



**5620 SAM and 1350 OMS
IP Optics Management
14.0 R6**

**Optical Integration Module User
Guide**

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Contents

About this document	5
1 What's new?	7
1.1 Overview	7
1.2 Structure of safety statements.....	8
1.3 What's new in 5620 SAM Release 14.0 for OIM	10
2 Platform architecture	13
2.1 Overview	13
2.2 Introduction.....	14
2.3 Single hardware infrastructure	16
3 User and HIP configuration in the 1350 OMS	19
3.1 Overview	19
3.2 Workflow for configuring HIP on the 1350 OMS.....	20
3.3 To configure the "samviewer" user on the 1350 OMS	21
3.4 To configure HIP on the 1350 OMS.....	26
4 Network topology and inventory	31
4.1 Overview	31
1350 OMS management as an EMS	33
4.2 Overview	33
4.3 Managing the 1350 OMS as an EMS in the 5620 SAM	34
4.4 OIM workspace	39
4.5 OIM considerations and limitations	40
4.6 To manage the 1350 OMS as an EMS in the 5620 SAM	41
4.7 To change the HIP user name and password	43
4.8 To view HIP-NE location and version from the equipment tree	46
4.9 To view the HIP-NE version and location from the inventory list	48
Node navigation	50
4.10 Overview	50
4.11 Optical node navigation.....	51
4.12 To cross-launch the 1350 OMS web GUI from an optical node or a link context	54

Link navigation	56
4.13 Overview	56
4.14 Optical link navigation	57
Link configuration between 7750 SR and 1830 PSS HIP node	62
4.15 Overview	62
4.16 To create a link between a 7750 SR and 1830 PSS HIP node	63
Delete a 1350 OMS EMS	64
4.17 Overview	64
4.18 To delete a 1350 OMS EMS from the 5620 SAM	65
5 OSS integration and fault management	67
5.1 Overview	67
5.2 OSS integration	68
5.3 Fault and event management.....	69
5.4 To enable the 1350 OMS cross-launch from the 5620 SAM FM application	74
5.5 To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application.....	76
6 Troubleshooting	77
6.1 Overview	77
6.2 Troubleshooting.....	78
6.3 To acknowledge alarms.....	79
6.4 To unacknowledge alarms.....	80
6.5 Problem: Client not receiving server heartbeat messages.....	81
6.6 Problem: EMS is unreachable.....	82

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.

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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*.

1.1.2 Contents

1.1	Overview	7
1.2	Structure of safety statements	8
1.3	What's new in 5620 SAM Release 14.0 for OIM	10

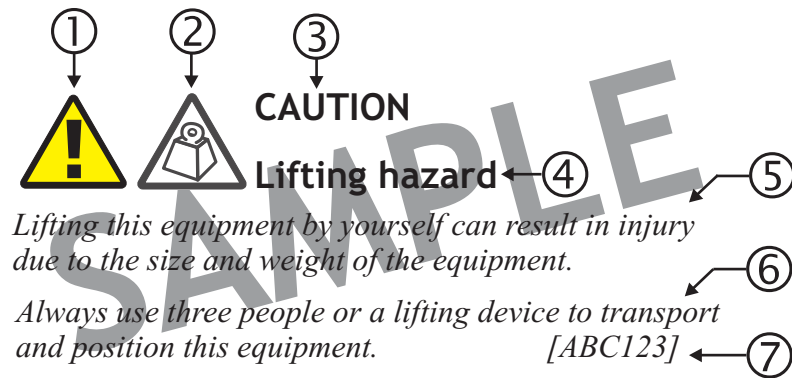
1.2 Structure of safety statements

1.2.1 Overview

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

1.2.2 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)

1.2.3 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.

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

1.3.1 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.

1.3.2 What's new in 5620 SAM Release 14.0 R5 for OIM

[Table 1, "5620 SAM Release 14.0 R5 1830 PSS features" \(p. 10\)](#), lists the features and functions added in 5620 SAM Release 14.0 R5 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 R5 1830 PSS features

Feature	Description and Reference
HIP configuration modifications	HIP configuration procedures updated. 3.4 "To configure HIP on the 1350 OMS" (p. 26) 4.6 "To manage the 1350 OMS as an EMS in the 5620 SAM" (p. 41) 4.7 "To change the HIP user name and password" (p. 43)
SAM-87840 — Move HIP NEs to any equipment group	Moving HIP NEs to any equipment group is supported. 4.3.2 "EMS equipment group" (p. 34)
SAM-87842 — High availability enhancements	When switch-over happens from active to spare or spare to active servers, all of the configuration in both 5620 SAM and 1350 OMS are retained. 2.3.2 "High availability" (p. 16)
SAM-87844 — Switch-over to DRC from 5620 SAM or 1350 OMS	The 5620 SAM supports automatic switch over to the active 1350 OMS server for HIP communication after manual or disaster switch over. 2.3.2 "High availability" (p. 16)
SAM-88035 — OIM workspace	OIM workspace support. 4.4.2 "OIM workspace" (p. 39)
SAM-88956 — Unacknowledge alarms	You can unacknowledge 1350 OMS alarms only from the 5620 SAM FM application. 6.2.3 "Unacknowledge alarms" (p. 78) 6.4 "To unacknowledge alarms" (p. 80)
SAM-89222 — Disable navigation to shelf, card, and port.	You cannot navigate from the shelf, card, or port objects in the 5620 SAM equipment tree to the 1350 OMS equipment view.

Table 1 5620 SAM Release 14.0 R5 1830 PSS features (continued)

Feature	Description and Reference
SAM-89224 — Object and link labels to align with 1350 OMS	<p>The following modifications are supported:</p> <ul style="list-style-type: none"> physical link display name size increased to 138 characters. physical inventory object display name size increased to 42 characters supports for special characters in the physical link name except <code>:</code>, <code>/</code>, and <code>@</code> supports only <code>_</code> special character for the node label Acknowledged By and Cleared By fields increased to 64 characters <p>4.5 "OIM considerations and limitations" (p. 40)</p>

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

[Table 2, "5620 SAM Release 14.0 R3 1830 PSS features" \(p. 11\)](#), 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 2 5620 SAM Release 14.0 R3 1830 PSS features

Feature	Description and Reference
SAM-82617 — Additional features for OMS integration	<p>The additional features include:</p> <ul style="list-style-type: none"> allow non-HIP NEs in an EMS group link URL appears 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 <p>4.3.2 "EMS equipment group" (p. 34) "Link navigation URL — Physical link — syntax" (p. 37) 4.16 "To create a link between a 7750 SR and 1830 PSS HIP node" (p. 63) 4.14.3 "MPLS link navigation" (p. 60)</p>
SAM-83974 — HIP NE version and location	<p>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.</p> <p>See 4.3.3 "HIP NE version and location" (p. 35)</p>

Table 2 5620 SAM Release 14.0 R3 1830 PSS features (continued)

Feature	Description and Reference
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. 4.11 "Optical node navigation" (p. 51)

2 Platform architecture

2.1 Overview

2.1.1 Purpose

This chapter provides information about the OIM platform architecture.

2.1.2 Contents

2.1	Overview	13
2.2	Introduction	14
2.3	Single hardware infrastructure	16

2.2 Introduction

2.2.1 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.

2.2.2 1350 OMS integration with the 5620 SAM

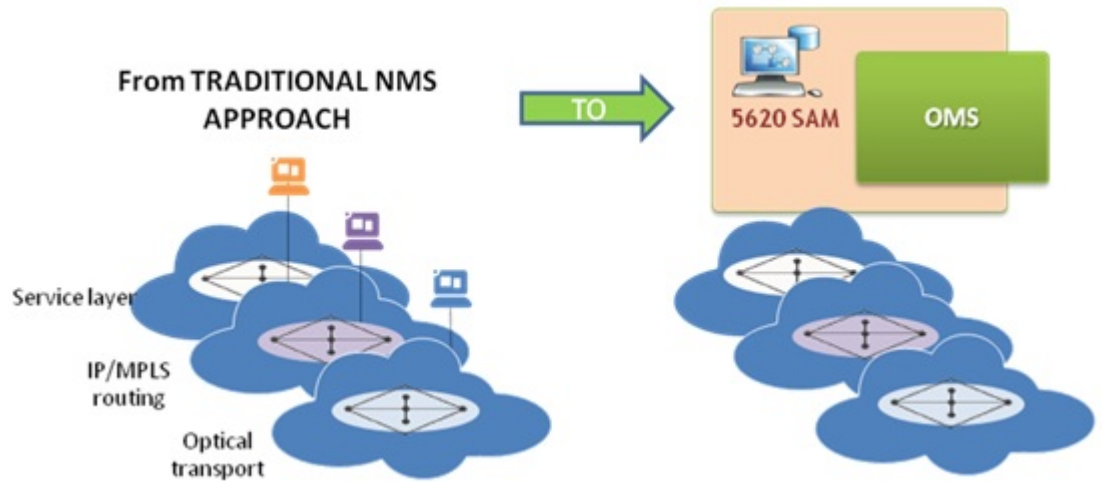
The 5620 SAM and 1350 OMS integration for an 1830 PSS based OTN network includes the following objectives:

- 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.

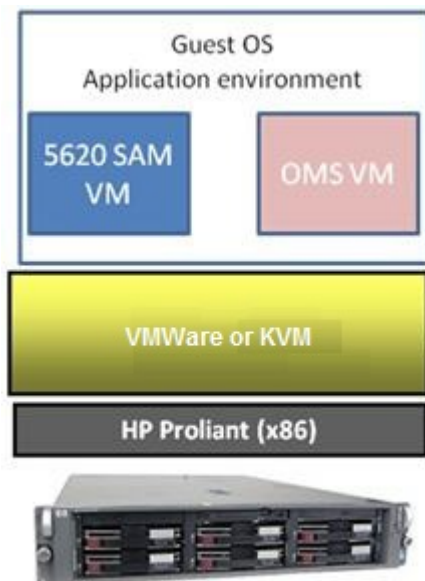
2.3 Single hardware infrastructure

2.3.1 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



2.3.2 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 virtual machines are coresident in the same machine. The 5620 SAM automatically connects to the active 1350 OMS server for HIP communication after manual or disaster switch over happens. The 5620 SAM alternates between the two IP addresses, server IP address and the second server IP address, until one of the servers is active and then requests a resynchronization. The objects, alarms, and links sent by the standby 1350 OMS after the switch over is consistent with what was sent by the previous active server.

i **Note:** Ensure that the data replication is configured in the 1350 OMS before switch over and both the active and standby servers are synchronized.

When switch-over happens from active (main) server to spare (DRC) server:

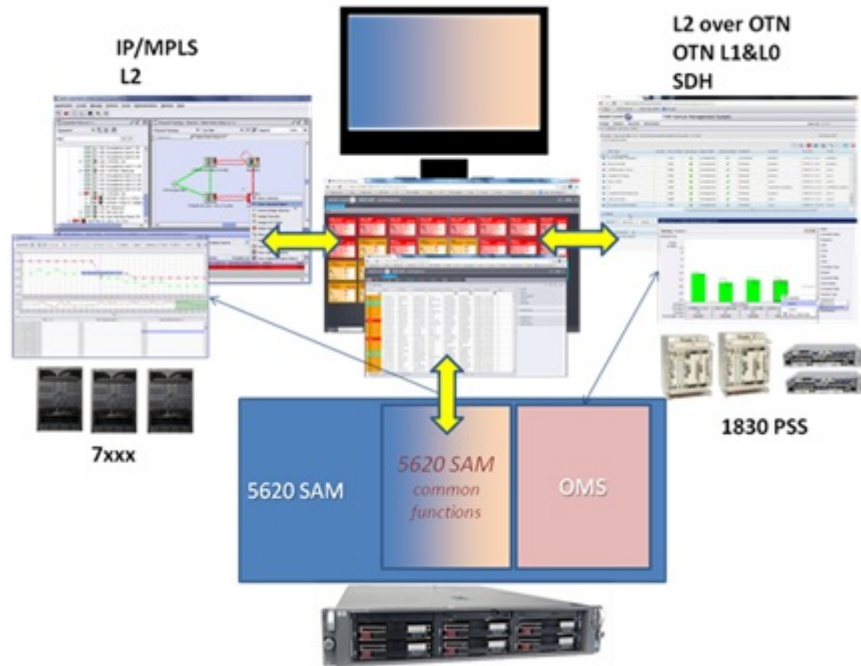
- HIP reactivation happens automatically
- configurations in both the 5620 SAM and 1350 OMS are retained
- hardware inventory is available in both the 5620 SAM and 1350 OMS
- physical links between 1830 PSS and 1830 PSS are retained in both the 5620 SAM and 1350 OMS
- physical links between 1830 PSS and SR are retained in the 5620 SAM
- active alarms and the alarm status in the 5620 SAM are synchronized with the number of active alarms in the 1350 OMS

2.3.3 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. The [Figure 3, “System layout” \(p. 18\)](#) shows the 5620 SAM and the 1350 OMS system layout.

