Alcatel-Lucent 5620

SERVICE AWARE MANAGER | RELEASE 9.0 R4

Alcatel-Lucent 5650

CONTROL PLANE ASSURANCE MANAGER | RELEASE 5.0 R4

INSTALLATION AND UPGRADE GUIDE

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7.2 The foregoing provision limiting the liability of Alcatel-Lucent's employees, agents, officers and directors shall be deemed to be a trust provision, and shall be enforceable by such employees, agents, officers and directors as trust beneficiaries.

8. GENERAL

8.1 Under no circumstances shall either party be liable to the other for any failure to perform its obligations (other than the payment of any monies owing) where such failure results from causes beyond that party's reasonable control.

8.2 This Agreement constitutes the entire agreement between Alcatel-Lucent and Customer and supersedes all prior oral and written communications. All amendments shall be in writing and signed by authorized representatives of both parties.

8.3 If any provision of this Agreement is held to be invalid, illegal or unenforceable, it shall be severed and the remaining provisions shall continue in full force and effect.

8.4 The Licensed Program may contain freeware or shareware obtained by Alcatel-Lucent from a third party source. No license fee has been paid by Alcatel-Lucent for the inclusion of any such freeware or shareware, and no license fee is charged to Customer for its use. The Customer agrees to be bound by any license agreement for such freeware or shareware. CUSTOMER ACKNOWLEDGES AND AGREES THAT THE THIRD PARTY SOURCE PROVIDES NO WARRANTIES AND SHALL HAVE NO LIABILITY WHATSOEVER IN RESPECT OF CUSTOMER'S POSSESSION AND/OR USE OF THE FREEWARE OR SHAREWARE.

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8.6 All notices shall be sent to the parties at the addresses listed above, or to any such address as may be specified from time to time. Notices shall be deemed to have been received five days after deposit with a post office when sent by registered or certified mail, postage prepaid and receipt requested.

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8.8 Customer shall comply with all export regulations pertaining to the Licensed Program in effect from time to time. Without limiting the generality of the foregoing, Customer expressly warrants that it will not directly or indirectly export, reexport, or transship the Licensed Program in violation of any export laws, rules or regulations of Canada, the United States or the United Kingdom.

8.9 No term or provision of this Agreement shall be deemed waived and no breach excused unless such waiver or consent is in writing and signed by the party claimed to have waived or consented. The waiver by either party of any right hereunder, or of the failure to perform or of a breach by the other party, shall not be deemed to be a waiver of any other right hereunder or of any other breach or failure by such other party, whether of a similar nature or otherwise.

8.10 This Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario. The application of the United Nations Convention on Contracts for the International Sale of Goods is hereby expressly excluded.

Preface

The Preface provides general information about the 5620 Service Aware Manager documentation suite.

Note — You can use the Search function of Acrobat Reader (File→Search) to find a term in a PDF of this document. To refine your search, use appropriate search options (for example, search for whole words only or enable case-sensitive searching). You can also search for a term in multiple PDFs at once. For more information, see the Help for Acrobat Reader.

5620 SAM documentation suite

The 5620 SAM documentation suite describes the 5620 SAM and the associated network management of its supported devices. Contact your Alcatel-Lucent support representative for information about specific network or facility considerations.

Table 1 lists the documents in the 5620 SAM documentation suite.

Table 1 5620 SAM customer documentation suite

Guide	Description
5620 SAM core documentation	
5620 SAM Planning Guide	The *5620 SAM Planning Guide* provides information about 5620 SAM scalability and recommended hardware configurations.

(1 of 4)

Guide	Description
5620 SAM | 5650 CPAM Installation and Upgrade Guide	The *5620 SAM | 5650 CPAM Installation and Upgrade Guide* provides OS considerations, configuration information, and procedures for the following: • installing, upgrading, and uninstalling 5620 SAM and 5650 CPAM software in standalone and redundant deployments • 5620 SAM system migration to a different system • conversion from a standalone to a redundant 5620 SAM system
5620 SAM User Guide	The *5620 SAM User Guide* provides information about using the 5620 SAM to manage the service-aware IP/MPLS network, including GUI basics, commissioning, service configuration, and policy management. The *5620 SAM User Guide* uses a task-based format. Each chapter contains: • a workflow that describes the steps for configuring and using the functionality • detailed procedures that list the configurable parameters on the associated forms 5620 SAM management information specific to LTE network elements is covered in the *5620 SAM LTE ePC User Guide* and *5620 SAM LTE RAN User Guide*. 5620 SAM management information specific to 1830 PSS network elements is covered in the *5620 SAM Optical User Guide*.
5620 SAM Parameter Guide	The *5620 SAM Parameter Guide* provides: • parameter descriptions that include value ranges and default values • parameter options and option descriptions • parameter and option dependencies • parameter mappings to the 5620 SAM-O XML equivalent property names There are dynamic links between the procedures in the *5620 SAM User Guide* and the parameter descriptions in the *5620 SAM Parameter Guide*. See Procedure 2 for more information. Parameters specific to LTE network elements are covered in the *5620 SAM LTE Parameter Reference*. Parameters specific to 1830 PSS network elements are covered in the *5620 SAM Optical Parameter Reference*.
5620 SAM Statistics Management Guide	The *5620 SAM Statistics Management Guide* provides information about how to configure performance and accounting statistics collection and how to view counters using the 5620 SAM. Network examples are included.
5620 SAM Scripts and Templates Developer Guide	The *5620 SAM Scripts and Templates Developer Guide* provides information that allows you to develop, manage, and execute CLI-based or XML-based scripts or templates. The guide is intended for developers, skilled administrators, and operators who are expected to be familiar with the following: • CLI scripting, XML, and the Velocity engine • basic scripting or programming • 5620 SAM functions

5620 SAM Troubleshooting Guide	The *5620 SAM Troubleshooting Guide* provides task-based procedures and user documentation to:
	• help resolve issues in the managed and management networks
	• identify the root cause and plan corrective action for:
	  • alarm conditions on a network object or customer service
	  • problems on customer services with no associated alarms
	• list problem scenarios, possible solutions, and tools to help check:
	  • network management LANs
	  • network management platforms and operating systems
	  • 5620 SAM client GUIs and client OSS applications
	  • 5620 SAM servers
	  • 5620 SAM databases

(2 of 4)

Guide	Description
5620 SAM Maintenance Guide	The *5620 SAM Maintenance Guide* provides procedures for: • generating baseline information for 5620 SAM applications • performing daily, weekly, monthly, and as-required maintenance activities for 5620 SAM-managed networks
5620 SAM Integration Guide	The *5620 SAM Integration Guide* provides procedures to allow the 5620 SAM to integrate with additional components.
5620 SAM System Architecture Guide	The *5620 SAM System Architecture Guide* is intended for technology officers and network planners to increase their knowledge of the 5620 SAM software structure and components. It describes the system structure, software components, and interfaces of the 5620 SAM. In addition, 5620 SAM fault tolerance, security, and network management capabilities are discussed from an architectural perspective.
5620 SAM Supervision Module User Guide	The *5620 SAM Supervision Module User Guide* provides information about how to configure and use the web-based 5620 SAM Supervision Module for fault management and at-a-glance network element monitoring.
5620 SAM Network Element Compatibility Guide	The *5620 SAM Network Element Compatibility Guide* provides release-specific information about the compatibility of managed device features in 5620 SAM releases.
5620 SAM Release Description	The *5620 SAM Release Description* provides information about the new features associated with a 5620 SAM software release.
5620 SAM Glossary	The *5620 SAM Glossary* defines terms and acronyms used in all of the 5620 SAM documentation, including 5620 SAM LTE documentation.
5620 SAM XML OSS Interface Developer Guide	The *5620 SAM XML OSS Interface Developer Guide* provides information that allows you to: • use the 5620 SAM XML OSS interface to access network management information • learn about the information model associated with the managed network • develop OSS applications using the packaged methods, classes, data types, and objects necessary to manage 5620 SAM functions
5620 SAM LTE documentation	
5620 SAM LTE ePC User Guide	The *5620 SAM LTE ePC User Guide* describes how to discover, configure, and manage LTE ePC devices using the 5620 SAM. The guide is intended for LTE ePC network planners, administrators, and operators. Alcatel-Lucent recommends that you review the entire *5620 SAM LTE ePC User Guide* before you attempt to use the 5620 SAM in your LTE network.
5620 SAM LTE RAN User Guide	The *5620 SAM LTE RAN User Guide* describes how to discover, configure, and manage the Evolved NodeB, or eNodeB, using the 5620 SAM. The guide is intended for LTE RAN network planners, administrators, and operators. Alcatel-Lucent recommends that you review the entire *5620 SAM LTE RAN User Guide* before you attempt to use the 5620 SAM in your LTE network.
5620 SAM LTE Parameter Reference	The *5620 SAM LTE Parameter Reference* provides a list of all LTE ePC and LTE RAN parameters supported in the 5620 SAM.
5620 SAM LTE Alarm Reference	The *5620 SAM LTE Alarm Reference* provides a list of LTE ePC and LTE RAN alarms that can be reported in the 5620 SAM GUI.
5620 SAM 3GPP OSS Interface Developer Guide	The *5620 SAM 3GPP OSS Interface Developer Guide* describes the components and architecture of the 3GPP OSS interface to the 5620 SAM. It includes procedures and samples to assist OSS application developers to use the 3GPP interface to manage LTE devices.
5620 SAM 3GPP OSS Interface Compliance Statements	The *5620 SAM 3GPP OSS Interface Compliance Statements* document describes the compliance of the 5620 SAM 3GPP OSS interface with the 3GPP standard.
5620 SAM LTE RAN Release Description	The *5620 SAM LTE RAN Release Description* provides information about the LTE RAN features associated with the release.

(3 of 4)

Guide	Description
5620 SAM optical documentation	
5620 SAM Optical User Guide	The *5620 SAM Optical User Guide* describes how to discover, configure, and manage optical devices using the 5620 SAM. The guide is intended for optical network planners, administrators, and operators. Alcatel-Lucent recommends that you review the entire *5620 SAM Optical User Guide* before you attempt to use the 5620 SAM in your network.
5620 SAM Optical Parameter Reference	The *5620 SAM Optical Parameter Reference* provides a list of all optical device parameters supported in the 5620 SAM.
5620 SAM Optical Alarm Reference	The *5620 SAM Optical Alarm Reference* provides a list of optical device alarms that can be reported in the 5620 SAM GUI.

(4 of 4)

Procedure 1 To find the 5620 SAM user documentation

The user documentation is available from the following sources:

- the User_Documentation directory on the product DVD-ROM
- Help→5620 SAM User Documentation in the 5620 SAM client GUI main menu

Note — Users of Mozilla browsers may receive an error message when using the User Documentation Index page (index.html) to open the PDF files in the 5620 SAM documentation suite. The offline storage and default cache values used by the browsers are the cause of the error message.

Alcatel-Lucent recommends changing the offline storage (Mozilla Firefox) or cache (Mozilla 1.7) values to 100 Mbytes to eliminate the error message.

Procedure 2 To view parameter descriptions from the *5620 SAM User Guide*

You can click on a parameter name in a *5620 SAM User Guide* procedure to open the matching parameter description in the *5620 SAM Parameter Guide*. Ensure the following conditions are true beforehand:

- the *5620 SAM Parameter Guide* and *5620 SAM User Guide* are located in the same directory
- Adobe Reader Release 5.0 or later is installed

1. To view a parameter description when both the *5620 SAM User Guide* and the *5620 SAM Parameter Guide* are open in Adobe Acrobat, click on the parameter name in the *5620 SAM User Guide*.

   The parameter description is displayed in the *5620 SAM Parameter Guide*.

2. To view a parameter description when only the *5620 SAM User Guide* is open in Adobe Acrobat:

   i. Click on a parameter name in a procedure in the *5620 SAM User Guide*. The *5620 SAM User Guide* closes and the *5620 SAM Parameter Guide* opens to display the parameter description.

   ii. Double-click on the Previous View button in Adobe Acrobat (or press Alt + ←) to re-open the *5620 SAM User Guide*. The *5620 SAM User Guide* opens and displays the parameter from step i.

Prerequisites

Readers of the 5620 SAM documentation suite are assumed to be familiar with the following:

- 5620 SAM software structure and components
- 5620 SAM GUI operations and tools
- typical 5620 SAM management tasks and procedures
- device and network management concepts

Conventions

Table 2 lists the conventions that are used throughout the documentation.

Table 2 Documentation conventions

Convention	Description	Example
Key name	Press a keyboard key	Delete
Italics	Identifies a variable	*hostname*

(1 of 2)

Convention	Description	Example
Key+Key	Type the appropriate consecutive keystroke sequence	CTRL+G
Key–Key	Type the appropriate simultaneous keystroke sequence	CTRL–G
*	An asterisk is a wildcard character, which means “any character” in a search argument.	log_file*.txt
↵	Press the Return key	↵
—	An em dash indicates there is no information.	—
→	Indicates that a cascading submenu results from selecting a menu item	Policies→Alarm Policies

(2 of 2)

Procedures with options or substeps

When there are options in a procedure, they are identified by letters. When there are substeps in a procedure, they are identified by Roman numerals.

Example of options in a procedure

At step 1, you can choose option a or b. At step 2, you must do what the step indicates.

1 This step offers two options. You must choose one of the following.

- **a** This is one option.
- **b** This is another option.

2 You must perform this step.

Example of substeps in a procedure

At step 1, you must perform a series of substeps within a step. At step 2, you must do what the step indicates.

1 This step has a series of substeps that you must perform to complete the step. You must perform the following substeps.

- **i** This is the first substep.
- **ii** This is the second substep.
- **iii** This is the third substep.

2 You must perform this step.

Measurement conventions

Measurements in this document are expressed in metric units and follow the Système international d’unités (SI) standard for abbreviation of metric units. If imperial measurements are included, they appear in brackets following the metric unit.

Table 3 lists the measurement symbols used in this document.

Table 3 Bits and bytes conventions

Measurement	Symbol
bit	b
byte	byte
kilobits per second	kb/s

Important information

The following conventions are used to indicate important information:

Warning — Warning indicates that the described activity or situation may, or will, cause equipment damage or serious performance problems.

Caution — Caution indicates that the described activity or situation may, or will, cause service interruption.

Note — Notes provide information that is, or may be, of special interest.

Contents

5620 SAM deployment

5650 CPAM deployment

Appendices

Getting started

1 — Before you begin

1 — Before you begin

1.1 Overview

This chapter contains general and OS-specific information about the deployment of the Alcatel-Lucent 5620 SAM software components in a network.

Caution 1 — The upgrade or conversion to redundancy of the Alcatel-Lucent 5620 SAM software components in a network requires a thorough understanding of 5620 SAM system administration and OS-specific requirements. The conversion or upgrade must be planned, documented, and tested in advance on a lab system that is representative of the target live network.

Contact Alcatel-Lucent technical support to assess the upgrade requirements for your network implementation of the 5620 SAM. Alcatel-Lucent offers an upgrade service that should be engaged for upgrades and conversions to redundancy.

Caution 2 — Alcatel-Lucent supports 5620 SAM software deployment only under the conditions described in this guide, the *5620 SAM Planning Guide*, and the *5620 SAM Release Notice*.

Guide conventions

A 5620 SAM software DVD-ROM is platform-specific. View the DVD-ROM label to verify that you have the correct DVD-ROM.

This document uses the following terminology:

- station—a discrete physical processing entity, such as a Windows PC or a Solaris workstation
- peer—means an equivalent component in the same 5620 SAM system. For example, in a redundant deployment, the peer main server of the primary main server is the standby main server, and the peer main server of the standby main server is the primary main server. The term peer is used because the terms primary and standby are relative to the functional role of a component, and these roles can change.

The figures and associated text in this guide display a typical or default parameter value when appropriate. A default value is acceptable in many deployment environments, but must be validated against specific requirements, for example, firewall constraints. See the *5620 SAM Planning Guide* and the current *5620 SAM Release Notice* for more information, or contact Alcatel-Lucent technical support.

An installer panel field that has a yellow background is a mandatory field that requires a valid entry before you can proceed to the next panel.

The 5620 SAM installer prompts the user before it creates a directory on the local file system.

5620 SAM client installation, upgrade, and configuration updates

The following 5620 SAM client software installation methods are available:

- using the client installer on the 5620 SAM software DVD-ROM
- using a web browser that connects to a 5620 SAM main server

Each method sets up a basic client environment that includes the 5620 SAM auto-client update utility. The auto-client update utility then downloads the client software from a 5620 SAM main server and installs it.

The 5620 SAM main server must be installed and initialized before you can use a web browser to install the auto-client update utility and client software. You can use the DVD-ROM client installer to install the auto-client update utility, regardless of the main server state, but the main server must be initialized before the auto-client update utility can install the client software.

See chapter 2 for client installation procedures. See chapter 3 for client upgrade procedures.

The auto-client update utility can also be used for the central management and automatic distribution of client software upgrades and configuration changes.

During startup, the client software checks for available updates on a 5620 SAM main server. If a configuration change is available, the client automatically applies it. If a client software upgrade is available, the client applies the upgrade in response to a user prompt.

Client software upgrades

After a 5620 SAM main server is upgraded, a GUI client that connects to the server automatically detects the release mismatch and attempts an upgrade to the server release level.

During a software upgrade, a 5620 SAM client downloads and installs only the files required for the upgrade. The upgrade process removes previously downloaded local 5620 SAM files that are not required by the updated client software.

Client configuration changes

When the GUI clients that connect to a 5620 SAM server require a configuration change, an administrator updates the global client configuration stored on a main server. Each client detects the update at the start of the next client session and applies the required configuration changes. See the *5620 SAM User Guide* for information about updating client configurations.

By default, the client configuration after an automatic update matches the server configuration, but this behavior is configurable using client startup options. To retain a customized configuration on a client, you can specify that the client does not apply any configuration changes from the server. If a client configuration change is mandatory and affects the customized configuration, you must allow the update and then manually reapply the custom configuration entries. See the *5620 SAM User Guide* GUI chapter for a description of each 5620 SAM client startup option.

Considerations and restrictions

Consider the following before you attempt to use the automatic 5620 SAM client update function.

- When a client detects an error during an auto-update attempt, for example, when the client is unable to connect to the server, it displays a message about the error.
- An auto-client update proceeds only when there is sufficient disk space on the client station. Otherwise, the client displays a message and exits.
- When a GUI client tries to connect to a server that is at an earlier 5620 SAM release than the download server, the client displays a message to this effect, restarts, and tries to connect to the other server in the cluster.
- A client backs up the existing configuration files before it performs a configuration change.
- The user documentation location is configurable during a 5620 SAM server installation. By default, the clients retrieve the documents from a URL, but you can specify a location such as the client file system.

1.2 General 5620 SAM deployment information

The information in this section applies to all platforms. You must comply with the requirements in this section and in the "5620 SAM deployment on Windows" or "5620 SAM deployment on Solaris" section, as appropriate, before you attempt a 5620 SAM installation or upgrade.

Note — It is important to record all information that you specify when you perform procedures in this guide; the information may be required for a subsequent operation. Store the recorded information in a secure location, such as a non-5620 SAM station, for later use.

Platform

The following are general 5620 SAM platform requirements and restrictions. See the appropriate section in this chapter for information about installing or upgrading the 5620 SAM on a specific platform.

- The 5620 SAM installation platform must meet the minimum requirements described in the *5620 SAM Planning Guide* for the 5620 SAM release.
- The system locale must be C or POSIX.
- The hostname of a 5620 SAM component must meet the following criteria:
  - It contains only ASCII alphanumeric and hyphen characters.
  - It does not begin or end with a hyphen.
  - If the hostname is an FQDN, period characters delimit the FQDN components.
  - The FQDN of the hostname does not exceed 63 characters.
- The 5620 SAM platform must be dedicated to the 5620 SAM application only. 5620 SAM operation may be adversely affected by the activity of another application on the same platform. Alcatel-Lucent does not support the sharing of the 5620 SAM platform with another application.
- The 5620 SAM main server and database components in a 5620 SAM system must be installed on stations that use the same OS at the same patch level.

- Before you install or upgrade a redundant 5620 SAM system, you must enable SSH on each main server, auxiliary server, and database station in the system.
- A 5620 SAM client on a Windows or Solaris station can interact with a 5620 SAM server that runs on any OS in a standalone or redundant configuration.
- A 5620 SAM single-user client or client delegate server cannot be installed on the same station as a 5620 SAM server or database.
- The 5620 SAM OSS and GUI client real-time clocks must always be synchronized with the main server real-time clock. Alcatel-Lucent strongly recommends using NTP or an equivalent time protocol for synchronization.

Table 1-1 lists the platforms that each 5620 SAM component supports.

Table 1-1 Platforms supported by 5620 SAM components

5620 SAM component	Solaris 10 on SPARC station	Solaris 10 on x86 station	Microsoft Windows
Main server (distributed)	✓	✓	
Main server with 3GPP interface (distributed)		✓	
Database (distributed)	✓	✓	
Collocated main server and database	✓	✓	
Collocated database and main server with 3GPP interface		✓	
Auxiliary server	✓	✓	
Client delegate server	✓	✓	
Single-user client	✓	✓	✓

Software

The following are general 5620 SAM software requirements and restrictions.

- You cannot upgrade the 5620 SAM to a release that is chronologically older than the currently installed release. For example, you cannot upgrade from Release 7.0 R8 to 8.0 R1, because Release 8.0 R1 predates Release 7.0 R8.
- The 5620 SAM server and database installers are available in English only.
- The prompts and descriptive text displayed during a client installation are in English; subsequent client upgrades use the language associated with the locale configured for the client on the server.
- An Alcatel-Lucent 5620 SAM license key is required during an 5620 SAM installation or upgrade. Before you install or upgrade a 5620 SAM system, confirm that your license key enables the function that you require and is configured for the number of network objects that you intend to manage.
- You cannot share an existing Oracle installation with the 5620 SAM.
- No other application can use the 5620 SAM Oracle software.
- The Oracle installation files must be in the same directory as the database installer file, for example, the directory on the product DVD-ROM.

- The 5620 SAM supports the upgrade of a 5620 SAM component that is no more than two major releases older than the current release. For example, you can upgrade a 5620 SAM Release 7.0 system to Release 9.0, but you cannot upgrade a Release 6.0 system directly to Release 9.0; you must first perform an intermediate upgrade to at least Release 7.0.
- After an upgrade to an intermediate release, for example, an upgrade from Release 6.0 to Release 7.0 before a final upgrade to Release 9.0, each 5620 SAM main server must be started and allowed to initialize fully before the final upgrade, or the final upgrade fails.
- Ensure that you have sufficient time to complete a 5620 SAM database upgrade. The time required for a database upgrade depends on the platform type, database complexity and tablespace configuration. See the *5620 SAM Planning Guide* for database upgrade time estimates.
- A 5620 SAM software upgrade from Release 8.0 or earlier to Release 9.0 R1 or later removes an SSL or HTTPS configuration on a 5620 SAM component. If SSL and HTTPS are enabled in a Release 8.0 or earlier 5620 SAM system before an upgrade, you must enable secure communication on each main server, auxiliary server, and client during the upgrade. The 5620 SAM installation utility includes an SSL configuration panel. See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.
- To enable or disable SSL on a single-user GUI client or delegate client, you must uninstall the single-user client or client delegate server software, and then select the appropriate SSL option during the client or client delegate server re-installation. A GUI client cannot connect to a main server that has a different SSL configuration, so the main server cannot update the client with the new SSL configuration.
- A 5620 SAM software upgrade from Release 8.0 or earlier to Release 9.0 R1 or later removes the SSO configuration on a 5620 SAM component. If SSO is enabled before an upgrade, and you want SSO enabled after the upgrade, you must configure SSO during the upgrade on each main server. See the *5620 SAM Integration Guide* for information about configuring SSO.
- At the beginning of a 5620 SAM server upgrade, the 5620 SAM installation utility backs up specific configuration and log files to a timestamped directory under the installation directory. The utility then deletes directories under the server installation directory. If you have created or customized a file under the server installation directory, you risk losing the file unless you back up the file before the upgrade to a storage location that is unaffected by the upgrade.

Release-specific considerations

The 5620 SAM Release Notice contains important release-specific information. Ensure that you read the Release Notice before you begin a 5620 SAM installation or upgrade.

Note — After an upgrade from a release earlier than 8.0 R5, the 5620 SAM clears the existing EquipmentRemoved and ContainingEquipmentMissing alarms during network resynchronization.

Network

The following are the 5620 SAM network requirements and restrictions.

5620 SAM management network

The following conditions apply to the 5620 SAM management domain:

- Specifying a TCP or UDP port other than the default during an installation or upgrade can affect firewall configuration; ensure that you record changes to default port numbers and make the ports available through firewalls.
- Before you can specify an IPv6 address for a 5620 SAM component, the IPv6 interface must be plumbed and operational. See the appropriate OS documentation for information about enabling and configuring an IPv6 interface.
- You must use an IP address, and not a hostname, to identify a database station.
- When you use hostname to identify a 5620 SAM component, you must use local hostname resolution.
- During a single-user client installation, you can specify a hostname instead of an IP address to identify a main server. A client upgrade, however, occurs automatically through a connection to a predefined server in the client configuration. See the *5620 SAM User Guide* for information about updating the client configuration.
- Alcatel-Lucent does not support DNS or NIS name resolution on a main or auxiliary server, and a pre-existing name service must not conflict with 5620 SAM server address resolution. Alcatel-Lucent supports DNS or NIS name resolution on a 5620 SAM GUI or OSS client.
- Network addressing for 5620 SAM components has the following requirements:
  - An IP address that a 5620 SAM client, database, or server uses to communicate with another 5620 SAM component must be an IPv4 address in dotted-decimal format. Support for IPv6 addressing is limited to network discovery and management by 5620 SAM servers on Solaris.
  - You cannot specify “localhost” or an alias IP address.

Caution 1 — Alcatel-Lucent strongly recommends the use of hostname resolution for GUI and OSS client communication with a 5620 SAM main server when there is a NAT firewall between the main server and clients.

Caution 2 — When a 5620 SAM main server and clients use IP addresses to traverse a NAT firewall, the firewall must be configured with an address loopback mechanism for each main server and client.

Managed network and external systems

The following conditions apply to the network of 5620 SAM- managed devices and to external systems with which the 5620 SAM is integrated:

- Before you upgrade a 5620 SAM system, you must confirm that the new 5620 SAM software release supports the releases of the 5620 SAM-managed devices. If this is not the case, you must perform one of the following before you attempt the upgrade, or service disruption may occur.
  - Upgrade the devices to a release that the new 5620 SAM release supports.
  - Use a 5620 SAM client to unmanage the devices and remove them from the 5620 SAM-managed network.
- Before you upgrade a 5620 SAM system, you must ensure that the new 5620 SAM software is compatible with the software release of each connected external system, for example, the 5620 NM. Contact Alcatel-Lucent technical support about 5620 SAM and external system compatibility.

Note 1 — You cannot upgrade a 5620 SAM system when a managed NE contains an HSMDAv1 daughter card. You must decommission each HSMDAv1 daughter card in the managed network before you attempt a 5620 SAM system upgrade. Contact Alcatel-Lucent technical support for more information.

Note 2 — If you have a 5620 SAM system that manages one or more OmniSwitch devices as generic NEs, you must unmanage and delete the OmniSwitch generic NEs before you upgrade the 5620 SAM software. You can manage the devices directly, rather than as generic NEs, when the 5620 SAM upgrade is complete.

Note 3 — Because of changes in 5620 SAM Release 7.0, a 5620 SAM upgrade disables the resynchronization of a MIB entry in some devices if the MIB entry has the former default polling interval of 24 h. The affected devices are the 7210 SAS-E, 7450 ESS, 7701 CPAA, 7705 SAR, 7710 SR, and 7750 SR. A MIB entry that has a non-default polling interval is unaffected by a 5620 SAM upgrade.

1.3 5620 SAM LTE-specific requirements

The following installation and upgrade conditions apply to a 5620 SAM deployment for LTE network management.

- The 5620 SAM 3GPP OSS interface is supported only on x86-based platforms.
- A 5620 SAM system that manages one or more eNodeB devices has special disk partitioning requirements. See "Disk configurations and partitioning" in section 1.5 for more information.

- Before you can use a 5620 SAM system to manage one or more eNodeB devices, the 5620 SAM and eNodeBs must use a common time-synchronization server that runs a protocol such as NTP. 5620 SAM eNodeB PM statistics collection fails when the eNodeB and 5620 SAM real-time clocks are not synchronized.
- Some 5620 SAM LTE RAN functions, for example, performance measurement transfers and network snapshots, require configuration before the 5620 SAM can manage an eNodeB. See the *5620 SAM LTE RAN User Guide* for eNodeB management configuration information.

1.4 5620 SAM deployment on Windows

This section describes the 5620 SAM deployment requirements and restrictions that are specific to a Microsoft Windows platform. The 5620 SAM supports only single-user client installation and upgrade on a Microsoft Windows platform. You must comply with the requirements in the "General 5620 SAM deployment information" section and in this section before you attempt to perform a 5620 SAM component installation or upgrade on a Windows platform.

Platform

The following are 5620 SAM platform requirements and restrictions for Windows.

- Alcatel-Lucent supports the installation or upgrade of a 5620 SAM single-user client on a station that runs one of the following Windows releases:
  - Windows 2000 Professional, 32-bit edition
  - Windows 2003, 32-bit edition
  - Windows 7, 32- and 64-bit editions
  - Windows XP Professional, 32-bit edition
  - Windows Vista Business, 32-bit edition (5620 SAM client only)
  - Windows Vista Ultimate, 32-bit edition (5620 SAM client only)
- Alcatel-Lucent does not support 5620 SAM single-user client installation on Windows when Windows is installed in a virtual environment.
- Before you attempt to install a single-user client on Windows 2003, you must enable Windows XP compatibility for the installer utility executable file. See the appropriate Microsoft product documentation for more information.

Security

The following are 5620 SAM security requirements and restrictions for Windows.

- The user that installs a 5620 SAM single-user client requires local user privileges.
- The user that starts an installed 5620 SAM single-user client must be the user that installs the client software, or a user with sufficient permissions on the client files and directories, such as a local administrator.
- The user that uninstalls the 5620 SAM single-user client software must be the user that installs the client software, or a user with local administrator privileges.

1.5 5620 SAM deployment on Solaris

This section describes the 5620 SAM deployment requirements and restrictions that are specific to a Solaris platform. You must comply with the requirements in the "General 5620 SAM deployment information" section and in this section before you attempt to perform a Solaris-specific procedure in this guide.

The following components comprise a 5620 SAM system on Solaris:

- one main server in a standalone deployment, or two in a redundant deployment
- one database in a standalone deployment, or two in a redundant deployment
- one or more auxiliary servers (optional)
- one or more single-user clients or client delegate servers

Note — A redundant 5620 SAM system upgrade requires a network-management outage and must be performed only during a scheduled maintenance period of sufficient duration for the upgrade.

Network

The following are 5620 SAM network requirements and restrictions for Solaris.

- If you move a standalone 5620 SAM main server to a different station during a cross-platform migration, Alcatel-Lucent recommends that you remove the trap-target entries for the former server from the SNMP configuration of each NE.
- A 5620 SAM main server listens for GUI and OSS client communication on only one interface unless you specify a hostname for the main server during an installation or upgrade.
- During a main server installation or upgrade, you must use hostnames to identify the main server interfaces under the following conditions:
  - when the OSS and GUI clients communicate with a main server using multiple IP addresses for the main server
  - when the OSS and GUI clients use different addresses to communicate with a main server through one interface on the main server
- When two components use hostnames to communicate, the /etc/hosts file on each component station must contain the following local entries:
  - an entry that maps the hostname assigned to the interface on the other component to the IP address used to reach the other component
  - an entry that maps the hostname of the other component station to each IP address used to reach the other component

- Using NAT adds an extra level of complexity to a 5620 SAM network. The /etc/hosts file on each component station must contain the correct public and private address entries for reaching other components at the following times:
  - during normal operation
  - after a 5620 SAM component or network component failure
- A 5620 SAM main server can use IPv6 addressing for network discovery and management only, and only if an IPv6 server address is specified during a server installation or upgrade.

Caution — Before you can use a 5620 SAM system to manage one or more eNodeB devices, the 5620 SAM and eNodeBs must use a common time-synchronization server that runs a protocol such as NTP. 5620 SAM eNodeB PM statistics collection fails when the eNodeB and 5620 SAM real-time clocks are not synchronized.

Platform

The following are 5620 SAM platform requirements and restrictions for Solaris.

Note — See the current *5620 SAM Release Notice* for information about the required Solaris version and patch level.

- 5620 SAM deployment on Solaris in a live network requires a station that has at least two hard disks. Alcatel-Lucent supports a one-disk layout only for lab trials or for demonstration purposes.
- 5620 SAM component installation is supported for Solaris 10 in 64-bit mode on a SPARC or an x86-based station.
- The Solaris forcedirectio disk-partitioning option is not required or recommended on a disk partition in a 5620 SAM system.
- You can deploy a collocated or distributed 5620 SAM system in a standalone or a redundant configuration.
- In a redundant 5620 SAM deployment, the main server time zones must match.
- When a 5620 SAM database station has multiple CPUs, the 5620 SAM installation utility uses Oracle parallel processing to speed a database upgrade.
- If the 5620 SAM is expected to collect statistics on a large scale, as defined in the *5620 SAM Planning Guide*, Alcatel-Lucent requires the use of a disk array with the 5620 SAM database to increase system performance.
- The Solaris release and patch levels on all main server, auxiliary server, and database components in a 5620 SAM deployment must be identical.
- The 5620 SAM does not support the use of Solaris zones.
- The Solaris TFTP server conflicts with the 5620 SAM TFTP server. The Solaris TFTP server must be disabled on a 5620 SAM server.
- Alcatel-Lucent recommends that you disable the Solaris webconsole service on each station in a 5620 SAM system.
- If you plan to convert a standalone 5620 SAM system to a redundant system and plan to upgrade the system, you must perform the upgrade before the conversion.

- You must relink the Oracle executable files after you apply a Solaris OS patch or after a Solaris OS upgrade. See the *5620 SAM Maintenance Guide* for more information.
- Table 1-16 lists the Solaris packages that the 5620 SAM requires in addition to a Solaris core distribution. The 5620 SAM may also be installed on a Solaris Entire Distribution installation with the OEM Support option. See the appropriate Solaris OS documentation for more information about package installation.
- An auxiliary or client-delegate server requires a dedicated station. Alcatel-Lucent does not support the sharing of an auxiliary or client-delegate server station with another 5620 SAM component.
- An auxiliary server must be accessible to each main server and database in a redundant 5620 SAM deployment. Optimally, all components in a deployment are in the same LAN and have high-quality network interconnection.
- The 5620 SAM supports the use of Solaris IP network multipathing, or IPMP, only when IPMP is deployed in an active-standby configuration. See the appropriate Solaris documentation for information about configuring IPMP.

Security

The following are 5620 SAM security requirements and restrictions for Solaris.

- A 5620 SAM server installation creates a user account called samadmin that is required for 5620 SAM operation and administration.
  - The samadmin account is created on a main, auxiliary, or client delegate server.
  - The account home directory is the 5620 SAM server installation directory; the samadmin user is the owner of this directory. The samadmin user owns most of the files and directories in the installation directory; the root user owns only a few files and directories.
  - The root user or a root-equivalent user must assign a password to the samadmin user after an installation creates the account.
  - Only the samadmin user can start or stop a 5620 SAM main or auxiliary server.
  - Only the root and samadmin users can modify the server configuration and run server scripts.
  - Server uninstallation does not remove the samadmin account or home directory.
  - Root user privileges are required for some low-level functions.
- The Oracle management user requires full read and write permissions to the 5620 SAM database installation directory and any specifically created partitions, for example, /opt/5620sam.
- The user that installs a 5620 SAM client requires local user account privileges.
- The user that starts a 5620 SAM client must be the user that installs the client software, or another user that has read, write, and execute privileges on the client files and directories.
- A 5620 SAM domain name defines the network-management domain to which a 5620 SAM component belongs and must be unique to a network. A 5620 SAM component can interact only with other 5620 SAM components in the same 5620 SAM domain. During 5620 SAM installation, you must specify the same domain name for all components in a 5620 SAM system.

- Alcatel-Lucent supports the disabling of Solaris services using the Solaris "Secure by default" feature on 5620 SAM stations. The feature disables network listening for Solaris services that do not use SSH.

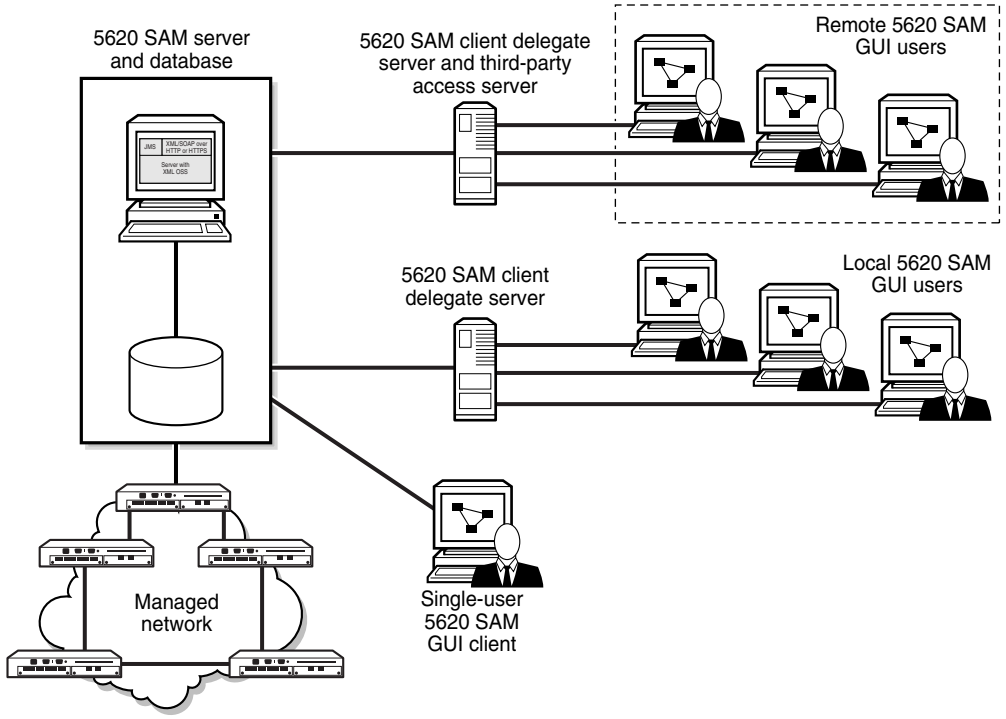
  The following conditions apply to enabling the feature in a 5620 SAM system:
  - You must ensure that SSH is functioning properly for remote access before you disable network services such as Telnet
  - You must enable the feature only while the 5620 SAM is shut down during a maintenance period of sufficient duration.
  - You must re-enable the NTP client service on a station after you enable the feature.
  - You must consult the appropriate Solaris documentation for information about enabling the feature and the services that are affected by enabling the feature.

Client delegate servers

The 5620 SAM supports the use of one or more client delegate servers in the management network. A 5620 SAM client delegate server supports simultaneous 5620 SAM client GUI sessions using one client software installation. A client delegate server can host local and remote user sessions, and supports the use of a third-party remote access tool such as a Citrix access gateway.

Figure 1-1 shows two client delegate servers that are deployed in a 5620 SAM management network. Multiple local users log in to a client delegate server directly. Multiple remote users log in through a client delegate server that hosts a third-party access tool such as a Citrix access gateway. Another local user opens a session on a single-user client station.

Figure 1-1 Client delegate server configuration



A 5620 SAM client GUI session that is opened through a client delegate server is functionally the same as a single-user client session. The client delegate server locally stores the files that are unique to each user session, such as the client logs and GUI preference files, using a directory structure that includes the UNIX username.

A 5620 SAM main server monitors the registered client delegate servers and displays information about them in the GUI. To register a client delegate server, you specify the client delegate server IP address during main server installation or configuration.

You can use the 5620 SAM client GUI to list the following:

- registered client delegate servers and the availability of each server
- active client delegate server sessions
- active client sessions on a specific client delegate server
- active client sessions for a specific 5620 SAM user

If a client delegate server becomes unreachable, the 5620 SAM raises an alarm and changes the color of the associated session entries in the GUI. The alarm clears when the server is again reachable.

The number of allowed 5620 SAM client sessions on a client delegate server is configurable as a threshold using the 5620 SAM GUI. If a user tries to open a client session that reaches or exceeds the threshold, the session proceeds and the client delegate server raises an alarm. This threshold-crossing function can help to balance the session load across multiple client delegate servers. You require the Update user permission on the Server package to configure the threshold. See the *5620 SAM User Guide* for more information.

You can use the client software on a client delegate server from the local console. Alcatel-Lucent recommends that you install a client delegate server, rather than a single-user client, to facilitate the deployment of additional clients.

The following restrictions apply to client delegate servers.

- Client delegate server installation is supported only on Solaris.
- Alcatel-Lucent supports the installation of one client delegate server on a station.
- Only the root user can perform a client delegate server installation, configuration, upgrade, or uninstallation.
- A user that opens a session on a client delegate server must belong to the client delegate server user group named sam; this user group is created during client delegate server installation, if the user group does not exist.
- You cannot change a 5620 SAM single-user client to a client delegate server.
- A client delegate server connects to only one release of 5620 SAM main server; multiple main servers to which the client connects must be the same release.

Disk configurations and partitioning

This section describes the hard-disk configuration guidelines and restrictions for 5620 SAM software components on Solaris stations. The partition sizes are based on the use of 73-Gbyte or 146-Gbyte hard disks. You may need to adjust the partition sizes to accommodate disks of a different capacity.

If a 5620 SAM system is expected to collect statistics on a large scale, Alcatel-Lucent requires that you include a disk array in the database disk layout. See the *5620 SAM Planning Guide* for scaling guidelines related to statistics collection. Contact Alcatel-Lucent technical support for information about using a disk array with the 5620 SAM.

Caution 1 — The Solaris forcedirectio partition option is not required on 5620 SAM disk partitions. Alcatel-Lucent strongly recommends that you do not enable this option on a 5620 SAM disk partition.

Caution 2 — Each disk partition described in this section must be a mounted partition and not a symbolic link. The 5620 SAM does not support the use of symbolic links to represent partitions.

Note — For each database disk layout in this section, the Oracle management user home directory specified by the ORACLE_HOME environment variable is /opt/5620sam/oracle11r2.

Using RAID with the 5620 SAM

Alcatel-Lucent supports the use of hardware RAID 0, or disk striping. The disk I/O performance of RAID 0 is required only for a 5620 SAM database that has a high transaction rate, as defined in the *5620 SAM Planning Guide*. Alcatel-Lucent does not recommend using software-based RAID 0.

Alcatel-Lucent supports the use of RAID 1, or disk mirroring. When extra system resilience is required, Alcatel-Lucent recommends the use of 5620 SAM platform redundancy rather than RAID 1, because RAID 1 may affect system performance. If RAID 1 is used, RAID 1 must be hardware-based and have the number of disks recommended in the *5620 SAM Planning Guide*.

Note 1 — Alcatel-Lucent is not responsible for the installation, administration, or recovery of RAID on a 5620 SAM platform.

Note 2 — A RAID 0 stripe size of 512 kbytes is required for optimal 5620 SAM disk performance. If a platform does not support a stripe size of 512 kbytes, choose the next largest stripe size, for example, 256 kbytes. Specifying a smaller or larger stripe size may result in degraded performance that compromises 5620 SAM network management.

Partitioning guidelines

Table 1-2 describes where to find disk partitioning information for 5620 SAM components in different deployment types.

Table 1-2 Disk partitioning guidelines by deployment type

Deployment type	Components	Number of disks	See in this section
Collocated	Main server and database	1	One-disk collocated main server and database partitioning
		2	Two-disk collocated main server and database partitioning
		4	Four-disk collocated main server and database partitioning
		>4	Using more than four disks for a database or collocated system
Distributed	Main server	1	One-disk main server partitioning
		2	Two-disk main server partitioning
	Database	1	One-disk database partitioning
		2	Two-disk database partitioning
		4	Four-disk database partitioning
		>4	Using more than four disks for a database or collocated system
—	Statistics-collection auxiliary server	1	One-disk statistics-collection auxiliary server partitioning
		2	Two-disk statistics-collection auxiliary server partitioning
		≥4	Four-or-more-disk statistics-collection auxiliary server partitioning
	Call-trace auxiliary server	≥4	Call-trace auxiliary server partitioning
	Client or client delegate server	1	Client or client delegate server partitioning

One-disk collocated main server and database partitioning

Table 1-3 lists the recommended partition configuration for a single disk on a Solaris station that hosts the 5620 SAM main server and database applications. The recommendations apply when only one disk is available for use by the 5620 SAM main server and database, or when two disks are available but one disk is used as a physical mirror of the other disk.

Caution — Alcatel-Lucent does not support the use of a one-disk layout for a collocated 5620 SAM system deployment in a live network. A one-disk layout is supported only for lab trials or for demonstration purposes.

Note 1 — Alcatel-Lucent does not support one-disk collocated 5620 SAM server and database installation using a 73-Gbyte disk; the minimum requirement for such a deployment is a 146-Gbyte disk.

Note 2 — The /opt/5620sam partition requires an additional 10 Gbytes above the recommended minimum for every 1000 eNodeB devices in the managed network.

Table 1-3 One-disk collocated partitioning scheme

Partition	Content	Disk size (Gbytes)	
		146	300
/	root, including /usr	15	30
—	swap	Equal to RAM, up to 16	
/var	var	3	10
/opt/5620sam (see Note 2 above table)	5620 SAM main server and database software	20	60
/opt/5620sam/dbbackup	Database backups	33	70
/opt/5620sam/samdb/tablespace	Database tablespaces and database redo logs	40	70
/opt/5620sam/samdb/archivelog	Database archive logs	16	40

Two-disk collocated main server and database partitioning

Table 1-4 lists the recommended partition configuration for two disks on a Solaris station that hosts the 5620 SAM main server and database applications. The recommendations apply when only two disks are available for use by the 5620 SAM main server and database, or when two pairs of disks are available but one disk pair is used as a physical mirror of the other disk pair.

Note 1 — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Note 2 — The /opt/5620sam partition requires an additional 10 Gbytes above the recommended minimum for each 1000 eNodeB devices in the managed network.

Table 1-4 Two-disk collocated partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 1				
/	root, including /usr	10	15	30
—	swap	8	8	Equal to RAM, up to 16
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam (see Note 2 above table)	5620 SAM main server and database software	15 (10 minimum)	41	60
/opt/5620sam/dbbackup	Database backups	24	60	100
/opt/5620sam/samdb/redolog	Database redo logs	8	8	30 (8 minimum)
Disk 2				
/opt/5620sam/samdb/archivelog	Database archive logs	15	40	100
/opt/5620sam/samdb/tablespace	Database tablespaces	40	80	100
/opt/5620sam/samdb/tablespace/statstbs01 /opt/5620sam/dbbackup/staging	Accounting statistics tablespace (optional)	10	10	20
	Accounting statistics staging directory (optional)	—	5	5
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Four-disk collocated main server and database partitioning

Table 1-5 lists the recommended partition configuration for four disks on a Solaris station that hosts the 5620 SAM main server and database applications. The recommendations apply when only four disks are available for use by the 5620 SAM main server and database, or when two sets of four disks are available but one disk set is used as a physical mirror of the other disk set.

Note 1 — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Note 2 — The /opt/5620sam partition requires an additional 10 Gbytes above the recommended minimum for each 1000 eNodeB devices in the managed network.

Table 1-5 Four-disk collocated partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 1				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam (see Note 2 above table)	5620 SAM main server and database software	29 (15 minimum)	45	60
/opt/5620sam/samdb/redolog	Database redo logs	8	8	30 (8 minimum)
/opt/5620sam/server/xml_output	Output of OSSI file-export operations	—	10	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 2				
/opt/5620sam/samdb/tablespace	Database tablespaces	40 minimum	80 minimum	100
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 3				
/opt/5620sam/dbbackup	Database backups	60	60 minimum	100
/opt/5620sam/dbbackup/staging	Accounting statistics staging directory (optional)	5	5	5
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

(1 of 2)

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 4				
/opt/5620sam/samdb/archivelog	Database archive logs	30	60	100
/opt/5620sam/samdb/tablespace/statstbs01	Accounting statistics tablespace (optional)	10	35	50
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

(2 of 2)

Using more than four disks for a database or collocated system

When more than four disks are available for a 5620 SAM database, or for a collocated main server and database, you can reduce disk contention by locating specific database partitions on unused disks. Alcatel-Lucent recommends locating the following partitions on unused disks:

- /opt/5620sam/samdb/redolog
- /opt/5620sam/samdb/tablespace/statstbs01

Caution 1 — If you plan to locate only one partition on an unused disk, this partition must be the redolog partition.

Caution 2 — You must not alter the specified redolog partition size.

Note — The /opt/5620sam partition that contains the 5620 SAM main server software requires an additional 10 Gbytes above the recommended minimum for each 1000 eNodeB devices in the managed network.

One-disk main server partitioning

Table 1-6 lists the recommended partition configuration for a single disk on a Solaris station that hosts the 5620 SAM main server application under typical operating conditions.

Note 1 — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Note 2 — Alcatel-Lucent strongly recommends using at least a two-disk layout for a 5620 SAM main server because a single-disk configuration greatly limits the 5620 SAM system performance, managed-network size, and data storage capacity. Alcatel-Lucent discourages the use of a single-disk configuration in a 5620 SAM server deployment.

Note 3 — The /opt/5620sam partition requires an additional 10 Gbytes above the recommended minimum for each 1000 eNodeB devices in the managed network.

Table 1-6 One-disk main server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam (see Note 3 above table)	5620 SAM main server software	35 (25 minimum)	35 (25 minimum)	60
/opt/5620sam/server/xml_output	Output of OSSI file-export operations	10	10	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Two-disk main server partitioning

Table 1-7 lists the recommended partition configuration for two disks on a Solaris station that hosts the 5620 SAM main server application under typical operating conditions.

Note 1 — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Note 2 — The /opt/5620sam partition requires an additional 10 Gbytes above the recommended minimum for each 1000 eNodeB devices in the managed network.

Table 1-7 Two-disk main server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 1				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
Disk 2				
/opt/5620sam (see Note 2 above table)	5620 SAM main server software	35 (25 minimum)	35 (25 minimum)	60
/opt/5620sam/server/xml_output	Output of OSSI file-export operations	10	10	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

One-disk database partitioning

Table 1-8 lists the recommended partition configuration for a single disk on a Solaris station that hosts the 5620 SAM database application. The recommendations apply when only one disk is available for use by the 5620 SAM database, or when two disks are available but one disk is used as a physical mirror of the other disk.

Caution — Alcatel-Lucent does not support the use of a one-disk layout for a 5620 SAM database deployment in a live network. A one-disk layout is supported only for lab trials, or for demonstration purposes.

Note — Alcatel-Lucent does not support one-disk 5620 SAM database installation using a 73-Gbyte disk; the minimum requirement for such a deployment is a 146-Gbyte disk.

Table 1-8 One-disk database partitioning scheme

Partition	Content	Disk size (Gbytes)	
		146	300
/	root, including /usr	15	30
—	swap	Equal to RAM, up to 16	
/var	var	7 (3 minimum)	10
/opt/5620sam	5620 SAM database software	20	60
/opt/5620sam/dbbackup	Database backups	33	70
/opt/5620sam/samdb/tablespace	Database tablespaces and redo logs	40	70
/opt/5620sam/samdb/archivelog	Database archive logs	16	40

Two-disk database partitioning

Table 1-9 lists the recommended partition configuration for two disks on a Solaris station that hosts the 5620 SAM database application. The recommendations apply when only two disks are available for use by the 5620 SAM database, or when two pairs of disks are available but one disk pair is used as a physical mirror of the other disk pair.

The recommendations in Table 1-9 apply regardless of the number of available disks on the station. The available disk space on a 5620 SAM database station using two disks typically exceeds the 5620 SAM application requirements. Because the partitioning recommendations do not consume all of the available disk space on a station, the remaining disk space is available for partitioning according to operator discretion.

Note — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Table 1-9 Two-disk database partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 1				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam	5620 SAM database software	18 (10 minimum)	41	60
/opt/5620sam/dbbackup	Database backups	25	60	100
/opt/5620sam/samdb/redolog	Database redo logs	8	8	30 (8 minimum)
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 2				
/opt/5620sam/samdb/archivelog	Database archive logs	15	40	100
/opt/5620sam/samdb/tablespace	Database tablespaces	40	80	100
/opt/5620sam/samdb/tablespace/statstbs01 /opt/5620sam/dbbackup/staging	Accounting statistics tablespace (optional)	10	10	20
	Accounting statistics staging directory (optional)	—	5	5
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Four-disk database partitioning

Table 1-10 lists the recommended partition configuration for four disks on a Solaris station that hosts the 5620 SAM database application. The recommendations apply when four disks are available for use by the 5620 SAM database, or when two sets of four disks are available but one disk set is used as a physical mirror of the other disk set.

The recommendations in Table 1-10 apply regardless of the number of available disks on the station. The available disk space on a 5620 SAM database station using four disks typically exceeds the 5620 SAM application requirements. Because the partitioning recommendations do not consume all of the available disk space on a station, the remaining disk space is available for partitioning according to operator discretion.

Note — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Table 1-10 Four-disk database partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disk 1				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam	5620 SAM database software	29 (15 minimum)	45	60
/opt/5620sam/samdb/redolog	Database redo logs	8	8	30 (8 minimum)
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 2				
/opt/5620sam/samdb/tablespace	Database tablespaces	40 minimum	80 minimum	100
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 3				
/opt/5620sam/dbbackup	Database backups	60	60 minimum	100
/opt/5620sam/dbbackup/staging	Accounting statistics staging directory (optional)	5	5	5

(1 of 2)

Partition	Content	Disk size (Gbytes)		
		73	146	300
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disk 4				
/opt/5620sam/samdb/archivelog	Database archive logs	30	60	100
/opt/5620sam/samdb/tablespace/statstbs01	Accounting statistics tablespace (optional)	10	35	50
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

(2 of 2)

One-disk statistics-collection auxiliary server partitioning

Table 1-11 lists the recommended partition configuration for a single disk on a Solaris station that hosts the 5620 SAM auxiliary server application for statistics collection under typical operating conditions.

Note 1 — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Note 2 — Alcatel-Lucent strongly recommends using at least a two-disk layout for a 5620 SAM auxiliary server because a single-disk configuration greatly limits the 5620 SAM system performance, managed-network size, and data storage capacity. Alcatel-Lucent discourages the use of a single-disk configuration in a 5620 SAM server deployment.

Table 1-11 One-disk auxiliary server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam	5620 SAM auxiliary server software	35 (25 minimum)	35 (25 minimum)	60
/opt/5620sam/auxserver/xml_output	Collected statistics	10	10	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Two-disk statistics-collection auxiliary server partitioning

Table 1-12 lists the recommended partition configuration for two disks on a Solaris station that hosts the 5620 SAM auxiliary server application for statistics collection under typical operating conditions.

Note — Alcatel-Lucent recommends 146-Gbyte hard disks for a 5620 SAM installation. Existing 73-Gbyte disks are sufficient for a 5620 SAM upgrade, but Alcatel-Lucent recommends that you upgrade to 146-Gbyte disks to accommodate system expansion.

Table 1-12 Two-disk statistics-collection auxiliary server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	**146**	**300**
Disk 1				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
Disk 2				
/opt/5620sam (see Note 2 above table)	5620 SAM auxiliary server software	35 (25 minimum)	35 (25 minimum)	60
/opt/5620sam/lte	Collected eNodeB statistics	—	80	100
/opt/5620sam/auxserver/xml_output	Collected statistics from NEs other than the eNodeB	10	10	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Four-or-more-disk statistics-collection auxiliary server partitioning

Table 1-13 lists the recommended partition configuration for a 5620 SAM auxiliary server that uses four or more disks and performs statistics collection at a high rate.

Note 1 — You must configure disks 3 and above in a RAID 0 configuration, and follow the partitioning recommendations described in Table 1-13. To accommodate a greater volume of statistics data, or for increased statistics-collection performance, you must combine additional disks with disks 3 and 4 in a RAID 0 configuration. See the *5620 SAM Planning Guide* for information about statistics data storage and throughput requirements.

Note 2 — A RAID 0 stripe size of 512 kbytes is required for optimal 5620 SAM disk performance. If a platform does not support a stripe size of 512 kbytes, choose the next largest stripe size, for example, 256 kbytes. Specifying a smaller or larger stripe size may result in degraded performance that compromises 5620 SAM network management.

Table 1-13 Four-disk statistics-collection auxiliary server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
Disks 1 and 2				
/	root, including /usr	10	15	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam	5620 SAM auxiliary server software	35 (25 minimum)	35 (25 minimum)	60
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		
Disks 3 and above, in RAID 0 configuration				
/opt/5620sam/lte	Collected eNodeB statistics	—	80	100
/opt/5620sam/auxserver/xml_output	Collected statistics from NEs other than the eNodeB	20	20	40
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Call-trace auxiliary server partitioning

Table 1-14 lists the recommended partition configuration for a 5620 SAM auxiliary server that performs call-trace functions. A call-trace auxiliary server requires at least four disks.

Note 1 — Alcatel-Lucent does not recommend the use of 73-Gbyte disks in a call-trace auxiliary server.

Note 2 — You must configure disks 3 and above in a RAID 0 configuration, and follow the partitioning recommendations described in Table 1-14. To accommodate a greater volume of call-trace data, or for increased call-trace performance, you must combine additional disks with disks 3 and 4 in a RAID 0 configuration. See the *5620 SAM Planning Guide* for information about call-trace data storage and throughput requirements.

Note 3 — A RAID 0 stripe size of 512 kbytes is required for optimal 5620 SAM disk performance. If a platform does not support a stripe size of 512 kbytes, choose the next largest stripe size, for example, 256 kbytes. Specifying a smaller or larger stripe size may result in degraded performance that compromises 5620 SAM network management.

Table 1-14 Call-trace auxiliary server partitioning scheme

Partition	Content	Disk size (Gbytes)	
		146	300
Disks 1 and 2			
/	root, including /usr	15	30
—	swap	Equal to RAM, up to 16	
/var	var	7 (3 minimum)	10
/opt/5620sam	5620 SAM auxiliary server software	35 (25 minimum)	60
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder	
Disks 3 and above, in RAID 0 configuration			
/opt/5620sam/calltrace	Call-trace output	80% of disk	
/opt/5620sam/debugtrace	Call-trace debug output	20% of disk	

Client or client delegate server partitioning

Table 1-15 lists the recommended partition configuration for disks on a Solaris station that hosts the 5620 SAM client application.

The recommendations in Table 1-15 apply regardless of the number of available disks on the station because the available disk space on a 5620 SAM client station typically exceeds the 5620 SAM application requirements. Because the partitioning recommendations do not consume all of the available disk space on a station, the remaining disk space is available for partitioning according to operator discretion.

Table 1-15 Client or client delegate server partitioning scheme

Partition	Content	Disk size (Gbytes)		
		73	146	300
/	root, including /usr	10	10	30
—	swap	Equal to RAM, up to 16		
/var	var	7 (3 minimum)	7 (3 minimum)	10
/opt/5620sam	5620 SAM client software	5	5	20
At operator discretion	Customer data (can be partitioned according to customer requirements)	Remainder		

Required Solaris packages

If you perform only a core Solaris installation instead of the Entire Distribution + OEM Support installation, you must install specific Solaris packages in addition to the core distribution. If one or more required packages are missing, the installation cannot continue until the packages are installed.

Table 1-16 lists the additional Solaris packages required on a station that hosts a 5620 SAM database.

Table 1-17 lists the additional Solaris packages required on a station that hosts a 5620 SAM main or auxiliary server, client delegate server, or single-user client.

Note 1 — A station that hosts a collocated 5620 SAM main server and database requires each package listed in Tables 1-16 and 1-17.

Note 2 — A Solaris core installation with the additional required packages listed in this section does not include the Solaris desktop. In such a configuration, before you can use the graphical 5620 SAM installer, you must invoke a basic X-window manager, for example, twm, and then redirect the X display to an X server on another station,

Table 1-16 Additional Solaris packages required for 5620 SAM database

Package name	Description
SUNWadmfr	System and Network Administration Framework Configuration
SUNWadmfw	System and Network Administration Framework
SUNWarc	Archive Libraries
SUNWbash	GNU Bourne-Again shell (bash)
SUNWbtool	CSS tools bundled with SunOS
SUNWctpls	Portable Layout services for Complex Test
SUNWeurf	European codeset fonts
SUNWgzip	The GNU Zip (gzip) compression utility
SUNWhea	SunOS Header Files
SUNWi15cs	X11 ISO8859-15 Codeset Support
SUNWi1cs	X11 ISO8859-1 Codeset Support
SUNWi1of	ISO-8859-1 (Latin-1) Optional Fonts
SUNWi15rf	X11 fonts for ISO8859-15 character set (required fonts)
SUNWj5rt	JDK 5.0 Runtime Env. (1.5.0_07)
SUNWlibm	Forte Developer Bundled libm
SUNWlibmr	Math Library Lint Files (Root)
SUNWlibms	Math Library Lint Files (Usr)
SUNWmfrun	Motif Run Time Kit
SUNWntpr	NTP (/)
SUNWntpu	NTP (/usr)
SUNWpool	Resource Pools
SUNWpoolr	Resource Pools (Root)
SUNWsshcu	SSH Common (Usr)
SUNWsshdr	SSH Server (Root)
SUNWsshdu	SSH Server (Usr)
SUNWsshr	SSH Client and utilities (Root)
SUNWsshu	SSH Client and utilities (Usr)
SUNWsprot	Solaris Bundled tools
SUNWtoo	Truss and other troubleshooting tools
SUNWuiu8	Iconv modules for UTF-8 Locale
SUNWxcu4	XCU4 Utilities
SUNWxcu4t	XCU4 make and sccs utilities
SUNWxwfnt	X Window System platform required fonts
SUNWxwice	X Window System Inter-Client Exchange (ICE)
SUNWxwopt	X Window System Optional Clients

(1 of 2)

Package name	Description
SUNWxwplr	X Window System platform software configuration
SUNWxwplt	X Window System platform software
SUNWxwrtl	X Window System & Graphics Runtime Library

(2 of 2)

Table 1-17 Additional Solaris packages required for 5620 SAM main or auxiliary server, client delegate server, or single-user client

Package name	Description
SUNWadmfr	System and Network Administration Framework Configuration
SUNWadmfw	System and Network Administration Framework
SUNWbash	GNU Bourne-Again shell (bash)
SUNWctpls	Portable Layout services for Complex Test
SUNWgzip	The GNU Zip (gzip) compression utility
SUNWmfrun	Motif RunTime Kit
SUNWntpr	NTP (/)
SUNWntpu	NTP (/usr)
SUNWscpr	utilities for user interface and source build compatibility with SunOS 4.x
SUNWscpu	utilities for user interface and source build compatibility with SunOS 4.x
SUNWsshcu	SSH Common (Usr)
SUNWsshdr	SSH Server (Root)
SUNWsshdu	SSH Server (Usr)
SUNWsshr	SSH Client and utilities (Root)
SUNWsshu	SSH Client and utilities (Usr)
SUNWuiu8	Iconv modules for UTF-8 Locale
SUNWxcu4	XCU4 Utilities
SUNWxwfnt	X Windows System platform required fonts
SUNWxwice	X Windows System Inter-Client Exchange (ICE)
SUNWxwopt	X Window System Optional Clients
SUNWxwplr	X Window System platform software configuration
SUNWxwplt	X Windows System platform software
SUNWxwrtl	X Windows System & Graphics Runtime Library

5620 SAM deployment

2 — 5620 SAM installation

2.1 5620 SAM installation overview

This chapter describes how to install a 5620 SAM network management system. The following components comprise a 5620 SAM system:

- one main server in a standalone deployment, or two in a redundant deployment
- one database in a standalone deployment, or two in a redundant deployment
- one or more auxiliary servers (optional)
- one or more single-user clients or client delegate servers

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document.

Caution — Alcatel-Lucent supports 5620 SAM software configuration only under the conditions described in chapter 1.

See Appendix A for detailed 5620 SAM installation parameter descriptions.

2.2 5620 SAM installation procedures list

Table 2-1 lists the 5620 SAM software installation procedures.

Table 2-1 5620 SAM installation procedures list

Procedure	Purpose
To install a standalone 5620 SAM system	Install the 5620 SAM database and server software in a standalone configuration on one or more Solaris stations.
To install a redundant 5620 SAM system	Install the 5620 SAM database and server software in a redundant configuration.
To install a 5620 SAM single-user client on Solaris using a web browser	Install the 5620 SAM single-user client software on a Solaris station using a web browser.
To install a 5620 SAM single-user client on Solaris using the software DVD-ROM	Install the 5620 SAM single-user client software on a Solaris station from the 5620 SAM software DVD-ROM.
To install a 5620 SAM client delegate server	Install the 5620 SAM client delegate server software on a Solaris station for access by multiple users.
To add a client delegate server to an existing 5620 SAM system	Add a new 5620 SAM client delegate server to an existing 5620 SAM system.
To install a 5620 SAM auxiliary server	Install the 5620 SAM auxiliary-server software on a Solaris station as part of a standalone or redundant 5620 SAM system.
To add auxiliary servers to a 5620 SAM system	Add a new 5620 SAM auxiliary server to an existing 5620 SAM system.

2.3 Standalone 5620 SAM installation workflow

The following is the sequence of high-level actions required to install a standalone 5620 SAM system. A section heading in quotation marks is a reference to a section in Procedure 2-1.

1. Install the database. See "Install standalone database" for more information.
2. Install the main server. See "Install standalone server" for more information.
3. Install one or more auxiliary servers, if required. See Procedure 2-9 for information about installing an auxiliary server.
4. Install one or more 5620 SAM clients. See "Install client" for more information.

2.4 Standalone 5620 SAM system installation

This section describes how to install the software components of a standalone 5620 SAM system. Procedure 2-1 describes how to install the 5620 SAM server and database software.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 2-1 To install a standalone 5620 SAM system

Perform this procedure to install the 5620 SAM main server and database software in a standalone deployment on one or more Solaris stations. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

You require the following user privileges to perform this procedure:

- on the main server station
  - root or root-equivalent
- on the database station:
  - root or root-equivalent
  - Oracle management

Note 1 — The samadmin user account is created on the main server station during this procedure.

Note 2 — The Oracle management user account is created on the database station during this procedure.

Run Oracle pre-installation script

1. Log in to the station that is to be the database station as a user with root or root-equivalent privileges.
2. Place the 5620 SAM software DVD-ROM in a DVD-ROM drive on the database station.
3. Open a console window.
4. Navigate to the DVD-ROM drive.
5. Perform one of the following to change to the appropriate directory.
   a. On a SPARC station, enter the following:

      ```
      # cd Solaris ↵
      ```

   b. On an x86-based station, enter the following:

      ```
      # cd Solarisx86 ↵
      ```

6. Enter the following:

   ```
   # ./OracleSw_PreInstall.sh ↵
   ```

   The following prompt is displayed:

   ```
   Please select between the following option:

   1) NEW INSTALL OF 5620 SAM

   2) UPGRADE OF 5620 SAM
   ```

7. Enter 1 ↵.
8. The script prompts you for the following Oracle management user information:
   - the user group name (default is dba)
   - the user name (default is oracle)
   - the home directory (default is /opt/5620sam/oracle11r2)
   - a password, if one of the following is true:
     - there is no password
     - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — If you receive a "failed to create group" message, confirm that NIS is disabled and re-run the pre-installation script. Contact Alcatel-Lucent technical support for more information.

9 When the script execution is complete, enter the following to reboot the database station:

```
# shutdown -y -i6 -g0 ↵
```

The database station reboots.

Before database installation can occur, the Oracle management user and group created by the pre-installation script require ownership of the directory that is to hold the database. The next section of the procedure describes how to configure the directory ownership.

Set directory ownership for database installation

10 After the database station reboots, log in to the database station as a user with root or root-equivalent privileges.

11 Open a console window.

12 Enter the following to change the current directory to /opt:

```
# cd /opt ↵
```

13 Enter the following to specify the required user and group ownership of the 5620sam directory and subdirectories:

```
# chown -R user:group 5620sam ↵
```

where
user is the username specified in step 8, typically oracle
group_name is the group name specified in step 8, typically dba

14 Enter the following to change to the 5620sam directory below /opt:

```
# cd 5620sam ↵
```

15 Enter the following to confirm that the Oracle management user home directory has the correct user and group ownerships:

```
# ls -l ↵
```

If the command output is not as shown below, repeat steps 12 to 15. Do not proceed unless the output is as shown.

```
drwx------ 2 user     group        512 Apr 11 11:15 directory
```

where
user is the username specified in step 8, typically oracle
group is the group name specified in step 8, typically dba
directory is the Oracle management user home directory name specified in step 8, typically /opt/5620sam/oracle11r2

Install standalone database

16 Log in to the station that is to be the database station as a user with root or root-equivalent privileges.

17 Open a console window.

18 Enter the following to switch to the Oracle management user created by the pre-installation script:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

19 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

20 Navigate to the DVD-ROM drive.

21 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

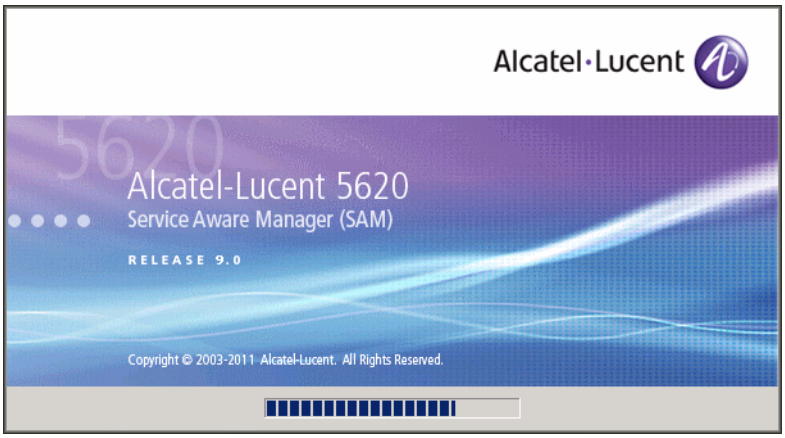
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

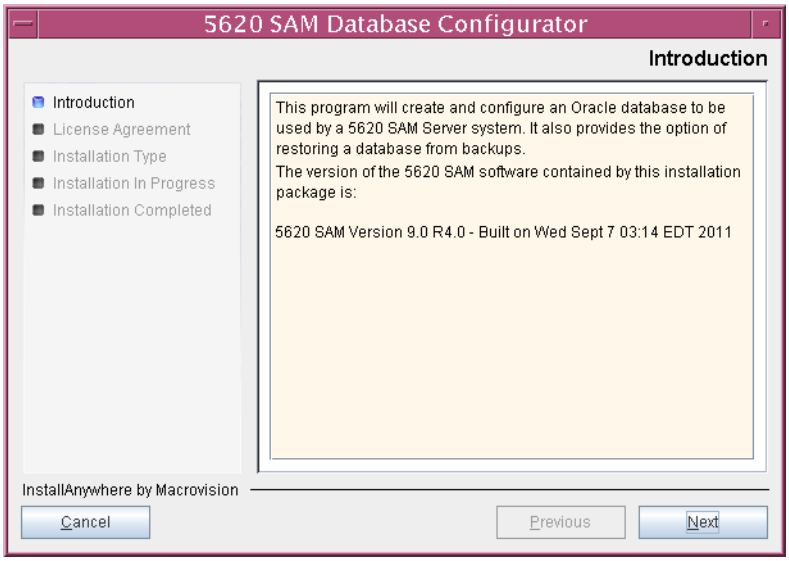
The splash screen shown in Figure 2-1 opens.

Figure 2-1 5620 SAM installer



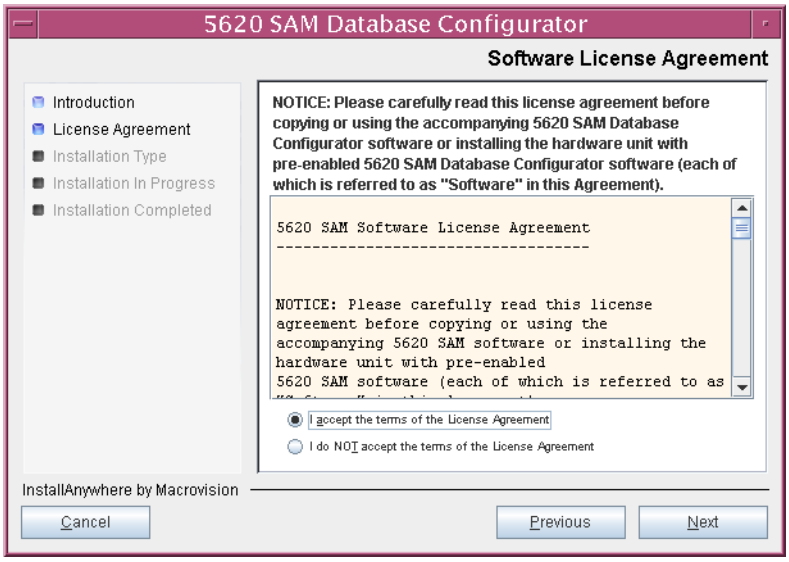
22 The 5620 SAM database installer opens, as shown in Figure 2-2. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-2 Introduction



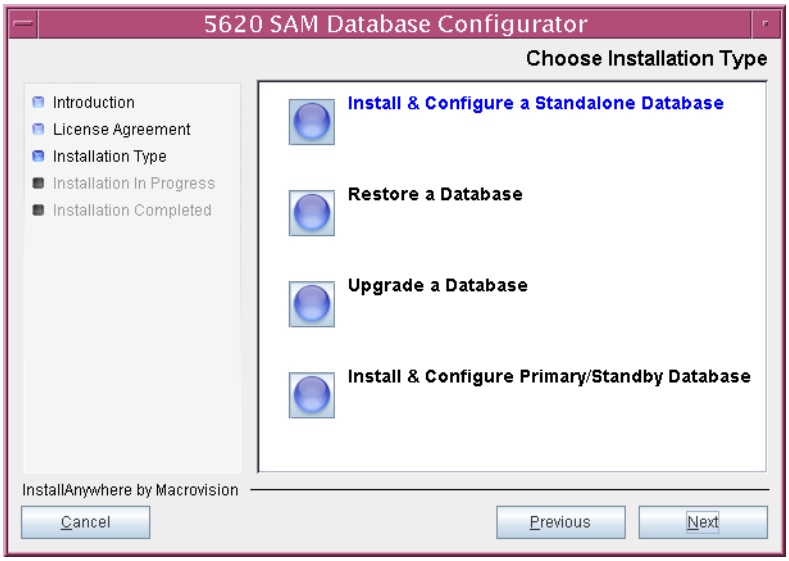
23 Review and accept the terms of the license agreement shown in Figure 2-3. Click on the Next button.

Figure 2-3 Software License Agreement



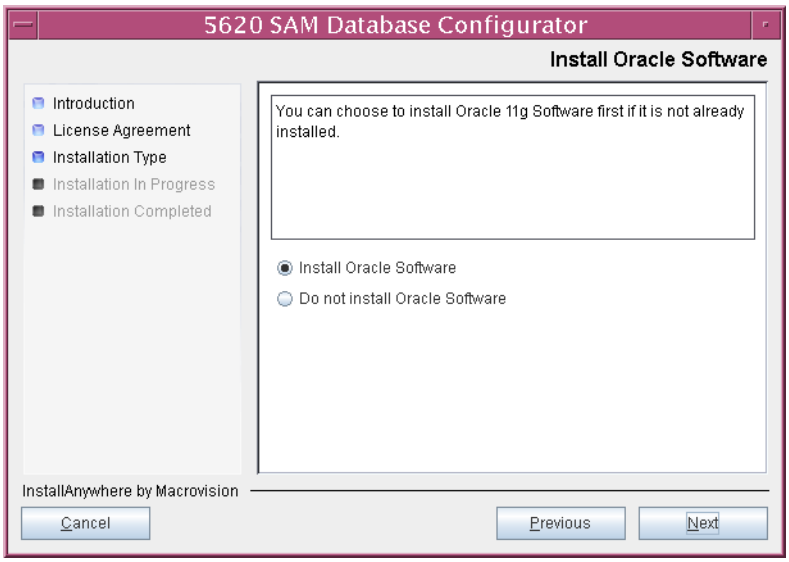
24 Select Install and Configure a Standalone Database, as shown in Figure 2-4. Click on the Next button.

Figure 2-4 Choose Installation Type



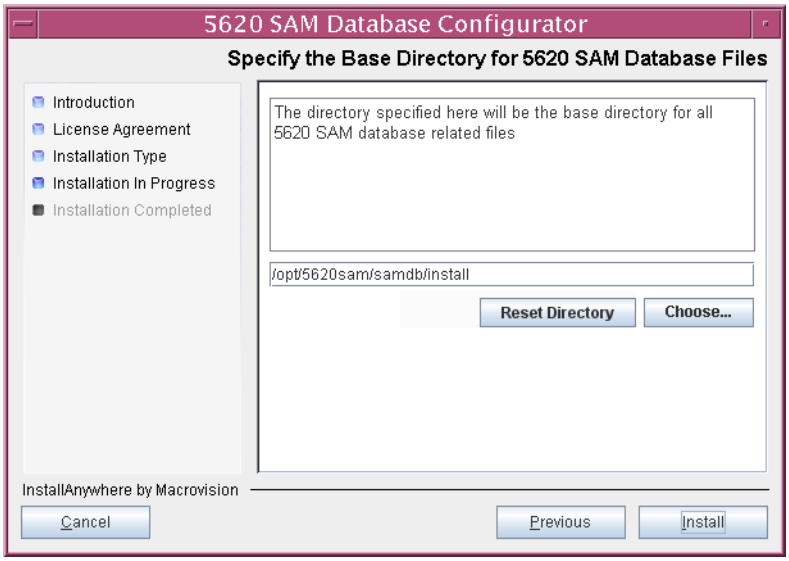
25 Select Install Oracle Software, as shown in Figure 2-5. Click on the Next button.

Figure 2-5 Install Oracle Software



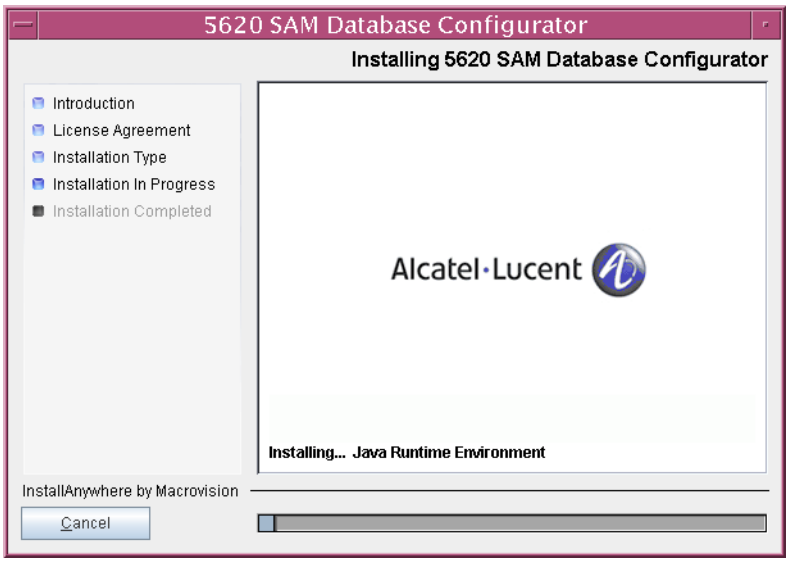
26 Specify a base directory in which to install the 5620 SAM database (typically /opt/5620sam/samdb/install), as shown in Figure 2-6. Click on the Install button to begin the database software installation.

Figure 2-6 Specify the Base Directory for 5620 SAM Database Files



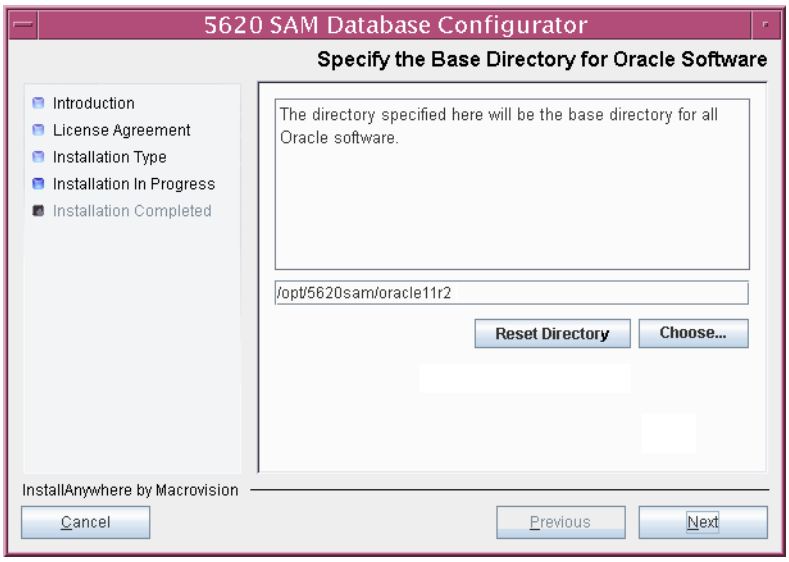
The installer prepares to install the database, as shown in Figure 2-7.

Figure 2-7 Installing 5620 SAM Database Configurator



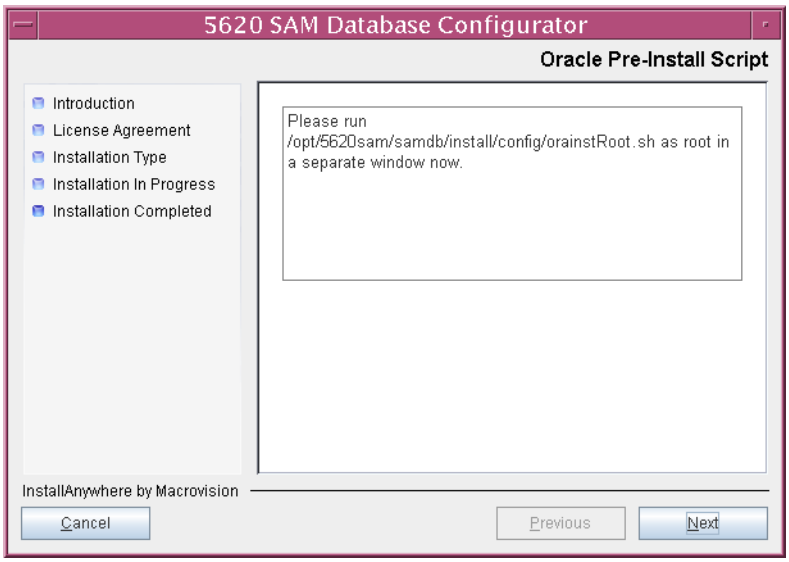
27 Specify a base directory in which to install the Oracle software (typically /opt/5620sam/oracle11r2), as shown in Figure 2-8. Click on the Next button.

Figure 2-8 Specify the Base Directory for Oracle Software



28 Perform the following steps when the panel in Figure 2-9 is displayed.

Figure 2-9 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

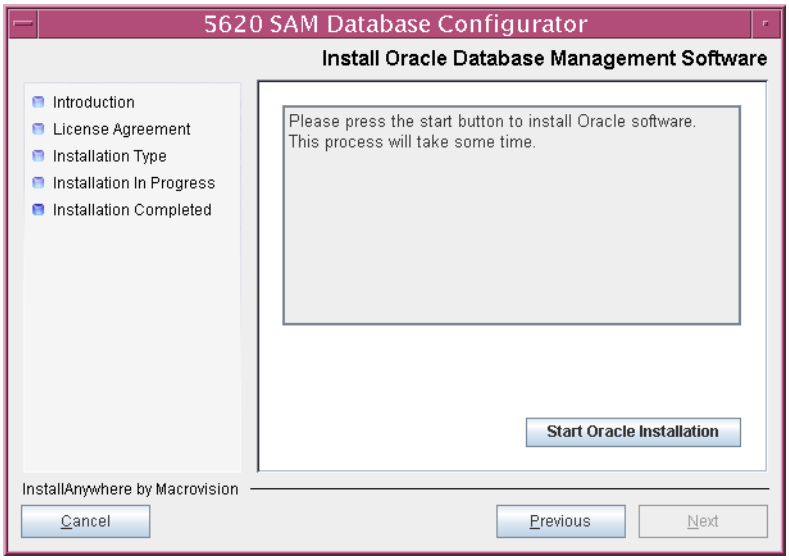
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

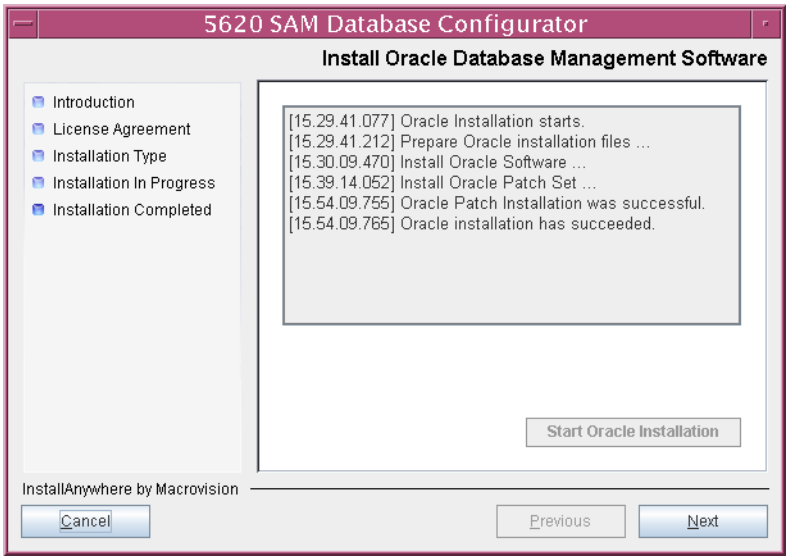
29 You are prompted to install Oracle software, as shown in Figure 2-10. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 2-10 Install Oracle Database Management Software



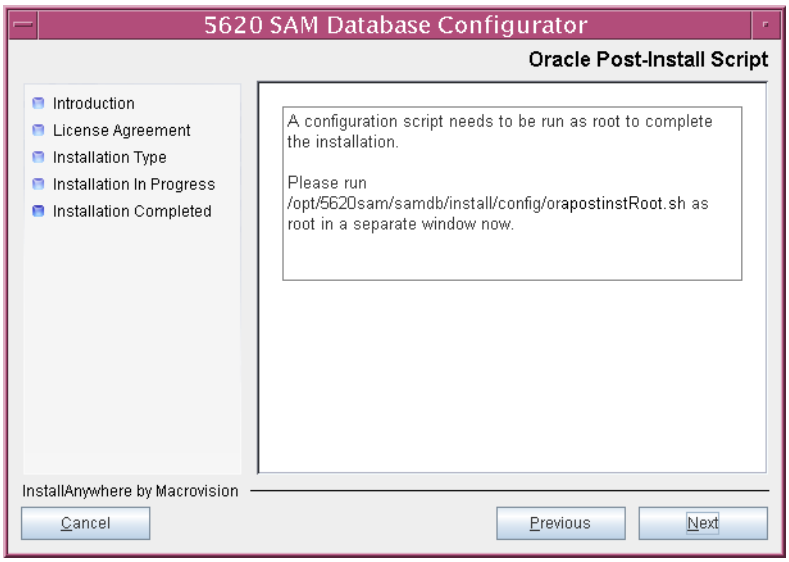
30 As shown in Figure 2-11, Oracle installation details are displayed as the installation progresses. When the installation is complete, click on the Next button.

Figure 2-11 Install Oracle Database Management Software



31 Perform the following steps when the panel in Figure 2-12 is displayed.

Figure 2-12 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

vi Click on the Next button.

32 Configure the following parameters shown in Figure 2-13, then click on the Next button:

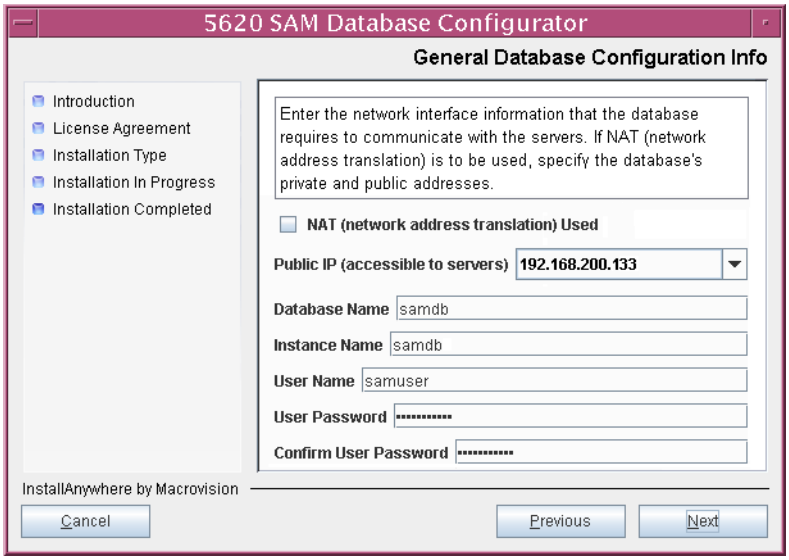
- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Name (typically samdb)
- Instance Name (typically samdb)
- User Name (typically samuser)
- User Password

Note — The "Private IP" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

The "User Password" value that you specify must meet the following criteria:

- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

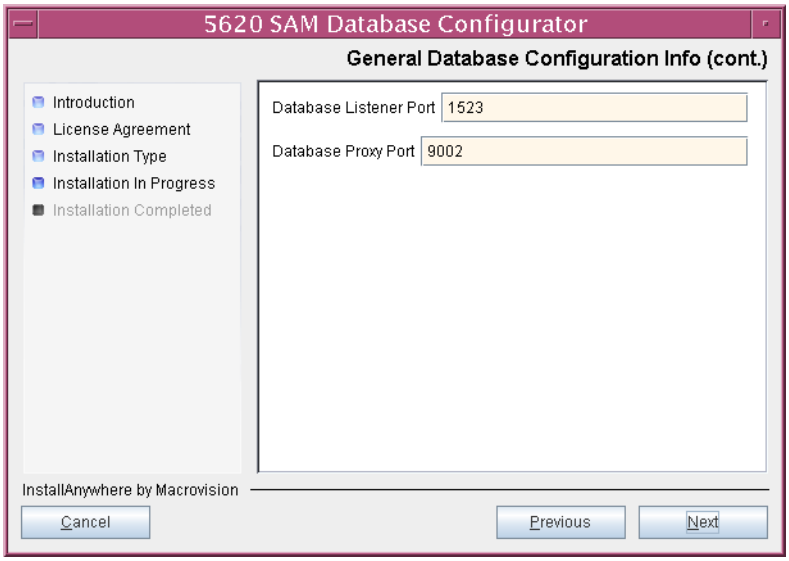
Figure 2-13 General Database Configuration Info



33 Configure the following parameters in Figure 2-14, then click on the Next button:

- Database Listener Port (typically 1523)
- Database Proxy Port (typically 9002)

Figure 2-14 General Database Configuration Info (cont.)



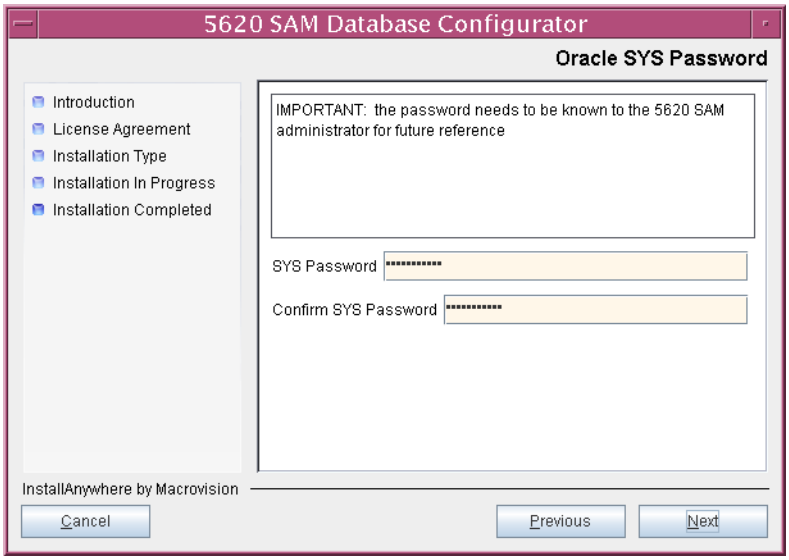
34 Configure the following parameters shown in Figure 2-15, then click on the Next button.

- SYS Password
- Confirm SYS Password

The password value that you specify must meet the following criteria:

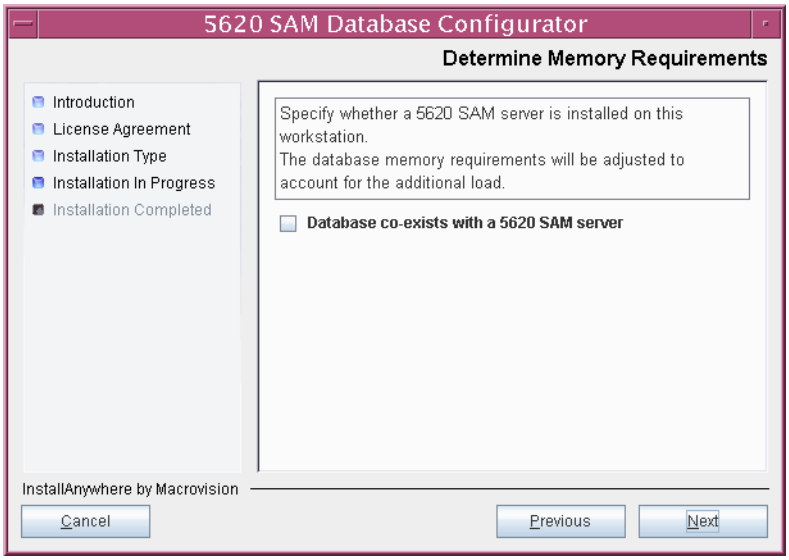
- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

Figure 2-15 Oracle SYS Password



35 If the 5620 SAM server and database are to be installed on the same station, select the “Database co-exists with a 5620 SAM Server” parameter shown in Figure 2-16. Click on the Next button.

Figure 2-16 Determine Memory Requirements

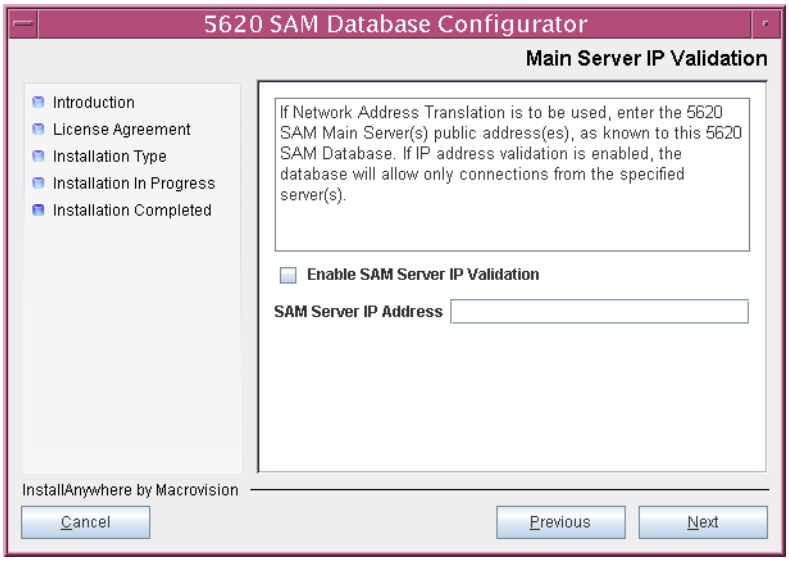


36 Configure the following parameters shown in Figure 2-17, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the server at the specified IP address or hostname can connect to the database.

- Enable SAM Server IP Validation
- SAM Server IP Address

Figure 2-17 Main Server IP Validation

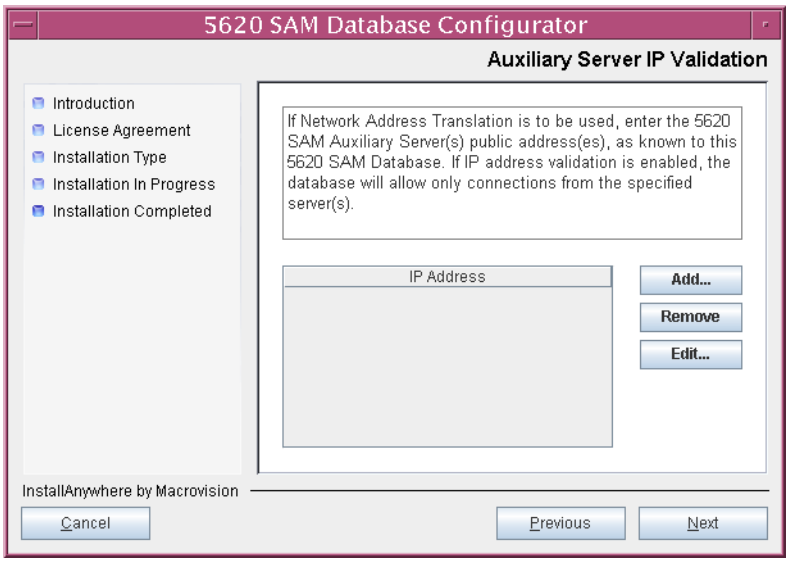


37 The panel in Figure 2-18 is displayed If the “Enable SAM Server IP Validation” parameter in step 36 is selected. Otherwise, go to step 39.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

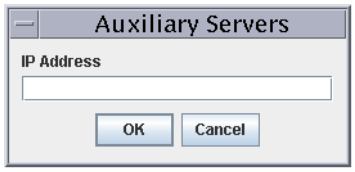
i Click on the Add button shown in Figure 2-18. The Auxiliary Server Configuration form shown in Figure 2-19 opens.

Figure 2-18 Auxiliary Server IP Validation



ii Enter the IP address or hostname of the auxiliary server.

Figure 2-19 Auxiliary Servers



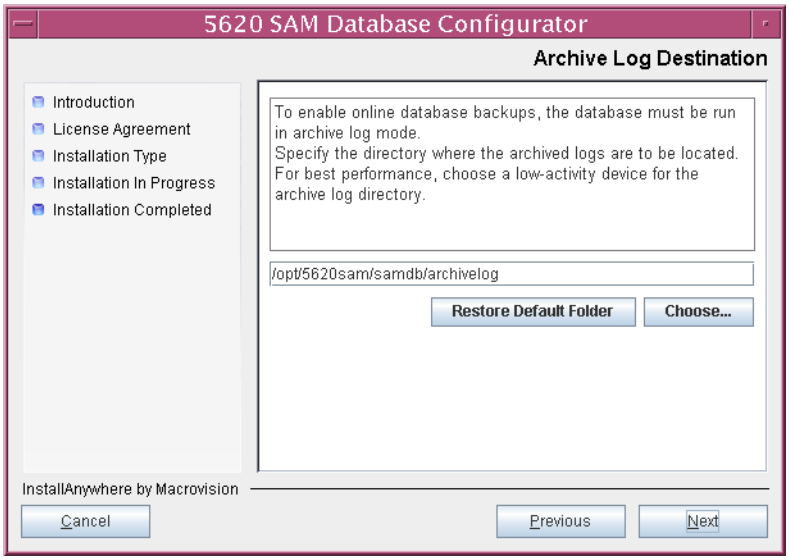
iii Click on the OK button to save the information and close the form.

iv Repeat steps 37 i to iii to specify an additional auxiliary server, if required.

38 Click on the Next button.

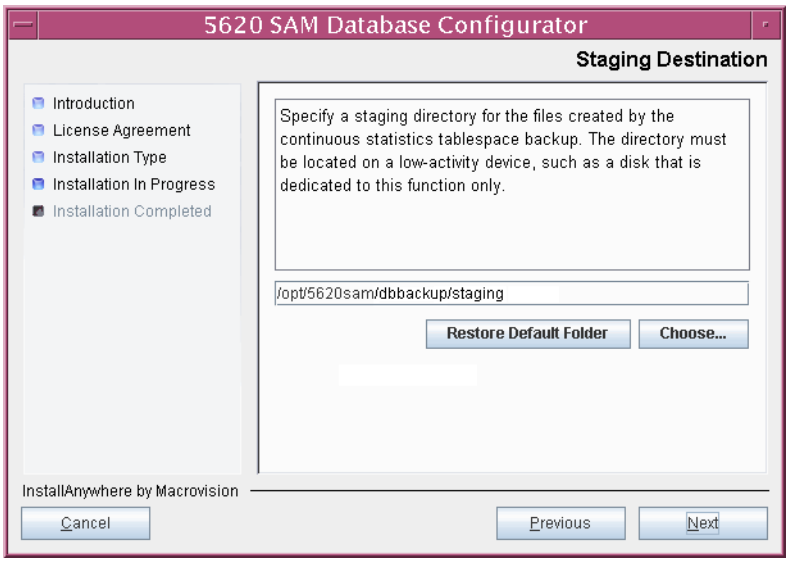
39 Specify a directory as the archive log destination (typically /opt/5620sam/samdb/archivelog), as shown in Figure 2-20. Click on the Next button.

Figure 2-20 Archive Log Destination



40 Specify a directory for the continuous statistics tablespace backup, as shown in Figure 2-21. Click on the Next button.

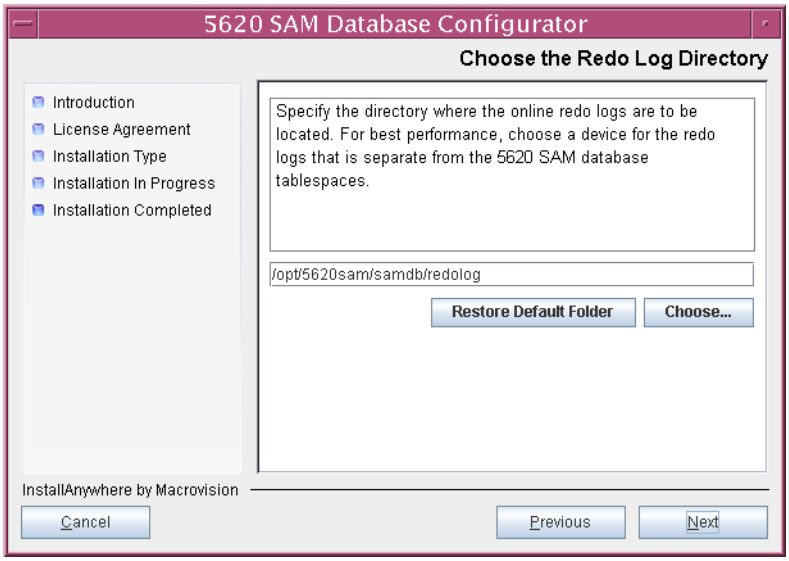
Figure 2-21 Staging Destination



41 Specify a directory for the Redo logs (typically /opt/5620sam/samdb/redolog), as shown in Figure 2-22. Click on the Next button.

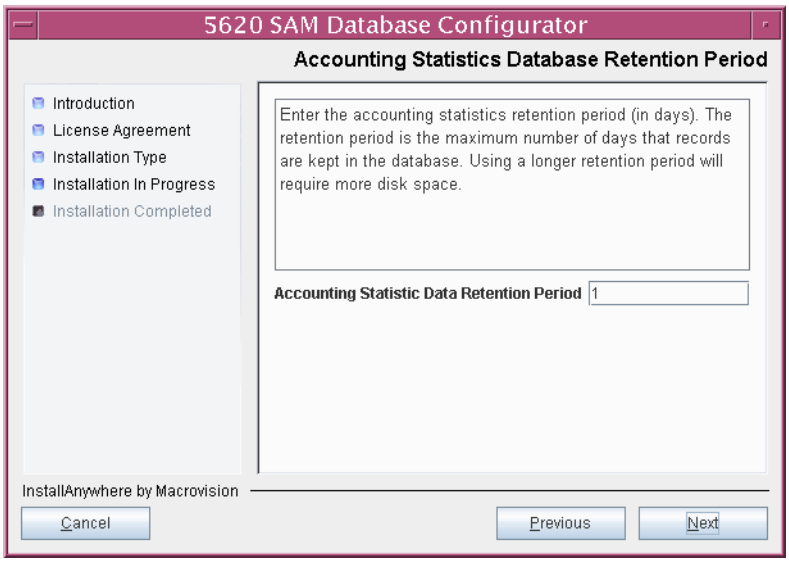
Note — In a one-disk configuration, the redo log directory must be the same directory that you specify as the tablespace directory later in the procedure.

Figure 2-22 Choose the Redo Log Directory



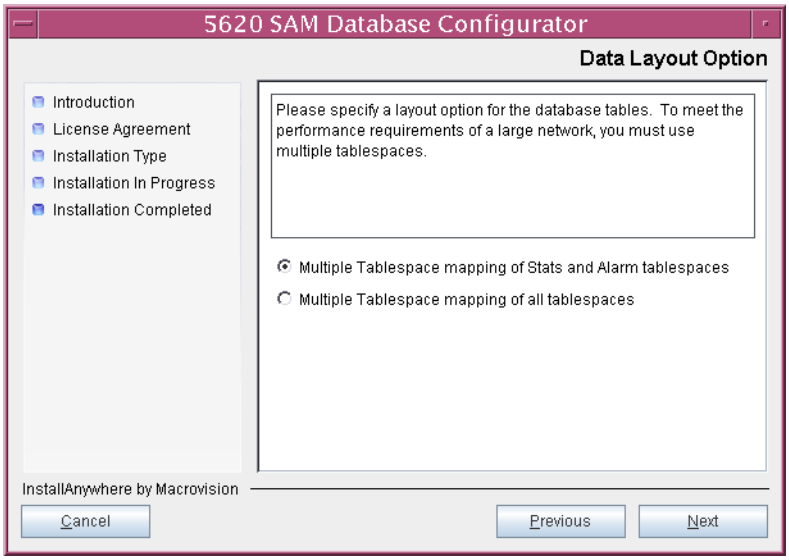
42 Configure the "Accounting Statistic Data Retention Period" parameter shown in Figure 2-23. Click on the Next button.

Figure 2-23 Accounting Statistics Database Retention Period



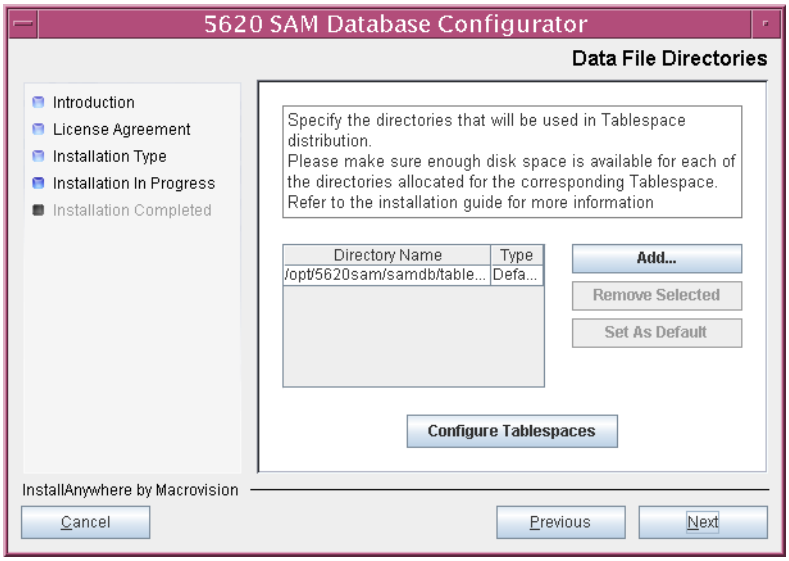
43 Choose one of the data layout options shown in Figure 2-24. Click on the Next button. Contact Alcatel-Lucent technical support for information about data layout options.

Figure 2-24 Data Layout Option



44 Choose the tablespace directories.

Figure 2-25 Data File Directories



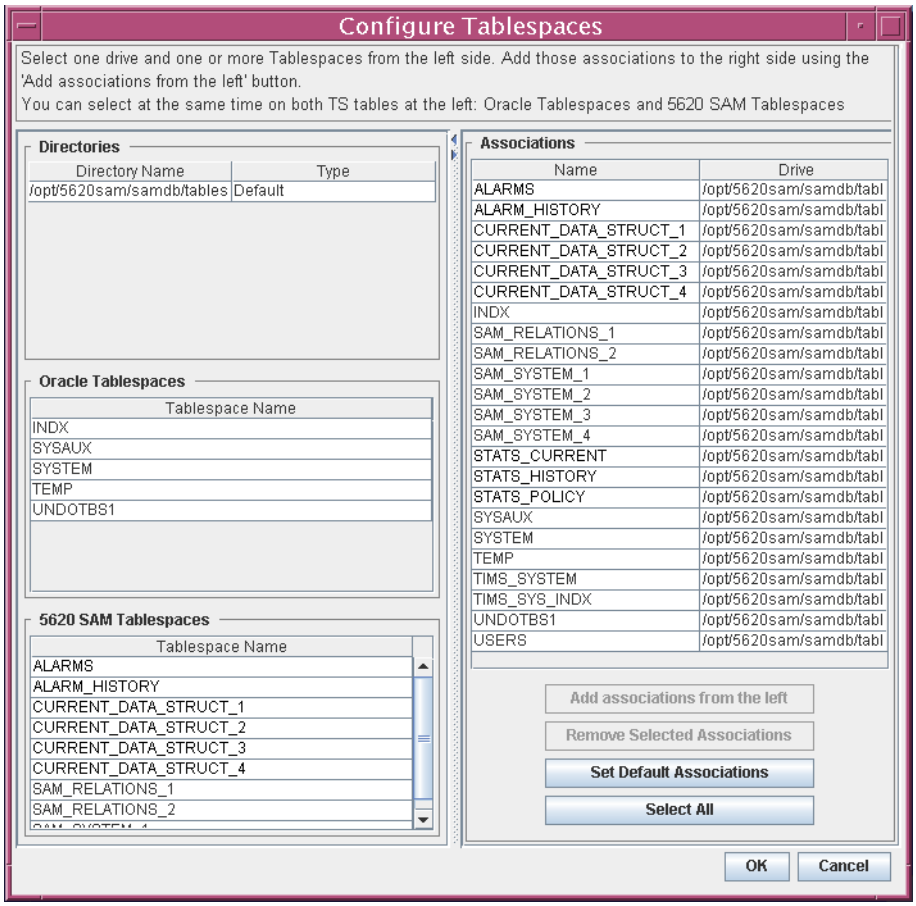
i Click on the Add button shown in Figure 2-25. A file browser form opens.

ii Use the file browser form to choose a tablespace directory.

iii Repeat steps 44 i and ii to specify an additional tablespace directory, if required.

45 Associate tablespaces with the directories specified in step 44.

Figure 2-26 Configure Tablespaces



i Click on the Configure Tablespaces button. The tablespace configuration form shown in Figure 2-26 opens.

Note — The lists of drives and tablespaces on the tablespace configuration form may differ from the lists shown in the figure below.

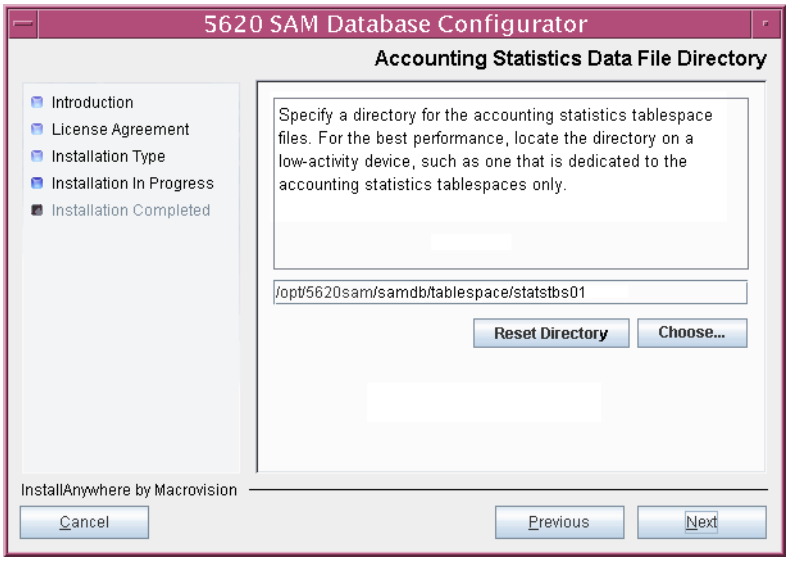
ii Follow the instructions at the top of the form to associate tablespaces with the directories, as required.

iii Click on the OK button. The tablespace configuration form closes and the “Data File Directories” panel in Figure 2-25 reappears.

46 Click on the Next button.

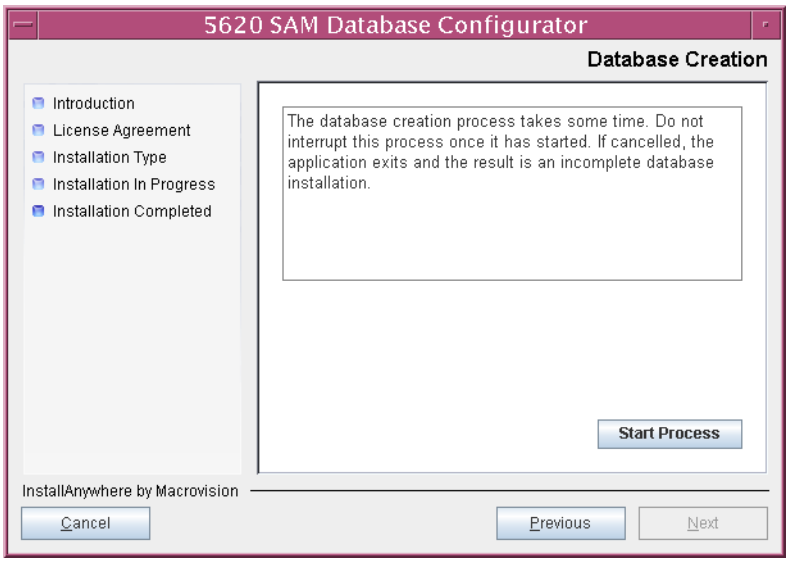
47 Specify a directory for the accounting statistics tablespace files, as shown in Figure 2-27. Click on the Next button.

Figure 2-27 Accounting Statistics Data File Directory



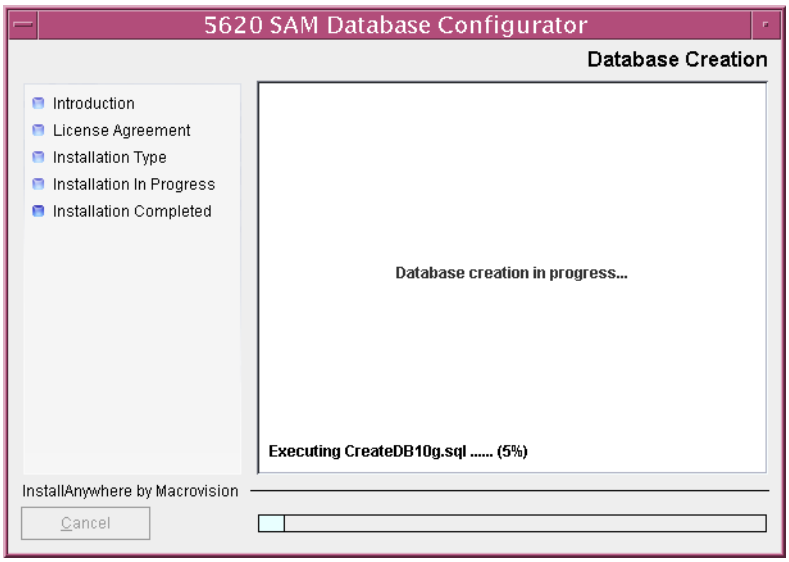
48 You are prompted to begin database creation, as shown in Figure 2-28. Database creation can take one hour or more, depending on the tablespace configuration. Click on the Start Process button to begin the database creation.

Figure 2-28 Database Creation



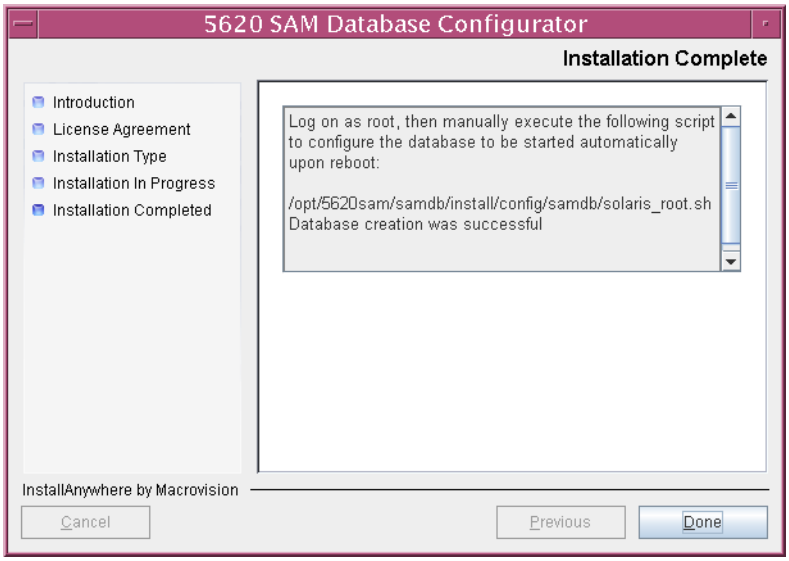
The next panel displays database creation progress, as shown in Figure 2-29.

Figure 2-29 Database Creation



49 When the panel in Figure 2-30 is displayed, the 5620 SAM database installation is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 2-30 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

50 Click on the Done button to close the database installer.

The next section of the procedure describes the installation of the standalone 5620 SAM main server. You can install the server on the same station as the database, or on another station. Server installation requires root-equivalent privileges.

Install standalone server

51 Log in to the station that is to be the server station as a user with root or root-equivalent privileges.

52 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

53 Open a console window.

54 Navigate to the DVD-ROM drive.

55 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

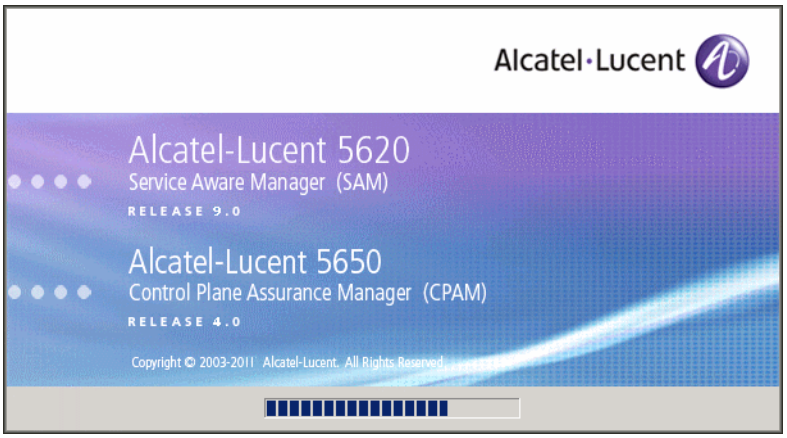
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

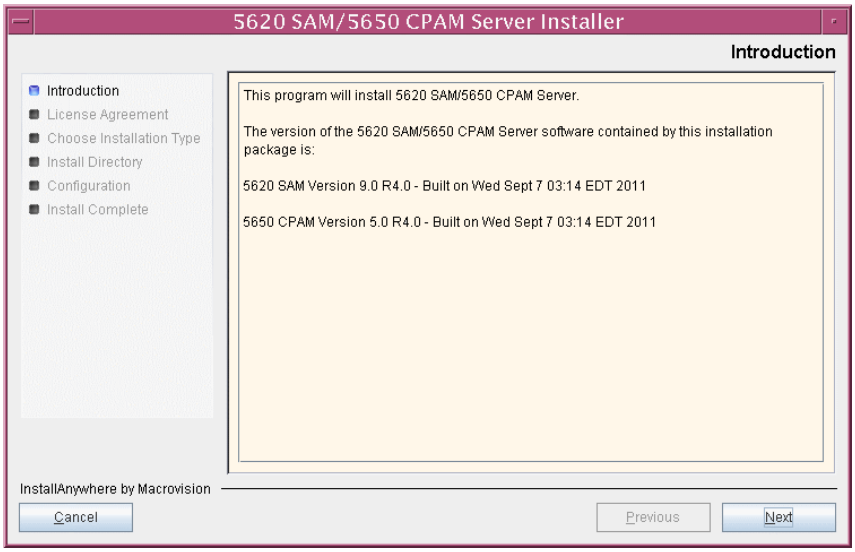
The splash screen shown in Figure 2-31 opens.

Figure 2-31 5620 SAM installer



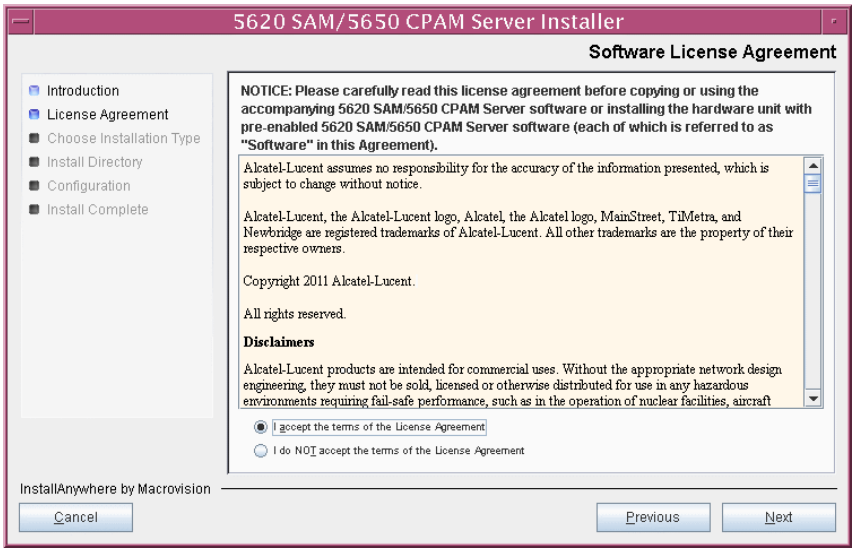
56 The 5620 SAM server installer opens, as shown in Figure 2-32. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-32 Introduction



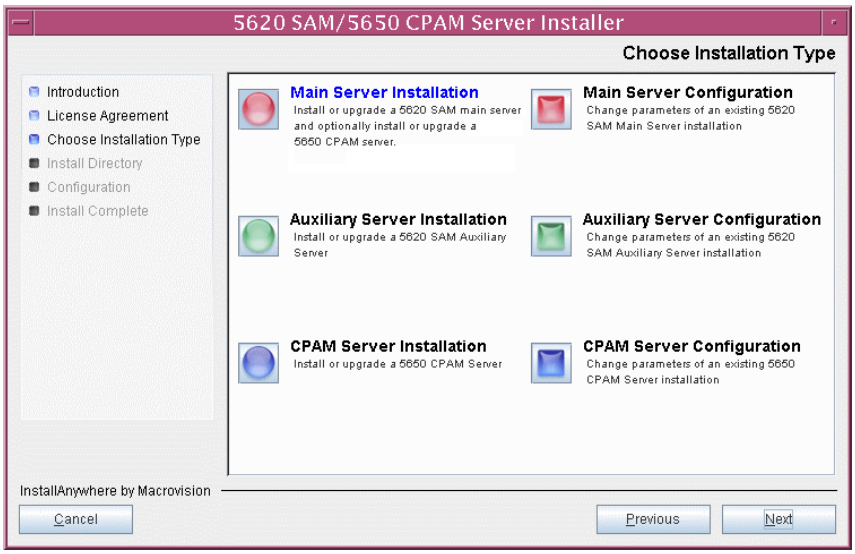
57 Review and accept the terms of the license agreement shown in Figure 2-33. Click on the Next button.

Figure 2-33 Software License Agreement



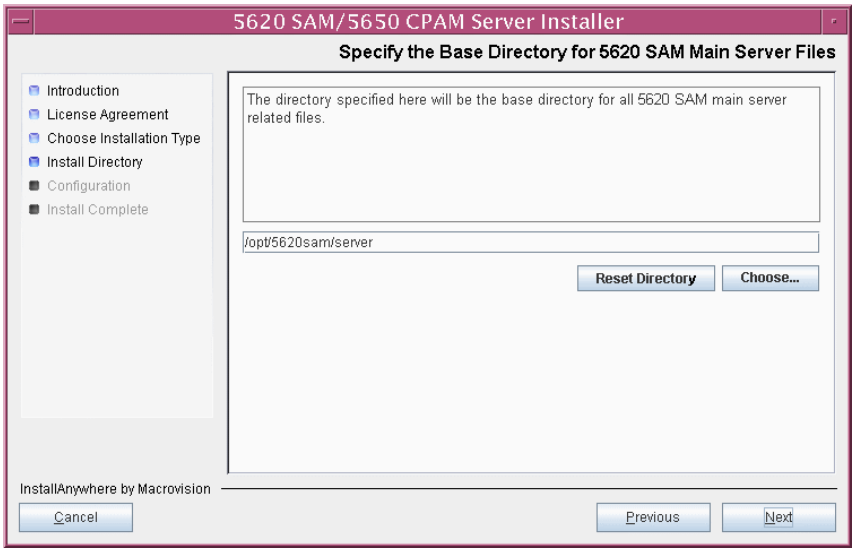
58 Select Main Server Installation, as shown in Figure 2-34. Click on the Next button.

Figure 2-34 Choose Installation Type



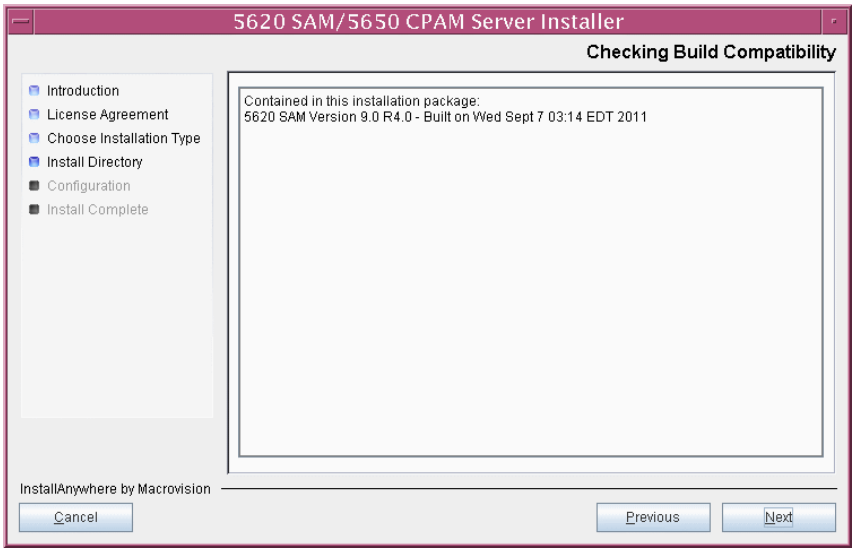
59 Specify a base directory in which to install the 5620 SAM main server software (typically /opt/5620sam/server), as shown in Figure 2-35. Click on the Next button.

Figure 2-35 Specify the Base Directory for 5620 SAM Main Server Files



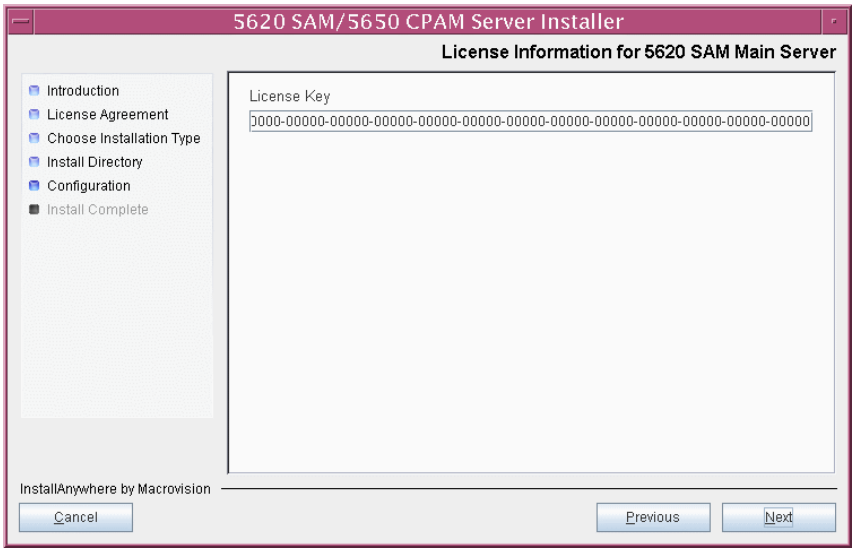
60 As shown in Figure 2-36, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-36 Checking Build Compatibility



61 Enter the license key information exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 2-37. Click on the Next button.

Figure 2-37 License Information for 5620 SAM Main Server

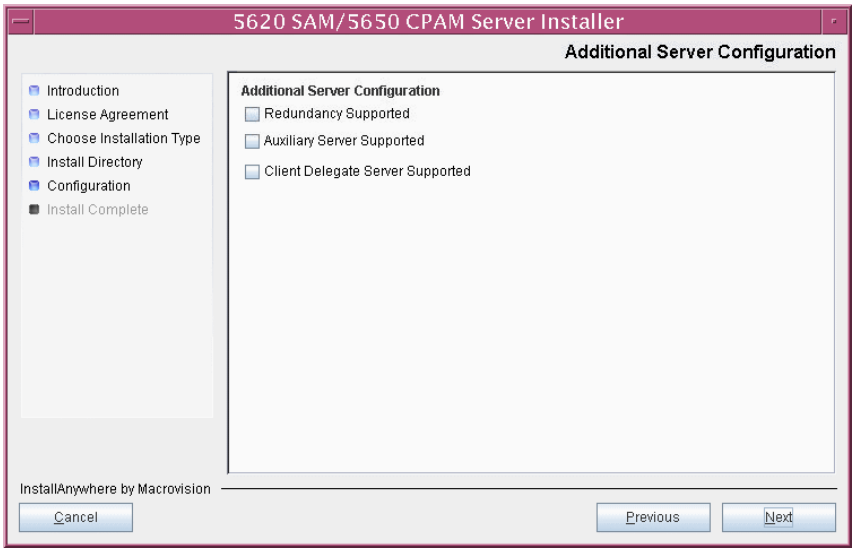


62 Configure the following parameters shown in Figure 2-38, then click on the Next button.

- Redundancy Supported
- Auxiliary Server Supported
- Client Delegate Server Supported

Note — You must leave the “Redundancy Supported” parameter unselected.

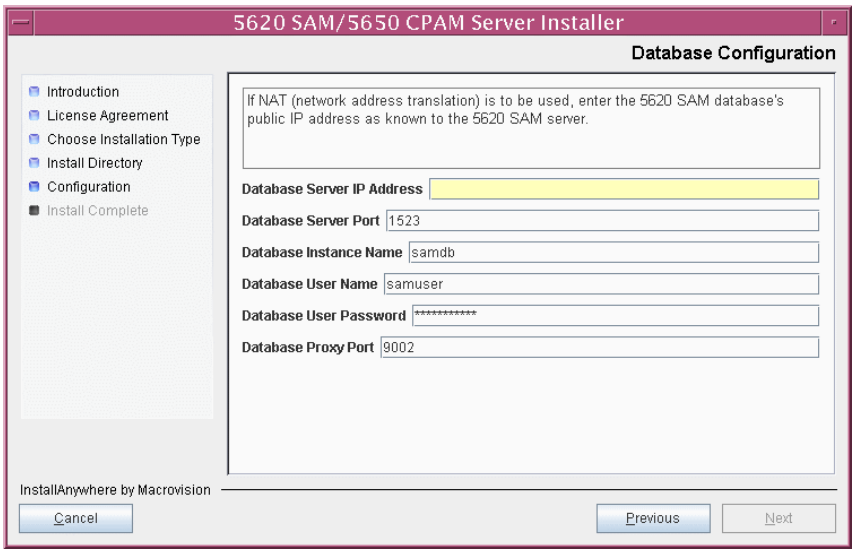
Figure 2-38 Additional Server Configuration



63 Configure the following parameters, shown in Figure 2-39, using the recorded values from the database installation. Click on the Next button.

- Database Server IP address
- Database Server Port (typically 1523)
- Database Instance Name (typically samdb)
- Database User Name (typically samuser)
- Database User Password
- Database Proxy Port (typically 9002)

Figure 2-39 Database Configuration

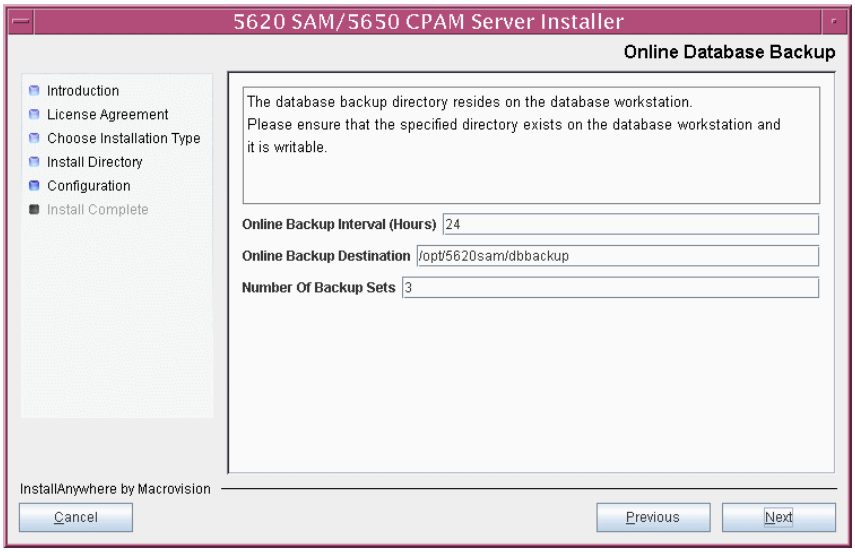


64 Configure the following parameters shown in Figure 2-40, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 63.

Figure 2-40 Online Database Backup



65 The panel in Figure 2-41 is displayed if you select the “Auxiliary Server Supported” parameter in step 62. Otherwise, go to step 67.

Perform the following steps to specify an auxiliary server, if required.

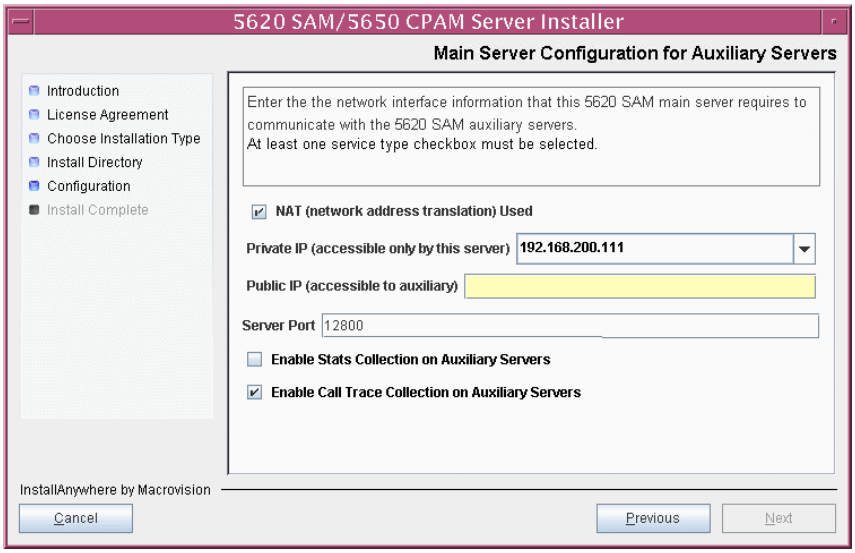
i Configure the following parameters shown in Figure 2-41:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-41 Main Server Configuration for Auxiliary Servers



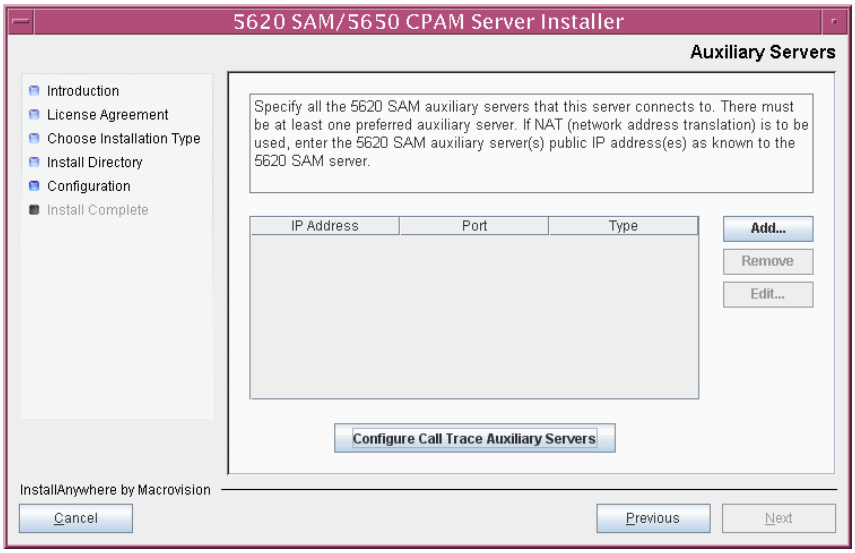
ii Click on the Next button.

iii Click on the Add button shown in Figure 2-42 to specify an auxiliary server. The form shown in Figure 2-43 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

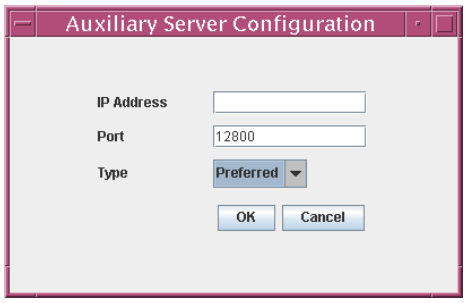
Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

Figure 2-42 Auxiliary Servers



Note — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 2-43 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

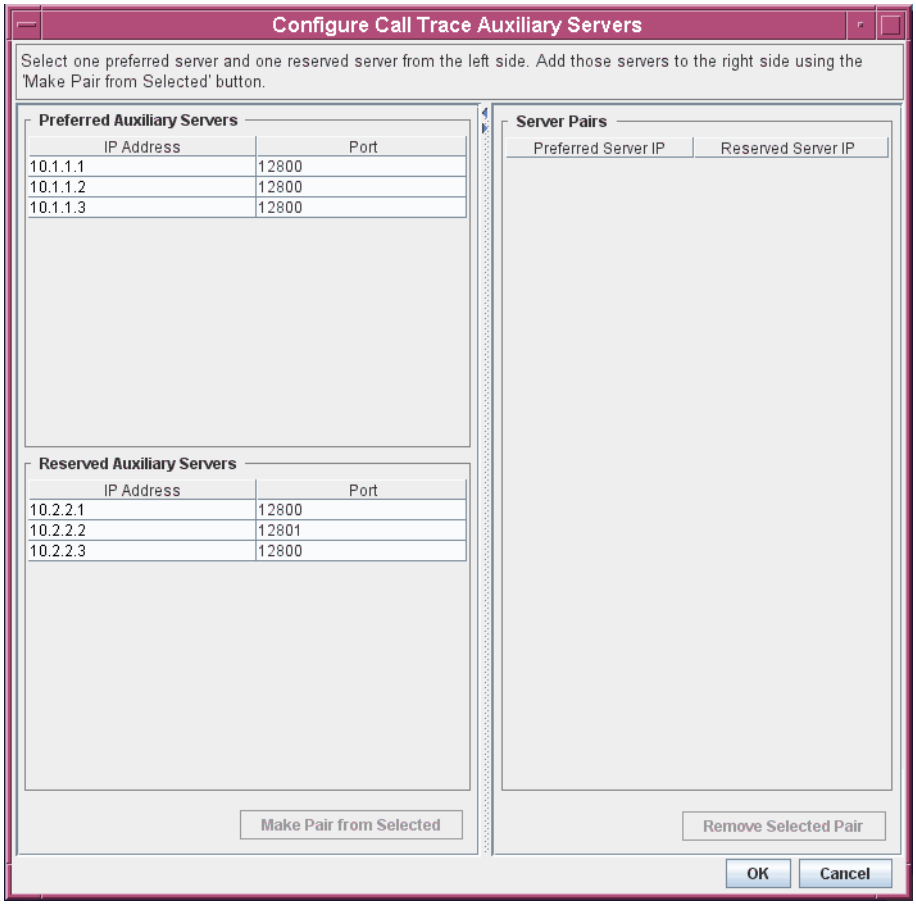
v Click on the OK button to save the information and close the form.

vi Repeat steps 65 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 65 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 2-42. Otherwise, go to step 66.

viii The form shown in Figure 2-44 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 2-44 Configure Call Trace Auxiliary Servers



ix Repeat step 65 viii to configure another call-trace auxiliary server pair, if required.

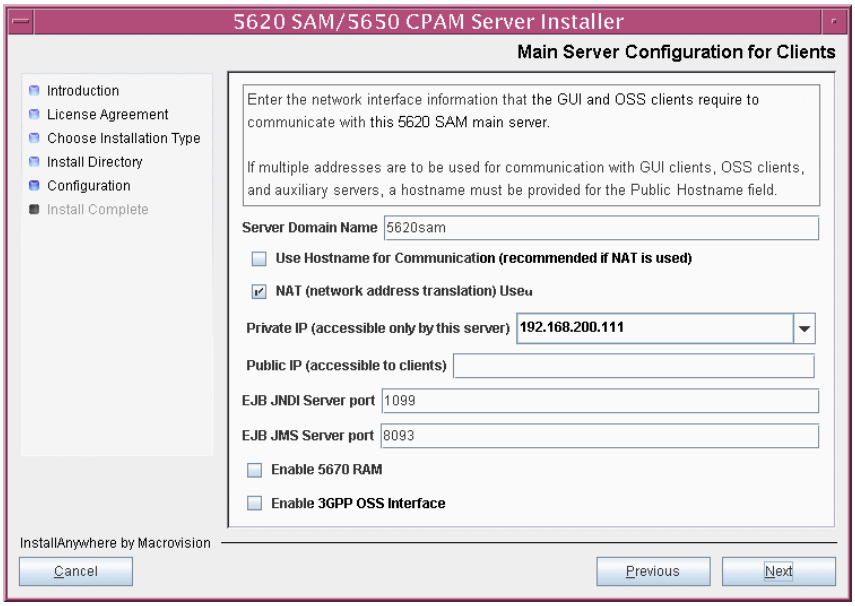
66 Click on the Next button.

67 Perform the following steps.

i Configure the following parameters shown in Figure 2-45:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 2-45 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 67 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

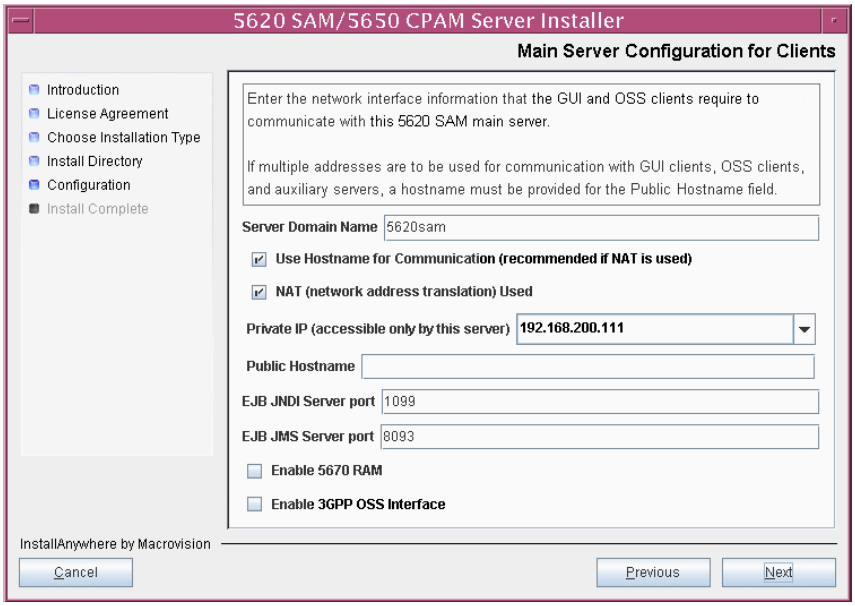
v Go to step 68.

vi Configure the following parameters shown in Figure 2-46:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

Figure 2-46 Main Server Configuration for Clients

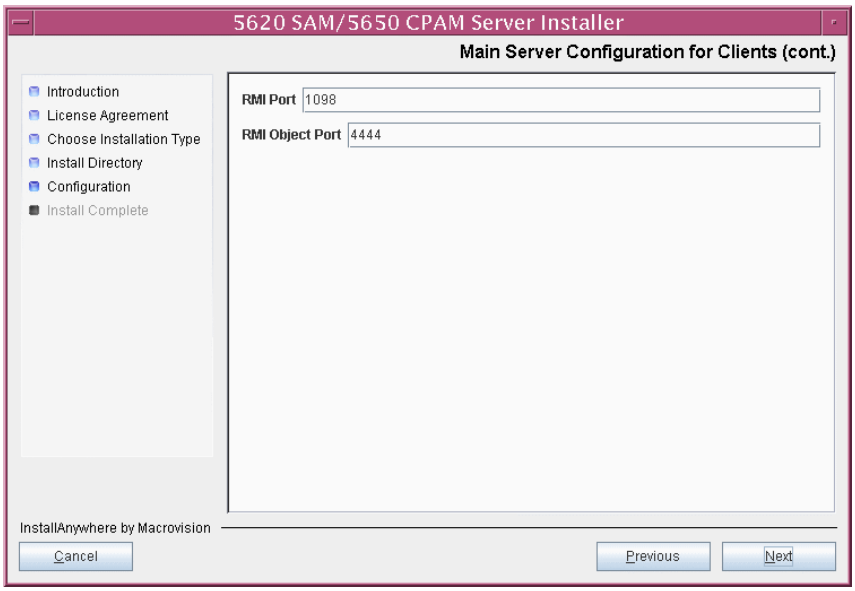


vii Click on the Next button.

68 Configure the following parameters shown in Figure 2-47, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

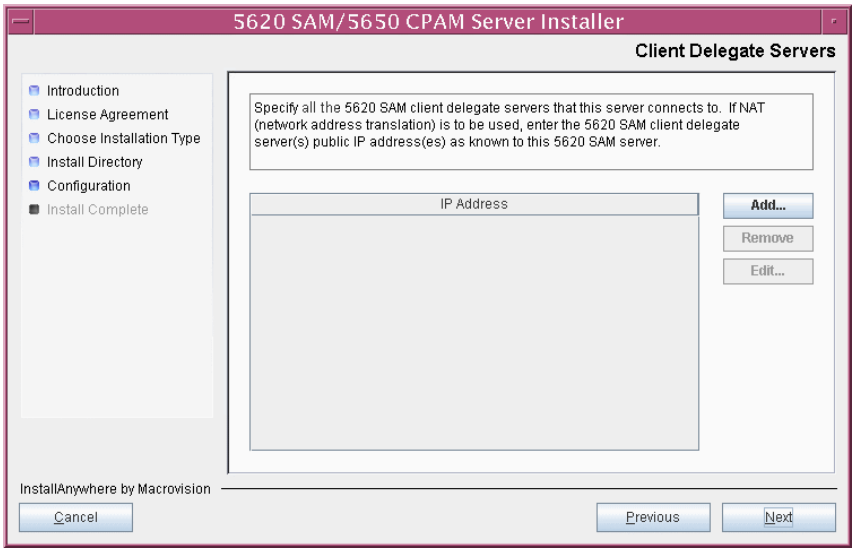
Figure 2-47 Main Server Configuration for Clients (cont.)



69 The panel in Figure 2-48 is displayed if you select the “Client Delegate Server Supported” parameter in step 62. Otherwise, go to step 71.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 2-48 Client Delegate Servers

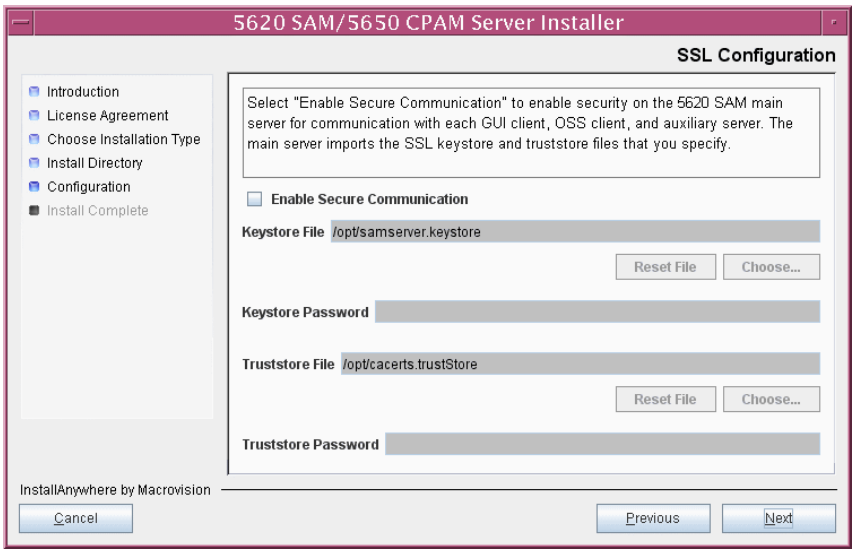


70 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 2-49.

Figure 2-49 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

71 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 2-50.

ii To accept the default user documentation location that is displayed, go to step 72.

Note — If NAT is to be used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

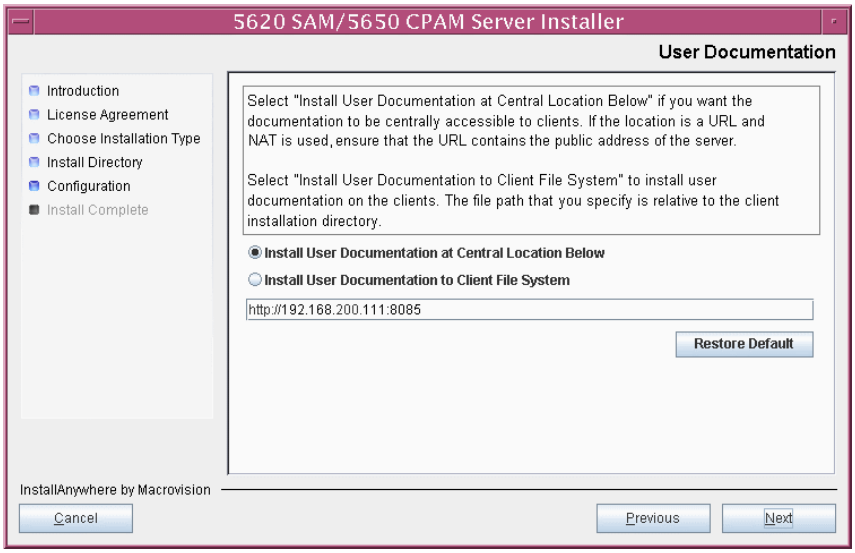
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 2-50 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 2-50.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

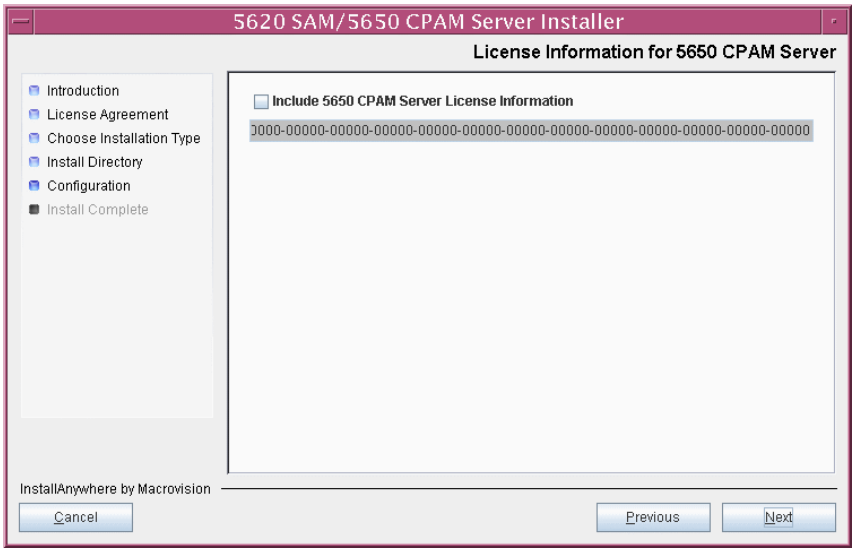
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

72 Click on the Next button.

73 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 2-51. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 2-51 License Information for 5650 CPAM Server



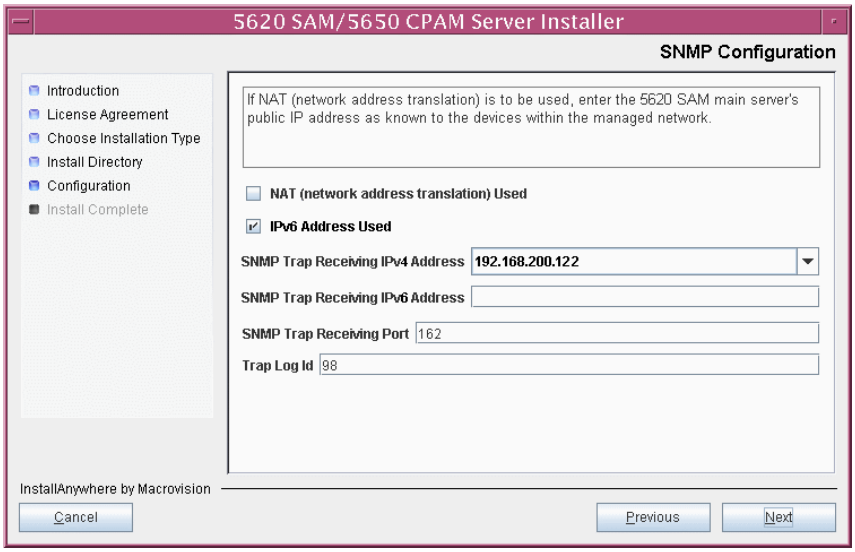
74 Configure the following parameters shown in Figure 2-52, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

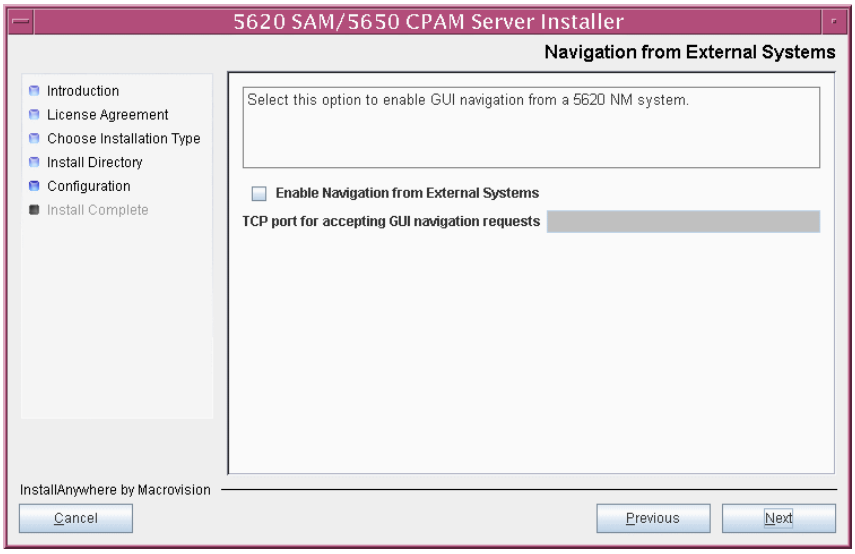
Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 2-52.

Figure 2-52 SNMP Configuration



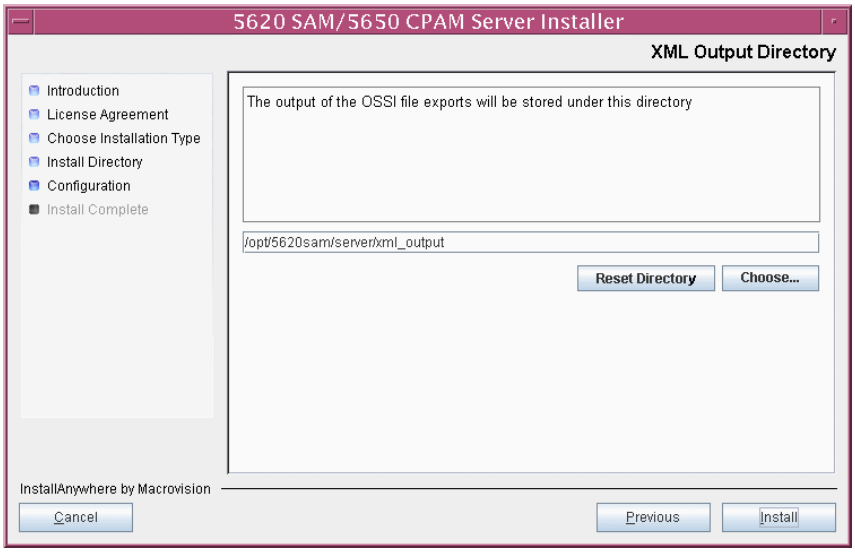
75 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 2-53 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 2-53 Navigation from External Systems



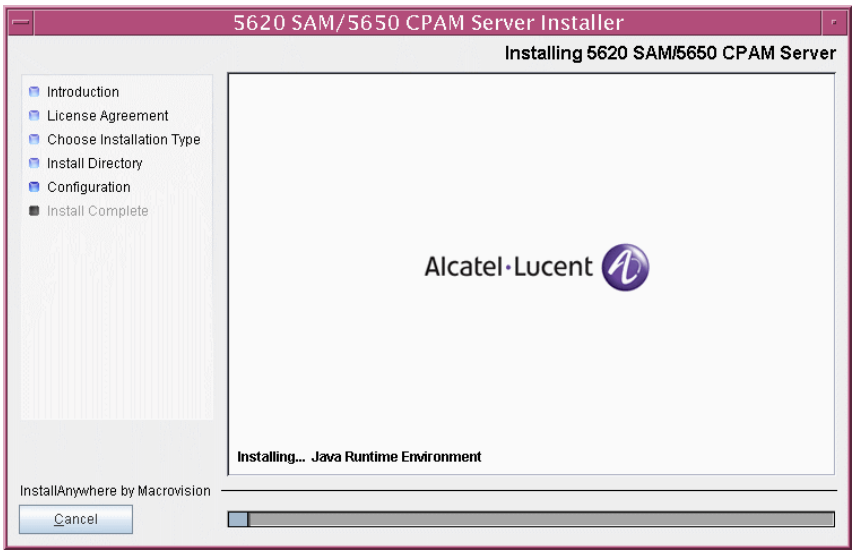
76 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 2-54. Click on the Install button to begin the server installation.

Figure 2-54 XML Output Directory



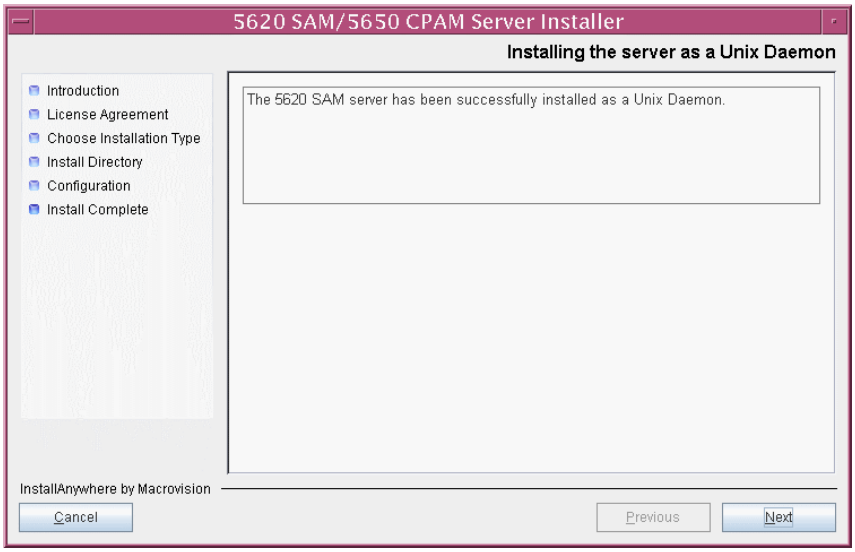
The next panel displays installation progress, as shown in Figure 2-55.

Figure 2-55 Installing 5620 SAM/5650 CPAM Server



77 The 5620 SAM server is installed as a UNIX daemon, as shown in Figure 2-56. Click on the Next button.

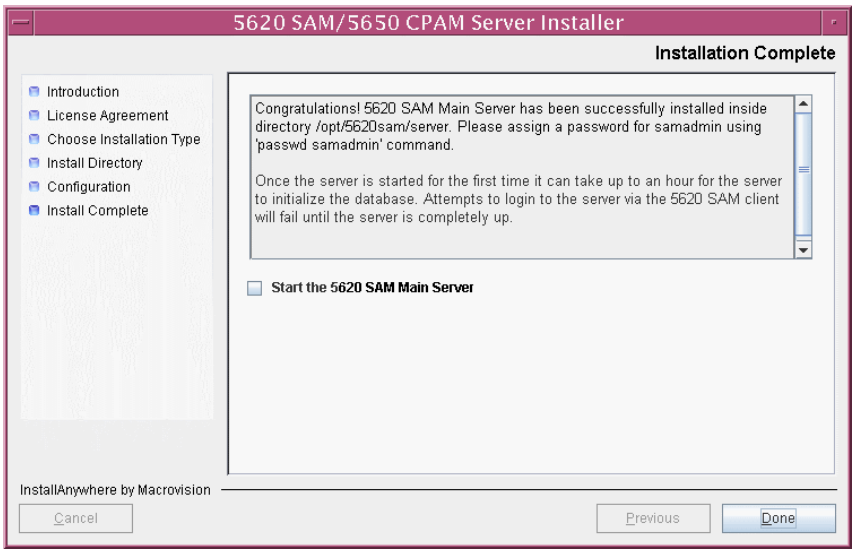
Figure 2-56 Installing the Server as a Unix Daemon



78 When the main server installation is complete, as shown in Figure 2-57, configure the “Start the 5620 SAM Main Server” parameter to specify whether you want the server to start immediately after the installation.

Caution — If the 3GPP OSS interface is enabled in step 67, ensure that the “Start the 5620 SAM Main Server” parameter is not selected.

Figure 2-57 Installation Complete



79 View the panel text to see whether it states that you must assign a password to samadmin, as shown in Figure 2-57. This information is required in step 81.

80 Click on the Done button to close the server installer. If you specified that the main server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

81 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration.

If you must assign a password to samadmin, as determined in step 79, perform the following steps.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

82 If the 3GPP OSS interface is enabled in step 67, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

vi Save and close the file.

vii Go to step 84.

83 If you specified that the main server is to start after installation, perform the following steps to verify that the 5620 SAM server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
-- SAM Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

84 If you specified not to start the main server immediately after the installation, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

bash$ **cd *path*/nms/bin** ↵

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

bash$ **./nmsserver.bash start** ↵

v Enter the following:

bash$ ***path*/nms/bin/nmsserver.bash -s nms_status** ↵

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
-- SAM Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

85 Close the console window.

Install client

86 Perform one of the following to install a 5620 SAM client.

a Perform Procedure 2-3 or 2-4 to install a single-user client on a Solaris station.

b Perform Procedure 2-5 or 2-6 to install a single-user client on a Windows station.

c Perform Procedure 2-7 to install a client delegate server.

87 If the 3GPP OSS interface is enabled in step 67, perform the following steps.

i Log in to a 5620 SAM GUI client as the admin user.

ii Create a user account for 3GPP OSS interface access. Observe the following when you create the account:

- The user name must be the user name specified in step 82.
- The password must be the password specified in step 82.
- The user account requires full permissions on the fm and oss packages.

See the *5620 SAM User Guide* for information about creating 5620 SAM user accounts.

2.5 Redundant 5620 SAM installation workflow

The following is the sequence of high-level actions required to install a redundant 5620 SAM system. A section heading in quotation marks is a reference to a section in Procedure 2-2.

1 Prepare the primary database station for the installation. See "Run Oracle pre-installation script for primary database" and "Set directory ownership for database installation" for more information.

2 Install the primary database. See "Install primary database" for more information.

3 Prepare the standby database station for the installation. See "Run Oracle pre-installation script for standby database" and "Set directory ownership for database installation" for more information.

4 Install the standby database. See "Install standby database" for more information.

5 Install the primary server. See "Install primary server" in Procedure 2-2 for more information.

6 Install a single-user client or client delegate server. See "Install client" for more information.

7 Reinstantiate the primary database on the standby database station. See "Reinstantiate database on standby station" for more information.

8 Install the standby server. See "Install standby server" for more information.

9 Install one or more auxiliary servers, if required. See Procedure 2-9 for more information.

10 Install a single-user client or client delegate server. See "Install additional client" for more information.

2.6 Redundant 5620 SAM system installation

This section describes how to install the software components of a redundant 5620 SAM system. Procedure 2-2 describes how to install the primary and standby 5620 SAM database and main server software.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 2-2 To install a redundant 5620 SAM system

Perform this procedure to install the 5620 SAM primary and standby main server and database software. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

You require the following user privileges to perform this procedure:

- on each main server station:
  - root or root-equivalent
- on each database station:
  - root or root-equivalent
  - Oracle management

Note 1 — The samadmin user account is created on each main server station during this procedure.

Note 2 — The Oracle management user account is created on each database station during this procedure.

Run Oracle pre-installation script for primary database

1 Before you perform a 5620 SAM database installation, you must run the OracleSw_PreInstall.sh script. This script creates and configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Log in to the station that is to be the primary database station as a user with root or root-equivalent privileges.

2 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to change to the appropriate directory.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

6 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

7 Enter 1 ↵.

8 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is /opt/5620sam/oracle11r2)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — If you receive a “failed to create group” message, confirm that NIS is disabled and re-run the pre-installation script. Contact Alcatel-Lucent technical support for more information.

9 When the script execution is complete, enter the following to reboot the primary database station:

```
# shutdown -y -i6 -g0 ↵
```

The primary database station reboots.

Before database installation can occur, the Oracle management user and group created by the pre-installation script require ownership of the directory that is to hold the database. The next section of the procedure describes how to configure the directory ownership.

Set directory ownership for database installation

10 After the primary database station reboots, log in to the primary database station as a user with root or root-equivalent privileges.

11 Open a console window.

12 Enter the following to change the current directory to /opt:

```
# cd /opt ↵
```

13 Enter the following to specify the required user and group ownership of the 5620sam directory and subdirectories:

```
# chown -R user:group 5620sam ↵
```

where
user is the username from step 8, typically oracle
group_name is the group name from step 8, typically dba

14 Enter the following to change to the 5620sam directory below the /opt directory:

```
# cd 5620sam ↵
```

15 Enter the following to confirm that the Oracle management user home directory has the correct user and group ownerships:

```
# ls -l ↵
```

If the command output is not as shown below, repeat steps 12 to 15. Do not proceed unless the output is as shown.

```
drwx------ 2 user     group        512 Apr 11 11:15 directory
```

where
user is the username specified in step 8, typically oracle
group is the group name specified in step 8, typically dba
directory is the Oracle management user home directory name specified in step 8, typically /opt/5620sam/oracle11r2

Install primary database

16 Log in to the station that is to be the primary database station as a user with root or root-equivalent privileges.

17 Open a console window.

18 Enter the following to switch to the Oracle management user created by the pre-installation script:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

19 Navigate to the DVD-ROM drive that contains the 5620 SAM software DVD-ROM.

20 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

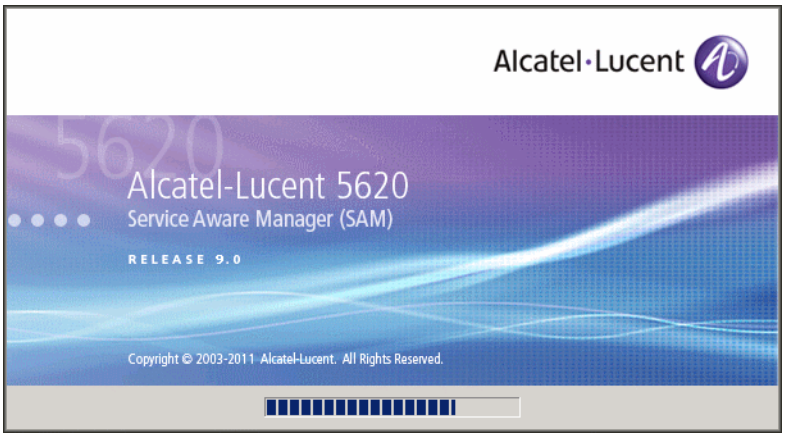
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

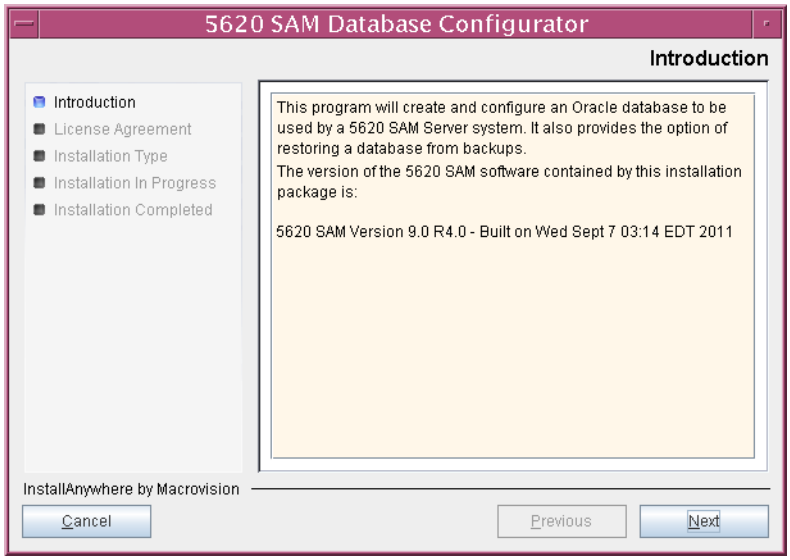
The splash screen shown in Figure 2-58 opens.

Figure 2-58 5620 SAM installer



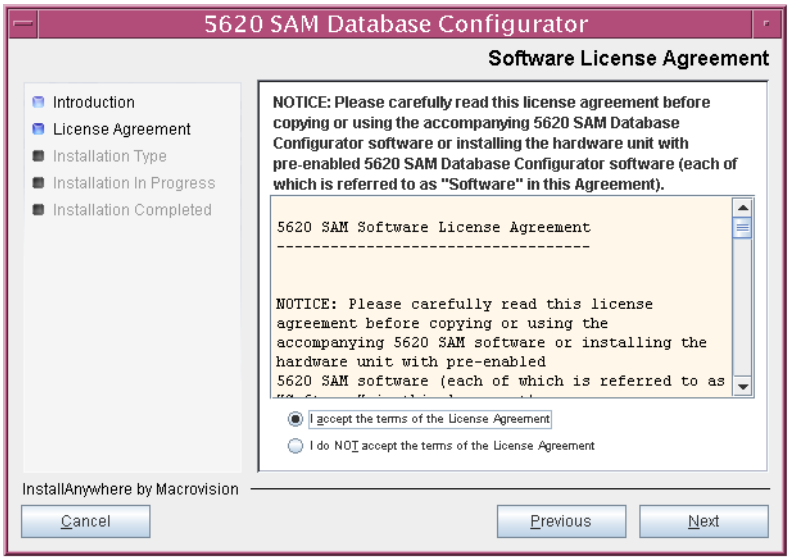
21 The 5620 SAM database installer opens, as shown in Figure 2-59. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-59 Introduction



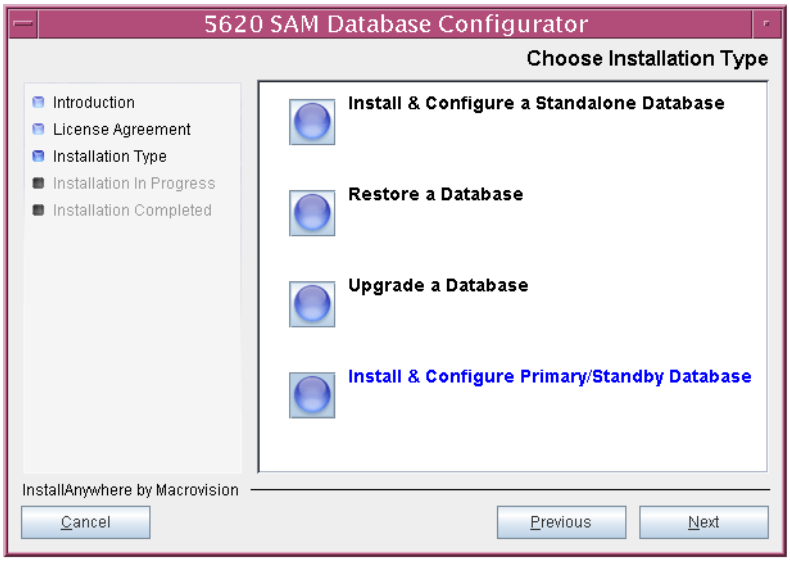
22 Review and accept the terms of the license agreement shown in Figure 2-60. Click on the Next button.

Figure 2-60 Software License Agreement



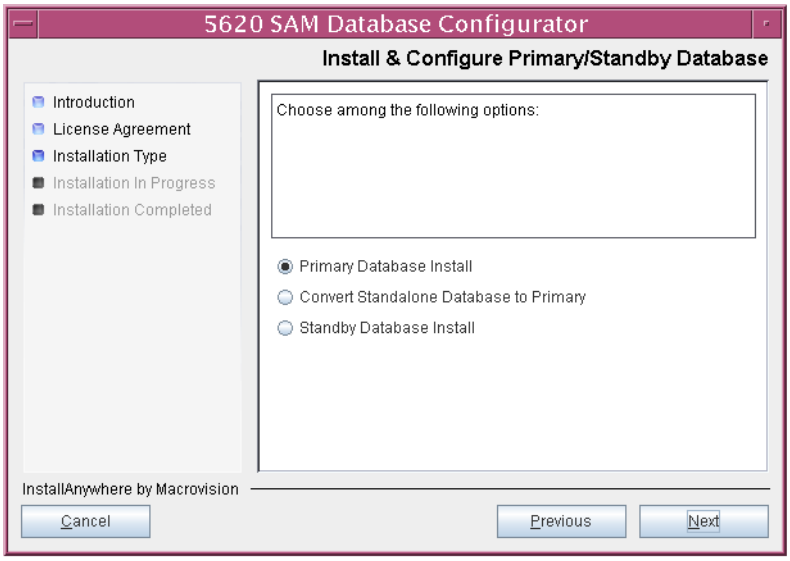
23 Select Install & Configure Primary/Standby Database, as shown in Figure 2-61. Click on the Next button.

Figure 2-61 Choose Installation Type



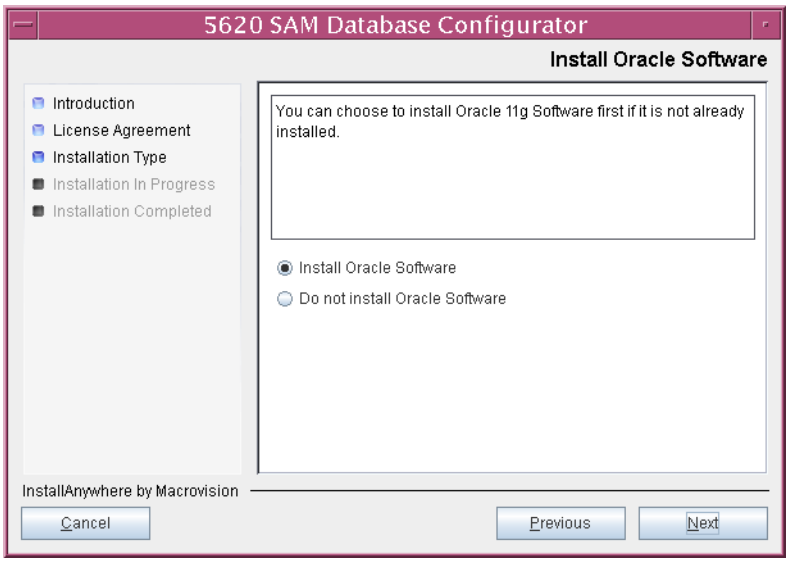
24 Select Primary Database Install, as shown in Figure 2-62. Click on the Next button.

Figure 2-62 Install & Configure Primary/Standby Database



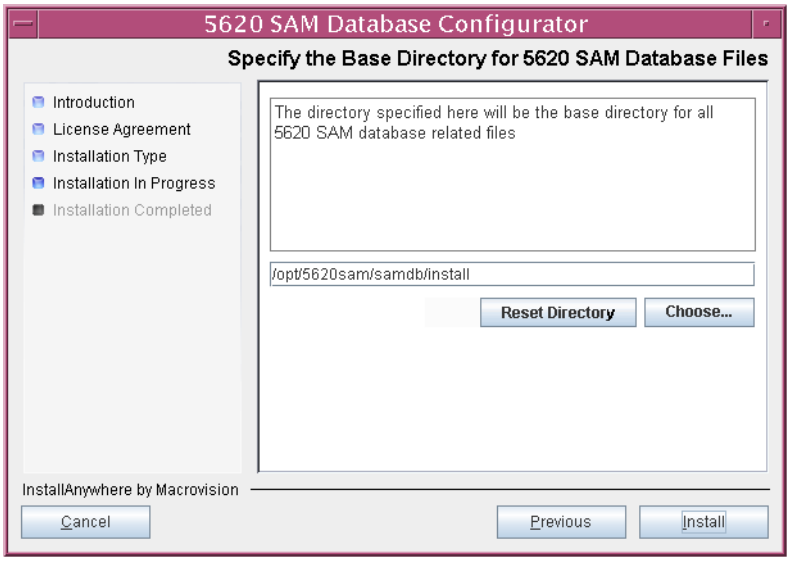
25 Select Install Oracle Software, as shown in Figure 2-63. Click on the Next button.

Figure 2-63 Install Oracle Software



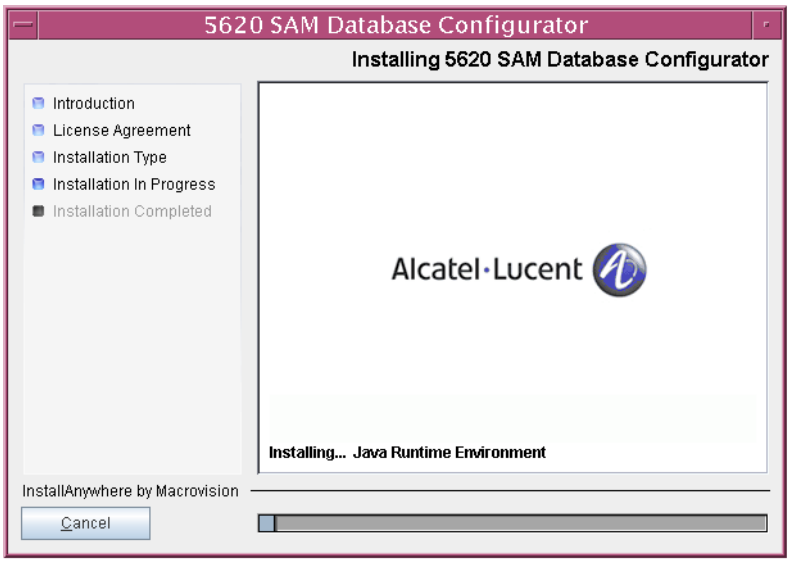
26 Specify a base directory in which to install the primary 5620 SAM database software (typically /opt/5620sam/samdb/install), as shown in Figure 2-64. Click on the Install button to begin the database software installation.

Figure 2-64 Specify the Base Directory for 5620 SAM Database Files



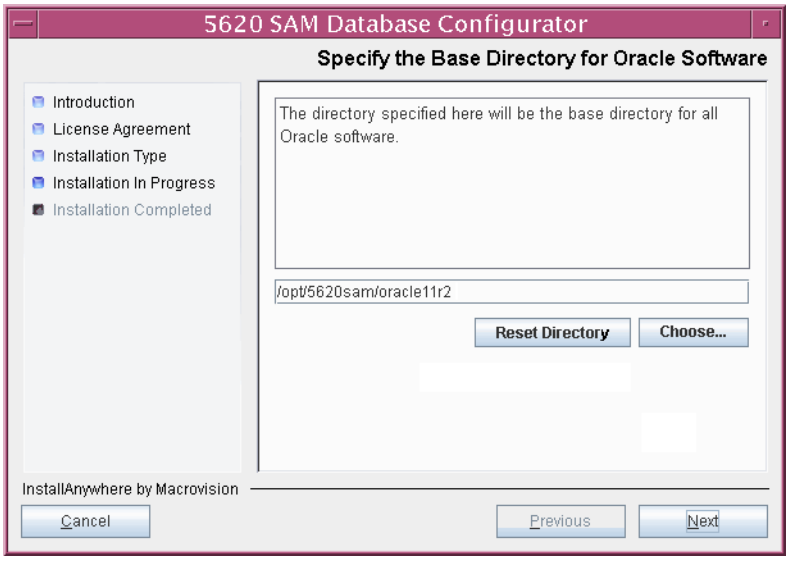
The installer prepares to install the database, as shown in Figure 2-65.

