

5620 SAM and 1350 OMS IP Optics Management 14.0 R3

Optical Integration Module User Guide

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About this document

Purpose

This guide describes how to perform the 5620 SAM and 1350 OMS integration for an 1830 PSS based OTN network that includes:

- · Photonic and electrical switching
- · Photonic and electrical GMPLS
- · SDH aggregation and switching
- · L2/Ethernet-over-WDM switching functions embedded with 1830 PSS

Safety information

For your safety, this document contains safety statements. Safety statements are given at points where risks of damage to personnel, equipment, and operation may exist. Failure to follow the directions in a safety statement may result in serious consequences.

Document support

Customer documentation and product support URLs:

- Customer documentation welcome page
- Technical support

How to comment

Documentation feedback

5620 SAM

1 What's new?

1.1 Overview

1.1.1 Purpose

This chapter highlights new features for the 5620 SAM Release 14.0 and provides references to the specific feature content. Feature lists and high-level feature descriptions are also available in the *5620 SAM Release Description*.

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1.2 What's new in 5620 SAM Release 14.0 for OIM

1.2.1 Maintenance releases

Some releases may not be listed in this section, either because no new OIM features are introduced, or the features introduced do not require documentation.

1.2.2 What's new in 5620 SAM Release 14.0 R3 for OIM

Table 1, "5620 SAM Release 14.0 R3 1830 PSS features" (p. 8), lists the features and functions added in 5620 SAM Release 14.0 R3 for 1830 PSS support. See the *5620 SAM User Guide* for more information about non-1830 PSS features and functions.

Table 1 5620 SAM Release 14.0 R3	1830 PSS features
----------------------------------	-------------------

Feature	Description and Reference
SAM-82617 — Additional features for OMS integration	 The additional features include: allow non-HIP NEs in an EMS group link URL is displayed in the Physical Link (Edit) form and in the Manage→Equipment→Equipment→Physical Link (Network) inventory list. link URL configuration during the physical link creation between the SR node and the HIP node allows you to navigate to the 1350 OMS user interface. navigation to the 1350 OMS Equipment View from the 5620 SAM equipment tree objects: shelf, card, and port. MPLS link navigation from MPLS adjacency link between SRs to the corresponding DSR path in 1350 OMS 4.3.2 "EMS equipment group" (p. 30) "Link navigation URL — Physical link — syntax" (p. 33) 4.18 "To create a link between a 7750 SR and 1350 OMS node" (p. 58) "Card, shelf, and port navigation" (p. 53) 4.12.3 "MPLS link navigation" (p. 52)
SAM-83974 — HIP NE version and location	You can view the HIP NE version and location on the Network Element (Edit) form and in the Manage→Equipment→Equipment→Network Element (Network) inventory list. See 4.3.3 "HIP NE version and location" (p. 31)
SAM-83976 — Names of the optical node inventory	The names of the objects in the optical node inventory in 5620 SAM are consistent with the 1350 OMS. 4.9 "Optical node navigation" (p. 43)

2 Platform architecture

2.1 Overview

2.1.1 Purpose

This chapter provides information about the OIM platform architecture.

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2.2 Structure of safety statements

2.2.1 Overview

This topic describes the components of safety statements that appear in this document.

2.2.2 General structure

Safety statements include the following structural elements:



Item	Structure element	Purpose
1	Safety alert symbol	Indicates the potential for personal injury (optional)
2	Safety symbol	Indicates hazard type (optional)
3	Signal word	Indicates the severity of the hazard
4	Hazard type	Describes the source of the risk of damage or injury
5	Safety message	Consequences if protective measures fail
6	Avoidance message	Protective measures to take to avoid the hazard
7	Identifier	The reference ID of the safety statement (optional)

2.2.3 Signal words

The signal words identify the hazard severity levels as follows:

Signal word	Meaning
DANGER	Indicates an extremely hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazardous situation not related to personal injury.

2.3 Introduction

2.3.1 Functional description

The 1350 OMS is a management and provisioning solution for optical networks that the 5620 SAM can manage as an EMS with the following functionality:

- Discovery of optical nodes managed by the 1350 OMS as EMS NEs in the 5620 SAM.
- Display of physical connectivity between EMS NEs on the network topology map.
- Fault management and display of alarms from EMS NEs, HIP links, and the 1350 OMS platform.
- Cross-launch of 1350 OMS web GUI for nodes, physical links (external optical links), alarms, and from the 5620 SAM FM application.

2.3.2 1350 OMS integration with the 5620 SAM

The 5620 SAM and 1350 OMS integration for an 1830 PSS based OTN network includes the following objectives:

- Photonic and electrical switching (L0 and L1 OTN)
- Photonic and electrical GMPLS
- SDH aggregation and switching
- L2/Ethernet-over-WDM switching functions embedded with 1830 PSS

The 1350 OMS and the 5620 SAM are installed on the same server as coresidents. The integrated network management system functions along with the rest of the 5620 SAM software when IP and optical convergence is required. The integrated network management system can function standalone when it is associated with optical network management.

The 1350 OMS and the 5620 SAM integration is also supported when the 1350 OMS and the 5620 SAM are on different servers.



Figure 1 1350 OMS integration with the 5620 SAM

The 1350 OMS shares the following with the 5620 SAM applications:

- Infrastructure (VMWare)
- · Common FM application
- Common Network Inventories
- NBI (5620 SAM-O) for common functions (Alarms/Events and Inventory)

The 1350 OMS is compatible with the standard hardware platform of the 5620 SAM and the required middleware.

2.4 Single hardware infrastructure

2.4.1 Single hardware platform

The hardware server that is supported is the HP-based x86 server (HP Proliant line) running RHEL.

The 1350 OMS and the 5620 SAM are installed on a single virtualized machine, where all the software components supporting the HIP solution are integrated as per the following figure.



Figure 2 Coresident platform architecture

2.4.2 High availability

The 5620 SAM and the 1350 OMS support redundant configurations. The active and spare servers host both 5620 SAM and 1350 OMS components; that is, different VMs are coresident in the same machine.

After a switchover occurs from the active (main) server to the spare (DRC) server site, the 5620 SAM and 1350 OMS integration works the same way as with the main before the switchover occurred. You need to configure HIP again after a switchover occurs from the main to the DRC server site. See 3.2 "Workflow for configuring HIP on the 1350 OMS" (p. 18) for more information about HIP configuration on 1350 OMS.

2.4.3 System layout

The 5620 SAM and the 1350 OMS integration is performed for the overall IP/OTN/SDH management in a unified operational environment where the different tasks and processes are carried out on different technologies—IP/MPLS, Ethernet L2, OTN L1 and L0, and SDH.

The 5620 SAM users access the native user interface to perform all the end-to-end operations in the IP/MPLS and L2 Ethernet domains running on the 7X50 router product families. The 1350 OMS users access the web GUI to perform all the end-to-end operations across Ethernet, electrical and photonic switching, and TDM switching domains implemented with the 1830 PSS product family.



Figure 3 System layout

3 User and HIP configuration in the 1350 OMS

3.1 Overview

3.1.1 Purpose

This chapter describes how to configure the user and HIP in the 1350 OMS.

3.1.2 Contents

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3.2 Workflow for configuring HIP on the 1350 OMS

3.2.1 Introduction

The HIP is implemented in the HI component embedded in the 1350 OMS OTN package. HIP is not automatically configured during the 1350 OMS installation or upgrade. HIP is not included as a process or services in the System Monitor application. You need to configure HIP on the 1350 OMS OTN VM after the first installation. See the 1350 OMS Installation Guide for more information about the VM installation.

3.2.2 User activity

The 5620 SAM logs each GUI and OSS user action, such as a system access attempt or the configuration of an object, in the 5620 SAM database. The GUI actions performed using the 1350 OMS NEs are also logged in the User Activity form. See "User activity logging" in the *5620 SAM System Administrator Guide* for more information.

3.2.3 Stages

The following are the stages for the HIP installation:

1

Configure a new user as "samviewer" user on the 1350 OMS platform of the OTN virtual machine. See 3.3 "To configure the "samviewer" user on the 1350 OMS" (p. 19).