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

3.1	Overview	19
3.2	Workflow for configuring HIP on the 1350 OMS	20
3.3	To configure the “samviewer” user on the 1350 OMS	21
3.4	To configure HIP on the 1350 OMS	26

3.2 Workflow for configuring HIP on the 1350 OMS

3.2.1 Introduction

HIP is implemented in the HI component embedded in the 1350 OMS OTN package. HIP is automatically configured with the following default values during the 1350 OMS installation.

User: oms

Password: oms

Port: 28082

FM.HIP = No

You must configure the *FM.HIP* parameter as **YES** to activate HIP on the 1350 OMS. See [3.4 "To configure HIP on the 1350 OMS" \(p. 26\)](#) for more information about configuring HIP on the 1350 OMS. When you configure the EM system in the 5620 SAM, you must provide the default user name, password and port that are available in the 1350 OMS IntegrationDetails file to connect to HIP. See [4.6 "To manage the 1350 OMS as an EMS in the 5620 SAM" \(p. 41\)](#) for more information about managing the 1350 OMS as an EMS in the 5620 SAM.

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" \(p. 21\)](#).

2

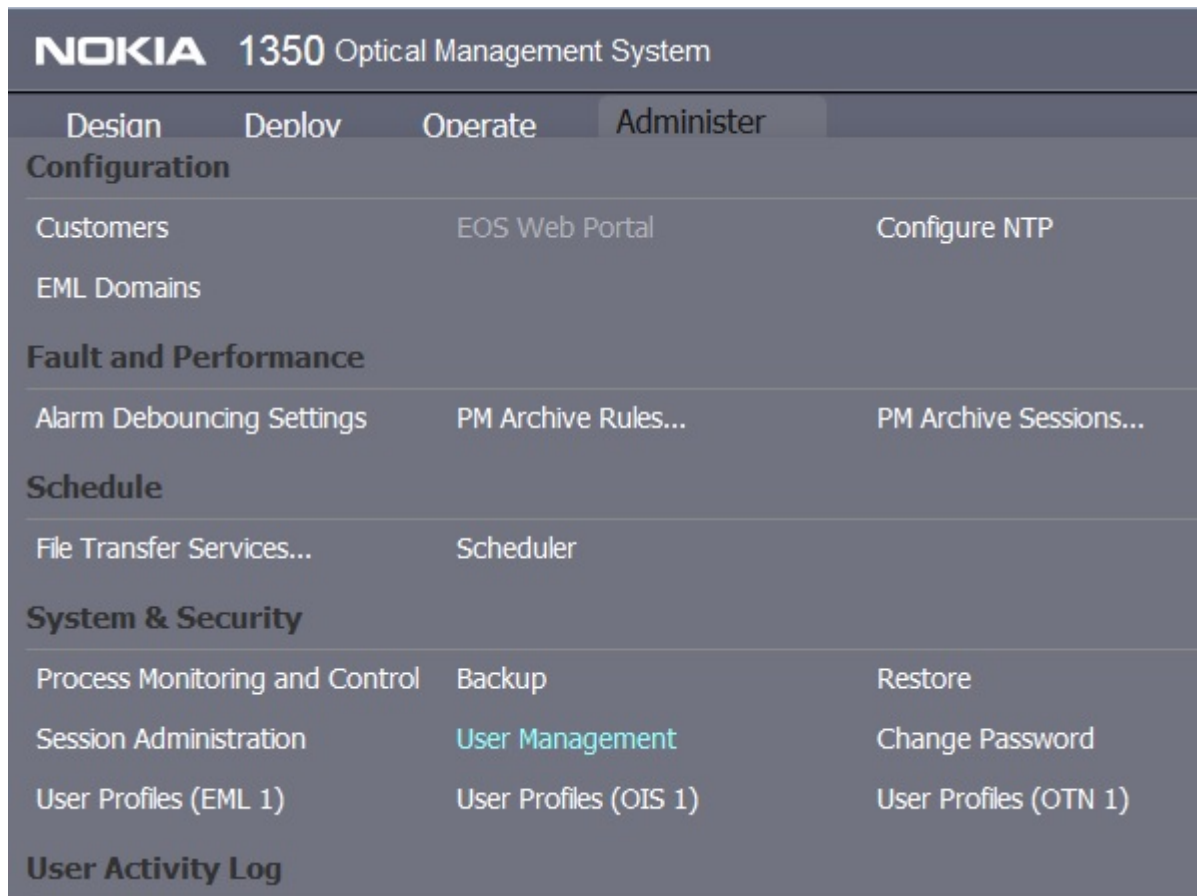
Configure HIP on the 1350 OMS platform of the OTN virtual machine. See [3.4 "To configure HIP on the 1350 OMS" \(p. 26\)](#).

3.3 To configure the “samviewer” user on the 1350 OMS

3.3.1 Steps

1

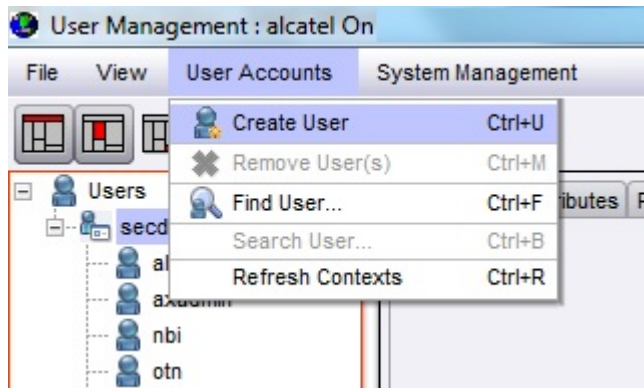
Log in to the 1350 OMS Presentation and choose Administer→User Management from the web GUI main menu.



Result: The User Management application opens.

2

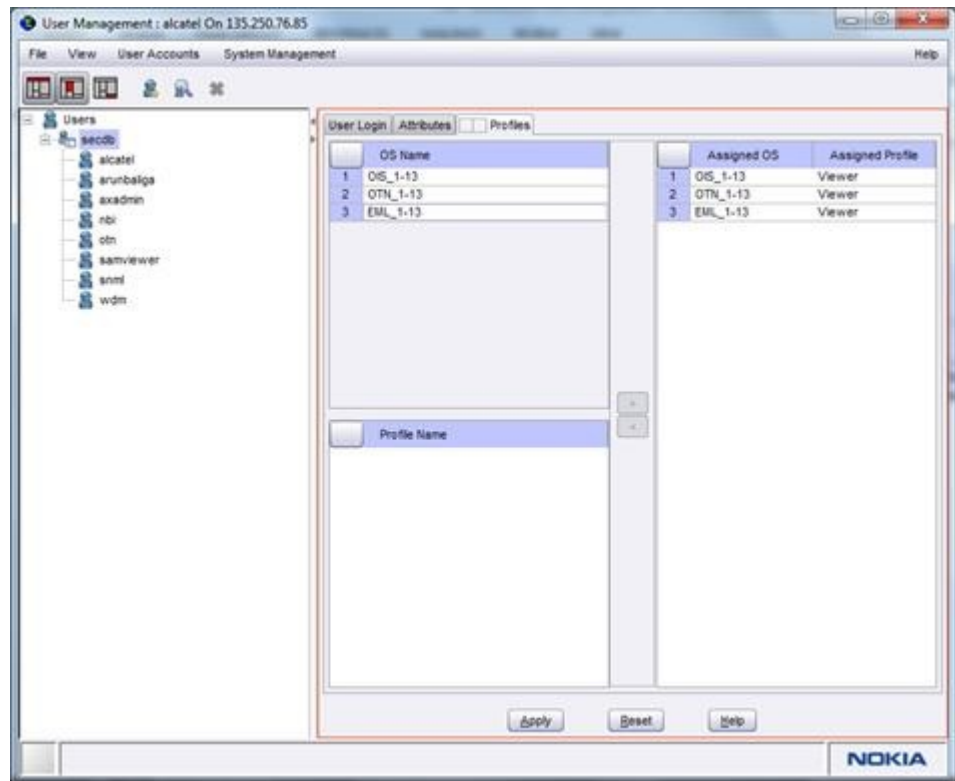
On the navigation tree, expand secdb and choose User Accounts→Create User from the User Management main menu. The Log in Info form appears.



3

Configure the following parameters:

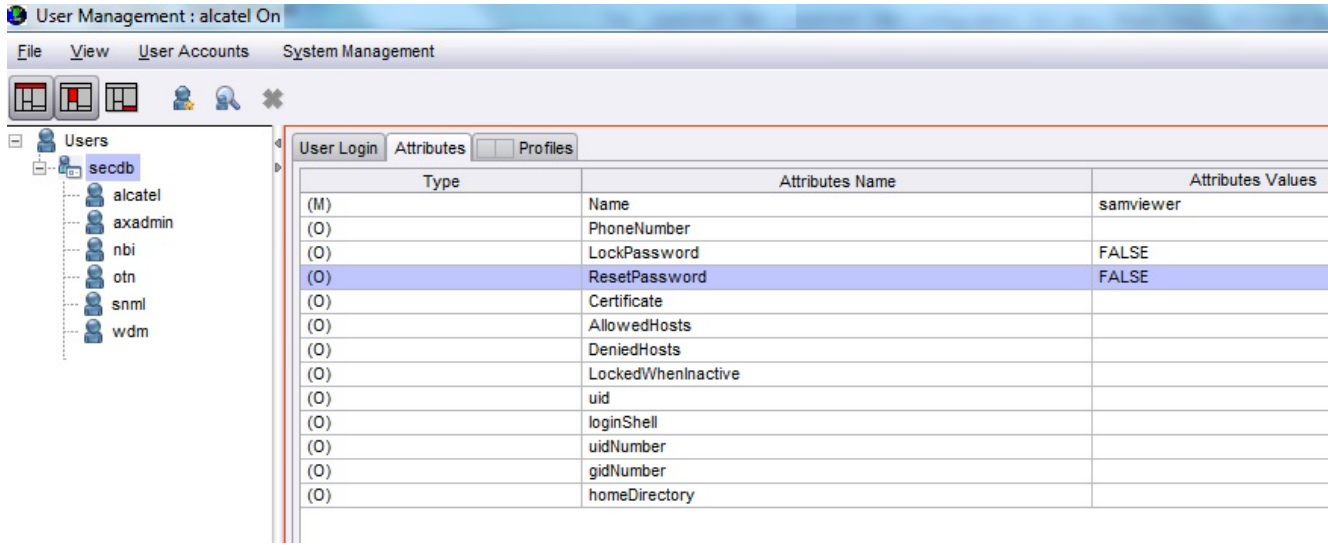
- Log in: *samviewer*
- New Password
- Confirm Password



