



# **5620 SAM and 1350 OMS IP Optics Management 14.0 R7**

## **Optical Integration Module User Guide**

**3HE-10923-AAAE-TQZZA**

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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

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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*.

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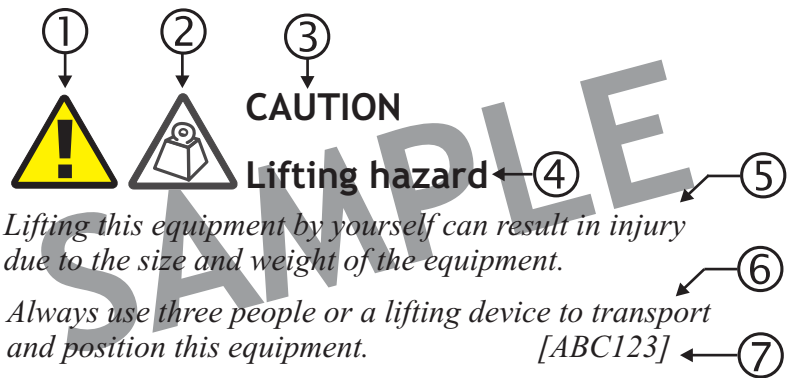
## 1.2 Structure of safety statements

### 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 R7 for OIM

[Table 1, "5620 SAM Release 14.0 R7 OIM features" \(p. 10\)](#), lists the features and functions added in 5620 SAM Release 14.0 R7 for OIM support. See the *5620 SAM User Guide* for more information about non-1830 PSS features and functions.

*Table 1* 5620 SAM Release 14.0 R7 OIM features

Feature	Description and Reference
SAM-87846 — Port selection during SR-PSS link configuration	Support for selection of ports during SR-PSS link configuration. <a href="#">4.3.5 "Configuring navigation URLs" (p. 40)</a> <a href="#">4.17 "To create a link between a 7750 SR and 1830 PSS HIP NE" (p. 72)</a> <a href="#">4.7 "To manage the 1350 OMS as an EMS in the 5620 SAM" (p. 46)</a>
SAM-87993 — Read and write access in 1350 OMS for OIM users	Support for read and write access in 1350 OMS for OIM users. <a href="#">3.2.2 "OIM user configuration in 5620 SAM and 1350 OMS" (p. 20)</a> <a href="#">3.3 "Workflow for configuring HIP on the 1350 OMS" (p. 21)</a> <a href="#">3.4 "To configure a 5620 SAM user account" (p. 22)</a> <a href="#">3.5 "To configure a 1350 OMS user account" (p. 25)</a>
SAM-88580 — HIP NE management state on topology map and equipment tree	HIP NE icons on the topology map and equipment tree are red when HIP NE are down and purple when HIP NEs are in a suspended management state. <a href="#">4.3.3 "Status of HIP NEs on topology map and equipment tree" (p. 39)</a>
SAM-96597 — Navigation from IP/MPLS service tunnel or LSP to 1350 OMS optical service enhancement	Support for navigation from: <ul style="list-style-type: none"> <li>• MPLS tunnels</li> <li>• LSP</li> <li>• LSP path binding</li> </ul> <a href="#">4.15.3 "Link navigation — MPLS tunnels" (p. 66)</a> <a href="#">4.15.4 "Link navigation — LSP" (p. 68)</a> <a href="#">4.15.5 "Link navigation — LSP path binding" (p. 69)</a>
SAM-97101 — EMSNetworkElementSystemUnreachable alarm on HIP NE	The EMSNetworkElementSystemUnreachable alarm remains on the HIP NE irrespective of the equipment group that the HIP NE has been moved to. <a href="#">4.3.2 "EMS equipment group" (p. 38)</a>

Table 1 5620 SAM Release 14.0 R7 OIM features (continued)

Feature	Description and Reference
SAM-98473 — Alignment of characters between 1350 OMS and 5620 SAM	Support for character length up to 100 characters in NE user label and ASCII characters from 0 to 127.
1830 PSS port listing	In addition to the SR ports, you can view all the 1830 PSS ports by navigating to Manage→Equipment→Equipment→Port (Physical Equipment)

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

Table 2, “5620 SAM Release 14.0 R5 OIM features” (p. 11), lists the features and functions added in 5620 SAM Release 14.0 R5 for OIM support. See the *5620 SAM User Guide* for more information about non-1830 PSS features and functions.