2 -

Configure HIP on the 1350 OMS platform of the OTN virtual machine. See 3.4 "To configure HIP on the 1350 OMS" (p. 24).

3.3 To configure the "samviewer" user on the 1350 OMS

3.3.1 Steps

1 -

Log in to the 1350 OMS Presentation and choose Administer $\!\!\!\rightarrow\!\!$ User Management from the web GUI main menu.

NOKIA	1350 Optical	Managemen	t System	
Desian	Deplov ()perate	Administer	
Configuration	l.			
Customers		EOS Web F	Portal	Configure NTP
EML Domains				
Fault and Per	formance			
Alarm Debounci	ing Settings	PM Archive	Rules	PM Archive Sessions
Schedule				
File Transfer Ser	vices	Scheduler		
System & Sec	curity			
Process Monitor	ing and Control	Backup		Restore
Session Adminis	tration	User Manag	jement	Change Password
User Profiles (EN	4L 1)	User Profile	s (OIS 1)	User Profiles (OTN 1)
User Activity	Log			

Result: The User Management application opens.

2 —

On the navigation tree, expand secdb and choose User Accounts \rightarrow Create User from the User Management main menu. The Login Info form appears.

Create User Ctrl+U Ctrl+U Ctrl+M Remove User(s) Ctrl+F ibutes Search User Ctrl+B Refresh Contexts Ctrl+R	File	View	User Accounts	System Managem	ent	
Remove User(s) Ctrl+M Kernove User(s) Ctrl+M Second Search User Ctrl+B Refresh Contexts Ctrl+R			🤱 Create User	Ctrl+U		
Image: Second Search User Ctrl+F ibutes Image: Second Search User Ctrl+B Image: Second Search User Ctrl+B			🗱 Remove Use	r(s) Ctrl+M		
Search User Ctrl+B al Refresh Contexts Ctrl+R	- 8	Users	R Find User	Ctrl+F	ibutes	
Refresh Contexts Ctrl+R	=	secd	Search User	Ctrl+B		
		al 🖉	Refresh Con	texts Ctrl+R	1	
			2			
		🎽 ot	n			

3 —

Configure the following parameters:

- Login: samviewer
- New Password
- Confirm Password

File View User Accounts Syste	m Management				H
BUsers Bu	User Login Attributes Profiles		1	Assigned OS OIS_1-13	Assigned Profile Viewer
Sakadmin Saka Saka Saturiewer Saturiewer Saturie Wodm	3 EML_1.13		3	EUL_1.15	Viewer
	Booly	Beset	1	(Beb)	

4 –

Click on the Attributes tab and configure the following parameters:

- Name: samviewer
- LockPassword: FALSE
- ResetPassword: FALSE

User Management : alcatel On		The party of a second distance of the	the second second
File View User Accounts S	System Management		
* 2 2 1			
Users	User Login Attributes Profiles		
⊡ ecdb	Туре	Attributes Name	Attributes Values
alcatel	(M)	Name	samviewer
axadmin	(0)	PhoneNumber	
📇 nbi	(0)	LockPassword	FALSE
🔗 otn	(0)	ResetPassword	FALSE
🔗 snml	(0)	Certificate	
🚨 wdm	(0)	AllowedHosts	
	(0)	DeniedHosts	
	(0)	LockedWhenInactive	
	(0)	uid	
	(0)	loginShell	
	(0)	uidNumber	
	(0)	gidNumber	
	(0)	homeDirectory	

5 -

Click on the Profiles tab, choose the specific 1350 OMS package in the OS Name panel, then choose the Viewer parameter in the Profile Name panel, and click on the arrow icon to assign the Viewer profile to the specific 1350 OMS package.

User Management : alcatel On Eile View User Accounts	n System Management					
Users	User Login Attributes Profiles OS Name 1 1 OIS_1-13 2 OTN_1-13 3 EML_1-13 • Profile Name 1 Viewer 2 AdvancedViewer 3 Operator 4 Constructor 5 AdvancedConstructor 6 Administrator		1	Assigned OS EML_1-13	Assigned Profile Viewer	
		Reset		Help		

Result: The samviewer user is listed in the Users navigation tree.

6	
v	

Save your changes and close the forms.

END OF STEPS -

3.4 To configure HIP on the 1350 OMS

3.4.1 Steps

1 —

Log in to the 1350 OMS-OTN Virtual Machine as root and enter the following:

```
/usr/Systems/OTN_1_13_Master/WDM_APPL/config/IntegrationDe-
tails
```

2 —

Enter the following:

```
hipUser=SAMINT
```

```
hipPassword=SAMINT123
```

hipPort=the value assigned to the 'OTN_HIP_PORT' in the file /etc/services on the 13500MS-OTN Virtual Machine

oisIp=the 13500MS-OIS VM IP address

```
oisPort=the value assigned to `nspCorbaPort_Global_Instance-
13' in the file /etc/services on the 13500MS-OIS Virtual
Machine
bindName=alu/nbi/EmsSessionFactory_I
```

```
nameContext=DefaultNamingContext
```

```
ems=ALU/the 13500MS-OIS VM hostname
```

```
emsUserName=alcatel
```

emsPassword=alcatel

3 —

Perform the following to enable HIP:

- 1. Log in to the OTN VM as user otn.
- 2. Enter the following: /usr/Systems/OTN*Master/WDM_PLATFORM/script/lt_param_ reconfig
- 3. Select 6 (FM Variables).
- 4. Select 1 (Enable HIP).
- 5. Set the Enable HIP parameter to Yes.
- 4

Enter the following to start the OIM application:

,root,ro	ot #	nohup	/usr/Systems/OTN*Master/WDM_	_APPL/script/
hip_start	&			
Result:				

When the OIM application starts, the OIM-server:

- establishes connection with the 1350 OMS-OIS Virtual Machine (unbi) for retrieving 1350 OMS objects (that is, alarms, NE, remote inventory, and physical connections) and notifications
- · accepts any requests from the 5620 SAM (OIM-Client) based on HIP.
- 5 —

Enter the following to stop the OIM application, If required:

...,root,root # /usr/Systems/OTN*Master/WDM_APPL/bin/hip_stop



Note: When you restart the OIM application, the 5620 SAM resynchronizes the inventory by retrieving all objects from the OIM. The operation can take a long time to complete depending on the size of the 1350 OMS network.

END OF STEPS -

4 Network topology and inventory

4.1 Overview

4.1.1 Purpose

This chapter provides information about the network topology and inventory.

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1350 OMS management as an EMS

4.2 Overview

4.2.1 Purpose

This section describes how to manage the 1350 OMS as an EMS in the 5620 SAM.

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4.3 Managing the 1350 OMS as an EMS in the 5620 SAM

4.3.1 Introduction

The 1350 OMS integration with the 5620 SAM supports synchronization of the following objects between the two applications:

- · Optical Node directory
- Nodal Equipment Inventory
- Optical Nodes in Map
- Optical Links Inventory (Map)

4.3.2 EMS equipment group

Equipment groups allow you to organize the network into logical groupings of NEs, for example, in a geographical area, or by equipment type. An equipment group is sometimes called a topology group. Some of the views in the view selector, for example the Equipment view, allow you to use the navigation tree to create and manage equipment groups.

The EMS equipment group is an equipment group created to organize the 1350 OMS and the NEs managed by the 1350 OMS. See 4.5 "To manage the 1350 OMS as an EMS in the 5620 SAM" (p. 36) for more information about creating an EMS equipment group.

You can move the non-HIP NEs to and from the EMS equipment groups by clicking and dragging icons on the navigation tree or topology map. Moving the HIP NEs out of the EMS equipment group is not allowed.

Alternatively, non-Hip NEs can be added to an EMS group by selecting the group name as the name of the EMS group during the discovery rule configuration of the non-Hip NEs.