4

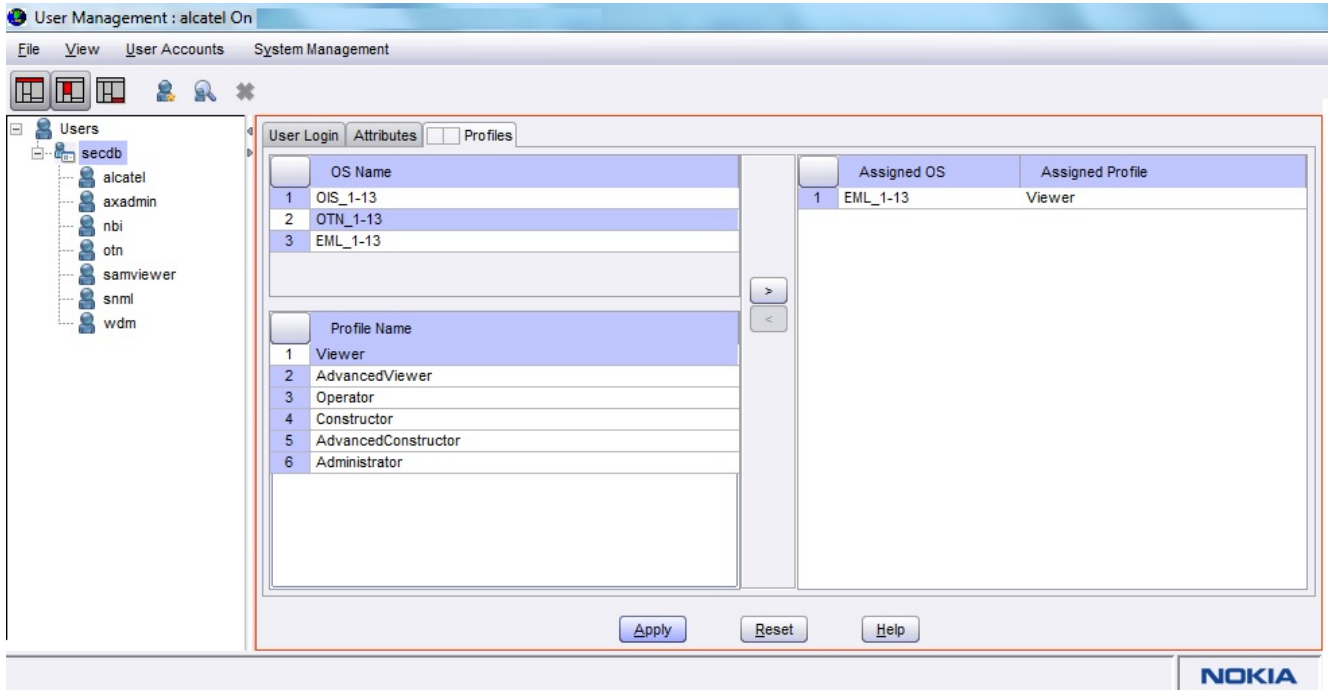
Click on the Attributes tab and configure the following parameters:

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



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.



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

6 _____

Save your changes and close the forms.

END OF STEPS _____

3.4 To configure HIP on the 1350 OMS

3.4.1 Steps

Start HIP from CLI

1 _____
Log in to the 1350 OMS-OTN VM as user `otn` .

2 _____
Perform the following to execute the `lt_param_reconfig` script:

```
SVTOTNE,gadmin,otn # pwd
```

```
/usr/Systems/OTNE_1/WDM_PLATFORM/script
```

```
SVTOTNE,gadmin,otn # ls
```

```
SVTOTNE,gadmin,otn # ./lt_param_reconfig
```

Result: The following output appears:

```
*****
```

```
System parameters main menu:
```

```
*****
```

```
Select One of the following:
```

```
1) Element Administration Variables
```

```
2) Connection Variables
```

```
3) Order Handling Variables
```

```
4) System Variables
```

```
5) NBI Variables
```

```
6) FM Variables
```

```
7) Display Current Values
```

```
Type in the number to select a sub-menu [1-7] or quit[Q,q]:
```

3
Enter **6**.**Result:** The following output appears:

FM parameters Menu:

- 1) Enable HIP [NO]
- 2) HIP User [oms]
- 3) HIP Password [oms]
- 4) EMS User [alcatel]
- 5) EMS Password [alcatel]

Enter parameter to be modified [1-5] or previous menu [P,p]
or quit [Q,q]:

4
Enter **1**.**Result:** The following output appears:

Enter choice [y,p,q]:

5
Enter **y**.

Restart HIP from PMC

6

Log in to the 1350 OMS WebUI and choose Administer→System Monitor from the main menu.



Note: HIP restart should always be from the Processes Monitoring and Control. Do not restart HIP from the command line.

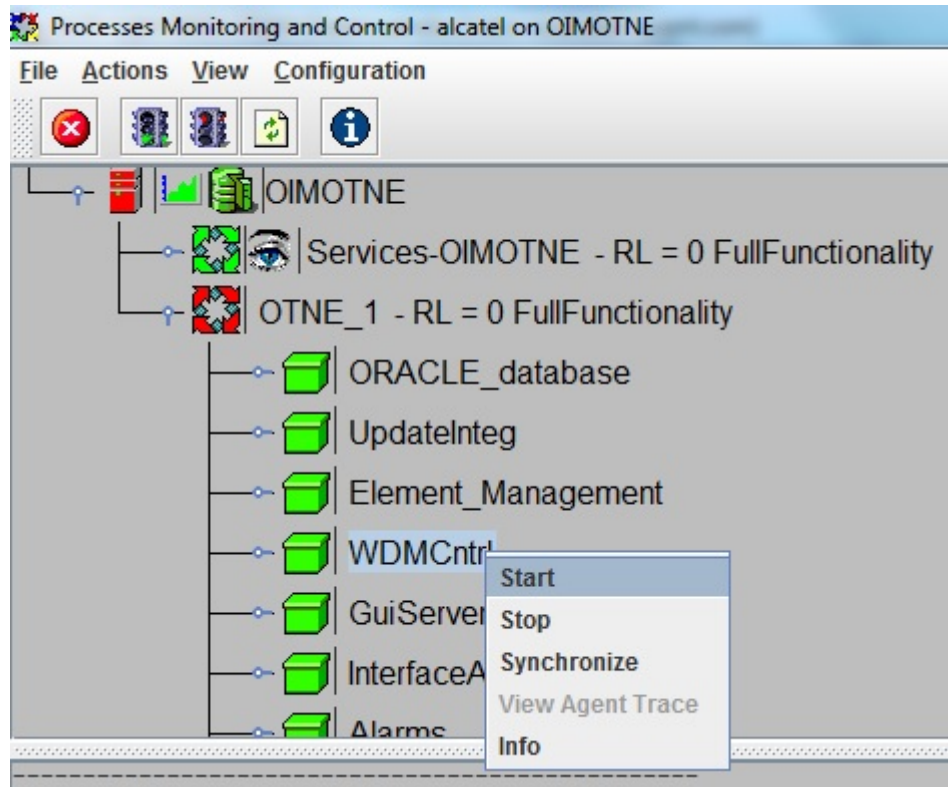
Result: The Processes Monitoring and Control GUI opens.

7

On the navigation tree, expand PMC→OIMOTNE→OTN_1 — RL = 0
FullFunctionality→WDMCtrl and choose WDM_FM.

8

To start HIP configuration, right-click on WDM_FM and choose Start.



Result:

When the HIP configuration 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.

Stop HIP

9

To stop HIP configuration, right-click on WDM_FM and choose Stop.

Result: When you restart the HIP configuration, 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.

**Note:**

- Ensure that you stop `jvm_hip` process from the Processes Monitoring and Control before HIP restart. The HIP restart should always be performed from the Processes Monitoring and Control.
- The HIP restart should not be performed from the command line interface.
- The `jvm_hip` process is respawned a few seconds after the HIP process is stopped.

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.

4.1.2 Contents

4.1	Overview	31
	1350 OMS management as an EMS	33
4.2	Overview	33
4.3	Managing the 1350 OMS as an EMS in the 5620 SAM	34
4.4	OIM workspace	39
4.5	OIM considerations and limitations	40
4.6	To manage the 1350 OMS as an EMS in the 5620 SAM	41
4.7	To change the HIP user name and password	43
4.8	To view HIP-NE location and version from the equipment tree	46
4.9	To view the HIP-NE version and location from the inventory list	48
	Node navigation	50
4.10	Overview	50
4.11	Optical node navigation	51
4.12	To cross-launch the 1350 OMS web GUI from an optical node or a link context	54
	Link navigation	56
4.13	Overview	56
4.14	Optical link navigation	57
	Link configuration between 7750 SR and 1830 PSS HIP node	62
4.15	Overview	62
4.16	To create a link between a 7750 SR and 1830 PSS HIP node	63
	Delete a 1350 OMS EMS	64

4.17 Overview	64
4.18 To delete a 1350 OMS EMS from the 5620 SAM	65

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.

4.2.2 Contents

4.2	Overview	33
4.3	Managing the 1350 OMS as an EMS in the 5620 SAM	34
4.4	OIM workspace	39
4.5	OIM considerations and limitations	40
4.6	To manage the 1350 OMS as an EMS in the 5620 SAM	41
4.7	To change the HIP user name and password	43
4.8	To view HIP-NE location and version from the equipment tree	46
4.9	To view the HIP-NE version and location from the inventory list	48

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)

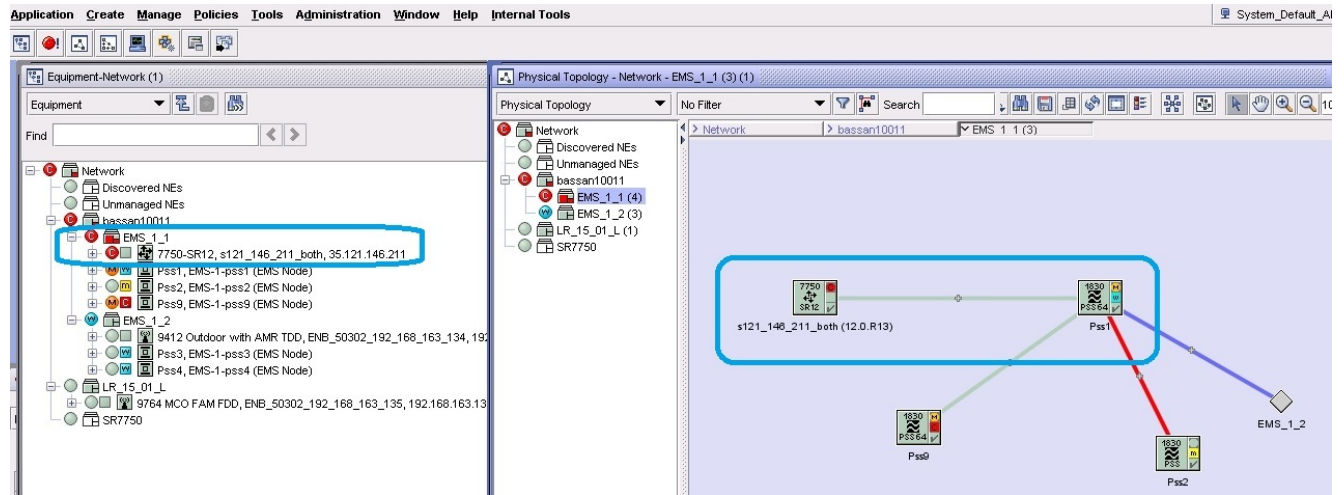
4.3.2 EMS equipment group

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 [4.6 “To manage the 1350 OMS as an EMS in the 5620 SAM” \(p. 41\)](#) for more information about creating an EMS equipment group.

You can move the HIP and non-HIP NEs to and from the EMS equipment groups by clicking and dragging icons on the navigation tree or topology map. 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.

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 [4.8 “To view HIP-NE location and version from the equipment tree” \(p. 46\)](#) for more information about how to view the NE version and location from the equipment tree.