Figure 2-65 Installing 5620 SAM Database Configurator



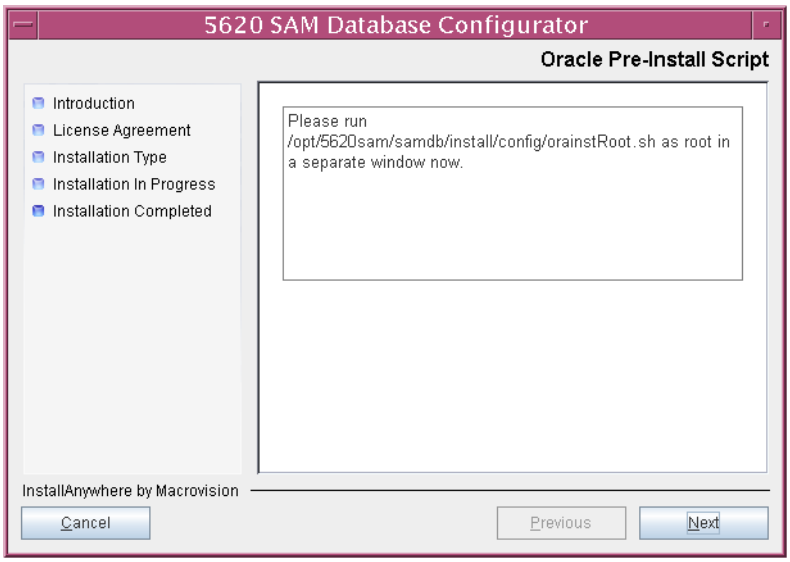
27 Specify a base directory in which to install the Oracle software (typically /opt/5620sam/oracle11r2), as shown in Figure 2-66. Click on the Next button.

Figure 2-66 Specify the Base Directory for Oracle Software



28 Perform the following steps when the panel in Figure 2-67 is displayed.

Figure 2-67 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

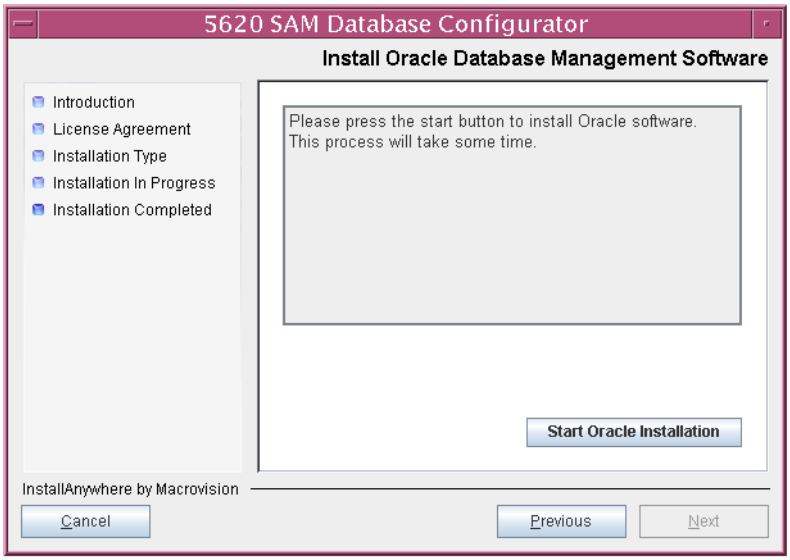
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

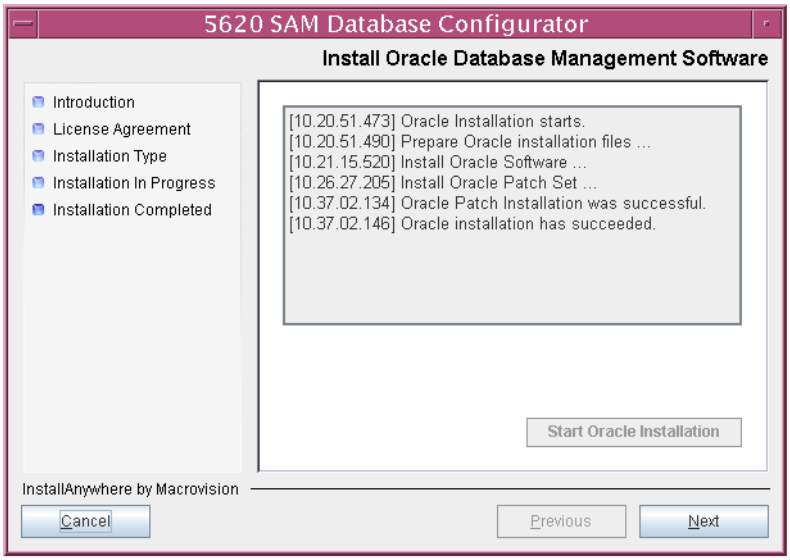
29 You are prompted to install Oracle software, as shown in Figure 2-68. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 2-68 Install Oracle Database Management Software



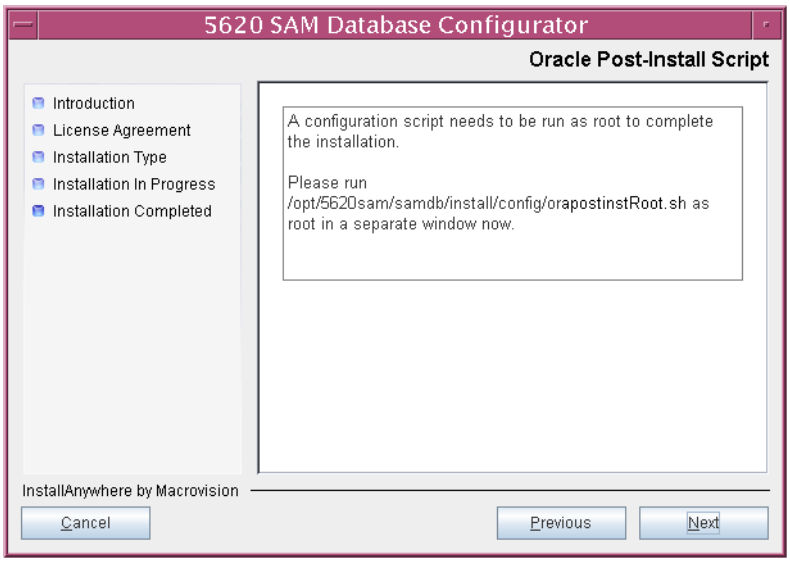
30 Oracle installation details are displayed as the installation progresses. When Oracle installation is complete, as shown in Figure 2-69, click on the Next button.

Figure 2-69 Install Oracle Database Management Software



31 Perform the following steps when the panel in Figure 2-70 is displayed.

Figure 2-70 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

vi Click on the Next button.

32 Configure the following primary database installation parameters shown in Figure 2-71, then click on the Next button:

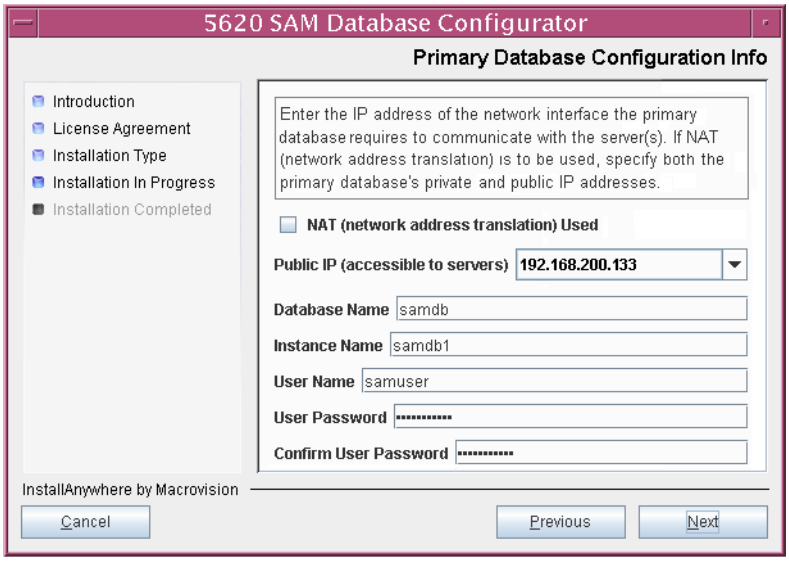
- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Name (typically samdb)
- Instance Name (typically samdb1)
- User Name (typically samuser)
- User Password

Note — The "Private IP" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

The "User Password" value that you specify must meet the following criteria:

- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

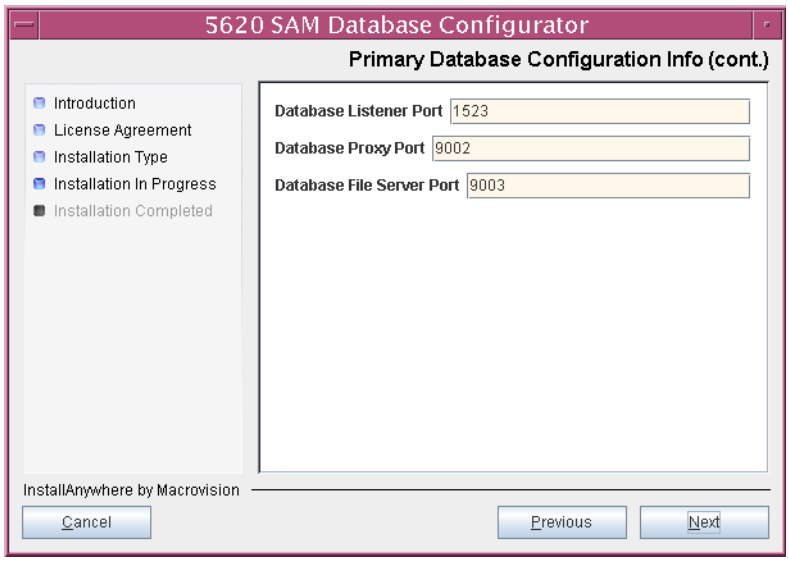
Figure 2-71 Primary Database Configuration Info



33 Configure the following parameters shown in Figure 2-72, record the information for use later in the procedure, then click on the Next button.

- Database Listener Port (typically 1523)
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

Figure 2-72 Primary Database Configuration Info (cont.)



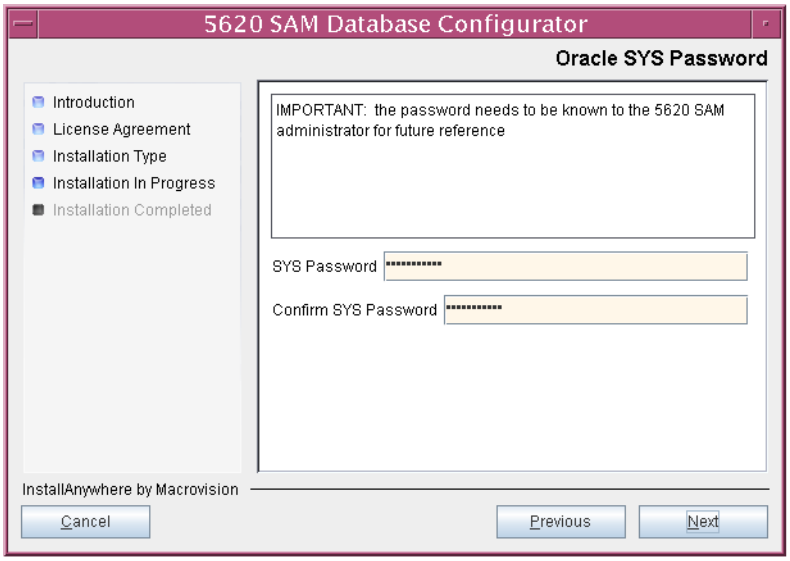
34 Configure the following parameters shown in Figure 2-73, then click on the Next button.

- SYS Password
- Confirm SYS Password

The password value that you specify must meet the following criteria:

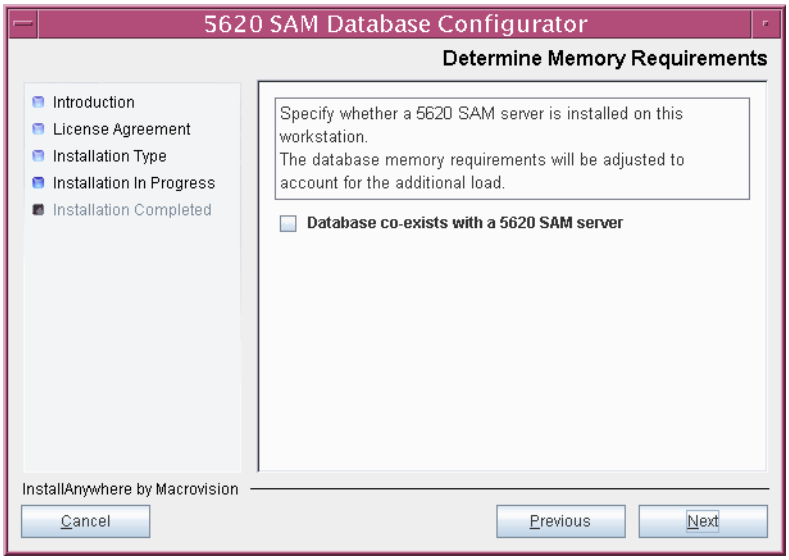
- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

Figure 2-73 Oracle SYS Password



35 If the 5620 SAM server and database are to be installed on the same station, select the “Database co-exists with a 5620 SAM Server” parameter shown in Figure 2-74. Click on the Next button.

Figure 2-74 Determine Memory Requirements

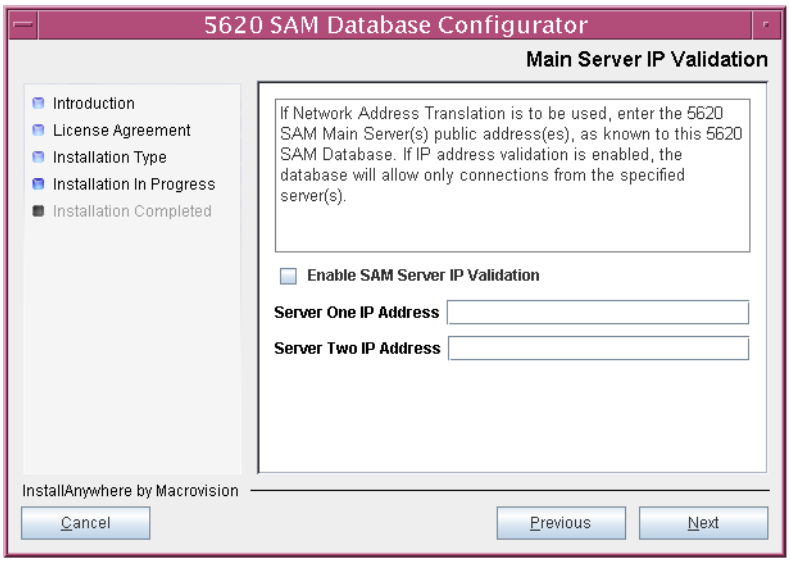


36 Configure the following parameters shown in Figure 2-75, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
- Server Two IP Address

Figure 2-75 Main Server IP Validation



37 The panel in Figure 2-76 is displayed If the “Enable SAM Server IP Validation” parameter in step 36 is selected. Otherwise, go to step 39.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

i Click on the Add button shown in Figure 2-76. The form shown in Figure 2-77 opens.

Figure 2-76 Auxiliary Server IP Validation

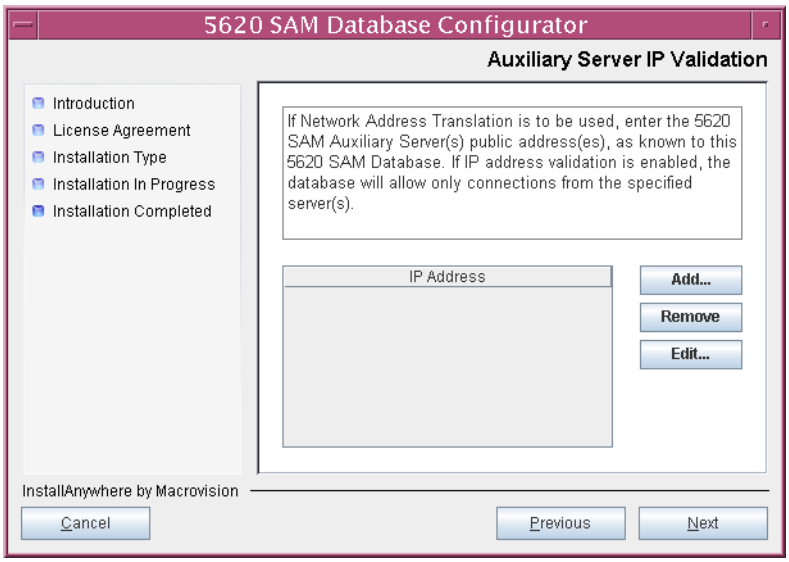
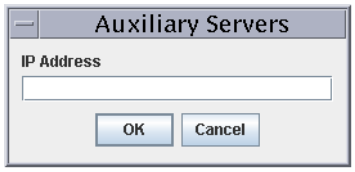


Figure 2-77 Auxiliary Servers



ii Enter the IP address or hostname of the auxiliary server.

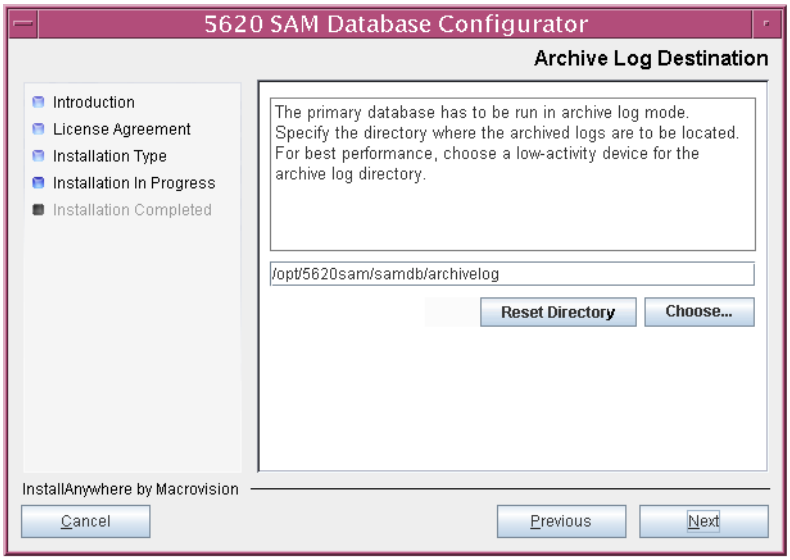
iii Click on the OK button to save the information and close the form.

iv Repeat steps 37 i to iii to specify an additional auxiliary server, if required.

38 Click on the Next button.

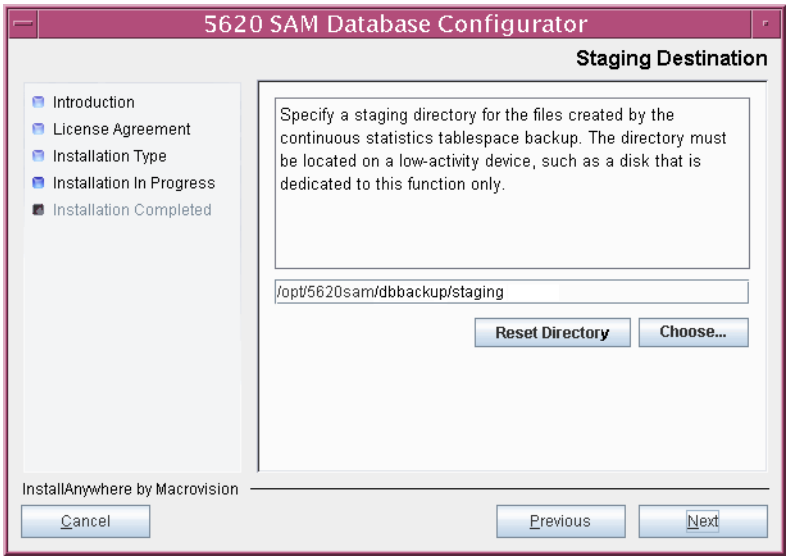
39 Specify an archive log destination (typically /opt/5620sam/samdb/archivelog) as shown in Figure 2-78. The archive log destination must be the same for the primary and standby databases. Click on the Next button.

Figure 2-78 Archive Log Destination



40 Specify a directory for the continuous statistics tablespace backup, as shown in Figure 2-79. Click on the Next button.

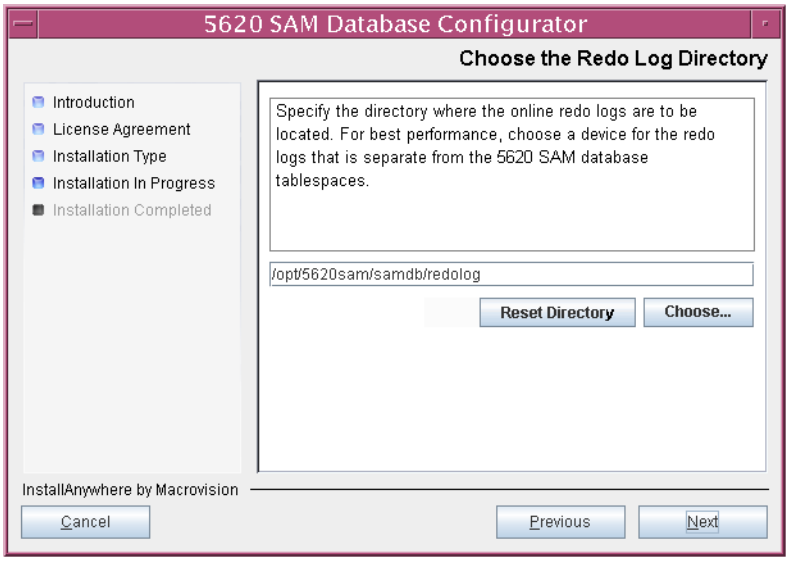
Figure 2-79 Staging Destination



41 Specify a directory for the Redo logs (typically /opt/5620sam/samdb/redolog), as shown in Figure 2-80. Click on the Next button.

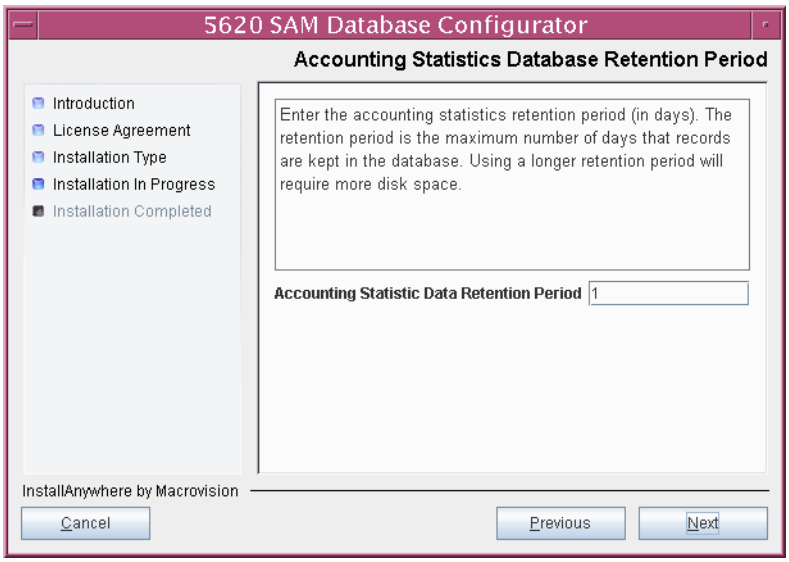
Note — In a one-disk configuration, the redo log directory must be the same directory that you specify as the tablespace directory later in the procedure.

Figure 2-80 Choose the Redo Log Directory



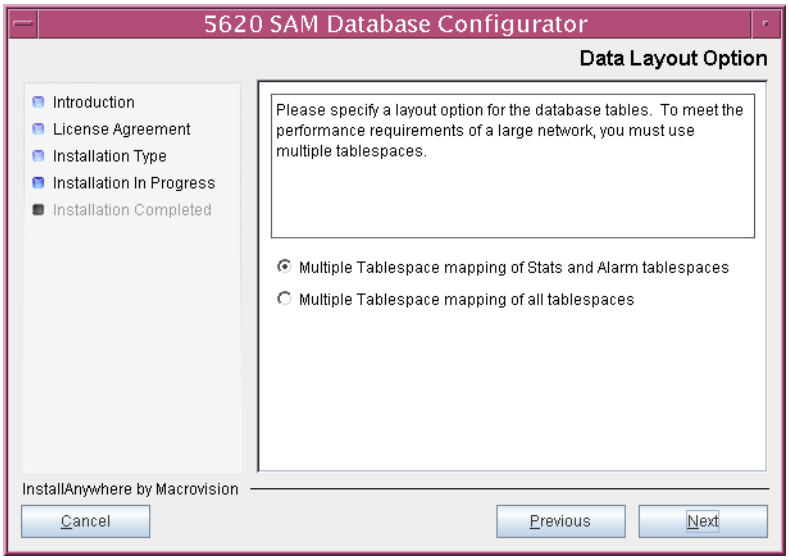
42 Configure the "Accounting Statistic Data Retention Period" parameter shown in Figure 2-81. Click on the Next button.

Figure 2-81 Accounting Statistics Database Retention Period



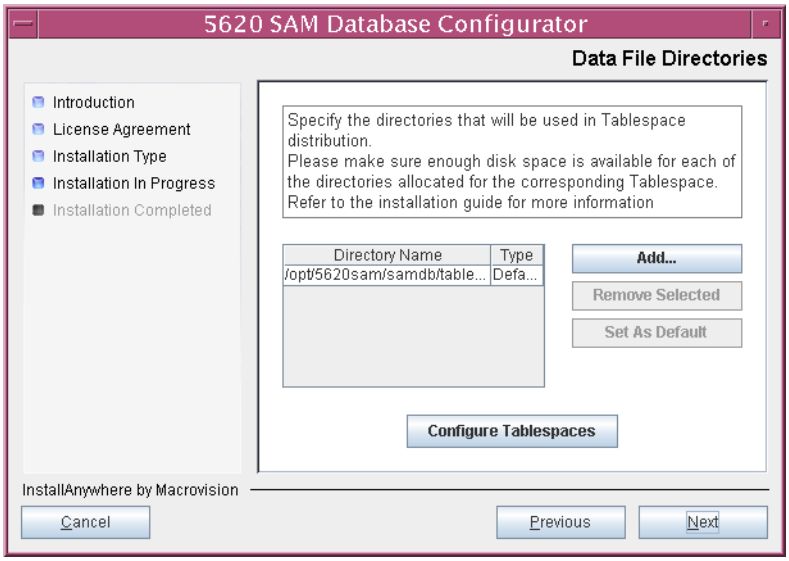
43 Choose one of the data layout options shown in Figure 2-82. Click on the Next button. Contact Alcatel-Lucent technical support for information about data layout options.

Figure 2-82 Data Layout Option



44 Choose the tablespace directories.

Figure 2-83 Data File Directories



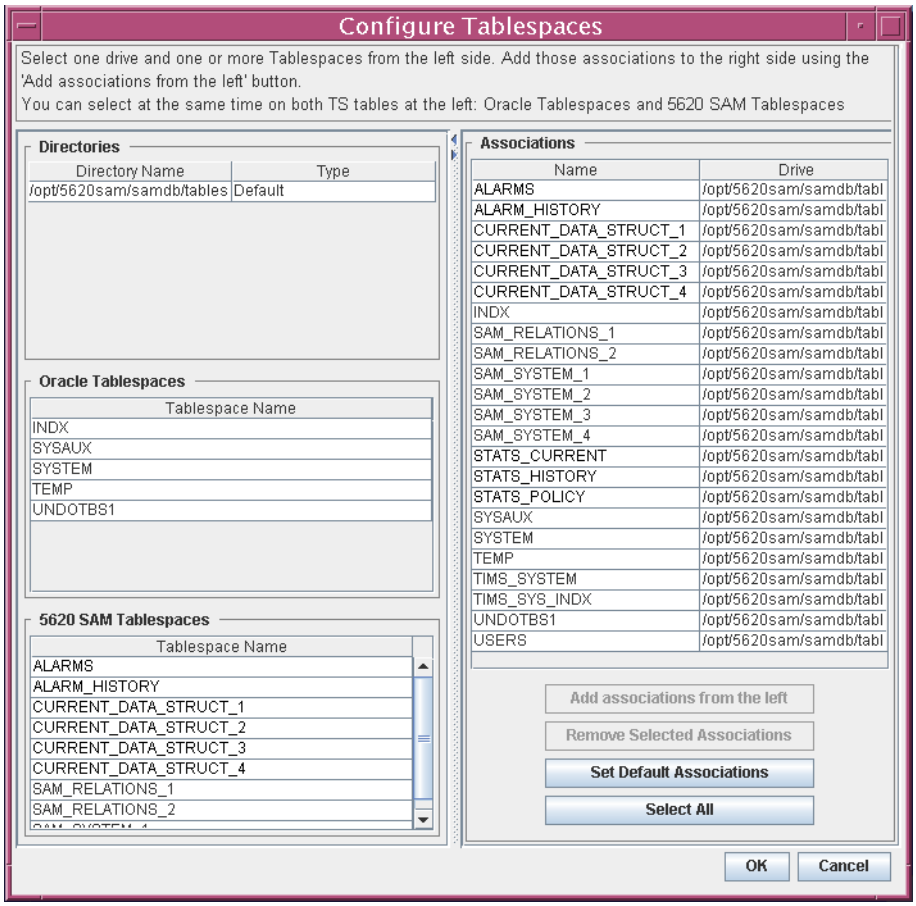
i Click on the Add button shown in Figure 2-83. A file browser form opens.

ii Use the file browser form to choose a tablespace directory.

iii Repeat steps 44 i and ii to specify an additional tablespace directory, if required.

45 Associate tablespaces with the directories specified in step 44.

Figure 2-84 Configure Tablespaces



i Click on the Configure Tablespaces button. The tablespace configuration form shown in Figure 2-84 opens.

Note — The lists of drives and tablespaces on the tablespace configuration form may differ from the lists shown in the figure below.

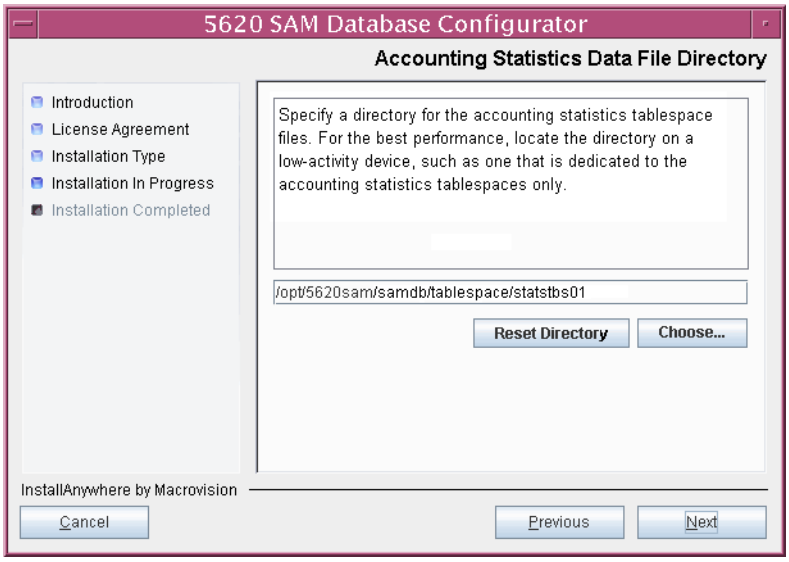
ii Follow the instructions at the top of the form to associate tablespaces with the directories, as required.

iii Click on the OK button. The tablespace configuration form closes and the “Data File Directories” panel in Figure 2-83 reappears.

46 Click on the Next button.

47 Specify a directory for the accounting statistics tablespace files, as shown in Figure 2-85. Click on the Next button.

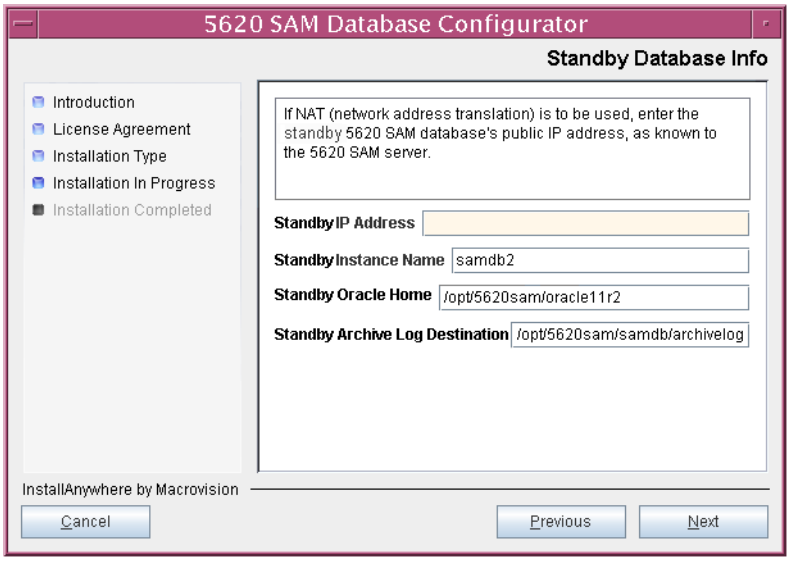
Figure 2-85 Accounting Statistics Data File Directory



48 Configure the following parameters shown in Figure 2-86, record the information for use later in the procedure, then click on the Next button:

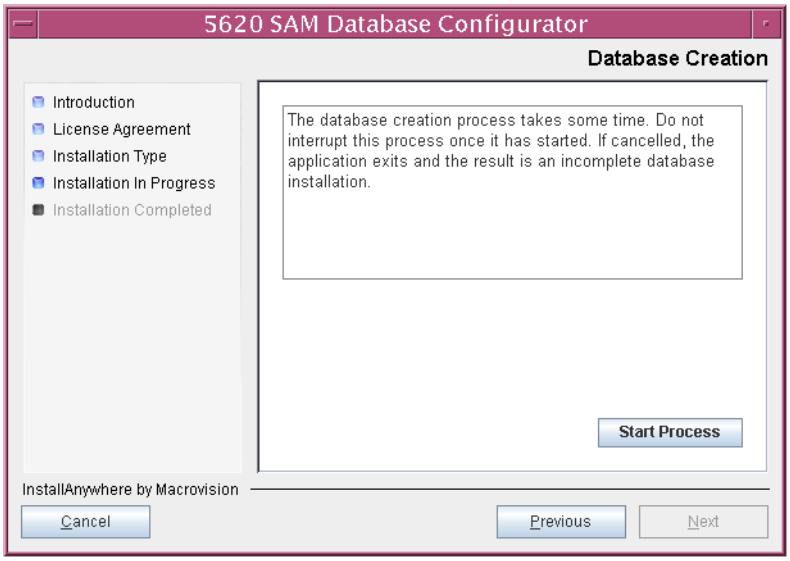
- Standby IP Address
- Standby Instance Name (typically samdb2)
- Standby Oracle Home (typically /opt/5620sam/oracle11r2)
- Standby Archive Log Destination (typically /opt/5620sam/samdb/archivelog)

Figure 2-86 Standby Database Info



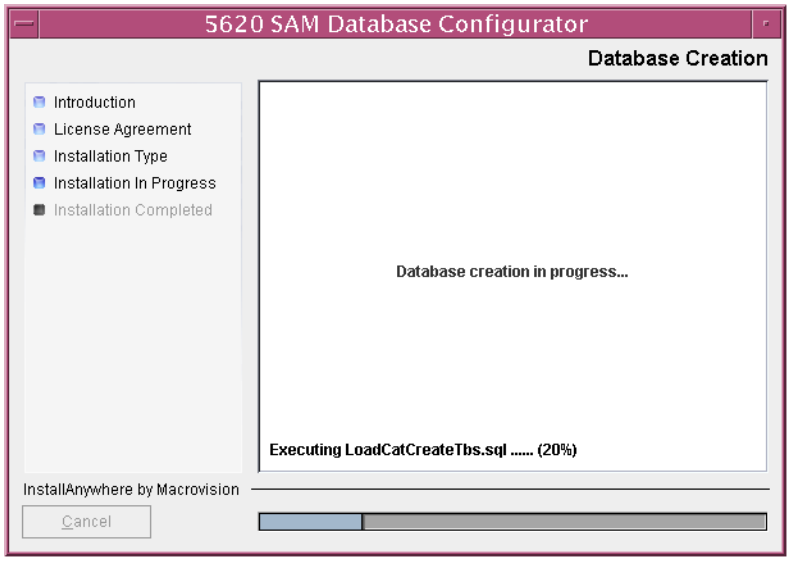
49 You are prompted to begin primary database creation, as shown in Figure 2-87. Database creation can take one hour or more, depending on the tablespace configuration. Click on the Start Process button to begin the database creation.

Figure 2-87 Database Creation



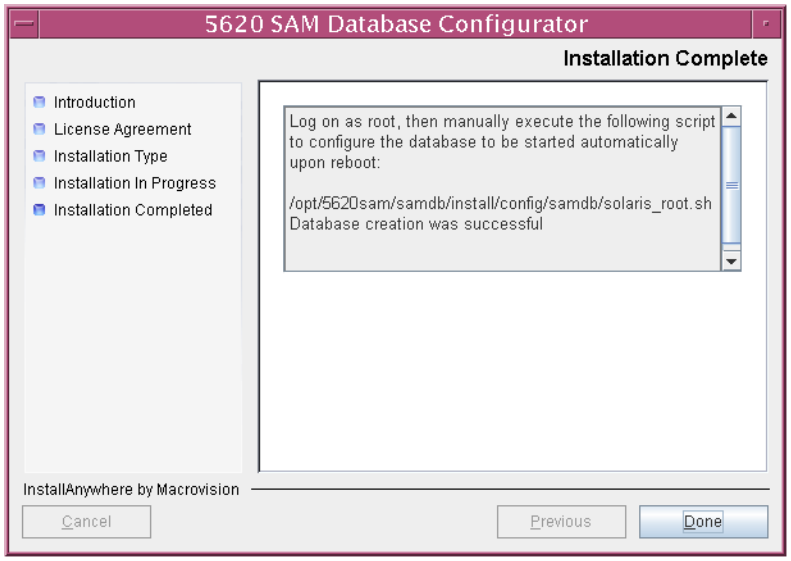
The next panel displays database creation progress, as shown in Figure 2-88.

Figure 2-88 Database Creation



50 When the panel in Figure 2-89 is displayed, the 5620 SAM database installation is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 2-89 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

51 Click on the Done button to close the database installer.

The next section of the procedure describes the installation of the standby 5620 SAM database. The standby database must be installed on a station other than the one on which the primary database is installed. Database installation requires root-equivalent privileges.

Run Oracle pre-installation script for standby database

52 Before you perform a 5620 SAM database installation, you must run the OracleSw_PreInstall.sh script. This script creates and configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Log in to the station that is to be the standby database station as a user with root or root-equivalent privileges.

53 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

54 Open a console window.

55 Navigate to the DVD-ROM drive.

56 Perform one of the following to change to the appropriate directory.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

57 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

58 Enter 1 ↵.

59 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is /opt/5620sam/oracle11r2)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — If you receive a "failed to create group" message, confirm that NIS is disabled and re-run the pre-installation script. Contact Alcatel-Lucent technical support for more information.

60 When the script execution is complete, enter the following to reboot the standby database station:

```
# shutdown -y -i6 -g0 ↵
```

The standby database station reboots.

Before standby database installation can occur, the Oracle management user and group created by the pre-installation script require ownership of the directory that is to hold the database. The next section of the procedure describes how to configure the directory ownership.

Set directory ownership for database installation

61 After the standby database station reboots, log in to the standby database station as a user with root or root-equivalent privileges.

62 Open a console window.

63 Enter the following to change the current directory to /opt:

```
# cd /opt ↵
```

64 Enter the following to specify the required user and group ownership of the 5620sam directory and subdirectories:

```
# chown -R user:group 5620sam ↵
```

where
user is the username from step 59, typically oracle
group_name is the group name from step 59, typically dba

65 Enter the following to change to the 5620sam directory below the /opt directory:

```
# cd 5620sam ↵
```

66 Enter the following to confirm that the Oracle management user home directory has the correct user and group ownerships:

```
# ls -l ↵
```

If the command output is not as shown below, repeat steps 63 to 66. Do not proceed unless the output is as shown.

```
drwx------ 2 user     group        512 Apr 11 11:15 directory
```

where
user is the username specified in step 59, typically oracle
group is the group name specified in step 59, typically dba
directory is the Oracle management user home directory name specified in step 59, typically /opt/5620sam/oracle11r2

Install standby database

67 Log in to the station that is to be the standby database station as a user with root or root-equivalent privileges.

68 Open a console window.

69 Enter the following to switch to the Oracle management user created by the pre-installation script:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

70 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

71 Navigate to the DVD-ROM drive.

72 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

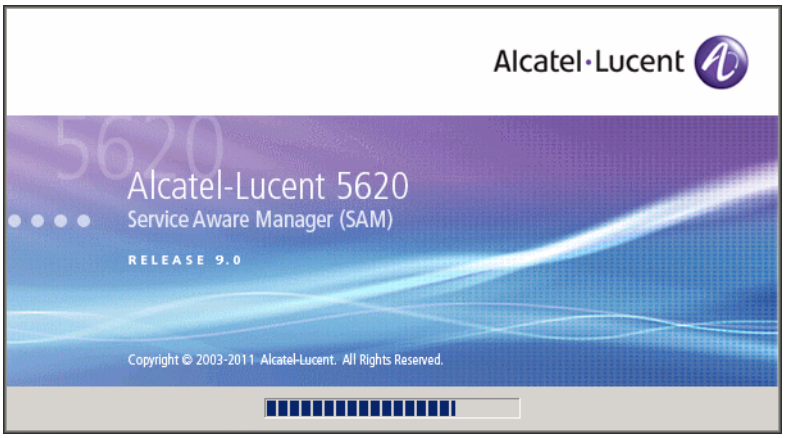
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

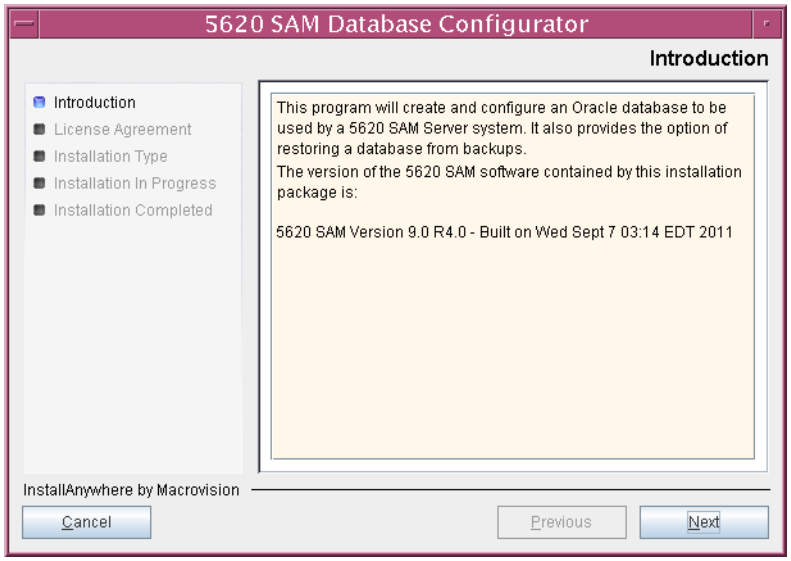
The splash screen shown in Figure 2-90 opens.

Figure 2-90 5620 SAM installer



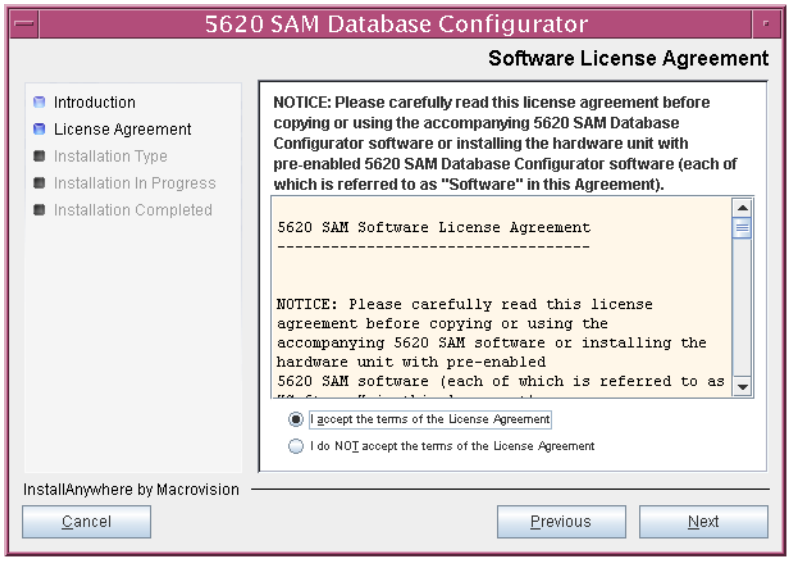
73 The 5620 SAM database installer opens, as shown in Figure 2-91. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-91 Introduction



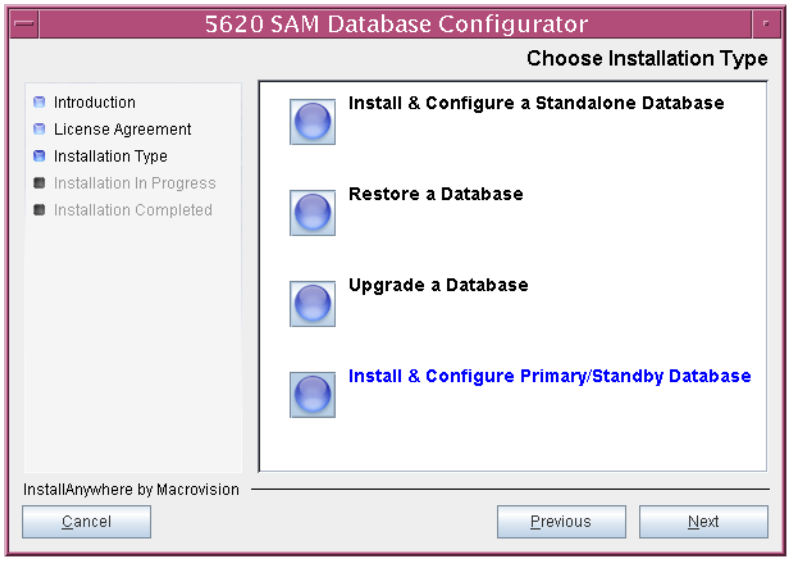
74 Review and accept the terms of the license agreement shown in Figure 2-92. Click on the Next button.

Figure 2-92 Software License Agreement



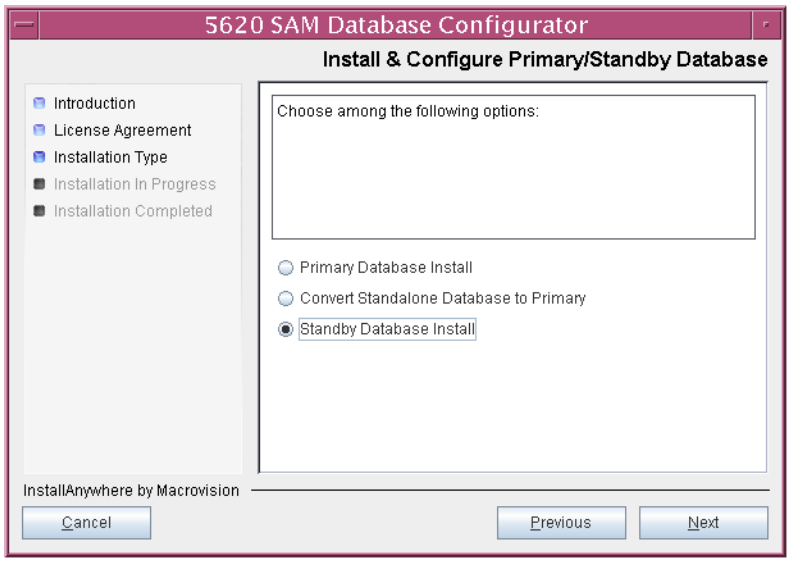
75 Select Install & Configure Primary/Standby Database, as shown in Figure 2-93. Click on the Next button.

Figure 2-93 Choose Installation Type



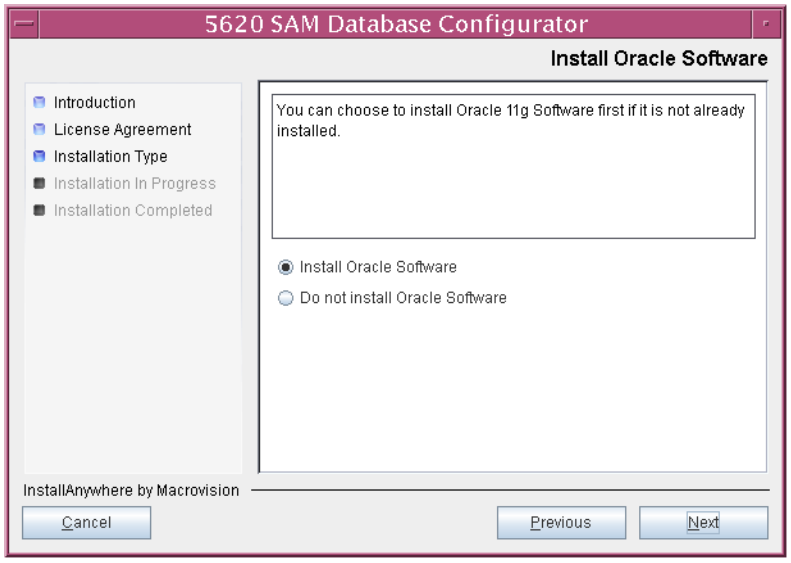
76 Select Standby Database Install, as shown in Figure 2-94. Click on the Next button.

Figure 2-94 Install & Configure Primary/Standby Database



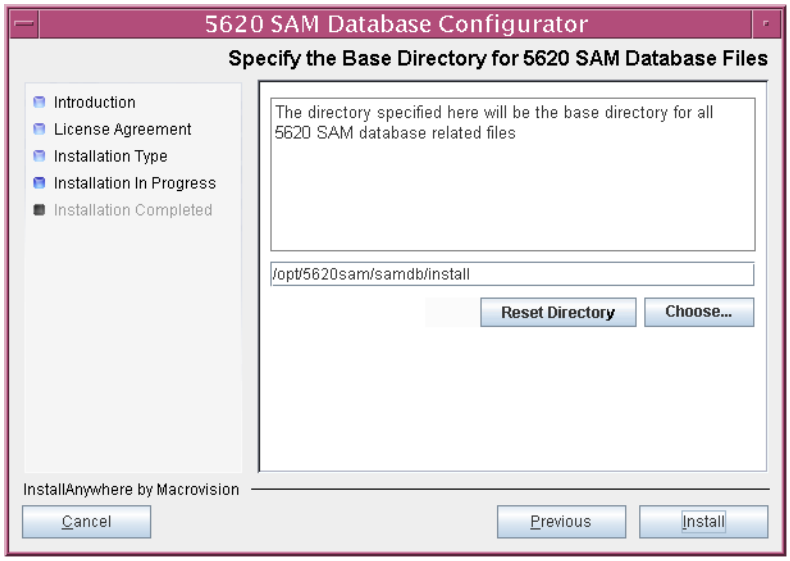
77 Select Install Oracle Software, as shown in Figure 2-95. Click on the Next button.

Figure 2-95 Install Oracle Software



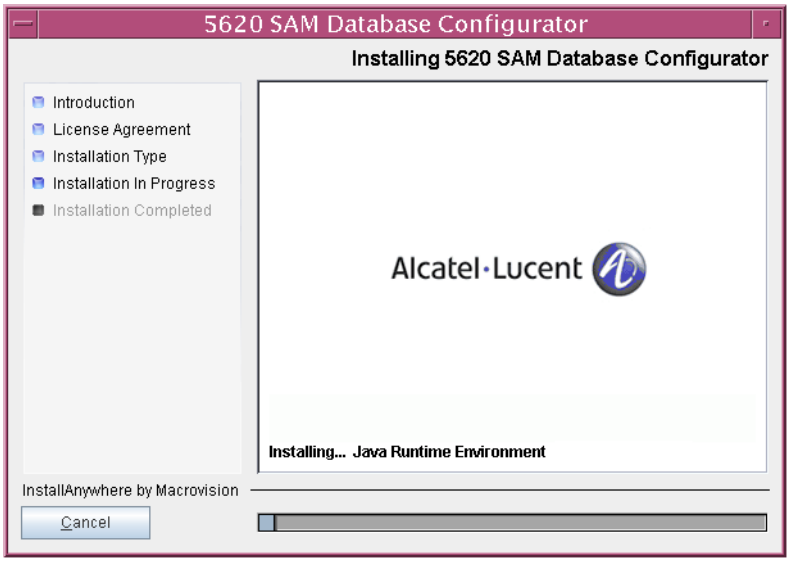
78 Specify a base directory in which to install the standby 5620 SAM database software (typically /opt/5620sam/samdb/install), as shown in Figure 2-96. Click on the Install button to begin the database software installation.

Figure 2-96 Specify the Base Directory for 5620 SAM Database Files



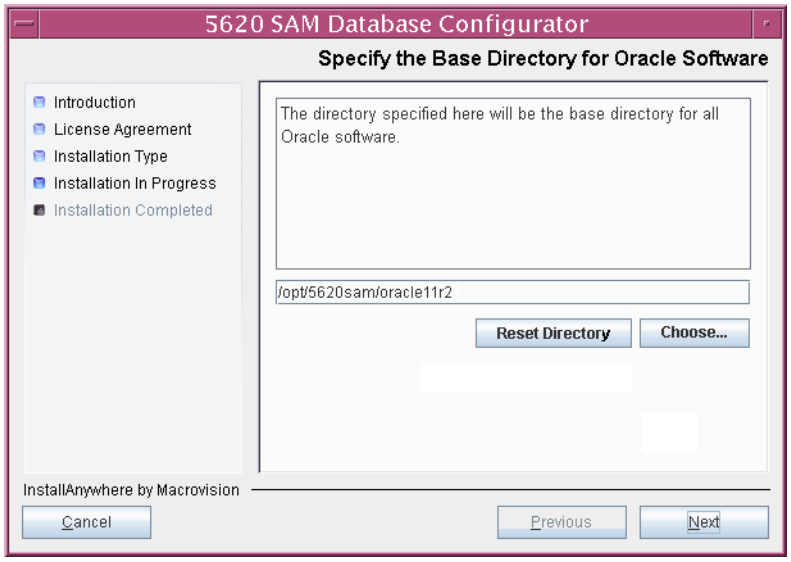
The installer prepares to install the database, as shown in Figure 2-97.

Figure 2-97 Installing 5620 SAM Database Configurator



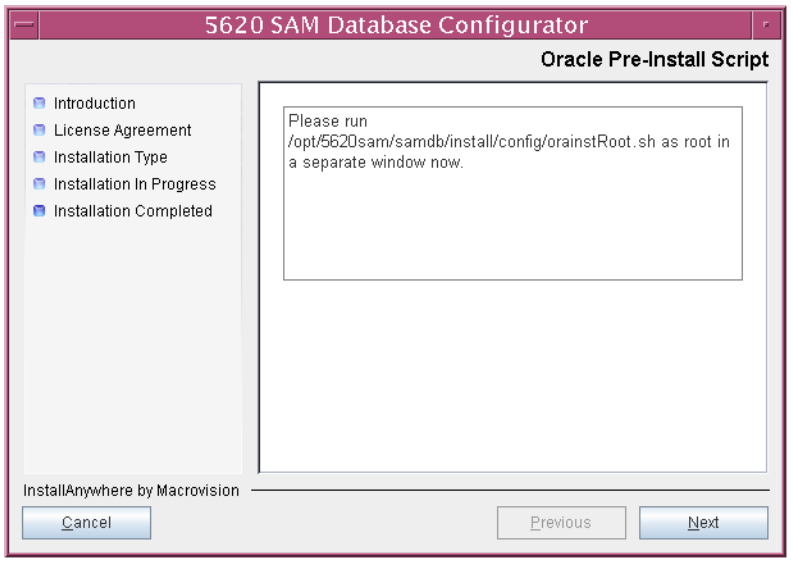
79 Specify a base directory in which to install the Oracle software (typically /opt/5620sam/oracle11r2), as shown in Figure 2-98. Click on the Next button.

Figure 2-98 Specify the Base Directory for Oracle Software



80 Perform the following steps when the panel in Figure 2-99 is displayed.

Figure 2-99 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

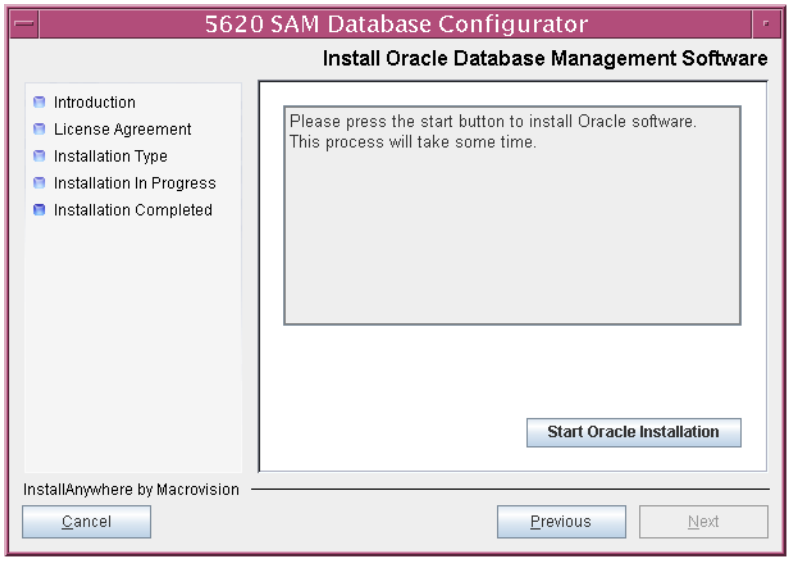
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

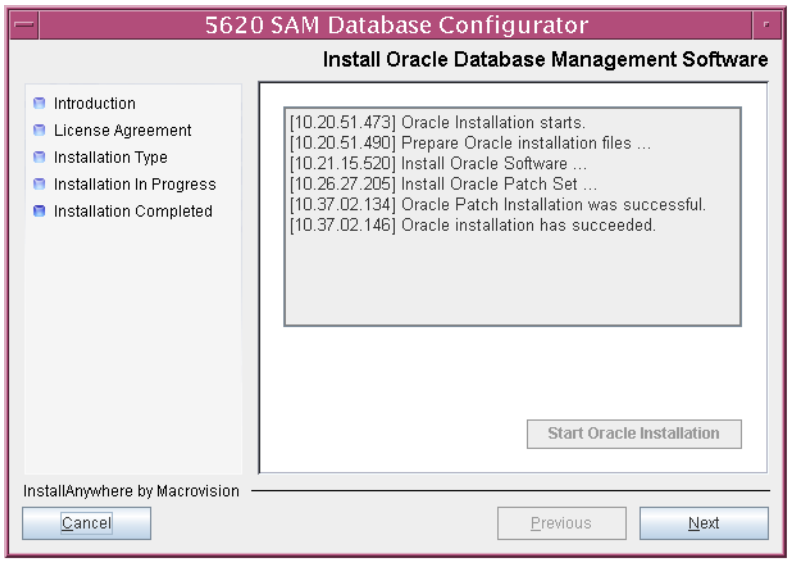
81 You are prompted to install Oracle software, as shown in Figure 2-100. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 2-100 Install Oracle Database Management Software



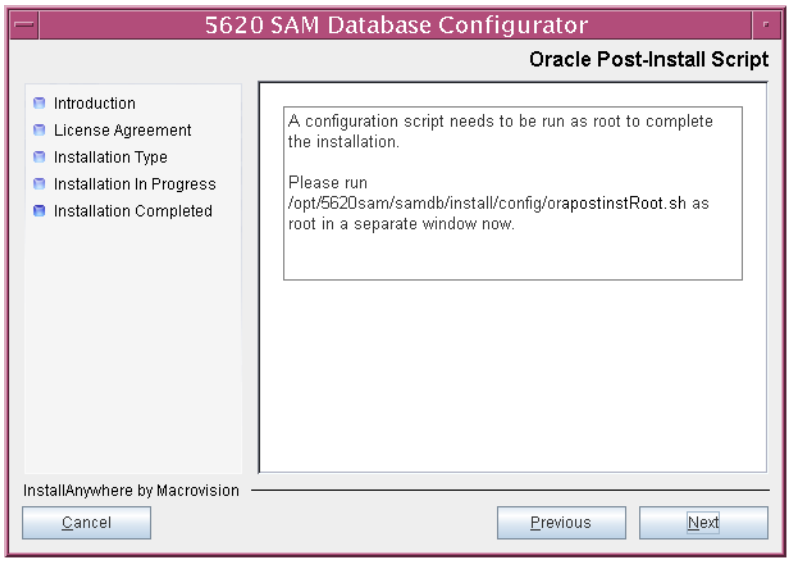
82 Oracle installation details are displayed as the installation progresses, as shown in Figure 2-101. When installation is complete, click on the Next button.

Figure 2-101 Install Oracle Database Management Software



83 Perform the following steps when the panel in Figure 2-102 is displayed.

Figure 2-102 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

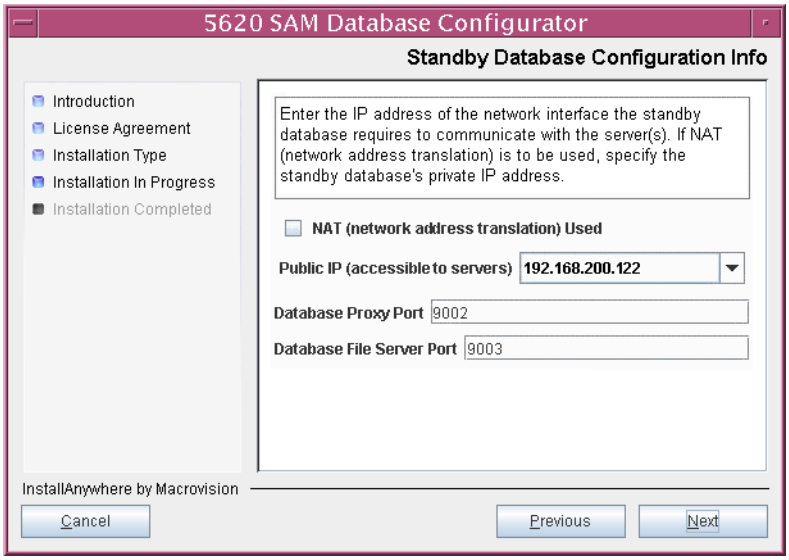
vi Click on the Next button.

84 Configure the parameters shown in Figure 2-103, then click on the Next button.

- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

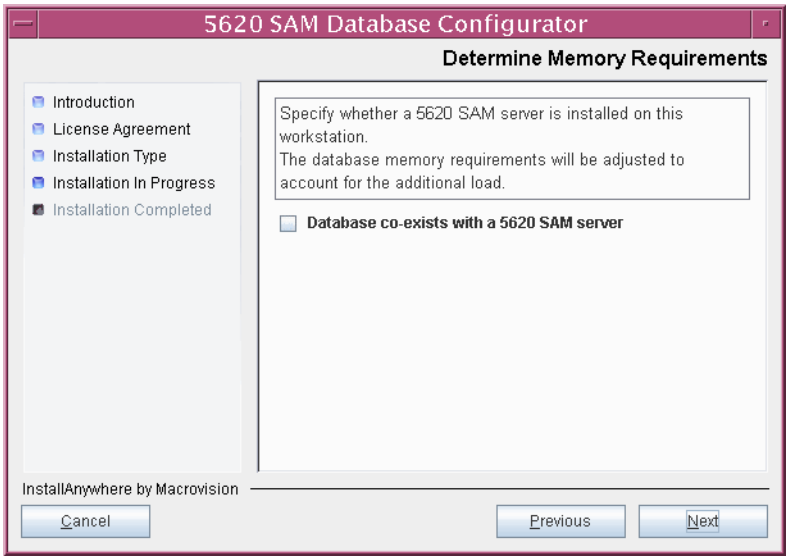
Note — The “Private IP” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-103 Standby Database Configuration Info



85 If the 5620 SAM server and database are to be installed on the same station, select the “Database co-exists with a 5620 SAM Server” parameter shown in Figure 2-104. Click on the Next button.

Figure 2-104 Determine Memory Requirements

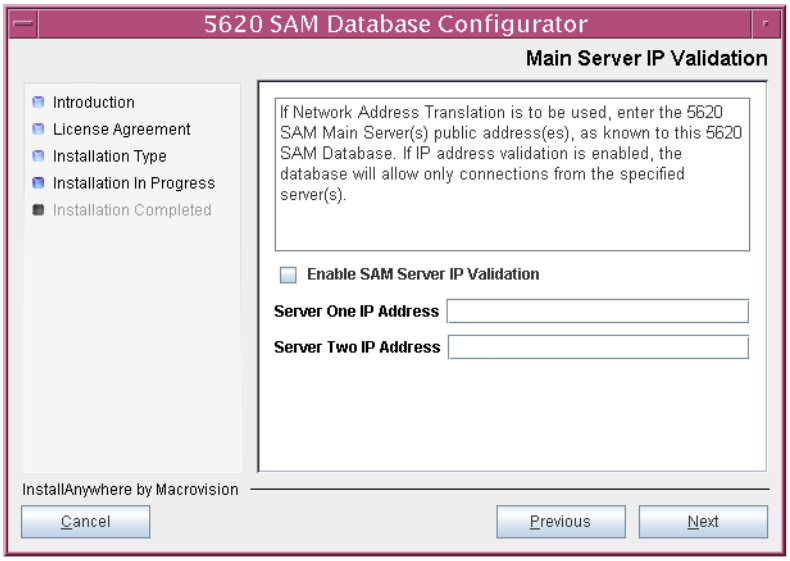


86 Configure the following parameters shown in Figure 2-105, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
  This is the “Server One IP Address” value from step 36.
- Server Two IP Address
  This is the “Server Two IP Address” value from step 36.

Figure 2-105 Main Server IP Validation



87 The panel in Figure 2-106 is displayed If the “Enable SAM Server IP Validation” parameter in step 86 is selected. Otherwise, go to step 89.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

i Click on the Add button shown in Figure 2-106. The form shown in Figure 2-107 opens.

Figure 2-106 Auxiliary Server IP Validation

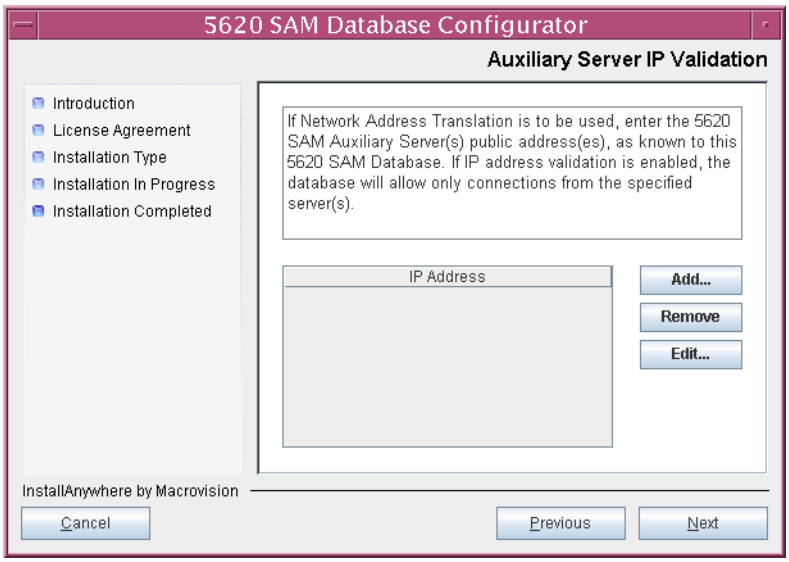
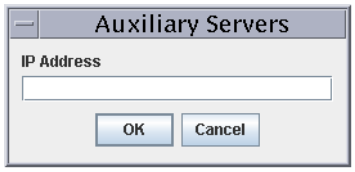


Figure 2-107 Auxiliary Servers



ii Enter the IP address or hostname of the auxiliary server.

iii Click on the OK button to save the information and close the form.

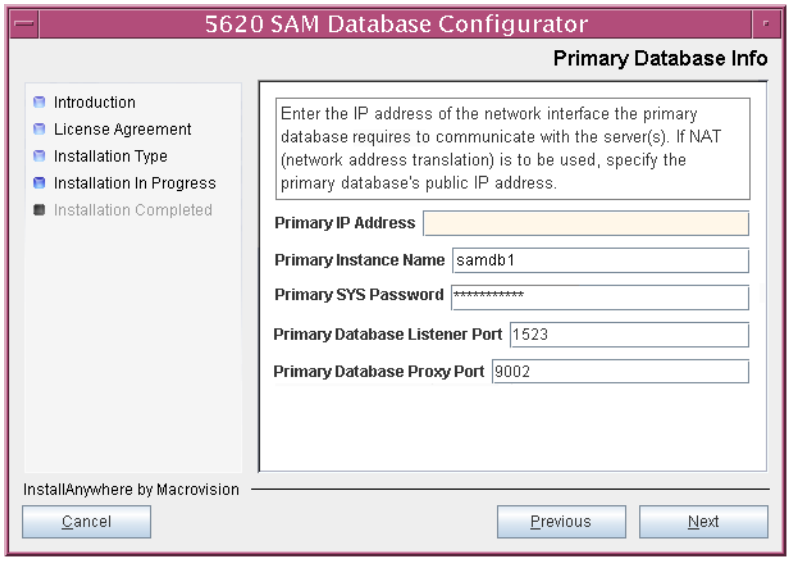
iv Repeat steps 87 i to iii to specify an additional auxiliary server, if required.

88 Click on the Next button.

89 Configure the following parameters, shown in Figure 2-108, using the recorded values from the primary database installation. Click on the Next button.

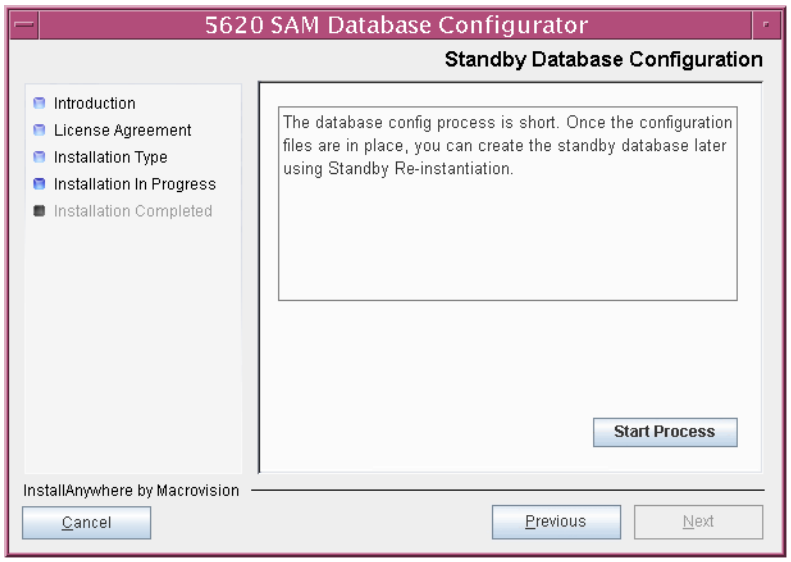
- Primary IP Address
- Primary Instance Name (typically samdb1)
- Primary SYS Password
- Primary Database Listener Port (typically 1523)
- Primary Database Proxy Port (typically 9002)

Figure 2-108 Primary Database Info



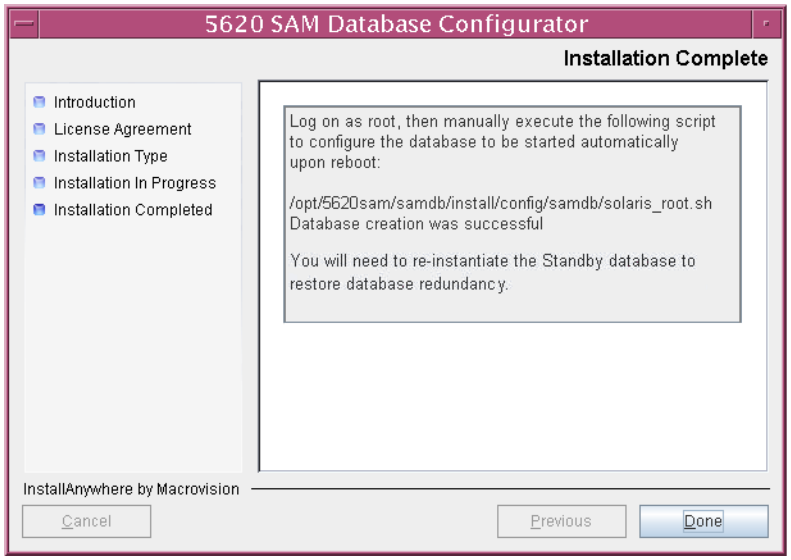
90 You are prompted to begin standby database creation, as shown in Figure 2-109. Click on the Start Process button to begin.

Figure 2-109 Standby Database Configuration



91 When the panel in Figure 2-110 is displayed, the 5620 SAM database installation is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 2-110 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

92 Click on the Done button to close the database installer.

The next section of the procedure describes the installation of the primary 5620 SAM server. You can install the primary server on the same station as the primary database or on another station. Server installation requires root-equivalent privileges.

Install primary server

93 Log in to the station that is to be the primary server station as a user with root or root-equivalent privileges.

94 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

95 Open a console window.

96 Navigate to the DVD-ROM drive.

97 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

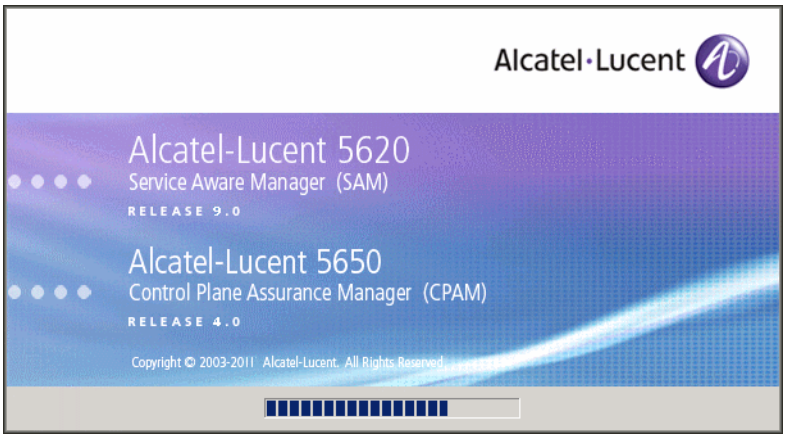
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

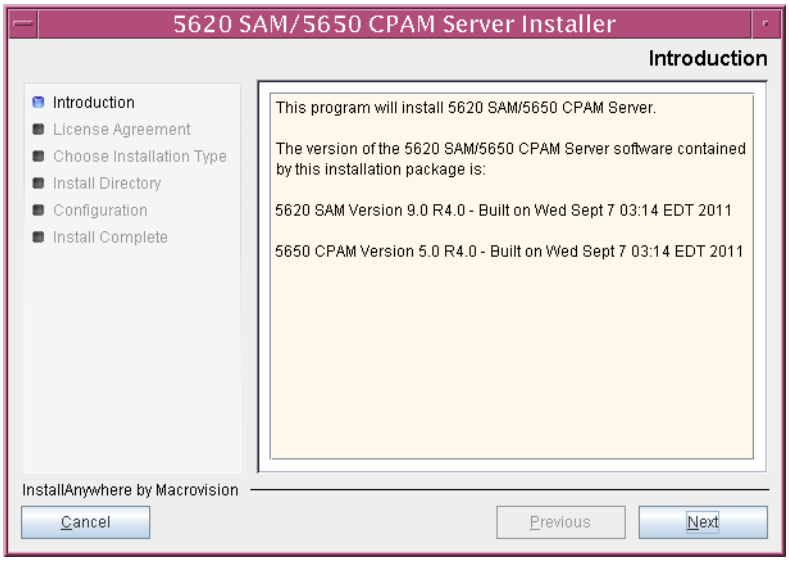
The splash screen shown in Figure 2-111 opens.

Figure 2-111 5620 SAM installer



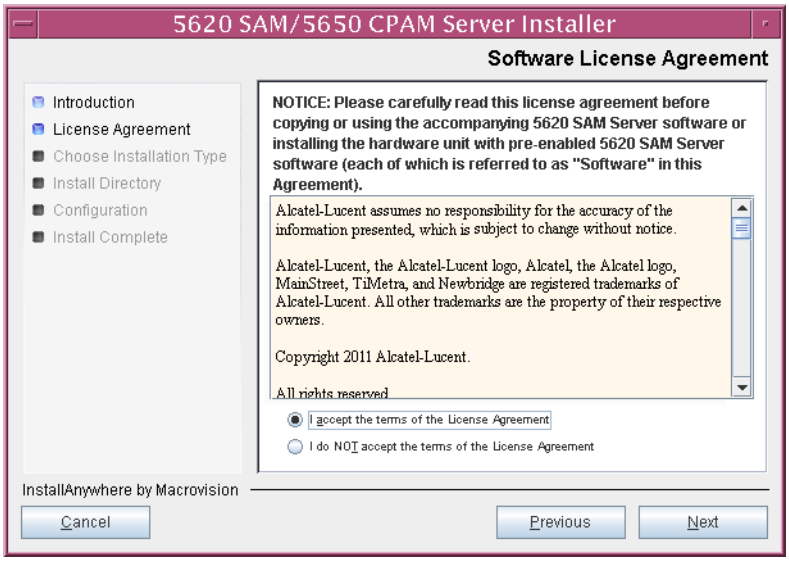
98 The 5620 SAM server installer opens, as shown in Figure 2-112. The left pane indicates the installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-112 Introduction



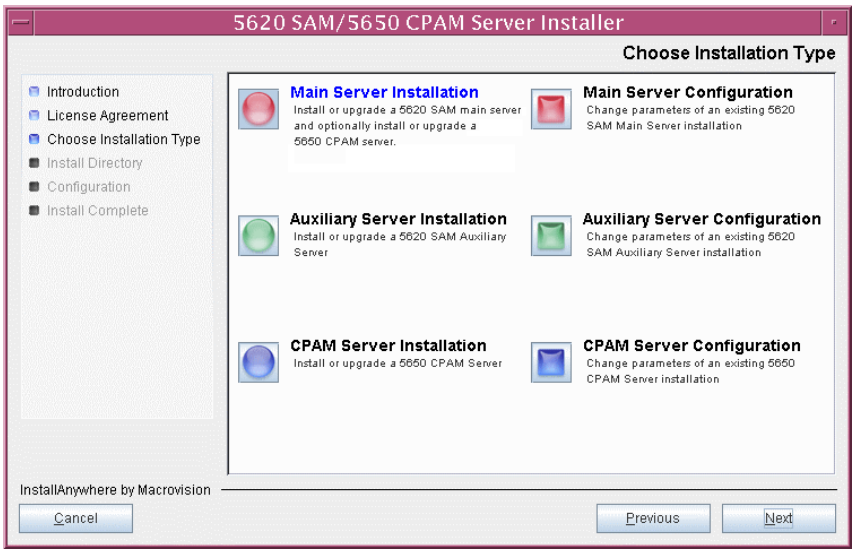
99 Review and accept the terms of the license agreement shown in Figure 2-113. Click on the Next button.

Figure 2-113 Software License Agreement



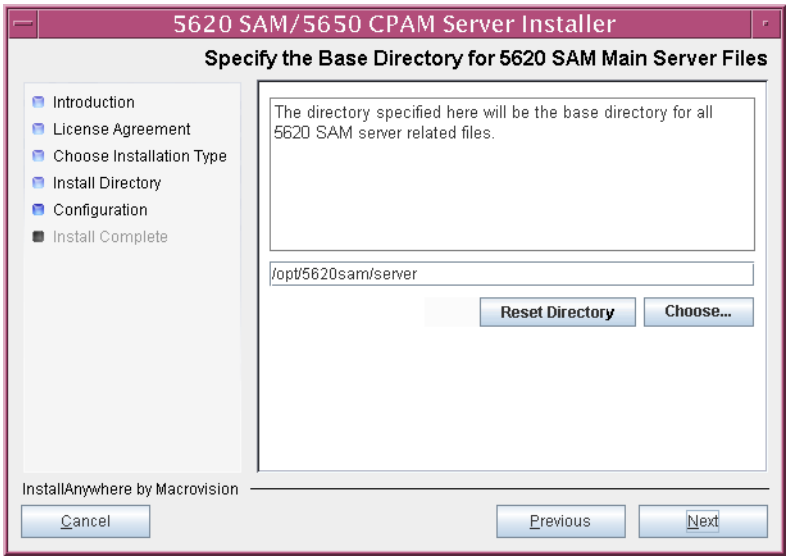
100 Select Main Server Installation, as shown in Figure 2-114. Click on the Next button.

Figure 2-114 Choose Installation Type



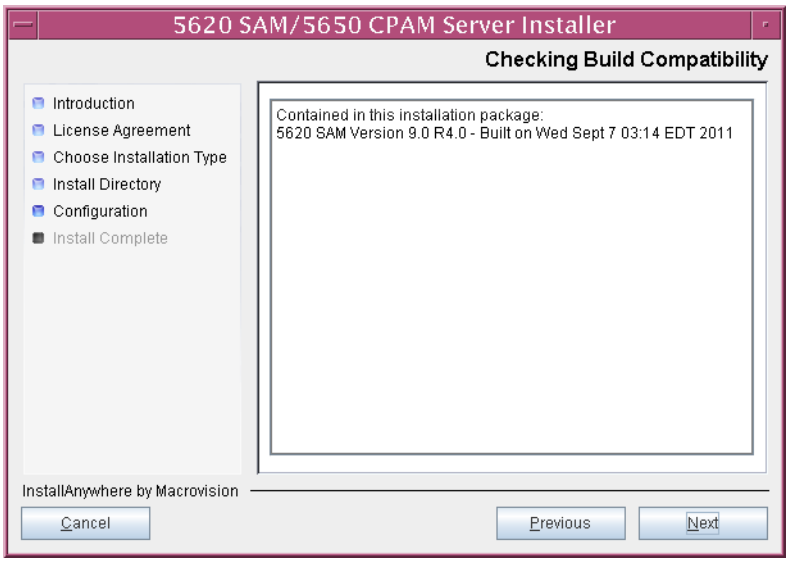
101 Specify a base directory in which to install the primary 5620 SAM main server software (typically /opt/5620sam/server), as shown in Figure 2-115. Click on the Next button.

Figure 2-115 Specify the Base Directory for 5620 SAM Main Server Files



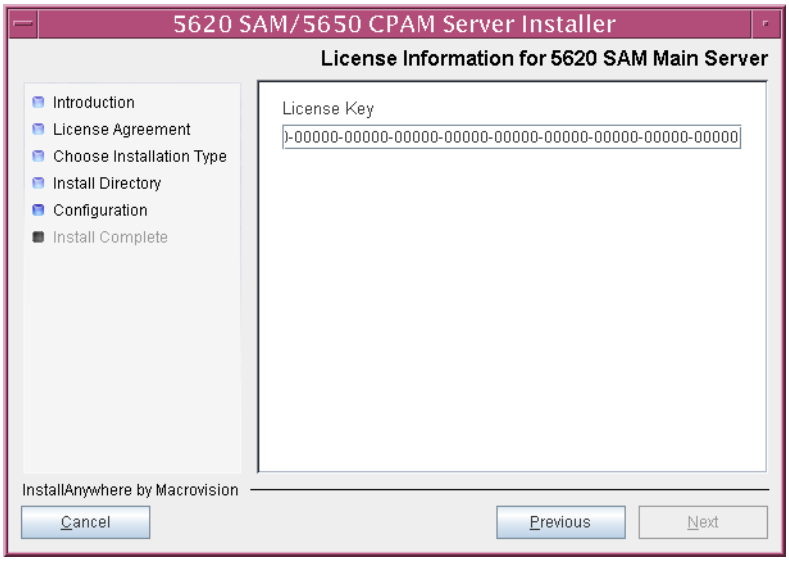
102 As shown in Figure 2-116, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-116 Checking Build Compatibility



103 Enter the license key information exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 2-117. Click on the Next button.

Figure 2-117 License information for 5620 SAM Main Server



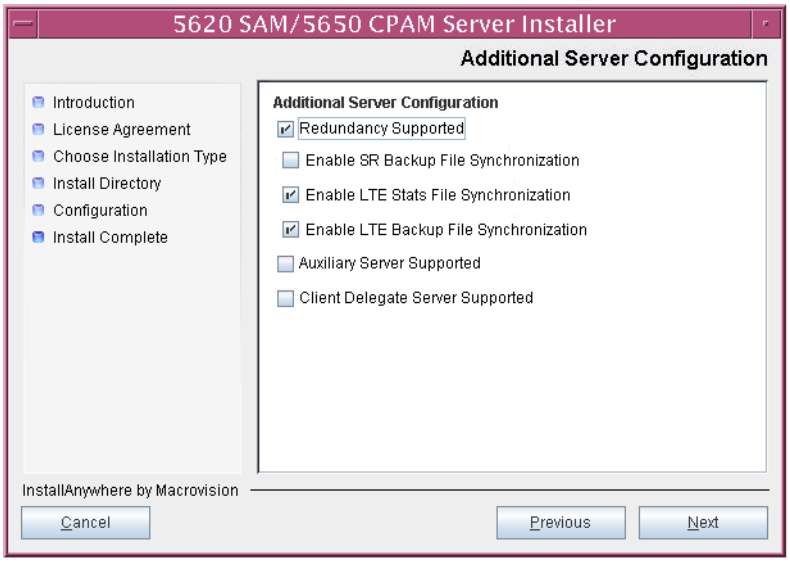
104 Configure the following parameters shown in Figure 2-118, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization”, “Enable LTE Stats File Synchronization”, and “Enable LTE Backup File Synchronization” parameters are displayed only when the “Redundancy Supported” parameter is enabled.

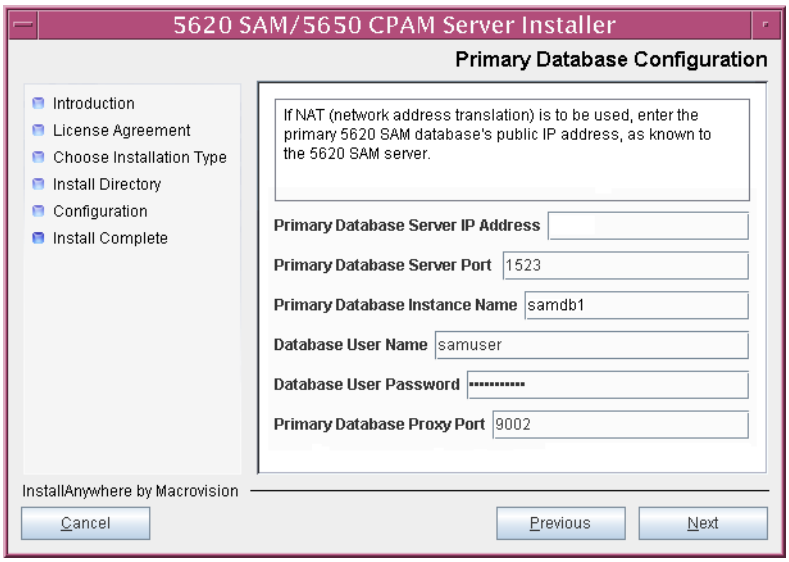
Figure 2-118 Additional Server Configuration



105 Configure the following parameters, shown in Figure 2-119, using the recorded values from the primary database installation. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb1)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 2-119 Primary Database Configuration

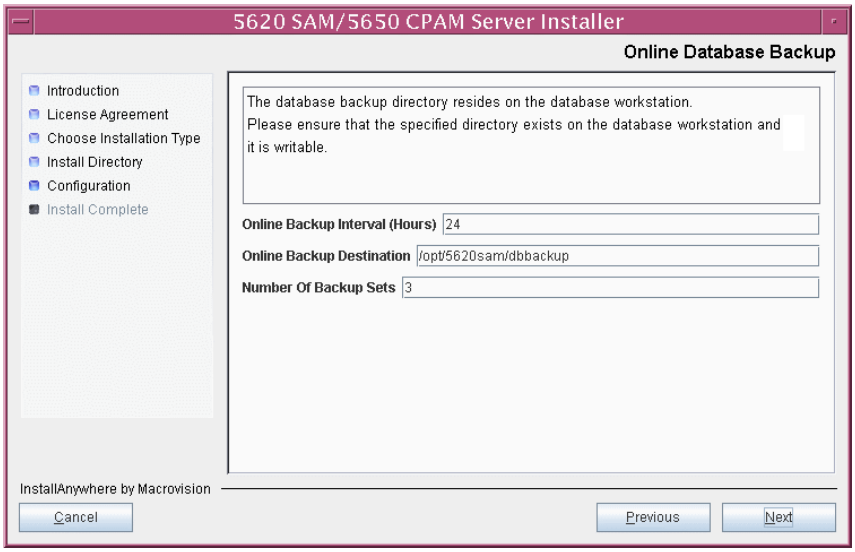


106 Configure the following database backup parameters shown in Figure 2-120, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The "Online Backup Destination" value is a path on the file system of the database station specified in step 105.

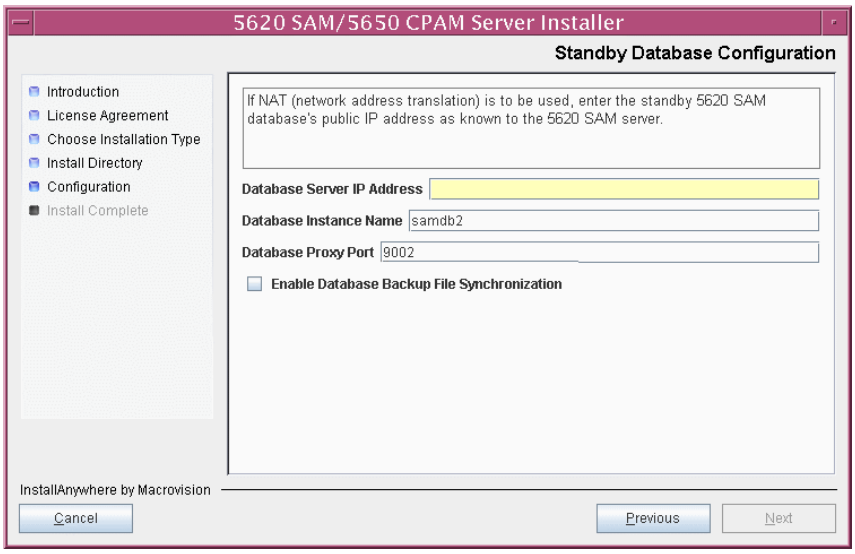
Figure 2-120 Online Database Backup



107 Configure the following parameters shown in Figure 2-121 using the recorded values from the standby database installation, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 2-121 Standby Database Configuration



108 The panel in Figure 2-122 is displayed if you select the "Auxiliary Server Supported" parameter in step 104. Otherwise, go to step 110.

Perform the following steps to specify an auxiliary server, if required.

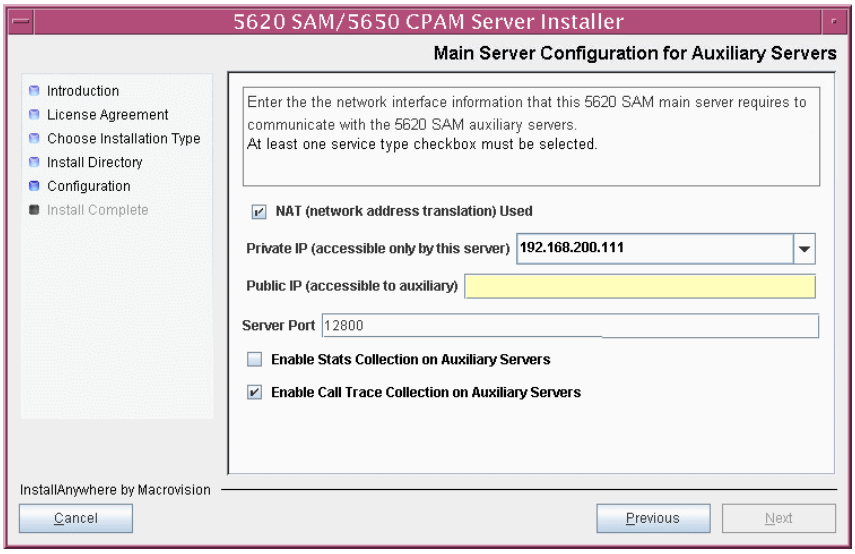
i Configure the following parameters shown in Figure 2-122:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

Figure 2-122 Main Server Configuration for Auxiliary Servers



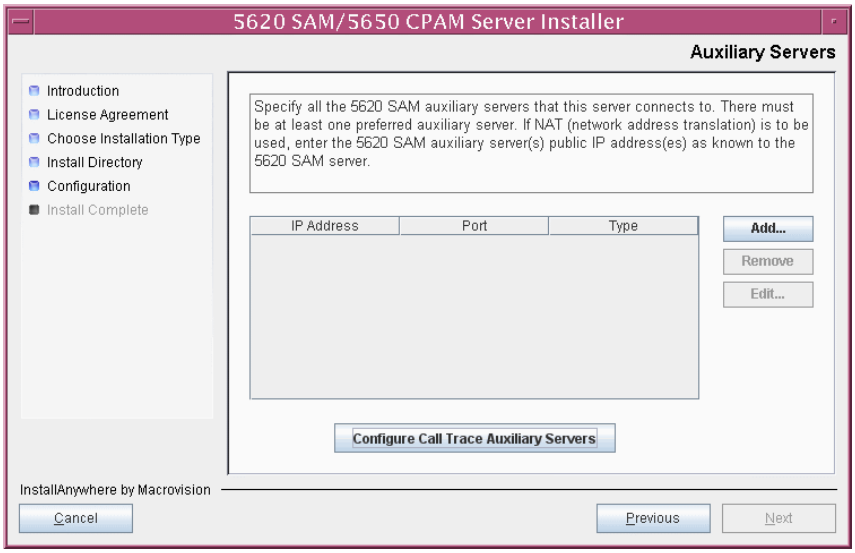
ii Click on the Next button.

iii Click on the Add button shown in Figure 2-123. The form shown in Figure 2-124 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

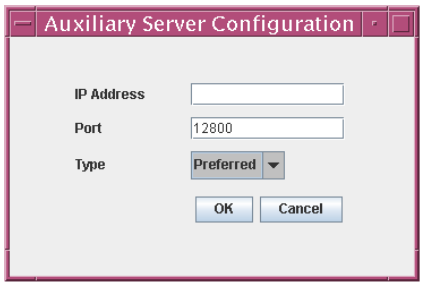
Figure 2-123 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 2-124 Auxiliary Server Configuration



iv Configure the following parameters shown in Figure 2-124:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

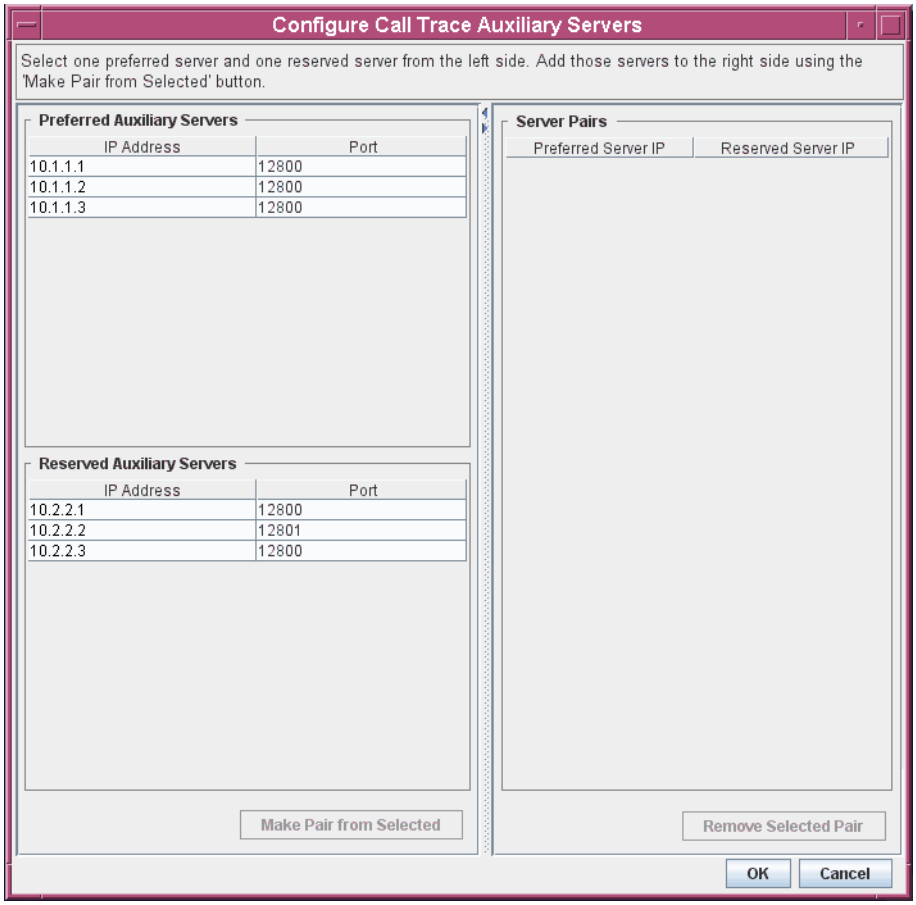
v Click on the OK button to save the information and close the form.

vi Repeat steps 108 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 108 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 2-123. Otherwise, go to step 109.

viii The form shown in Figure 2-125 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 2-125 Configure Call Trace Auxiliary Servers



ix Repeat step 108 viii to configure another call-trace auxiliary server pair, if required.

109 Click on the Next button.

110 If you select the “Enable Database Alignment” parameter shown in Figure 2-126, you must specify the preferred database of this main server, then click on the Next button.

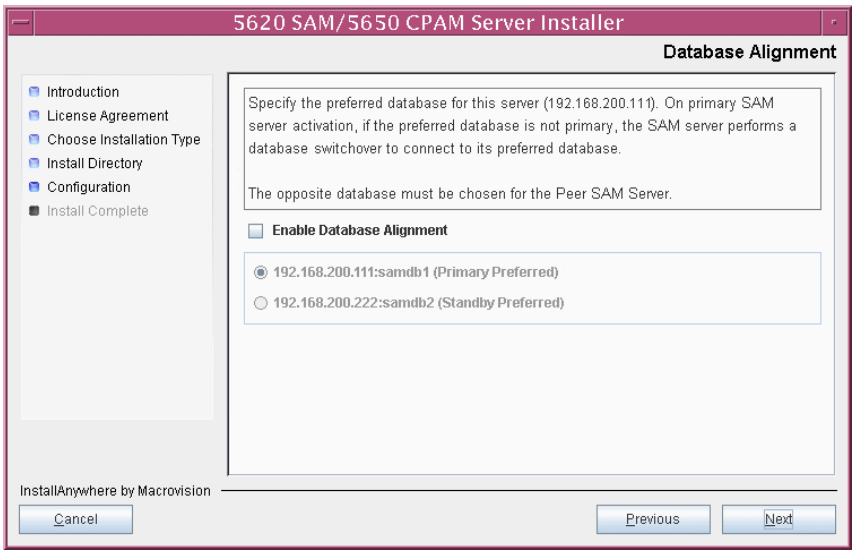
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 2-126 Database Alignment



111 Configure the following parameters shown in Figure 2-127, then click on the Next button:

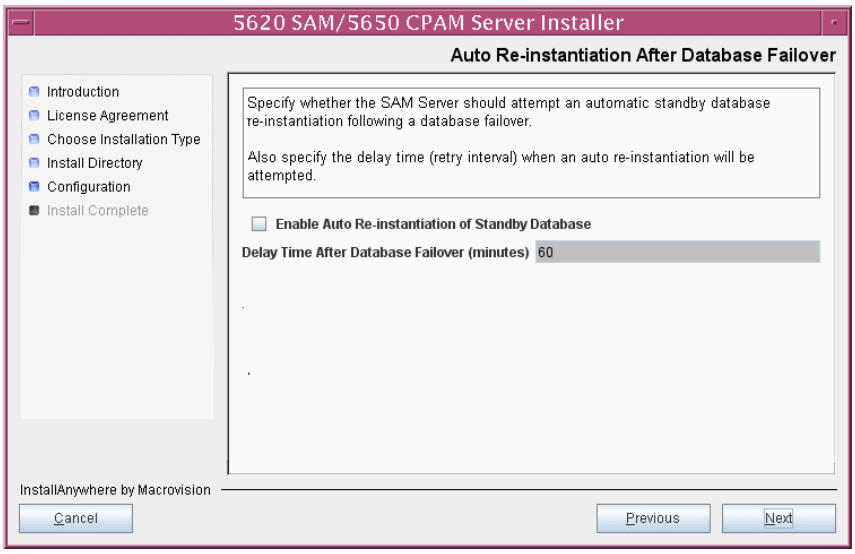
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The "Delay Time After Database Failover (minutes)" parameter is configurable when the "Enable Auto Re-Instantiation of Standby Database" parameter is selected.

Figure 2-127 Auto Re-Instantiation After Database Failover

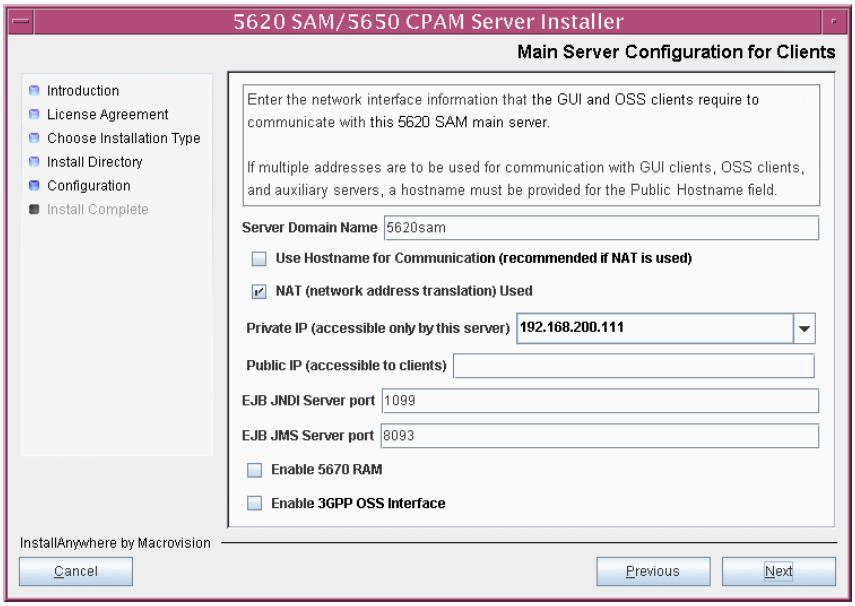


112 Perform the following steps.

i Configure the following parameters shown in Figure 2-128:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 2-128 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 112 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

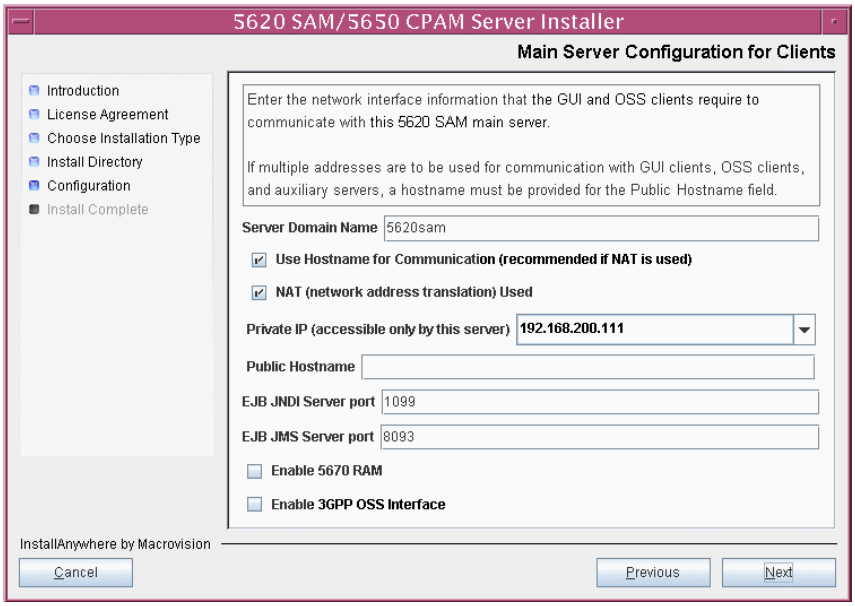
v Go to step 113.

vi Configure the following parameters shown in Figure 2-129:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-129 Main Server Configuration for Clients

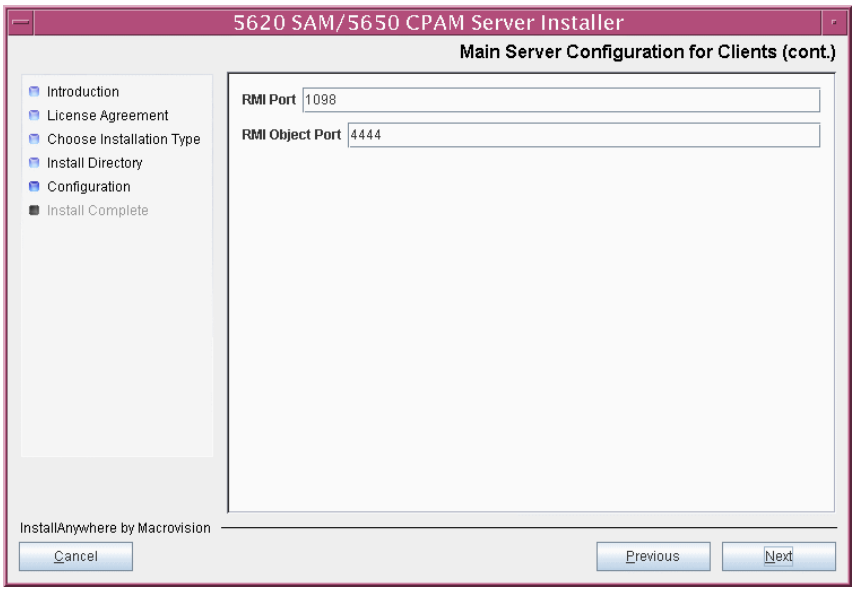


vii Click on the Next button.

113 Configure the following parameters shown in Figure 2-130, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 2-130 Main Server Configuration for Clients (cont.)

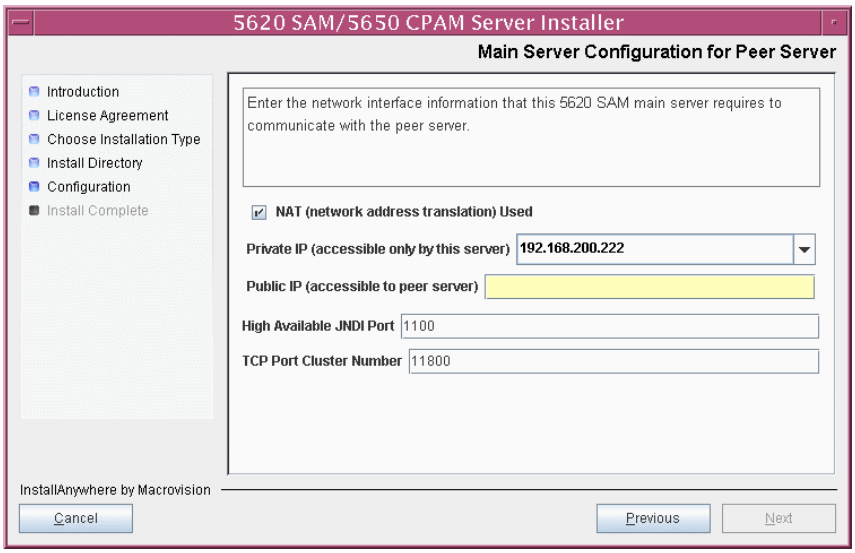


114 Configure the following parameters shown in Figure 2-131:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

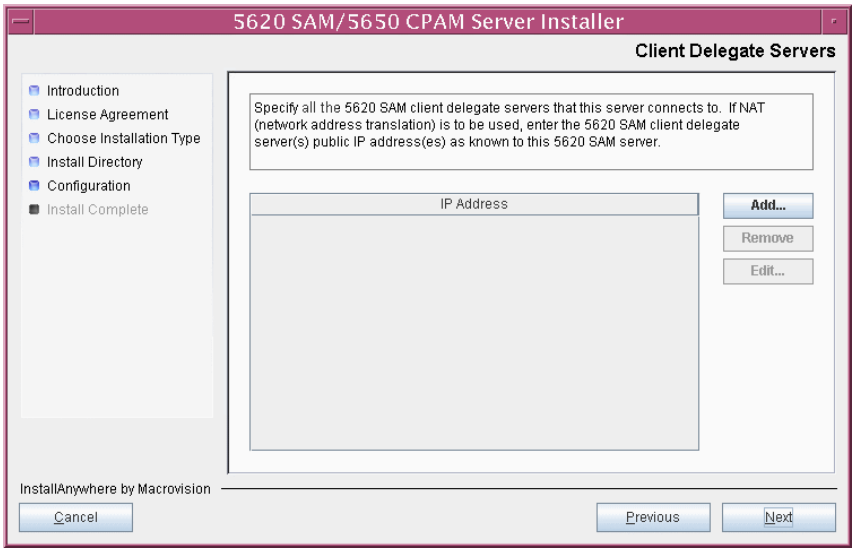
Figure 2-131 Main Server Configuration for Peer Server



115 The panel in Figure 2-132 is displayed if you select the “Client Delegate Server Supported” parameter in step 104. Otherwise, go to step 117.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 2-132 Client Delegate Servers

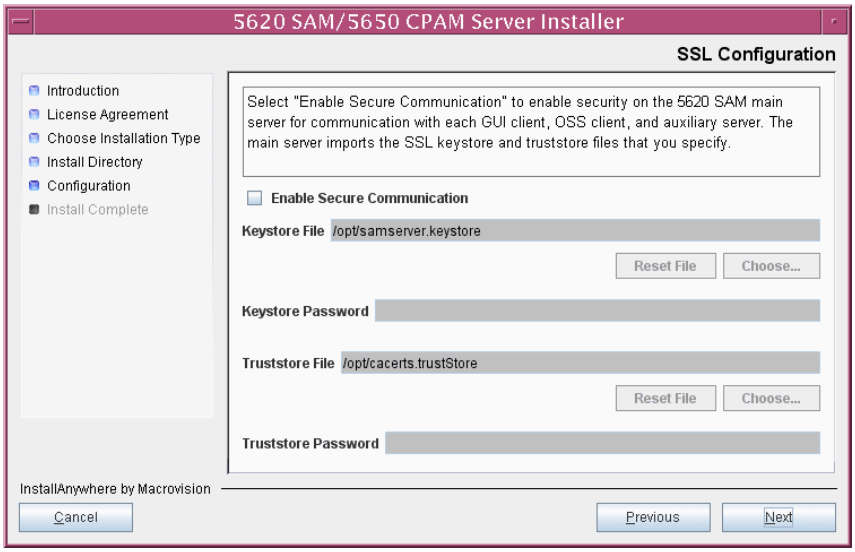


116 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 2-133.

Figure 2-133 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

117 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 2-134.

ii To accept the default user documentation location that is displayed, go to step 118.

Note — If NAT is to be used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

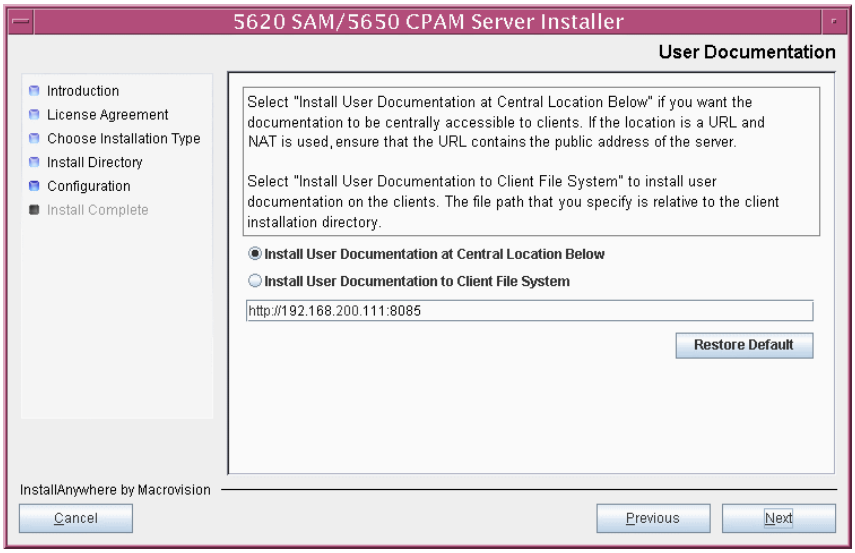
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 2-134 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 2-134.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

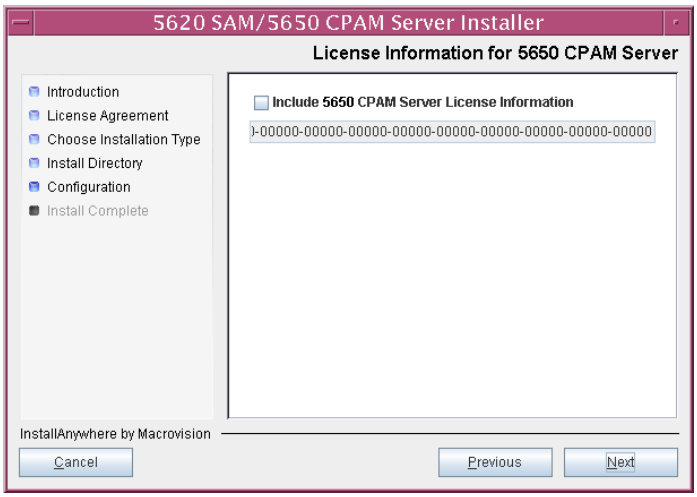
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

118 Click on the Next button.

119 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 2-135. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 2-135 License Information for 5650 CPAM Server



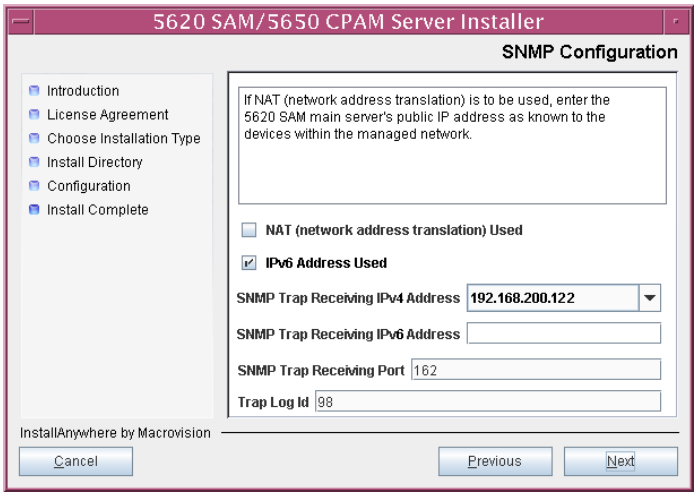
120 Configure the following parameters shown in Figure 2-136, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 2-136.

Figure 2-136 SNMP Configuration

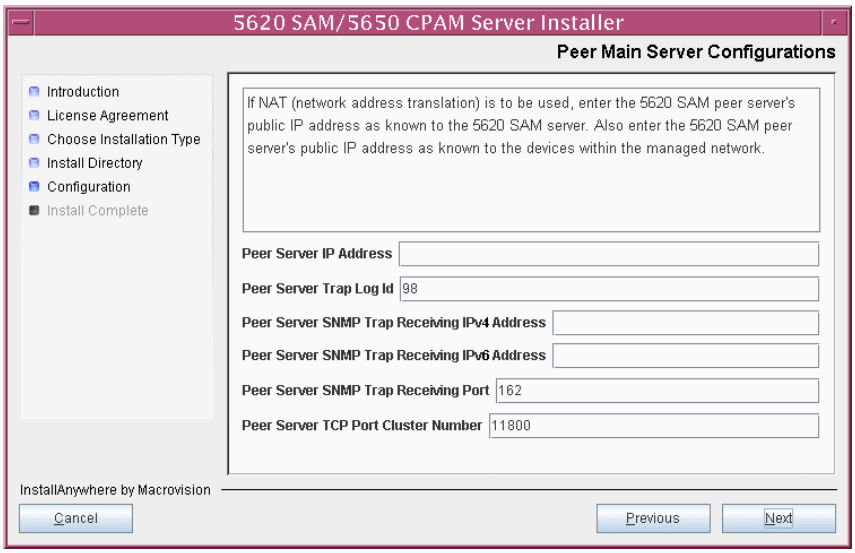


121 Configure the following parameters shown in Figure 2-137, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Port Number (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 120.

Figure 2-137 Peer Main Server Configurations

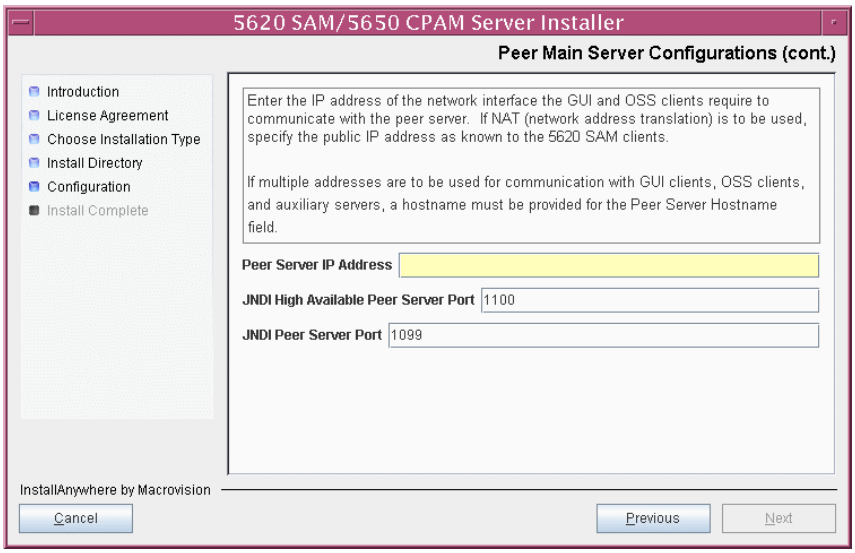


122 If the "Use Hostname for Communication" parameter in step 112 is selected, go to step 125.

123 Configure the following parameters shown in Figure 2-138, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 2-138 Peer Main Server Configurations (cont.)

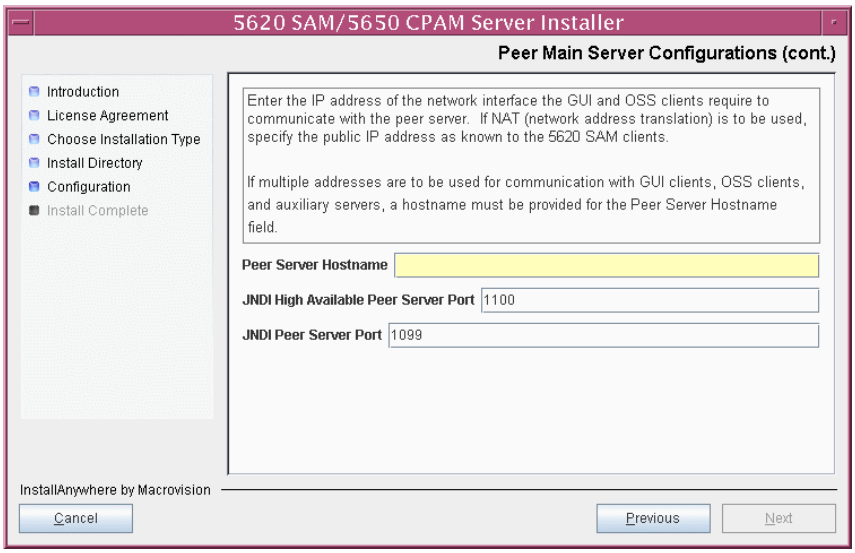


124 Go to step 126.

125 Configure the following parameters shown in Figure 2-139, then click on the Next button:

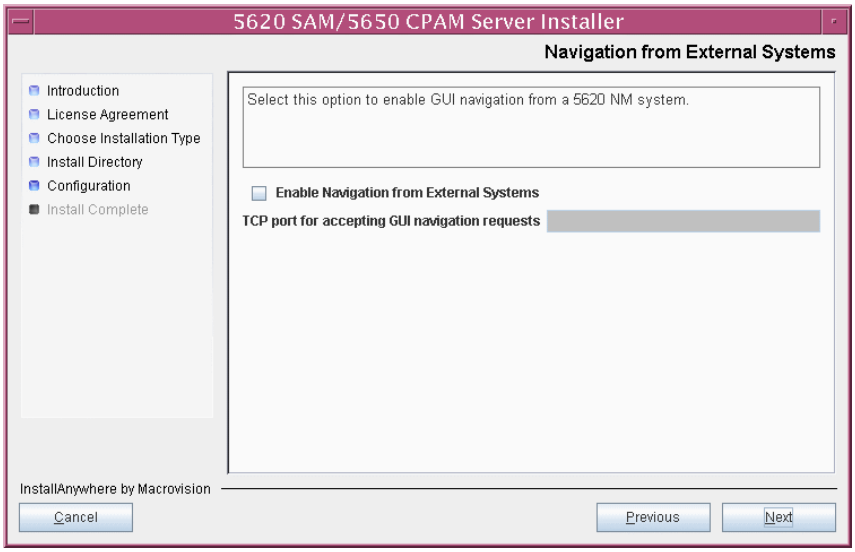
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 2-139 Peer Main Server Configurations (cont.)



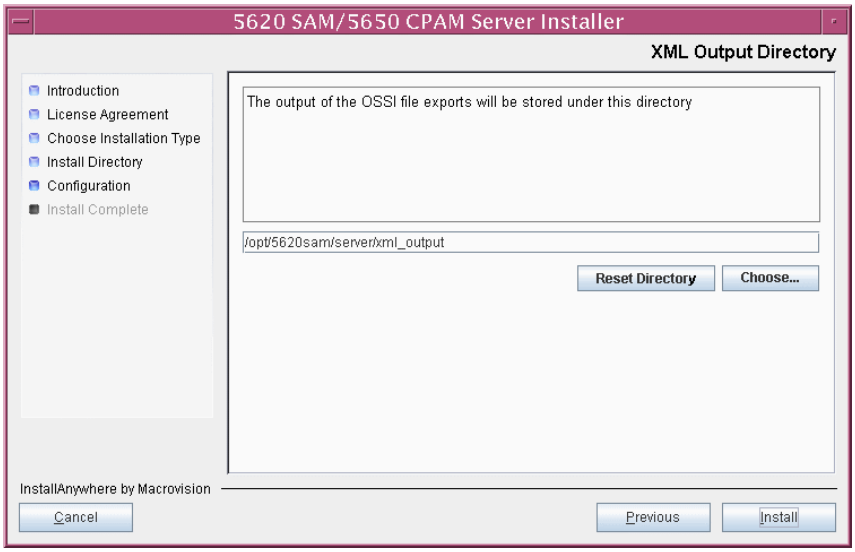
126 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 2-140 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 2-140 Navigation from External Systems



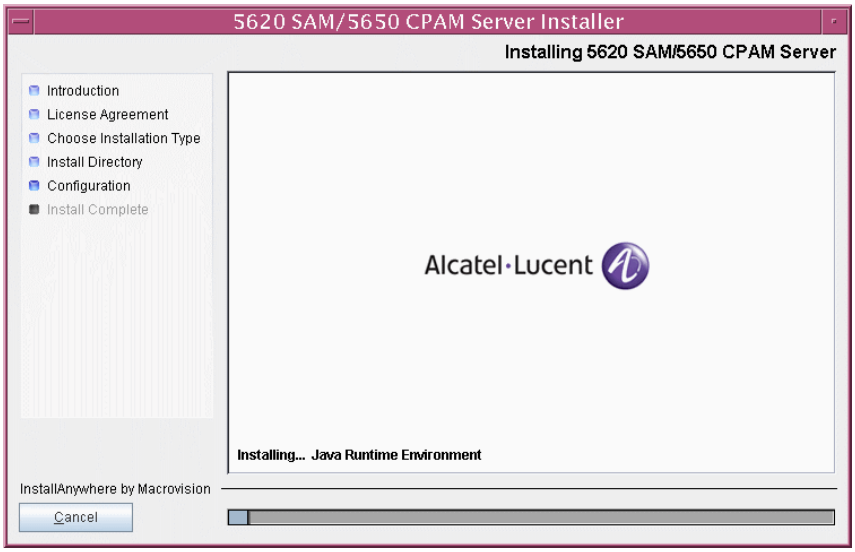
127 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 2-141. Click on the Install button to begin the server installation.

Figure 2-141 XML Output Directory



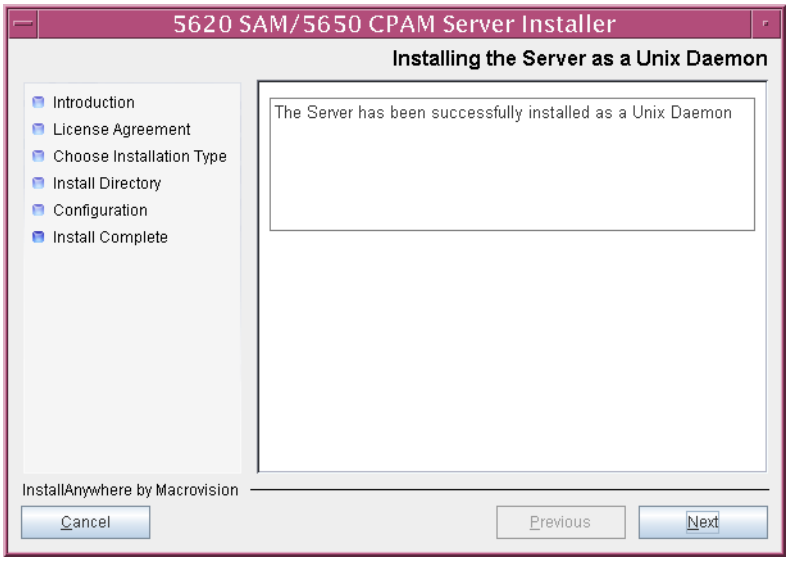
The next panel displays installation progress, as shown in Figure 2-142.

Figure 2-142 Installing 5620 SAM/5650 CPAM Server



128 As shown in Figure 2-143, the 5620 SAM server is installed as a UNIX daemon. Click on the Next button.

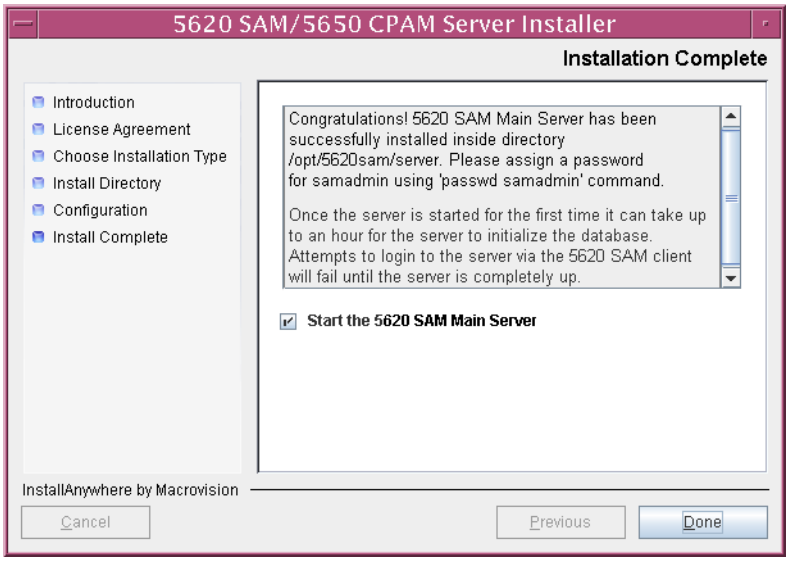
Figure 2-143 Installing the Server as a Unix Daemon



129 When the main server installation is complete, as shown in Figure 2-144, configure the "Start the 5620 SAM Main Server" parameter to specify whether you want the server to start immediately after the installation.

Caution — If the 3GPP OSS interface is enabled in step 112, ensure that the "Start the 5620 SAM Main Server" parameter is not selected.

Figure 2-144 Installation Complete



130 View the panel text to see whether it states that you must assign a password to samadmin, as shown in Figure 2-144. This information is required in step 132.

131 Click on the Done button to close the server installer. If you specified that the main server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

132 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration.

If you must assign a password to samadmin, as determined in step 130, perform the following steps.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

133 If the 3GPP OSS interface is enabled in step 112, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

vi Save and close the file.

vii Go to step 135.

134 If you specified that the main server is to start after installation, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Primary Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

135 If you specified not to start the main server immediately after the installation, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

v Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Primary Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

136 Close the console window.

Install client

137 Perform one of the following to install a 5620 SAM client.

a Perform Procedure 2-3 or 2-4 to install a single-user client on Solaris.

b Perform Procedure 2-5 or 2-6 to install a single-user client on Windows.

c Perform Procedure 2-7 to install a client delegate server.

138 If the 3GPP OSS interface is enabled in step 112, perform the following steps.

i Log in to a 5620 SAM GUI client as the admin user.

ii Create a user account for 3GPP OSS interface access. Observe the following when you create the account:

- The user name must be the user name specified in step 133.
- The password must be the password specified in step 133.
- The user account requires full permissions on the fm and oss packages.

See the *5620 SAM User Guide* for information about creating 5620 SAM user accounts.

The next section of the procedure describes the reinstantiation of the database on the standby database station.

Reinstantiate database on standby station

139 Log in to a 5620 SAM client as the admin user.

140 Choose Administration→System Information from the 5620 SAM main menu. The System Information form opens with the General tab displayed.

141 Click on the Re-Instantiate Standby button. A dialog box appears.

142 Click on the Yes button. The database reinstantiation begins. You can view the reinstantiation status on the client GUI status bar or on the System Information form. The Standby Re-instantiation State changes from In Progress to Success when reinstantiation is complete. The start time of the reinstantiation is shown by the Last Attempted Standby Re-instantiation Time indicator.

Note — Database reinstantiation can take a long time when there is a large amount of statistics information to transfer.

143 When the reinstantiation is complete, close the System Information form.

The next section of the procedure describes the installation of the standby 5620 SAM server. You can install the standby server on the same station that contains the standby database, or on another station. Server installation requires root-equivalent privileges.

Install standby server

144 Log in to the station that is to be the standby server station as a user with root or root-equivalent privileges.

145 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

146 Open a console window.

147 Navigate to the DVD-ROM drive.

148 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

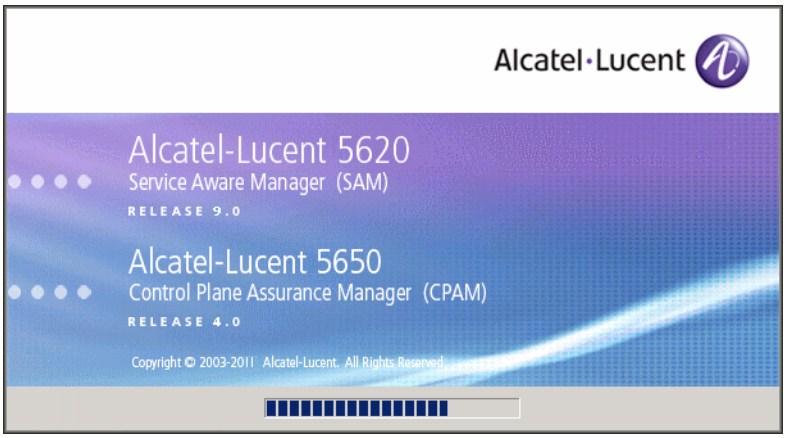
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

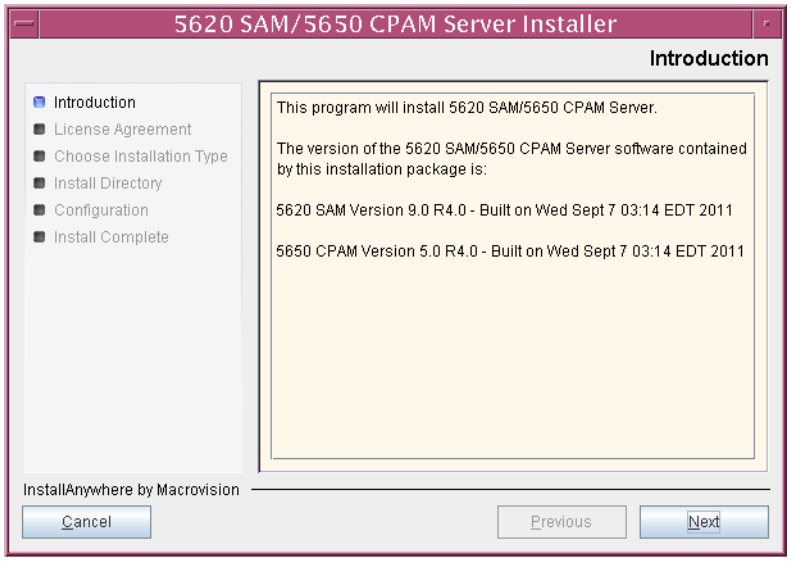
The splash screen shown in Figure 2-145 opens.

Figure 2-145 5620 SAM installer



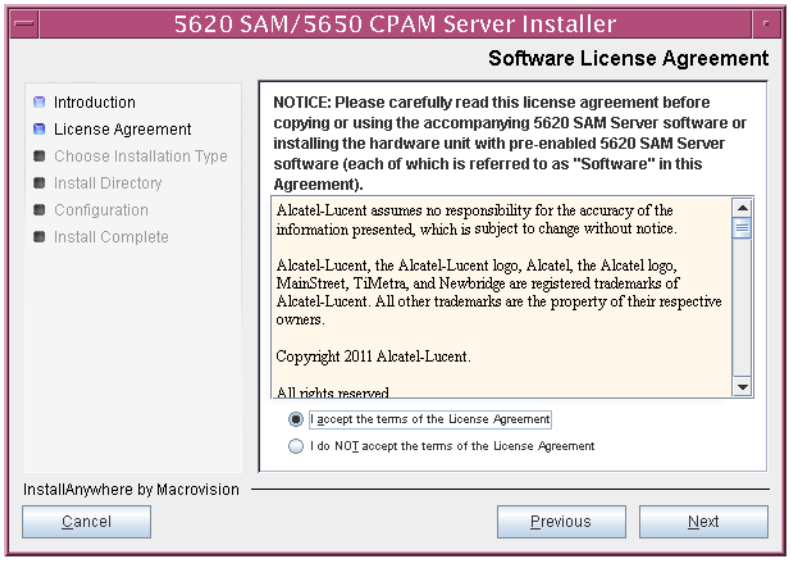
149 The 5620 SAM server installer opens, as shown in Figure 2-146. The left pane indicates the installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-146 Introduction



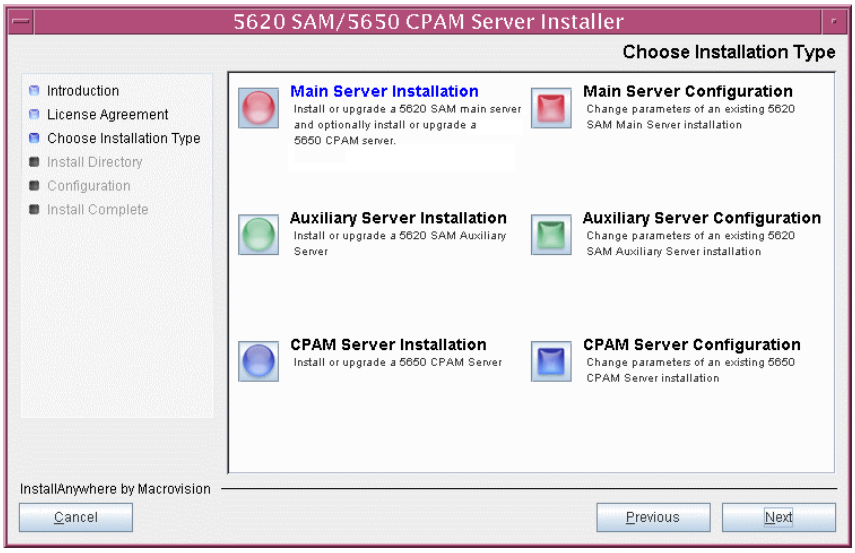
150 Review and accept the terms of the license agreement shown in Figure 2-147. Click on the Next button.

Figure 2-147 Software License Agreement



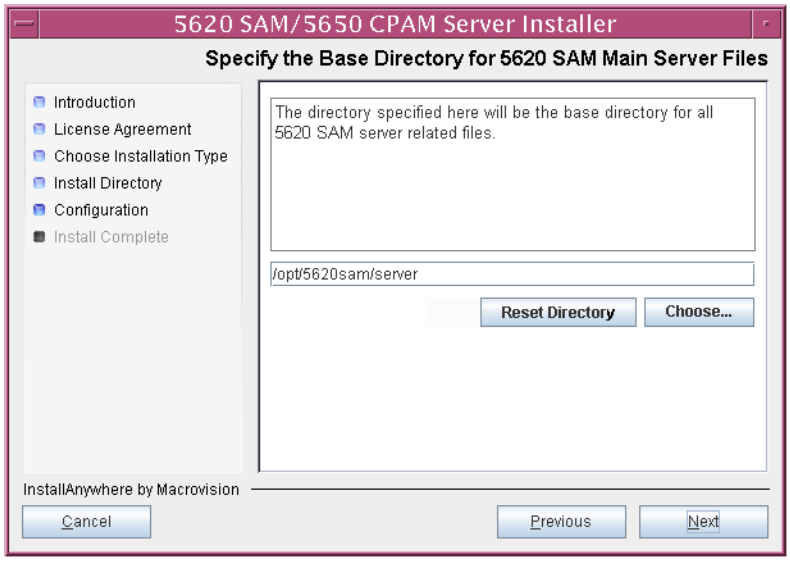
151 Select Main Server Installation, as shown in Figure 2-148. Click on the Next button.

Figure 2-148 Choose Installation Type



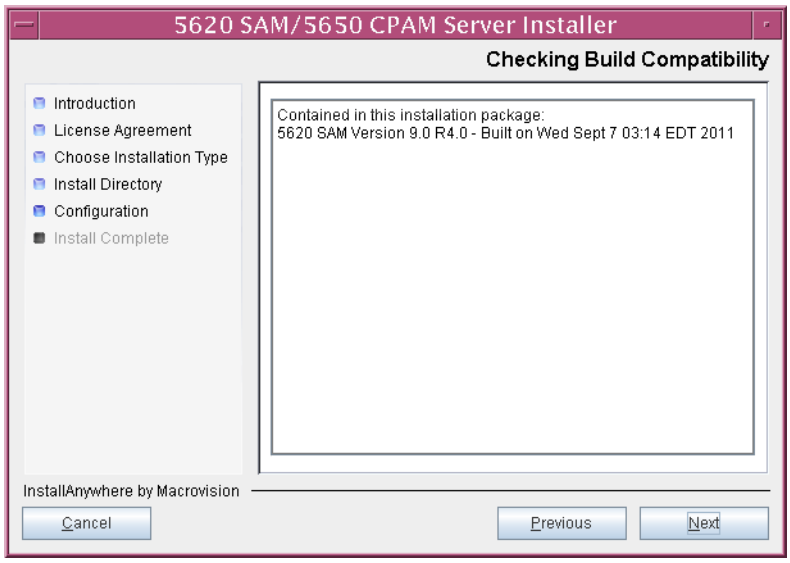
152 Specify a base directory in which to install the standby 5620 SAM main server software (typically /opt/5620sam/server), as shown in Figure 2-149. Click on the Next button.

Figure 2-149 Specify the Base Directory for 5620 SAM Main Server Files



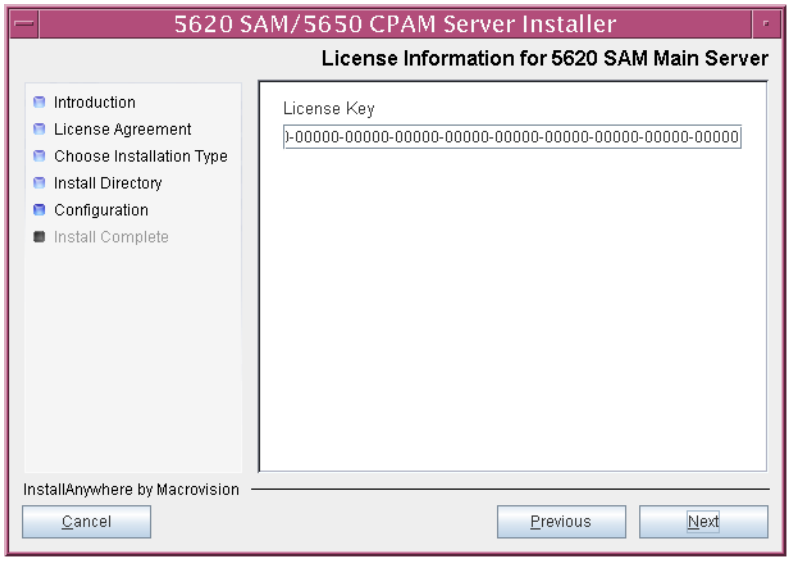
153 As shown in Figure 2-150, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-150 Checking Build Compatibility



154 Enter the license key information exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 2-151. Click on the Next button.

Figure 2-151 License Information for 5620 SAM Main Server



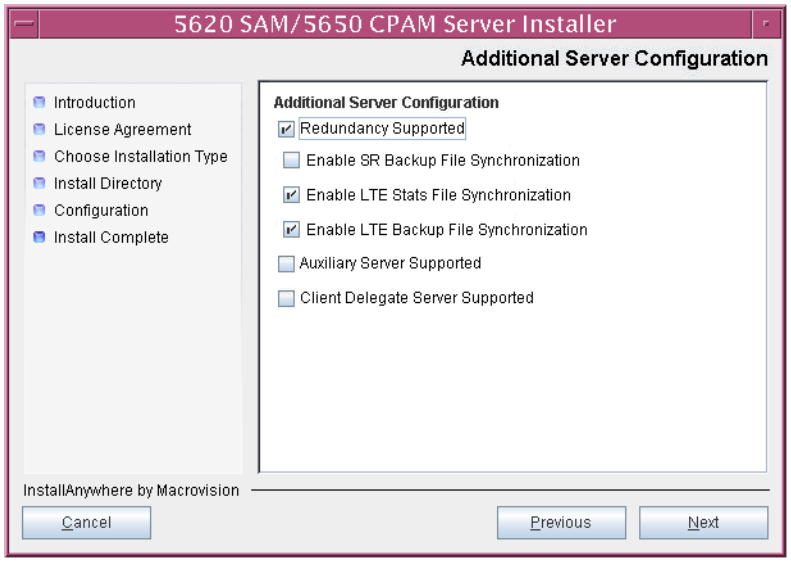
155 Configure the following parameters shown in Figure 2-152, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization”, “Enable LTE Stats File Synchronization”, and “Enable LTE Backup File Synchronization” parameters are displayed only when the “Redundancy Supported” parameter is enabled.

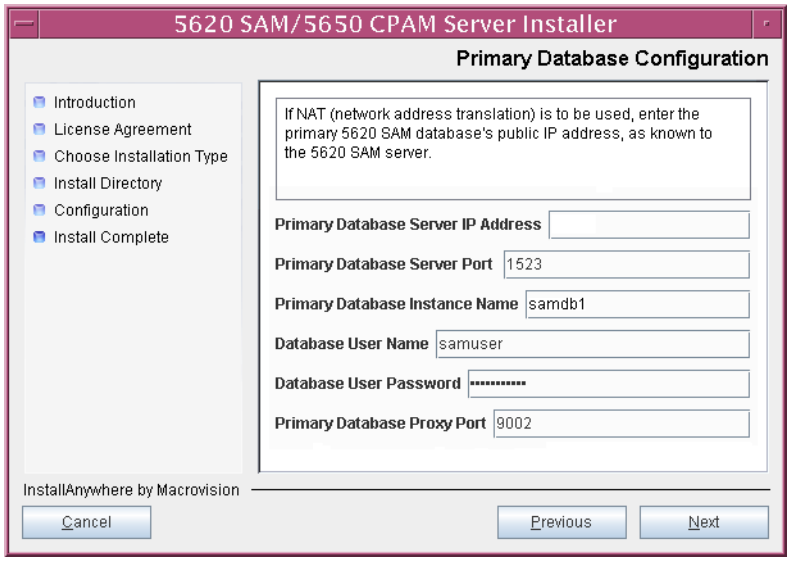
Figure 2-152 Additional Server Configuration



156 Configure the following parameters, shown in Figure 2-153 using the recorded values from the primary database installation. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb1)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 2-153 Primary Database Configuration

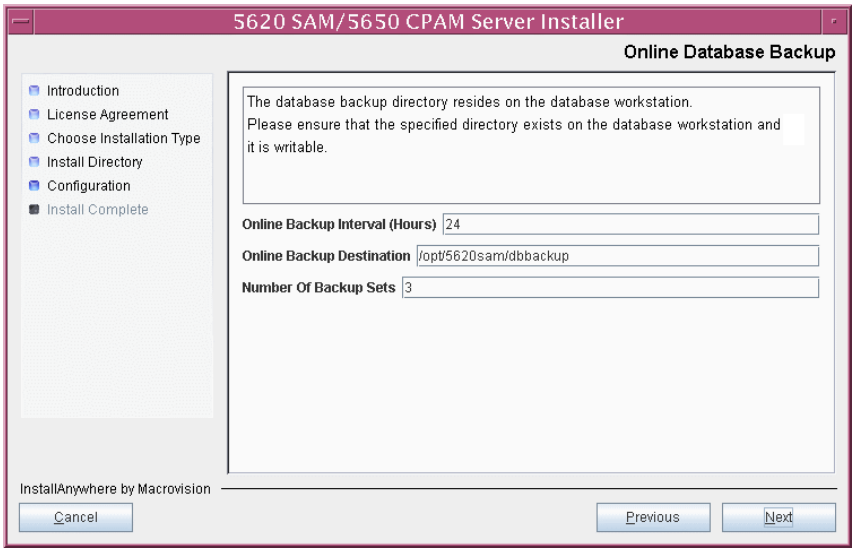


157 Configure the following database backup parameters shown in Figure 2-154, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The "Online Backup Destination" value is a path on the file system of the database station specified in step 156.

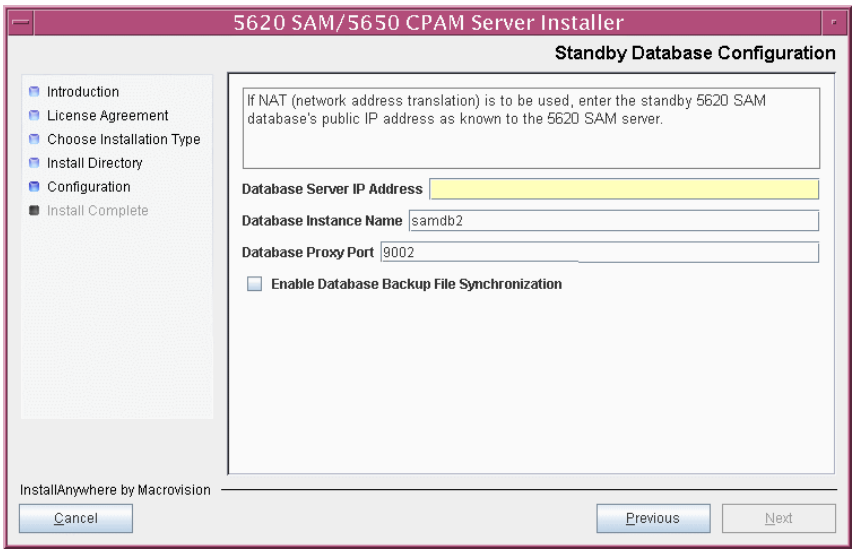
Figure 2-154 Online Database Backup



158 Configure the following parameters shown in Figure 2-155 using the recorded values from the standby database installation, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 2-155 Standby Database Configuration



159 The panel in Figure 2-156 is displayed if you select the “Auxiliary Server Supported” parameter in step 155. Otherwise, go to step 161.

Perform the following steps to specify an auxiliary server, if required.

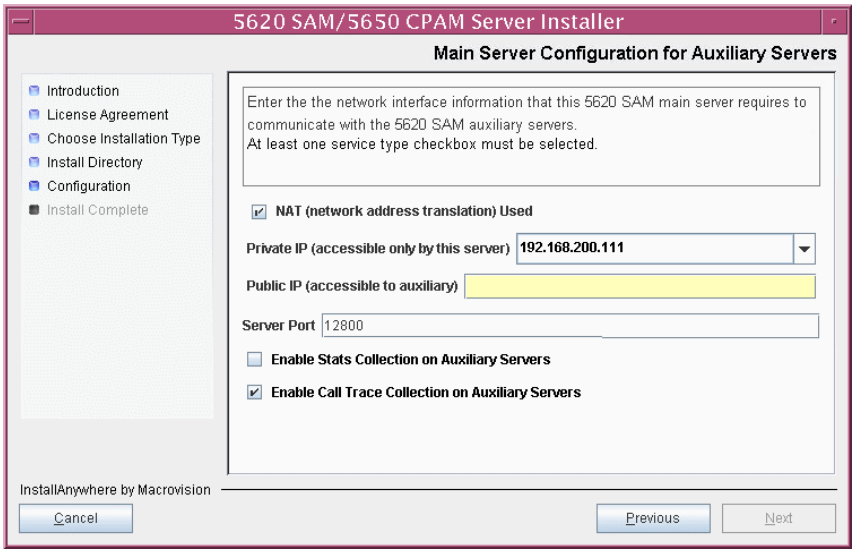
i Configure the following parameters shown in Figure 2-156:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-156 Main Server Configuration for Auxiliary Servers



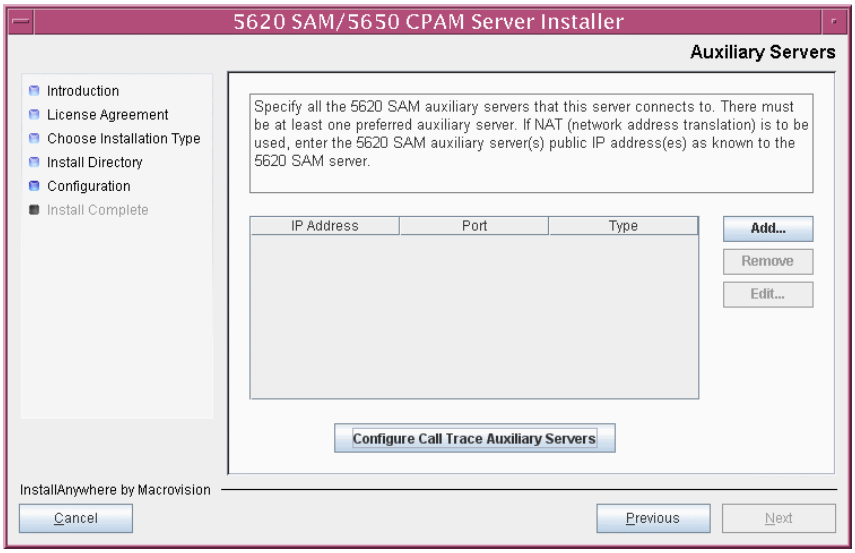
ii Click on the Next button.

iii Click on the Add button shown in Figure 2-157 to specify an auxiliary server. The form shown in Figure 2-158 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

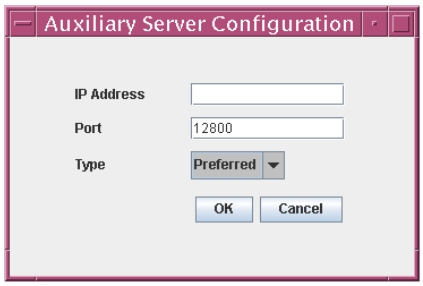
Figure 2-157 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 2-158 Auxiliary Server Configuration



iv Configure the following parameters shown in Figure 2-158:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

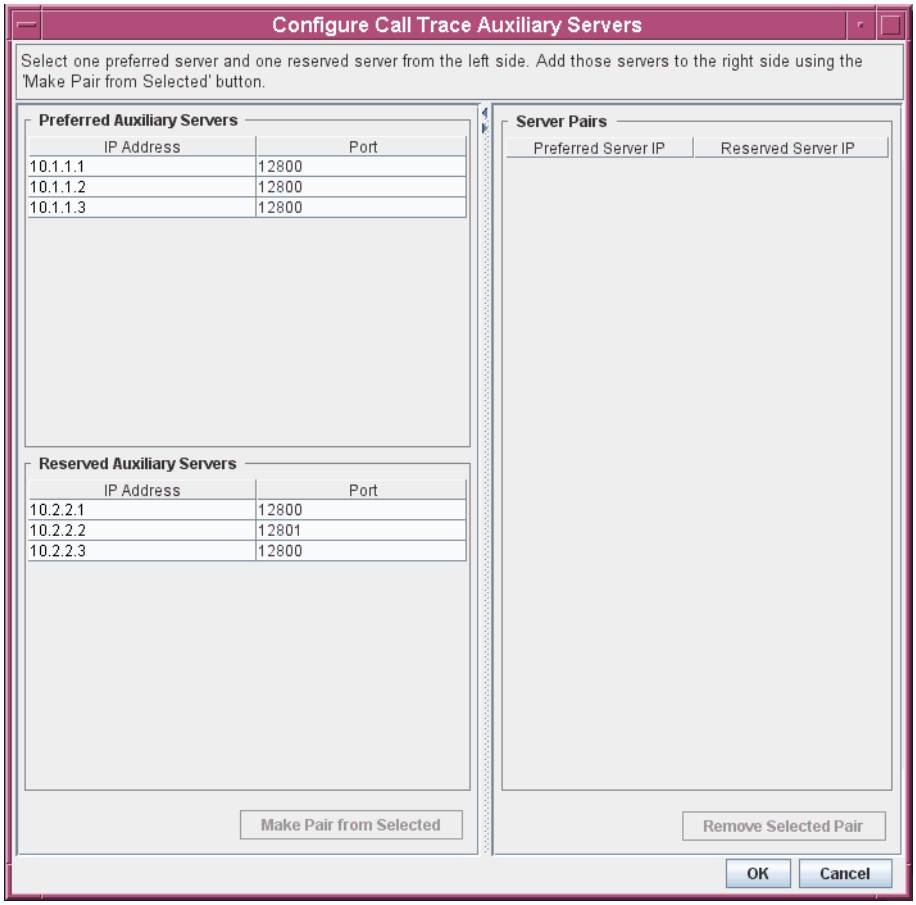
v Click on the OK button to save the information and close the form.

vi Repeat steps 159 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 159 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 2-157. Otherwise, go to step 160.

viii The form shown in Figure 2-159 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 2-159 Configure Call Trace Auxiliary Servers



ix Repeat step 159 viii to configure another call-trace auxiliary server pair, if required.

160 Click on the Next button.

161 If you select the “Enable Database Alignment” parameter shown in Figure 2-160, you must specify the preferred database of this main server, then click on the Next button.

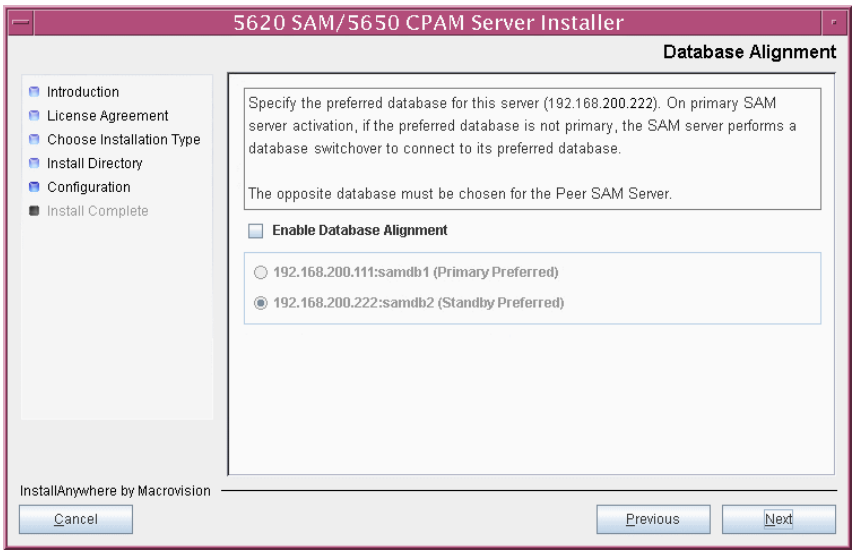
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 2-160 Database Alignment



162 Configure the following parameters shown in Figure 2-161, then click on the Next button:

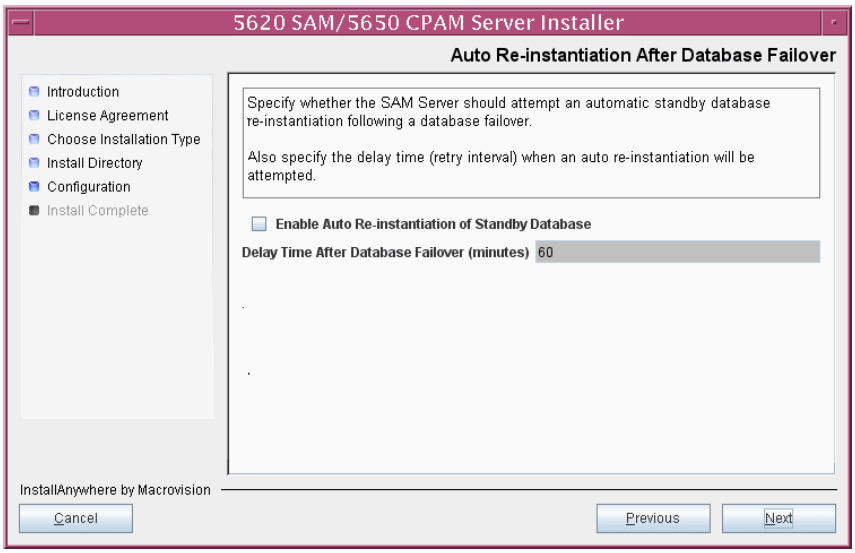
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The "Delay Time After Database Failover (minutes)" parameter is configurable when the "Enable Auto Re-Instantiation of Standby Database" parameter is selected.

Figure 2-161 Auto Re-Instantiation After Database Failover

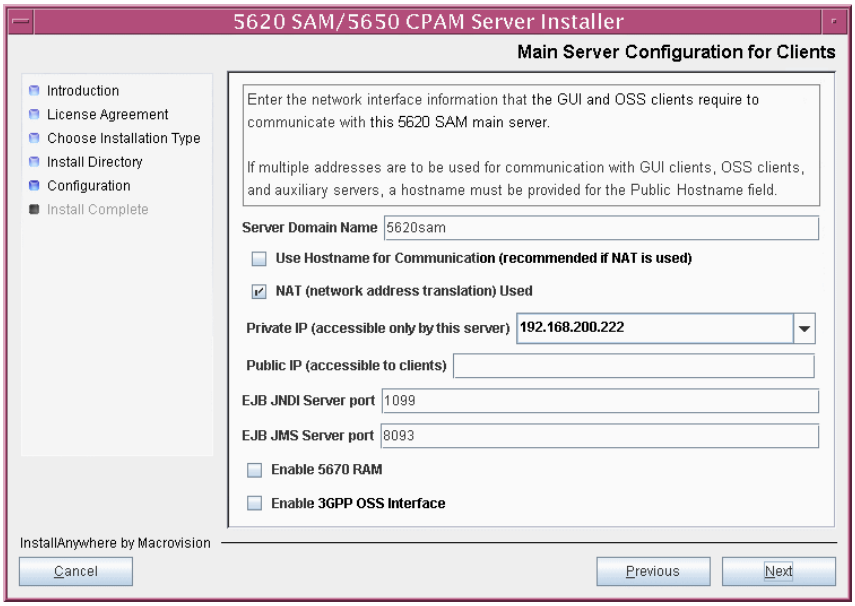


163 Perform the following steps.

i Configure the following parameters shown in Figure 2-162:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 2-162 Main Server Configuration for Clients



ii If you select the "Use Hostname for Communication" parameter, go to step 163 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

iv Click on the Next button.

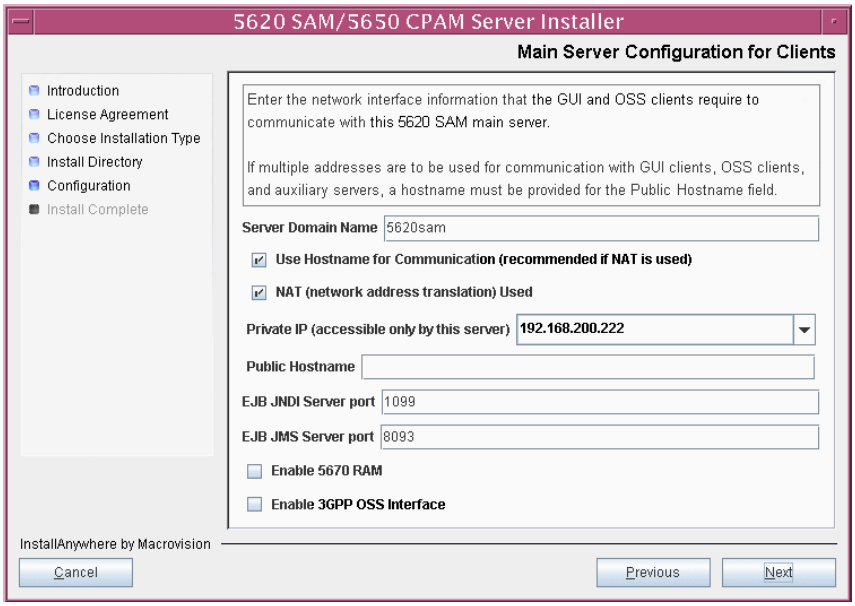
v Go to step 164.

vi Configure the following parameters shown in Figure 2-163:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-163 Main Server Configuration for Clients

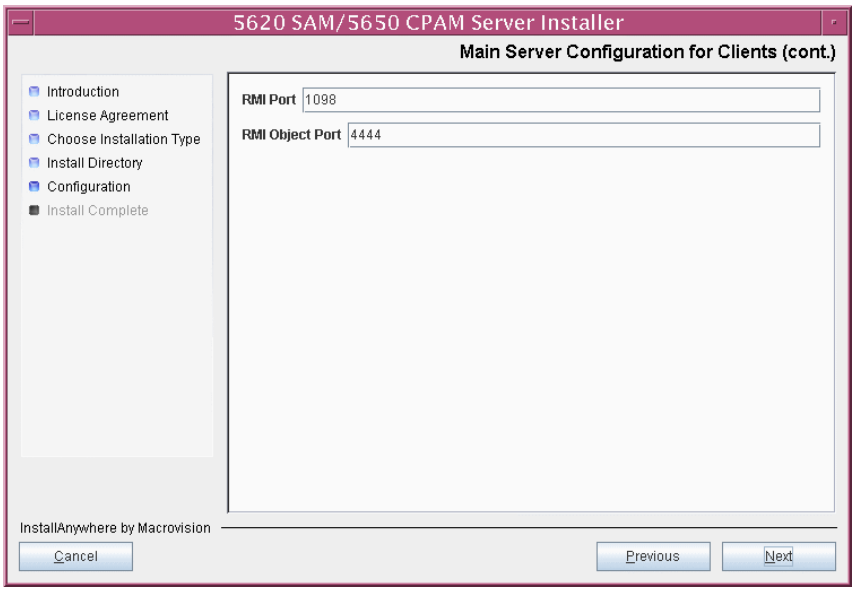


vii Click on the Next button.

164 Configure the following parameters shown in Figure 2-164, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 2-164 Main Server Configuration for Clients (cont.)

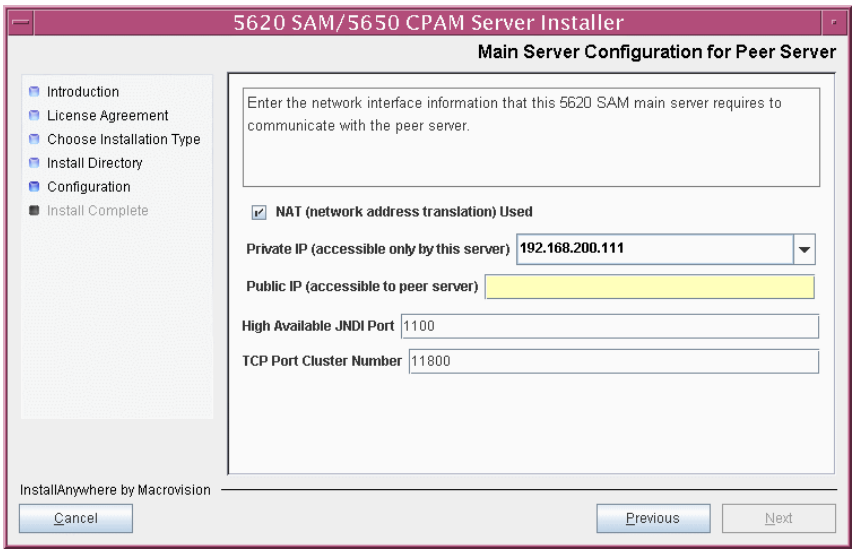


165 Configure the following parameters shown in Figure 2-165:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

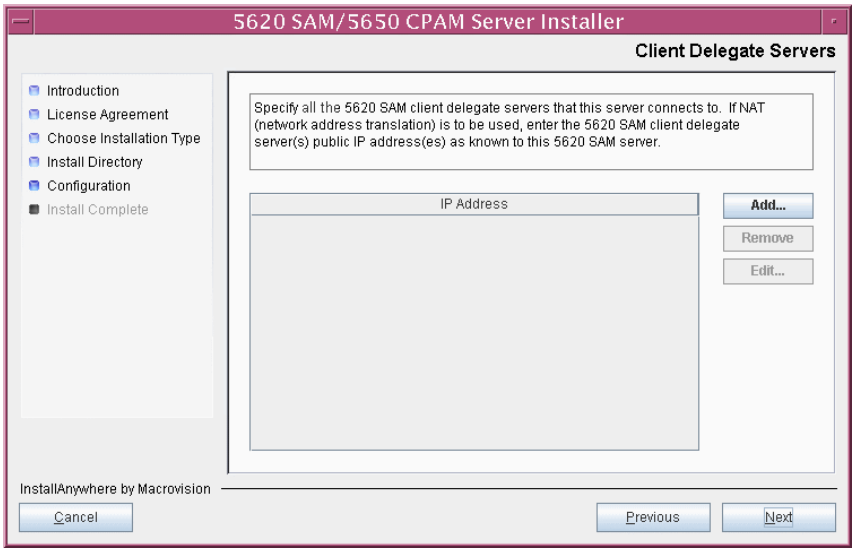
Figure 2-165 Main Server Configuration for Peer Server



166 The panel in Figure 2-166 is displayed if you select the “Client Delegate Server Supported” parameter in step 155. Otherwise, go to step 168.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 2-166 Client Delegate Servers

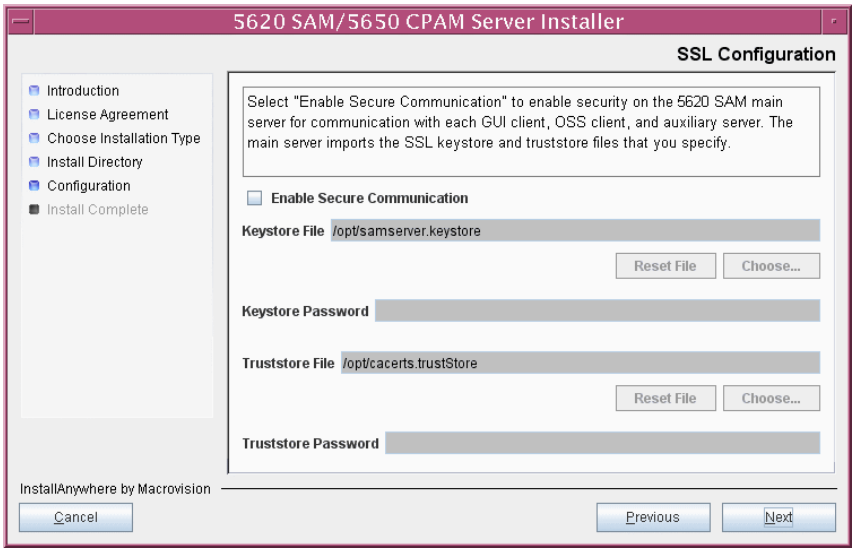


167 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 2-167.

Figure 2-167 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note 1 — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

Note 2 — The parameter values must match the values specified during the primary main server installation.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

168 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 2-168.

ii To accept the default user documentation location that is displayed, go to step 169.

Note — If NAT is to be used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

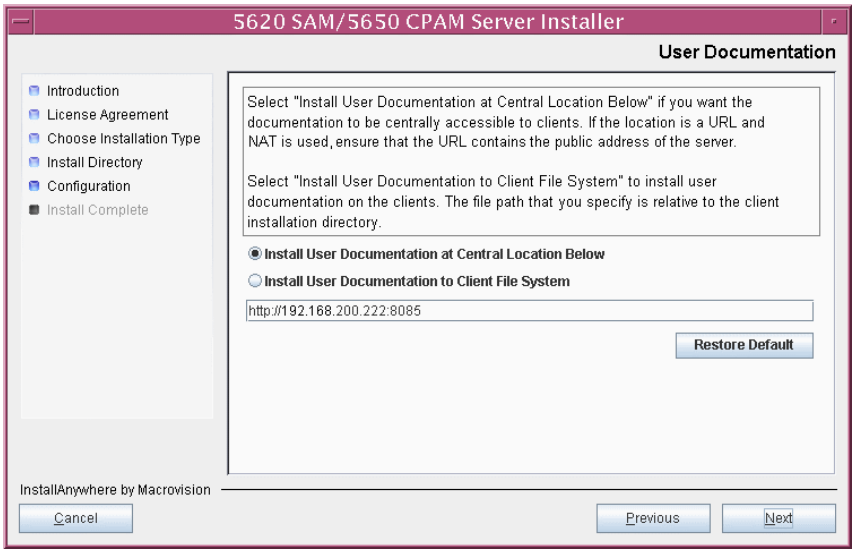
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 2-168 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 2-168.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

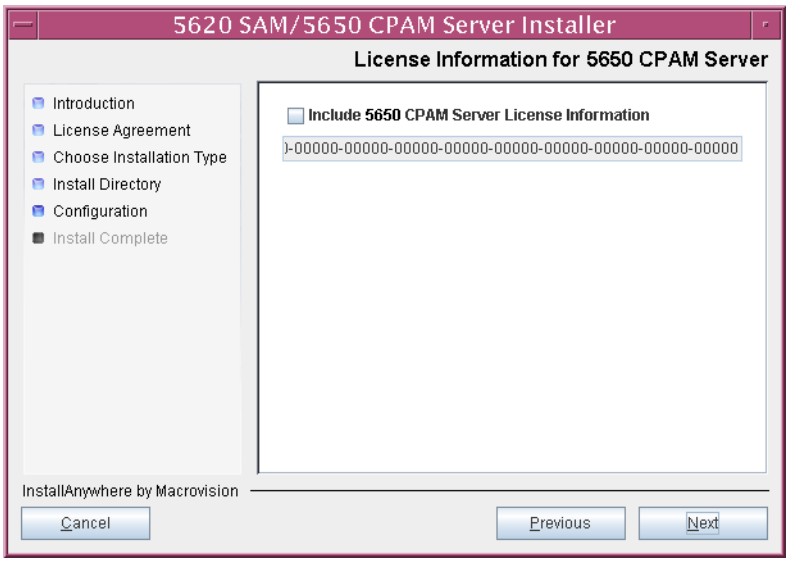
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

169 Click on the Next button.

170 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 2-169. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 2-169 License Information for 5650 CPAM Server



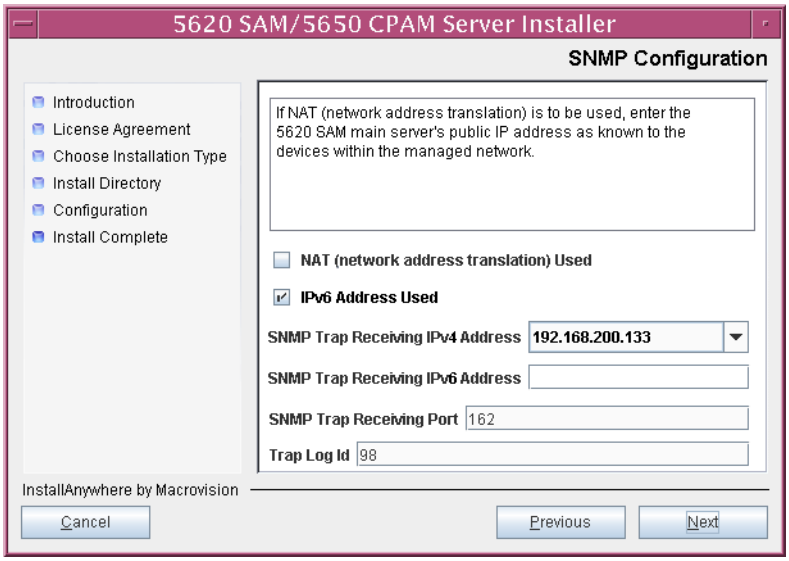
171 Configure the following parameters shown in Figure 2-170, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The "SNMP Trap Receiving IPv6 Address" parameter is configurable only when the "IPv6 Address Used" parameter is selected, as shown in Figure 2-170.

Figure 2-170 SNMP Configuration

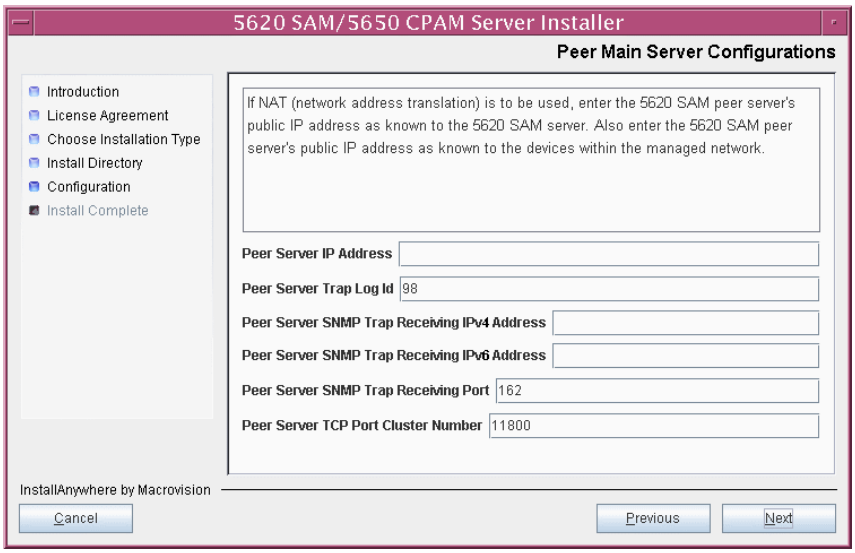


172 Configure the following parameters shown in Figure 2-171, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 171.

Figure 2-171 Peer Main Server Configurations

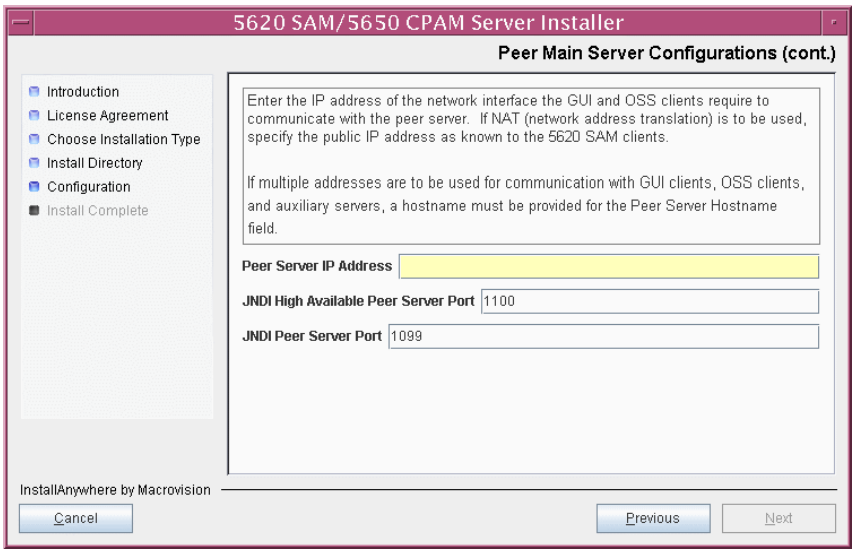


173 If the "Use Hostname for Communication" parameter in step 163 is selected, go to step 176.

174 Configure the following parameters shown in Figure 2-172, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 2-172 Peer Main Server Configurations (cont.)

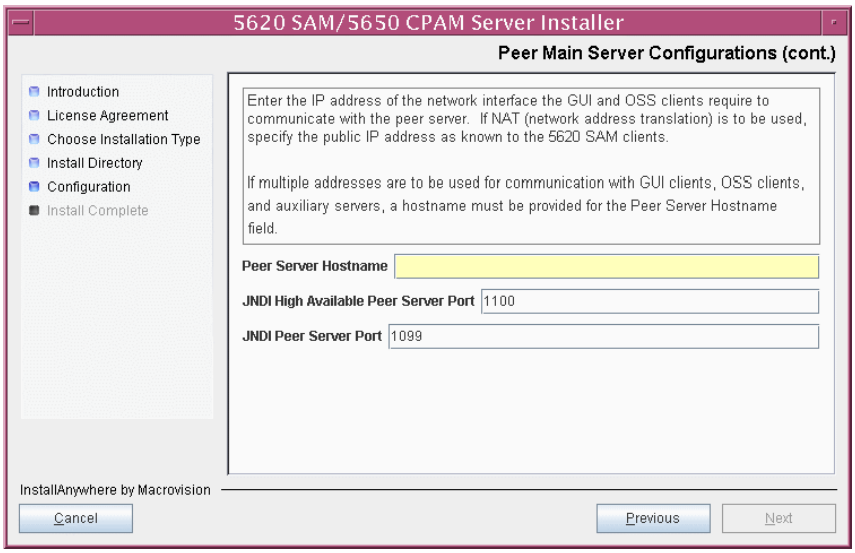


175 Go to step 177.

176 Configure the following parameters shown in Figure 2-173, then click on the Next button:

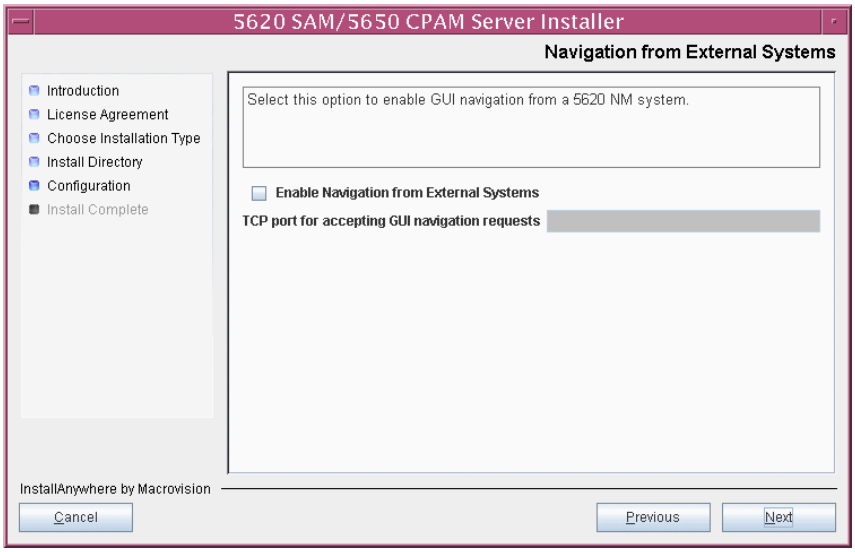
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 2-173 Peer Main Server Configurations (cont.)