Application Create Manage Policies Tools Administration Window Help	Internal Tools				🖳 🖳 System_Defa	ult_Al
14 🔶 🔼 🔜 🍕 🖻 🗊						
Equipment-Network (1)	Physical Topology - Network - I	EMS_1_1 (3) (1)				
Equipment 👻 🔁 💼 🛗	Physical Topology 🔹	No Filter	🔻 💎 🎜 Search	: 🖬 🗐 进 🕸 ;	¥ 💀 🕨 🔍	2 10
Find Image: Second	Attwork O Discovered NEs Discoveree NEs Dis	Network 7 \$121_146_211	bessen10011	► EMS 1 1 (3)	EMS_1_2 Pss2	2

Figure 4 EMS equipment group

4.3.3 HIP NE version and location

You can view the HIP NE version from the HIP NE properties form and the inventory list.

See 4.6 "To view location and version of HIP-NE from the equipment tree" (p. 38) for more information about how to view the NE version and location from the equipment tree.

See 4.7 "To view the HIP-NE version and location from the inventory list" (p. 40) for more information about how to view the NE version and location from the inventory list.

4.3.4 Configuring navigation URLs

The navigation URLs must be defined in the EM System object when configuring the discovery rule for 1350 OMS management by the 5620 SAM. The URL configuration is different for NEs and links.

The three different navigation URLs are:

- NE URL syntax is set at the EM System creation
- · Link URL syntax is set at the EM System creation
- Link URL syntax is set at the Physical Link level

NE navigation URL syntax

https://135.250.76.83:8443/oms1350/mainOtn/extNav?entity= node&nern=\$rn&displayName=\$displayedName&typeDescription=

```
$typeDescription&timestamps=$timestamps&samServerAddress=
$samServerAddress&userName=$userName&userGroup=
$userGroup&tokenId=$token
```

The URL is displayed in the Element Manager (Edit) form.

See Figure 5, "Link URL — Element manager" (p. 31)

Link navigation URL — Element manager — syntax

```
https://135.250.76.83:8443/oms1350/mainOtn/extNav?entity=
link&displayName=$displayedName&endPoint1Fdn=
$endPoint1NeRn&endPoint2Fd=$endPoint2NeRn&notes=
$notes&timestamps=$timestamps&samServerAddress=
$samServerAddress&userName=$userName&userGroup=&tokenId=$token
```

The URL is displayed in the Element Manager (Edit) form.

Element Manager - type-Element Manager-SOINTOTN [Edit]	×				
General Faults					
Server Port Number: 28600					
▼ Identification					
User Name: SAMINT	999				
Password:					
Connection Information	100000				
Network Connection Status: Up	00000				
Last Connection Status Update Time: 2016/05/13 00:28:22 432 EST	0000000				
▼ EM Server Information	000000				
EM Server Name: 1350-OMS					
EM Server Version: R13.3					
EM HIP Library Version: 5620 SAM Release 14.0 Build MAIN Patch 6893					
▼ Navigation	0000000				
NE navigation Urt: https://135.250.76.83:8443/oms1350/mainOtn/extNav?entity=node&nern=\$rn&displayName=\$displayedName&typeDescription= NE navigation Urt: \$typeDescription×tamps=\$timestamps&samServerAddress=\$samServerAddress&userName=\$userName&userGroup= \$userGroup&tokenId=\$token \$userGroup&tokenId=\$token					
Link navigation Url: https://135.250.76.83:8443/oms1350/mainOtn/extNav?entity=link&displayName=\$displayedName&endPoint1Fdn=\$endPoint1NeRn&en dPoint2Fdn=\$endPoint2NeRn¬es=\$notes×tamps=\$timestamps&samServerAddress=\$samServerAddress&userName=\$user Name&userGroup=&tokenld=\$token					
	•				
User Activity OK Cancel App	ly				

Figure 5	Link URL — Element manager
----------	----------------------------

Link navigation URL — Physical link — syntax

https://oms_server_IP:port/oms1350/mainOtn/extNav?entity= link&displayName=LinkPss2&endPoint1Fdn=network%3AEMS-6pss1&endPoint2Fdn=network%3AEMS-6-pss2&userName= \$userName&samServerAddress=\$samServerAddress×tamps= \$timestamps&tokenId=\$token

The URL is displayed in the Physical Link (Edit) form and in the Manage \rightarrow Equipment \rightarrow Equipment \rightarrow Physical Link (Network) inventory list.

Figure 6 Link URL — Physical link

Application <u>C</u> re	eate <u>M</u> anage <u>P</u> olic	ies <u>T</u> ools A <u>d</u> ministration <u>W</u> i	dow Help Internal Tools	👤 System_Default_All
🖭 🤶 🛃	1. 🖪 🍕 E 🕻	۲ ۲		
Physica	al Link - LinkPss1 [Edit]			r, 12,
General	Faults			5 k 🖑 🔍 🔍 100%
11	Name: Lini	kPss1	▲ P ^{MS} 1 1 (3)	
	Description: End	lpointA_Pss1port1_EndpointB_Pss2p	tt	
	Operational State: In S	Service		
	Endpoint A Type: Net	work Element		_
	Endpoint B Type: Net	work Element	Pss2	
	Notes: Not	dePss1	7750	1830 0
	Navigation URL: Arts	os://135.117.210.234:8443/oms1350/n ndPoint2Fdn=network%3AEMS-6-pss: s&tokenId=\$token	ainCfn/extNav?ently=link&displayName=LnkPss28endPoint1Fdn=network%3AEM5-6-pss1 &userName=SuserNameSamServerAddress=SamServerAddress8timestamps=Rimesta 21_146_211_both (12.0.R13)	PSS64
d I	▼ Endpoint A - Networ	rk Element		0
	Name:	Pss1	Paste from Clipboard Droperties	
4	Active Management IP	138.120.128.1		
	Site ID:	EMS-1-pss1	Pss9	
	Site Name:	Pss1		
	 Endpoint B - Network 	k Element	Physical Link Group List. Group:network:EMS-1-pss1:network:EMS-1-pss2	
	Name:	Pss2	No Filter 👻 🔽 Span On:	Last Search:
	Active Management IP	138.120.128.2	Physical Link (Network)	Soproh
	Site ID:	EMS-1-pss2	Name T (1) Navigation URL Description Operational State Endpoint A Type Endpo	
	Site Name:	PSS2	LinkPeet https://135.117.210.234.8443/nme1350/_Exhnint& Peet nort1_in_ServiceNetwork-ElamontNetwork/ &	
	-			Telete

Mandatory attributes

The mandatory attributes are the following:

- oms_server_IP and port
- timestamps
- samServerAddress
- userName
- tokenId

All other attributes are optional in the URL.

4.4 OIM considerations and limitations

4.4.1 General information

Table 2, "OIM considerations and limitations" (p. 35) lists the notable considerations and limitation for OIM.

Table 2	OIM considerations	and	limitations
TUDIO Z		ana	mmations

Туре	Considerations/limitation
Links	 Modification of link is not supported by HIP The physical link display name size should not exceed 121 characters.
Alarms	 Unackowledge is not supported for the 1350 OMS alarms in the 5620 SAM alarm display. Some alarms are listed with probable cause displayed unknown in 5620 SAM. Acknowledge and then purge alarm is not supported for the 1350 OMS alarms in the 5620 SAM.
Objects	 Modification of HIP-node name is not supported. Equipment name with more than 15 characters is not supported. Compound node is displayed as two NEs in the 5620 SAM. Shelf, slot and port objects are not displayed in order in the equipment tree.
Synchronization	 Pack create and delete notifications are not sent by the 1646 SM. You should perform manual synchronization. All create tasks are handled as DBCHG in the node. If the link, equipment, or alarm is not as per HIP guidelines, all of the further synchronizations for specific type is skipped.
Navigation	 All navigations from the 5620 SAM takes more than 10 s. You cannot disable Opt_Connection navigation from the 5620 SAM to the 1350 OMS using the 5620 SAM.
User	 You cannot use the same browser to login to the 1350 OMS as alcatel and samviewer user simultaneously. One of the users will be logged off.
Status	 Port administrative state will always be shown as "UP" as part of notification. You need to perform manual synchronization to update the status.