See [4.9 “To view the HIP-NE version and location from the inventory list” \(p. 48\)](#) 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 following navigation URLs are supported:

- NE URL — syntax is set at the EM System creation
- PSS-PSS Link URL — syntax is set at the EM System creation
- PSS-SR Link URL — syntax is set at the Physical Link level

NE navigation URL syntax

```
https://$activeEmsAddress/oms1350/mainOtn/extNav?entity=
node&nern=$rn&displayName=$displayedName&typeDescription=
$typeDescription&timestamps=$timestamps&samServerAddress=
```

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

The URL appears in the Element Manager (Edit) form.

See [Figure 5, “Link URL — Element manager”](#) (p. 35)

PSS-PSS Link navigation URL — Element manager — syntax

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

The URL appears in the Element Manager (Edit) form.

Figure 5 Link URL — Element manager

Element Manager - type-Element Manager-MAINOTNE [Edit]

General Faults

Connection Status: Second Server IP Address: 135.250.73.9 Second Server Port Number: 28082

▼ Identification

User Name: oms

Password:

▼ Connection Information

Network Connection Status: Up

Last Connection Status Update Time: 2016/09/13 01:35:12 713 EST

▼ EM Server Information

EM Server Name: 1350-OMS

EM Server Version: R14.0

EM HIP Library Version: 5620 SAM Release 14.0 Build MAIN Patch 7123

▼ Navigation

NE navigation Url: `https://$activeEmsAddress:8443/oms1350/mainOtn/extNav?entity=node&nern=$n&displayName=$displayName&typeDescription=$typeDescription×tamps=$timestamps&samServerAddress=$samServerAddress&userName=$userName&userGroup=$userGroup&tokenId=$token`

Link navigation Url: `https://$activeEmsAddress:8443/oms1350/mainOtn/extNav?entity=link&displayName=$displayName&endPoint1Fdn=$endPoint1NeRn&endPoint2Fdn=$endPoint2NeRn¬es=$notes×tamps=$timestamps&samServerAddress=$samServerAddress&userName=$userName&userGroup=$userGroup&tokenId=$token`

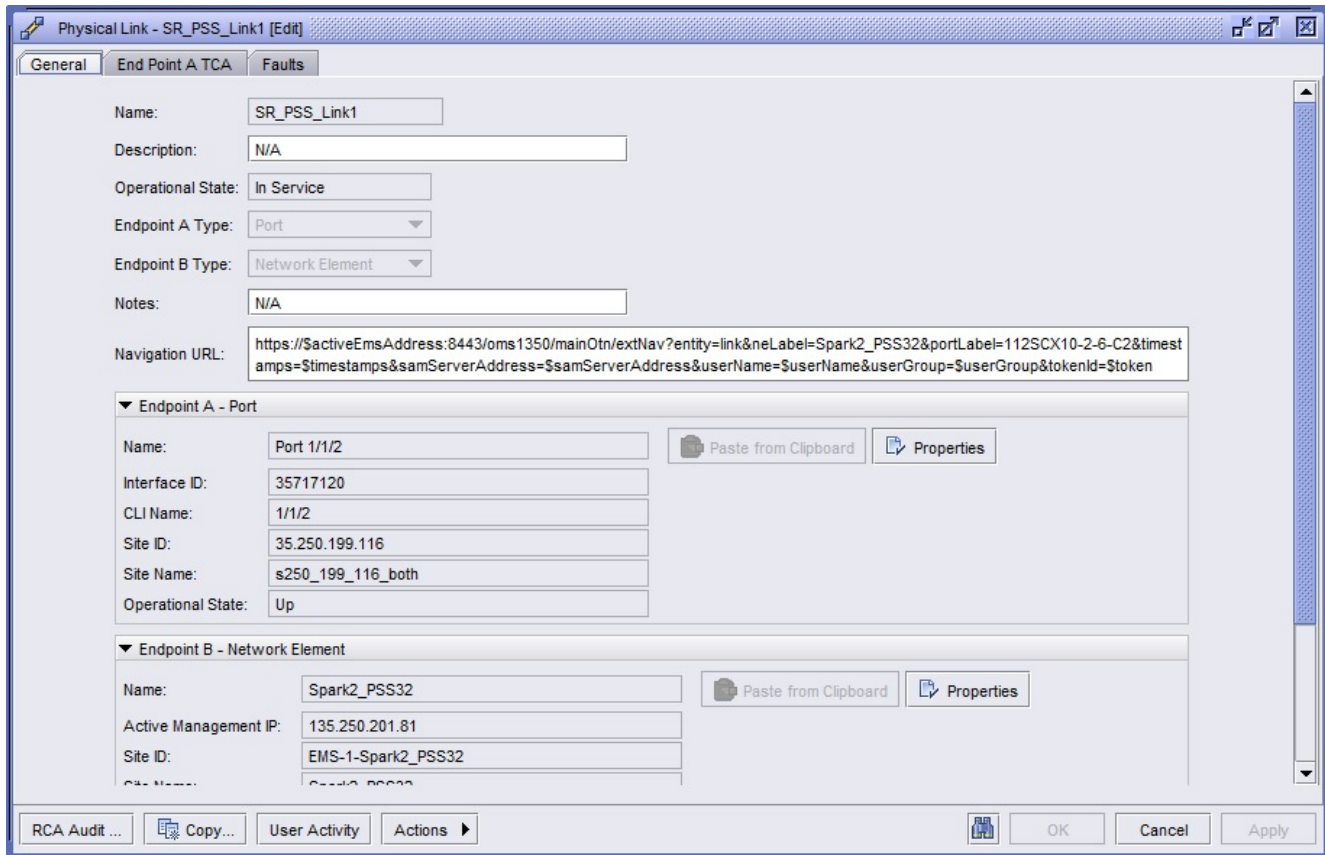
User Activity OK Cancel Apply

Link navigation URL — Physical link — syntax

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

The URL appears in the Physical Link (Edit) form and in the Manage→Equipment→Equipment→Physical Link (Network) inventory list.

Figure 6 SR-PSS Link URL — Physical link



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 workspace

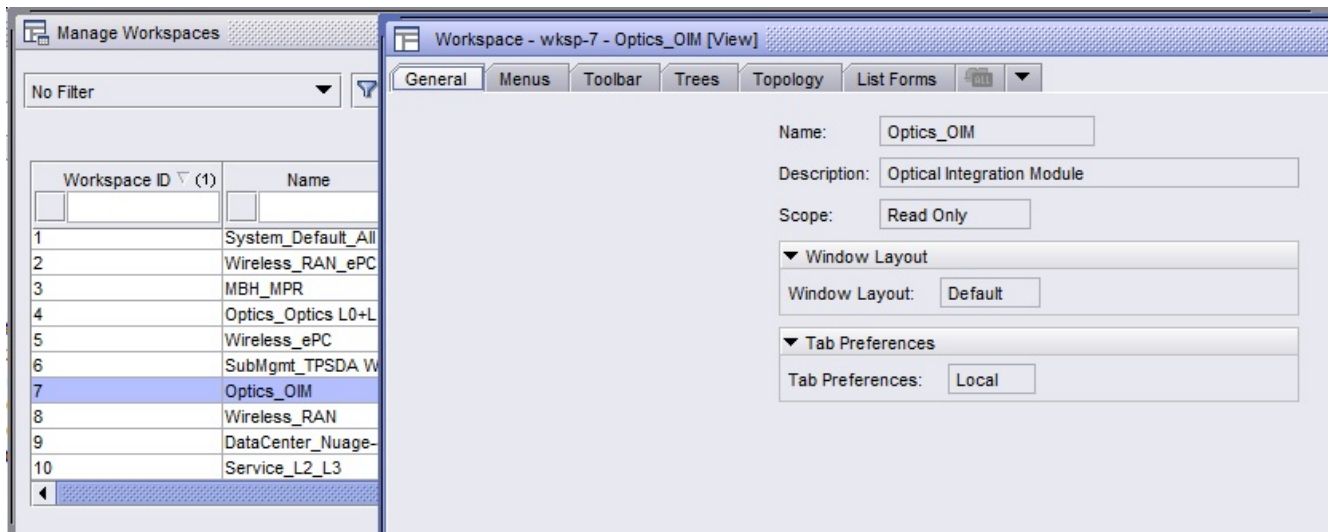
4.4.1 General information

A workspace is a configuration of the main 5620 SAM GUI elements, such as the window layout or menu options. System-defined workspaces are provided, but you can also create and save your own customized workspaces to simplify navigation and operation according to your requirements. See *5620 SAM User Guide* for more information about workspaces.

4.4.2 OIM workspace

You can access the OIM workspace by navigating to Application→Manage Workspace .The [Figure 7, “OIM workspace”](#) (p. 39) shows the OIM workspace configuration forms.

Figure 7 OIM workspace



4.5 OIM considerations and limitations

4.5.1 General information

Table 3, "OIM considerations and limitations" (p. 40) lists the important considerations and limitations for OIM.

Table 3 OIM considerations and limitations

Type	Considerations/limitations
Links	<ul style="list-style-type: none"> The physical link display name size should not exceed 138 characters. If a physical link is modified in the 1350 OMS, you can either resynchronize the nodes in the 5620 SAM or restart HIP. The 5620 SAM does not support the special characters : , , and @ in the physical link display name.
Alarms	<ul style="list-style-type: none"> Some alarms are listed with probable cause displayed as "ReferAdditionalText" in the 5620 SAM. Acknowledge and then purge alarm is not supported for the 1350 OMS alarms in the 5620 SAM.
Objects	<ul style="list-style-type: none"> Modification of HIP-node name is not supported. Compound node appears as two NEs in the 5620 SAM. Shelf, slot, and port objects are not displayed in order in the equipment tree.
Synchronization	<ul style="list-style-type: none"> 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 are skipped.
Navigation	<ul style="list-style-type: none"> All navigations from the 5620 SAM take more than 10 s. You cannot disable Opt_Connection navigation from the 5620 SAM to the 1350 OMS using the 5620 SAM. Navigation from Physical Link can fail for the first time. Keep the failed browser open and navigate again.
User	<ul style="list-style-type: none"> You cannot use the same browser to log in to the 1350 OMS as "alcatel" and "samviewer" user simultaneously. One of the users will be logged off.
Status	<ul style="list-style-type: none"> Port administrative state will always be shown as "UP" as part of notification. You need to perform manual synchronization to update the status.

4.6 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.

4.6.1 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 appears 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 appears.

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 of the first server specified in the 1350 OMS file, */usr/Systems/OTN_1_13_Master/WDM_APPL/config/IntegrationDetails*.
- Second Server IP Address — Enter the IP address of the second server specified in the 1350 OMS file, */usr/Systems/OTN_1_13_Master/WDM_APPL/config/IntegrationDetails*.

Identification panel parameters

- User Name — Enter the user name specified in the 1350 OMS file, */usr/Systems/OTN_1_13_Master/WDM_APPL/config/IntegrationDetails*. See [4.7 “To change the HIP user name and password” \(p. 43\)](#) for more information about changing the user name.
- Password — Enter the password specified in the 1350 OMS file, */usr/Systems/OTN_1_13_Master/WDM_APPL/config/IntegrationDetails*. See [4.7 “To change the HIP user name and password” \(p. 43\)](#) for more information about changing the user password.
- Confirm Password — Re-enter the password. See [4.7 “To change the HIP user name and password” \(p. 43\)](#) for more information about changing the user password.

Navigation panel parameters

- NE navigation URL — See [4.3.4 “Configuring navigation URLs” \(p. 35\)](#)
- Link navigation URL — See [4.3.4 “Configuring navigation URLs” \(p. 35\)](#)

6. Save the changes and return to the Create Discovery Rule form.

7. Click Finish.

8. Save the changes to the discovery rule and close the forms.

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.