Table 2 5620 SAM Release 14.0 R5 OIM features

Feature	Description and Reference
HIP configuration modifications	HIP configuration procedures updated. 3.6 “To configure HIP on the 1350 OMS” (p. 30) 4.7 “To manage the 1350 OMS as an EMS in the 5620 SAM” (p. 46) 4.8 “To change the HIP user name and password” (p. 49)
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. 38)
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. 43)
SAM-88956 — Unacknowledge alarms	You can unacknowledge 1350 OMS alarms only from the 5620 SAM FM application. 6.2.3 “Unacknowledge alarms” (p. 86) 6.4 “To unacknowledge alarms” (p. 88)
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 2 5620 SAM Release 14.0 R5 OIM 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"> <li>• physical link display name size increased to 138 characters.</li> <li>• physical inventory object display name size increased to 42 characters</li> <li>• supports for special characters in the physical link name except <code>:</code>, <code>/</code>, and <code>@</code></li> <li>• supports only <code>_</code> special character for the node label</li> <li>• Acknowledged By and Cleared By fields increased to 64 characters</li> </ul> <p><a href="#">4.6 “OIM considerations and limitations” (p. 45)</a></p>

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

[Table 3, “5620 SAM Release 14.0 R3 OIM features” \(p. 12\)](#), lists the features and functions added in 5620 SAM Release 14.0 R3 for OIM support. See the *5620 SAM User Guide* for more information about non-1830 PSS features and functions.

Table 3 5620 SAM Release 14.0 R3 OIM features

Feature	Description and Reference
SAM-82617 — Additional features for OMS integration	<p>The additional features include:</p> <ul style="list-style-type: none"> <li>• allow non-HIP NEs in an EMS group</li> <li>• link URL appears in the Physical Link (Edit) form and in the Manage→Equipment→Equipment→Physical Link (Network) inventory list.</li> <li>• 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.</li> <li>• navigation to the 1350 OMS Equipment View from the 5620 SAM equipment tree objects: shelf, card, and port.</li> <li>• MPLS link navigation from MPLS adjacency link between SRs to the corresponding DSR path in 1350 OMS</li> </ul> <p><a href="#">4.3.2 “EMS equipment group” (p. 38)</a></p> <p><a href="#">“Port to port link navigation URL syntax” (p. 41)</a></p> <p><a href="#">4.17 “To create a link between a 7750 SR and 1830 PSS HIP NE” (p. 72)</a></p> <p><a href="#">4.15.3 “Link navigation — MPLS tunnels” (p. 66)</a></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 <a href="#">4.3.4 “HIP NE version and location” (p. 39)</a></p>
SAM-83976 — Names of the optical node inventory	<p>The names of the objects in the optical node inventory in 5620 SAM are consistent with the 1350 OMS.</p> <p><a href="#">4.12 “Optical node navigation” (p. 57)</a></p>

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## 2 Platform architecture

### 2.1 Overview

#### 2.1.1 Purpose

This chapter provides information about the OIM platform architecture.

#### 2.1.2 Contents

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<a href="#">2.3</a>	<a href="#">Single hardware infrastructure</a>	<a href="#">16</a>

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## 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