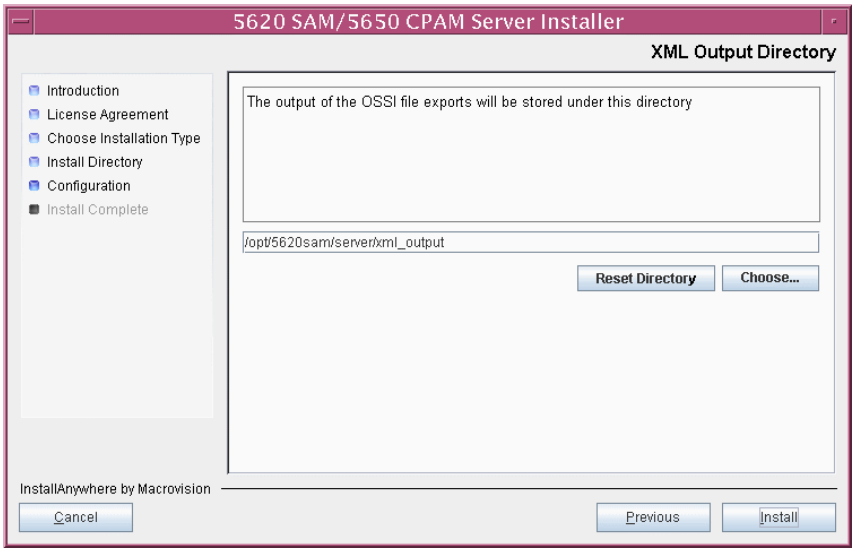
177 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 2-174 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 2-174 Navigation from External Systems



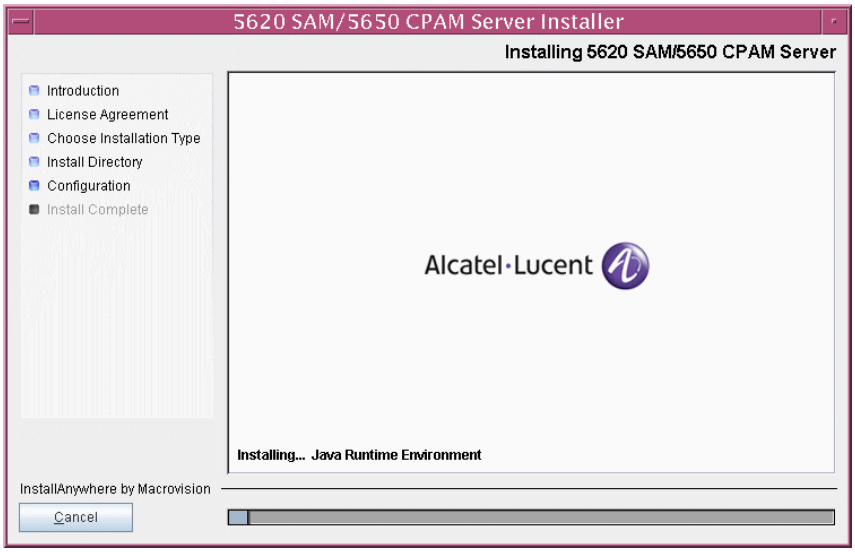
178 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 2-175. Click on the Install button to begin the server installation.

Figure 2-175 XML Output Directory



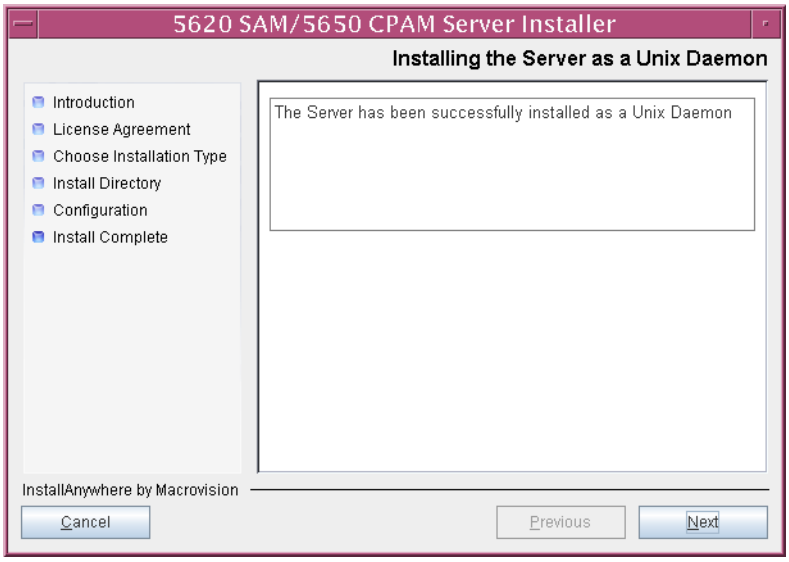
The next panel displays installation progress, as shown in Figure 2-176.

Figure 2-176 Installing 5620 SAM/5650 CPAM Server



179 As shown in Figure 2-177, the 5620 SAM server is installed as a UNIX daemon. Click on the Next button.

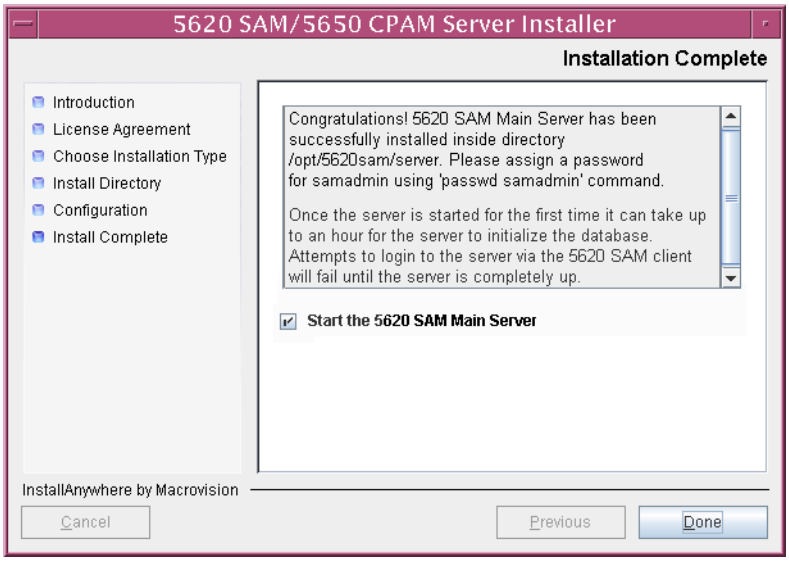
Figure 2-177 Installing the Server as a Unix Daemon



180 When the main server installation is complete, as shown in Figure 2-178, configure the "Start the 5620 SAM Main Server" parameter to specify whether you want the server to start immediately after the installation.

Caution — If the 3GPP OSS interface is enabled in step 163, ensure that the "Start the 5620 SAM Main Server" parameter is not selected.

Figure 2-178 Installation Complete



181 View the panel text to see whether it states that you must assign a password to samadmin, as shown in Figure 2-178. This information is required in step 183.

182 Click on the Done button to close the server installer. If you specified that the main server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

183 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration.

If you must assign a password to samadmin, as determined in step 181, perform the following steps.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

184 If the 3GPP OSS interface is enabled in step 163, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

CNBI.SAMO.USER=*3GPP_OSS_user_name*

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

Note — The user name and password must be the same user name and password specified during the primary server configuration in step 133.

vi Save and close the file.

vii Go to step 186.

185 If you specified that the main server is to start immediately after installation, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

186 If you specified not to start the main server immediately after the installation, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

v Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

187 Close the console window.

Install additional client

188 Perform one of the following to install an additional 5620 SAM client, if required.

a Perform Procedure 2-4 or 2-4 to install a single-user client on Solaris.

b Perform Procedure 2-5 or 2-6 to install a single-user client on Windows.

c Perform Procedure 2-7 to install a client delegate server.

2.7 5620 SAM client and client delegate server installation

This section describes how to install a 5620 SAM client or client delegate server component for a standalone or redundant 5620 SAM system. Procedures 2-3 and 2-4 describe how to install the 5620 SAM client software on a Solaris station. Procedures 2-5 and 2-6 describe how to install the 5620 SAM client software on a Windows station. Procedure 2-7 describes how to install a 5620 SAM client delegate server. Procedure 2-8 describes how to add a 5620 SAM client delegate server to an existing 5620 SAM system.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 2-3 To install a 5620 SAM single-user client on Solaris using a web browser

Perform this procedure to install the 5620 SAM single-user client software on a Solaris station using a web browser. You require local user privileges on the client station to perform this procedure.

Note — The 5620 SAM main server to which the single-user client connects must be running before you perform this procedure.

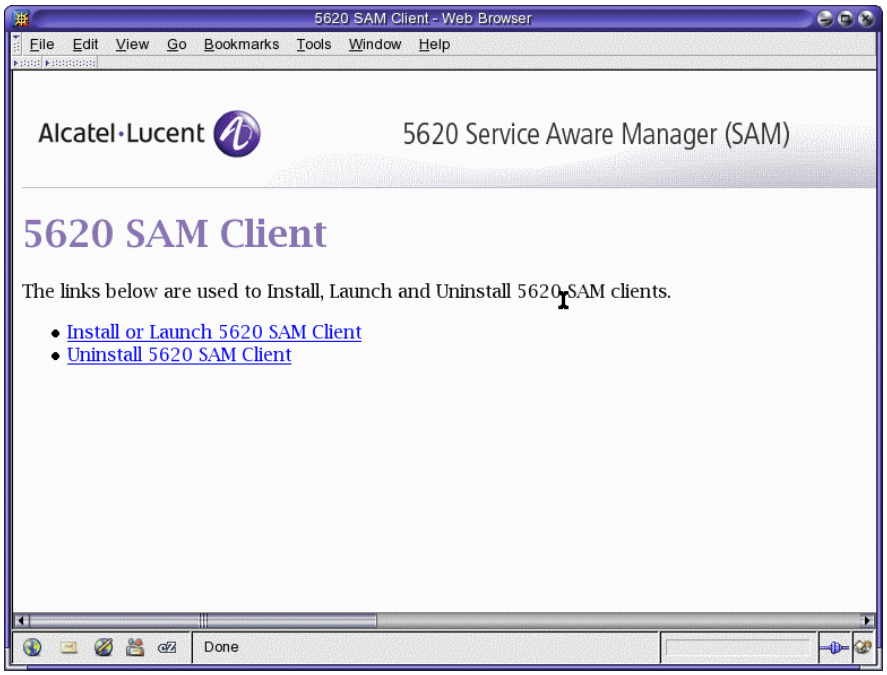
1. Log in to the station that is to be the single-user client station as a user with local privileges.
2. The client installer requires Java version 6.0 or later. Perform one of the following to ensure that the correct Java version is installed.
   - **a** If an earlier version of Java is installed on the client station, ensure that the client station has Internet access so that the installer can download and install the later version.
   - **b** If Java is not installed on the client station, visit http://java.com to download and install Java.
3. Use a web browser on the client station to open the following page on the 5620 SAM main server:

   http://*server*:8085/client

   where *server* is the IP address or hostname of the 5620 SAM main server

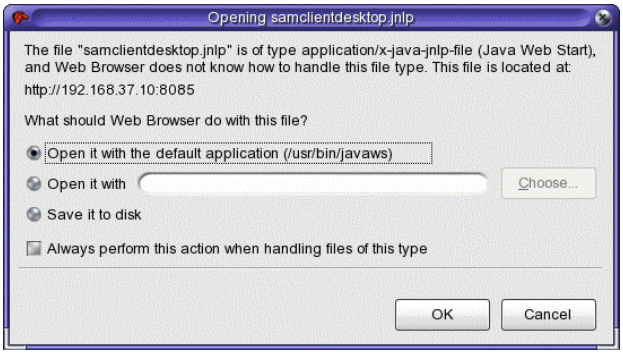
The page shown in Figure 2-179 is displayed.

Figure 2-179 5620 SAM client page



4 Click on the “Install or Launch 5620 SAM Client” link. The form shown in Figure 2-180 is displayed.

Figure 2-180 Opening samclientdesktop.jnlp

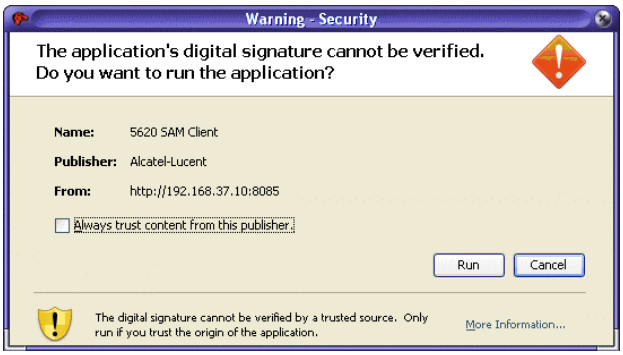


5 Ensure that “Open it with the default application” is selected, then click on the OK button. A Java installer opens, as shown in Figure 2-181, and begins to download components.

Figure 2-181 Java Web Start

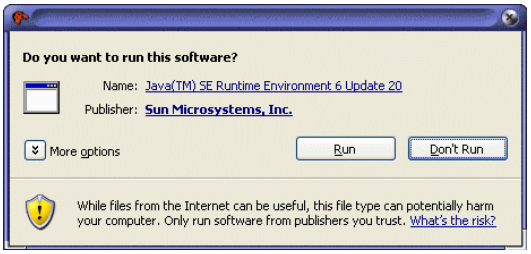
6 If a security warning like the one shown in Figure 2-182 is displayed, click on the Run button.

Figure 2-182 Warning - Security



7 If a security warning like the one shown in Figure 2-183 is displayed, click on the Run button.

Figure 2-183 Java - Security Warning



8 If the Java setup utility shown in Figure 2-184 opens, the installed Java version requires an update. Click on the Install button. Otherwise, go to step 10.

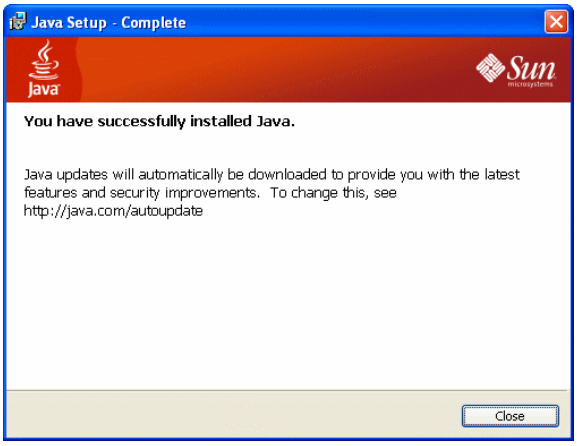
Figure 2-184 Java Setup - Welcome

The setup utility displays installation progress, as shown in Figure 2-185.

Figure 2-185 Java Setup Progress

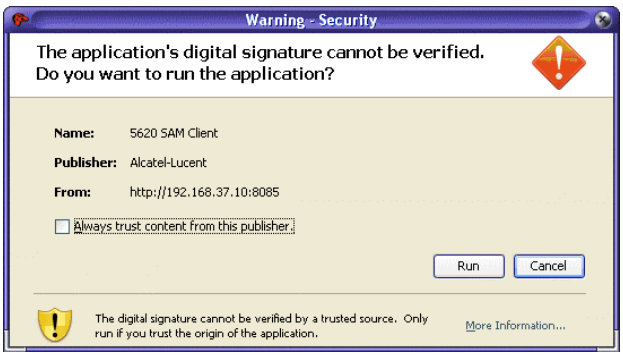
9 When the panel shown in Figure 2-186 is displayed, the Java setup is complete. Click on the Close button.

Figure 2-186 Java Setup - Complete



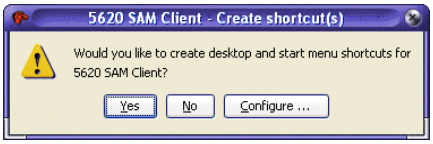
10 If a security warning like the one shown in Figure 2-187 is displayed, click on the Run button.

Figure 2-187 Warning - Security



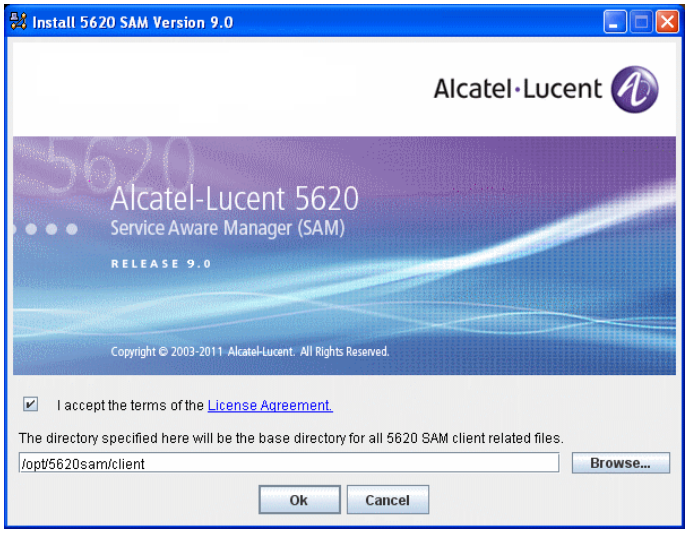
11 The 5620 SAM client installer opens, as shown in Figure 2-188. Click on the Yes or No button, as required, to indicate whether you want the installer to create shortcuts for the 5620 SAM client application.

Figure 2-188 5620 SAM Client - Create shortcut(s)



12 Perform the following steps when the panel shown in Figure 2-189 is displayed.

Figure 2-189 Install 5620 SAM Version 9.0



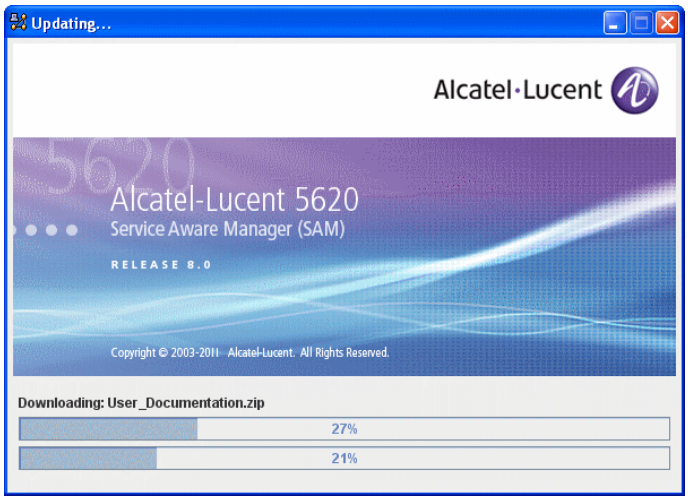
i Select the check box to accept the terms of the license agreement.

ii If required, specify a client installation location other than the default by typing the path or by using the Browse button.

iii Click on the OK button. The 5620 SAM client installation begins.

The panel shown in Figure 2-190 is displayed. The panel shows installation progress using separate bars to indicate the overall and current task progress.

Figure 2-190 Installation progress



When the installation is complete, the client installer closes and the newly installed 5620 SAM client GUI opens.

13 Log in to the 5620 SAM client GUI.

Note — The default 5620 SAM client login credentials are the following:

- Login Name—admin
- Password—5620Sam!

Procedure 2-4 To install a 5620 SAM single-user client on Solaris using the software DVD-ROM

Perform this procedure to install the 5620 SAM client software on a Solaris station from the 5620 SAM software DVD-ROM for local access by one user at a time. You require local user privileges on the client station to perform this procedure.

Note — The 5620 SAM main server to which the single-user client connects must be running before you perform this procedure.

Install auto-client update utility

1 Log in to the station that is to be the single-user client station as a user with local privileges.

2 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to open the 5620 SAM client installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./ClientInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

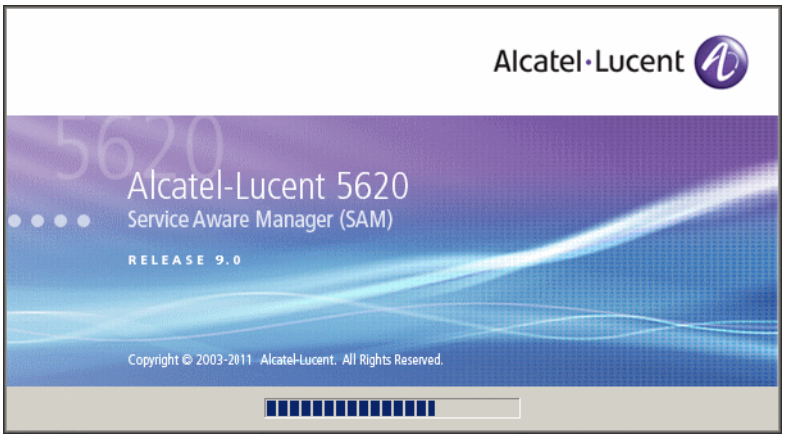
ii Enter the following:

```
bash$ ./ClientInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

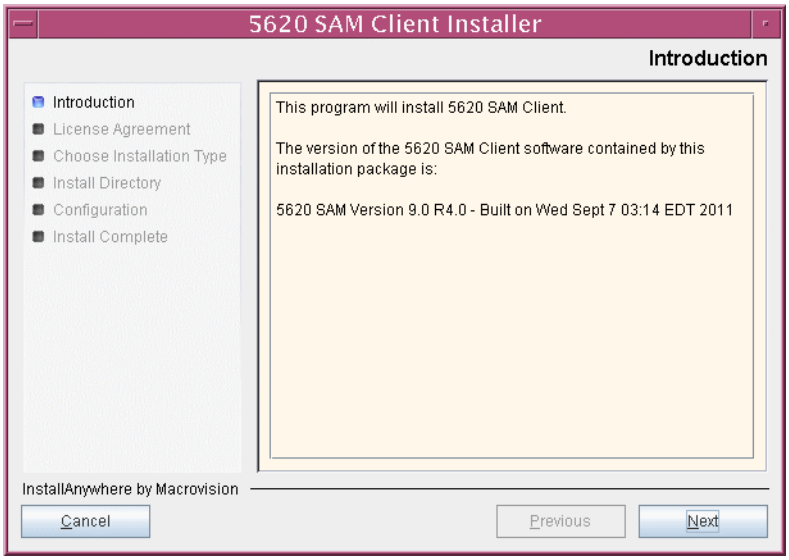
The splash screen shown in Figure 2-191 opens.

Figure 2-191 5620 SAM installer



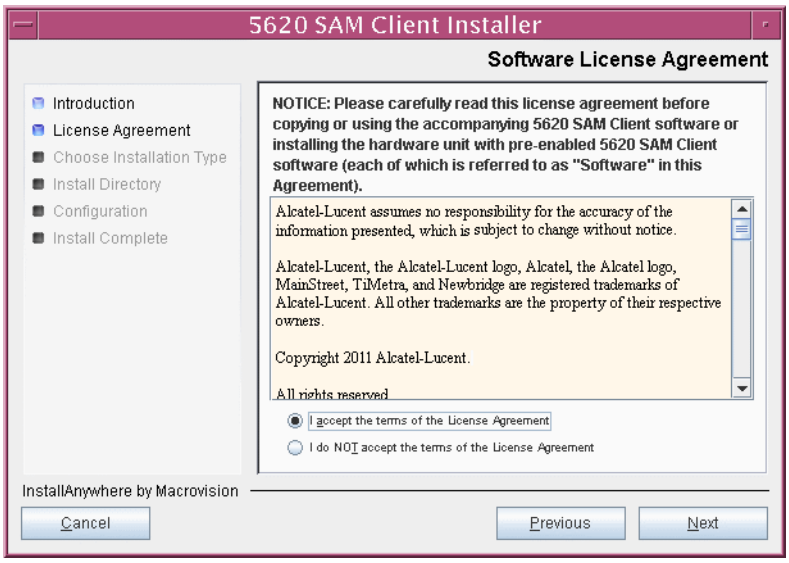
6 The 5620 SAM client installer opens, as shown in Figure 2-192. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-192 Introduction



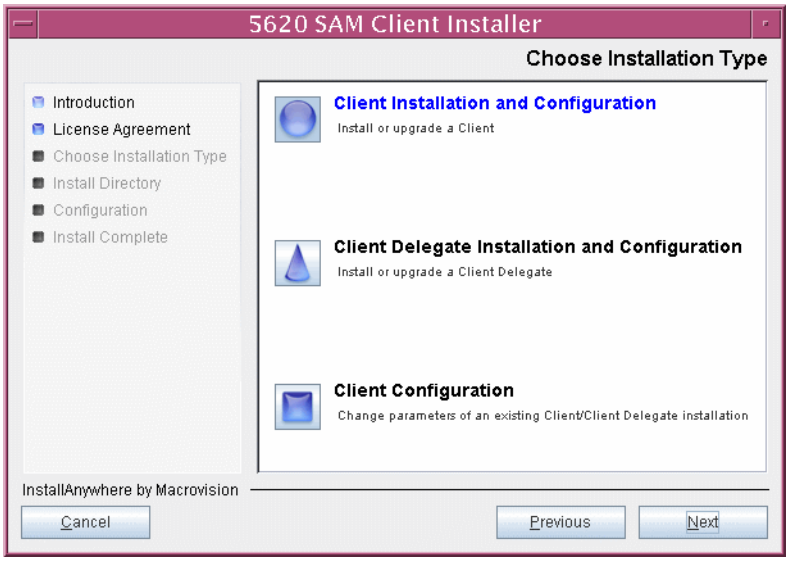
7 Review and accept the terms of the license agreement shown in Figure 2-193. Click on the Next button.

Figure 2-193 Software License Agreement



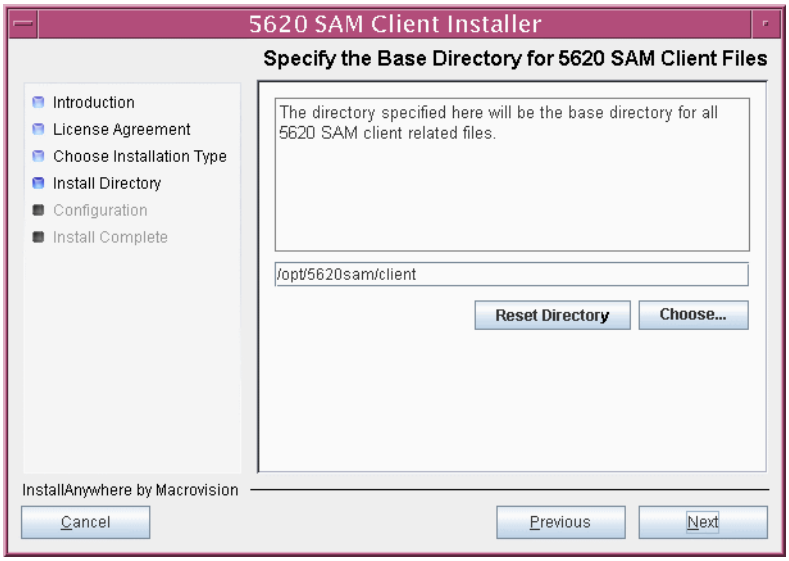
8 Select Client Installation and Configuration, as shown in Figure 2-194. Click on the Next button.

Figure 2-194 Choose Installation Type



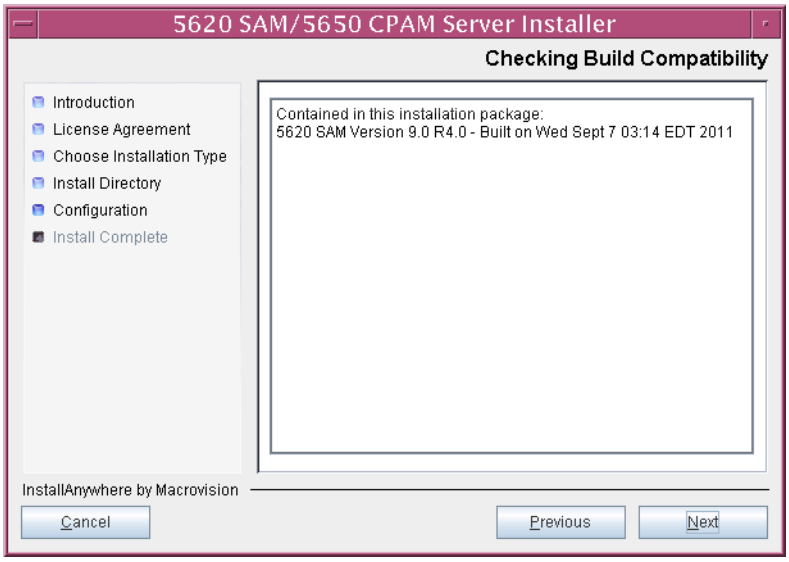
9 Specify a base directory in which to install the 5620 SAM client software (typically /opt/5620sam/client) as shown in Figure 2-195. Click on the Next button.

Figure 2-195 Specify the Base Directory for 5620 SAM Client Files



10 As shown in Figure 2-196, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-196 Checking Build Compatibility

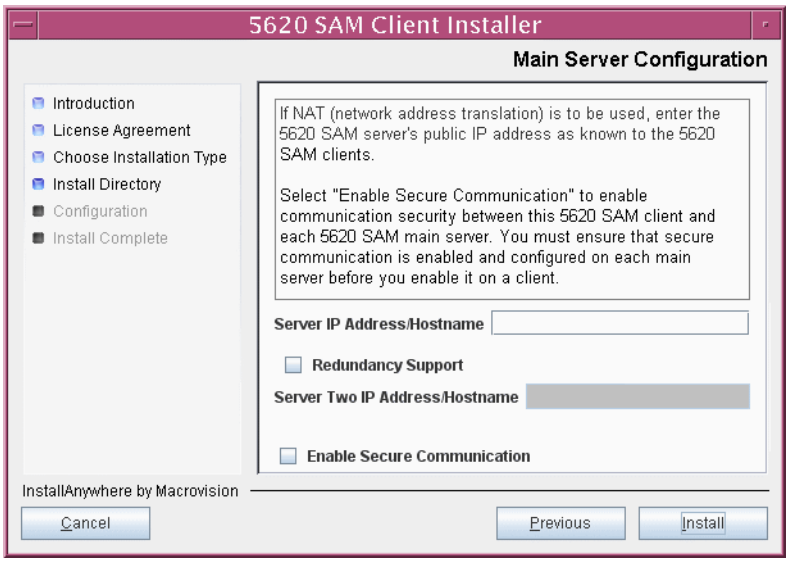


11 Perform one of the following.

a Configure the 5620 SAM client for use with a standalone 5620 SAM server and database.

i Ensure that the “Redundancy Support” parameter is disabled, as shown in Figure 2-197.

Figure 2-197 Main Server Configuration



ii Configure the “Server IP Address/Hostname” parameter using the IP address that the client must use to reach the 5620 SAM server.

iii Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.

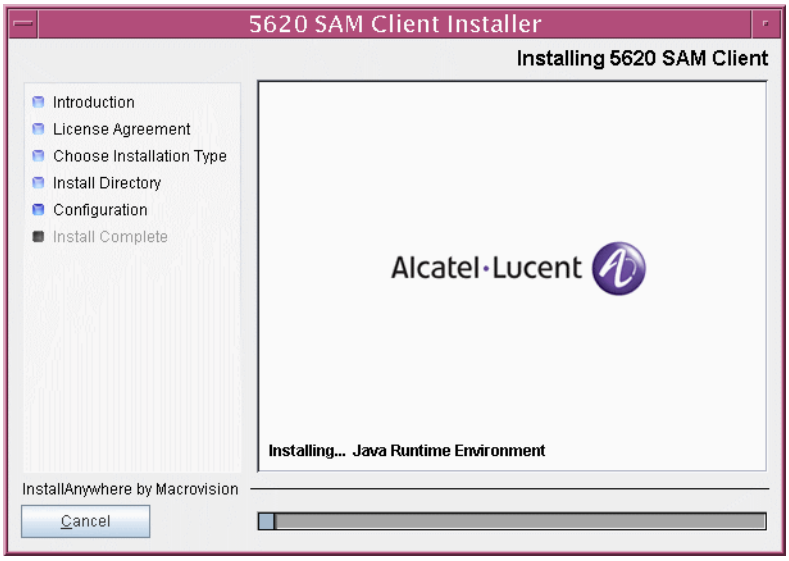
iv Click on the Install button to begin the auto-client update utility installation.

b Configure the 5620 SAM client for use with a redundant 5620 SAM server and database.

- **i** Select the “Redundancy Support” parameter shown in Figure 2-197.
- **ii** Configure the “Server IP Address/Hostname” parameter using the IP address that the client must use to reach the primary 5620 SAM server.
- **iii** Configure the “Server Two IP Address/Hostname” parameter using the IP address that the client must use to reach the standby 5620 SAM server.
- **iv** Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.
- **v** Click on the Install button to begin the auto-client update utility installation.

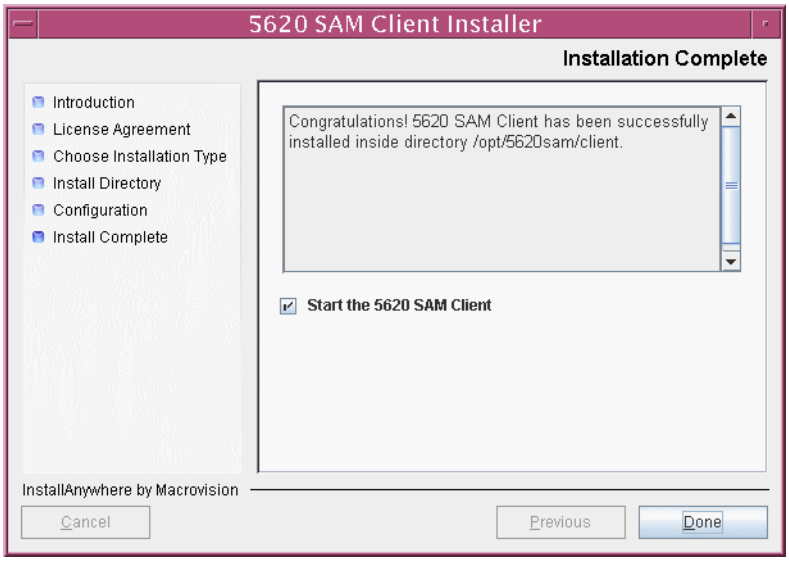
The next panel displays installation progress, as shown in Figure 2-198.

Figure 2-198 Installing 5620 SAM Client



12 When the auto-client update utility installation is complete, as shown in Figure 2-199, configure the “Start the 5620 SAM Client” parameter to specify whether you want the auto-client update utility to start immediately after the installation.

Figure 2-199 Installation Complete

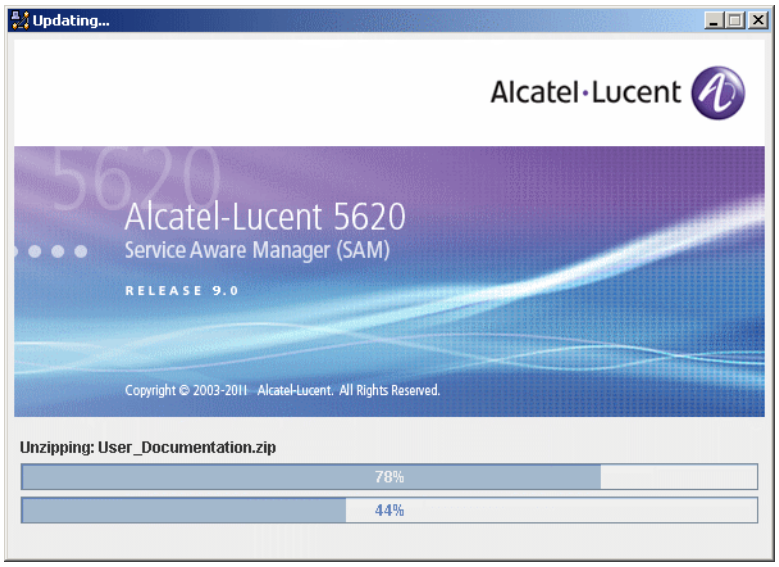


Install 5620 SAM client software using auto-client update utility

13 Click on the Done button to close the client installer.

If you specified that the auto-client update utility is to start after installation, the utility starts, detects the available client software on the 5620 SAM server, begins downloading files, and displays the panel shown in Figure 2-200. The panel uses separate bars to indicate the overall and current task progress.

Figure 2-200 Installation progress



When the installation is complete, the auto-client update utility closes and the 5620 SAM client login form opens.

14 If you specified not to start the auto-client update utility immediately after the installation, start the 5620 SAM auto-client update utility manually later by entering the following at a CLI prompt:

Note — You must be logged in as the same user that installed the auto-client update utility.

```
# path/nms/bin/nmsclient.bash ↵
```

where *path* is the 5620 SAM client installation location, typically /opt/5620sam/client

The utility detects the available client software on the 5620 SAM server, begins downloading files, and displays the panel shown in Figure 2-200. The panel uses separate bars to indicate the overall and current task progress.

When the installation is complete, the auto-client update utility closes and the 5620 SAM client login form opens.

15 Log in to the 5620 SAM client GUI to ensure that the client and server are communicating properly.

Note — The default 5620 SAM client login credentials are the following:

- Login Name—admin
- Password—5620Sam!

Procedure 2-5 To install a 5620 SAM single-user client on Windows using a web browser

Perform this procedure to install the 5620 SAM single-user client software on a Windows station using a web browser. You require local user privileges on the client station to perform this procedure.

Note — The 5620 SAM main server to which the single-user client connects must be running before you perform this procedure.

1 The client installer requires Java version 6.0 or later. Perform one of the following to ensure that the correct Java version is installed.

a If an earlier version of Java is installed on the client station, ensure that the client station has Internet access so that the installer can download and install the later version.

b If Java is not installed on the client station, visit http://java.com to download and install Java.

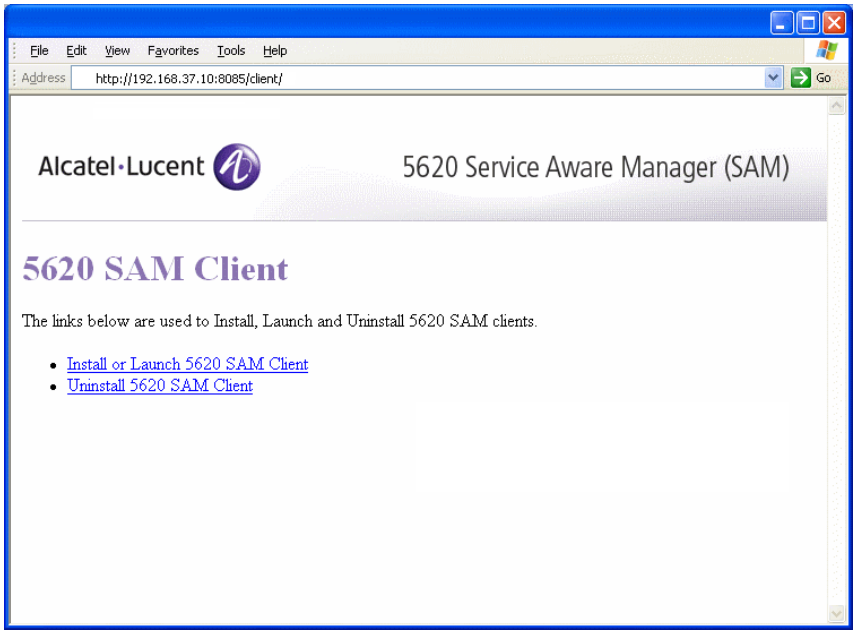
2 Use a web browser on the client station to open the following page on the 5620 SAM main server:

http://*server*:8085/client

where *server* is the IP address or hostname of the 5620 SAM main server

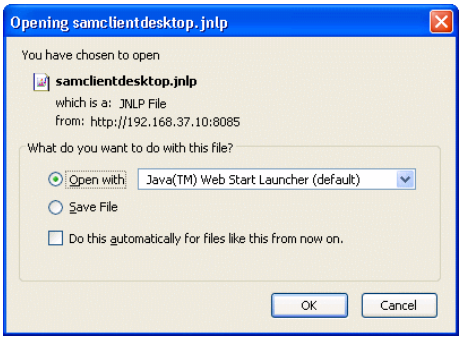
The page shown in Figure 2-179 is displayed.

Figure 2-201 5620 SAM client page



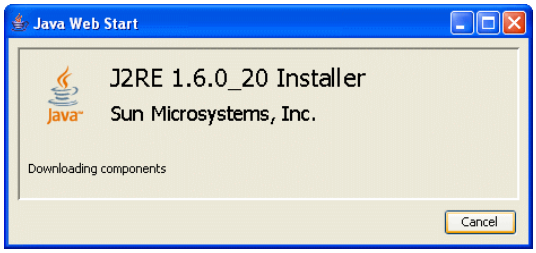
3 Click on the "Install or Launch 5620 SAM Client" link. The form shown in Figure 2-180 is displayed.

Figure 2-202 Opening samclientdesktop.jnlp



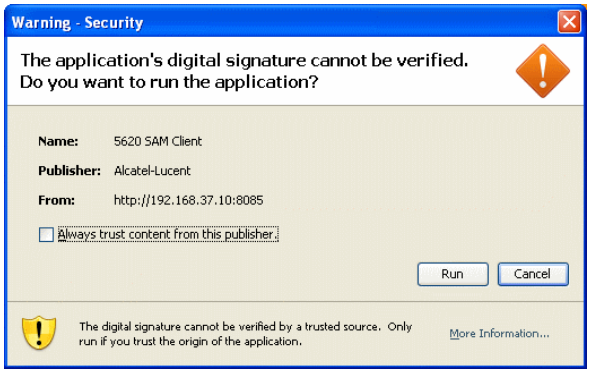
4 Ensure that “Open with” is selected, then click on the OK button. A Java installer opens, as shown in Figure 2-181, and begins to download components.

Figure 2-203 Java Web Start



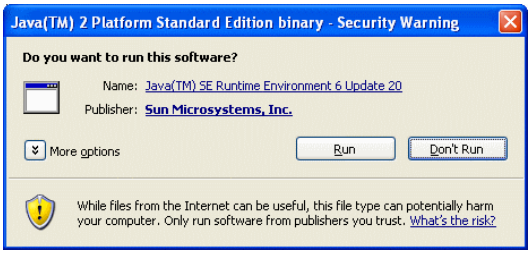
5 If a security warning like the one shown in Figure 2-182 is displayed, click on the Run button.

Figure 2-204 Warning - Security



6 If a security warning like the one shown in Figure 2-183 is displayed, click on the Run button.

Figure 2-205 Java - Security Warning



7 If the Java setup utility shown in Figure 2-184 opens, the installed Java version requires an update. Click on the Install button. Otherwise, go to step 10.

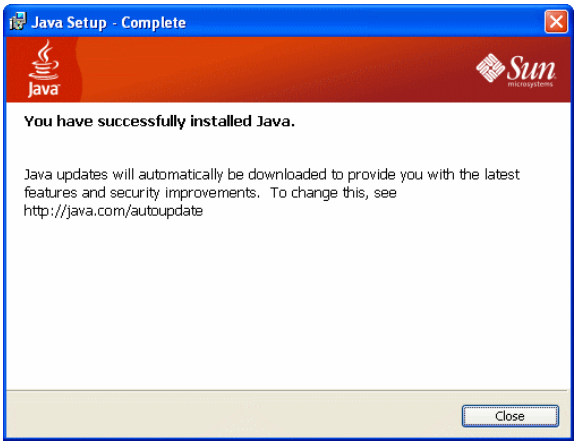
Figure 2-206 Java Setup - Welcome

The setup utility displays installation progress, as shown in Figure 2-185.

Figure 2-207 Java Setup Progress

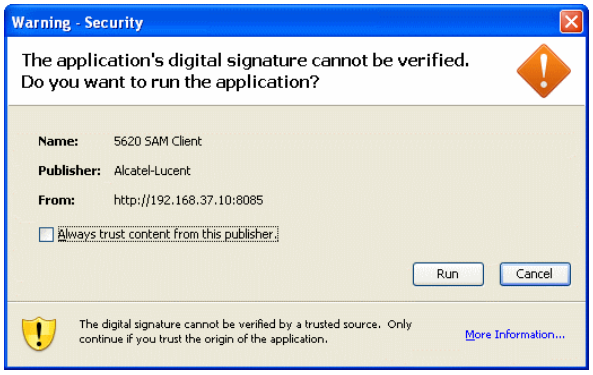
8 When the panel shown in Figure 2-185 is displayed, the Java setup is complete. Click on the Close button.

Figure 2-208 Java Setup - Complete



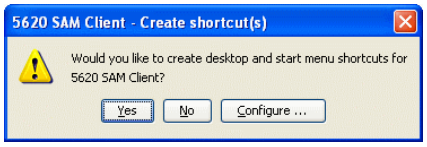
9 If a security warning like the one shown in Figure 2-187 is displayed, click on the Run button.

Figure 2-209 Warning - Security



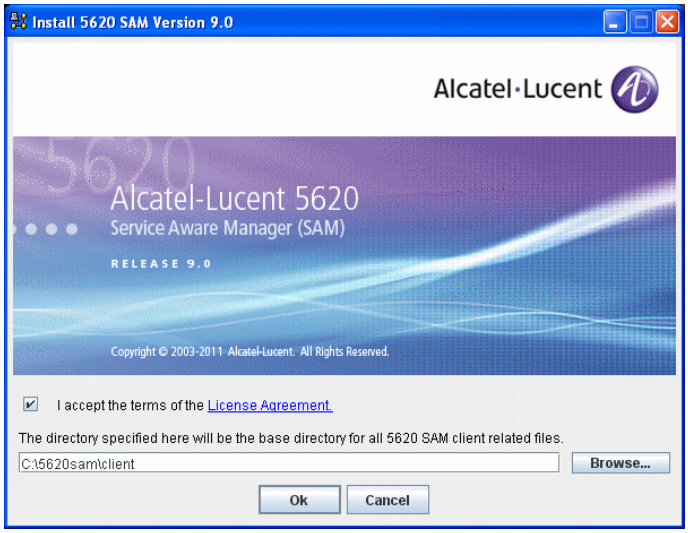
10 The 5620 SAM client installer opens, as shown in Figure 2-188. Click on the Yes or No button, as required, to indicate whether you want the installer to create shortcuts for the 5620 SAM client application.

Figure 2-210 5620 SAM Client - Create shortcut(s)



11 Perform the following steps when the panel shown in Figure 2-189 is displayed.

Figure 2-211 Install 5620 SAM Version 9.0



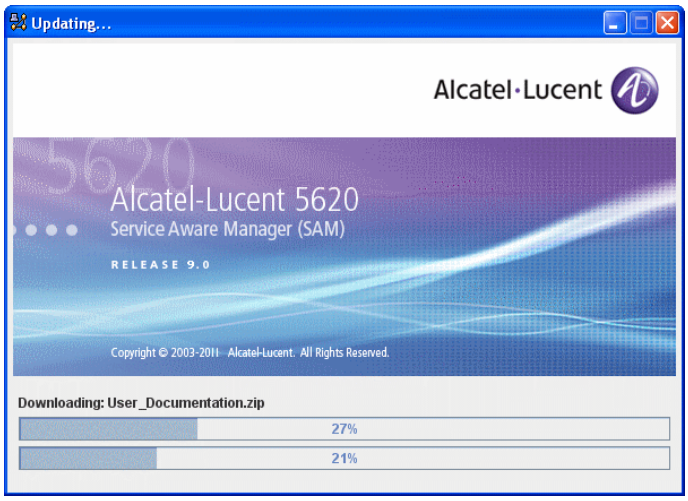
i Select the check box to accept the terms of the license agreement.

ii If required, specify a client installation location other than the default by typing the path or by using the Browse button.

iii Click on the OK button. The 5620 SAM client installation begins.

The panel shown in Figure 2-200 is displayed. The panel shows installation progress using separate bars to indicate the overall and current task progress.

Figure 2-212 Installation progress



When the installation is complete, the client installer closes and the newly installed 5620 SAM client GUI opens.

12 Log in to the 5620 SAM client GUI.

Note — The default 5620 SAM client login credentials are the following:

- Login Name—admin
- Password—5620Sam!

Procedure 2-6 To install a 5620 SAM single-user client on Windows using the software DVD-ROM

Perform this procedure to install the 5620 SAM single-user client software on a Windows station from the 5620 SAM software DVD-ROM. You require local user privileges on the client station to perform this procedure. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — The 5620 SAM main server to which the single-user client connects must be running before you perform this procedure.

Install auto-client update utility

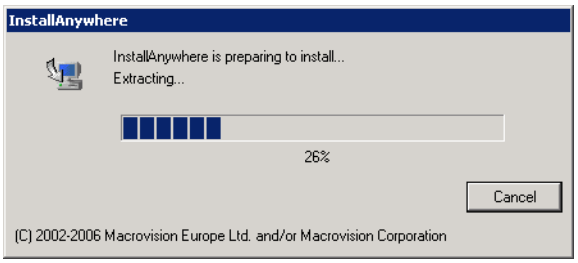
1 Navigate to the Windows directory on the 5620 SAM software DVD-ROM.

2 Double-click on the ClientInstall_SAM_9_0_*revision*.exe file

where *revision* is the revision identifier, such as R1, R3, or another descriptor

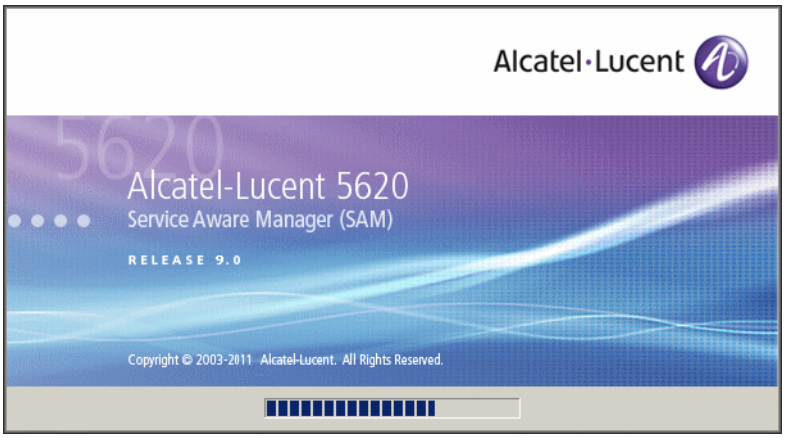
The installer prepares by extracting files, as shown in Figure 2-213.

Figure 2-213 Installer preparation



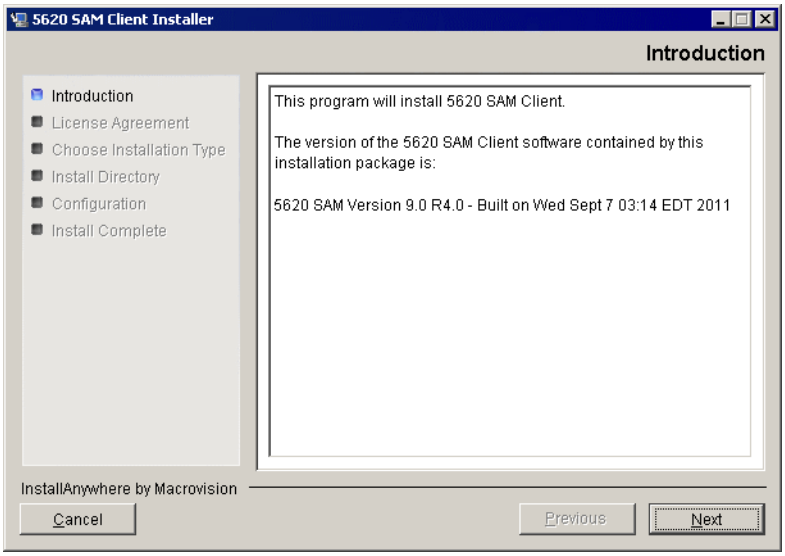
When the counter reaches 100%, the splash screen shown in Figure 2-214 opens.

Figure 2-214 5620 SAM installer



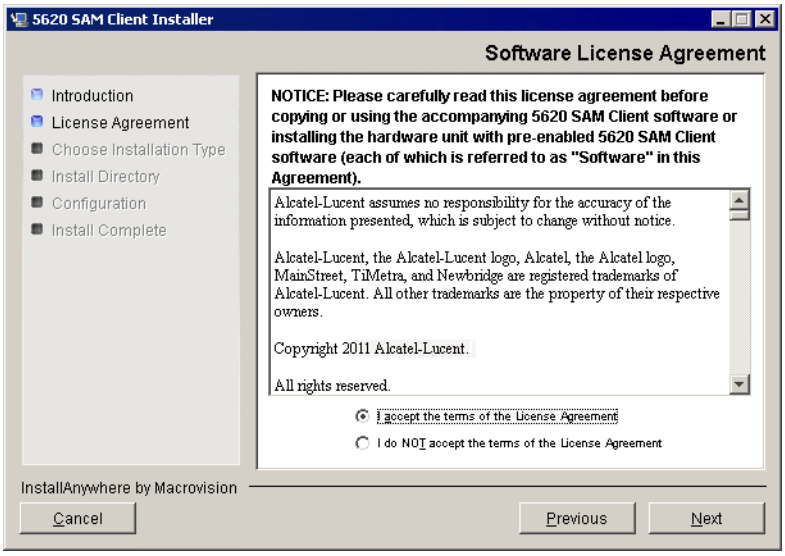
3 The 5620 SAM client installer opens, as shown in Figure 2-215. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-215 Introduction



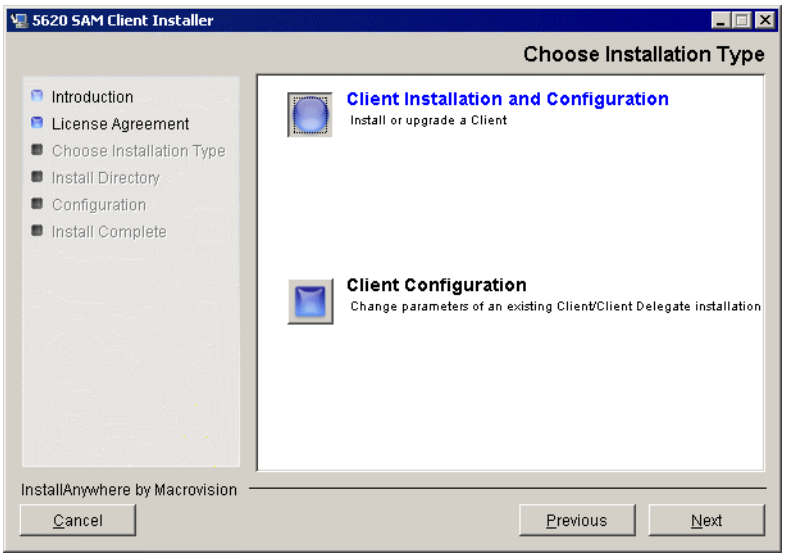
4 Review and accept the terms of the license agreement shown in Figure 2-216. Click on the Next button.

Figure 2-216 Software License Agreement



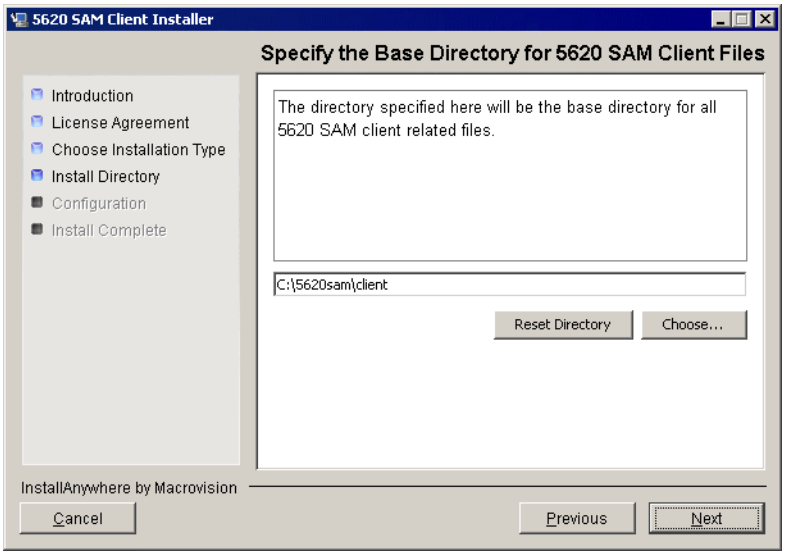
5 Select Client Installation and Configuration, as shown in Figure 2-217. Click on the Next button.

Figure 2-217 Choose Installation Type



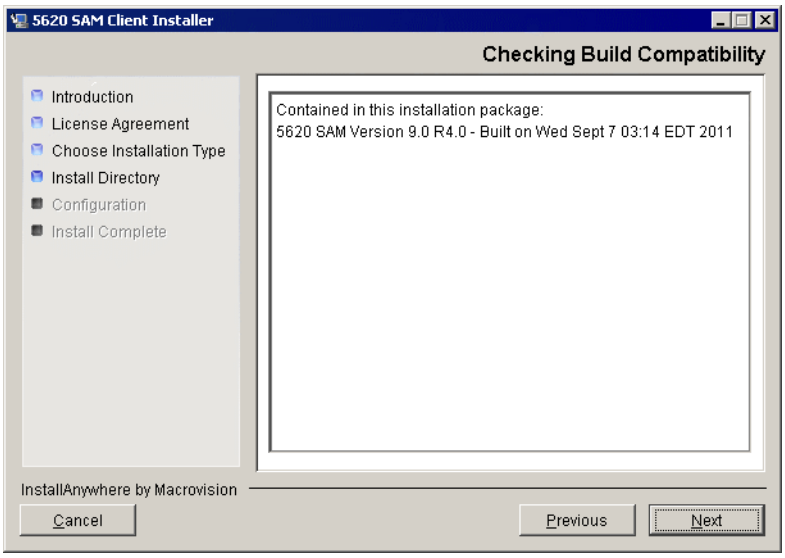
6 Specify a base directory in which to install the 5620 SAM client software (typically C:\5620sam\client) as shown in Figure 2-218. Click on the Next button.

Figure 2-218 Specify the Base Directory for 5620 SAM Client Files



7 As shown in Figure 2-219, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-219 Checking Build Compatibility

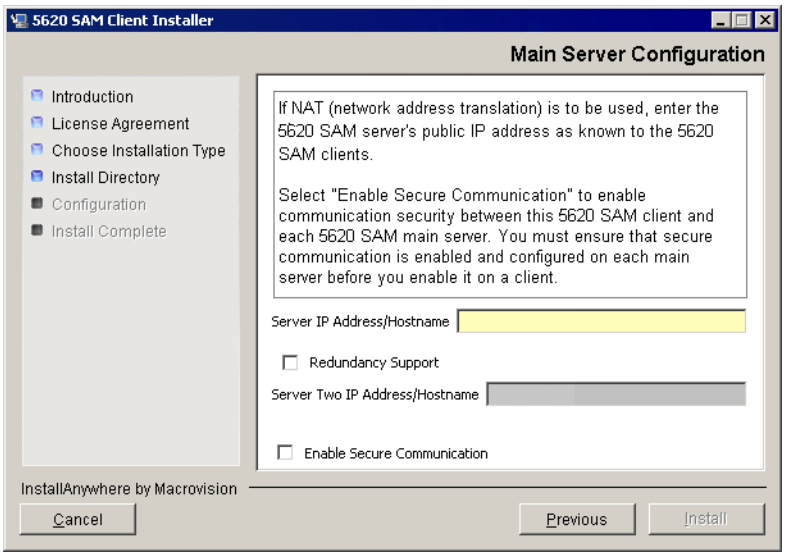


8 Perform one of the following:

a Configure the 5620 SAM client for use with a standalone 5620 SAM main server and database.

i Ensure that the “Redundancy Support” parameter is disabled, as shown in Figure 2-220.

Figure 2-220 Main Server Configuration



ii Configure the “Server IP Address/Hostname” parameter using the IP address that the client uses to address the 5620 SAM main server.

iii Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.

iv Click on the Install button to begin the auto-client update utility installation.

b Configure the 5620 SAM client for use with a redundant 5620 SAM main server and database.

i Select the “Redundancy Support” parameter shown in Figure 2-220.

ii Configure the “Server IP Address/Hostname” parameter using the IP address that the client uses to reach the primary 5620 SAM main server.

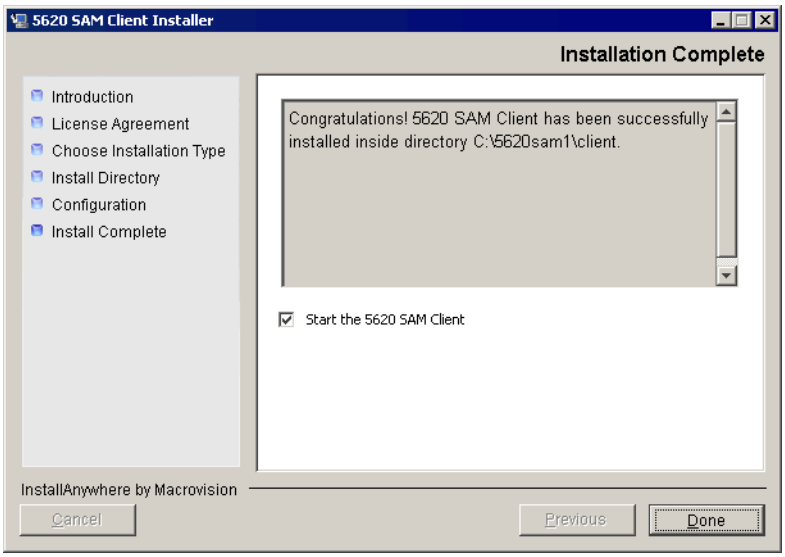
iii Configure the “Server Two IP Address/Hostname” parameter using the IP address that the client uses to reach the standby 5620 SAM main server, then click on the Install button to begin the auto-client update utility installation.

iv Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.

v Click on the Install button to begin the auto-client update utility installation.

9 When the installation is complete, as shown in Figure 2-221, configure the “Start the 5620 SAM client” parameter to specify whether the client is to start immediately after the installer closes. Click on the Done button to close the client installer.

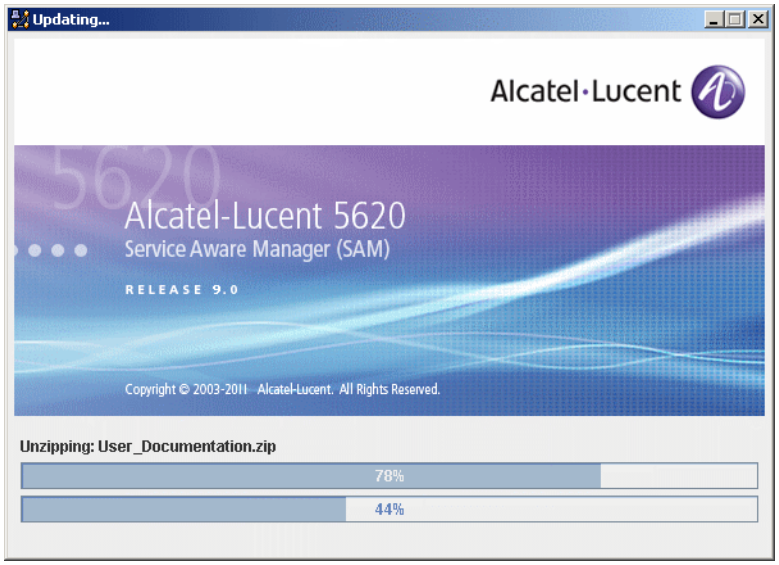
Figure 2-221 Installation Complete



Install 5620 SAM client software using auto-client update utility

10 If you did not select the "Start the 5620 SAM client" parameter in step 9, start the 5620 SAM auto-client update utility by double-clicking on the 5620 SAM Client App desktop icon. The utility opens, detects the available client software on the 5620 SAM main server, and displays the panel shown in Figure 2-200. The panel uses separate bars to indicate the overall and current task progress.

Figure 2-222 Installation progress



When the installation is complete, the auto-client update utility closes and the newly installed 5620 SAM client opens.

11 Log in to the 5620 SAM client GUI to ensure that the single-user client and main server are communicating properly.

Note — The default 5620 SAM client login credentials are the following:

- Login Name—admin
- Password—5620Sam!

Procedure 2-7 To install a 5620 SAM client delegate server

Perform this procedure to install a 5620 SAM client delegate server. You require root or root-equivalent user privileges on the client delegate server station to perform this procedure.

A client delegate server supports multiple client GUI sessions using display redirection. Consider the following before you install a client delegate server.

- A separate terminal using X.11 or native X can display a 5620 SAM client GUI.
- You cannot use X window emulation software to display a 5620 SAM client GUI.

Note — The 5620 SAM main server to which the client delegate server connects must be running before you perform this procedure.

Install auto-client update utility

1 Log in to the station that is to be the client delegate server station as a user with root or root-equivalent privileges.

2 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to open the 5620 SAM client installer.

   a On a SPARC station:

      i Enter the following:

      ```
      bash$ cd Solaris ↵
      ```

      ii Enter the following:

      ```
      bash$ ./ClientInstall_SAM_9_0_revision.bin ↵
      ```

      where
      revision is the revision identifier, such as R1, R3, or another descriptor

   b On an x86-based station:

      i Enter the following:

      ```
      bash$ cd Solarisx86 ↵
      ```

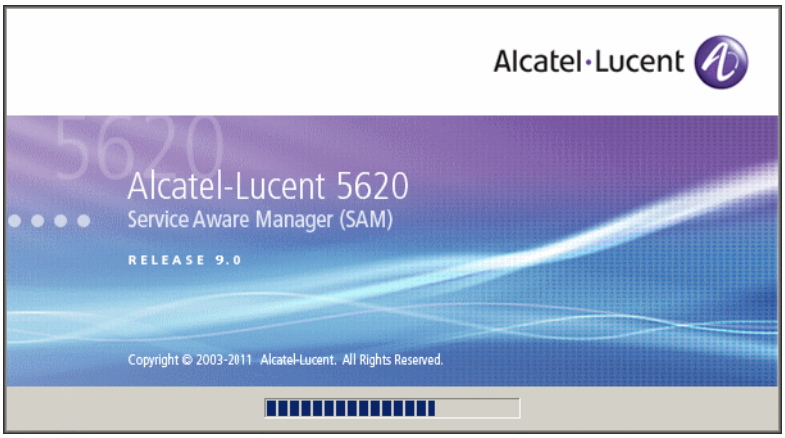
      ii Enter the following:

      ```
      bash$ ./ClientInstall_x86_SAM_9_0_revision.bin ↵
      ```

      where
      revision is the revision identifier, such as R1, R3, or another descriptor

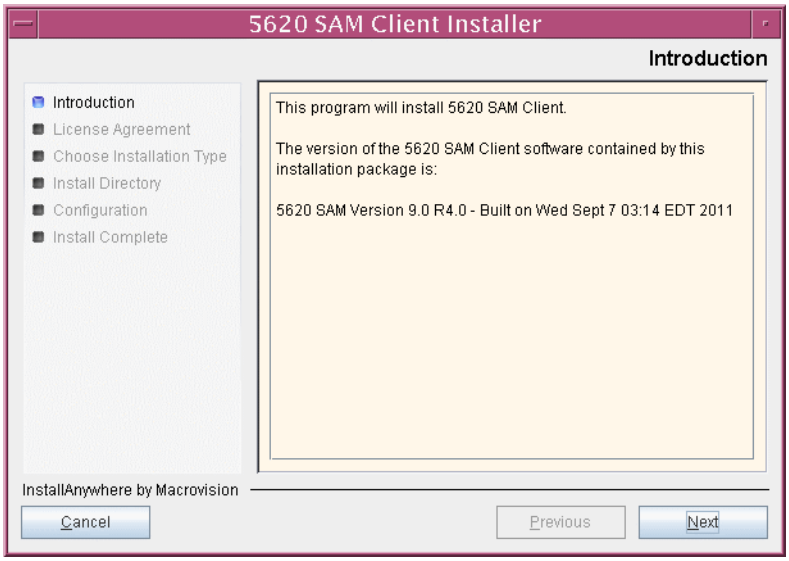
The splash screen shown in Figure 2-223 opens.

Figure 2-223 5620 SAM installer



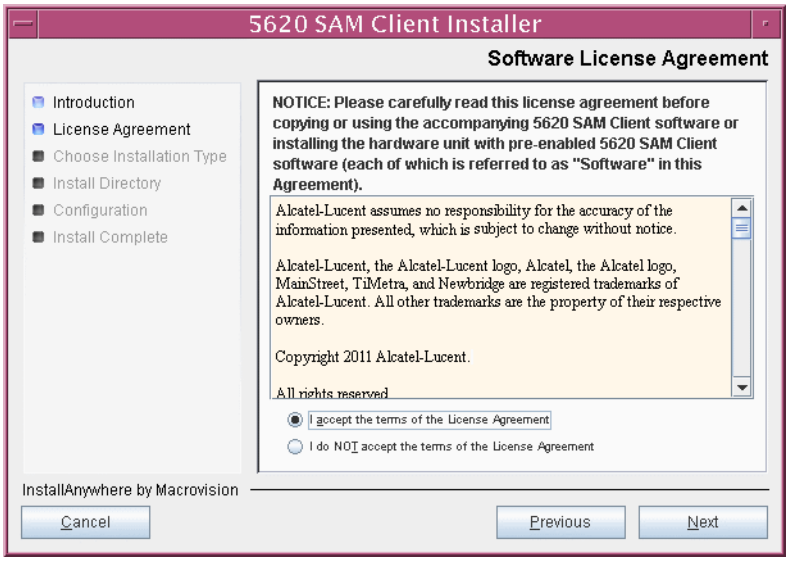
6 The 5620 SAM client installer opens, as shown in Figure 2-224. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-224 Introduction



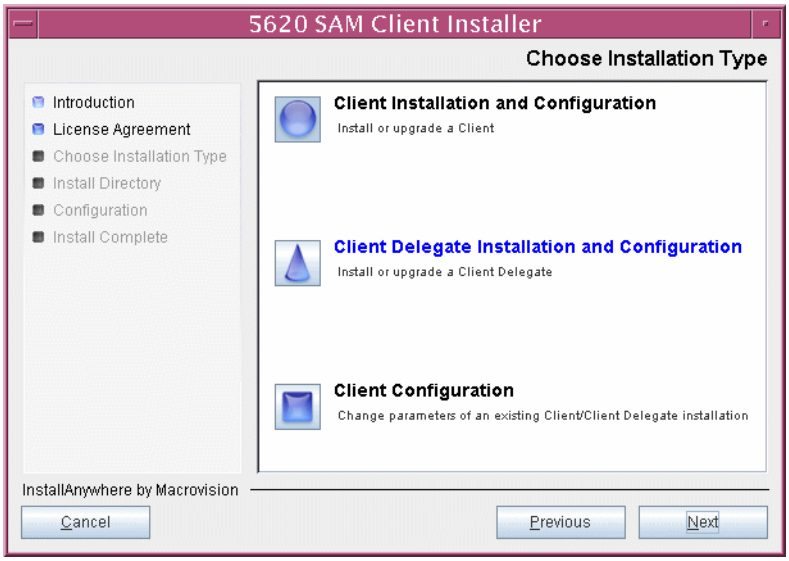
7 Review and accept the terms of the license agreement shown in Figure 2-225. Click on the Next button.

Figure 2-225 Software License Agreement



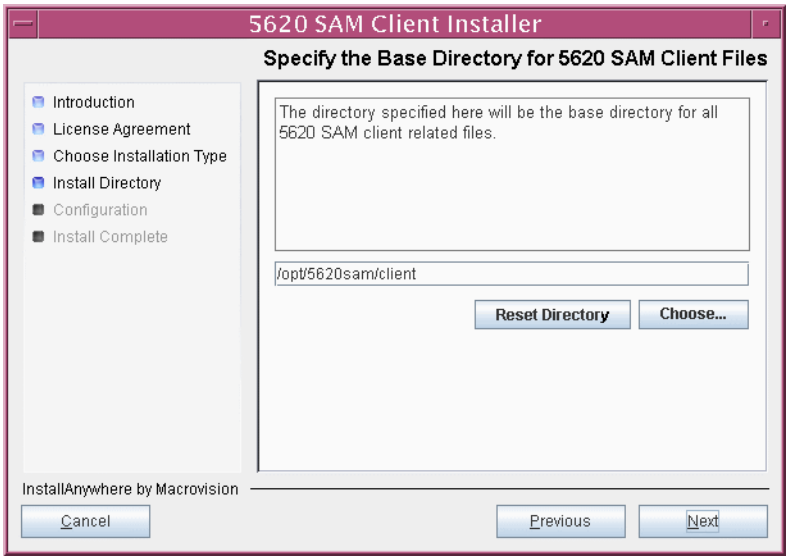
8 Select Client Delegate Installation and Configuration, as shown in Figure 2-226. Click on the Next button.

Figure 2-226 Choose Installation Type



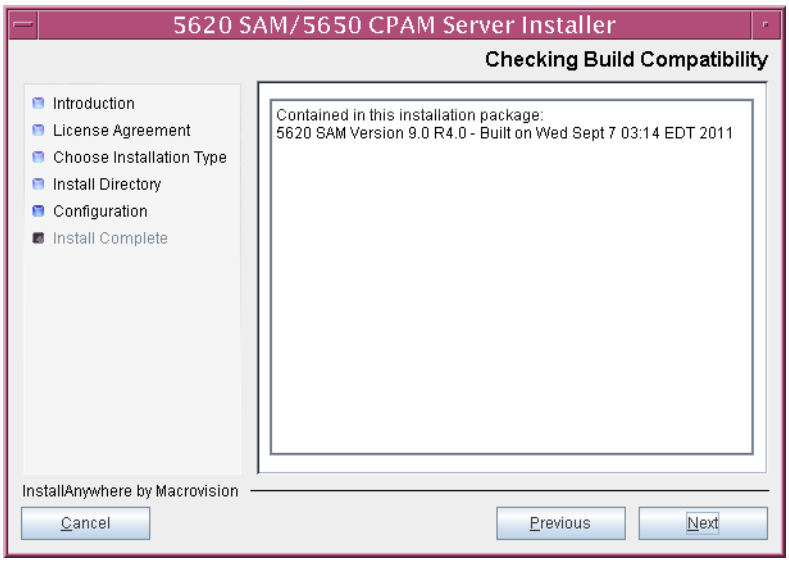
9 Specify a base directory in which to install the 5620 SAM client delegate software (typically /opt/5620sam/client) as shown in Figure 2-227. Click on the Next button.

Figure 2-227 Specify the Base Directory for 5620 SAM Client Files



10 As shown in Figure 2-228, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-228 Checking Build Compatibility

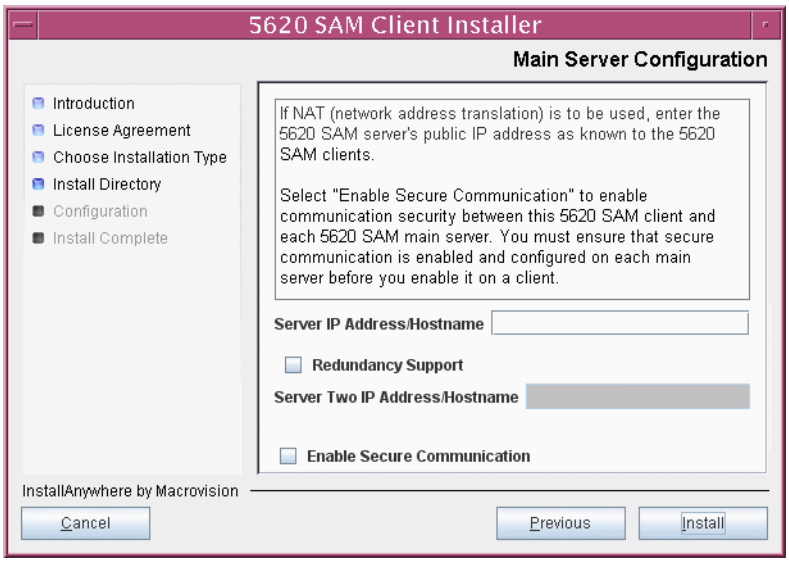


11 Perform one of the following.

a Configure the 5620 SAM client delegate server for use with a standalone 5620 SAM server and database.

i Ensure that the “Redundancy Support” parameter is disabled, as shown in Figure 2-229.

Figure 2-229 Main Server Configuration



ii Configure the “Server IP Address” parameter using the IP address that the client delegate must use to reach the 5620 SAM server.

iii Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.

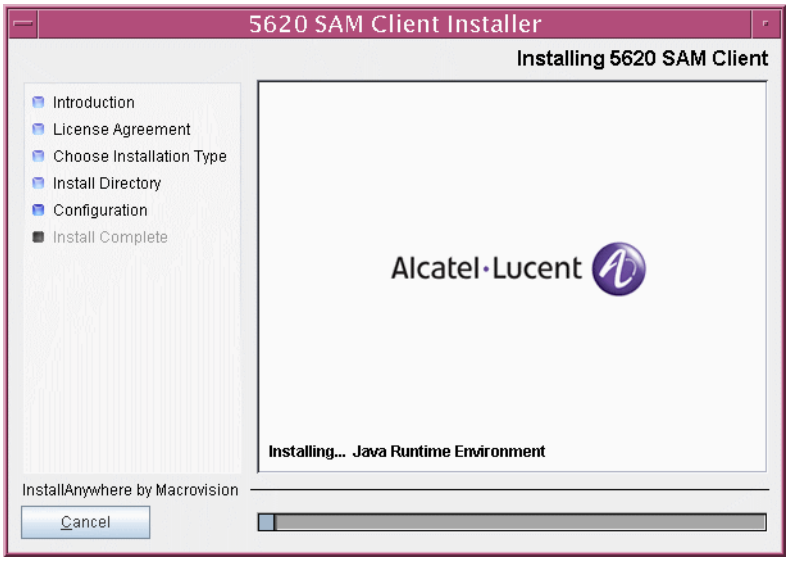
iv Click on the Install button to begin the auto-client update utility installation.

b Configure the 5620 SAM client delegate server for use with a redundant 5620 SAM server and database.

- **i** Select the “Redundancy Support” parameter shown in Figure 2-229.
- **ii** Configure the “Server IP Address” parameter using the IP address that the client delegate server must use to reach the primary 5620 SAM server.
- **iii** Configure the “Server Two IP Address” parameter using the IP address that the client delegate server must use to reach the standby 5620 SAM server.
- **iv** Select the “Enable Secure Communication” parameter if secure communication is configured on the 5620 SAM main servers to which the client connects.
- **v** Click on the Install button to begin the auto-client update utility installation.

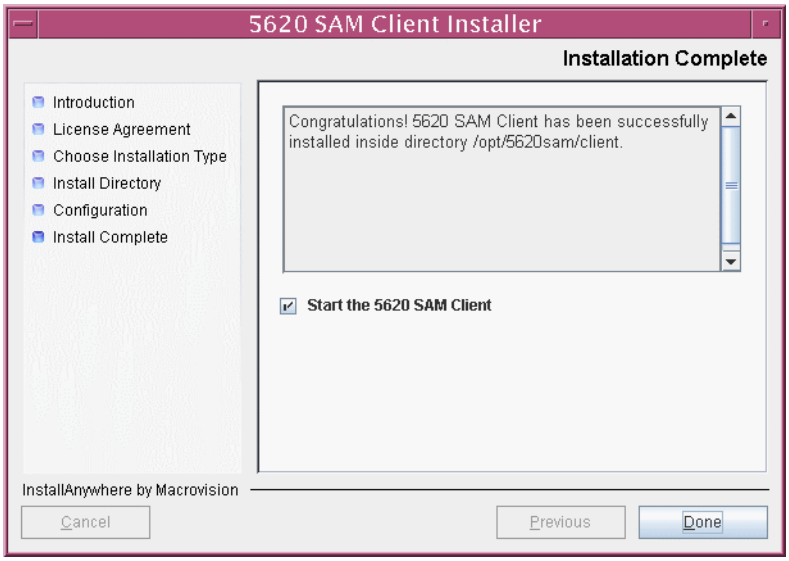
The next panel displays installation progress, as shown in Figure 2-230.

Figure 2-230 Installing 5620 SAM Client



12 When the auto-client update utility installation is complete, as shown in Figure 2-231, ensure that the select the “Start the 5620 SAM Client” parameter is selected to specify that the auto-client update utility is to start immediately after the installation.

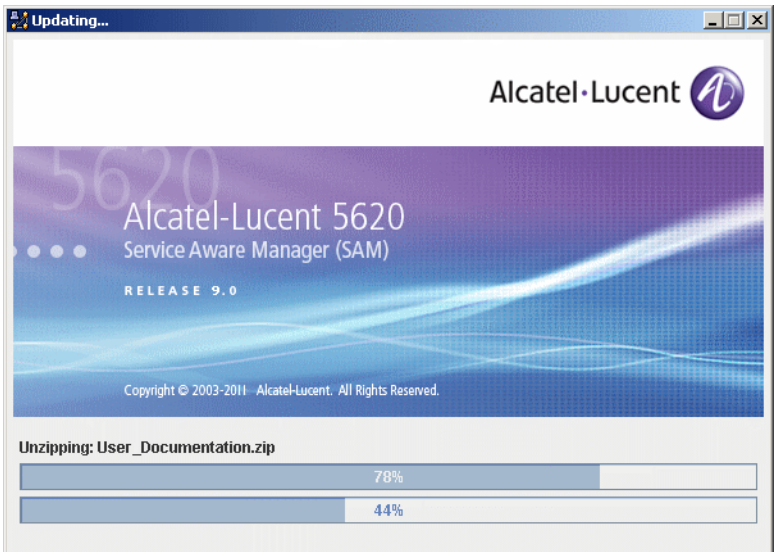
Figure 2-231 Installation Complete



Install 5620 SAM client delegate server software using auto-client update utility

13 Click on the Done button to close the client installer. The auto-client update utility detects the available client software on the 5620 SAM server, begins downloading files, and displays the panel shown in Figure 2-232. The panel uses separate bars to indicate the overall and current task progress.

Figure 2-232 Installation progress



When the installation is complete, the auto-client update utility closes and the 5620 SAM client login form opens.

14 Click on the Cancel button to close the 5620 SAM client login form.

15 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration. You must assign a new password to this user account.

Perform the following steps to assign a new samadmin password.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

Transfer saved GUI preferences and table layouts to client delegate server

16 A client delegate server installation creates a UNIX user group named sam. A user that opens a 5620 SAM client session through the client delegate server must belong to this user group. Add each user that is to use the client delegate server to the user group named sam.

17 Perform the following steps to preserve the saved GUI preferences and table layouts for each Solaris single-user client user that is to migrate from a single-user 5620 SAM client to the client delegate server.

i Log in to the single-user client station as the user that installed the 5620 SAM single-user client or as a user that has read privileges on the client files and directories.

ii Copy the following files in the *home_dir*/5620SAM/guiPreference/*SAM_user_name* directory to the same directory on the client delegate server station:

- *SAM_user_name*.guiPreferences
- *SAM_user_name*.tablePreferences

where
home_dir is the Solaris home directory of the user
SAM_user_name is the 5620 SAM login name of the user

18 Perform the following steps to preserve the saved GUI preferences and table layouts for each Windows single-user client user that is to migrate from a single-user 5620 SAM client to the client delegate server.

i Log in to the single-user client station as the user that installed the 5620 SAM single-user client, or as a user that has read privileges on the client files and directories.

ii Copy the following files in the *home_dir*\5620SAM\guiPreference*SAM_user_name* directory to the same directory on the client delegate server station:

- *SAM_user_name*.guiPreferences
- *SAM_user_name*.tablePreferences

where
home_dir is the UNIX home directory of the user
SAM_user_name is the 5620 SAM login name of the user

19 Perform the following steps on each station that is to open a client GUI session through the client delegate server.

i Open a remote login session on the client delegate server.

ii Configure display redirection from the client delegate server station to the current station.

iii Start the 5620 SAM client GUI by entering the following command:

```
# path/nms/bin/nmsclient.bash ↵
```

where *path* is the 5620 SAM client delegate server installation location, typically /opt/5620sam/client

The 5620 SAM client login form opens.

iv Log in to the 5620 SAM client GUI to ensure that the display is properly redirected and the GUI preferences for the 5620 SAM account, such as table layouts, are preserved.

Procedure 2-8 To add a client delegate server to an existing 5620 SAM system

Perform this procedure to add a new 5620 SAM client delegate server to an existing 5620 SAM system. You must use the 5620 SAM server configuration utility to add the new client delegate server to each main server configuration. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

You require the following user privileges to perform this procedure:

- on each main server station:
  - root or root-equivalent
  - samadmin

1 Perform Procedure 2-7 to install the client delegate server software on the station that is to be the new client delegate server station.

2 If the 5620 SAM is deployed in a standalone configuration, go to step 5.

3 Perform steps 5 to 13 on the primary main server.

4 Perform steps 5 to 13 on the standby main server.

5 Log in to the main server station as the root user.

6 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

7 Open a console window.

8 Navigate to the DVD-ROM drive.

9 Perform one of the following to open the 5620 SAM server configuration utility.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

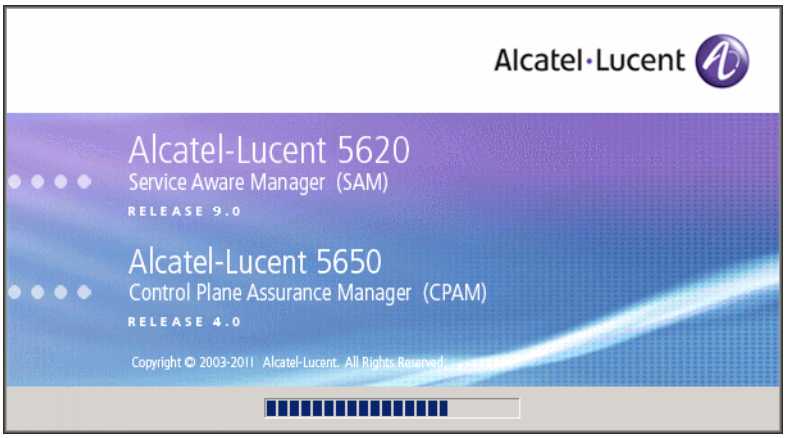
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

The splash screen shown in Figure 2-233 opens.

Figure 2-233 5620 SAM server configuration utility



10 Perform the following steps to add the new client delegate server to the main server configuration.

i Click on the Next button in the “Introduction” panel.

ii Accept the terms of the license agreement in the “Software License Agreement” panel.

iii Click on the Next button.

iv Choose Main Server Configuration in the “Choose Installation Type” panel.

v Click on the Next button.

vi Click on the Next button on each successive panel until the “Additional Server Configuration” panel is displayed.

vii Select the “Client Delegate Server Supported” parameter.

viii Click on the Next button until the “Client Delegate Servers” panel is displayed.

ix Click on the Add button.

x Configure the “IP Address” parameter.

Note — If NAT is used between the 5620 SAM main and client delegate servers, you must specify the public IP address of the client delegate server.

xi Click on the OK button to save the information and close the form.

xii Click on the Next button in each successive panel until the “Installation Complete” panel is displayed.

xiii Click on the Done button to close the main server configuration utility.

11 Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

12 Enter the following:

```
# path/nms/bin/nmsserver.bash read_config ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The main server reads the updated configuration and accepts client sessions from the new client delegate server.

13 Close the console window.

2.8 5620 SAM auxiliary server installation

This section describes how to install a 5620 SAM auxiliary server component for a standalone or redundant 5620 SAM system. Procedure 2-9 describes how to install the 5620 SAM auxiliary server software. Procedure 2-10 describes how to add a new 5620 SAM auxiliary server to an existing 5620 SAM system.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 2-9 To install a 5620 SAM auxiliary server

Perform this procedure to install the 5620 SAM auxiliary server software. You require root-equivalent user privileges on the auxiliary server station to perform this procedure. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — An auxiliary server is dedicated to only one of the following functions:

- statistics collection
- call-trace data collection

Note 2 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 3 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

Note 4 — The installer creates the samadmin user account on the auxiliary server station during this procedure.

1 Log in to the station that is to be the auxiliary server station as a user with root or root-equivalent privileges.

2 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

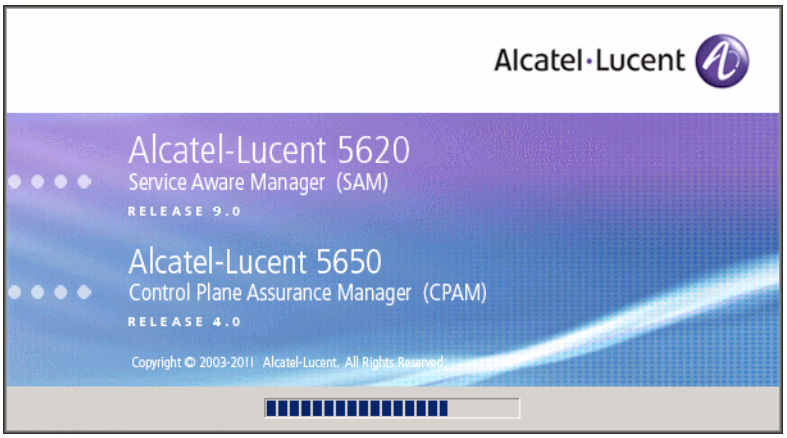
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

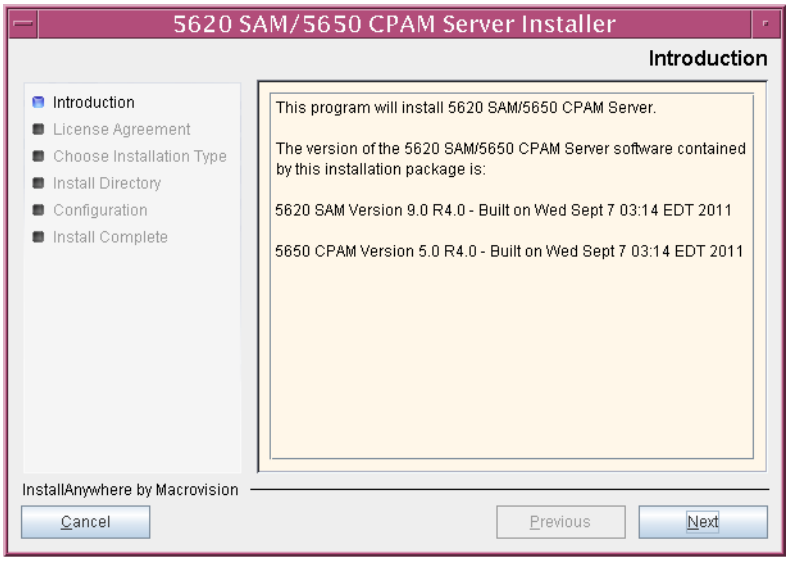
The splash screen shown in Figure 2-234 opens.

Figure 2-234 5620 SAM installer



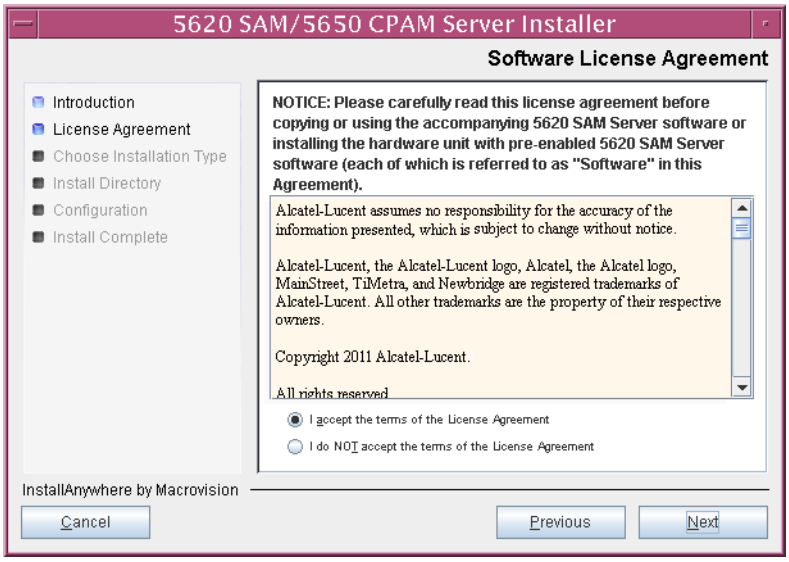
6 The 5620 SAM server installer opens, as shown in Figure 2-235. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 2-235 Introduction



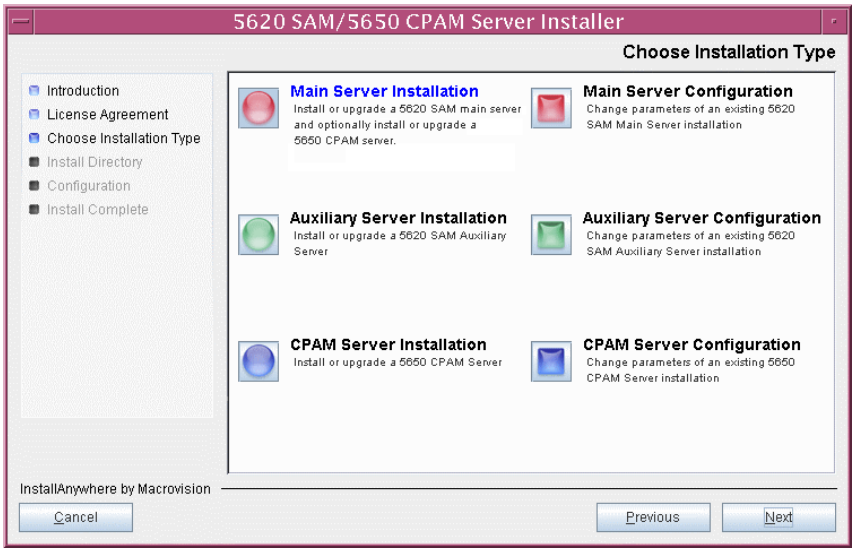
7 Review and accept the terms of the license agreement shown in Figure 2-236. Click on the Next button.

Figure 2-236 Software License Agreement



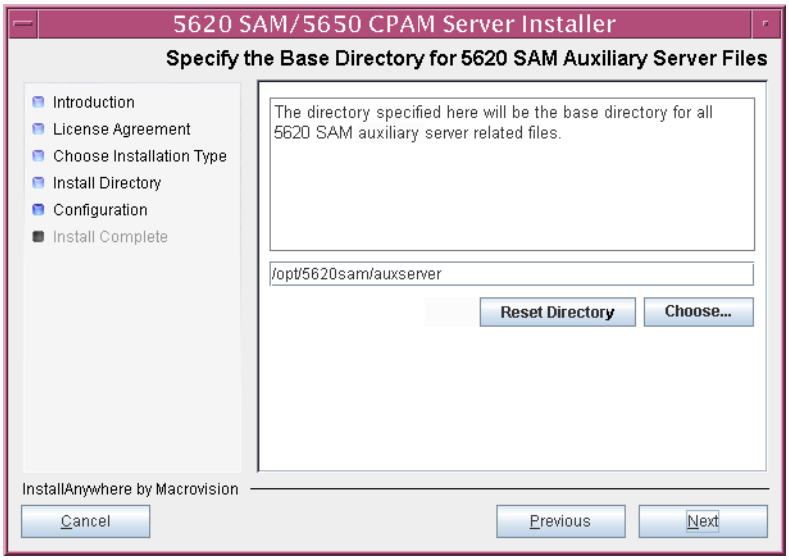
8 Select Auxiliary Server Installation, as shown in Figure 2-237. Click on the Next button.

Figure 2-237 Choose Installation Type



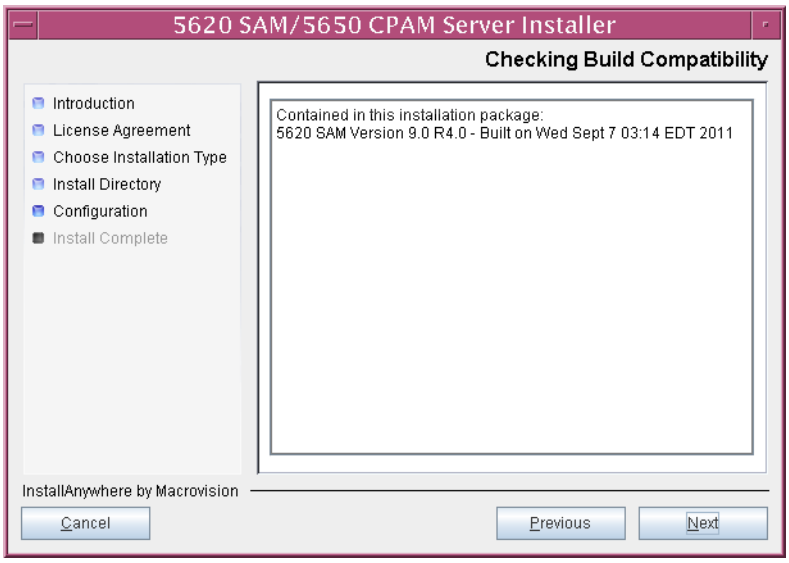
9 Specify a base directory in which to install the 5620 SAM auxiliary server software (typically /opt/5620sam/auxserver), as shown in Figure 2-238. Click on the Next button.

Figure 2-238 Specify the Base Directory for 5620 SAM Auxiliary Server Files



10 As shown in Figure 2-239, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 2-239 Checking Build Compatibility



11 Configure the parameters shown in Figure 2-240:

- Server Domain Name (typically 5620sam)

  This parameter uniquely identifies the 5620 SAM server cluster to which the auxiliary server belongs.
- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM auxiliary server and the main servers.
- Private IP (accessible only by this server)
- Public IP (accessible to servers)
- Server Port (typically 12800)
- Redundancy Supported On the 5620 SAM Main Server

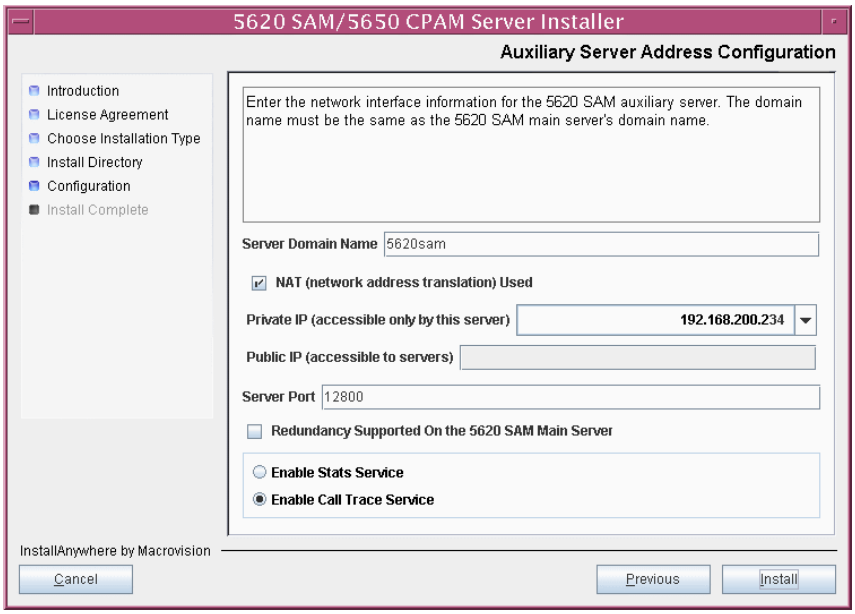
  Select this parameter only if the 5620 SAM main servers are deployed in a redundant configuration.
- Enable Stats Service

  Select this parameter if the 5620 SAM auxiliary server is to be used for statistics collection.
- Enable Call Trace Service

  Select this parameter if the 5620 SAM auxiliary server is to be used for call-trace data collection.

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 2-240 Auxiliary Server Address Configuration

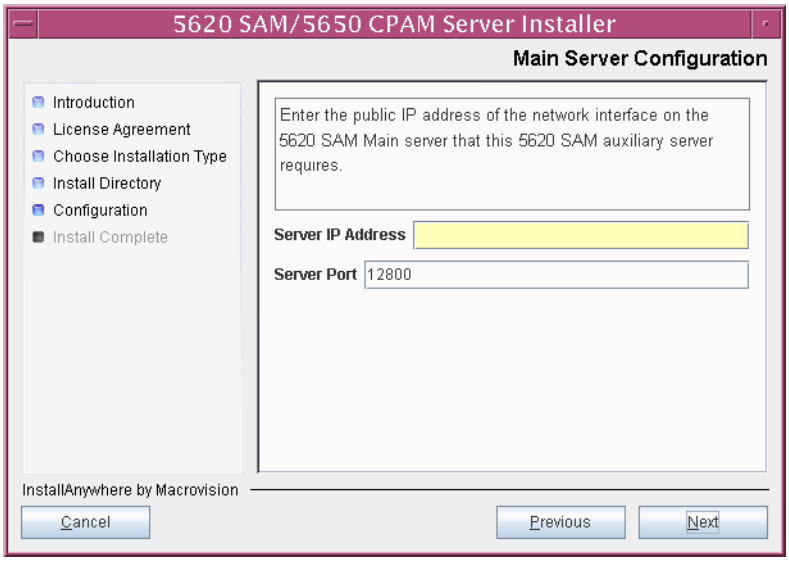


12 Perform one of the following.

a If the “Redundancy Supported On the 5620 SAM Main Server” parameter in step 11 is not selected, configure the parameters shown in Figure 2-241:

- Server IP Address
- Server Port (typically 12800)

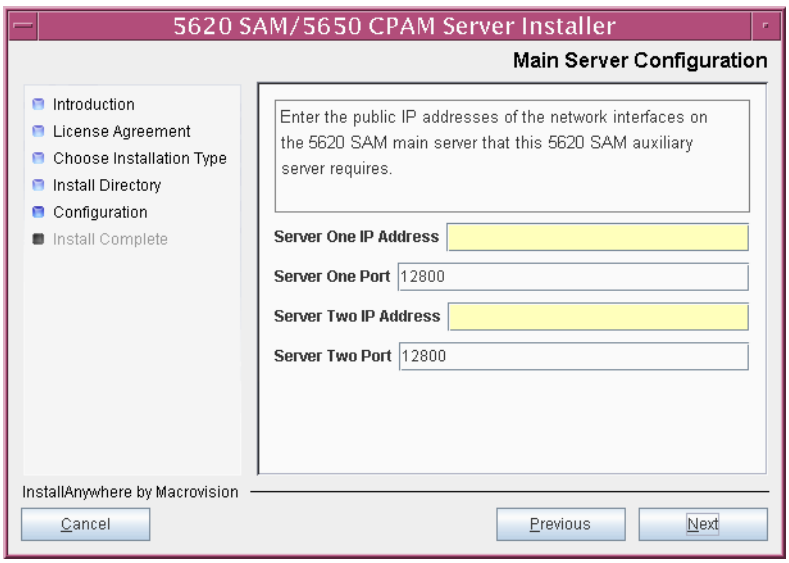
Figure 2-241 Main Server Configuration



b If the “Redundancy Supported On the 5620 SAM Main Server” parameter in step 11 is selected, configure the parameters shown in Figure 2-242:

- Server One IP Address
- Server One Port (typically 12800)
- Server Two IP Address
- Server Two Port (typically 12800)

Figure 2-242 Main Server Configuration



13 If “Enable Call Trace Service” in step 11 is not selected, go to step 15.

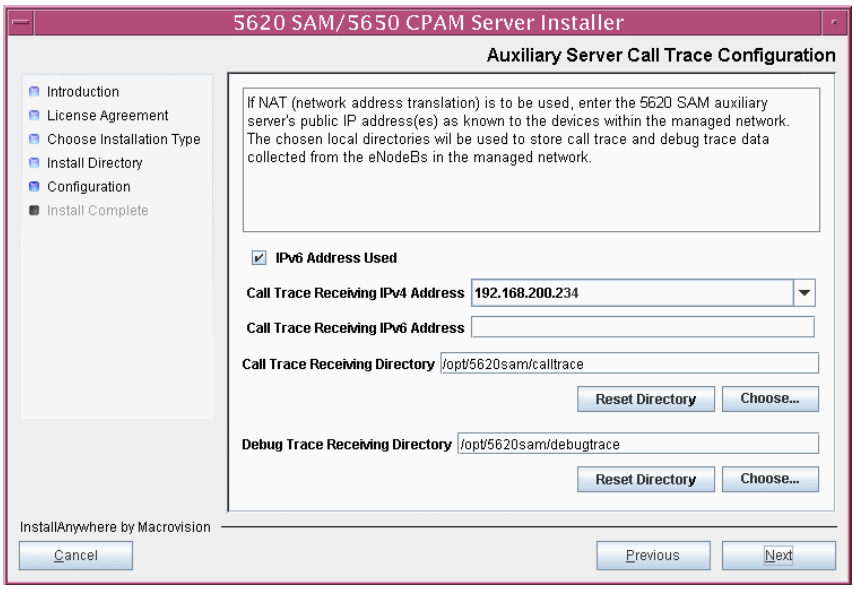
14 The panel shown in Figure 2-243 is displayed if you select the “Enable Call Trace Service” parameter in step 11. Configure the following parameters, then click on the Next button:

- IPv6 Address Used
- Call Trace Receiving IPv4 Address
- Call Trace Receiving IPv6 Address
- Call Trace Receiving Directory (typically /opt/5620sam/calltrace)
- Debug Trace Receiving Directory (typically /opt/5620sam/debugtrace)

Note 1 — The “Call Trace Receiving IPv6 Address” parameter is displayed only when the “IPv6 Address Used” parameter is selected, as shown in Figure 2-243.

Note 2 — If NAT is to be used, each specified IP address must be a public IP address.

Figure 2-243 Auxiliary Server Call Trace Configuration

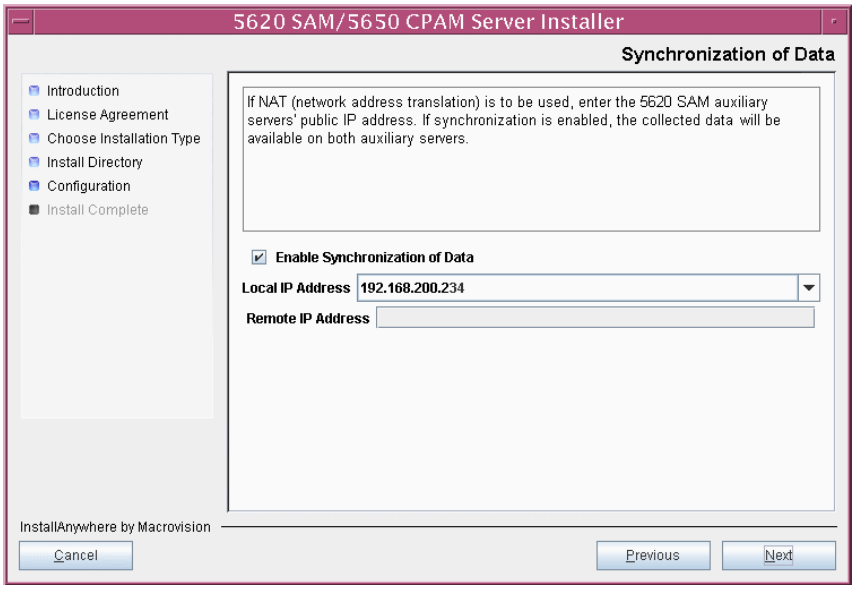


15 Configure the following parameters shown in Figure 2-243, then click on the Next button:

- Enable Synchronization of Data
- Local IP Address
- Remote IP Address

Note — The “Local IP Address” and “Remote IP Address” parameters are configurable only when the “Enable Synchronization of Data” parameter is enabled.

Figure 2-244 Synchronization of Data

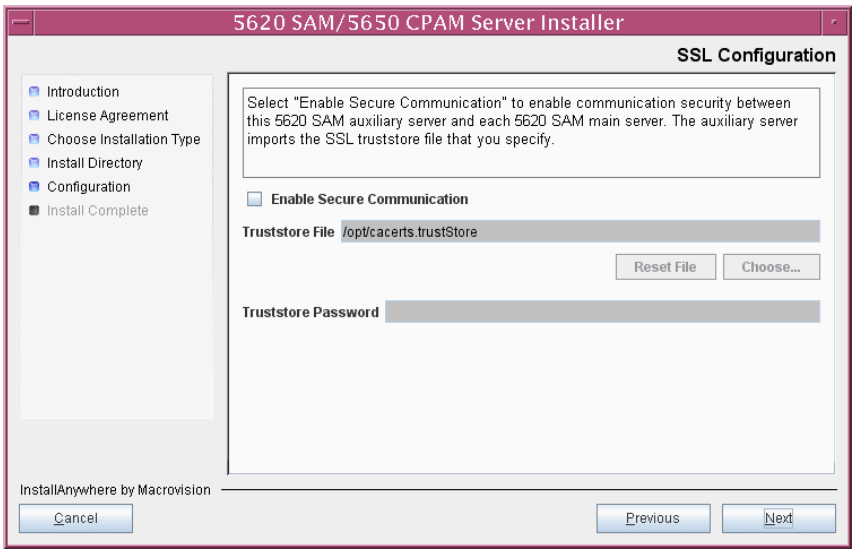


16 Perform the following steps to enable communication security between this auxiliary server and each main server. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 2-245.

Figure 2-245 SSL Configuration



ii Configure the following parameters:

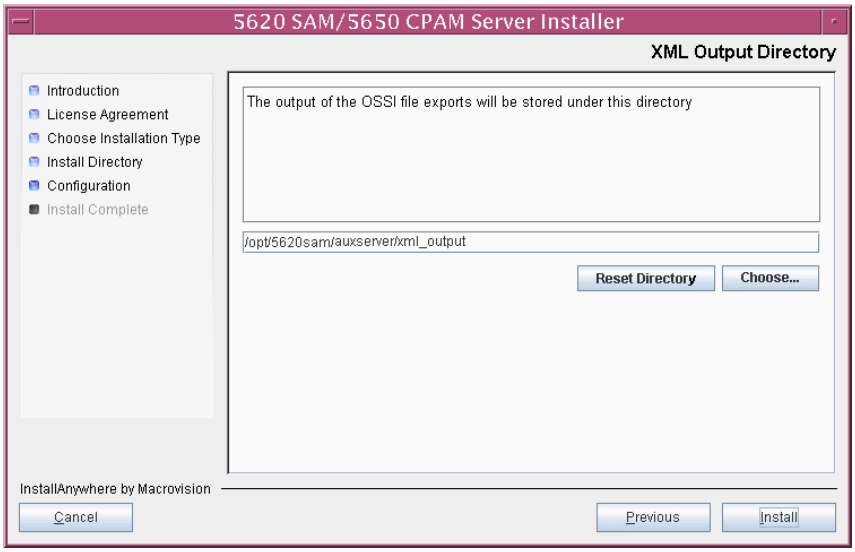
- Truststore File
- Truststore Password

Note — The parameter values must match the values specified during the main server installation.

iii Click on the Next button.

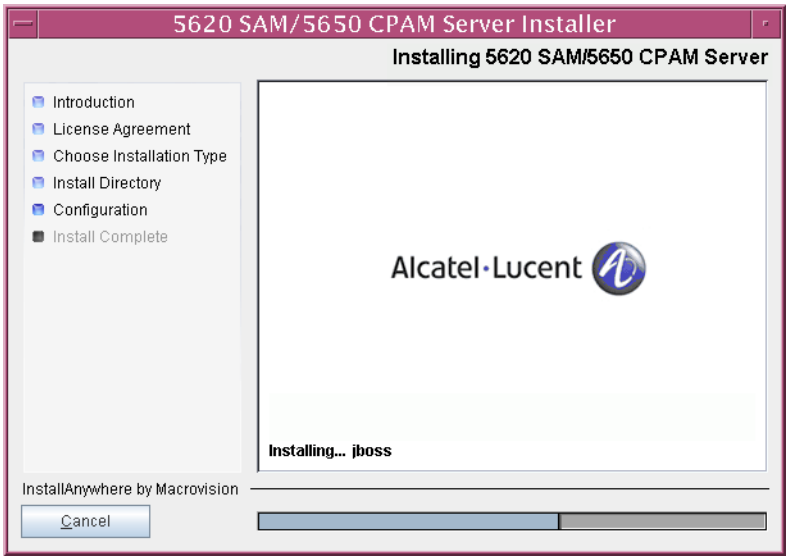
17 Specify an OSS XML output location (typically /opt/5620sam/auxserver/xml_output), as shown in Figure 2-246. Click on the Install button to begin the auxiliary server installation.

Figure 2-246 XML Output Directory



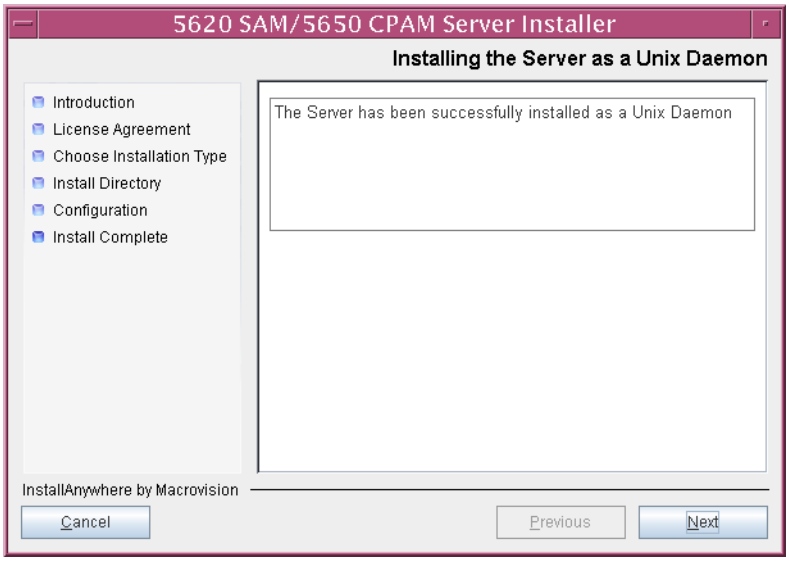
The next panel displays installation progress, as shown in Figure 2-247.

Figure 2-247 Installing 5620 SAM/5650 CPAM Server



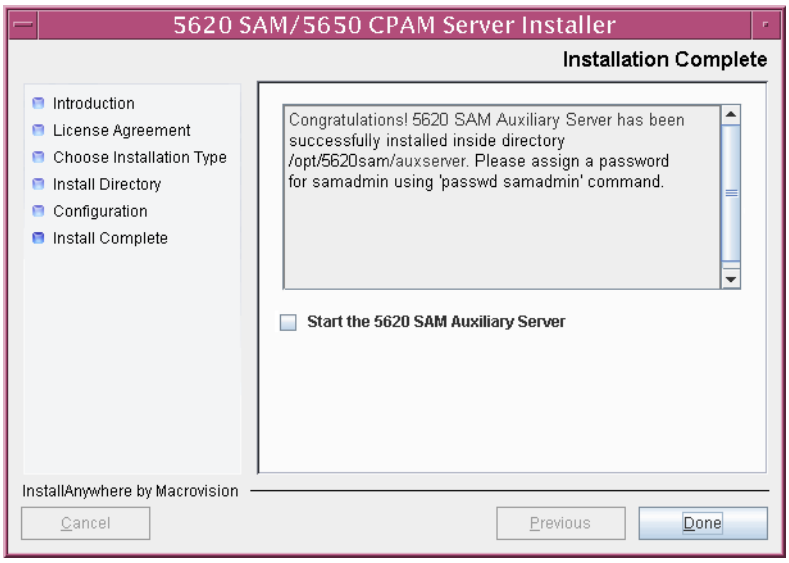
18 As shown in Figure 2-248, the 5620 SAM auxiliary server is installed as a UNIX daemon. Click on the Next button.

Figure 2-248 Installing the Server as a Unix Daemon



19 When the auxiliary server installation is complete, as shown in Figure 2-249, configure the "Start the 5620 SAM Auxiliary Server" parameter to specify whether you want the server to start immediately after the installation.

Figure 2-249 Installation Complete



20 View the panel text to see whether it states that you must assign a password to samadmin, as shown in Figure 2-249. This information is required in step 22.

21 Click on the Done button to close the server installer. If you specified that the auxiliary server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

22 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration.

If you must assign a password to samadmin, as determined in step 20, perform the following steps.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

23 If you specified not to start the auxiliary server immediately after the installation, you can start it later by performing the following steps.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to start the 5620 SAM server software:

```
bash$ path/nms/bin/auxnmsserver.bash auxstart ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

The 5620 SAM auxiliary server starts. Initial server startup can take twenty minutes or more.

Note — The order in which a 5620 SAM auxiliary server and the primary 5620 SAM server initialize is unimportant. The primary 5620 SAM server synchronizes with an auxiliary server as soon as it is able to communicate with the auxiliary server.

Procedure 2-10 To add auxiliary servers to a 5620 SAM system

Perform this procedure to add one or more 5620 SAM auxiliary servers to a functioning 5620 SAM system. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

You require the following user privileges to perform this procedure:

- on each main or auxiliary server station:
  - root or root-equivalent
  - samadmin
- on each database station that has IP validation enabled:
  - Oracle management

Caution — This procedure requires that you add each new auxiliary server to each 5620 SAM main server configuration and restart each main server, which is service-affecting. Perform this procedure only during a scheduled maintenance period.

Note — In a redundant 5620 SAM deployment, you must reconfigure the primary main server before you reconfigure the standby main server.

1 If the 5620 SAM is deployed in a standalone configuration, go to step 5.

2 Perform steps 5 to 10 on the primary main server.

Note — After you stop the primary main server in step 5, a server activity switch occurs and the standby main server becomes the new primary main server.

3 Perform steps 5 to 10 on the former standby (new primary) main server.

4 Go to step 11.

5 Stop the 5620 SAM server application.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 5 v. Do not proceed to the next step until the server is stopped.

6 Enter the following to switch to the root user:

```
bash$ su - ↵
```

7 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

8 Navigate to the DVD-ROM drive.

9 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

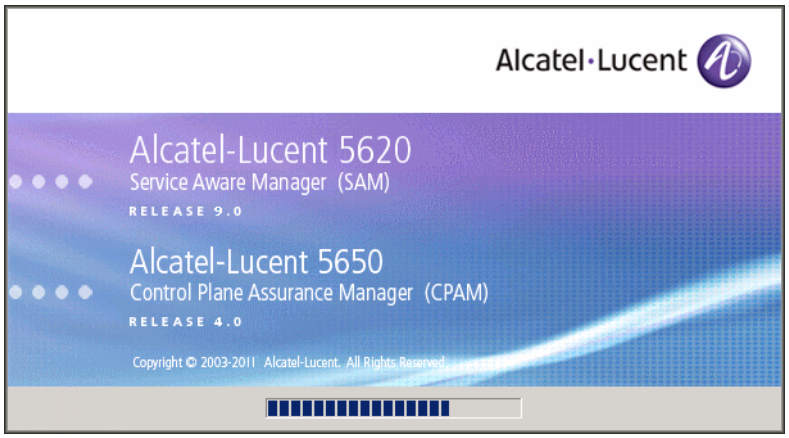
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

The splash screen shown in Figure 2-250 opens.

Figure 2-250 5620 SAM installer



10 Perform the following steps to add an auxiliary server to the main server configuration.

i Accept the terms of the license agreement in the “Software License Agreement” panel.

ii Click on the Next button.

iii Choose Main Server Configuration in the “Choose Installation Type” panel.

iv Click on the Next button.

v Click on the Next button in each successive panel until the “Additional Server Configuration” panel is displayed.

vi Select the “Auxiliary Server Supported” parameter.

vii Click on the Next button in each successive panel until the “Main Server Configuration for Auxiliary Servers” panel is displayed.

viii Configure the following parameters:

- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

ix Click on the Next button. The “Auxiliary Servers” panel is displayed.

x Click on the Add button. The Auxiliary Server Configuration form opens.

xi Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

xii Click on the OK button. The Auxiliary Server Configuration form closes.

xiii Repeat steps 10 x to xii to add another auxiliary server, if required.

xiv If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 10 viii, click on the "Configure Call Trace Auxiliary Servers" button to open the Configure Call Trace Auxiliary Servers form. Otherwise, go to step 10 xvii.

xv Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

xvi Repeat step 10 xv to configure another call-trace auxiliary server pair, if required.

xvii Click on the Next button.

xviii Click on the Next button in each successive panel until the "Installation Complete" panel is displayed.

xix Click on the Done button to close the server installer.

11 Perform the following steps on each 5620 SAM main server station to start the 5620 SAM server application.

Caution — In a redundant 5620 SAM deployment, you must start the former primary main server first, then the former standby main server. This ensures that the primary and standby designations are the same as at the start of the procedure.

i Enter the following to change to the server binary directory:

```
# cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

ii Enter the following to start the 5620 SAM server software:

```
# ./nmsserver.bash start ↵
```

iii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The primary 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Primary server is UP
```

The standby 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby server is UP
```

iv If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

12 If IP validation is enabled for database access, perform the following steps on each database station to enable validation of each auxiliary server.

Caution — In a redundant 5620 SAM deployment, you must perform this step on the primary database station first, then on the standby database station.

i Log in to the database station as the Oracle management user.

ii Open a console window.

iii Enter the following to change to the Oracle network configuration directory:

```
bash$ cd path/network/admin ↵
```

where *path* is the Oracle base installation location, typically /opt/5620sam/oracle11r2

iv Create a backup copy of the sqlnet.ora file.

v Open the sqlnet.ora file with a plain-text editor, for example, vi.

vi In the section labeled IP Validation, edit the TCP.VALIDNODE_CHECKING line to read:

```
TCP.VALIDNODE_CHECKING = yes
```

vii In the same section, edit the TCP.INVITED_NODES line to read:

```
TCP.INVITED_NODES = (hostname_or_IP,hostname_or_IP,...)
```

where
hostname_or_IP is the hostname or IP address of an auxiliary server

viii Save the file.

ix Close the file.

x Enter the following command to stop the Oracle database listener:

```
bash$ path/bin/lsnrctl stop ↵
```

where *path* is the Oracle base installation location, typically /opt/5620sam/oracle11r2

xi Enter the following command to start the Oracle database listener:

```
bash$ path/bin/lsnrctl start ↵
```

where *path* is the Oracle base installation location, typically /opt/5620sam/oracle11r2

xii Close the console window.

13 Perform Procedure 2-9 to install the 5620 SAM auxiliary server software on the station that is to be the new 5620 SAM auxiliary server station.

3 — 5620 SAM upgrade

3.1 5620 SAM upgrade overview

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document.

Caution 1 — An upgrade of a 5620 SAM system in a network requires that you thoroughly understand the general and OS-specific requirements of the task. It is essential that the upgrade procedure be planned, documented and tested in advance on a lab system that is representative of the target live network.

Contact Alcatel-Lucent technical support to assess the upgrade requirements for your network implementation of the 5620 SAM. Alcatel-Lucent offers an upgrade service and strongly recommends that it be engaged for upgrades in larger or more complex networks.

Caution 2 — Alcatel-Lucent supports 5620 SAM software configuration only under the conditions described in chapter 1.

See Appendix B for detailed 5620 SAM upgrade parameter descriptions.

3.2 5620 SAM upgrade procedures list

Table 3-1 lists the 5620 SAM software upgrade procedures.

Table 3-1 5620 SAM upgrade procedures list

Procedure	Purpose
To perform the pre-upgrade tasks	Prepare a standalone or redundant 5620 SAM system for a software upgrade by ensuring the correct conditions are in place, gathering the required system information, and backing up the configuration files and database.
To upgrade a standalone 5620 SAM system	Upgrade the 5620 SAM database and server software in a standalone configuration on one or more Solaris stations.
To upgrade a redundant 5620 SAM system	Upgrade the 5620 SAM database and server software in a redundant deployment.
To upgrade a 5620 SAM single-user client on Solaris	Upgrade the 5620 SAM single-user client software on a Solaris station.
To upgrade a 5620 SAM single-user client on Windows	Upgrade the 5620 SAM single-user client software on a Windows station.
To upgrade a 5620 SAM client delegate server	Upgrade the 5620 SAM client delegate server software.
To upgrade a 5620 SAM auxiliary server	Upgrade the 5620 SAM auxiliary server software on a station that is part of a standalone or redundant 5620 SAM system.

3.3 5620 SAM system upgrade preparation

This section describes how to prepare for the upgrade of a standalone or redundant 5620 SAM system.

Before you attempt a 5620 SAM system upgrade, you must collect the required information and ensure that the proper upgrade conditions are in place. To do this, perform Procedure 3-1.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 3-1 To perform the pre-upgrade tasks

Perform this procedure to prepare a standalone or redundant 5620 SAM system for a 5620 SAM software upgrade.

You require the following user privileges to perform this procedure:

- on each main server station
  - root or root-equivalent
- on each database station:
  - root or root-equivalent
  - Oracle management

Remove failed deployments

1 Remove all outstanding failed deployments. See the *5620 SAM User Guide* for information about deleting a failed deployment.

Back up database

2 Alcatel-Lucent strongly recommends that you perform a database backup using one of the following methods before you upgrade the 5620 SAM database.

Caution 1 — The path of the 5620 SAM database backup directory must not include the 5620 SAM database installation directory, typically /opt/5620sam/samdb, or data loss may occur.

Caution 2 — Before the 5620 SAM performs a database backup, it deletes the contents of the specified backup directory. Ensure that the backup directory that you specify in this step does not contain files that you want to retain.

Perform one of the following.

a Use the 5620 SAM client GUI. See the *5620 SAM User Guide* for information about how to perform a database backup using the client GUI.

b Use a CLI script. Perform the following steps.

i Log in to the appropriate station as the Oracle management user.

- the standalone database station in a standalone 5620 SAM system
- the primary database station in a redundant 5620 SAM system

ii Open a console window.

iii Enter the following to begin the database backup:

```
bash$ path/install/config/samdb/SAMbackup.sh
backup_directory ↵
```

where
path is the 5620 SAM database installation location, typically /opt/5620sam/samdb
backup_directory is the directory that is to contain the database backup

The 5620 SAM backs up the database.

iv Record the backup directory location.

v Copy the database backup files from the backup directory to a secure location, such as a non-5620 SAM station, for safekeeping.

Verify external-system compatibility

3 Ensure that the new 5620 SAM software is compatible with the software release level of each external system, such as the 5750 SSC, that connects to the 5620 SAM system. Contact Alcatel-Lucent technical support for information about 5620 SAM compatibility with an external system.

Verify managed-device and 5620 SAM policy compatibility

4 Confirm that the new 5620 SAM software release supports the software release of each 5620 SAM-managed device. Perform one of the following for each unsupported device before you attempt the upgrade, or a service disruption may occur. See the *5620 SAM NE Compatibility Guide* for information about managed-device release and 5620 SAM release compatibility.

a Upgrade the device to a software release that the new 5620 SAM software supports. See the appropriate device documentation for information about device software upgrades.

b Remove the device from the 5620 SAM managed network. See the *5620 SAM User Guide* for information about performing the following steps.

i Use a 5620 SAM client to unmanage the device.

ii When the device is unmanaged, use the 5620 SAM client to remove the device from the 5620 SAM network.

Note — If you have a 5620 SAM system that manages one or more OmniSwitch devices as generic NEs, you must unmanage and delete the OmniSwitch generic NEs before you upgrade the 5620 SAM software.

You can manage the devices directly, rather than as generic NEs, when the 5620 SAM upgrade is complete.

5 If you are upgrading from R4 or later of 5620 SAM Release 7.0, perform the following steps to ensure the compatibility of the egress queue group template policies.

Note — You do not need to perform this step if you are upgrading from Release 8.0 R1 or later.

i Choose Policies→QoS→SROS QoS→Queue Group→Egress Template from the 5620 SAM main menu. The Manage Egress Queue Group Template Policies form opens.

ii Click on the Search button.

iii View the list. If no policy has the following Displayed Name value, go to step 6:

policer-output-queues

iv Select the policy named policer-output-queues and click on the Properties button.The Egress Queue Group Template Policy (Edit) form opens.

v Click on the Copy button. The Egress Queue Group Template Policy (Create) form opens.

vi Change the Displayed Name value to something other than policer-output-queues.

vii Distribute the policy to devices, as required.

viii Delete the policy named policer-output-queues.

Close 5620 SAM LogViewer

6 Close the 5620 SAM LogViewer application, if it is open.

Open port for client/server communication

7 Confirm that the firewalls between the 5620 SAM main server and client allow traffic to the HTTP or HTTPS port used for performing automatic client updates. Otherwise, you cannot perform a client installation or upgrade. By default, the auto-update utility uses HTTP. See the *5620 SAM User Guide* for information about configuring 5620 SAM clients and servers to communicate using HTTP or HTTPS.

Back up configuration files

8 Make a backup copy of each file that you have created or customized in or under the *path*/nms and *path*/jre directories on each main server station

where *path* is the 5620 SAM main server installation location, typically /opt/5620sam/server

Note — At the beginning of a 5620 SAM server upgrade, the 5620 SAM installation utility backs up specific configuration and log files to a timestamped directory under the installation directory. The utility then deletes directories under the main server installation directory. If you have created or customized a file under this directory, you risk losing the file unless you back up the file before the upgrade to a storage location that is unaffected by the upgrade.

Store the files in a secure location that is unaffected by 5620 SAM upgrade activity.

9 Make a copy of any custom XML configuration files in the *path*/nms/jboss directory on each server station

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

Store the files in a secure location that is unaffected by 5620 SAM upgrade activity.

Gather required information

10 Obtain the following information from each main server station in the 5620 SAM system and record it for use during the upgrade:

- hostname, which is one of the following:
  - the hostname specified for the main server station during the previous 5620 SAM software installation or upgrade
  - the local hostname, if an IP address was specified for the main server station during the previous 5620 SAM software installation or upgrade
- IP addresses
  - server IP addresses used by 5620 SAM databases to reach the server (public IP addresses, if NAT is used)
  - server IP address used by 5620 SAM GUI and OSS clients to reach the server (public IP address, if NAT is used)
  - server IP address used by 5620 SAM auxiliary servers to reach the server (public IP address, if NAT is used)
  - private server IP address (if NAT is used)
- root user password

11 Perform the following steps to obtain the redundancy information for each server and database in the 5620 SAM system.

i Open a 5620 SAM client.

ii Choose Administration→System Information from the 5620 SAM main menu. The System Information window is displayed.

iii Record the following information for use during the upgrade:

- Domain Name
- **In the Primary Server panel:**
  - IP Address
  - Host Name
  - Status
- **In the Primary Database Server panel:**
  - Database Name
  - Instance Name
  - IP Address
  - Host Name

iv If the 5620 SAM system is deployed in a redundant configuration, record the following information for use during the upgrade:

- **In the Standby Server panel:**
  - IP Address
  - Host Name
  - Status
- **In the Standby Database Server panel:**
  - Database Name
  - Instance Name
  - IP Address
  - Host Name

12 If the 5620 SAM system includes one or more auxiliary servers, click on the Auxiliary Servers tab button. A list of auxiliary servers is displayed. Otherwise, go to step 14.

13 Perform the following steps for each auxiliary server listed on the form:

i Select an auxiliary server in the list and click on the Properties button. The properties form for the auxiliary server opens.

ii Record the following information for use during the upgrade:

- Host Name
- Port Number
- Auxiliary Server Type
- Server Status
- Public IP address
- Private IP address, if displayed

iii Close the auxiliary server properties form.

14 If the 5620 SAM system includes one or more client delegate servers, click on the Client Delegate Servers tab button. Otherwise, go to step 16.

15 Perform the following steps for each client delegate server listed on the form:

i Select a client delegate server in the list and click on the Properties button. The properties form for the client delegate server opens.

ii Record the IP Address value for use during the upgrade.

iii Close the client delegate server properties form.

16 Close the System Information form, if it is open.

17 Obtain the following information from each database station in the 5620 SAM system and record it for use during the upgrade:

- hostname
- IP addresses
  - database IP addresses used by 5620 SAM servers to reach the database (public IP addresses, if NAT is used)
  - database IP address used by 5620 SAM auxiliary servers to reach the database (public IP address, if NAT is used)
  - private database IP address (if NAT is used)
- root user password
- Oracle management user information:
  - UNIX username (default value at installation is oracle)
  - UNIX group name (default value at installation is oracle)
  - UNIX home directory (default value at installation is /opt/5620sam/oracle11r2)
- Oracle database user ID (default value at installation is samuser)
- Oracle database user password
- Oracle SYS password
- Oracle base installation directory name (default 5620 SAM Release 7.0 or 8.0 value is /opt/5620sam/oracle10r2; default 5620 SAM Release 9.0 value is /opt/5620sam/oracle11r2)
- 5620 SAM database installation directory name (default installation value is /opt/5620sam/samdb)

Close client sessions

18 Close all unrequired open 5620 SAM client sessions.

i Open a 5620 SAM client session using an account with security management privileges, such as admin.

ii Click on Administration→Security→5620 SAM User Security in the 5620 SAM main menu. The 5620 SAM User Security - Security Management (Edit) form opens with the General tab displayed.

iii Click on the Sessions tab button.

iv Click on the Search button. The form displays a list of the open 5620 SAM client sessions.

v Using the IP addresses in the Client IP column, identify the GUI and OSS clients that are currently logged in.

vi Close the client sessions by selecting them and clicking on the Close Session button. A dialog box appears.

- If you are performing a standalone upgrade, you must close all open 5620 SAM client sessions.
- If you are performing a redundant upgrade, you must close all open 5620 SAM client sessions except for those required to monitor the network during the upgrade.

Note — One of the listed sessions is the session that you are using. Do not attempt to close this session.

vii Click on the Yes button to confirm the action.

viii Click on the Search button to refresh the list of open client sessions.

19 If the 5620 SAM client that you are using is not required for network monitoring during the upgrade, close the 5620 SAM client by choosing Application→Exit from the 5620 SAM main menu.

3.4 Standalone 5620 SAM upgrade workflow

The following is the sequence of high-level actions required to upgrade a standalone 5620 SAM system. A section heading in quotation marks is a reference to a section in Procedure 3-2.

1 Perform the pre-upgrade tasks. See Procedure 3-1 for more information.

2 Back up the 5620 SAM database, if not done as a pre-upgrade task. See "Back up database" for more information.

3 Stop the 5620 SAM server application. See "Stop server" for more information.

4 Disable the 5620 SAM server startup daemon. See "Disable server daemon" for more information.

5 Prepare the 5620 SAM database for the upgrade. See "Prepare database for upgrade" for more information.

6 Disable the 5620 SAM database and Oracle proxy startup daemons. See "Disable database daemons" for more information.

7 Upgrade the database. See "Upgrade database" for more information.

8 Upgrade the server. See "Upgrade server" for more information.

9 Upgrade or install the 5620 SAM client software, as required. See "Upgrade or install 5620 SAM client" for more information.

3.5 Standalone 5620 SAM system upgrade

This section describes how to upgrade the software components of a standalone 5620 SAM system. Procedure 3-2 describes how to upgrade the 5620 SAM database and main server software.

Before you begin a 5620 SAM system upgrade, you must collect the required information and ensure that the proper conditions are in place, as described in Procedure 3-1.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 3-2 To upgrade a standalone 5620 SAM system

Perform this procedure to upgrade the 5620 SAM database and main server software in a standalone deployment on one or more stations. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges to perform this procedure:

on the main server station:

- root or root-equivalent
- samadmin

on the database station:

- root or root-equivalent
- Oracle management

1 Open at least one 5620 SAM client to monitor the network before the first server and database are upgraded.

Back up database

2 Alcatel-Lucent strongly recommends that you perform a database backup before you perform a 5620 SAM system upgrade. If you did not perform a database backup as part of the pre-upgrade preparation in Procedure 3-1, back up the database now using a CLI script.

Caution 1 — The path of the 5620 SAM database backup directory must not include the 5620 SAM database installation directory, typically /opt/5620sam/samdb, or data loss may occur.

Caution 2 — Before the 5620 SAM performs a database backup, it deletes the contents of the specified backup directory. Ensure that the backup directory that you specify in this step does not contain files that you want to retain.

Perform the following steps.

i Log in to the database station as the Oracle management user.

ii Open a console window.

iii Enter the following to begin the database backup:

```
bash$ path/install/config/samdb/SAMbackup.sh
backup_directory ↵
```

where
path is the 5620 SAM database installation location, typically /opt/5620sam/samdb
backup_directory is the directory that is to contain the database backup

The 5620 SAM backs up the database.

iv Record the backup directory location.

v Copy the database backup files from the backup directory to a secure location, such as a non-5620 SAM station, for safekeeping.

Stop server

3 Stop the 5620 SAM server application.

i Log in to the server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 3 v. Do not proceed to the next step until the server is stopped.

Disable server daemon

4 Disable the 5620 SAM server startup daemon. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the upgrade.

i Log in to the server station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

Prepare database for upgrade

5 Log in to the database station as a user with root or root-equivalent privileges.

6 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

7 Open a console window.

8 You must run a pre-upgrade script that configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Navigate to the DVD-ROM drive that contains the new 5620 SAM software DVD-ROM.

Caution — Ensure that you run only the pre-installation script that is on the new 5620 SAM software DVD-ROM. Using a different version of the script may cause the database upgrade to fail.

9 Perform one of the following to change to the appropriate directory.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

10 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

11 Enter 2 ↵.

12 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is current home directory, typically /opt/5620sam/oracle10r2 on a Release 8.0 or earlier system)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter, except for the home directory, for which Alcatel-Lucent recommends that you set to oracle11r2 to match the new Oracle installation location.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — Running the script may generate messages that are similar to the following; these are not error messages and can be ignored.

- WARNING: Group dba already exists locally.
- WARNING: Oracle user with the specified name already exists locally.
- projadd: Duplicate project name "Oracle11R2"

Disable database daemons

13 Disable the 5620 SAM Oracle proxy and database startup daemons. This ensures that the 5620 SAM database does not automatically start in the event of a power disruption during the upgrade.

i Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

ii Enter the following to disable the 5620 SAM database startup daemon by renaming it:

```
# mv S95db5620sam inactive.S95db5620sam ↵
```

iii Enter the following to disable the 5620 SAM Oracle proxy daemon by renaming it:

```
# mv S965620SAMOracleProxyWrapper
inactive.S965620SAMOracleProxyWrapper ↵
```

14 Enter the following to reboot the database station and put the system update into effect:

```
# shutdown -y -i6 -g0 ↵
```

The database station reboots.

Upgrade database

15 After the database station reboots, log in to the database station as the Oracle management user.

16 Open a console window.

17 Navigate to the DVD-ROM drive that contains the new 5620 SAM software DVD-ROM.

18 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

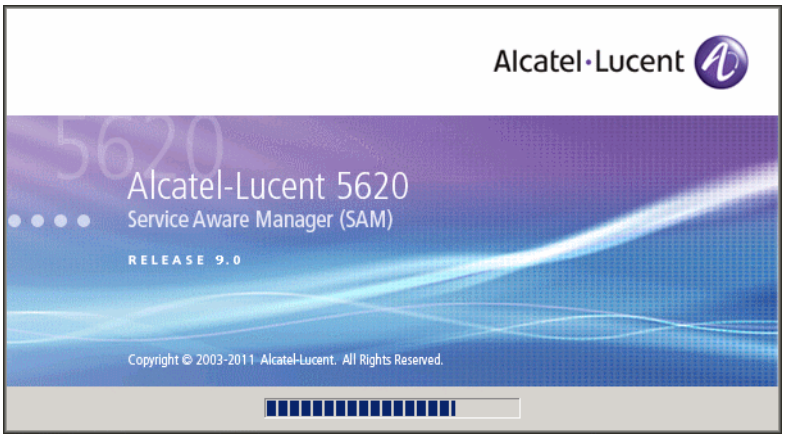
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

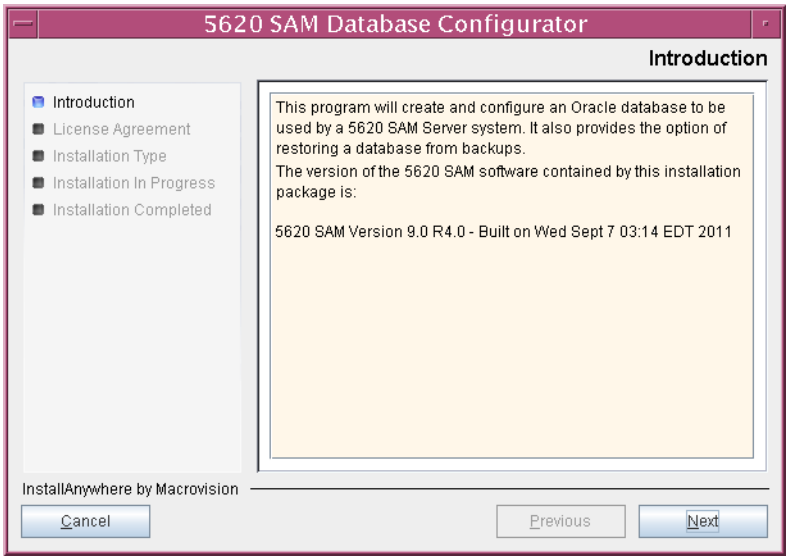
The splash screen shown in Figure 3-1 opens.

Figure 3-1 5620 SAM installer



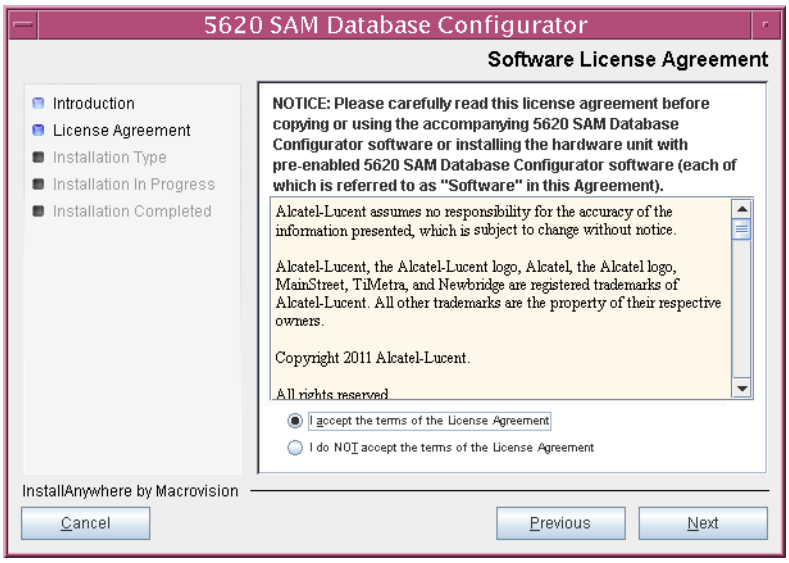
19 The 5620 SAM database installer opens, as shown in Figure 3-2. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-2 Introduction



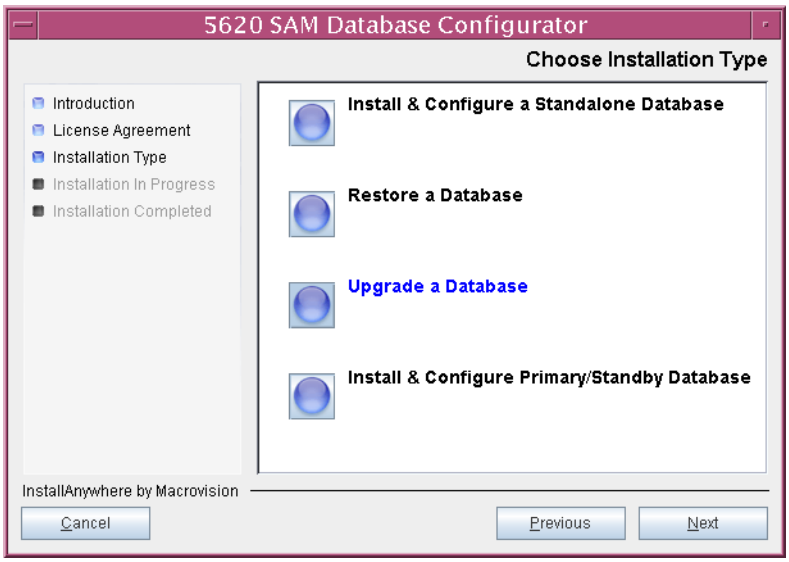
20 Review and accept the terms of the license agreement shown in Figure 3-3. Click on the Next button.

Figure 3-3 Software License Agreement



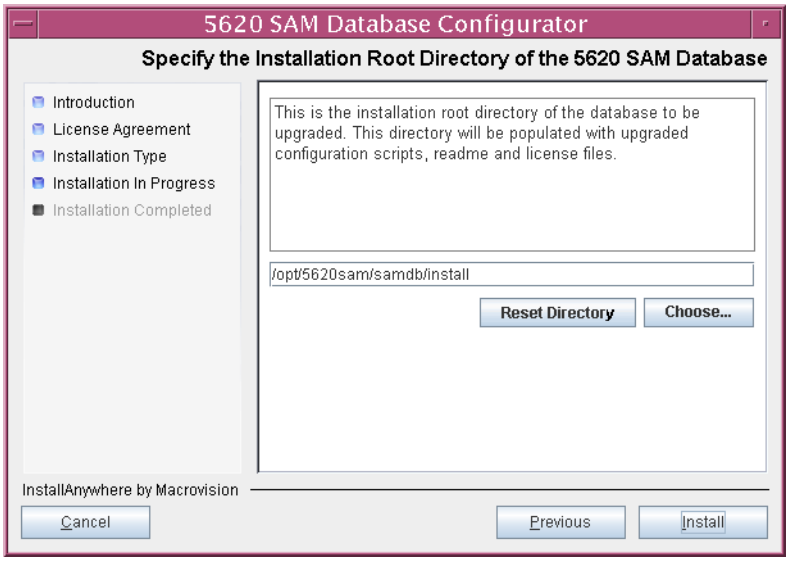
21 Select Upgrade a Database, as shown in Figure 3-4. Click on the Next button.

Figure 3-4 Choose Installation Type



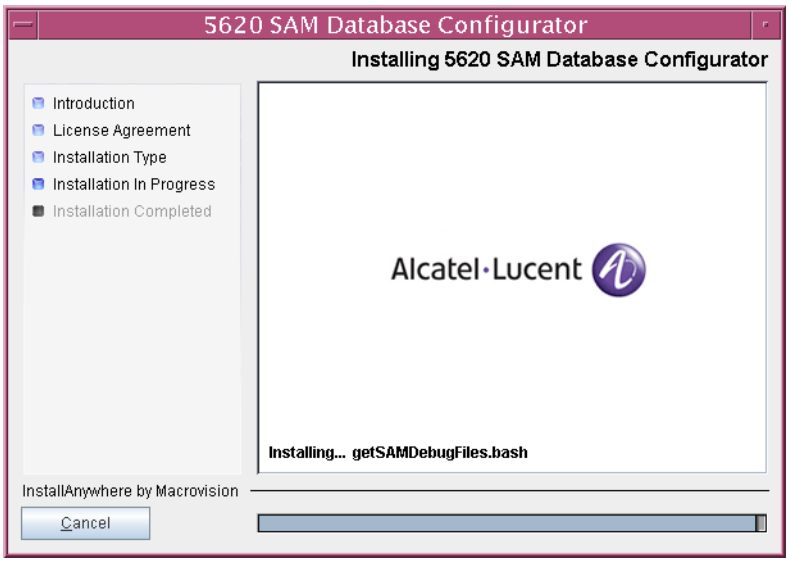
22 Specify the directory in which the 5620 SAM database files are installed (typically /opt/5620sam/samdb/install), as shown in Figure 3-5. Click on the Install button to begin the installer configuration.

Figure 3-5 Specify the Installation Root Directory of the 5620 SAM Database



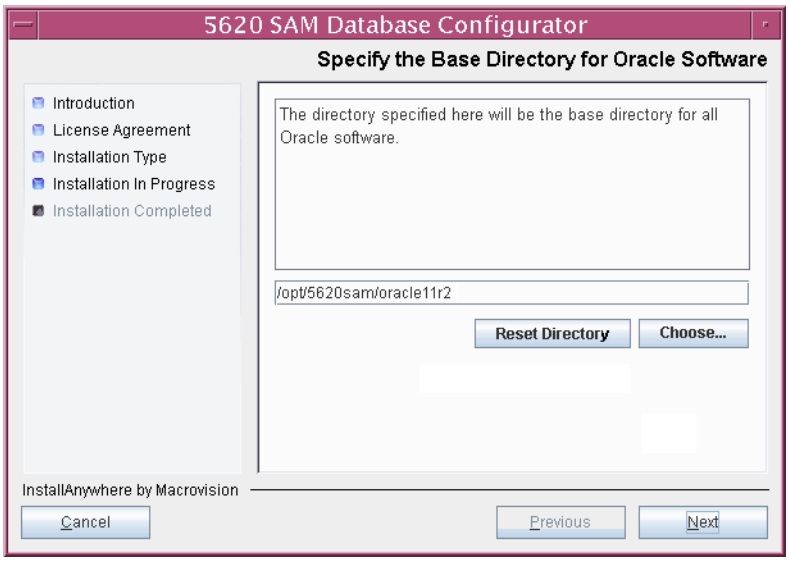
The installer prepares to upgrade the database, as shown in Figure 3-6.

Figure 3-6 Installing 5620 SAM Database Configurator



23 The panel shown in Figure 3-7 displays the Oracle software installation directory, which cannot be changed. Click on the Next button.

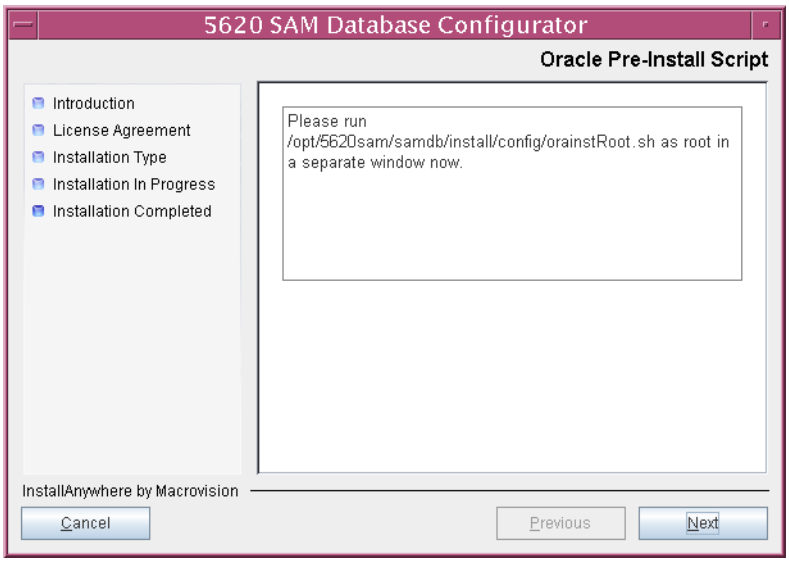
Figure 3-7 Specify the Base Directory for Oracle Software



24 If you are upgrading from Release 9.0 R1 or later, go to step 29.

25 When the panel in Figure 3-8 is displayed, perform the following steps.

Figure 3-8 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

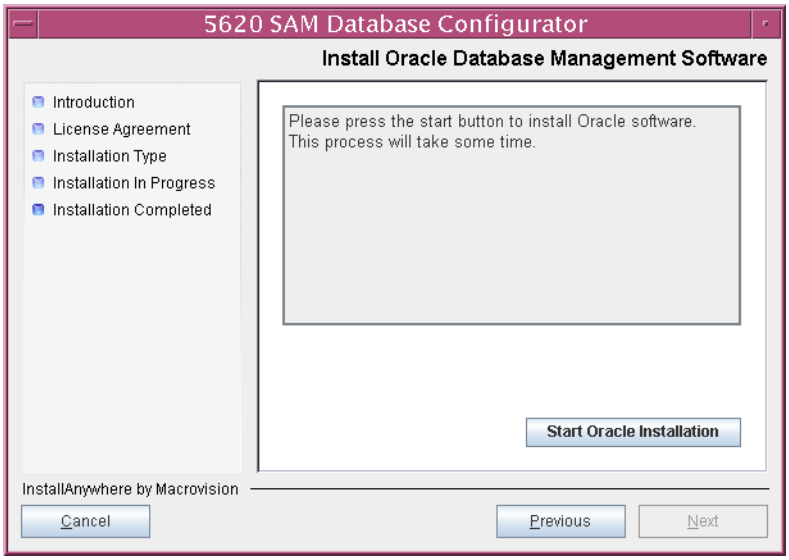
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

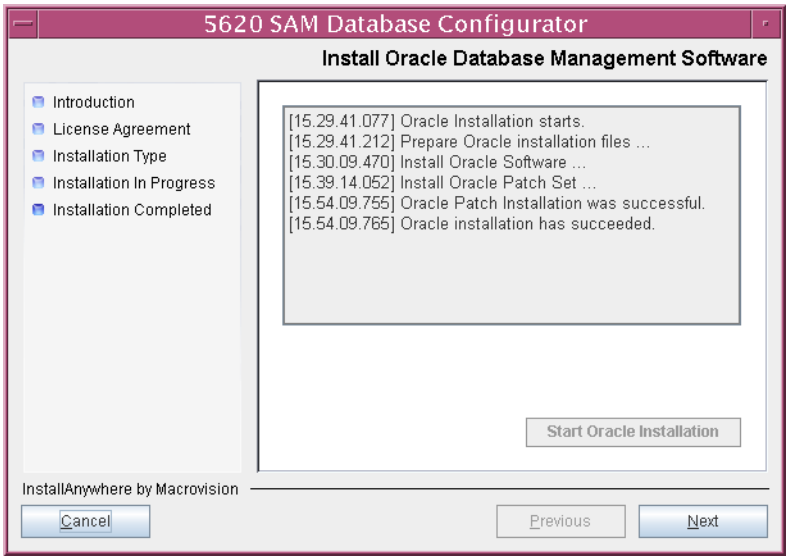
26 You are prompted to install Oracle software, as shown in Figure 3-9. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 3-9 Install Oracle Database Management Software



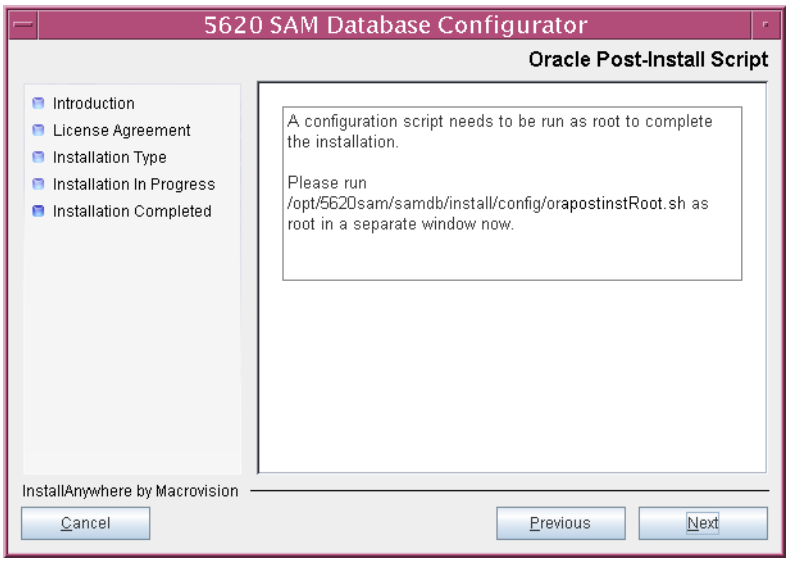
27 As shown in Figure 3-10, Oracle installation details are displayed as the installation progresses. When the installation is complete, click on the Next button.

Figure 3-10 Install Oracle Database Management Software



28 When the panel in Figure 3-11 is displayed, perform the following steps.

Figure 3-11 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

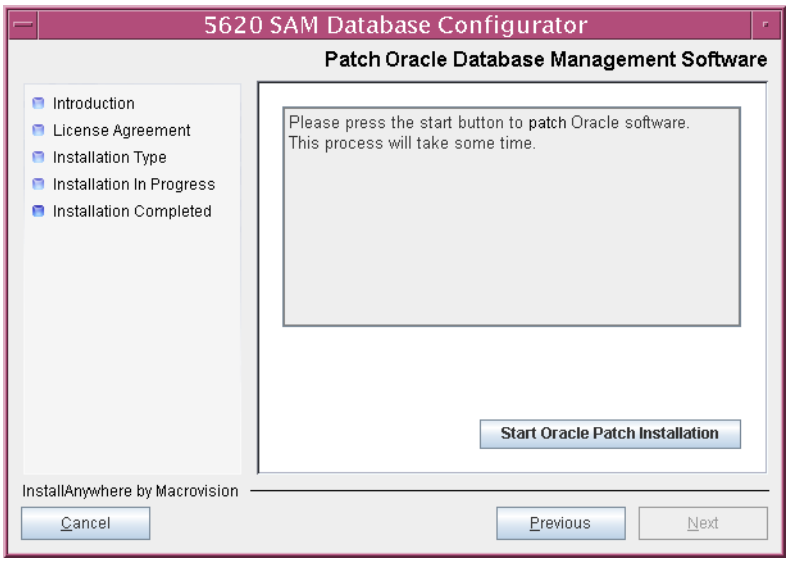
iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

vi Click on the Next button.

29 If the panel in Figure 3-12 is displayed, perform the following steps.

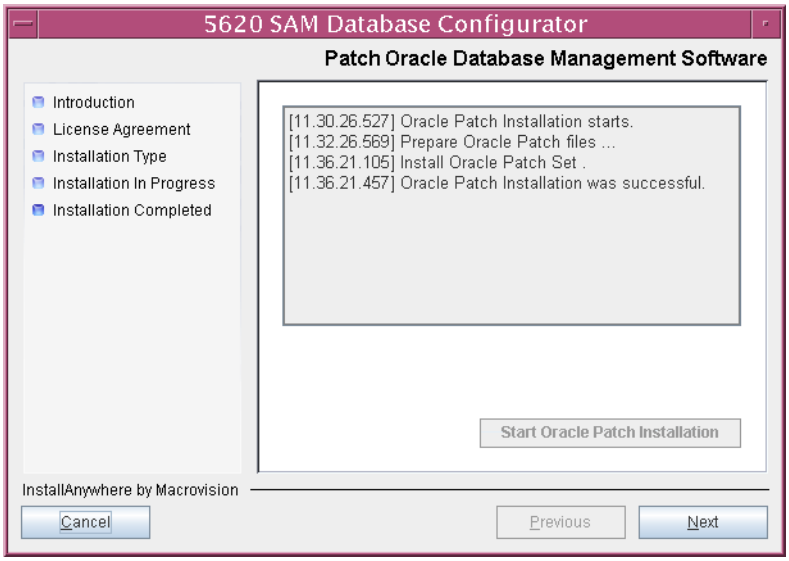
Figure 3-12 Patch Oracle Database Management Software



i Click on the “Start Oracle Patch Installation” button to begin installing the Oracle patch. Oracle patch installation can take an hour or more to complete.

ii Oracle patch installation details are displayed as the patch installation progresses. When the patch installation is complete, as shown in Figure 3-13, click on the Next button.

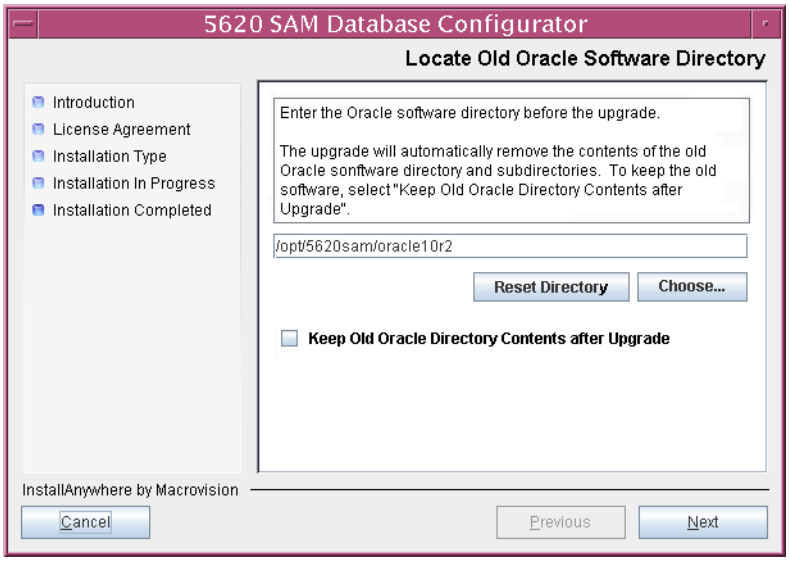
Figure 3-13 Patch Oracle Database Management Software



30 Specify the location of the currently installed Oracle software, as shown in Figure 3-14, configure the “Keep Old Oracle Directory Contents after Upgrade” parameter, then click on the Next button.

Note — If the “Keep Old Oracle Directory Contents after Upgrade” parameter is not selected, the 5620 SAM database installer deletes the files and subdirectories in the specified directory. The installer deletes the directory itself only if the directory is not specified as the Oracle management user home directory in step 12.

Figure 3-14 Locate Old Oracle Software Directory



31 Configure the following parameters shown in Figure 3-15 using information from the existing 5620 SAM installation, then click on the Next button:

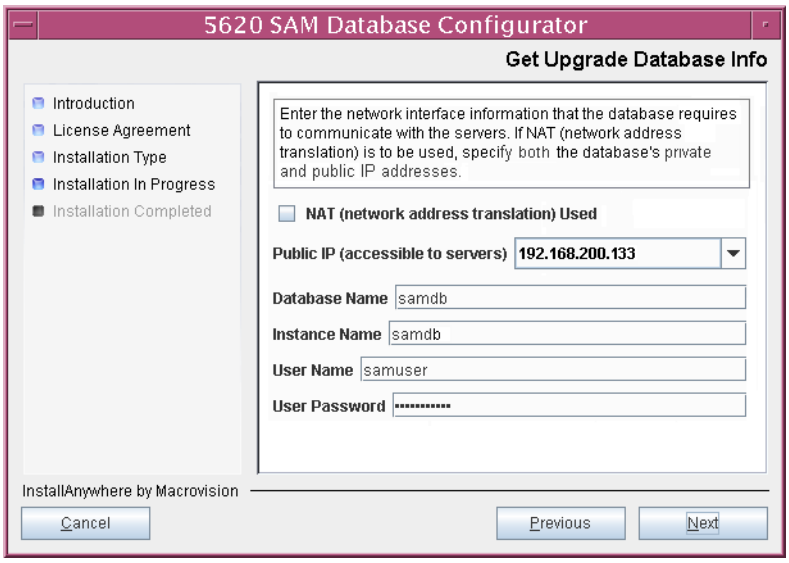
- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Name (typically samdb)
- Instance Name (typically samdb)
- User Name (typically samuser)
- User Password

Note — The "Private IP" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

If you modify the "User Password" parameter, the value that you specify must meet the following criteria:

- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

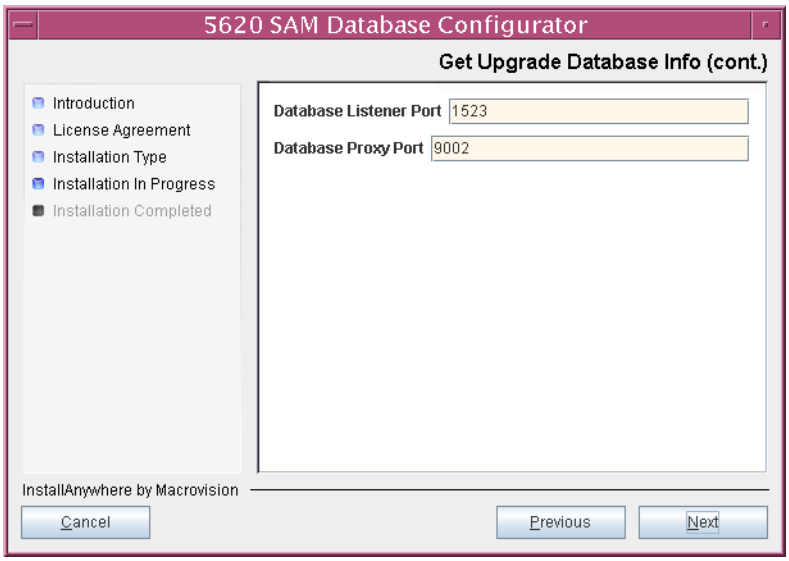
Figure 3-15 Get Upgrade Database Info



32 Configure the following parameters shown in Figure 3-16 using information from the existing 5620 SAM installation, then click on the Next button:

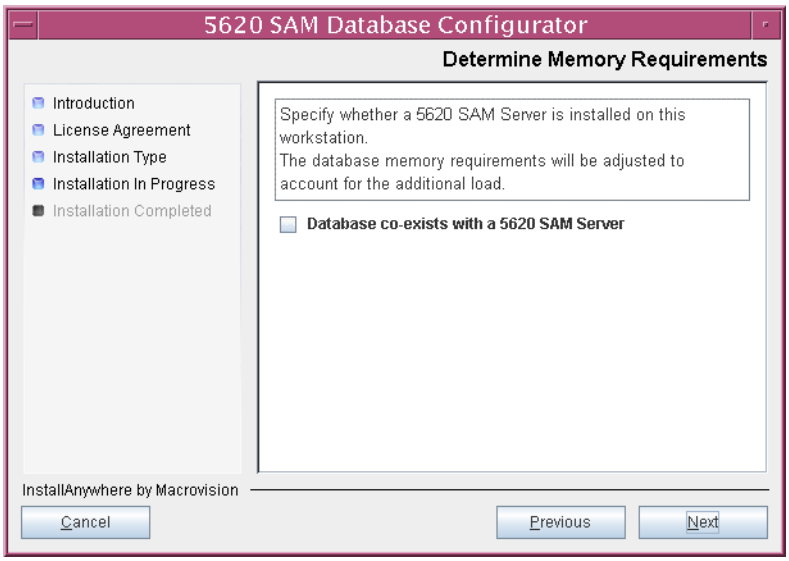
- Database Listener Port (typically 1523)
- Database Proxy Port (typically 9002)

Figure 3-16 Get Upgrade Database Info (cont.)



33 If the 5620 SAM server and database are installed on the same station, select the "Database co-exists with a 5620 SAM Server" parameter shown in Figure 3-17. Click on the Next button.

Figure 3-17 Determine Memory Requirements

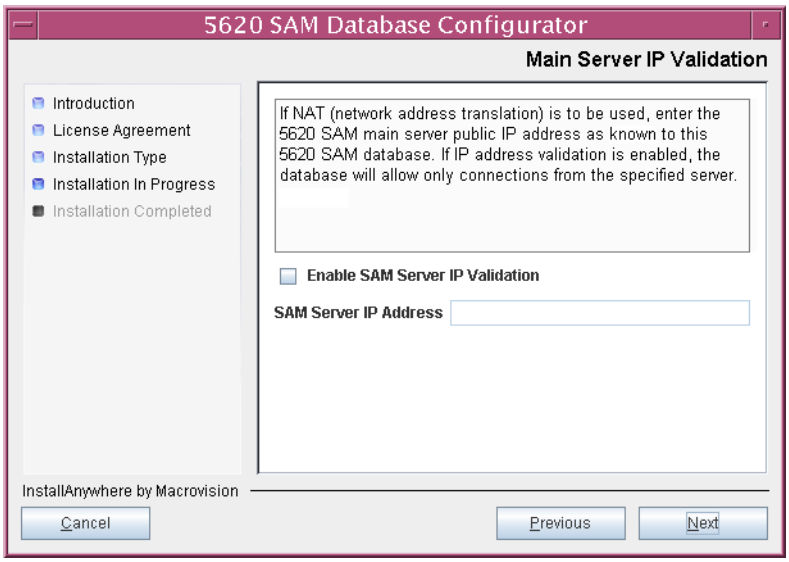


34 Configure the following parameters shown in Figure 3-18, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the server at the specified IP address or hostname can connect to the database.

- Enable SAM Server IP Validation
- SAM Server IP Address

Figure 3-18 Main Server IP Validation

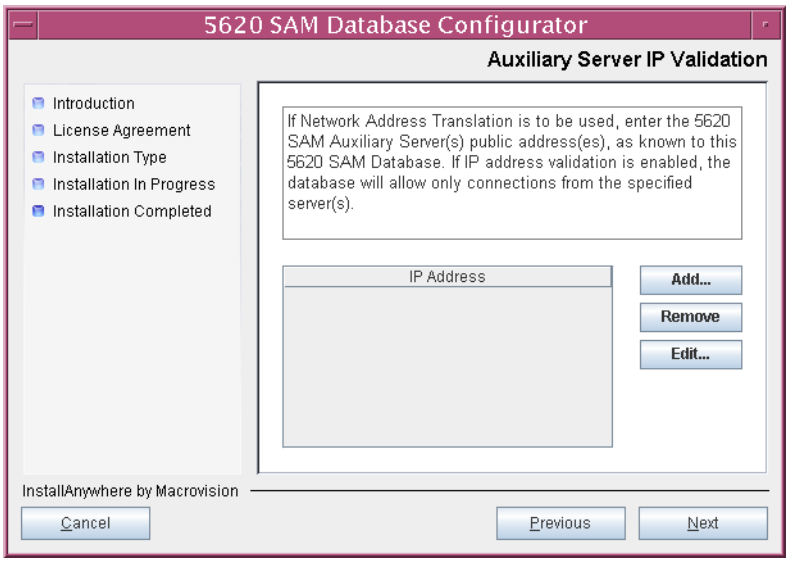


35 The panel in Figure 3-19 is displayed if the “Enable SAM Server IP Validation” parameter in step 34 is selected. Otherwise, go to step 37.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

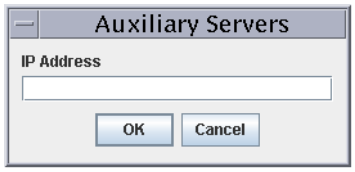
i Click on the Add button shown in Figure 3-19. The Auxiliary Server Configuration form shown in Figure 3-20 opens.

Figure 3-19 Auxiliary Server IP Validation



ii Enter the IP address or hostname of the auxiliary server.

Figure 3-20 Auxiliary Servers



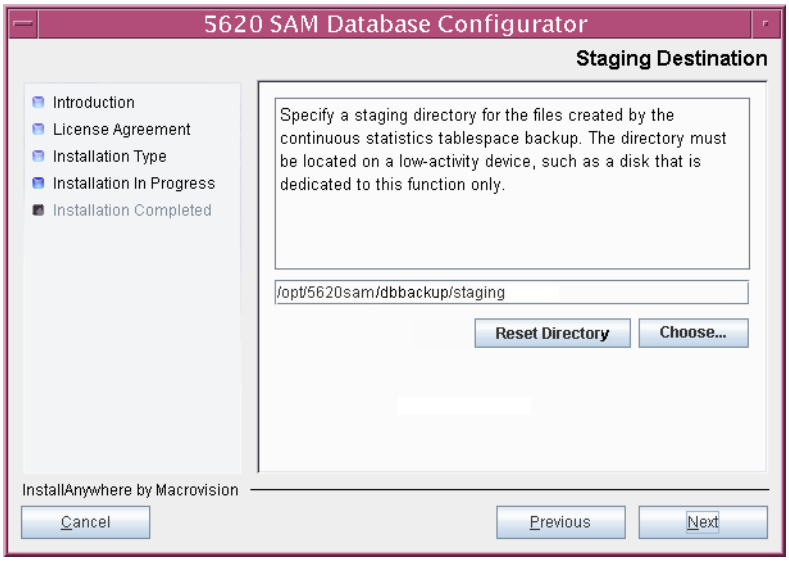
iii Click on the OK button to save the information and close the form.

iv Repeat steps 35 i to iii to specify an additional auxiliary server, if required.

36 Click on the Next button.

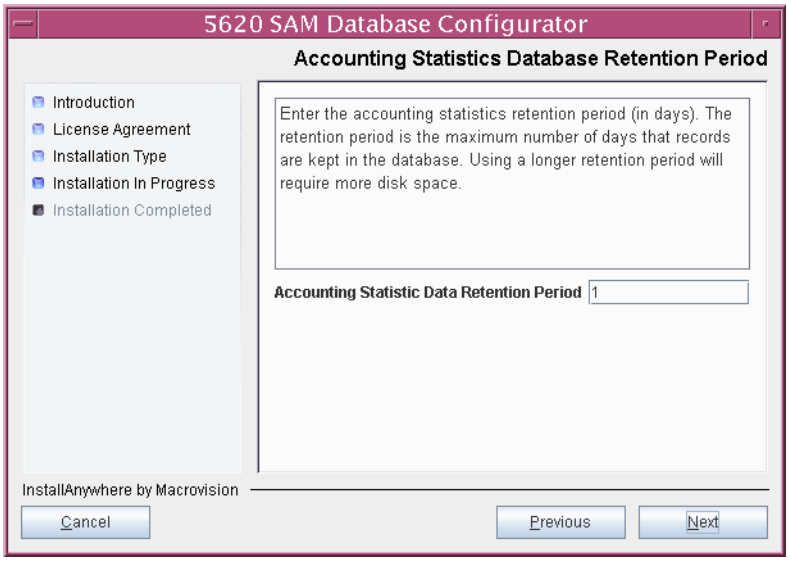
37 If the panel in Figure 3-21 is displayed, specify a directory for the continuous statistics tablespace backup. Click on the Next button.

Figure 3-21 Staging Destination



38 Configure the "Accounting Statistic Data Retention Period" parameter shown in Figure 3-22. Click on the Next button.

Figure 3-22 Accounting Statistics Database Retention Period

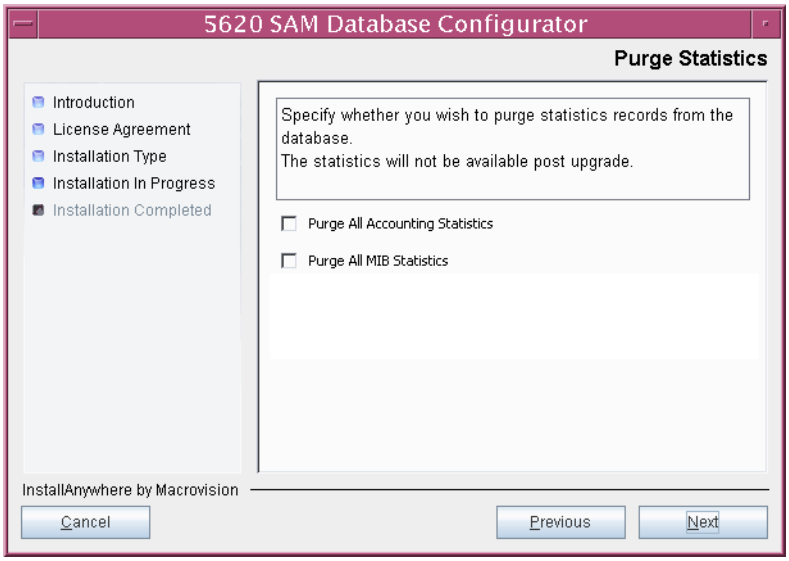


39 To reduce the time required for the database upgrade, you can purge the current 5620 SAM statistics data. Configure the following parameters shown in Figure 3-23, then click on the Next button:

- Purge All Accounting Statistics
- Purge All MIB Statistics

Note — The statistics data for the specified statistics types are permanently deleted from the 5620 SAM database.

Figure 3-23 Purge Statistics



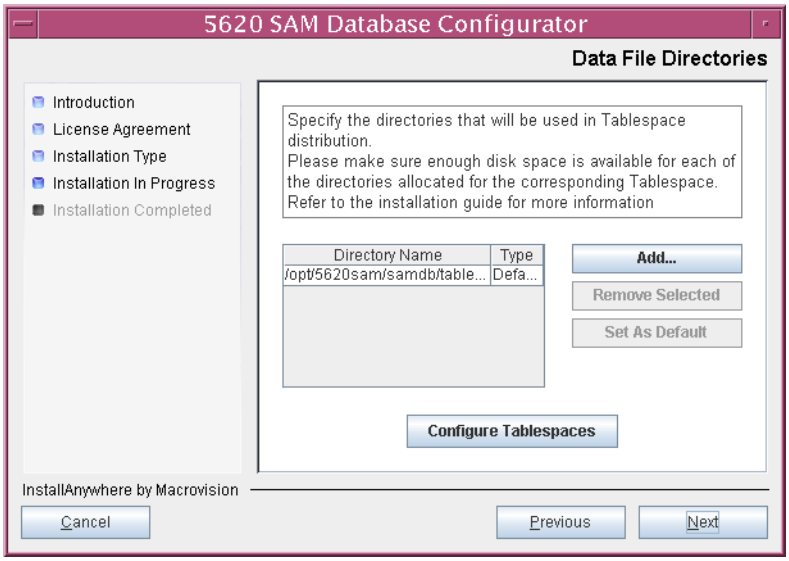
40 If the panel in Figure 3-24 is displayed, the new database contains at least one tablespace that is not defined in the previous database and you must perform the following steps to specify the tablespace directories. Otherwise, go to step 43.

i Click on the Add button shown in Figure 3-24. A file browser form opens.

ii Use the file browser form to choose a tablespace directory.

iii Repeat steps 40 i and ii to specify an additional tablespace directory, if required.

Figure 3-24 Data File Directories



41 Associate tablespaces with the directories specified in step 40.

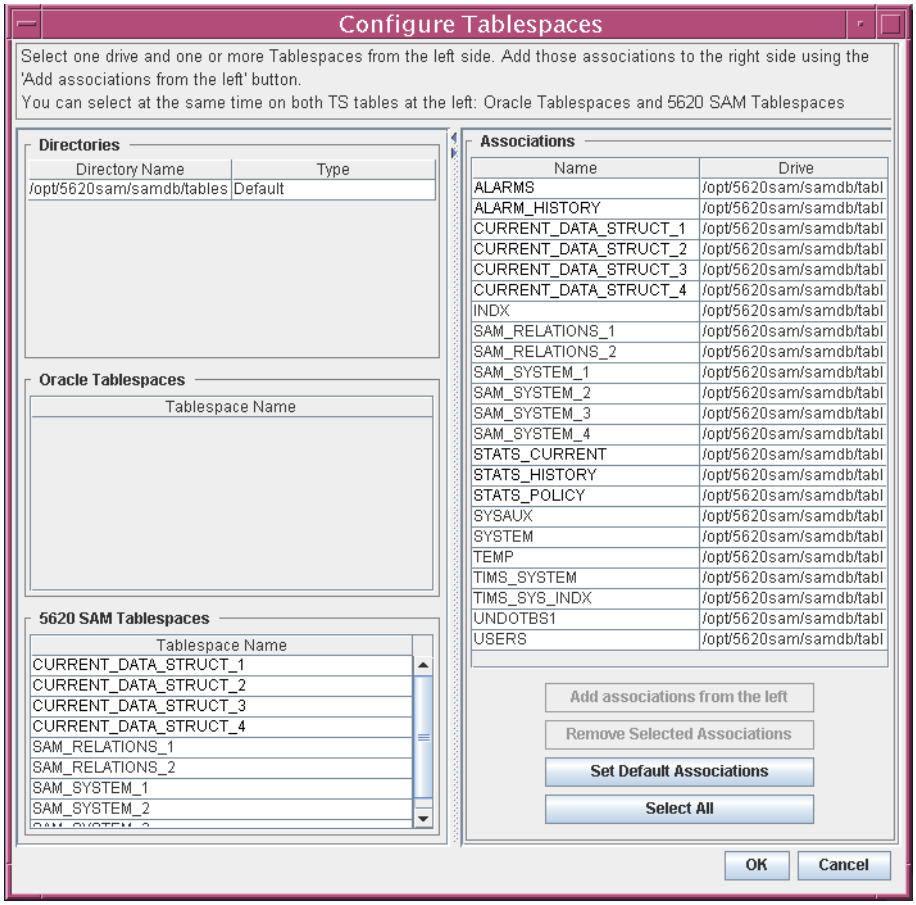
i Click on the Configure Tablespaces button. The tablespace configuration form opens, as shown in Figure 3-25.

Note — The lists of drives and tablespaces on the tablespace configuration form may differ from the lists shown in the figure below.

ii Follow the instructions at the top of the form to associate tablespaces with the directories, as required.

iii Click on the OK button. The tablespace configuration form closes and the "Data File Directories" panel in Figure 3-24 reappears.

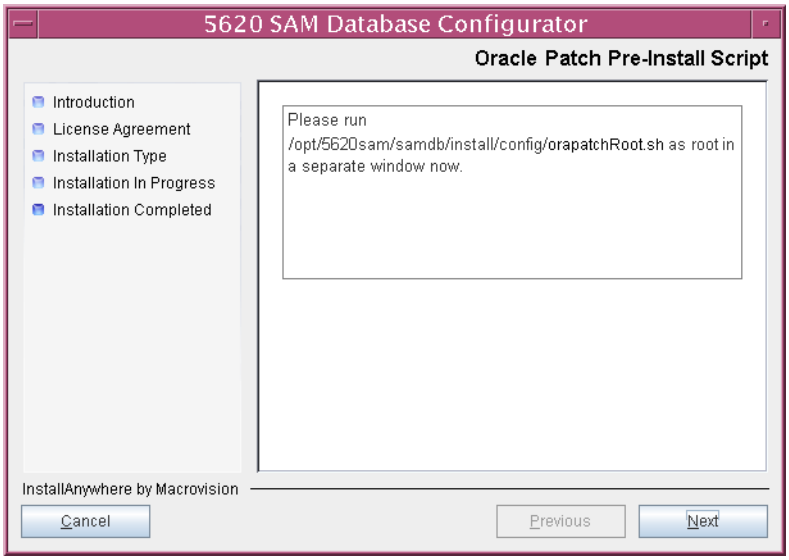
Figure 3-25 Configure Tablespaces



42 Click on the Next button.

43 If you are prompted to run an Oracle patch pre-installation script, as shown in Figure 3-26, run the script in a separate console window as a user with root or root-equivalent privileges.