END OF STEPS

4.7 To change the HIP user name and password

4.7.1 Steps

1

Log in to the 1350 OMS-OTN Virtual Machine as `otn` and perform the following to execute the `lt_param_reconfig` script:

```
SVTOTNE,gadmin,otn # pwd
```

```
/usr/Systems/OTNE_1/WDM_PLATFORM/script
```

```
SVTOTNE,gadmin,otn # ./lt_param_reconfig
```

Result: The following output appears:

```
*****
```

```
System parameters main menu:
```

```
*****
```

```
Select One of the following:
```

```
1) Element Administration Variables
```

```
2) Connection Variables
```

```
3) Order Handling Variables
```

```
4) System Variables
```

```
5) NBI Variables
```

```
6) FM Variables
```

```
7) Display Current Values
```

```
Type in the number to select a sub-menu [1-7] or quit[Q,q]:
```

2

Enter 6.

Result: The following output appears:

```
FM parameters Menu:
```

- 1) Enable HIP [YES]
- 2) HIP User [oms]
- 3) HIP Password [oms]
- 4) EMS User [alcatel]
- 5) EMS Password [alcatel]

Enter parameter to be modified [1-5] or previous menu [P,p]
or quit [Q,q]:

3

Perform one of the following:

- a. To change user name, enter 2 .
- b. To change password, enter 3 . .

Result: The following output appears:

Enter new value:

4

Enter the new user name or password.

Result: The following output appears:

CONFIRM PARAMETER CHANGE : FM.HIP_USER

Current setting:

5

Enter the current user name or password.

Result: The following output appears:

Proposed setting:

6

Enter the new user name or password.

Result: The following output appears:

Do you want to accept this change?

y) Accept
p) Reject and return to previous menu
q) Reject and quit program
Enter choice [y,p,q]:

7

Enter **y** .

Result: The following output appears:

```
Storing new setting...  
1 row updated.  
Update completed  
Enter return to continue  
FM parameters Menu:  
1) Enable HIP [YES]  
2) HIP User [oms]  
3) HIP Password [oms]  
4) EMS User [alcatel]  
5) EMS Password [alcatel]  
Enter parameter to be modified [1-5] or previous menu [P,p]  
or quit [Q,q]: q  
QUIT selected, program exiting.  
  
* These changes will take immediate effect and do not *  
* require an application restart *
```

END OF STEPS

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

4.8.1 Steps

- 1 Expand Network→1350 OMS→EMS→HIP-NE from the 5620 SAM equipment tree.
- 2 Right-click on the NE object and choose properties. The Network Element (Edit) form opens displaying the location and version information.

Figure 8 HIP-NE properties

The screenshot shows the 'Network Element - EMS-2-pss128 - Pss128 [Edit]' window. The 'General' tab is selected, showing the following fields:

- Site ID: EMS-2-pss128
- Site Name: Pss128
- Name: Pss128
- Active Management IP: 138.120.128.1
- Location: France
- Chassis Type: 7750-SR7-MG
- Software Version: PSS15.4
- Descriptor Version: N/A
- Resource Group ID: 2
- State: Managed
- External EMS: N/A

Below these fields are sections for 'Custom Properties' and 'Latitude/Longitude Configuration':

- Custom Property 1: N/A
- Custom Property 2: N/A
- Custom Property 3: N/A
- Latitude(degrees): 145.32
- Longitude(degrees): 12.4

At the bottom of the form, there are buttons for 'Resync', 'NE Resync Audit', 'Navigate', 'User Activity', and 'Actions'.

END OF STEPS

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

4.9.1 Steps

- 1 _____
Choose Manage→Equipment→Equipment from the 5620 SAM main menu. The Manage Equipment form opens.
- 2 _____
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 9 Inventory list

Manage Equipment

Network Element (Network) No Filter Span On: Equipment Group(s) - All

Count: 6

Site ID	Site Name	Software Version	Location	Chassis Type (1)	Longitude(degrees)	Latitude(degrees)
EMS-2-pss124	Pss124	myHipSwVersion	myHipLocation	7210 SAS-M-24F-2XFP	123.4	14.32
EMS-2-pss128	Pss128	PSS15.4	France	7750-SR7-MG	12.4	145.32
EMS-2-pss119	Pss119	myHipSwVersion	myHipLocation	7750-SRc12	123.4	14.32
EMS-2-pss125	Pss125	myHipSwVersion	myHipLocation	HIP Chassis	123.4	14.32
EMS-2-pss126	Pss126	myHipSwVersion	myHipLocation	HIP Chassis	0.0	0.0
EMS-2-pss122	Pss122	myHipSwVersion	myHipLocation	unspecified	123.4	14.32

END OF STEPS

Node navigation

4.10 Overview

4.10.1 Purpose

This section provides information about node navigation.

4.10.2 Contents

4.10 Overview	50
4.11 Optical node navigation	51
4.12 To cross-launch the 1350 OMS web GUI from an optical node or a link context	54

4.11 Optical node navigation

4.11.1 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 10, “1350 OMS-based optical node display in the 5620 SAM” \(p. 51\)](#) shows the optical node inventory and hardware.

Figure 10 1350 OMS-based optical node display in the 5620 SAM



4.11.2 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 [4.12 “To cross-launch the 1350 OMS web GUI from an optical node or a link context” \(p. 54\)](#) for more information about cross launch from the 5620 SAM to the 1350 OMS.

Figure 11 Navigation from the 5620 SAM

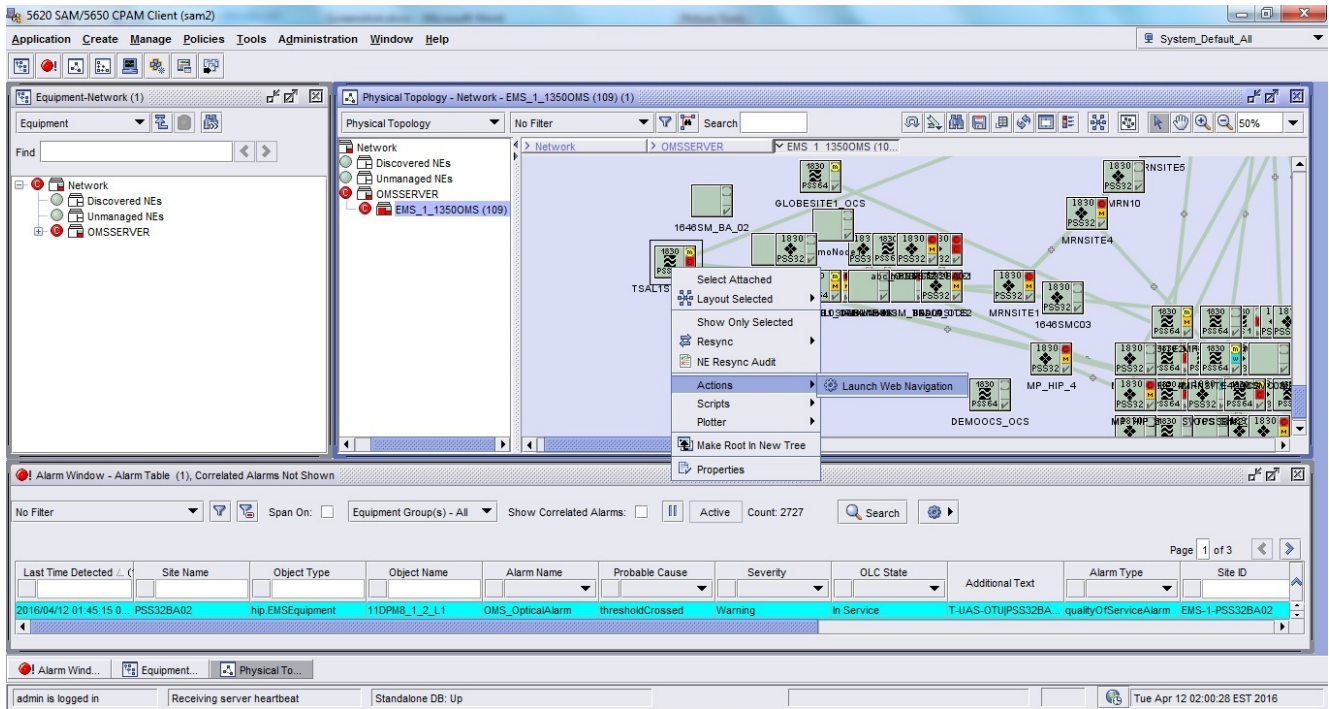


Figure 12 Navigation to the 1350 OMS EQM

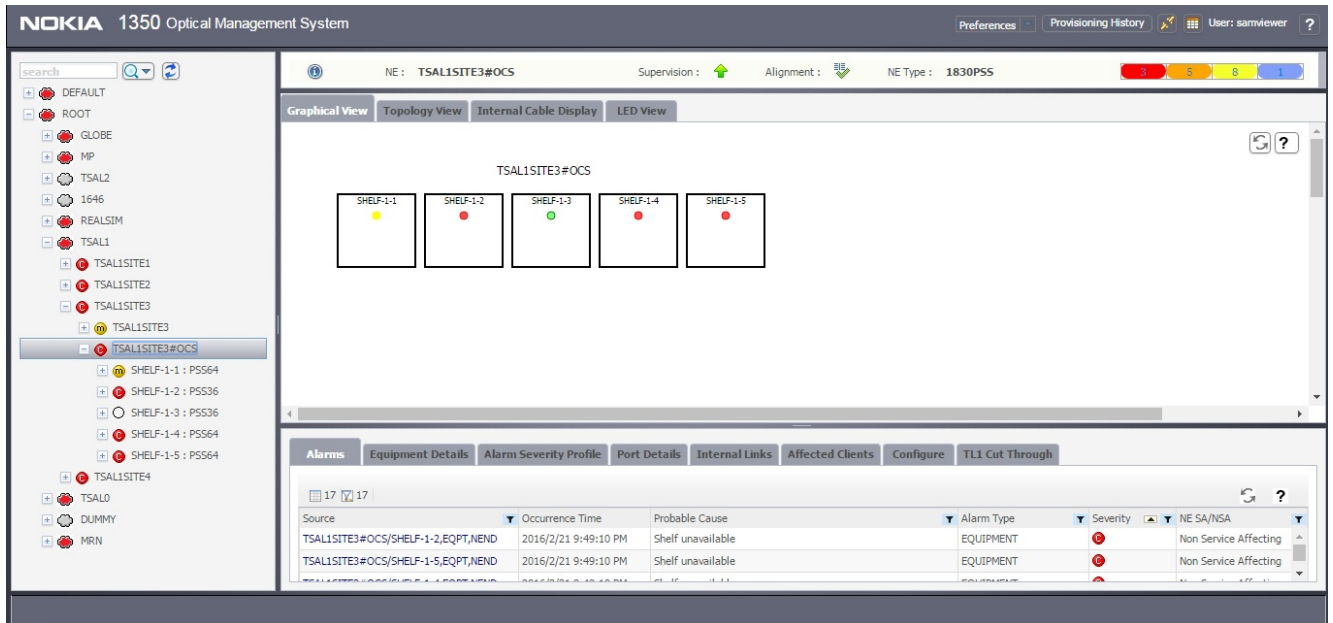
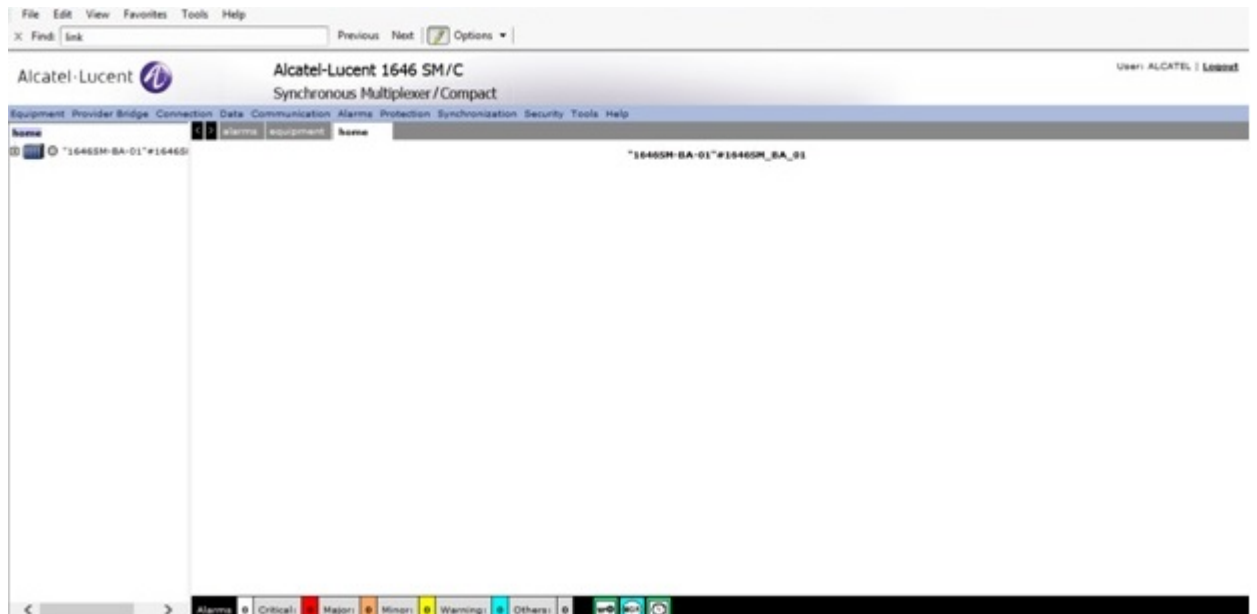


Figure 13 Navigation to the 1646 SMC



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

4.12.1 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.