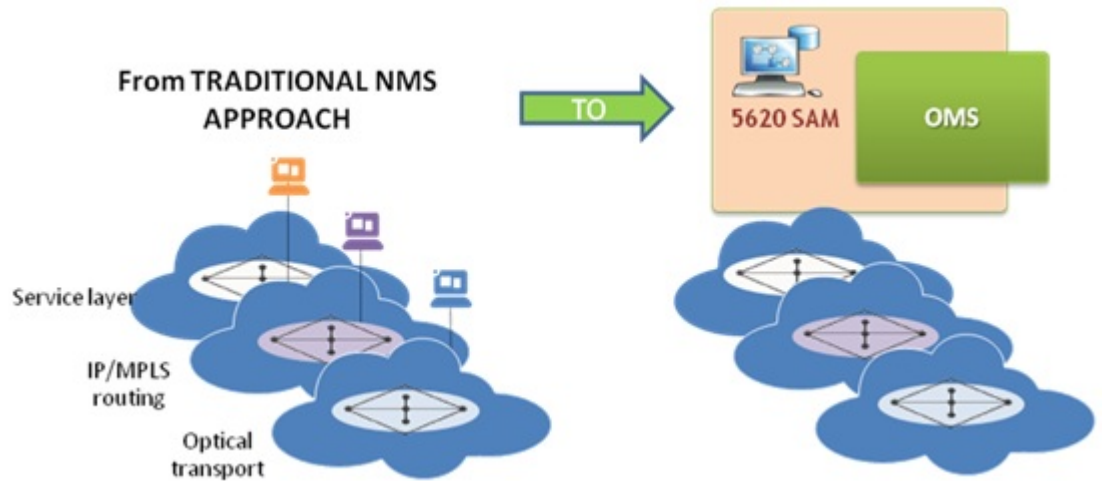
The 5620 SAM and 1350 OMS integration for an 1830 PSS based OTN network includes the following objectives:

- 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.

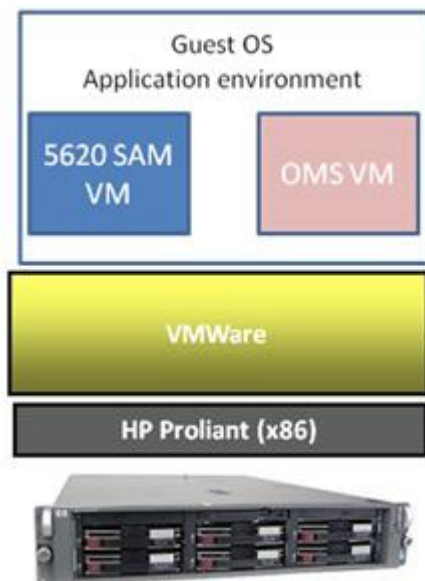
## 2.3 Single hardware infrastructure

### 2.3.1 Single hardware platform

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

The 1646 SM 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.





**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:

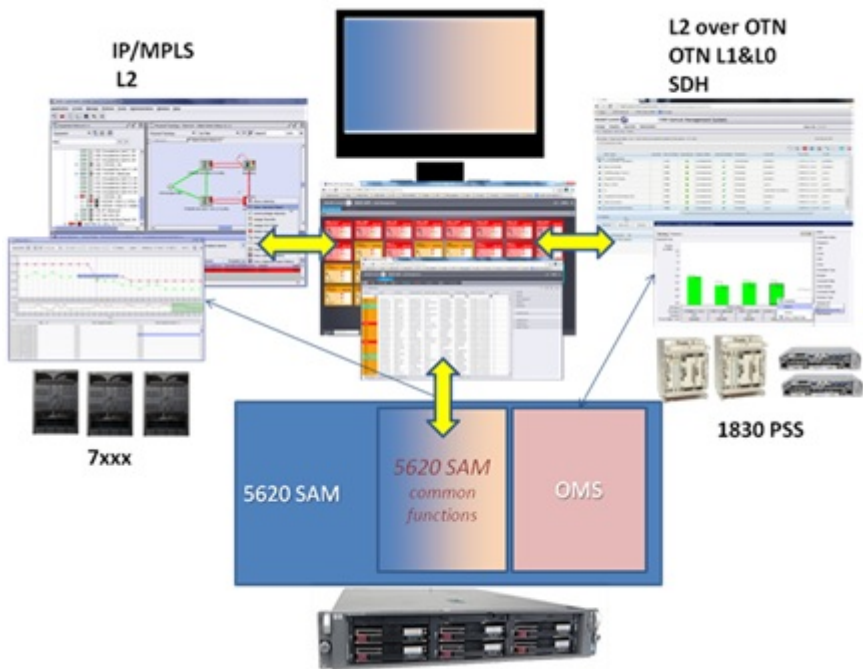
- HIP reactivation happens automatically
- configurations in both the 5620 SAM and 1350 OMS are retained
- hardware inventory is available in both the 5620 SAM and 1350 OMS
- physical links between 1830 PSS and 1830 PSS are retained in both the 5620 SAM and 1350 OMS
- physical links between 1830 PSS 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

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3.6	To configure HIP on the 1350 OMS	30

## 3.2 Overview

### 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 [3.6 “To configure HIP on the 1350 OMS” \(p. 30\)](#) 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 [4.7 “To manage the 1350 OMS as an EMS in the 5620 SAM” \(p. 46\)](#) for more information about managing the 1350 OMS as an EMS in the 5620 SAM.

