Alcatel-Lucent 5620

SERVICE AWARE MANAGER | RELEASE 9.0 R2

INTEGRATION GUIDE

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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 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

Preface **ix**

5620 SAM documentation suite ix
Procedure 1 To find the 5620 SAM user documentation xii
Procedure 2 To view parameter descriptions from the 5620 SAM User Guide xiii
Prerequisites xiii
Conventions xiii
Procedures with options or substeps xiv
Measurement conventions xiv
Important information xv

1 — Overview **1-1**

1.1 Introduction 1-2
1.2 Integration overview 1-2
Single Sign On 1-2
CFMA Integration 1-2
Supervision Module to OMC-RAN navigation 1-2

2 — Single Sign On **2-1**

2.1 SSO integration 2-2
2.2 SSO integration procedures 2-2
Procedure 2-1 To configure 5620 SAM and LSM portal integration 2-2
Procedure 2-2 To configure 5620 SAM integration with a system that uses the LSM portal 2-4
Procedure 2-3 To configure 5620 SAM and SANE portal integration 2-6

3 — CFMA Integration 3-1

3.1 CFMA integration 3-2
3.2 CFMA integration procedures 3-2
Procedure 3-1 Installing the SAM-CFMA adapter sar file 3-2
Procedure 3-2 Setting CFMA preferences 3-3
Procedure 3-3 Enabling 5620 SAM server communication 3-3

4 — Supervision Module to OMC-RAN navigation 4-1

4.1 Supervision Module to OMC-RAN navigation 4-2
4.2 Supervision Module to OMC-RAN navigation procedures 4-2
Procedure 4-1 Supervision Module to OMC-RAN navigation flow 4-2

1 — Overview

1.1 Introduction *1-2*

1.2 Integration overview *1-2*

1.1 Introduction

The *5620 SAM Integration Guide* describes horizontal integration between the 5620 SAM and various third-party systems.

A 5620 SAM system is integrated with these systems to provide additional functionality and increased ease of use. Integration is achieved in a variety of ways depending on the components involved and a user's specific configuration. Visit the chapter pertaining to a specific solution to see how integration is accomplished in that scenario.

1.2 Integration overview

The *5620 SAM Integration Guide* contains information about the following integration components:

- Single Sign On
- CFMA Integration
- Supervision Module to OMC-RAN navigation

For information about 5620 SAM interworking with Alcatel-Lucent systems, see the *5620 SAM User Guide*.

Single Sign On

Single Sign On (SSO) technology enables a user to access all resources within a given domain after having entered their credentials just one time.

See chapter 2 for more information.

CFMA Integration

The SAM-CFMA adapter for CFMA 2.1 translates 5620 SAM alarms into alarms for CFMA. Using CFMA as a fault manager, the adapter is used to aggregate SAM alarms within another NM.

The adapter connects to 5620 SAM using SAM-O and JMS. The adapter software can be found in the integration/samcfmadapter directory of the 5620 SAM installation DVD.

See chapter 3 for more information.

Supervision Module to OMC-RAN navigation

A 5620 SAM client GUI can discover and monitor other element manager systems, including OMC-RAN systems. A 5620 SAM client GUI can also launch the 5620 SAM Supervision Module, a web-based application that provides summarized views of objects monitored by the 5620 SAM client GUI from which it is launched. These objects may belong to a discovered OMC-RAN system. If navigation is attempted from the 5620 SAM Supervision Module to an object belonging to an OMC-RAN system, it will be accomplished via LSM Proxy using JNLP webstart.

See chapter 4 for more information.

2 — Single Sign On

2.1 SSO integration *2-2*

2.2 SSO integration procedures *2-2*

2.1 SSO integration

Single Sign On (SSO) technology enables a user to access all resources within a domain after having entered their credentials just one time. SSO uses centralized authentication servers to ensure that users do not need to enter their credentials repeatedly. Security is provided on all levels without the inconvenience of re-prompting users.

Note — Users who access the 5620 SAM client GUI through Internet Explorer must deselect the "Do not save encrypted pages to disk" Security option. This option is on the Advanced tab of the Internet Options form, which is accessible from the Tools menu.

You can use SSO to integrate the 5620 SAM and the following systems:

- SANE portal
- 1350 OMS
- OMC-RAN

2.2 SSO integration procedures

Use the following procedures to enable 5620 SAM SSO integration with other systems.

Procedure 2-1 To configure 5620 SAM and LSM portal integration

Perform this procedure to configure a 5620 SAM system for interworking with the LSM portal. The LSM portal is a component used for integration with the 1350 OMS. Ensure that the 5620 SAM Server is stopped before you begin. Perform the following steps as root user, or a user with root-equivalent permissions.