4.12.2 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→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.

END OF STEPS

Link navigation

4.13 Overview

4.13.1 Purpose

This section provides information about link navigation.

4.13.2 Contents

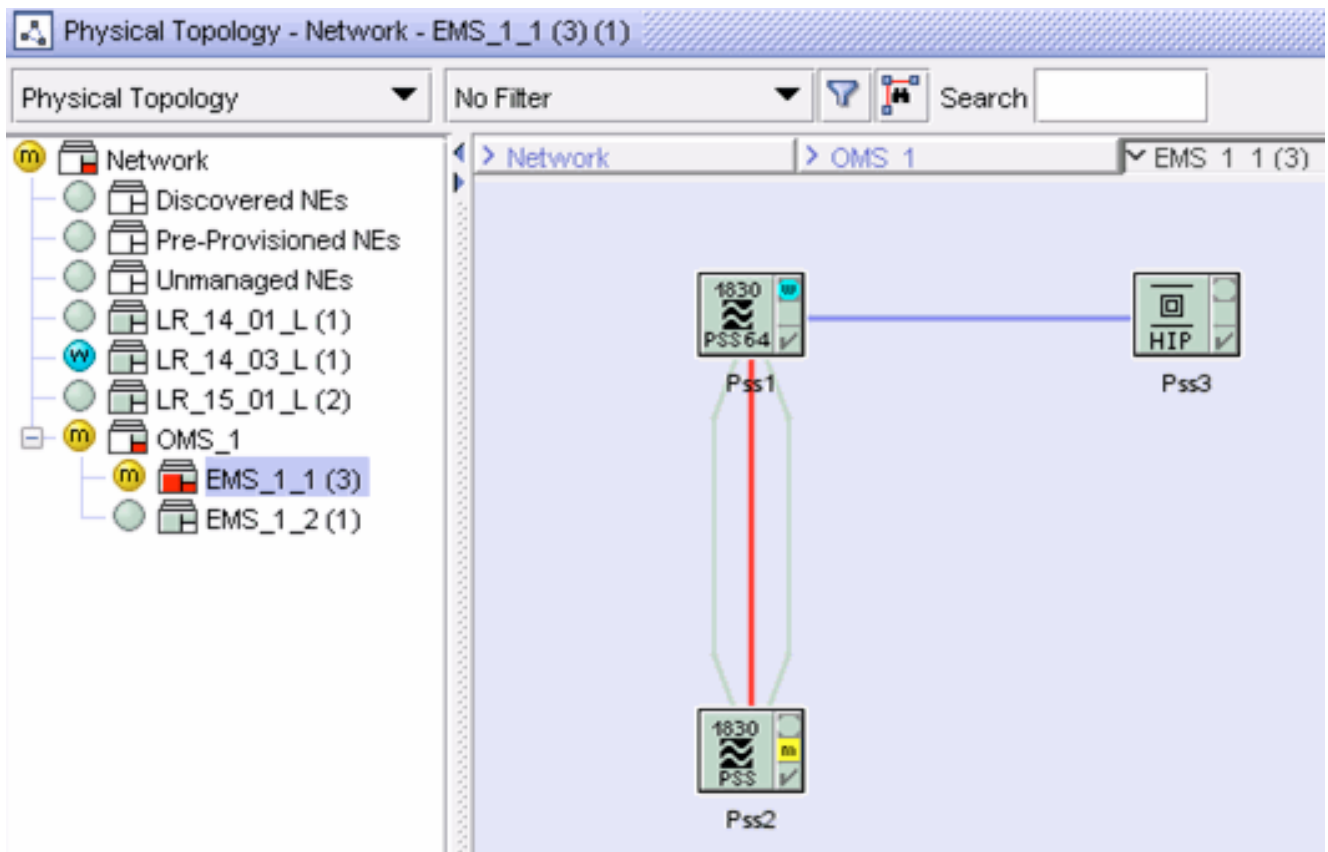
4.13 Overview	56
4.14 Optical link navigation	57

4.14 Optical link navigation

4.14.1 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 14 Optical node link display on topology map



4.14.2 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 [4.12 “To cross-launch the 1350 OMS web GUI from an optical node or a link context” \(p. 54\)](#) for more information about cross launch from the 5620 SAM to the 1350 OMS.

Figure 15 Expand group

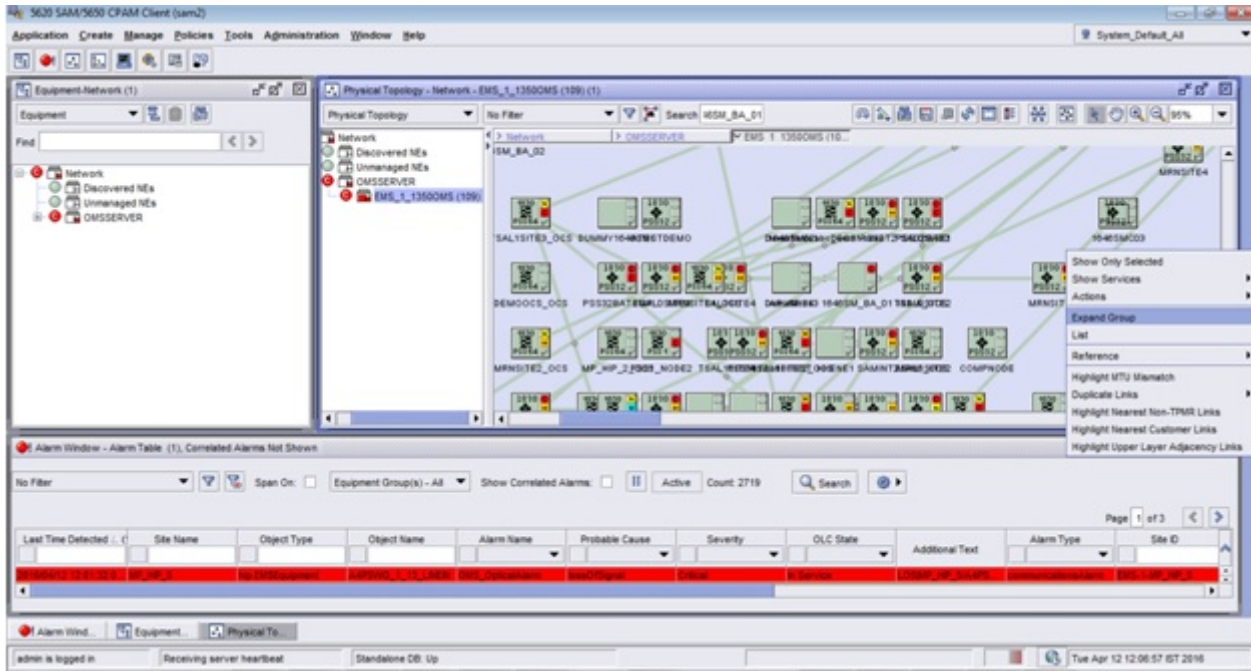
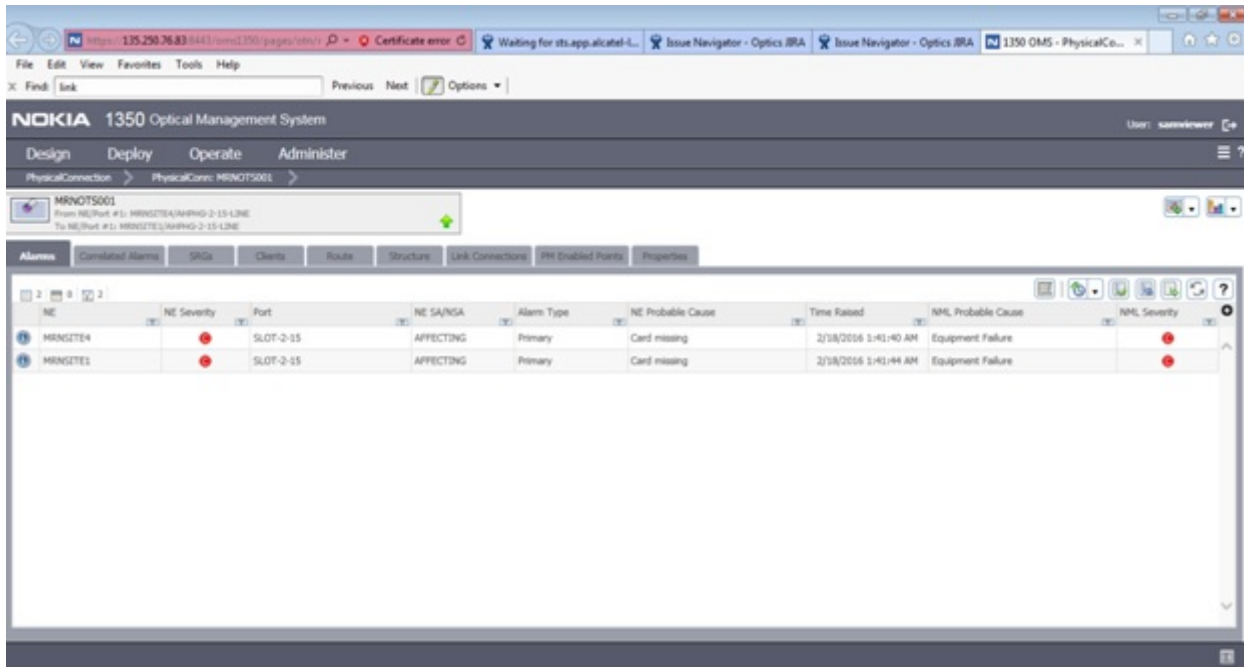


Figure 16 Navigation from the 5620 SAM



Figure 17 Navigation to the 1350 OMS Physical Connection



4.14.3 MPLS link navigation

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

MPLS link navigation is supported for RSVP tunnels.

Figure 18 MPLS link navigation

The screenshot displays a network management application with several key components:

- Service Tunnel Group List:** A table listing tunnels with columns for Name, ID, Description, Underlying Transport, Test Suite Count, and Signaling. Two tunnels are visible:

Name	ID	Description	Underlying Transport	Test Suite Count	Signaling
from-35.250.199.116-4	4	from-35.250.199.116-id-4	MPLS	0	TLDP
from-35.250.199.119-5	5	from-35.250.199.119-id-5	MPLS	0	TLDP
- Tunnel - 4, 35.250.199.116 [Edit]:** A configuration window for the selected tunnel. It shows fields for Name, ID, Description, Underlying Transport, and Signaling (TLDP). It also includes sections for MPLS Signaling (Mixed LSP Mode, Enable LDP, Enable BGP-Tunnel) and Signaling Type for Inner Labels.
- Alarm Window - Alarm Table (1), Correlated Alarms Not Shown:** A table at the bottom showing alarm history.