### 3.2.2 OIM user configuration in 5620 SAM and 1350 OMS

Configure a 5620 SAM user and a 1350 OMS user with the same user name and privileges. When you login to the 5620 SAM and navigate to the 1350 OMS, the application that opens has the user privileges that are configured for the specific user. The privileges are limited to the application that has been opened and not to all the applications that can be opened from the 1350 OMS. For example, when you navigate to the equipment view application, you can perform the operations in the equipment view application but other applications like, user management and process monitoring and control cannot be accessed. See [3.4 “To configure a 5620 SAM user account” \(p. 22\)](#) and [3.5 “To configure a 1350 OMS user account” \(p. 25\)](#)

### 3.2.3 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.

### 3.3 Workflow for configuring HIP on the 1350 OMS

#### 3.3.1 Stages

The following are the stages for the HIP installation:

- 1 

---

Configure a 5620 SAM user account. See [3.4 “To configure a 5620 SAM user account” \(p. 22\)](#).
- 2 

---

Configure a 1350 OMS user account. See [3.5 “To configure a 1350 OMS user account” \(p. 25\)](#).
- 3 

---



Configure HIP on the 1350 OMS platform of the OTN virtual machine. See [3.6 “To configure HIP on the 1350 OMS” \(p. 30\)](#).

---

## 3.4 To configure a 5620 SAM user account


### 3.4.1 Steps

#### User group configuration

- 1 \_\_\_\_\_  
Using an account with an assigned security scope of command role, choose Administration→Security→5620 SAM User Security from the 5620 SAM main menu. The 5620 SAM User Security - Security Management (Edit) form opens.
- 2 \_\_\_\_\_  
Click on the User Groups tab and click Create. The User Group (Create) form opens.
- 3 \_\_\_\_\_  
Configure the required parameters.
- 4 \_\_\_\_\_  
If the user group is for OSS users or remote GUI users, configure the required parameters in the Remote Users panel.
- 5 \_\_\_\_\_  
Select a scope of command profile in the Scope of Command panel.  
 **Note:** Ensure that the privileges are same in the 5620 SAM and the 1350 OMS.
- 6 \_\_\_\_\_  
Select a span of control profile in the Span of Control panel.  
 **Note:** Ensure that the privileges are same in the 5620 SAM and the 1350 OMS.
- 7 \_\_\_\_\_  
If you are modifying a user group, click on the Format and Range Policies tab. The Select Format or Range Policies form opens.
- 8 \_\_\_\_\_  
Select one or more policies and click OK.
- 9 \_\_\_\_\_  
Save your changes and close the form.

---

## User account configuration

- 10** \_\_\_\_\_
- Using an account with an assigned security scope of command role, choose Administration→Security→5620 SAM User Security from the 5620 SAM main menu. The 5620 SAM User Security - Security Management (Edit) form opens.
- 11** \_\_\_\_\_
- Click on the Users tab and click Create. The User (Create) form opens.
- 12** \_\_\_\_\_
- Configure the required parameters.
-  **Note:** Ensure that the User Name parameter has the same value in the 5620 SAM and the 1350 OMS.
- 13** \_\_\_\_\_
- Click Select and choose a user group.
- 14** \_\_\_\_\_
- If required, test the validity of the user e-mail address by clicking Test E-mail beside the E-mail Address parameter.
- 15** \_\_\_\_\_
- Configure the parameters in the Password panel.
- 16** \_\_\_\_\_
- Configure the Non-Web Maximum Sessions Allowed parameter.
- 17** \_\_\_\_\_
- Configure an OSS user account:
1. Configure the required parameters in the OSS Session panel.
  2. To apply a GUI alarm filter to alarm information requests from the OSS user, click Select in the OSS Session panel and choose an alarm filter.
- 18** \_\_\_\_\_
- Configure the required parameters in the Client IP Address panel.

---

**19** \_\_\_\_\_

Save your changes and close the form.