The following steps assume that the 5620 SAM server is installed at /opt/5620sam/server. Modify paths accordingly if your 5620 SAM server is installed to a different location.

The following steps assume that the 5620 SAM administrator account is samadmin with group sam. Modify accordingly if your 5620 SAM administrator account is different.

1 Deploy the csa_v2_proxy_spi.sar file.

```
/opt/5620sam/server/nms/jboss/server/default/deploy/csa_v2_proxy
_spi.sar

# cp -i
/opt/5620sam/server/nms/jboss/sso/csa/csa_v2_proxy_spi.sar
/opt/5620sam/server/nms/jboss/server/default/deploy/csa_v2_proxy
_spi.sar

# chown samadmin:sam
/opt/5620sam/server/nms/jboss/server/default/deploy/csa_v2_proxy
_spi.sar
```

2 Modify the following fields within /5620sam/sever/nms/config/sso/csa_proxy_config_service.xml:

   i Set the ipaddress parameter to the IP address of the LSM Portal. Contact your LSM Portal administrator to obtain.

   ii Set the port parameter to the port number of the LSM Portal. Contact your LSM Portal administrator to obtain.

3 To enable debug level logging, add the following lines to /opt/5620sam/server/nms/config/nms-main-log4j.xml:

```
<category name="com.alu.sso.csa">

<priority value="DEBUG"/>

</category>
```

4 Go to /opt/5620sam/server/nms/config/clientDeploy/nms-client.xml and add the following line to the <configuration> section:

```
<integration
properties="/com/alcatel/tmn/nm/lsm/lsmintegration.properties"
lsmproperties="https://<pathToLsmApiProperties>"
applicationid="<applicationIdValue"/>
```

Note 1 — <pathToLsmApiProperties> is the URL of the path to the LSM Portal LSM API properties file. Contact your LSM Portal administrator to obtain.

Note 2 — <applicationIdValue> is the value of the 5620 SAM target binding ID configured in the LSM Portal. Contact your LSM Portal administrator to obtain

5 When communication to the LSM Portal is SSL secured, perform the following steps to share the LSM Portal security certificates with the 5620 SAM server and its clients:

   i Obtain the public security certificate from the LSM Portal administrator.

   ii Import this certificate into the 5620 SAM server truststore found at /opt/5620sam/server/nms/config/ssl/trustStore/cacerts.trustStore.

   iii Go to /opt/5620sam/server/nms/bin/setenv.rc and set the SSL path parameter to the path of the 5620 SAM server truststore.

   iv Go to /opt/5620sam/server/nms/config/clientDeploy/setenv.bat and uncomment the following line:

```
rem  set
JVM_OPTIONS_SSL=-Djavax.net.ssl.trustStore=..\config\ssl\tru
stStore\cacerts.trustStore
```

v Go to /opt/5620sam/server/nms/config/clientDeploy/setenv.rc and uncomment the following line:

```
#JVM_OPTIONS_SSL="-Djavax.net.ssl.trustStore=../config/ssl/t
rustStore/cacerts.trustStore"
```

vi To deploy the changes, run the following command as samadmin:

```
# /opt/5620sam/server/nms/bin/nmsdeploytool.bash deploy
```

6 Restart the 5620 SAM server.

Procedure 2-2 To configure 5620 SAM integration with a system that uses the LSM portal

Perform this procedure to configure a 5620 SAM system to allow navigation requests from an external system that uses the LSM portal.

Note — You must perform this procedure on each main server in the 5620 SAM system.

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

2 Open *path*/nms/config/sso/em_lsmproxy_config.xml using a plain-text editor.

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

3 Locate the following XML tag, which marks the beginning of the section that lists each external system, or target application, that connects to the 5620 SAM through the LSM portal, as shown in Code 2-1.

Code 2-1: Beginning of target applications section

```
<lsm-proxy-target-applications>
```

The section contains multiple target application entries in separate subsections. By default, each entry is populated with sample values, and the group of entries is surrounded by comment tags to disable them.

4 To configure a target application, edit the subsection directly below the leading comment tag, which is the first line in Code 2-2, to read as shown in Code 2-2.