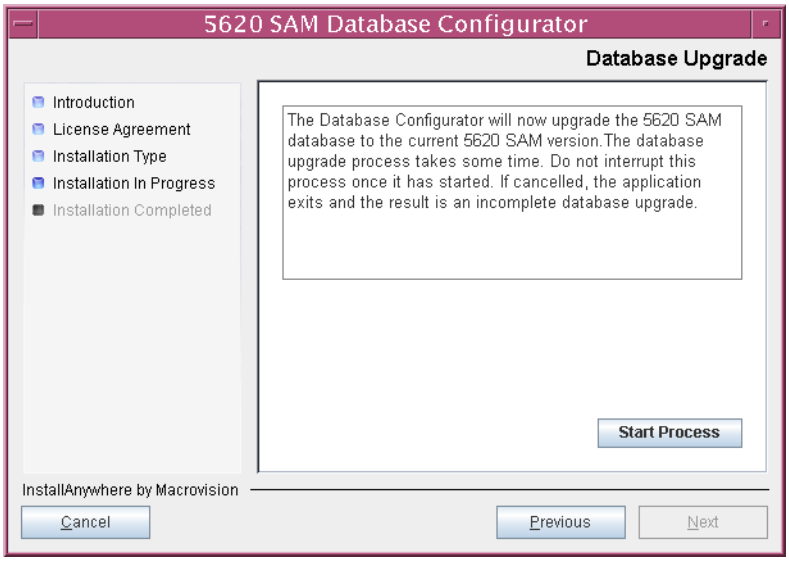
Figure 3-26 Oracle Patch Pre-Installll Script



44 When the script execution is complete, click on the Next button.

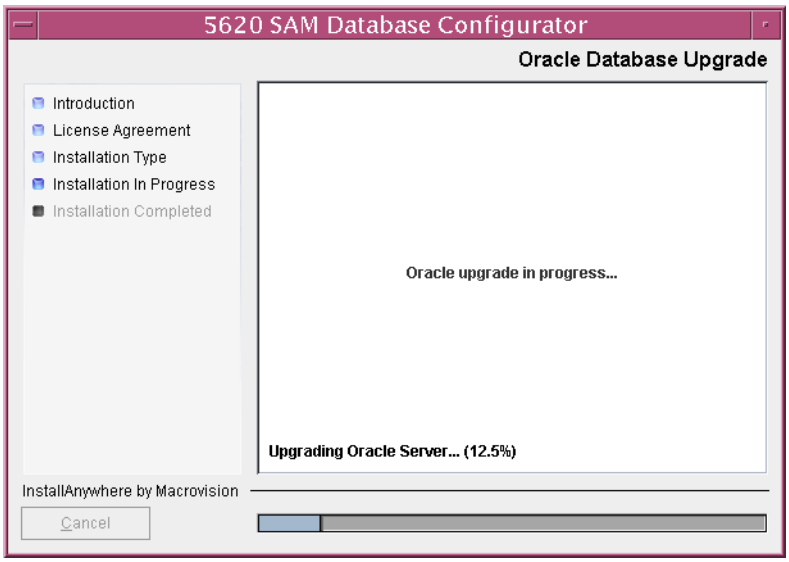
45 You are prompted to begin the database upgrade, as shown in Figure 3-27. A database upgrade can take one hour or more, depending on the tablespace configuration. Click on the Start Process button to begin the database upgrade.

Figure 3-27 Database Upgrade



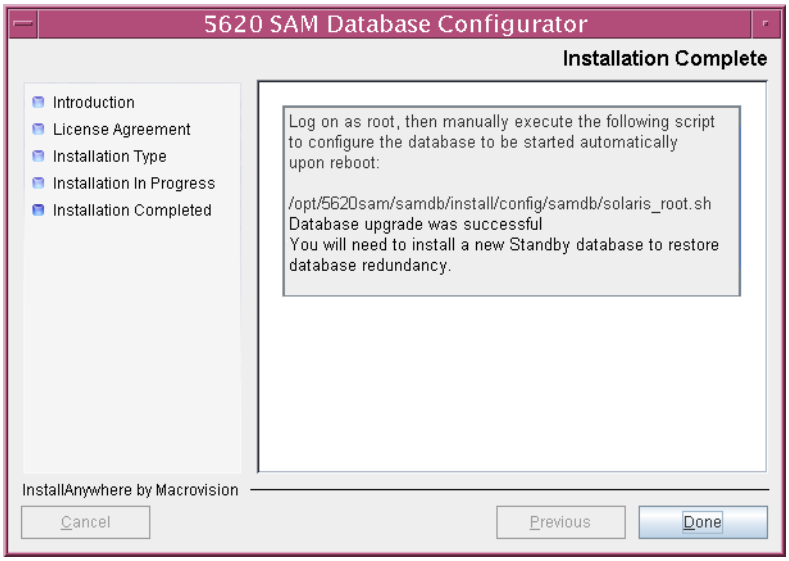
The next panel displays upgrade progress, as shown in Figure 3-28.

Figure 3-28 Oracle Database Upgrade



46 When the panel in Figure 3-29 is displayed, the 5620 SAM database upgrade is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 3-29 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

47 Click on the Done button to close the database installer.

The next section of the procedure describes the upgrade of the standalone 5620 SAM main server. A server upgrade requires root-equivalent privileges.

Upgrade server

48 Log into the server station as a user with root or root-equivalent privileges.

49 Open a console window.

50 Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.

i Enter the following:

```
# who ↵
```

The active user sessions are listed.

ii If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.

51 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

52 Navigate to the DVD-ROM drive.

53 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

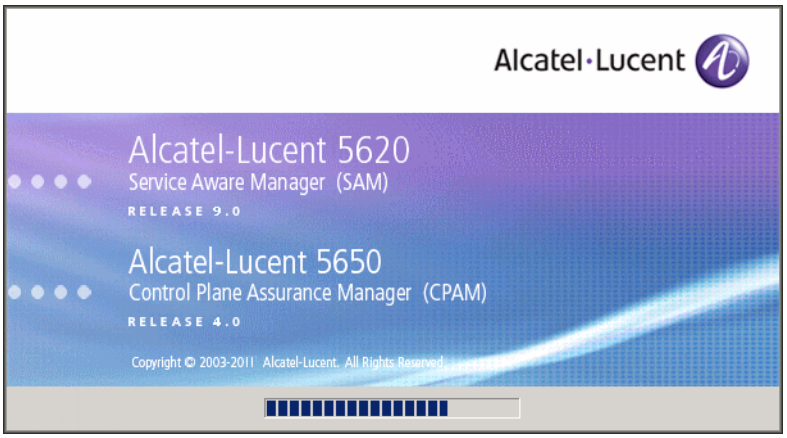
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

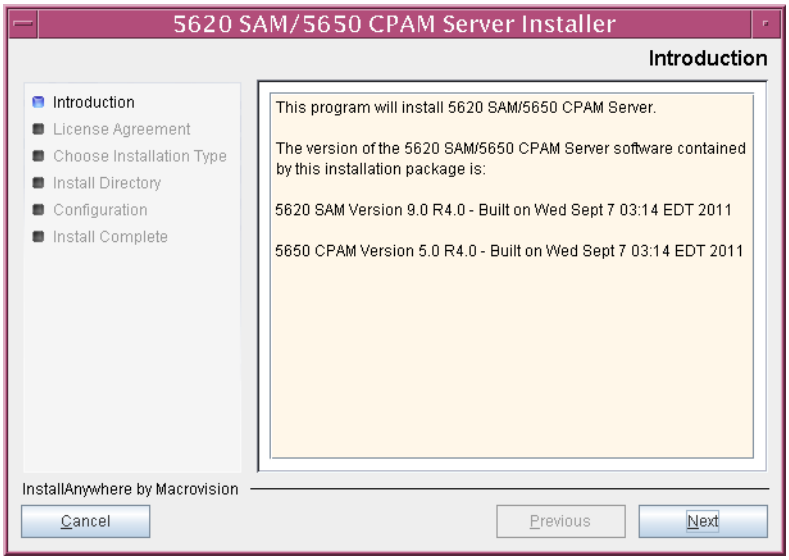
The splash screen shown in Figure 3-30 opens.

Figure 3-30 5620 SAM installer



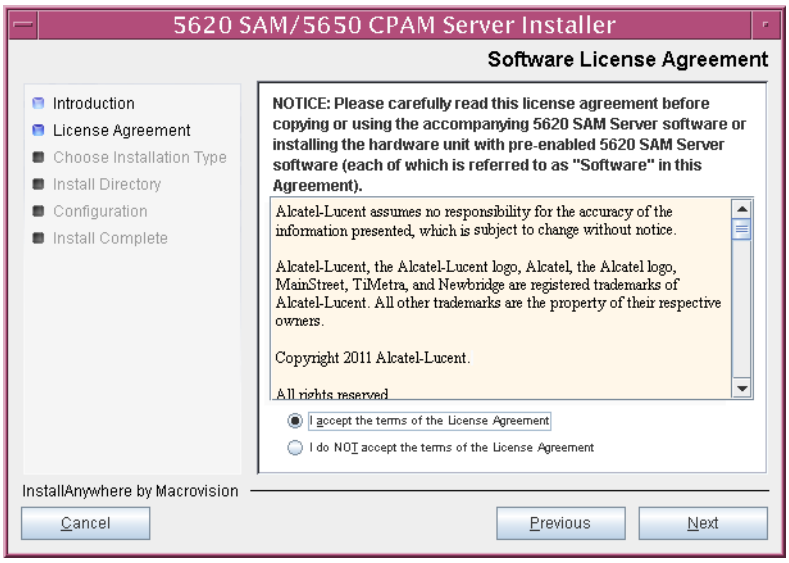
54 The 5620 SAM server installer opens, as shown in Figure 3-31. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-31 Introduction



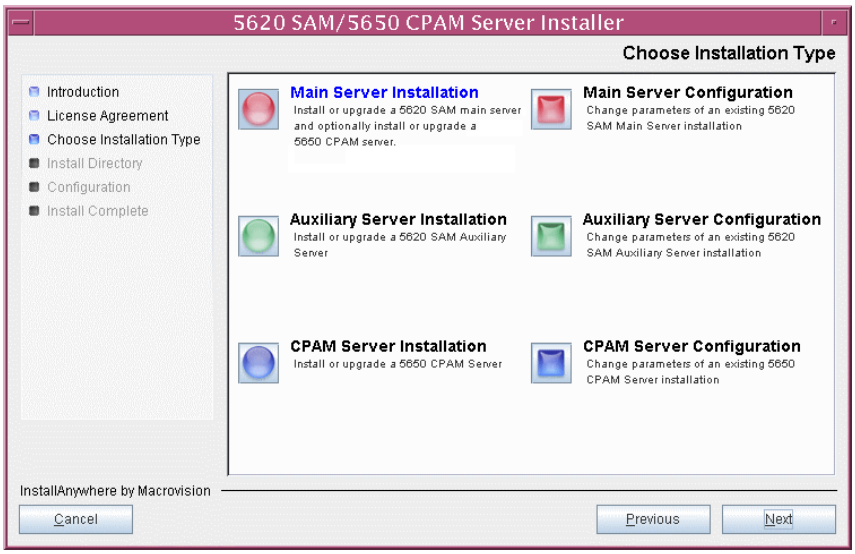
55 Review and accept the terms of the license agreement shown in Figure 3-32. Click on the Next button.

Figure 3-32 Software License Agreement



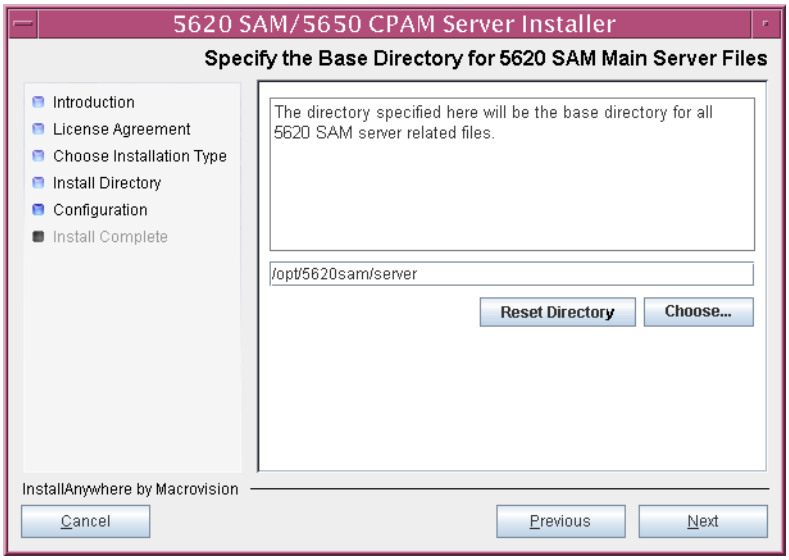
56 Select Main Server Installation, as shown in Figure 3-33. Click on the Next button.

Figure 3-33 Choose Installation Type



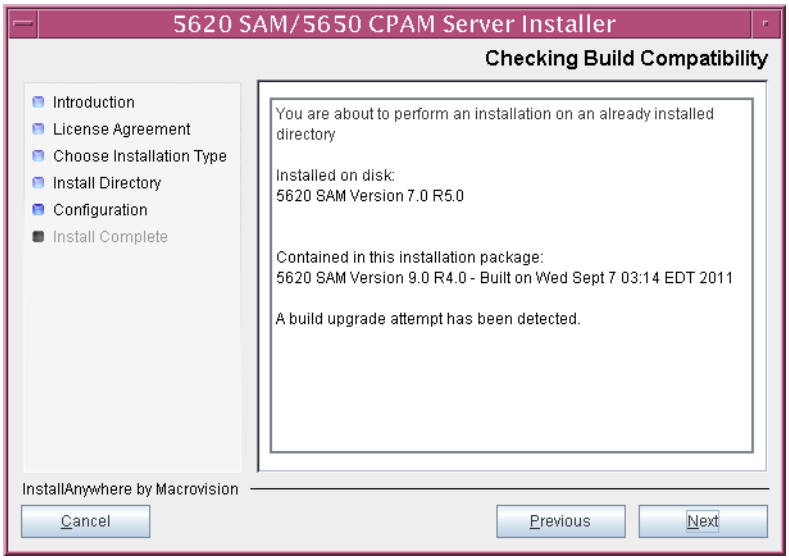
57 Specify the base directory in which the existing 5620 SAM main server software is installed (typically /opt/5620sam/server), as shown in Figure 3-34. Click on the Next button.

Figure 3-34 Specify the Base Directory for 5620 SAM Main Server Files



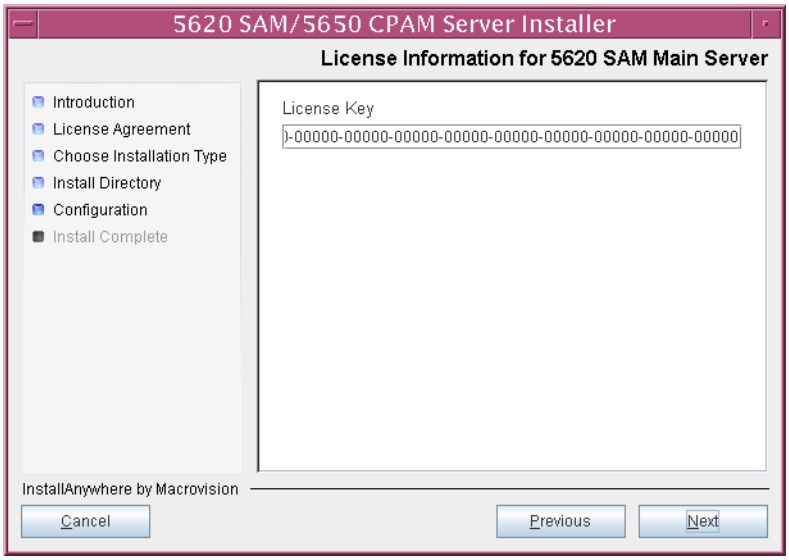
58 As shown in Figure 3-35, the installer indicates which release of 5620 SAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 3-35 Checking Build Compatibility



59 The 5620 SAM installer displays the existing license key. Enter the license key for the new 5620 SAM release exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 3-36. Click on the Next button.

Figure 3-36 License Information for 5620 SAM Main Server

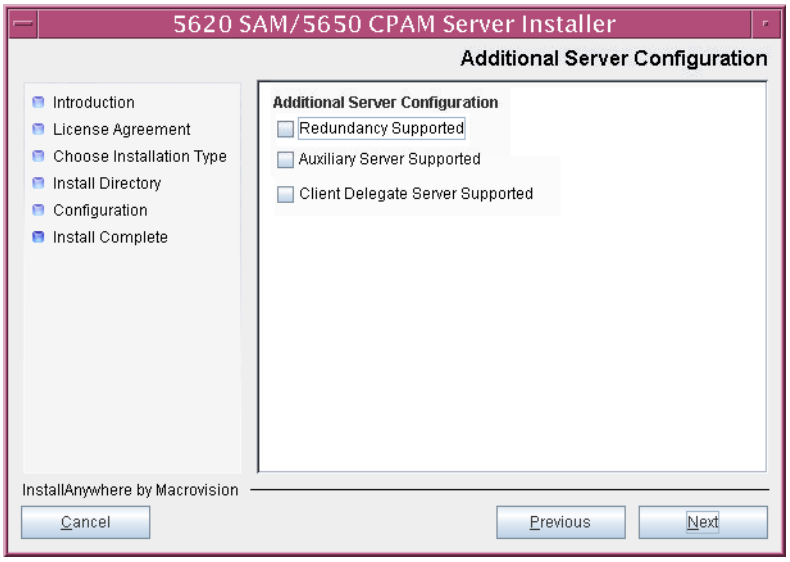


60 Configure the following parameters shown in Figure 3-37, then click on the Next button.

- Redundancy Supported
- Auxiliary Server Supported
- Client Delegate Server Supported

Note — You must leave the “Redundancy Supported” parameter unselected.

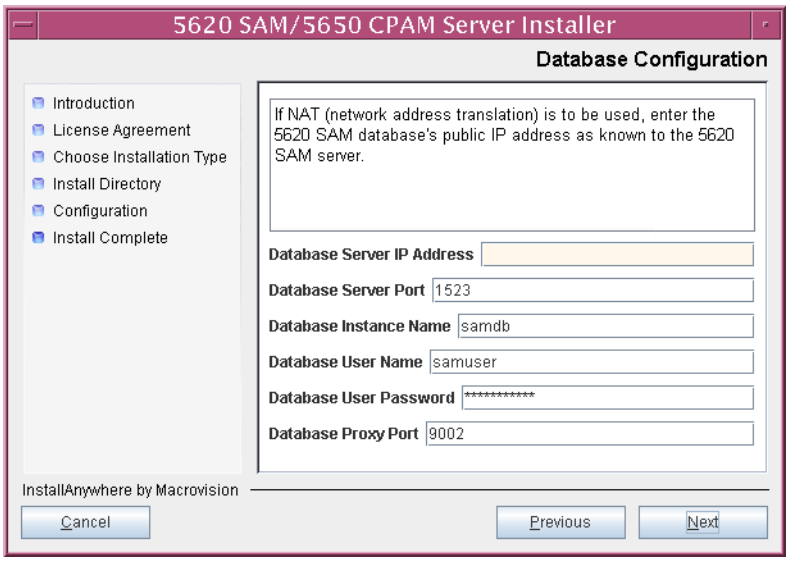
Figure 3-37 Additional Server Configuration



61 Configure the following parameters, shown in Figure 3-38, using the recorded values from the database upgrade, then click on the Next button.

- Database Server IP address
- Database Server Port (typically 1523)
- Database Instance Name (typically samdb)
- Database User Name (typically samuser)
- Database User Password
- Database Proxy Port (typically 9002)

Figure 3-38 Database Configuration

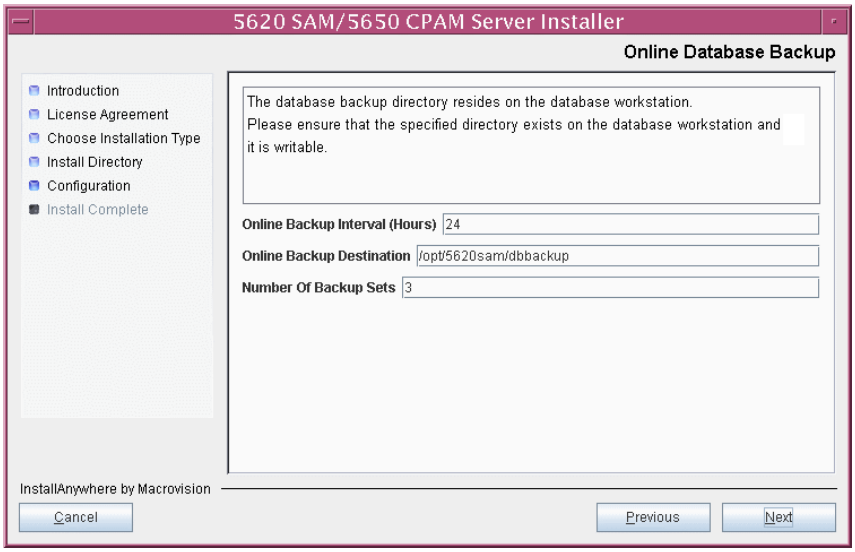


62 Depending on the existing configuration. the panel in Figure 3-39 is displayed. Configure the following parameters, if required, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 61.

Figure 3-39 Online Database Backup



63 The panel in Figure 3-40 is displayed if you select the “Auxiliary Server Supported” parameter in step 60. Otherwise, go to step 65.

Perform the following steps to specify an auxiliary server, if required.

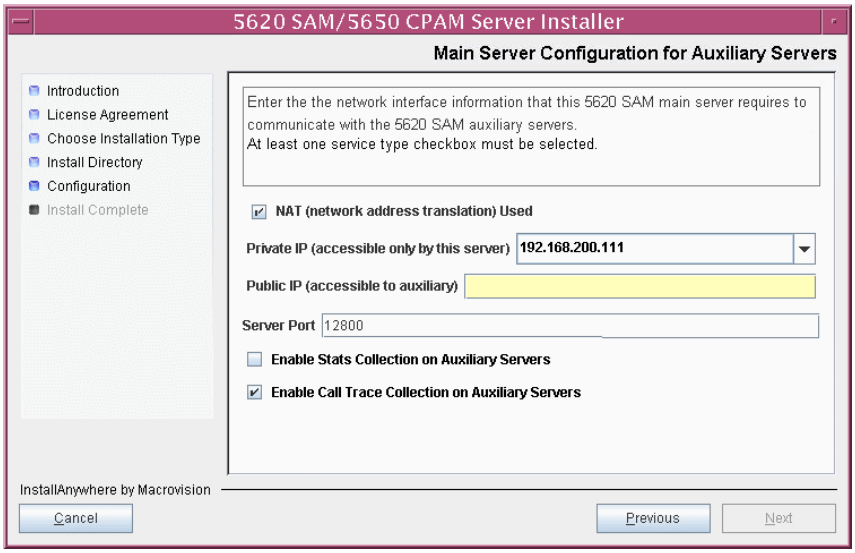
i Configure the following parameters shown in Figure 3-40:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-40 Main Server Configuration for Auxiliary Servers



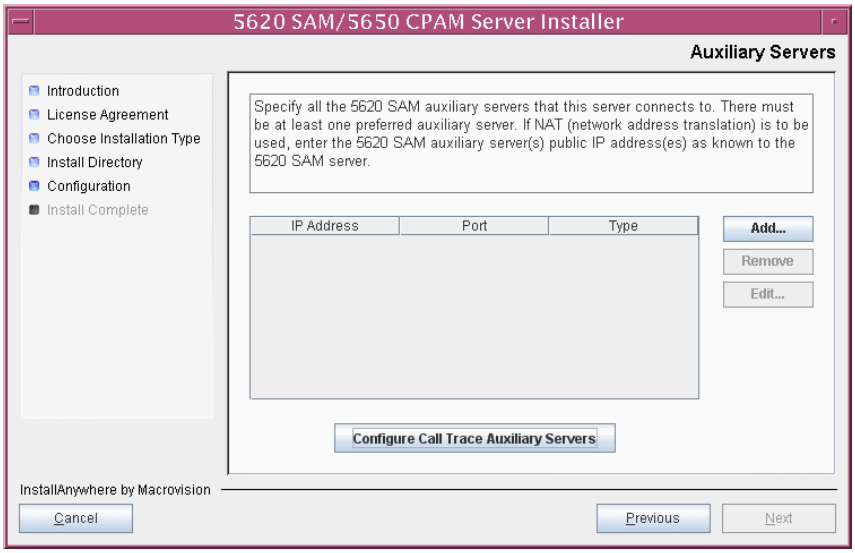
ii Click on the Next button.

iii Click on the Add button shown in Figure 3-41 to specify an auxiliary server. The form shown in Figure 3-42 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

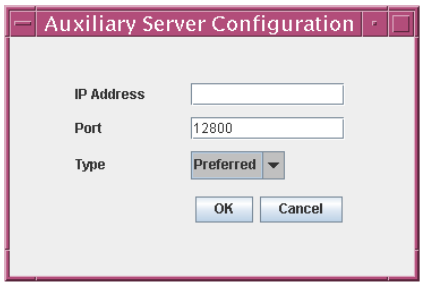
Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

Figure 3-41 Auxiliary Servers



Note — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 3-42 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

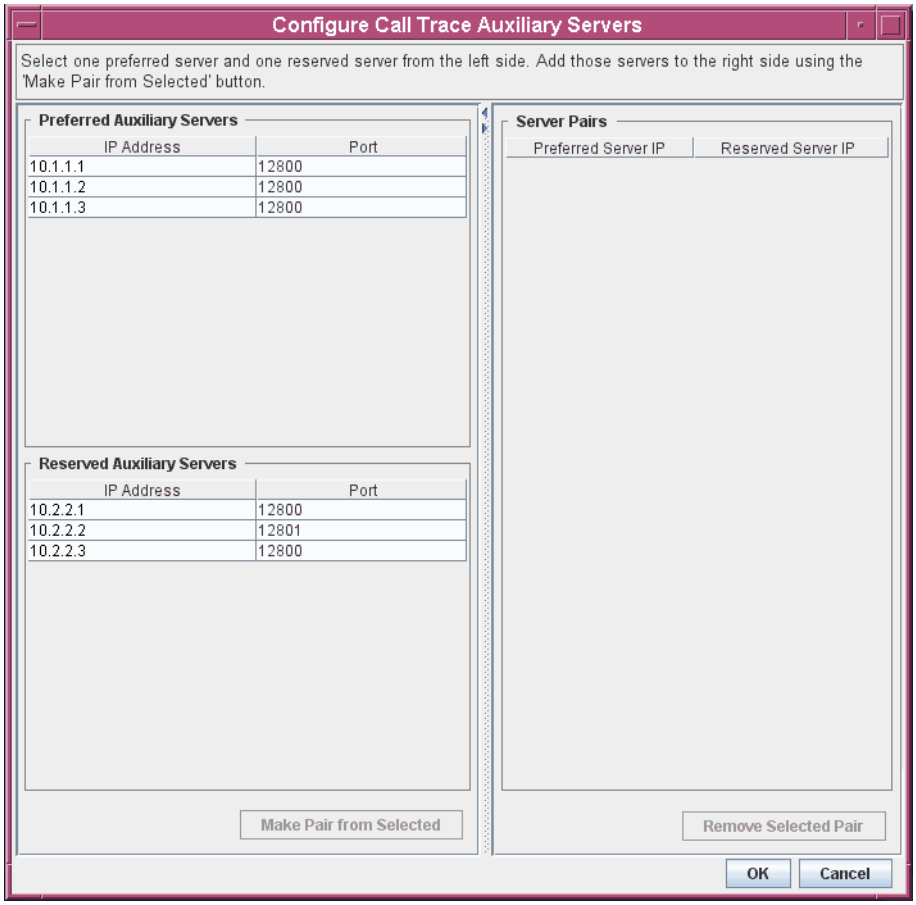
v Click on the OK button to save the information and close the form.

vi Repeat steps 63 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 63 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 3-41. Otherwise, go to step 64.

viii The form shown in Figure 3-43 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 3-43 Configure Call Trace Auxiliary Servers



ix Repeat step 63 viii to configure another call-trace auxiliary server pair, if required.

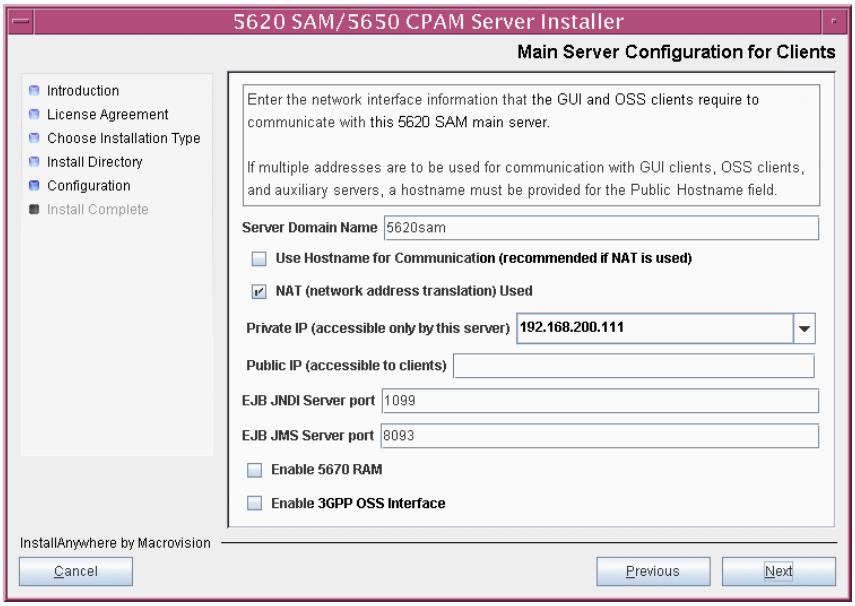
64 Click on the Next button.

65 Perform the following steps.

i Configure the following parameters shown in Figure 3-44:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 3-44 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 65 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

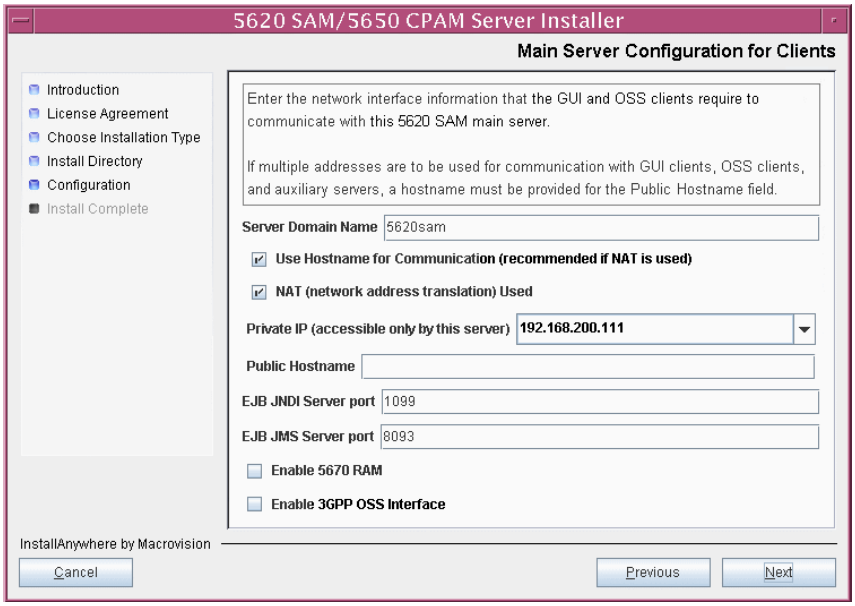
v Go to step 66.

vi Configure the following parameters shown in Figure 3-45:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

Figure 3-45 Main Server Configuration for Clients

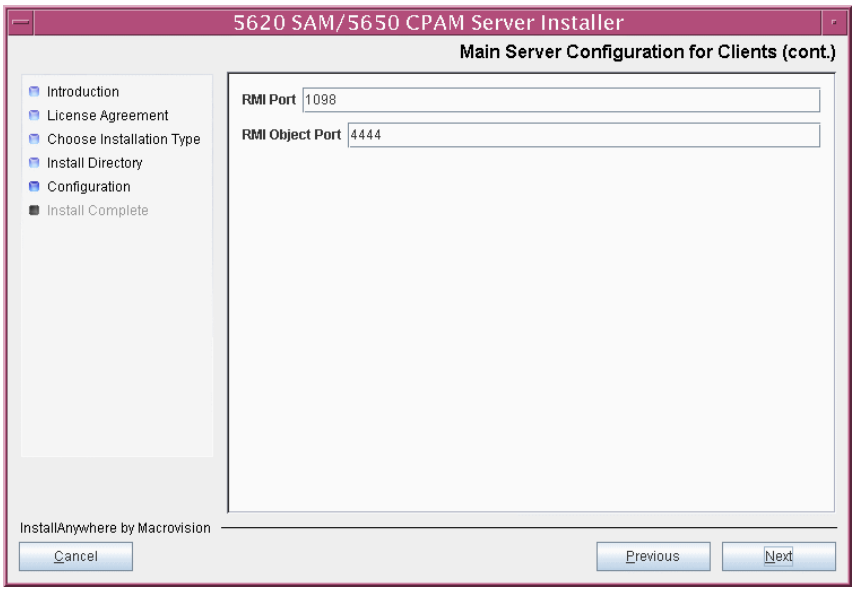


vii Click on the Next button.

66 Configure the following parameters shown in Figure 3-46, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

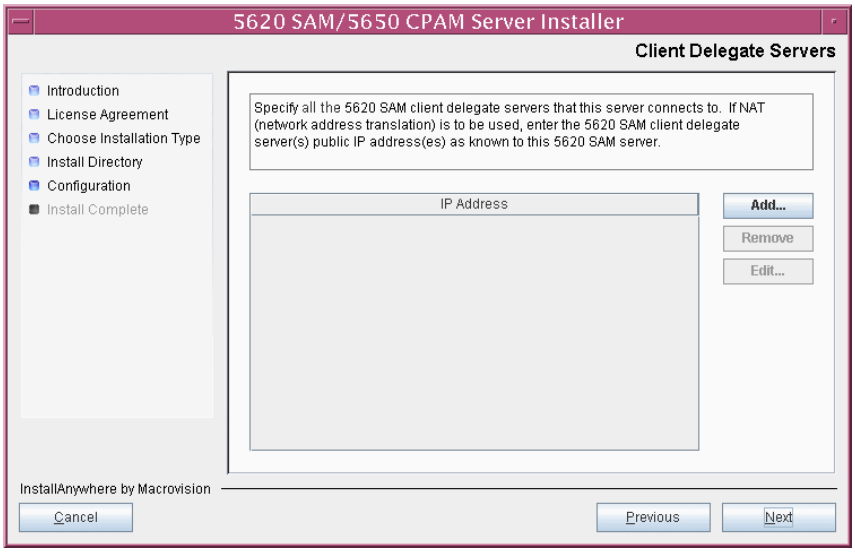
Figure 3-46 Main Server Configuration for Clients (cont.)



67 The panel in Figure 3-47 is displayed if you select the “Client Delegate Server Supported” parameter in step 60. Otherwise, go to step 69.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 3-47 Client Delegate Servers

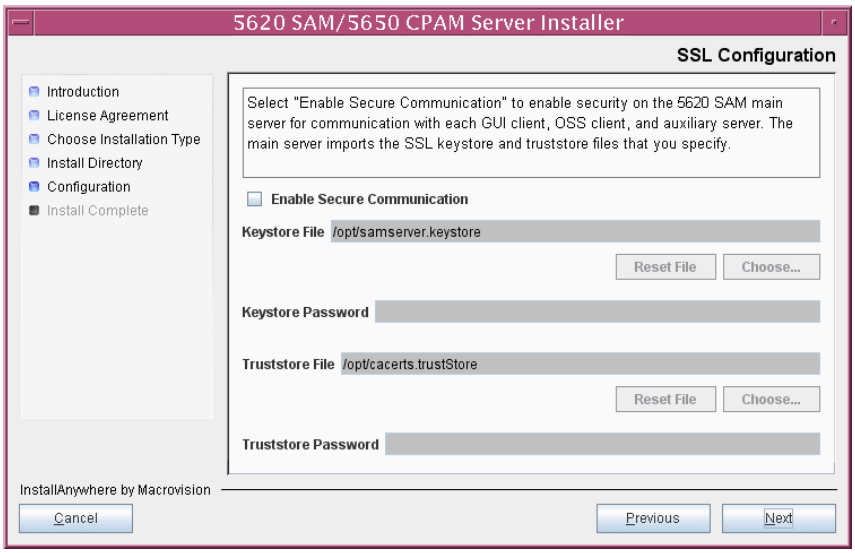


68 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 3-48.

Figure 3-48 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

69 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 3-49.

ii To accept the default user documentation location that is displayed, go to step 70.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

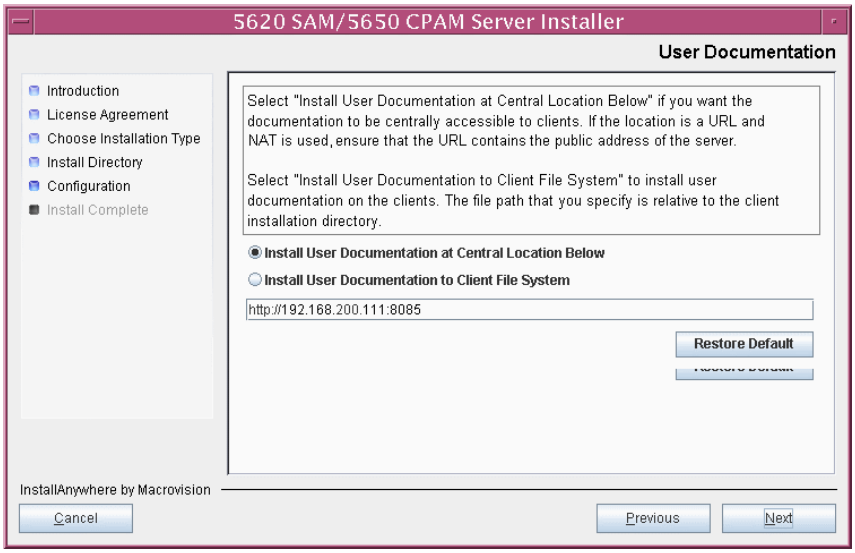
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the new 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 3-49 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 3-49.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

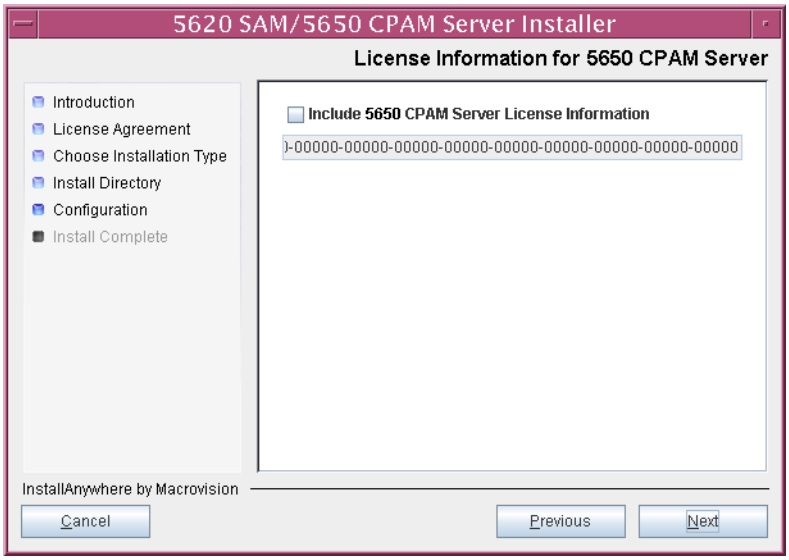
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

70 Click on the Next button.

71 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 3-50. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 3-50 License Information for 5650 CPAM Server



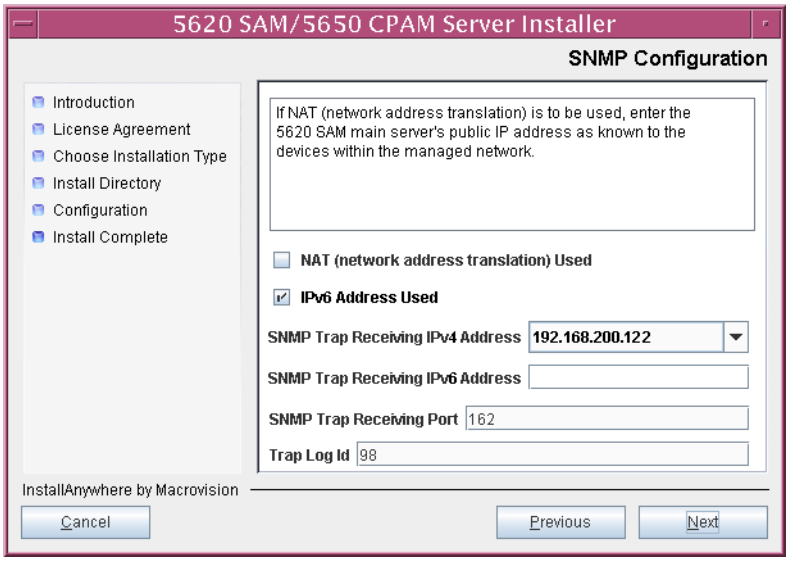
72 Configure the following parameters shown in Figure 3-51, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

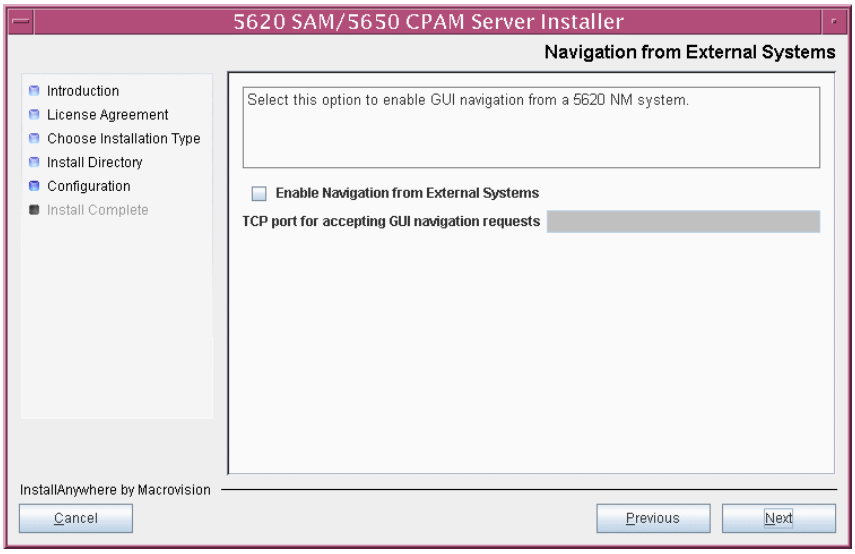
Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 3-51.

Figure 3-51 SNMP Configuration



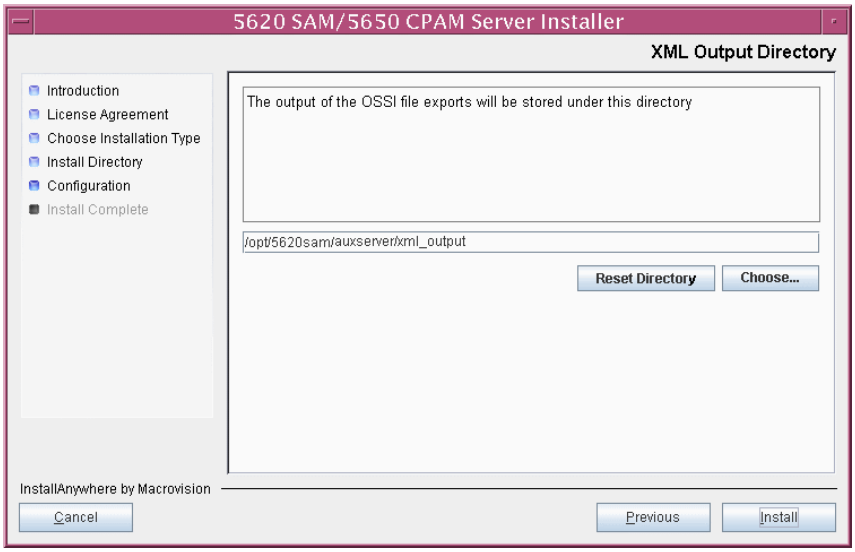
73 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 3-52 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 3-52 Navigation from External Systems



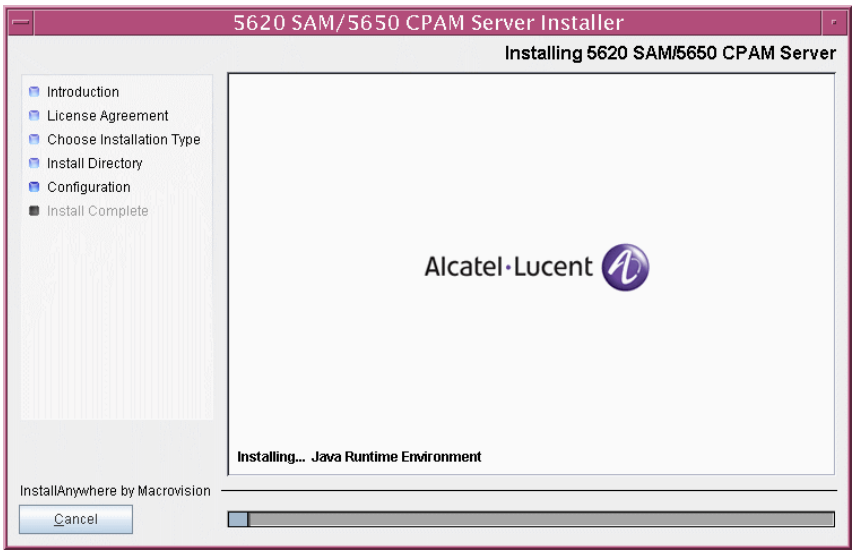
74 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 3-53. Click on the Install button to begin the server upgrade.

Figure 3-53 XML Output Directory



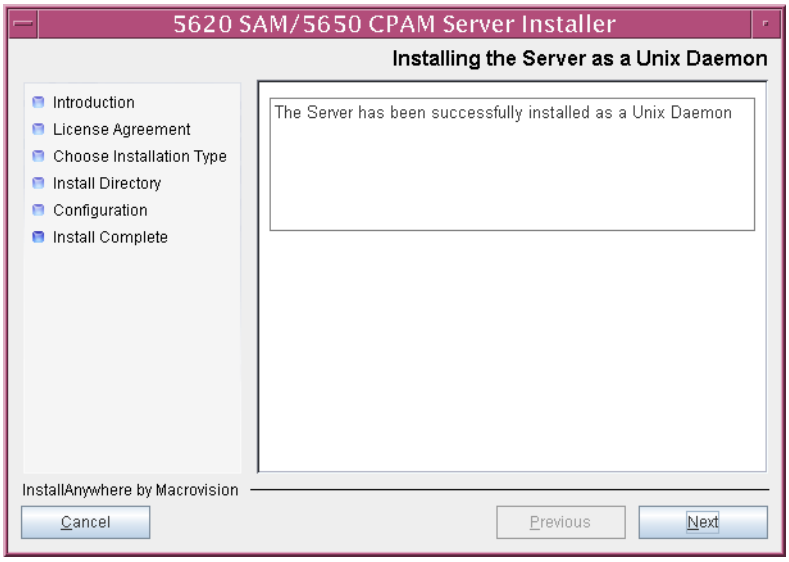
The next panel displays upgrade progress, as shown in Figure 3-54.

Figure 3-54 Installing 5620 SAM/5650 CPAM Server



75 The 5620 SAM server is installed as a UNIX daemon, as shown in Figure 3-55. Click on the Next button.

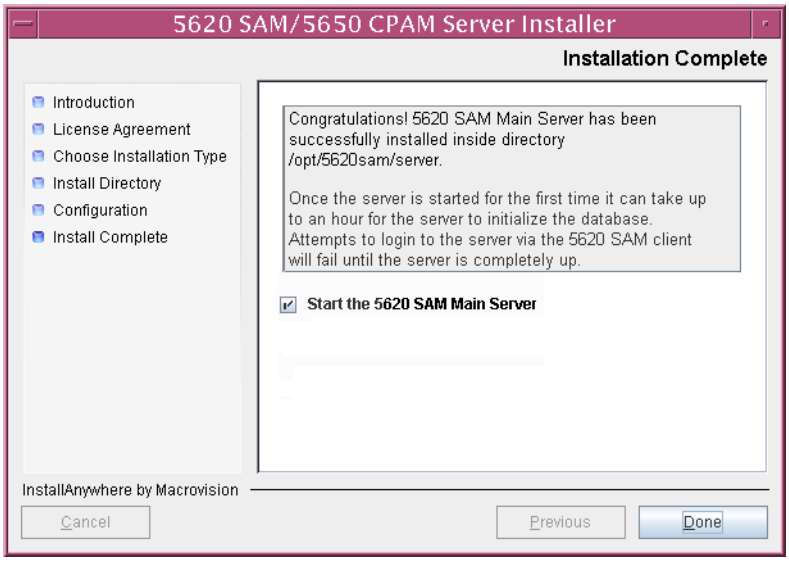
Figure 3-55 Installing the Server as a Unix Daemon



76 When the main server upgrade is complete, as shown in Figure 3-56, configure the "Start the 5620 SAM Main Server" parameter to specify whether you want the server to start immediately after the upgrade.

Caution — If the 3GPP OSS interface is enabled in step 65, and you did not enable the interface on this station during a previous installation or upgrade, ensure that the "Start the 5620 SAM Main Server" parameter is not selected.

Figure 3-56 Installation Complete



77 Click on the Done button to close the server installer. If you specified that the main server is to start after the upgrade, the server starts. Initial server startup can take twenty minutes or more.

78 If the 3GPP OSS interface is not enabled in step 65, go to step 80.

79 If the 3GPP OSS interface has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

vi Save and close the file.

vii Go to step 81.

80 If you specified that the main server is to start immediately after the upgrade, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- SAM Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

81 If you specified not to start the main server immediately after the upgrade, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

v Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- SAM Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

82 Close the console window.

Upgrade or install 5620 SAM client

83 If you modify the SSL configuration during a main server upgrade, you cannot upgrade a client that connects to the main server; you must uninstall the client software and re-install it. Perform the appropriate procedure in chapter 6 to uninstall the client or client delegate server software, as required.

84 Perform one of the following to upgrade or install the 5620 SAM client software on a Solaris station, if required.

Note — Each procedures listed in this step includes a step that starts the 5620 SAM client. Do not perform the step that starts the 5620 SAM client; the 5620 SAM client is not to be started at this time.

a Perform Procedure 2-3 or 2-4 to install a single-user client.

b Perform Procedure 2-7 to install a client delegate server.

c Perform Procedure 3-4 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

d Perform Procedure 3-6 to upgrade a client delegate server, if you did not modify the SSL configuration on the main server during the upgrade.

85 Perform one of the following to upgrade or install the 5620 SAM client software on a Windows station, if required.

Note — Each procedures listed in this step includes a step that starts the 5620 SAM client. Do not perform the step that starts the 5620 SAM client; the 5620 SAM client is not to be started at this time.

a Perform Procedure 2-5 or 2-6 to install a single-user client.

b Perform Procedure 3-5 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

86 If the 3GPP OSS interface is enabled in step 65, and has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Log in to a 5620 SAM GUI client as the admin user.

ii Create a user account for 3GPP OSS interface access. Observe the following when you create the account:

- The user name must be the user name specified in step 79.
- The password must be the password specified in step 79.
- The user account requires full permissions on the fm and oss packages.

See the *5620 SAM User Guide* for information about creating 5620 SAM user accounts.

3.6 Redundant 5620 SAM upgrade workflow

The following is the serial sequence of high-level actions required to upgrade a redundant 5620 SAM system. A section heading in quotation marks is a reference to a section in Procedure 3-3. To reduce the time that a redundant upgrade requires, some steps can be performed concurrently by multiple operators, as described in Table 3-2.

Caution 1 — A redundant 5620 SAM system upgrade involves a network-management outage, and must be performed only during a scheduled maintenance period of sufficient duration for the upgrade.

Caution 2 — The following conditions must be in place before you begin a redundant 5620 SAM upgrade:

- The four 5620 SAM application components (primary server, standby server, primary database, and standby database) are functional.
- Each database station is to be associated with the same database instance name after the upgrade as before the upgrade.
- No 5620 SAM-related hardware modifications occur during the upgrade.

If you are unable to meet these conditions when the upgrade is to be performed, contact Alcatel-Lucent technical support for assistance.

1. Perform the pre-upgrade tasks. See Procedure 3-1 for more information.
2. Open at least one 5620 SAM client to monitor the network until the first server and database are upgraded.
3. Align the primary and standby 5620 SAM database designations with the original 5620 SAM main server configuration, if automatic database realignment is not in effect. See "Align database roles with 5620 SAM configuration" for more information.
4. Back up the primary database. See "Back up primary database" for more information.
5. Stop the standby main server. See "Stop standby main server" for more information.
6. Disable the standby 5620 SAM main server startup daemon. See "Disable standby server daemon" for more information.
7. If the 5620 SAM deployment contains auxiliary servers, stop the preferred and reserved auxiliary servers of the standby main server. See "Stop standby auxiliary servers" for more information.
8. Disable database redundancy functionality on the primary 5620 SAM main server. See "Disable redundancy on primary main server" for more information.
9. Upgrade the original standby database. This database becomes the new primary database. See "Upgrade standby database" for more information.
10. Upgrade the original standby main server to become the new primary server. See "Upgrade original standby main server" for more information.

11 If the 5620 SAM deployment contains auxiliary servers, upgrade the preferred and reserved auxiliary servers of the original standby main server. See Procedure 3-7 for more information.

12 Stop the original primary 5620 SAM main server. See "Stop original primary main server" for more information.

Note — This is the beginning of the network-management outage.

13 Disable the original primary 5620 SAM server startup daemon. See "Disable original primary server daemon" for more information.

14 Stop the original primary database. See "Stop original primary database" for more information.

15 Disable the original primary 5620 SAM database startup daemons. See "Disable original primary database daemons" for more information.

16 If the 5620 SAM deployment contains auxiliary servers, stop the preferred and reserved auxiliary servers of the original primary main server. See "Stop original primary auxiliary servers" for more information.

17 Start the new primary (original standby) 5620 SAM main server. See "Start new primary main server" for more information.

18 If the 5620 SAM deployment contains auxiliary servers, start the preferred and reserved auxiliary servers of the new primary main server. See "Start new primary auxiliary servers" for more information.

19 Upgrade or install 5620 SAM single-user clients or client delegate servers, as required. A 5620 SAM client is required for network monitoring and sanity testing of the first upgraded server and database. Sanity testing at this point facilitates backing out of the upgrade if it is necessary.

See "Upgrade or install 5620 SAM client" for more information.

Note — This is the end of the network-management outage.

20 Perform sanity testing on the upgraded server and database using a newly installed or upgraded 5620 SAM client. See "Test 5620 SAM system using new client" for more information.

21 Uninstall the original primary database. See "Uninstall original primary database" for more information.

22 Install the new standby database. See "Install new standby database" for more information.

23 Reinstantiate the database on the new standby database station.
See "Reinstantiate database on new standby station" for more information.

24 Upgrade the original primary main server to become the new standby main server. See "Upgrade original primary main server" for more information.

25 If the 5620 SAM deployment contains auxiliary servers, upgrade the preferred and reserved auxiliary servers of the new standby main server. See Procedure 3-7 for more information.

26 If the 5620 SAM deployment contains auxiliary servers, start the preferred and reserved auxiliary servers of the new standby main server. See "Start new standby auxiliary servers" for more information.

27 Upgrade or install additional 5620 SAM single-user clients or client delegate servers, if required. See "Upgrade or install additional clients for redundant system" for more information.

Table 3-2 lists the redundant 5620 SAM upgrade tasks in a format that involves two operators, A and B, who perform some tasks concurrently. Each task consists of a workflow step link and a link to the appropriate procedure or procedure section.

Table 3-2 Workflow for concurrent task execution during redundant upgrade

5620 SAM system state	Operator A workflow steps	Operator B workflow steps
DUPLEX	1—pre-upgrade tasks described in Procedure 3-1	
	2—open GUI client to monitor network 3—check database alignment, correct if required	Begin download 5620 SAM software, if not using 5620 SAM software DVD-ROM for upgrade
	4— "Back up primary database"	—
SIMPLEX	5— "Stop standby main server"	6— "Disable standby server daemon"
	7— "Stop standby auxiliary servers"	8— "Disable redundancy on primary main server"
	9— "Upgrade standby database" procedure steps, up to and including starting database activation	—
	During database activation: 10— "Upgrade original standby main server" 11— "Upgrade original standby auxiliary servers"	
	When database activation is complete, subsequent "Upgrade standby database" procedure steps, up to and including starting database upgrade	—
	During database upgrade: 10— "Upgrade original standby main server", if not complete 11— "Upgrade original standby auxiliary servers", if not complete	
OUTAGE	12— "Stop original primary main server"	13— "Disable original primary server daemon"
	14— "Stop original primary database"	15— "Disable original primary database daemons"
	16— "Stop original primary auxiliary servers"	
	17— "Start new primary main server" Network management outage persists until new primary server started and device discovery complete	18— "Start new primary auxiliary servers"

(1 of 2)

5620 SAM system state	Operator A workflow steps	Operator B workflow steps
SIMPLEX	19— "Upgrade or install 5620 SAM client"	—
	—	20— "Test 5620 SAM system using new client"
	21— "Uninstall original primary database"	—
	22— "Install new standby database"	24— "Upgrade original primary main server"
	23— "Reinstantiate database on new standby station"	—
DUPLEX	25— "Upgrade new standby auxiliary servers"	
	26— "Start new standby auxiliary servers"	
	27— "Upgrade or install additional clients for redundant system"	

(2 of 2)

3.7 Redundant 5620 SAM system upgrade

This section describes how to upgrade the software components of a redundant 5620 SAM system. Procedure 3-3 describes how to upgrade the 5620 SAM database and main server software.

Before you begin a 5620 SAM system upgrade, you must collect the required information and ensure that the proper conditions are in place, as described in Procedure 3-1.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 3-3 To upgrade a redundant 5620 SAM system

Perform this procedure to upgrade the 5620 SAM database and main server software in a redundant 5620 SAM deployment. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

You require the following user privileges to perform this procedure:

on each main server station:

- root or root-equivalent
- samadmin

on each database station:

- root or root-equivalent
- Oracle management

1 Open an existing 5620 SAM client GUI for network monitoring purposes until the second 5620 SAM server and database are disabled in this procedure.

Align database roles with 5620 SAM configuration

2 Before you can perform a redundant upgrade, the database that is designated the primary database in the primary main server configuration must currently be operating as the primary database.

If automatic database realignment is enabled, go to step 4. Otherwise, perform the following steps to ensure that the correct database is currently the primary database.

Note — In a collocated redundant 5620 SAM system, the primary main server and the primary database must be on the same station.

i Log in to the primary server station as the samadmin user.

ii Open the following file for viewing:

path/nms/config/nms-server.xml

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iii Search for the section that begins with the following XML tag:

```
<db
```

iv Locate the line in this section that reads as follows:

host="*nnn.nnn.nnn.nnn*"

where *nnn.nnn.nnn.nnn* is the IP address of a station in the 5620 SAM cluster

This IP address on this line is the original primary database IP address.

v If the IP address on the host= line belongs to the current standby database station, you must perform a database switchover so that the standby database becomes the primary database. See the *5620 SAM User Guide* for information about performing a database switchover.

Caution — Do not attempt to modify the nms-server.xml file. You cannot change the 5620 SAM primary and standby database designations by changing a parameter value.

vi Close the nms-server.xml file.

Back up primary database

3 If you did not perform a database backup as part of the pre-upgrade preparation in Procedure 3-1, you must back up the database now.

Caution 1 — The path of the 5620 SAM database backup directory must not include the 5620 SAM database installation directory, typically /opt/5620sam/samdb, or data loss may occur.

Caution 2 — Before the 5620 SAM performs a database backup, it deletes the contents of the specified backup directory. Ensure that the backup directory that you specify in this step does not contain files that you want to retain.

Perform one of the following.

a Use the 5620 SAM client GUI. See the *5620 SAM User Guide* for information about performing database backups.

b Use a CLI script.

i Log in to the primary database station as the Oracle management user.

ii Open a console window.

iii Enter the following to begin the database backup:

```
bash$ path/install/config/samdb/SAMbackup.sh
backup_directory ↵
```

where
path is the 5620 SAM database installation location, typically /opt/5620sam/samdb
backup_directory is the directory that is to contain the database backup

The 5620 SAM backs up the database.

iv Record the backup directory location.

v Copy the database backup files from the backup directory to a secure location, such as a non-5620 SAM station, for safekeeping.

Stop standby main server

4 Stop the standby 5620 SAM main server application.

i Log in to the standby server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 4 v. Do not proceed to the next step until the server is stopped.

Disable standby server daemon

5 Perform the following steps to disable the 5620 SAM server startup daemon on the standby server station. This ensures that the standby 5620 SAM server does not automatically start in the event of an electrical or network disruption during the upgrade.

i If you are currently logged in as the samadmin user on the standby server station, enter the following on the standby server station to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to disable the 5620 SAM server startup daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

Stop standby auxiliary servers

6 If the 5620 SAM deployment contains auxiliary servers, perform the following steps to stop the auxiliary server software on each preferred and reserved auxiliary server station of the standby main server.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to stop the 5620 SAM server software:

```
bash$ path/nms/bin/auxnmsserver.bash auxstop ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

The 5620 SAM auxiliary server stops.

Disable redundancy on primary main server

7 Disable the 5620 SAM failover and switchover functionality on the primary server.

i Log in to the primary main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server configuration directory:

```
bash$ cd path/nms/config ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to make a backup copy of the server configuration file:

```
bash$ cp nms-server.xml nms-server.xml.backup ↵
```

v Open the nms-server.xml file with a plain-text editor, for example, vi.

vi Search for the <db tag.

vii Edit the line below the tag that reads:

```
redundancyEnabled="true"
```

to read:

```
redundancyEnabled="false"
```

viii Save the nms-server.xml file.

ix Close the nms-server.xml file.

x Enter the following to put the nms-server.xml change into effect:

```
bash$ path/nms/bin/nmsserver.bash read_config ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The primary 5620 SAM server application is reconfigured with database redundancy disabled.

Upgrade standby database

8 You must run a pre-upgrade script that configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Log in to the standby database station as a user with root or root-equivalent privileges.

Caution — Ensure that you run only the pre-installation script that is on the new 5620 SAM software DVD-ROM. Using a different version of the script may cause the database upgrade to fail.

9 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

10 Open a console window.

11 Navigate to the DVD-ROM drive.

12 Perform one of the following to change to the appropriate directory.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

13 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

14 Enter 2 ↵.

15 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is current home directory, typically /opt/5620sam/oracle10r2 on a Release 8.0 or earlier system)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter, except for the home directory, for which Alcatel-Lucent recommends that you set to oracle11r2 to match the new Oracle installation location.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — Running the script may generate messages that are similar to the following; these are not error messages and can be ignored.

- WARNING: Group dba already exists locally.
- WARNING: Oracle user with the specified name already exists locally.
- projadd: Duplicate project name "Oracle11R2"

16 When the script execution is complete, disable the 5620 SAM Oracle proxy daemon to ensure that the daemon does not conflict with the database installer.

i Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

ii Enter the following to disable the 5620 SAM Oracle proxy daemon by renaming it:

```
# mv S965620SAMOracleProxyWrapper
inactive.S965620SAMOracleProxyWrapper ↵
```

17 Enter the following to reboot the standby database station and put the system update into effect:

```
# shutdown -y -i6 -g0 ↵
```

The standby database station reboots.

18 Log in to the standby database station as the Oracle management user.

19 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

20 Open a console window.

21 Navigate to the DVD-ROM drive.

22 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

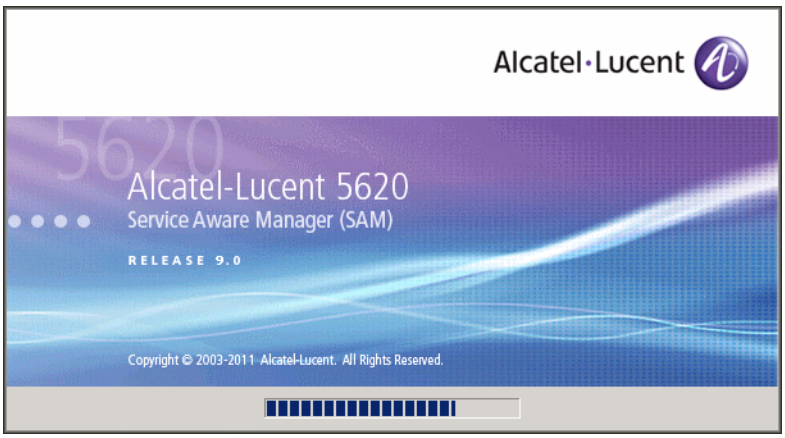
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

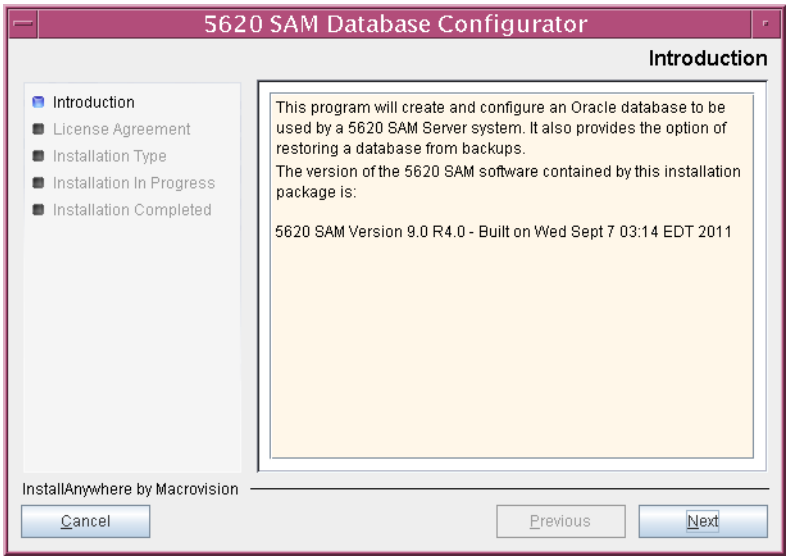
The splash screen shown in Figure 3-57 opens.

Figure 3-57 5620 SAM installer



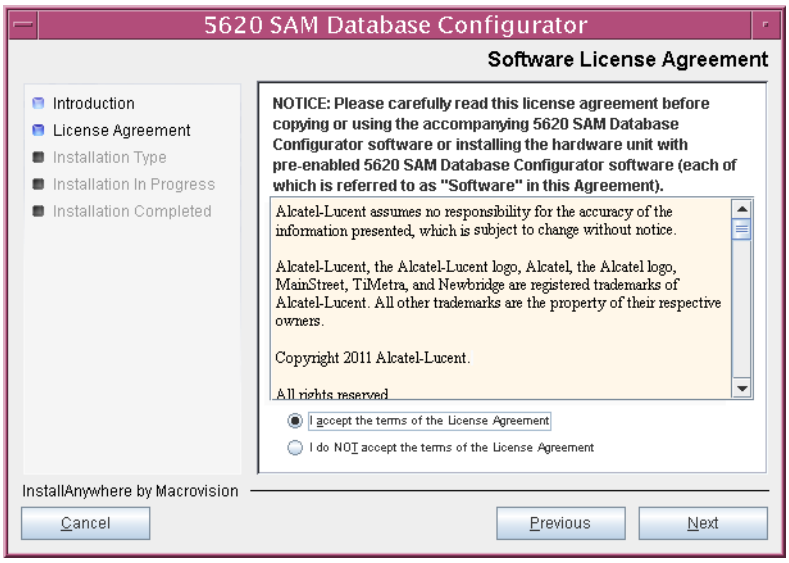
23 The 5620 SAM database installer opens, as shown in Figure 3-58. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-58 Introduction



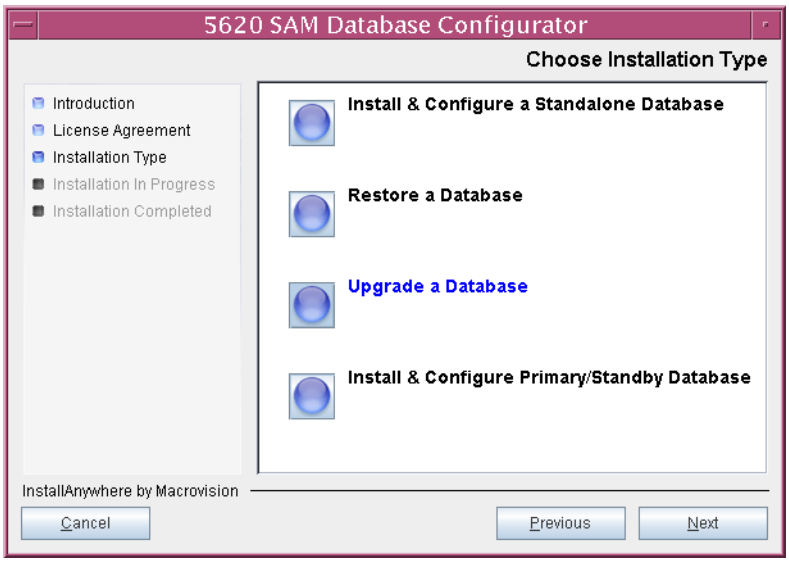
24 Review and accept the terms of the license agreement shown in Figure 3-59. Click on the Next button.

Figure 3-59 Software License Agreement



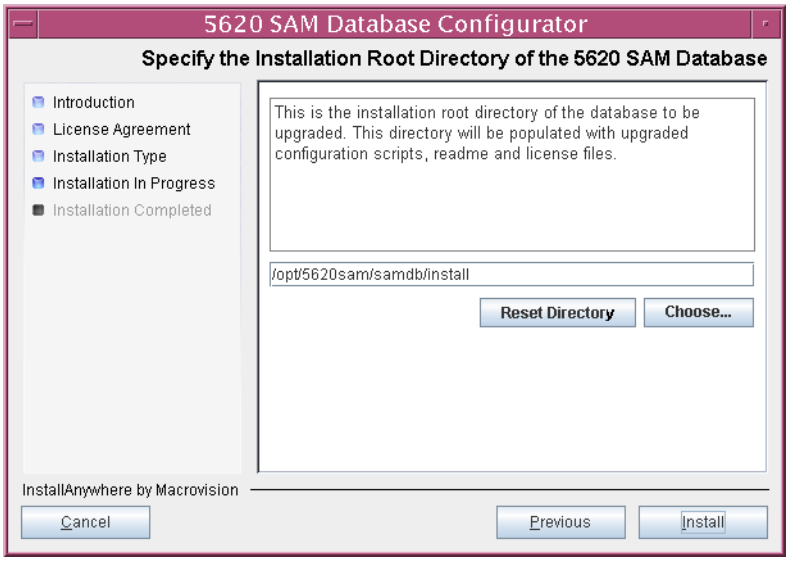
25 Select Upgrade a Database, as shown in Figure 3-60. Click on the Next button.

Figure 3-60 Choose Installation Type



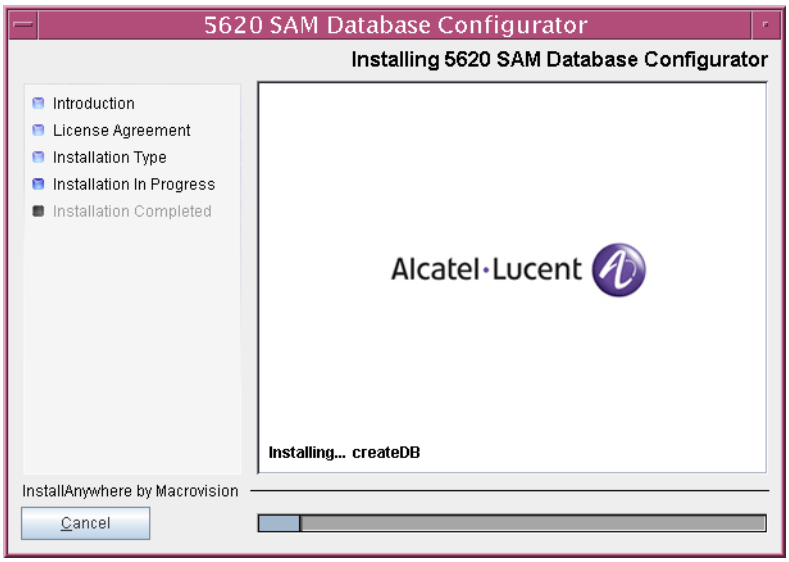
26 Specify the base directory in which the existing 5620 SAM database software is installed (typically /opt/5620sam/samdb/install), as shown in Figure 3-61. Click on the Install button to begin the database software upgrade.

Figure 3-61 Specify the Installation Root Directory of the 5620 SAM Database



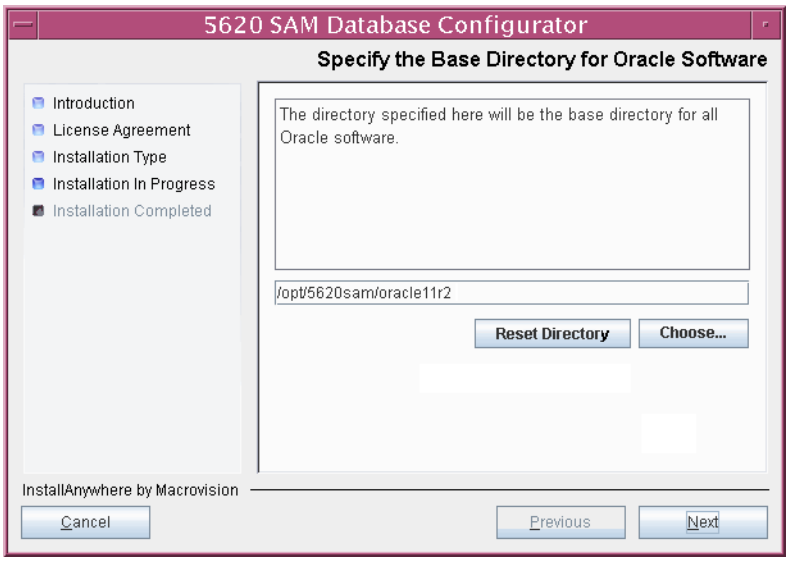
The 5620 SAM installer prepares to upgrade the database, as shown in Figure 3-62.

Figure 3-62 Installing 5620 SAM Database Configurator



27 The panel shown in Figure 3-63 displays the Oracle software installation directory, which cannot be changed. Click on the Next button.

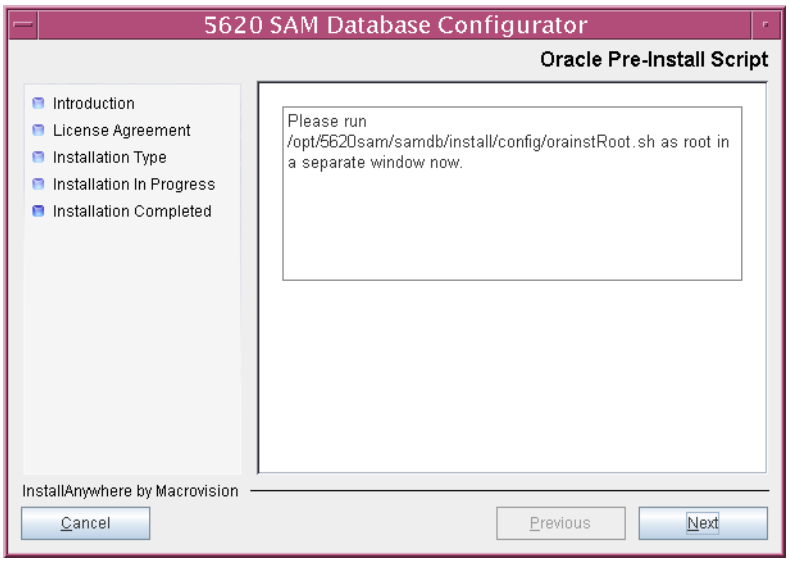
Figure 3-63 Specify the Base Directory for Oracle Software



28 If you are upgrading from Release 9.0 R1 or later, go to step 33.

29 When the panel in Figure 3-64 is displayed, perform the following steps.

Figure 3-64 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

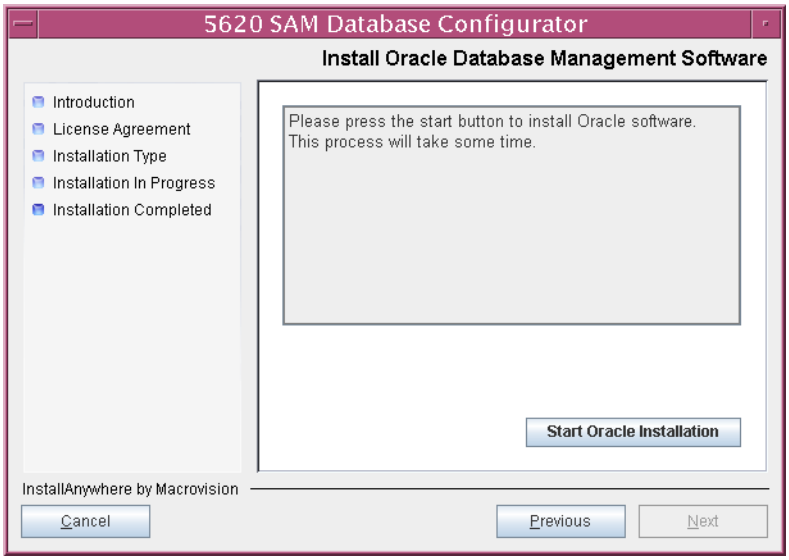
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

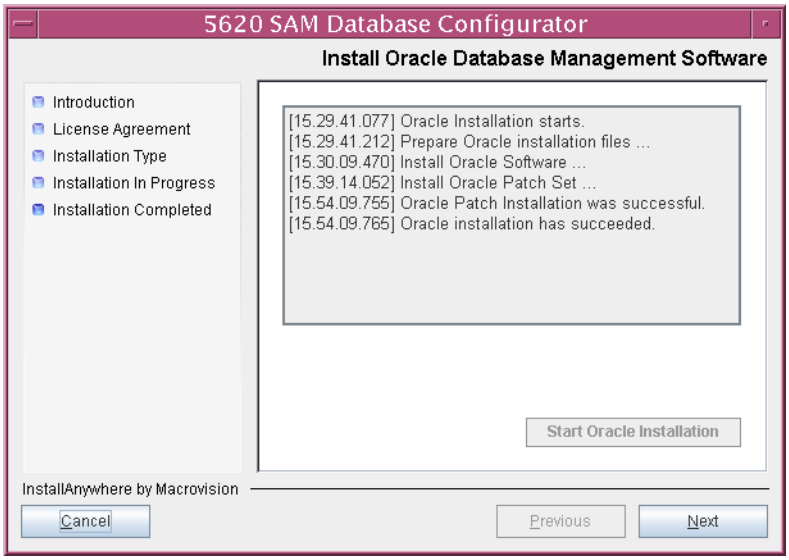
30 You are prompted to install Oracle software, as shown in Figure 3-65. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 3-65 Install Oracle Database Management Software



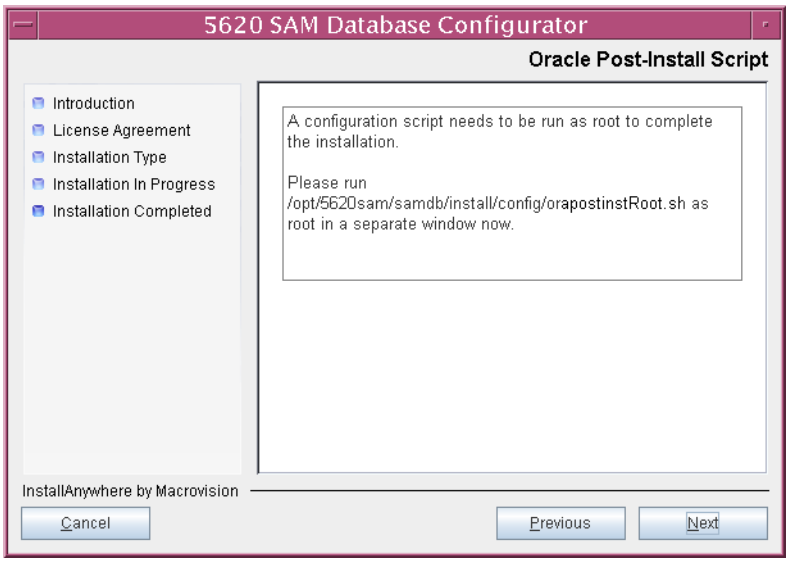
31 As shown in Figure 3-66, Oracle installation details are displayed as the installation progresses. When the installation is complete, click on the Next button.

Figure 3-66 Install Oracle Database Management Software



32 When the panel in Figure 3-67 is displayed, perform the following steps.

Figure 3-67 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

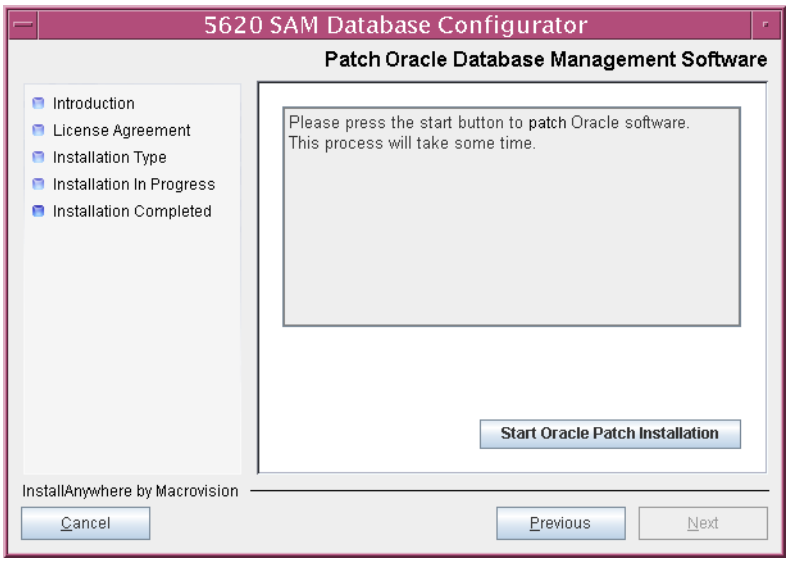
iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

vi Click on the Next button.

33 If the panel in Figure 3-68 is displayed, perform the following steps.

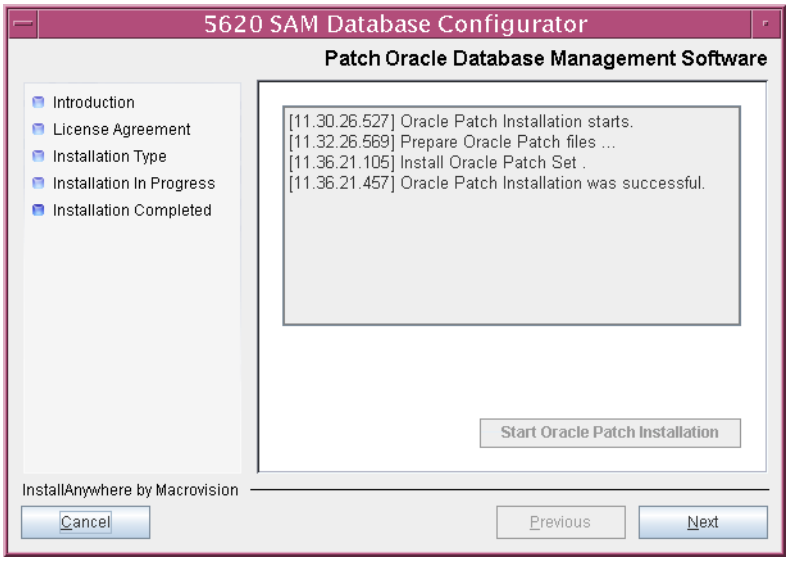
Figure 3-68 Patch Oracle Database Management Software



i Click on the “Start Oracle Patch Installation” button to begin installing the Oracle patch. Oracle patch installation can take an hour or more to complete.

ii Oracle patch installation details are displayed as the patch installation progresses. When the patch installation is complete, as shown in Figure 3-69, click on the Next button.

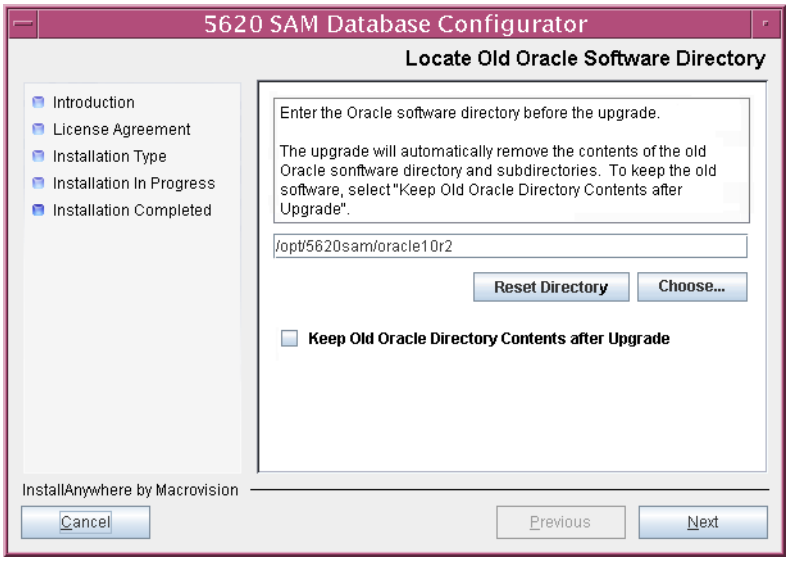
Figure 3-69 Patch Oracle Database Management Software



34 Specify the location of the currently installed Oracle software, as shown in Figure 3-70, configure the “Keep Old Oracle Directory Contents after Upgrade” parameter, then click on the Next button.

Note — If the “Keep Old Oracle Directory Contents after Upgrade” parameter is not selected, the 5620 SAM database installer deletes the files and subdirectories in the specified directory. The installer deletes the directory itself only if the directory is not specified as the Oracle management user home directory in step 15.

Figure 3-70 Locate Old Oracle Software Directory



35 Configure the following parameters shown in Figure 3-71 using information from the existing standby database installation, then click on the Next button:

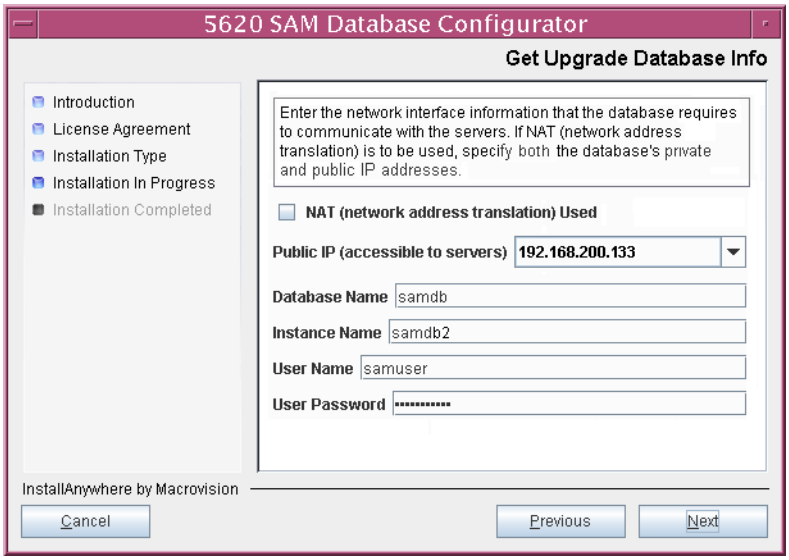
- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Name (typically samdb)
- Instance Name (typically samdb2)
- User Name (typically samuser)
- User Password

Note — The “Private IP” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

If you modify the “User Password” parameter, the value that you specify must meet the following criteria:

- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

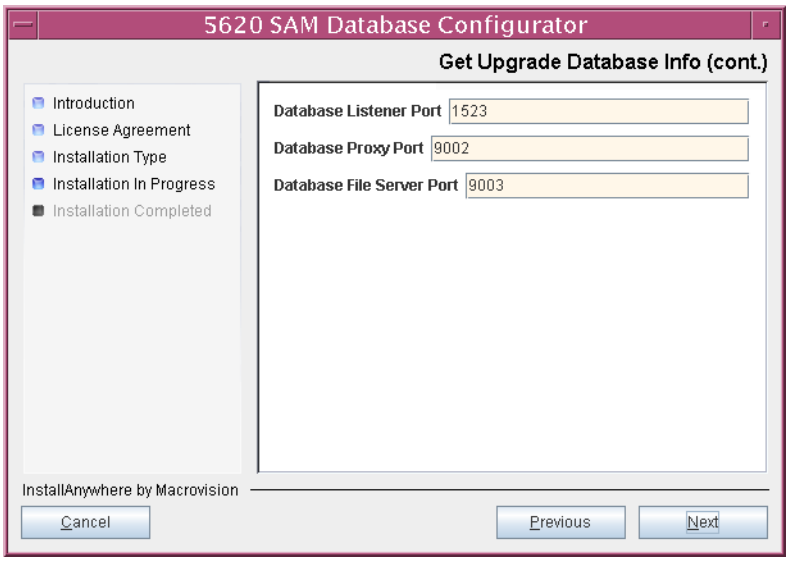
Figure 3-71 Get Upgrade Database Info



36 Configure the following parameters shown in Figure 3-72 using information from the existing 5620 SAM installation, then click on the Next button:

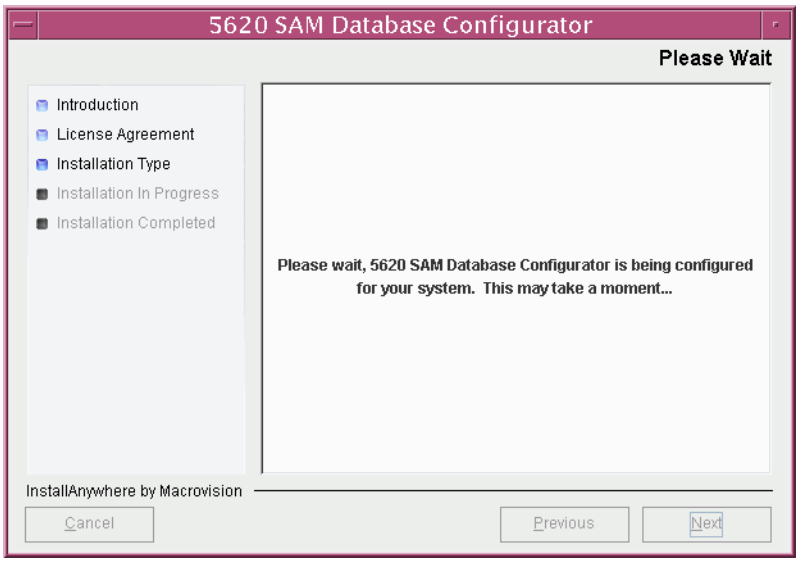
- Database Listener Port (typically 1523)
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

Figure 3-72 Get Upgrade Database Info (cont.)



The installer prepares for the next configuration phase, as shown in Figure 3-73.

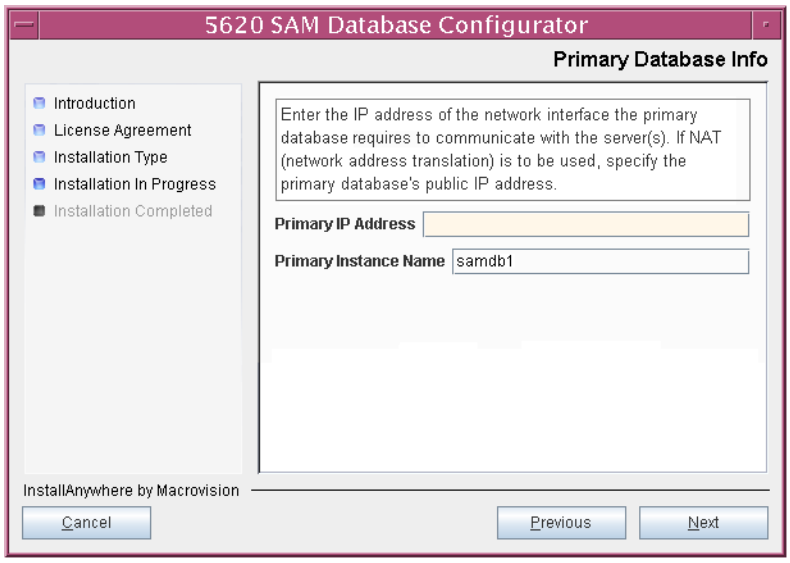
Figure 3-73 Please Wait



37 Configure the following parameters, shown in Figure 3-74, using the existing primary database values. Click on the Next button.

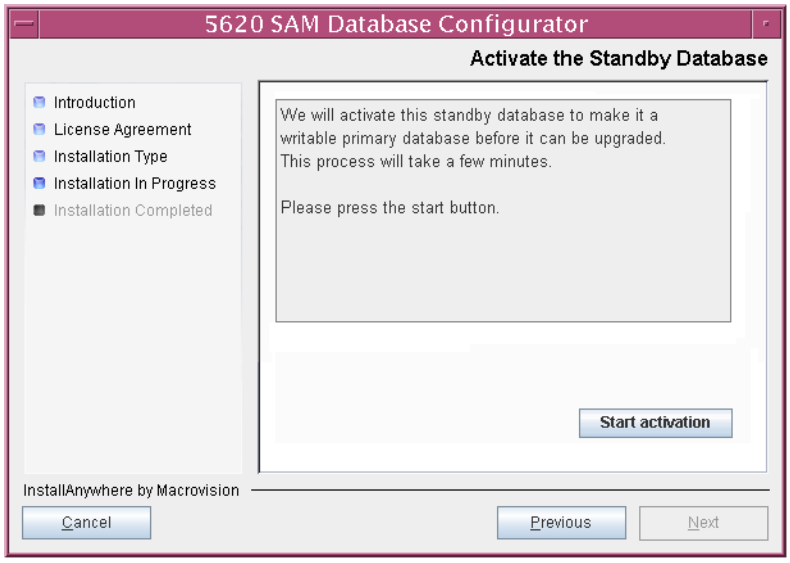
- Primary IP Address
- Primary Instance Name (typically samdb1)

Figure 3-74 Primary Database Info



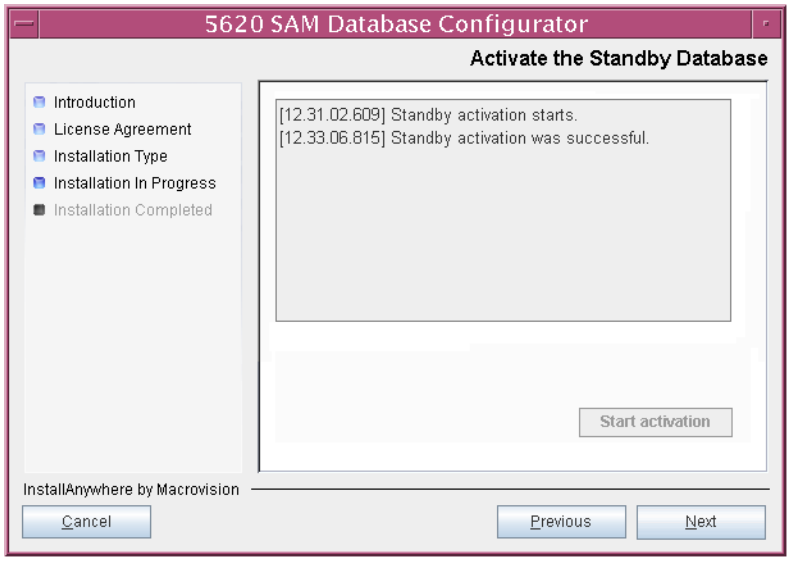
38 You are prompted to activate the standby database, as shown in Figure 3-75. Click on the Start activation button to proceed with the activation.

Figure 3-75 Activate the Standby Database



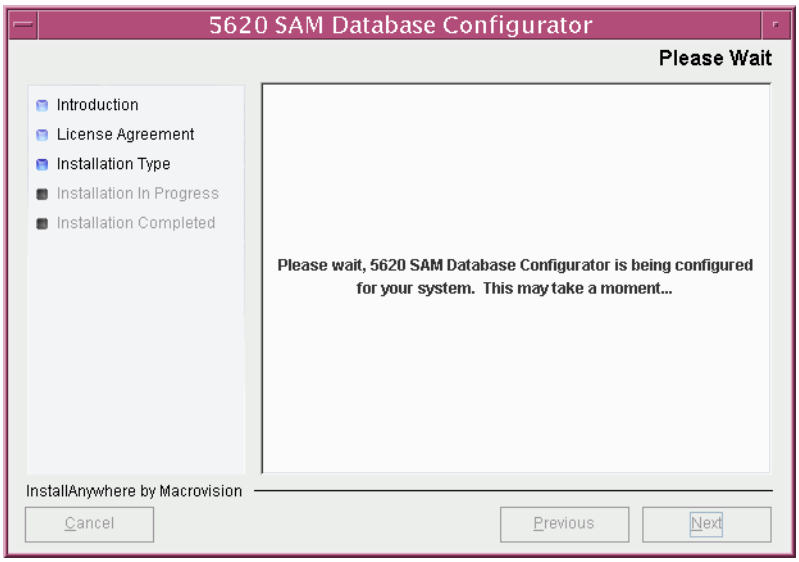
39 Database activation details are displayed as the activation progresses. When the activation is complete, as shown in Figure 3-76, click on the Next button.

Figure 3-76 Activate the Standby Database



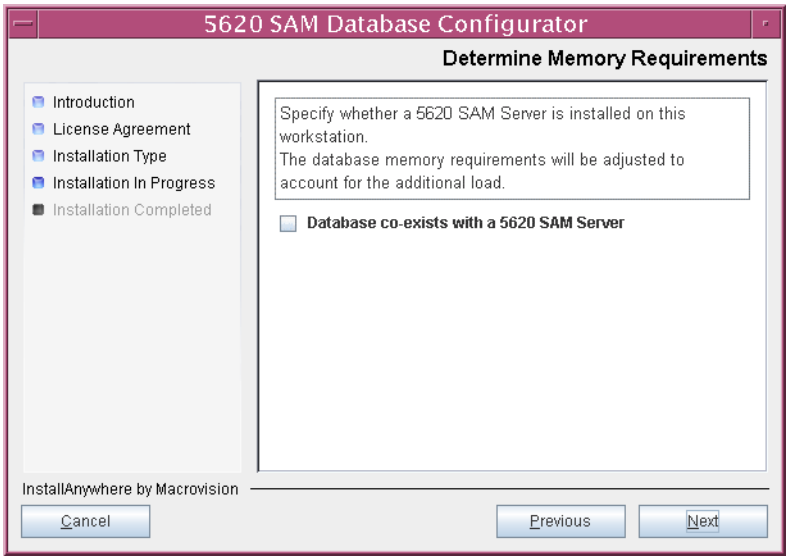
The installer prepares for the next configuration phase, as shown in Figure 3-77.

Figure 3-77 Please Wait



40 If the 5620 SAM server and database are installed on the same station, select the "Database co-exists with a 5620 SAM Server" parameter shown in Figure 3-78. Click on the Next button.

Figure 3-78 Determine Memory Requirements

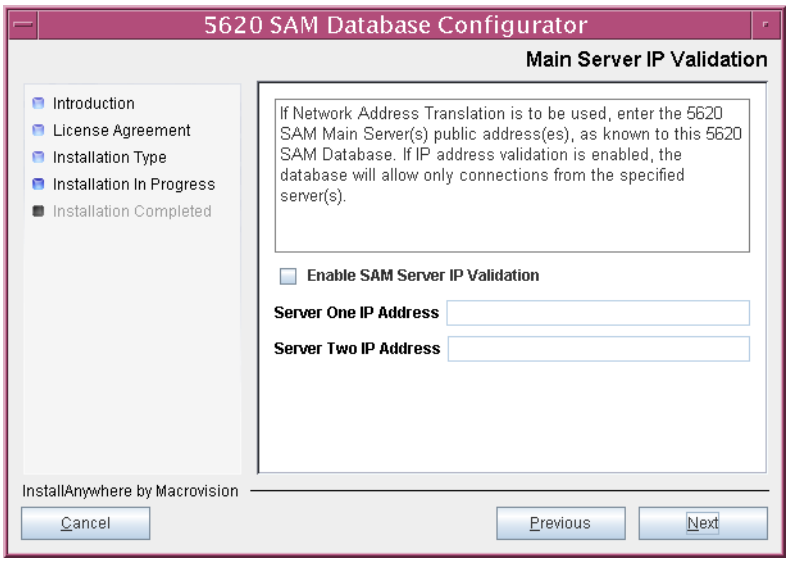


41 Configure the following parameters shown in Figure 3-79, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
- Server Two IP Address

Figure 3-79 Main Server IP Validation

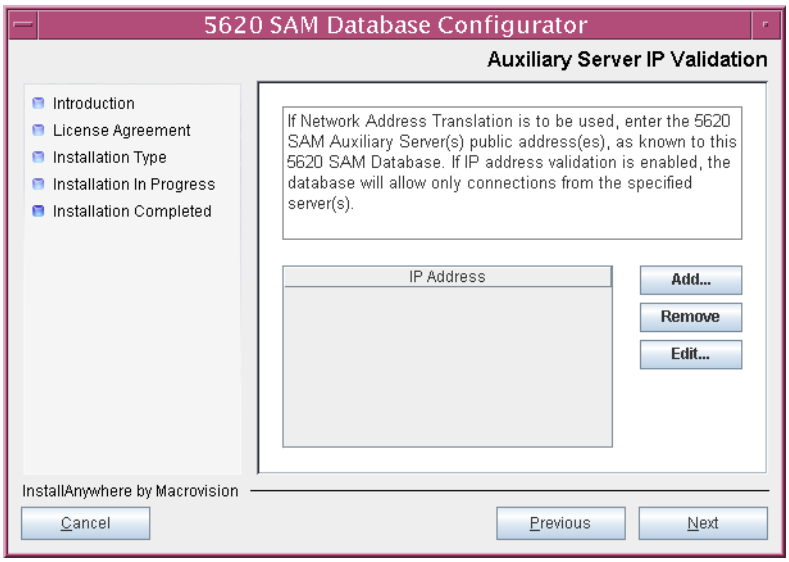


42 The panel in Figure 3-80 is displayed if the “Enable SAM Server IP Validation” parameter in step 41 is selected. Otherwise, go to step 44.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

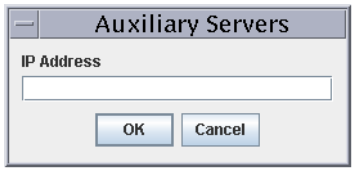
i Click on the Add button shown in Figure 3-80. The Auxiliary Server Configuration form shown in Figure 3-81 opens.

Figure 3-80 Auxiliary Server IP Validation



ii Enter the IP address and hostname of the auxiliary server.

Figure 3-81 Auxiliary Servers



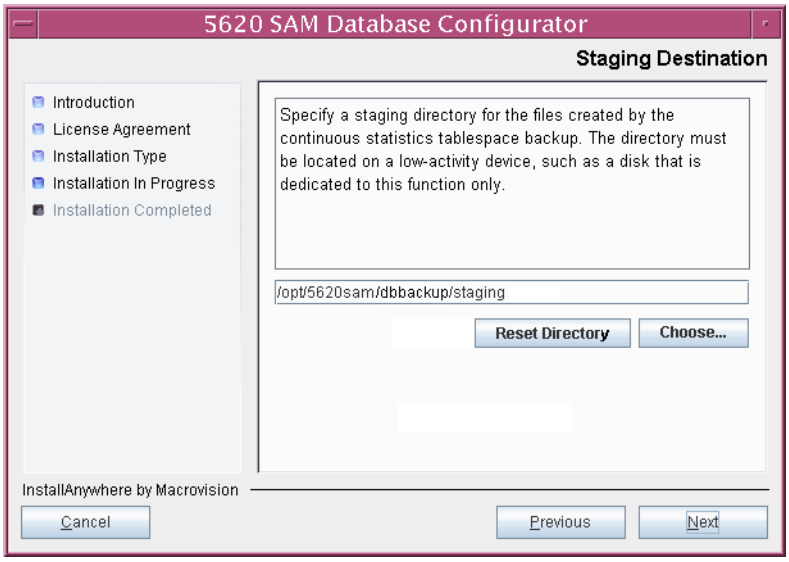
iii Click on the OK button to save the information and close the form.

iv Repeat steps 42 i to iii to specify an additional auxiliary server, if required.

43 Click on the Next button.

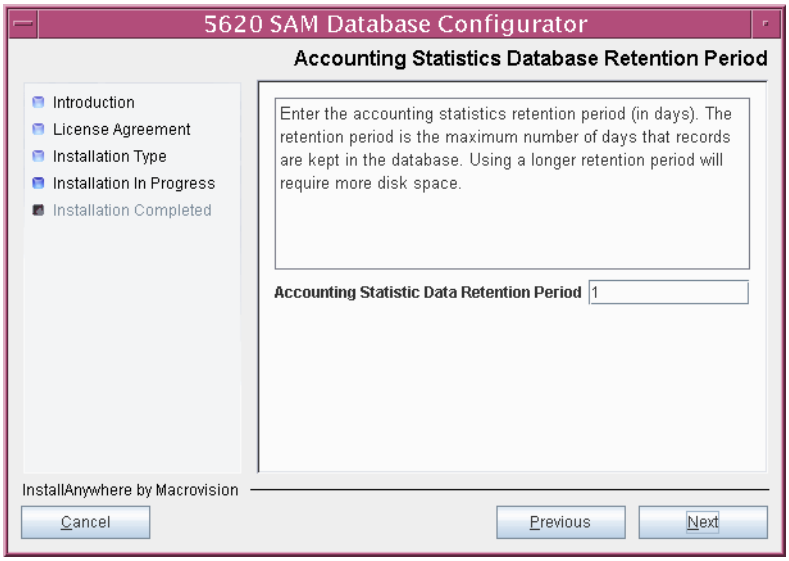
44 If the panel in Figure 3-82 is displayed, specify a directory for the continuous statistics tablespace backup. Click on the Next button.

Figure 3-82 Staging Destination



45 Configure the "Accounting Statistic Data Retention Period" parameter shown in Figure 3-83. Click on the Next button.

Figure 3-83 Accounting Statistics Database Retention Period

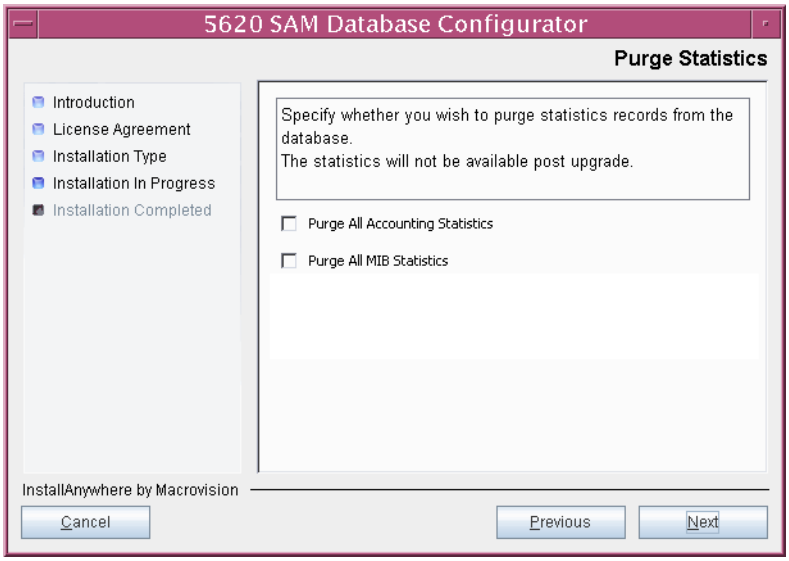


46 To reduce the time required for the database upgrade, you can purge the current 5620 SAM statistics data. Configure the following parameters shown in Figure 3-84, then click on the Next button:

- Purge All Accounting Statistics
- Purge All MIB Statistics

Note — The statistics data for the specified statistics types are permanently deleted from the 5620 SAM database.

Figure 3-84 Purge Statistics



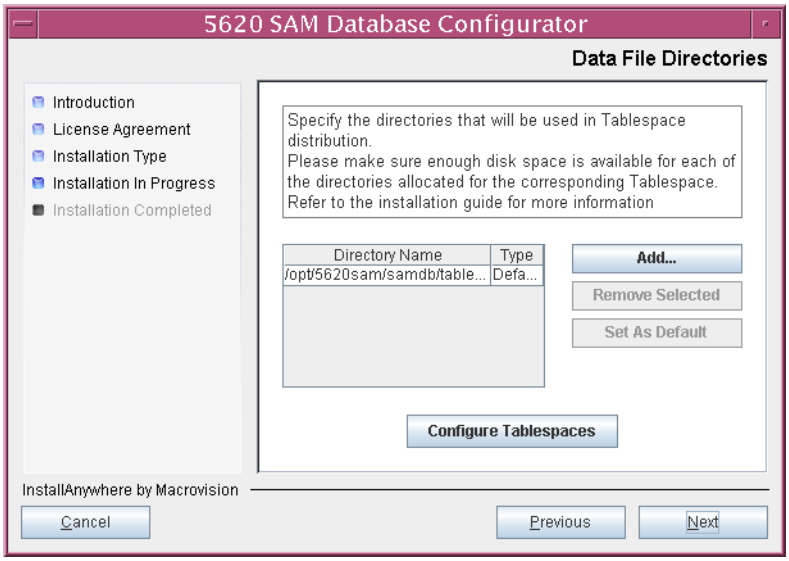
47 If the panel in Figure 3-85 is displayed, the new database contains at least one tablespace that is not defined in the previous database and you must perform the following steps to specify the tablespace directories. Otherwise, go to step 50.

i Click on the Add button. A file browser form opens.

ii Use the file browser form to choose a tablespace directory.

iii Repeat steps 47 i and ii to specify an additional tablespace directory, if required.

Figure 3-85 Data File Directories



48 Associate the new tablespaces with the directories specified in step 47.

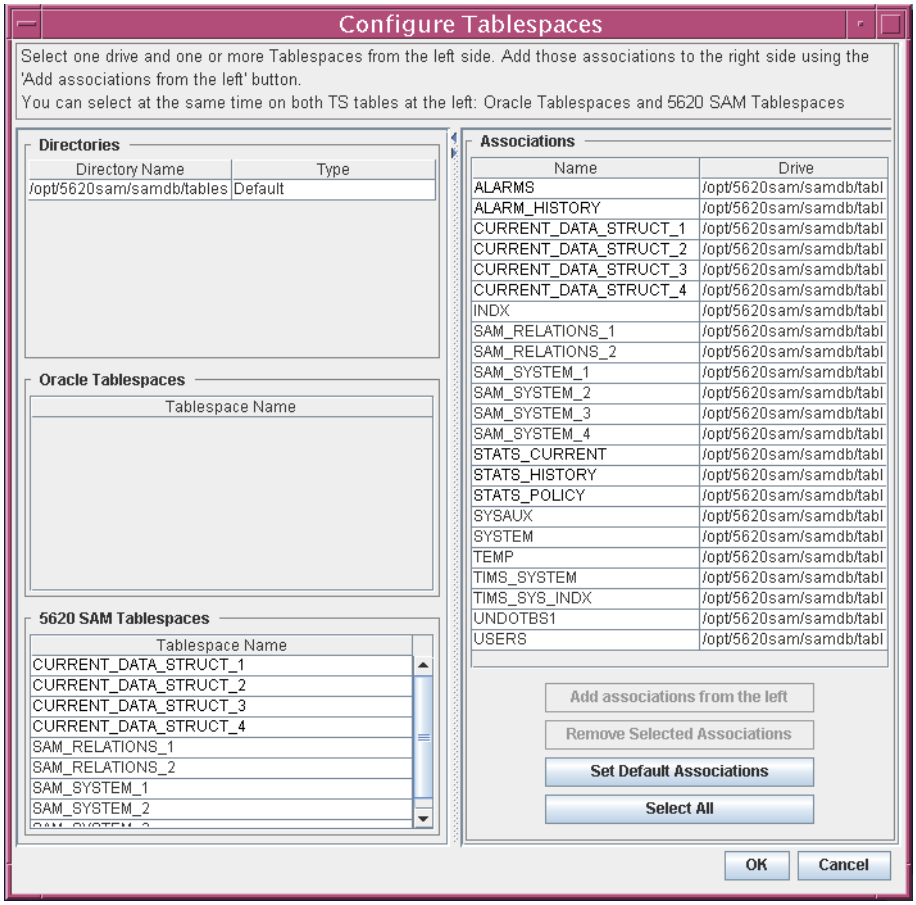
i Click on the Configure Tablespaces button. The tablespace configuration form opens, as shown in Figure 3-86.

Note — The lists of drives and tablespaces on the tablespace configuration form may differ from the lists shown in the figure below.

ii Follow the instructions at the top of the form to associate tablespaces with directories, as required.

iii Click on the OK button. The tablespace configuration form closes and the "Data File Directories" panel in Figure 3-85 reappears.

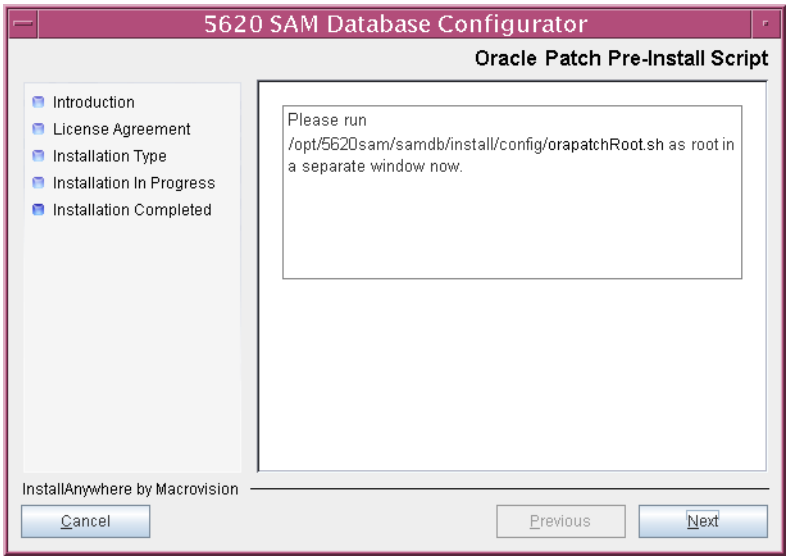
Figure 3-86 Configure Tablespaces



49 Click on the Next button.

50 If you are prompted to run an Oracle patch pre-installation script, as shown in Figure 3-87, run the script in a separate console window as a user with root or root-equivalent privileges.

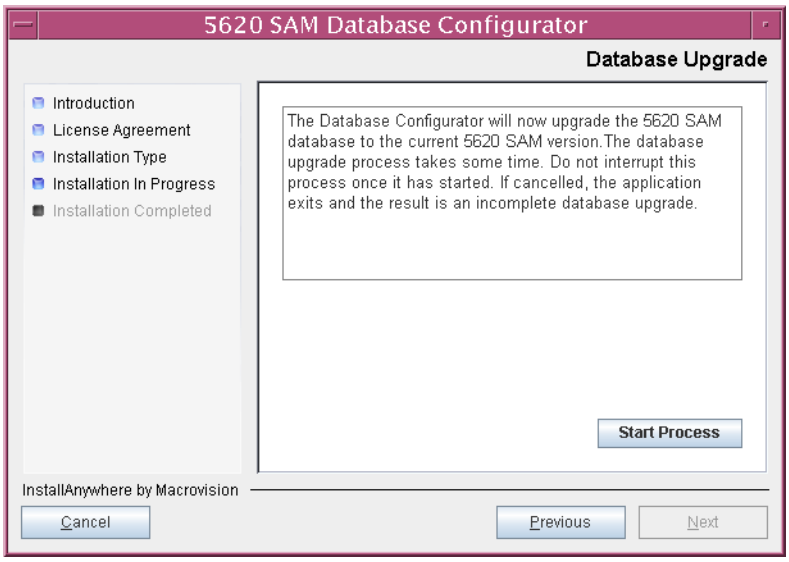
Figure 3-87 Oracle Patch Pre-install Script



51 When the script execution is complete, click on the Next button.

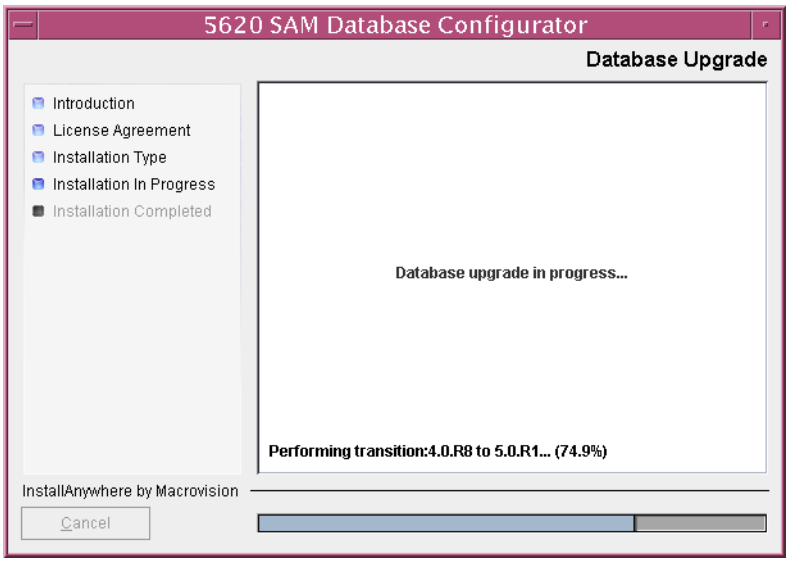
52 You are prompted to begin the database upgrade, as shown in Figure 3-88. A database upgrade can take two hours or more, depending on the database release and number of database records. Click on the Start Process button to begin the database upgrade.

Figure 3-88 Database Upgrade



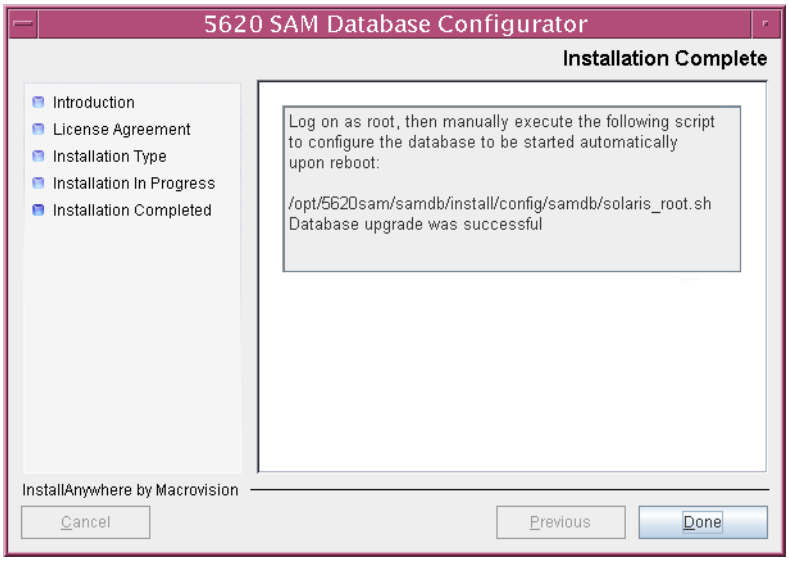
The next panel displays database creation progress, as shown in Figure 3-89.

Figure 3-89 Database Upgrade



53 When the panel in Figure 3-90 is displayed, the 5620 SAM database upgrade is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 3-90 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

54 Click on the Done button to close the database installer.

This database is the new primary database.

The next section of the procedure describes the upgrade of the original standby main server. A server upgrade requires root-equivalent privileges.

Upgrade original standby main server

55 Log in to the original standby main server station as a user with root or root-equivalent privileges.

56 Open a console window.

57 Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.

i Enter the following:

```
# who ↵
```

The active user sessions are listed.

ii If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.

58 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

59 Navigate to the DVD-ROM drive.

60 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

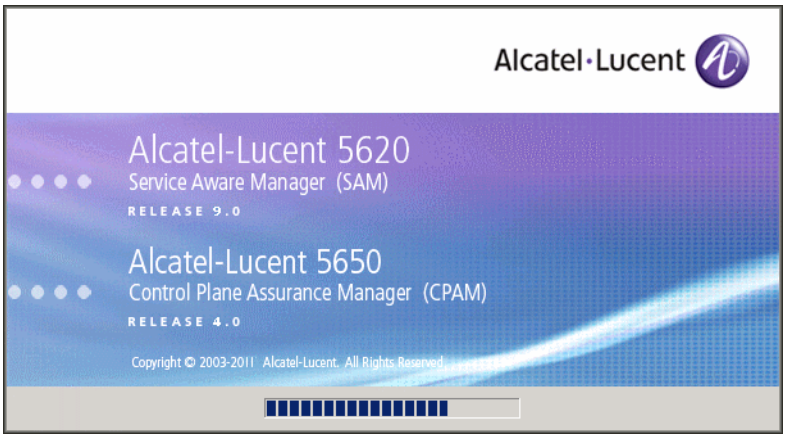
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

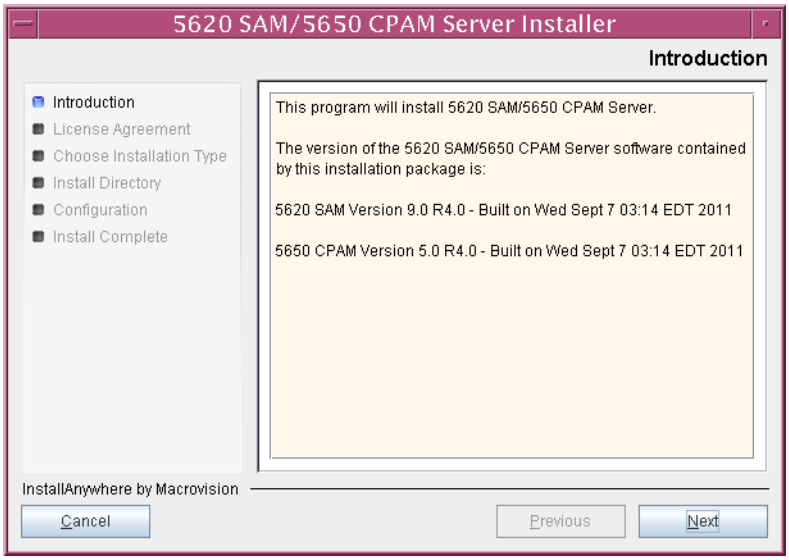
The splash screen shown in Figure 3-91 opens.

Figure 3-91 5620 SAM installer



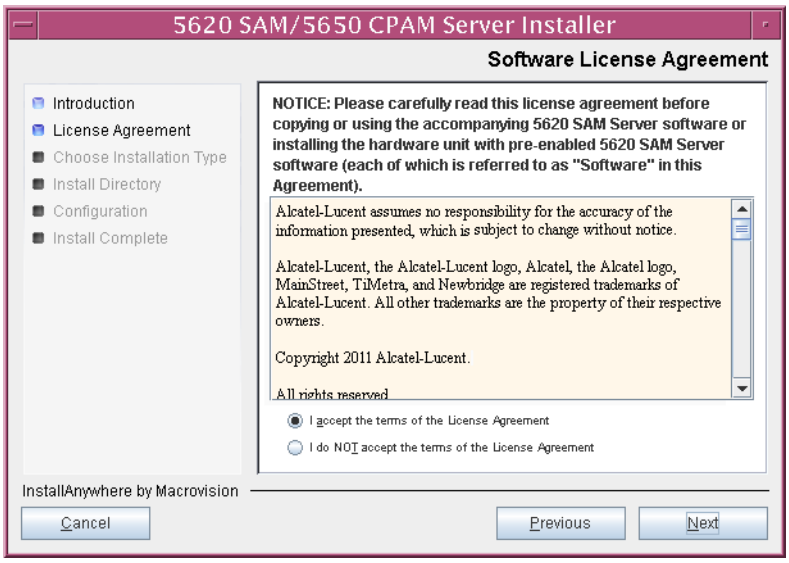
61 The 5620 SAM server installer opens, as shown in Figure 3-92. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-92 Introduction



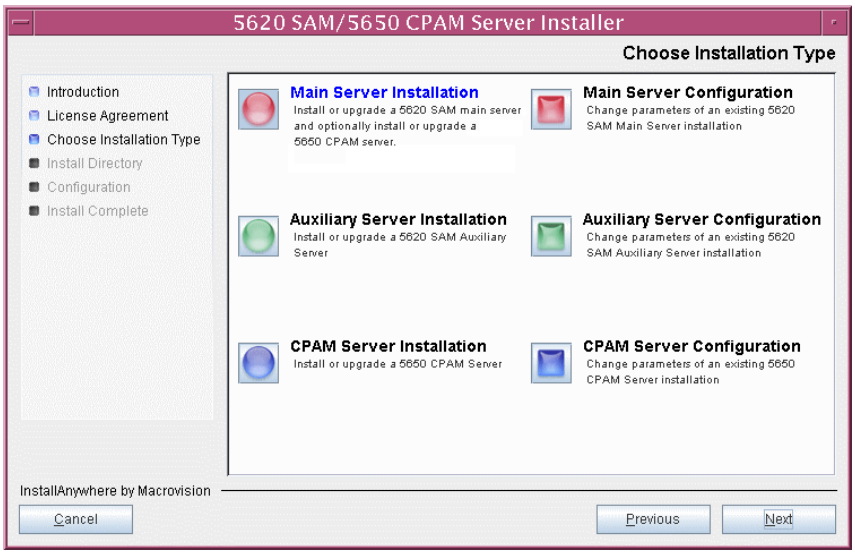
62 Review and accept the terms of the license agreement shown in Figure 3-93. Click on the Next button.

Figure 3-93 Software License Agreement



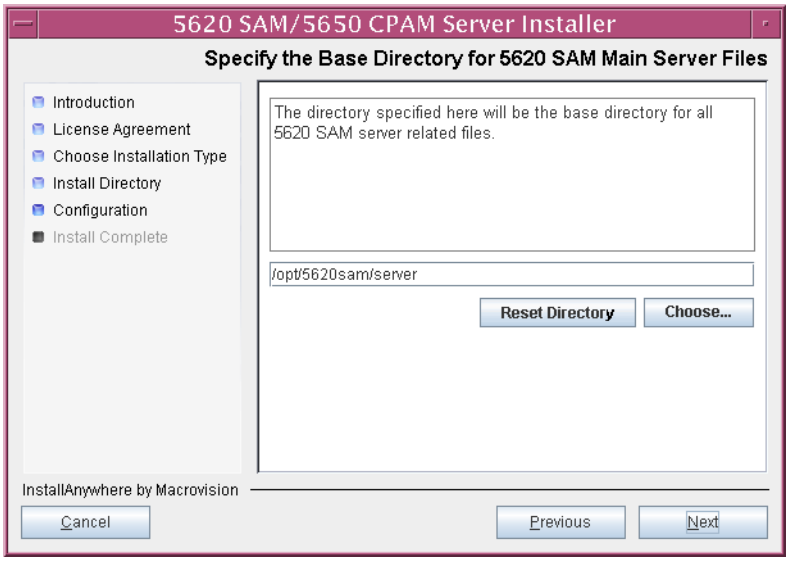
63 Select Main Server Installation, as shown in Figure 3-94. Click on the Next button.

Figure 3-94 Choose Installation Type



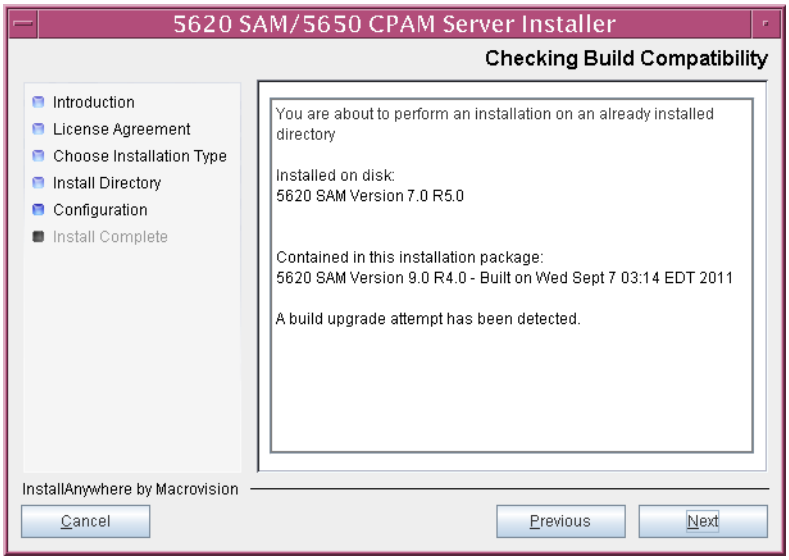
64 Specify the base directory in which the existing 5620 SAM main server software is installed (typically /opt/5620sam/server), as shown in Figure 3-95. Click on the Next button.

Figure 3-95 Specify the Base Directory for 5620 SAM Main Server Files



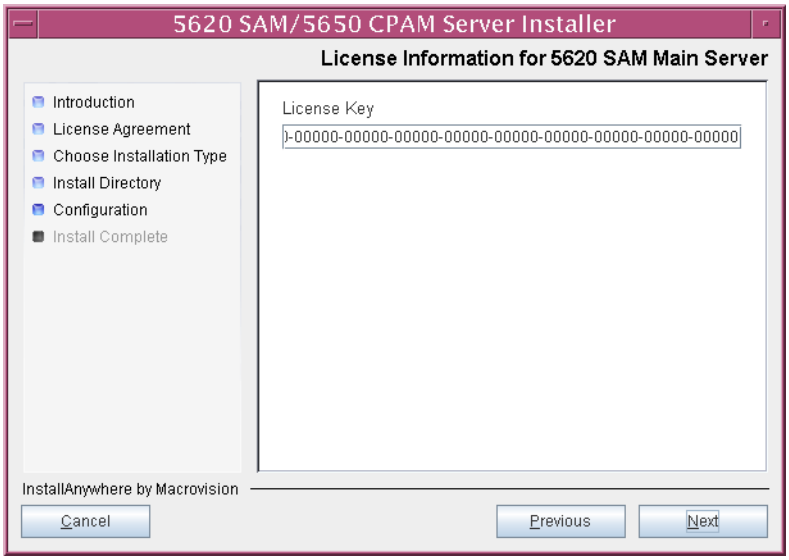
65 As shown in Figure 3-96, the installer indicates which release of 5620 SAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 3-96 Checking Build Compatibility



66 The 5620 SAM installer displays the existing license key. Enter the license key for the new 5620 SAM release exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 3-97. Click on the Next button.

Figure 3-97 License Information for 5620 SAM Main Server



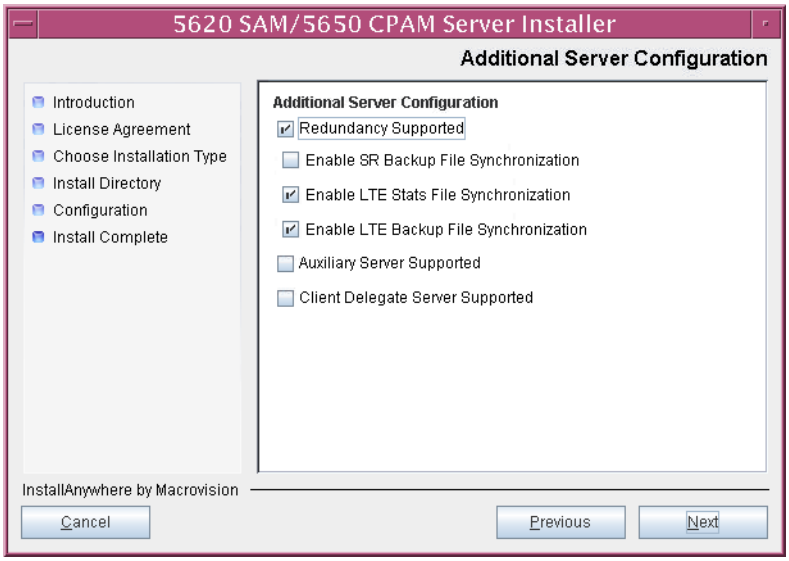
67 Configure the following parameters shown in Figure 3-98, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization”, “Enable LTE Stats File Synchronization”, and “Enable LTE Backup File Synchronization” parameters are displayed only when the “Redundancy Supported” parameter is enabled.

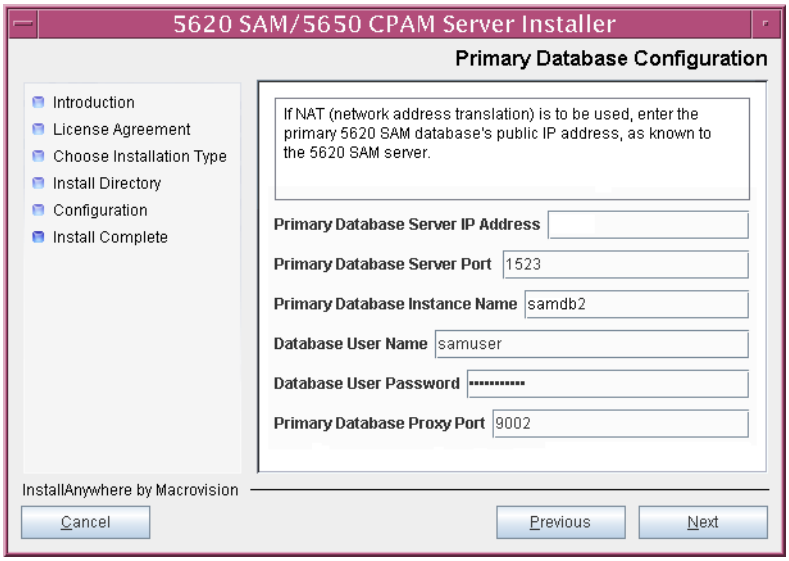
Figure 3-98 Additional Server Configuration



68 Configure the following parameters, shown in Figure 3-99, using the recorded values from the new primary database upgrade, then click on the Next button.

- Primary Database Server IP Address (the IP address of the new primary database station)
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (the name of the former standby database instance, typically samdb2)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 3-99 Primary Database Configuration

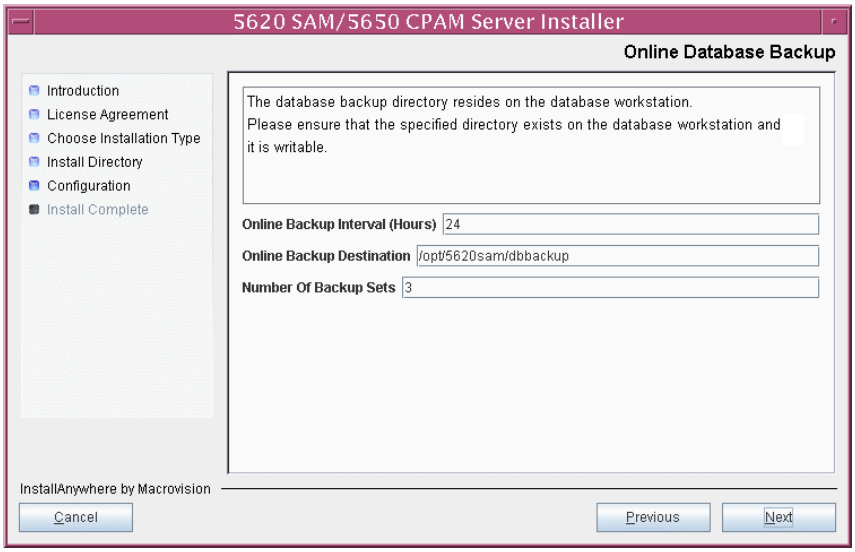


69 Depending on the existing configuration. the panel in Figure 3-100 is displayed. Configure the following parameters, if required, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 68.

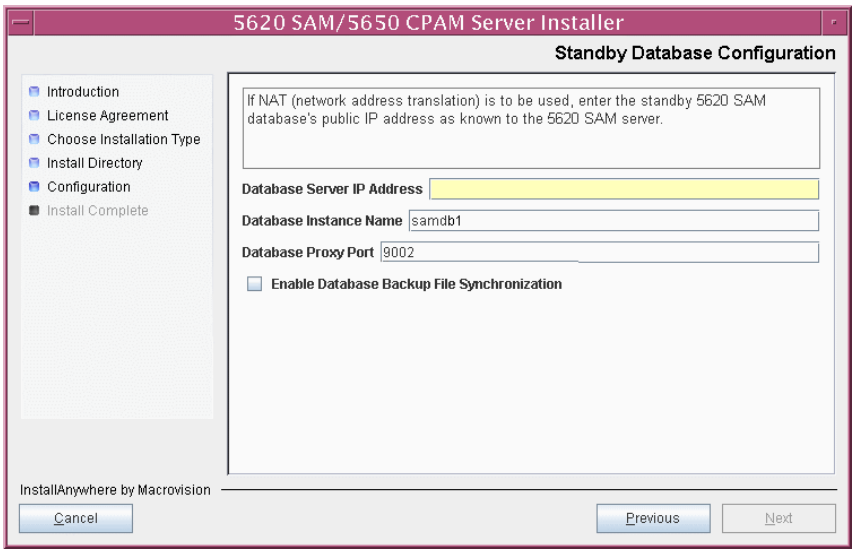
Figure 3-100 Online Database Backup



70 Configure the following parameters shown in Figure 3-101, then click on the Next button:

- Database Server IP Address (the IP address of the new standby database station)
- Database Instance Name (the name of the database instance on the new standby database station, typically samdb1)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 3-101 Standby Database Configuration



71 The panel in Figure 3-102 is displayed if you select the “Auxiliary Server Supported” parameter in step 67. Otherwise, go to step 73.

Perform the following steps to specify an auxiliary server, if required.

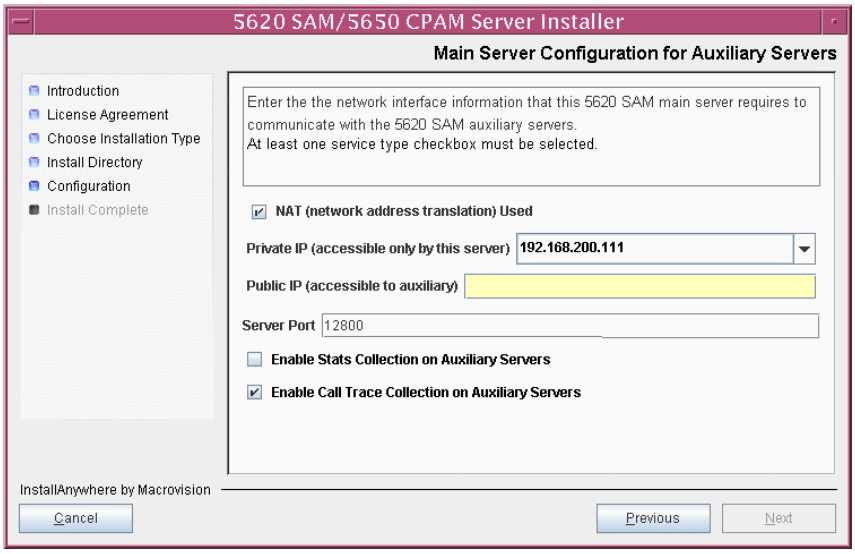
i Configure the following parameters shown in Figure 3-102:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-102 Main Server Configuration for Auxiliary Servers



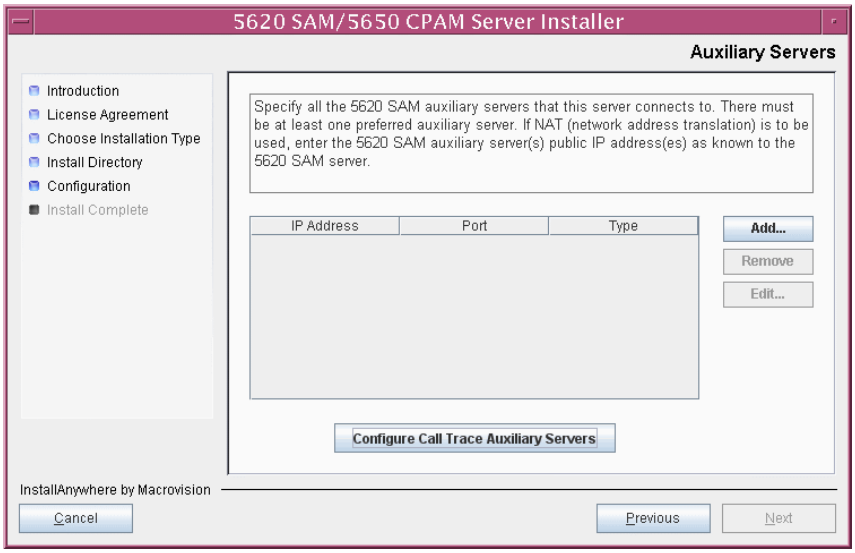
ii Click on the Next button.

iii Click on the Add button shown in Figure 3-103 to specify an auxiliary server. The form shown in Figure 3-104 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

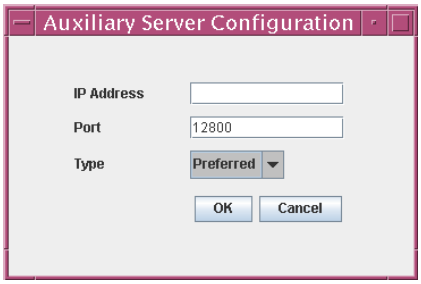
Figure 3-103 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 3-104 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address (the IP address of the auxiliary server)
- Port (typically 12800)
- Type (Preferred or Reserved)

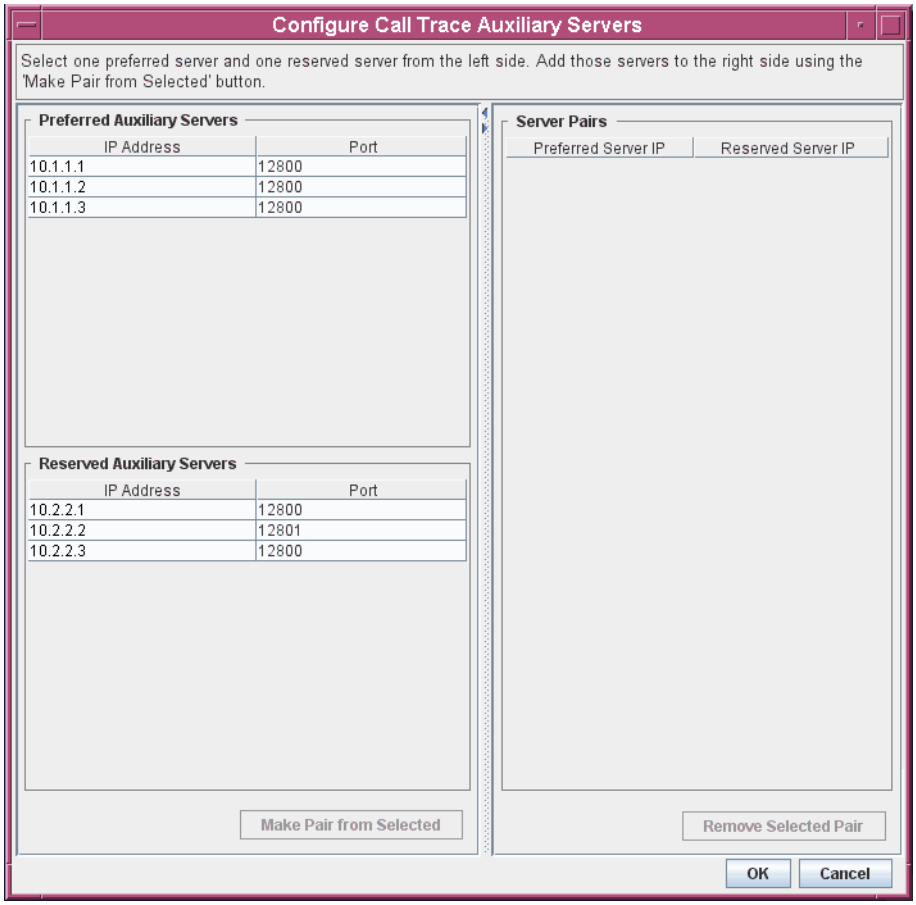
v Click on the OK button to save the information and close the form.

vi Repeat steps 71 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 71 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 3-103. Otherwise, go to step 72.

viii The form shown in Figure 3-105 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 3-105 Configure Call Trace Auxiliary Servers



ix Repeat step 71 viii to configure another call-trace auxiliary server pair, if required.

72 Click on the Next button.

73 If you select the “Enable Database Alignment” parameter shown in Figure 3-106, you must specify the preferred database of this main server, then click on the Next button.

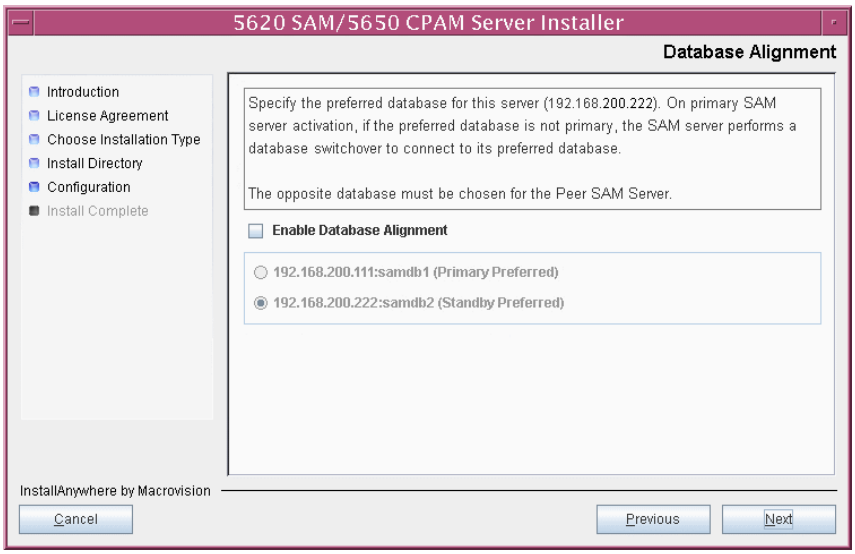
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 3-106 Database Alignment



74 Configure the following parameters shown in Figure 3-107, then click on the Next button:

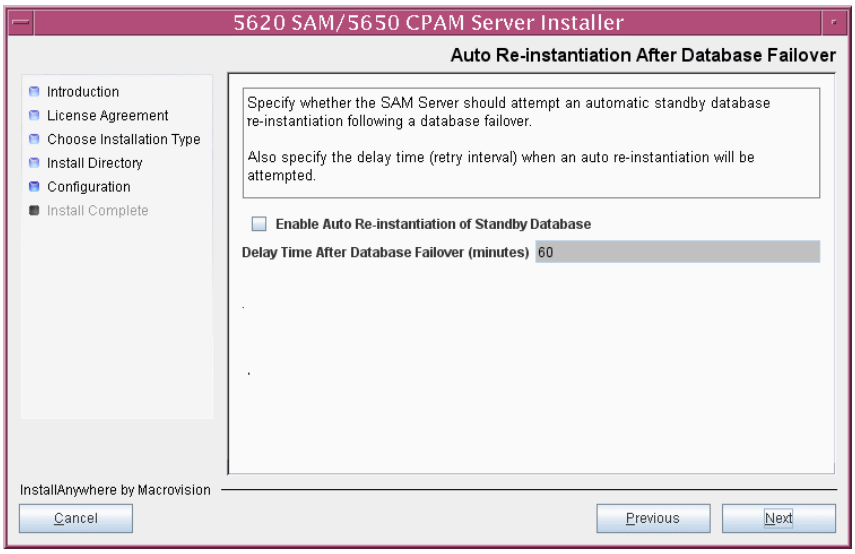
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The "Delay Time After Database Failover (minutes)" parameter is configurable when the "Enable Auto Re-Instantiation of Standby Database" parameter is selected.

Figure 3-107 Auto Re-Instantiation After Database Failover

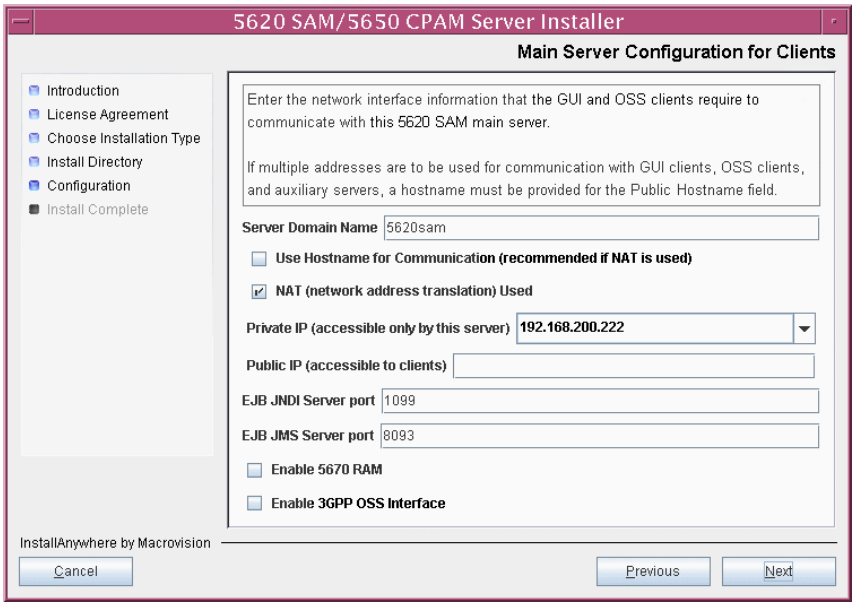


75 Perform the following steps.

i Configure the following parameters shown in Figure 3-108:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 3-108 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 75 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

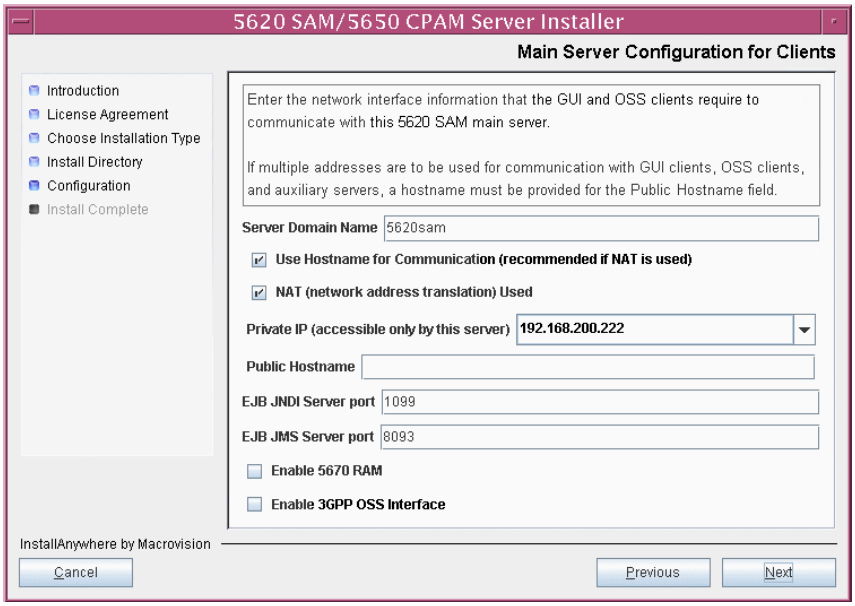
v Go to step 76.

vi Configure the following parameters shown in Figure 3-109:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-109 Main Server Configuration for Clients

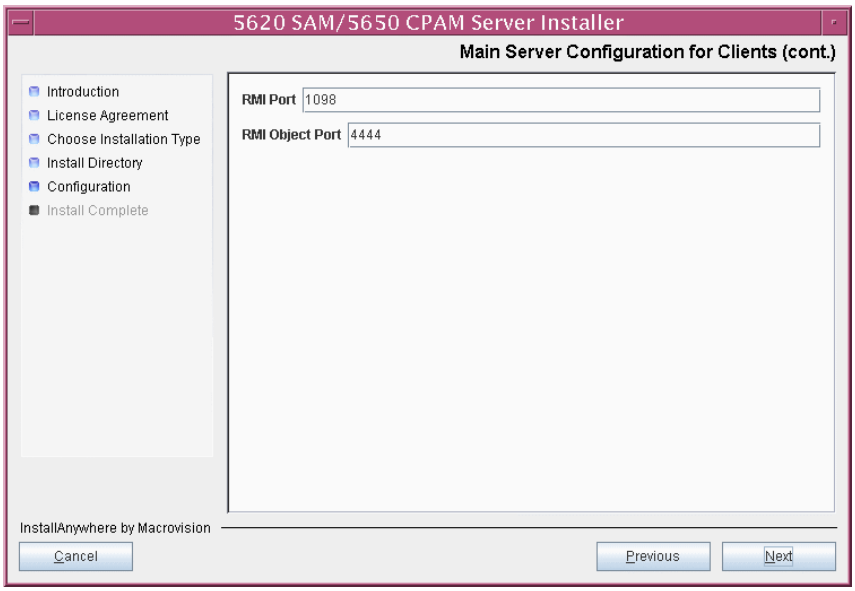


vii Click on the Next button.

76 Configure the following parameters shown in Figure 3-110, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 3-110 Main Server Configuration for Clients (cont.)

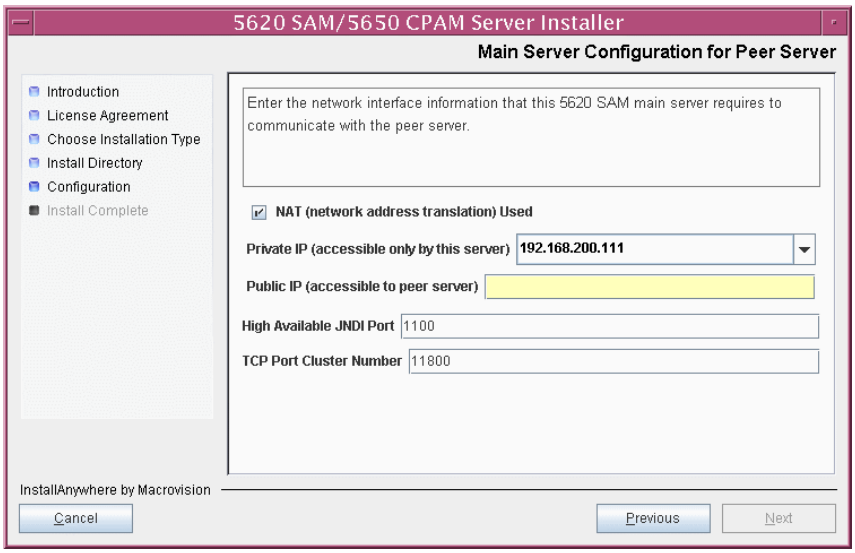


77 Configure the following parameters shown in Figure 3-111:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

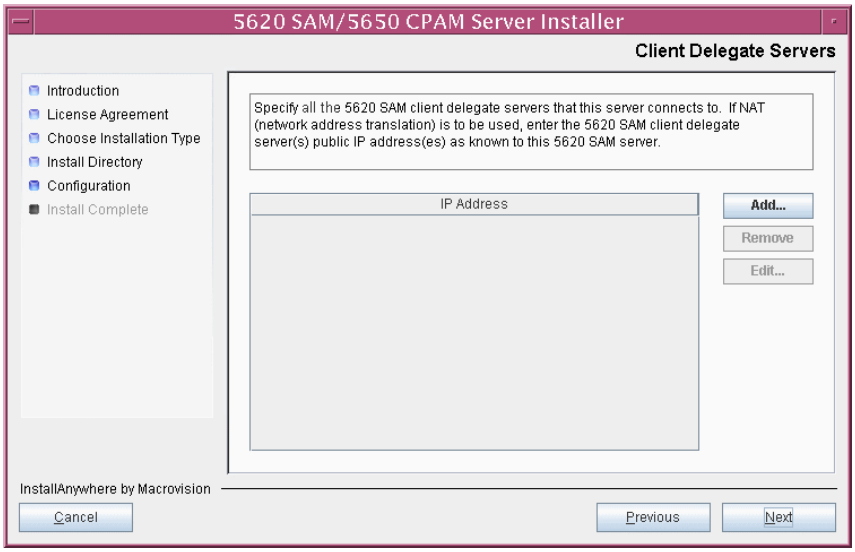
Figure 3-111 Main Server Configuration for Peer Server



78 The panel in Figure 3-112 is displayed if you select the “Client Delegate Server Supported” parameter in step 67. Otherwise, go to step 80.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 3-112 Client Delegate Servers

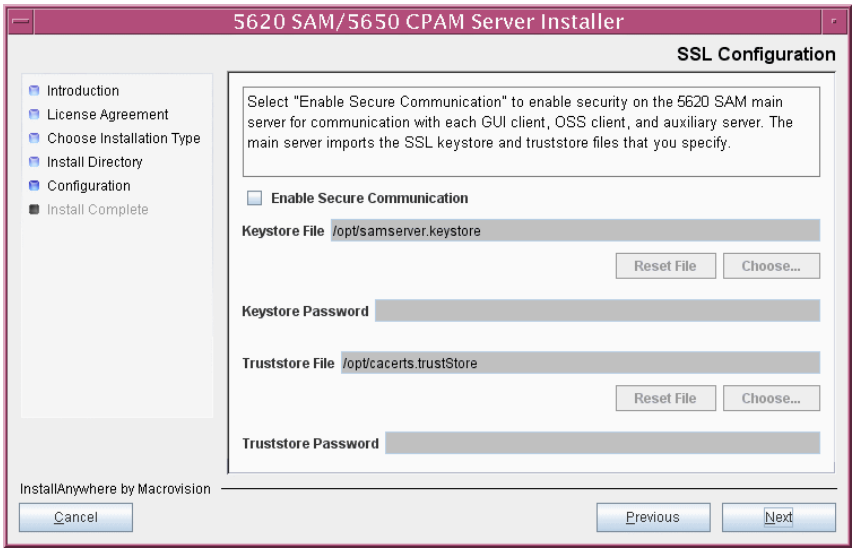


79 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 3-113.

Figure 3-113 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

80 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 3-114.

ii To accept the default user documentation location that is displayed, go to step 81.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

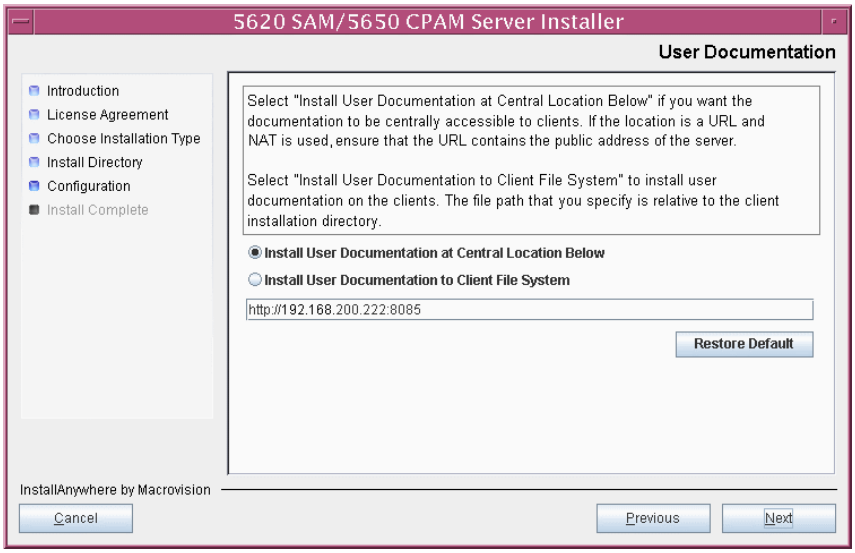
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the new 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 3-114 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 3-114.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

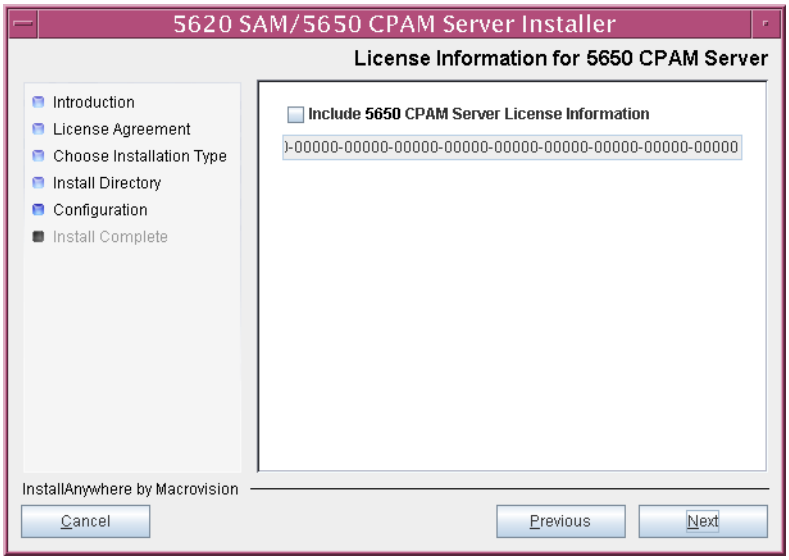
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

81 Click on the Next button.

82 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 3-115. If it does, enter the 5650 CPAM license key provided by from Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 3-115 License Information for 5650 CPAM Server



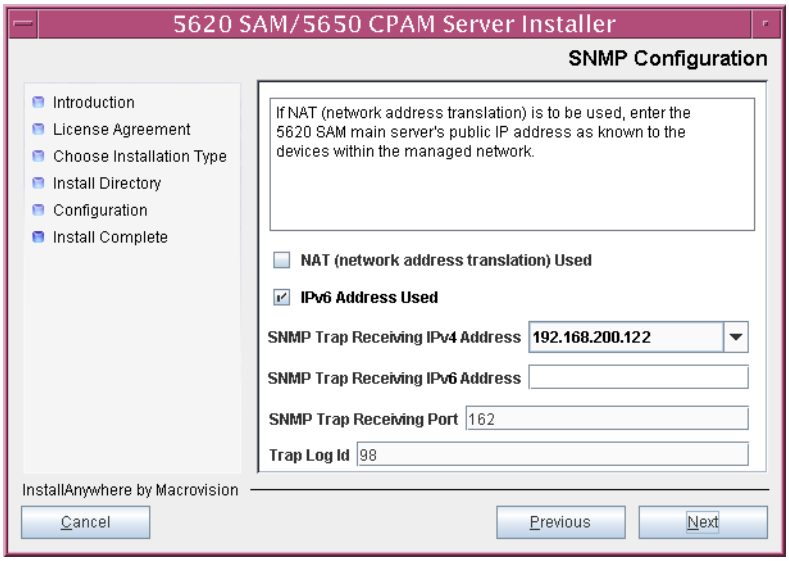
83 Configure the following parameters shown in Figure 3-116, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 3-116.

Figure 3-116 SNMP Configuration



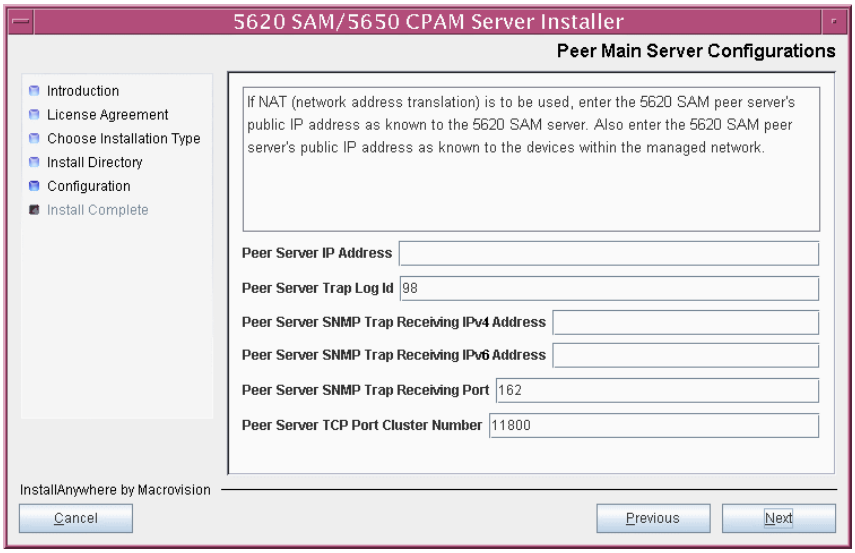
84 Configure the following parameters shown in Figure 3-117, then click on the Next button:

- Peer Server IP Address (original primary server station IP address)
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note 1 — The peer server is the other 5620 SAM main server, which is the new standby main server after the upgrade.

Note 2 — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 83.

Figure 3-117 Peer Main Server Configurations

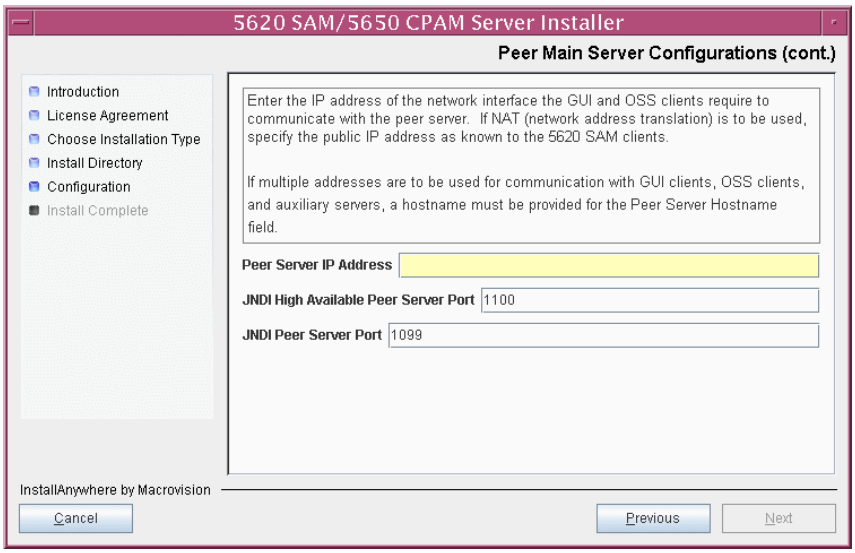


85 If the "Use Hostname for Communication" parameter in step 75 is selected, go to step 88.

86 Configure the following parameters shown in Figure 3-118, then click on the Next button:

- Peer Server IP Address (new standby server station IP address)
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 3-118 Peer Main Server Configurations (cont.)

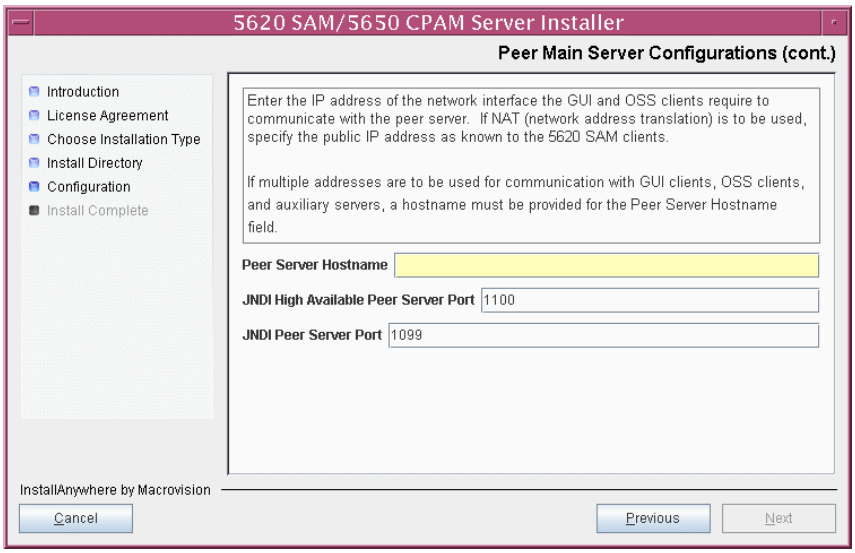


87 Go to step 89.

88 Configure the following parameters shown in Figure 3-119, then click on the Next button:

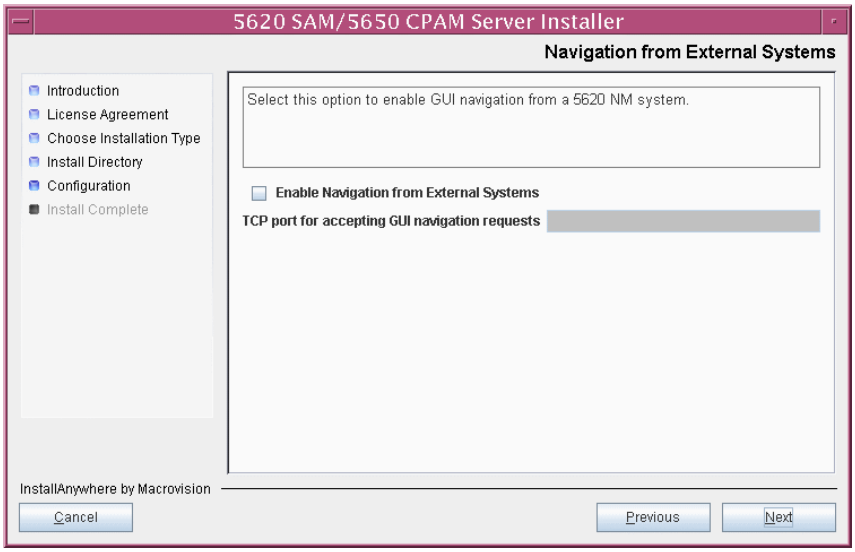
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 3-119 Peer Main Server Configurations (cont.)



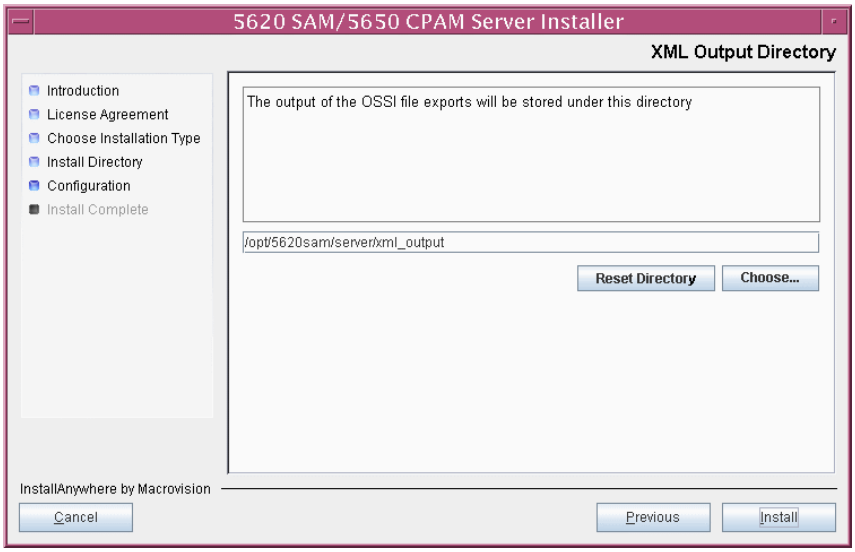
89 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 3-120 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 3-120 Navigation from External Systems



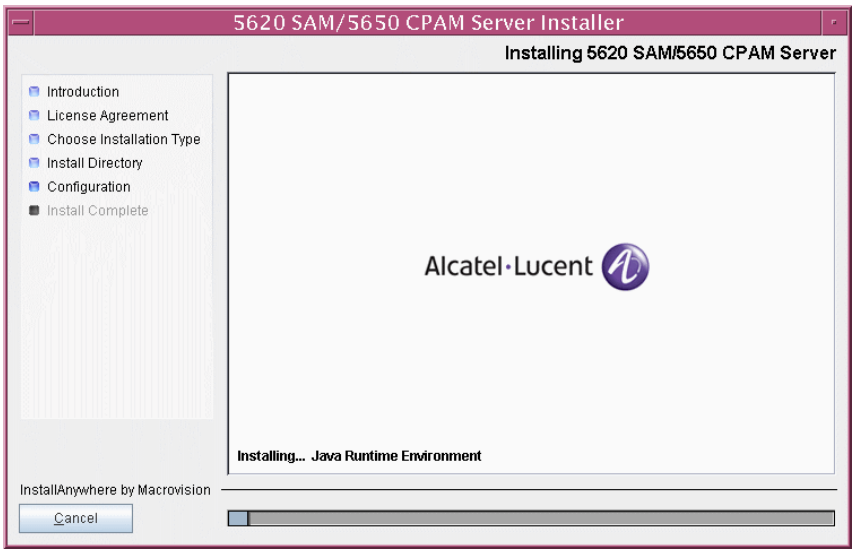
90 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 3-121. Click on the Install button to begin the server upgrade.

Figure 3-121 XML Output Directory



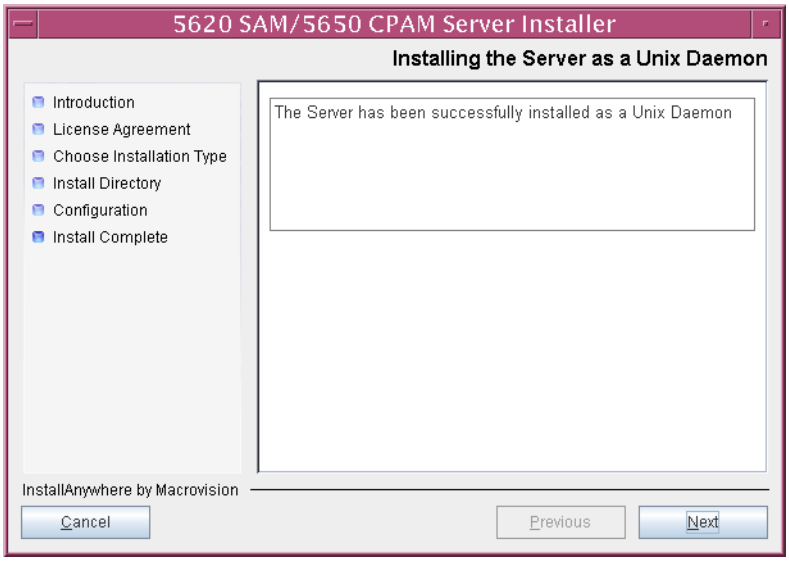
The next panel displays upgrade progress, as shown in Figure 3-122.

Figure 3-122 Installing 5620 SAM/5650 CPAM Server



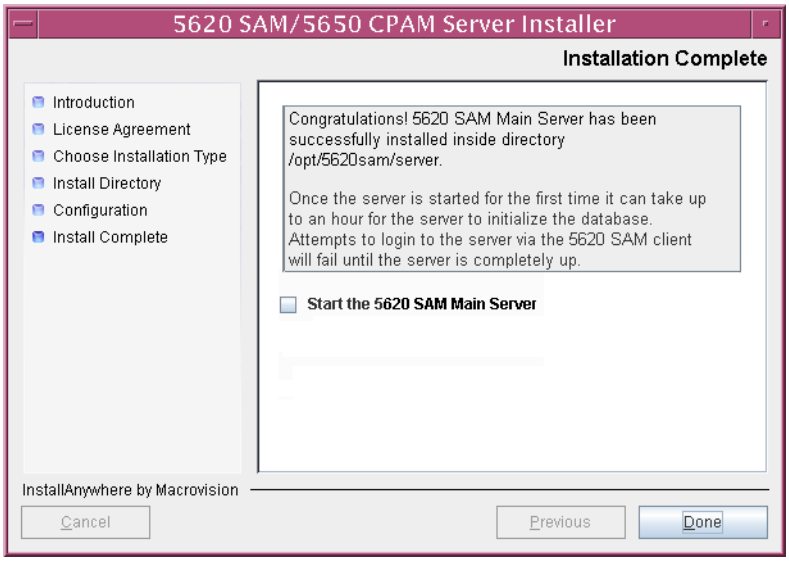
91 As shown in Figure 3-123, the 5620 SAM server is installed as a UNIX daemon. Click on the Next button.

Figure 3-123 Installing the server as a Unix Daemon



92 When the main server upgrade is complete, ensure that the "Start the 5620 SAM Main Server" parameter is not selected, as shown in Figure 3-124.

Figure 3-124 Installation Complete



This server is the new primary main server.

93 Click on the Done button to close the server installer.

94 If the 3GPP OSS interface is not enabled in step 75, go to step 96.

95 If the 3GPP OSS interface has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

vi Save and close the file.

Upgrade original standby auxiliary servers

96 If the 5620 SAM deployment contains auxiliary servers, perform Procedure 3-7 on each preferred and reserved auxiliary server of the original standby main server to upgrade the auxiliary server software.

Note — Do not start the auxiliary servers immediately after you upgrade them; they are started later in this procedure.

Stop original primary main server

97 Stop the 5620 SAM server application on the original primary main server station.

i Log in to the original primary main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 97 v. Do not proceed to the next step until the server is stopped.

Note — This is the beginning of the network management outage.

Disable original primary server daemon

98 Disable the 5620 SAM server startup daemon on the original primary server station. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the upgrade.

i Log in to the original primary server station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

Stop original primary database

99 Stop the 5620 SAM database application on the original primary database station.

i Log in to the original primary database station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to stop the Oracle proxy daemon:

```
# ./S965620SAMOracleProxyWrapper stop ↵
```

v Enter the following to stop the 5620 SAM database daemon:

```
# ./S95db5620sam stop ↵
```

Do not proceed until the command displays the following message:

```
Done
```

Disable original primary database daemons

100 Disable the 5620 SAM Oracle proxy and database startup daemons on the original primary database station. This ensures that the original primary 5620 SAM database does not automatically start in the event of a power disruption during the upgrade.

i Log in to the database station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to disable the Oracle database daemon by renaming it:

```
# mv S95db5620sam inactive.S95db5620sam ↵
```

v Enter the following to disable the Oracle proxy daemon by renaming it:

```
# mv S965620SAMOracleProxyWrapper
inactive.S965620SAMOracleProxyWrapper ↵
```

Stop original primary auxiliary servers

101 If the 5620 SAM deployment contains auxiliary servers, perform the following steps to stop the auxiliary server software on each preferred or reserved auxiliary server of the original primary main server.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following:

```
bash$ path/nms/bin/auxnmsserver.bash auxstop ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

The 5620 SAM auxiliary server stops.

Start new primary main server

102 Perform the following steps to start the new primary 5620 SAM main server.

i Enter the following to switch to the samadmin user on the new primary main server station:

```
# su - samadmin ↵
```

ii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iii Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

iv Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the new primary main server is not completely started, it is possible that the command can produce exception messages, or the first line of status information is the following:

```
Main Server is not ready...
```

The new primary 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Primary server is UP
```

v If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

Start new primary auxiliary servers

103 Perform the following steps on each preferred and reserved 5620 SAM auxiliary server of the new primary main server.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./auxnmsserver.bash auxstart ↵
```

The 5620 SAM auxiliary server starts. Initial server startup can take twenty minutes or more.

Upgrade or install 5620 SAM client

104 If you modify the SSL configuration during a main server upgrade, you cannot upgrade a client that connects to the main server; you must uninstall the client software and re-install it. Perform the appropriate procedure in chapter 6 to uninstall the client or client delegate server software, as required.

105 Perform one of the following to upgrade or install the 5620 SAM client software on a Solaris station, if required.

Note — You must specify the IP address of the current standby 5620 SAM server as the primary main server IP address when you install or upgrade the client software. The current standby server is the new primary server after the upgrade.

a Perform Procedure 2-3 or 2-4 to install a single-user client.

b Perform Procedure 2-7 to install a client delegate server.

c Perform Procedure 3-4 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

d Perform Procedure 3-6 to upgrade a client delegate server, if you did not modify the SSL configuration on the main server during the upgrade.

106 Perform one of the following to upgrade or install the 5620 SAM client software on a Windows station, if required.

Note — You must specify the IP address of the current standby 5620 SAM server as the primary main server IP address when you install or upgrade the client software. The current standby server is the new primary server after the upgrade.

a Perform Procedure 2-5 or 2-6 to install a single-user client.

b Perform Procedure 3-5 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

107 If the 3GPP OSS interface is not enabled in step 75, go to step 109.

108 If the 3GPP OSS interface has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Log in to a 5620 SAM GUI client as the admin user.

ii Create a user account for 3GPP OSS interface access. Observe the following when you create the account:

- The user name must be the user name specified in step 95.
- The password must be the password specified in step 95.
- The user account requires full permissions on the fm and oss packages.

See the *5620 SAM User Guide* for information about creating 5620 SAM user accounts.

The next section of the procedure describes the testing of the 5620 SAM system using a 5620 SAM client.

Test 5620 SAM system using new client

109 When the new primary server is started, use a newly installed or upgraded client to perform sanity testing of the new primary 5620 SAM server and database.

See the *5620 SAM User Guide* for information about client operation.

If you need to back out of the upgrade and return the original primary server and database to service, you can do so by stopping the new primary server and database and restarting the original primary server and database applications.