Last Time Detected	Site Name	Object Type	Object Name	Alarm Name	Probable Cause
2016/08/18 15:17:55.0	s250	hp EMSEquipment	TLR_25_1	OMS_OpticalAlarm	RepUnitMiss
2016/08/18 13:17:14.0	Test1	hp EMSEquipment	EC_1_1	OMS_OpticalAlarm	ReferAdditionalText
2016/08/17 14:32:17.0	Test1	hp EMSEquipment	RF_3_36	OMS_OpticalAlarm	RepUnitMiss
2016/08/17 14:32:17.0	Test1	hp EMSEquipment	RF_3_19	OMS_OpticalAlarm	RepUnitMiss
2016/08/17 14:32:17.0	Test1	hp EMSEquipment	EC_3_1	OMS_OpticalAlarm	RepUnitMiss

Link configuration between 7750 SR and 1830 PSS HIP node

4.15 Overview

4.15.1 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.

4.15.2 Contents

4.15 Overview	62
4.16 To create a link between a 7750 SR and 1830 PSS HIP node	63

4.16 To create a link between a 7750 SR and 1830 PSS HIP node

4.16.1 Steps

1 _____
Choose Create→Equipment→Physical Link from the 5620 SAM main menu. The Physical Link (Create) form opens.

2 _____
Select the ports for Endpoint A.

3 _____
Select the HIP node for Endpoint B.

4 _____
Configure the Navigation URL parameter. See [Figure 6, “SR-PSS Link URL — Physical link” \(p. 38\)](#).



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

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

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

END OF STEPS _____

Delete a 1350 OMS EMS

4.17 Overview

4.17.1 Purpose

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

4.17.2 Contents

4.17 Overview	64
4.18 To delete a 1350 OMS EMS from the 5620 SAM	65

4.18 To delete a 1350 OMS EMS from the 5620 SAM

4.18.1 Before you begin

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

4.18.2 Steps

1

Choose Administration→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.

END OF STEPS

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

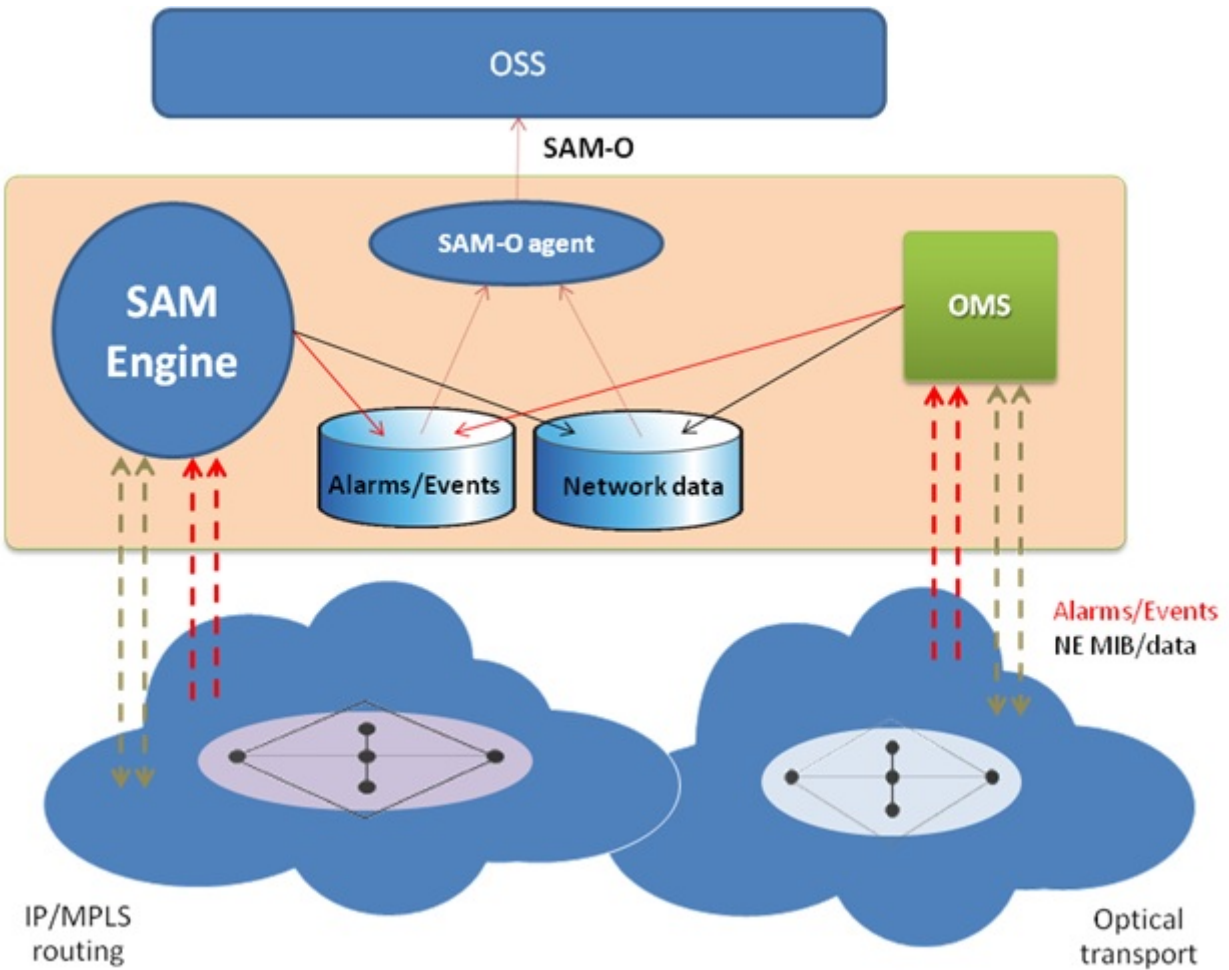
5.1	Overview	67
5.2	OSS integration	68
5.3	Fault and event management	69
5.4	To enable the 1350 OMS cross-launch from the 5620 SAM FM application	74
5.5	To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application	76

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 19 The 5620 SAM and the 1350 OMS OSS integration



5.3 Fault and event management

5.3.1 Introduction

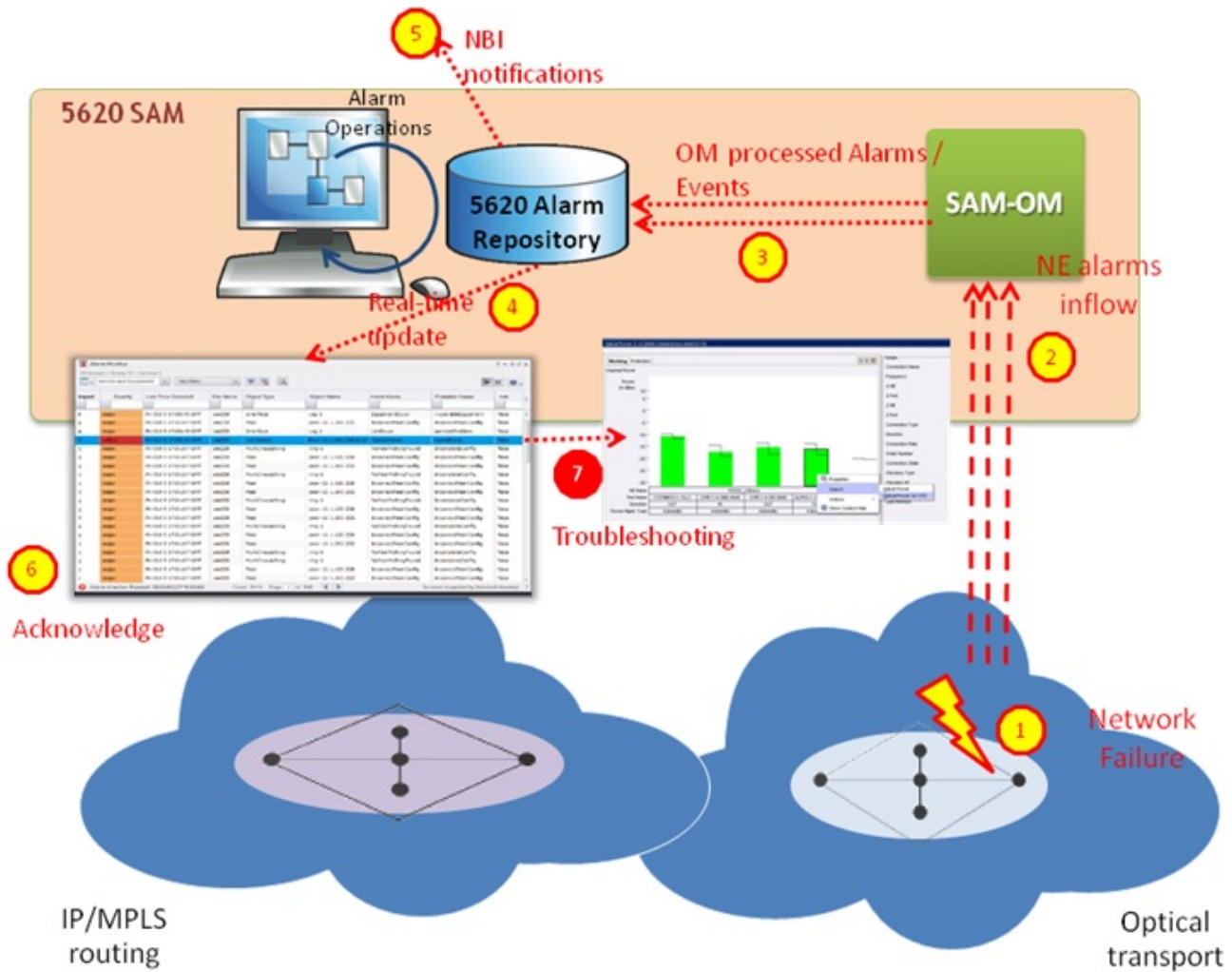
The 5620 SAM and the 1350 OMS integration supports an enhanced fault management application, to provide a single point of handling for the alarms of a multi-layer IP and optical network, and a centralized environment where the fault correlation process takes place.

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” \(p. 79\)](#) for more information about acknowledging alarms in the 5620 SAM.
- Unacknowledging the alarm from the 5620 SAM FM application. See [6.4 “To unacknowledge alarms” \(p. 80\)](#) for more information about unacknowledging alarms in the 5620 SAM FM application.
- 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” \(p. 74\)](#) and [5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” \(p. 76\)](#) 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.

Figure 20 The 5620 SAM and 1350 OMS fault and event management



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. 74) and 5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” (p. 76) for more information about cross launch from the 5620 SAM FM application to the 1350 OMS.