4.5 To manage the 1350 OMS as an EMS in the 5620 SAM

I Note: You must specify an equipment group other than the default Discovered NEs group when discovering an EMS. Step 1 of this procedure describes a basic process for creating an equipment group. See the *5620 SAM User Guide* for more information about creating and populating equipment groups.

4.5.1 Steps

1 _____

Create an equipment group for the EMS:

- 1. Choose Create→Equipment→Group from the 5620 SAM main menu. The Group (New Instance) (Create) form opens.
- 2. Configure the required parameters.
- 3. Click OK. The form closes and the equipment group is displayed in the navigation tree and topology map.
- 2 –

Choose Administration→Discovery Manager from the 5620 SAM main menu. The Discovery Manager (Edit) form opens.

3 —

Click Create. The Create Discovery Rule form opens with the Specify General Attributes step displayed.

4

Click Select for the Group Name, select the equipment group created in Step 1, and click OK. The form is updated with the group name.

5 -

Click Next until the Add EM Systems step is displayed.

6 —

Complete the Add EM Systems step:

- 1. Click Create. The EM System (Create) form opens.
- 2. Configure the required parameters.
- 3. Click on the Element Managers tab.
- 4. Click Create. The Element Manager (Create) form opens.
- 5. Configure the parameters as follows:
 - Host Name Enter the OTN host name

Communication panel parameters

- Server IP Address Enter the IP Address entered in Step 2 of 3.4 "To configure HIP on the 1350 OMS" (p. 24).
- Server Port Number Enter the port number entered in Step 2 of 3.4 "To configure HIP on the 1350 OMS" (p. 24).

Identification panel parameters

- User Name Enter the user name entered in Step 2 of 3.4 "To configure HIP on the 1350 OMS" (p. 24).
- Password Enter the password entered in Step 2 of 3.4 "To configure HIP on the 1350 OMS" (p. 24).

Navigation panel parameters

- NE navigation URL See 4.3.4 "Configuring navigation URLs" (p. 31)
- Link navigation URL See 4.3.4 "Configuring navigation URLs" (p. 31)
- 6. Save the changes and return to the Create Discovery Rule form.
- 7. Click Finish.
- 8. Save the changes to the discovery rule.
- 7 -

Activate the EMS discovery:

- 1. In the Discovery Manager (Edit) form, click on the EM Systems tab.
- 2. Select the EM system that you created in Step 6 and click Properties. The EM System (Edit) form opens.
- 3. Set the Administrative State parameter to Up.
- 4. Save the changes. The 5620 SAM attempts to discover the EM system.



Note: The 5620 SAM does not discover an EMS until you set the Administrative State parameter of the EMS object to Up and save the changes in the Discovery Manager.

4.6 To view location and version of HIP-NE from the equipment tree

4.6.1 Steps

Expand Network→1350 OMS→EMS→HIP-NE from the 5620 SAM equipment tree.

2 —

1 —

Right-click on the NE object and choose properties. The Network Element (Edit) form opens displaying the location and version information.

Figure 7	HIP-NE	properties
0		

Network Element - EMS-2-pss128 - Pss128 [Edit]			
- 💭 🔲 Pss128, EMS-2-pss128 (EMS Node) 🕴 EM	MS-2-pss	:128 - Pss128 💣 🗙	
Ge	eneral	Polling NFV EM Site ID: EMS-2-pss12	MS Network Element TCA Deployment Faults 🚾 » 28 Site Name: Pss128
	N	ame: .ctive Management IP:	Pss128
	L	ocation:	France
	ci Si	hassis Type: oftware Version:	7750-SR7-MG PSS15.4
	D	escriptor Version: esource Group ID:	N/A
	s	tate:	Managed
	E	xternal EMS:	N/A
		 Custom Properties 	
	¢	Custom Property 1: N	4/A
	C C	Custom Property 2: N	N/A
	0	Custom Property 3: N	N/A
		 Latitude/Longitude C Latitude(degrees): Longitude(degrees): 	Configuration 145.32 12.4
	🛱 Resyr	nc 🕨 📓 NE Resyr	nc Audit Navigate 🕨 User Activity Actions 🕨 🎯 🕨

4.7 To view the HIP-NE version and location from the inventory list

4.7.1 Steps

Choose Manage \rightarrow Equipment \rightarrow Equipment from the 5620 SAM main menu. The Manage Equipment form opens.

2 _____

1 —

Choose Network Element (Network) from the object drop-down menu. Click Search and the network element inventory list appears.

3 –

Right-click on the column heading and choose Column Display. The Column Display form opens.

4 –

Select the columns to remove from the Displayed on Table list, then click on the left arrow. The columns move to the Available for Table list.

5 —

Select the following properties in the Available for Sorting panel:

- Location
- Software Version
- Chassis Type
- Latitude
- · Longitude
- 6 –

Click on the right arrow button and the properties move to the Used for Sorting panel. Click OK to display the location and version information of the network elements.

Figure 8	Inventory list
i igui o o	inventory list

Network Element (Net	work)	▼ 👰 No Filter		🔻 🍸 🎦 Span On	Equipment Grou	ip(s) - All 🔻	
					1	Court	6 Page 1 of 1 🔇
site ID	Site Name	Software Version	Location	Chassis Type $ imes$ (1)	Longitude(degrees)	Latitude(degrees)	Name
				_			
EMS-2-pss124	Pss124	myHipSwVersion	myHipLocation	7210 SAS-M-24F-2XFP	123.4	14.32	Pss124
EMS-2-pss128	Pss128	PSS15.4	France	7750-SR7-MG	12.4	145.32	Pss128
EMS-2-pss119	Pss119	myHipSwVersion	myHipLocation	7750-SRc12	123.4	14.32	Pss119
EMS-2-pss125	Pss125	myHipSwVersion	myHipLocation	HIP Chassis	123.4	14.32	Pss125
EMS-2-pss126	Pss126	myHipSwVersion	myHipLocation	HIP Chassis	0.0	0.0	Pss126
EMS-2-pss122	Pss122	myHipSwVersion	myHipLocation	unspecified	123.4	14.32	Pss122

Node navigation

4.8 Overview

4.8.1 Purpose

This section provides information about node navigation.

4.8.2 Contents

4.8	Overview	42
4.9	Optical node navigation	43
4.10	To cross-launch the 1350 OMS web GUI from an optical node or a link context	46

4.9 Optical node navigation

4.9.1 Introduction

The 1350 OMS sends node list data to the 5620 SAM and keeps the node data synchronized both on 1350 OMS and 5620 SAM. The 5620 SAM receives the node list on initial discovery of the 1350 OMS as a managed EMS, and the 1350 OMS keeps the list synchronized, based on object creation/deletion events and state changes using HIP notifications.

Figure 9, "1350 OMS-based optical node display in the 5620 SAM" (p. 43) shows the optical node inventory and hardware.



Figure 9 1350 OMS-based optical node display in the 5620 SAM

4.9.2 Node navigation

You can navigate to the 1350 OMS EQM from the 5620 SAM equipment tree or topology map when the selected NE is a photonic or OCS node. When the 1646 SMC is selected, the 1646 SMC user interface opens. See 4.10 "To cross-launch the 1350 OMS web GUI from an optical node or a link context" (p. 46) for more information about cross launch from the 5620 SAM to the 1350 OMS.