Uninstall original primary database

110 Log in to the original primary database station as a user with root or root-equivalent privileges.

111 Open a console window.

112 Enter the following to switch to the Oracle management user:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

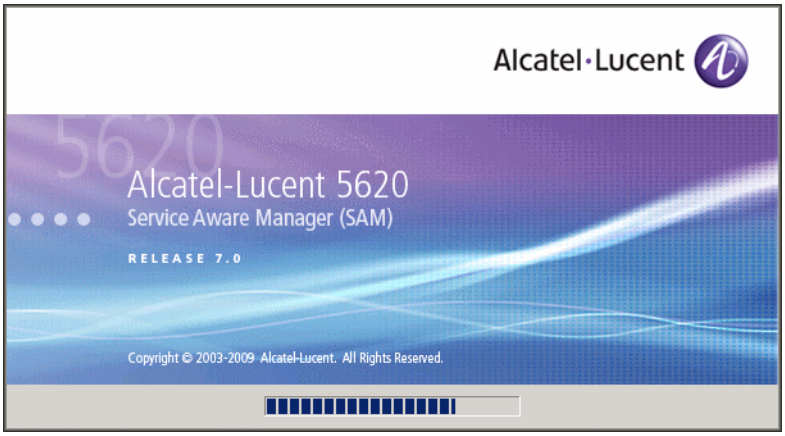
113 Enter the following to open the 5620 SAM uninstaller:

```
bash$
path/install/Uninstaller/Uninstall_5620_SAM_Database_Configurato
r ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

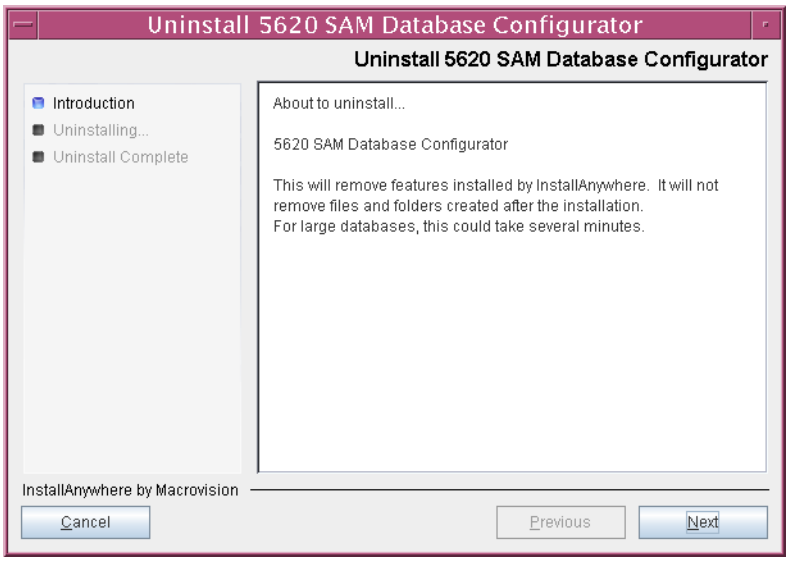
The splash screen shown in Figure 3-125 opens. The splash screen appearance depends on which 5620 SAM release you are uninstalling.

Figure 3-125 5620 SAM Uninstaller



114 The 5620 SAM database uninstaller opens, as shown in Figure 3-126. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Next button.

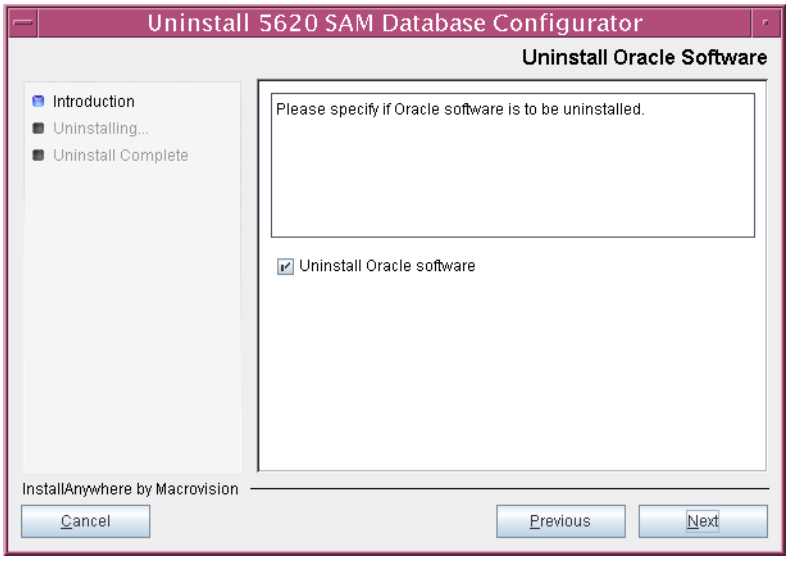
Figure 3-126 Uninstall 5620 SAM Database Configurator



115 A 5620 SAM standby database upgrade requires the removal of the previously installed Oracle software. Select the “Uninstall Oracle software” parameter, as shown in Figure 3-127, and click on the Next button.

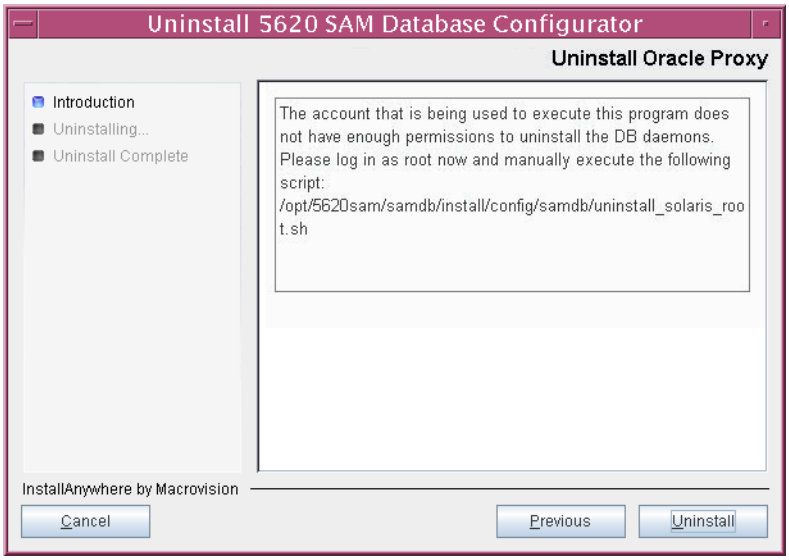
Note — When the installer removes the Oracle software, it does not delete the Oracle base installation directory, because this directory is typically the home directory of the Oracle management user.

Figure 3-127 Uninstall Oracle Software



116 As shown in Figure 3-128, you are prompted to run a script that enables the uninstallation of the database daemons. Open a separate console window and run the script.

Figure 3-128 Uninstall Oracle Proxy

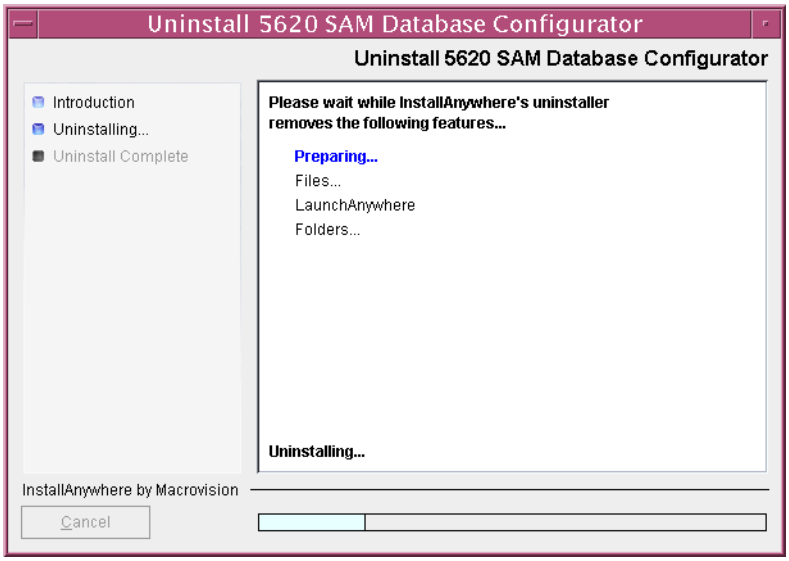


117 When the script execution is complete, click on the OK button.

118 Click on the Uninstall button shown in Figure 3-128 to begin the uninstallation.

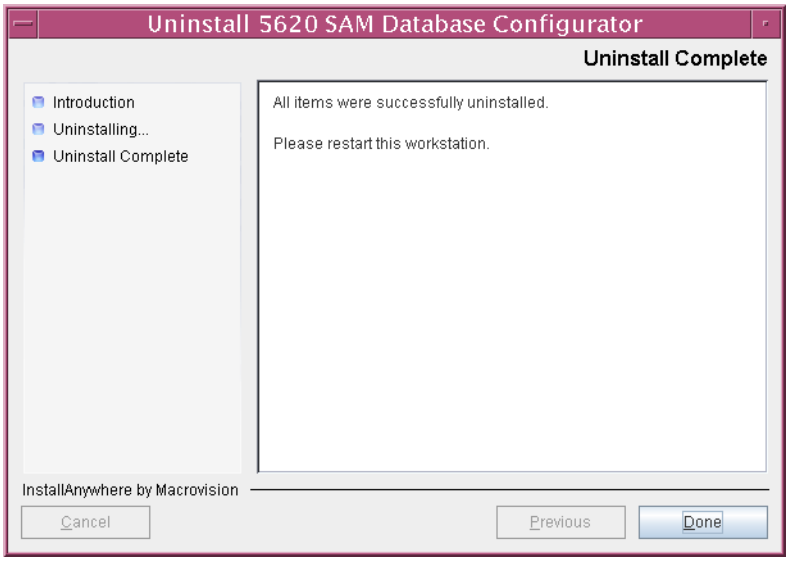
119 As shown in Figure 3-129, the uninstaller begins to remove files and directories from the original primary database station.

Figure 3-129 Uninstall 5620 SAM Database Configurator



120 When database uninstallation is complete, as shown in Figure 3-130, click on the Done button to close the database uninstaller.

Figure 3-130 Uninstall Complete



121 Enter the following to reboot the database station:

```
# shutdown -y -i6 -g0 ↵
```

The database station reboots.

The next section of the procedure describes the installation of the new standby (original primary) 5620 SAM database. 5620 SAM database installation requires root-equivalent and Oracle management user privileges.

Install new standby database

122 After the database station reboots, open a console window.

123 Before you perform a 5620 SAM database installation, you must run a pre-installation script. This script configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Caution — Ensure that you run only the pre-installation script that is on the new 5620 SAM software DVD-ROM. Using a different version of the script may cause the database installation to fail.

Enter the following to switch to the root user:

```
bash$ su - ↵
```

124 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

125 Navigate to the DVD-ROM drive.

126 Perform one of the following to change to the appropriate directory.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

127 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

128 Enter 1 ↵.

129 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is current home directory, typically /opt/5620sam/oracle10r2 on a Release 8.0 or earlier system)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter, except for the home directory, for which Alcatel-Lucent recommends that you set to oracle11r2 to match the new Oracle installation location.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — Running the script may generate messages that are similar to the following; these are not error messages and can be ignored.

- WARNING: Group dba already exists locally.
- WARNING: Oracle user with the specified name already exists locally.
- projadd: Duplicate project name "Oracle11R2"

130 When the script execution is complete, enter the following to reboot the new standby database station and put the system update into effect:

```
# shutdown -y -i6 -g0 ↵
```

The new standby database station reboots.

131 After the new standby database station reboots, log in as the Oracle management user on the new standby database station.

132 Open a console window.

133 Navigate to the DVD-ROM drive that contains the new 5620 SAM software DVD-ROM.

134 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

ii Enter the following:

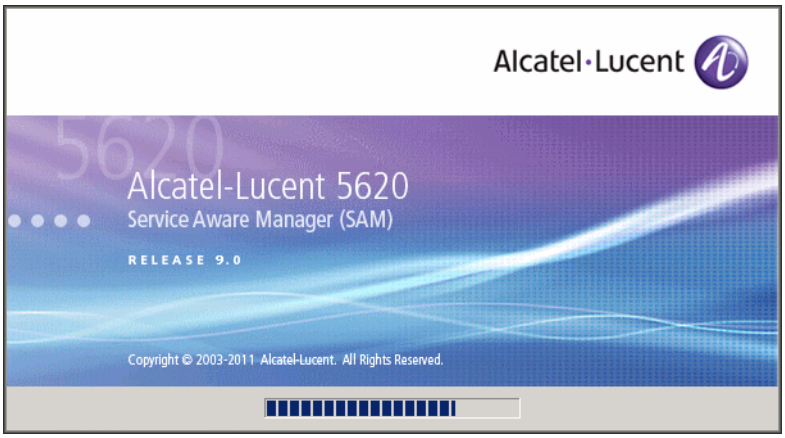
```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

Note — After the upgrade, the database on this station is the new standby database. Later in this procedure, the primary database is reinstantiated on this station.

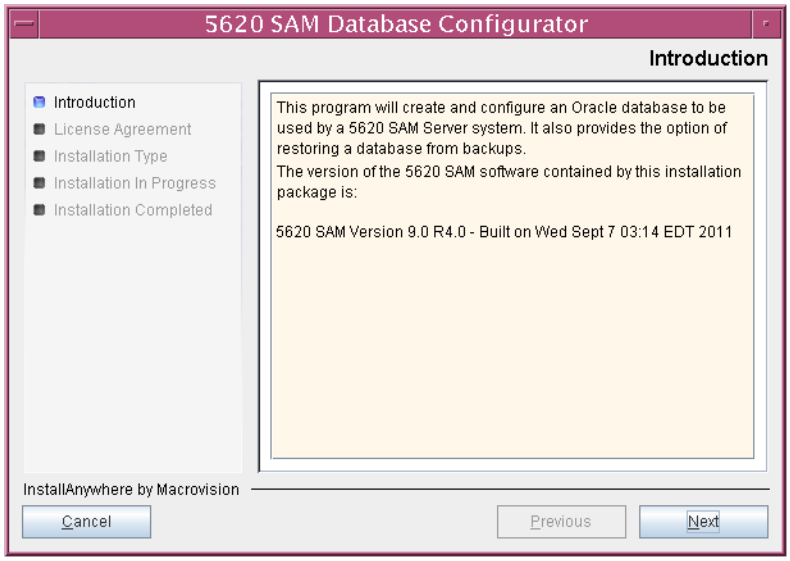
The splash screen shown in Figure 3-131 opens.

Figure 3-131 5620 SAM installer



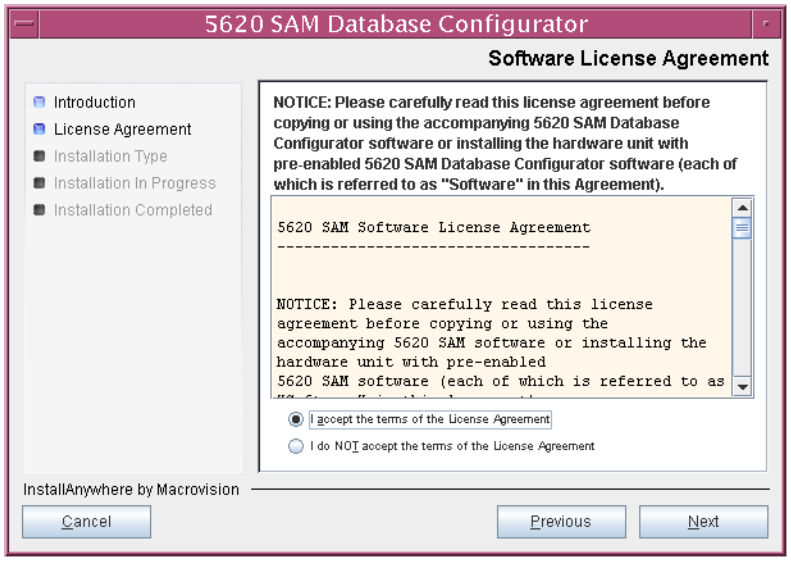
135 The 5620 SAM database installer opens, as shown in Figure 3-132. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-132 Introduction



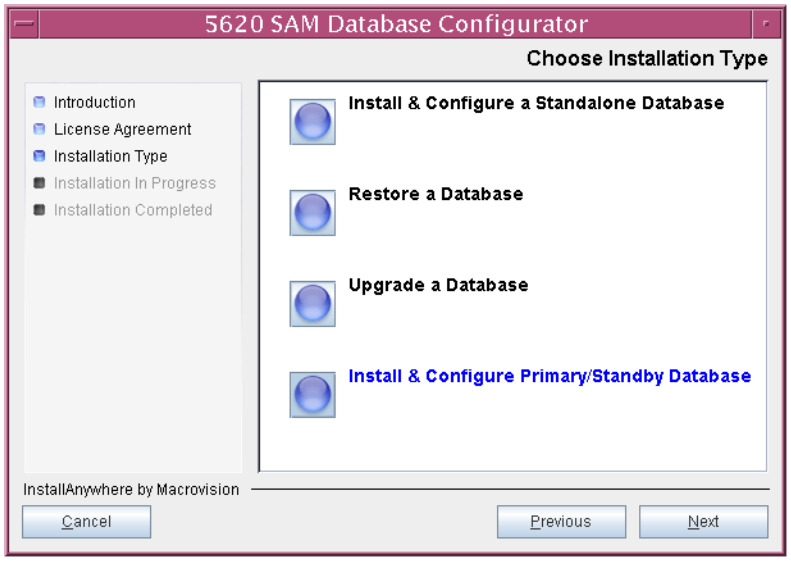
136 Review and accept the terms of the license agreement shown in Figure 3-133. Click on the Next button.

Figure 3-133 Software License Agreement



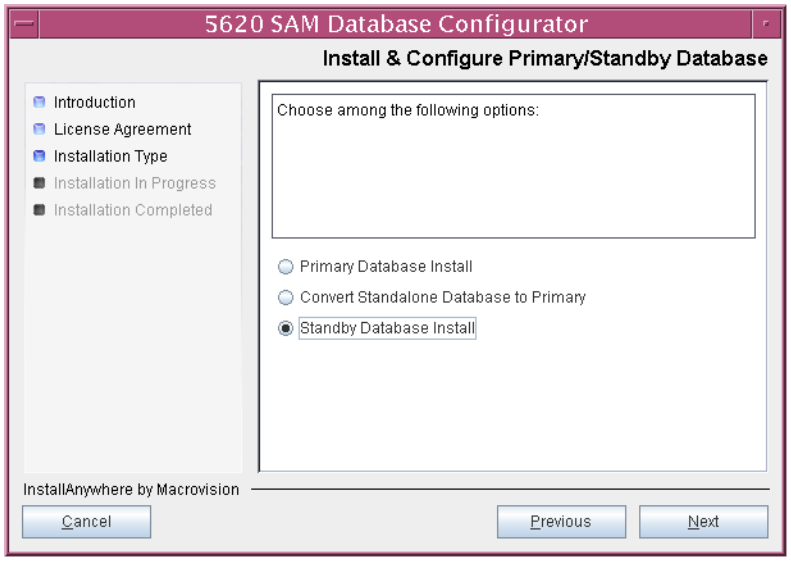
137 Select Install & Configure Primary/Standby Database, as shown in Figure 3-134. Click on the Next button.

Figure 3-134 Choose Installation Type



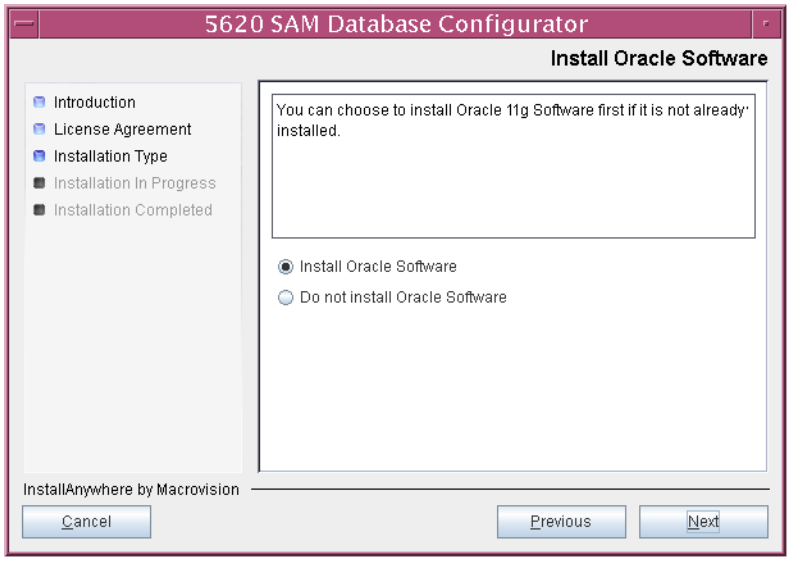
138 Select Standby Database Install, as shown in Figure 3-135. Click on the Next button.

Figure 3-135 Install & Configure Primary/Standby Database



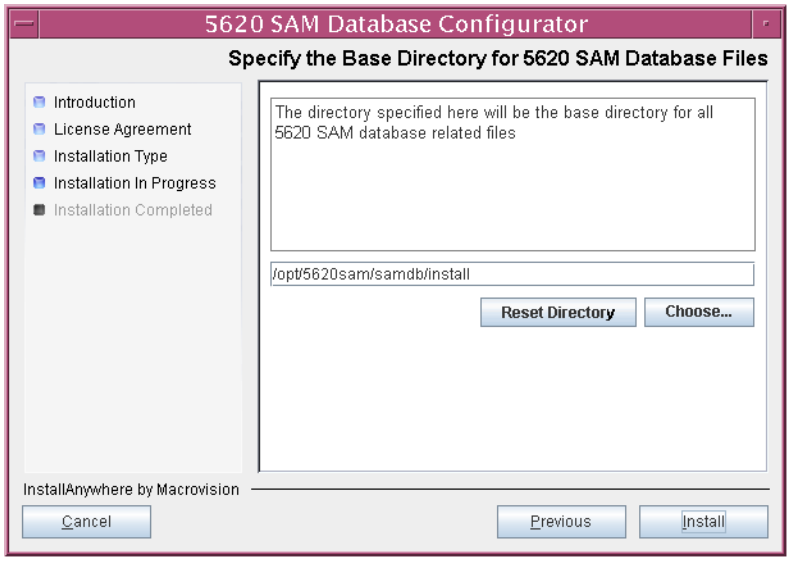
139 Select Install Oracle Software, as shown in Figure 3-136. Click on the Next button.

Figure 3-136 Install Oracle Software



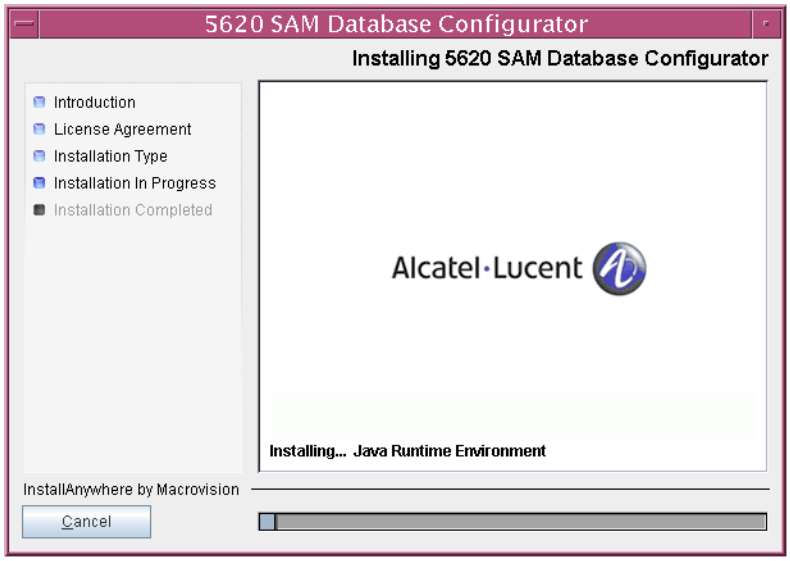
140 Specify the base directory for the standby 5620 SAM database software (typically /opt/5620sam/samdb/install), as shown in Figure 3-137. This directory must be the same one specified in step 26. Click on the Install button to begin the database software installation.

Figure 3-137 Specify the Base Directory for 5620 SAM Database Files



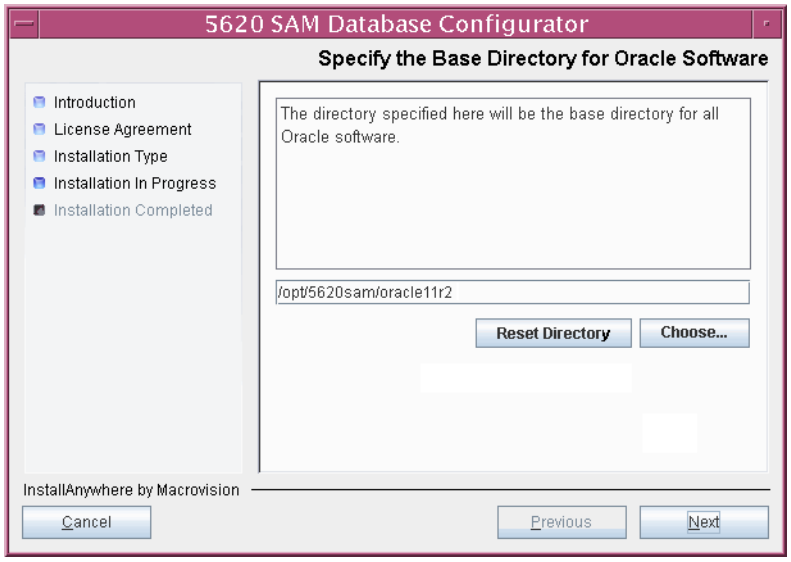
The installer prepares to install the database, as shown in Figure 3-138.

Figure 3-138 Installing 5620 SAM Database Configurator



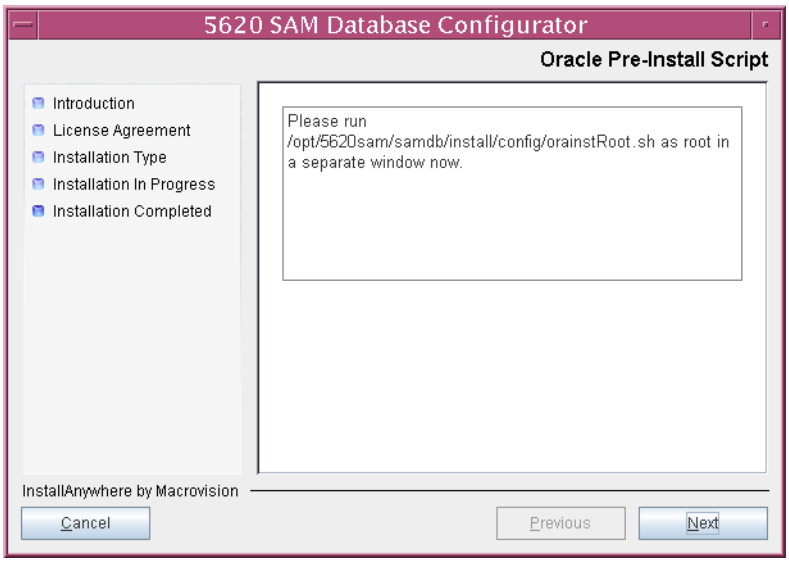
141 The panel shown in Figure 3-139 displays the Oracle software installation directory, which cannot be changed. Click on the Next button.

Figure 3-139 Specify the Base Directory for Oracle Software



142 Perform the following steps when the panel in Figure 3-140 is displayed.

Figure 3-140 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

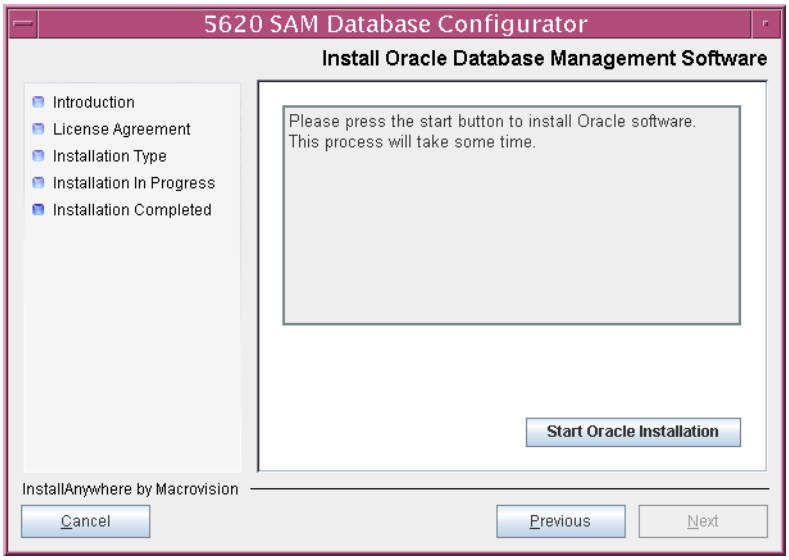
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

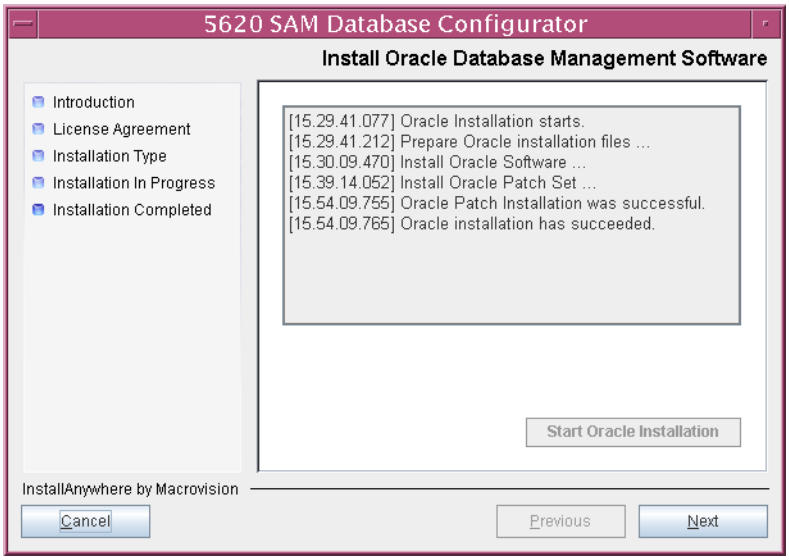
143 You are prompted to install Oracle software, as shown in Figure 3-141. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 3-141 Install Oracle Database Management Software



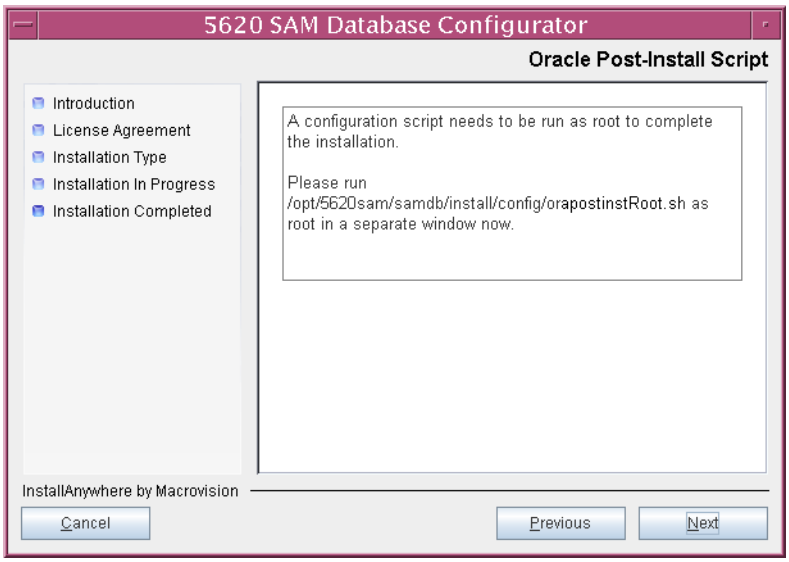
144 As shown in Figure 3-142, Oracle installation details are displayed as the installation progresses. When the installation is complete, click on the Next button.

Figure 3-142 Install Oracle Database Management Software



145 Perform the following steps when the panel in Figure 3-143 is displayed.

Figure 3-143 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

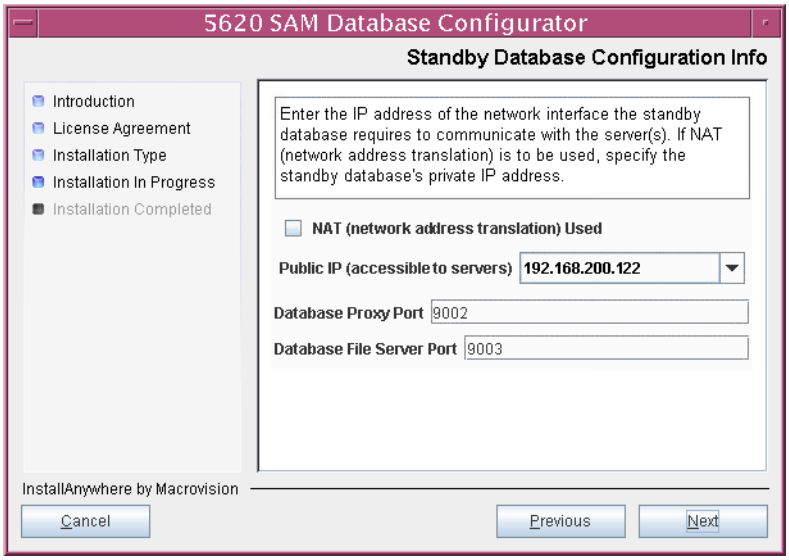
vi Click on the Next button.

146 Configure the parameters shown in Figure 3-144, then click on the Next button.

- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

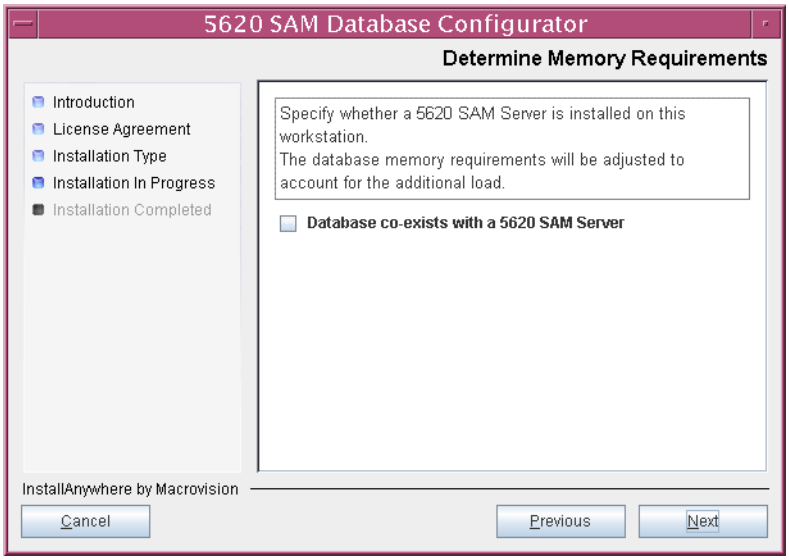
Note — The “Private IP” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-144 Standby Database Configuration Info



147 If the 5620 SAM server and database are installed on the same station, select the "Database co-exists with a 5620 SAM Server" parameter shown in Figure 3-145. Click on the Next button.

Figure 3-145 Determine Memory Requirements

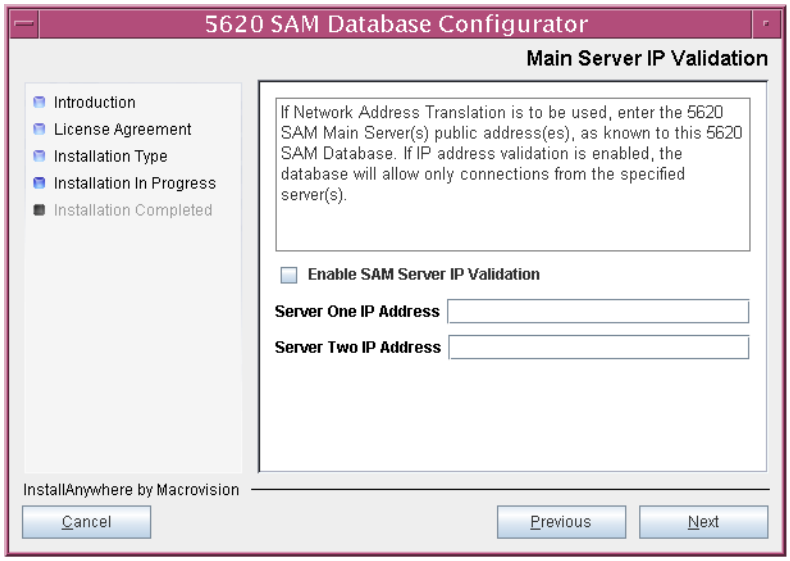


148 Configure the following parameters shown in Figure 3-146, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
  This is the “Server One IP Address” value from step 41.
- Server Two IP Address
  This is the “Server Two IP Address” value from step 41.

Figure 3-146 Main Server IP Validation



149 The panel in Figure 3-147 is displayed if the “Enable SAM Server IP Validation” parameter in step 148 is selected. Otherwise, go to step 151.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

i Click on the Add button shown in Figure 3-147. The form shown in Figure 3-148 opens.

Figure 3-147 Auxiliary Server IP Validation

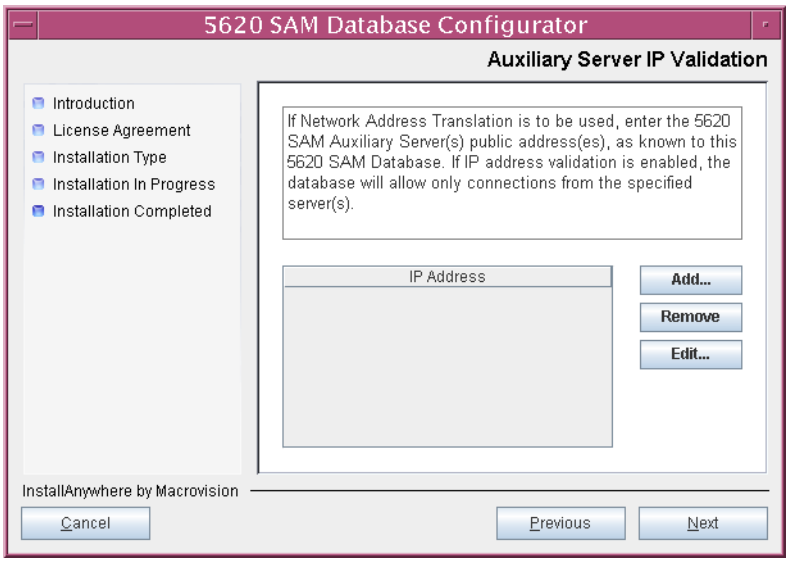
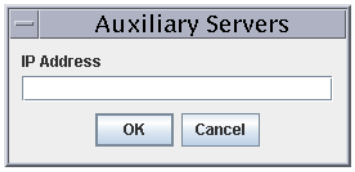


Figure 3-148 Auxiliary Servers



ii Enter the IP address or hostname of the auxiliary server.

iii Click on the OK button to save the information and close the form.

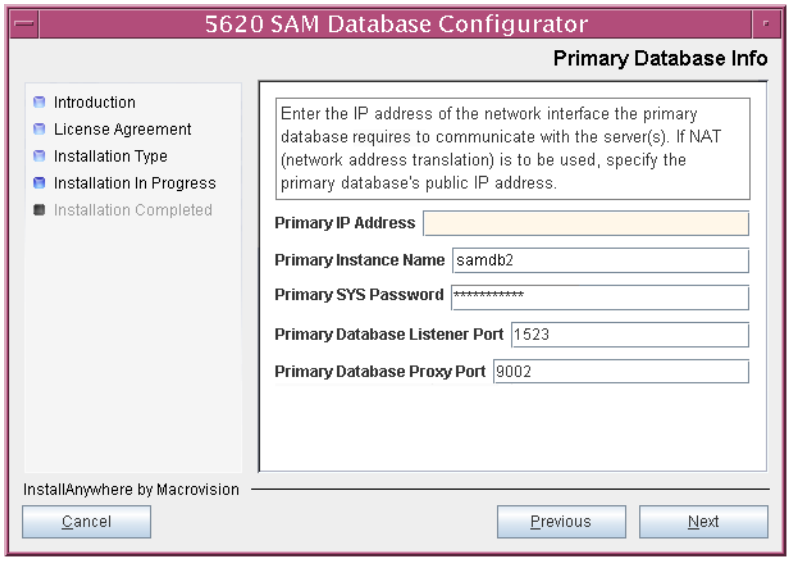
iv Repeat steps 149 i to iii to specify an additional auxiliary server, if required.

150 Click on the Next button.

151 Configure the following parameters, shown in Figure 3-149, using the recorded values from the primary database upgrade. Click on the Next button.

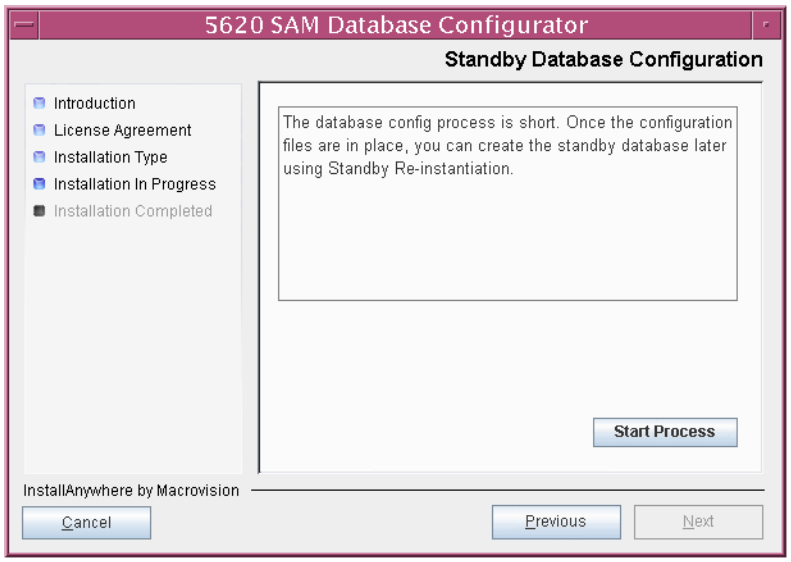
- Primary IP Address
- Primary Instance Name (typically samdb2)
- Primary SYS Password
- Primary Database Listener Port (typically 1523)
- Primary Database Proxy Port (typically 9002)

Figure 3-149 Primary Database Info



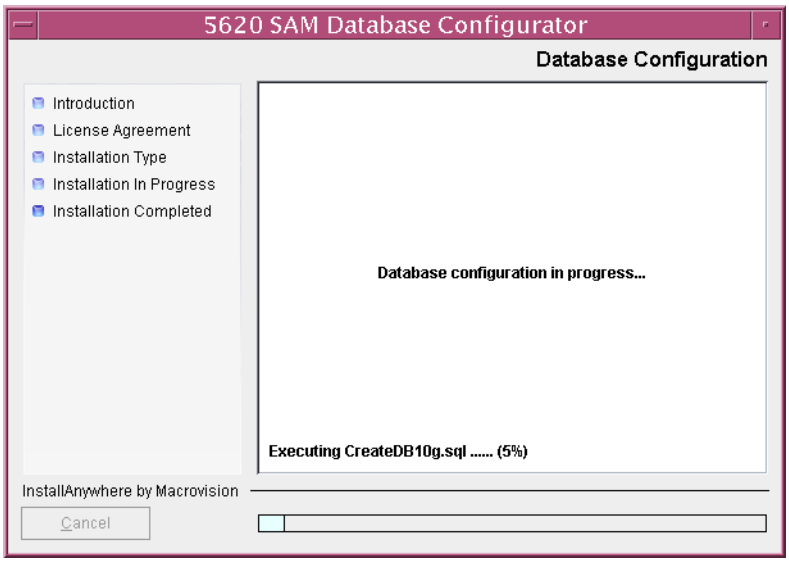
152 You are prompted to begin standby database creation, as shown in Figure 3-150. Click on the Start Process button to begin the database creation.

Figure 3-150 Standby Database Configuration



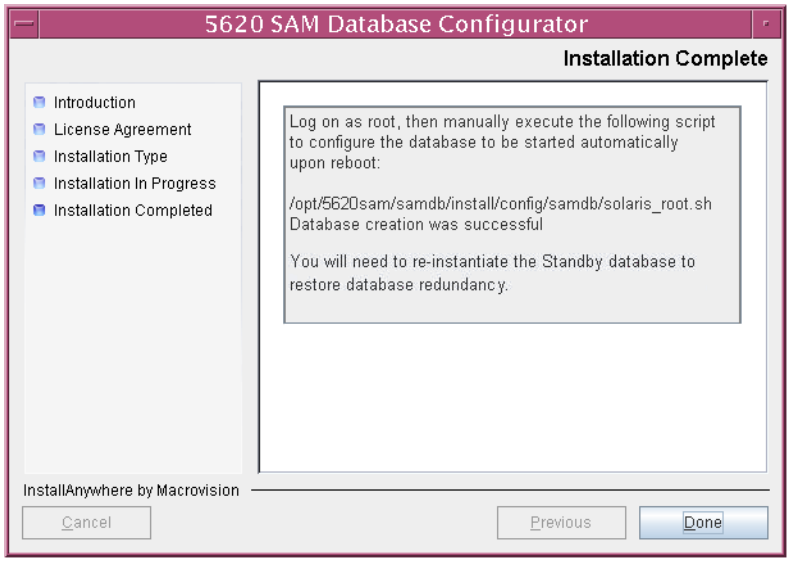
The next panel displays database configuration progress, as shown in Figure 3-151.

Figure 3-151 Database Configuration



153 When the panel in Figure 3-152 is displayed, the 5620 SAM database installation is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 3-152 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

154 Click on the Done button to close the database installer.

The next section of the procedure describes the reinstantiation of the database on the new standby database station.

Reinstantiate database on new standby station

155 Log in to a 5620 SAM client as the admin user.

156 Choose Administration→System Information from the 5620 SAM main menu. The System Information form opens with the General tab displayed.

157 Click on the Re-Instantiate Standby button. A dialog box appears.

158 Click on the Yes button. The database reinstantiation begins.

You can view the reinstantiation status on the client GUI status bar or on the System Information form. The Standby Re-instantiation State changes from In Progress to Success when reinstantiation is complete. The start time of the reinstantiation is shown by the Last Attempted Standby Re-instantiation Time indicator.

Note 1 — Database reinstantiation can take a long time when there is a large amount of statistics data to transfer.

Note 2 — You can perform the original primary main server upgrade described in the next section of the procedure while the database reinstantiation is in progress.

159 When the reinstantiation is complete, close the System Information form.

The next section of the procedure describes the upgrade of the original primary (new standby) 5620 SAM server. A server upgrade requires root-equivalent privileges.

Upgrade original primary main server

160 Log in to the original primary server station as a user with root or root-equivalent privileges.

Note — This station is the new standby server station after the upgrade.

161 Open a console window.

162 Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.

i Enter the following:

```
# who ↵
```

The active user sessions are listed.

ii If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.

163 Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.

164 Navigate to the DVD-ROM drive.

165 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

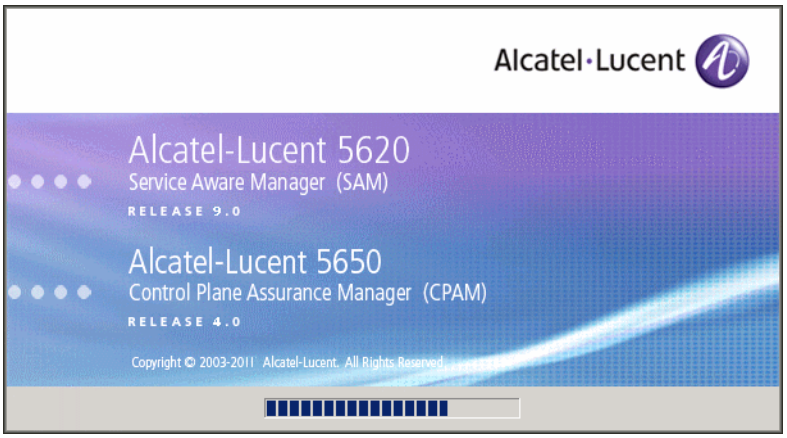
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

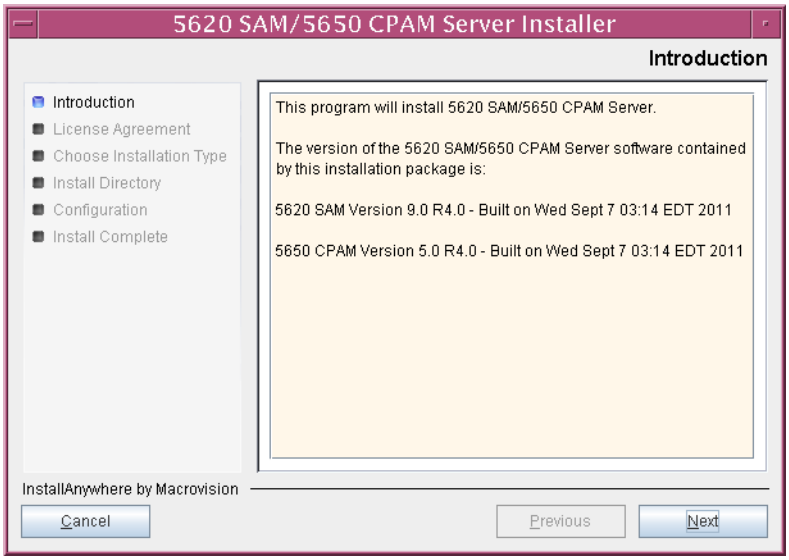
The splash screen shown in Figure 3-153 opens.

Figure 3-153 5620 SAM installer



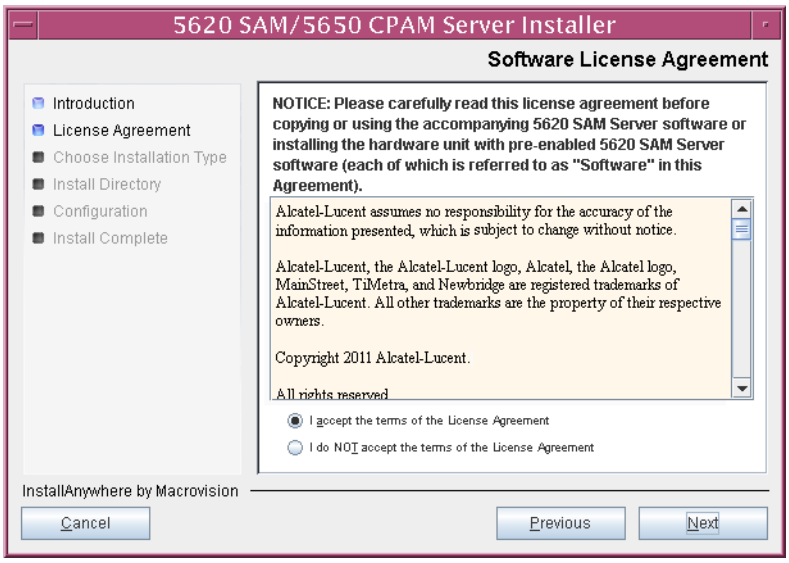
166 The 5620 SAM server installer opens, as shown in Figure 3-154. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-154 Introduction



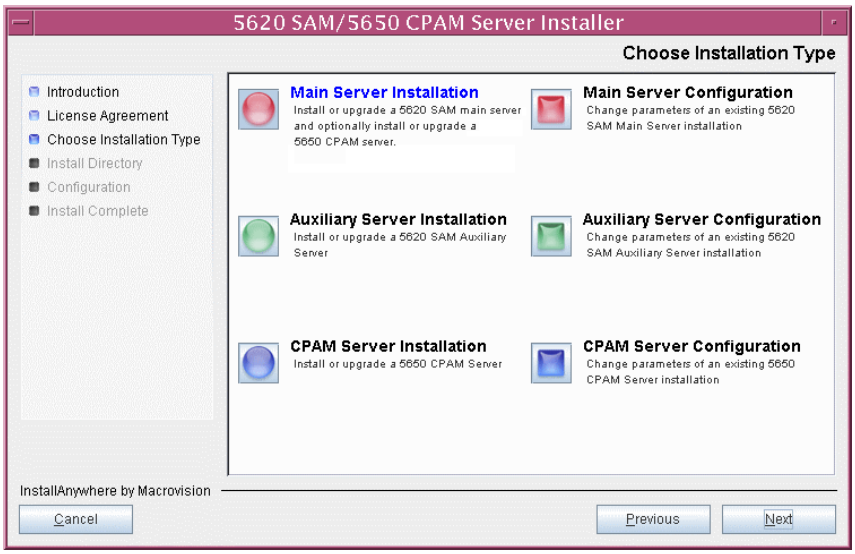
167 Review and accept the terms of the license agreement shown in Figure 3-155. Click on the Next button.

Figure 3-155 Software License Agreement



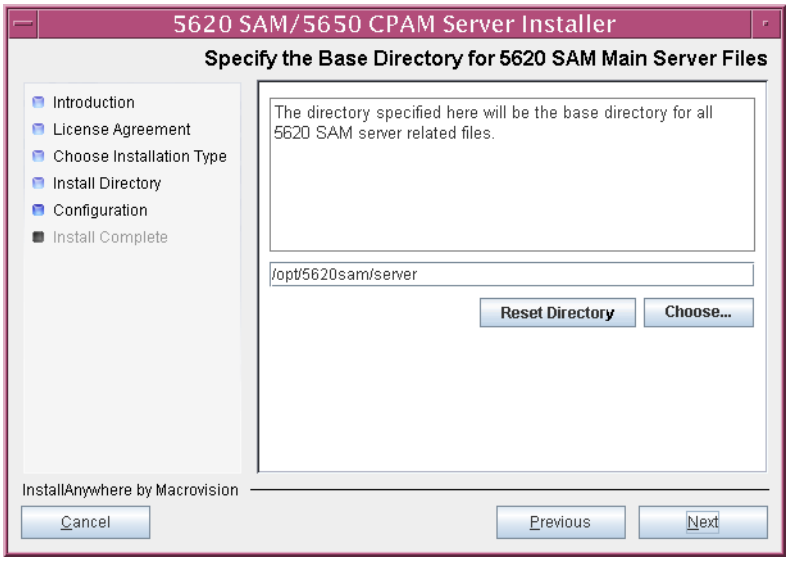
168 Select Main Server Installation, as shown in Figure 3-156. Click on the Next button.

Figure 3-156 Choose Installation Type



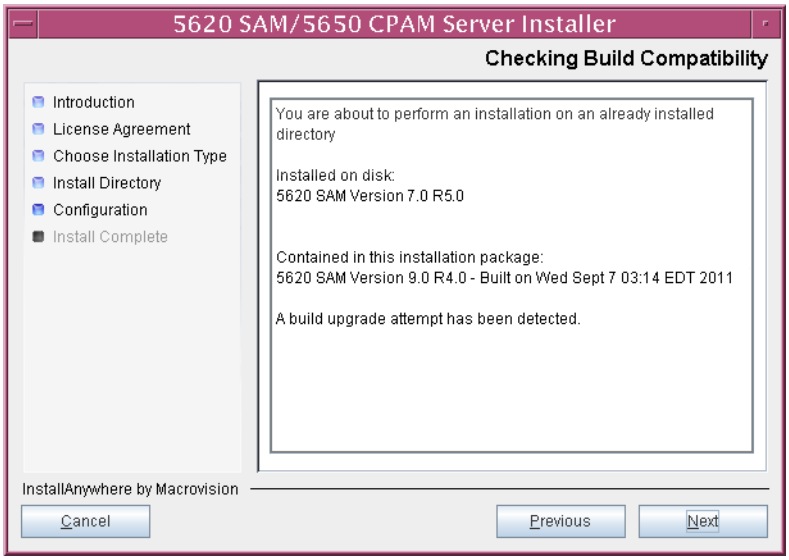
169 Specify the base directory in which the existing 5620 SAM main server software is installed (typically /opt/5620sam/server), as shown in Figure 3-157. Click on the Next button.

Figure 3-157 Specify the Base Directory for 5620 SAM Main Server Files



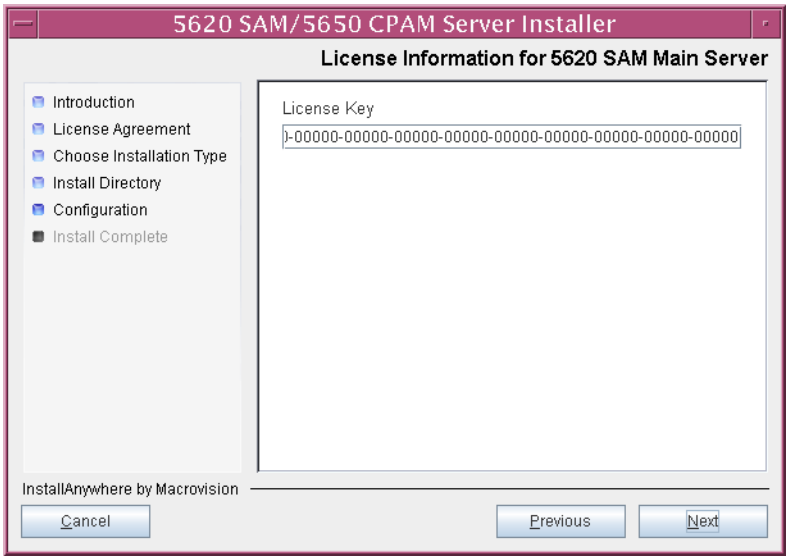
170 As shown in Figure 3-158, the installer indicates which release of 5620 SAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 3-158 Checking Build Compatibility



171 The 5620 SAM installer displays the existing license key. Enter the license key for the new 5620 SAM release exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 3-159. Click on the Next button.

Figure 3-159 License Information for 5620 SAM Main Server



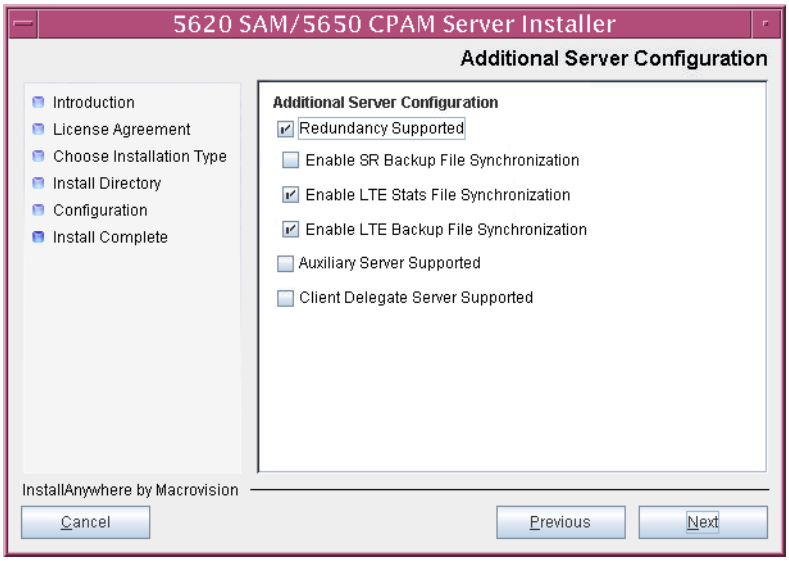
172 Configure the following parameters shown in Figure 3-160, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization”, “Enable LTE Stats File Synchronization”, and “Enable LTE Backup File Synchronization” parameters are displayed only when the “Redundancy Supported” parameter is enabled.

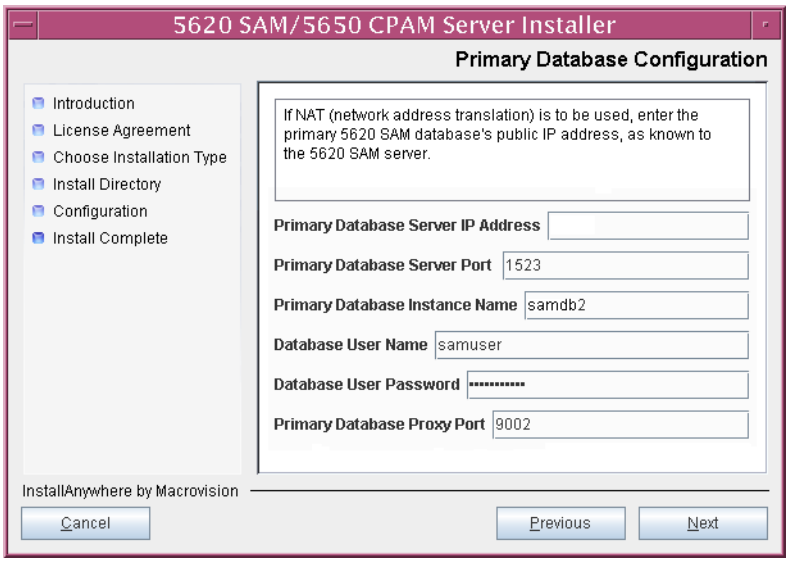
Figure 3-160 Additional Server Configuration



173 Configure the following parameters, shown in Figure 3-161, using the recorded values from the primary database upgrade. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb2)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 3-161 Primary Database Configuration

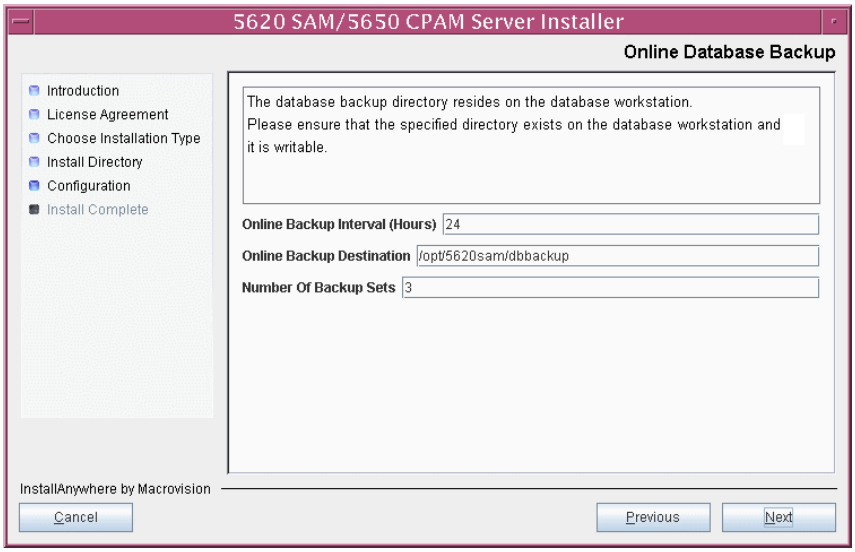


174 Depending on the existing configuration. the panel in Figure 3-162 is displayed. Configure the following parameters, if required, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 173.

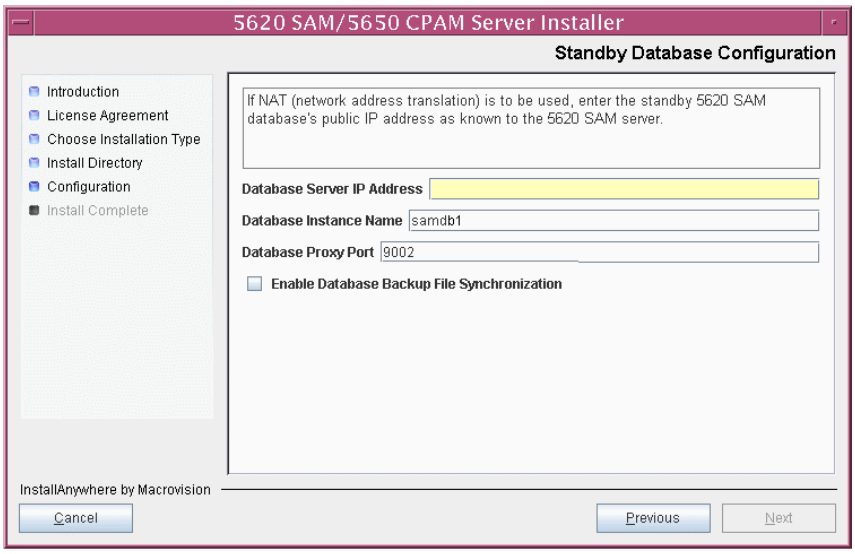
Figure 3-162 Online Database Backup



175 Configure the following parameters shown in Figure 3-163, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb1)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 3-163 Standby Database Configuration



176 The panel in Figure 3-164 is displayed if you select the "Auxiliary Server Supported" parameter in step 172. Otherwise, go to step 178.

Perform the following steps to specify an auxiliary server, if required.

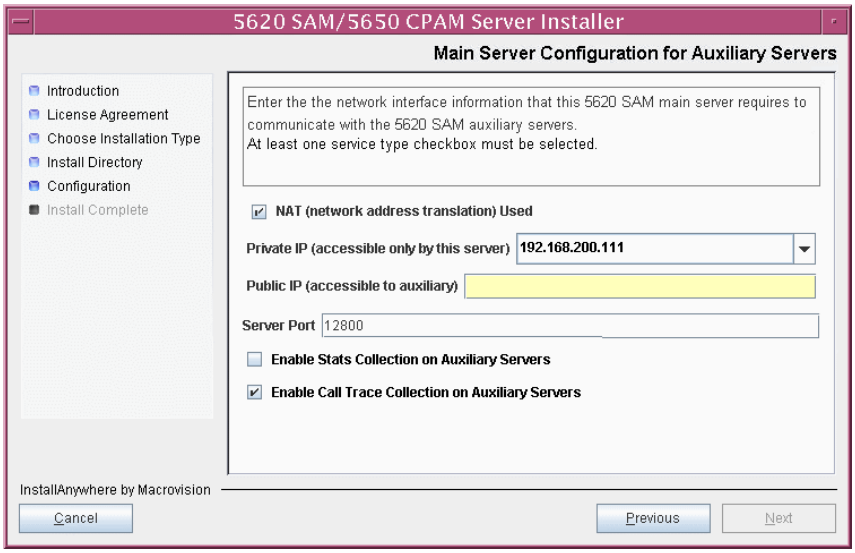
i Configure the following parameters shown in Figure 3-164:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

Figure 3-164 Main Server Configuration for Auxiliary Servers



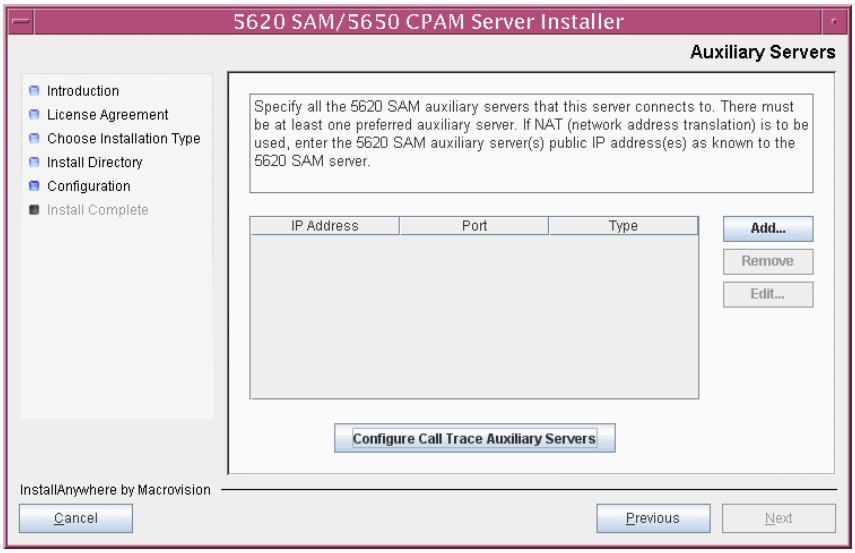
ii Click on the Next button.

iii Click on the Add button shown in Figure 3-165 to specify an auxiliary server. The form shown in Figure 3-166 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

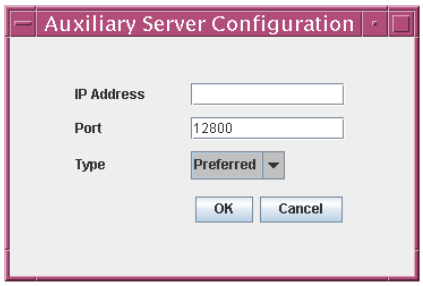
Figure 3-165 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 3-166 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

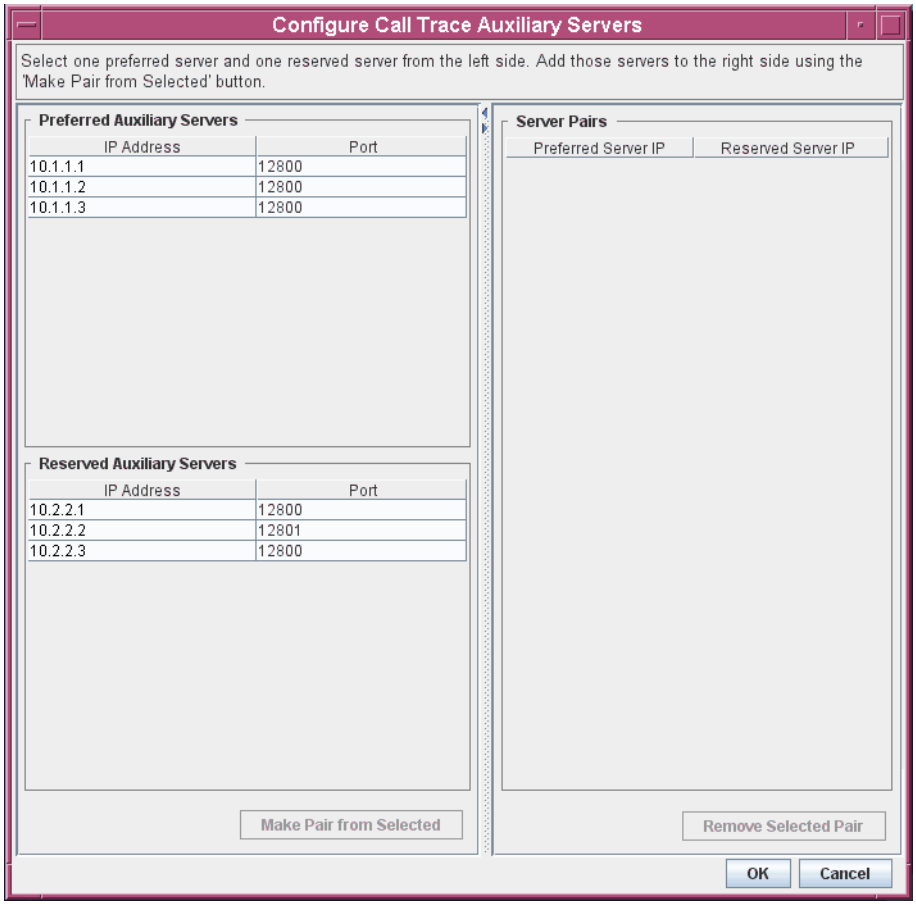
v Click on the OK button to save the information and close the form.

vi Repeat steps 176 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 176 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 3-165. Otherwise, go to step 177.

viii The form shown in Figure 3-167 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 3-167 Configure Call Trace Auxiliary Servers



ix Repeat step 176 viii to configure another call-trace auxiliary server pair, if required.

177 Click on the Next button.

178 If you select the “Enable Database Alignment” parameter shown in Figure 3-168, you must specify the preferred database of this main server, then click on the Next button.

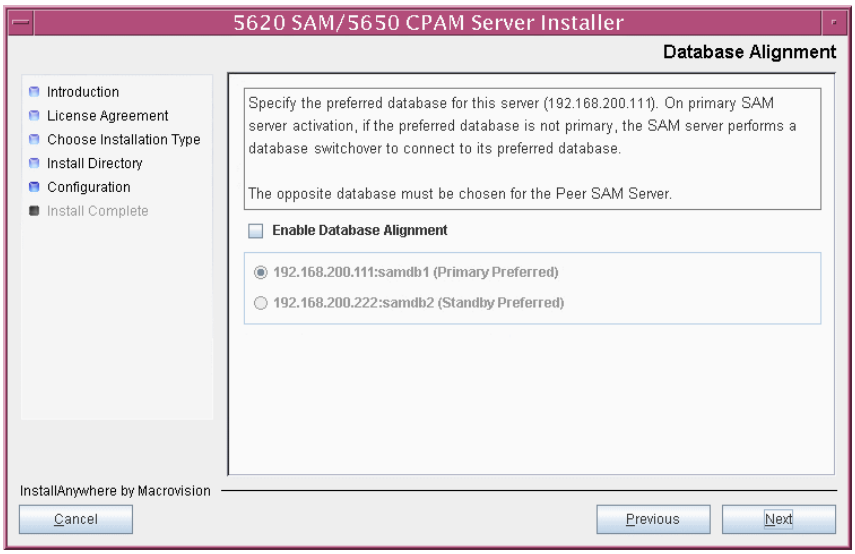
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 3-168 Database Alignment



179 Configure the following parameters shown in Figure 3-169, then click on the Next button:

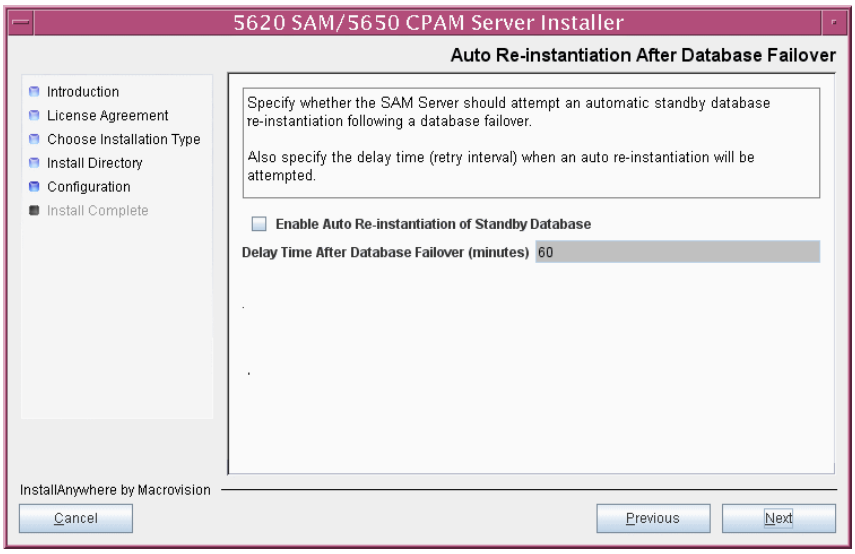
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The “Delay Time After Database Failover (minutes)” parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected.

Figure 3-169 Auto Re-Instantiation After Database Failover

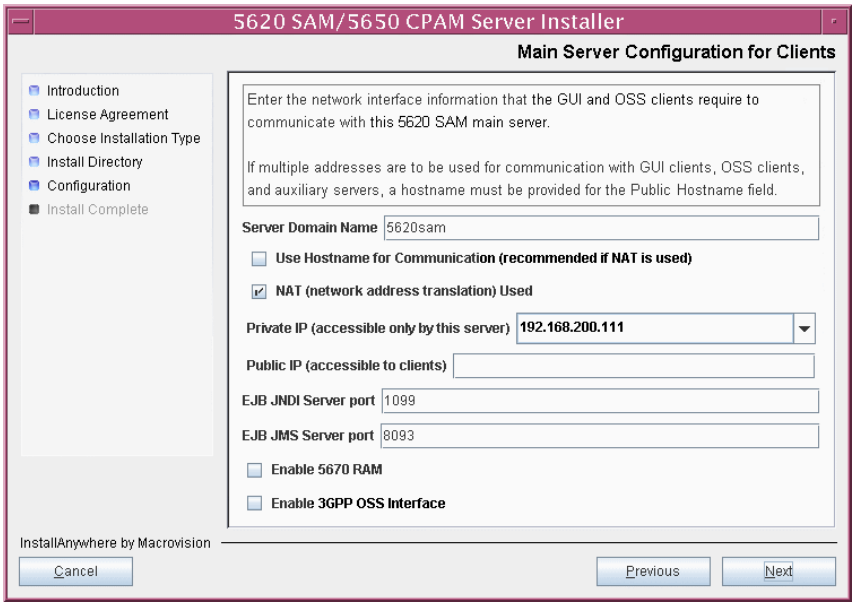


180 Perform the following steps.

i Configure the following parameters shown in Figure 3-170:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 3-170 Main Server Configuration for Clients



ii If you select the "Use Hostname for Communication" parameter, go to step 180 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

iv Click on the Next button.

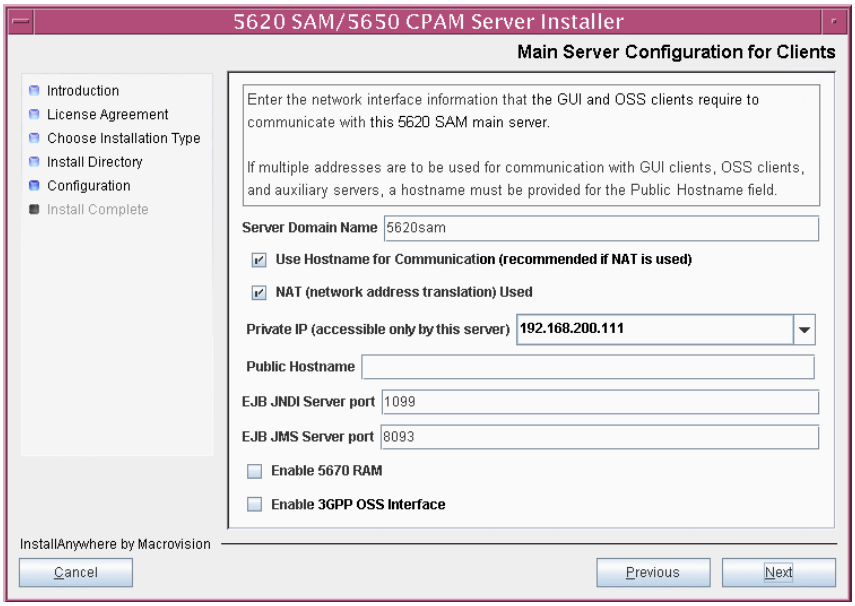
v Go to step 181.

vi Configure the following parameters shown in Figure 3-171:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-171 Main Server Configuration for Clients

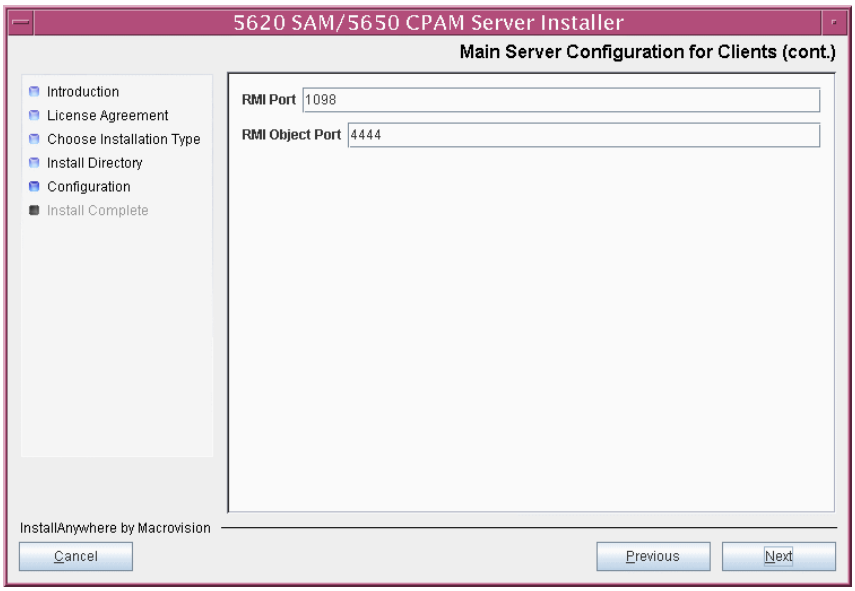


vii Click on the Next button.

181 Configure the following parameters shown in Figure 3-172, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 3-172 Main Server Configuration for Clients (cont.)

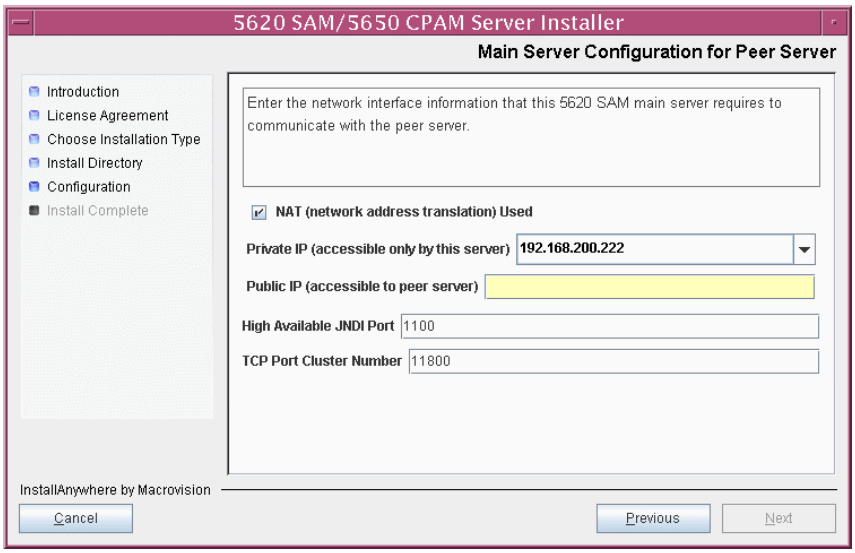


182 Configure the following parameters shown in Figure 3-173:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

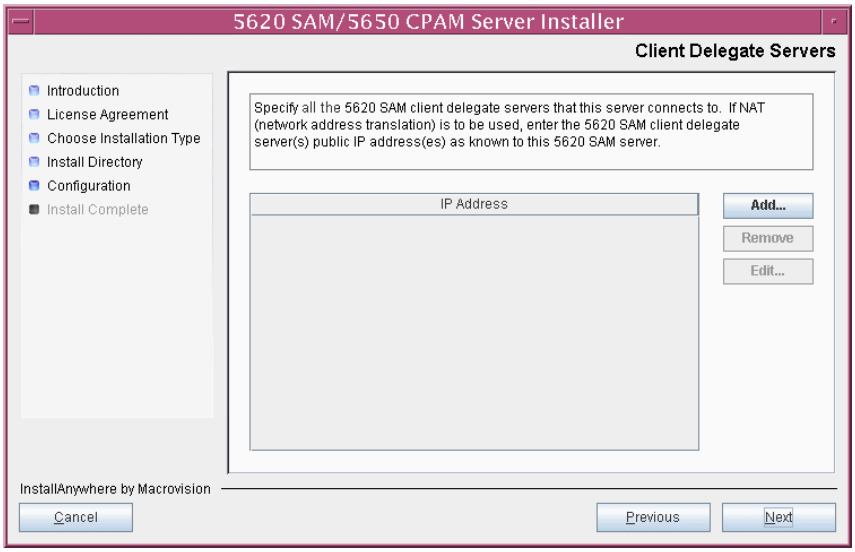
Figure 3-173 Main Server Configuration for Peer Server



183 The panel in Figure 3-174 is displayed if you select the “Client Delegate Server Supported” parameter in step 172. Otherwise, go to step 185.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 3-174 Client Delegate Servers

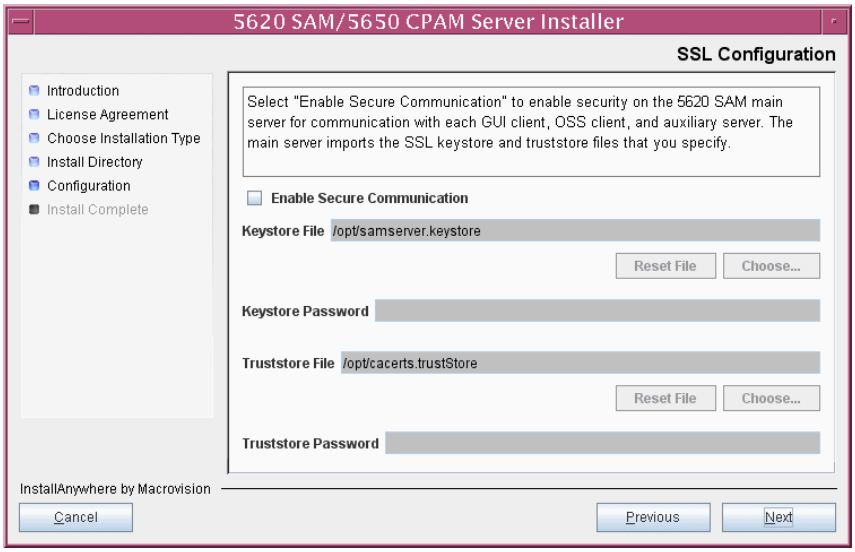


184 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 3-175.

Figure 3-175 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note 1 — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

Note 2 — The parameter values must match the values specified during the original standby main server upgrade.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

185 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 3-176.

ii To accept the default user documentation location that is displayed, go to step 186.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

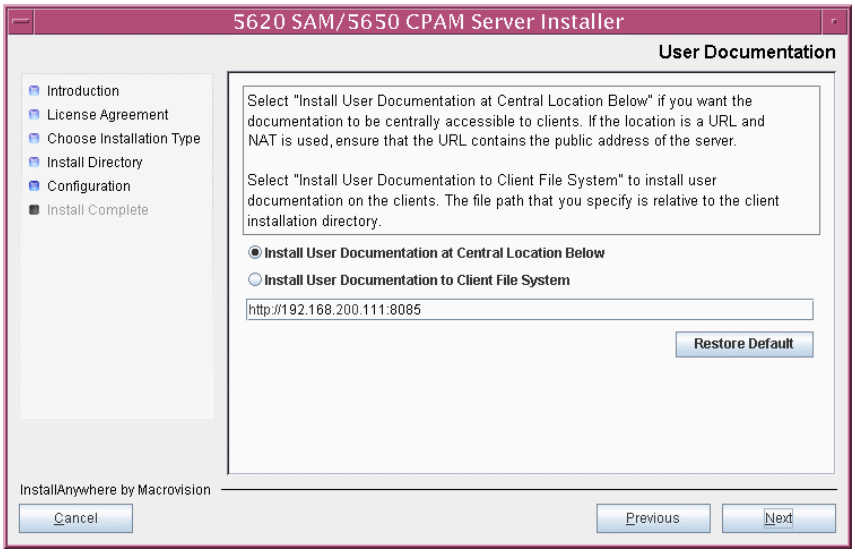
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the new 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 3-176 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 3-176.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

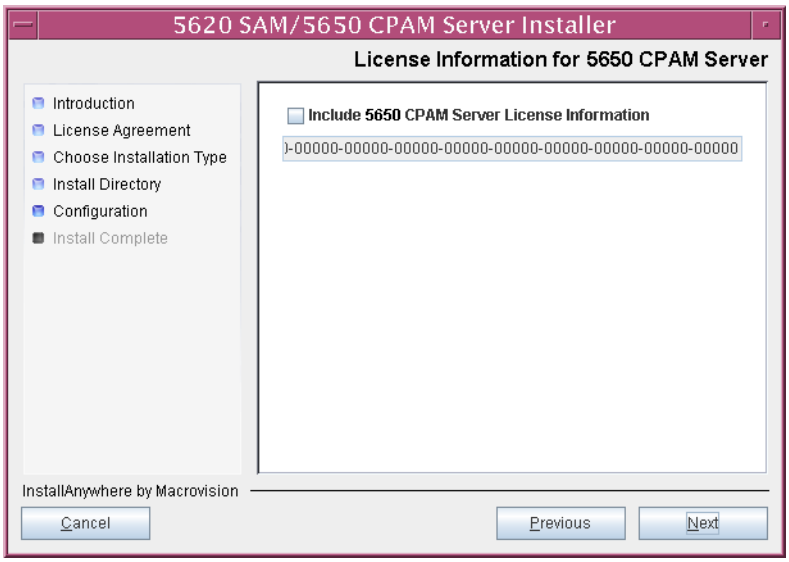
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

186 Click on the Next button.

187 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 3-177. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 3-177 License Information for 5650 CPAM Server



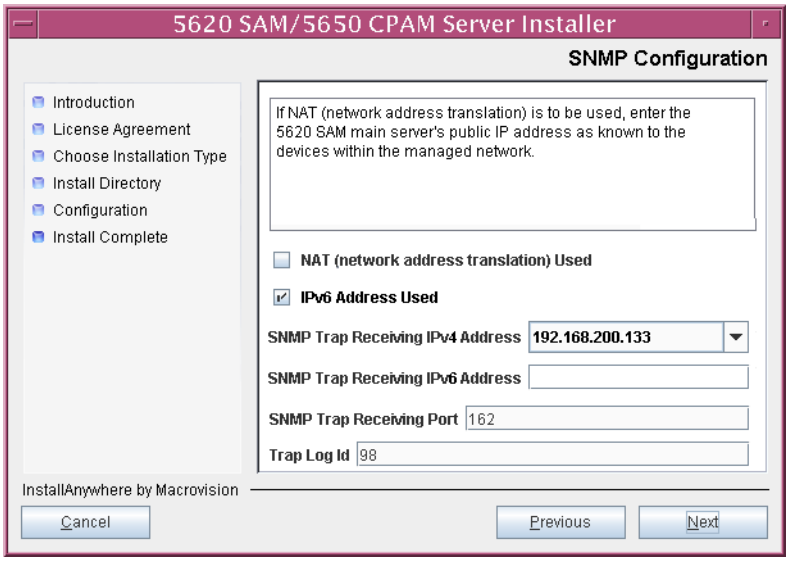
188 Configure the following parameters shown in Figure 3-178, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 3-178.

Figure 3-178 SNMP Configuration



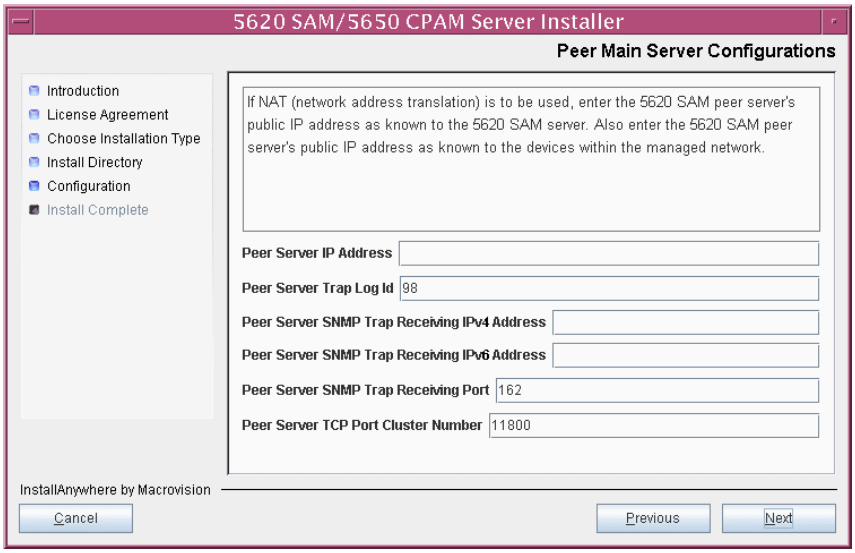
189 Configure the following parameters shown in Figure 3-179, then click on the Next button:

- Peer Server IP Address (the new primary server IP address)
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note 1 — The peer server is the other 5620 SAM main server, which is the new primary main server after the upgrade.

Note 2 — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 188.

Figure 3-179 Peer Main Server Configurations

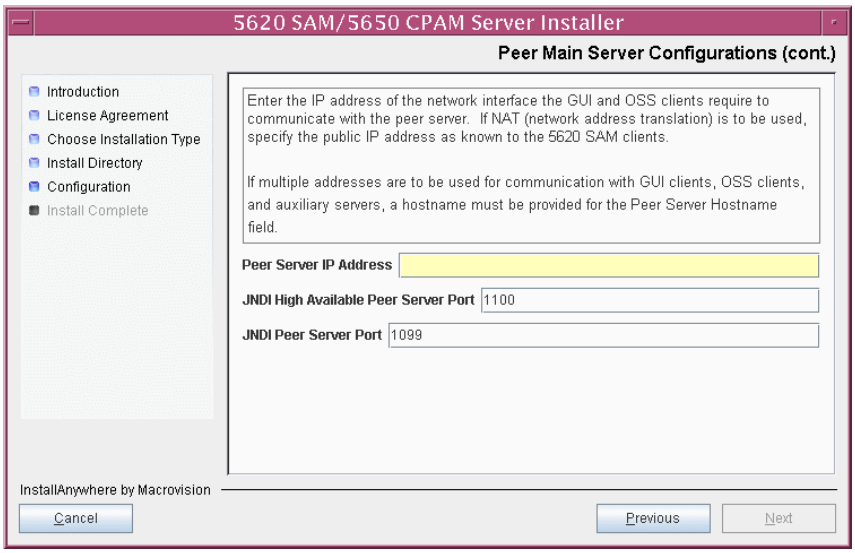


190 If the "Use Hostname for Communication" parameter in step 180 is selected, go to step 193.

191 Configure the following parameters shown in Figure 3-180, then click on the Next button:

- Peer Server IP Address (the new primary server station IP address)
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 3-180 Peer Main Server Configurations (cont.)

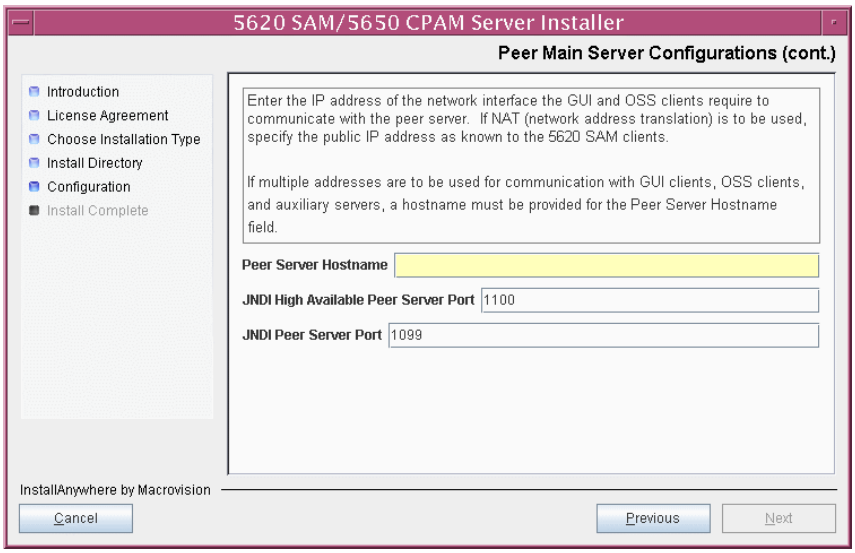


192 Go to step 194.

193 Configure the following parameters shown in Figure 3-181, then click on the Next button:

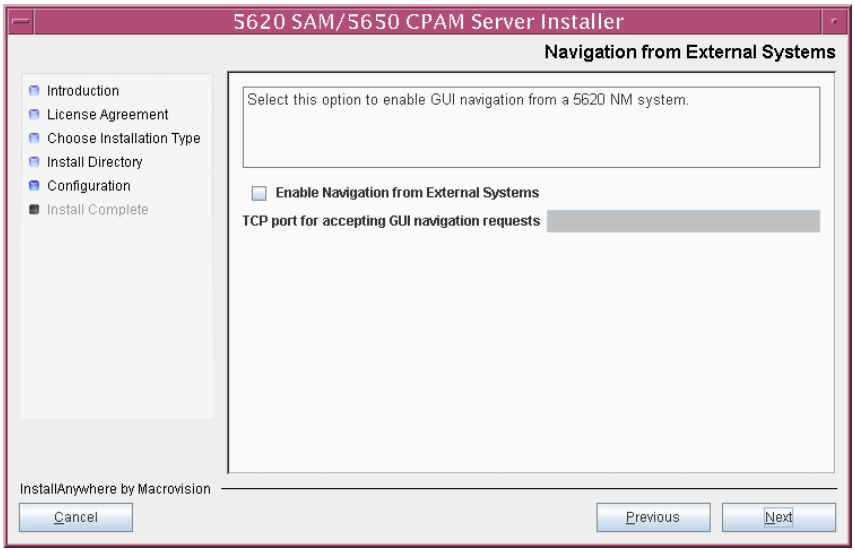
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 3-181 Peer Main Server Configurations (cont.)



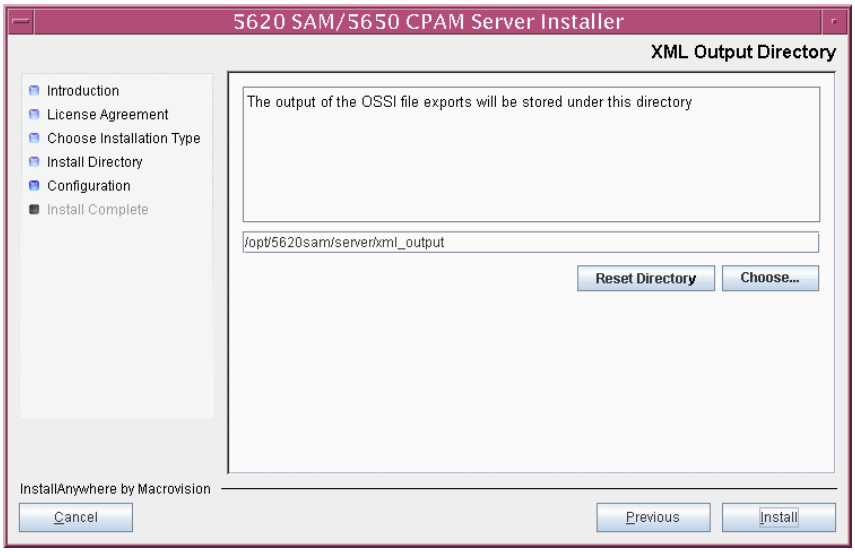
194 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 3-182 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 3-182 Navigation from External Systems



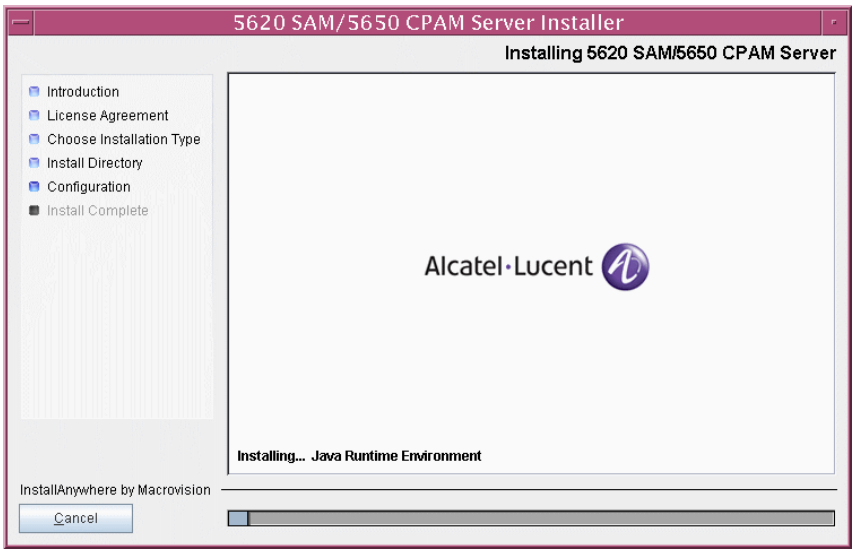
195 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 3-183. Click on the Install button to begin the server upgrade.

Figure 3-183 XML Output Directory



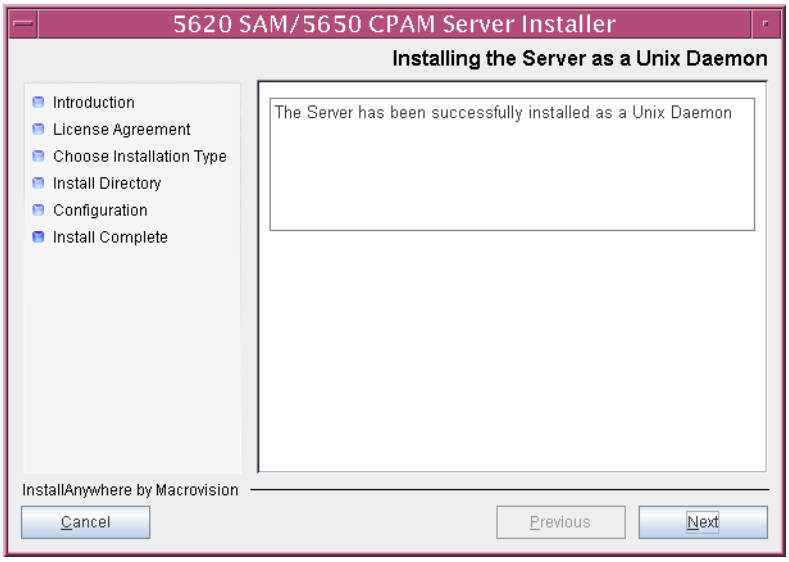
The next panel displays upgrade progress, as shown in Figure 3-184.

Figure 3-184 Installing 5620 SAM/5650 CPAM Server



196 The 5620 SAM server is installed as a UNIX daemon, as shown in Figure 3-185. Click on the Next button.

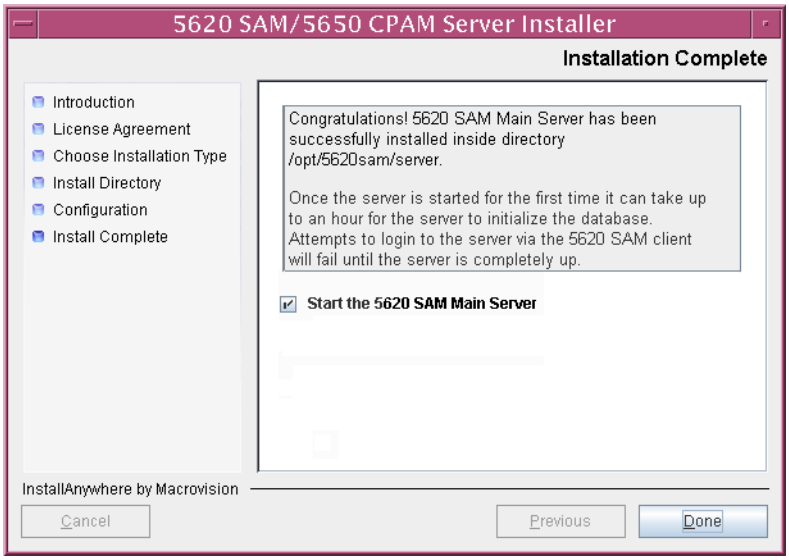
Figure 3-185 Installing the Server as a Unix Daemon



197 When the main server upgrade is complete, as shown in Figure 3-186, configure the "Start the 5620 SAM Main Server" parameter to specify whether you want the server to start immediately after the upgrade.

Caution — If the 3GPP OSS interface is enabled in step 180, and you did not enable the interface on this station during a previous installation or upgrade, ensure that the "Start the 5620 SAM Main Server" parameter is not selected.

Figure 3-186 Installation Complete



198 Click on the Done button to close the server installer. If you specified that the main server is to start immediately after the upgrade, the server starts. Initial server startup can take twenty minutes or more.

This server is the new standby main server.

199 If the 3GPP OSS interface is not enabled in step 180, go to step 201.

200 If the 3GPP OSS interface has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

Note — The user name and password must be the same user name and password specified during the primary main server configuration in step 95.

vi Save and close the file.

vii Go to step 202.

201 If you specified that the main server is to start immediately after the upgrade, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

202 If you specified not to start the main server immediately after the upgrade, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

bash$ **cd *path*/nms/bin** ↵

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

bash$ **./nmsserver.bash start** ↵

v Enter the following:

bash$ ***path*/nms/bin/nmsserver.bash -s nms_status** ↵

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

203 Close the console window.

Upgrade new standby auxiliary servers

204 If the 5620 SAM deployment contains auxiliary servers, perform Procedure 3-7 on each preferred and reserved auxiliary server of the new standby main server to upgrade the auxiliary server software.

Note — Do not start the auxiliary servers immediately after you upgrade them; they are started later in this procedure.

Start new standby auxiliary servers

205 Perform the following steps on each preferred and reserved 5620 SAM auxiliary server of the new standby main server.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to start the 5620 SAM server software:

```
bash$ path/nms/bin/auxnmsserver.bash auxstart ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

The 5620 SAM auxiliary server starts. Initial server startup can take twenty minutes or more.

Upgrade or install additional clients for redundant system

206 If you modify the SSL configuration during a main server upgrade, you cannot upgrade a client that connects to the main server; you must uninstall the client software and re-install it. Perform the appropriate procedure in chapter 6 to uninstall the client or client delegate server software, as required.

207 Perform one of the following to upgrade or install the 5620 SAM client software on a Solaris station, if required.

a Perform Procedure 2-3 or 2-4 to install a single-user client.

b Perform Procedure 2-7 to install a client delegate server.

c Perform Procedure 3-4 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

d Perform Procedure 3-6 to upgrade a client delegate server, if you did not modify the SSL configuration on the main server during the upgrade.

208 Perform one of the following to upgrade or install the 5620 SAM client software on a Windows station, if required.

a Perform Procedure 2-5 or 2-6 to install a single-user client.

b Perform Procedure 3-5 to upgrade a single-user client, if you did not modify the SSL configuration on the main server during the upgrade.

3.8 5620 SAM client and client delegate server upgrade

This section describes how to upgrade a client or client delegate server component in a standalone or redundant 5620 SAM system. Procedure 3-4 describes how to upgrade the 5620 SAM client software on a Solaris station. Procedure 3-5 describes how to upgrade the 5620 SAM client software on a Windows station. Procedure 3-6 describes how to upgrade a 5620 SAM client delegate server.

Procedure 3-4 To upgrade a 5620 SAM single-user client on Solaris

Perform this procedure to upgrade the 5620 SAM single-user client software on a Solaris station. A 5620 SAM client software upgrade happens automatically when the client connects to a main server at a different 5620 SAM release.

Note 1 — The 5620 SAM main server to which the 5620 SAM single-user client connects must be upgraded and operational before you can upgrade the client.

Note 2 — The user that installs the 5620 SAM client software on Solaris must be the user that upgrades the client software.

1 Close the 5620 SAM single-user client if it is running.

i Choose Application→Exit from the 5620 SAM main menu. A dialog box appears.

ii Click on the Yes button. The 5620 SAM single-user client closes.

2 Perform one of the following.

a Double-click on the 5620 SAM Client App desktop icon.

b Use a web browser on the client station. Perform the following steps.

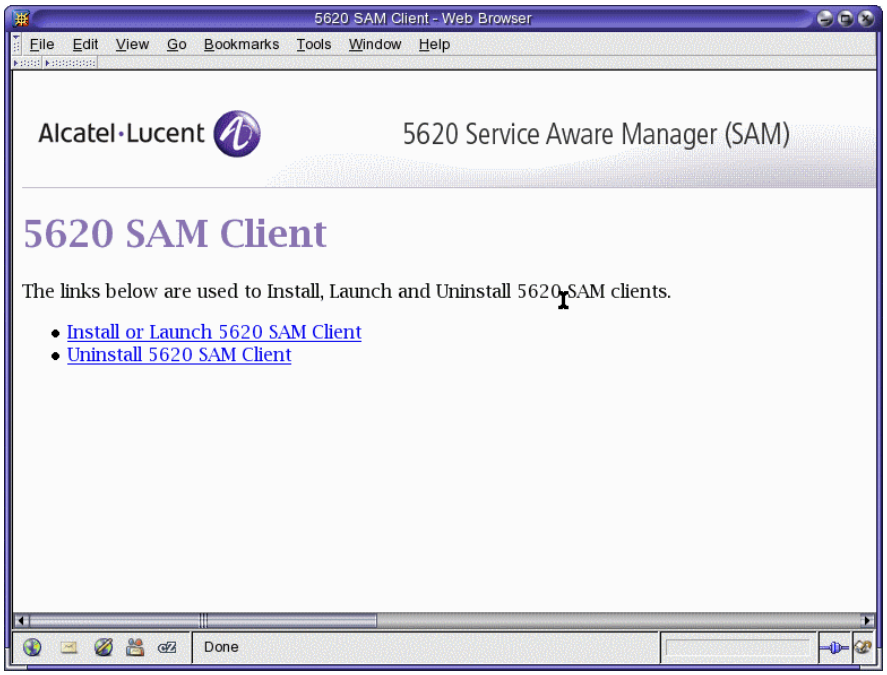
i Use the browser to open one of the following URLs:

- http://*server*:8085/client, if SSL security is not enabled on the client and main server.
- https://*server*:8444/client, if SSL security is enabled on the client and main server

where *server* is the IP address or hostname of the 5620 SAM main server

The page shown in Figure 3-187 is displayed.

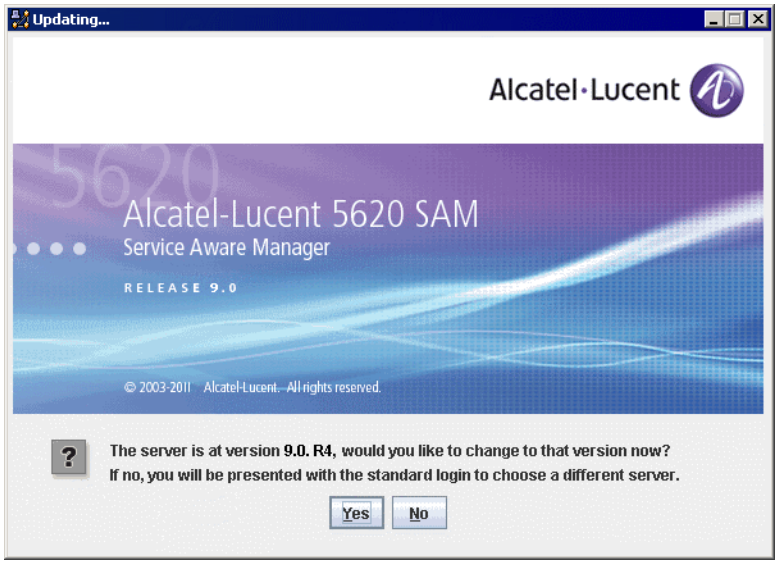
Figure 3-187 5620 SAM client page



ii Click on the “Install or Launch 5620 SAM Client” link.

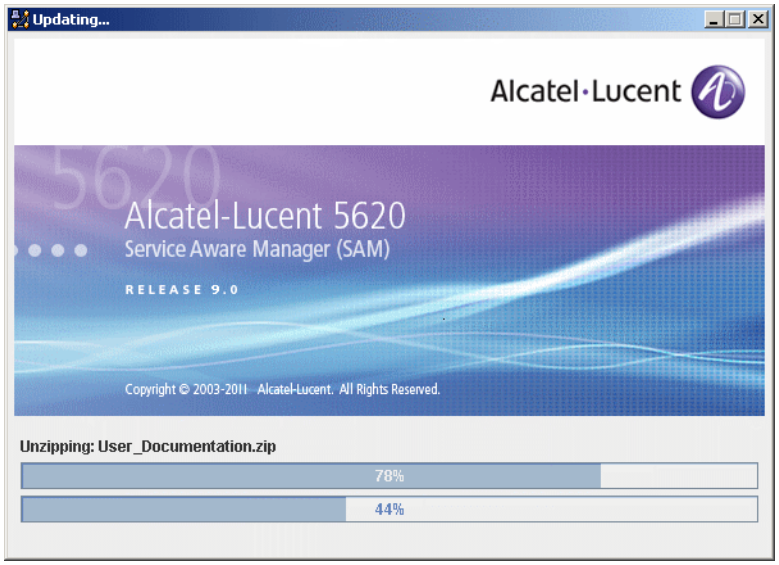
3 The 5620 SAM auto-client update utility opens, detects the new client software on the 5620 SAM main server, and displays the panel shown in Figure 3-188.

Figure 3-188 Upgrade prompt



4 Click on the Yes button to begin the 5620 SAM client software upgrade. As shown in Figure 3-189, the next panel uses separate bars to indicate the overall and current task progress.

Figure 3-189 Installation progress



When the upgrade is complete, the auto-client update utility closes and the 5620 SAM client login form is displayed.

5 Log in to the 5620 SAM client GUI.

Procedure 3-5 To upgrade a 5620 SAM single-user client on Windows

This procedure describes how to upgrade the 5620 SAM single-user client software on a Windows station. A 5620 SAM client software upgrade happens automatically when the client connects to a main server at a different 5620 SAM release.

Note 1 — The 5620 SAM main server to which the 5620 SAM single-user client connects must be upgraded and operational before you can upgrade the client.

Note 2 — The user that installs the 5620 SAM single-user client software on Windows must be the user that upgrades the client software, or a local administrator.

1 Close the 5620 SAM client GUI, if it is open.

i Choose Application→Exit from the 5620 SAM main menu. A dialog box appears.

ii Click on the Yes button. The client GUI closes.

2 Perform one of the following.

a Double-click on the 5620 SAM Client App desktop icon.

b Use a web browser on the client station. Perform the following steps.

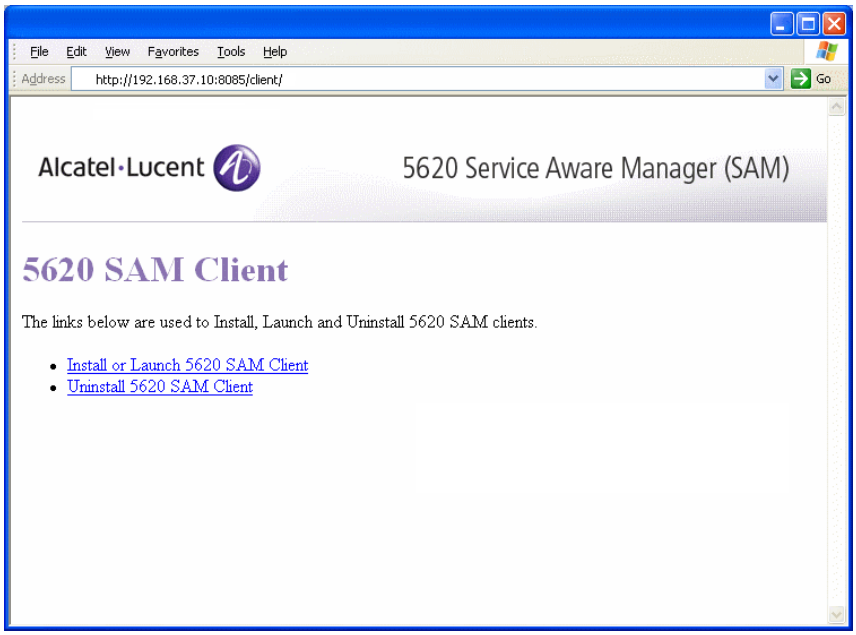
i Use the browser to open one of the following URLs:

- http://*server*:8085/client, if SSL security is not enabled on the client and main server.
- https://*server*:8444/client, if SSL security is enabled on the client and main server

where *server* is the IP address or hostname of the 5620 SAM main server

The page shown in Figure 3-190 is displayed.

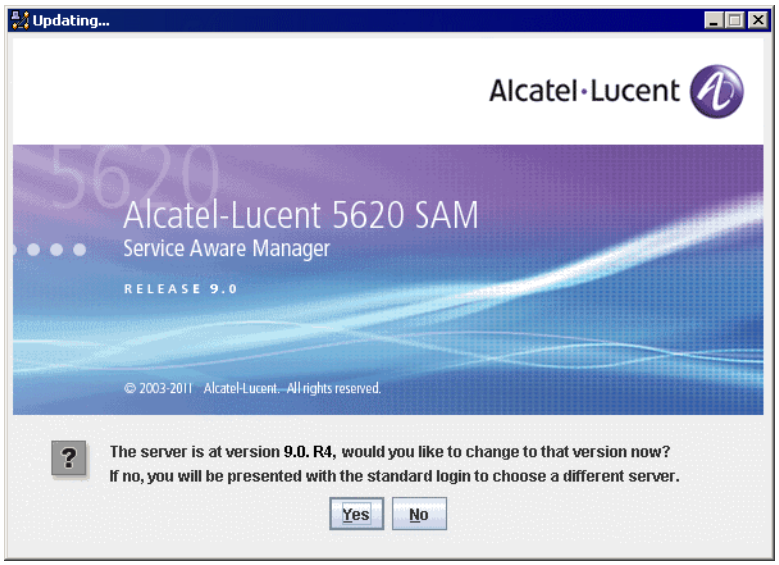
Figure 3-190 5620 SAM client page



ii Click on the “Install or Launch 5620 SAM Client” link.

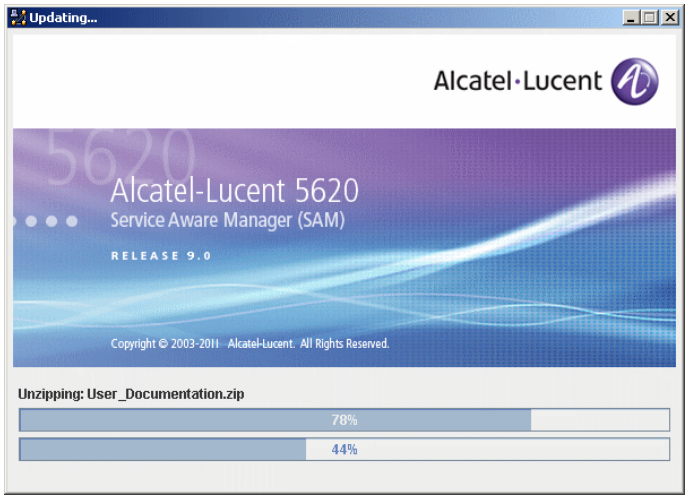
3 The 5620 SAM auto-client update utility opens, detects the new client software on the 5620 SAM main server, and displays the panel shown in Figure 3-191.

Figure 3-191 Upgrade prompt



4 Click on the Yes button to begin the 5620 SAM client software upgrade. As shown in Figure 3-192, the next panel uses separate bars to indicate the overall and current task progress.

Figure 3-192 Installation progress



When the upgrade is complete, the auto-client update utility closes and the 5620 SAM client login form is displayed.

5 Log in to the 5620 SAM client GUI.

Procedure 3-6 To upgrade a 5620 SAM client delegate server

Perform this procedure to upgrade a 5620 SAM client delegate server. A client delegate server supports multiple client GUI sessions using display redirection. You require root or root-equivalent user privileges on the client delegate server station to perform this procedure.

Note — The 5620 SAM main server to which the 5620 SAM single-user client connects must be upgraded and operational before you can upgrade the client.

The 5620 SAM main server to which the 5620 SAM delegate clients connect must be upgraded and operational before you can upgrade the client delegate server.

1 Close each open 5620 SAM client GUI session that the client delegate server is currently hosting. Perform the following steps on each station that has an open session through the client delegate server.

   i Choose Application→Exit from the 5620 SAM main menu. A dialog box appears.

   ii Click on the Yes button. The 5620 SAM client closes.

2 Perform one of the following.

a Double-click on the 5620 SAM Client App desktop icon.

b Use a web browser on the client station. Perform the following steps.

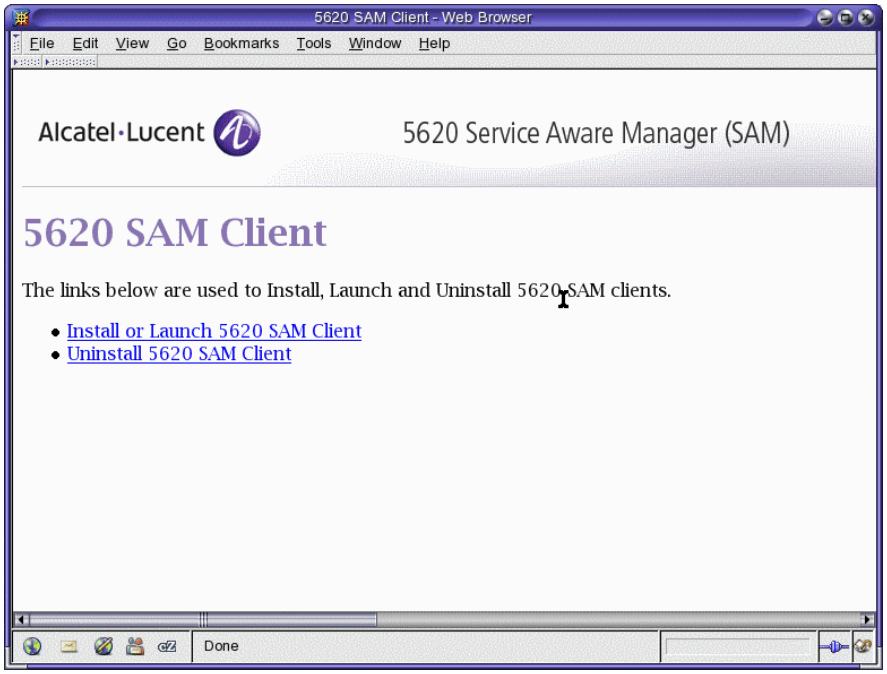
i Use the browser to open one of the following URLs:

- http://*server*:8085/client, if SSL security is not enabled on the client and main server.
- https://*server*:8444/client, if SSL security is enabled on the client and main server

where *server* is the IP address or hostname of the 5620 SAM main server

The page shown in Figure 3-193 is displayed.

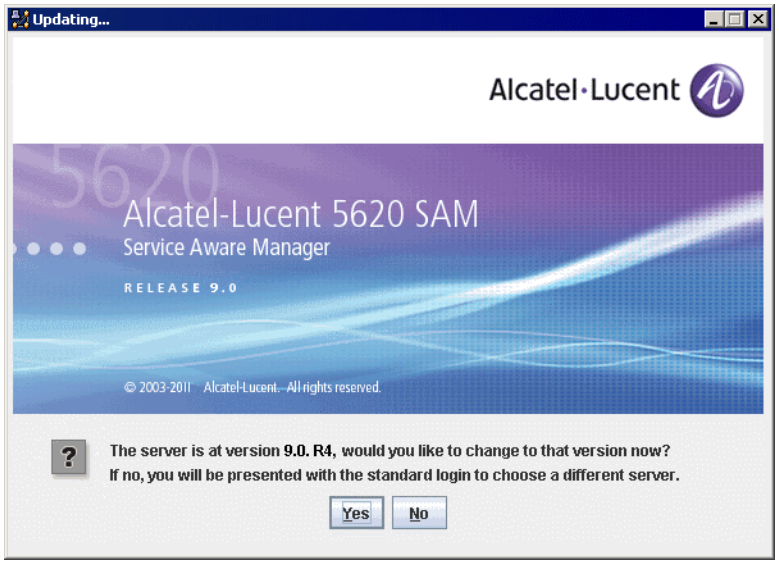
Figure 3-193 5620 SAM client page



ii Click on the “Install or Launch 5620 SAM Client” link.

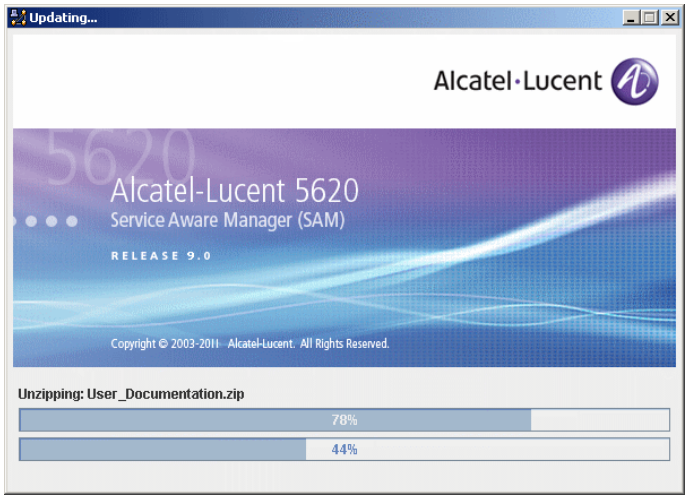
3 The 5620 SAM auto-client update utility opens, detects the new client delegate server software on the 5620 SAM main server, and displays the panel shown in Figure 3-194.

Figure 3-194 Upgrade prompt



4 Click on the Yes button to begin the upgrade. As shown in Figure 3-195, the next panel uses separate bars to indicate the overall and current task progress.

Figure 3-195 Installation progress



When the upgrade is complete, the auto-client update utility closes and the 5620 SAM client login form is displayed.

5 Log in to the 5620 SAM client GUI.

3.9 5620 SAM auxiliary server upgrade procedures

This section describes how to upgrade a 5620 SAM auxiliary server component for a standalone or redundant 5620 SAM system. Procedure 3-7 describes how to upgrade the 5620 SAM auxiliary server software.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin user

Do not type the # symbol or bash$ when you enter a command.

Procedure 3-7 To upgrade a 5620 SAM auxiliary server

Perform this procedure to upgrade the 5620 SAM auxiliary server software. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges on the auxiliary server station to perform this procedure:

- root or root-equivalent
- samadmin

1. Log in to the auxiliary server station as a user with root or root-equivalent privileges.
2. Open a console window.
3. Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.
   - **i** Enter the following:

     # **who** ↵

     The active user sessions are listed.
   - **ii** If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.
4. Place the new 5620 SAM software DVD-ROM in a DVD-ROM drive.
5. Navigate to the DVD-ROM drive.

6 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

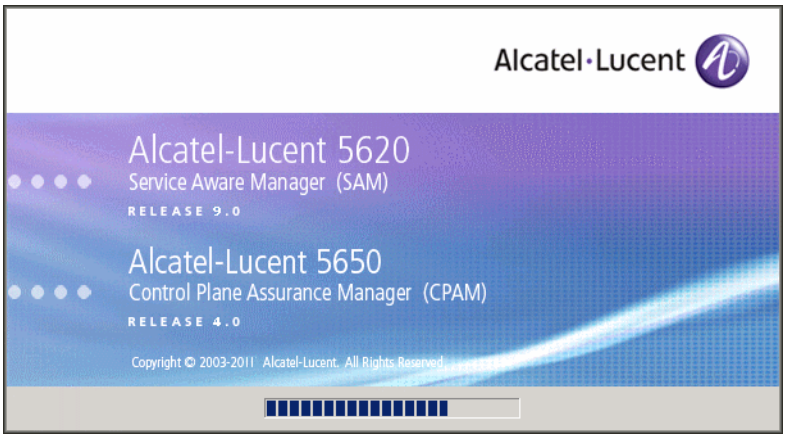
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

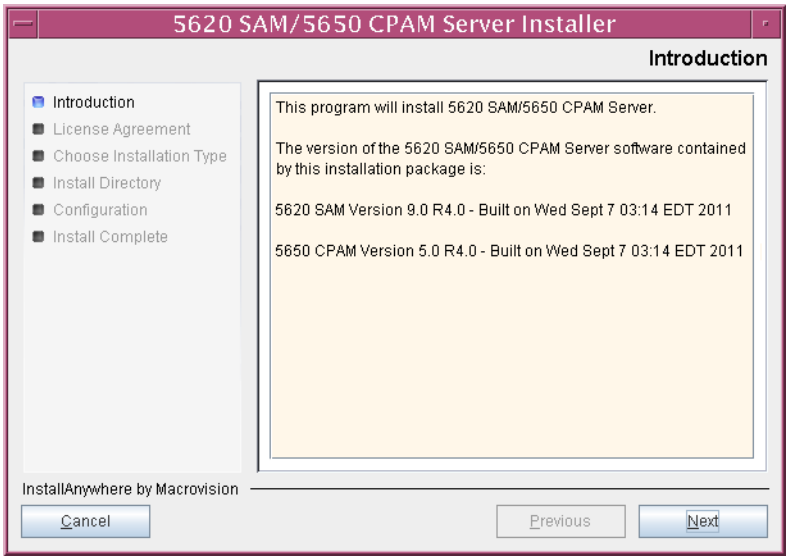
The splash screen shown in Figure 3-196 opens.

Figure 3-196 5620 SAM installer



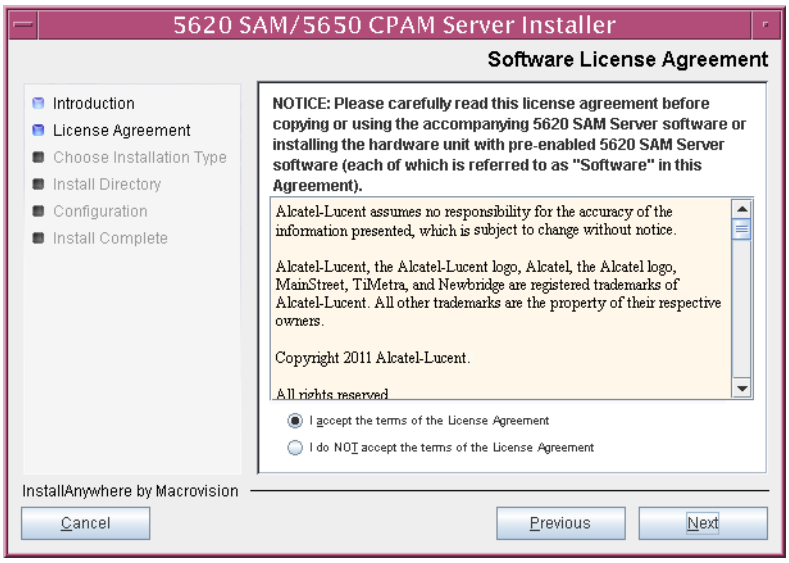
7 The 5620 SAM server installer opens, as shown in Figure 3-197. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 3-197 Introduction



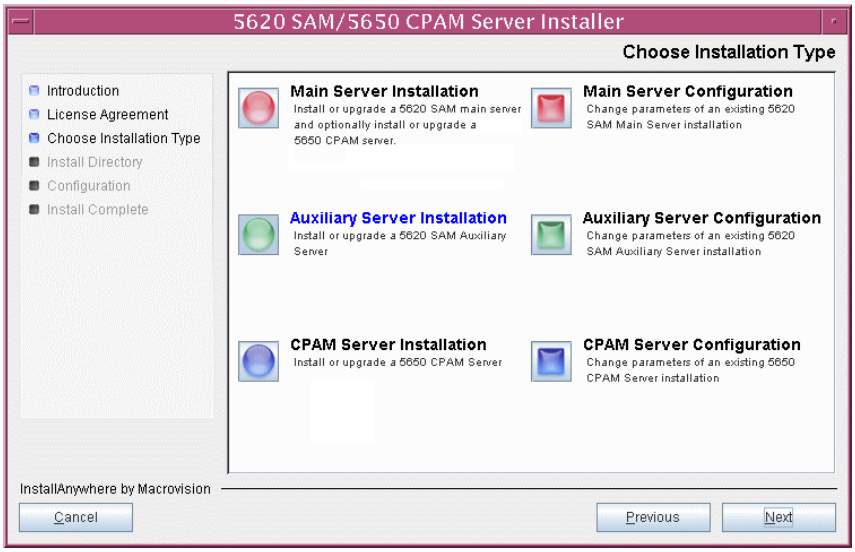
8 Review and accept the terms of the license agreement shown in Figure 3-198. Click on the Next button.

Figure 3-198 Software License Agreement



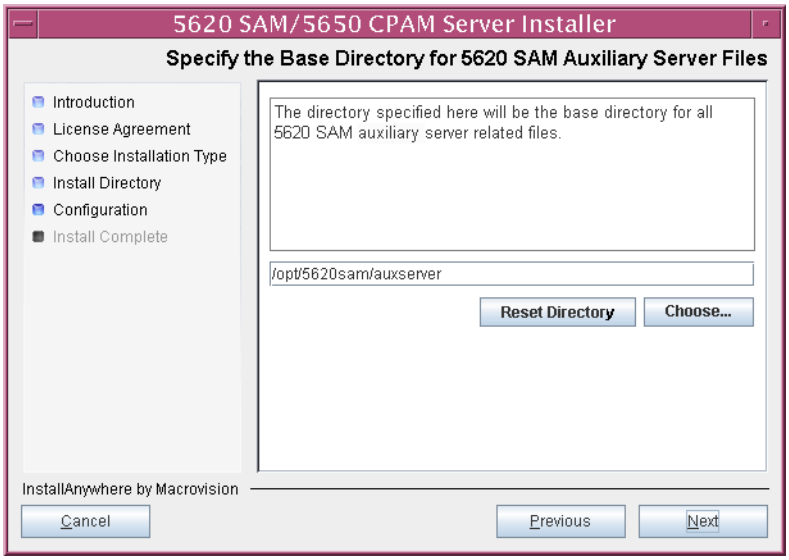
9 Select Auxiliary Server Installation, as shown in Figure 3-199. Click on the Next button.

Figure 3-199 Choose Installation Type



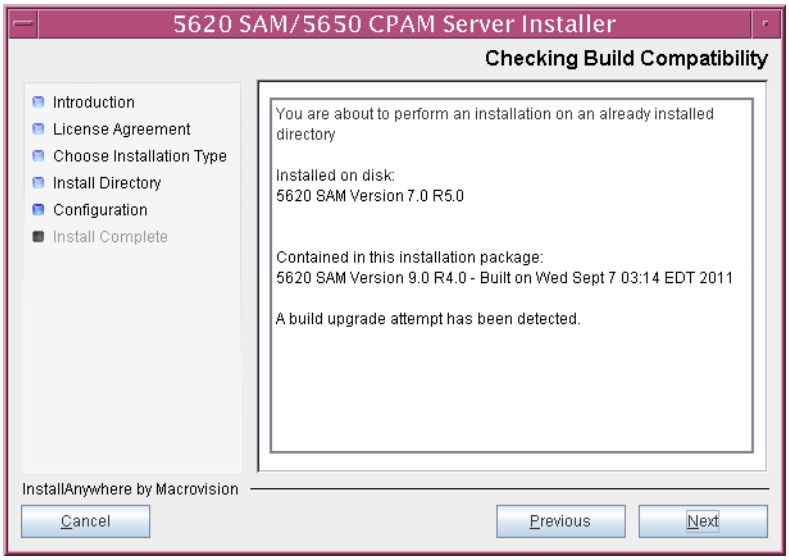
10 Specify the base directory in which the existing 5620 SAM auxiliary server software is installed (typically /opt/5620sam/auxserver), as shown in Figure 3-200. Click on the Next button.

Figure 3-200 Specify the Base Directory for 5620 SAM Auxiliary Server Files



11 As shown in Figure 3-201, the installer indicates which release of 5620 SAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 3-201 Checking Build Compatibility



12 Configure the parameters shown in Figure 3-202:

- Server Domain Name (typically 5620sam)

  This parameter uniquely identifies the 5620 SAM server cluster to which the auxiliary server belongs.
- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM auxiliary server and the main servers.
- Private IP (accessible only by this server)
- Public IP (accessible to servers)
- Server Port (typically 12800)
- Redundancy Supported On the 5620 SAM Main Server

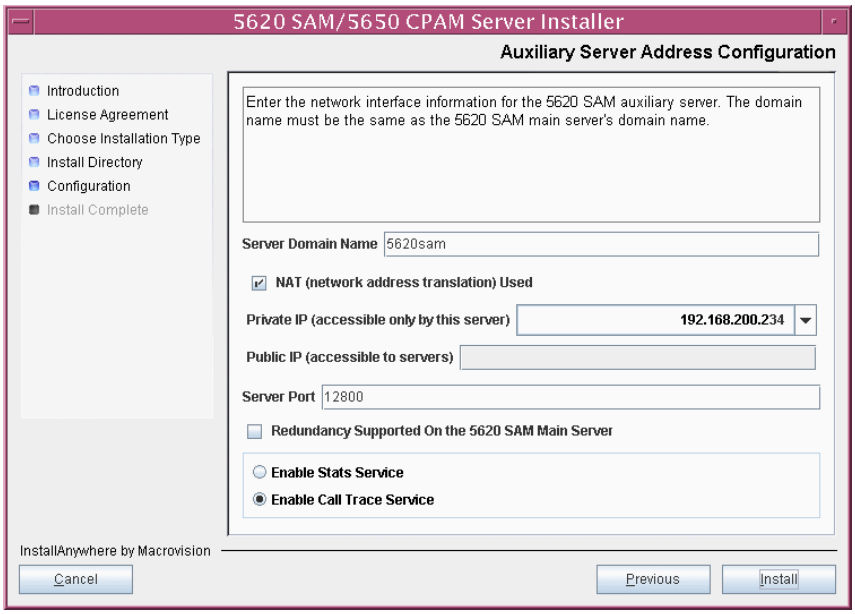
  Select this parameter only if the 5620 SAM main servers are deployed in a redundant configuration.
- Enable Stats Service

  Select this parameter if the 5620 SAM auxiliary server is to be used for statistics collection.
- Enable Call Trace Service

  Select this parameter if the 5620 SAM auxiliary server is to be used for call-trace data collection.

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 3-202 Auxiliary Server Address Configuration

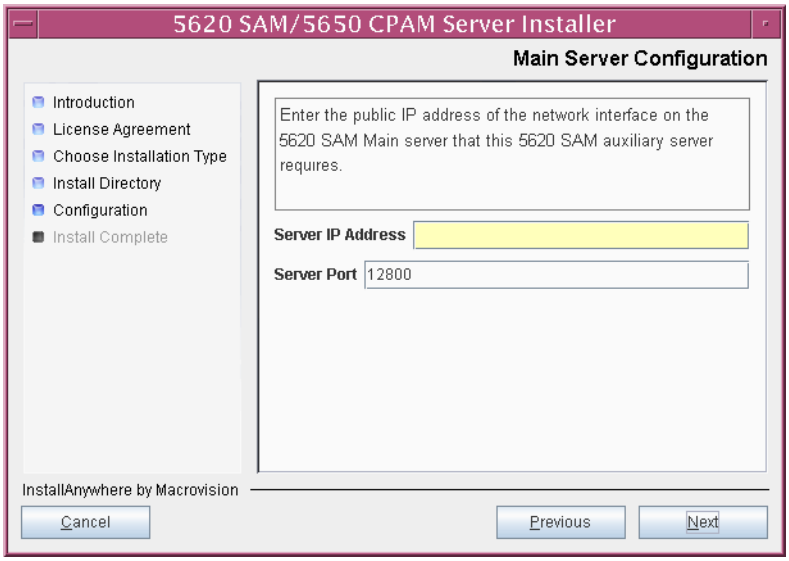


13 Perform one of the following.

a If the “Redundancy Supported On the 5620 SAM Main Server” parameter in step 12 is not selected, configure the parameters shown in Figure 3-203:

- Server IP Address
- Server Port (typically 12800)

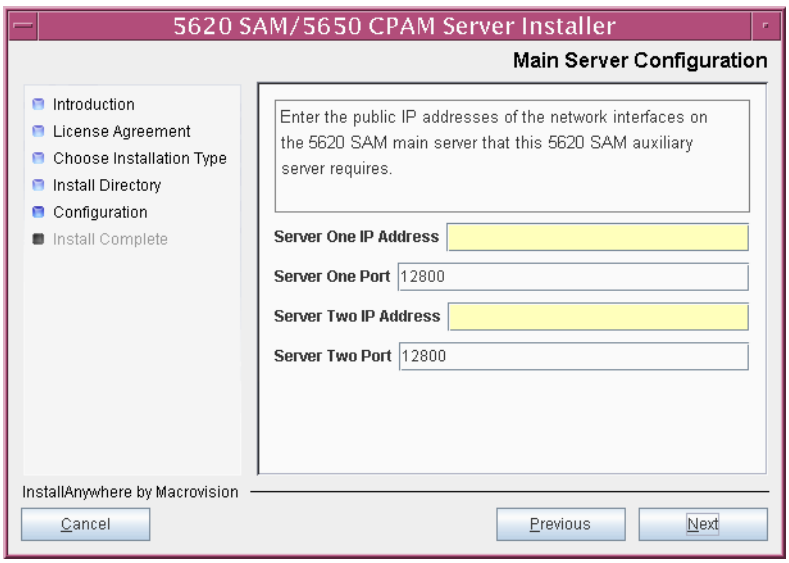
Figure 3-203 Main Server Configuration



b If the “Redundancy Supported On the 5620 SAM Main Server” parameter in step 12 is selected, configure the parameters shown in Figure 3-204:

- Server One IP Address
- Server One Port (typically 12800)
- Server Two IP Address
- Server Two Port (typically 12800)

Figure 3-204 Main Server Configuration



14 If “Enable Call Trace Service” in step 12 is not selected, go to step 16.

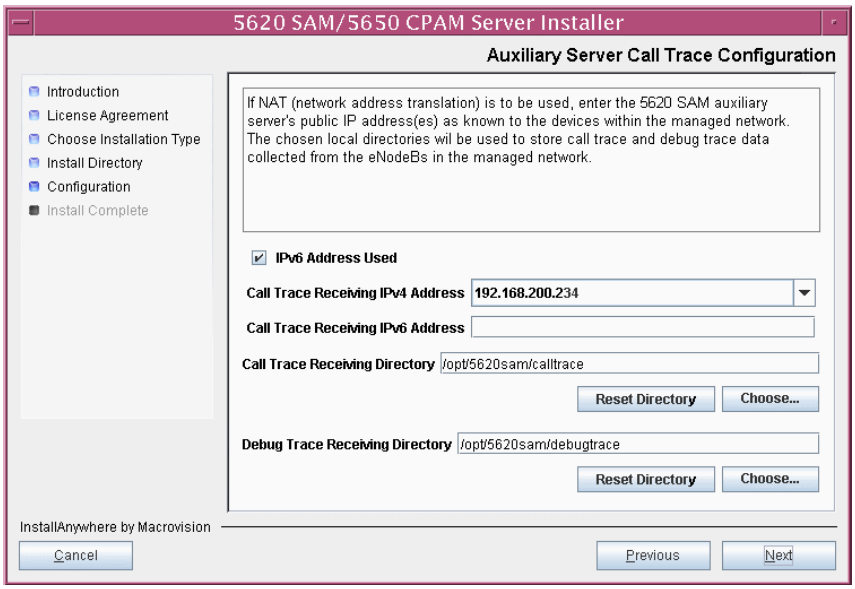
15 The panel shown in Figure 3-205 is displayed if you select the “Enable Call Trace Service” parameter in step 12. Configure the following parameters, then click on the Next button:

- IPv6 Address Used
- Call Trace Receiving IPv4 Address
- Call Trace Receiving IPv6 Address
- Call Trace Receiving Directory (typically /opt/5620sam/calltrace)
- Debug Trace Receiving Directory (typically /opt/5620sam/debugtrace)

Note 1 — The “Call Trace Receiving IPv6 Address” parameter is displayed only when the “IPv6 Address Used” parameter is selected, as shown in Figure 3-205.

Note 2 — If NAT is to be used, each specified IP address must be a public IP address.

Figure 3-205 Auxiliary Server Call Trace Configuration

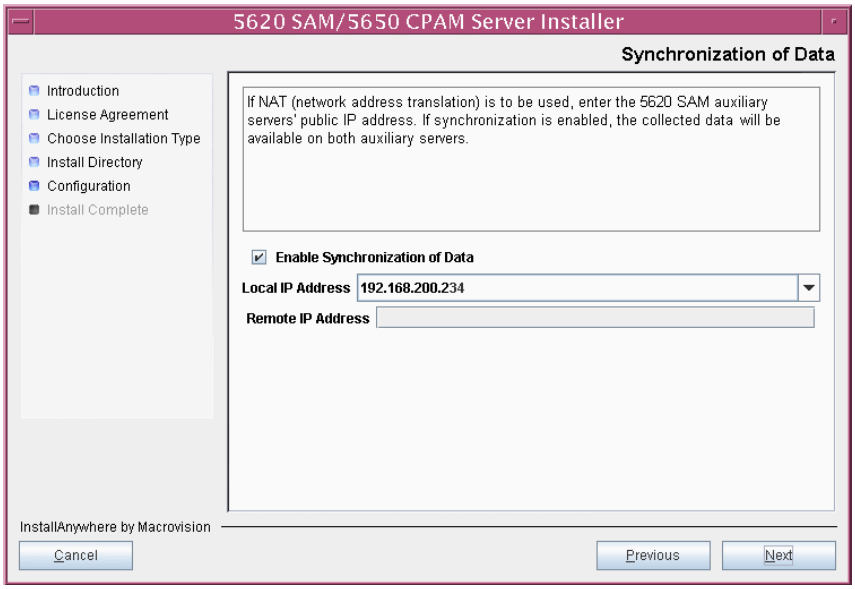


16 Configure the following parameters shown in Figure 3-206, then click on the Next button:

- Enable Synchronization of Data
- Local IP Address
- Remote IP Address

Note — The “Local IP Address” and “Remote IP Address” parameters are configurable only when the “Enable Synchronization of Data” parameter is enabled.

Figure 3-206 Synchronization of Data

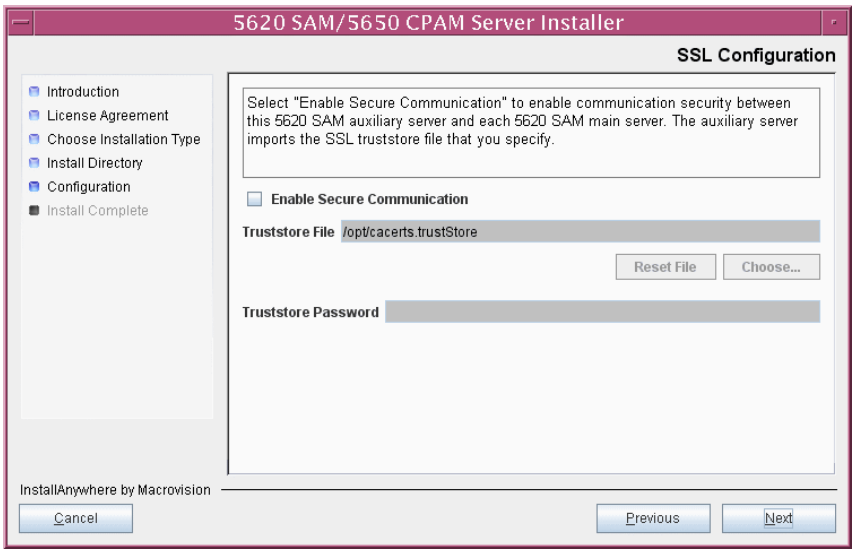


17 Perform the following steps to enable communication security between this auxiliary server and each main server. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 3-207.

Figure 3-207 SSL Configuration



ii Configure the following parameters:

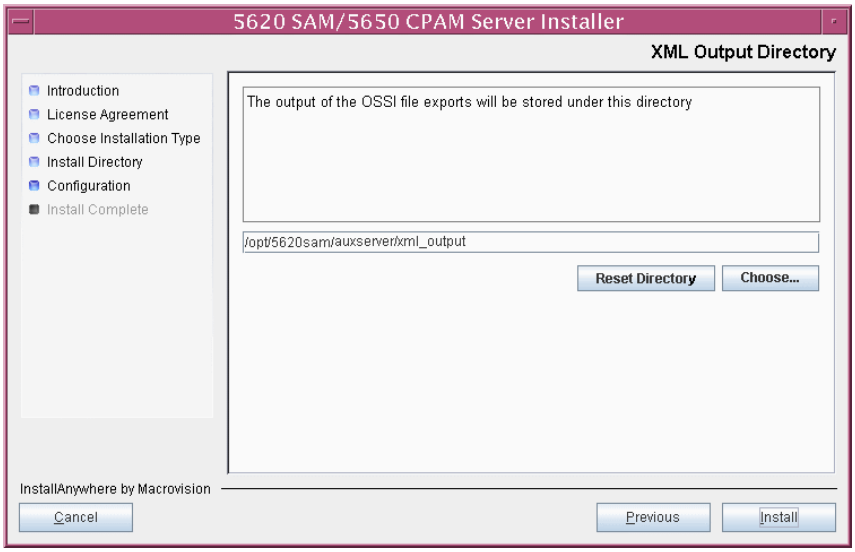
- Truststore File
- Truststore Password

Note — The parameter values must match the values specified during the main server upgrade.

iii Click on the Next button.

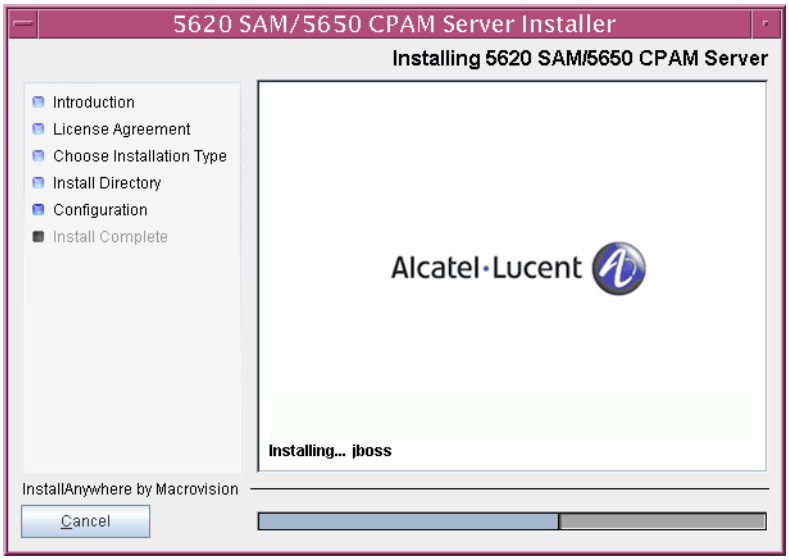
18 Specify an OSS XML output location (typically /opt/5620sam/auxserver/xml_output), as shown in Figure 3-208. Click on the Install button to begin the auxiliary server upgrade.

Figure 3-208 XML Output Directory



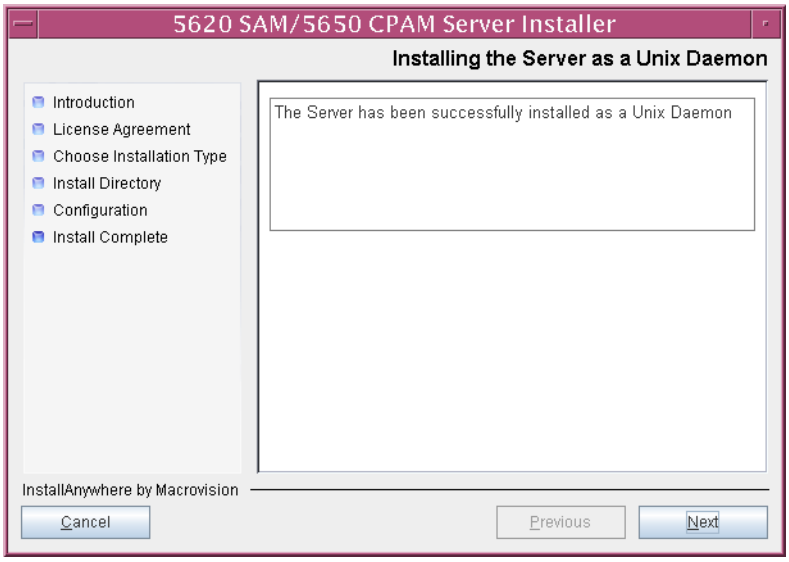
The next panel displays upgrade progress, as shown in Figure 3-209.

Figure 3-209 Installing 5620 SAM/5650 CPAM Server



19 As shown in Figure 3-210, the 5620 SAM auxiliary server is installed as a UNIX daemon. Click on the Next button.

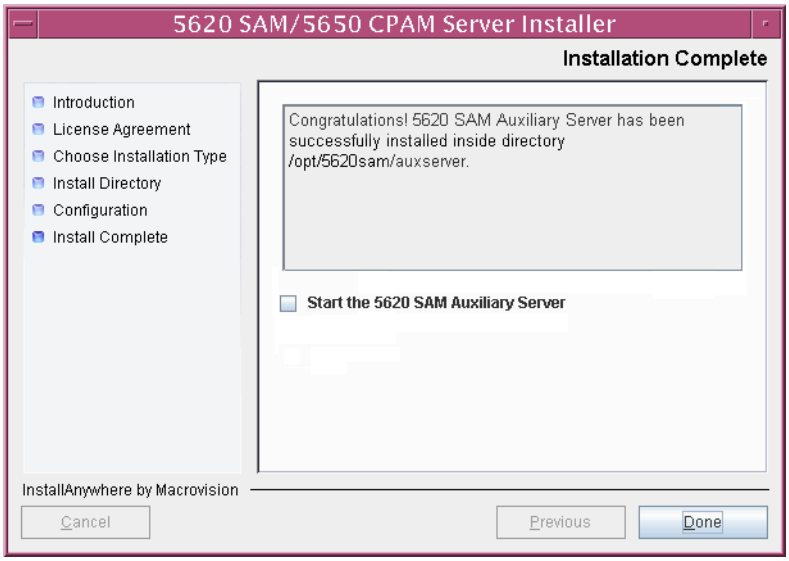
Figure 3-210 Installing the Server as a Unix Daemon



20 When the auxiliary server upgrade is complete, as shown in Figure 3-211, configure the "Start the 5620 SAM Auxiliary Server" parameter to specify whether you want the server to start immediately after the upgrade.

Caution — If you are upgrading the auxiliary server as part of a redundant 5620 SAM system upgrade, do not configure the server to start immediately after the upgrade.

Figure 3-211 Installation Complete



If you specify not to start the auxiliary server immediately after the upgrade, you can start the server later by performing the following steps.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to start the 5620 SAM server software:

```
bash$ path/nms/bin/auxnmsserver.bash auxstart ↵
```

where *path* is the 5620 SAM auxiliary server installation location, typically /opt/5620sam/auxserver

The 5620 SAM auxiliary server starts. Initial server startup can take twenty minutes or more.

Note — The order in which a 5620 SAM auxiliary server and the primary 5620 SAM main server initialize is unimportant. A 5620 SAM server synchronizes with an auxiliary server as soon as it is able to communicate with the auxiliary server.

21 Click on the Done button to close the server installer. If you specified that the auxiliary server is to start after the upgrade, the server starts. Initial server startup can take twenty minutes or more.

4 — 5620 SAM conversion to redundancy

4.1 5620 SAM conversion to redundancy overview

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document.

Caution 1 — Converting a 5620 SAM system from standalone to redundant requires that you thoroughly understand the general and OS-specific requirements. It is essential that the conversion procedure be planned, documented and tested in advance on a lab system that is representative of the target live network.

Contact Alcatel-Lucent technical support to assess the conversion requirements for your network implementation of the 5620 SAM. Alcatel-Lucent offers an upgrade service and strongly recommends that it be engaged for conversions in larger or more complex networks.

Caution 2 — Alcatel-Lucent supports 5620 SAM software configuration only under the conditions described in chapter 1.

Note 1 — You cannot convert a standalone 5620 SAM system to redundancy as part of a 5620 SAM system upgrade. To upgrade your 5620 SAM system and convert it to redundancy, you must upgrade the system before you perform the conversion.

Note 2 — You require a second 5620 SAM license key for the new standby main server. The new key must have the same capacity specifications as the existing key, and must be generated specifically for the new 5620 SAM server station. Contact Alcatel-Lucent technical support for more information about license keys.

See Appendix C for detailed 5620 SAM conversion to redundancy parameter descriptions.

4.2 5620 SAM conversion to redundancy procedures list

Table 4-1 lists the procedures required to convert a standalone 5620 SAM system on Solaris to a redundant 5620 SAM system.

Table 4-1 5620 SAM conversion to redundancy procedures list

Procedure	Purpose
To convert a standalone 5620 SAM system on Solaris to a redundant system	Convert a standalone 5620 SAM system on one or more Solaris stations to a redundant 5620 SAM system.

4.3 Workflow for 5620 SAM conversion to redundancy

The following is the sequence of high-level actions required to convert a standalone 5620 SAM system on Solaris to a redundant system. A section heading in quotation marks is a reference to a section in Procedure 4-1.

1. Back up the 5620 SAM configuration files. See "Back up configuration files" for more information.
2. Gather the system information required for the conversion. See "Gather required information" for more information.
3. Close the unrequired 5620 SAM client sessions. See "Close client sessions" for more information.
4. Close the 5620 SAM LogViewer application, if it is running. See "Close 5620 SAM LogViewer" for more information.
5. Back up the 5620 SAM database. See "Back up database" for more information.
6. Stop the 5620 SAM server. See "Stop server" for more information.
7. Disable the 5620 SAM server startup daemon. See "Disable server daemon" for more information.
8. Convert the standalone database to a primary database. See "Convert standalone database to primary database" for more information.
9. Convert the standalone server to a primary server. See "Convert standalone server to primary server" for more information.
10. Create an Oracle management user account and configure the associated system parameters on the standby database station. See "Prepare new standby database station for standby database installation" for more information.
11. Install the standby database. See "Install standby database" for more information.
12. Install the standby server. See "Install standby server" for more information.
13. Reinstantiate the database on the standby database station. See "Reinstantiate standby database" for more information.
14. Use a 5620 SAM client to perform sanity testing on the newly redundant 5620 SAM system, as required.

4.4 5620 SAM conversion to redundancy procedures

This section describes how to convert a standalone 5620 SAM system on Solaris to a redundant system. Procedure 4-1 describes how to convert a standalone 5620 SAM system to a redundant system.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 4-1 To convert a standalone 5620 SAM system on Solaris to a redundant system

Perform this procedure to convert a standalone 5620 SAM system on a Solaris platform to a redundant 5620 SAM system. This involves the following:

- Converting the standalone main server and database to a primary main server and database
- Installing the standby main server and database software
- Reinstantiating the new primary database on the new standby database station

Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — You require the following user privileges to perform this procedure:

on the current standalone server station:

- root or root-equivalent
- samadmin

on the station that is to be the new standby main server station:

- root or root-equivalent

on each database station:

- root or root-equivalent
- Oracle management

Note 2 — The samadmin user account is created on the standby main server station during this procedure.

Note 3 — The Oracle management user account is created on the standby database station during this procedure.

Back up configuration files

1 Make a backup copy of each file that you have created or customized in or under the *path*/nms and *path*/jre directories on each server station

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

Note — At the beginning of a 5620 SAM server upgrade, the 5620 SAM installation utility backs up specific configuration and log files to a timestamped directory under the installation directory. The utility then deletes directories under the server installation directory. If you have created or customized a file under the installation directory, you risk losing the file unless you back up the file before the upgrade to a storage location that is unaffected by the upgrade.

Store the files in a secure location that is unaffected by 5620 SAM upgrade activity.

2 Make a copy of any custom XML configuration files in the *path*/nms/jboss directory on the server station

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

Note — The upgrade process re-installs and potentially modifies the format of the XML files in the jboss directory. You can use the copy of the pre-upgrade XML files as a reference for restoring your custom configuration, but you cannot use the files as part of the upgraded server installation. Copying the files to the new jboss directory after the upgrade does not restore the configuration specified in the XML files.

Store the files in a secure location that is unaffected by the 5620 SAM conversion activity, such as a non-5620 SAM station.

Gather required information

3 Obtain the following information from the main server station and record it for use during the conversion:

- hostname, which is one of the following:
  - the hostname specified for the main server station during the previous 5620 SAM software installation or upgrade
  - the local hostname, if an IP address was specified for the main server station during the previous 5620 SAM software installation or upgrade
- IP addresses
  - server IP addresses used by the current and new 5620 SAM databases to reach the server (public IP addresses, if NAT is used)
  - server IP address used by 5620 SAM GUI and OSS clients to reach this server (public IP address, if NAT is used)
  - server IP address used by 5620 SAM auxiliary servers to reach this server (public IP address, if NAT is used)
  - private server IP address (if NAT is used)
- root user password

4 Obtain the following information from the database station and record it for use during the conversion:

- hostname
- IP addresses
  - database IP addresses used by the current and new 5620 SAM servers to reach the database on this station (public IP addresses, if NAT is used)
  - database IP address used by 5620 SAM auxiliary servers to reach the database on this station (public IP address, if NAT is used)
  - private database IP address (if NAT is used)
- root user password
- UNIX username for Oracle management account (default value at installation is oracle)
- Oracle database user ID (default value at installation is samuser)
- Oracle database user password
- Oracle SYS password
- Oracle base installation directory name (default installation value is /opt/5620sam/oracle11r2)
- 5620 SAM database installation directory name (default value at installation is /opt/5620sam/samdb)

5 If the 5620 SAM system includes one or more auxiliary servers, perform the following steps. Otherwise, go to step 7.

i Open a 5620 SAM client.

ii Choose Administration→System Information from the 5620 SAM main menu. The System Information window is displayed.

iii Click on the Auxiliary Servers tab button.

6 Perform the following steps for each auxiliary server listed on the form:

i Select an auxiliary server in the list and click on the Properties button. The properties form for the auxiliary server opens.

ii Record the following information for use during the upgrade:

- Host Name
- Port Number
- Auxiliary Server Type
- Server Status
- Public IP address
- Private IP address, if displayed

iii Close the auxiliary server properties form.

7 If the 5620 SAM system includes one or more client delegate servers, perform the following steps. Otherwise, go to step 9.

- **i** Open a 5620 SAM client.
- **ii** Choose Administration→System Information from the 5620 SAM main menu. The System Information window is displayed.
- **iii** Click on the Client Delegate Servers tab button.

8 Perform the following steps for each client delegate server listed on the form:

- **i** Select a client delegate server in the list and click on the Properties button. The properties form for the client delegate server opens.
- **ii** Record the IP Address value for use during the upgrade.
- **iii** Close the client delegate server properties form.

9 Close the System Information form, if it is open.

Close client sessions

10 Close all unrequired open 5620 SAM client sessions.

- **i** Open a 5620 SAM client session using an account with security management privileges, such as admin.
- **ii** Click on Administration→Security→5620 SAM User Security in the 5620 SAM main menu. The 5620 SAM User Security - Security Management (Edit) form opens with the General tab displayed.
- **iii** Click on the Sessions tab button.
- **iv** Click on the Search button. The form displays a list of the open 5620 SAM client sessions.
- **v** Using the IP addresses in the Client IP column, identify the GUI and OSS clients that are currently logged in.
- **vi** Close the client sessions by selecting them and clicking on the Close Session button. A dialog box appears.

Note — One of the listed sessions is the session that you are using. Do not attempt to close this session.

- **vii** Click on the Yes button to confirm the action.
- **viii** Click on the Search button to refresh the list of open client sessions.

Close 5620 SAM LogViewer

11 Close the 5620 SAM LogViewer application, if it is open.

Caution — If the 5620 SAM LogViewer is running during a 5620 SAM upgrade, the upgrade fails.

Back up database

12 Perform one of the following to back up the 5620 SAM database.

Caution 1 — The path of the 5620 SAM database backup directory must not include the 5620 SAM database installation directory, typically /opt/5620sam/samdb, or data loss may occur.

Caution 2 — Before the 5620 SAM performs a database backup, it deletes the contents of the specified backup directory. Ensure that the backup directory that you specify in this step does not contain files that you want to retain.

a Use a 5620 SAM client GUI to back up the database. See the *5620 SAM User Guide* for information about performing database backups using the client GUI.

b Use a CLI script to back up the database. Perform the following steps.

i Log in to the database station as the Oracle management user.

ii Open a console window.

iii Enter the following to begin the database backup:

```
bash$ path/install/config/samdb/SAMbackup.sh
backup_directory ↵
```

where
path is the 5620 SAM database installation location, typically /opt/5620sam/samdb
backup_directory is the directory that is to contain the database backup

The 5620 SAM backs up the database.

iv Record the backup directory location.

v Copy the database backup files from the backup directory to a secure location, such as a non-5620 SAM station, for safekeeping.

Stop server

13 Perform the following steps to stop the 5620 SAM main server application.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 13 v. Do not proceed to the next step until the server is stopped.

Disable server daemon

14 Disable the 5620 SAM server startup daemon. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the conversion.

i Enter the following to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

The next section of the procedure describes the conversion of the standalone 5620 SAM database to the primary database in a redundant system.

Convert standalone database to primary database

15 Log in to the database station as the Oracle management user.

16 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

17 Open a console window.

18 Navigate to the DVD-ROM drive.

19 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

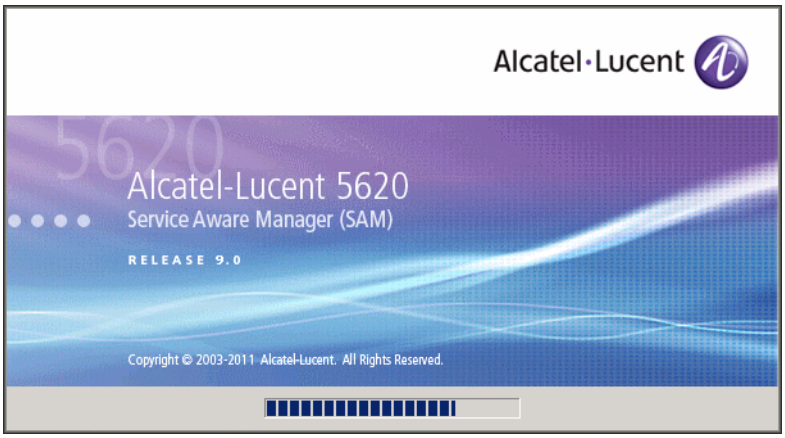
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

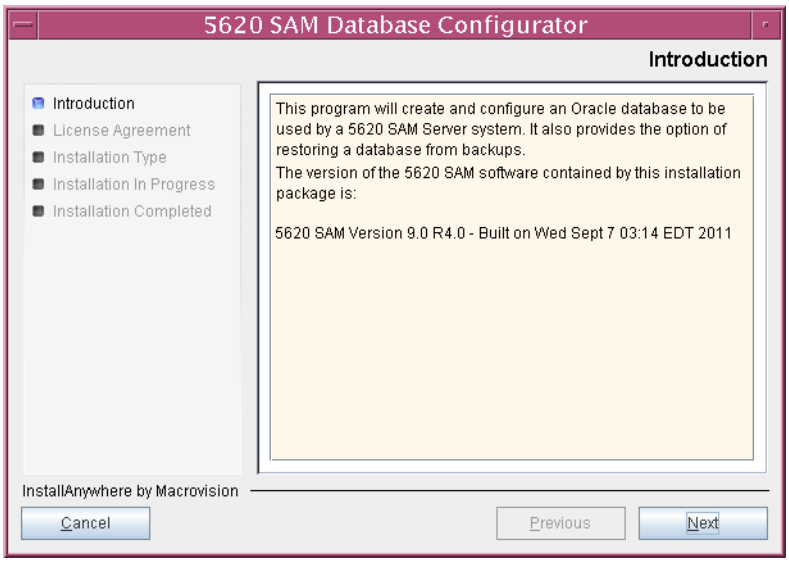
The splash screen shown in Figure 4-1 opens.

Figure 4-1 5620 SAM installer



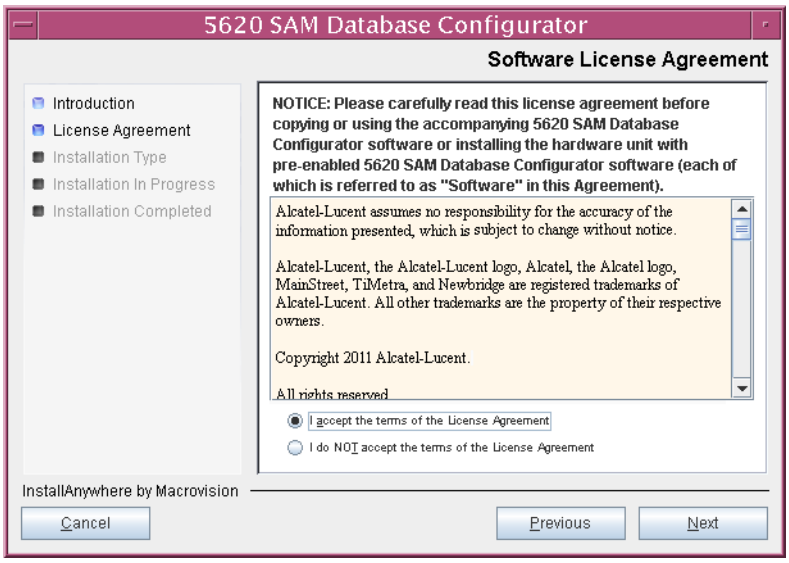
20 The 5620 SAM database installer opens, as shown in Figure 4-2. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 4-2 Introduction



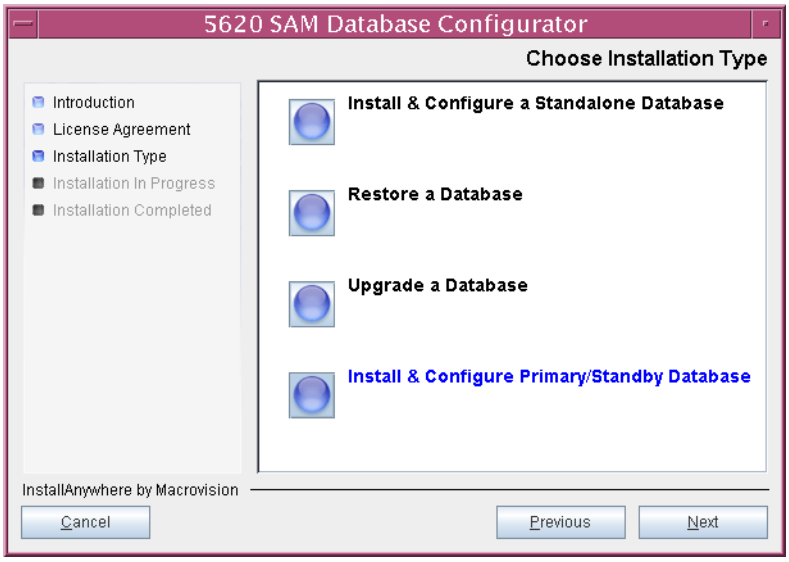
21 Review and accept the terms of the license agreement shown in Figure 4-3. Click on the Next button.

Figure 4-3 Software License Agreement



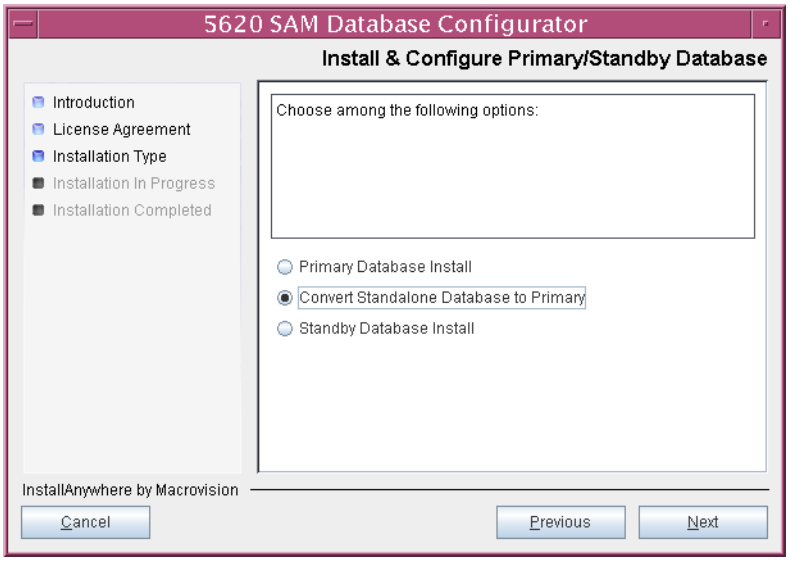
22 Select Install & Configure Primary/Standby Database, as shown in Figure 4-4. Click on the Next button.

Figure 4-4 Choose Installation Type



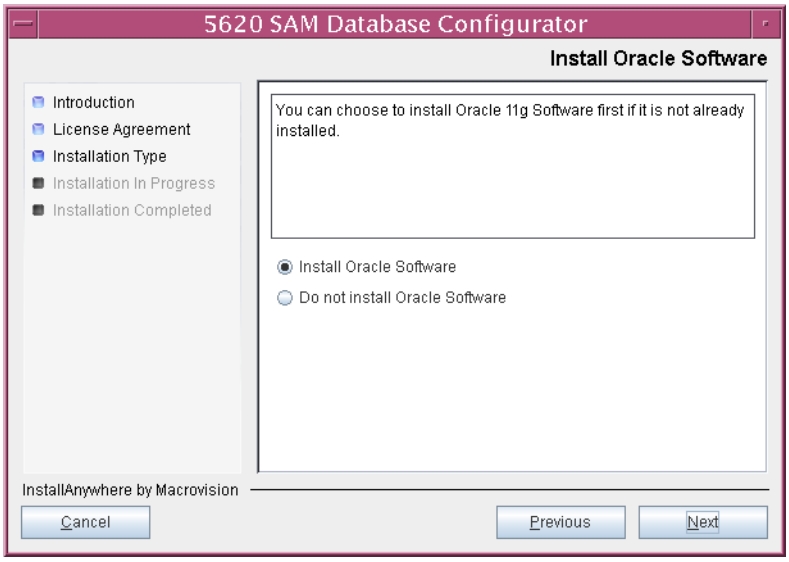
23 Select Convert Standalone Database to Primary, as shown in Figure 4-5. Click on the Next button.

Figure 4-5 Install & Configure Primary/Standby Database



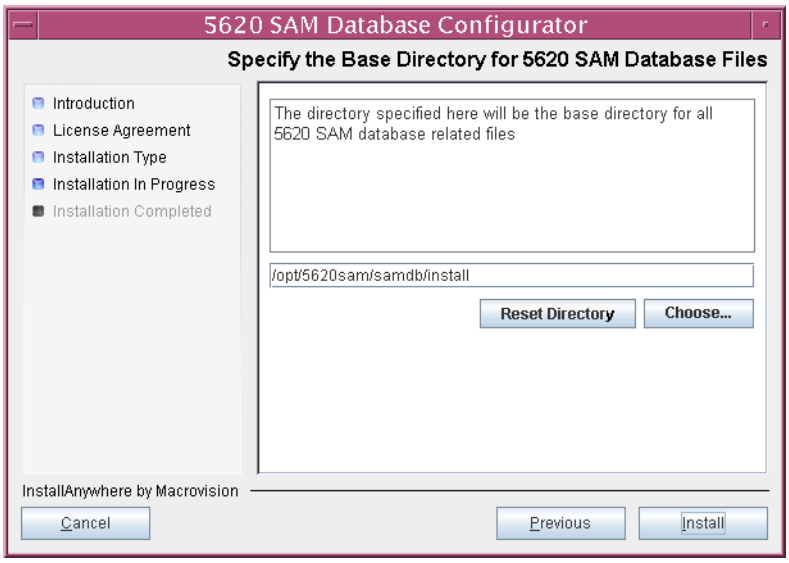
24 Select Do not Install Oracle Software, as shown in Figure 4-6. Click on the Next button.

Figure 4-6 Install Oracle Software



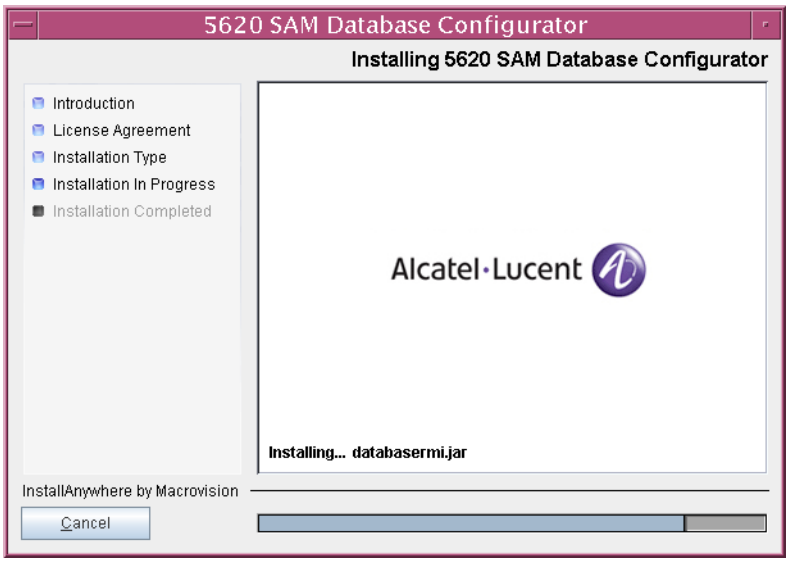
25 Specify the base directory in which the existing 5620 SAM database software is installed (typically /opt/5620sam/samdb/install), as shown in Figure 4-7. Click on the Install button to begin the database conversion.

Figure 4-7 Specify the Base Directory for 5620 SAM Database Files



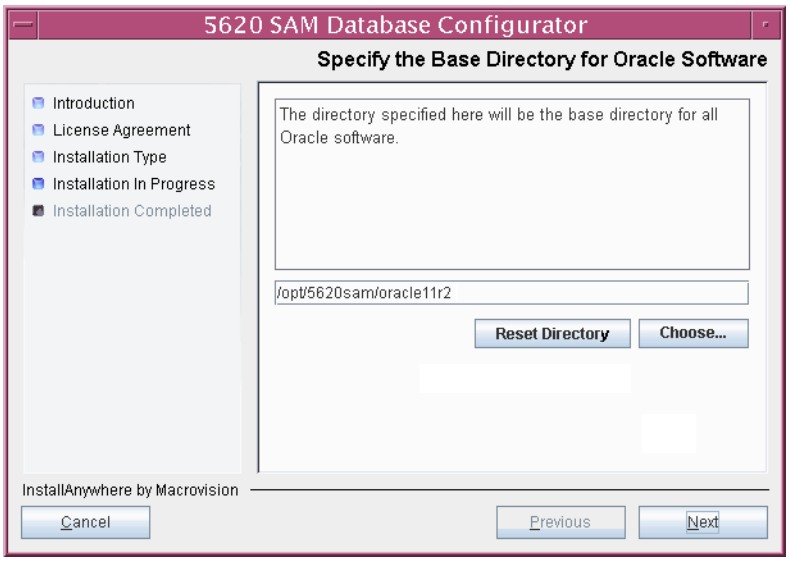
The installer prepares to convert the database, as shown in Figure 4-8.

Figure 4-8 Installing 5620 SAM Database Configurator



26 The panel shown in Figure 4-9 displays the Oracle software installation directory, which cannot be changed. Click on the Next button.

Figure 4-9 Specify the Base Directory for Oracle Software



27 Configure the following parameters shown in Figure 4-10, then click on the Next button:

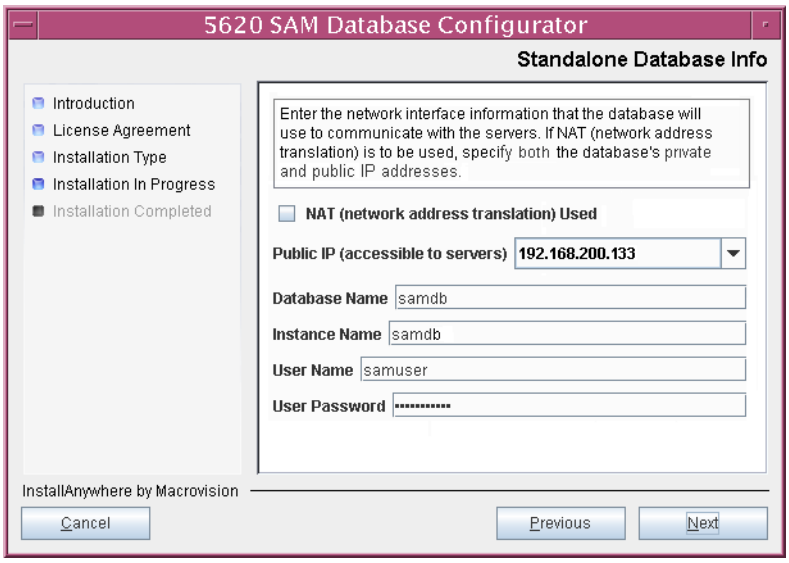
- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Name (typically samdb)
- Instance Name (typically samdb)
- User Name (typically samuser)
- User Password

Note — The “Private IP” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

If you modify the “User Password” parameter, the value that you specify must meet the following criteria:

- The password must be between 4 and 30 characters long.
- The password must contain at least three of the following:
  - lower-case alphabetic character
  - upper-case alphabetic character
  - numeric character
  - special character, which is one of the following:
    # $ _
- The password must not contain four or more of the same character type in sequence.
- The password must not be the same as the user name or its reverse.
- The password must not contain a space character.

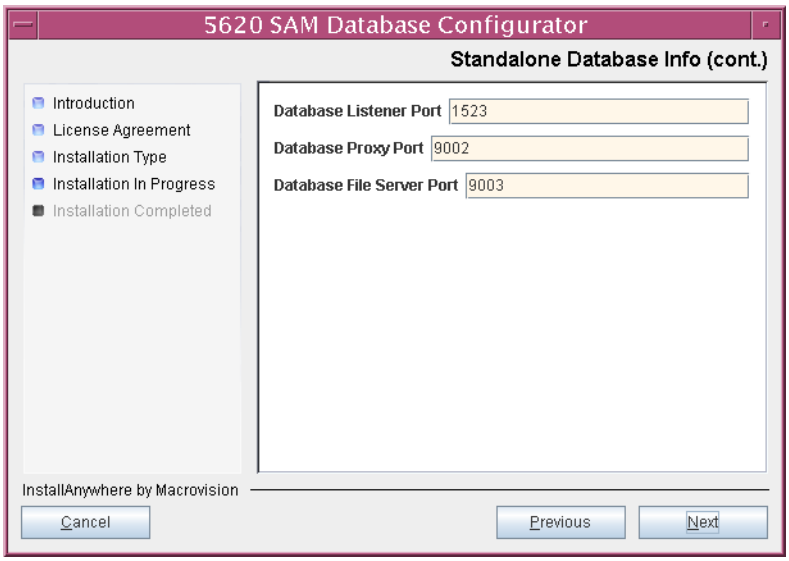
Figure 4-10 Standalone Database Info



28 Configure the following parameters shown in Figure 4-11, then click on the Next button:

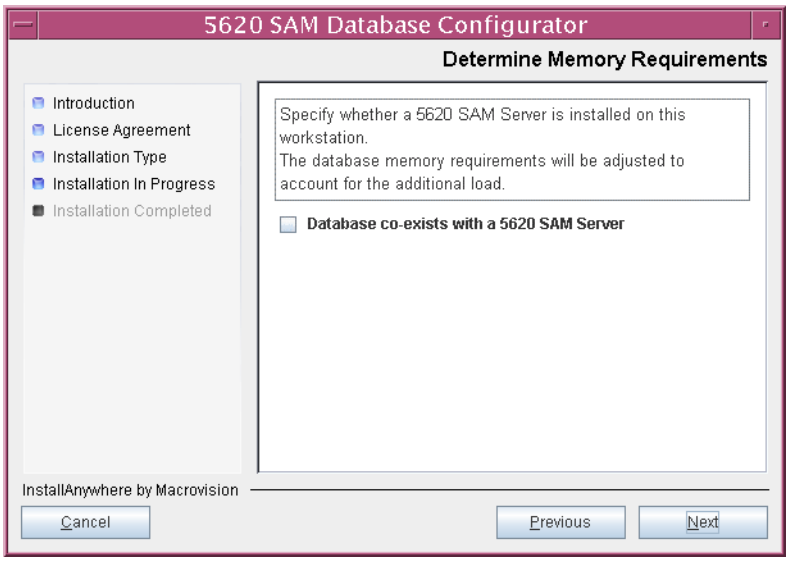
- Database Listener Port (typically 1523)
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

Figure 4-11 Standalone Database Info (cont.)



29 If the 5620 SAM server and database are installed on the same station, select the "Database co-exists with a 5620 SAM Server" parameter shown in Figure 4-12. Click on the Next button.

Figure 4-12 Determine Memory Requirements

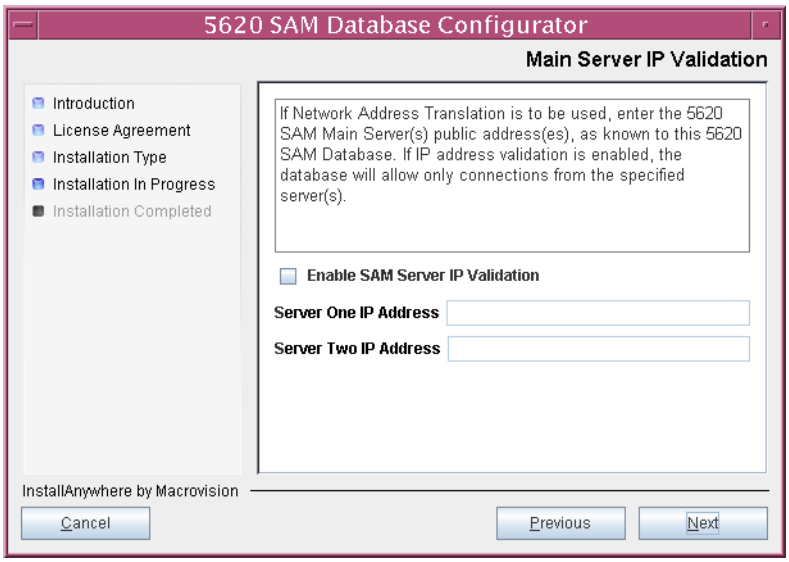


30 Configure the following parameters shown in Figure 4-13, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
- Server Two IP Address

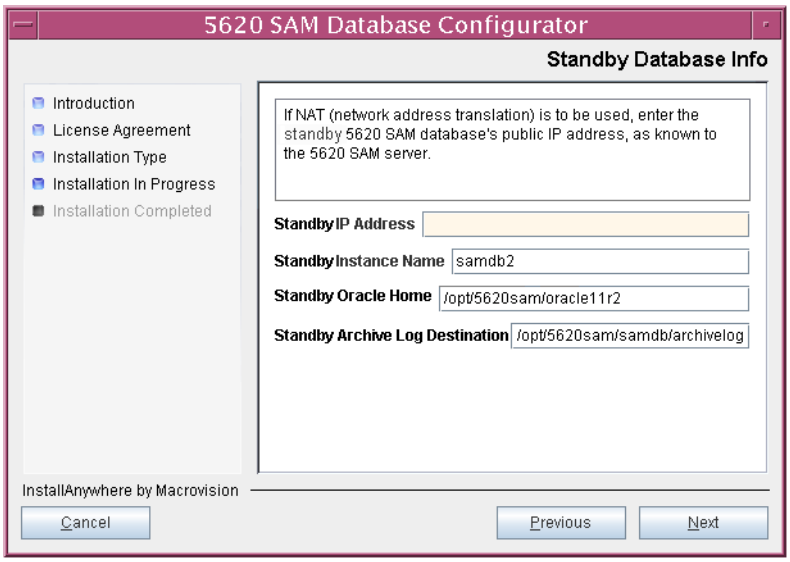
Figure 4-13 Main Server IP Validation



31 Configure the following standby database parameters shown in Figure 4-14, record the information for use later in the procedure, then click on the Next button:

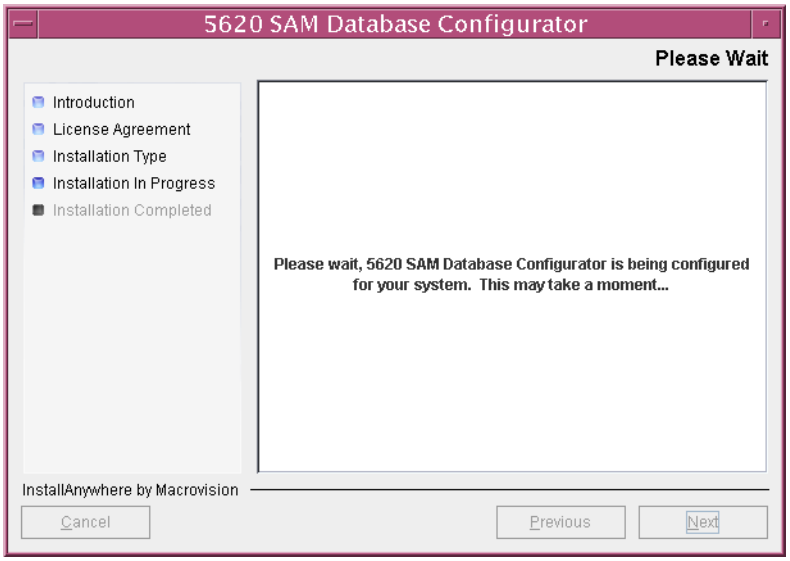
- Standby IP Address
- Standby Instance Name (typically samdb2)
- Standby Oracle Home (typically /opt/5620sam/oracle11r2)
- Standby Archive Log Destination (typically /opt/5620sam/samdb/archivelog)

Figure 4-14 Standby Database Info



The installer prepares to convert the database, as shown in Figure 4-15.

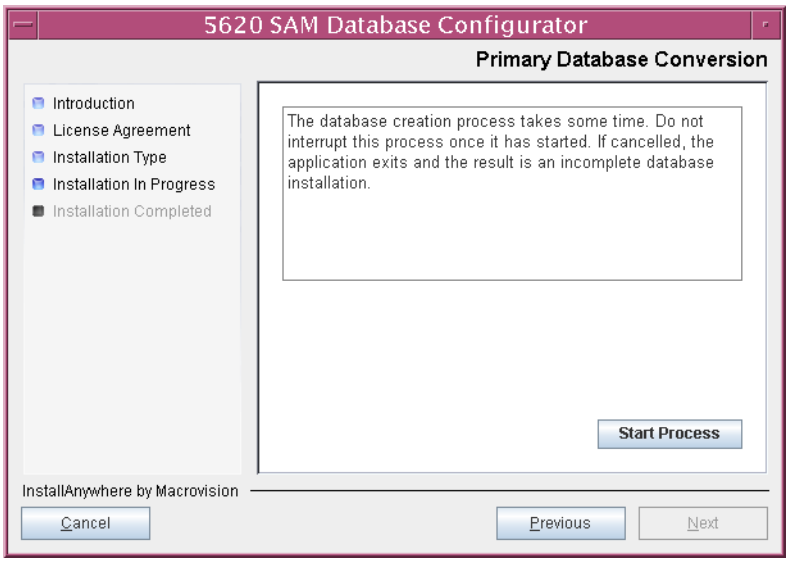
Figure 4-15 Please Wait



32 Click on the Next button.

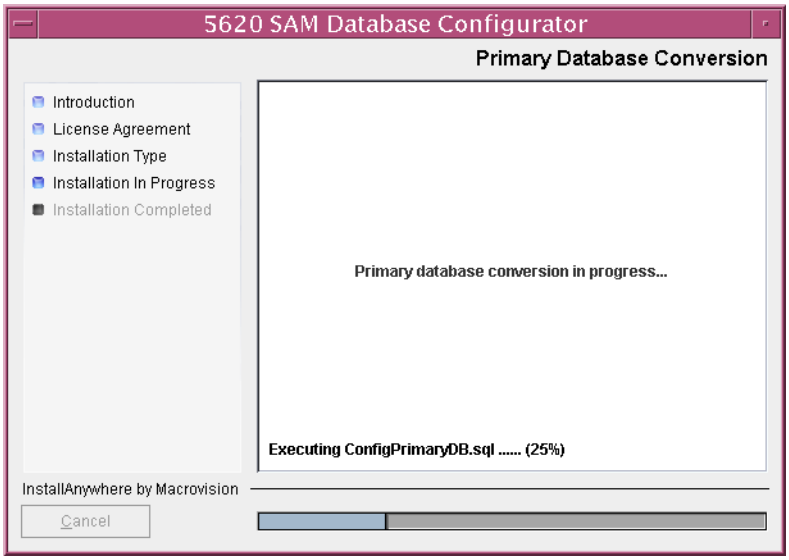
33 You are prompted to begin primary database conversion, as shown in Figure 4-16. Database conversion can take one hour or more, depending on the tablespace configuration. Click on the Start Process button to begin the database conversion.

Figure 4-16 Primary Database Conversion



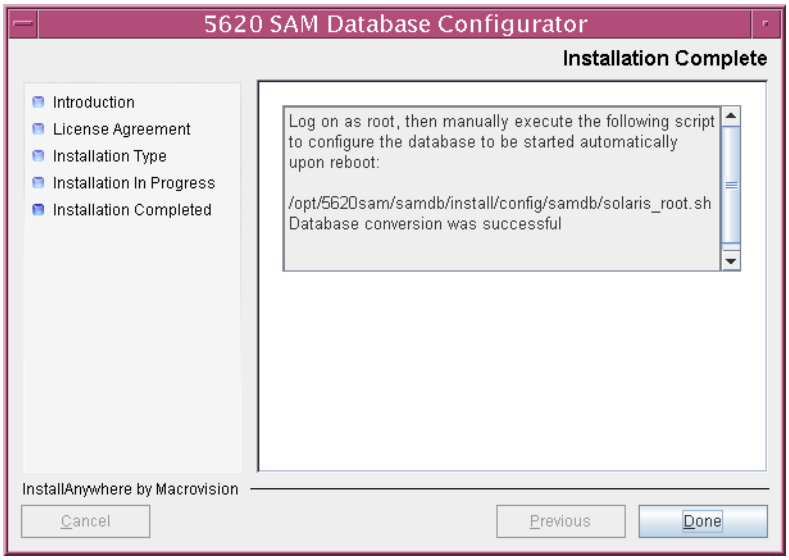
The next panel displays conversion progress, as shown in Figure 4-17.

Figure 4-17 Primary Database Conversion



34 When the panel in Figure 4-18 is displayed, the 5620 SAM database conversion is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 4-18 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

35 Click on the Done button to close the database installer.

The next section of the procedure describes the conversion of the standalone 5620 SAM server to the primary 5620 SAM server. Server conversion requires root-equivalent privileges.

Convert standalone server to primary server

36 Log in to the standalone server station as a user with root or root-equivalent privileges.

37 Open a console window.

38 Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.

i Enter the following:

```
# who ↵
```

The active user sessions are listed.

ii If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.

39 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

40 Navigate to the DVD-ROM drive.

41 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

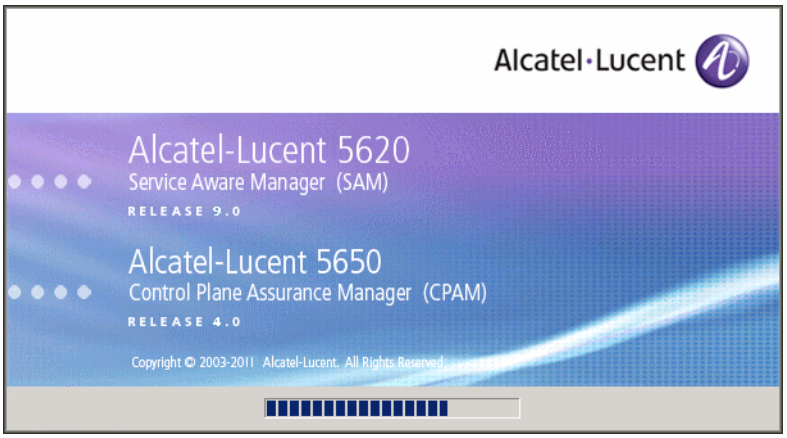
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

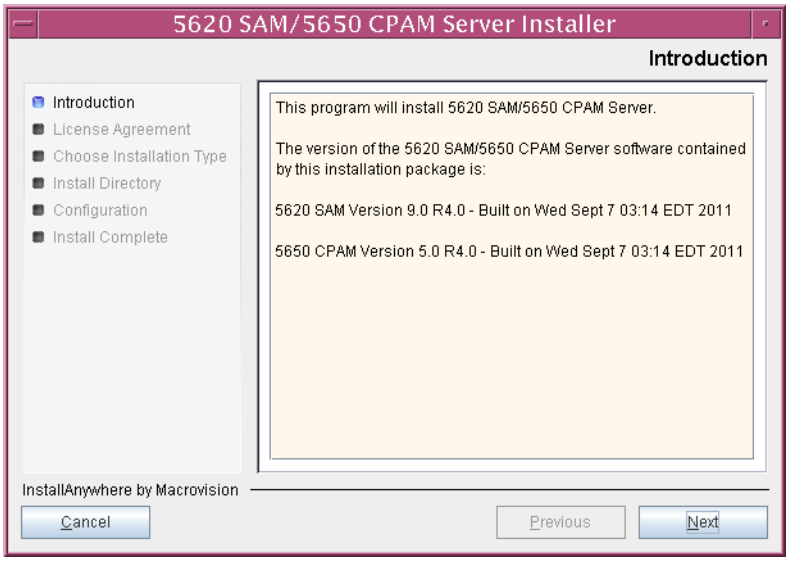
The splash screen shown in Figure 4-19 opens.

Figure 4-19 5620 SAM installer



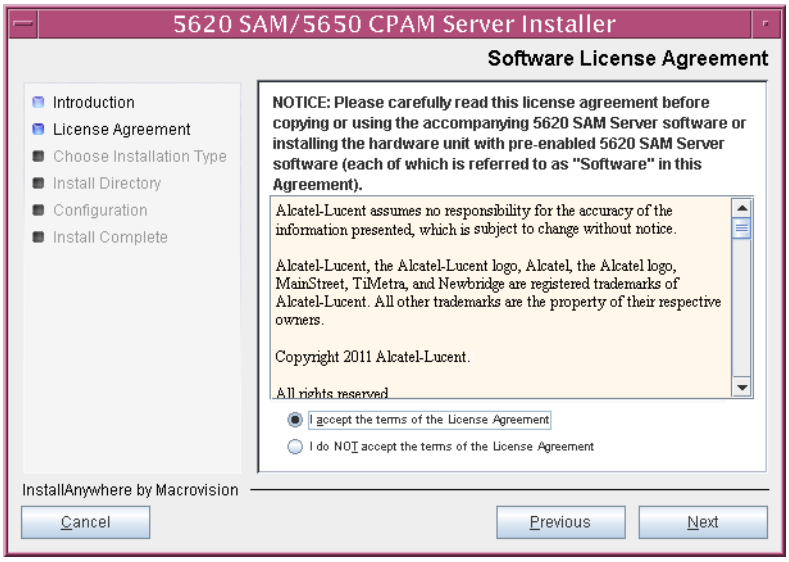
42 The 5620 SAM server installer opens, as shown in Figure 4-20. The left pane indicates the conversion progress. The right pane displays release information about the software. Click on the Next button.

Figure 4-20 Introduction



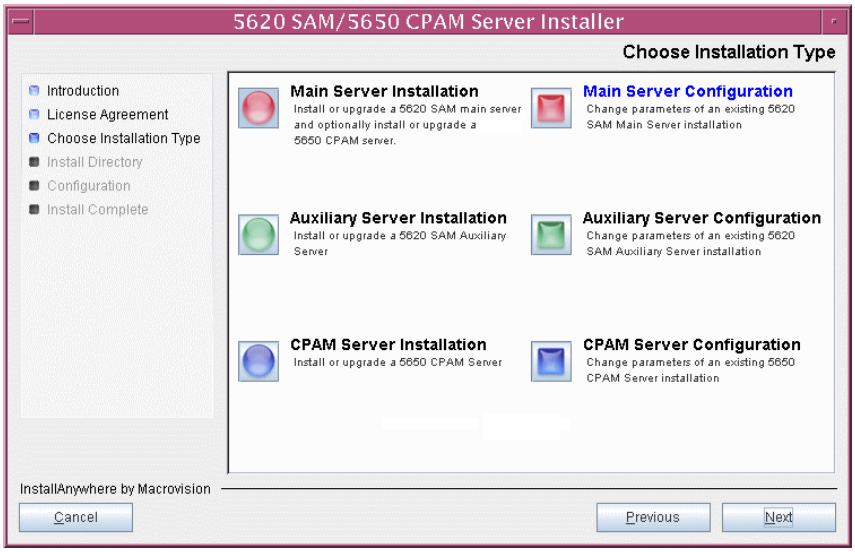
43 Review and accept the terms of the license agreement shown in Figure 4-21. Click on the Next button.

Figure 4-21 Software License Agreement



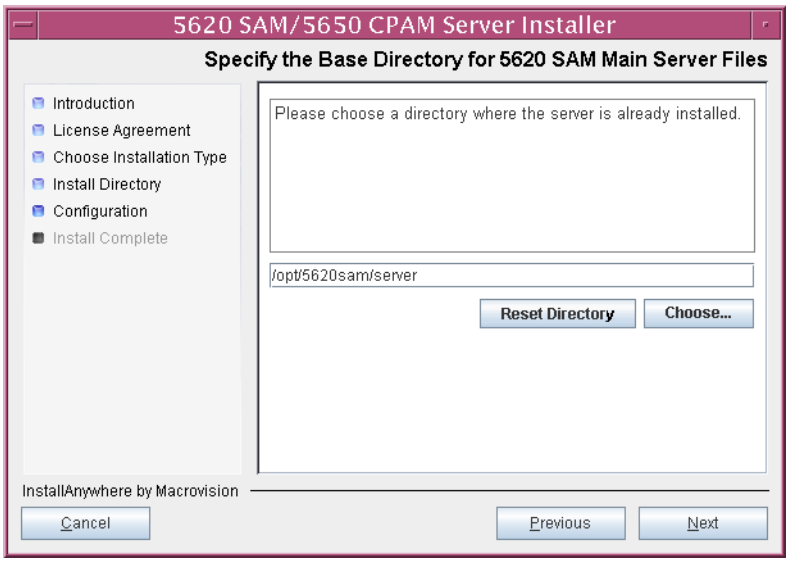
44 Select Main Server Configuration, as shown in Figure 4-22. Click on the Next button.

Figure 4-22 Choose Installation Type



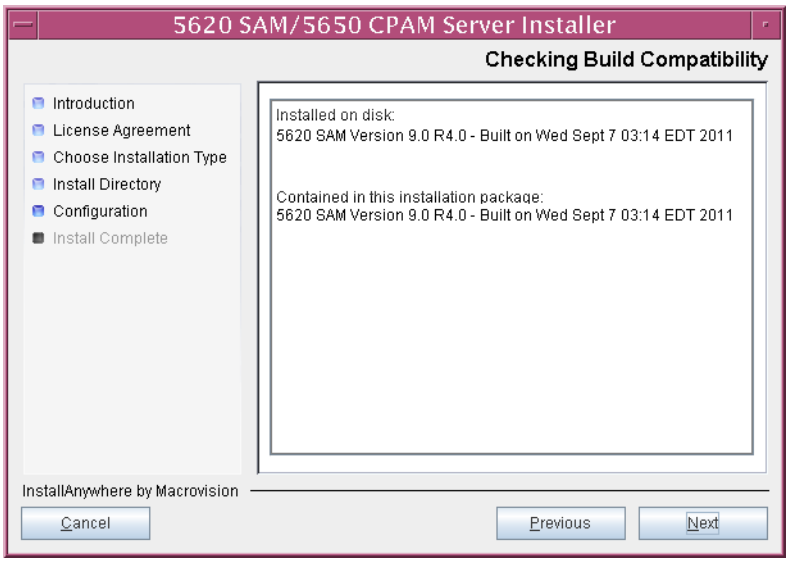
45 Specify the base directory in which the existing 5620 SAM main server software is installed (typically /opt/5620sam/server), as shown in Figure 4-23. Click on the Next button.

Figure 4-23 Specify the Base Directory for 5620 SAM Main Server Files



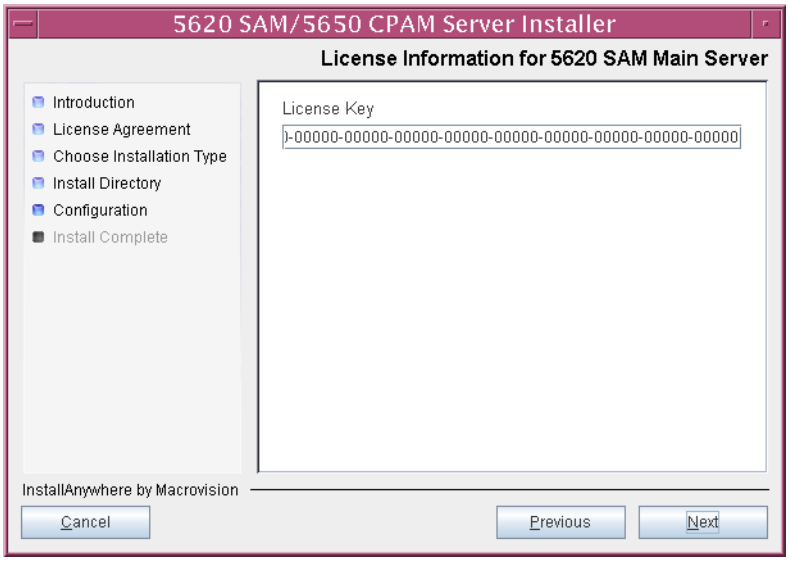
46 As shown in Figure 4-24, the installer indicates which release of 5620 SAM software is installed. Verify the information. Click on the Next button.

Figure 4-24 Checking Build Compatibility



47 The 5620 SAM installer displays the existing license key, as shown in Figure 4-25. Click on the Next button.

Figure 4-25 License information for 5620 SAM Main Server



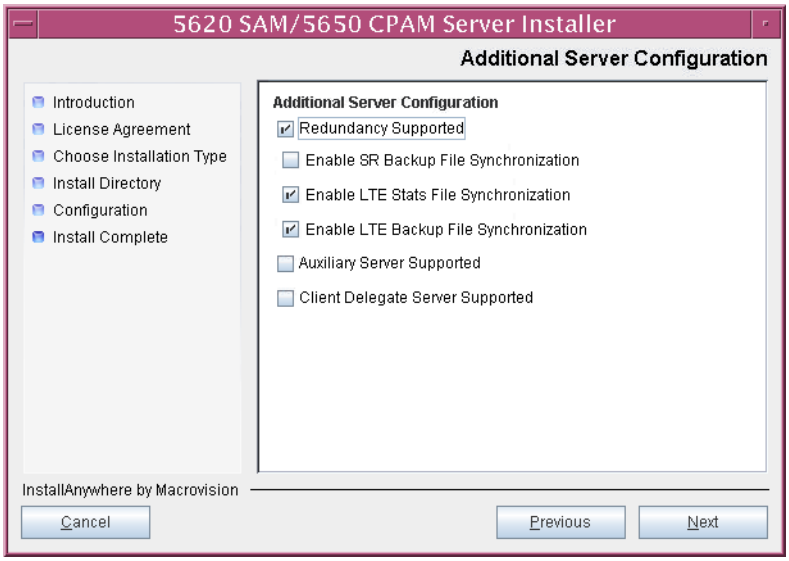
48 Configure the following parameters shown in Figure 4-26, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization”, “Enable LTE Stats File Synchronization”, and “Enable LTE Backup File Synchronization” parameters are displayed only when the “Redundancy Supported” parameter is enabled.

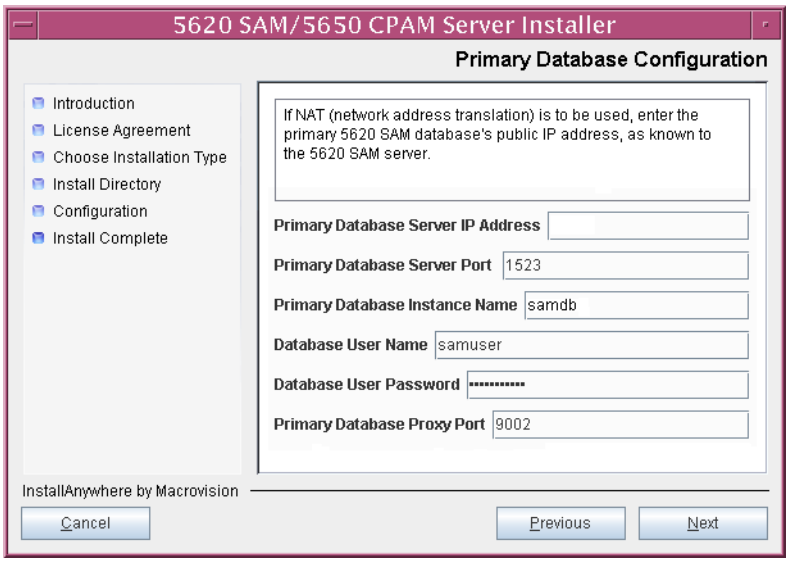
Figure 4-26 Additional Server Configuration



49 Configure the following parameters, shown in Figure 4-27, using the recorded values from the primary database conversion. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 4-27 Primary Database Configuration

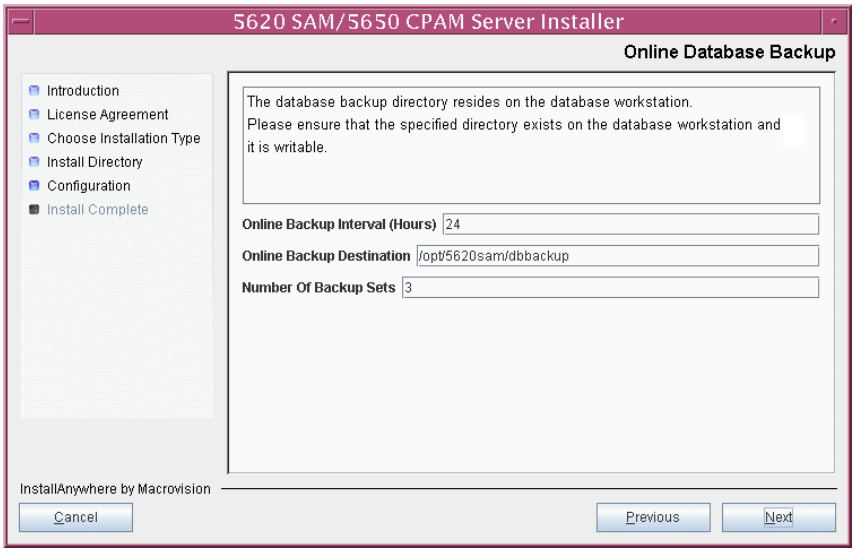


50 Depending on the existing configuration. the panel in Figure 4-28 is displayed. Configure the following parameters, if required, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 49.

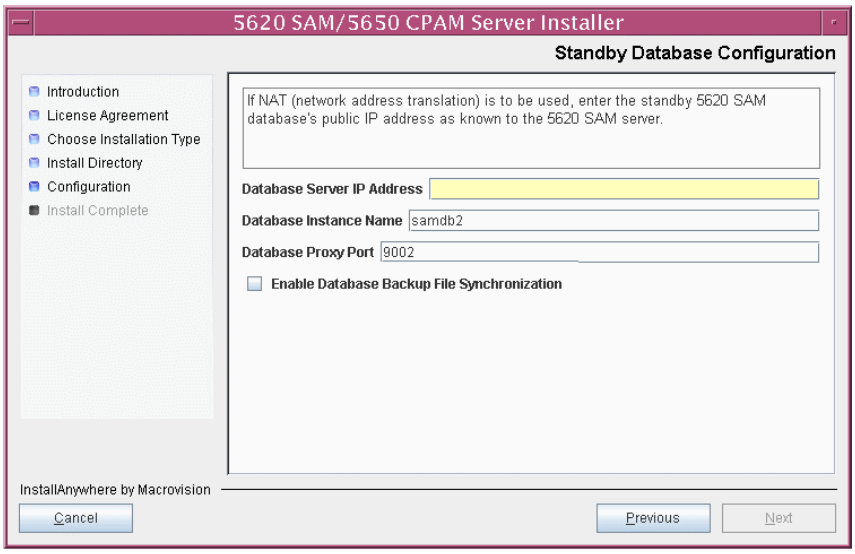
Figure 4-28 Online Database Backup



51 Configure the following parameters shown in Figure 4-29, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 4-29 Standby Database Configuration



52 The panel in Figure 4-30 is displayed if you select the “Auxiliary Server Supported” parameter in step 48. Otherwise, go to step 54.

Perform the following steps to specify an auxiliary server, if required.

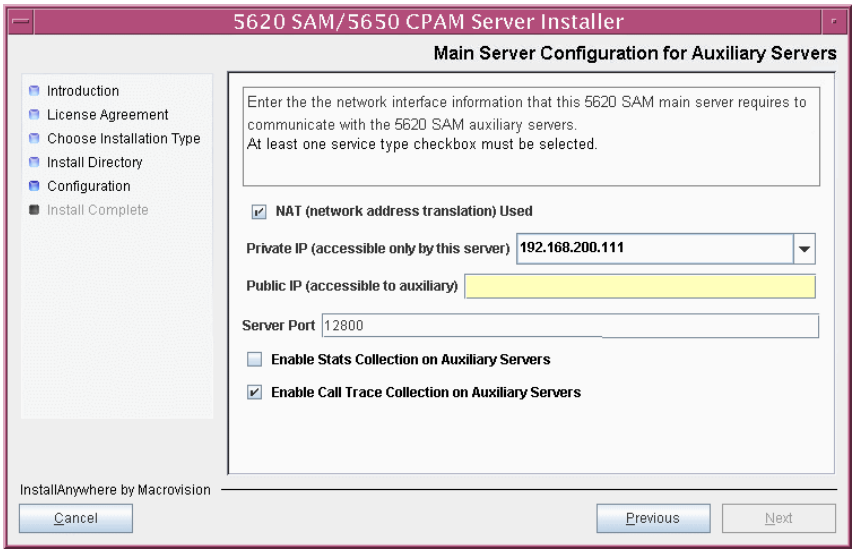
i Configure the following parameters shown in Figure 4-30:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 4-30 Main Server Configuration for Auxiliary Servers



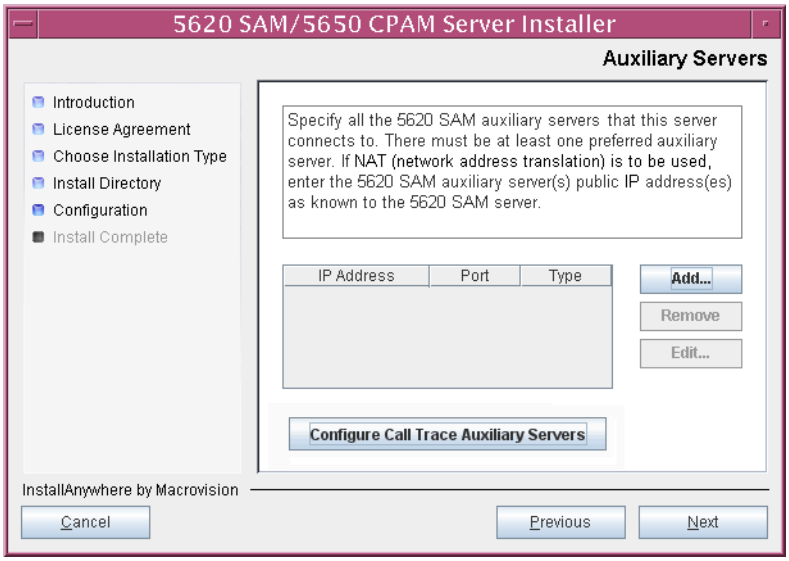
ii Click on the Next button.

iii Click on the Add button shown in Figure 4-31. The form shown in Figure 4-32 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

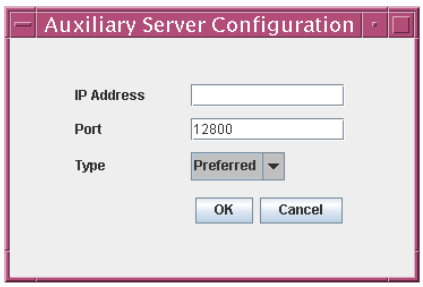
Figure 4-31 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 4-32 Auxiliary Server Configuration



iv Configure the following parameters shown in Figure 4-32:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

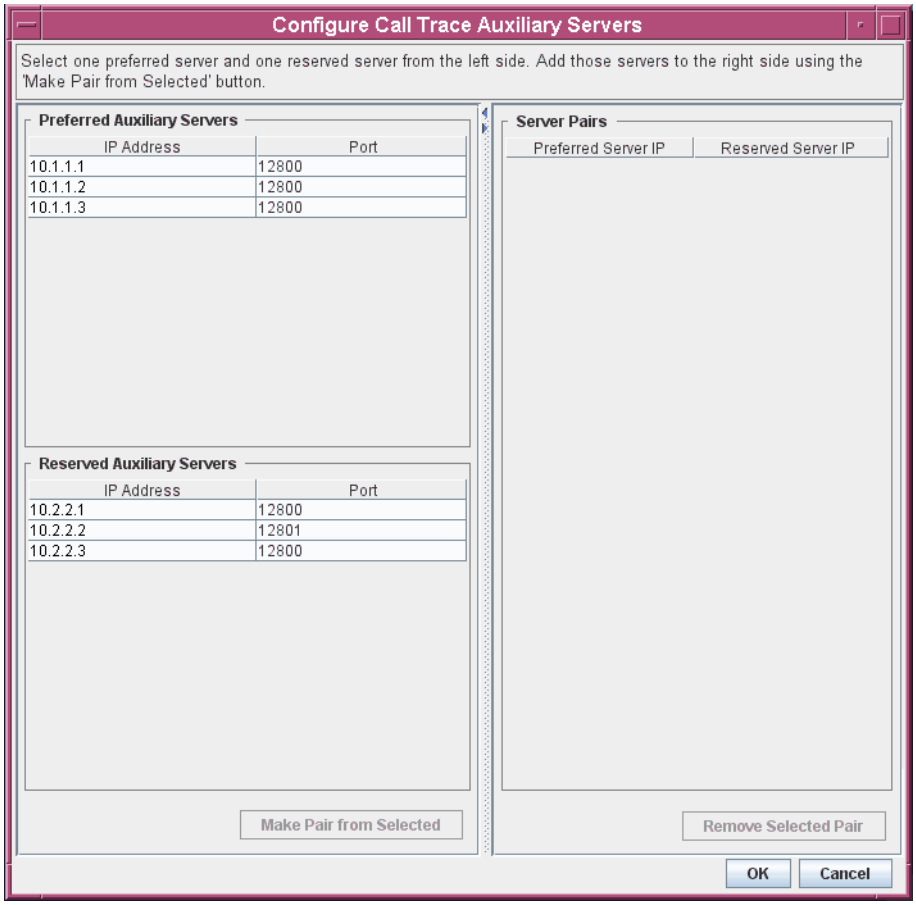
v Click on the OK button to save the information and close the form.

vi Repeat steps 52 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 52 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 4-31. Otherwise, go to step 53.

viii The form shown in Figure 4-33 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 4-33 Configure Call Trace Auxiliary Servers



ix Repeat step 52 viii to configure another call-trace auxiliary server pair, if required.

53 Click on the Next button.

54 If you select the “Enable Database Alignment” parameter shown in Figure 4-34, you must specify the preferred database of this main server, then click on the Next button.

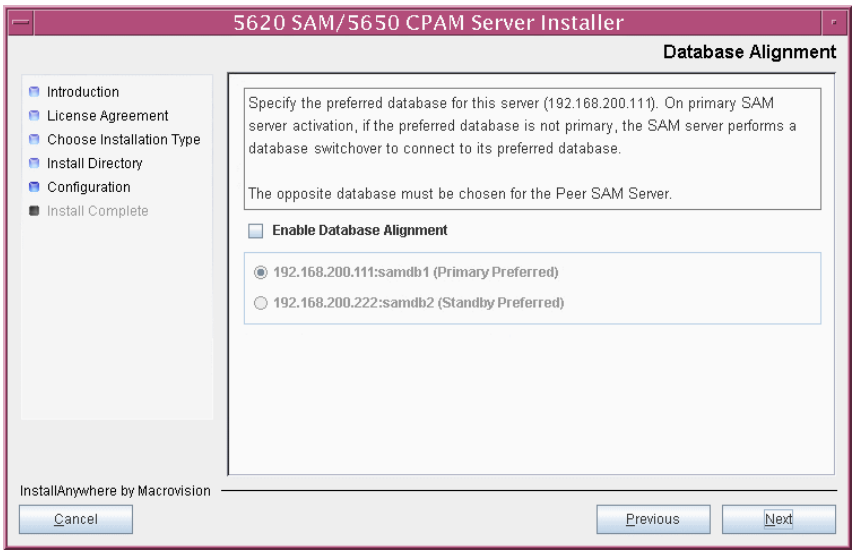
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 4-34 Database Alignment



55 Configure the following parameters shown in Figure 4-35, then click on the Next button:

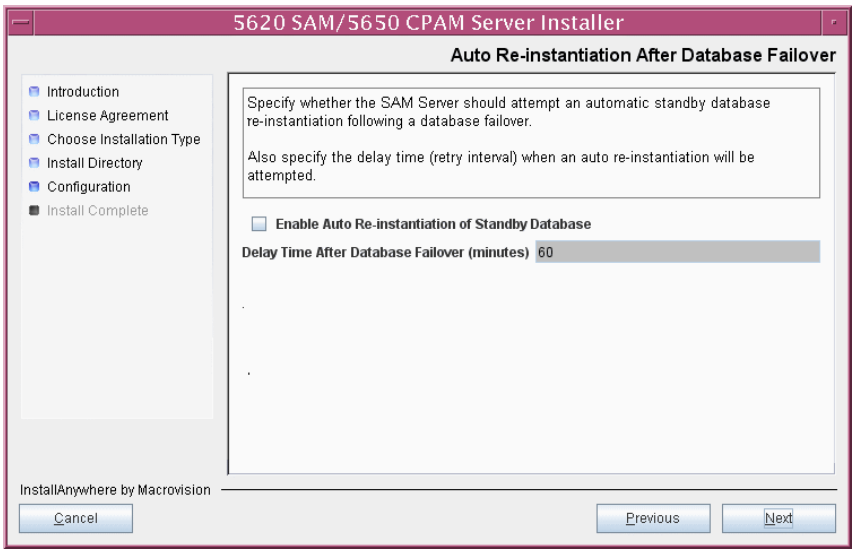
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The "Delay Time After Database Failover (minutes)" parameter is configurable when the "Enable Auto Re-Instantiation of Standby Database" parameter is selected.

Figure 4-35 Auto Re-Instantiation After Database Failover

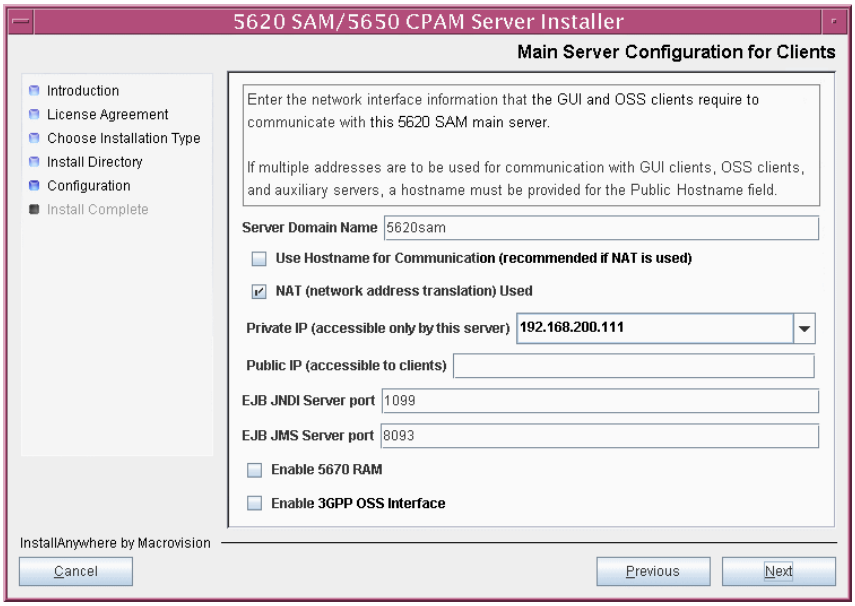


56 Perform the following steps.

i Configure the following parameters shown in Figure 4-36:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 4-36 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 56 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

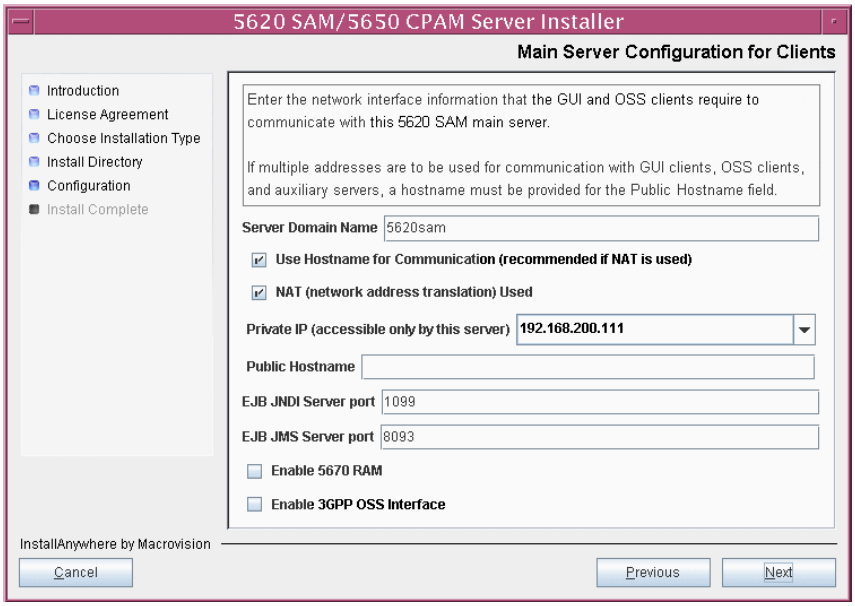
v Go to step 57.

vi Configure the following parameters shown in Figure 4-37:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 4-37 Main Server Configuration for Clients

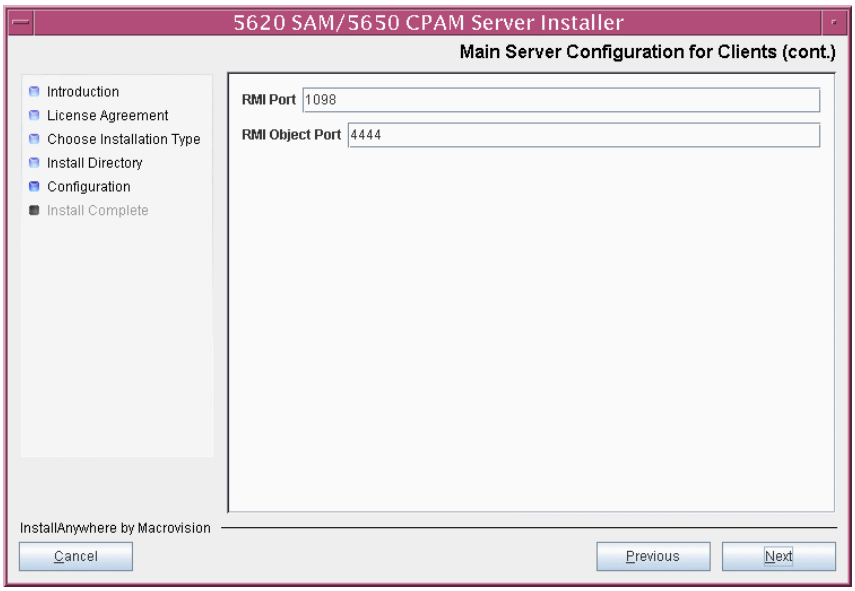


vii Click on the Next button.

57 Configure the following parameters shown in Figure 4-38, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 4-38 Main Server Configuration for Clients (cont.)

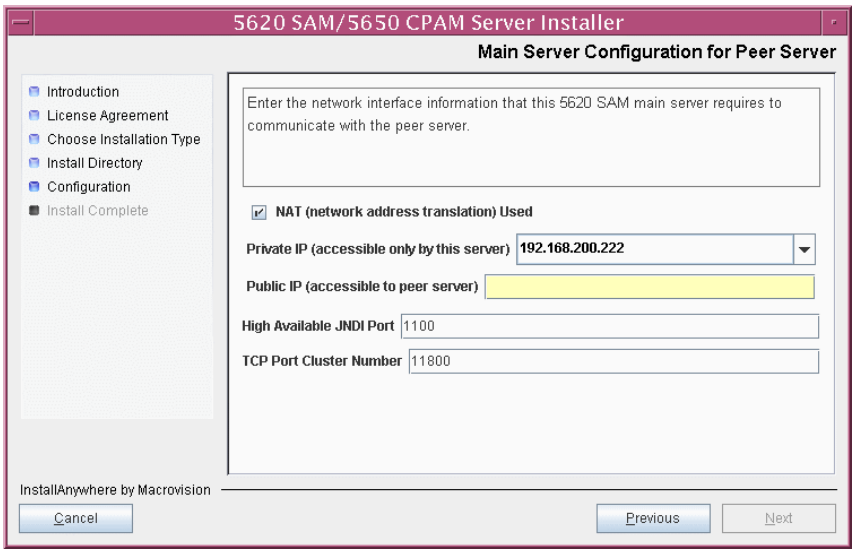


58 Configure the following parameters shown in Figure 4-39:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

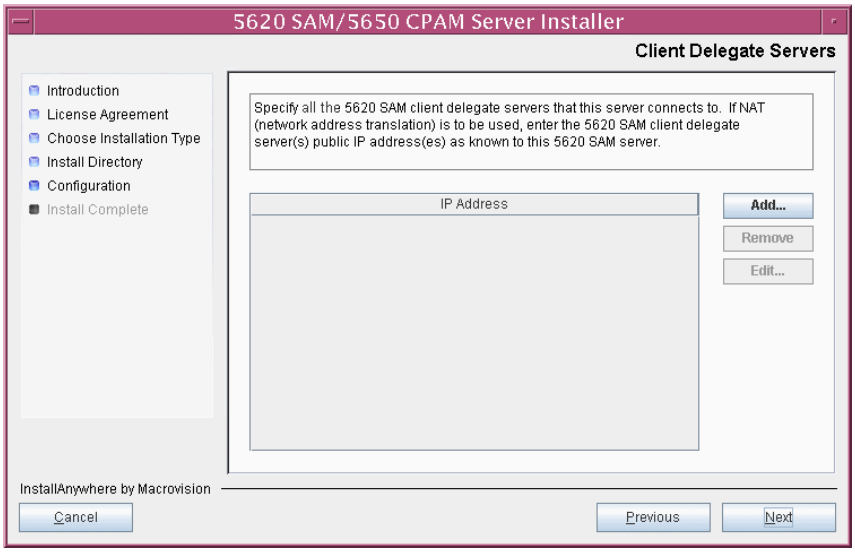
Figure 4-39 Main Server Configuration for Peer Server



59 The panel in Figure 4-40 is displayed if you select the “Client Delegate Server Supported” parameter in step 48. Otherwise, go to step 61.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 4-40 Client Delegate Servers

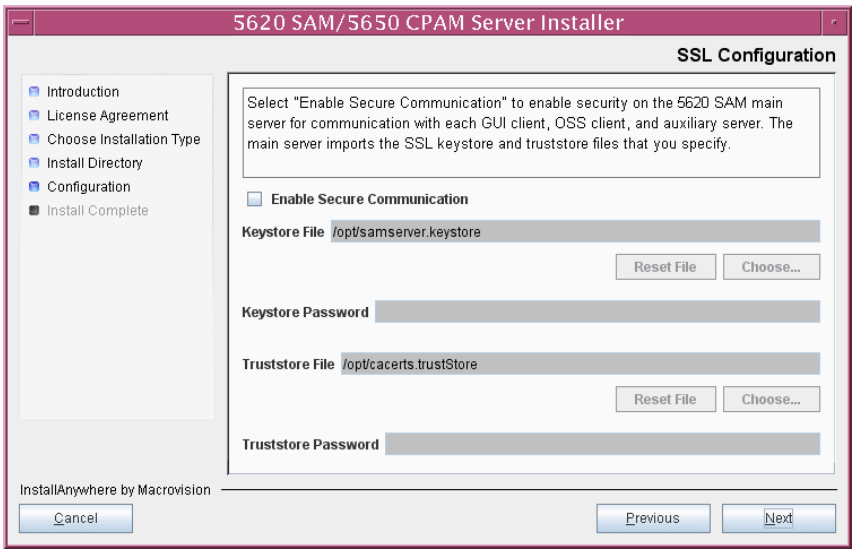


60 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 4-41.

Figure 4-41 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

61 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 4-42.

ii To accept the default user documentation location that is displayed, go to step 62.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

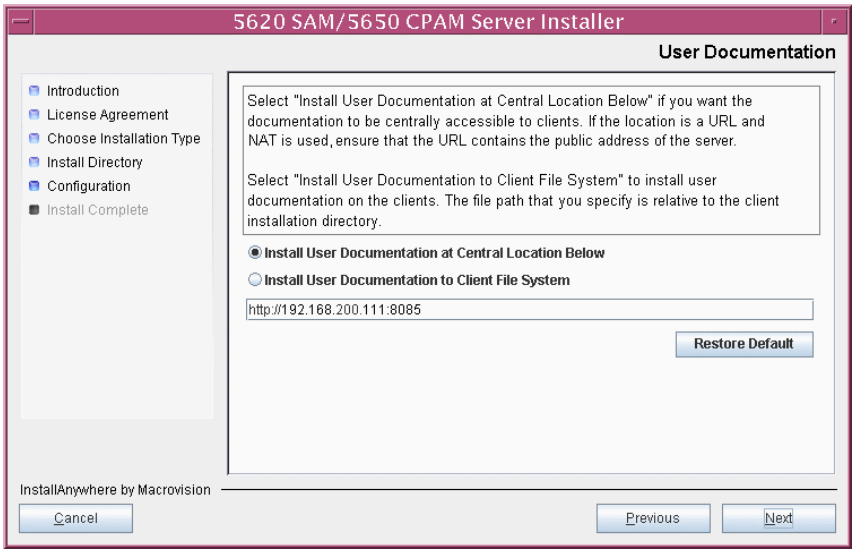
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 4-42 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 4-42.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

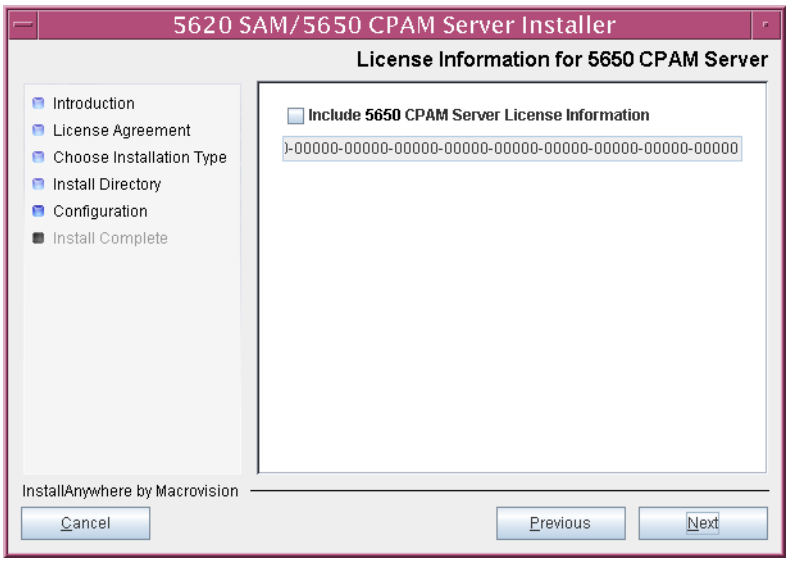
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

62 Click on the Next button.

63 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 4-43. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 4-43 License Information for 5650 CPAM Server



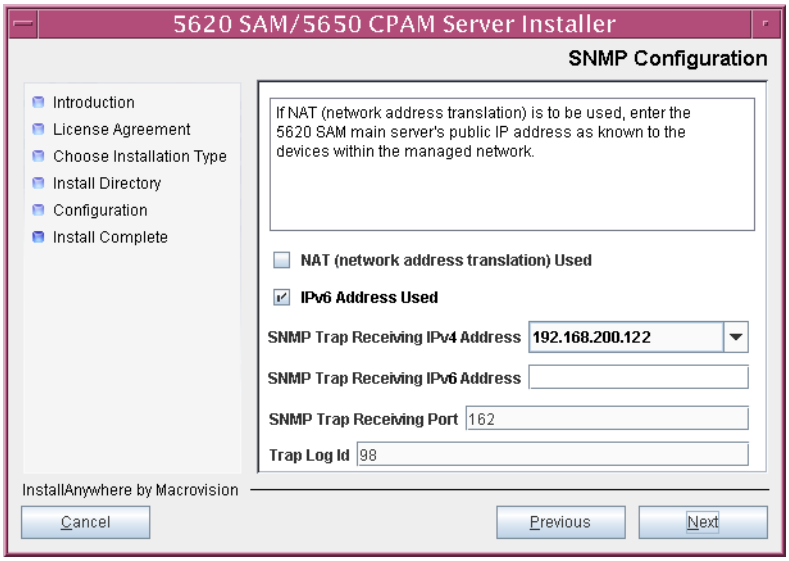
64 Configure the following parameters shown in Figure 4-44, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 4-44.

Figure 4-44 SNMP Configuration

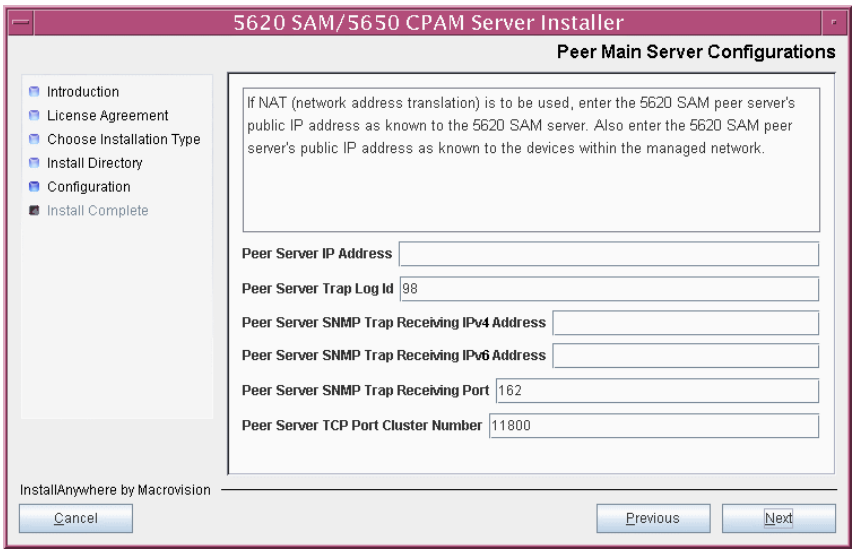


65 Configure the following parameters shown in Figure 4-45, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 64.

Figure 4-45 Peer Main Server Configurations

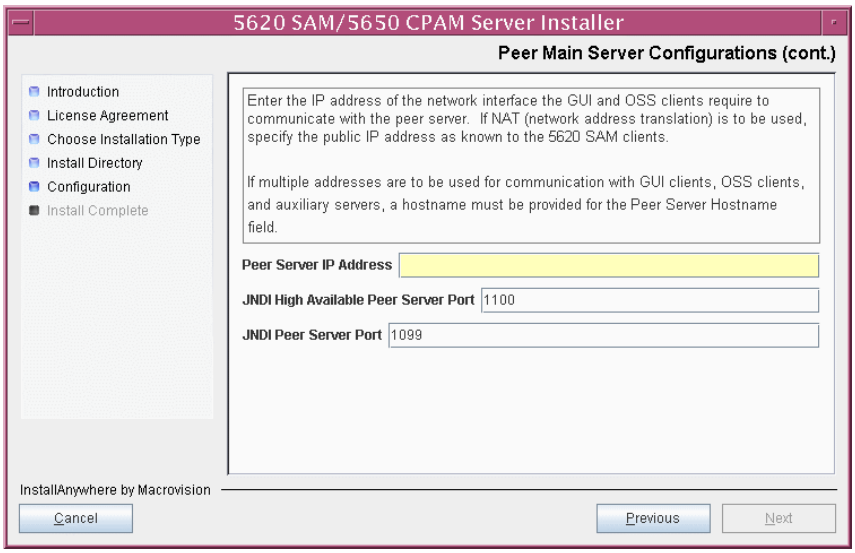


66 If the "Use Hostname for Communication" parameter in step 56 is selected, go to step 69.

67 Configure the following parameters shown in Figure 4-46, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 4-46 Peer Main Server Configurations (cont.)

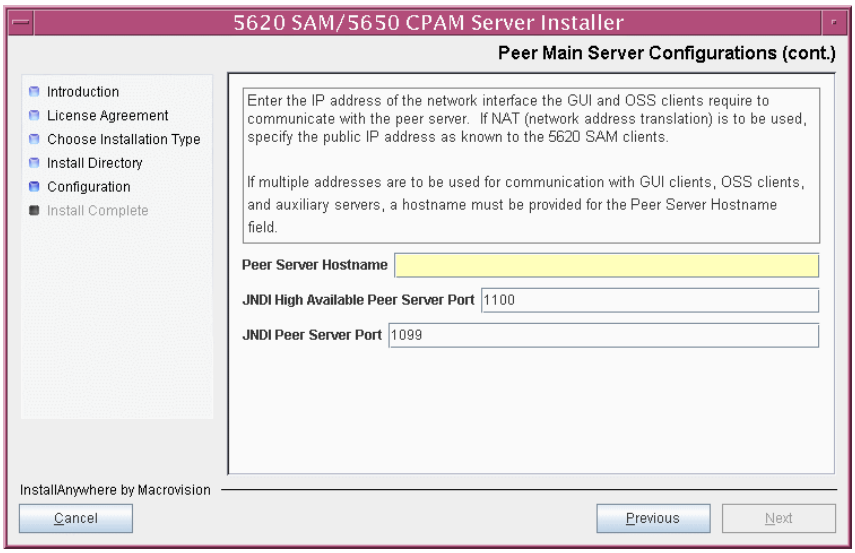


68 Go to step 70.

69 Configure the following parameters shown in Figure 4-47, then click on the Next button:

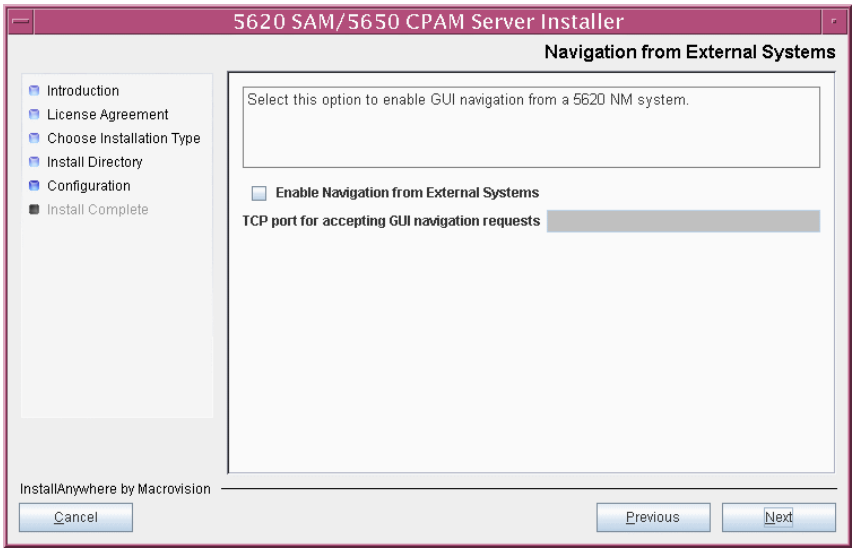
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 4-47 Peer Main Server Configurations (cont.)



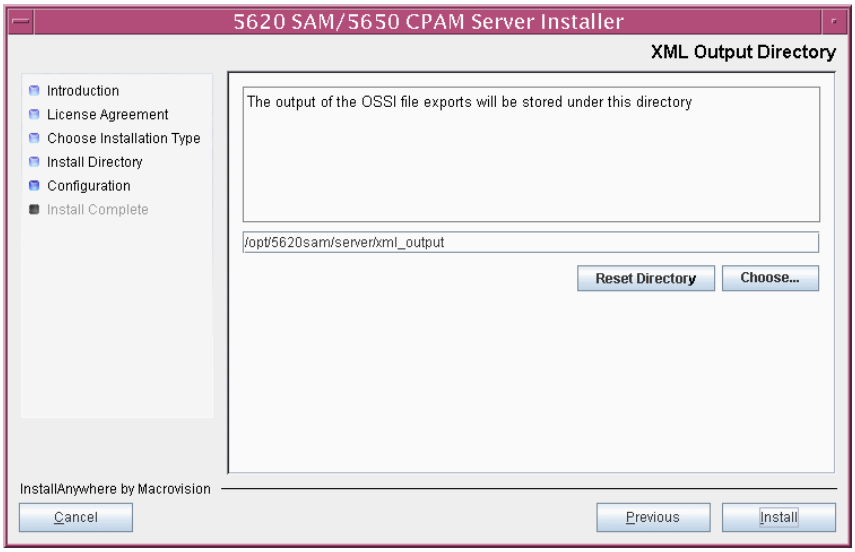
70 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 4-48 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 4-48 Navigation from External Systems



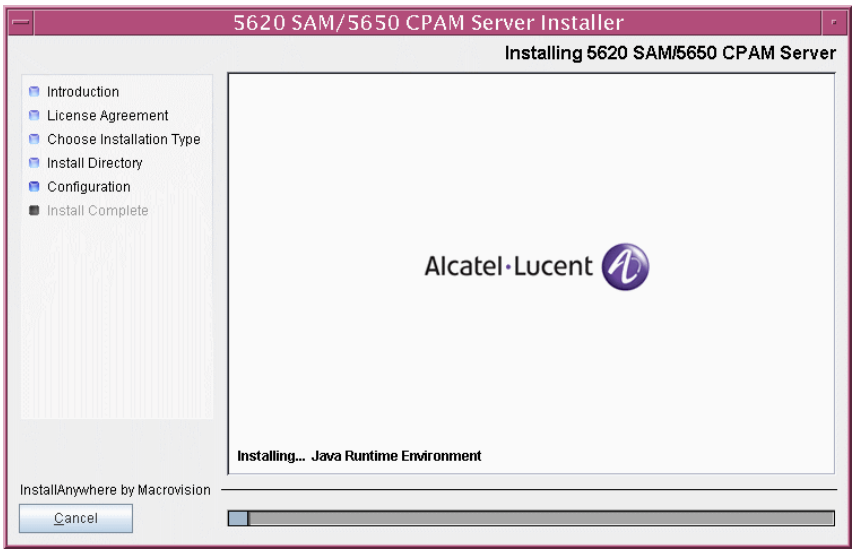
71 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 4-49. Click on the Install button to begin the server conversion.

Figure 4-49 XML Output Directory



The next panel displays conversion progress, as shown in Figure 4-50.

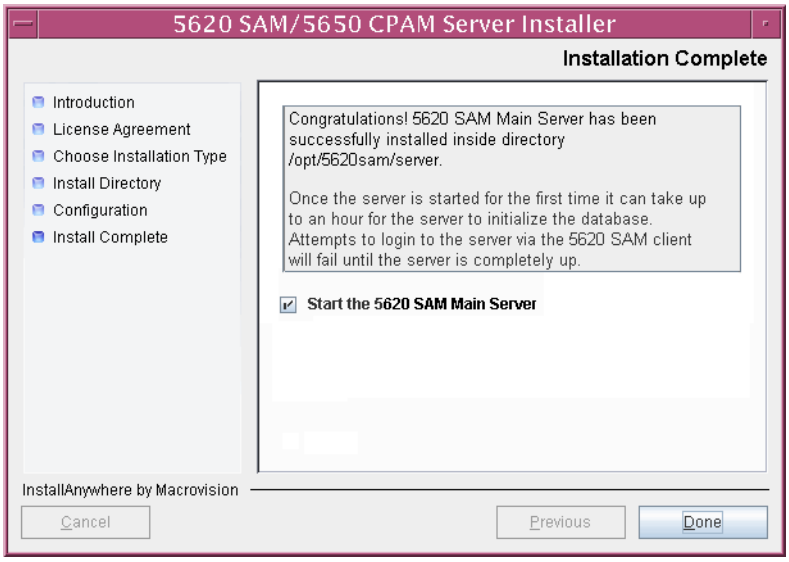
Figure 4-50 Installing 5620 SAM/5650 CPAM Server



72 When the main server conversion is complete, as shown in Figure 4-51, configure the “Start the 5620 SAM Main Server” parameter to specify whether you want the server to start immediately after the conversion.

Caution — If the 3GPP OSS interface is enabled in step 56, and you did not enable the interface on this station during a previous installation or upgrade, ensure that the “Start the 5620 SAM Main Server” parameter is not selected.

Figure 4-51 Installation Complete



73 Click on the Done button to close the server installer. If you specified that the main server is to start after the conversion, the server starts. Initial server startup can take twenty minutes or more.

74 If the 3GPP OSS interface is not enabled in step 56, go to step 76.

75 If the 3GPP OSS interface has not been configured during a previous 5620 SAM main server installation or upgrade, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

```
CNBI.SAMO.USER=3GPP_OSS_user_name
```

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

vi Save and close the file.

vii Go to step 77.

76 If you specified that the main server is to start immediately after the conversion, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- SAM Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

iv Go to step 78.

77 Perform the following steps to start the 5620 SAM main server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

v Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- SAM Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

78 Close the console window.

The next section of the procedure describes the enabling of the 5620 SAM server startup daemon that is currently disabled.

Enable server daemon

79 Enable the 5620 SAM server startup daemon.

i Enter the following to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to enable the 5620 SAM server daemon by renaming it:

```
# mv inactive.S975620SAMServerWrapper
S975620SAMServerWrapper ↵
```

The next section of the procedure describes the configuration steps required to prepare the new standby database station for the 5620 SAM software.

Prepare new standby database station for standby database installation

80 Before you perform a 5620 SAM database installation, you must run a pre-installation script. This script creates and configures the UNIX account for the Oracle management user and adds configuration information to the /etc/system file.

Log in to the station that is to be the standby database station as a user with root or root-equivalent privileges.

Caution — Ensure that you run only the pre-installation script that is on the new 5620 SAM software DVD-ROM. Using a different version of the script may cause the database installation to fail.

81 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

82 Open a console window.

83 Navigate to the DVD-ROM drive.

84 Perform one of the following to change to the appropriate directory on the 5620 SAM software DVD-ROM.

a On a SPARC station, enter the following:

```
# cd Solaris ↵
```

b On an x86-based station, enter the following:

```
# cd Solarisx86 ↵
```

85 Enter the following:

```
# ./OracleSw_PreInstall.sh ↵
```

The following prompt is displayed:

```
Please select between the following option:

1) NEW INSTALL OF 5620 SAM

2) UPGRADE OF 5620 SAM
```

86 Enter 1 ↵.

87 The script prompts you for the following Oracle management user information:

- the user group name (default is dba)
- the user name (default is oracle)
- the home directory (default is /opt/5620sam/oracle11r2)
- a password, if one of the following is true:
  - there is no password
  - there is a password, but you specify that you want to change it

Provide the information. The script updates the system configuration.

Note 1 — To reduce the complexity of subsequent software upgrades and technical support activities, Alcatel-Lucent recommends that you press ↵ to accept the default value for each parameter.

Note 2 — If you specify a value other than the default, you must record the value for use when the OracleSw_PreInstall.sh script is run during a software upgrade, or when the Oracle management user information is required by Alcatel-Lucent technical support.

Note 3 — If you receive a "failed to create group" message, ensure that NIS is disabled and re-run the pre-installation script. Contact Alcatel-Lucent technical support for more information.

88 When the script execution is complete, enter the following to reboot the new standby database station:

```
# shutdown -y -i6 -g0 ↵
```

The standby database station reboots.

89 Before you perform a 5620 SAM database installation, the Oracle management user and group created by the pre-installation script require ownership of the directory that is to hold the database.

After the new standby database station reboots, log in to the new standby database station as a user with root or root-equivalent privileges.

90 Open a console window on the new standby database station.

91 Enter the following to change the current directory to /opt:

```
# cd /opt ↵
```

92 Enter the following to specify the required user and group ownership of the 5620sam directory and subdirectories:

```
# chown -R user:group 5620sam ↵
```

where
user is the username from step 87, typically oracle
group_name is the group name from step 87, typically dba

93 Enter the following to change to the 5620sam directory below /opt:

```
# cd 5620sam ↵
```

94 Enter the following to confirm that the Oracle management user home directory has the correct user and group ownerships:

```
# ls -l ↵
```

If the command output is not as shown below, repeat steps 89 to 94. Do not proceed unless the output is as shown.

```
drwx------ 2 user     group        512 Apr 11 11:15 directory
```

where
user is the username specified in step 87, typically oracle
group is the group name specified in step 87, typically dba
directory is the Oracle management user home directory name specified in step 87, typically /opt/5620sam/oracle11r2

The next section of the procedure describes the installation of the standby 5620 SAM database. The standby database must be installed on a station other than the one on which the primary database is installed.

Install standby database

95 Enter the following to switch to the Oracle management user created by the pre-installation script:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

96 Navigate to the DVD-ROM drive that contains the 5620 SAM software DVD-ROM.

97 Perform one of the following to open the 5620 SAM database installer.

a On a SPARC station:

i Enter the following:

```
bash$ cd Solaris ↵
```

ii Enter the following:

```
bash$ ./DBConfig_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
bash$ cd Solarisx86 ↵
```

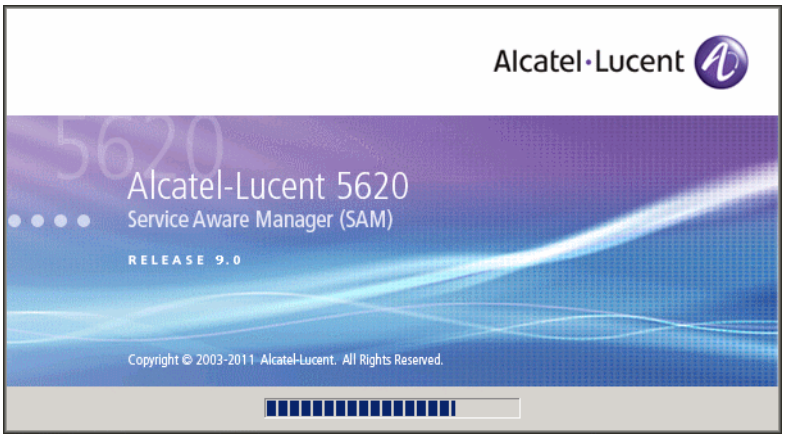
ii Enter the following:

```
bash$ ./DBConfig_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

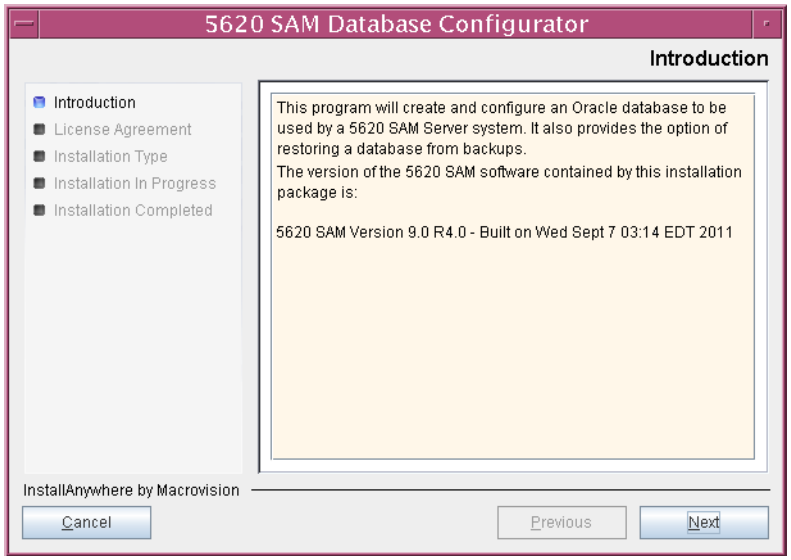
The splash screen shown in Figure 4-52 opens.

Figure 4-52 5620 SAM installer



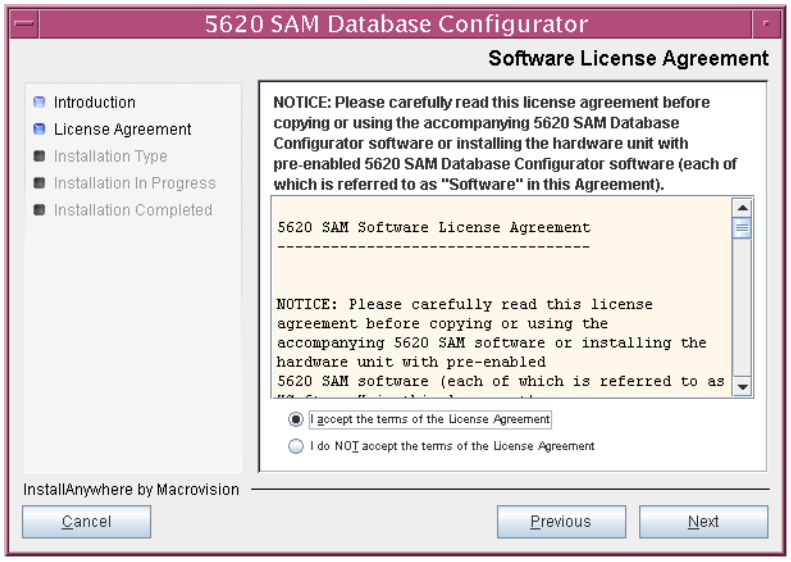
98 The 5620 SAM database installer opens, as shown in Figure 4-53. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 4-53 Introduction



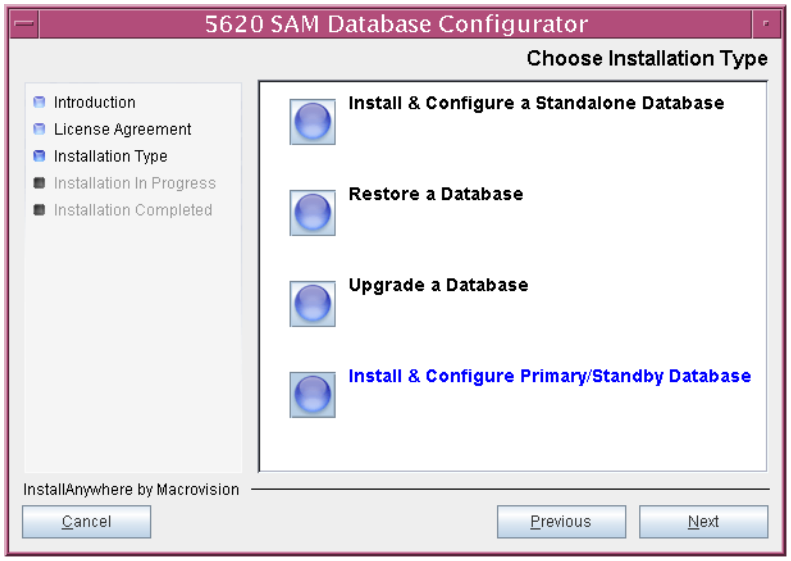
99 Review and accept the terms of the license agreement shown in Figure 4-54. Click on the Next button.

Figure 4-54 Software License Agreement



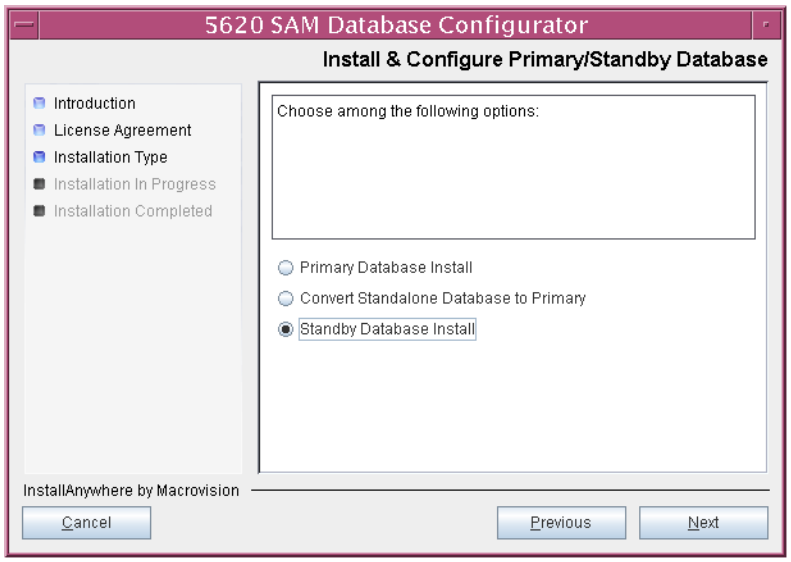
100 Select Install & Configure Primary/Standby Database, as shown in Figure 4-55. Click on the Next button.

Figure 4-55 Choose Installation Type



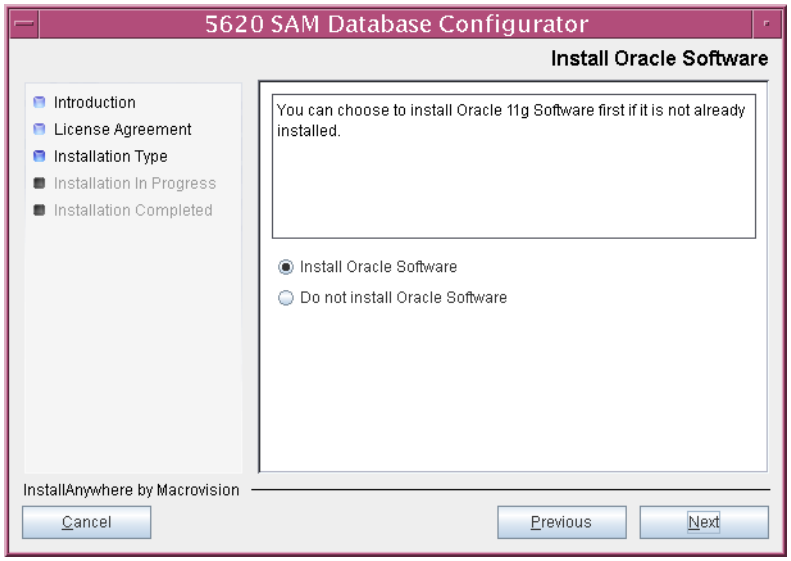
101 Select Standby Database Install, as shown in Figure 4-56. Click on the Next button.

Figure 4-56 Install & Configure Primary/Standby Database



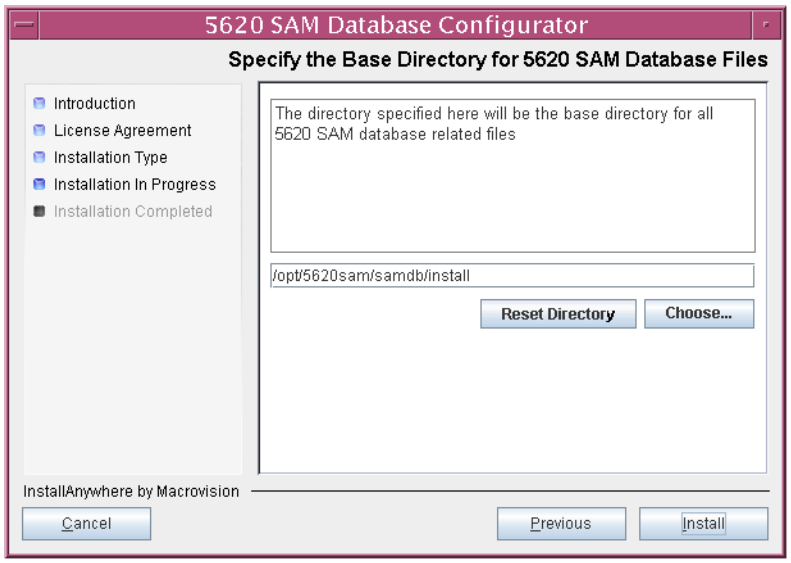
102 Select Install Oracle Software, as shown in Figure 4-57. Click on the Next button.

Figure 4-57 Install Oracle Software



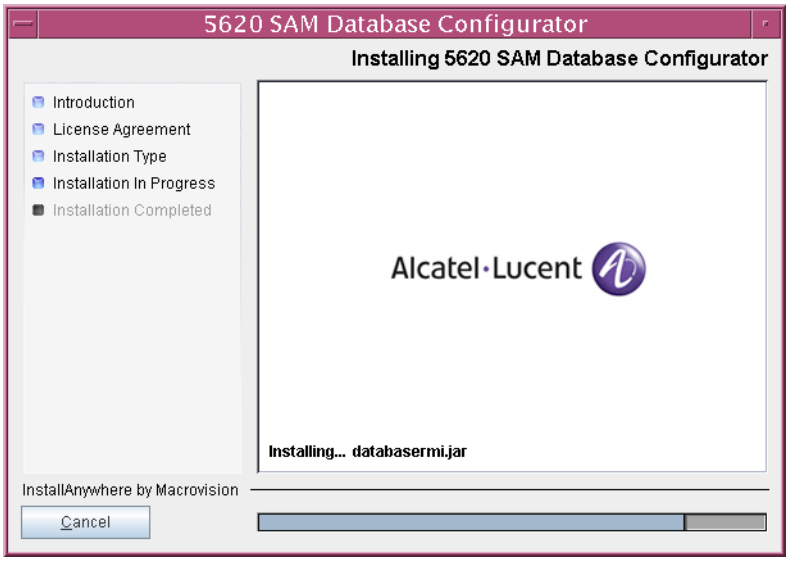
103 Specify a base directory in which to install the standby 5620 SAM database software (typically /opt/5620sam/samdb/install), as shown in Figure 4-58. Click on the Install button to begin database software installation.

Figure 4-58 Specify the Base Directory for 5620 SAM Database Files



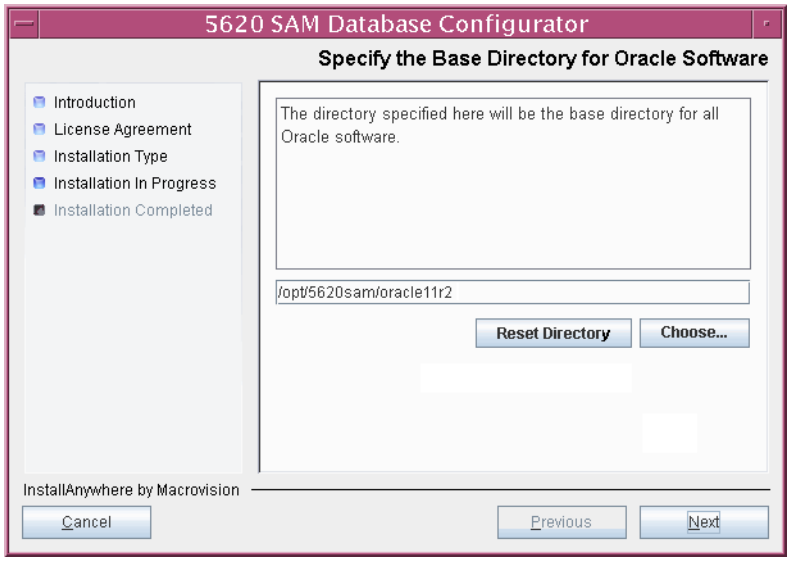
The installer prepares to install the database, as shown in Figure 4-59.

Figure 4-59 Installing 5620 SAM Database Configurator



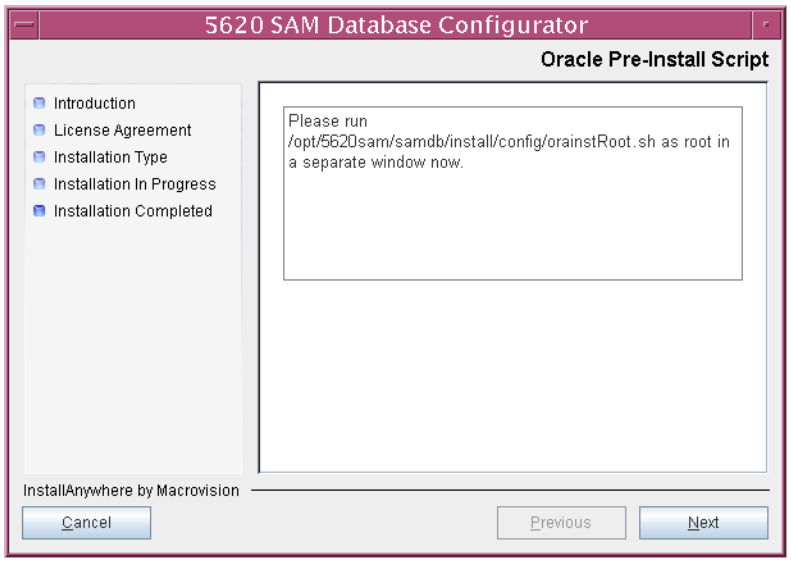
104 Specify a base directory in which to install the Oracle software (typically /opt/5620sam/oracle11r2), as shown in Figure 4-60. Click on the Next button.

Figure 4-60 Specify the Base Directory for Oracle Software



105 Perform the following steps if the panel in Figure 4-61 is displayed.

Figure 4-61 Oracle Pre-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle pre-install script:

```
# path/install/config/orainstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script generates messages like the following:

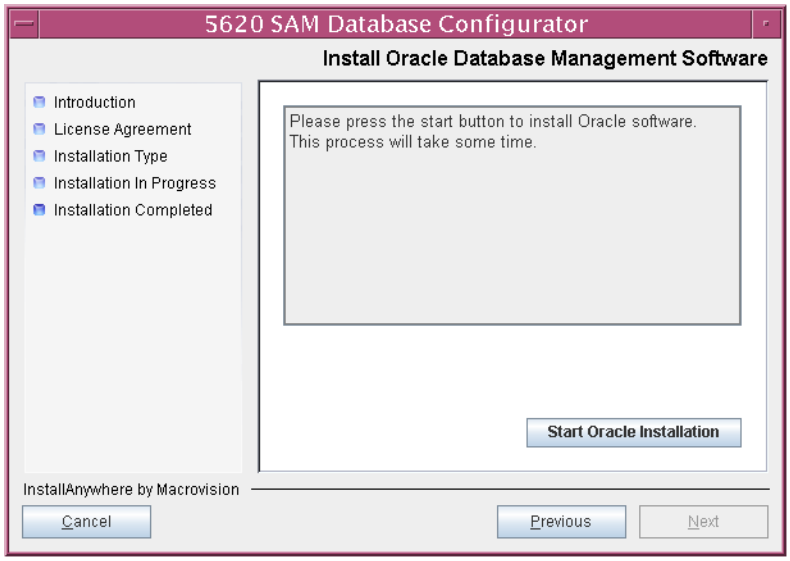
```
Creating the Oracle inventory pointer file
(/var/opt/oracle/oraInst.loc)

Creating the Oracle inventory directory
(/opt/5620sam/oracle11r2/oraInventory)

Changing groupname of /opt/5620sam/oracle11r2/oraInventory to
(dba).
```

iv When the script execution is complete, close the console window.

v Click on the Next button.

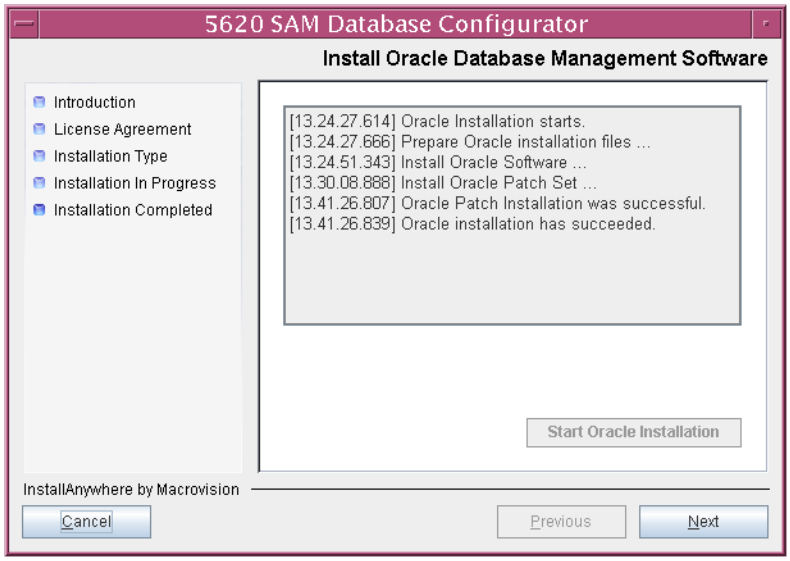
106 You are prompted to install Oracle software, as shown in Figure 4-62. This operation can take one hour or more. Click on the Start Oracle Installation button to begin the Oracle software installation.

Figure 4-62 Install Oracle Database Management Software



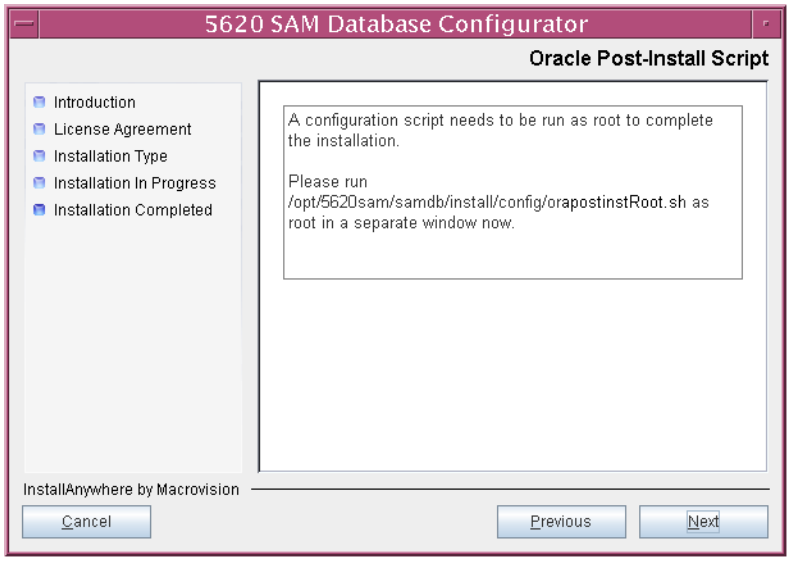
107 As shown in Figure 4-63, Oracle installation details are displayed as the installation progresses. When the installation is complete, Click on the Next button.

Figure 4-63 Install Oracle Database Management Software



108 Perform the following steps when the panel in Figure 4-64 is displayed.

Figure 4-64 Oracle Post-Install Script



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the Oracle post-install script:

```
# path/install/config/orapostinstRoot.sh ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

The script displays the following message:

```
Check path/username_hostname_timestamp.log for output
```

where
path is the directory that contains the script log file, typically /opt/5620sam/oracle11r2/install
username is the Solaris account name of the current user, for example, root
hostname is the hostname of this station
timestamp is the script execution start time

iv If the script generates a message that contains the word “error”, view the script log file named in the message for more information, and contact Alcatel-Lucent technical support for assistance, if required.

v When the script execution is complete, close the console window.

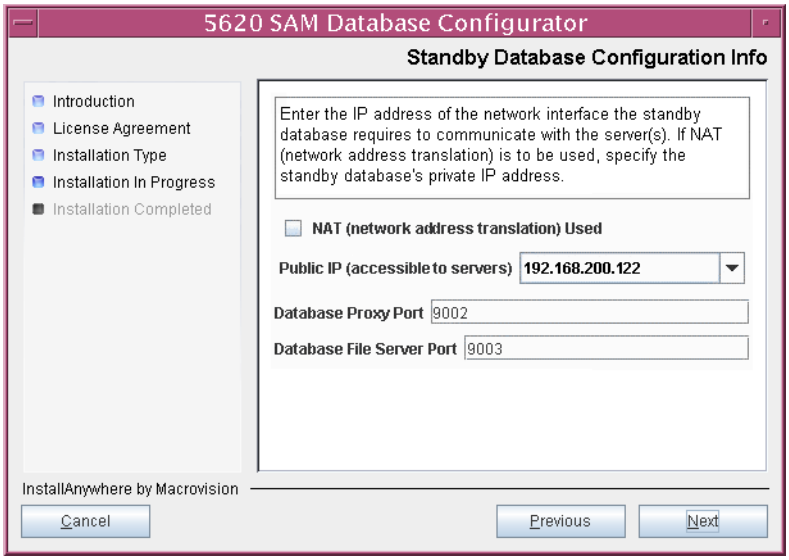
vi Click on the Next button.

109 Configure the parameters shown in Figure 4-65, then click on the Next button.

- NAT (network address translation) Used
- Public IP (accessible to servers)
- Private IP
- Database Proxy Port (typically 9002)
- Database File Server Port (typically 9003)

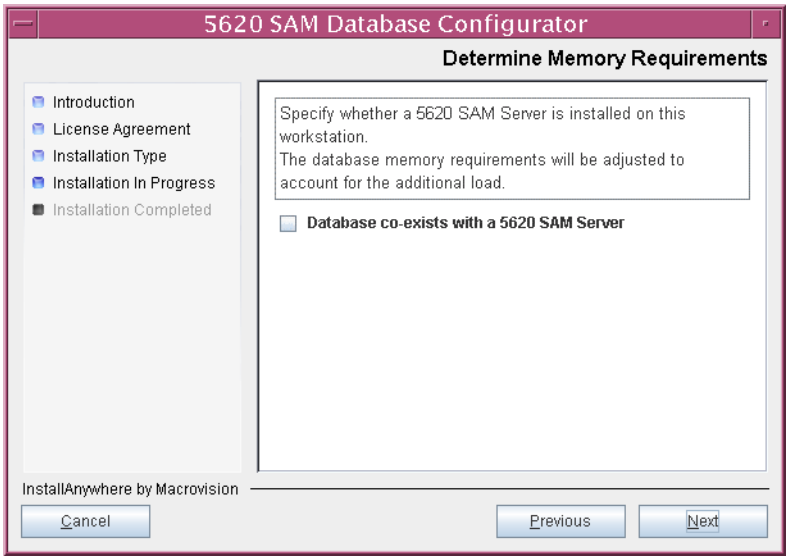
Note — The “Private IP” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 4-65 Standby Database Configuration Info



110 If the 5620 SAM server and database are installed on the same station, select the "Database co-exists with a 5620 SAM Server" parameter shown in Figure 4-66. Click on the Next button.

Figure 4-66 Determine Memory Requirements

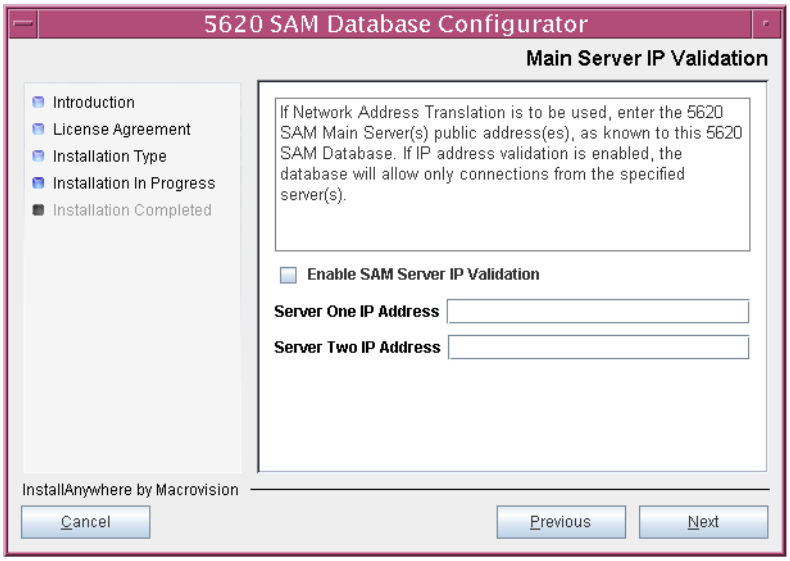


111 Configure the following parameters shown in Figure 4-67, then click on the Next button.

If the “Enable SAM Server IP Validation” parameter is selected, only the servers at the specified IP addresses or hostnames can connect to the database.

- Enable SAM Server IP Validation
- Server One IP Address
  This is the “Server One IP Address” value from step 30.
- Server Two IP Address
  This is the “Server Two IP Address” value from step 30.

Figure 4-67 Main Server IP Validation



112 The panel in Figure 4-68 is displayed if the “Enable SAM Server IP Validation” parameter in step 111 is selected. Otherwise, go to step 114.

If the 5620 SAM system includes an auxiliary server, perform the following steps.

i Click on the Add button shown in Figure 4-68. The form shown in Figure 4-69 opens.

Figure 4-68 Auxiliary Server IP Validation

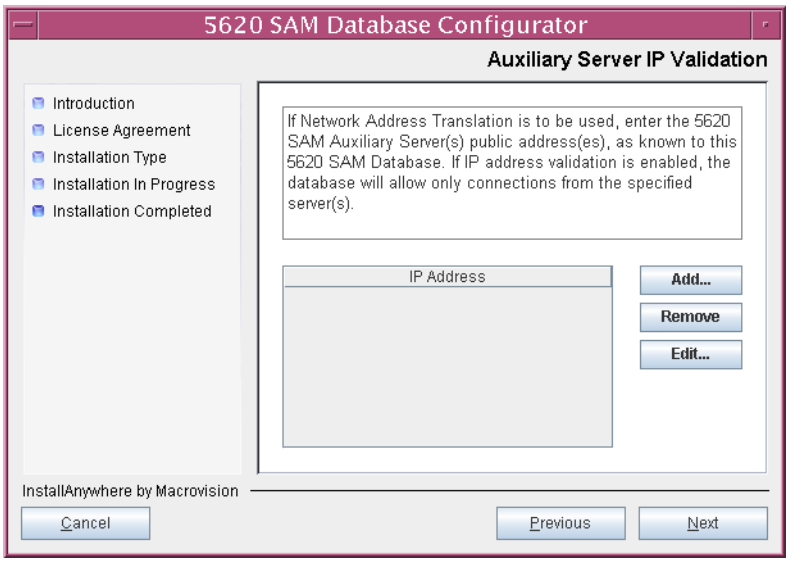
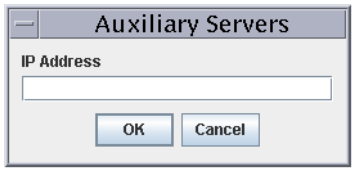


Figure 4-69 Auxiliary Servers



ii Enter the IP address or hostname of the auxiliary server.

iii Click on the OK button to save the information and close the form.

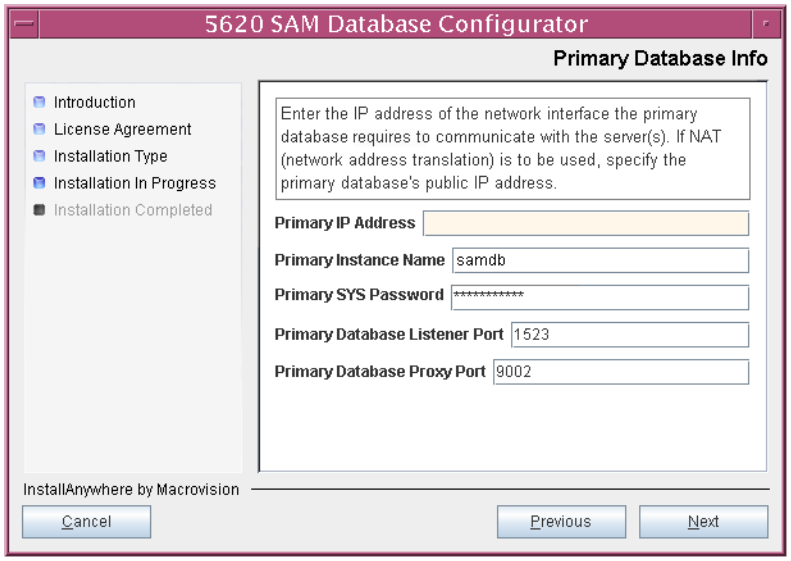
iv Repeat steps 112 i to iii to specify an additional auxiliary server, if required.

113 Click on the Next button.

114 Configure the following parameters, shown in Figure 4-70, using the recorded values from the primary database conversion. Click on the Next button.

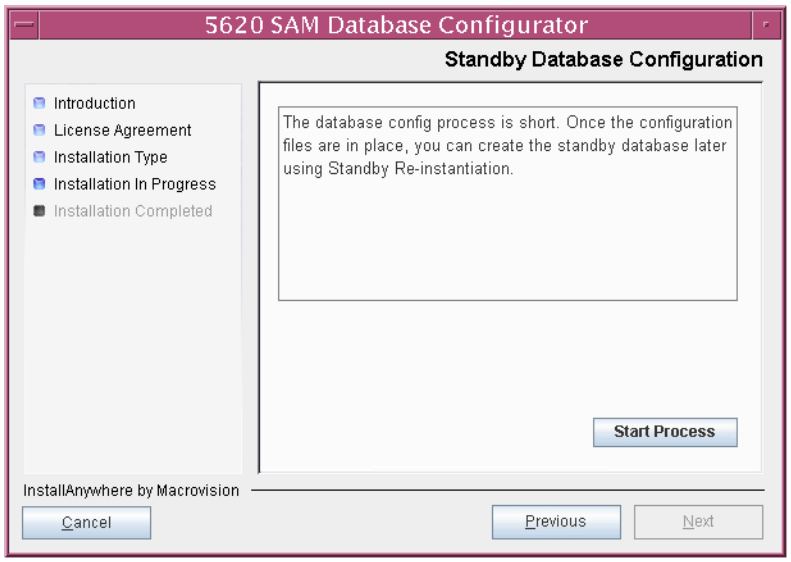
- Primary IP Address
- Primary Instance Name (typically samdb)
- Primary SYS Password
- Primary Database Listener Port (typically 1523)
- Primary Database Proxy Port (typically 9002)

Figure 4-70 Primary Database Info



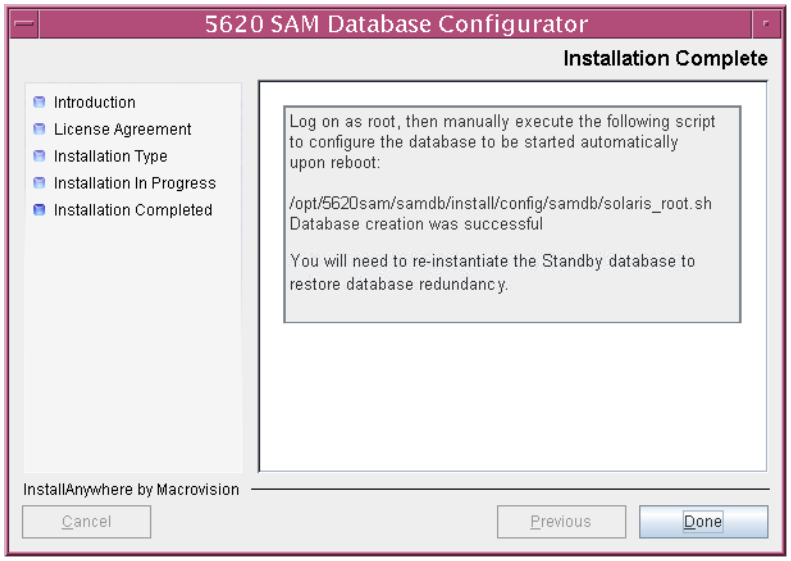
115 You are prompted to begin standby database creation, as shown in Figure 4-71. Click on the Start Process button to begin the database creation.

Figure 4-71 Standby Database Configuration



116 When the panel in Figure 4-72 is displayed, the 5620 SAM database installation is complete, but as shown in the panel text, you must run a script to enable automatic database startup.

Figure 4-72 Installation Complete



Perform the following steps to run the script described in the panel.

i Open a separate console window as a user with root or root-equivalent privileges.

ii Enter the following:

```
# path/solaris_root.sh
```

where *path* is the solaris_root.sh script location, typically /opt/5620sam/samdb/install/config/samdb

The script returns messages similar to the following:

```
Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005

Sun Microsystems Inc.   SunOS 5.10      Generic January 2005
```

iii When the script execution is complete, close the console window.

117 Click on the Done button to close the database installer.

The next section of the procedure describes the installation of the standby 5620 SAM server. You can install the standby server on the same station that contains the standby database, or on a different station. Server installation requires root-equivalent privileges.

Install standby server

118 Log in to the station that is to be the standby server station as a user with root or root-equivalent privileges.

119 Open a console window.

120 Perform the following steps to ensure that no-one is logged in to the station as the samadmin user.

i Enter the following:

```
# who ↵
```

The active user sessions are listed.

ii If the samadmin user is listed, close each samadmin user session. See the Solaris documentation for more information.

121 Place the 5620 SAM software DVD-ROM in a DVD-ROM drive.

122 Navigate to the DVD-ROM drive.

123 Perform one of the following to open the 5620 SAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

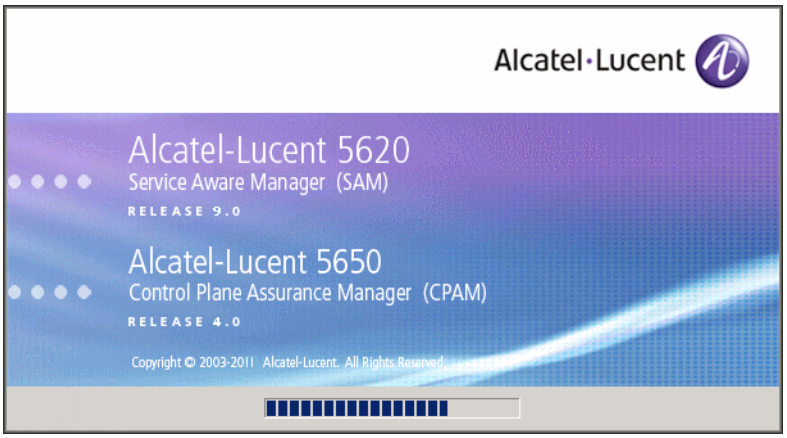
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

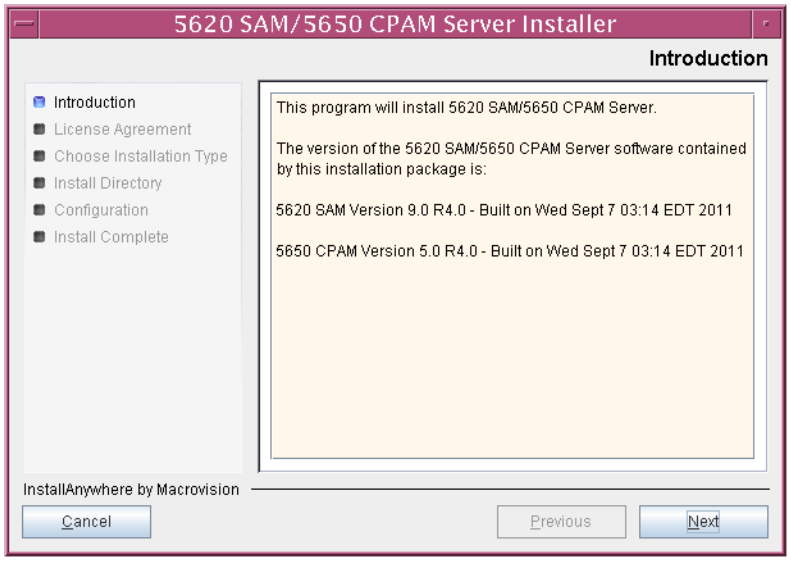
The splash screen shown in Figure 4-73 opens.

Figure 4-73 5620 SAM installer



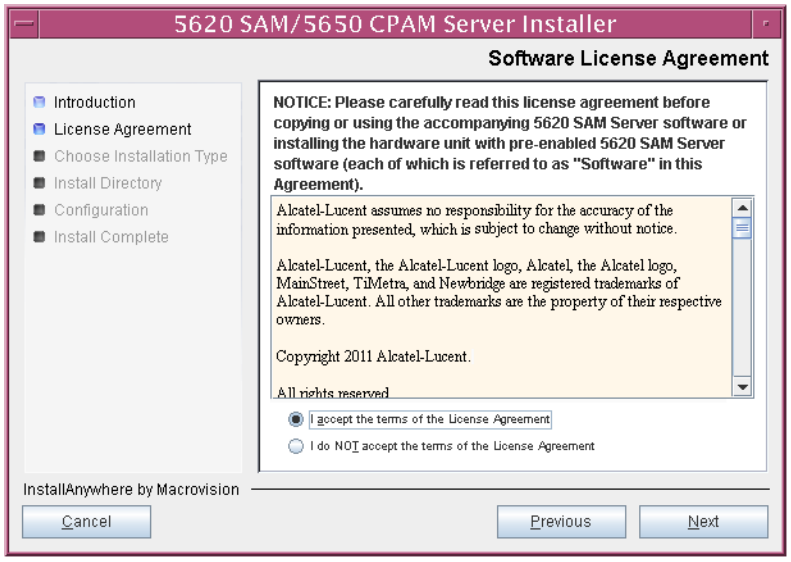
124 The 5620 SAM server installer opens, as shown in Figure 4-74. The left pane indicates the installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 4-74 Introduction



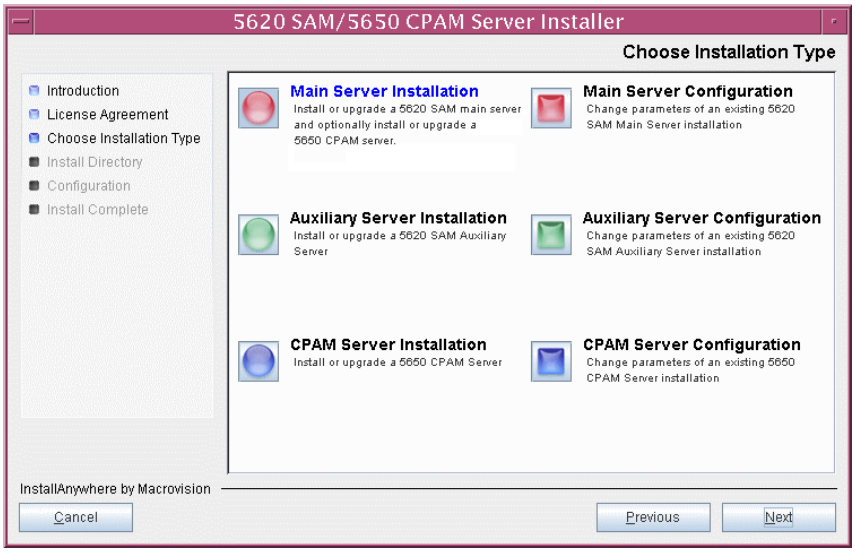
125 Review and accept the terms of the license agreement shown in Figure 4-75. Click on the Next button.

Figure 4-75 Software License Agreement



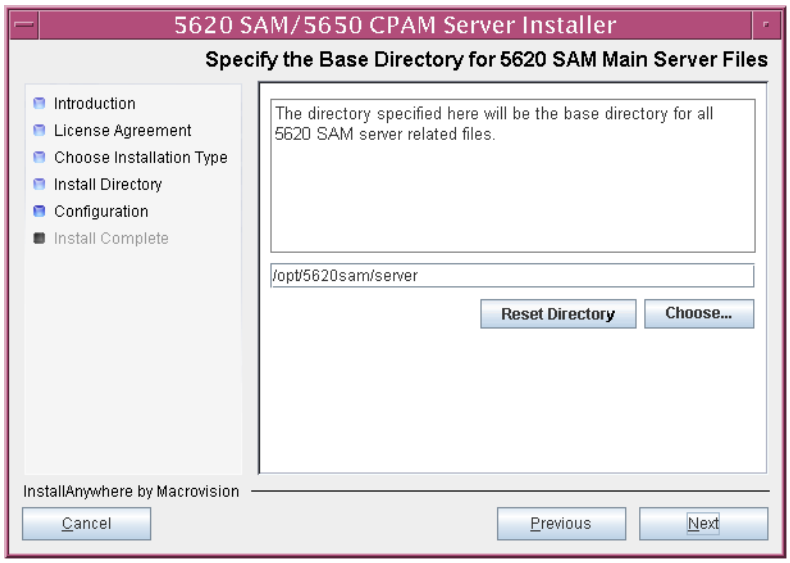
126 Select Main Server Installation, as shown in Figure 4-76. Click on the Next button.

Figure 4-76 Choose Installation Type



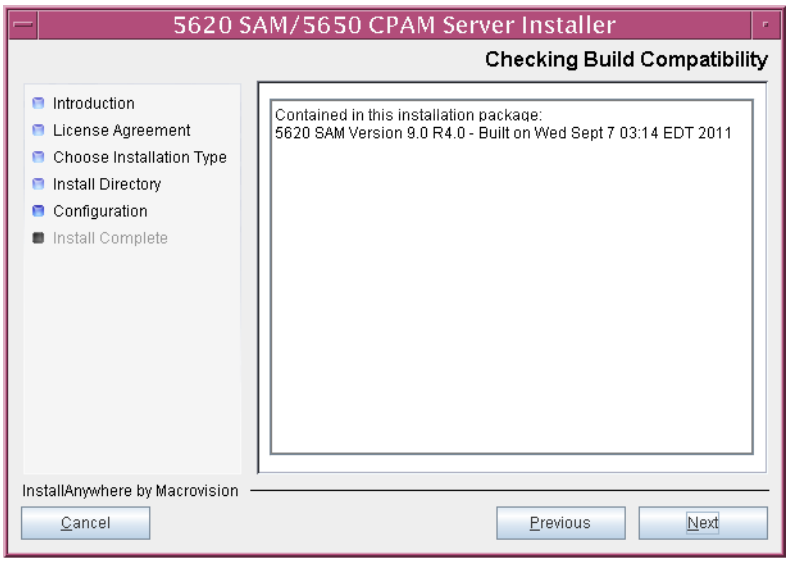
127 Specify a base directory in which to install the standby 5620 SAM main server software (typically /opt/5620sam/server), as shown in Figure 4-77. Click on the Next button.

Figure 4-77 Specify the Base Directory for 5620 SAM Main Server Files



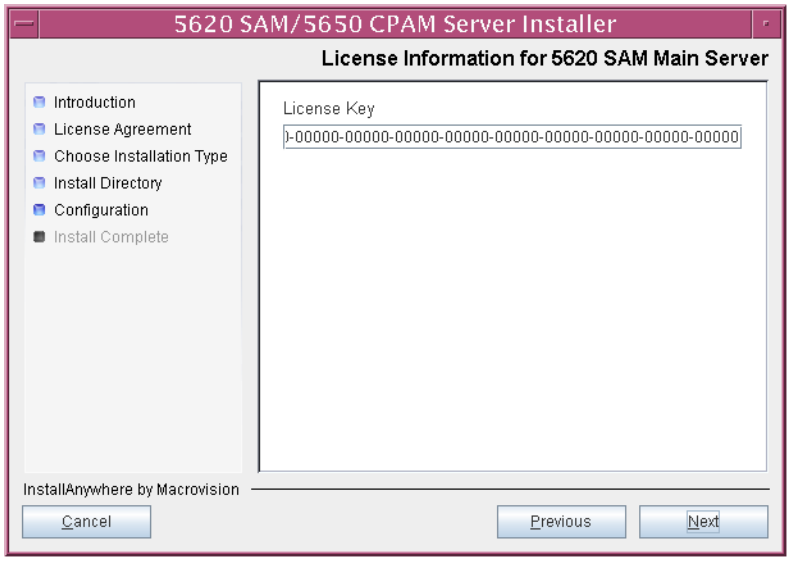
128 As shown in Figure 4-78, the installer indicates which release of 5620 SAM software is to be installed. Verify the information. Click on the Next button.

Figure 4-78 Checking Build Compatibility



129 The 5620 SAM installer displays the existing license key, as shown in Figure 4-79. Click on the Next button.

Figure 4-79 License Information for 5620 SAM Main Server



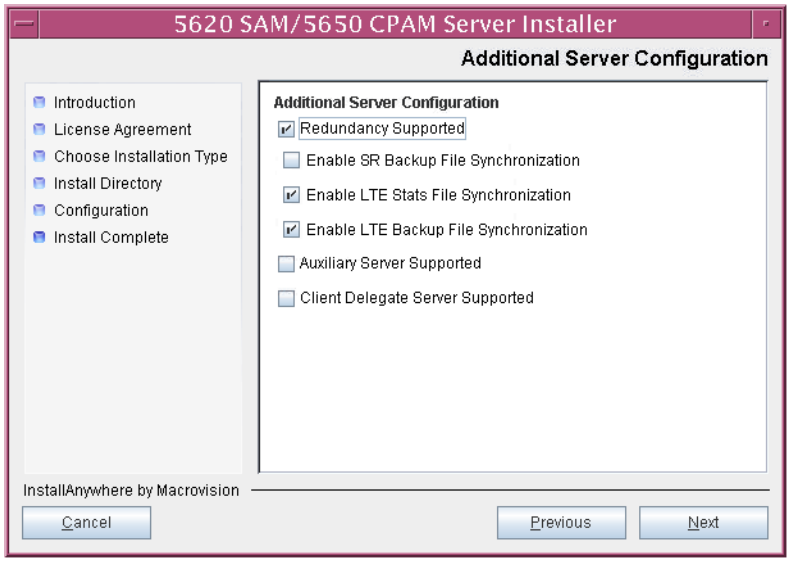
130 Configure the following parameters shown in Figure 4-80, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Enable LTE Stats File Synchronization
- Enable LTE Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the "Redundancy Supported" parameter.

Note 2 — The "Enable SR Backup File Synchronization", "Enable LTE Stats File Synchronization", and "Enable LTE Backup File Synchronization" parameters are displayed only when the "Redundancy Supported" parameter is enabled.

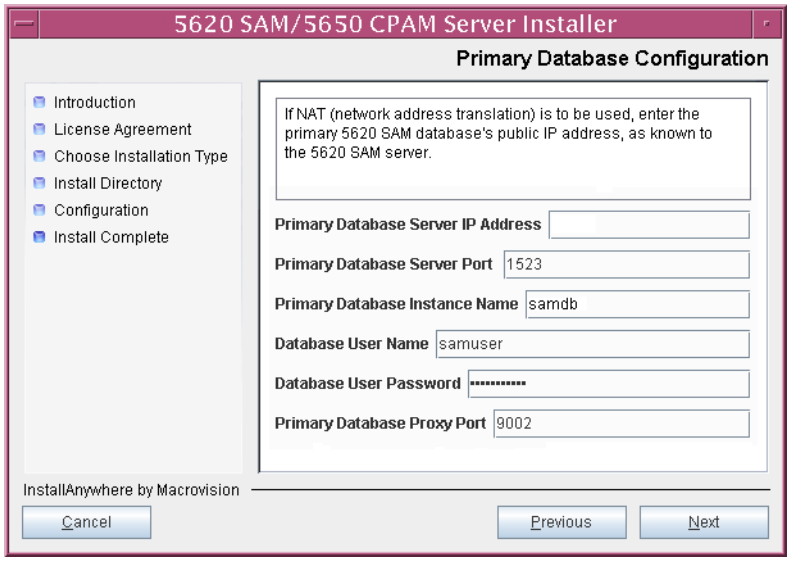
Figure 4-80 Additional Server Configuration



131 Configure the following parameters, shown in Figure 4-81, using the recorded values from the primary database conversion. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

Figure 4-81 Primary Database Configuration

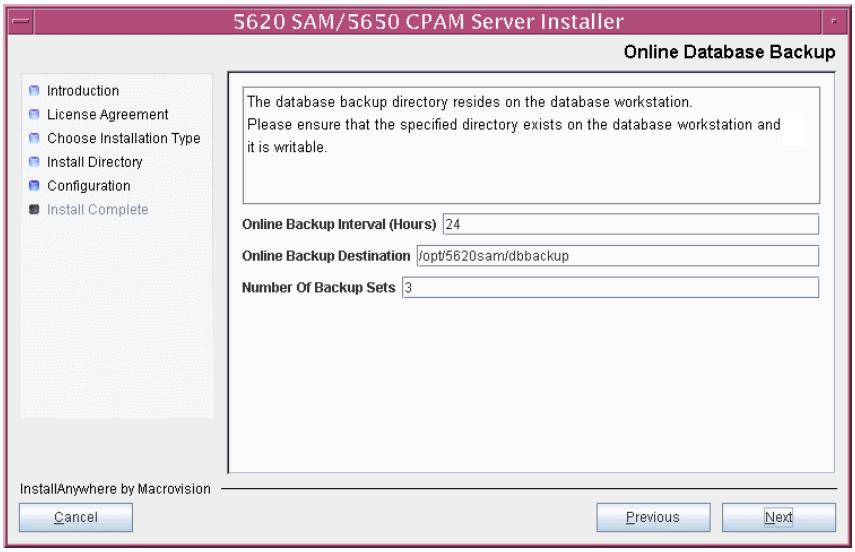


132 Depending on the existing configuration. the panel in Figure 4-82 is displayed. Configure the following parameters, if required, then click on the Next button:

- Online Backup Interval (Hours) (typically 24)
- Online Backup Destination (typically /opt/5620sam/dbbackup)
- Number Of Backup Sets (typically 3)

Note — The “Online Backup Destination” value is a path on the file system of the database station specified in step 131.

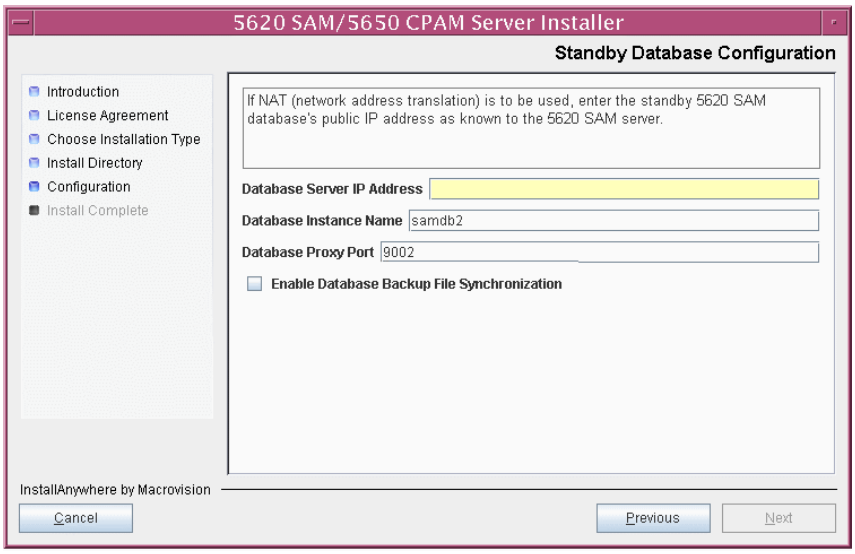
Figure 4-82 Online Database Backup



133 Configure the following parameters shown in Figure 4-83, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)
- Enable Database Backup File Synchronization

Figure 4-83 Standby Database Configuration



134 The panel in Figure 4-84 is displayed if you select the “Auxiliary Server Supported” parameter in step 130. Otherwise, go to step 136.

Perform the following steps to specify an auxiliary server, if required.

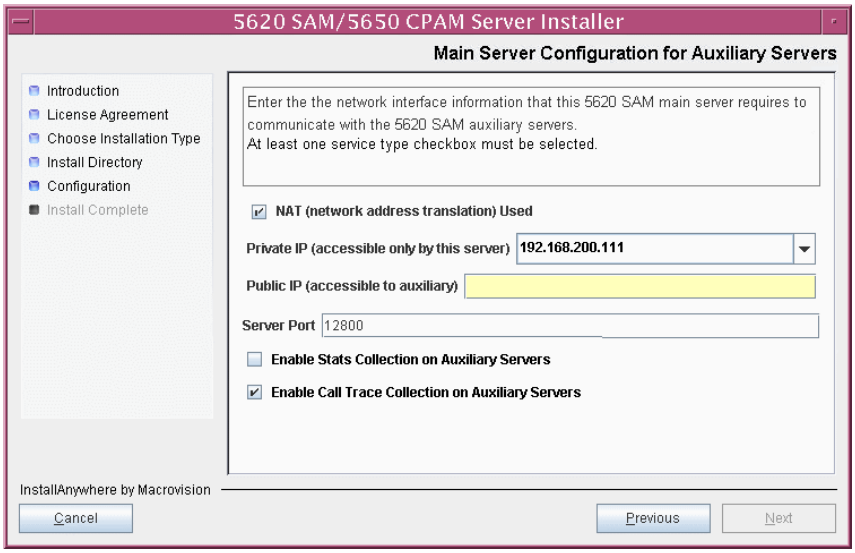
i Configure the following parameters shown in Figure 4-84:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5620 SAM main and auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 4-84 Main Server Configuration for Auxiliary Servers



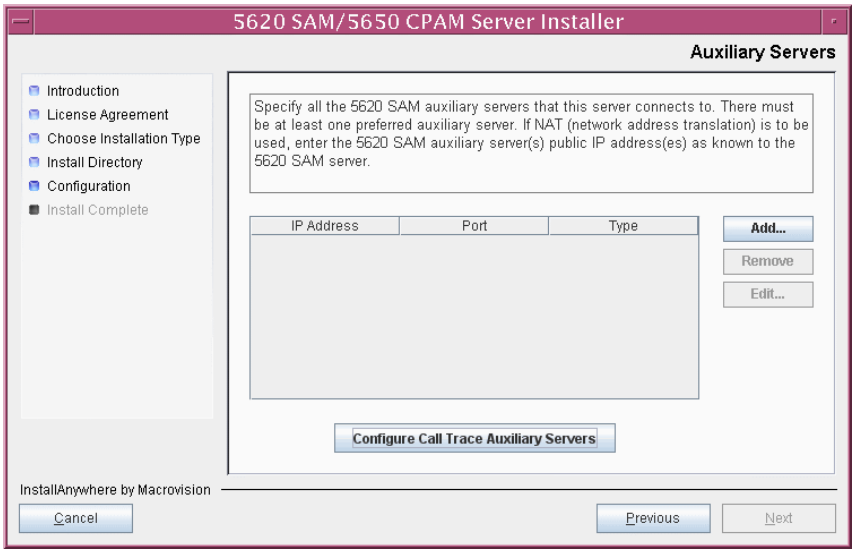
ii Click on the Next button.

iii Click on the Add button shown in Figure 4-85 to specify an auxiliary server. The form shown in Figure 4-86 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

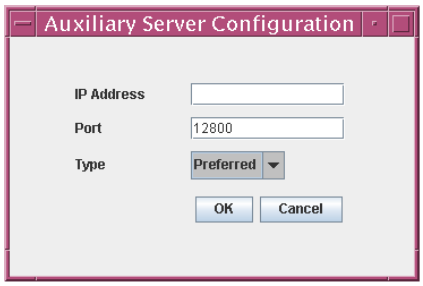
Figure 4-85 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 4-86 Auxiliary Server Configuration



iv Configure the following parameters shown in Figure 4-86:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

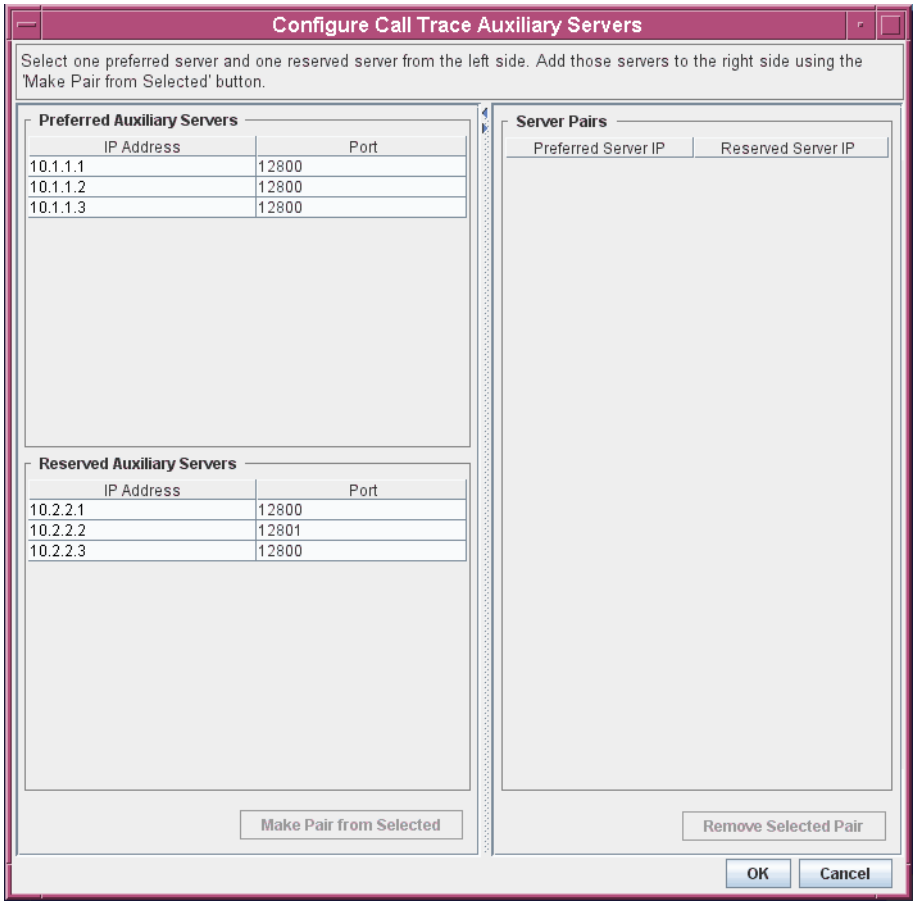
v Click on the OK button to save the information and close the form.

vi Repeat steps 134 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 134 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 4-85. Otherwise, go to step 135.

viii The form shown in Figure 4-87 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 4-87 Configure Call Trace Auxiliary Servers



ix Repeat step 134 viii to configure another call-trace auxiliary server pair, if required.

135 Click on the Next button.

136 If you select the “Enable Database Alignment” parameter shown in Figure 4-88, you must specify the preferred database of this main server, then click on the Next button.

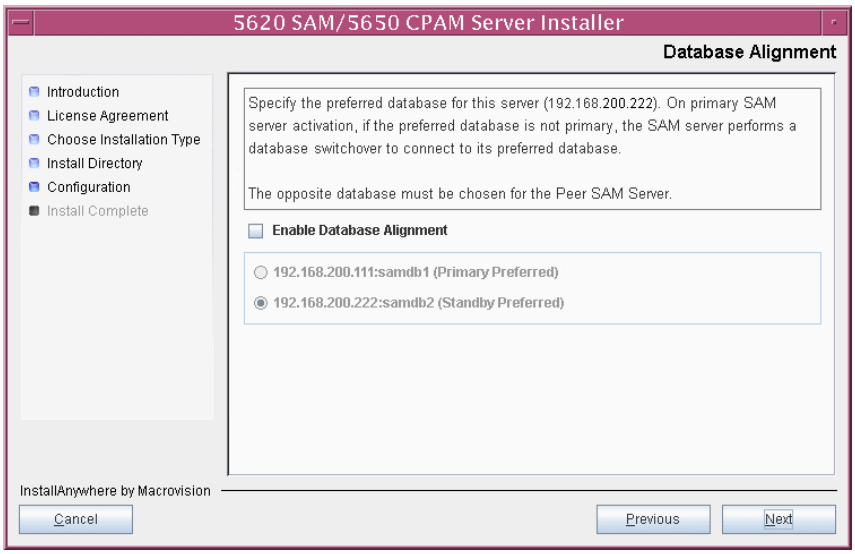
Database alignment associates each main server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the main server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a main server is the database in the same physical facility; typically, the primary main server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the main servers and databases in the 5620 SAM complex are aligned. If the switchover fails, each database reverts to the former role, and the main server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary main server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 4-88 Database Alignment



137 Configure the following parameters shown in Figure 4-89, then click on the Next button:

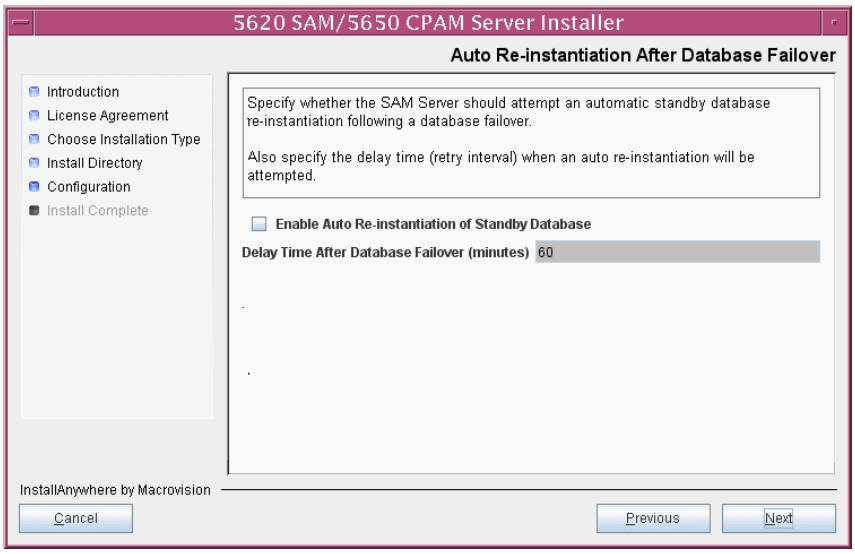
- Enable Auto Re-Instantiation of Standby Database

  If this parameter is selected, the 5620 SAM main server automatically reinstantiates the standby database after a database failover.
- Delay Time After Database Failover (minutes)

  This parameter specifies how long, in m, the main server waits after database failover completion before it initiates a standby database reinstantiation.

Note — The “Delay Time After Database Failover (minutes)” parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected.

Figure 4-89 Auto Re-Instantiation After Database Failover

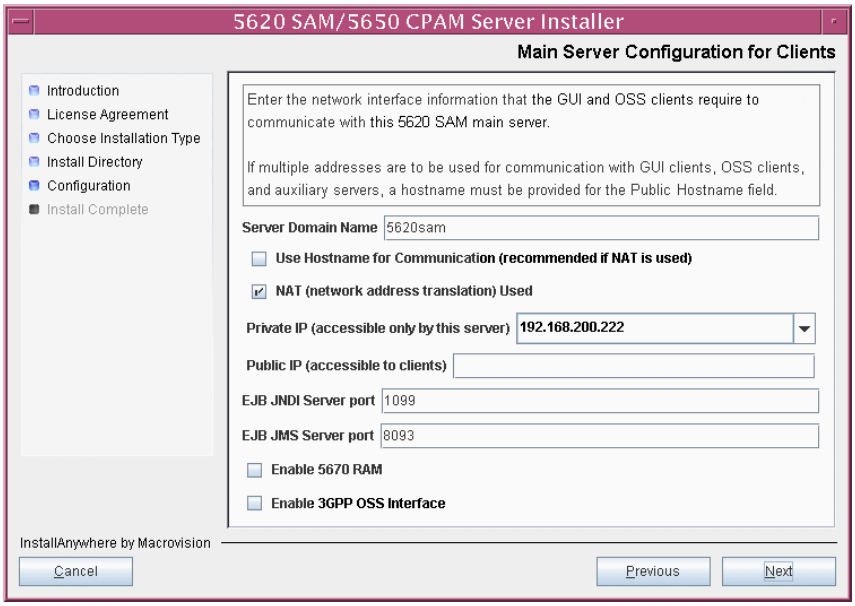


138 Perform the following steps.

i Configure the following parameters shown in Figure 4-90:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the main server belongs.
- Use Hostname for Communication
  Select this parameter if the main server is to use multiple interfaces for GUI and OSS client communication.

Figure 4-90 Main Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 138 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

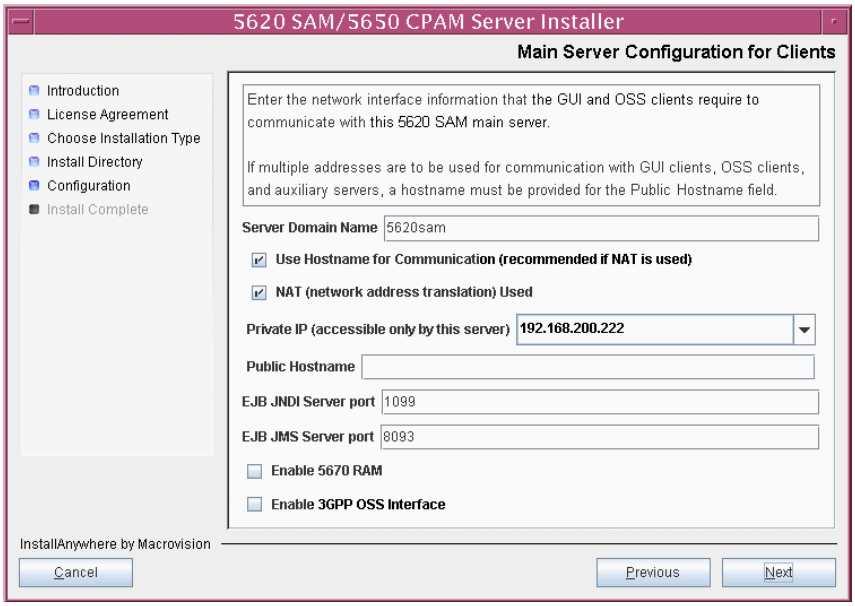
v Go to step 139.

vi Configure the following parameters shown in Figure 4-91:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)
- Enable 5670 RAM
- Enable 3GPP OSS Interface

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 4-91 Main Server Configuration for Clients

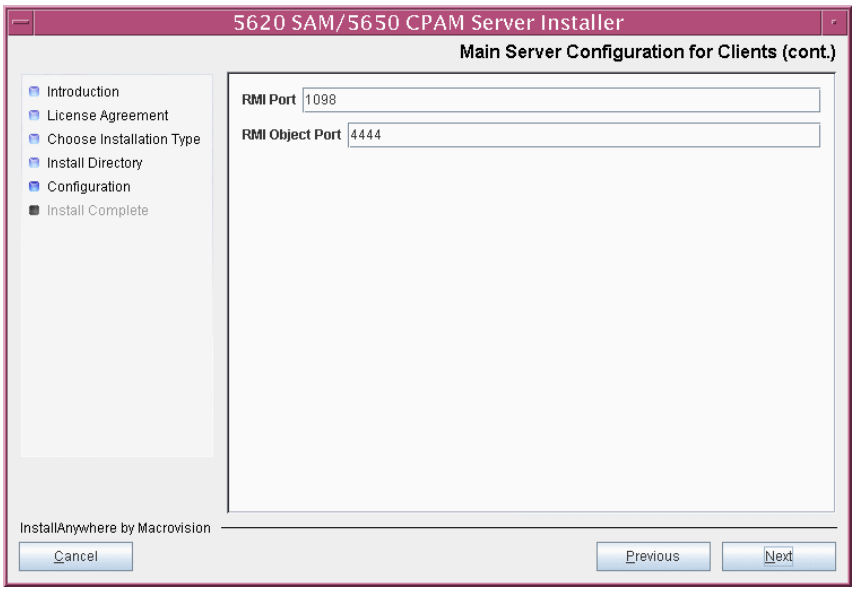


vii Click on the Next button.

139 Configure the following parameters shown in Figure 4-92, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 4-92 Main Server Configuration for Clients (cont.)

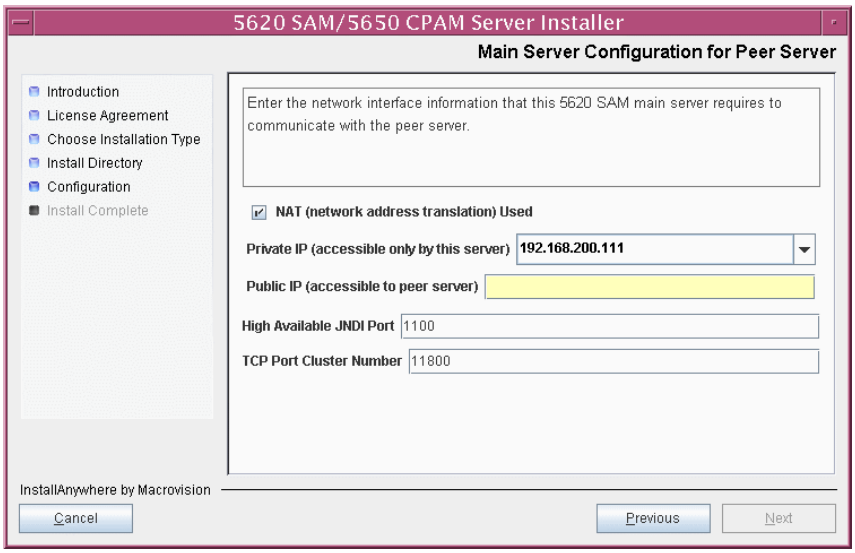


140 Configure the following parameters shown in Figure 4-93:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5620 SAM server and the peer 5620 SAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

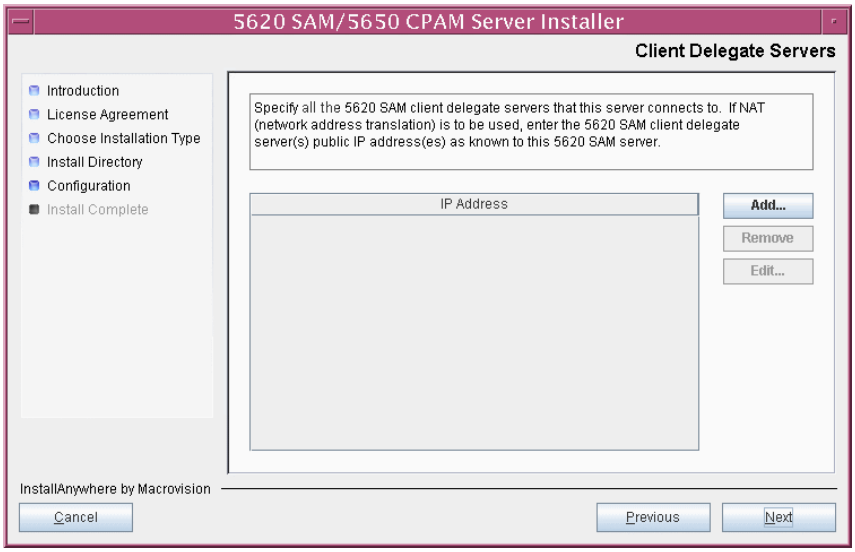
Figure 4-93 Main Server Configuration for Peer Server



141 The panel in Figure 4-94 is displayed if you select the “Client Delegate Server Supported” parameter in step 130. Otherwise, go to step 143.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5620 SAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 4-94 Client Delegate Servers

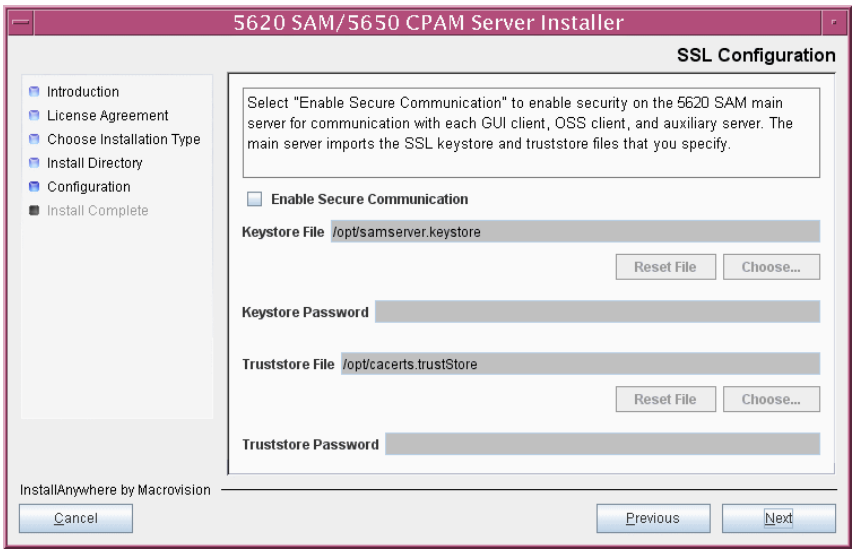


142 Perform the following steps to enable communication security between the main server and clients, and between the main and auxiliary servers. Otherwise, click on the Next button.

Note — See the 5620 SAM SSL security chapter of the *5620 SAM User Guide* for information about creating SSL keystore and truststore files, and for general 5620 SAM SSL configuration information.

i Select the “Enable Secure Communication” parameter shown in Figure 4-95.

Figure 4-95 SSL Configuration



ii Configure the following parameters:

- Keystore File
- Keystore Password
- Truststore File
- Truststore Password

Note 1 — The default keystore and truststore files use an autosigned SSL certificate. If you want to use a certificate signed by a root CA, and the CA is not named in the default truststore file, you must specify a truststore file that includes the root CA.

Note 2 — The parameter values must match the values specified during the standalone main server conversion to a primary main server.

iii Copy the truststore file to the same location on each client and auxiliary server station.

iv Click on the Next button. The main server copies the files, imports them into the main server configuration, and transfers the keystore file to each client and auxiliary server.

143 Perform one of the following to specify where the 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 4-96.

ii To accept the default user documentation location that is displayed, go to step 144.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

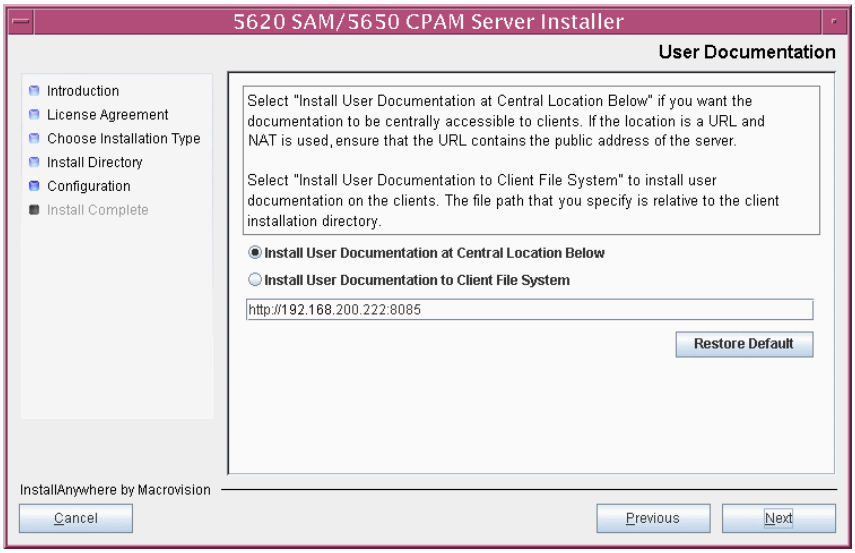
iii Specify a location for the 5620 SAM user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM software DVD-ROM to the location specified in step iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 4-96 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 4-96.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

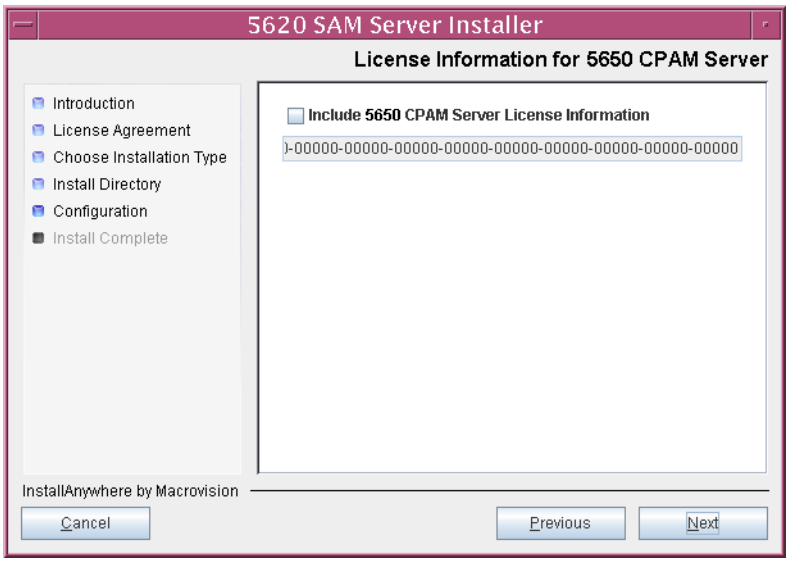
/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

144 Click on the Next button.

145 Specify whether the 5620 SAM configuration includes a 5650 CPAM server, as shown in Figure 4-97. If it does, enter the 5650 CPAM license key provided by Alcatel-Lucent. Include the dashes in the key. Click on the Next button.

Figure 4-97 License Information for 5650 CPAM Server



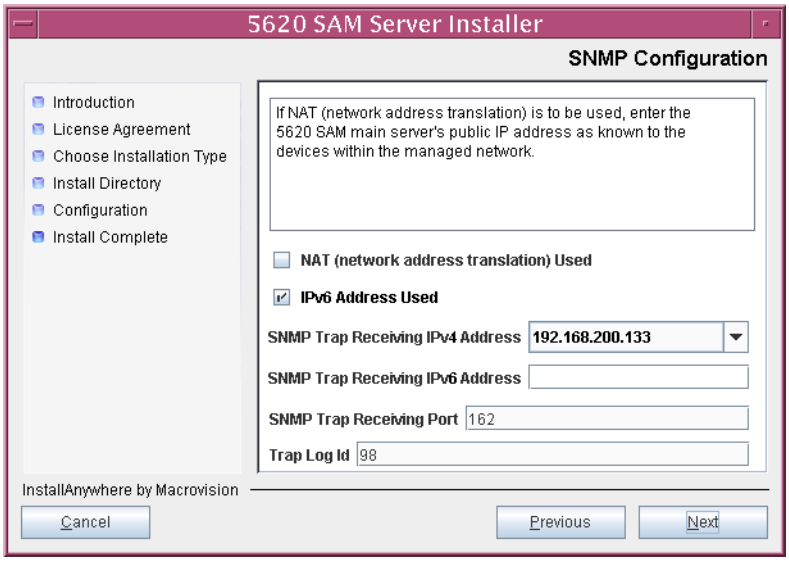
146 Configure the following parameters shown in Figure 4-98, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5620 SAM main server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The “SNMP Trap Receiving IPv6 Address” parameter is configurable only when the “IPv6 Address Used” parameter is selected, as shown in Figure 4-98.

Figure 4-98 SNMP Configuration

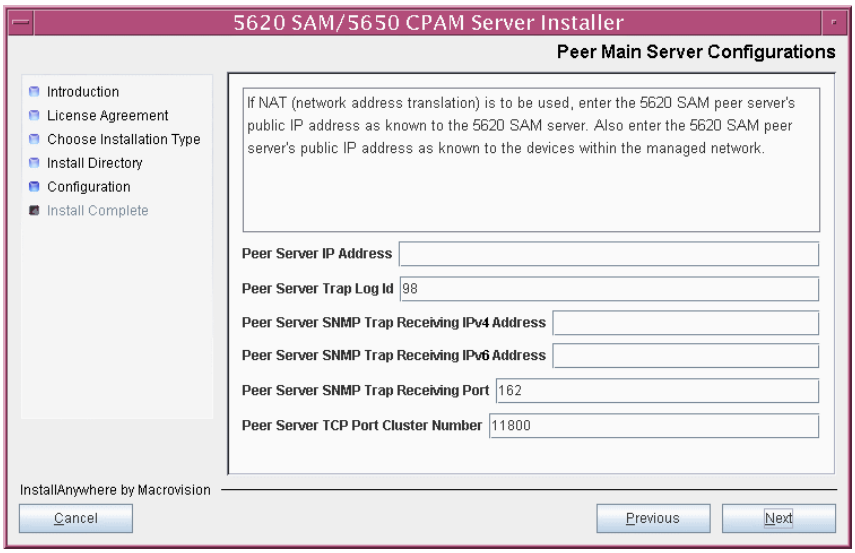


147 Configure the following parameters shown in Figure 4-99, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 146.

Figure 4-99 Peer Main Server Configurations

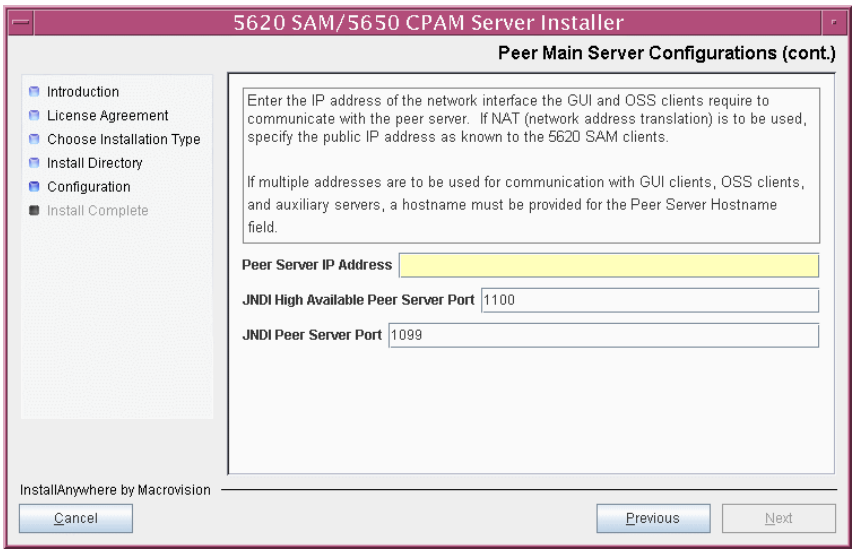


148 If the "Use Hostname for Communication" parameter in step 138 is selected, go to step 151.

149 Configure the following parameters shown in Figure 4-100, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 4-100 Peer Main Server Configurations (cont.)

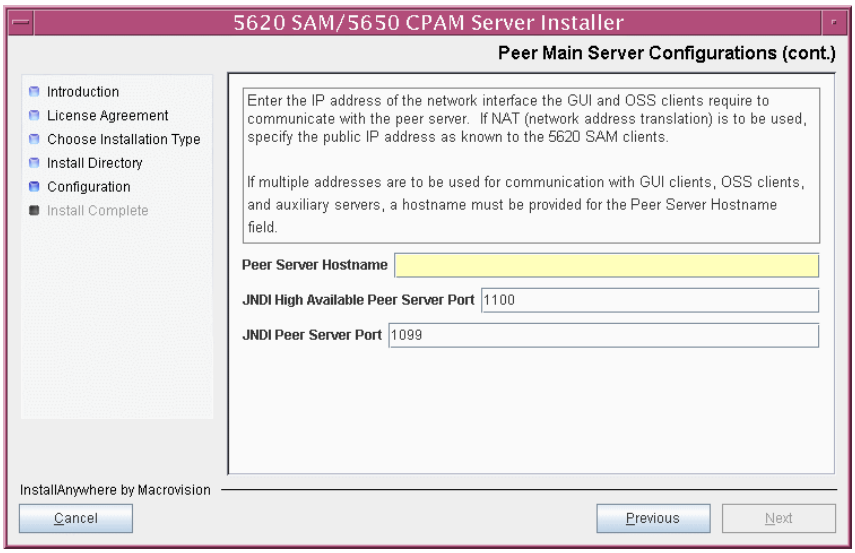


150 Go to step 152.

151 Configure the following parameters shown in Figure 4-101, then click on the Next button:

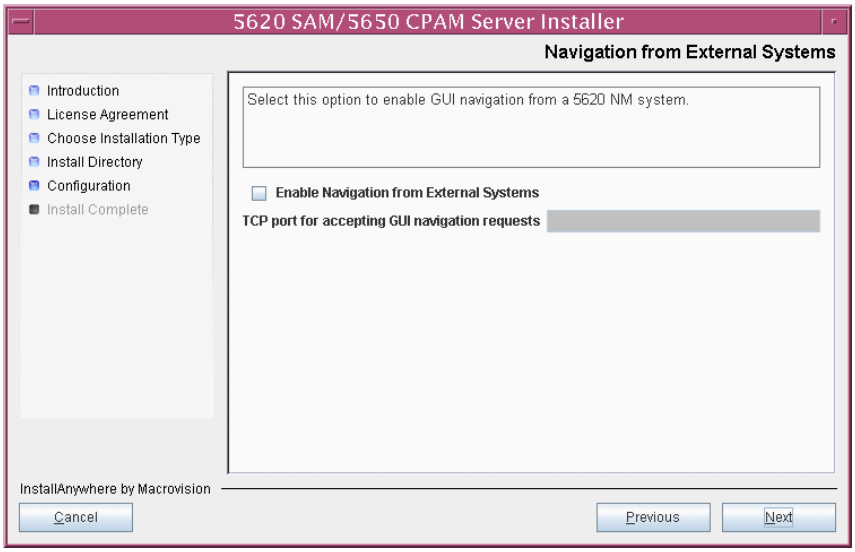
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 4-101 Peer Main Server Configurations (cont.)



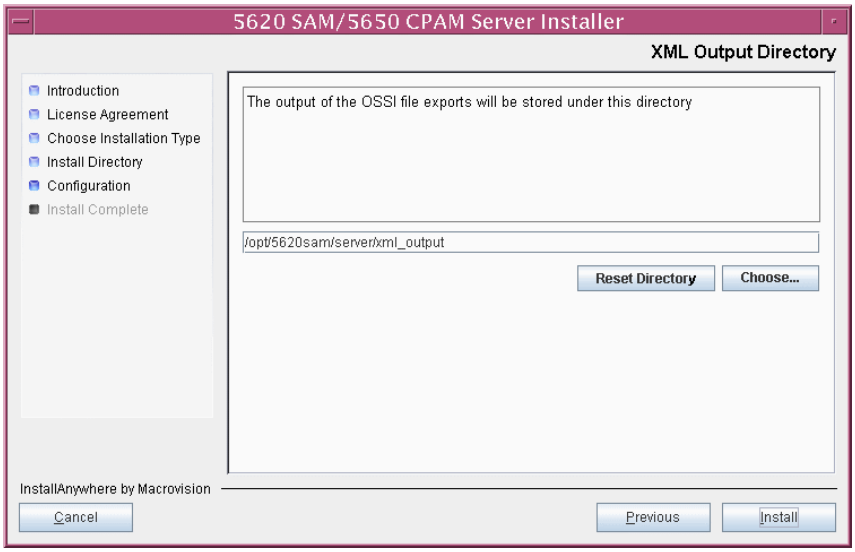
152 If you require 5620 SAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 4-102 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button.

Figure 4-102 Navigation from External Systems



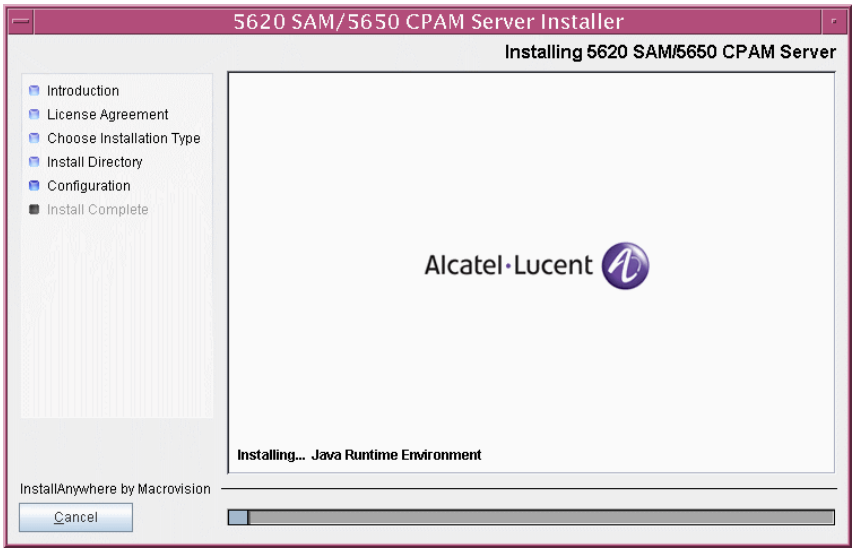
153 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 4-103. Click on the Install button to begin the server installation.

Figure 4-103 XML Output Directory



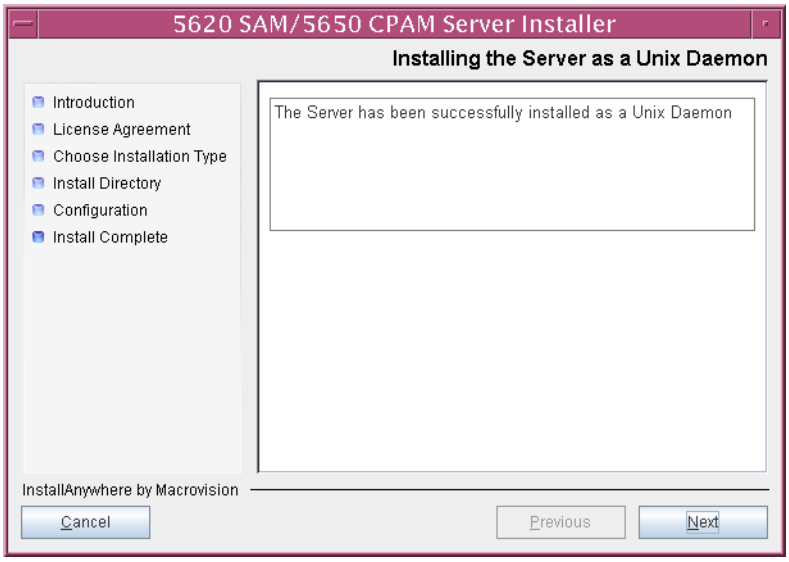
The next panel displays installation progress, as shown in Figure 4-104.

Figure 4-104 Installing 5620 SAM/5650 CPAM Server



154 As shown in Figure 4-105, the 5620 SAM server is installed as a UNIX daemon. Click on the Next button.

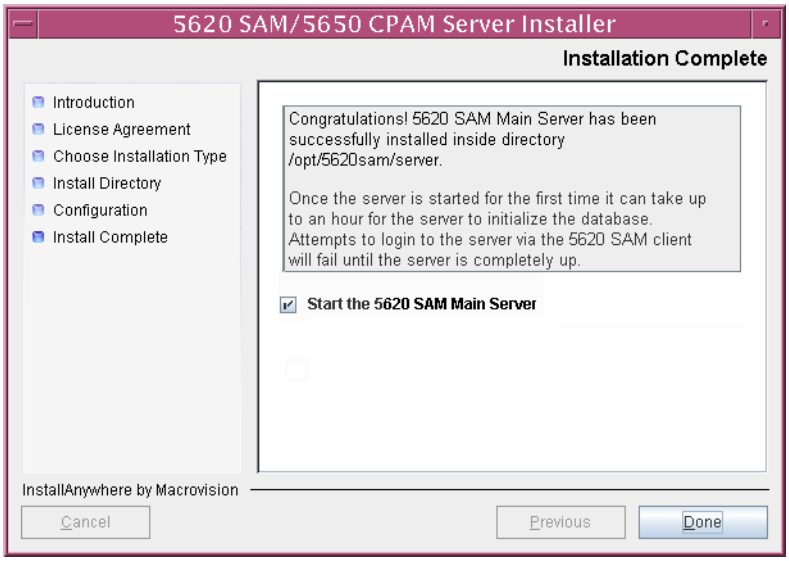
Figure 4-105 Installing the Server as a Unix Daemon



155 When the main server installation is complete, as shown in Figure 4-106, configure the "Start the 5620 SAM Main Server" parameter to specify whether you want the server to start immediately after the installation.

Caution — If the 3GPP OSS interface is enabled in step 138, ensure that the "Start the 5620 SAM Main Server" parameter is not selected.

Figure 4-106 Installation Complete



156 View the panel text to see whether it states that you must assign a password to samadmin, as shown in Figure 4-106. This information is required in step 158.

157 Click on the Done button to close the server installer. If you specified that the main server is to start immediately after the installation, the server starts. Initial server startup can take twenty minutes or more.

158 If this is the first 5620 SAM server installation on the station, the installer creates a user account called samadmin for 5620 SAM system administration.

If you must assign a password to samadmin, as determined in step 156, perform the following steps.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

159 If the 3GPP OSS interface is enabled in step 138, perform the following steps.

i Open the *path*/nms/cnbi/home/config/cnbi.properties file using a plain-text editor

where *path* is the 5620 SAM main server installation location, typically opt/5620sam/server

ii Locate the following line:

```
CNBI.SAMO.USER=
```

iii Edit the line to read:

CNBI.SAMO.USER=*3GPP_OSS_user_name*

where *3GPP_OSS_user_name* is the user name that OSS applications must send in requests to the interface

iv Locate the following line:

```
CNBI.SAMO.PASSWORD=
```

v Edit the line to read:

```
CNBI.SAMO.PASSWORD=3GPP_OSS_password
```

where *3GPP_OSS_password* is the MD5-encrypted user password that OSS applications must send in requests to the interface

Note — The user name and password must be the same user name and password specified for the 3GPP OSS interface in the primary server configuration.

vi Save and close the file.

vii Go to step 161.

160 If you specified that the main server is to start after installation, perform the following steps to verify that the server is started.

i Enter the following to switch to the samadmin user:

```
# su - samadmin ↵
```

ii Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- SAM Server is UP
```

iii If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

161 If you specified not to start the main server immediately after the installation, perform the following steps to start the server manually.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to start the 5620 SAM server software:

```
bash$ ./nmsserver.bash start ↵
```

v Enter the following:

```
bash$ path/nms/bin/nmsserver.bash -s nms_status ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

The command returns server status information.

If the main server is not completely started, the first line of status information is the following:

```
Main Server is not ready...
```

The 5620 SAM server is completely started when the command returns the following line of output:

```
 -- Standby Server is UP
```

vi If the command output indicates that the server is not completely started, wait 5m and enter the command again to check the output.

Note — Do not proceed to the next step until the server is completely started.

The next section of the procedure describes the reinstantiation of the primary database on the standby database station.

Reinstantiate standby database

162 Log in to a 5620 SAM client as the admin user.

163 Choose Administration→System Information from the 5620 SAM main menu. The System Information form opens with the General tab displayed.

164 Click on the Re-Instantiate Standby button. A dialog box appears.

165 Click on the Yes button. The database reinstantiation begins.

You can view the reinstantiation status on the client GUI status bar or on the System Information form. The Standby Re-instantiation State changes from In Progress to Success when reinstantiation is complete. The start time of the reinstantiation is shown by the Last Attempted Standby Re-instantiation Time indicator.

Note — Database reinstantiation can take a long time when there is a large amount of statistics data to transfer.

166 When the Standby Re-instantiation State displays Success, close the System Information form.

167 Use a 5620 SAM GUI client to perform sanity testing of the newly redundant 5620 SAM server and database, as required.

5 — 5620 SAM platform migration

5.1 5620 SAM platform migration overview

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document.

Caution — Alcatel-Lucent supports 5620 SAM system migration and software configuration only under the conditions described in chapter 1.

The 5620 SAM supports the relocation, or migration, of a 5620 SAM system between platforms that have different processing architectures. The migration paths that the 5620 SAM supports are the following:

- Solaris SPARC to Solaris x86
- Solaris x86 to Solaris SPARC
- Microsoft Windows to Solaris SPARC or x86

Note 1 — In a migration from one type of Solaris platform to another, the new physical stations to which the 5620 SAM system migrates must have the same processing architecture and their OSs must be at the same release and patch level.

Note 2 — You cannot upgrade the 5620 SAM software as part of a 5620 SAM system migration. To upgrade your 5620 SAM system and move it to a different platform, you must upgrade the system before you perform the migration.

Note 3 — A 5620 SAM migration from Windows to a redundant Solaris platform requires the following sequence of operations:

- a standalone 5620 SAM platform migration
- an upgrade of the 5620 SAM system on the new platform
- a conversion of the upgraded 5620 SAM system to redundancy

See chapter 3 for information about upgrading a 5620 SAM system.

See chapter 4 for information about converting a standalone 5620 SAM system to a redundant system.

5.2 5620 SAM platform migration procedures list

Table 5-1 lists the procedures required to perform 5620 SAM platform migrations.

Table 5-1 5620 SAM platform migration procedures list

Procedure	Purpose
To perform the pre-migration tasks	Prepare a standalone or redundant 5620 SAM system on Solaris for a platform migration by ensuring the correct conditions are in place, gathering the required system information, and backing up the configuration files and database.
To relocate a Windows 5620 SAM system to a Solaris platform	Move the 5620 SAM database and main server from Microsoft Windows stations to one or more Solaris stations.
To relocate a standalone 5620 SAM system from one Solaris platform to another	Move a standalone 5620 SAM database and main server on one or more Solaris stations to one or more Solaris stations of a different type.
To relocate a redundant 5620 SAM system to a different platform	Move redundant 5620 SAM databases and main servers on Solaris stations to Solaris stations of a different type.

5.3 Workflow for 5620 SAM platform migration

The following is the sequence of high-level actions required to relocate a standalone or redundant 5620 SAM system from one type of Solaris platform to another.

1. Perform the pre-migration tasks. See Procedure 5-1 for more information.
2. Perform the appropriate 5620 SAM migration procedure.
   - a. To relocate a standalone 5620 SAM system to a new platform, perform Procedure 5-3.
   - b. To relocate a redundant 5620 SAM system to a new platform, perform Procedure 5-4.
3. Perform sanity testing of the new 5620 SAM system using a 5620 SAM client.

5.4 5620 SAM platform migration preparation

This section describes how to prepare for the migration of a standalone or redundant 5620 SAM system from one type of platform to another. Before you attempt a 5620 SAM platform migration, you must collect specific information and ensure that the proper conditions are in place. Procedure 5-1 describes the required actions to perform in preparation for a 5620 SAM platform migration.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 5-1 To perform the pre-migration tasks

Perform this procedure to prepare a standalone or redundant 5620 SAM system on one or more Solaris stations for migration to a different platform type. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges to perform this procedure:

on each main server station:

- root or root-equivalent
- samadmin

on each database station:

- root or root-equivalent
- Oracle management

General preparation

1 Ensure that the 5620 SAM software DVD-ROM is available.

2 Remove all outstanding failed deployments. See the *5620 SAM User Guide* for information about deleting a failed deployment.

Back up configuration files

3 Make a backup copy of the *path*/nms/config/nms-server.xml configuration file on each server station.

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

Copy the file to a secure location that is unaffected by 5620 SAM migration activity, such as a non-5620 SAM station.

4 Make a copy of custom XML configuration files that may be present in the *path*/nms/jboss directory on each server station

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

Ensure that you store the files in a secure location that is unaffected by 5620 SAM migration activity, such as a non-5620 SAM station.

Gather required information

5 Obtain the following information for the appropriate database station in the current 5620 SAM system and record it for use during the migration:

Note — The appropriate station is one of the following:

- the standalone database station in a standalone 5620 SAM system
- the primary database station in a redundant 5620 SAM system

- root user password
- UNIX username for Oracle management account (default value at installation is oracle)
- Oracle database user ID (default value at installation is samuser)
- Oracle database user password
- Oracle SYS password
- Oracle base installation directory name (default Solaris installation value is /opt/5620sam/oracle11r2; default Windows installation value is C:\5620sam\oracle10r2)
- 5620 SAM database installation directory name (default installation value is /opt/5620sam/samdb)

6 Obtain the following information for each station that is to be a server station in the new 5620 SAM system and record it for use during the migration:

- hostname
- IP addresses
  - server IP addresses used by 5620 SAM databases to reach the server (public IP addresses, if NAT is used)
  - server IP address used by 5620 SAM GUI and OSS clients to reach the server (public IP address, if NAT is used)
  - server IP address used by 5620 SAM auxiliary servers to reach the main server (public IP address, if NAT is used)
  - server IP address used by device in the managed network to reach the main server (public IP address, if NAT is used)
  - private server IP addresses (if NAT is used)
- root user password
- samadmin user password

7 Obtain the following information for each station that is to be a database station in the new 5620 SAM system and record it for use during the migration:

- hostname
- IP addresses
  - IP addresses used by 5620 SAM servers to reach the database (public IP addresses, if NAT is used)
  - IP address used by 5620 SAM auxiliary servers to reach the database (public IP address, if NAT is used)
  - private IP addresses (if NAT is used)
- root user password

Close unrequired clients

8 Close all open 5620 SAM client sessions except one.

i Open a 5620 SAM client session using an account with security management privileges, such as admin.

ii Click on Administration→Security→5620 SAM User Security in the 5620 SAM main menu. The 5620 SAM User Security - Security Management (Edit) form opens with the General tab displayed.

iii Click on the Sessions tab button.

iv Click on the Search button. The form displays a list of the open 5620 SAM client sessions.

v Using the IP addresses in the Client IP column, identify the GUI and OSS clients that are currently logged in.

vi Close the client sessions by selecting them and clicking on the Close Session button. A dialog box appears.

Note — One of the listed sessions is the session that you are using. Do not attempt to close this session.

vii Click on the Yes button to confirm the action.

viii Click on the Search button to refresh the list of open client sessions.

Back up database

9 Alcatel-Lucent strongly recommends that you perform a database backup using one of the following methods before you perform a 5620 SAM system migration.

Perform one of the following.

a Use the 5620 SAM client GUI. See the *5620 SAM User Guide* for information about how to perform a database backup using the client GUI.

b Use a CLI script. Perform the following steps.

i Log in to the database station as one of the following:

- on Solaris, the Oracle management user
- on Windows, a user with local administrator privileges

Note — In a redundant 5620 SAM system, you must log on to the primary database station.

ii Open a console window.

iii Enter one of the following to begin the database backup.

Caution 1 — The path of the 5620 SAM database backup directory must not include the 5620 SAM database installation directory, typically /opt/5620sam/samdb on Solaris, and C:\5620sam\samdb on Windows, or data loss may occur.

Caution 2 — Before the 5620 SAM performs a database backup, it deletes the contents of the specified backup directory. Ensure that the backup directory that you specify in this step does not contain files that you want to retain.

On a Solaris station:

```
bash$ path/install/config/instance_name/SAMbackup.sh
backup_directory ↵
```

On a Windows station:

```
path\install\config\instance_name\SAMbackup.bat
backup_directory ↵
```

where
path is the 5620 SAM database installation location, typically /opt/5620sam/samdb on Solaris and C:\5620sam\samdb on Windows
instance_name is the 5620 SAM database instance name, typically samdb in a standalone deployment, and samdb1 or samdb2 in a redundant deployment
backup_directory is the directory that is to contain the database backup

The 5620 SAM backs up the database.

Note — A 5620 SAM database backup can take considerable time, depending on the database size and tablespace layout.

iv Record the backup directory name.

v Copy the database backup files from the backup directory to a secure location, such as a non-5620 SAM station, for safekeeping.

5.5 Standalone 5620 SAM platform migration procedures

This section describes the migration of a standalone 5620 SAM system from one type of platform to another.

Procedure 5-2 describes how to relocate a standalone 5620 SAM system on Windows to a Solaris platform.

Procedure 5-3 describes how to relocate a standalone 5620 SAM system from one Solaris platform type to another.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 5-2 To relocate a Windows 5620 SAM system to a Solaris platform

Perform this procedure to relocate a standalone 5620 SAM system on Windows to a Solaris platform. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges to perform this procedure:

on the Solaris main server station:

- root or root-equivalent
- samadmin

on the Solaris database station:

- root or root-equivalent
- Oracle management

on each Windows station:

- local administrator

Stop server

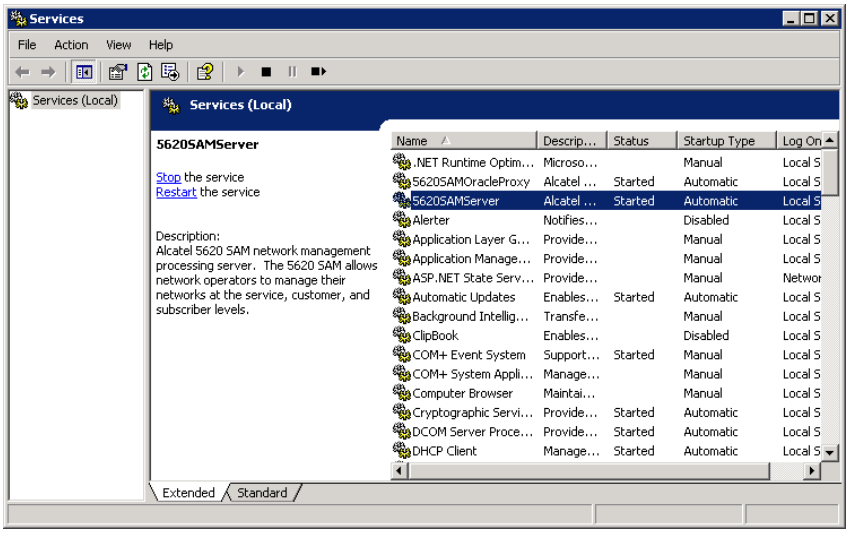
1 Perform the following steps on the Windows 5620 SAM main server station to stop the 5620 SAM server service.

   i Log in to the main server station as a user with local administrator privileges.

   ii Click on Start→Settings→Control Panel→Administrative Tools→Services. The Services window opens.

iii Select the 5620SAMServer entry, as shown in Figure 5-1, and click on the Stop the service link.

Figure 5-1 Services - 5620SAMServer service



2 Perform the following steps to verify that the 5620 SAM main server is stopped.

i Open a console window.

ii Enter the following to change to the main server binary directory:

cd *path*\nms\bin ↵

where *path* is the 5620 SAM main server installation location, typically C:\5620sam\server

iii Enter the following:

nmsserver.bat appserver_status ↵

The command displays a status message.

iv The 5620 SAM main server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 2 iii. Do not proceed to the next step until the main server is stopped.

v Close the console window.

3 Close the Services window.

Export database

4 Perform the following steps to export the 5620 SAM database to a file set.

i Log in to the database station as a user with local administrator privileges.

ii If the directory that is to hold the exported database file set does not exist, create the directory.

Note 1 — A 5620 SAM database export operation fails if the directory that is to contain the exported database file set does not exist.

Note 2 — The directory must be a directory on the local file system.

iii Open a console window.

iv Enter the following:

path*\Windows_dbExport.cmd *database_export_directory ↵

where
path is the Windows_dbExport.cmd script location, typically C:\5620sam\samdb\install\config\samdb
database_export_directory is the absolute path of the directory that is to contain the exported database file set

Note 1 — *database_export_directory* must be a directory on the local file system.

Note 2 — The passwords that you enter are not displayed.

v Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

vi Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
  Accept value? [y/n/q] (y):
```

vii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 4 vi.

viii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

ix The following prompt is displayed if you enter a username other than the default:

```
Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 4 viii.

x Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

xi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 4 x.

xii Create a database export encryption password and record it for use in the following steps and during the database import operation.

Note — The password can be of any length and use any characters.

xiii Enter the created password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

xiv Re-enter the password at the following prompt:

```
Confirm export encryption password (terminal echo is off):
```

xv If the passwords do not match, the script displays the following error message, and you must go back to step 4 xiii:

```
ERROR: Passwords do NOT match, Please enter it again
```

xvi Press ↵ at the following prompt to proceed with the database export:

```
Proceed with the export? [y/n/q] (y):
```

The script exports the 5620 SAM database to a file set in the directory specified in step 4 iv.

Stop database

5 Perform the following steps on the Windows 5620 SAM database station to stop the database services.

- **i** Click on Start→Settings→Control Panel→Administrative Tools→Services. The Services window opens.
- **ii** Select the OracleService*instance_name* entry

  where *instance_name* is the name of the 5620 SAM database instance, typically samdb
- **iii** Click on the Stop the service link.
- **iv** Click on the OK button to acknowledge that stopping the OracleService*instance_name* service also stops the 5620SAMOracleProxy service. The 5620 SAM database services are stopped.

Install database

6 Perform steps 1 to 50 of Procedure 2-1 to install the 5620 SAM database software on the new database station.

Note — For the database installation, you must use the same usernames, passwords, database name, and database instance name specified for the existing database installation.

Import database file set

7 Copy the exported data file set created in step 4 to the new database station.

Note — The directory to which you copy the file set must contain no other files.

8 Perform the following steps to import the exported 5620 SAM data file set.

- **i** Log in to the primary database station as the Oracle management user.
- **ii** Open a console window.

iii Enter the following:

```
bash$ path/Solaris_dbMigration.sh -i
database_import_directory ↵
```

where
path is the Solaris_dbMigration.sh script location, typically /opt/5620sam/samdb/install/config/samdb
database_import_directory is the absolute path of the directory that contains the exported database file set

Note 1 — To view the migration script usage instructions, specify the -h switch, as follows:

```
Solaris_dbMigration.sh -h ↵
```

Note 2 — The passwords that you enter are not displayed.

iv Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

v Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

vi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 8 v.

vii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

viii The following prompt is displayed if you enter a username other than the default:

```
Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 8 vii.

ix Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

x Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 8 ix.

xi Enter the database export encryption password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

Note — This password is the password recorded in step 3 xii.

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

xii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 8 xi.

xiii At the following prompt, specify how many CPUs are available for the import process:

```
In order to optimize the speed of this import, this script
needs to know how many CPUs are available on this machine and
how many data files there are to import.