Code 2-2: Target application subsection

```
<!--
    <target-application>
        <em-server>
            <servertype>serverType</servertype>
            <server-ip>serverIP</server-ip>
        </em-server>
        <jnlp-url>JNLP_URL</jnlp-url>
```

```
</target-application>
```

where

serverType: is the application type, for example, OMC-RAN

serverIP is the public IPv4 address of the server application on the external system

JNLP_URL is the URL of the JNLP file required to run the client application; see the external system documentation for the file location

5 To enable the target application, move the leading comment tag line to the line directly below the closing tag of the target application subsection, as shown in Code 2-3.

Code 2-3: Enabled target application

```
    </target-application>
<!--
```

6 Save and close the file.

Procedure 2-3 To configure 5620 SAM and SANE portal integration

Perform this procedure to configure a 5620 SAM system for interworking with the SANE portal. You require the following user privileges on each main server station to perform this procedure:

- root or root-equivalent
- samadmin

Caution — If you are using this procedure to reconfigure one or more installed main servers, the following conditions apply:

- If the main servers do not currently have SSL enabled, you must first prepare the 5620 SAM system for operation using SSL. See the "*5620 SAM SSL security*" chapter of the *5620 SAM User Guide* for information about configuring SSL.
- The procedure requires that you stop and restart each main server, which causes a network management outage. Ensure that you perform this procedure only during a scheduled maintenance period.

In a redundant deployment, the sequence of events is the following:

- standby main server stopped
- standby main server reconfigured
- standby main server started
- primary main server stopped / server activity switch triggered
  This is the beginning of the network management outage.
- server activity switch completes
  This is the end of the network management outage.
- primary main server reconfigured
- primary main server started
- if required, manual activity switch performed to restore initial primary and standby main server roles

Note 1 — You can perform this procedure as part of a 5620 SAM main server installation or upgrade, or as a configuration activity on an installed main server.

Note 2 — You must perform this procedure on each main server In a redundant 5620 SAM deployment, in the following order:

- standby main server
- primary main server

1 Perform one of the following.

a If you are performing this procedure as part of a main server installation or upgrade, perform the initial installation or upgrade procedure steps in the *5620 SAM | 5650 CPAM Installation and Upgrade Guide* up to, but not including, the step that describes opening the 5620 SAM server installer.

b If you are performing this procedure to reconfigure one or more installed main servers, perform the following steps.

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 main server software:

```
bash$ ./nmsserver.bash stop ↵
```

v Enter the following to display the 5620 SAM main server status:

```
bash$ ./nmsserver.bash appserver_status ↵
```

The command displays a status message.

vi 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 1 b v. Do not proceed to the next step until the server is stopped.

vii Enter the following to switch to the root user:

```
bash$ su - ↵
```

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

ix Navigate to the DVD-ROM drive.

2 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 -DconfigSANE=yes
↵
```

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
-DconfigSANE=yes ↵
```

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

3 Accept the terms of the license agreement in the “Software License Agreement” panel.

4 Click on the Next button. The “Choose Installation Type” panel is displayed.

5 Perform one of the following.

a If you are performing this procedure as part of a main server installation or upgrade, select “Main Server Installation” in the “Choose Installation Type” panel.

b If you are performing this procedure to reconfigure an installed main server, select “Main Server Configuration” in the “Choose Installation Type” panel.

6 Click on the Next button.

7 Perform one of the following.

a If you are performing this procedure as part of a main server installation or upgrade, perform the subsequent installation or upgrade procedure steps described in the *5620 SAM | 5650 CPAM Installation and Upgrade Guide* until the “SSL Configuration” panel is displayed.

b If you are performing this procedure to reconfigure an installed main server, click on the Next button in each subsequent panel until the “SSL Configuration” panel is displayed.

8 Select the “Enable Secure Communication” parameter.

Note — You must enable and configure SSL before you can enable or configure SANE SSO.

9 Configure the remaining parameters on the panel.

10 Click on the Next button. The “SANE SSO Configuration” panel is displayed.

11 Select the “Enable SANE SSO” parameter.

12 Configure the “Windows Client Installation Directory” parameter by specifying the 5620 SAM software installation directory used for Windows clients.

13 Configure the “Unix Client Installation Directory” parameter by specifying the 5620 SAM software installation directory used for Solaris clients.

14 Configure the “Enable Response Signature Validation” parameter.

15 Click on the Next button. The “SANE SSO Certificate Files Configuration” panel is displayed.

16 Click on the Add button to specify an SSO certificate file. A file browser opens.

17 Choose a certificate file and click on the OK button.

18 Repeat steps 16 and 17 to specify an additional certificate file, if required.

19 Click on the Next button.

20 Perform one of the following.

a If you are performing this procedure as part of a main server installation or upgrade, perform the subsequent installation or upgrade procedure steps described in the *5620 SAM | 5650 CPAM Installation and Upgrade Guide*.

b If you are performing this procedure to reconfigure an installed main server, perform the following steps.

i Click on the Next button in each subsequent panel until the “Installation Complete” panel is displayed.

ii Click on the Done button to close the server installer.

iii Enter the following to switch back to the samadmin user:

```
# exit ↵
```

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

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

The 5620 SAM main server restarts and puts the SANE SSO configuration into effect.