Figure 10 Navigation from the 5620 SAM

	ent System				Preferences	Provisioning History	💉 🏢 User: samviewer ?
search Q V	NE: TSAL15ITE3#00	s Su	pervision : 🔶	Alignment : 🐺	NE Type: 1830P55	3	5 8 1
ROOT	Graphical View Topology View Inter	al Cable Display LED Vi	iew				
🗄 🍎 GLOBE							E 2 -
🖃 🍘 MP							
🗄 🍈 TSAL2	1:	ALISITE3#OCS					
± 🍈 1646	SHELF-1-1 SHELF-1-2	SHELF-1-3 SHELF-1	L-4 SHELF-1-5	7			
🌰 REALSIM	• • •	•	•				
E 🍈 TSAL1							
* O TSALISITE1				_			
* O TSALISITE2							
+ A SHELE-1-2 • PSS36							
O SHELE 1 211 5556	1						· ·
+ 🙃 SHELF-1-4 : PSS64							
+ 🙆 SHELF-1-5 : PSS64	Alarms Equipment Details Alar	m Severity Profile Port D	Details Internal Lin	nks Affected Client	s Configure TL1 Cut Through	1	
* () TSAL1SITE4			and the second s				
🗄 🍎 TSALO	17 🕎 17						S ?
🗉 🌐 DUMMY	Source	Occurrence Time	Probable Cause		Y Alarm Type	Y Severity	Y NE SA/NSA Y
🖭 🍎 MRN	TSAL1SITE3#OCS/SHELF-1-2,EQPT,NEND	2016/2/21 9:49:10 PM	Shelf unavailable		EQUIPMENT	0	Non Service Affecting
	TSAL1SITE3#OCS/SHELF-1-5,EQPT,NEND	2016/2/21 9:49:10 PM	Shelf unavailable		EQUIPMENT	0	Non Service Affecting
	Telligeres according to a contraction	0046/0/04 0 40 40 DM	et 12 - 1 - 1 - 1		FOLIDUFLE	^	

Figure 11 Navigation to the 1350 OMS EQM

Figure 12 Navigation to the 1646 SMC



4.10 To cross-launch the 1350 OMS web GUI from an optical node or a link context

4.10.1 Before you begin

The following must be true before you can cross-launch the 1350 OMS web GUI from the 5620 SAM client:

- The 1350 OMS is managed as an EMS in the 5620 SAM, and at least one optical node and one link are discovered for node and link context navigation, respectively.
- The URLs are configured correctly in the EM System object.

Active connectivity between the 1350 OMS and the 5620 SAM is not necessarily required for cross-launch. The Administrative State of the EMS can be down and cross-launch will succeed if the client can access the URL successfully.

4.10.2 Steps

1

Navigate to the 1350 OMS optical node or link on the 5620 SAM equipment tree, topology map, or properties form.

Launch equipment view on 1350 OMS

2 -

Right-click on the node in the 5620 SAM equipment tree or topology map, or open the node properties form and choose Actions—Launch Web Navigation. The equipment view of the chosen node opens on the 1350 OMS web GUI in the default browser, according to the defined URL for the node.

Launch physical connection details on 1350 OMS

3 —

Right-click on the plus sign of the optical link group in the 5620 SAM topology map and choose Expand Group. The link or links constituting the group are displayed.

4

Right-click on an optical link and choose Actions \rightarrow Launch Web Navigation. The physical connections details of the chosen link opens on the 1350 OMS web GUI in the default browser, according to the defined URL for the link.



Note: You can also cross-launch the physical connection details on the 1350 OMS web GUI by clicking Actions→Launch Web Navigation from the properties form of an optical link.

Link navigation

4.11 Overview

4.11.1 Purpose

This section provides information about link navigation.

4.11.2 Contents

4.11	Overview	48
4.12	Optical link navigation	49

4.12 Optical link navigation

4.12.1 Introduction

The 1350 OMS also sends optical link data to the 5620 SAM on initial discovery and synchronizes the link data over HIP for creation/deletion and state changes. The 5620 SAM displays links between the 1350 OMS nodes on the topology map,as follows. Links are colored according to their Operational State.



Figure 13 Optical node link display on topology map

4.12.2 Link navigation

You can navigate to the 1350 OMS Physical Connections from the 5620 SAM equipment tree or topology map when the selected NE is a photonic or OCS node. See 4.10 "To cross-launch the 1350 OMS web GUI from an optical node or a link context" (p. 46) for more information about cross launch from the 5620 SAM to the 1350 OMS.



Figure 14 Expand group

5630 SAM/S650 CPAM Client (sam2)	
Application Greate Manage Policies Tools Administration Window Belp	🗑 System_Default_All
S Environment Minterson (1)	2 d 10
Find C > O Doctored MSs Hau (A, 02	///// MM/
G Betwork G Dunnanaged Ms G Dunnanaged Ms	Managites
SALISTED_DOS BUNNINGHOUSE TOENO Demonstration To	SAUCHARD Show Only Selected
	(2) Launch Web Revisation Actions
	Properties
DEMOCIE_DOS PERIORATEMALDIAMENTALDEREN TALDEREN	Law Collapse into Group
	Reference
Earlies Earlie Salestee States Sales	Highlight Mill Mierretch
	Duplcate Links
	1810 Highlight Nearest Non-TPMIL Levis
	Highlight Upper Layer Adjacency Linka
🕐 Alarm Window - Alarm Table (1), Correlated Alarma Not Shown	6° 8° 12
The first The State Or Statement Constitut A Theory Constituted Statement This Const 2015	
	Page 1 of 3 🔍 🔰
Leat Time Detected /, C Site Name Object Type Object Name Alarm Name Probable Cause Severity OLC State	Additional Text Alarm Type Site D
	THE R. LEWIS CO., LANSING MICH.
◆ Alarm Wind. 🛐 Equipment. 📝 Physical To	
admin is logged in Receiving server heartbeat Standalone D8. Up	Tue Apr 12 12:07:38 IST 2016

Figure 15 Navigation from the 5620 SAM

File Ed	R View Fevorites Ink CIA 1350 Op	Tools He	dp igement Syste	Previous Next	fte error G	₩ Waiting for sts.app.alcatel	-L. 🗙 Issue Navigator	Optics IRA 🛛 🗙 Issue Navigator -	Optics JRA 🛛 1350 Of	VS - PhysicalCo X	• * •
Desig	an Depkoy Konnector	Opera	te Admi worset >	nister	_						-
Alarres	KRNOTSOO1 Inan NE(Post #1: MERSON In NE(Post #1: MERSON) Conveliated Alarma	14/WPHG 2-15 (WPHG 2-15-13 (SRC)	une Ne Dierte	Route Struct	+	onnections PH Enabled Points	Properties				•
12 E	t e 120 2 NGETE4 NGETE1	NE Seventy	Port SL07-2-15 SL07-2-15		NE SAINSA AFFECTING AFFECTING	Di Alam Type (M Primary Primary	NE Probable Cause Card missing Card missing	Time Raised 1 2/10/2006 1:41:40 AM 2/10/2006 1:41:44 AM	Equipment Failure	RMS, Security	(C) ?

Figure 16 Navigation to the 1350 OMS Physical Connection

4.12.3 MPLS link navigation

MPLS link navigation is also supported from the 5620 SAM. Tou can navigate from MPLS adjacency link between SRs to the corresponding DSR path in the 1350 OMS.

MPLS link navigation is supported for RSVP.

Card, shelf, and port navigation

4.13 Overview

4.13.1 Purpose

This section provides information about card, shelf, and port navigation.

4.13.2 Contents

4.13	Overview	53
4.14	Shelf navigation	54
4.15	Card navigation	55
4.16	Port navigation	56

4.14 Shelf navigation

4.14.1 General information

You can navigate to the 1350 OMS Equipment View from the Network \rightarrow 1350 OMS \rightarrow EMS \rightarrow PSS \rightarrow Rack \rightarrow Shelf.

Equipment-Network (1)
Equipment 🔻 🔁 🔯
Find < 🔉
PSS32_BA_02, EMS-5-PSS32_BA_02 (EMS Node) PSS32_BA_05, EMS-5-PSS32_BA_05 (EMS Node) PSS32BA02, EMS-5-PSS32BA02 (EMS Node) PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node) PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node) PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node) PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node)
Image: SHELF_1 Admin:Up, Status:Up Image: SHELF_1 Admin:Up Image: SHELF_1 Admin:Up </td
- ○□ ⊒ 11DPM12_1_10 - ○□ ⊒ 11DPM12_1_10 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
- ○□ ⊒ 11DPM12_1_10_L2 Properties Down - ○□ ⊒ 11DPM12_1_10_C12 Admin:Down, Status:Down
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

Figure 17 Shelf navigation

4.15 Card navigation

4.15.1 General information

You can navigate to the 1350 OMS Equipment View from the Network \rightarrow 1350 OMS \rightarrow EMS \rightarrow PSS \rightarrow Rack \rightarrow Shelf \rightarrow Card.