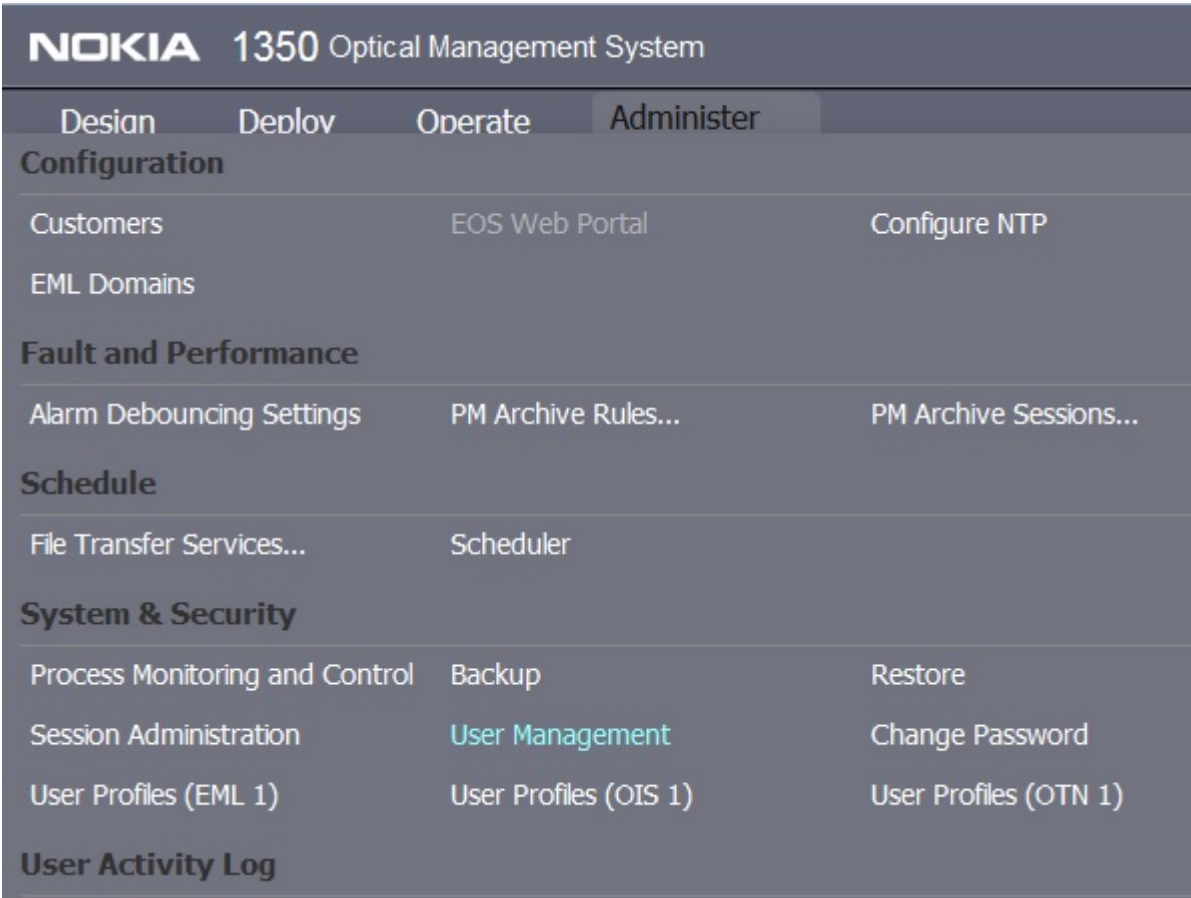
**END OF STEPS** \_\_\_\_\_



### 3.5 To configure a 1350 OMS user account

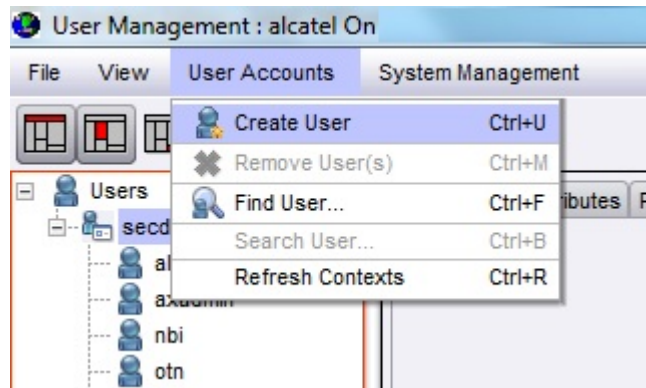
#### 3.5.1 Steps

- 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 secddb and choose User Accounts→Create User from the User Management main menu. The Log in Info form appears.