- If required, perform a manual server activity switch to restore the initial primary and standby main server roles.

3 — CFMA Integration

3.1 CFMA integration *3-2*

3.2 CFMA integration procedures *3-2*

3.1 CFMA integration

The SAM-CFMA adapter for CFMA 2.1 translates 5620 SAM alarms into alarms for CFMA. The adapter connects to 5620 SAM using SAM-O and JMS. The connection parameters will be specified in an XML configuration file that contains the required information to allow the 5620 SAM adapter to connect to SAM-O and JMS. The password provided in the XML file will be MD5 hashed. The adapter software can be found in the integration/samcfmadapter directory of the 5620 SAM installation DVD.

An installed SAM-CFMA adapter must be of the same version as the 5620 SAM server with which it will interface, and these must be compatible with the CFMA version. Both the 5620 SAM server and the CFMA must also have their times synchronized to ensure that the JMS connection behaves properly and that the alarm timestamp matches on both systems. It is recommended that both systems synchronize their time against the same NTP server. Contact your Alcatel-Lucent support representative for more information.

The sam-cfma-adapter.sar file is an archive of files required to support the SAM-CFMA adapter. A CFMA system administrator must extract the contents of this file and deploy them to the correct CFMA directory. Contact your Alcatel-Lucent support representative for more information.

3.2 CFMA integration procedures

Use the following procedures to install the 5620 SAM adapter for CFMA 2.1.

Procedure 3-1 Installing the SAM-CFMA adapter sar file

The paths to the configurations provided in the following procedure are provided as an example only and will vary depending on CFMA installations and versions. Please consult the CFMA documentation for details.

1 Run the following command:

```
cd <JBOSS_dir>/alu_cnm_cfma_main/deploy
```

2 To create the SAM-CFMA adapter directory, run the following command:

```
mkdir sam-cfma-adapter.sar
```

3 To copy the sar file in the created directory, run the following commands:

```
cp <SAR_FILE_LOCATION>/sam-cfma-adapter.sar
<JBOSS_dir>/alu_cnm_cfma_main/deploy/sam-cfma-adapter.sar/

cd <JBOSS_dir>/alu_cnm_cfma_main/deploy/sam-cfma-adapter.sar/
```

4 To unzip the sar file, run the following command:

```
unzip sam-cfma-adapter.sar
```

5 To remove the unzipped sar file, run the following command:

```
rm sam-cfma-adapter.sar
```

Procedure 3-2 Setting CFMA preferences

The paths to the configurations provided in the following procedure are provided as an example only and will vary depending on CFMA installations and versions. Please consult the CFMA documentation for details.

1 To set the EVENT_PROCESSING_WITH_DEVICETIME to true for the main and player servers, run the following commands:

```
cnm-preference-modify -c cfma -i main -d ../main/data/output
"/cfma/server/asset/main/com/alu/cnm/cfma/ngfm/server/fmcommon:E
VENT_PROCESSING_WITH_DEVICETIME:true"

cnm-preference-modify -c cfma -i main -d ../main/data/output
"/cfma/server/asset/player/com/alu/cnm/cfma/ngfm/server/fmcommon
:EVENT_PROCESSING_WITH_DEVICETIME:true"
```

2 To set the synchTimeout to 60, run the following command:

```
cnm-preference-modify -c cfma -i main -d ../main/data/output
"/cfma/server/asset/main/com/alu/cnm/cfma/ngfm/server/fmcollecto
r:synchTimeout:60"
```

Note — An initial discovery taking more than 60 minutes will require increasing the synchTimeout.

Procedure 3-3 Enabling 5620 SAM server communication

Included in the sam-cfma-adapter.sar file is the jboss-service.xml configuration file. Prior to deploying the SAM-CFMA adapter, the following parameters within the jboss-service.xml configuration file must be modified to allow communication with the 5620 SAM server.