Equipment-Network (1)	×
Equipment 🔻 🔁 🔯	
Find 🖉	
Image: PSS32_BA_02, EMS-5-PSS32_BA_02 (EMS Node) Image: PSS32_BA_05, EMS-5-PSS32_BA_05 (EMS Node) Image: PSS32BA02, EMS-5-PSS32BA02 (EMS Node) Image: PSS32BA02, EMS-5-PSS32BA02 (EMS Node) Image: PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node)	
□ □ □ 11DPM12_1_10 Admin:Up, Status:Up □ □ □ □ 11DPM12_1_10_C1 Admin:Down Actions	00000
- ○□ 亘 11DPM12_1_10_C10 Admin:Dow - ○□ 亘 11DPM12_1_10_C11 Admin:Dow - ○□ 亘 11DPM12_1_10_C12 Admin:Dow - ○□ 亘 11DPM12_1_10_C12 Admin:Dow	
- ○□ 亘 11DPM12_1_10_C2 Admin:Down, Status:Down ⊕- ○□ 亘 11DPM12_1_10_C3 Admin:Down, Status:Down ⊕- ○□ 亘 11DPM12_1_10_C4 Admin:Down, Status:Down	
 IDPM12_1_10_C5 Admin:Down, Status:Down IDPM12_1_10_C5 Admin:Down, Status:Down IDPM12_1_10_C6 Admin:Down, Status:Down 	
	-

Figure 18 Card navigation

4.16 Port navigation

4.16.1 General information

You can navigate to the 1350 OMS Equipment View from the Network \rightarrow 1350 OMS \rightarrow EMS \rightarrow PSS \rightarrow Rack \rightarrow Shelf \rightarrow Card \rightarrow Port.

Figure 19 Port navigation

Equipment-Network (1)
Equipment T T D
Find 🔍 🗶
PSS32_BA_02, EMS-5-PSS32_BA_02 (EMS Node) PSS32_BA_05, EMS-5-PSS32_BA_05 (EMS Node) PSS32BA02, EMS-5-PSS32BA02 (EMS Node) PSS32BA02, EMS-5-PSS32BA02 (EMS Node) PSS32BATEMP, EMS-5-PSS32BATEMP (EMS Node) PS32BATEMP, EMS-5-PS32BATEMP (EMS Node) PS32BATEMP, EMS
□ □ □ 11DPM12_1_10_C2 Admin:Down, Stat
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
⊕□ □ □ 11DPM12_1_10_C5 Admin:Down, Status:Down □□ □ □ □ □ 11DPM12_1_10_C6 Admin:Down, Status:Down
⊕

Link configuration between 7750 SR and 1350 OMS

4.17 Overview

4.17.1 Purpose

This section describes how to configure a physical link between a 7750 SR and a HIP node in the 1350 OMS managed as an EMS in the 5620 SAM.

4.17.2 Contents

4.17	Overview	57
4.18	To create a link between a 7750 SR and 1350 OMS node	58

4.18 To create a link between a 7750 SR and 1350 OMS node

4.18.1 Steps

1 -

Choose Create \rightarrow Equipment \rightarrow Physical Link from the 5620 SAM main menu. The Physical Link (Create) form opens.

2 —

Configure the identifying parameters as required and set the Endpoint A Type and Endpoint B Type parameters to "Network Element".

3

Configure the Navigation URL parameter. See "Link navigation URL — Physical link — syntax" (p. 33).

Note: The configuration of the Navigation URL parameter is mandatory if you need to navigate to the 1350 OMS user interface.

4

In the Endpoint panels, click Select and choose the required nodes for the A and B points of the link.

5

Save the changes and close the form. The 5620 SAM creates the link object between the specified nodes.

Delete a 1350 OMS EMS

4.19 Overview

4.19.1 Purpose

This section describes how to delete a 1350 OMS that is managed as an EMS in the 5620 SAM.

4.19.2 Contents

4.19	Overview	59
4.20	To delete a 1350 OMS EMS from the 5620 SAM	60

4.20 To delete a 1350 OMS EMS from the 5620 SAM

4.20.1 Before you begin

You must set the Administrative State of the EMS to "Down" before you can delete the object from the 5620 SAM.

4.20.2 Steps

1 –

Choose Administration \rightarrow Discovery Manager from the 5620 SAM main menu. The Discovery Manager (Edit) form opens.

2 _____

Click on the EM System tab.

3 _____

If required, configure the Administrative State parameter:

- 1. Select the EM System and click Properties.
- 2. Set the Administrative State parameter to "Down".
- 3. Save the changes and close the form.
- 4 –

In the Discovery Manager form, select the EM System and click Delete. The 5620 SAM deletes the EM System and all associated optical nodes and links.



Note: The EMS group does not get deleted from Physical Topology view if non-Hip NEs are present in the EMS group.

5 OSS integration and fault management

5.1 Overview

5.1.1 Purpose

This chapter provides information about the OSS integration and fault management.

5.1.2 Contents

5.1	Overview	61
5.2	OSS integration	62
5.3	Fault and event management	63
5.4	To enable the 1350 OMS cross-launch from the 5620 SAM FM application	68
5.5	To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application	70

5.2 OSS integration

5.2.1 Introduction

One NBI is supported for the 5620 SAM and the 1350 OMS using the 5620 SAM-O interface. The interface exports the 5620 SAM and the 1350 OMS objects, inventories, and alarms of the 1830 PSS managed network.

Figure 20 The 5620 SAM and the 1350 OMS OSS integration



5.3 Fault and event management

5.3.1 Introduction

The 5620 SAM and the 1350 OMS integration supports an enhanced fault management application, to provide a single point of handling for the alarms of a multi-layer IP and optical network, and a centralized environment where the fault correlation process takes place.

5.3.2 Fault management

The 1350 OMS feeds platform and nodal alarms, including correlation information, to the 5620 SAM over HIP. The following statements describe FM support for 1350 OMS integration:

- Alarm raising and clearing from the 1350 OMS to the 5620 SAM is supported. Acknowledging the alarm from the 5620 SAM results in the alarm acknowledgment in the 1350 OMS. See 6.3 "To acknowledge alarms" (p. 73) for more information about acknowledging alarms in the 5620 SAM.
- Basic nodal alarms are associated with the expected node objects from the 1350 OMS in the 5620 SAM network. See 5.4 "To enable the 1350 OMS cross-launch from the 5620 SAM FM application" (p. 68) and 5.5 "To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application" (p. 70) for more information about cross-launching from the 5620 SAM FM application to the 1350 OMS.
- Correlated alarms on optical links are associated with the expected object types in the 5620 SAM. Correlated alarms on OTU-k/ODU-k layers and services are associated with Opt_Connection.
- 5620 SAM-O support for alarms originating from the 1350 OMS via HIP is provided.



5.3.3 Alarm navigation

Navigation to the elementary alarms

You can navigate to the 1350 OMS EQM elementary alarm from the 5620 SAM Fault Management Application. See 5.4 "To enable the 1350 OMS cross-launch from the 5620 SAM FM application" (p. 68) and 5.5 "To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application" (p. 70) for more information about cross launch from the 5620 SAM FM application to the 1350 OMS.