This machine appears to have n CPUs

  Is this correct? [y/n/q] (y):
```

where *n* is the number of CPUs that the script detects

xiv Press ↵ at the following prompt if the number of data files to import is correct:

```
There appears to be n data files to import

  Is this correct? [y/n/q] (y):
```

where *n* is the number of data files found by the script

xv Press ↵ at the following prompt to proceed with the database import:

```
Log of import command will be written to log_file

Proceed with the import? [y/n/q] (y):
```

where *log_file* is the name of a log file that the script creates

The script imports the 5620 SAM database from the directory specified in step 8 iii.

Install server

9 Perform steps 51 to 87 of Procedure 2-1 to install the 5620 SAM main server software on the new main server station.

10 Log in to a newly installed client station.

11 Choose Administration→Database from the 5620 SAM main menu. The Database Manager (Edit) form opens.

Configure the following parameters, using the values entered during the Solaris database and main server installations:

- Scheduled Backup Location—“Online Backup Destination” value from Online Database Backup panel in main server installation
- Manual Backup Location—Solaris file path; default is “Online Backup Destination” value

Procedure 5-3 To relocate a standalone 5620 SAM system from one Solaris platform to another

Perform this procedure to relocate a standalone 5620 SAM system on Solaris to a different Solaris platform type. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges to perform this procedure:

on the main server station:

- root or root-equivalent
- samadmin

on the database station:

- root or root-equivalent
- Oracle management

Stop server

1 Perform the following steps to stop the 5620 SAM main server application.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and go back to step 1 v. Do not proceed to the next step until the server is stopped.

Disable server daemon

2 Disable the 5620 SAM server startup daemon. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the conversion.

i Enter the following to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

The next section of the procedure describes the exporting of the 5620 SAM database to a file set.

Export database

3 Perform the following steps to export the 5620 SAM database to a file set.

i Log in to the database station as the Oracle management user.

ii If the directory that is to hold the exported database file set does not exist, create the directory.

Note 1 — A 5620 SAM database export operation fails if the directory that is to contain the exported database file set does not exist.

Note 2 — The directory must be a directory on the local file system.

iii Open a console window.

iv Enter the following:

```
bash$ path/Solaris_dbMigration.sh -e
database_export_directory ↵
```

where
path is the Solaris_dbMigration.sh script location, typically /opt/5620sam/samdb/install/config/samdb
database_export_directory is the absolute path of the directory that is to contain the exported database file set

Note 1 — *database_export_directory* must be a directory on the local file system.

Note 2 — To view the migration script usage instructions, specify the -h switch, as follows:

```
Solaris_dbMigration.sh -h ↵
```

Note 3 — The passwords that you enter are not displayed.

v Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

vi Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

vii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 3 vi.

viii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

ix The following prompt is displayed if you enter a username other than the default:

```
Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 3 viii.

x Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
  Accept value? [y/n/q] (y):
```

xi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 3 x.

xii Create a database export encryption password and record it for use in the following steps and during the database import operation.

Note — The password can be of any length and use any characters.

xiii Enter the created password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

xiv Re-enter the password at the following prompt:

```
Confirm export encryption password (terminal echo is off):
```

xv If the passwords do not match, the script displays the following error message, and you must go back to step 3 xiii:

```
ERROR: Passwords do NOT match, Please enter it again
```

xvi Press ↵ at the following prompt to confirm that the 5620 SAM server is stopped:

```
This tool will shutdown the db listener disconnecting any
connections to the database.

  Have the SAM servers been shutdown? [y/n/q] (y):
```

xvii At the following prompt, specify how many CPUs are available for the export process:

```
To optimize the speed of the export this script will use as
many CPUs as you allow it to.

  How many CPUs are available for this export? (n):
```

where *n* is the number of CPUs that the script detects

xviii Press ↵ at the following prompt to direct the script to estimate the amount of disk space required for the database export:

```
Do you want to perform an export size estimate first? [y/n/q]
(y):
```

xix Press ↵ at the following prompt to proceed with the database export:

```
Proceed with the export? [y/n/q] (y):
```

The script exports the 5620 SAM database to a file set in the directory specified in step 3 iv.

Stop database

4 Stop the 5620 SAM database application.

i Log in to the database station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to stop the Oracle proxy daemon:

```
# ./S965620SAMOracleProxyWrapper stop ↵
```

v Enter the following to stop the 5620 SAM database daemon:

```
# ./S95db5620sam stop ↵
```

Do not proceed until the command displays the following text string:

```
Done
```

Install database

5 Perform steps 1 to 50 of Procedure 2-1 to install the 5620 SAM database software on the new database station.

Note — For the database installation, you must use the same usernames, passwords, database name, and database instance name specified for the existing database installation.

Import database file set

6 Copy the exported data file set created in step 3 to the new database station.

Note — The directory to which you copy the file set must contain no other files.

7 Perform the following steps to import the exported 5620 SAM data file set.

i Log in to the primary database station as the Oracle management user.

ii Open a console window.

iii Enter the following:

```
bash$ path/Solaris_dbMigration.sh -i
database_import_directory ↵
```

where
path is the Solaris_dbMigration.sh script location, typically /opt/5620sam/samdb/install/config/samdb
database_import_directory is the absolute path of the directory that contains the exported database file set

Note 1 — To view the migration script usage instructions, specify the -h switch, as follows:

```
Solaris_dbMigration.sh -h ↵
```

Note 2 — The passwords that you enter are not displayed.

iv Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

v Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

vi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 7 v.

vii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

viii The following prompt is displayed if you enter a username other than the default:

```
Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 7 vii.

ix Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

x Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 7 ix.

xi Enter the database export encryption password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

Note — This password is the password recorded in step 3 xii.

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

xii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 7 xi.

xiii At the following prompt, specify how many CPUs are available for the import process:

```
In order to optimize the speed of this import, this script
needs to know how many CPUs are available on this machine and
how many data files there are to import.

This machine appears to have n CPUs

  Is this correct? [y/n/q] (y):
```

where *n* is the number of CPUs that the script detects

xiv Press ↵ at the following prompt if the number of data files to import is correct:

```
There appears to be n data files to import

  Is this correct? [y/n/q] (y):
```

where *n* is the number of data files found by the script

xv Press ↵ at the following prompt to proceed with the database import:

```
Log of import command will be written to log_file

Proceed with the import? [y/n/q] (y):
```

where *log_file* is the name of a log file that the script creates

The script imports the 5620 SAM database from the directory specified in step 7 iii.

Install server

8 Perform steps 51 to 87 of Procedure 2-1 to install the 5620 SAM main server software on the new main server station.

5.6 Redundant 5620 SAM platform migration procedures

This section describes the migration of a redundant 5620 SAM system from one type of Solaris platform to another.

Procedure 5-4 describes how to relocate a redundant 5620 SAM system.

Note — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin and Oracle management users

Do not type the # symbol or bash$ when you enter a command.

Procedure 5-4 To relocate a redundant 5620 SAM system to a different platform

Perform this procedure to relocate a redundant 5620 SAM system on Solaris to a different platform type. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note — You require the following user privileges to perform this procedure:

on each main server station:

- root or root-equivalent
- samadmin

on each database station:

- root or root-equivalent
- Oracle management

Stop standby main server

1 Perform the following steps to stop the standby 5620 SAM main server application.

i Log in to standby main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and go back to step 1 v. Do not proceed to the next step until the server is stopped.

Disable standby main server daemon

2 Disable the standby 5620 SAM main server startup daemon. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the migration.

i Enter the following to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

The next section of the procedure describes the stopping of the primary 5620 SAM main server.

Stop primary main server

3 Perform the following steps to stop the primary 5620 SAM main server application.

i Log in to the primary main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and go back to step 3 v. Do not proceed to the next step until the server is stopped.

Disable primary main server daemon

4 Disable the primary 5620 SAM main server startup daemon. This ensures that the 5620 SAM server does not automatically start in the event of a power disruption during the migration.

i Enter the following to switch to the root user:

```
bash$ su - ↵
```

ii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iii Enter the following to disable the 5620 SAM server daemon by renaming it:

```
# mv S975620SAMServerWrapper
inactive.S975620SAMServerWrapper ↵
```

The next section of the procedure describes the stopping of the standby 5620 SAM database.

Stop standby database

5 Stop the standby database application.

i Log in to the standby database station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to stop the Oracle proxy daemon:

```
# ./S965620SAMOracleProxyWrapper stop ↵
```

v Enter the following to stop the 5620 SAM database daemon:

```
# ./S95db5620sam stop ↵
```

Do not proceed until the command displays the following text string:

```
Done
```

Export database

6 Perform the following steps to export the primary 5620 SAM database to a file set.

i Log in to the primary database station as the Oracle management user.

ii Open a console window.

iii If the directory that is to hold the exported database file set does not exist, create the directory.

Note 1 — A 5620 SAM database export operation fails if the directory that is to contain the exported database file set does not exist.

Note 2 — The directory must be a directory on the local file system.

iv Enter the following:

```
bash$ path/Solaris_dbMigration.sh -e
database_export_directory ↵
```

where
path is the Solaris_dbMigration.sh script location, typically /opt/5620sam/samdb/install/config/samdb
database_export_directory is the absolute path of the directory that is to contain the exported database file set

Note 1 — *database_export_directory* must be a directory on the local file system.

Note 2 — To view the migration script usage instructions, specify the -h switch, as follows:

```
Solaris_dbMigration.sh -h ↵
```

Note 3 — The passwords that you enter are not displayed.

v Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

vi Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
  Accept value? [y/n/q] (y):
```

vii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 6 vi.

viii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

ix The following prompt is displayed if you enter a username other than the default:

```
  Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 6 viii.

x Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
  Accept value? [y/n/q] (y):
```

xi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 6 x.

xii Create a database export encryption password and record it for use in the following steps and during the database import operation.

Note — The password can be of any length and use any characters.

xiii Enter the created password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

xiv Re-enter the password at the following prompt:

```
Confirm export encryption password (terminal echo is off):
```

xv If the passwords do not match, the script displays the following error message, and you must go back to step 6 xiii:

```
ERROR: Passwords do NOT match, Please enter it again
```

xvi Press ↵ at the following prompt to confirm that the 5620 SAM server is stopped:

```
This tool will shutdown the db listener disconnecting any
connections to the database.

  Have the SAM servers been shutdown? [y/n/q] (y):
```

xvii At the following prompt, specify how many CPUs are available for the export process:

```
To optimize the speed of the export this script will use as
many CPUs as you allow it to.

  How many CPUs are available for this export? (n):
```

where *n* is the number of CPUs that the script detects

xviii Press ↵ at the following prompt to direct the script to estimate the amount of disk space required for the database export:

```
Do you want to perform an export size estimate first? [y/n/q]
(y):
```

xix Press ↵ at the following prompt to proceed with the database export:

```
Proceed with the export? [y/n/q] (y):
```

The script exports the 5620 SAM database to a file set in the directory specified in step 6 iv.

Stop primary database

7 Stop the 5620 SAM database application on the primary database station.

i Enter the following on the primary database station to switch to the root user:

```
bash$  su -
```

ii Enter the following to stop the Oracle proxy daemon:

```
# /etc/rc3.d/S965620SAMOracleProxyWrapper stop ↵
```

iii Enter the following to stop the 5620 SAM database daemon:

```
# ./S95db5620sam stop ↵
```

Do not proceed until the command displays the following text string:

```
Done
```

Install primary database

8 Perform steps 1 to 51 of Procedure 2-2 to install the 5620 SAM database software on the new primary database station.

Note — For the new primary database installation, you must use the same usernames, passwords, database name, and database instance name specified for the existing primary database installation.

Import database file set to primary database

9 Copy the exported data file set created in step 6 to the new primary database station.

Note — The directory to which you copy the file set must contain no other files.

10 Perform the following steps to import the primary 5620 SAM data file set.

i Log in to the primary database station as the Oracle management user.

ii Open a console window.

iii Enter the following:

```
bash$ path/Solaris_dbMigration.sh -i
database_import_directory ↵
```

where
path is the Solaris_dbMigration.sh script location, typically /opt/5620sam/samdb/install/config/samdb
database_import_directory is the absolute path of the directory that contains the exported database file set

Note 1 — To view the migration script usage instructions, specify the -h switch, as follows:

```
Solaris_dbMigration.sh -h ↵
```

Note 2 — The passwords that you enter are not displayed.

iv Specify the 5620 SAM database installation location at the following prompt; press Enter to accept the default:

```
Please enter the DB_INSTALL_BASE (installation_location):
```

where *installation_location* is the default database installation directory

The following text is displayed:

```
Using ORACLE_SID = database_instance_name

Using ORACLE_HOME = Oracle_installation_directory
```

v Enter the SYS user password at the following prompt and press ↵:

```
Enter the password for the "sys" user (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

vi Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 10 v.

vii Enter the 5620 SAM database username at the following prompt:

```
Enter the username for the SAM Database (user_name):
```

where *user_name* is the default 5620 SAM database username, typically samuser

viii The following prompt is displayed if you enter a username other than the default:

```
Accept "user_name" [y/n/q]? (y):
```

Press ↵ if you have entered the name correctly. Otherwise, enter n ↵ and go back to step 10 vii.

ix Enter the database user password at the following prompt:

```
Enter the password for user_name (terminal echo is off):
```

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

x Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 10 ix.

xi Enter the export password at the following prompt:

```
Enter the export encryption password (terminal echo is off):
```

Note — This password is the password recorded in step 6 xii.

The following prompt is displayed:

```
Accept value? [y/n/q] (y):
```

xii Press ↵ if you are sure that the password is entered correctly. Otherwise, enter n ↵ and go back to step 10 xi.

xiii At the following prompt, specify how many CPUs are available for the import process:

```
In order to optimize the speed of this import, this script
needs to know how many CPUs are available on this machine and
how many data files there are to import.
```

```
This machine appears to have n CPUs

  Is this correct? [y/n/q] (y):
```

where *n* is the number of CPUs that the script detects

xiv Press ↵ at the following prompt if the number of data files to import is correct:

```
There appears to be n data files to import

  Is this correct? [y/n/q] (y):
```

where *n* is the number of data files found by the script

xv Press ↵ at the following prompt to proceed with the database import:

```
Log of import command will be written to log_file

Proceed with the import? [y/n/q] (y):
```

where *log_file* is the name of a log file that the script creates

The script imports the 5620 SAM database from the directory specified in step 10 iii.

Install standby database

11 Perform steps 52 to 92 of Procedure 2-2 to install the 5620 SAM database software on the new standby database station.

Note — For the new standby database installation, you must use the same usernames, passwords, database name, and database instance name specified for the existing standby database installation.

Install primary main server

12 Perform steps 93 to 139 of Procedure 2-2 to install the 5620 SAM main server software on the new primary main server station.

Install standby main server

13 Perform steps 144 to 187 of Procedure 2-2 to install the 5620 SAM main server software on the new standby main server station.

6 — 5620 SAM uninstallation

6.1 5620 SAM uninstallation overview

This chapter contains information about uninstalling the 5620 SAM software components. 5620 SAM system uninstallation has the following requirements.

- No 5620 SAM software in the 5620 SAM system is running when the uninstallation begins.
- The order in which the 5620 SAM components are uninstalled is the reverse of the order in which they are installed.

6.2 5620 SAM uninstallation procedures list

Table 6-1 lists the 5620 SAM software uninstallation procedures.

Table 6-1 5620 SAM uninstallation procedures list

Procedure	Purpose
To uninstall the 5620 SAM single-user client software on Solaris using a web browser	Remove the 5620 SAM client software from a Solaris station.
To uninstall the 5620 SAM client software on Solaris using the local client uninstaller	Remove the 5620 SAM client software from a Solaris station.
To uninstall the 5620 SAM single-user client software on Windows using a web browser	Remove the 5620 SAM client software from a Windows station.
To uninstall the 5620 SAM single-user client software on Windows using the Add/Remove Programs utility	Remove the 5620 SAM client software from a Windows station.
To uninstall the 5620 SAM auxiliary server software	Remove the 5620 SAM auxiliary server software.
To uninstall the 5620 SAM main server software	Remove the 5620 SAM main server software.
To uninstall the 5620 SAM database software	Remove the 5620 SAM database software.

6.3 Workflow for 5620 SAM uninstallation

The following is the sequence of high-level actions required to uninstall the 5620 SAM client, server and database components that comprise a 5620 SAM system.

1. Uninstall the client. See Procedure 6-1, 6-2, 6-3, or 6-4 for more information.
2. Uninstall the auxiliary servers, if required. See Procedure 6-5 for more information.
3. Uninstall the main server. See Procedure 6-6 for more information.
4. Uninstall the database. See Procedure 6-7 for more information.

6.4 5620 SAM uninstallation procedures

The following procedures describe how to remove the software components of a 5620 SAM system. Procedures 6-1 and 6-2 describe how to uninstall the 5620 SAM client software on a Solaris station. Procedures 6-3 and 6-4 describe how to uninstall the 5620 SAM client software on a Windows station. Procedure 6-5 describes how to uninstall the 5620 SAM auxiliary server software. Procedure 6-6 describes how to uninstall the 5620 SAM main server software. Procedure 6-7 describes how to uninstall the 5620 SAM database software.

Procedure 6-1 To uninstall the 5620 SAM single-user client software on Solaris using a web browser

Perform this procedure to remove the 5620 SAM single-user client software from a Solaris station using a web browser.

Note — You require one of the following sets of user privileges on the client station to perform this procedure:

- the privileges of the user that installed the client software
- root or root-equivalent

1. Stop the 5620 SAM client. From the 5620 SAM GUI main menu, choose Application→Exit.
2. Log in to the 5620 SAM client station as the same user that installed the 5620 SAM client software, or as a root-equivalent user.
3. Perform one of the following.
   a. If SSL security is not enabled on the client and main server, open the following page on the main server using a web browser on the client station:

      http://*server*:8085/client

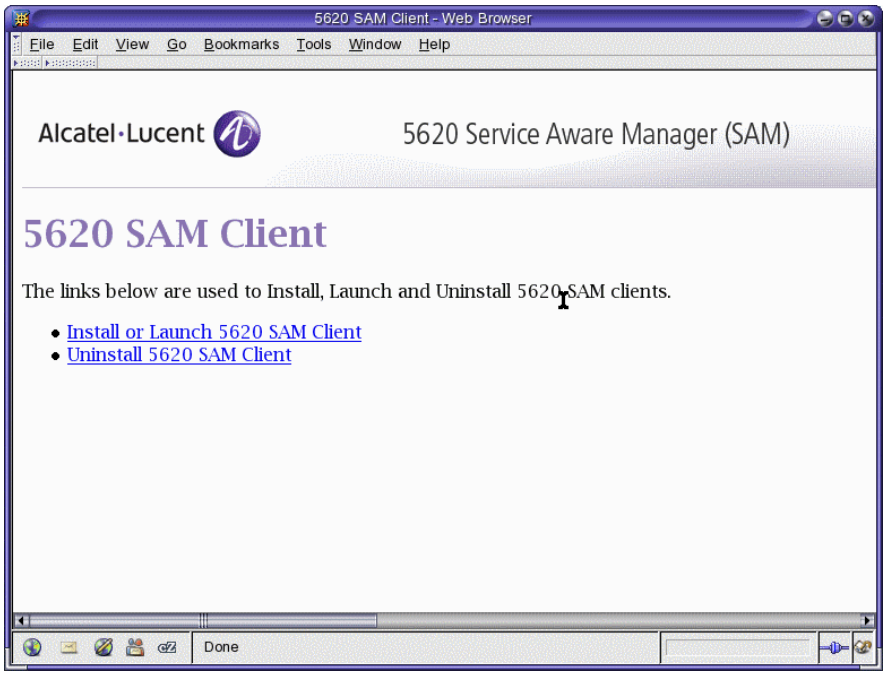
   b. If SSL security is enabled on the client and main server, open the following page on the main server using a web browser on the client station:

      https://*server*:8444/client

   where *server* is the IP address or hostname of the 5620 SAM main server

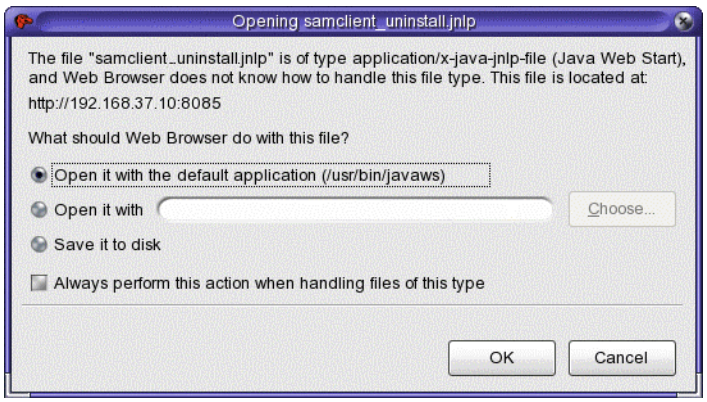
The page shown in Figure 6-1 is displayed.

Figure 6-1 5620 SAM client page



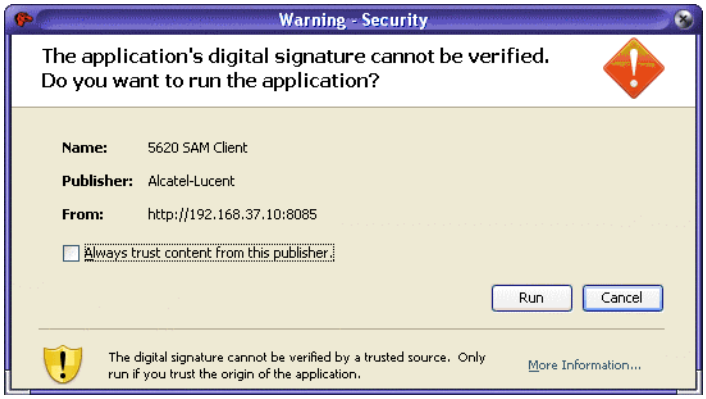
4 Click on the “Uninstall 5620 SAM Client” link. The form shown in Figure 6-2 is displayed. Ensure that “Open with” is selected, then click on the OK button.

Figure 6-2 Opening samclient_uninstall.jnlp



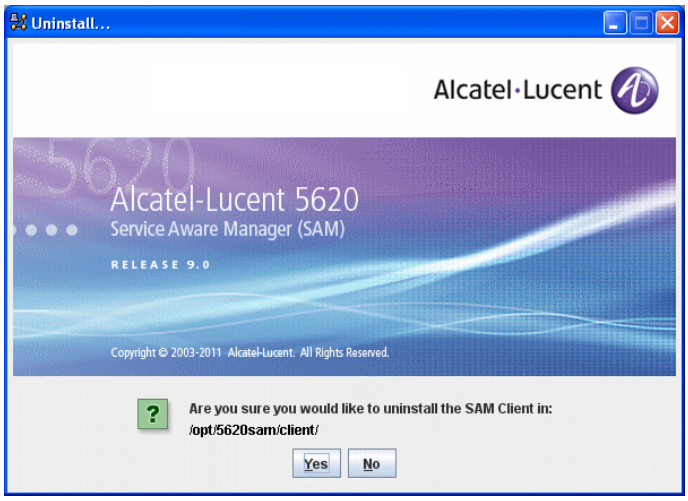
5 If a security warning like the one shown in Figure 6-3 is displayed, click on the Run button.

Figure 6-3 Warning - Security



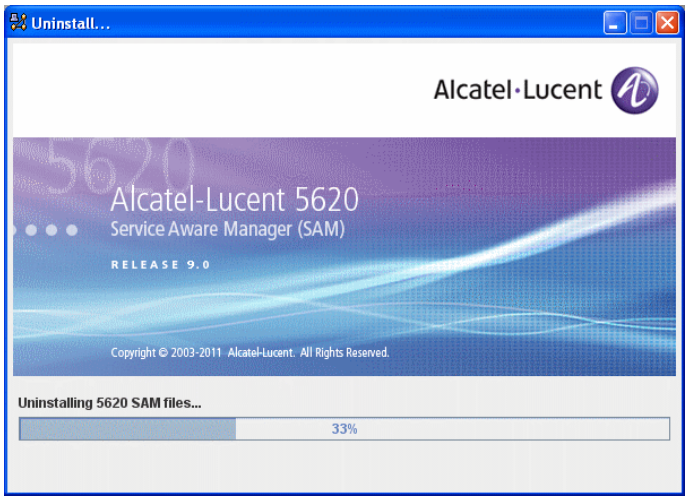
6 The client uninstaller opens, as shown in Figure 6-4. Click on the Yes button to begin the client uninstallation.

Figure 6-4 Uninstall...



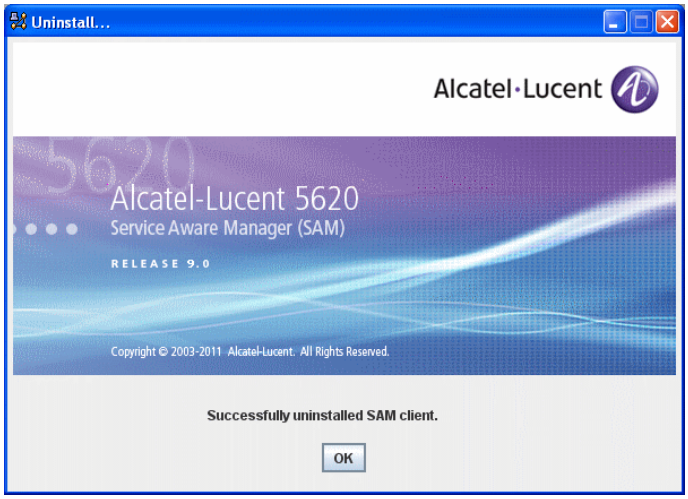
The panel Figure 6-5 opens. The panel displays the uninstallation progress.

Figure 6-5 Uninstall...



7 The client uninstallation is complete when the panel in Figure 6-6 is displayed. Click on the OK button to close the uninstaller.

Figure 6-6 Uninstall...



Procedure 6-2 To uninstall the 5620 SAM client software on Solaris using the local client uninstaller

Perform this procedure to remove the 5620 SAM client software from a Solaris station using the uninstallation utility on the client station.

Note — You require one of the following sets of user privileges on the client station to perform this procedure:

- the privileges of the user that installed the client software
- root or root-equivalent

1 Stop the 5620 SAM client. From the 5620 SAM GUI main menu, choose Application→Exit.

2 Log in to the 5620 SAM client station as the same user that installed the 5620 SAM client software, or as a root-equivalent user.

3 Open a console window.

Note — Ensure that the current working directory is not a directory below the 5620 SAM client installation directory, for example, below /opt/5620sam/client.

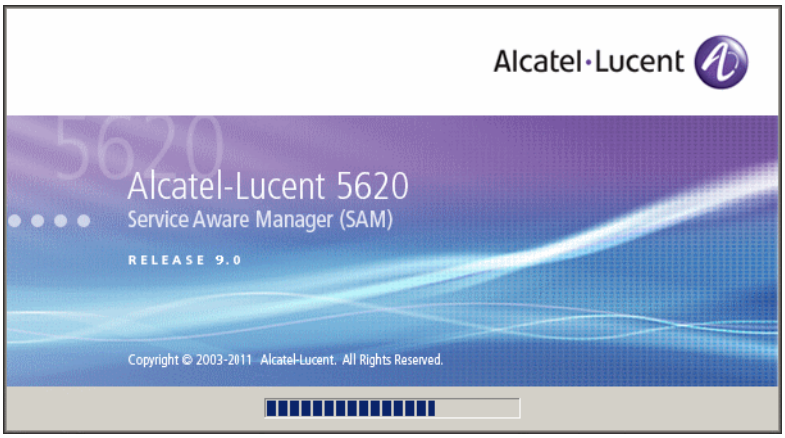
4 Enter the following to open the 5620 SAM client uninstaller:

```
# path/Uninstaller/Uninstall_5620_SAM_Client ↵
```

where *path* is the 5620 SAM client installation location, typically /opt/5620sam/client

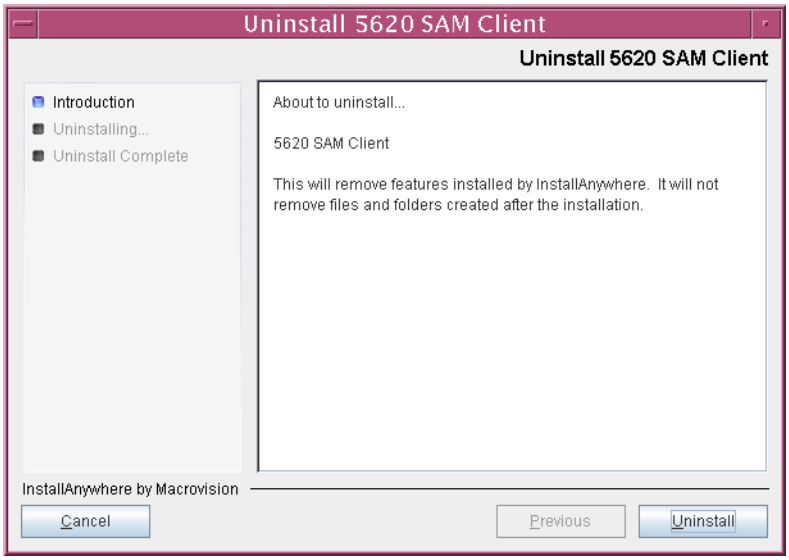
The splash screen shown in Figure 6-7 opens.

Figure 6-7 5620 SAM Uninstaller



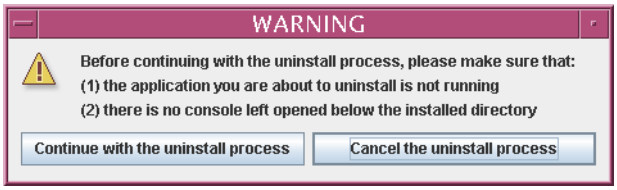
5 The 5620 SAM client uninstaller opens, as shown in Figure 6-8. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Uninstall button to begin the uninstallation.

Figure 6-8 Uninstall 5620 SAM Client



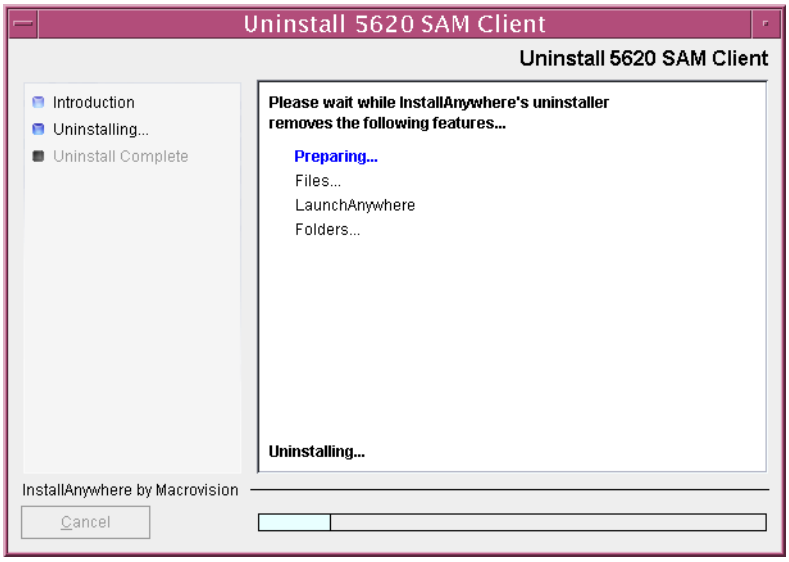
6 As shown in Figure 6-9, a warning appears. Ensure that the conditions are true. Click on the “Continue with the uninstall process” button to begin the uninstallation.

Figure 6-9 Warning



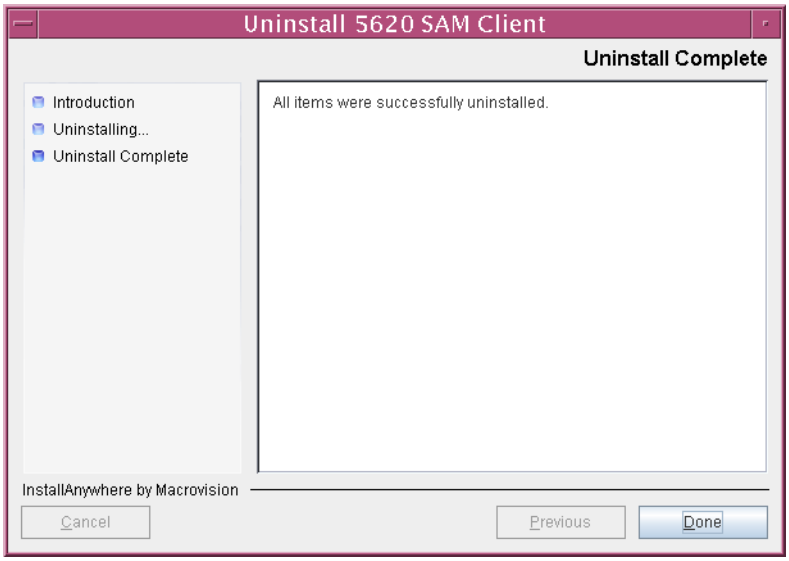
The uninstaller begins to remove 5620 SAM client files and directories, as shown in Figure 6-10.

Figure 6-10 Uninstall 5620 SAM Client



7 When the client uninstallation is complete, as shown in Figure 6-11, click on the Done button to close the client uninstaller.

Figure 6-11 Uninstall Complete



Procedure 6-3 To uninstall the 5620 SAM single-user client software on Windows using a web browser

Perform this procedure to remove the 5620 SAM single-user client software from a Windows station using a web browser.

Note — The user that uninstalls the 5620 SAM client software must be a local administrator or the user that installed the 5620 SAM client software.

1 Log in to the 5620 SAM single-user client station as a local administrator, or as the user that installed the client software.

2 Close the client GUI, if it is open, by choosing Application→Exit from the 5620 SAM main menu.

3 Perform one of the following.

   a If SSL security is not enabled on the client and main server, open the following page on the main server using a web browser on the client station:

   http://*server*:8085/client

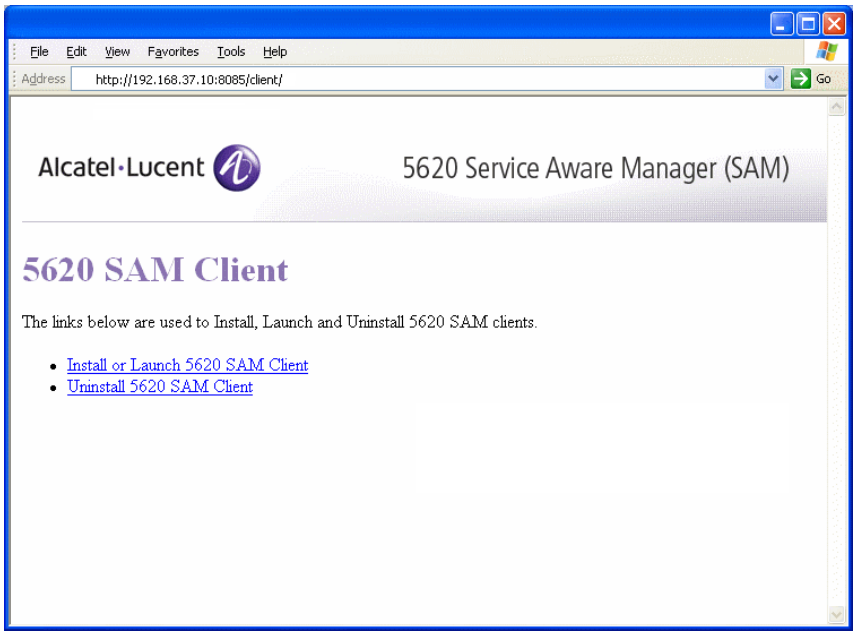
   b If SSL security is enabled on the client and main server, open the following page on the main server using a web browser on the client station:

   https://*server*:8444/client

   where *server* is the IP address or hostname of the 5620 SAM main server

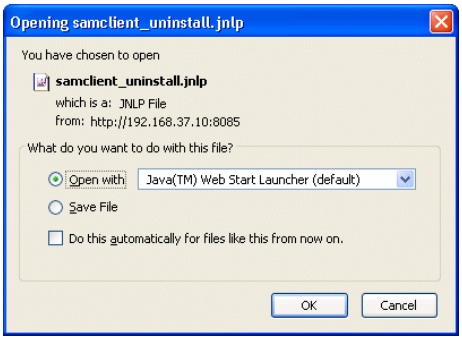
   The page shown in Figure 6-12 is displayed.

Figure 6-12 5620 SAM client page



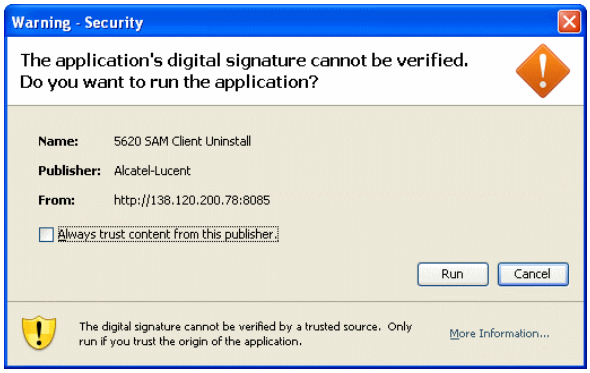
4 Click on the “Uninstall 5620 SAM Client” link. The form shown in Figure 6-13 is displayed. Ensure that “Open with” is selected, then click on the OK button.

Figure 6-13 Opening samclient_uninstall.jnlp



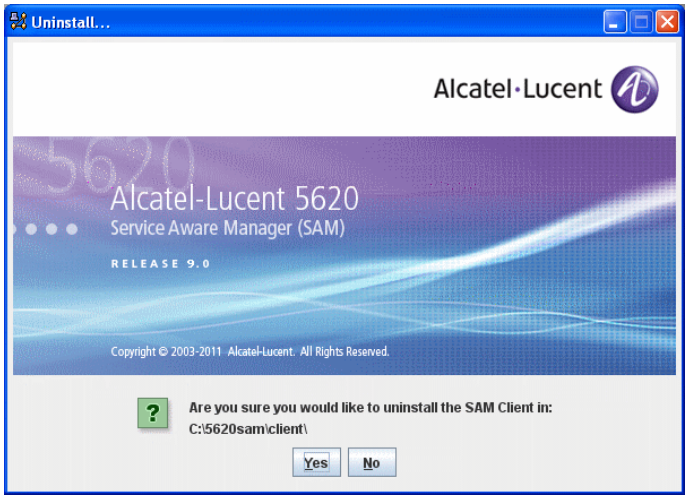
5 If a security warning like the one shown in Figure 6-14 is displayed, click on the Run button.

Figure 6-14 Warning - Security



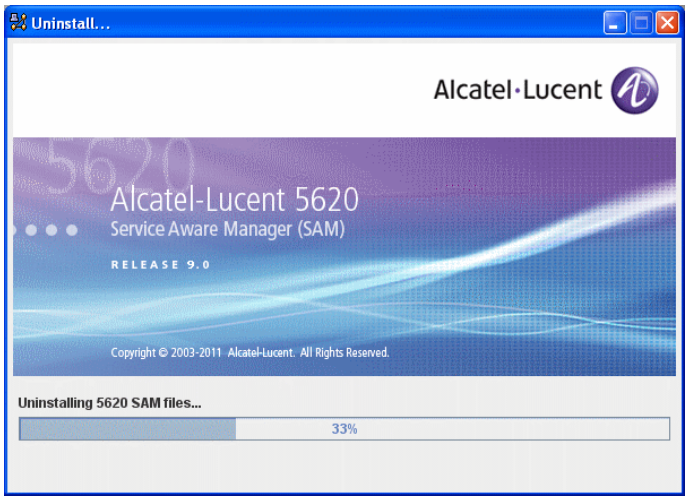
6 The client uninstaller opens, as shown in Figure 6-15. Click on the Yes button to begin the client uninstallation.

Figure 6-15 Uninstall...



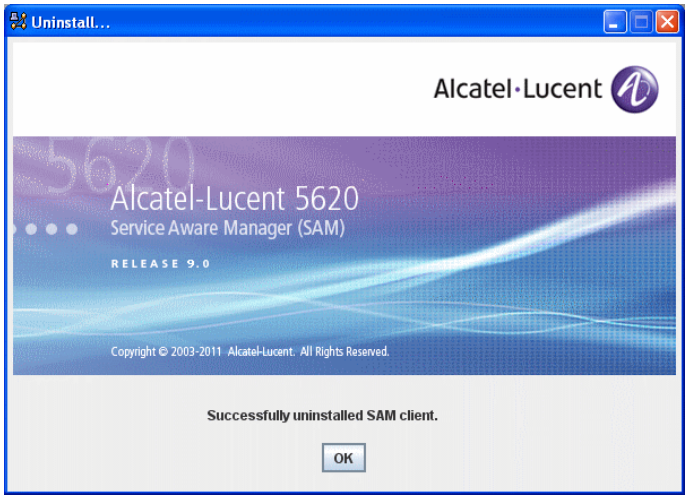
The panel Figure 6-16 opens. The panel displays the uninstallation progress.

Figure 6-16 Uninstall...



7 The client uninstallation is complete when the panel in Figure 6-17 is displayed. Click on the OK button to close the uninstaller.

Figure 6-17 Uninstall...



Procedure 6-4 To uninstall the 5620 SAM single-user client software on Windows using the Add/Remove Programs utility

Perform this procedure to remove the 5620 SAM single-user client software from a Windows station using the Windows Add/Remove Programs utility.

Note — The Windows user that uninstalls the 5620 SAM client software must be a local administrator or the user that installed the 5620 SAM client software.

1 Log in to the 5620 SAM single-user client station as a local administrator or the user that installed the 5620 SAM client software.

2 Close the 5620 SAM client GUI, if it is open, by choosing Application→Exit from the 5620 SAM main menu.

3 Perform one of the following, based on the Windows release.

   a Perform the following steps for Windows Vista.

      i Click on Start→Control Panel. The Control Panel window opens.

      ii Under the Programs category, click on Uninstall a Program. The Uninstall or change a program window opens.

iii Right-click on 5620 SAM Client and select Uninstall/Change.

iv If a security dialog box appears, click on the Continue button.

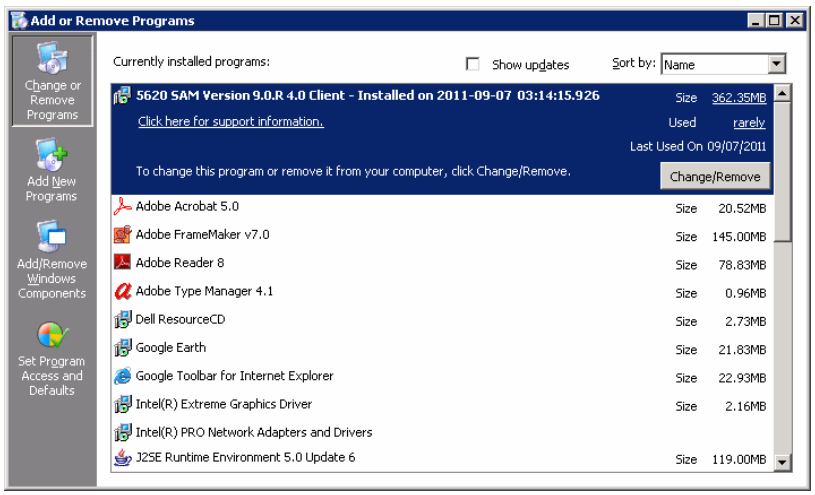
b Perform the following steps for a Windows release other than Vista.

i Click on Start→Settings→Control Panel. The Control Panel window opens.

ii Double-click on Add or Remove Programs. The Add or Remove Programs window opens.

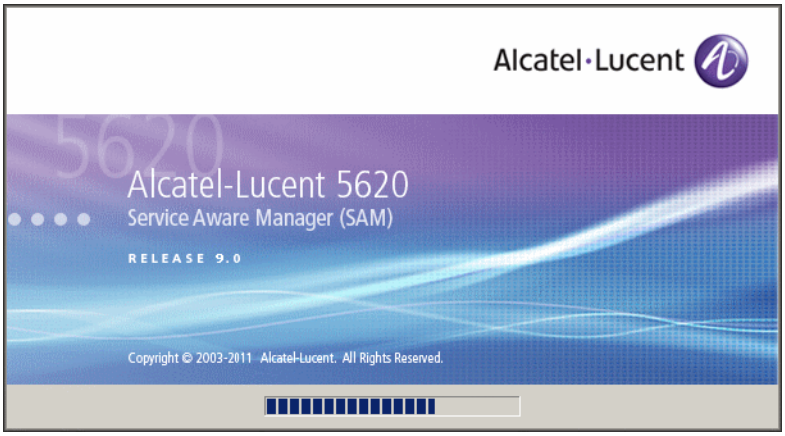
iii Select 5620 SAM Client, as shown in Figure 6-18. Click on the Change/Remove button to begin the uninstallation.

Figure 6-18 Add or Remove Programs - client



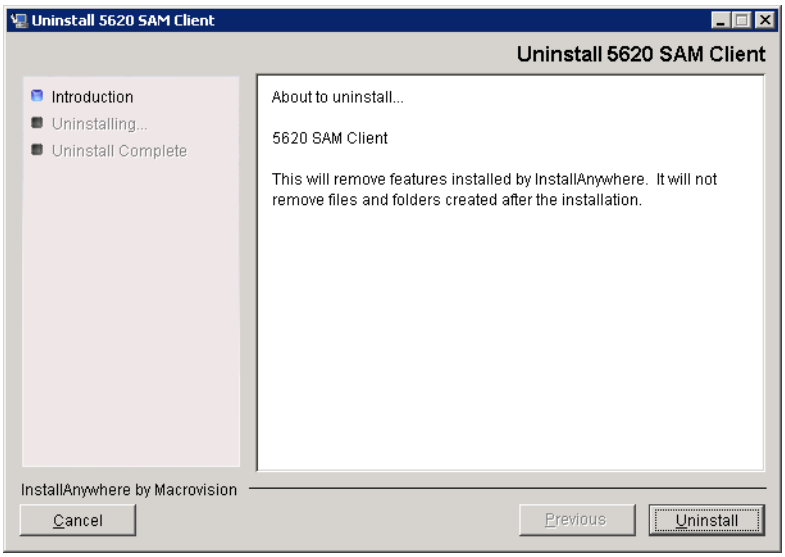
The splash screen shown in Figure 6-19 opens.

Figure 6-19 5620 SAM uninstaller



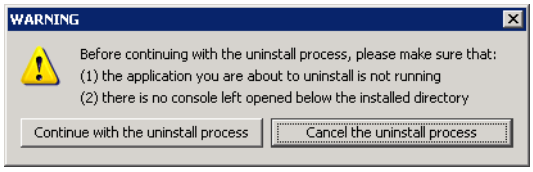
4 You are notified that the utility uninstalls the specified application but does not remove any files or directories added after the installation, as shown in Figure 6-20. Click on the Uninstall button to begin the uninstallation.

Figure 6-20 Uninstall 5620 SAM Client



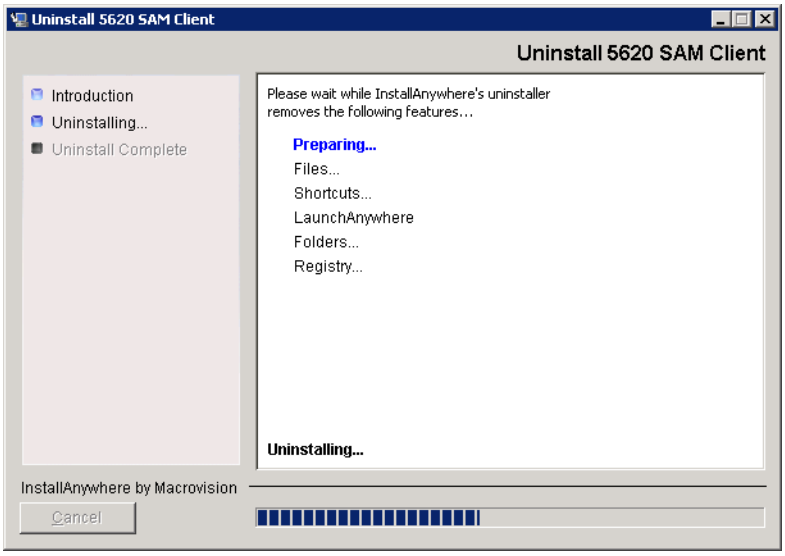
5 As shown in Figure 6-21, a warning appears. Ensure that the conditions are true, then click on the “Continue with the uninstall process” button.

Figure 6-21 Warning



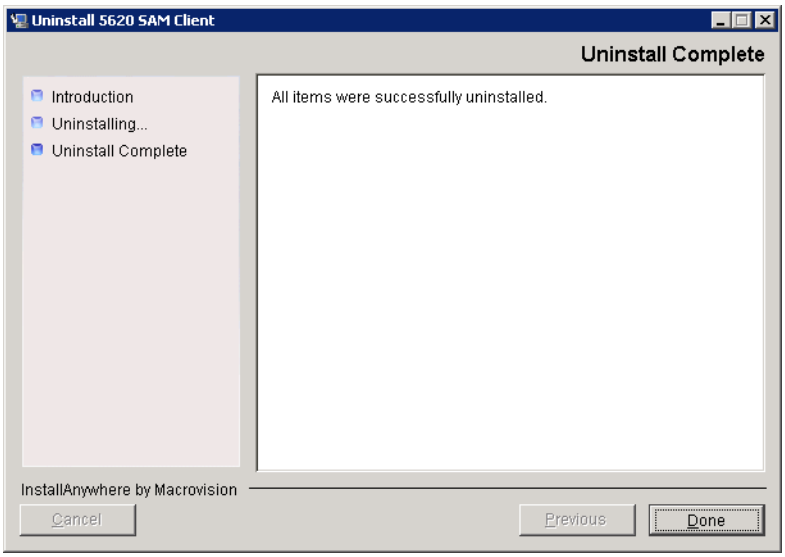
6 As shown in Figure 6-22, the uninstallation process removes the 5620 SAM client software.

Figure 6-22 Uninstall 5620 SAM Client



7 When the 5620 SAM client uninstallation is complete, as shown in Figure 6-23, click on the Done button to close the client uninstaller.

Figure 6-23 Uninstall Complete



8 Close the Add/Remove Programs window or the Uninstall or change a program window, as appropriate.

9 Close the Control Panel window.

Procedure 6-5 To uninstall the 5620 SAM auxiliary server software

Perform this procedure to remove the 5620 SAM auxiliary server software.

Caution — In a redundant 5620 SAM system, you must uninstall the auxiliary servers in the following order:

- reserved auxiliary server of primary main server
- preferred auxiliary server of primary main server

Note — You require the following user privileges on the auxiliary server station to perform this procedure:

- root or root-equivalent
- samadmin

Stop auxiliary server application

1 Perform the following steps to stop the 5620 SAM server application on the auxiliary server station.

i Log in to the auxiliary server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/auxserver

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./auxnmsserver.bash auxstop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./auxnmsserver.bash auxappserver_status ↵
```

The command displays a status message.

vi The server is stopped when the command displays the following status message:

```
Auxiliary Server is stopped
```

If the command displays a different message, wait 5m and repeat step 1 v. Do not proceed to the next step until the server is stopped.

Uninstall server

2 Enter the following at the prompt to switch to the root user:

```
bash$ su - ↵
```

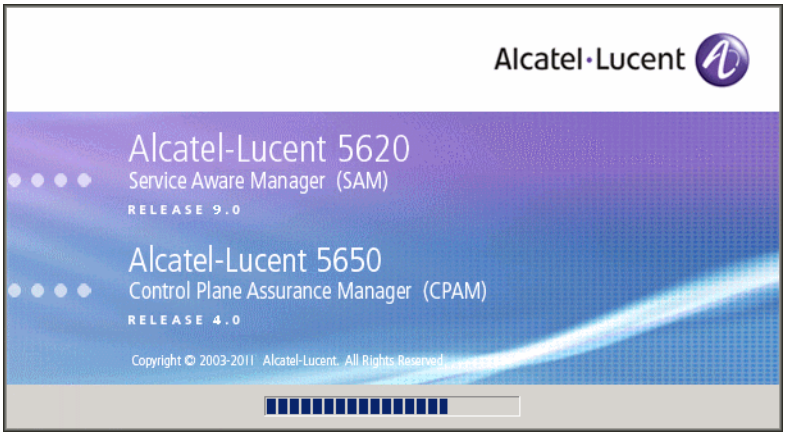
3 Enter the following to open the 5620 SAM server uninstaller:

```
# path/Uninstaller/Uninstall_Server_Auxiliary ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/auxserver

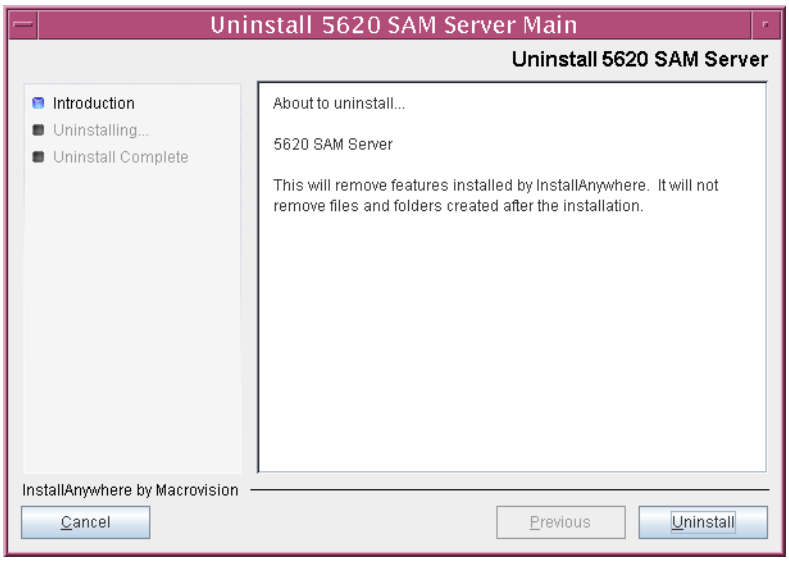
The splash screen shown in Figure 6-24 opens.

Figure 6-24 5620 SAM Uninstaller



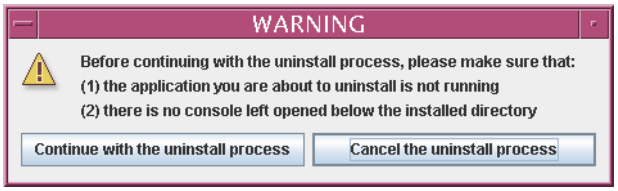
4 The 5620 SAM server uninstaller opens, as shown in Figure 6-25. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Uninstall button to begin the uninstallation.

Figure 6-25 Uninstall 5620 SAM Server



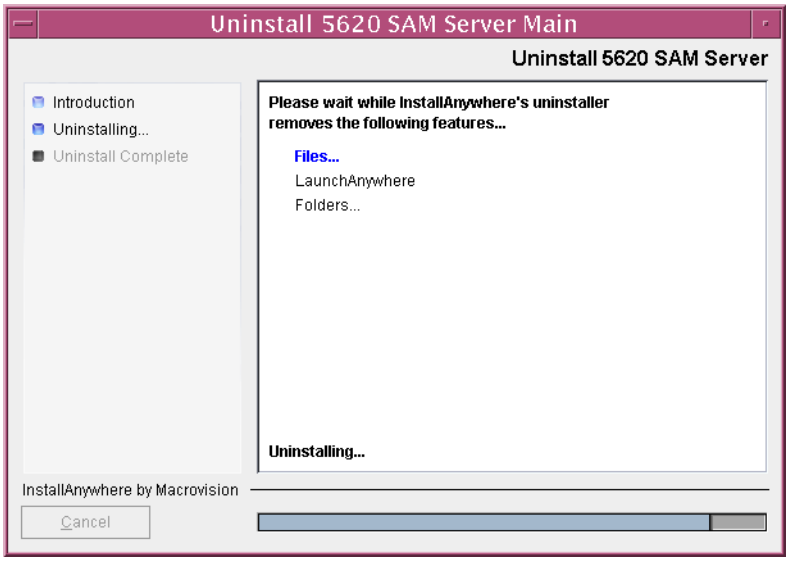
5 Read the warning shown in Figure 6-26. Click on the “Continue with the uninstall process” button to begin the uninstallation.

Figure 6-26 Warning



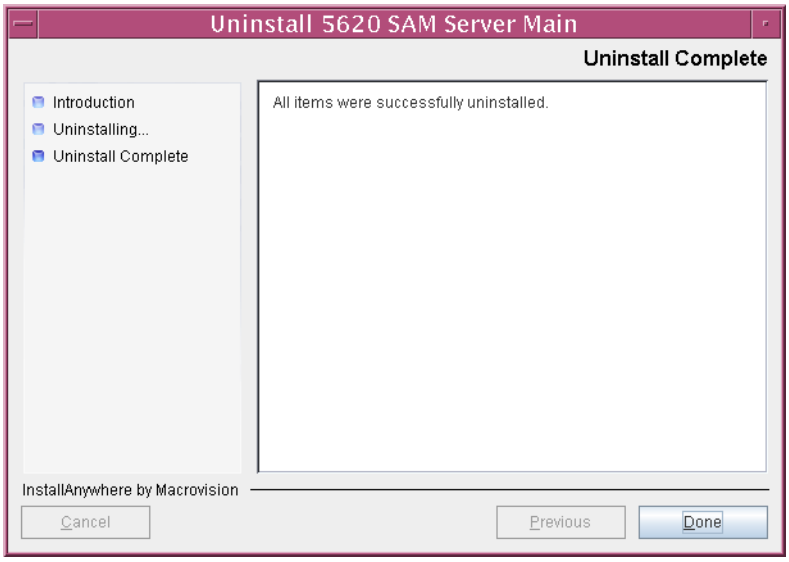
The uninstaller begins to remove 5620 SAM server files and directories, as shown in Figure 6-27.

Figure 6-27 Uninstall 5620 SAM Server



6 When the server uninstallation is complete, as shown in Figure 6-28, click on the Done button to close the server uninstaller.

Figure 6-28 Uninstall Complete



7 Enter the following to reboot the auxiliary server station:

```
# shutdown -y -i6 -g0 ↵
```

The station reboots.

8 Remove any files and directories that remain in the auxiliary server installation directory.

Procedure 6-6 To uninstall the 5620 SAM main server software

Perform this procedure to remove the 5620 SAM main server software.

Caution 1 — This procedure involves stopping the 5620 SAM server and database software. Ensure that you perform this procedure only during a scheduled maintenance period.

Caution 2 — In a redundant 5620 SAM deployment, to avoid a server activity switch, you must uninstall the main servers in the following order:

- standby main server
- primary main server

Note — You require the following user privileges to perform this procedure:

on each main server station:

- root or root-equivalent
- samadmin

on each database station:

- root or root-equivalent
- Oracle management

Stop server and database applications

1 Perform the following steps to stop the 5620 SAM main server application.

i Log in to the main server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5620 SAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5620 SAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 1 v. Do not proceed to the next step until the server is stopped.

2 Stop the 5620 SAM database application.

i Log in to the database station as a user with root or root-equivalent privileges.

ii Open a console window.

iii Enter the following to change to the /etc/rc3.d directory:

```
# cd /etc/rc3.d ↵
```

iv Enter the following to stop the Oracle proxy daemon:

```
# ./S965620SAMOracleProxyWrapper stop ↵
```

v Enter the following to stop the 5620 SAM database daemon:

```
# ./S95db5620sam stop ↵
```

vi Enter the following to verify that the 5620 SAM database is stopped:

```
# ps -ef | grep oracle ↵
```

The command displays a list of processes that contain the term “oracle”.

Note — One of the list entries is the “grep oracle” command from this step. Disregard the “grep oracle” entry, as it is not an Oracle process.

vii If the command displays lines of text other than “grep oracle”, the 5620 SAM database is not stopped. Repeat step 2 vi.

Do not proceed until the command displays only the single “grep oracle” entry.

The next phase involves the uninstallation of the 5620 SAM server software.

Uninstall server

3 Log in to the 5620 SAM main server station as a user with root or root-equivalent privileges.

4 Open a console window.

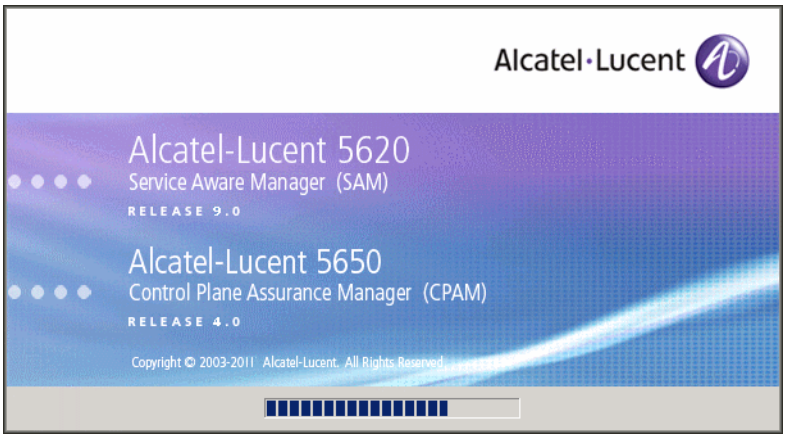
5 Enter the following to open the 5620 SAM server uninstaller:

```
# path/Uninstaller/Uninstall_Server_Main ↵
```

where *path* is the 5620 SAM server installation location, typically /opt/5620sam/server

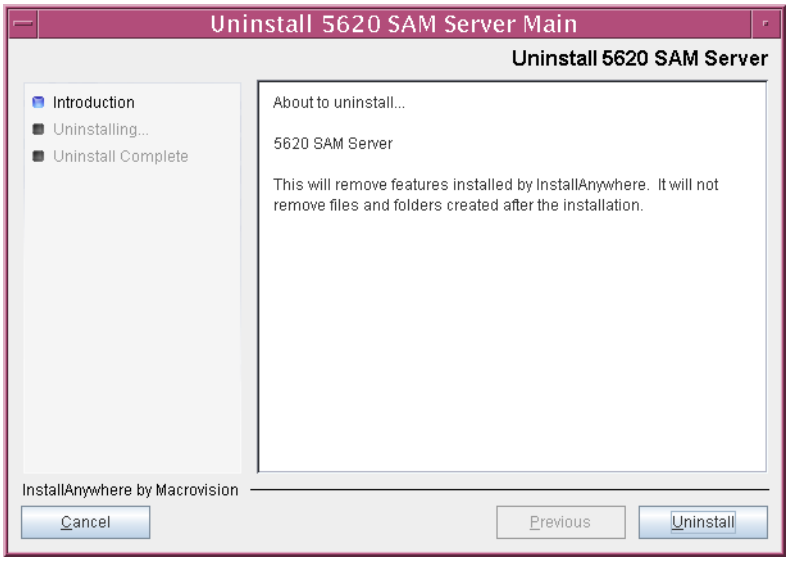
The splash screen shown in Figure 6-29 opens.

Figure 6-29 5620 SAM Uninstaller



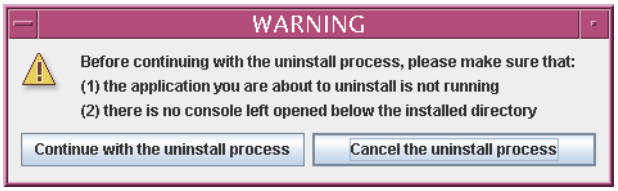
6 The 5620 SAM server uninstaller opens, as shown in Figure 6-30. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Uninstall button to begin the uninstallation.

Figure 6-30 Uninstall 5620 SAM Server



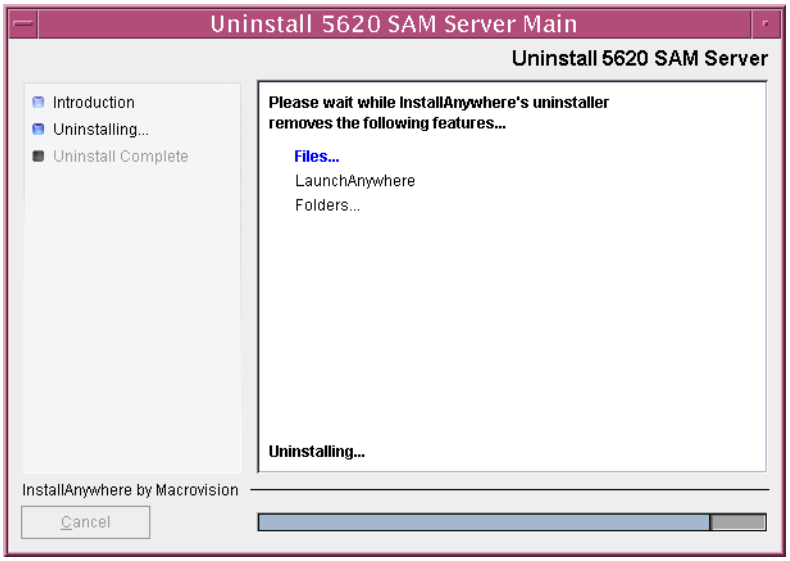
7 Read the warning shown in Figure 6-31. Click on the “Continue with the uninstall process” button to begin the uninstallation.

Figure 6-31 Warning



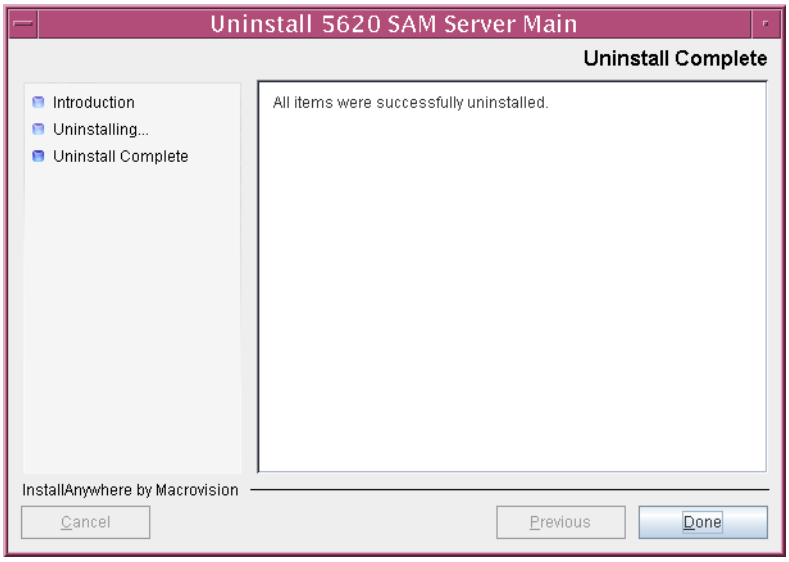
The uninstaller begins to remove 5620 SAM server files and directories, as shown in Figure 6-32.

Figure 6-32 Uninstall 5620 SAM Server



8 When the server uninstallation is complete, as shown in Figure 6-33, click on the Done button to close the server uninstaller.

Figure 6-33 Uninstall Complete



9 Enter the following to reboot the main server station:

```
bash$ shutdown -y -i6 -g0 ↵
```

The station reboots.

10 Remove any files and directories that remain in the main server installation directory.

Procedure 6-7 To uninstall the 5620 SAM database software

Perform this procedure to remove the 5620 SAM database software.

Note — You require the following user privileges on the database station to perform this procedure:

- root or root-equivalent
- Oracle management

1 Log in to the database station as a user with root or root-equivalent privileges.

2 Open a console window.

3 Enter the following to switch to the Oracle management user:

```
# su - Oracle_management_user_name ↵
```

where *Oracle_management_user_name* is the name of the UNIX account with Oracle management privileges, typically oracle

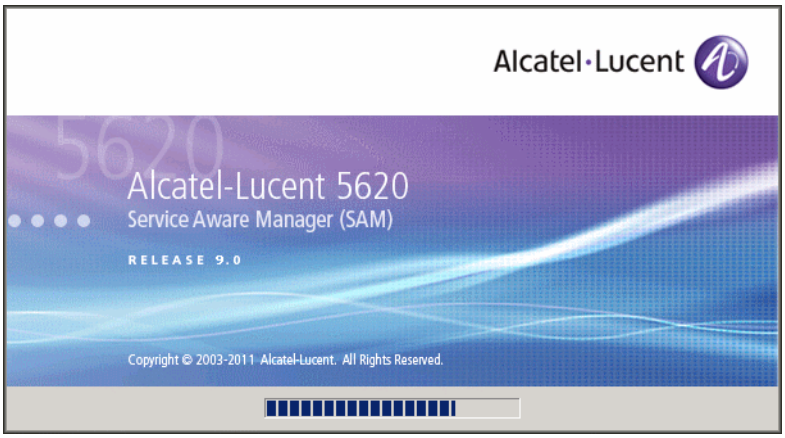
4 Enter the following to open the 5620 SAM database uninstaller:

```
bash$
path/install/Uninstaller/Uninstall_5620_SAM_Database_Configurato
r ↵
```

where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

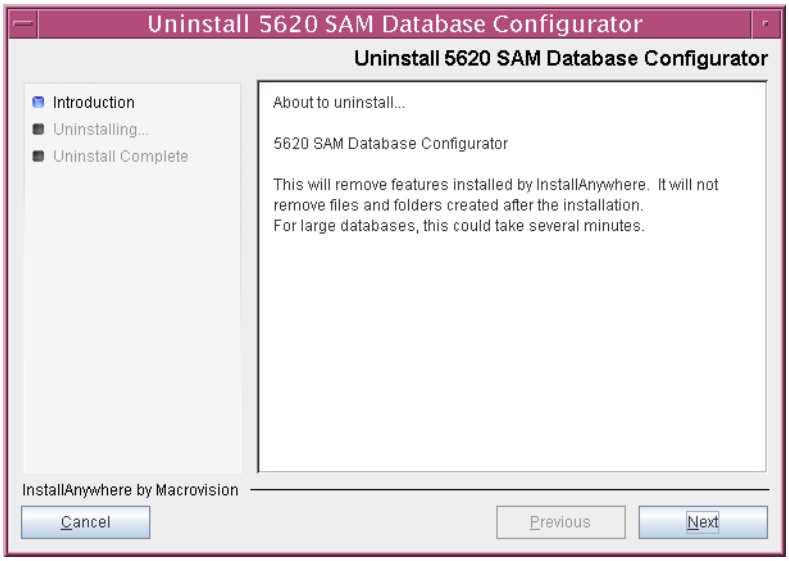
The splash screen shown in Figure 6-34 opens.

Figure 6-34 5620 SAM Uninstaller



5 The 5620 SAM database uninstaller opens, as shown in Figure 6-35. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Next button.

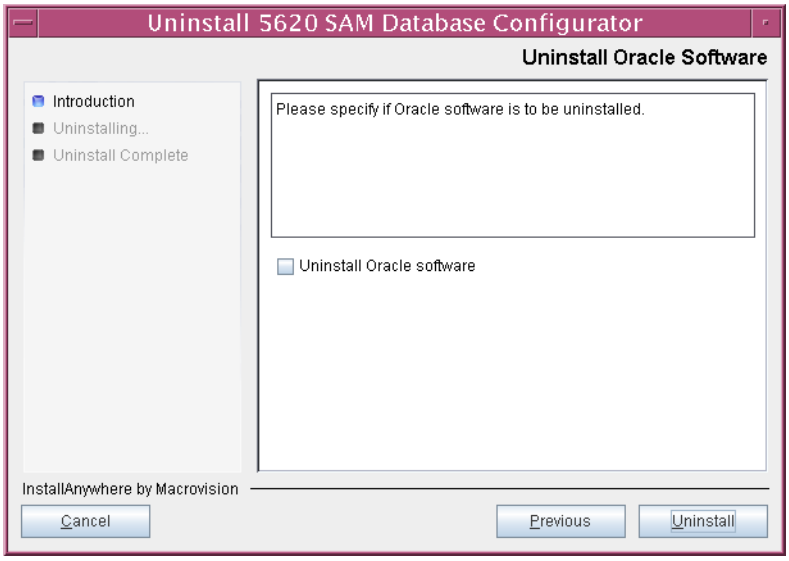
Figure 6-35 Uninstall 5620 SAM Database Configurator



6 If required, select the “Uninstall Oracle software” parameter shown in Figure 6-36 to remove the Oracle software from the database station, then click on the Uninstall button to begin the uninstallation.

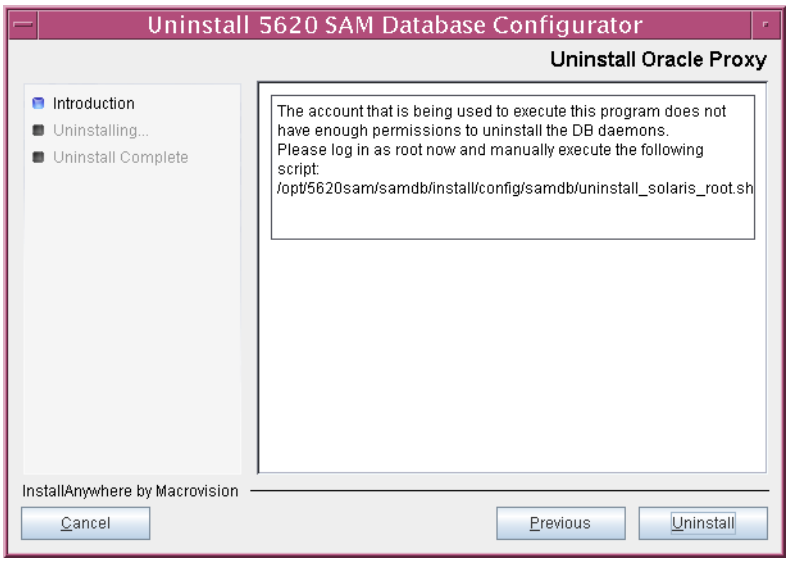
Note — When the installer removes the Oracle software, it does not delete the Oracle base installation directory, because this directory is typically the home directory of the Oracle management user.

Figure 6-36 Uninstall Oracle Software



7 Perform the following steps when the panel in Figure 6-37 is displayed.

Figure 6-37 Uninstall Oracle Proxy



i Open a separate console window.

ii Enter the following to switch to the root user:

```
# su - ↵
```

iii Enter the following to run the script named in the panel text:

```
# path/install/config/samdb/uninstall_solaris_root.sh ↵
```

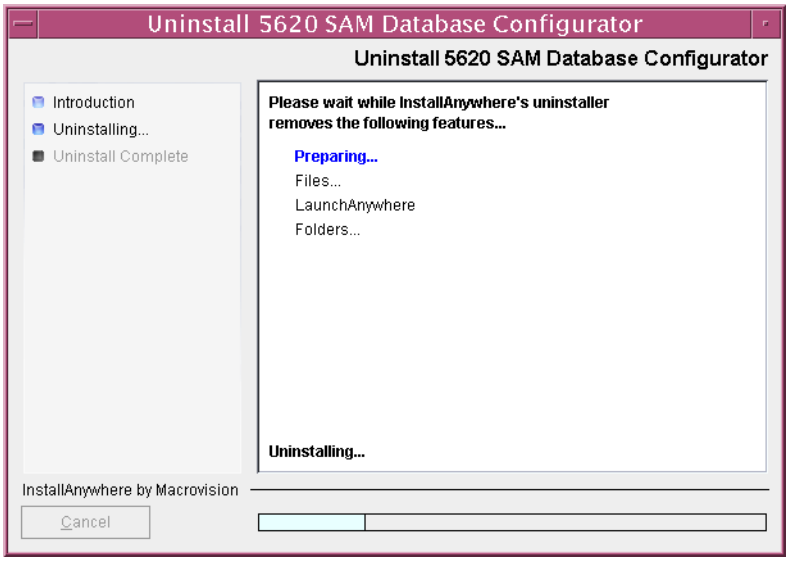
where *path* is the 5620 SAM database installation location, typically /opt/5620sam/samdb

iv When the script execution is complete, close the console window.

v Click on the Uninstall button.

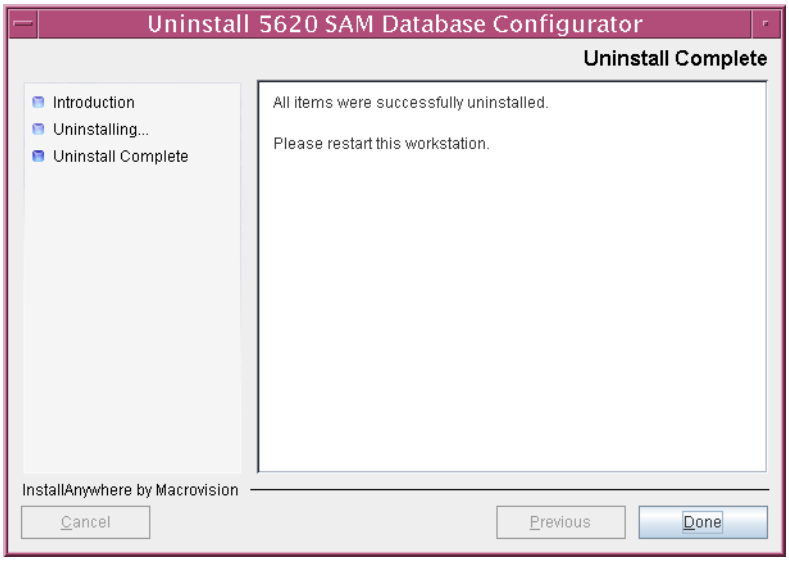
The uninstaller begins to remove 5620 SAM database files and directories, as shown in Figure 6-38.

Figure 6-38 Uninstall 5620 SAM Database Configurator



8 When database uninstallation is complete, as shown in Figure 6-39, click on the Done button to close the database uninstaller.

Figure 6-39 Uninstall Complete



9 Enter the following to reboot the database station:

```
bash$ shutdown -y -i6 -g0 ↵
```

The station reboots.

10 Remove any files and directories that remain in the Oracle installation directory and the database directories.

5650 CPAM deployment

7 — 5650 CPAM installation

7.1 5650 CPAM installation overview

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document and in the *5650 CPAM User Guide*.

Caution — Alcatel-Lucent supports 5650 CPAM software configuration only under the conditions described in chapter 1.

Note — The platform requirements for a 5650 CPAM server are the same as the requirements for a 5620 SAM server. Use the 5620 SAM main server guidelines in chapter 1 as the 5650 CPAM server guidelines.

See Appendix D for detailed 5650 CPAM installation parameter descriptions.

7.2 5650 CPAM installation procedures list

Table 7-1 lists the 5650 CPAM server software installation procedures.

Table 7-1 5650 CPAM installation procedures list

Procedure	Purpose
To install a standalone 5650 CPAM system	Install the 5650 CPAM server software in a standalone deployment.
To install a redundant 5650 CPAM system	Install the 5650 CPAM server software in a redundant deployment.

7.3 5650 CPAM installation

This section describes how to install the 5650 CPAM software in a standalone or redundant deployment. A 5650 CPAM software installation is typically performed as part of a 5620 SAM main server software installation. Procedure 7-1 describes how to install the 5650 CPAM server software in a standalone deployment. Procedure 7-2 describes how to install the 5650 CPAM server software in a redundant deployment.

Note — The 5650 CPAM software is automatically installed when you install the 5620 SAM main server software, but is activated only after a valid 5650 CPAM license key is added to the 5650 CPAM configuration.

The procedures in this section are for use only in the following situations:

- when the 5650 CPAM server is to be used without a 5620 SAM main server
- when the 5650 CPAM server is to be used with a 5620 SAM main server that is installed on a station other than the 5650 CPAM station

Procedure 7-1 To install a standalone 5650 CPAM system

Perform this procedure to install the 5650 CPAM server software on a station in a standalone deployment. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — You require root or root-equivalent user privileges on the 5650 CPAM station to perform this procedure.

Note 2 — Command-line examples procedures use the # symbol to represent the Solaris CLI prompt. Do not type the leading # symbol when you enter a command.

1 Log in to the station that is to be the 5650 CPAM station as a user with root or root-equivalent privileges.

2 Place the 5620 SAM | 5650 CPAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to open the 5620 SAM | 5650 CPAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

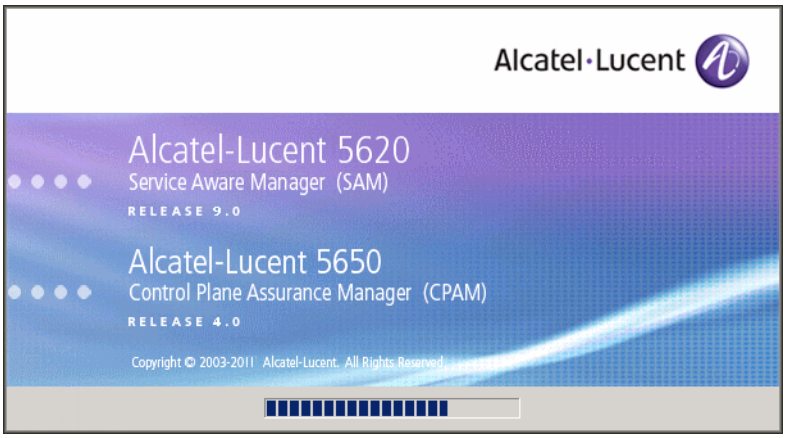
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

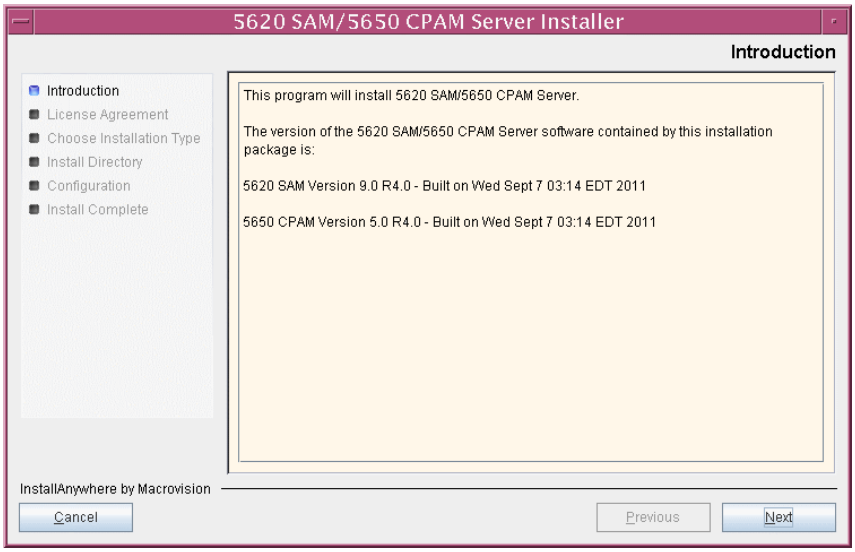
The splash screen shown in Figure 7-1 opens.

Figure 7-1 5620 SAM | 5650 CPAM installer



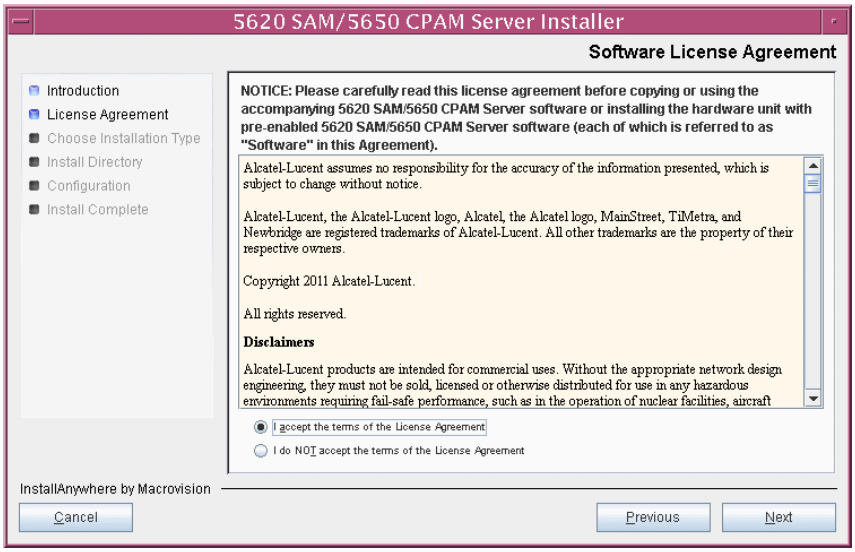
6 The 5650 CPAM server installer opens, as shown in Figure 7-2. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 7-2 Introduction



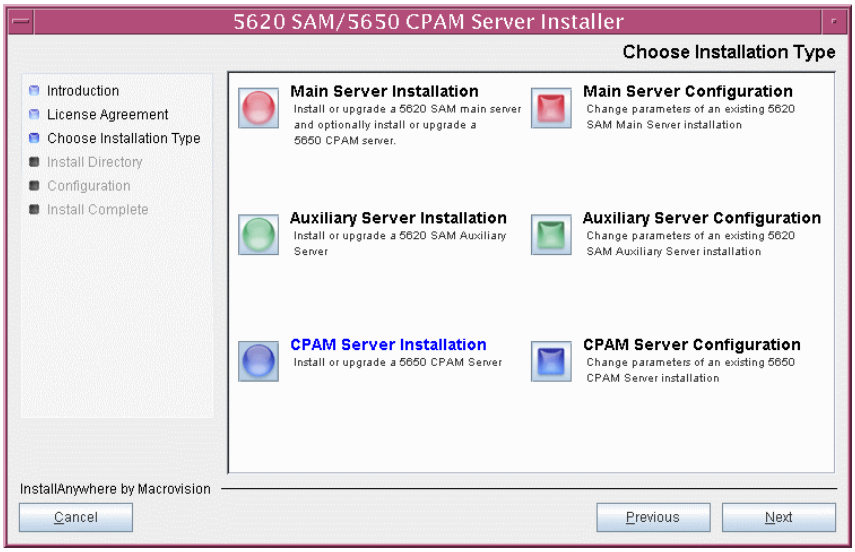
7 Review and accept the terms of the license agreement shown in Figure 7-3. Click on the Next button.

Figure 7-3 Software License Agreement



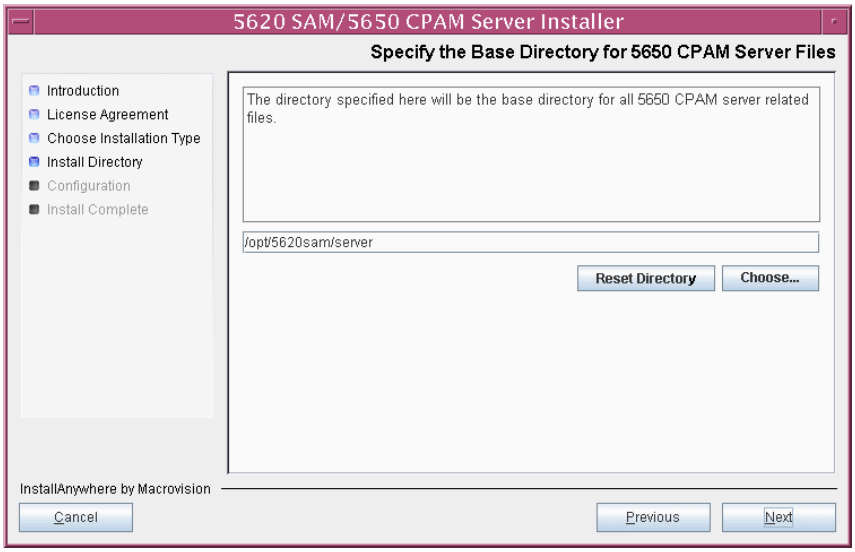
8 Select CPAM Server Installation, as shown in Figure 7-4. Click on the Next button.

Figure 7-4 Choose Installation Type



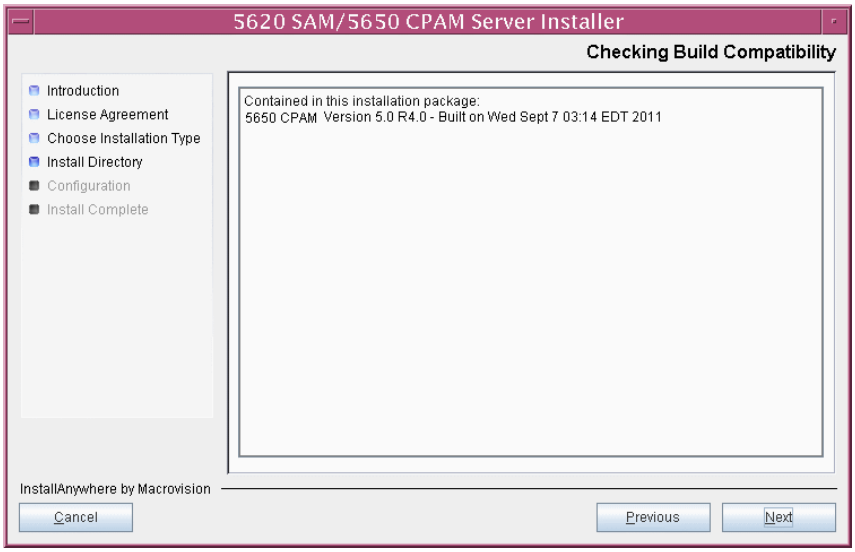
9 Specify a base directory in which to install the 5650 CPAM server software (typically /opt/5620sam/server), as shown in Figure 7-5. Click on the Next button.

Figure 7-5 Specify the Base Directory for 5650 CPAM Server Files



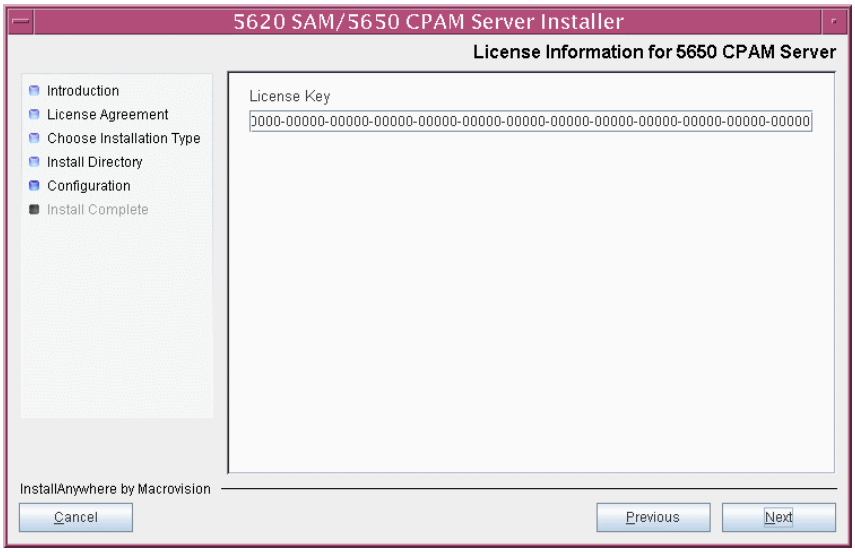
10 As shown in Figure 7-6, the installer indicates which release of 5650 CPAM software is to be installed. Verify the information. Click on the Next button.

Figure 7-6 Checking Build Compatibility



11 Enter the license key information exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 7-7. Click on the Next button.

Figure 7-7 License Information for 5650 CPAM Server

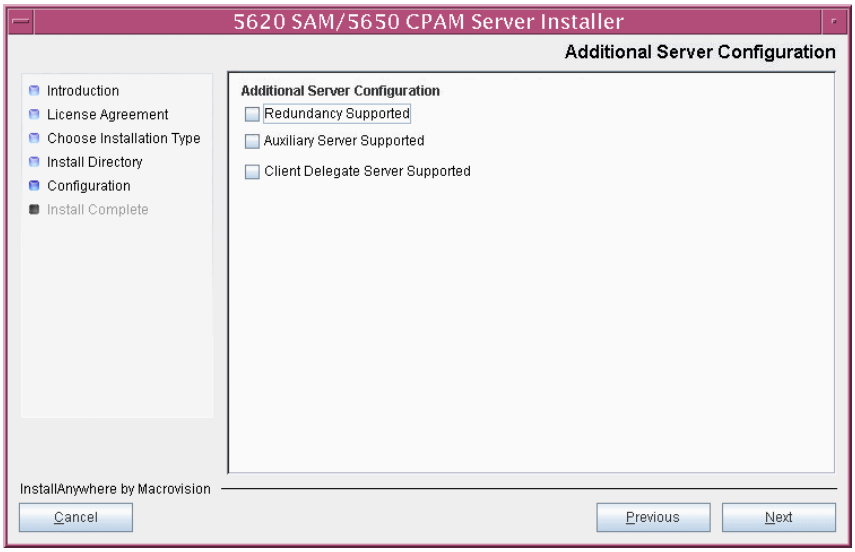


12 Configure the following parameters shown in Figure 7-8, then click on the Next button.

- Redundancy Supported
- Auxiliary Server Supported
- Client Delegate Server Supported

Note — You must leave the “Redundancy Supported” parameter unselected.

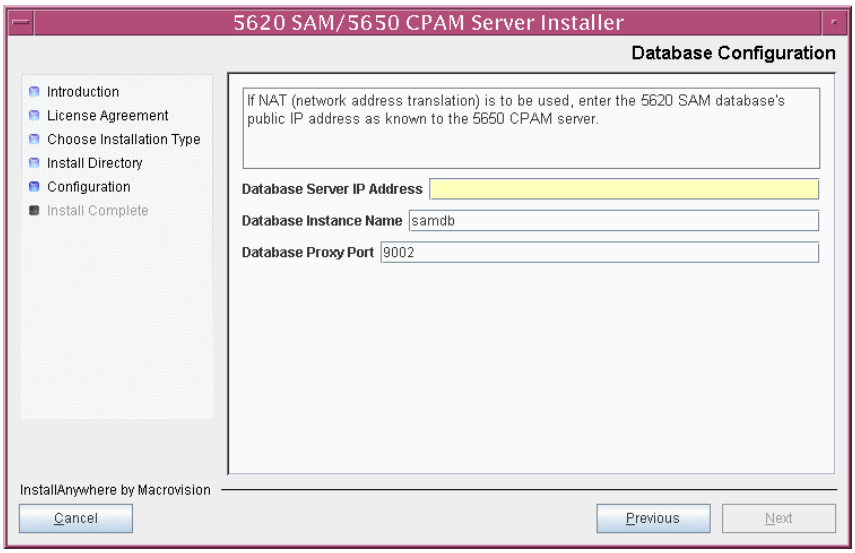
Figure 7-8 Additional Server Configuration



13 Configure the following parameters shown in Figure 7-9, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb)
- Database Proxy Port (typically 9002)

Figure 7-9 Database Configuration



14 The panel in Figure 7-10 is displayed if you select the “Auxiliary Server Supported” parameter in step 12. Otherwise, go to step 16.

Perform the following steps.

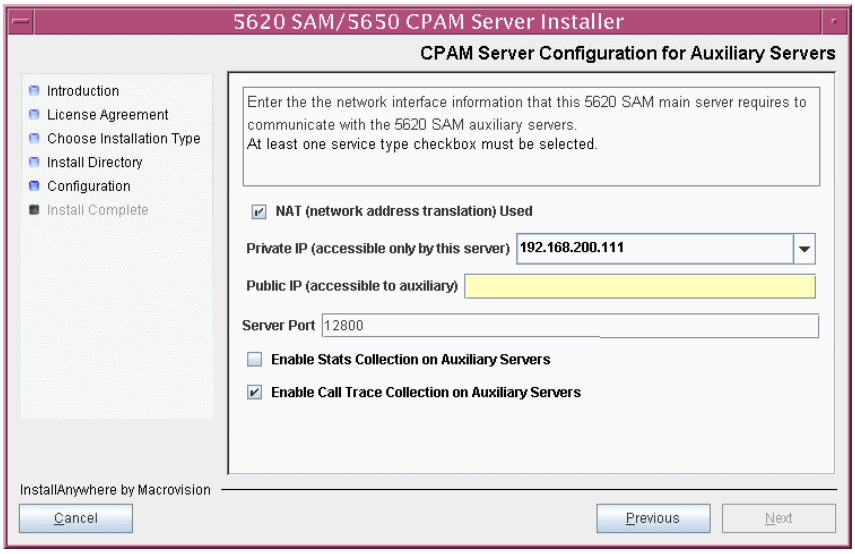
i Configure the following parameters shown in Figure 7-10:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5650 CPAM server and the 5620 SAM auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 7-10 CPAM Server Configuration for Auxiliary Servers



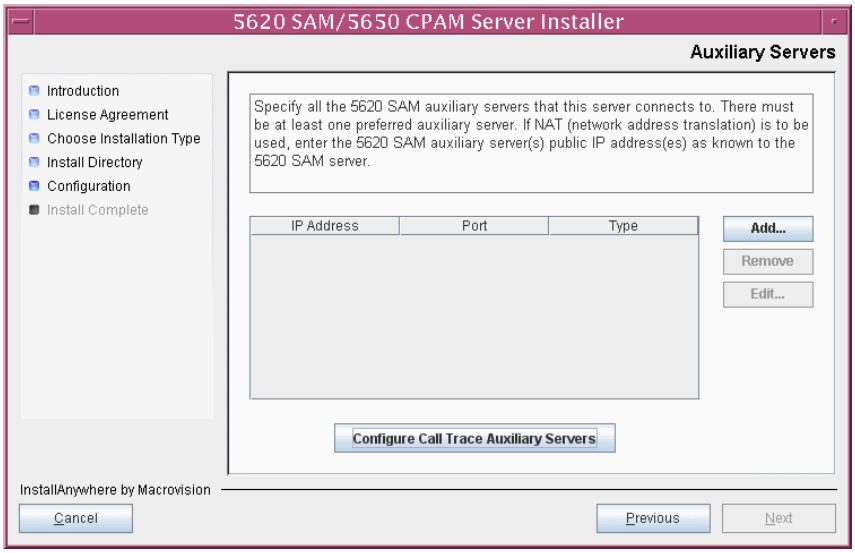
ii Click on the Next button.

iii Click on the Add button shown in Figure 7-11 to specify an auxiliary server. The form shown in Figure 7-12 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

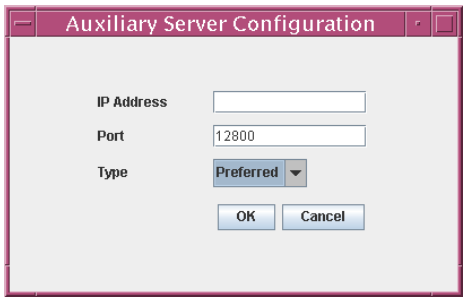
Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

Figure 7-11 Auxiliary Servers



Note — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 7-12 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

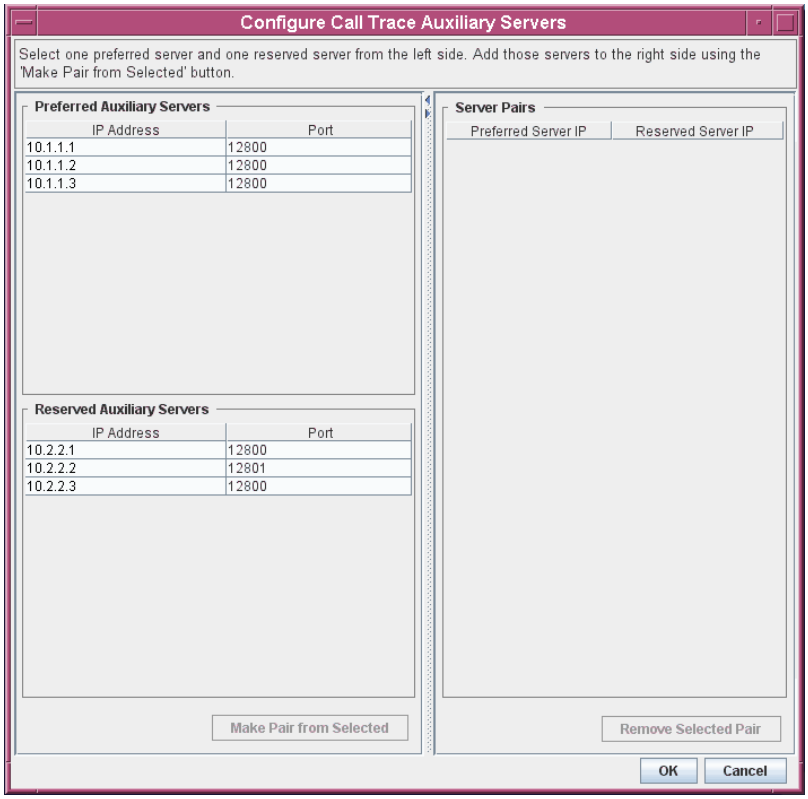
v Click on the OK button to save the information and close the form.

vi Repeat steps 14 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 14 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 7-11. Otherwise, go to step 15.

viii The form shown in Figure 7-13 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 7-13 Configure Call Trace Auxiliary Servers



ix Repeat step 14 viii to configure another call-trace auxiliary server pair, if required.

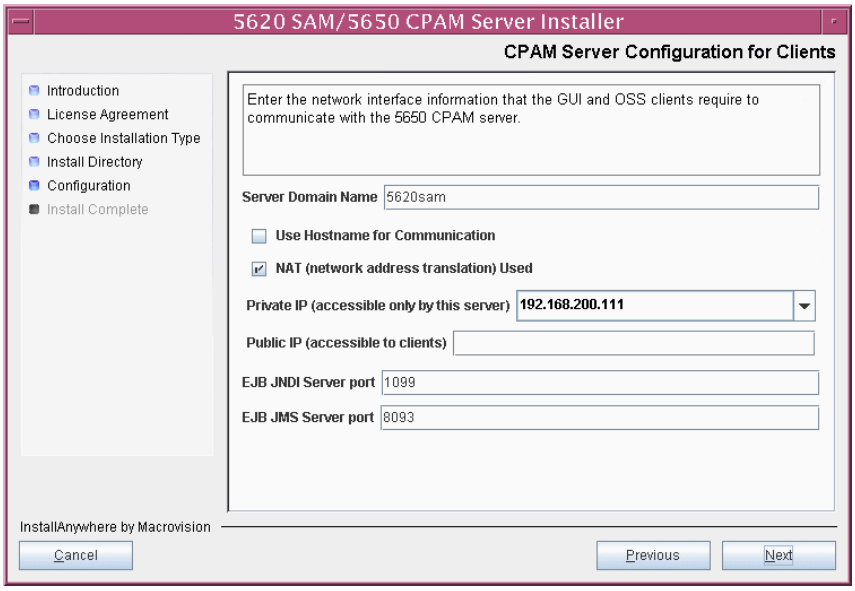
15 Click on the Next button.

16 Perform the following steps.

i Configure the following parameters shown in Figure 7-14:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the 5650 CPAM server belongs.
- Use Hostname for Communication
  Select this parameter if the 5650 CPAM server is to use multiple interfaces for GUI and OSS client communication.

Figure 7-14 CPAM Server Configuration for Clients



ii If you select the "Use Hostname for Communication" parameter, go to step 16 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

iv Click on the Next button.

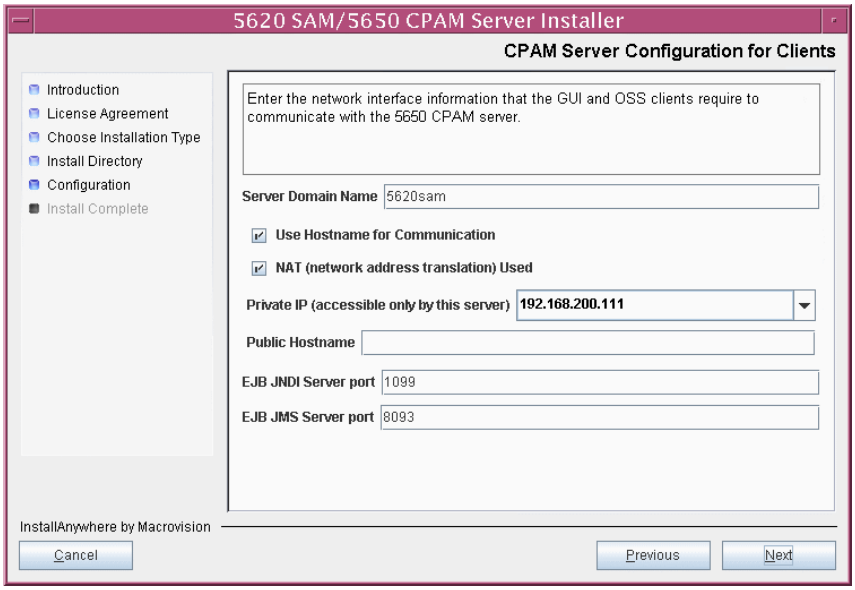
v Go to step 17.

vi Configure the following parameters shown in Figure 7-15:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 7-15 CPAM Server Configuration for Clients

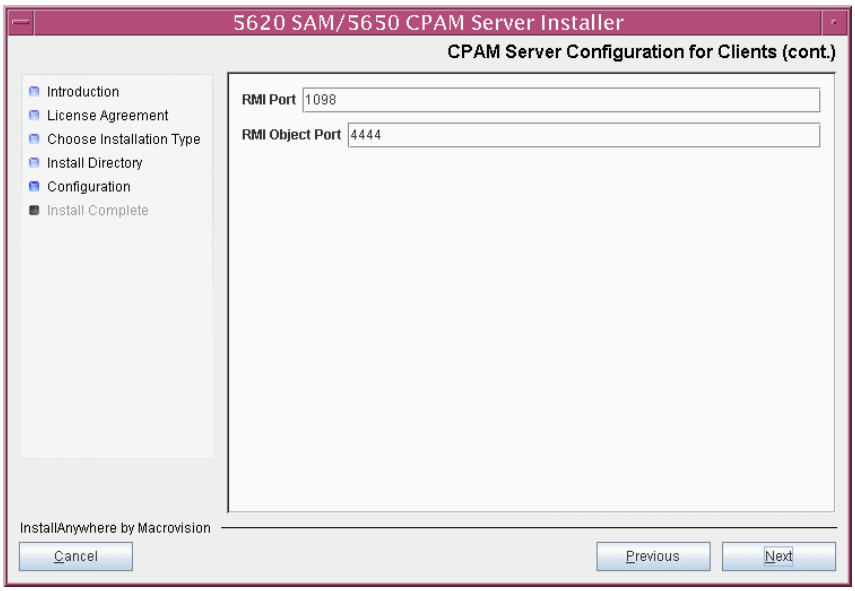


vii Click on the Next button.

17 Configure the following parameters shown in Figure 7-16, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

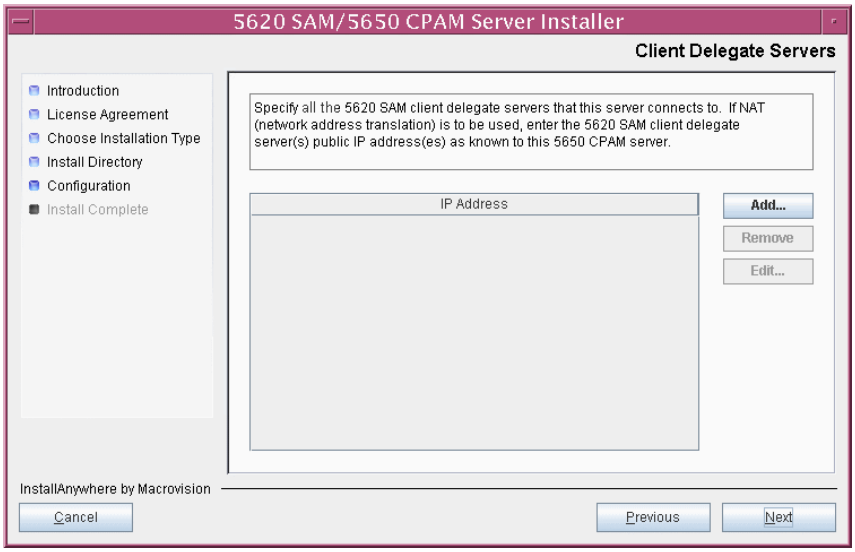
Figure 7-16 CPAM Server Configuration for Clients (cont.)



18 The panel in Figure 7-17 is displayed if you select the “Client Delegate Server Supported” parameter in step 12. Otherwise, go to step 19.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5650 CPAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 7-17 Client Delegate Servers



19 Perform one of the following to specify where the 5650 CPAM and 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 7-18.

ii To accept the default user documentation location that is displayed, go to step 20.

Note — If NAT is to be used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

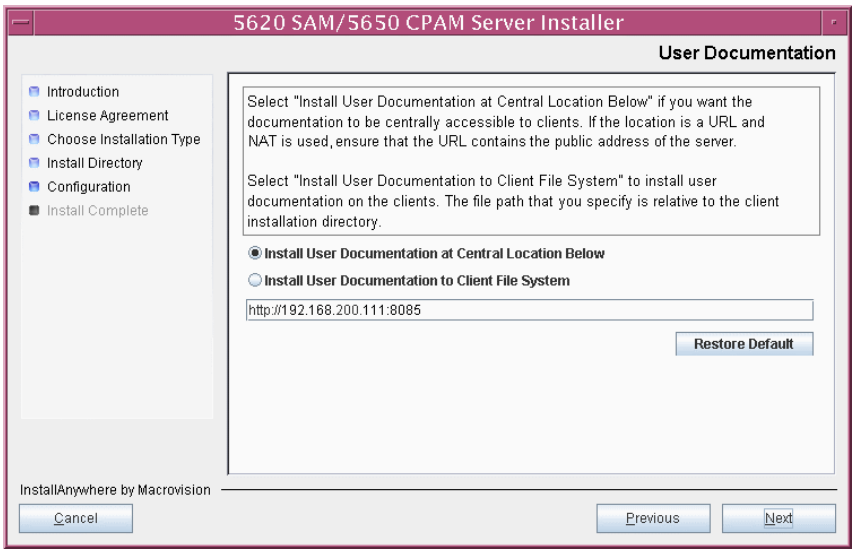
iii Specify a location for the user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM | 5650 CPAM software DVD-ROM to the location specified in step 19 iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 7-18 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 7-18.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

20 Click on the Next button.

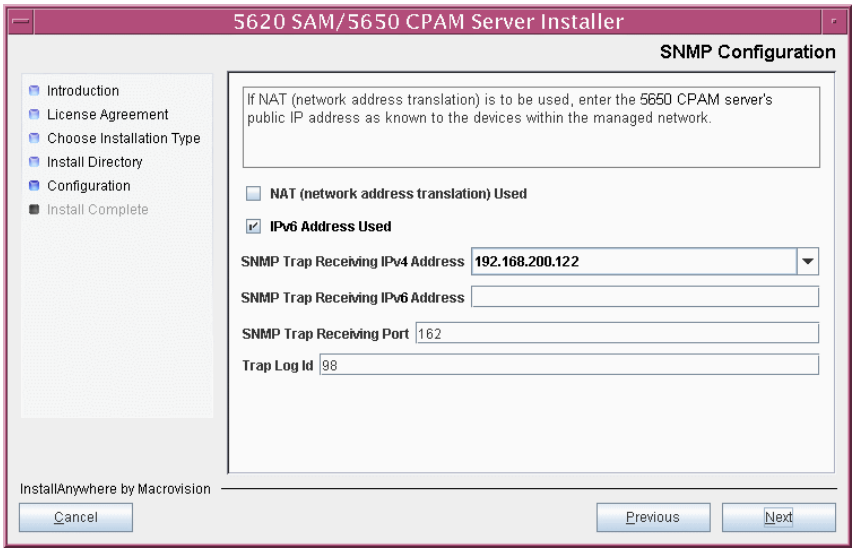
21 Configure the following parameters shown in Figure 7-19, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5650 CPAM server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

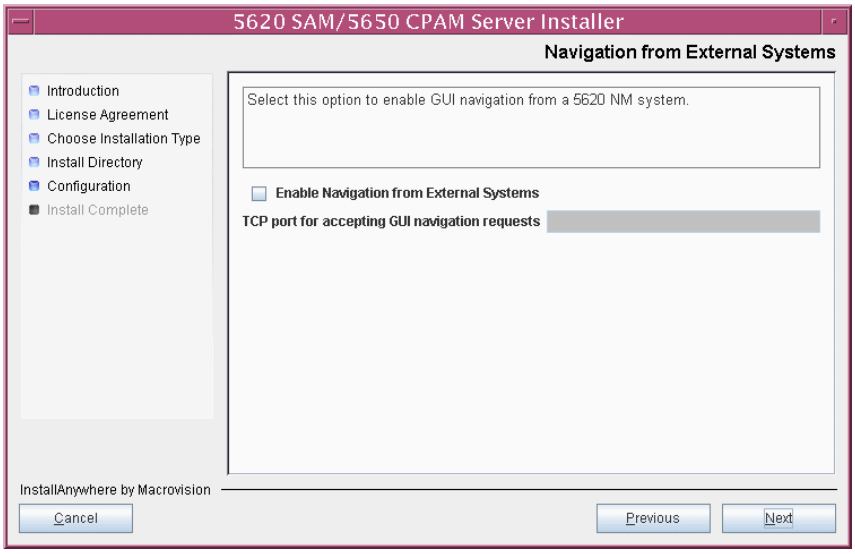
Note — The "SNMP Trap Receiving IPv6 Address" parameter is configurable only when the "IPv6 Address Used" parameter is selected, as shown in Figure 7-19.

Figure 7-19 SNMP Configuration



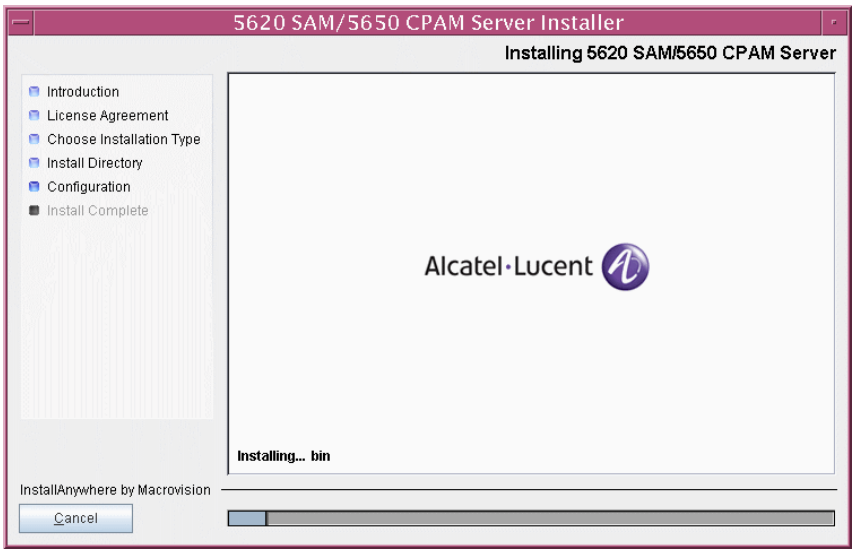
22 If you require 5650 CPAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 7-20 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button to begin the server installation.

Figure 7-20 Navigation from External Systems



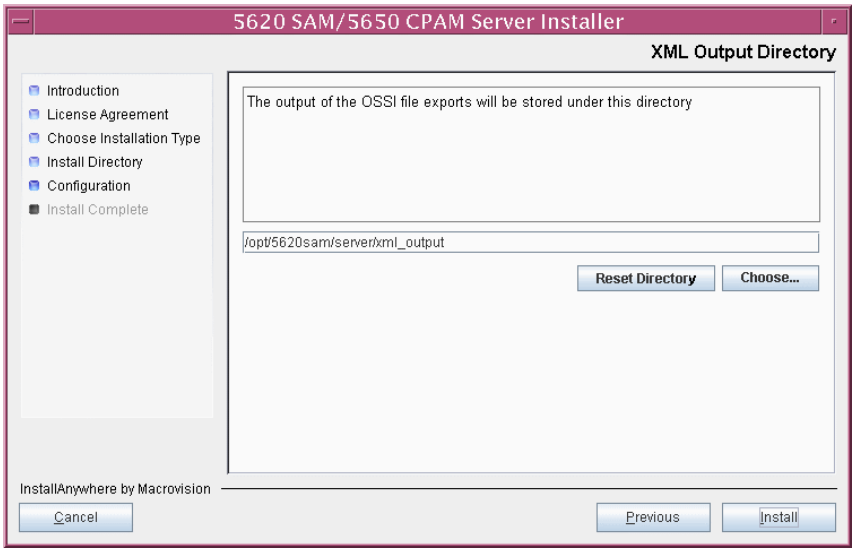
The next panel displays installation progress, as shown in Figure 7-21.

Figure 7-21 Installing 5620 SAM/5650 CPAM Server



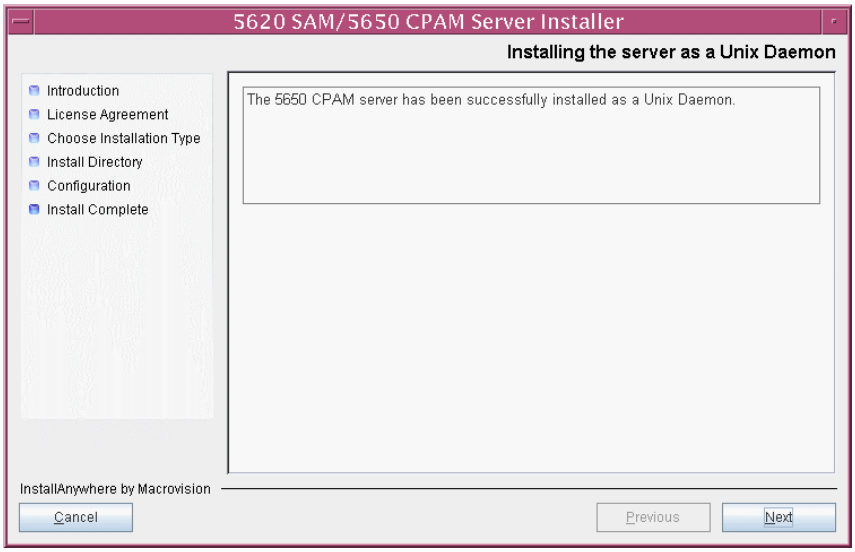
23 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 7-22. Click on the Install button to begin the server installation.

Figure 7-22 XML Output Directory



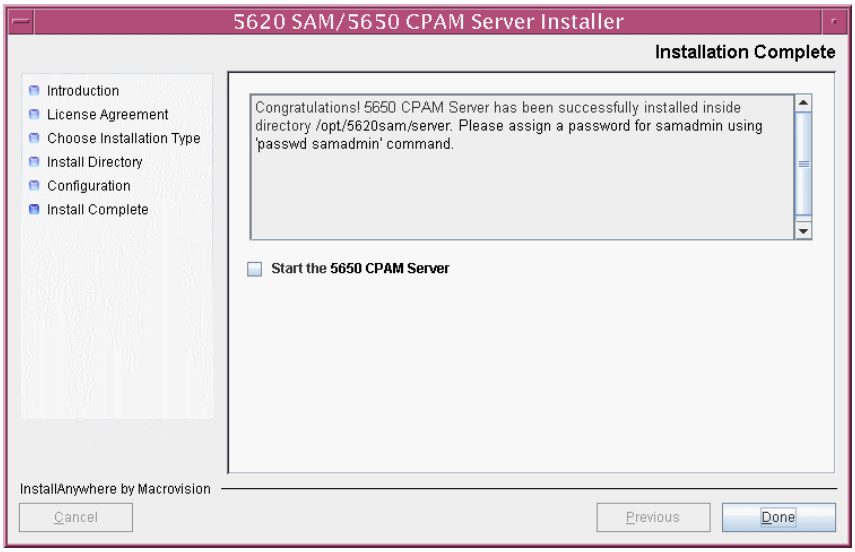
24 As shown in Figure 7-23, the 5650 CPAM server is installed as a UNIX daemon. Click on the Next button.

Figure 7-23 Installing the Server as a Unix Daemon



25 When the 5650 CPAM server installation is complete, as shown in Figure 7-24, configure the “Start the 5650 CPAM Server” parameter to specify whether you want the server to start immediately after the installation.

Figure 7-24 Installation Complete



26 Click on the Done button to close the server installer. If you specified that the 5650 CPAM server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

27 The installer creates a user account called samadmin that is required for 5650 CPAM system administration. You must assign a new password to this user account.

Perform the following steps to assign a new samadmin password.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

28 Restart each currently open 5620 SAM GUI client that connects to the 5620 SAM/5650 CPAM server.

Note — The 5650 CPAM functionality is not visible in a client GUI until the client is restarted.

Procedure 7-2 To install a redundant 5650 CPAM system

Perform this procedure to install the 5650 CPAM server software on a station in a redundant deployment. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — You must perform this procedure on each 5650 CPAM station in the redundant deployment.

Note 2 — You require root or root-equivalent user privileges on each 5650 CPAM server station to perform this procedure:

Note 3 — Command-line examples use the # symbol to represent the Solaris CLI prompt. Do not type the leading # symbol when you enter a command.

1 Log in to the station that is to be the 5650 CPAM station as a user with root or root-equivalent privileges.

2 Place the 5620 SAM | 5650 CPAM software DVD-ROM in a DVD-ROM drive.

3 Open a console window.

4 Navigate to the DVD-ROM drive.

5 Perform one of the following to open the 5620 SAM | 5650 CPAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

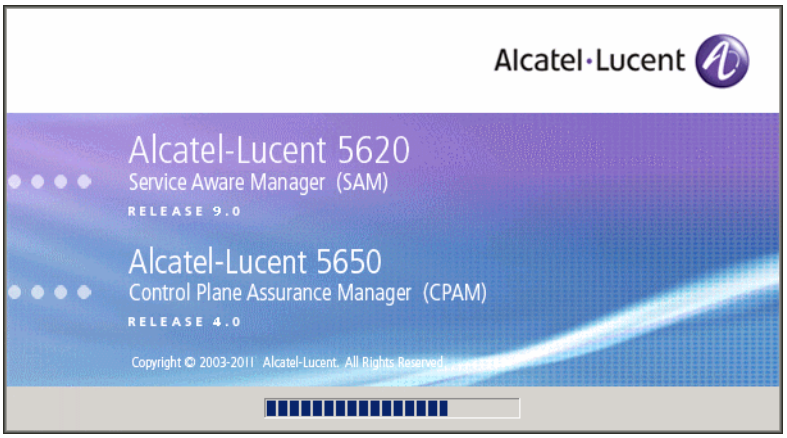
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

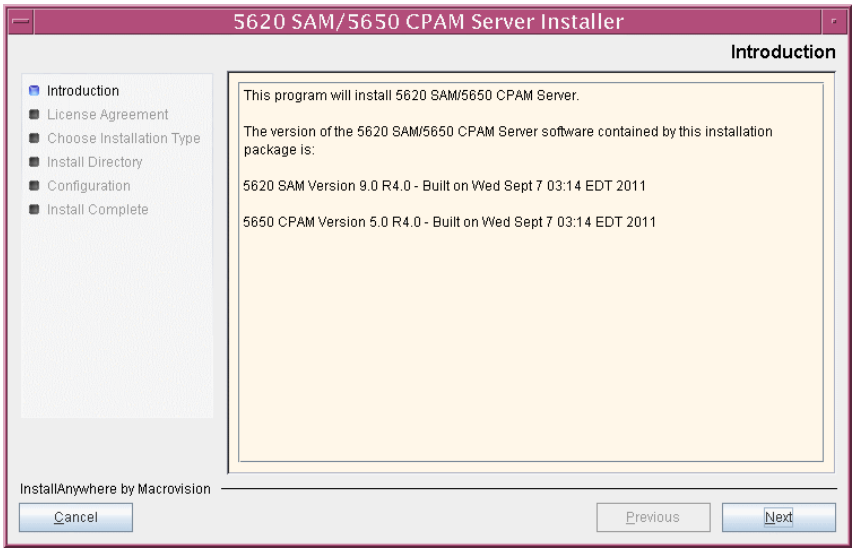
The splash screen shown in Figure 7-25 opens

Figure 7-25 5620 SAM | 5650 CPAM installer



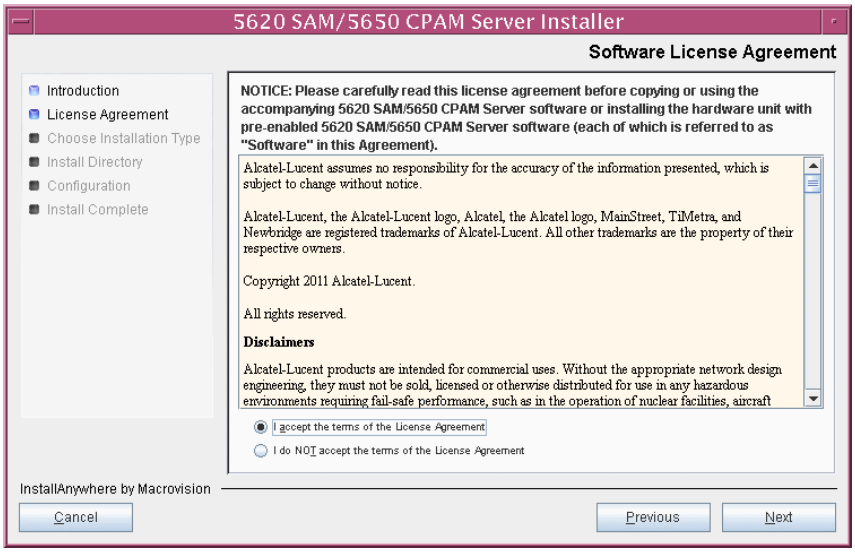
6 The 5650 CPAM server installer opens, as shown in Figure 7-26. The left pane indicates installation progress. The right pane displays release information about the software. Click on the Next button.

Figure 7-26 Introduction



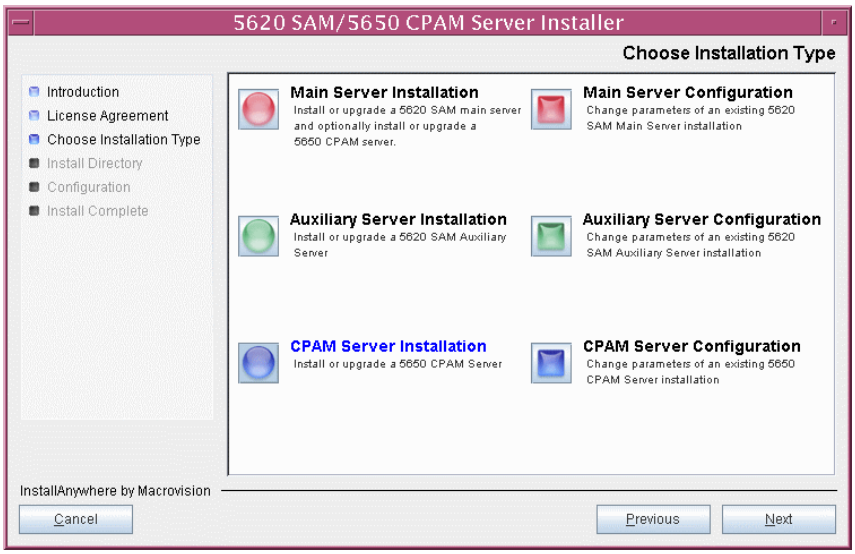
7 Review and accept the terms of the license agreement shown in Figure 7-27. Click on the Next button.

Figure 7-27 Software License Agreement



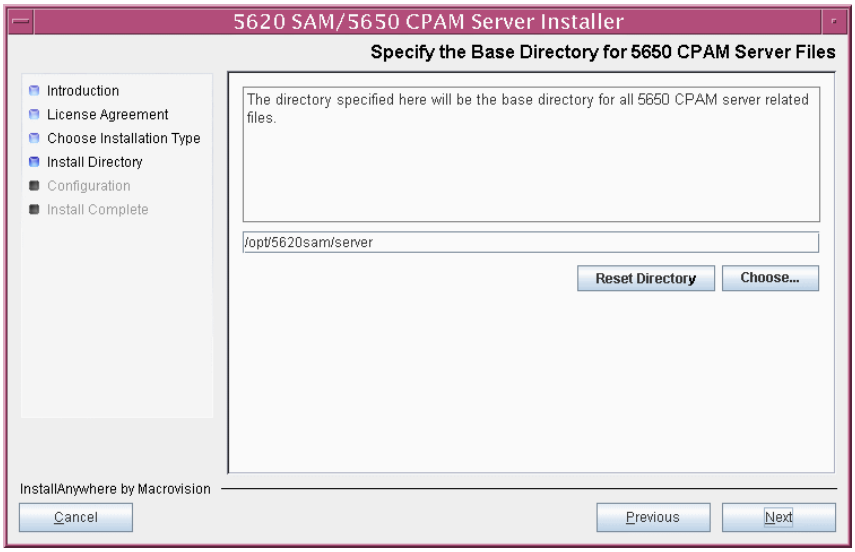
8 Select CPAM Server Installation, as shown in Figure 7-28. Click on the Next button.

Figure 7-28 Choose Installation Type



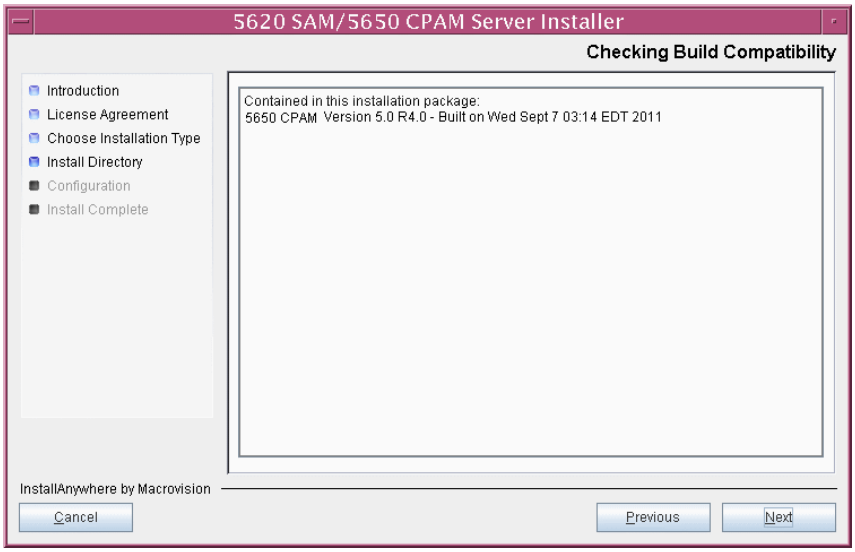
9 Specify a base directory in which to install the 5650 CPAM server software (typically /opt/5620sam/server), as shown in Figure 7-29. Click on the Next button.

Figure 7-29 Specify the Base Directory for 5650 CPAM Server Files



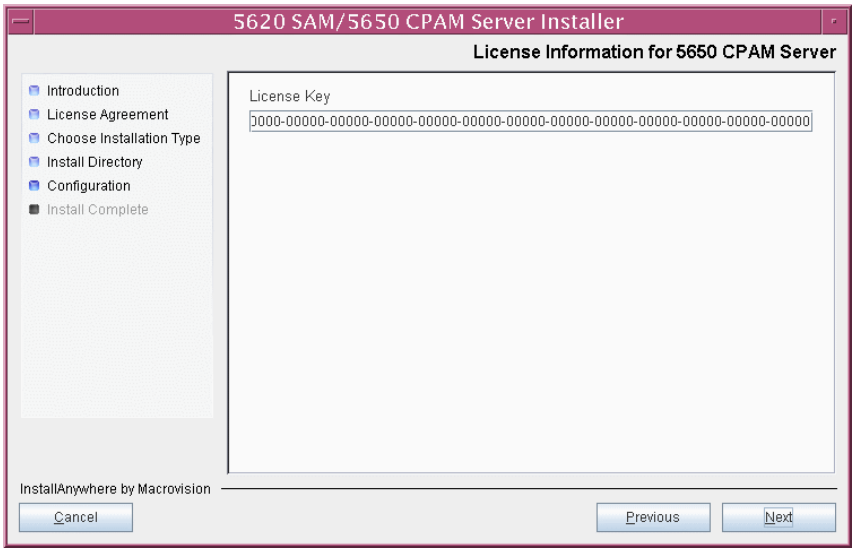
10 As shown in Figure 7-30, the installer indicates which release of 5650 CPAM software is to be installed. Verify the information. Click on the Next button.

Figure 7-30 Checking Build Compatibility



11 Enter the license key information exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 7-31. Click on the Next button.

Figure 7-31 License Information for 5650 CPAM Server



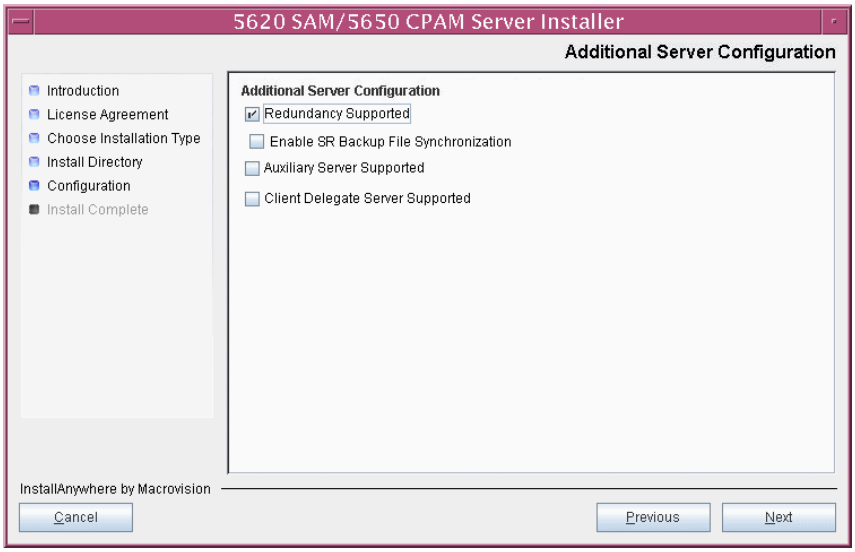
12 Configure the following parameters shown in Figure 7-32, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization” parameter is configurable when the “Redundancy Supported” parameter is enabled.

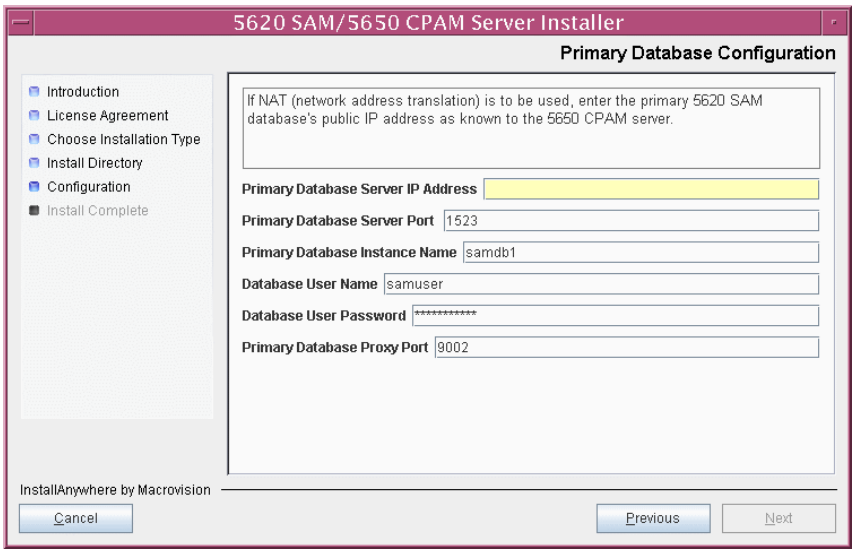
Figure 7-32 Additional Server Configuration



13 Configure the following parameters shown in Figure 7-33. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb1)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

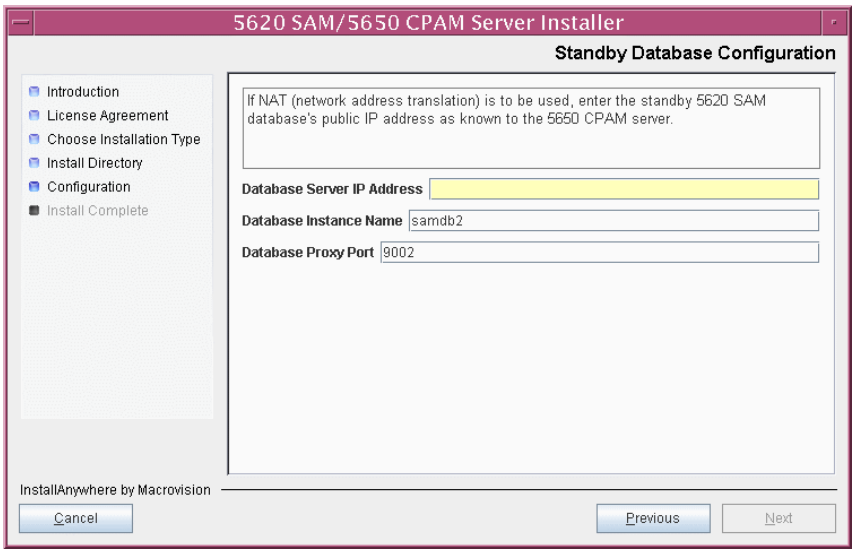
Figure 7-33 Primary Database Configuration



14 Configure the following parameters shown in Figure 7-34, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)

Figure 7-34 Standby Database Configuration



15 The panel in Figure 7-35 is displayed if you select the “Auxiliary Server Supported” parameter in step 12. Otherwise, go to step 17.

Perform the following steps.

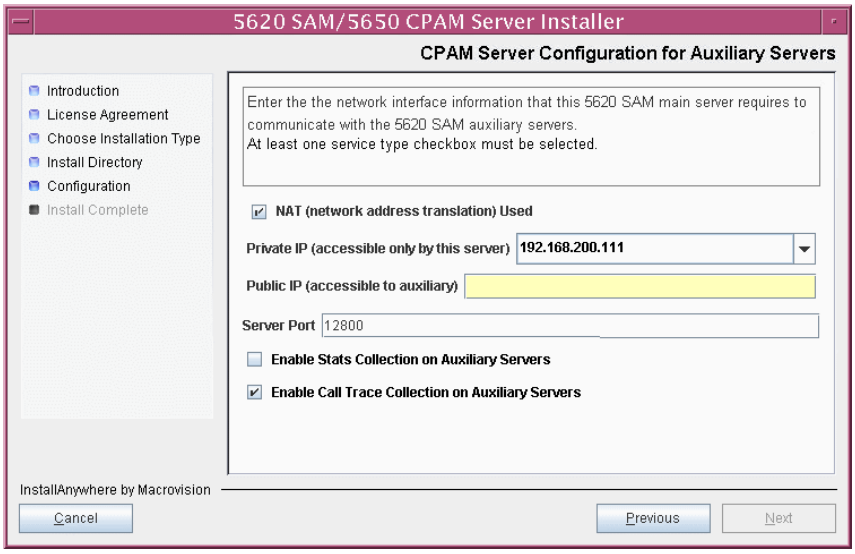
i Configure the following parameters shown in Figure 7-35:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5650 CPAM server and the 5620 SAM auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 7-35 CPAM Server Configuration for Auxiliary Servers



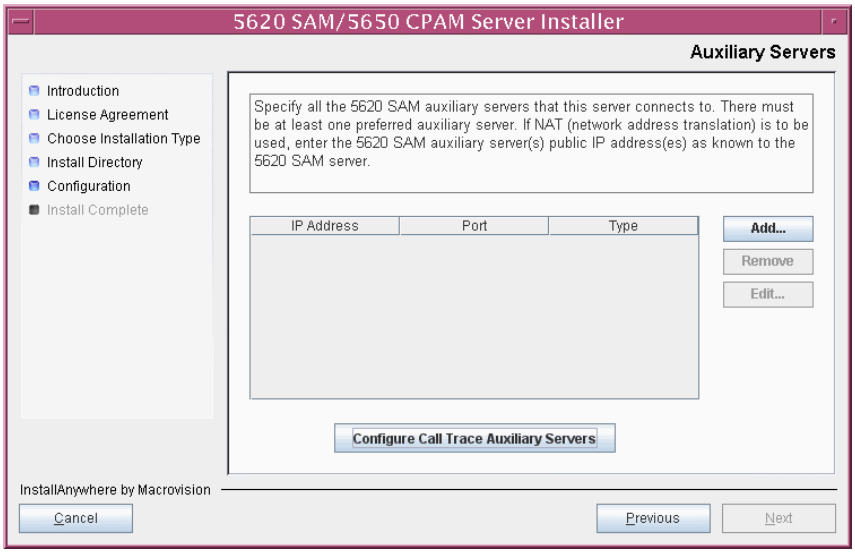
ii Click on the Next button.

iii Click on the Add button shown in Figure 7-36 to specify an auxiliary server. The form shown in Figure 7-37 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

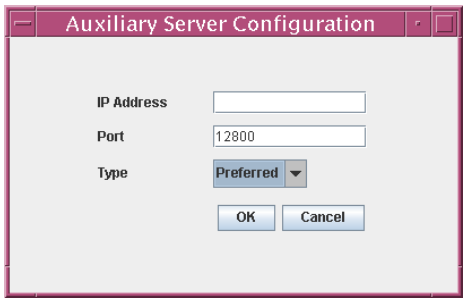
Figure 7-36 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 7-37 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

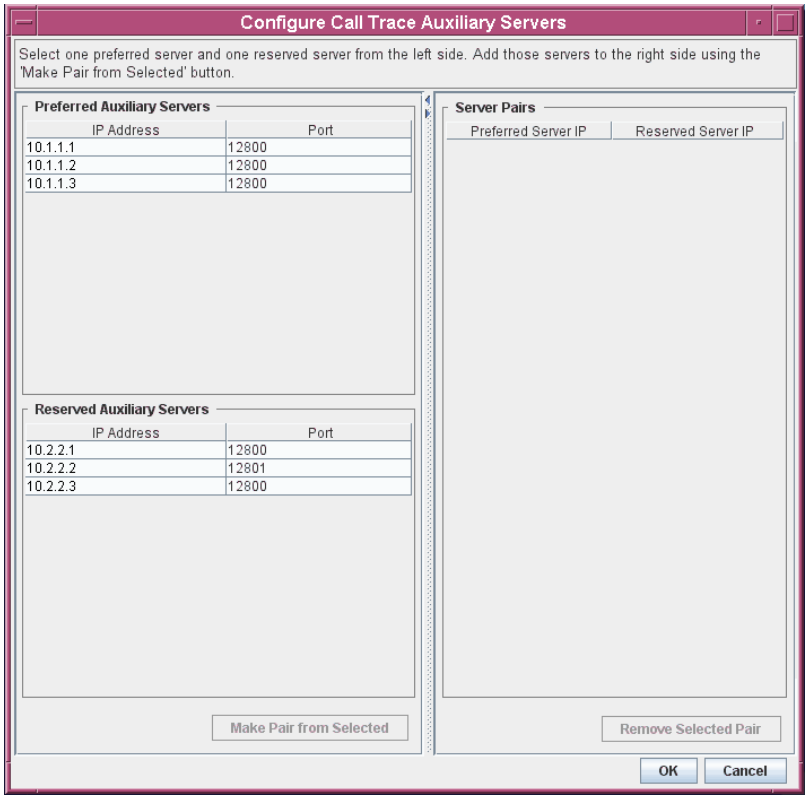
v Click on the OK button to save the information and close the form.

vi Repeat steps 15 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 15 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 7-37. Otherwise, go to step 16.

viii The form shown in Figure 7-38 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 7-38 Configure Call Trace Auxiliary Servers



ix Repeat step 15 viii to configure another call-trace auxiliary server pair, if required.

16 Click on the Next button.

17 If you select the “Enable Database Alignment” parameter shown in Figure 7-39, you must specify the preferred database of this 5650 CPAM server, then click on the Next button.

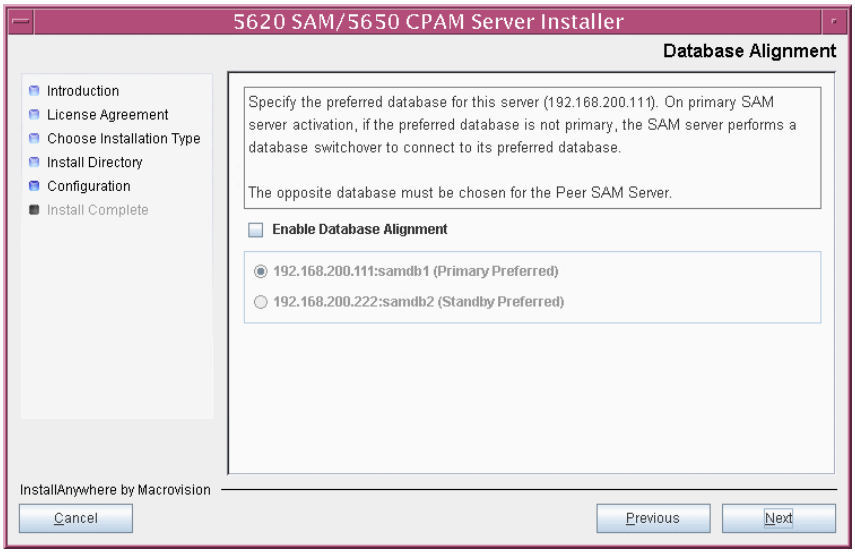
Database alignment associates each server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a server is the database in the same physical facility; typically, the primary server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the servers and databases in the 5620 SAM/5650 CPAM complex are aligned. If the switchover fails, each database reverts to the former role, and the server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 7-39 Database Alignment

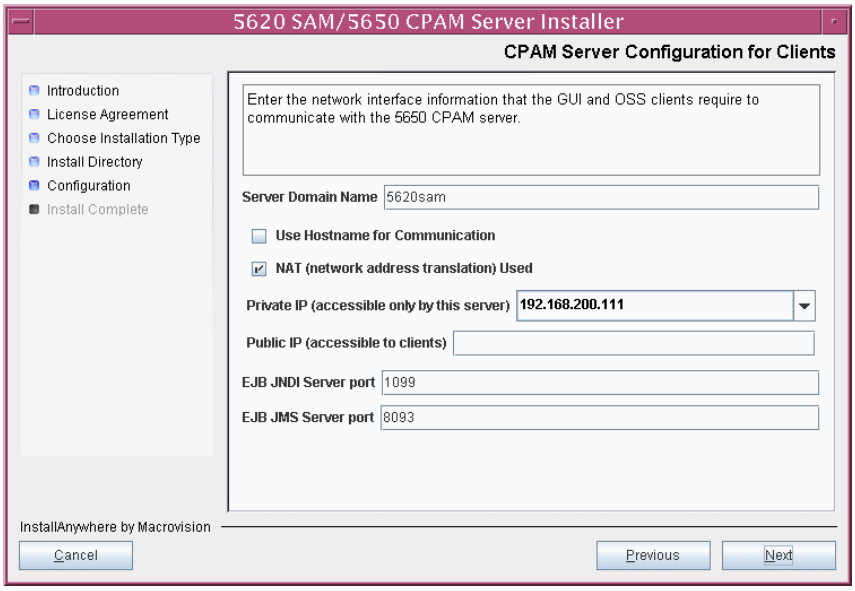


18 Perform the following steps.

i Configure the following parameters shown in Figure 7-40:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the 5650 CPAM server belongs.
- Use Hostname for Communication
  Select this parameter if the 5650 CPAM server is to use multiple interfaces for GUI and OSS client communication.

Figure 7-40 CPAM Server Configuration for Clients



ii If you select the "Use Hostname for Communication" parameter, go to step 18 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

iv Click on the Next button.

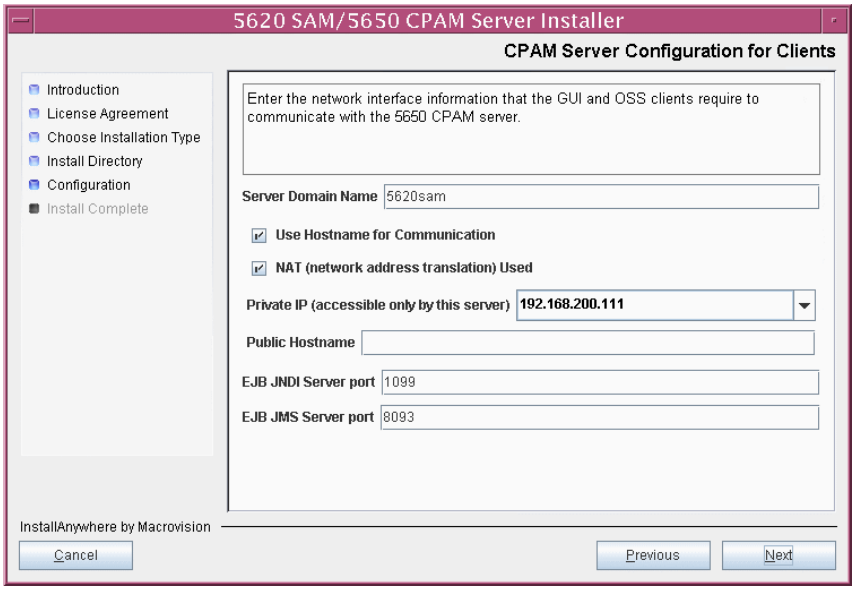
v Go to step 19.

vi Configure the following parameters shown in Figure 7-41:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 7-41 CPAM Server Configuration for Clients

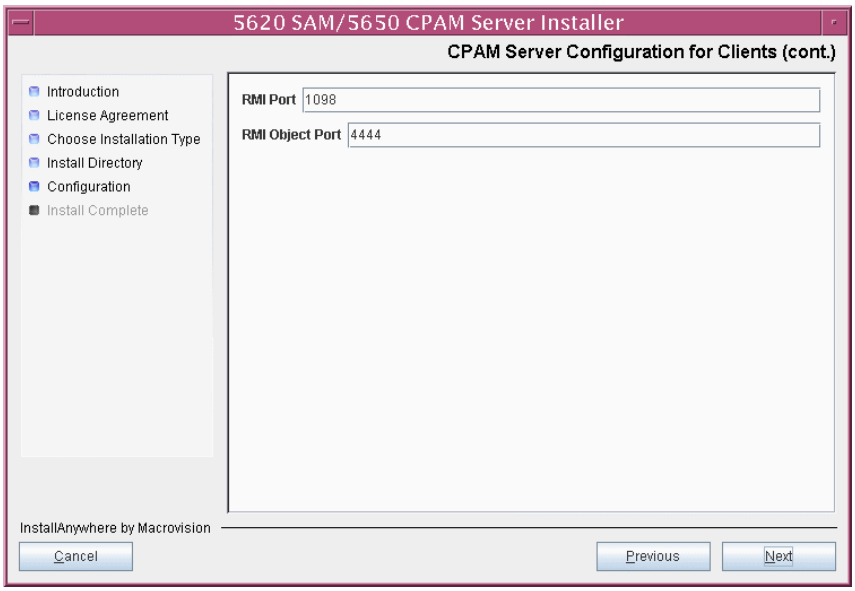


vii Click on the Next button.

19 Configure the following parameters shown in Figure 7-42, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 7-42 CPAM Server Configuration for Clients (cont.)



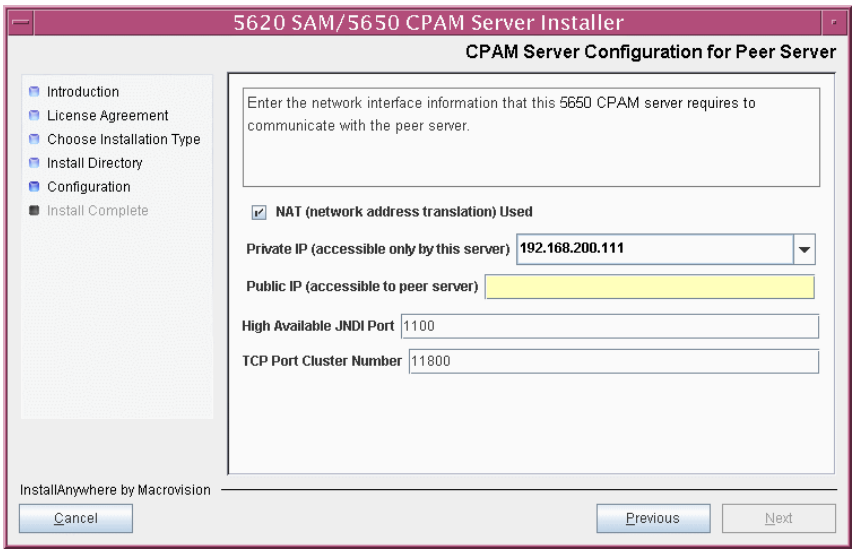
20 Click on the Next button.

21 Configure the following parameters shown in Figure 7-43:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5650 CPAM server and the peer 5650 CPAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

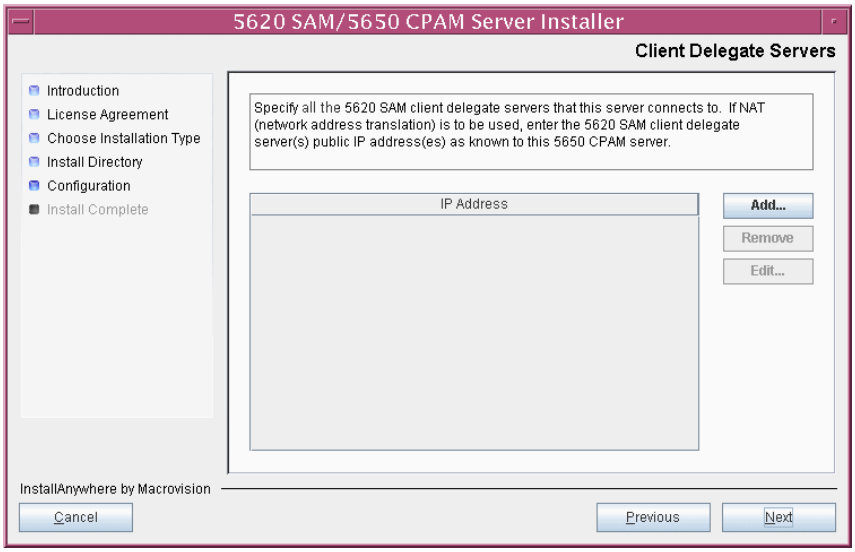
Figure 7-43 CPAM Server Configuration for Peer Server



22 The panel in Figure 7-44 is displayed if you select the “Client Delegate Server Supported” parameter in step 12. Otherwise, go to step 23.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5650 CPAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 7-44 Client Delegate Servers



23 Perform one of the following to specify where the 5650 CPAM and 5620 SAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 7-45.

ii To accept the default user documentation location that is displayed, go to step 24.

Note — If NAT is to be used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

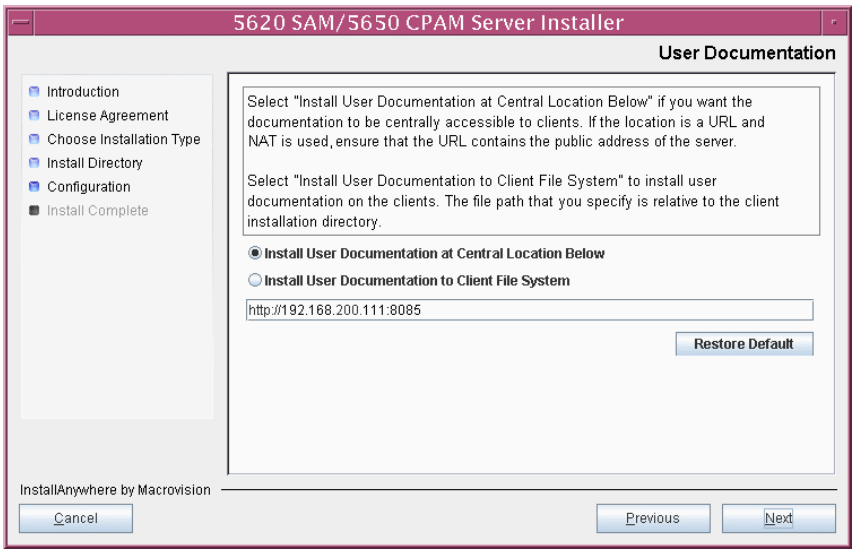
iii Specify a location for the user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the 5620 SAM | 5650 CPAM software DVD-ROM to the location specified in step 23 iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 7-45 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 7-45.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

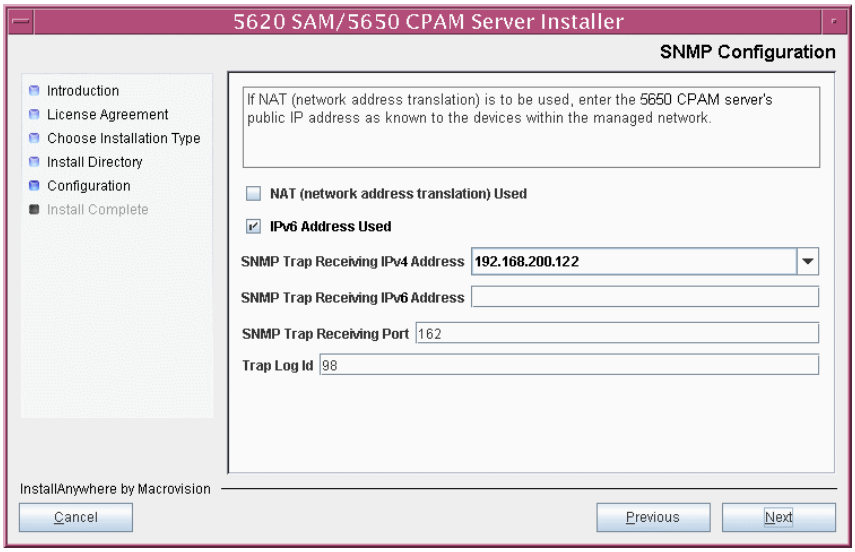
24 Configure the following parameters shown in Figure 7-46, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5650 CPAM server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The "SNMP Trap Receiving IPv6 Address" parameter is configurable only when the "IPv6 Address Used" parameter is selected, as shown in Figure 7-46.

Figure 7-46 SNMP Configuration

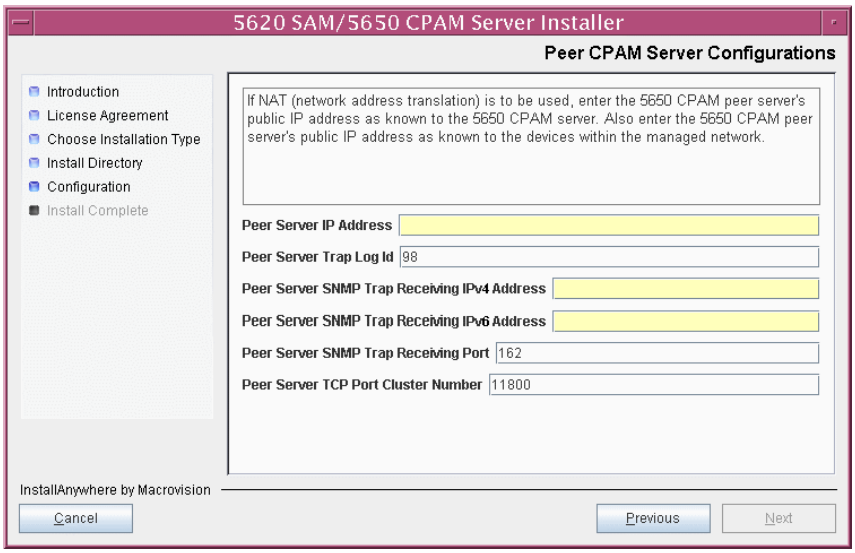


25 Configure the following parameters shown in Figure 7-47, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 24.

Figure 7-47 Peer CPAM Server Configurations

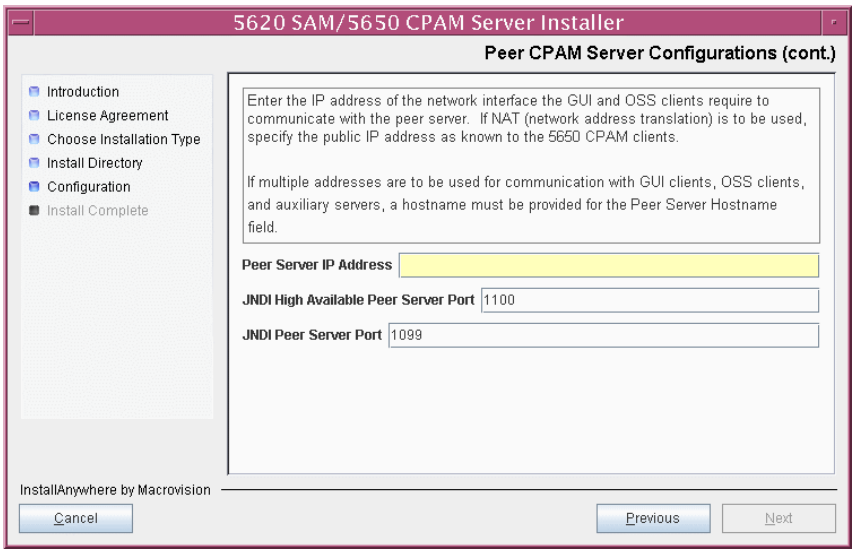


26 If the "Use Hostname for Communication" parameter in step 18 is selected, go to step 29.

27 Configure the following parameters shown in Figure 7-48, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 7-48 Peer CPAM Server Configurations (cont.)

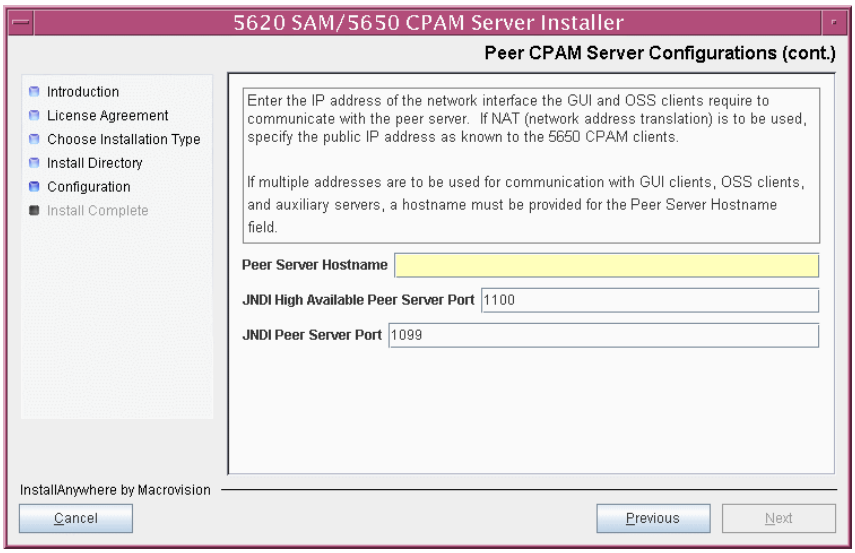


28 Go to step 30.

29 Configure the following parameters shown in Figure 7-49, then click on the Next button:

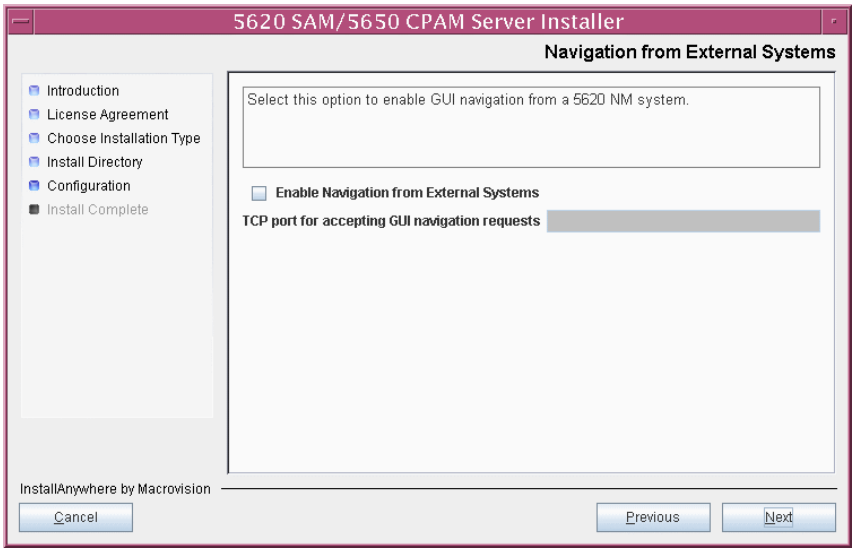
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 7-49 Peer CPAM Server Configurations (cont.)



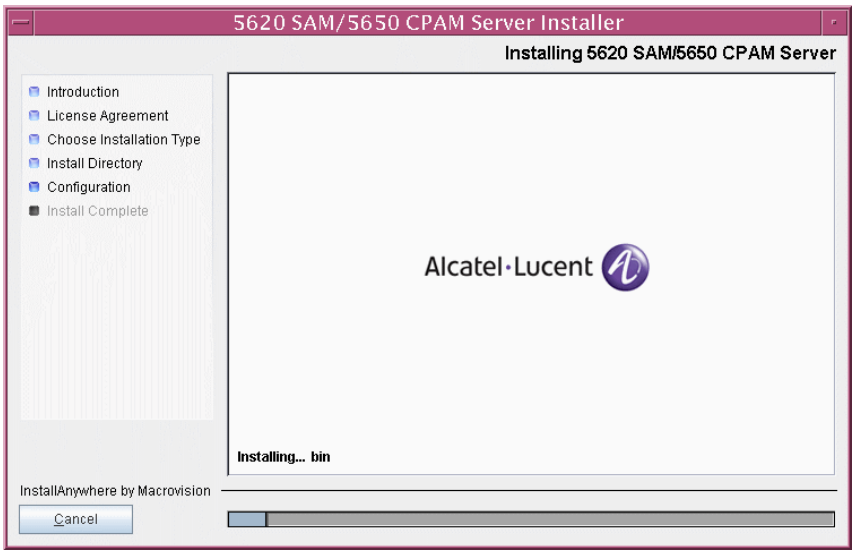
30 If you require 5650 CPAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 7-50 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button to begin the server installation.

Figure 7-50 Navigation from External Systems



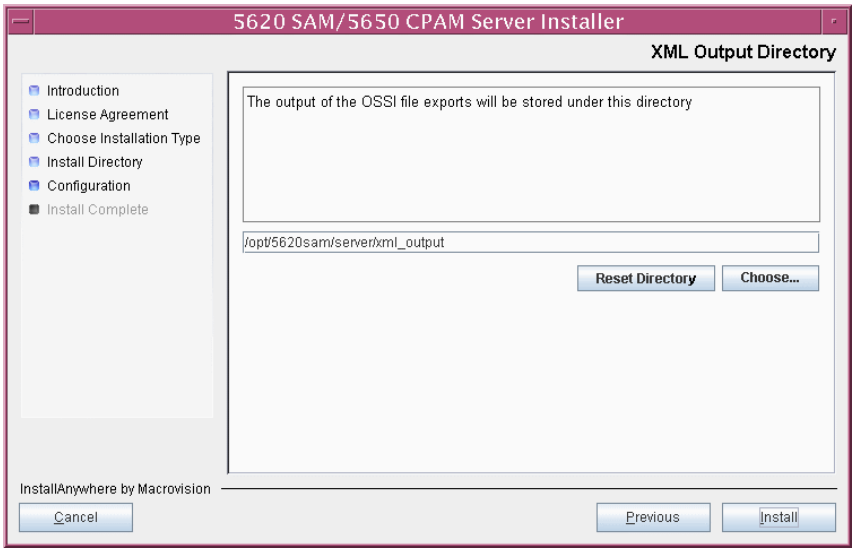
The next panel displays installation progress, as shown in Figure 7-51.

Figure 7-51 Installing 5620 SAM/5650 CPAM Server



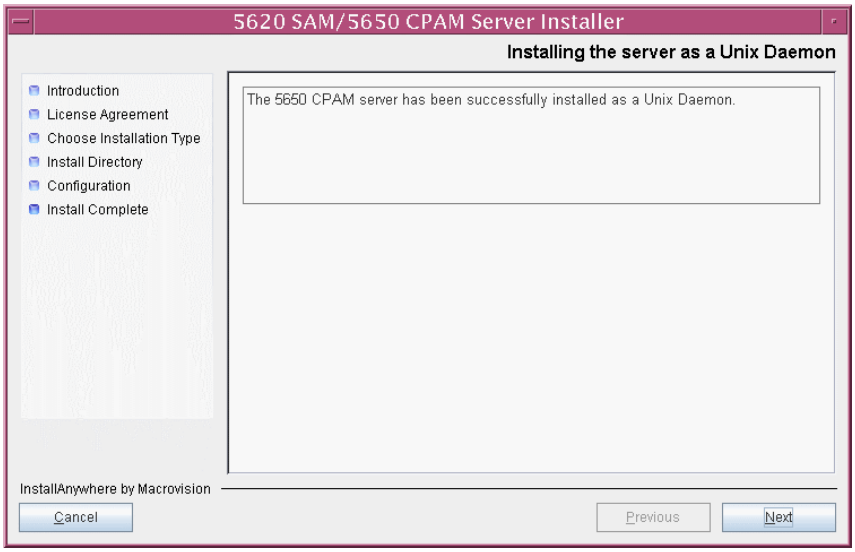
31 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 7-52. Click on the Install button to begin the server installation.

Figure 7-52 XML Output Directory



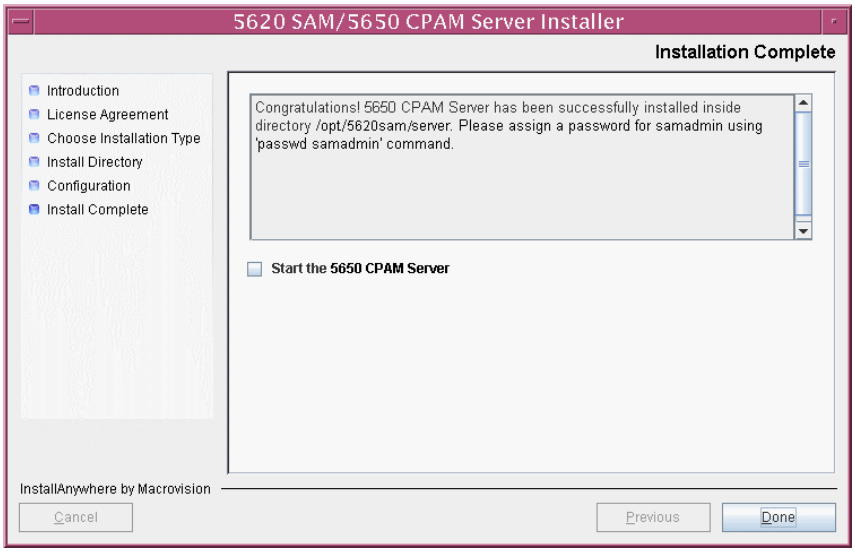
32 As shown in Figure 7-53, the 5650 CPAM server is installed as a UNIX daemon. Click on the Next button.

Figure 7-53 Installing the Server as a Unix Daemon



33 When the 5650 CPAM server installation is complete, as shown in Figure 7-54, configure the "Start the 5650 CPAM Server" parameter to specify whether you want the server to start immediately after the installation.

Figure 7-54 Installation Complete



34 Click on the Done button to close the server installer. If you specified that the 5650 CPAM server is to start after installation, the server starts. Initial server startup can take twenty minutes or more.

35 The installer creates a user account called samadmin that is required for 5650 CPAM system administration. You must assign a new password to this user account.

Perform the following steps to assign a new samadmin password.

Note — The samadmin password must not contain the @ symbol, or eNodeB device management may be compromised.

i Enter the following:

```
# passwd samadmin
```

The following prompt is displayed:

```
New Password:
```

ii Enter the new password and press ↵.

The following prompt is displayed:

```
Confirm New Password:
```

iii Enter the new password again and press ↵. The password is changed.

iv Record the new password and store it in a secure location.

36 Restart each currently open 5620 SAM GUI client that connects to the 5620 SAM/5650 CPAM server.

Note — The 5650 CPAM functionality is not visible in a client GUI until the client is restarted.

8 — 5650 CPAM upgrade

8.1 5650 CPAM upgrade overview

Before you attempt to perform a procedure in this chapter, ensure that you understand and comply with the relevant requirements, considerations, and precautions described in chapter 1 of this document and in the *5650 CPAM User Guide*.

Caution — Alcatel-Lucent supports 5650 CPAM software configuration only under the conditions described in chapter 1.

Note — The platform requirements for a 5650 CPAM server are the same as the requirements for a 5620 SAM server. Use the 5620 SAM main server guidelines in chapter 1 as the 5650 CPAM server guidelines.

See Appendix D for detailed 5650 CPAM upgrade parameter descriptions.

8.2 5650 CPAM upgrade procedures list

Table 8-1 lists the 5650 CPAM server software upgrade procedures.

Table 8-1 5650 CPAM upgrade procedures list

Procedure	Purpose
To upgrade a standalone 5650 CPAM system	Upgrade the 5650 CPAM server software in a standalone deployment.
To upgrade a redundant 5650 CPAM system	Upgrade the 5650 CPAM server software in a redundant deployment.

8.3 5650 CPAM upgrade

This section describes how to upgrade the 5650 CPAM software in a standalone or redundant deployment. A 5650 CPAM software upgrade is typically performed as part of a 5620 SAM main server software upgrade. Procedure 8-1 describes how to upgrade the 5650 CPAM server software in a standalone deployment. Procedure 8-2 describes how to upgrade the 5650 CPAM server software in a redundant deployment.

Note — The 5650 CPAM software is automatically upgraded when you upgrade the 5620 SAM main server software, but is activated only after a valid 5650 CPAM license key is added to the 5650 CPAM configuration.

The procedures in this section are for use only in the following situations:

- when the 5650 CPAM server is to be used without a 5620 SAM main server
- when the 5650 CPAM server is to be used with a 5620 SAM main server that is installed on a station other than the 5650 CPAM station

The 5650 CPAM and the 7701 CPAA can function only when the software versions are compatible, for example, 5650 CPAM, Release 5.0 R1 and 7701 CPAA, Release 5.0 R1. If you upgrade one component, you must upgrade the other component. See the current 5650 CPAM release notice for product compatibility information.

Note 1 — When you perform a 5620 SAM upgrade, the 5650 CPAM software is upgraded automatically.

Note 2 — You can use the 5650 CPAM to upgrade the 7701 CPAA, or you can upgrade the 7701 CPAA during a 5620 SAM upgrade to save time.

Procedure 8-1 To upgrade a standalone 5650 CPAM system

Perform this procedure to upgrade the 5650 CPAM server software on a station in a standalone deployment. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — You require the following user privileges on the 5650 CPAM server station to perform this procedure:

- root or root-equivalent
- samadmin

Note 2 — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin user

Do not type the # symbol or bash$ when you enter a command.

1. Use the 5650 CPAM to set a reference for each IGP routing domain, for example, OSPF areas, and IS-IS Level 1 and Level 2 domains. See the *5650 CPAM User Guide* for information about setting a reference.
2. Use the 5650 CPAM to set a checkpoint for each IGP routing domain, for example, OSPF areas, and IS-IS Level 1 and Level 2 domains. See the *5650 CPAM User Guide* for information about setting a checkpoint.
3. Ensure that each 7701 CPAA TCP connection to the 5650 CPAM is administratively and operationally up.
4. Use the 5650 CPAM to back up the 7701 CPAA configuration. See the *5650 CPAM User Guide* for information about backing up a 7701 CPAA configuration.

5 Stop the 5650 CPAM server application.

Note — When you stop the 5650 CPAM server application, you also stop the 5620 SAM server application.

i Log in to the server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5650 CPAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5650 CPAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5650 CPAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5650 CPAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 5 v. Do not proceed to the next step until the server is stopped.

6 Perform one of the following.

a Upgrade the 5650 CPAM server as part of a 5620 SAM system upgrade.

i Perform the appropriate 5620 SAM upgrade procedures in chapter 3.

ii Perform step 35 in this procedure.

b Upgrade the 5650 CPAM server using this procedure.

7 Log in to the 5650 CPAM station as a user with root or root-equivalent privileges.

8 Place the new 5620 SAM | 5650 CPAM software DVD-ROM in a DVD-ROM drive.

9 Open a console window.

10 Navigate to the DVD-ROM drive.

11 Perform one of the following to open the 5620 SAM | 5650 CPAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

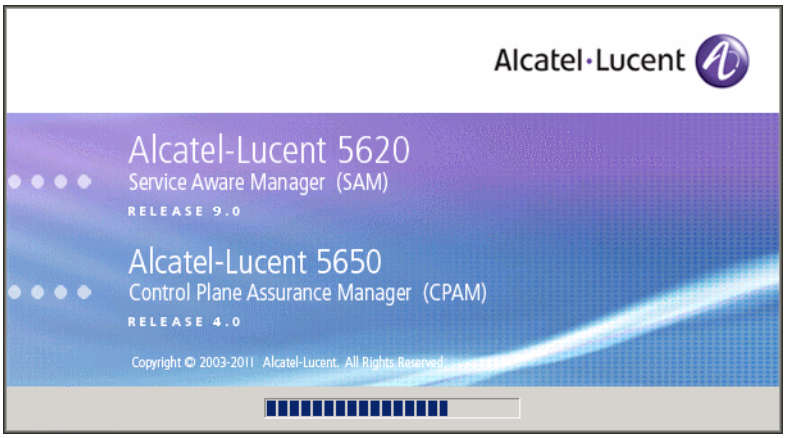
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

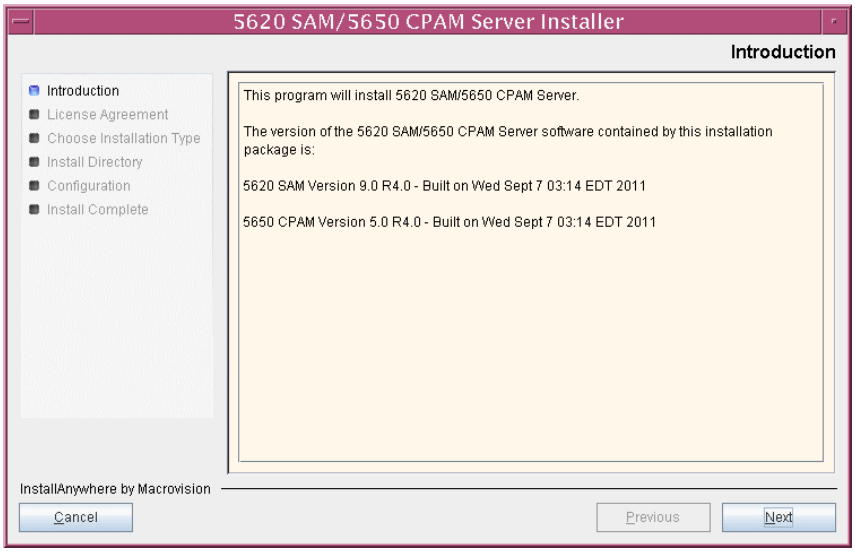
The splash screen shown in Figure 8-1 opens.

Figure 8-1 5620 SAM | 5650 CPAM installer



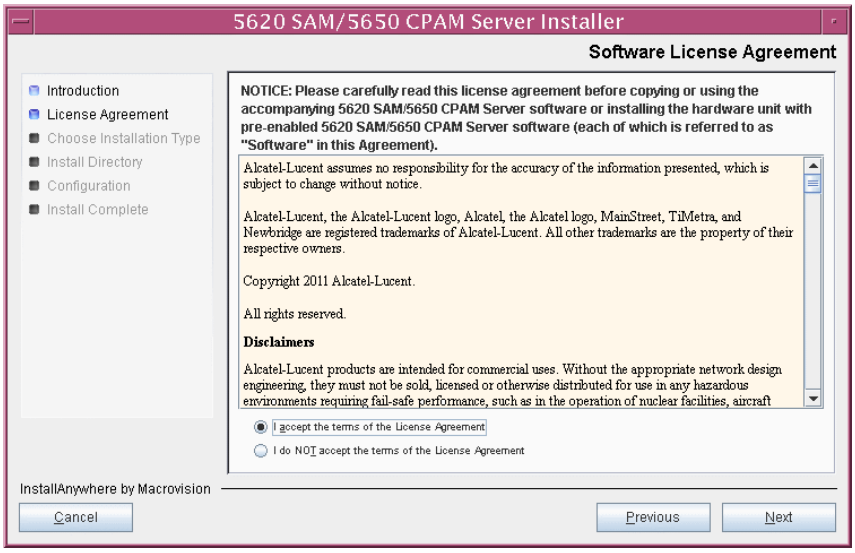
12 The 5650 CPAM server installer opens, as shown in Figure 8-2. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 8-2 Introduction



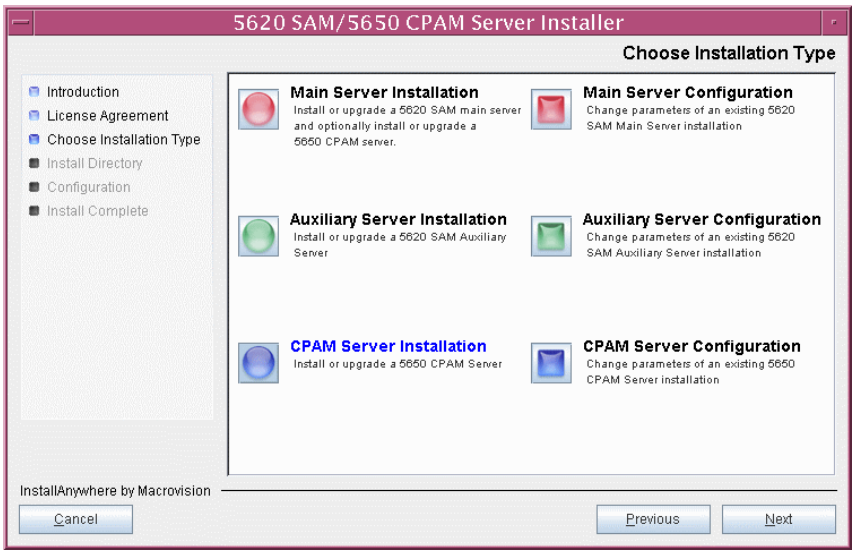
13 Review and accept the terms of the license agreement shown in Figure 8-3. Click on the Next button.