1 Open the jboss-service.xml configuration file.

2 Set the ipAddressOne parameter to the IP address of the primary 5620 SAM server.

3 Set the httpPortOne parameter to the HTTP port of the primary 5620 SAM server used for OSS requests.

4 Set the jndiPortOne parameter to the JNDI port of the primary 5620 SAM erver.

5 Set the ipAddressTwo parameter to the IP address of the redundant 5620 SAM server.

6 Set the httpPortTwo parameter to the HTTP port of the redundant 5620 SAM server used for OSS requests.

7 Set the jndiPortTwo parameter to the JNDI port of the redundant 5620 SAM server.

8 Set the adapterType parameter to either 5620OMS or 5620XMS.

Note — This value is dependent on specific system integration.

9 Set the username parameter to the 5620 SAM user used for the OSS/JMS connections.

Note 1 — This user must be configured in the 5620 SAM server and must have have OSS privileges.

Note 2 — In 5620 SAM, this user should be bound to a Span Profile that contains spans defining all alarmable objects for which the CFMA user wishes to receive alarm events.

Note 3 — Do not specify a Span Profile containing blocked spans as this will cause the SAM-CFMA adapter to become out of sync with the 5620 SAM.

10 Set the password parameter to the MD5 hashed password required for the 5620 SAM username.

11 Set the spanIds to a comma separated list of numeric values corresponding to span numbers configured on the 5620 SAM Server.

Note 1 — The span numbers specified here must match those belonging to the Span Profile of the 5620 SAM user specified in step 9.

Note 2 — Only alarms raised on objects belonging to the specified spanIds will be shown in CFMA.

Note 3 — Spans used by the SAM-CFMA adapter should not be modified after an interface is established between 5620 SAM and CFMA. Alarmed objects should not be added, removed, or moved from one span to another (i.e. move an NE from one group belonging to a spanId to another group belonging to a different spanId). Doing so will cause the CFMA alarm list to become out of sync with the 5620 SAM alarm list. If the CFMA alarms become out of sync with the 5620 SAM alarms, the 5620 SAM alarms can be synchronized from the CFMA GUI by performing Actions→Synchronize→Alarms and selecting the 5620SAM entry.

12 Restart the CFMA.

4 — Supervision Module to OMC-RAN navigation

4.1 Supervision Module to OMC-RAN navigation *4-2*

4.2 Supervision Module to OMC-RAN navigation procedures *4-2*

4.1 Supervision Module to OMC-RAN navigation

The 5620 SAM client GUI provides a generic solution for discovering various element manager systems, including OMC-RAN systems, for monitoring and diagnostics purposes. The 5620 SAM client GUI also allows access to the 5620 SAM Supervision Module, a web-based application that provides summarized views of objects monitored by the 5620 SAM client GUI from which it is launched. These objects must be specified in user-defined supervision groups, and can include objects belonging to discovered element manager systems.

Navigation is possible from the 5620 SAM Supervision module to any object that has been specified in a supervision group. If the object being navigated to is managed by an OMC-RAN system that has been discovered by the 5620 SAM client GUI, navigation is done via an LSM Proxy using JNLP webstart.

See the *5620 SAM User Guide* for information about discovering element manager systems from the 5620 SAM client GUI.

See the *5620 SAM Supervision Module User Guide* for information about configuring supervision groups and using the 5620 SAM Supervision Module.

4.2 Supervision Module to OMC-RAN navigation procedures

Use the following procedure to conduct Supervision Module to OMC-RAN navigation.

Procedure 4-1 Supervision Module to OMC-RAN navigation flow

1. Start a 5620 SAM client GUI that has an OMC-RAN system discovered.
2. Specify the OMC-RAN system for inclusion into a supervision group.
3. Choose Application→Supervision Portal from the 5620 SAM main menu. The Supervision web portal launches.
4. Select a supervision group in the Summary View. The Details and Alarms windows are populated.
5. Perform one of the following operations to trigger navigation:
   - **a** Select an object from the Network Elements or Matrix View subtabs. Go to step 6.
   - **b** Select an alarm from the Alarm Table subtab. Go to step 7.
6. Right-click on the selected object and choose one of the following options if applicable:
   - Navigate to Property View
   - Navigate to Tree View
   - Navigate to Hardware View

   The LSM Proxy launch window opens. Go to step 8.

7 Right-click on the selected alarm and choose one of the following options if applicable:

- Navigate to Affected Object
- Navigate to Online Help

The LSM Proxy launch window opens.

8 Click on the Run button. The LSM Proxy is launched and the navigation request is transmitted to the OMC-RAN client.

Note — The OMC-RAN client will be automatically launched to accept the transmitted navigation request. If previously launched, the OMC-RAN client will be automatically opened.

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

Documentation feedback

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