NOK	IA	5620 SAM - Faul	t Management												Use	er: admin 💠
Top Unhealth	v NEs	Alarm List Top	Problems Inspect	or												
							0 2,188	8 257	<u>m</u> 179	104	on 0		() 0	0	C 1	_) ≣ ?
📰 🔻 Alarm L	list							Show Root Ca	uses Only	Saved Filter	No	Filter			- 7	7. Q 🗠 -
Severity		Site ID	Site Name	Alarmed Object Name	Alarm	ed Object Type	Is Acknowled	Alarm Na	Probable	Cause		Last 🔻	> Gene	ral		
	-							-			-		> Seve	rity		
warning		EMS-1-PSS32BA02	PSS32BA02	11DPM8_1_2_L1	hip.EN	4SEquipment		OpticalAla	threshold	dCrossed		201 🔺	> Ackn	owledgement		
warning		EMS-1-PSS32BA02	PSS32BA02	11DPM8_1_2_L1	hip.EN	ASEquipment		OpticalAla	threshold	Crossed		201	Acknowledgement Notes			
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_13_C5	hip.EN	4SEquipment		OpticalAla	threshold	dCrossed		201				
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_13_L1	hip.6*			thresho	threshold	dCrossed		201	> Stati	stics		
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_10_L1	hip.E	Show Impact	S		threshold	Crossed		201 201	✓ Description			
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_13_L1	hip.E	Show Root C	auses		threshold	dCrossed						
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_13_C5	hip.E	Show Object	Impacts	threshold	dCrossed		201	× Remedial Action				
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_10_C5	hip.E	Show Object	Point Of View	threshold	dCrossed		201	* Rem	Coldt Action			
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_10_C5	hip.E				threshold	dCrossed		201				
warning		EMS-1-PSS32BA02	PSS32BA02	112SNX10_1_10_C5	hip.E	hip.E	Alarm(c)		threshold	dCrossed		201	> Addi	tional Text		
warning		EMS-1-SVTPSS81	SVTPSS81	20P200_5_3_4	hip.E	Acknowledg	e Addrin(s)		threshold	dCrossed		201	Custom Text Specific Problem			
warning		EMS-1-SVTPSS81	SVTPSS81	20P200_5_3_1	hip.E	Assign Sever	ity		threshold	dCrossed		201				
warning		EMS-1-SAMINT2	SAMINT2	11STAR1_1_2_L1	hip.E	Assign Urger	ncy		threshold	dCrossed		201	· spec	nerrobien		
minor		EMS-1-Opt_Connection	Opt_Connection	Opt_Connection	netw	Assign OLC S	itate		threshold	dCrossed		201				
critical		EMS-1-TSAL0SITE2	TSAL0SITE2	D5X500_1_2_L1	hip.E	Edit Custom	Text		lossOfSig	Inal		201				
major		EMS-1-TSAL0SITE2	TSAL0SITE2	D5X500_1_2_L1	hip.E	Delete Alarn	n(s)		lossOFSig	inal		201				
major		EMS-1-Opt_Connection	Opt_Connection	Opt_Connection	netw	Clear Alarm(5)		transmiss	sionError		201				
major		EMS-1-MP_HIP_1_OCS	MP_HIP_1_OCS	PORT_1_1_37_1	hip.E	Cical Atalini	2)		degraded	Signal		201				
major		EMS-1-Opt_Connection	Opt_Connection	Opt_Connection	netv	-			transmiss	sionError		201				
major		EMS-1-MP_HIP_1_OCS	MP_HIP_1_OCS	PORT_1_1_37_1	hip.E	Show Affect	ed Object		underlyin	gResourceUnavai	ila	201				
warning		EMS-1-SVTPSS81	SVTPSS81	ODU4_5_3_BP2	hip.E	View Alarm(s) History		threshold	dCrossed		201				
warning		EMS-1-SVTPSS81	SVTPSS81	ODU4_5_3_BP2	hip.E	Diew Object	s) Alarm History		threshold	dCrossed		201 🖵				
-					-	View Curren	and Historical Alar	ms Snapshot				+				
O Auto Refi	reshing	2016/04/12 12:47:06 978	+05:30 GMT			Open in Cop	Window			c	Count :	2729	-	_	_	Þ

Figure 22 Navigation from the 5620 SAM Fault Management Application





Navigation to the correlated alarms

You can navigate to the correlated alarms in the 1350 OMS RCA/alarms tab of 360 view on a connection from 5620 SAM Fault Management Application. See 5.4 "To enable the 1350 OMS cross-launch from the 5620 SAM FM application" (p. 68) and 5.5 "To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application" (p. 70) for more information about cross launch from the 5620 SAM FM application to the 1350 OMS.

NDKIA 5620 SAM - Fault Management User : admin 🛧													
Top Unhealthy NEs	Alarm List Toj	o Problems Inspecto	r										
						G 2,188	M 257	<mark>m 178 🛛 😗 101 🖉 📾</mark>	0				
E V Alarm List Show Root Causes Only Y Saved Filter No Filter V									- Y 7. Q 🗠 -				
Severity	Site ID	Site Name	Alarmed C	bject Name	Alarmed Object Type	Is Acknowled	Alarm Na	Probable Cause	Last 🔻	> General			
•							*	*		> Severity			
warning	EMS-1-PSS32BA02	PSS32BA02	11DPM8_1	_2_L1	hip.EMSEquipment		OpticalAla	thresholdCrossed	201 🔺	> Acknowledgement			
warning	EMS-1-PSS32BA02	PSS32BA02	11DPM8_1	_2_L1	hip.EMSEquipment		OpticalAla	thresholdCrossed	201	A described and a second block of			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX10	_1_13_C5	hip.EMSEquipment		OpticalAla	thresholdCrossed	201	 Acknowledgement wotes 			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX				OpticalAla	thresholdCrossed	201	Statistics			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX	Show Impact	5		OpticalAla	thresholdCrossed	201	 Description 			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX	Show Root C	auses		OpticalAla	thresholdCrossed	201				
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX	Show Object	Impacts		OpticalAla	thresholdCrossed	201	× Remedial áction			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX	Show Object	Point Of View		OpticalAla	thresholdCrossed	201	Refiledial Action			
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX				OpticalAla	thresholdCrossed	201				
warning	EMS-1-PSS32BA02	PSS32BA02	1125NX	Acknowledge	Alacta(c)		OpticalAla	thresholdCrossed	201	> Additional Text			
warning	EMS-1-SVTPSS81	SVTPSS81	20P200	Acknowledge	e Aldini(s)		OpticalAla	thresholdCrossed	201	Custom Text			
warning	EMS-1-SVTPSS81	SVTPSS81	20P200	Assign Sever	ity		OpticalAla	thresholdCrossed	201	> Specific Problem			
critical	EMS-1-TSAL0SITE2	TSAL0SITE2	D5X500	Assign Urger	ncy		OpticalAla	lossOfSignal	201	- Specific Fromen			
major	EMS-1-TSAL0SITE2	TSAL0SITE2	D5X500	Assign OLC S	itate		OpticalAla	lossOfSignal	201				
major	EMS-1-Opt_Connection	Opt_Connection	Opt_Co	Edit Custom	Text		OpticalAla	transmissionError	201				
major	EMS-1-MP_HIP_1_OCS	MP_HIP_1_OCS	PORT_1	Delete Alarm	n(s)		OpticalAla	degradedSignal	201				
major	EMS-1-Opt_Connection	Opt_Connection	Opt_Co	Clear Alarm/	5)		OpticalAla	transmissionError	201				
major	EMS-1-MP_HIP_1_OCS	MP_HIP_1_OCS	PORT_1	Cical Alaring	2)		OpticalAla	underlyingResourceUnavaila	201				
warning	EMS-1-SVTPSS81	SVTPSS81	ODU4_5	10			OpticalAla	thresholdCrossed	201				
warning	EMS-1-SVTPSS81	SVTPSS81	ODU4_5	2 Show Affect	ed Object		OpticalAla	thresholdCrossed	201				
warning	EMS-1-SVTPSS81	SVTPSS81	ODU4_5	View Alarm(s) History		OpticalAla	thresholdCrossed	201				
warning	EMS-1-SVTPSS81	SVTPSS81	ODU4_5	View Object	s) Alarm History		OpticalAla	thresholdCrossed	201 🖵				
				View Curren	t and Historical Alarms Snaps	shot			Þ				
Auto Refreshing 2016/04/12 12:56:08 069 +05:30 GMT				Open in Cop	y Window			Count :	2725	<			