Figure 8-3 Software License Agreement



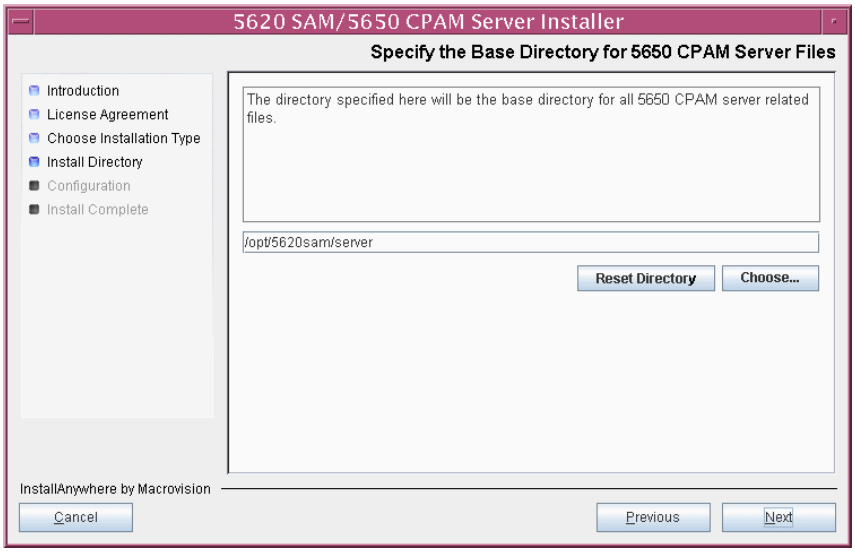
14 Select CPAM Server Installation, as shown in Figure 8-4. Click on the Next button.

Figure 8-4 Choose Installation Type



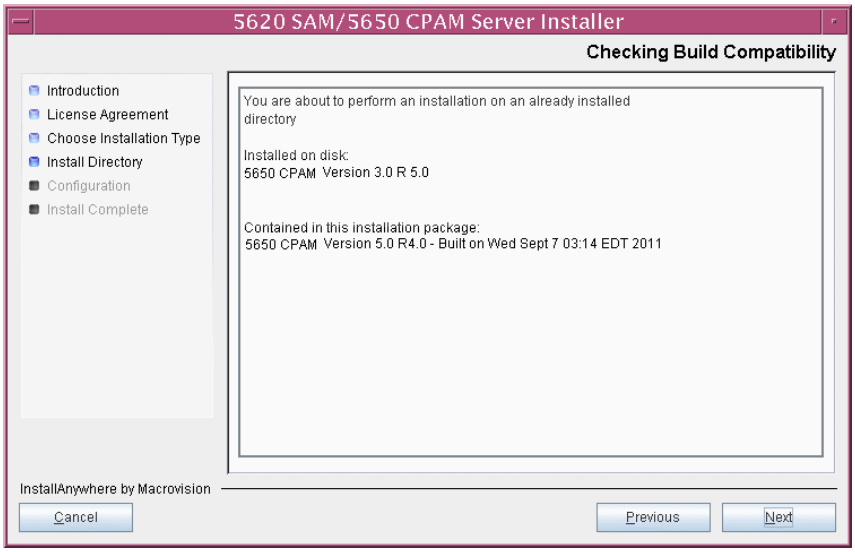
15 Specify a base directory in which to install the 5650 CPAM server software (typically /opt/5620sam/server), as shown in Figure 8-5. Click on the Next button.

Figure 8-5 Specify the Base Directory for 5650 CPAM Server Files



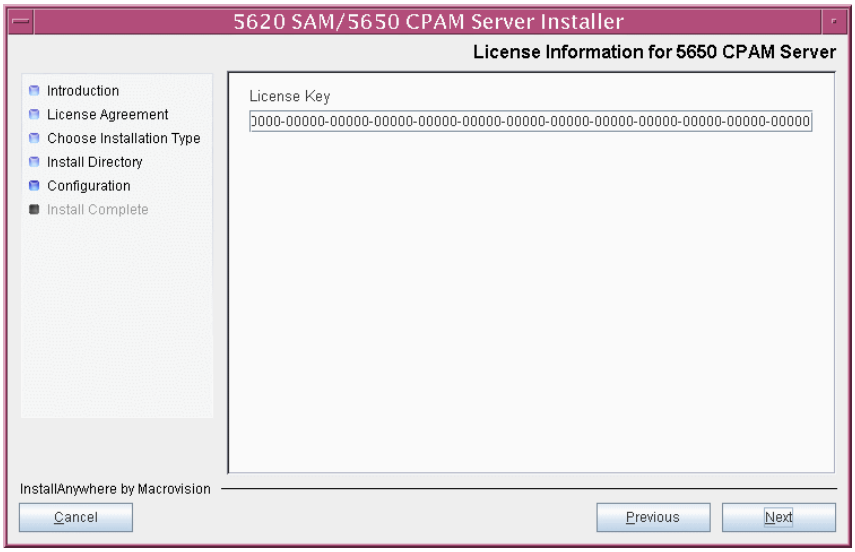
16 As shown in Figure 8-6, the installer indicates which release of 5650 CPAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 8-6 Checking Build Compatibility



17 The 5620 SAM installer displays the existing license key. Enter the license key for the new 5620 SAM release exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 8-7. Click on the Next button.

Figure 8-7 License Information for 5650 CPAM Server

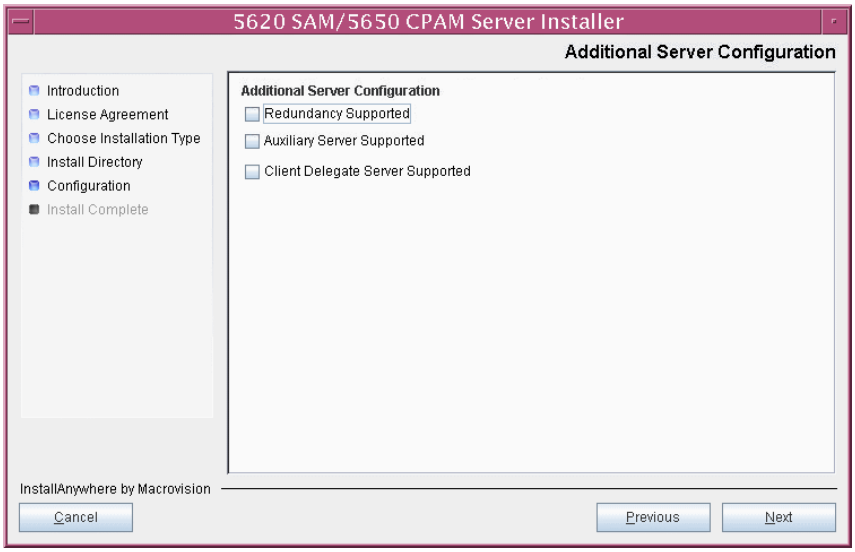


18 Configure the following parameters shown in Figure 8-8, then click on the Next button.

- Redundancy Supported
- Auxiliary Server Supported
- Client Delegate Server Supported

Note — You must leave the “Redundancy Supported” parameter unselected.

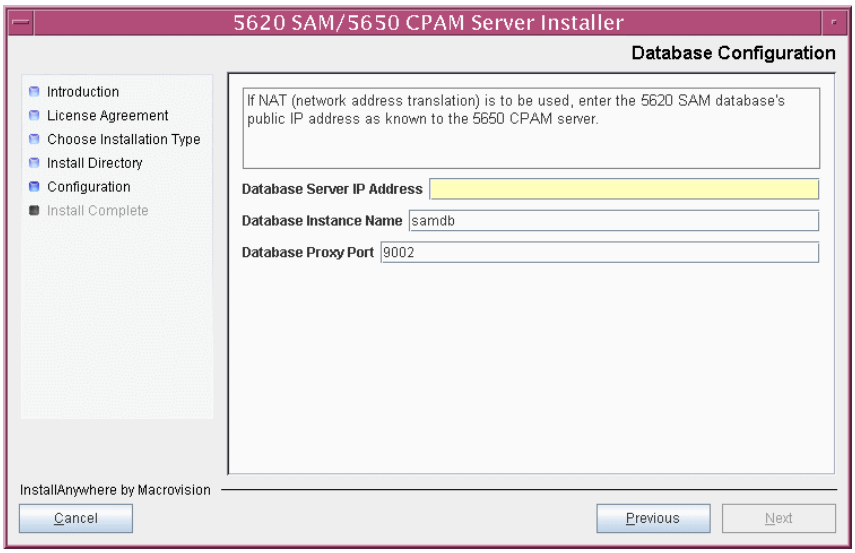
Figure 8-8 Additional Server Configuration



19 Configure the following parameters shown in Figure 8-9, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb)
- Database Proxy Port (typically 9002)

Figure 8-9 Database Configuration



20 The panel in Figure 8-10 is displayed if you select the “Auxiliary Server Supported” parameter in step 18. Otherwise, go to step 22.

Perform the following steps.

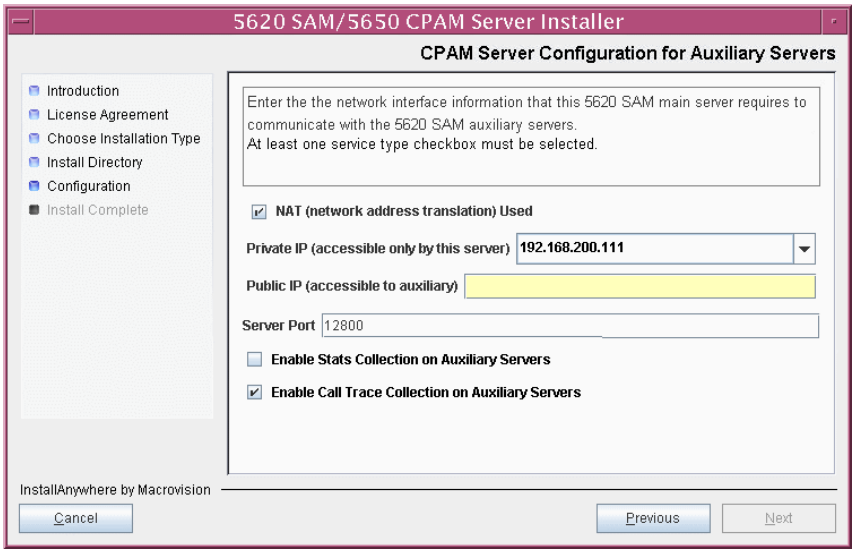
i Configure the following parameters shown in Figure 8-10:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between the 5650 CPAM server and the 5620 SAM auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 8-10 CPAM Server Configuration for Auxiliary Servers



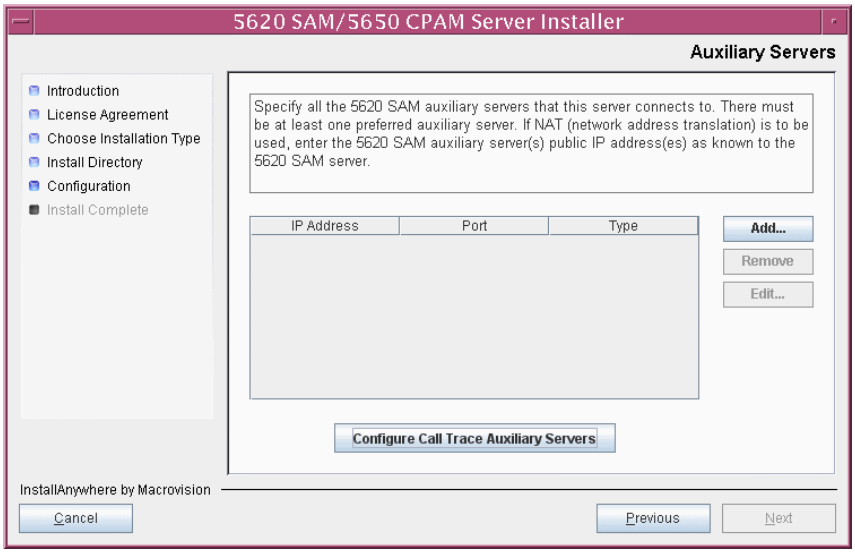
ii Click on the Next button.

iii Click on the Add button shown in Figure 8-11 to specify an auxiliary server. The form shown in Figure 8-12 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

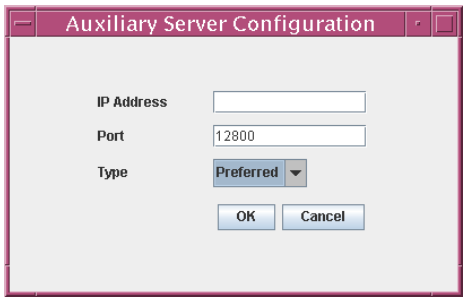
Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

Figure 8-11 Auxiliary Servers



Note — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 8-12 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

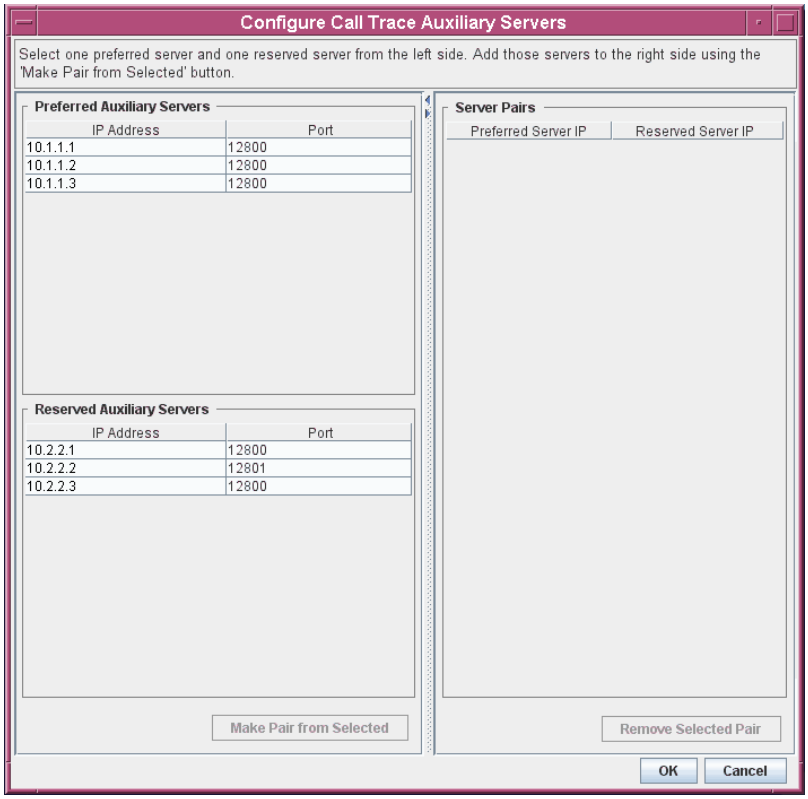
v Click on the OK button to save the information and close the form.

vi Repeat steps 20 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 20 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 8-11. Otherwise, go to step 21.

viii The form shown in Figure 8-13 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 8-13 Configure Call Trace Auxiliary Servers



ix Repeat step 20 viii to configure another call-trace auxiliary server pair, if required.

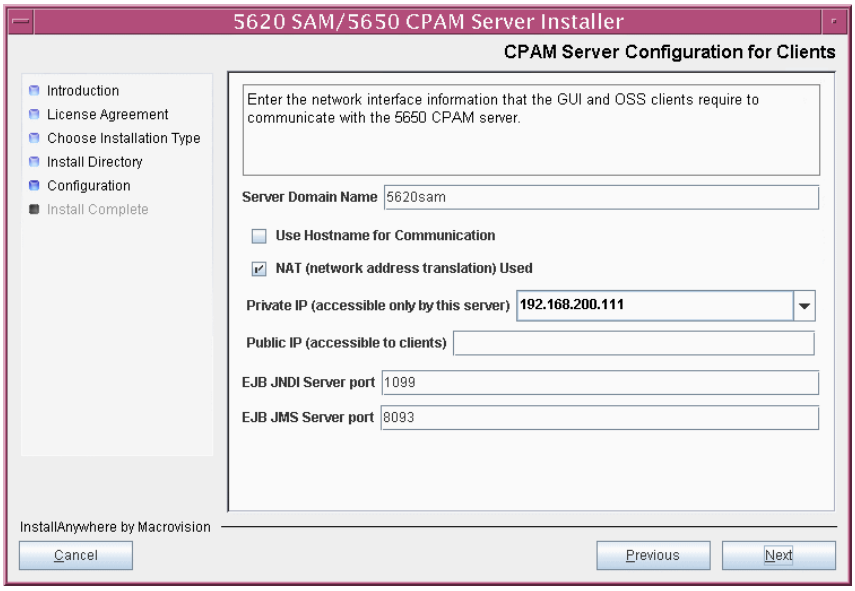
21 Click on the Next button.

22 Perform the following steps.

i Configure the following parameters shown in Figure 8-14:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the 5650 CPAM server belongs.
- Use Hostname for Communication
  Select this parameter if the 5650 CPAM server is to use multiple interfaces for GUI and OSS client communication.

Figure 8-14 CPAM Server Configuration for Clients



ii If you select the "Use Hostname for Communication" parameter, go to step 22 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

iv Click on the Next button.

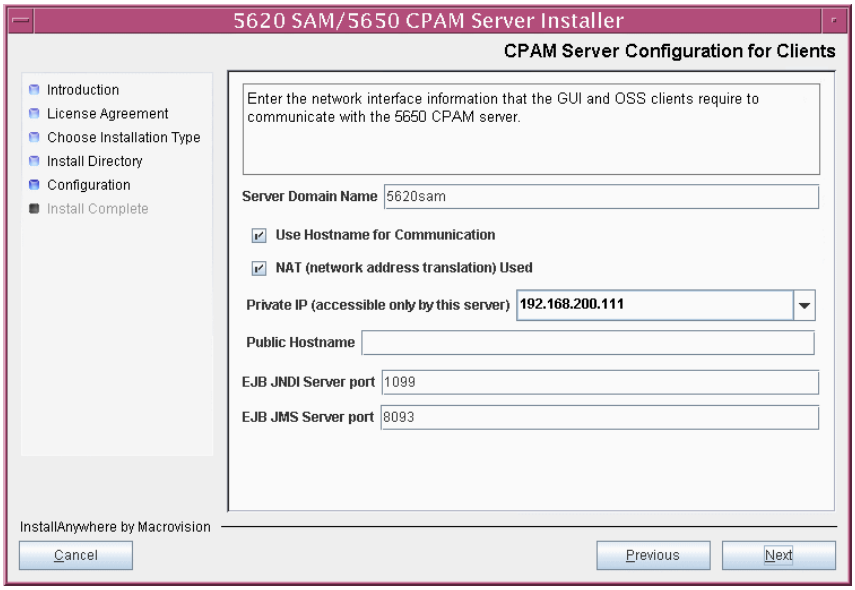
v Go to step 23.

vi Configure the following parameters shown in Figure 8-15:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 8-15 CPAM Server Configuration for Clients

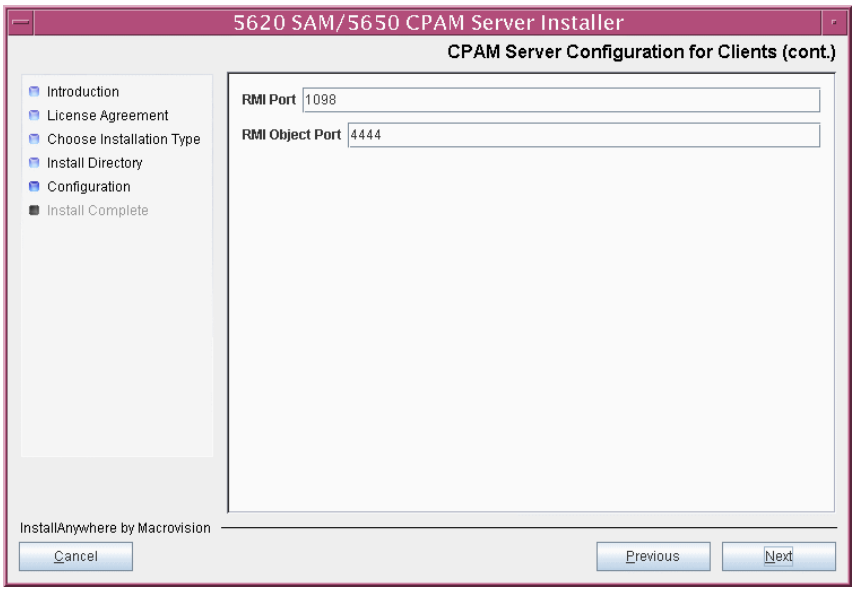


vii Click on the Next button.

23 Configure the following parameters shown in Figure 8-16, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 8-16 CPAM Server Configuration for Clients (cont.)

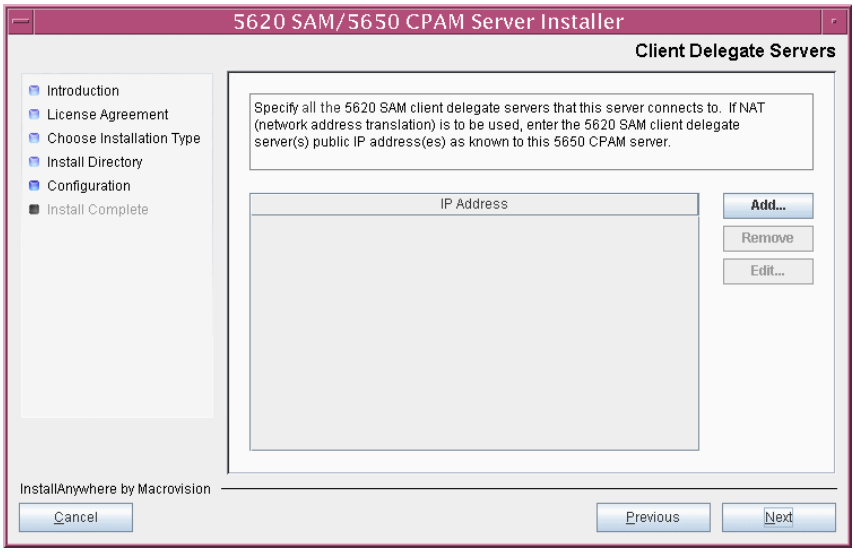


24 Click on the Next button.

25 The panel in Figure 8-17 is displayed if you select the “Client Delegate Server Supported” parameter in step 18. Otherwise, go to step 26.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5650 CPAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 8-17 Client Delegate Servers



26 Perform one of the following to specify where the 5620 SAM and 5650 CPAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 8-18.

ii To accept the default user documentation location that is displayed, go to step 27.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

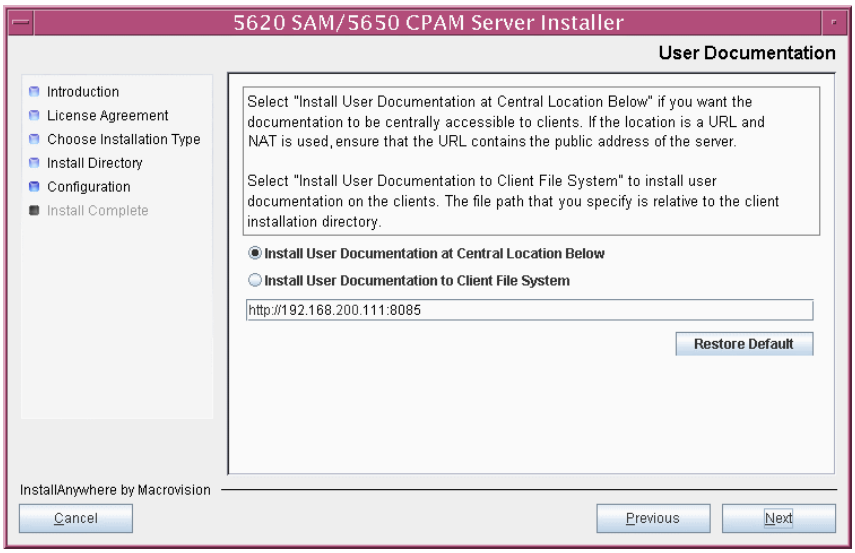
iii Specify a location for the user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the new 5620 SAM | 5650 CPAM software DVD-ROM to the location specified in step 26 iii.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 8-18 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 8-18.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

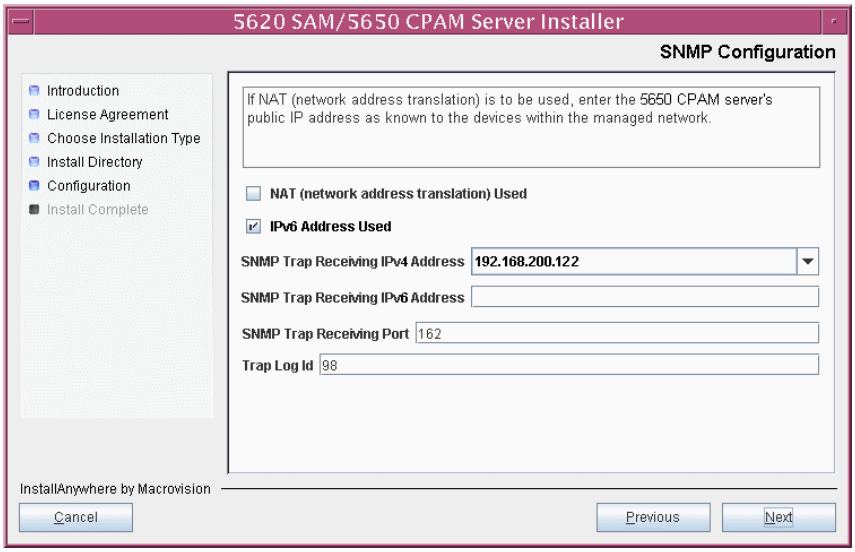
27 Configure the following parameters shown in Figure 8-19, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between the 5650 CPAM server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

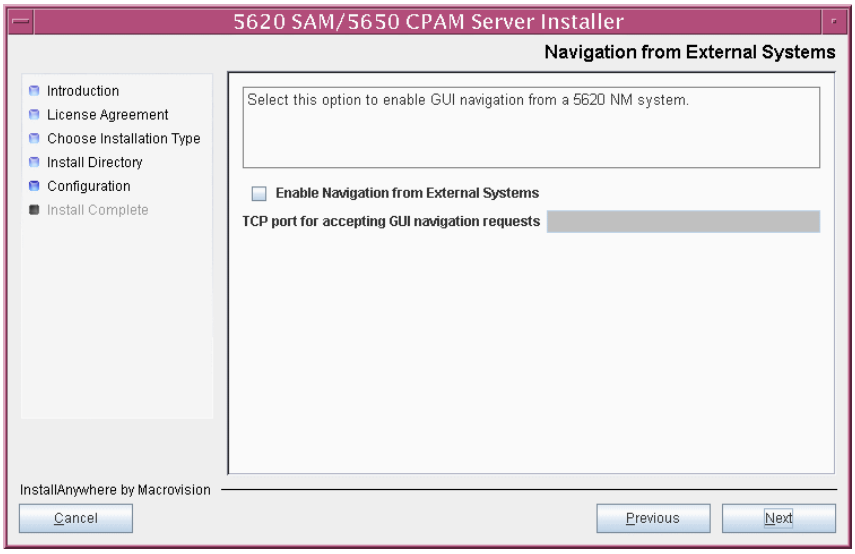
Note — The "SNMP Trap Receiving IPv6 Address" parameter is configurable only when the "IPv6 Address Used" parameter is selected, as shown in Figure 8-19.

Figure 8-19 SNMP Configuration



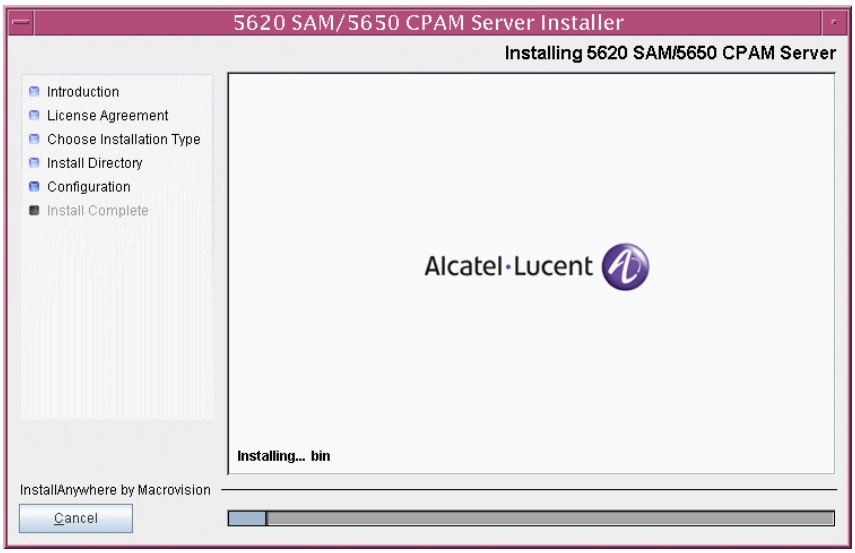
28 If you require 5650 CPAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 8-20 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button to begin the server upgrade.

Figure 8-20 Navigation from External Systems



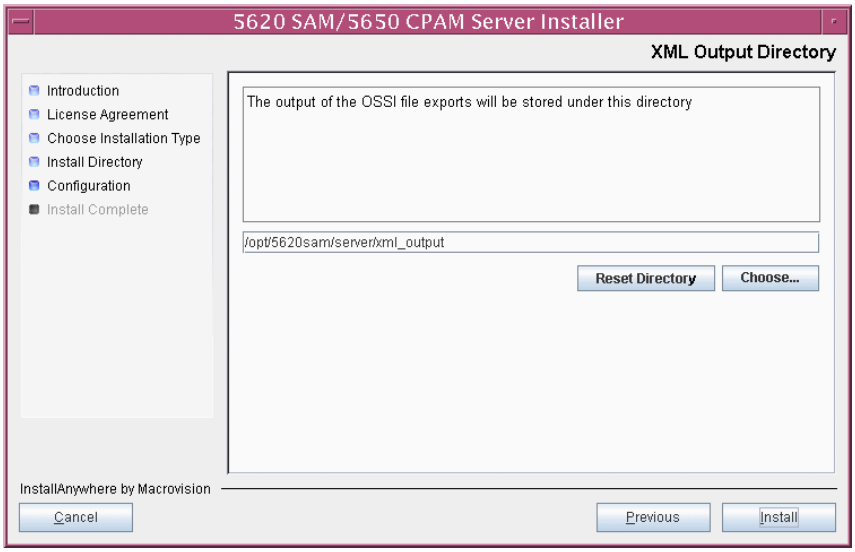
The next panel displays upgrade progress, as shown in Figure 8-21.

Figure 8-21 Installing 5620 SAM/5650 CPAM Server



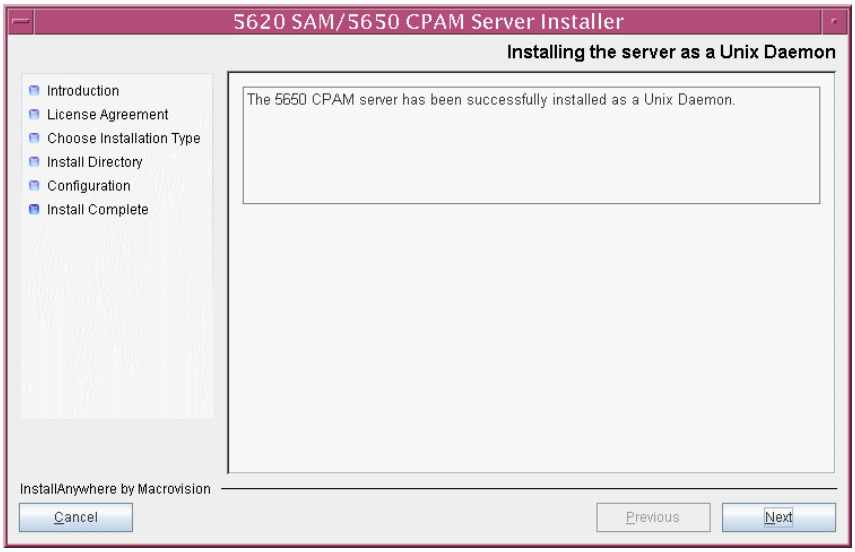
29 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 8-22. Click on the Install button to begin the server upgrade.

Figure 8-22 XML Output Directory



30 As shown in Figure 8-23, the 5650 CPAM server is installed as a UNIX daemon. Click on the Next button.

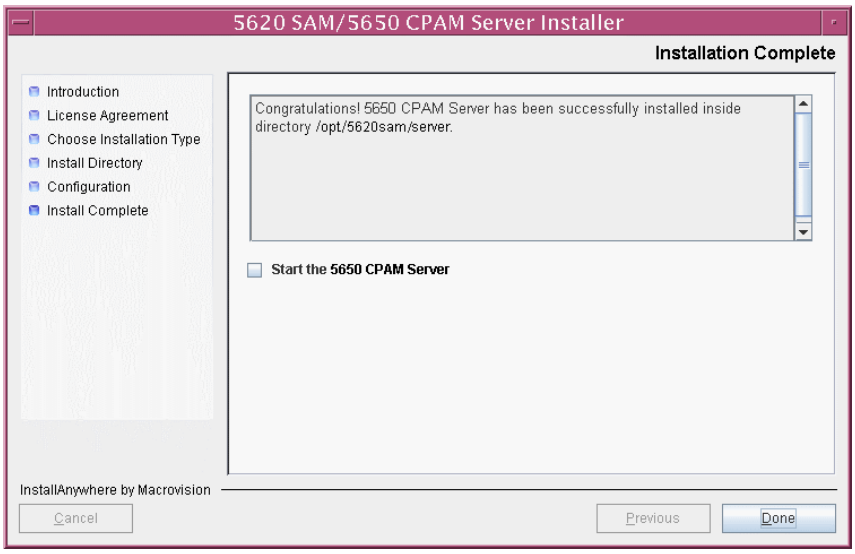
Figure 8-23 Installing the Server as a Unix Daemon



31 When the 5650 CPAM server upgrade is complete, as shown in Figure 8-24, configure the “Start the 5650 CPAM Server” parameter to specify whether you want the server to start immediately after the upgrade.

Caution — Alcatel-Lucent recommends that you do not configure the server to start immediately after an upgrade.

Figure 8-24 Installation Complete



32 Click on the Done button to close the server installer. If you specified that the 5650 CPAM server is to start after the upgrade, the server starts. Initial server startup can take twenty minutes or more.

33 Restart each currently open 5620 SAM GUI client that connects to the 5620 SAM/5650 CPAM server.

Note — The new 5650 CPAM functionality is not visible in a client GUI until the client is restarted.

34 Upgrade the 7701 CPAA.

Note — You can use the 5650 CPAM or the 5620 SAM to upgrade the 7701 CPAA, or you can upgrade the CPAA independently during a 5620 SAM upgrade to save time.

35 Use the upgraded 5650 CPAM to administratively turn up each 7701 CPAA TCP connection to the 5650 CPAM. After this step, each TCP connection between the 5650 CPAM and each 7701 CPAA is operationally up.

Procedure 8-2 To upgrade a redundant 5650 CPAM system

Perform this procedure to upgrade the 5650 CPAM server software on a station in a redundant deployment. Ensure that you record the information that you specify during this procedure, for example, directory names, passwords, and IP addresses.

Note 1 — You must perform this procedure on each 5650 CPAM station in the redundant deployment.

Note 2 — You require the following user privileges on each 5650 CPAM server station to perform this procedure:

- root or root-equivalent
- samadmin

Note 3 — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin user

Do not type the # symbol or bash$ when you enter a command.

1 Use the 5650 CPAM to set a reference for each IGP routing domain, for example, OSPF areas, and IS-IS Level 1 and Level 2 domains. See the *5650 CPAM User Guide* for information about setting a reference.

2 Use the 5650 CPAM to set a checkpoint for each IGP routing domain, for example, OSPF areas, and IS-IS Level 1 and Level 2 domains. See the *5650 CPAM User Guide* for information about setting a checkpoint.

3 Ensure that each 7701 CPAA TCP connection to the 5650 CPAM is administratively and operationally up.

4 Use the 5650 CPAM to back up the 7701 CPAA configuration. See the *5650 CPAM User Guide* for information about backing up a 7701 CPAA configuration.

5 Stop the 5650 CPAM server application.

Note — When you stop the 5650 CPAM server application, you also stop the 5620 SAM server application.

i Log in to the server station as the samadmin user.

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5650 CPAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5650 CPAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5650 CPAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5650 CPAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 5 v. Do not proceed to the next step until the server is stopped.

6 Perform one of the following.

a Upgrade the 5650 CPAM server as part of a 5620 SAM system upgrade.

i Perform the appropriate 5620 SAM upgrade procedures in chapter 3.

ii Perform step 43 in this procedure.

b Upgrade the 5650 CPAM server using this procedure.

7 Log in to the 5650 CPAM station as a user with root or root-equivalent privileges.

8 Place the new 5620 SAM | 5650 CPAM software DVD-ROM in a DVD-ROM drive.

9 Open a console window.

10 Navigate to the DVD-ROM drive.

11 Perform one of the following to open the 5620 SAM | 5650 CPAM server installer.

a On a SPARC station:

i Enter the following:

```
# cd Solaris ↵
```

ii Enter the following:

```
# ./ServerInstall_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

b On an x86-based station:

i Enter the following:

```
# cd Solarisx86 ↵
```

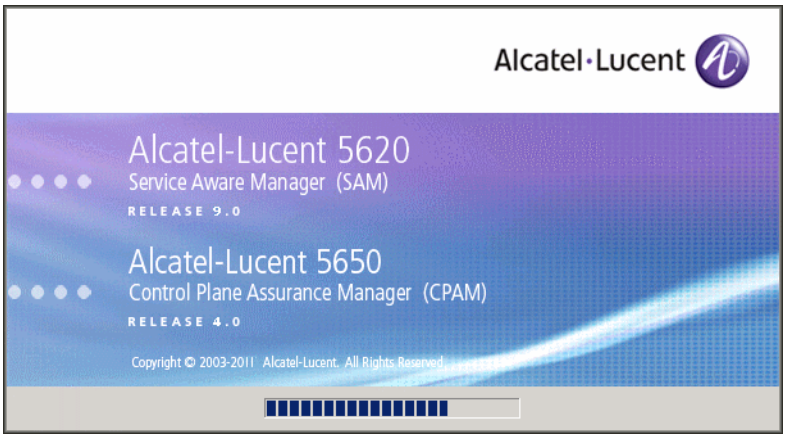
ii Enter the following:

```
# ./ServerInstall_x86_SAM_9_0_revision.bin ↵
```

where
revision is the revision identifier, such as R1, R3, or another descriptor

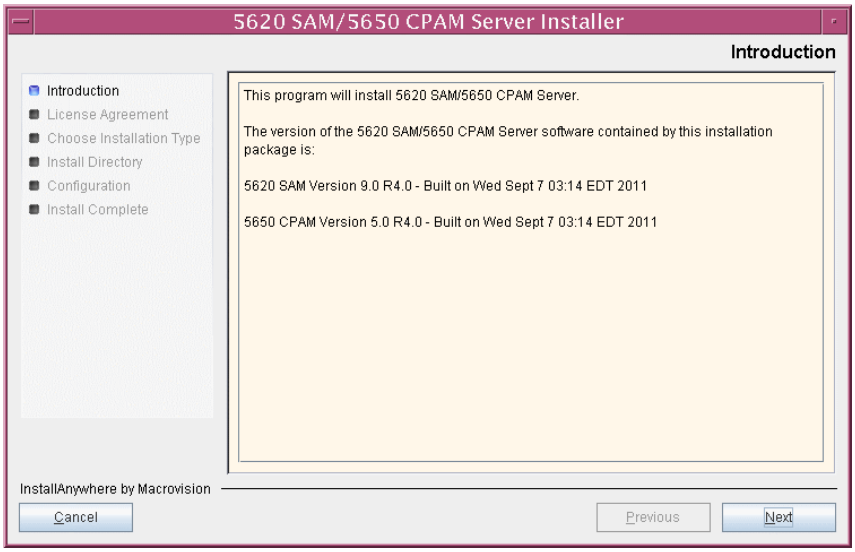
The splash screen shown in Figure 8-25 opens.

Figure 8-25 5620 SAM | 5650 CPAM installer



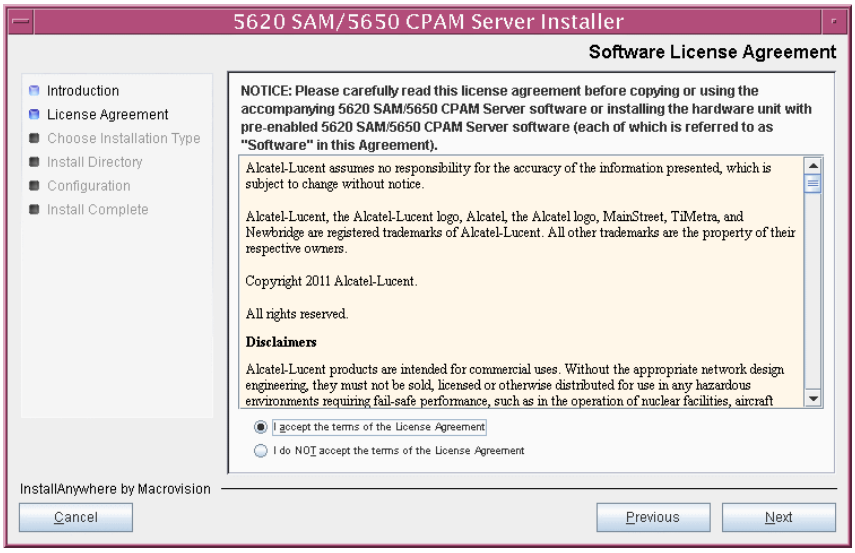
12 The 5650 CPAM server installer opens, as shown in Figure 8-26. The left pane indicates upgrade progress. The right pane displays release information about the software. Click on the Next button.

Figure 8-26 Introduction



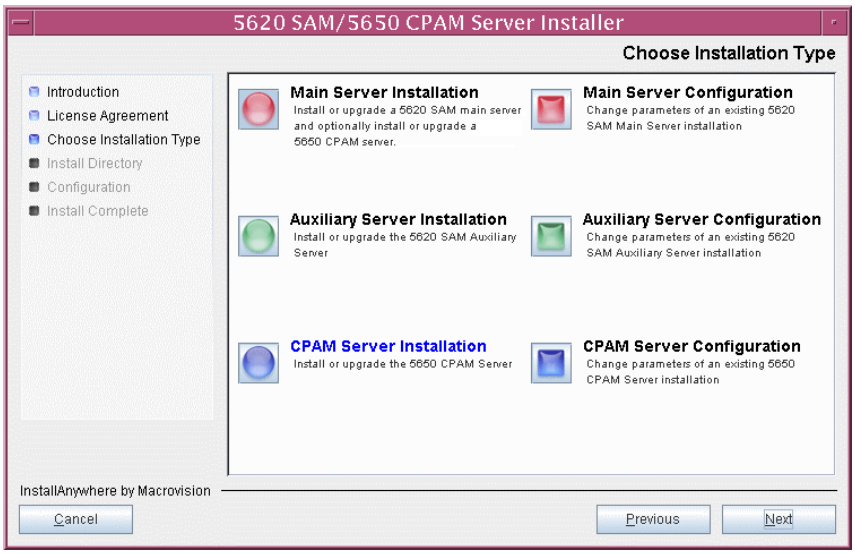
13 Review and accept the terms of the license agreement shown in Figure 8-27. Click on the Next button.

Figure 8-27 Software License Agreement



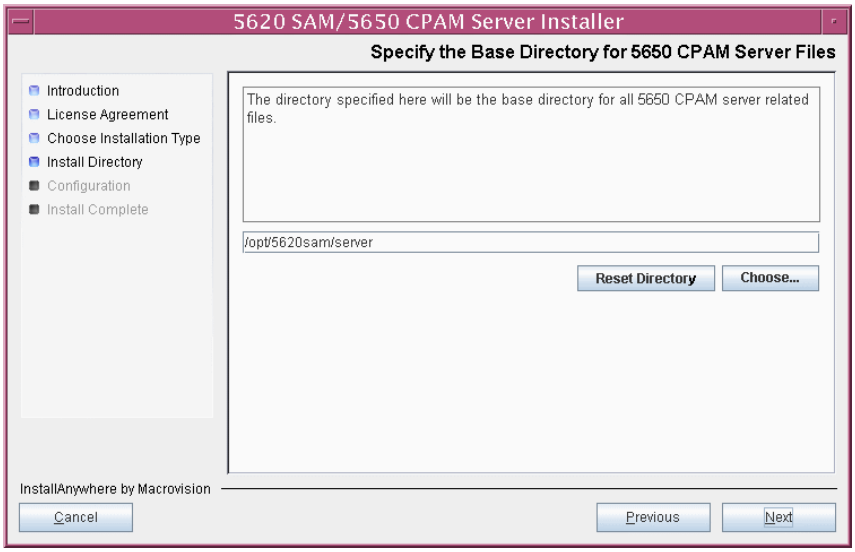
14 Select CPAM Server Installation, as shown in Figure 8-28. Click on the Next button.

Figure 8-28 Choose Installation Type



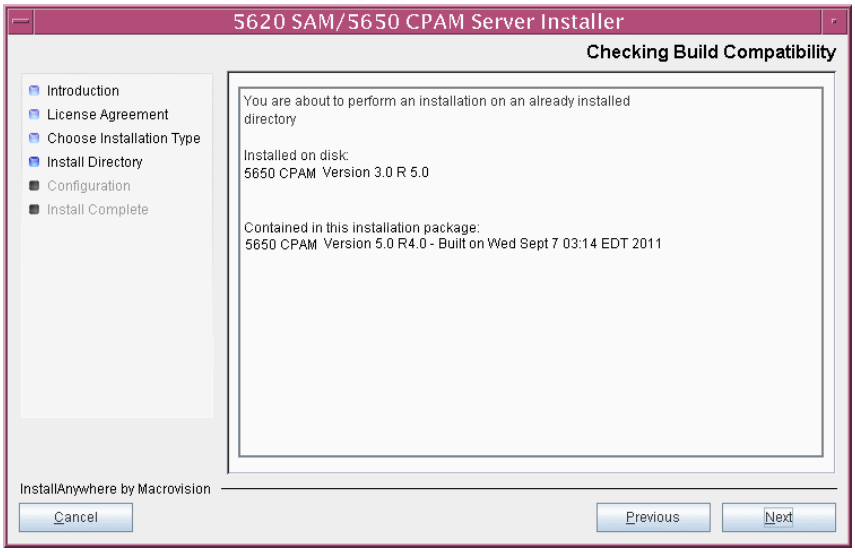
15 Specify a base directory in which to install the 5650 CPAM server software (typically /opt/5620sam/server), as shown in Figure 8-29. Click on the Next button.

Figure 8-29 Specify the Base Directory for 5650 CPAM Server Files



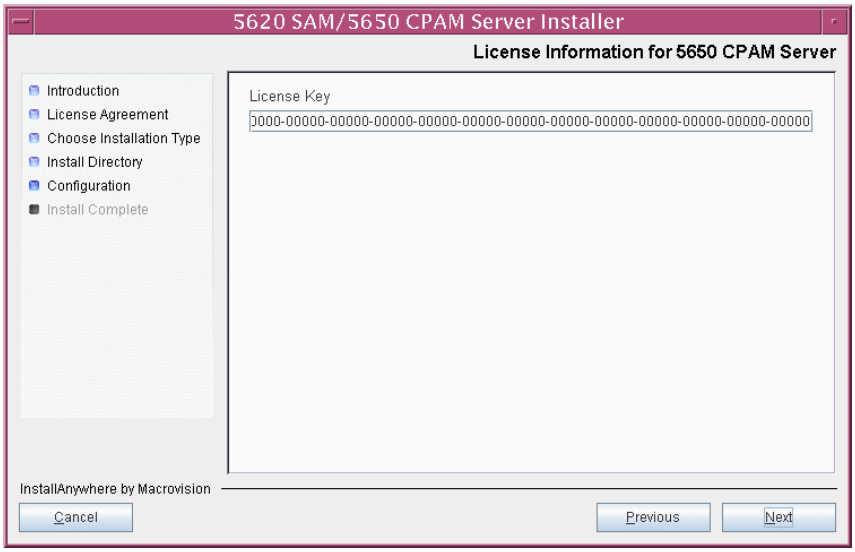
16 As shown in Figure 8-30, the installer indicates which release of 5650 CPAM software is currently installed and the release to which it is to be upgraded. Verify the information. Click on the Next button.

Figure 8-30 Checking Build Compatibility



17 The 5620 SAM installer displays the existing license key. Enter the license key for the new 5620 SAM release exactly as received from Alcatel-Lucent. Include the dashes in the key, as shown in Figure 8-31. Click on the Next button.

Figure 8-31 License Information for 5650 CPAM Server



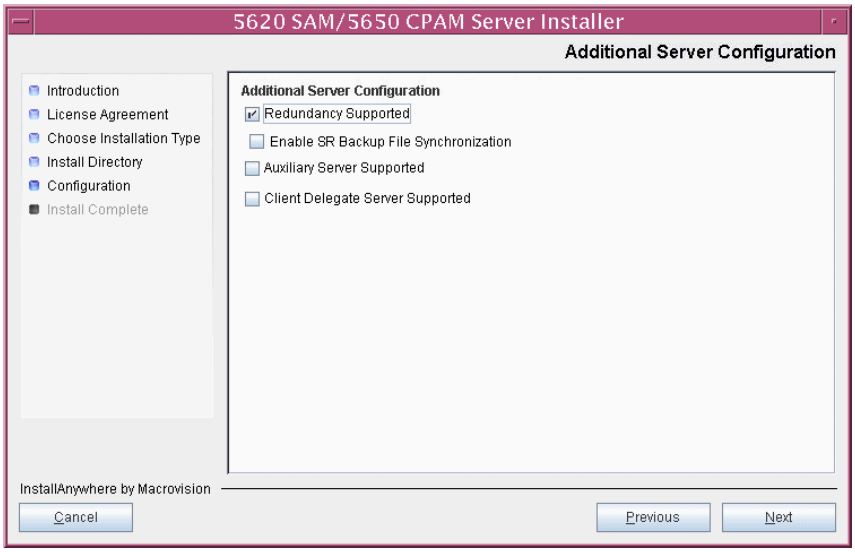
18 Configure the following parameters shown in Figure 8-32, then click on the Next button.

- Redundancy Supported
- Enable SR Backup File Synchronization
- Auxiliary Server Supported
- Client Delegate Server Supported

Note 1 — You must select the “Redundancy Supported” parameter.

Note 2 — The “Enable SR Backup File Synchronization” parameter is configurable when the “Redundancy Supported” parameter is enabled.

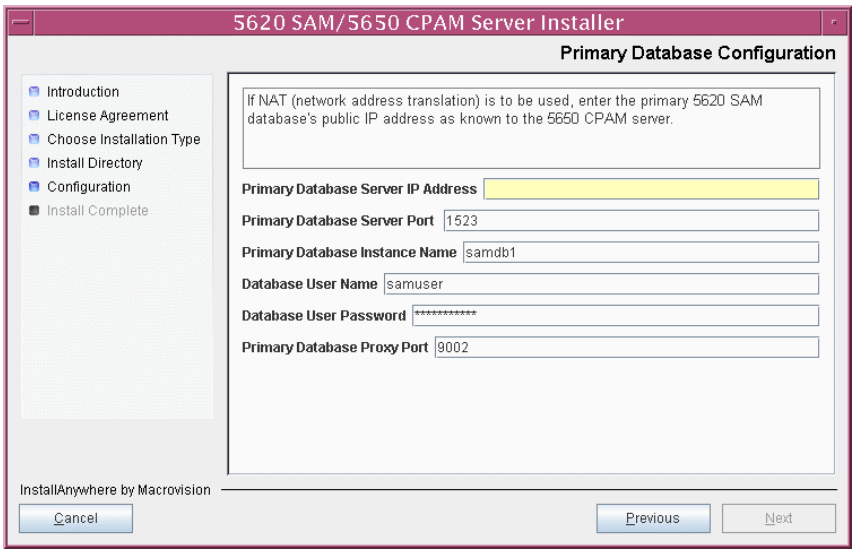
Figure 8-32 Additional Server Configuration



19 Configure the following parameters shown in Figure 8-33. Click on the Next button.

- Primary Database Server IP Address
- Primary Database Server Port (typically 1523)
- Primary Database Instance Name (typically samdb1)
- Database User Name (typically samuser)
- Database User Password
- Primary Database Proxy Port (typically 9002)

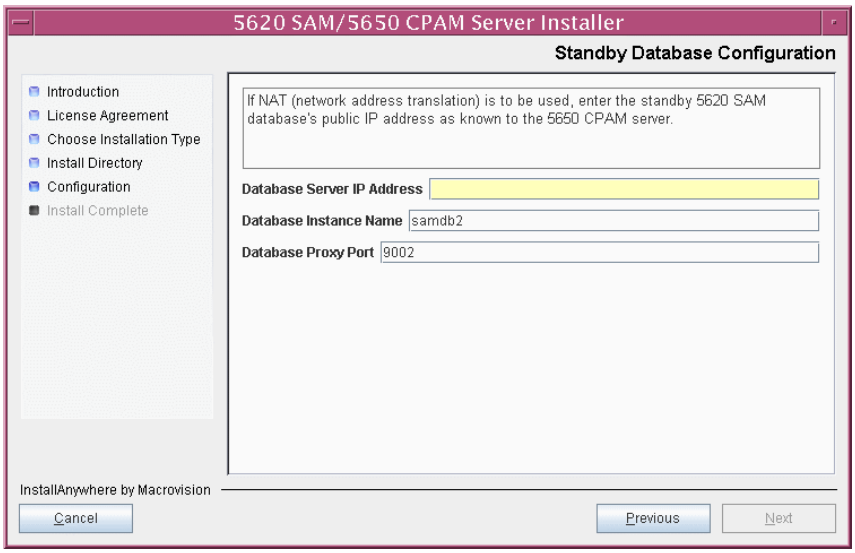
Figure 8-33 Primary Database Configuration



20 Configure the following parameters shown in Figure 8-34, then click on the Next button:

- Database Server IP Address
- Database Instance Name (typically samdb2)
- Database Proxy Port (typically 9002)

Figure 8-34 Standby Database Configuration



21 The panel in Figure 8-35 is displayed if you select the “Auxiliary Server Supported” parameter in step 18. Otherwise, go to step 23.

Perform the following steps.

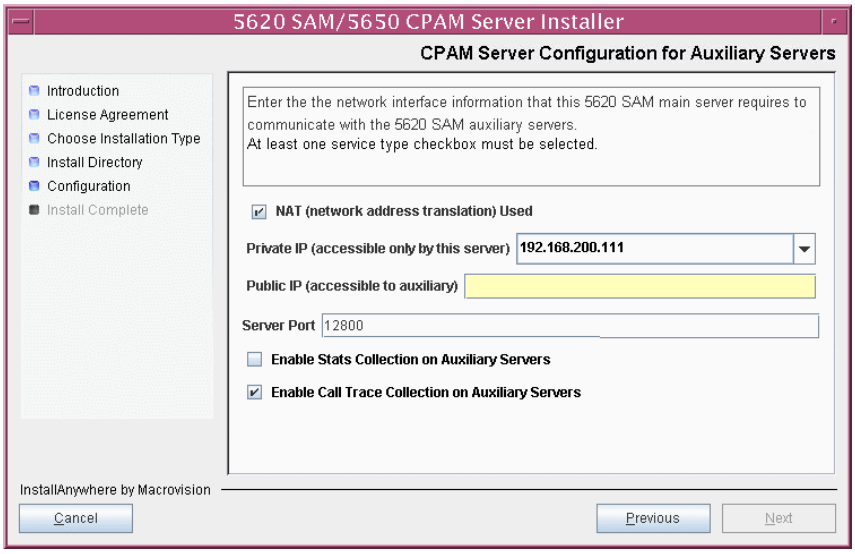
i Configure the following parameters shown in Figure 8-35:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5650 CPAM server and the 5620 SAM auxiliary servers.
- Private IP (accessible only by this server)
- Public IP (accessible to auxiliary)
- Server Port (typically 12800)
- Enable Stats Collection on Auxiliary Servers
- Enable Call Trace Collection on Auxiliary Servers

Note 1 — An auxiliary server can perform statistics collection or call-trace data collection, but not both.

Note 2 — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 8-35 CPAM Server Configuration for Auxiliary Servers



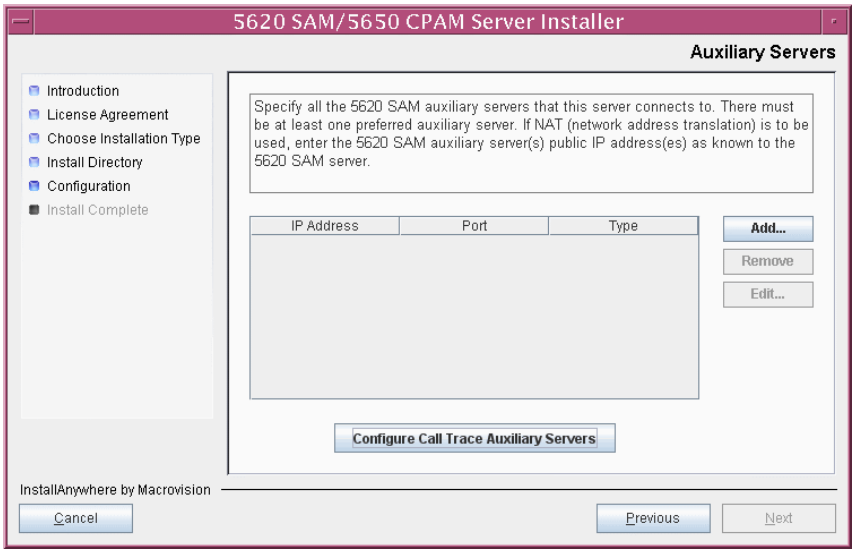
ii Click on the Next button.

iii Click on the Add button shown in Figure 8-36 to specify an auxiliary server. The form shown in Figure 8-37 opens.

Note 1 — Statistics data collection requires only a preferred auxiliary server; a reserved auxiliary server is optional.

Note 2 — Call-trace data collection requires at least one preferred and reserved auxiliary server pair.

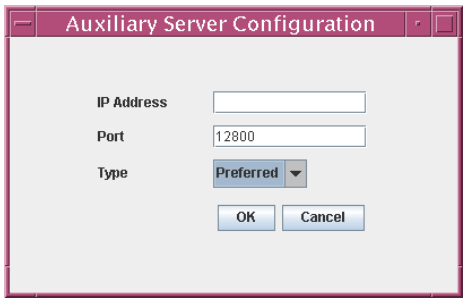
Figure 8-36 Auxiliary Servers



Note 1 — The Preferred auxiliary server of the primary main server must be the Reserved auxiliary server of the standby SAM main server. Conversely, the Reserved auxiliary server of the primary main server must be the Preferred auxiliary server of the standby main server.

Note 2 — To minimize network latency between this main server and a Preferred auxiliary server, specify an auxiliary server in the local network rather than an auxiliary server that is geographically remote.

Figure 8-37 Auxiliary Server Configuration



iv Configure the following parameters:

- IP Address
- Port (typically 12800)
- Type (Preferred or Reserved)

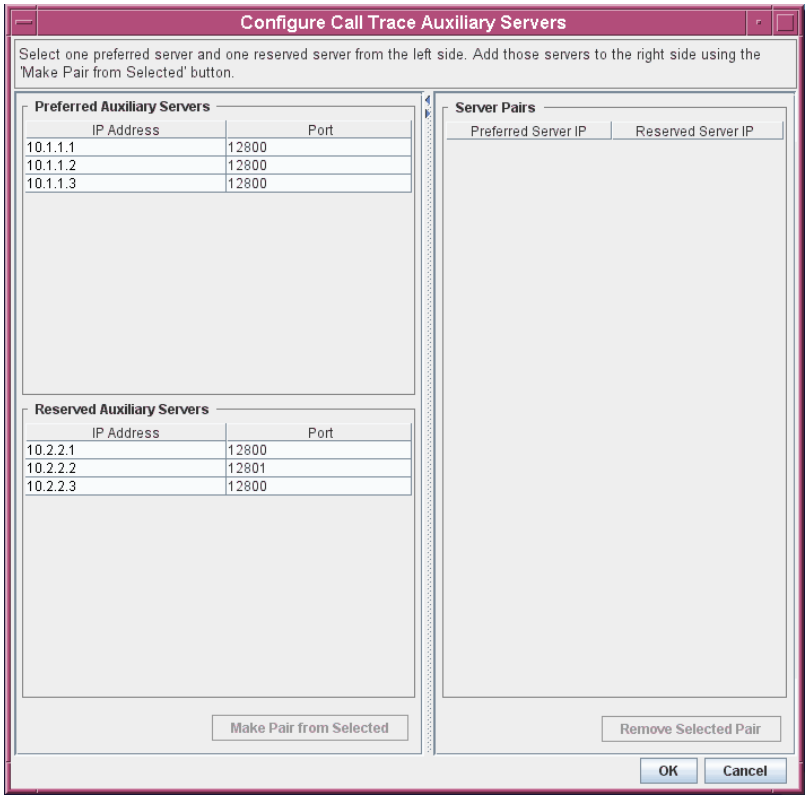
v Click on the OK button to save the information and close the form.

vi Repeat steps 21 iii to v to specify an additional auxiliary server, if required.

vii If "Enable Call Trace Collection on Auxiliary Servers" is selected in step 21 i, click on the "Configure Call Trace Auxiliary Servers" button shown in Figure 8-36. Otherwise, go to step 22.

viii The form shown in Figure 8-38 opens. Select a preferred auxiliary server in the upper left panel and the associated reserved auxiliary server in the lower left panel, and click on the "Make Pair from Selected" button. The auxiliary servers move to the list on the right side of the form.

Figure 8-38 Configure Call Trace Auxiliary Servers



ix Repeat step 21 viii to configure another call-trace auxiliary server pair, if required.

22 Click on the Next button.

23 If you select the “Enable Database Alignment” parameter shown in Figure 8-39, you must specify the preferred database of this 5650 CPAM server, then click on the Next button.

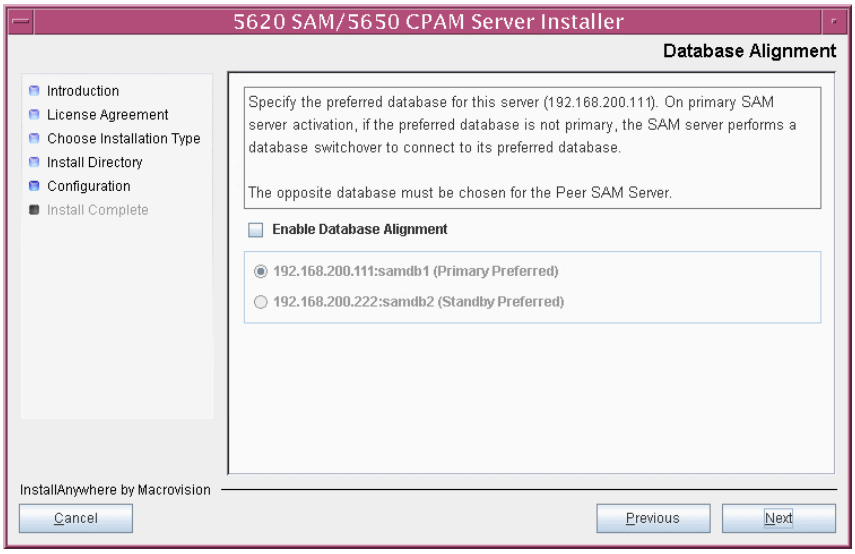
Database alignment associates each server with the database to which it is most directly connected in terms of network latency. This database is the preferred database of the server. For example, in a 5620 SAM complex that is geographically dispersed, the preferred database of a server is the database in the same physical facility; typically, the primary server and database are in one facility, and the standby server and database are in another.

When a primary server starts, it verifies that the database to which it connects is the preferred database. If this database is not the preferred database, the server performs a database switchover to reverse the primary and standby database roles. If the switchover is successful, the servers and databases in the 5620 SAM/5650 CPAM complex are aligned. If the switchover fails, each database reverts to the former role, and the server raises an alarm about the failed switchover.

When database alignment is enabled and you perform a database switchover, the primary server does not attempt database realignment, because a switchover is a manual operation that is considered to be a purposeful act.

When database alignment is enabled and you perform a server activity switch, the primary server performs an automatic database switchover to maintain alignment with the preferred database.

Figure 8-39 Database Alignment

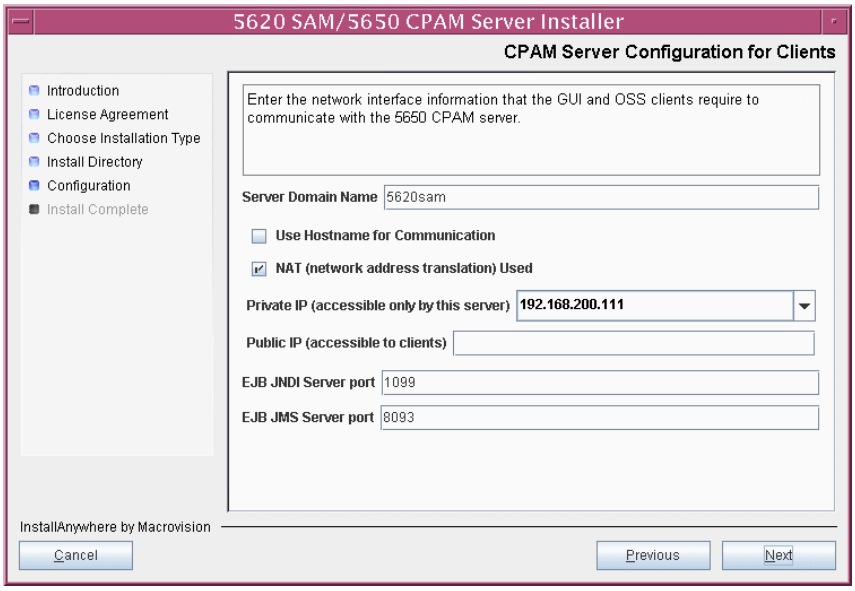


24 Perform the following steps.

i Configure the following parameters shown in Figure 8-40:

- Server Domain Name (typically 5620sam)
  This parameter uniquely identifies the 5620 SAM server cluster to which the 5650 CPAM server belongs.
- Use Hostname for Communication
  Select this parameter if the 5650 CPAM server is to use multiple interfaces for GUI and OSS client communication.

Figure 8-40 CPAM Server Configuration for Clients



ii If you select the “Use Hostname for Communication” parameter, go to step 24 vi.

iii Configure the following parameters:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public IP (accessible to clients)
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

iv Click on the Next button.

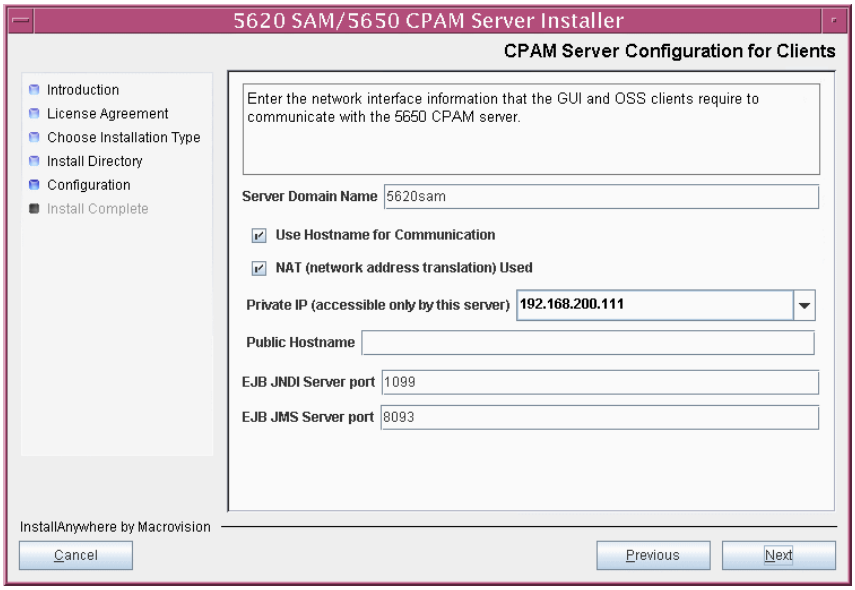
v Go to step 25.

vi Configure the following parameters shown in Figure 8-41:

- NAT (network address translation) Used
- Private IP (accessible only by this server)
- Public Hostname
- EJB JNDI Server port (typically 1099)
- EJB JMS Server port (typically 8093)

Note — The “Private IP (accessible only by this server)” parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

Figure 8-41 CPAM Server Configuration for Clients

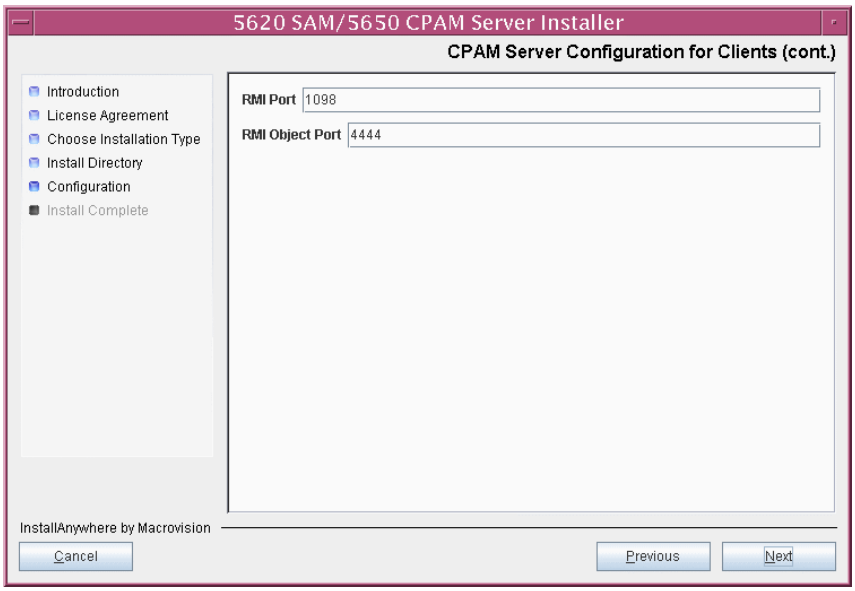


vii Click on the Next button.

25 Configure the following parameters shown in Figure 8-42, then click on the Next button:

- RMI Port (typically 1098)
- RMI Object Port (typically 4444)

Figure 8-42 CPAM Server Configuration for Clients (cont.)



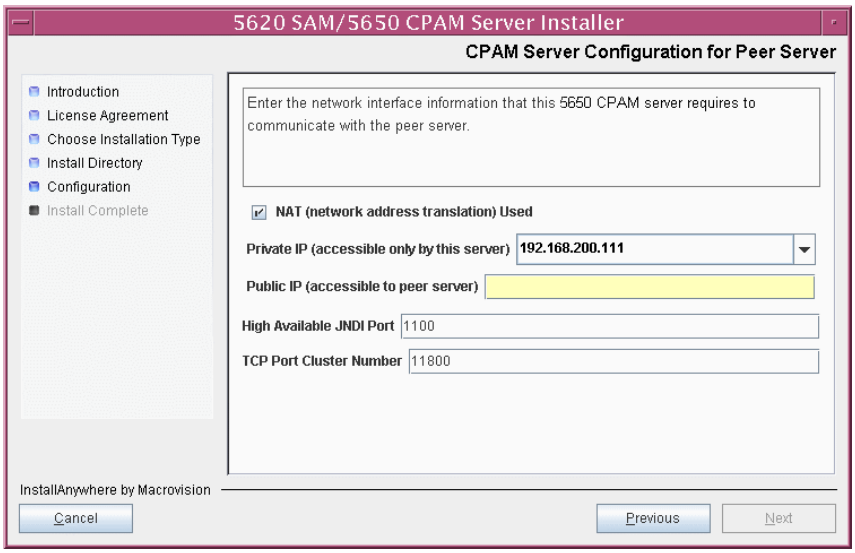
26 Click on the Next button.

27 Configure the following parameters shown in Figure 8-43:

- NAT (network address translation) Used
  Select this parameter only if NAT is to be used between this 5650 CPAM server and the peer 5650 CPAM server.
- Private IP (accessible only by this server)
- Public IP (accessible to peer server)
- High Available JNDI Port (typically 1100)
- TCP Port Cluster Number (typically 11800)

Note — The "Private IP (accessible only by this server)" parameter is configurable when the "NAT (network address translation) Used" parameter is selected.

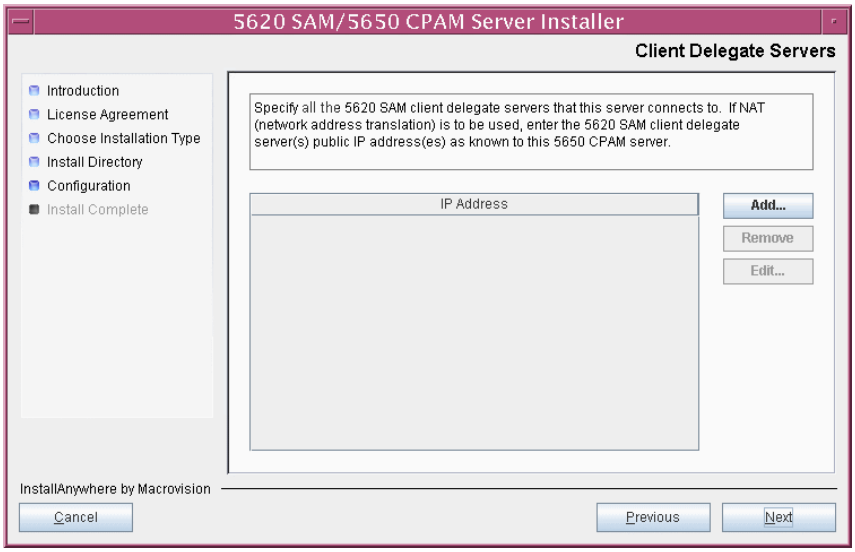
Figure 8-43 CPAM Server Configuration for Peer Server



28 The panel in Figure 8-44 is displayed if you select the “Client Delegate Server Supported” parameter in step 18. Otherwise, go to step 29.

Click on the Add button to specify the client delegate server IP addresses, as required. If NAT is used between the 5650 CPAM server and client delegate servers, specify the public IP address. Click on the Next button.

Figure 8-44 Client Delegate Servers



29 Perform one of the following to specify where the 5620 SAM and 5650 CPAM user documentation is to be stored.

a To store the documentation in a central location that is available to all clients, perform the following steps.

i Select the “Install User Documentation at Central Location Below” parameter, as shown in Figure 8-45.

ii To accept the default user documentation location that is displayed, go to step 30.

Note — If NAT is used between the 5620 SAM server and clients, you must update the default location using the public IP address of the server, or the documentation is not accessible to clients.

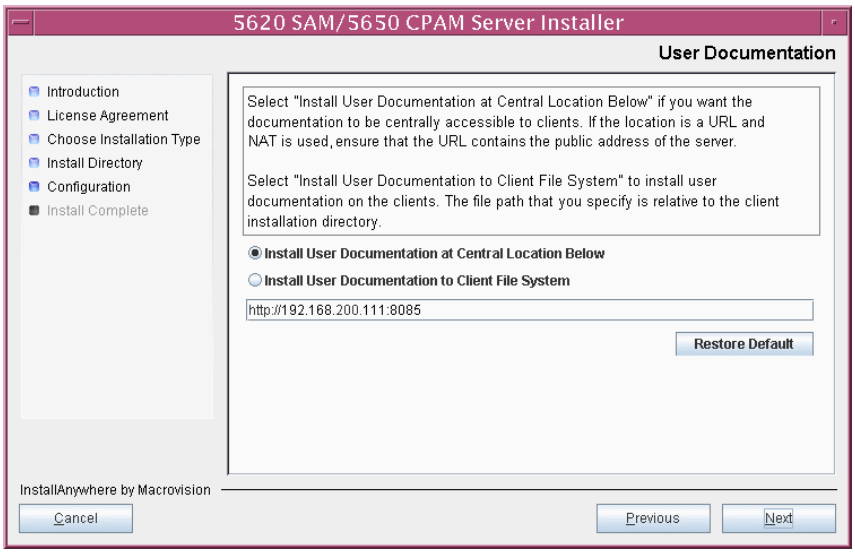
iii Specify a location for the user documentation in the field below the parameters.

iv Copy the contents of the User_Documentation directory on the new 5620 SAM | 5650 CPAM software DVD-ROM to the location specified in step 29 iv.

v Click on the Next button. A dialog box appears.

vi Click on the OK button.

Figure 8-45 User Documentation



b To store a copy of the documentation on the client file system, perform the following steps.

i Select the “Install User Documentation to Client File System” parameter shown in Figure 8-45.

ii Specify a file path relative to the 5620 SAM client installation directory. The path must not contain a leading slash.

For example, if the installation directory is /opt/5620sam/client and you specify Documents as the location, the documentation is installed in the following directory:

/opt/5620sam/client/Documents

Note — The 5620 SAM client uninstaller cannot remove the documentation unless it is installed below the nms directory in the 5620 SAM client installation directory, for example, /opt/5620sam/client/nms/Documents.

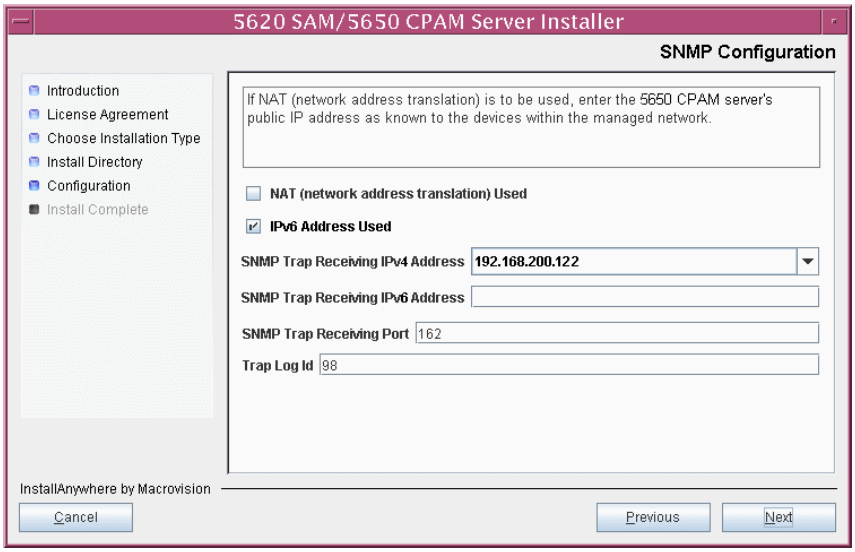
30 Configure the following parameters shown in Figure 8-46, then click on the Next button:

- NAT (network address translation) Used

  Select this parameter only if NAT is to be used between this 5650 CPAM server and the managed network.
- IPv6 Address Used
- SNMP Trap Receiving IPv4 Address
- SNMP Trap Receiving IPv6 Address
- SNMP Trap Receiving Port (typically 162)
- Trap Log Id (typically 98)

Note — The "SNMP Trap Receiving IPv6 Address" parameter is configurable only when the "IPv6 Address Used" parameter is selected, as shown in Figure 8-46.

Figure 8-46 SNMP Configuration

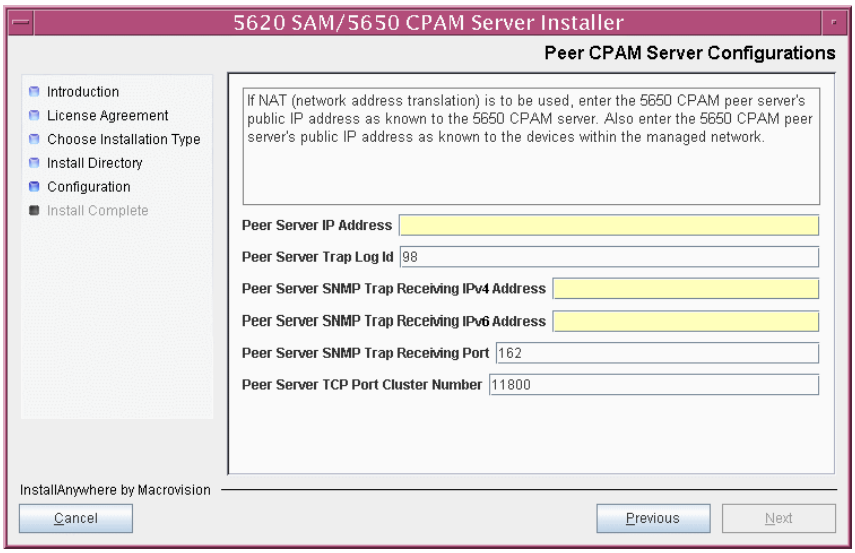


31 Configure the following parameters shown in Figure 8-47, then click on the Next button:

- Peer Server IP Address
- Peer Server Trap Log Id (typically 98)
- Peer Server SNMP Trap Receiving IPv4 Address
- Peer Server SNMP Trap Receiving IPv6 Address
- Peer Server SNMP Trap Receiving Port (typically 162)
- Peer Server TCP Port Cluster Number (typically 11800)

Note — The "Peer Server SNMP Trap Receiving IPv6 Address" parameter is configurable only if you select the "IPv6 Address Used" parameter in step 30.

Figure 8-47 Peer CPAM Server Configurations

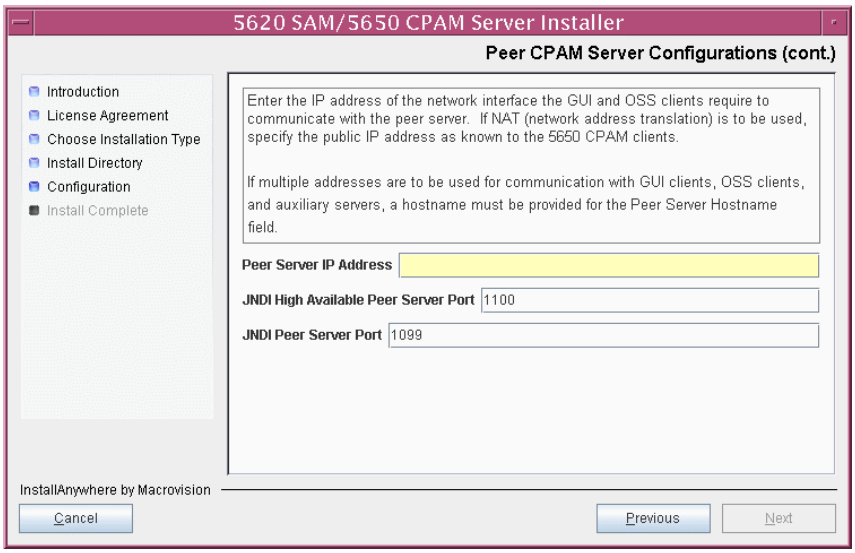


32 If the "Use Hostname for Communication" parameter in step 24 is selected, go to step 35.

33 Configure the following parameters shown in Figure 8-48, then click on the Next button:

- Peer Server IP Address
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 8-48 Peer CPAM Server Configurations (cont.)

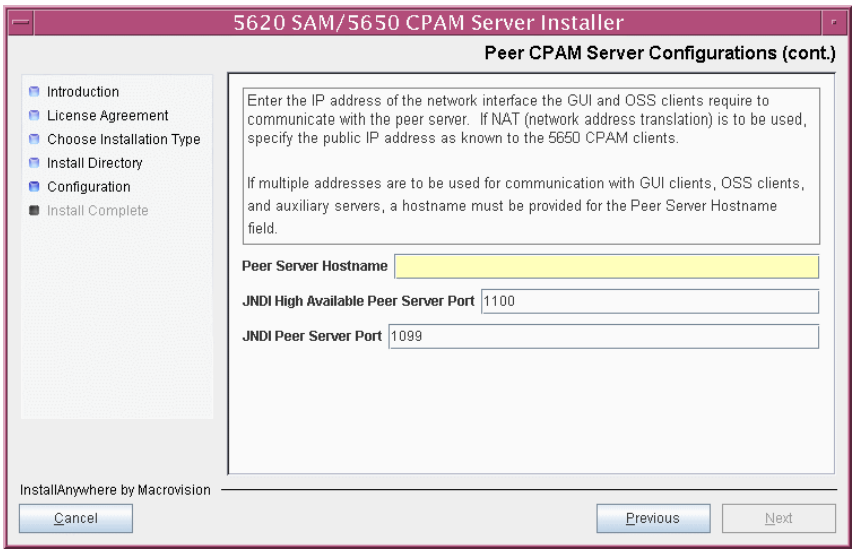


34 Go to step 36.

35 Configure the following parameters shown in Figure 8-49, then click on the Next button:

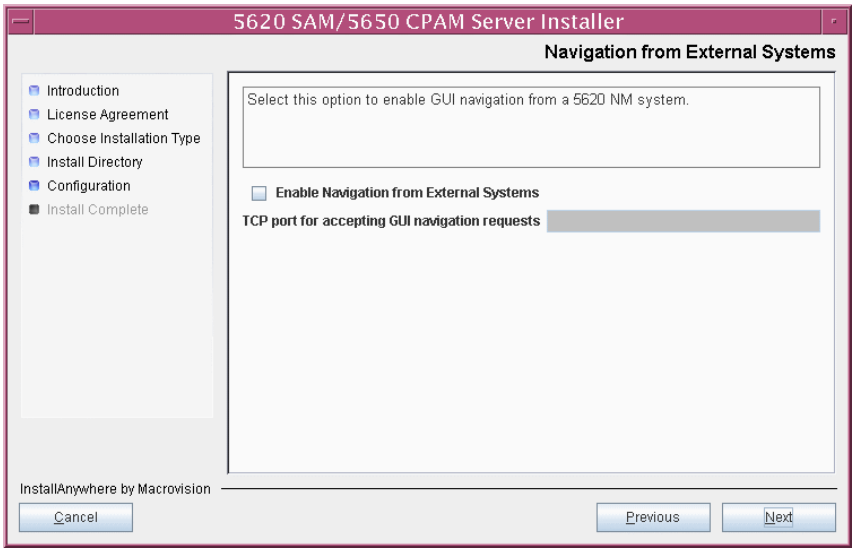
- Peer Server Hostname
- JNDI High Available Peer Server Port (typically 1100)
- JNDI Peer Server Port (typically 1099)

Figure 8-49 Peer CPAM Server Configurations (cont.)



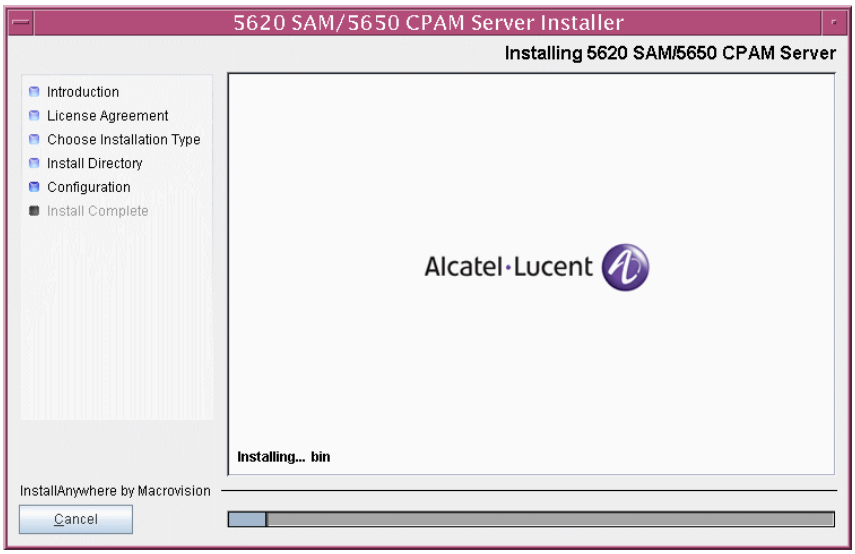
36 If you require 5650 CPAM client navigation from a 5620 NM system, select the "Enable Navigation from External Systems" parameter shown in Figure 8-50 and specify the TCP port that the client is to use for accepting navigation requests. Click on the Next button to begin the server upgrade.

Figure 8-50 Navigation from External Systems



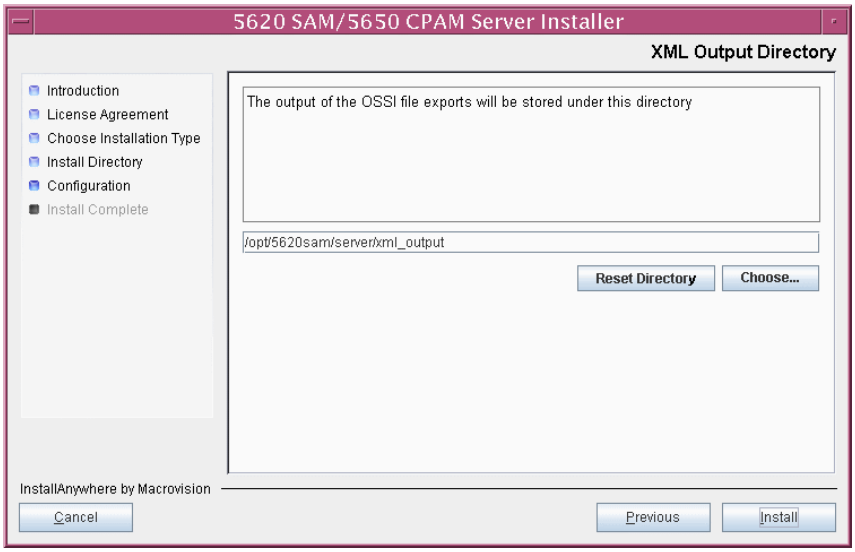
The next panel displays upgrade progress, as shown in Figure 8-51.

Figure 8-51 Installing 5620 SAM/5650 CPAM Server



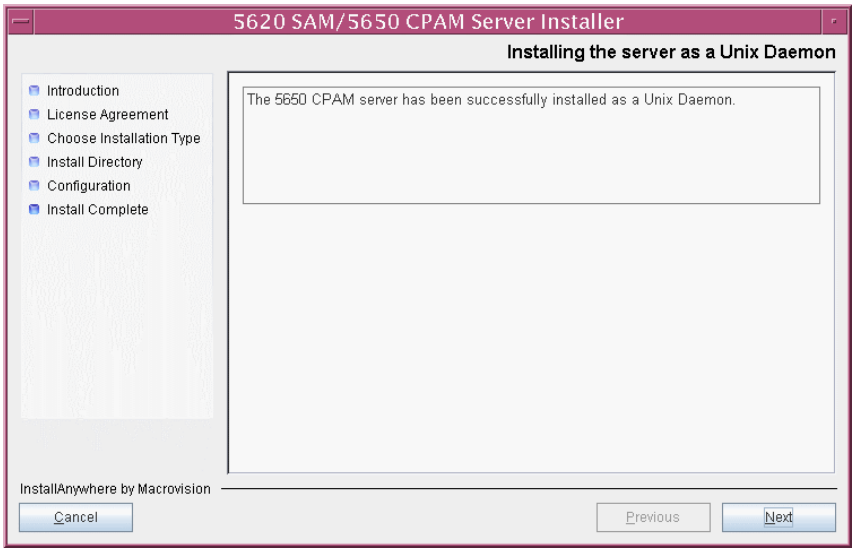
37 Specify an OSS XML output location (typically /opt/5620sam/server/xml_output), as shown in Figure 8-52. Click on the Install button to begin the server upgrade.

Figure 8-52 XML Output Directory



38 As shown in Figure 8-53, the 5650 CPAM server is installed as a UNIX daemon. Click on the Next button.

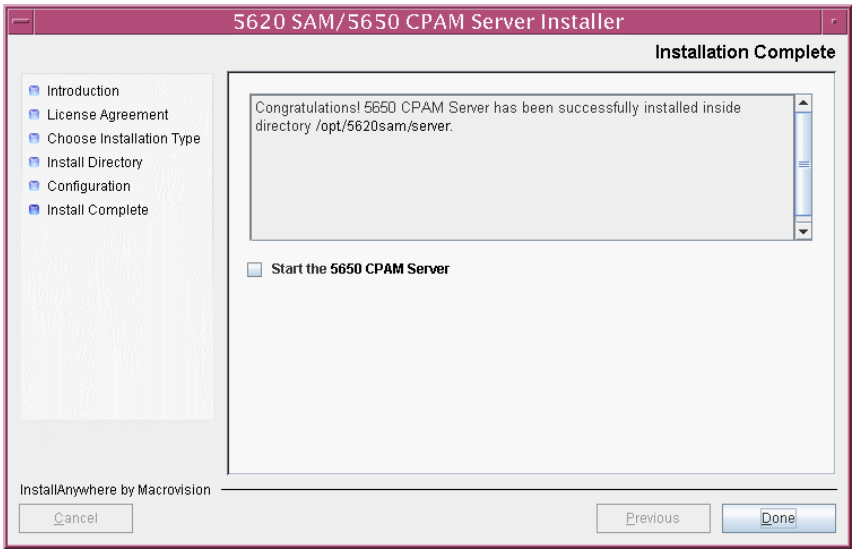
Figure 8-53 Installing the Server as a Unix Daemon



39 When the 5650 CPAM server upgrade is complete, as shown in Figure 8-54, configure the "Start the 5650 CPAM Server" parameter to specify whether you want the server to start immediately after the upgrade.

Caution — Alcatel-Lucent recommends that you do not configure the server to start immediately after an upgrade.

Figure 8-54 Installation Complete



40 Click on the Done button to close the server installer. If you specified that the 5650 CPAM server is to start after the upgrade, the server starts. Initial server startup can take twenty minutes or more.

41 Restart each currently open 5620 SAM GUI client that connects to the 5620 SAM/5650 CPAM server.

Note — The new 5650 CPAM functionality is not visible in a client GUI until the client is restarted.

42 Upgrade the 7701 CPAA.

Note — You can use the 5650 CPAM or the 5620 SAM to upgrade the 7701 CPAA, or you can upgrade the CPAA independently during a 5620 SAM upgrade to save time.

43 Use the upgraded 5650 CPAM to administratively turn up each 7701 CPAA TCP connection to the 5650 CPAM. After this step, each TCP connection between the 5650 CPAM and each 7701 CPAA is operationally up.

9 — 5650 CPAM uninstallation

9.1 5650 CPAM uninstallation overview

This chapter contains information about uninstalling the 5650 CPAM software. 5650 CPAM uninstallation requires that no 5650 CPAM software is running when the uninstallation begins.

9.2 5650 CPAM uninstallation procedures list

Table 9-1 lists the 5650 CPAM software uninstallation procedures.

Table 9-1 5650 CPAM uninstallation procedures list

Procedure	Purpose
To uninstall the 5650 CPAM software	Remove the 5650 CPAM server software.

9.3 5650 CPAM uninstallation

The following procedures describe how to remove the 5650 CPAM software from a station in a standalone or redundant deployment.

Procedure 9-1 To uninstall the 5650 CPAM software

Perform this procedure to remove the 5650 CPAM software from a station.

Caution — This procedure involves stopping the 5650 CPAM server application, which also stops the 5620 SAM server application. Ensure that you perform this procedure only during a scheduled maintenance period.

Note 1 — You require the following user privileges on the 5650 CPAM server station to perform this procedure:

- root or root-equivalent
- samadmin

Note 2 — Command-line examples use the following to represent the Solaris CLI prompts:

- #—represents the prompt for a root or root-equivalent user
- bash$—represents the prompt for the samadmin user

Do not type the # symbol or bash$ when you enter a command.

1 Stop the 5650 CPAM/5620 SAM server application.

i Log in to the server station as the samadmin user:

ii Open a console window.

iii Enter the following to change to the server binary directory:

```
bash$ cd path/nms/bin ↵
```

where *path* is the 5650 CPAM server installation location, typically /opt/5620sam/server

iv Enter the following to stop the 5650 CPAM server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5650 CPAM server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi The 5650 CPAM server is stopped when the command displays the following status message:

```
Application Server is stopped
```

If the command displays a different message, wait 5m and repeat step 1 v. Do not proceed to the next step until the server is stopped.

2 Log in to the 5650 CPAM server station as a user with root or root-equivalent privileges.

3 Open a console window.

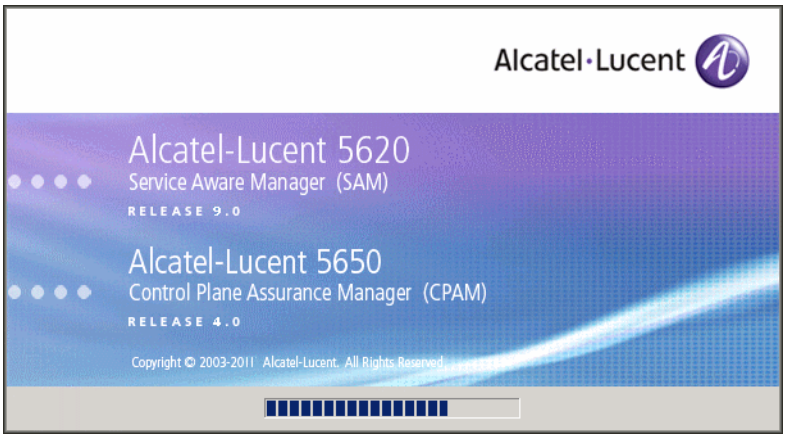
4 Enter the following to open the 5650 CPAM server uninstaller:

```
# path/Uninstall/Uninstall_5650_CPAM_Server ↵
```

where *path* is the 5650 CPAM server installation location, typically /opt/5620sam/server

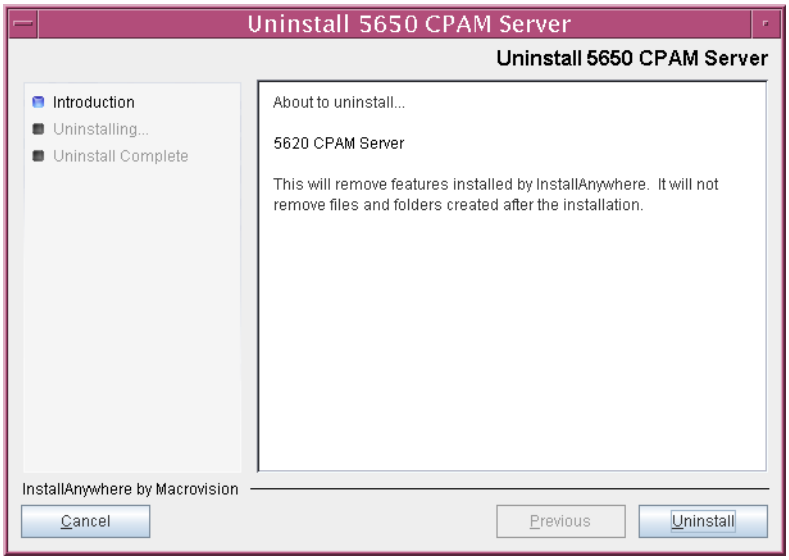
The splash screen shown in Figure 9-1 opens.

Figure 9-1 5620 SAM | 5650 CPAM uninstaller



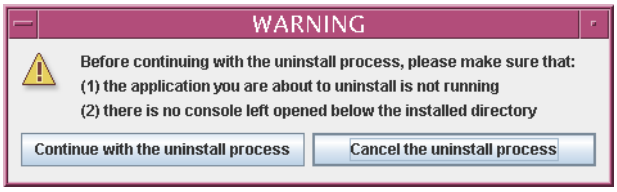
5 The 5650 CPAM server uninstaller opens, as shown in Figure 9-2. The left pane indicates uninstallation progress. The right pane indicates the operations that are to take place. Click on the Uninstall button to begin the uninstallation.

Figure 9-2 Uninstall 5650 CPAM Server



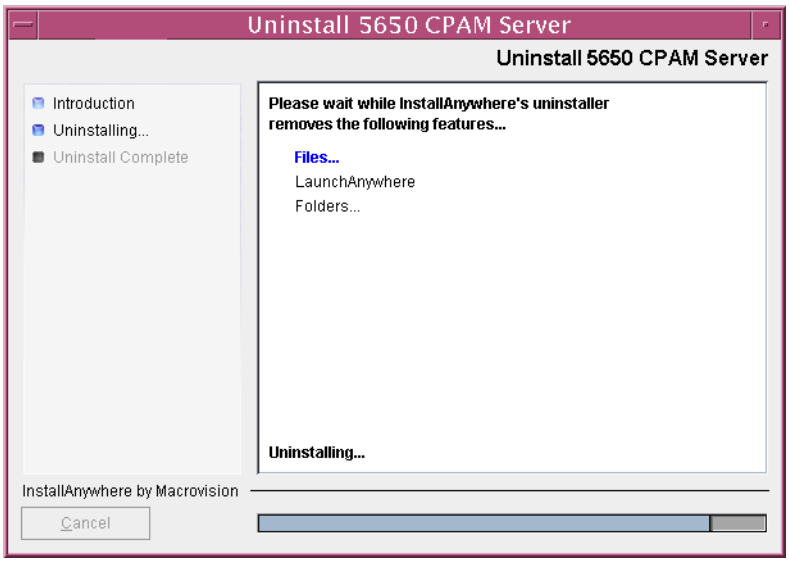
6 Read the warning shown in Figure 9-3. Click on the “Continue with the uninstall process” button to begin the uninstallation.

Figure 9-3 Warning



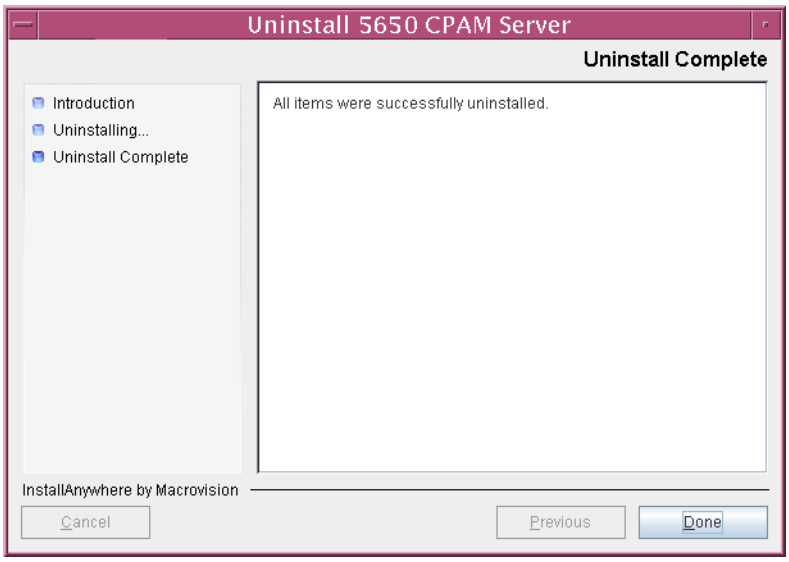
The uninstaller begins to remove 5650 CPAM components, as shown in Figure 9-4.

Figure 9-4 Uninstall 5650 CPAM Server



7 When the 5650 CPAM server uninstallation is complete, as shown in Figure 9-5, click on the Done button to close the server uninstaller.

Figure 9-5 Uninstall Complete



8 Close the console window.

9 Restart each currently open 5620 SAM GUI client that connects to the 5650 CPAM server.

Note — The 5650 CPAM functions remain in a 5620 SAM client GUI until the client is restarted.

Appendices

A. 5620 SAM installation parameters

A.1 Standalone database and main server installation parameters

Tables A-1 and A-2 list and describe the configurable parameters for a standalone 5620 SAM database and main server installation. The tables are presented in an order that follows the standalone installation workflow in chapter 2. The parameters in each table are grouped by installer panel in the order that the panels are displayed.

Table A-1 Standalone database installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database You must choose this option.
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software
Do not install Oracle Software	Does not install the Oracle software
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are to be installed Default: /opt/5620sam/samdb/install
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
General Database Configuration Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and the main server
Public IP (accessible to servers)	The IP address that the main server must use to reach this database Default: IP address of primary network interface
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.

(1 of 4)

Panel and parameters	Description
Database Name	The name of the database The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character • not be an Oracle restricted database name; see the appropriate Oracle documentation for more information Default: samdb
Instance Name	The name that the Oracle software associates with the database processes The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character Default: samdb
User Name	The database username Default: samuser

User Password
Confirm User Password
	The database password, which can be set only during installation
	The password value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.
	
	Ensure that you record the password for future use.
	Default: available from Alcatel-Lucent technical support

General Database Configuration Info (cont.)	
Database Listener Port	The TCP port on this station that the Oracle database listener is to use to communicate with the main server Default: 1523
Database Proxy Port	The TCP port on this station that the main server is to use for non-JDBC operations Default: 9002
Oracle SYS Password	

(2 of 4)

Panel and parameters	Description

SYS Password	The password that Oracle requires to start the database
	The password value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.
	Default: available from Alcatel-Lucent technical support

Confirm SYS Password	
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that the database and main server are to be collocated on this station Default: unselected
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main server specified by the “SAM Server IP Address” parameter to connect to the database Default: unselected
SAM Server IP Address	The IP address of the only main server that is allowed to connect to the database The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server Default: —
Archive Log Destination	
Unlabeled field	The directory in which the database is to store the archive logs Database transactions are stored in the archive log directory until a database backup is performed. Alcatel-Lucent recommends that you regularly back up the database to avoid filling the partition that contains the archive log directory. Default: /opt/5620sam/samdb/archivelog
Staging Destination	
Unlabeled field	The directory that the database is to use for the continuous statistics tablespace backup Default: /opt/5620sam/dbbackup/staging
Choose the Redo Log Directory	
Unlabeled field	The directory in which the database is to store the redo logs Default: /opt/5620sam/samdb/redolog
Accounting Statistics Database Retention Period	
Accounting Statistics Data Retention Period	The length of time, in days, that the database is to retain statistics records Default: 1
Data Layout Option	

(3 of 4)

Panel and parameters	Description
Multiple Tablespace mapping of Stats and Alarm tablespaces (default)	Separate tablespaces for the statistics and alarm data, and one tablespace for other data
Multiple Tablespace mapping of all tablespaces	Separate tablespaces for the statistics and alarm data, and multiple tablespaces for other data
Accounting Statistics Data File Directory	
Unlabeled field	The directory that is to contain the accounting statistics tablespace files Default: /opt/5620sam/samdb/tablespace/statstbs01

(4 of 4)

Table A-2 Standalone main server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are to be installed Default: /opt/5620sam/server
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must leave this parameter unselected. Default: unselected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers Default: unselected

(1 of 6)

Panel and parameters	Description
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers Default: unselected
Database Configuration	
Database Server IP Address	The IP address that the main server must use to reach the database station The value must match the “Public IP (accessible to servers)” value specified on the “General Database Configuration Info (cont.)” panel during the database installation. Default: —
Database Server Port	The TCP port on the database station that the main server must use to reach the database The value must match the “Database Listener Port” value specified on the “General Database Configuration Info (cont.)” panel during the database installation. Default: 1523
Database Instance Name	The name that the Oracle software associates with the database processes The value must match the “Instance Name” value specified on the “General Database Configuration Info” panel during the database installation. Default: samdb
Database User Name	The database username The value must match the “User Name” value specified on the “General Database Configuration Info” panel during the database installation. Default: samuser
Database User Password	The database password The value must match the “User Password” value specified on the “General Database Configuration Info” panel during the database installation. Default: available from Alcatel-Lucent technical support
Database Proxy Port	The TCP port on the database station that the main server is to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “General Database Configuration Info (cont.)” panel during the database installation. Default: 9002
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database Default: 24
Online Backup Destination	The backup directory on the database station Alcatel-Lucent recommends that you do the following: • Specify an Online Backup Destination that can hold at least five times the expected database size. • Ensure that the available space in the Online Backup Destination is sufficient to accommodate the database growth associated with network growth. Default: /opt/5620sam/dbbackup
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain The 5620 SAM creates a separate directory for each backup set. For example, if the Online Backup Destination is /opt/5620sam/dbbackup and the Number Of Backup Sets is 3, the /opt/5620sam/dbbackup directory contains the backupset_1, backupset_2, and backupset_3 subdirectories. Default: 3
Main Server Configuration for Auxiliary Servers	

(2 of 6)

Panel and parameters	Description
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach the main server Default: —
Server Port	The TCP port on this station that the auxiliary servers must use to reach the main server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection Default: unselected
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection Default: unselected
Auxiliary Server Configuration	
IP Address	The IP address that the main server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that the main server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that the main server uses this auxiliary server under normal conditions Reserved—specifies that the main server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach the main server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the GUI clients, OSS clients, and auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach the main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —

(3 of 6)

Panel and parameters	Description
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach the main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 8093
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system Default: unselected
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled Default: unselected
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main server and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: /opt/samserver.keystore
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: —
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: /opt/cacerts.trustStore
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: —

(4 of 6)

Panel and parameters	Description
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system Default: unselected
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected. Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the managed NEs
IPv6 Address Used	If selected, specifies that the main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the main server Default: IP address of primary network interface
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the main server The parameter is configurable when the “IPv6 Address Used parameter” is selected. Default: —
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach the main server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with the main server Default: 98
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output

(5 of 6)

Panel and parameters	Description
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the installation Default: unselected

(6 of 6)

A.2 Redundant database and main server installation parameters

Tables A-3 to A-6 list and describe the configurable parameters for a redundant 5620 SAM database and main server installation. The tables are presented in an order that follows the redundant installation workflow in chapter 2. The parameters in each table are grouped by installer panel in the order that the panels are displayed.

Table A-3 Primary database installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment You must choose this option.
Install & Configure Primary/Standby Database	
Primary Database Install (default)	Installs the primary database in a redundant deployment You must choose this option.
Convert Standalone Database to Primary	Converts a standalone database to the primary database in a redundant deployment
Standby Database Install	Installs the standby database in a redundant deployment
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software You must choose this option.
Do not install Oracle Software	Does not install the Oracle software
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are to be installed Default: /opt/5620sam/samdb/install

(1 of 4)

Panel and parameters	Description
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
Primary Database Configuration Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and this main server
Public IP (accessible to servers)	The IP address that the main servers must use to reach this database Default: IP address of primary network interface
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the "NAT (network address translation) Used" parameter is selected.
Database Name	The name of the database The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character • not be an Oracle restricted database name; see the appropriate Oracle documentation for more information Default: samdb
Instance Name	The name that the Oracle software associates with the database processes on this station The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character Default: samdb1
User Name	The database username Default: samuser

User Password
Confirm User Password
	The database password, which can be set only during installation
	The password value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.
	
	Ensure that you record the password for future use.
	Default: available from Alcatel-Lucent technical support

Primary Database Configuration Info (cont.)	
Database Listener Port	The TCP port on this station that the Oracle database listener is to use to communicate with the main servers Default: 1523

(2 of 4)

Panel and parameters	Description
Database Proxy Port	The TCP port on this station that each main server is to use for non-JDBC operations Default: 9002
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station Default: 9003
Oracle SYS Password	

SYS Password	The password that Oracle requires to start the database
	The password value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.
	Default: available from Alcatel-Lucent technical support

Confirm SYS Password	
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that the database and a main server are to be collocated on this station Default: unselected
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the “Server One IP Address” and “Server Two IP Address” parameters to connect to the database Default: unselected
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server Default: —
Archive Log Destination	
Unlabeled field	The directory on this station in which the database is to store the archive logs Database transactions are stored in the archive log directory until a database backup is performed. Alcatel-Lucent recommends that you regularly back up the database to avoid filling the partition that contains the archive log directory. Default: /opt/5620sam/samdb/archivelog

(3 of 4)

Panel and parameters	Description
Staging Destination	
Unlabeled field	The directory that the database is to use for the continuous statistics tablespace backup Default: /opt/5620sam/dbbackup/staging
Choose the Redo Log Directory	
Unlabeled field	The directory in which the database is to store the redo logs Default: /opt/5620sam/samdb/redolog
Accounting Statistics Database Retention Period	
Accounting Statistics Data Retention Period	The length of time, in days, that the database is to retain statistics records Default: 1
Data Layout Option	
Multiple Tablespace mapping of Stats and Alarm tablespaces (default)	Separate tablespaces for the statistics and alarm data, and one tablespace for other data
Multiple Tablespace mapping of all tablespaces	Separate tablespaces for the statistics and alarm data, and multiple tablespaces for other data
Accounting Statistics Data File Directory	
Unlabeled field	The directory that is to contain the accounting statistics tablespace files Default: /opt/5620sam/samdb/tablespace/statstbs01
Standby Database Info	
Standby IP Address	The IP address that each main server and this database must use to reach the peer database Default: —
Standby Instance Name	The name that the Oracle software associates with the peer database processes The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character Default: samdb2
Standby Oracle Home	The directory on the peer database station in which the Oracle files are to be installed Default: the directory specified in the “Specify the Base Directory for Oracle Software” panel
Standby Archive Log Destination	The directory on the peer database station in which the database is to store the archive logs Database transactions are stored in the archive log directory until a database backup is performed. Alcatel-Lucent recommends that you regularly back up the database to avoid filling the partition that contains the archive log directory. Default: the directory specified in the “Archive Log Destination” panel

(4 of 4)

Table A-4 Standby database installation parameters

Panel and parameters	Description
Software License Agreement	

(1 of 3)

Panel and parameters	Description
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment You must choose this option.
Install & Configure Primary/Standby Database	
Primary Database Install (default)	Installs the primary database in a redundant deployment
Convert Standalone Database to Primary	Converts a standalone database to the primary database in a redundant deployment
Standby Database Install	Installs the standby database in a redundant deployment You must choose this option.
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software You must choose this option.
Do not install Oracle Software	Does not install the Oracle software
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are to be installed Default: /opt/5620sam/samdb/install
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
Standby Database Configuration Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and each main server
Public IP (accessible to servers)	The IP address that each main server must use to reach this database Default: IP address of primary network interface
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Database Proxy Port	The TCP port on this station that each main server is to use for non-JDBC operations Default: 9002
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station Default: 9003
Determine Memory Requirements	

(2 of 3)

Panel and parameters	Description
Database co-exists with a 5620 SAM Server	If selected, specifies that the database and a main server are to be collocated on this station Default: unselected
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the “Server One IP Address” and “Server Two IP Address” parameters to connect to the database Default: unselected
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server Default: —
Primary Database Info	
Primary IP Address	The IP address of the peer database Default: —
Primary Instance Name	The name that the Oracle software associates with the peer database processes Default: samdb1
Primary SYS Password	The password that Oracle requires to start the peer database instance The value must match the “SYS Password” value specified on the “Oracle SYS Password” panel during the primary database installation.
Primary Database Listener Port	The TCP port on the peer database station that the Oracle database listener is to use to communicate with the main servers Default: 1523
Primary Database Proxy Port	The TCP port on the peer database station that each main server is to use for non-JDBC operations Default: 9002

(3 of 3)

Table A-5 Primary main server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.

(1 of 9)

Panel and parameters	Description
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are to be installed Default: /opt/5620sam/server
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must select this parameter. Default: unselected
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers Default: unselected
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers Default: unselected
Primary Database Configuration	

(2 of 9)

Panel and parameters	Description
Primary Database Server IP Address	The IP address that this main server must use to reach the primary database station The value must match the “Public IP (accessible to servers)” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: —
Primary Database Server Port	The TCP port on the primary database station that this main server must use to reach the database The value must match the “Database Listener Port” value specified on the “Primary Database Configuration Info (cont.)” panel during the primary database installation. Default: 1523
Primary Database Instance Name	The name that the Oracle software associates with the database processes on this station The value must match the “Instance Name” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: samdb1
Database User Name	The database username The value must match the “User Name” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: samuser
Database User Password	The database password The value must match the “User Password” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: available from Alcatel-Lucent technical support
Primary Database Proxy Port	The TCP port on the primary database station that this main server is to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Primary Database Configuration Info (cont.)” panel during the primary database installation. Default: 9002
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database Default: 24
Online Backup Destination	The backup directory on the database station Alcatel-Lucent recommends that you do the following: • Specify an Online Backup Destination that can hold at least five times the expected database size. • Ensure that the available space in the Online Backup Destination is sufficient to accommodate the database growth associated with network growth. Default: /opt/5620sam/dbbackup
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain The 5620 SAM creates a separate directory for each backup set. For example, if the Online Backup Destination is /opt/5620sam/dbbackup and the Number Of Backup Sets is 3, the /opt/5620sam/dbbackup directory contains the backupset_1, backupset_2, and backupset_3 subdirectories. Default: 3
Standby Database Configuration	
Database Server IP Address	The IP address that this main server must use to reach the standby database station Default: —
Database Instance Name	The name that the Oracle software associates with the standby database processes Default: samdb2

(3 of 9)

Panel and parameters	Description
Database Proxy Port	The TCP port on the standby database station that this main server is to use for non-JDBC operations Default: 9002
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the "NAT (network address translation) Used" parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server Default: —
Server Port	The TCP port on this station that the auxiliary servers must use to reach this main server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection Default: unselected
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection Default: unselected
Auxiliary Server Configuration	
IP Address	The IP address that this main server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that this main server uses this auxiliary server under normal conditions Reserved—specifies that this main server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected
IP_address_1:instance_name (Primary Preferred) (default)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the "Enable Database Alignment" parameter is selected.

(4 of 9)

Panel and parameters	Description
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover Default: unselected
Delay Time After Database Failover (minutes)	The time, in m, that is to elapse between database failover completion and the standby database reinstantiation The parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected. Default: 60
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this main server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 8093

(5 of 9)

Panel and parameters	Description
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system Default: unselected
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled Default: unselected
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients. Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the peer main server Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server Default: —
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value. Default: 1100
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members Alcatel-Lucent recommends that you accept the default value. Default: 11800
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main servers and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: /opt/samserver.keystore
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: —
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: /opt/cacerts.trustStore

(6 of 9)

Panel and parameters	Description
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. Default: —
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system Default: unselected
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected. Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server Default: IP address of primary network interface
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the “IPv6 Address Used” parameter is selected. Default: —
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this main server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with this main server Default: 98
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server must use to reach the peer main server Default: —
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server Default: 98

(7 of 9)

Panel and parameters	Description
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server Default: —
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected. Default: —
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs must use to reach the peer main server Default: 162
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members must use to reach the peer main server Default: 11800
Peer Main Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is selected. Default: —
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected. Default: —
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1100
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output

(8 of 9)

Panel and parameters	Description
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the installation Default: unselected

(9 of 9)

Table A-6 Standby main server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are to be installed Default: /opt/5620sam/server
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must select this parameter. Default: unselected
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected

(1 of 8)

Panel and parameters	Description
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers Default: unselected
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers Default: unselected
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this main server must use to reach the primary database station The value must match the “Public IP (accessible to servers)” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: —
Primary Database Server Port	The TCP port on the primary database station that this main server must use to reach the database The value must match the “Database Listener Port” value specified on the “Primary Database Configuration Info (cont.)” panel during the primary database installation. Default: 1523
Primary Database Instance Name	The name that the Oracle software associates with the primary database processes The value must match the “Instance Name” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: samdb1
Database User Name	The database username The value must match the “User Name” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: samuser
Database User Password	The database password The value must match the “User Password” value specified on the “Primary Database Configuration Info” panel during the primary database installation. Default: available from Alcatel-Lucent technical support
Primary Database Proxy Port	The TCP port on the primary database station that this main server is to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Primary Database Configuration Info (cont.)” panel during the primary database installation. Default: 9002
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database Default: 24

(2 of 8)

Panel and parameters	Description
Online Backup Destination	The backup directory on the database station Alcatel-Lucent recommends that you do the following: • Specify an Online Backup Destination that can hold at least five times the expected database size. • Ensure that the available space in the Online Backup Destination is sufficient to accommodate the database growth associated with network growth. Default: /opt/5620sam/dbbackup
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain The 5620 SAM creates a separate directory for each backup set. For example, if the Online Backup Destination is /opt/5620sam/dbbackup and the Number Of Backup Sets is 3, the /opt/5620sam/dbbackup directory contains the backupset_1, backupset_2, and backupset_3 subdirectories. Default: 3
Standby Database Configuration	
Database Server IP Address	The IP address that this main server must use to reach the standby database station Default: —
Database Instance Name	The name that the Oracle software associates with the standby database processes Default: samdb2
Database Proxy Port	The TCP port on the standby database station that this main server is to use for non-JDBC operations Default: 9002
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server Default: —
Server Port	The TCP port on this station that the auxiliary servers must use to reach this main server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection Default: unselected
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection Default: unselected
Auxiliary Server Configuration	

(3 of 8)

Panel and parameters	Description
IP Address	The IP address that this main server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that this main server uses this auxiliary server under normal conditions Reserved—specifies that this main server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected
IP_address_1:instance_name (Primary Preferred)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
IP_address_2:instance_name (Standby Preferred) (default)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover Default: unselected
Delay Time After Database Failover (minutes)	The time, in m, that is to elapse between database failover completion and the standby database reinstantiation The parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected. Default: 60
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach the main server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —

(4 of 8)

Panel and parameters	Description
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 8093
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system Default: unselected
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled Default: unselected
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients. Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the peer main server Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server Default: —
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the peer main server and this main server. Default: 1100

(5 of 8)

Panel and parameters	Description
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members Default: 11800
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main server and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore File” value specified in the “SSL Configuration” panel during the primary main server installation. Default: /opt/samserver.keystore
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore Password” value specified in the “SSL Configuration” panel during the primary main server installation. Default: —
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore File” value specified in the “SSL Configuration” panel during the primary main server installation. Default: /opt/cacerts.trustStore
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore Password” value specified in the “SSL Configuration” panel during the primary main server installation. Default: —
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system Default: unselected

(6 of 8)

Panel and parameters	Description
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the "Include 5650 CPAM Server License Information" parameter is selected. Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server Default: IP address of primary network interface
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the "IPv6 Address Used" parameter is selected. Default: —
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this main server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with this main server Default: 98
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server must use to reach the peer main server Default: —
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server Default: 98
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server Default: —
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the "IPv6 Address Used" parameter on the "SNMP Configuration" panel is selected. Default: —
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs must use to reach the peer main server Default: 162
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members must use to reach the peer main server Default: 11800
Peer Main Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI and OSS clients must use to reach the peer main server The parameter is configurable when the "Use Hostname for Communication" parameter on the "Main Server Configuration For Clients" panel is selected. Default: —

(7 of 8)

Panel and parameters	Description
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected. Default: —
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1100
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the installation Default: unselected

(8 of 8)

A.3 Auxiliary server installation parameters

Table A-7 lists and describes the parameters that are configurable during a 5620 SAM auxiliary server installation. The parameters are grouped by installer panel in the order that the panels are displayed.

Table A-7 Auxiliary server installation parameters

Panel and parameters	Description
Software License Agreement	

(1 of 4)

Panel and parameters	Description
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software You must choose this option.
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Auxiliary Server Files	
Unlabeled field	The directory in which the auxiliary server files are to be installed Default: /opt/5620sam/auxserver
Auxiliary Server Address Configuration	
Server Domain Name	The unique identifier of the 5620 SAM server cluster Default: 5620sam
NAT (network address translation) Used	If selected, specifies that NAT is used between this auxiliary server and the main servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this auxiliary server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to servers)	The IP address that each main server must use to reach this auxiliary server Default: —
Server Port	The TCP port on this station that this auxiliary server is to use to communicate with the main servers Default: 12800
Redundancy Supported On the 5620 SAM Main Server	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration Default: unselected
Enable Stats Service	If selected, specifies that the 5620 SAM auxiliary server is to be used for statistics data collection Default: selected
Enable Call Trace Service	If selected, specifies that the 5620 SAM auxiliary server is to be used for call-trace data collection Default: unselected
Main Server Configuration	

(2 of 4)

Panel and parameters	Description
Server IP Address	The IP address that this auxiliary server must use to reach the main server in a standalone deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is unselected. Default: —
Server Port	The TCP port on the main server station in a standalone deployment that this auxiliary server must use to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is unselected. Default: 12800
Server One IP Address	The IP address that this auxiliary server must use to reach the primary main server in a redundant deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected. Default: —
Server One Port	The TCP port on the primary main server station in a redundant deployment that this auxiliary server must use to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected. Default: 12800
Server Two IP Address	The IP address that this auxiliary server must use to reach the standby main server in a redundant deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected. Default: —
Server Two Port	The TCP port on the standby main server station in a redundant deployment that this auxiliary server must use to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected. Default: 12800
Auxiliary Server Call Trace Configuration	
IPv6 Address Used	If selected, specifies that an IPv6 address on the auxiliary server, in addition to an IPv4 address, is used for call-trace data collection Default: unselected
Call Trace Receiving IPv4 Address	The IPv4 address that the managed devices must use to reach this auxiliary server; if NAT is used, this is a public address Default: IP address of primary network interface
Call Trace Receiving IPv6 Address	The IPv6 address that the managed devices use to reach this auxiliary server; if NAT is used, this is a public address The parameter is configurable when the “IPv6 Address Used” parameter is selected. Default: —
Call Trace Receiving Directory	The local directory in which call-trace data is stored Default: /opt/5620sam/calltrace
Debug Trace Receiving Directory	The local directory in which debug trace data is stored Default: /opt/5620sam/debugtrace
Synchronization of Data	

(3 of 4)

Panel and parameters	Description
Enable Synchronization of Data	If selected, specifies that the collected data on this auxiliary server is synchronized with the data on the other auxiliary server in the auxiliary server pair Default: selected
Local IP Address	The IPv4 address that the other auxiliary server in the auxiliary server pair uses to reach this auxiliary server; if NAT is used, this is a public address Default: IP address of primary network interface
Remote IP Address	The IPv4 address that this auxiliary server uses to reach the other auxiliary server in the auxiliary server pair; if NAT is used, this is a public address Default: —
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the auxiliary and main servers
Truststore File	The SSL truststore file that the auxiliary server imports to the auxiliary server configuration This value must match the “Truststore File” value specified in the “SSL Configuration” panel during the main server installation. Default: /opt/cacerts.trustStore
Truststore Password	The SSL truststore file password This value must match the “Truststore Password” value specified in the “SSL Configuration” panel during the main server installation. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/auxserver/xml_output
Installation Complete	
Start the 5620 SAM Auxiliary Server	If selected, specifies that the auxiliary server is to start automatically after the installation Default: unselected

(4 of 4)

A.4 Single-user client and client delegate server installation parameters

Table A-8 lists and describes the parameters that are configurable during a 5620 SAM single-user client or client delegate server installation. The parameters are grouped by installer panel in the order that the panels are displayed.

Table A-8 Single-user client and client delegate server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.

(1 of 2)

Panel and parameters	Description
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Client Installation and Configuration (default)	Installs the single-user client software
Client Delegate Installation and Configuration	Installs the client delegate server software
Client Configuration	Configures the single-user client or client delegate server software
Specify the Base Directory for 5620 SAM Client Files	
Unlabeled field	The directory in which the client files are to be installed Default: /opt/5620sam/client
Main Server Configuration	
Server IP Address/Hostname	The IP address or hostname that the client software must use to reach the main server in a standalone deployment, or the primary main server in a redundant deployment Default: —
Redundancy Support	If selected, specifies that the 5620 SAM system is a redundant deployment Default: unselected
Server Two IP Address/Hostname	The IP address or hostname that the client software must use to reach the standby main server in a redundant deployment The parameter is configurable when the “Redundancy Support” parameter is selected. Default: —
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the client and each main server
Installation Complete	
Start the 5620 SAM Client	If selected, specifies that the client software is to start automatically after the installation Default: selected

(2 of 2)

B. 5620 SAM upgrade parameters

B.1 Standalone database and main server upgrade parameters

Tables B-1 and B-2 list and describe the configurable parameters for a standalone 5620 SAM database and main server upgrade. The tables are presented in an order that follows the standalone upgrade workflow in chapter 3. The parameters in each table are grouped by installer panel in the order that the panels are displayed.

Note — Unless stated, the default value for a parameter is the value specified during the previous upgrade or installation.

Table B-1 Standalone database upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database You must choose this option.
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment
Specify the Installation Root Directory of the 5620 SAM Database	
Unlabeled field	The directory in which the database files are installed
Locate Old Oracle Software Directory	
Unlabeled field	The base installation location of the existing Oracle software
Keep Old Oracle Directory Contents after Upgrade	If selected, specifies that the 5620 SAM database installer is to delete the files and subdirectories in the specified directory; the installer deletes the directory itself only if the directory is not specified as the Oracle management user home directory during the OracleSw_PreInstall.sh script execution.
Get Upgrade Database Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between the database and the main server
Public IP (accessible to servers)	The IP address that the main server must use to reach the database
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Database Name	The name of the database

(1 of 2)

Panel and parameters	Description
Instance Name	The name that the Oracle software associates with the database processes
User Name	The database username

User Password	The database password, which is set during installation
	If you modify the "User Password" parameter, the value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.

Get Upgrade Database Info (cont.)	
Database Listener Port	The TCP port on this station that the Oracle database listener uses to communicate with the main server
Database Proxy Port	The TCP port on this station that the main server is to use for non-JDBC operations
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that the database and main server are collocated on this station
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main server specified by the "SAM Server IP Address" parameter to connect to the database
SAM Server IP Address	The IP address of the only main server that is allowed to connect to the database The parameter is configurable when the "Enable SAM Server IP Validation" parameter is selected.
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server
Staging Destination	
Unlabeled field	The directory that the database is to use for the continuous statistics tablespace backup
Accounting Statistics Database Retention Period	
Accounting Statistics Data Retention Period	The length of time, in days, that the database is to retain statistics records
Purge Statistics	
Purge All Accounting Statistics	Permanently delete the accounting statistics data from the database to reduce the time required for the database upgrade Default: unselected
Purge All MIB Statistics	Permanently delete the MIB statistics data from the database to reduce the time required for the database upgrade Default: unselected

(2 of 2)

Table B-2 Standalone main server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are installed Default: /opt/5620sam/server
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must leave this parameter unselected.
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers.
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers.
Database Configuration	
Database Server IP Address	The IP address that the main server must use to reach the database station The value must match the “Public IP (accessible to servers)” value specified on the “Get Upgrade Database Info” panel during the database upgrade.
Database Server Port	The TCP port on the database station that the main server uses to reach the database The value must match the “Database Listener Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the database upgrade.
Database Instance Name	The name that the Oracle software associates with the database processes The value must match the “Instance Name” value specified on the “Get Upgrade Database Info” panel during the database upgrade.
Database User Name	The database username The value must match the “User Name” value specified on the “Get Upgrade Database Info” panel during the database upgrade.

(1 of 4)

Panel and parameters	Description
Database User Password	The database password The value must match the “User Password” value specified on the “Get Upgrade Database Info” panel during the database upgrade.
Database Proxy Port	The TCP port on the database station that the main server is to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the database upgrade.
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database
Online Backup Destination	The backup directory on the database station
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach the main server
Server Port	The TCP port on this station that the auxiliary servers use to reach the main server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that the main server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that the main server must use to reach the auxiliary server
Type	Preferred—specifies that the main server uses this auxiliary server under normal conditions Reserved—specifies that the main server uses this auxiliary server when the Preferred auxiliary server is unavailable
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach the main server
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the GUI clients, OSS clients, and auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach the main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected.

(2 of 4)

Panel and parameters	Description
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach the main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected.
EJB JNDI Server port	The TCP port on this station that the GUI clients use for EJB JNDI messaging
EJB JMS Server port	The TCP port on this station that the GUI clients use for EJB JMS messaging
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main server and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system

(3 of 4)

Panel and parameters	Description
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the "Include 5650 CPAM Server License Information" parameter is selected.
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between the main server and the managed NEs
IPv6 Address Used	If selected, specifies that the main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the main server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the main server The parameter is configurable when the "IPv6 Address Used" parameter is selected.
SNMP Trap Receiving Port	The TCP port that the managed NEs use to reach the main server
Trap Log Id	The SNMP trap log ID that is associated with the main server
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the "Enable Navigation from External Systems" parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the upgrade Default: unselected

(4 of 4)

B.2 Redundant database and main server upgrade parameters

Tables B-3 to B-6 list and describe the configurable parameters for a redundant 5620 SAM database and main server upgrade. The tables are presented in an order that follows the redundant upgrade workflow in chapter 3. The parameters in each table are grouped by installer panel in the order that the panels are displayed.

Note — Unless stated, the default value for a parameter is the value specified during the previous upgrade or installation.

Table B-3 Standby database upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database You must choose this option.
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment
Specify the Installation Root Directory of the 5620 SAM Database	
Unlabeled field	The directory in which the database files are installed
Locate Old Oracle Software Directory	
Unlabeled field	The base installation location of the existing Oracle software
Keep Old Oracle Directory Contents after Upgrade	If selected, specifies that the 5620 SAM database installer is to delete the files and subdirectories in the specified directory; the installer deletes the directory itself only if the directory is not specified as the Oracle management user home directory during the OracleSw_PreInstall.sh script execution.
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are installed
Get Upgrade Database Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and the main servers
Public IP (accessible to servers)	The IP address that the main servers must use to reach this database
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Database Name	The name of the database
Instance Name	The name that the Oracle software associates with the database processes on this station
User Name	The database username

(1 of 3)

Panel and parameters	Description

User Password	The database password, which is set during installation
	If you modify the "User Password" parameter, the value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.

Get Upgrade Database Info (cont.)	
Database Listener Port	The TCP port on this station that the Oracle database listener uses to communicate with the main servers
Database Proxy Port	The TCP port on this station that the main servers are to use for non-JDBC operations
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station
Primary Database Info	
Primary IP Address	The IP address that the main servers use to reach the peer database instance
Primary Instance Name	The name that the Oracle software associates with the database processes on the peer database station
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that this database and a main server are collocated on this station
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the "Server One IP Address" and "Server Two IP Address" parameters to connect to this database instance
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the "Enable SAM Server IP Validation" parameter is selected.
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the "Enable SAM Server IP Validation" parameter is selected.
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server
Staging Destination	
Unlabeled field	The directory that the database is to use for the continuous statistics tablespace backup
Accounting Statistics Database Retention Period	
Accounting Statistics Data Retention Period	The length of time, in days, that the database is to retain statistics records
Purge Statistics	

(2 of 3)

Panel and parameters	Description
Purge All Accounting Statistics	Permanently delete the accounting statistics data from the database to reduce the time required for the database upgrade
Purge All MIB Statistics	Permanently delete the MIB statistics data from the database to reduce the time required for the database upgrade

(3 of 3)

Table B-4 Standby main server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are installed
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must select this parameter.
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected.
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected.

(1 of 6)

Panel and parameters	Description
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers.
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers.
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this main server must use to reach the primary database station The value must match the “Public IP (accessible to servers)” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Primary Database Server Port	The TCP port on the primary database station that this main server uses to reach the database The value must match the “Database Listener Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the standby database upgrade.
Primary Database Instance Name	The name that the Oracle software associates with the primary database processes The value must match the “Instance Name” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Database User Name	The database username The value must match the “User Name” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Database User Password	The database password The value must match the “User Password” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Primary Database Proxy Port	The TCP port on the primary database station that this main server is to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the standby database upgrade.
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database
Online Backup Destination	The backup directory on the database station
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain
Standby Database Configuration	
Database Server IP Address	The IP address that this main server must use to reach the standby database station
Database Instance Name	The name that the Oracle software associates with the standby database processes
Database Proxy Port	The TCP port on the standby database station that this main server is to use for non-JDBC operations
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	

(2 of 6)

Panel and parameters	Description
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server
Server Port	The TCP port on this station that the auxiliary servers use to reach this main server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that this main server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server
Type	Preferred—specifies that this main server uses this auxiliary server under normal conditions Reserved—specifies that this main server uses this auxiliary server when the Preferred auxiliary server is unavailable
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected
IP_address_1:instance_name (Primary Preferred)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover
Delay Time After Database Failover (minutes)	The time, in m, that is to elapses between database failover completion and the standby database reinstantiation The parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected.
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this main server
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers

(3 of 6)

Panel and parameters	Description
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected.
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected.
EJB JNDI Server port	The TCP port on this station that the GUI clients use for EJB JNDI messaging
EJB JMS Server port	The TCP port on this station that the GUI clients use for EJB JMS messaging
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients.
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the peer main server
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main servers and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected.

(4 of 6)

Panel and parameters	Description
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
User Documentation	
Install User Documentation at Central Location Below	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected.
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the “IPv6 Address Used” parameter is selected.
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this main server
Trap Log Id	The SNMP trap log ID that is associated with this main server
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server uses to reach the peer main server
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected.
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs must use to reach the peer main server
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members use to reach the peer main server
Peer Main Server Configurations (cont.)	

(5 of 6)

Panel and parameters	Description
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is selected.
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected.
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server uses for EJB JNDI messaging
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients use for EJB JNDI messaging
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the upgrade Default: unselected

(6 of 6)

Table B-5 New standby database installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment You must choose this option.
Install & Configure Primary/Standby Database	
Primary Database Install (default)	Installs the primary database in a redundant deployment

(1 of 3)

Panel and parameters	Description
Convert Standalone Database to Primary	Converts a standalone database to the primary database in a redundant deployment
Standby Database Install	Installs the standby database in a redundant deployment You must choose this option.
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software You must choose this option.
Do not install Oracle Software	Does not install the Oracle software
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are to be installed Default: /opt/5620sam/samdb/install
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
Standby Database Configuration Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and the main servers
Public IP (accessible to servers)	The IP address that the main servers must use to reach this database
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Database Proxy Port	The TCP port on this station that the main servers are to use for non-JDBC operations Default: 9002
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station Default: 9003
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that this database and a main server are collocated on this station Default: unselected
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the “Server One IP Address” and “Server Two IP Address” parameters to connect to this database instance Default: unselected
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected.
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected.
Auxiliary Servers	

(2 of 3)

Panel and parameters	Description
IP Address	The IP address or hostname of the auxiliary server Default: —
Primary Database Info	
Primary IP Address	The IP address of the peer database Default: —
Primary Instance Name	The name that the Oracle software associates with the peer database processes
Primary SYS Password	The password that Oracle requires to start the peer database instance The value must match the "SYS Password" value specified on the "Oracle SYS Password" panel during the original standby database installation.
Primary Database Listener Port	The TCP port on the peer database station that the Oracle database listener is to use to communicate with the main server Default: 1523
Primary Database Proxy Port	The TCP port on the peer database station that the main servers are to use for non-JDBC operations Default: 9002

(3 of 3)

Table B-6 Original primary main server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are installed
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.
Additional Server Configuration	

(1 of 6)

Panel and parameters	Description
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must select this parameter.
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected.
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected.
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected.
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers.
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers.
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this main server must use to reach the new primary database station The value must match the “Public IP (accessible to servers)” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Primary Database Server Port	The TCP port on the new primary database station that this main server uses to reach the database The value must match the “Database Listener Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the standby database upgrade.
Primary Database Instance Name	The name that the Oracle software associates with the database processes on the new primary database station The value must match the “Instance Name” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Database User Name	The database username The value must match the “User Name” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Database User Password	The database password The value must match the “User Password” value specified on the “Get Upgrade Database Info” panel during the standby database upgrade.
Primary Database Proxy Port	The TCP port on the new primary database station that the main servers are to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Get Upgrade Database Info (cont.)” panel during the standby database upgrade.
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database
Online Backup Destination	The backup directory on the database station
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain
Standby Database Configuration	
Database Server IP Address	The IP address that this main server must use to reach the new standby database station

(2 of 6)

Panel and parameters	Description
Database Instance Name	The name that the Oracle software associates with the database processes on the new standby database station
Database Proxy Port	The TCP port on the new standby database station that the main servers are to use for non-JDBC operations
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server
Server Port	The TCP port on this station that the auxiliary servers are to use to reach this main server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that this main server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server
Type	Preferred—specifies that this main server uses this auxiliary server under normal conditions Reserved—specifies that this main server uses this auxiliary server when the Preferred auxiliary server is unavailable
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment
IP_address_1:instance_name (Primary Preferred)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover

(3 of 6)

Panel and parameters	Description
Delay Time After Database Failover (minutes)	The time, in m, that is to elapse between database failover completion and the standby database reinstantiation The parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected.
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this main server
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected.
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected.
EJB JNDI Server port	The TCP port on this station that the GUI clients use for EJB JNDI messaging
EJB JMS Server port	The TCP port on this station that the GUI clients use for EJB JMS messaging
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients.
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the peer main server
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main servers and clients, and between the main and auxiliary servers

(4 of 6)

Panel and parameters	Description
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore File” value specified in the “SSL Configuration” panel during the original standby main server upgrade.
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore Password” value specified in the “SSL Configuration” panel during the original standby main server upgrade.
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore File” value specified in the “SSL Configuration” panel during the original standby main server upgrade.
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore Password” value specified in the “SSL Configuration” panel during the original standby main server upgrade.
User Documentation	
Install User Documentation at Central Location Below	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected.
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the “IPv6 Address Used” parameter is selected.

(5 of 6)

Panel and parameters	Description
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this main server
Trap Log Id	The SNMP trap log ID that is associated with this main server
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server must use to reach the peer main server
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected.
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs use to reach the peer main server
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members use to reach the peer main server
Peer Main Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is selected.
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected.
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server uses for EJB JNDI messaging
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients use for EJB JNDI messaging
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the upgrade Default: unselected

(6 of 6)

B.3 Auxiliary server upgrade parameters

Table B-7 lists and describes the parameters that are configurable during a 5620 SAM auxiliary server upgrade. The parameters are grouped by installer panel in the order that the panels are displayed.

Note — Unless stated, the default value for a parameter is the value specified during the previous upgrade or installation.

Table B-7 Auxiliary server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software You must choose this option.
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Auxiliary Server Files	
Unlabeled field	The directory in which the auxiliary server files are installed
Auxiliary Server Address Configuration	
Server Domain Name	The unique identifier of the 5620 SAM server cluster
NAT (network address translation) Used	If selected, specifies that NAT is used between this auxiliary server and the main servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this auxiliary server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to servers)	The IP address that each main server must use to reach this auxiliary server
Server Port	The TCP port on this station that the auxiliary server uses to communicate with the main servers
Redundancy Supported On the 5620 SAM Main Server	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration
Enable Stats Service	If selected, specifies that the 5620 SAM auxiliary server is used for statistics data collection

(1 of 3)

Panel and parameters	Description
Enable Call Trace Service	If selected, specifies that the 5620 SAM auxiliary server is used for call-trace data collection
Main Server Configuration	
Server IP Address	The IP address that this auxiliary server must use to reach the main server in a standalone deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is unselected.
Server Port	The TCP port on the main server station in a standalone deployment that this auxiliary server uses to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is unselected.
Server One IP Address	The IP address that this auxiliary server must use to reach the primary main server in a redundant deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected.
Server One Port	The TCP port on the primary main server station in a redundant deployment that this auxiliary server must use to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected.
Server Two IP Address	The IP address that this auxiliary server must use to reach the standby main server in a redundant deployment The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected.
Server Two Port	The TCP port on the standby main server station in a redundant deployment that this auxiliary server must use to reach the main server The parameter is configurable when the “Redundancy Supported On the 5620 SAM Main Server” parameter on the “Auxiliary Server Address Configuration” panel is selected.
Auxiliary Server Call Trace Configuration	
IPv6 Address Used	If selected, specifies that an IPv6 address on the auxiliary server, in addition to an IPv4 address, is used for call-trace data collection
Call Trace Receiving IPv4 Address	The IPv4 address that the managed devices must use to reach this auxiliary server; if NAT is used, this is a public address
Call Trace Receiving IPv6 Address	The IPv6 address that the managed devices use to reach this auxiliary server; if NAT is used, this is a public address The parameter is configurable when the “IPv6 Address Used” parameter is selected.
Call Trace Receiving Directory	The local directory in which call-trace data is stored
Debug Trace Receiving Directory	The local directory in which debug trace data is stored
Synchronization of Data	
Enable Synchronization of Data	If selected, specifies that the collected data on this auxiliary server is synchronized with the data on the other auxiliary server in the auxiliary server pair
Local IP Address	The IPv4 address that the other auxiliary server in the auxiliary server pair uses to reach this auxiliary server; if NAT is used, this is a public address
Remote IP Address	The IPv4 address that this auxiliary server uses to reach the other auxiliary server in the auxiliary server pair; if NAT is used, this is a public address
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the auxiliary and main servers

(2 of 3)

Panel and parameters	Description
Truststore File	The SSL truststore file that the auxiliary server imports to the auxiliary server configuration This value must match the “Truststore File” value specified in the “SSL Configuration” panel during the main server upgrade.
Truststore Password	The SSL truststore file password This value must match the “Truststore Password” value specified in the “SSL Configuration” panel during the main server upgrade.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5620 SAM Auxiliary Server	If selected, specifies that the auxiliary server is to start automatically after the upgrade Default: unselected

(3 of 3)

C. 5620 SAM conversion to redundancy parameters

C.1 5620 SAM conversion to redundancy parameters

Tables C-1 to C-4 list and describe the configurable parameters for the conversion of a standalone 5620 SAM database and main on Solaris to redundancy. The tables are presented in an order that follows the conversion workflow in chapter 4. The parameters in each table are grouped by installer panel in the order that the panels are displayed.

Note — Unless stated, the default value for a parameter is the value specified during the previous upgrade or installation.

Table C-1 Standalone database conversion parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment You must choose this option.
Install & Configure Primary/Standby Database	
Primary Database Install (default)	Installs the primary database in a redundant deployment
Convert Standalone Database to Primary	Converts a standalone database to the primary database in a redundant deployment You must choose this option.
Standby Database Install	Installs the standby database in a redundant deployment
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software
Do not install Oracle Software	Does not install the Oracle software You must choose this option.
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are installed
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are installed
Standalone Database Info	

(1 of 3)

Panel and parameters	Description
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and the main servers
Public IP (accessible to servers)	The IP address that the main servers must use to reach this database
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the "NAT (network address translation) Used" parameter is selected.
Database Name	The name of the database
Instance Name	The name that the Oracle software associates with the database processes on this station
User Name	The database username

User Password	The database password, which is set during installation
	If you modify the "User Password" parameter, the value that you specify must meet the following criteria:
	• The password must be between 4 and 30 characters long.
	• The password must contain at least three of the following:
	  • lower-case alphabetic character
	  • upper-case alphabetic character
	  • numeric character
	  • special character, which is one of the following:
	  # $ _
	• The password must not contain four or more of the same character type in sequence.
	• The password must not be the same as the user name or its reverse.
	• The password must not contain a space character.

Standalone Database Info (cont.)	
Database Listener Port	The TCP port on this station that the Oracle database listener is to use to communicate with each main server
Database Proxy Port	The TCP port on this station that the main servers are to use for non-JDBC operations
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that this database and a main server are to be collocated on this station
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the "Server One IP Address" and "Server Two IP Address" parameters to connect to this database instance
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the "Enable SAM Server IP Validation" parameter is selected.
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the "Enable SAM Server IP Validation" parameter is selected.
Standby Database Info	

(2 of 3)

Panel and parameters	Description
Standby IP Address	The IP address that each main server and this database instance must use to reach the peer database instance Default: —
Standby Instance Name	The name that the Oracle software associates with the database processes on the peer database station The name must: • contain 8 or fewer characters • consist of ASCII characters only • have a letter as the first character Default: samdb2
Standby Oracle Home	The directory on the peer database station in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
Standby Archive Log Destination	The directory on the peer database station in which the database is to store the archive logs Database transactions are stored in the archive log directory until a database backup is performed. Alcatel-Lucent recommends that you regularly back up the database to avoid filling the partition that contains the archive log directory. Default: /opt/5620sam/samdb/archivelog

(3 of 3)

Table C-2 Standalone main server conversion parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software
Main Server Configuration	Configures the main server software You must choose this option.
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are installed
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.

(1 of 6)

Panel and parameters	Description
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must select this parameter. Default: unselected
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this main server must use to reach the primary database station The value must match the “Public IP (accessible to servers)” value specified on the “Standalone Database Info” panel during the standalone database conversion.
Primary Database Server Port	The TCP port on the primary database station that this main server must use to reach the database The value must match the “Database Listener Port” value specified on the “Standalone Database Info (cont.)” panel during the standalone database conversion.
Primary Database Instance Name	The name that the Oracle software associates with the database processes on the primary database station The value must match the “Instance Name” value specified on the “Standalone Database Info” panel during the standalone database conversion.
Database User Name	The database username The value must match the “User Name” value specified on the “Standalone Database Info” panel during the standalone database conversion.
Database User Password	The database password The value must match the “User Password” value specified on the “Standalone Database Info” panel during the standalone database conversion.
Primary Database Proxy Port	The TCP port on the primary database station that the main servers are to use for non-JDBC operations The value must match the “Database Proxy Port” value specified on the “Standalone Database Info (cont.)” panel during the standalone database conversion.
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database
Online Backup Destination	The backup directory on the database station

(2 of 6)

Panel and parameters	Description
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain
Standby Database Configuration	
Database Server IP Address	The IP address that this main server must use to reach the standby database station Default: —
Database Instance Name	The name that the Oracle software associates with the database processes on the standby database station Default: samdb2
Database Proxy Port	The TCP port on the standby database station that the main servers are to use for non-JDBC operations Default: 9002
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server
Server Port	The TCP port on this station that the auxiliary servers must use to reach this main server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that this main server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server
Type	Preferred—specifies that this main server uses this auxiliary server under normal conditions Reserved—specifies that this main server uses this auxiliary server when the Preferred auxiliary server is unavailable
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected
IP_address_1:instance_name (Primary Preferred) (default)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.

(3 of 6)

Panel and parameters	Description
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the "Enable Database Alignment" parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover
Delay Time After Database Failover (minutes)	The time, in m, that is to elapse between database failover completion and the standby database reinstantiation The parameter is configurable when the "Enable Auto Re-Instantiation of Standby Database" parameter is selected.
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this main server
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the "NAT (network address translation) Used" parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach this main server The parameter is configurable when the "Use Hostname for Communication" parameter is selected.
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the "Use Hostname for Communication" parameter is unselected.
EJB JNDI Server port	The TCP port on this station that the GUI clients use for EJB JNDI messaging
EJB JMS Server port	The TCP port on this station that the GUI clients use for EJB JMS messaging
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients.
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is to be used between this main server and the peer main server Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the "NAT (network address translation) Used" parameter is selected. Default: IP address of primary network interface

(4 of 6)

Panel and parameters	Description
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server Default: —
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging Default: 1100
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members Default: 11800
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main servers and clients, and between the main and auxiliary servers
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected.
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected.
User Documentation	
Install User Documentation at Central Location Below	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected.
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs

(5 of 6)

Panel and parameters	Description
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the “IPv6 Address Used” parameter is selected.
SNMP Trap Receiving Port	The TCP port that the managed NEs use to reach this main server
Trap Log Id	The SNMP trap log ID that is associated with this main server
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server must use to reach the peer main server
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected.
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs must use to reach the peer main server
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members must use to reach the peer main server
Peer Main Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is selected.
Peer Server IP Address	The IP address that the GUI and OSS clients must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected.
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server is to use for EJB JNDI messaging
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients are to use for EJB JNDI messaging
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the conversion Default: unselected

(6 of 6)

Table C-3 Standby database installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Install & Configure a Standalone Database (default)	Installs a standalone database
Restore a Database	Restores a database using a backup file set
Upgrade a Database	Upgrades a database
Install & Configure Primary/Standby Database	Installs a primary or standby database for a redundant 5620 SAM deployment You must choose this option.
Install & Configure Primary/Standby Database	
Primary Database Install (default)	Installs the primary database in a redundant deployment
Convert Standalone Database to Primary	Converts a standalone database to the primary database in a redundant deployment
Standby Database Install	Installs the standby database in a redundant deployment You must choose this option.
Install Oracle Software	
Install Oracle Software (default)	Installs the Oracle software You must choose this option.
Do not install Oracle Software	Does not install the Oracle software
Specify the Base Directory for 5620 SAM Database Files	
Unlabeled field	The directory in which the database files are to be installed Default: /opt/5620sam/samdb/install
Specify the Base Directory for Oracle Software	
Unlabeled field	The directory in which the Oracle files are to be installed Default: /opt/5620sam/oracle11r2
Standby Database Configuration Info	
NAT (network address translation) Used	If selected, specifies that NAT is used between this database and the main servers
Public IP (accessible to servers)	The IP address that the main servers must use to reach this database Default: IP address of primary network interface
Private IP	The IP address that the NAT router uses to reach this database The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Database Proxy Port	The TCP port on this station that the main servers are to use for non-JDBC operations Default: 9002

(1 of 2)

Panel and parameters	Description
Database File Server Port	The TCP port on this station that the database is to use for file transfers to and from the peer database station Default: 9003
Determine Memory Requirements	
Database co-exists with a 5620 SAM Server	If selected, specifies that this database and a main server are to be collocated on this station Default: unselected
Main Server IP Validation	
Enable SAM Server IP Validation	If selected, allows only the main servers specified by the “Server One IP Address” and “Server Two IP Address” parameters to connect to this database instance Default: unselected
Server One IP Address	The IP address of the primary main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Server Two IP Address	The IP address of the standby main server that is allowed to connect to this database instance The parameter is configurable when the “Enable SAM Server IP Validation” parameter is selected. Default: —
Auxiliary Servers	
IP Address	The IP address or hostname of the auxiliary server Default: —
Primary Database Info	
Primary IP Address	The IP address that each main server must use to reach the peer database station Default: —
Primary Instance Name	The name that the Oracle software associates with the database processes on the peer database station Default: samdb
Primary SYS Password	The password that Oracle requires to start the database Default: available from Alcatel-Lucent technical support
Primary Database Listener Port	The TCP port on the peer database station that the Oracle database listener uses to communicate with each main server Default: 1523
Primary Database Proxy Port	The TCP port on the peer database station that the main servers are to use for non-JDBC operations Default: 9002

(2 of 2)

Table C-4 Standby main server installation parameters

Panel and parameters	Description
Software License Agreement	

(1 of 9)

Panel and parameters	Description
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the main server software You must choose this option.
Main Server Configuration	Configures the main server software
Auxiliary Server Installation	Installs the auxiliary server software
Auxiliary Server Configuration	Configures the auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5620 SAM Main Server Files	
Unlabeled field	The directory in which the main server files are to be installed Default: /opt/5620sam/server
License Information for 5620 SAM Main Server	
License Key	The 5620 SAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5620 SAM system is deployed in a redundant configuration You must choose this option. Default: unselected
Enable SR Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected
Enable LTE Stats File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE statistics files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Enable LTE Backup File Synchronization	If selected, specifies that the 5620 SAM main servers synchronize the LTE backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: selected
Auxiliary Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more auxiliary servers Default: unselected

(2 of 9)

Panel and parameters	Description
Client Delegate Server Supported	If selected, specifies that the 5620 SAM deployment includes one or more client delegate servers Default: unselected
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this main server must use to reach the primary database station The value must match the Public IP (accessible to servers)" value specified on the "Standalone Database Info" panel during the standalone database conversion. Default: —
Primary Database Server Port	The TCP port on the primary database station that this main server must use to reach the database The value must match the "Database Listener Port" value specified on the "Standalone Database Info (cont.)" panel during the standalone database conversion. Default: 1523
Primary Database Instance Name	The name that the Oracle software associates with the database processes on the primary database station The value must match the "Instance Name" value specified on the "Standalone Database Info" panel during the standalone database conversion. Default: samdb
Database User Name	The database username The value must match the "User Name" value specified on the "Standalone Database Info" panel during the standalone database conversion. Default: samuser
Database User Password	The database password The value must match the "User Password" value specified on the "Standalone Database Info" panel during the standalone database conversion. Default: available from Alcatel-Lucent technical support
Primary Database Proxy Port	The TCP port on the primary database station that this main server is to use for non-JDBC operations The value must match the "Database Proxy Port" value specified on the "Standalone Database Info (cont.)" panel during the standalone database conversion. Default: 9002
Online Database Backup	
Online Backup Interval (Hours)	How often, in hours, the 5620 SAM is to back up the database Default: 24
Online Backup Destination	The backup directory on the database station Alcatel-Lucent recommends that you do the following: • Specify an Online Backup Destination that can hold at least five times the expected database size. • Ensure that the available space in the Online Backup Destination is sufficient to accommodate the database growth associated with network growth. Default: /opt/5620sam/dbbackup
Number Of Backup Sets	The number of database backup sets that the 5620 SAM is to retain The 5620 SAM creates a separate directory for each backup set. For example, if the Online Backup Destination is /opt/5620sam/dbbackup and the Number Of Backup Sets is 3, the /opt/5620sam/dbbackup directory contains the backupset_1, backupset_2, and backupset_3 subdirectories. Default: 3
Standby Database Configuration	

(3 of 9)

Panel and parameters	Description
Database Server IP Address	The IP address that this main server must use to reach the standby database station Default: —
Database Instance Name	The name that the Oracle software associates with the database processes on the standby database station Default: samdb2
Database Proxy Port	The TCP port on the standby database station that this main server is to use for non-JDBC operations Default: 9002
Enable Database Backup File Synchronization	If selected, specifies that each 5620 SAM database backup file set is copied to the peer database after the backup completes You must configure this parameter the same on each main server. You must ensure that there is sufficient network bandwidth between the database stations before you enable this parameter. See the *5620 SAM Planning Guide* for information about the bandwidth required for database backup file synchronization.
Main Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this main server Default: —
Server Port	The TCP port on this station that the auxiliary servers must use to reach this main server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that each main server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that this main server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that the main server uses this auxiliary server under normal conditions Reserved—specifies that the main server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected

(4 of 9)

Panel and parameters	Description
IP_address_1:instance_name (Primary Preferred) (default)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary main server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
Auto Re-Instantiation After Database Failover	
Enable Auto Re-Instantiation of Standby Database	If selected, enables automatic reinstantiation of the primary database on the standby database station after a database failover Default: unselected
Delay Time After Database Failover (minutes)	The time, in m, that is to elapse between database failover completion and the standby database reinstantiation The parameter is configurable when the “Enable Auto Re-Instantiation of Standby Database” parameter is selected. Default: 60
Main Server Configuration For Clients	
Server Domain Name	The unique identifier of the 5620 SAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this main server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the GUI clients, OSS clients, and auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach the main server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this main server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099

(5 of 9)

Panel and parameters	Description
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 8093
Enable 5670 RAM	If selected, specifies that a 5670 RAM is to be integrated with the 5620 SAM system Default: unselected
Enable 3GPP OSS Interface	If selected, specifies that the 5620 SAM 3GPP OSS interface is to be enabled Default: unselected
Main Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the main server In a redundant 5620 SAM deployment, the main servers use this port to share information about the objects and functions that are available to clients. Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
Main Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the peer main server Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this main server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to peer server)	The IP address that the peer main server must use to reach this main server Default: —
High Available JNDI Port	The TCP port on this station that the peer main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1100
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM server cluster members Default: 11800
SSL Configuration	
Enable Secure Communication	If selected, specifies that SSL communication security is to be used between the main servers and clients, and between the main and auxiliary servers

(6 of 9)

Panel and parameters	Description
Keystore File	The SSL keystore file that the main server imports to the main server configuration, and transfers to each client and auxiliary server station The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore File” value specified in the “SSL Configuration” panel during the standalone main server conversion to a primary main server.
Keystore Password	The SSL keystore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Keystore Password” value specified in the “SSL Configuration” panel during the standalone main server conversion to a primary main server.
Truststore File	The SSL truststore file that the main server imports to the main server configuration The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore File” value specified in the “SSL Configuration” panel during the standalone main server conversion to a primary main server.
Truststore Password	The SSL truststore file password The parameter is configurable when the “Enable Secure Communication” parameter is selected. This value must match the “Truststore Password” value specified in the “SSL Configuration” panel during the standalone main server conversion to a primary main server.
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
License Information for 5650 CPAM Server	
Include 5650 CPAM Server License Information	If selected, specifies that a 5650 CPAM is to be integrated with the 5620 SAM system Default: unselected
Unlabeled field	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. The parameter is configurable when the “Include 5650 CPAM Server License Information” parameter is selected. Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this main server and the managed NEs
IPv6 Address Used	If selected, specifies that this main server uses IPv6 to manage one or more NEs

(7 of 9)

Panel and parameters	Description
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this main server Default: —
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this main server The parameter is configurable when the “IPv6 Address Used” parameter is selected. Default: —
SNMP Trap Receiving Port	The TCP port that the managed NEs must use to reach this main server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with this main server Default: 98
Peer Main Server Configurations	
Peer Server IP Address	The IP address that this main server must use to reach the peer main server Default: —
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer main server Default: 98
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer main server Default: —
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer main server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected. Default: —
Peer Server SNMP Trap Receiving Port	The TCP port on the peer main server station that the managed NEs must use to reach the peer main server Default: 162
Peer Server TCP Port Cluster Number	The TCP port on the peer main server station that the 5620 SAM server cluster members must use to reach the peer main server Default: 11800
Peer Main Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is selected. Default: —
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer main server The parameter is configurable when the “Use Hostname for Communication” parameter on the “Main Server Configuration For Clients” panel is unselected. Default: —
JNDI High Available Peer Server Port	The TCP port on the peer main server station that this main server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1100

(8 of 9)

Panel and parameters	Description
JNDI Peer Server Port	The TCP port on the peer main server station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the main server. Default: 1099
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output
Installation Complete	
Start the 5620 SAM Main Server	If selected, specifies that the main server is to start automatically after the installation Default: unselected

(9 of 9)

D. 5650 CPAM installation parameters

D.1 5650 CPAM installation parameters

Table D-1 lists and describes the parameters that are configurable during a standalone 5650 CPAM server installation. Table D-2 lists and describes the parameters that are configurable for each 5650 CPAM server during a redundant installation. The parameters are grouped by installer panel in the order that the panels are displayed.

Table D-1 Standalone 5650 CPAM server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the 5620 SAM main server software
Main Server Configuration	Configures the 5620 SAM main server software
Auxiliary Server Installation	Installs the 5620 SAM auxiliary server software
Auxiliary Server Configuration	Configures the 5620 SAM auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software You must choose this option.
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5650 CPAM Server Files	
Unlabeled field	The directory in which the 5650 CPAM server files are to be installed Default: /opt/5620sam/server
License Information for 5650 CPAM Server	
License Key	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5650 CPAM system is deployed in a redundant configuration You must leave this parameter unselected. Default: unselected
Auxiliary Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more auxiliary servers Default: unselected
Client Delegate Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more client delegate servers Default: unselected

(1 of 4)

Panel and parameters	Description
Database Configuration	
Database Server IP Address	The IP address that the 5650 CPAM server must use to reach the database station Default: —
Database Instance Name	The name that the Oracle software associates with the database processes Default: samdb
Database Proxy Port	The TCP port on the database station that the 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch Default: 9002
CPAM Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the 5650 CPAM server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach the 5650 CPAM server Default: —
Server port	The TCP port on this station that the auxiliary servers must use to reach the 5650 CPAM server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that the 5650 CPAM server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that the 5650 CPAM server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that the 5650 CPAM server uses this auxiliary server under normal conditions Reserved—specifies that the 5650 CPAM server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
CPAM Server Configuration for Clients	
Server Domain Name	The unique identifier of the 5620 SAM/5650 CPAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach the 5650 CPAM server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the GUI clients, OSS clients, and auxiliary servers Default: unselected

(2 of 4)

Panel and parameters	Description
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the 5650 CPAM server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach the 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach the 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 1099
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 8093
CPAM Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the 5650 CPAM server Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the managed NEs

(3 of 4)

Panel and parameters	Description
IPv6 Address Used	If selected, specifies that the 5650 CPAM server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the 5650 CPAM server Default: IP address of primary network interface
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the 5650 CPAM server The parameter is configurable when the “IPv6 Address Used parameter” is selected. Default: —
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach the 5650 CPAM server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with the 5650 CPAM server Default: 98
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output
Installation Complete	
Start the 5650 CPAM Server	If selected, specifies that the 5650 CPAM server is to start automatically after the installation Default: unselected

(4 of 4)

Table D-2 Redundant 5650 CPAM server installation parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the 5620 SAM main server software
Main Server Configuration	Configures the 5620 SAM main server software
Auxiliary Server Installation	Installs the 5620 SAM auxiliary server software
Auxiliary Server Configuration	Configures the 5620 SAM auxiliary server software

(1 of 7)

Panel and parameters	Description
CPAM Server Installation	Installs the 5650 CPAM server software You must choose this option.
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5650 CPAM Server Files	
Unlabeled field	The directory in which the 5650 CPAM server files are to be installed Default: /opt/5620sam/server
License Information for 5650 CPAM Server	
License Key	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter. Default: —
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5650 CPAM system is deployed in a redundant configuration You must select this parameter. Default: unselected
Enable SR Backup File Synchronization	If selected, specifies that the 5650 CPAM servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected
Auxiliary Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more auxiliary servers Default: unselected
Client Delegate Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more client delegate servers Default: unselected
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this 5650 CPAM server must use to reach the primary database station Default: —
Primary Database Server Port	The TCP port on the primary database station that is to receive communication from this 5650 CPAM server Default: 1523
Primary Database Instance Name	The name that the Oracle software associates with the database processes on the primary database station Default: samdb1
Database User Name	The database username Default: samuser
Database User Password	The database password Default: available from Alcatel-Lucent technical support
Primary Database Proxy Port	The TCP port on the primary database station that this 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch Default: 9002

(2 of 7)

Panel and parameters	Description
Standby Database Configuration	
Database Server IP Address	The IP address that this 5650 CPAM server must use to reach the standby database station Default: —
Database Instance Name	The name that the Oracle software associates with the database processes on the standby database station Default: samdb2
Database Proxy Port	The TCP port on the standby database station that this 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch Default: 9002
CPAM Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this station The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this 5650 CPAM server Default: —
Server port	The TCP port on this station that the auxiliary servers must use to reach this 5650 CPAM server Default: 12800
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that this 5650 CPAM server must use to reach the auxiliary server Default: —
Port	The TCP port on the auxiliary server station that the 5650 CPAM server must use to reach the auxiliary server Default: 12800
Type	Preferred—specifies that this 5650 CPAM server uses this auxiliary server under normal conditions Reserved—specifies that this 5650 CPAM server uses this auxiliary server when the Preferred auxiliary server is unavailable Default: Preferred
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment Default: unselected
IP_address_1:instance_name (Primary Preferred) (default)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary 5650 CPAM server The parameter is configurable when the “Enable Database Alignment” parameter is selected.

(3 of 7)

Panel and parameters	Description
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary 5650 CPAM server The parameter is configurable when the “Enable Database Alignment” parameter is selected.
CPAM Server Configuration for Clients	
Server Domain Name	The unique identifier of the 5620 SAM/5650 CPAM server cluster Default: 5620sam
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this 5650 CPAM server Default: unselected
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the GUI clients, OSS clients, and auxiliary servers Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this station The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public Hostname	The hostname that the GUI and OSS clients must use to reach this 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is selected. Default: —
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected. Default: —
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 1099
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 8093
CPAM Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the 5650 CPAM server Default: 1098
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations Default: 4444
CPAM Server Configuration for Peer Server	

(4 of 7)

Panel and parameters	Description
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the peer 5650 CPAM server Default: unselected
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this 5650 CPAM server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected. Default: IP address of primary network interface
Public IP (accessible to peer server)	The IP address that the peer 5650 CPAM server must use to reach this 5650 CPAM server Default: —
High Available JNDI Port	The TCP port on this station that the peer 5650 CPAM server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value. Default: 1100
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM/5650 CPAM server cluster members Alcatel-Lucent recommends that you accept the default value. Default: 11800
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory Default: —
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the managed NEs
IPv6 Address Used	If selected, specifies that this 5650 CPAM server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach this 5650 CPAM server Default: IP address of primary network interface
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this 5650 CPAM server The parameter is configurable when the “IPv6 Address Used” parameter is selected. Default: —
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this 5650 CPAM server Default: 162
Trap Log Id	The SNMP trap log ID that is associated with this 5650 CPAM server Default: 98
Peer CPAM Server Configurations	

(5 of 7)

Panel and parameters	Description
Peer Server IP Address	The IP address that this 5650 CPAM server must use to reach the peer 5650 CPAM server Default: —
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer 5650 CPAM server Default: 98
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer 5650 CPAM server Default: —
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer 5650 CPAM server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected.
Peer Server SNMP Trap Receiving Port	The TCP port on the peer 5650 CPAM server station that the managed NEs must use to reach the peer 5650 CPAM server Default: 162
Peer Server TCP Port Cluster Number	The TCP port on the peer 5650 CPAM server station that is used to communicate with the other 5620 SAM/5650 CPAM server cluster members Default: 11800
Peer CPAM Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter on the “CPAM Server Configuration for Clients” panel is selected. Default: —
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter on the “CPAM Server Configuration for Clients” panel is unselected. Default: —
JNDI High Available Peer Server Port	The TCP port on the peer 5650 CPAM server station that this 5650 CPAM server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 1100
JNDI Peer Server Port	The TCP port on the peer 5650 CPAM server station that the GUI clients use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server. Default: 1099
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM Default: unselected
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected. Default: —

(6 of 7)

Panel and parameters	Description
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations Default: /opt/5620sam/server/xml_output
Installation Complete	
Start the 5650 CPAM Server	If selected, specifies that the 5650 CPAM server is to start automatically after the installation Default: unselected

(7 of 7)

E. 5650 CPAM upgrade parameters

E.1 5650 CPAM upgrade parameters

Table E-1 lists and describes the parameters that are configurable during a standalone 5650 CPAM server upgrade. Table E-2 lists and describes the parameters that are configurable for each 5650 CPAM server during a redundant upgrade. The parameters are grouped by installer panel in the order that the panels are displayed.

Note — Unless stated, the default value for a parameter is the value specified during the previous upgrade or installation.

Table E-1 Standalone 5650 CPAM server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the 5620 SAM main server software
Main Server Configuration	Configures the 5620 SAM main server software
Auxiliary Server Installation	Installs the 5620 SAM auxiliary server software
Auxiliary Server Configuration	Configures the 5620 SAM auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software You must choose this option.
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5650 CPAM Server Files	
Unlabeled field	The directory in which the 5650 CPAM server files are installed
License Information for 5650 CPAM Server	
License Key	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5650 CPAM system is deployed in a redundant configuration You must leave this parameter unselected.
Auxiliary Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more auxiliary servers
Client Delegate Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more client delegate servers
Database Configuration	

(1 of 4)

Panel and parameters	Description
Database Server IP Address	The IP address that the 5650 CPAM server uses to reach the database station
Database Instance Name	The name that the Oracle software associates with the database processes
Database Proxy Port	The TCP port on the database station that the 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch
CPAM Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the 5650 CPAM server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach the 5650 CPAM server
Server port	The TCP port on this station that the auxiliary servers must use to reach the 5650 CPAM server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that the 5650 CPAM server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that the 5650 CPAM server must use to reach the auxiliary server
Type	Preferred—specifies that the 5650 CPAM server uses this auxiliary server under normal conditions Reserved—specifies that the 5650 CPAM server uses this auxiliary server when the Preferred auxiliary server is unavailable
CPAM Server Configuration for Clients	
Server Domain Name	The unique identifier of the 5620 SAM/5650 CPAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach the 5650 CPAM server
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the GUI clients, OSS clients, and auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach the 5650 CPAM server The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach the 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is selected.
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach the 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter is unselected.

(2 of 4)

Panel and parameters	Description
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
CPAM Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the 5650 CPAM server
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between the 5650 CPAM server and the managed NEs
IPv6 Address Used	If selected, specifies that the 5650 CPAM server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the 5650 CPAM server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the 5650 CPAM server The parameter is configurable when the “IPv6 Address Used parameter” is selected.
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach the 5650 CPAM server
Trap Log Id	The SNMP trap log ID that is associated with the 5650 CPAM server
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations

(3 of 4)

Panel and parameters	Description
Installation Complete	
Start the 5650 CPAM Server	If selected, specifies that the 5650 CPAM server is to start automatically after the upgrade Default: unselected

(4 of 4)

Table E-2 Redundant 5650 CPAM server upgrade parameters

Panel and parameters	Description
Software License Agreement	
I accept the terms of the License Agreement	You accept the license terms and conditions. You must select this parameter before you can proceed to the next panel.
I do NOT accept the terms of the License Agreement (default)	You do not accept the license terms and conditions. You cannot proceed to the next panel when this parameter is selected.
Choose Installation Type	
Main Server Installation (default)	Installs the 5620 SAM main server software
Main Server Configuration	Configures the 5620 SAM main server software
Auxiliary Server Installation	Installs the 5620 SAM auxiliary server software
Auxiliary Server Configuration	Configures the 5620 SAM auxiliary server software
CPAM Server Installation	Installs the 5650 CPAM server software You must choose this option.
CPAM Server Configuration	Configures the 5650 CPAM server software
Specify the Base Directory for 5650 CPAM Server Files	
Unlabeled field	The directory in which the 5650 CPAM server files are installed
License Information for 5650 CPAM Server	
License Key	The 5650 CPAM license key value, which is in the following format: *XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX-XXXXX* You must include the dashes in the license key value that you enter.
Additional Server Configuration	
Redundancy Supported	If selected, specifies that the 5650 CPAM system is deployed in a redundant configuration You must select this parameter.
Enable SR Backup File Synchronization	If selected, specifies that the 5650 CPAM servers synchronize the NE configuration backup files with each other The parameter is configurable when the “Redundancy Supported” parameter is selected. Default: unselected
Auxiliary Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more auxiliary servers
Client Delegate Server Supported	If selected, specifies that the 5650 CPAM deployment includes one or more client delegate servers

(1 of 5)

Panel and parameters	Description
Primary Database Configuration	
Primary Database Server IP Address	The IP address that this 5650 CPAM server must use to reach the primary database station
Primary Database Server Port	The TCP port on the primary database station that is to receive communication from this 5650 CPAM server
Primary Database Instance Name	The name that the Oracle software associates with the database processes on the primary database station
Database User Name	The database username
Database User Password	The database password
Primary Database Proxy Port	The TCP port on the primary database station that this 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch
Standby Database Configuration	
Database Server IP Address	The IP address that this 5650 CPAM server must use to reach the standby database station
Database Instance Name	The name that the Oracle software associates with the database processes on the standby database station
Database Proxy Port	The TCP port on the standby database station that this 5650 CPAM server is to use for redundancy communication, such as the initiation of a database failover or notification of a server activity switch
CPAM Server Configuration for Auxiliary Servers	
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this station The parameter is configurable when the “NAT (network address translation) Used” parameter is selected.
Public IP (accessible to auxiliary)	The IP address that the auxiliary servers must use to reach this 5650 CPAM server
Server port	The TCP port on this station that the auxiliary servers must use to reach this 5650 CPAM server
Enable Stats Collection on Auxiliary Servers	If selected, specifies that at least one auxiliary server is to be used for statistics collection
Enable Call Trace Collection on Auxiliary Servers	If selected, specifies that at least two auxiliary servers are to be used for call-trace data collection
Auxiliary Server Configuration	
IP Address	The IP address that this 5650 CPAM server must use to reach the auxiliary server
Port	The TCP port on the auxiliary server station that the 5650 CPAM server must use to reach the auxiliary server
Type	Preferred—specifies that this 5650 CPAM server uses this auxiliary server under normal conditions Reserved—specifies that this 5650 CPAM server uses this auxiliary server when the Preferred auxiliary server is unavailable
Database Alignment	
Enable Database Alignment	If selected, enables automatic database alignment

(2 of 5)

Panel and parameters	Description
IP_address_1:instance_name (Primary Preferred) (default)	If selected, specifies that the database that is the designated primary database is the preferred database of the primary 5650 CPAM server The parameter is configurable when the "Enable Database Alignment" parameter is selected.
IP_address_2:instance_name (Standby Preferred)	If selected, specifies that the database that is the designated standby database is the preferred database of the primary 5650 CPAM server The parameter is configurable when the "Enable Database Alignment" parameter is selected.
CPAM Server Configuration for Clients	
Server Domain Name	The unique identifier of the 5620 SAM/5650 CPAM server cluster
Use Hostname for Communication	If selected, specifies that the GUI clients, OSS clients, and auxiliary servers use a hostname, rather than an IP address, to reach this 5650 CPAM server
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the GUI clients, OSS clients, and auxiliary servers
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this station The parameter is configurable when the "NAT (network address translation) Used" parameter is selected.
Public Hostname	The hostname that the GUI and OSS clients must use to reach this 5650 CPAM server The parameter is configurable when the "Use Hostname for Communication" parameter is selected.
Public IP (accessible to clients)	The IP address that the GUI and OSS clients must use to reach this 5650 CPAM server The parameter is configurable when the "Use Hostname for Communication" parameter is unselected.
EJB JNDI Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
EJB JMS Server port	The TCP port on this station that the GUI clients are to use for EJB JMS messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
CPAM Server Configuration for Clients (cont.)	
RMI Port	The TCP port on this station that the GUI clients are to use for JBOSS name service communication, such as requesting objects or functions from the 5650 CPAM server
RMI Object Port	The TCP port on this station that the GUI clients are to use for JBOSS messaging, for example, during GUI user operations
CPAM Server Configuration for Peer Server	
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the peer 5650 CPAM server
Private IP (accessible only by this server)	The IP address that the NAT router uses to reach this 5650 CPAM server The parameter is configurable when the "NAT (network address translation) Used" parameter is selected.
Public IP (accessible to peer server)	The IP address that the peer 5650 CPAM server must use to reach this 5650 CPAM server

(3 of 5)

Panel and parameters	Description
High Available JNDI Port	The TCP port on this station that the peer 5650 CPAM server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value.
TCP Port Cluster Number	The TCP port on this station that is used to communicate with the other 5620 SAM/5650 CPAM server cluster members Alcatel-Lucent recommends that you accept the default value.
User Documentation	
Install User Documentation at Central Location Below (default)	If selected, specifies that the user documentation is to be installed in the central location that you enter in the unlabeled field on the panel
Install User Documentation to Client File System	If selected, specifies that the user documentation is to be installed on the local file system of each GUI client
Unlabeled field	If Install User Documentation at Central Location Below is selected: A location that is accessible to the GUI clients; if the location is a URL and NAT is used, the URL must contain a public IP address If Install User Documentation to Client File System is selected: A path on the client file system that is relative to the nms directory under the client installation directory
SNMP Configuration	
NAT (network address translation) Used	If selected, specifies that NAT is used between this 5650 CPAM server and the managed NEs
IPv6 Address Used	If selected, specifies that this 5650 CPAM server uses IPv6 to manage one or more NEs
SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs use to reach this 5650 CPAM server
SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach this 5650 CPAM server The parameter is configurable when the “IPv6 Address Used” parameter is selected.
SNMP Trap Receiving Port	The TCP port on this station that the managed NEs must use to reach this 5650 CPAM server
Trap Log Id	The SNMP trap log ID that is associated with this 5650 CPAM server
Peer CPAM Server Configurations	
Peer Server IP Address	The IP address that this 5650 CPAM server must use to reach the peer 5650 CPAM server
Peer Server Trap Log Id	The SNMP trap log ID that is associated with the peer 5650 CPAM server
Peer Server SNMP Trap Receiving IPv4 Address	The IPv4 address that the managed NEs must use to reach the peer 5650 CPAM server
Peer Server SNMP Trap Receiving IPv6 Address	The IPv6 address that the managed NEs use to reach the peer 5650 CPAM server The parameter is configurable when the “IPv6 Address Used” parameter on the “SNMP Configuration” panel is selected.
Peer Server SNMP Trap Receiving Port	The TCP port on the peer 5650 CPAM server station that the managed NEs must use to reach the peer 5650 CPAM server
Peer Server TCP Port Cluster Number	The TCP port on the peer 5650 CPAM server station that is used to communicate with the other 5620 SAM/5650 CPAM server cluster members
Peer CPAM Server Configurations (cont.)	
Peer Server Hostname	The hostname that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter on the “CPAM Server Configuration for Clients” panel is selected.

(4 of 5)

Panel and parameters	Description
Peer Server IP Address	The IP address that the GUI clients, OSS clients, and auxiliary servers must use to reach the peer 5650 CPAM server The parameter is configurable when the “Use Hostname for Communication” parameter on the” CPAM Server Configuration for Clients” panel is unselected.
JNDI High Available Peer Server Port	The TCP port on the peer 5650 CPAM server station that this 5650 CPAM server is to use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
5650 CPAM JNDI Peer Server Port	The TCP port on the peer 5650 CPAM server station that the GUI clients use for EJB JNDI messaging Alcatel-Lucent recommends that you accept the default value unless one of the following is true: • Another application uses the port. • There is a firewall between the clients and the 5650 CPAM server.
Navigation from External Systems	
Enable Navigation from External Systems	If selected, enables the forwarding of 5620 SAM client GUI activity to a 5620 NM
TCP pot for accepting GUI navigation requests	The TCP port on this station that is to accept 5620 NM navigation requests The parameter is configurable when the “Enable Navigation from External Systems” parameter is selected.
XML Output Directory	
Unlabeled field	The directory that is to contain the output of OSSI file export operations
Installation Complete	
Start the 5650 CPAM Server	If selected, specifies that the 5650 CPAM server is to start automatically after the upgrade Default: unselected

(5 of 5)

Customer documentation and product support

Customer documentation

http://www.alcatel-lucent.com/myaccess

Product manuals and documentation updates are available at alcatel-lucent.com. If you are a new user and require access to this service, please contact your Alcatel-Lucent sales representative.

Technical Support

http://support.alcatel-lucent.com

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