Figure 21 Navigation from the 5620 SAM Fault Management Application

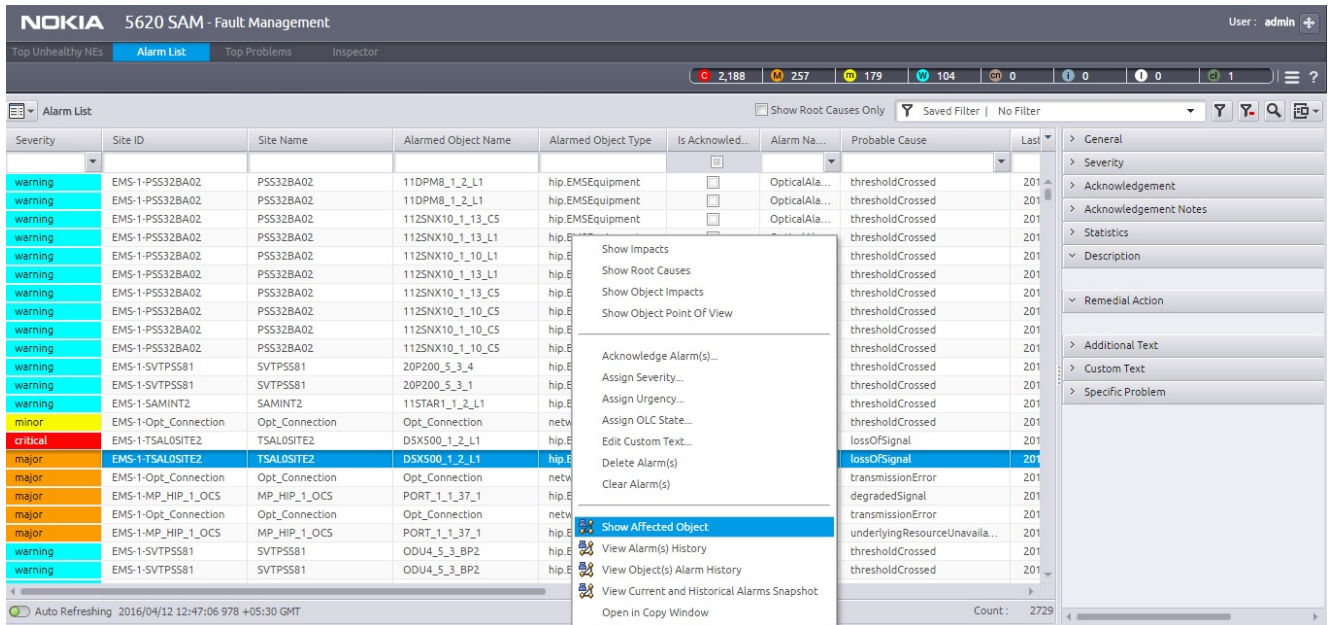
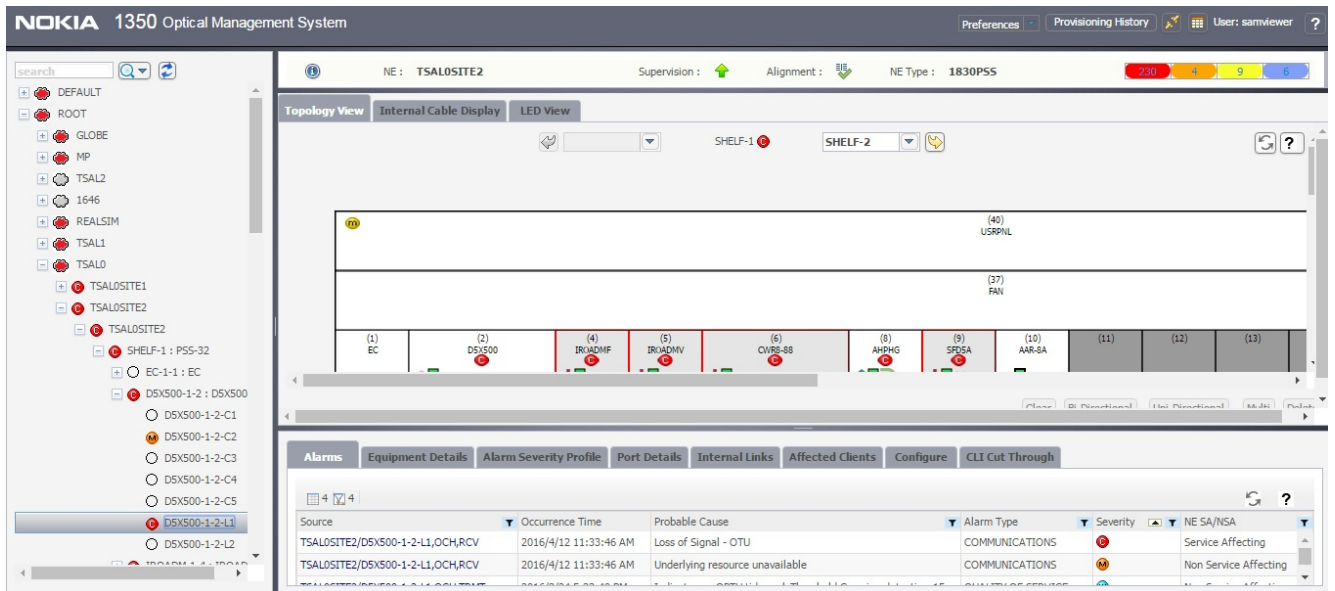


Figure 22 Navigation to the 1350 OMS EQM



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. 74) and 5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” (p. 76) for more information about cross launch from the 5620 SAM FM application to the 1350 OMS.

Figure 23 Navigation from the 5620 SAM Fault Management Application

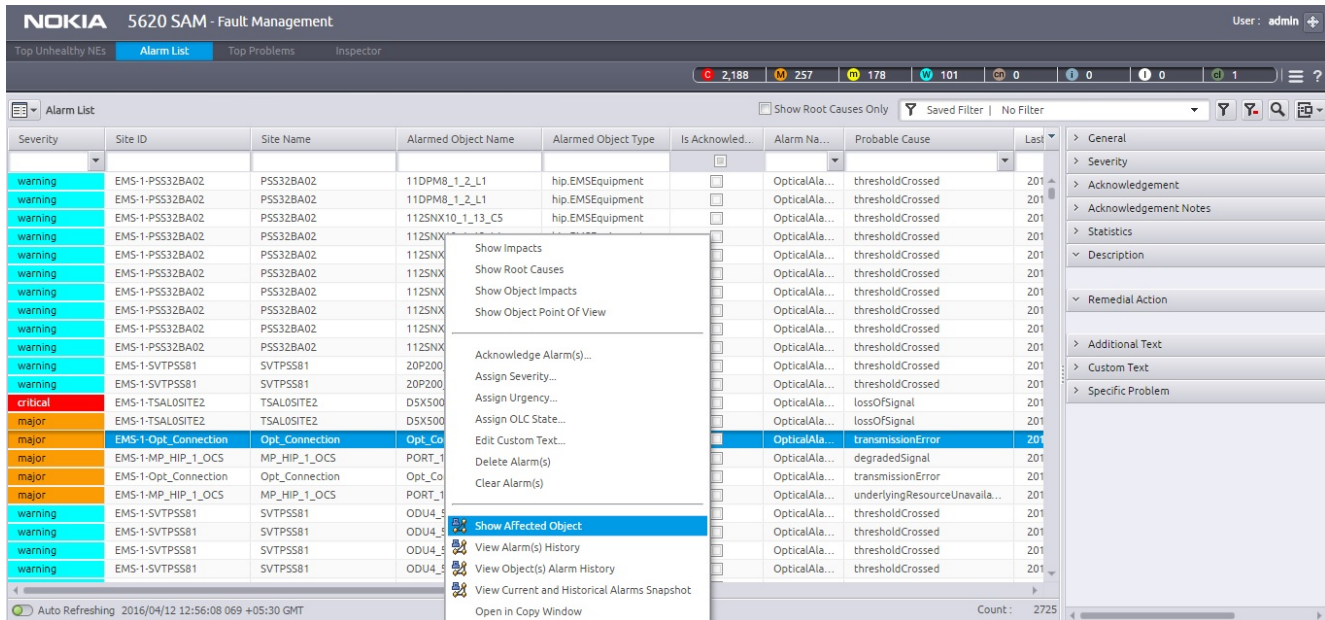


Figure 24 Navigation to the 1350 OMS correlated alarms

NOKIA 1350 Optical Management System User: samviewer

Design Deploy Operate Administer

Operate Infrastructure Connections Infrastructure: Bharath-D5X500-ODU4-LL OTU4X2#1

Bharath-D5X500-ODU4-LL OTU4X2#1
From Node #1: TSALOSITE1
To Node #1: TSALOSITE2

Alarms Servers Clients Route Structure Link Connections PM Enabled Points

NE	NE Seve	Port/SNC	NE SA/NSA	Alarm Type	NE Probable Cause	Time Raised	Connection Rate	Connection Name/	NML Probable Cause	NML Severity
TSALOSITE1	Service Affecting	SLOT-1-2	Service Affecting	Primary	Card missing	3/24/2016 3:52:47 PM	Not_Applicable	Not_Applicable	Equipment Failure	Red
TSALOSITE1	Service Affecting	SLOT-1-8	Service Affecting	Primary	Card missing	3/24/2016 4:43:24 PM	Not_Applicable	Not_Applicable	Equipment Failure	Red
TSALOSITE1	Service Affecting	SLOT-1-9	Service Affecting	Primary	Card missing	3/24/2016 4:43:42 PM	Not_Applicable	Not_Applicable	Equipment Failure	Red
TSALOSITE2	Service Affecting	SLOT-1-9	Service Affecting	Primary	Card missing	3/24/2016 4:49:02 PM	Not_Applicable	Not_Applicable	Equipment Failure	Red
TSALOSITE2	Affecting	OCH-1-2-L1	Affecting	Primary	Loss of Signal - OTU	4/12/2016 11:33:46 AM	OTU4x2	Bharath-D5X500-OC	Transport Failure	Yellow
TSALOSITE2	Non-Affecting	OCH-1-2-L1	Non-Affecting	Primary	Underlying resource unavail	4/12/2016 11:33:46 AM	OTU4x2	Bharath-D5X500-OC	Transport Failure	Yellow
TSALOSITE2	Non-Affecting	OCH-1-2-L1	Non-Affecting	Secondary	Indicates an OPTH tidemar	3/24/2016 5:33:40 PM	OTU4x2	Bharath-D5X500-OC	Quality Threshold Crossed	Green
TSALOSITE2	Non-Affecting	OCH-1-2-L1	Non-Affecting	Secondary	Indicates an OPRL tidemar	3/24/2016 6:17:04 PM	OTU4x2	Bharath-D5X500-OC	Quality Threshold Crossed	Green

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.



CAUTION

Service Disruption

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.



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

5.4.2 Steps

- 1 _____
Log in to the main server station as the samadmin user.
- 2 _____
Open a console window.
- 3 _____
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
```

7 _____

Edit the following line in the section to read:

```
navigationEnabled="true"
```

8 _____

Save and close the nms-server.xml file.

9 _____

Enter the following:

```
bash$ cd ../bin
```

10 _____

Enter the following:

```
bash$ ./nmserver.bash read_config ↵
```

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

11 _____

Close the console window.

END OF STEPS _____

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

5.5.1 Steps

1 _____
Log in to the 5620 SAM FM application.

2 _____
Click on the Alarm List tab. The alarm list appears.

3 _____
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.

END OF STEPS _____

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

6.1	Overview	77
6.2	Troubleshooting	78
6.3	To acknowledge alarms	79
6.4	To unacknowledge alarms	80
6.5	Problem: Client not receiving server heartbeat messages	81
6.6	Problem: EMS is unreachable	82

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” \(p. 79\)](#) for more information about how to acknowledge alarms.

6.2.3 Unacknowledge alarms

You can unacknowledge the 1350 OMS alarms only from the 5620 SAM FM application and not from the 5620 SAM Java GUI. See [6.4 “To unacknowledge alarms” \(p. 80\)](#) for more information about how to unacknowledge 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.
4. 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 To unacknowledge alarms

6.4.1 Steps

- 1 _____
Log in to the 5620 SAM FM application.
- 2 _____
Click on the Alarm List tab. The alarm list appears.
- 3 _____
Right-click on one or more alarm entries and choose Acknowledge Alarm(s). The Alarm Acknowledgement form opens.
- 4 _____
Deselect the Acknowledge check box and click OK.

END OF STEPS _____

6.5 Problem: Client not receiving server heartbeat messages

6.5.1 Purpose

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

6.5.2 Steps

1 _____

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

2 _____

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 _____

6.6 Problem: EMS is unreachable

6.6.1 Purpose

Perform this procedure when an EMS is unreachable.

6.6.2 Steps

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

END OF STEPS _____