Figure 24 Navigation from the 5620 SAM Fault Management Application

	JKIA	1350 o	ptical Manag	ement Sys	stem									Jser: sam	viewer [+
De	esign	Deploy	Operat	e Ad	Iministe	۲									≡ 1
Ор	erate >	Infrastructu	re Connections	> Infrast	tructure: Bi	harath-D5X500-ODU4-	-LL OTU4X2#	1 >							
\$	Bharabh-DSX500-0DU4-LL OTU4X2#1											2			
Ala	ms Se	ervers	Clients	Route	Structure	Link Connections	PM Enabled	d Points							
	8 🚍 1 🕎 8	8													
	NE		NE Se	Ve Port/SNC		NE SA/NSA	Alarm	Туре	NE Probable Cause	Time Raised	Connection Rate	Connection Name/A	NML Probable Cause	NML	Severity O
0	TSALOSITE	1	0	SLOT-1-2	-	Service Affecting	Primary	/	Card missing	3/24/2016 3:52:47 PM	Not_Applicable	Not_Applicable	Equipment Failure		0 1
0	TSALOSITE	1	0	SLOT-1-8	9	Service Affecting	Primar	/	Card missing	3/24/2016 4:43:24 PM	Not_Applicable	Not_Applicable	Equipment Failure		0
0	TSALOSITE	1	0	SLOT-1-9	9	Service Affecting	Primar	/	Card missing	3/24/2016 4:43:42 PM	Not_Applicable	Not_Applicable	Equipment Failure		0
0	TSALOSITE	2	0	SLOT-1-9	9	Service Affecting	Primar	/	Card missing	3/24/2016 4:49:02 PM	Not_Applicable	Not_Applicable	Equipment Failure		0
0	TSALOSITE	2	0	OCH-1-2-L	1 /	Affecting	Primar	/	Loss of Signal - OTU	4/12/2016 11:33:46 AM	OTU4x2	Bharath-D5X500-OI	Transport Failure		•
0	TSALOSITE	2	0	OCH-1-2-L	1 1	Non-Affecting	Priman	/	Underlying resource unavai	4/12/2016 11:33:46 AM	OTU4x2	Bharath-D5X500-OI	Transport Failure		•
0	TSALOSITE	2		OCH-1-2-L	1 1	Non-Affecting	Second	ary	Indicates an OPTH tidemar	3/24/2016 5:33:40 PM	OTU4x2	Bharath-D5X500-OI	Quality Threshold Cr	ossed	0
0	TSALOSITE	2		OCH-1-2-L	1 1	Non-Affecting	Second	ary	Indicates an OPRL tidemark	3/24/2016 6:17:04 PM	OTU4x2	Bharath-D5X500-OI	Quality Threshold Cr	ossed	0
													« <	1 > » (25 ¥

Figure 25 Navigation to the 1350 OMS correlated alarms

5.4 To enable the 1350 OMS cross-launch from the 5620 SAM FM application

5.4.1 Purpose

The following steps describe how to enable 5620 SAM FM application users to open an 1350 OMS management window using an FM contextual menu option.



The procedure changes the 5620 SAM system configuration. A configuration change may have serious consequences such as service disruption.

Contact technical support before you attempt to modify the 5620 SAM system configuration.

1 ______

3 _____



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

5.4.2 Steps

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

2 ------

Open a console window.

Enter the following:

bash\$ cd /opt/5620sam/server/nms/config

4 _____

Create a backup copy of the nms-server.xml file.

5 _____

Open the nms-server.xml file using a plain-text editor such as vi.

6 _____

Locate the section that begins with the following tag:

<integration

Edit the following line in the section to read: navigationEnabled="true"

8 —

7 _____

Save and close the nms-server.xml file.

9 —

Enter the following: bash\$ cd ../bin

10 _____

Enter the following:

bash\$./nmsserver.bash read_config 4

The main server reads the updated configuration and puts the change into effect.

11 _____

Close the console window.

5.5 To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application

5.5.1 Steps

Log in to the 5620 SAM FM application.

Click on the Alarm List tab. The alarm list is displayed.

3 —

1 _____

2 —

Right-click on an alarm entry and choose Show Affected Object. The details of the chosen alarm opens on the 1350 OMS web GUI in the default browser, according to the defined URL for the link.

6 Troubleshooting

6.1 Overview

6.1.1 Purpose

This chapter describes how to troubleshoot problems when you are working on the OIM.

6.1.2 Contents

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6.3	To acknowledge alarms	73
6.4	Problem: Client not receiving server heartbeat messages	74
6.5	Problem: EMS is unreachable	75
6.6	Problem: HIP cannot complete 5620 SAM synchronization after restarting OIS (NBI)	76

6.2 Troubleshooting

6.2.1 Introduction

The *5620 SAM Troubleshooting Guide* provides information about the *5620 SAM* and troubleshooting using alarms, OAM tools for service troubleshooting, and network management domain troubleshooting for the *5620 SAM* software and platforms.

6.2.2 Acknowledge alarms

When you acknowledge the alarms in the 5620 SAM, the alarms are acknowledged also in the 1350 OMS. See 6.3 "To acknowledge alarms" (p. 73) for more information about how to acknowledge alarms.
6.3 To acknowledge alarms

6.3.1 Purpose

When you select an alarm to investigate the root cause, you should acknowledge the alarm and its related problems to indicate that the problem is under investigation. This ensures that duplicate resources are not applied to the same problem.

6.3.2 Steps

1 -

To acknowledge the selected alarm:

1. Right-click on the selected alarm in the dynamic alarm list and choose Acknowledge Alarm(s). The Alarm Acknowledgment form opens.

If required, add text in the Acknowledgment Text box.

- 2. Select the Acknowledgement check box and click OK.
- 3. Click OK. A check mark appears for the selected alarm under the Acknowledged column in the dynamic alarm list.
- 2 –

To acknowledge multiple, correlated alarms:

- 1. Right-click on the selected alarm in the dynamic alarm list and choose Show Affected Object. The Properties form for the object opens.
- 2. Click on the Faults tab, then click on the Object Alarms, Alarms on Related Objects, or Affected Objects tab to display the alarms related to the affected object.
- 3. Choose all the alarms listed.
- Right-click on the alarm list, then choose Acknowledge Alarm(s). The Alarm Acknowledgement form opens and lists all of the selected alarms. If required, add text in the Acknowledgement Text box.
- 5. Click OK to continue. A check mark appears for each of the selected alarms under the Ack. column in the dynamic alarm list.

END OF STEPS -

6.4 Problem: Client not receiving server heartbeat messages

6.4.1 Purpose

Perform this procedure when a 5620 SAM client is not receiving heartbeat messages.

6.4.2 Steps

Verify the network connectivity between the 5620 SAM and 1350 OMS.

2 _____

1 _____

Verify that the 5620 SAM server and client clocks are synchronized. To set the date and time for 5620 SAM server and client clocks, see the *5620 SAM System Administrator Guide* for more information.

END OF STEPS -

6.5 **Problem: EMS is unreachable**

6.5.1 Purpose

Perform this procedure when an EMS is unreachable.

6.5.2 Steps

1 _____

Verify that the Administrative State parameter on the EM System (Edit) form is set to Up.

END OF STEPS -

6.6 Problem: HIP cannot complete 5620 SAM synchronization after restarting OIS (NBI)

6.6.1 Purpose

Perform this procedure to synchronize the 1350 OMS and the 5620 SAM after you remove an NE from the 1350 OMS, the 5620 SAM inventory does not reflect the change, and continues to list the NE in the inventory list.

6.6.2 Steps

1 –

Enter the following to stop the OIM application to ensure that the current HIP process is terminated and more than one HIP processes are not in progress simultaneously.

...,root,root # /usr/Systems/OTN*Master/WDM_APPL/bin/hip_stop

2 —

Configure HIP on the 1350 OMS to complete the 5620 SAM and 1350 OMS synchronization. See Procedure 3.4 "To configure HIP on the 1350 OMS" (p. 24) for more information about how to configure HIP on the 1350 OMS.



Note: When you restart the OIM application, the 5620 SAM re-synchronizes the inventory by retrieving all objects from the OIM. The operation can take a long time to complete depending on the size of the 1350 OMS network.

END OF STEPS