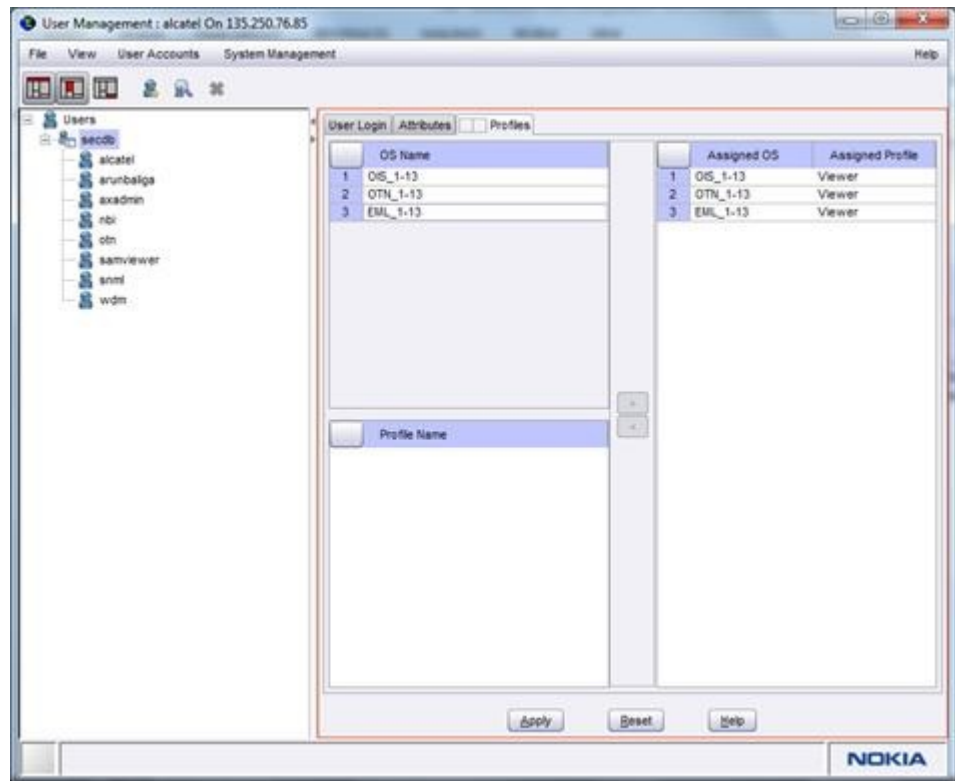


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### 3

Configure the following parameters:

- Log in: *User Name*
- New Password
- Confirm Password

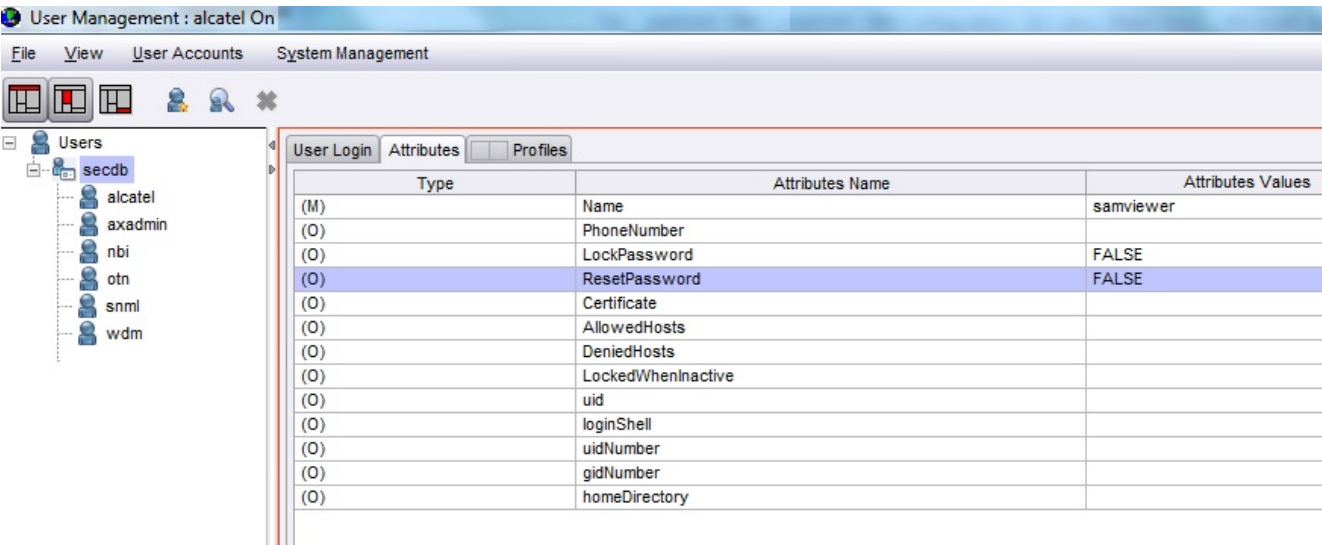


**Note:** Ensure that the User Name parameter has the same value in the 5620 SAM and the 1350 OMS.

4

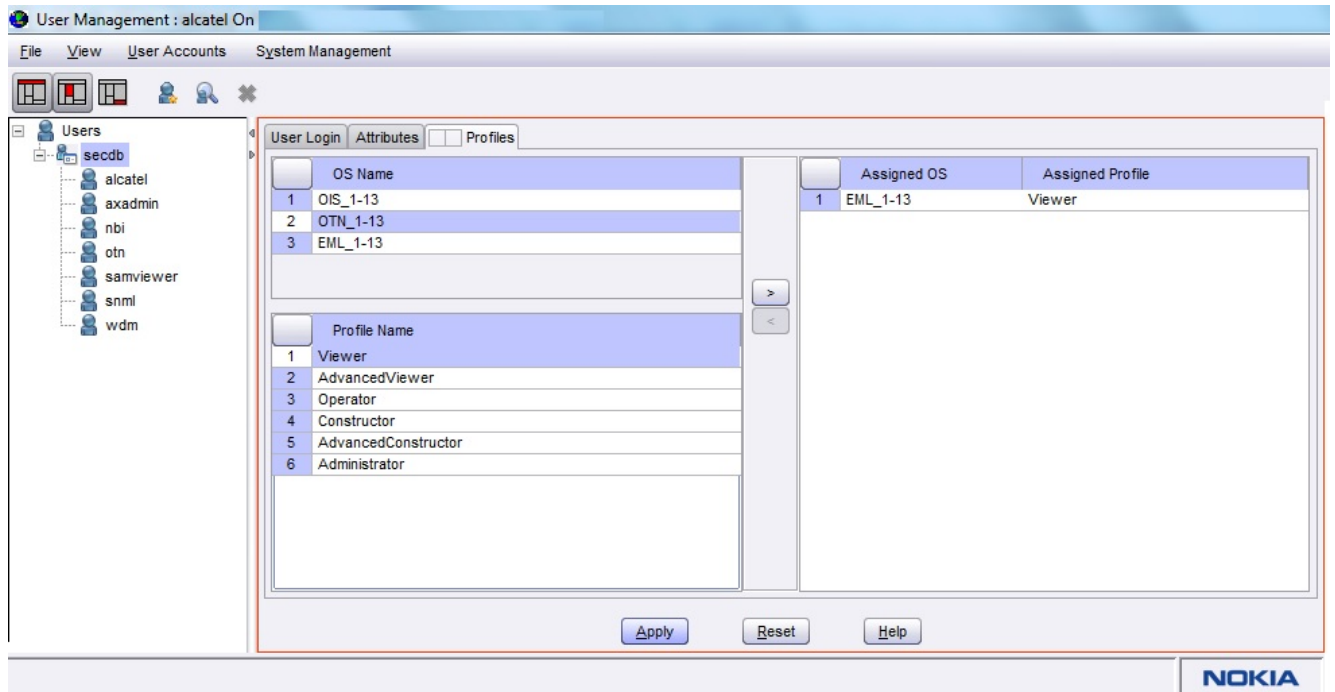
Click on the Attributes tab and configure the following parameters:

- Name: *User Name*
- LockPassword: *FALSE*
- ResetPassword: *FALSE*



**Note:** Ensure that the User Name parameter has the same value in the 5620 SAM and the 1350 OMS.

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



**Note:** Ensure that the privileges are same in the 5620 SAM and the 1350 OMS.

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

6

Save your changes and close the forms.

END OF STEPS

## 3.6 To configure HIP on the 1350 OMS

### 3.6.1 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.

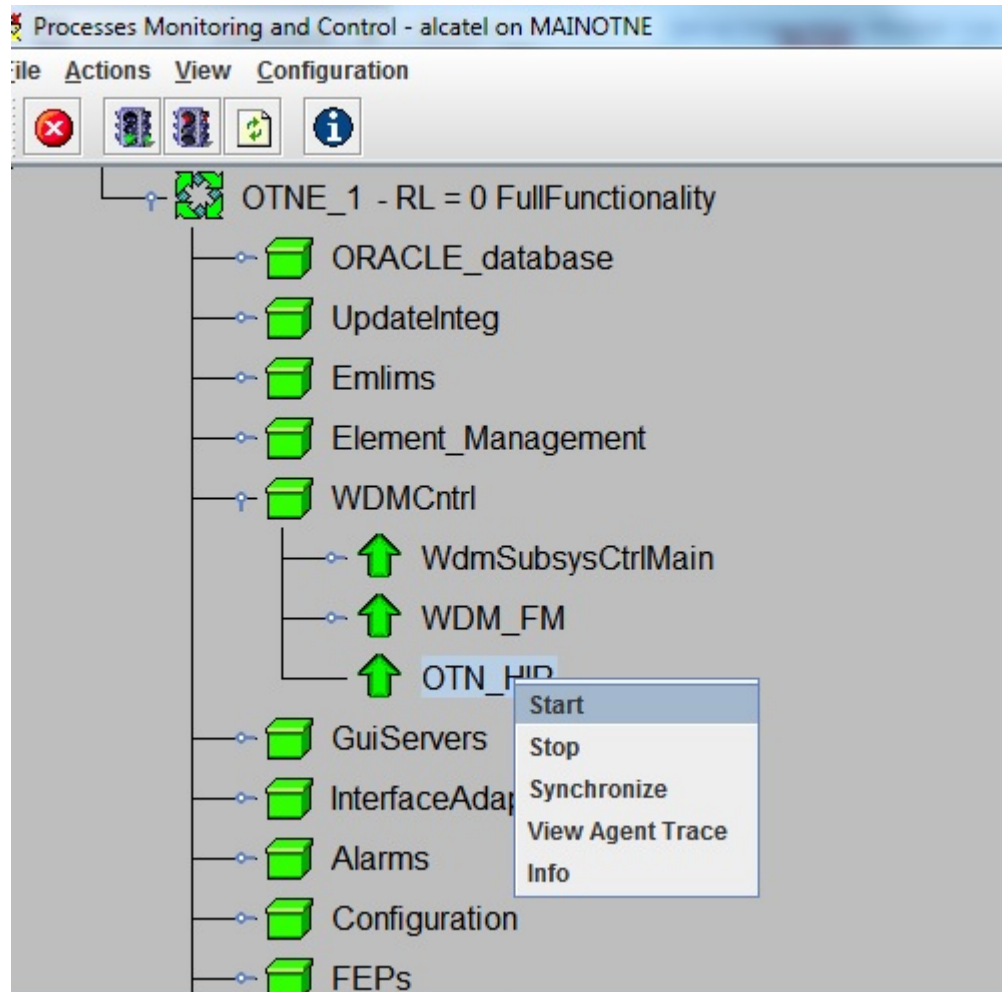
---

7

On the navigation tree, expand PMC→OIMOTNE→OTN\_1 — RL = 0  
FullFunctionality→WDMCtrl and choose OTN\_HIP.

8

To start HIP configuration, right-click on OTN\_HIP 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 OTN\_HIP 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.
- Start OTN\_HIP manually if the process does not come up on its own. Right click on OTN\_HIP and choose start.

**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.

#### 4.2.2 Contents

4.2	Overview	37
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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

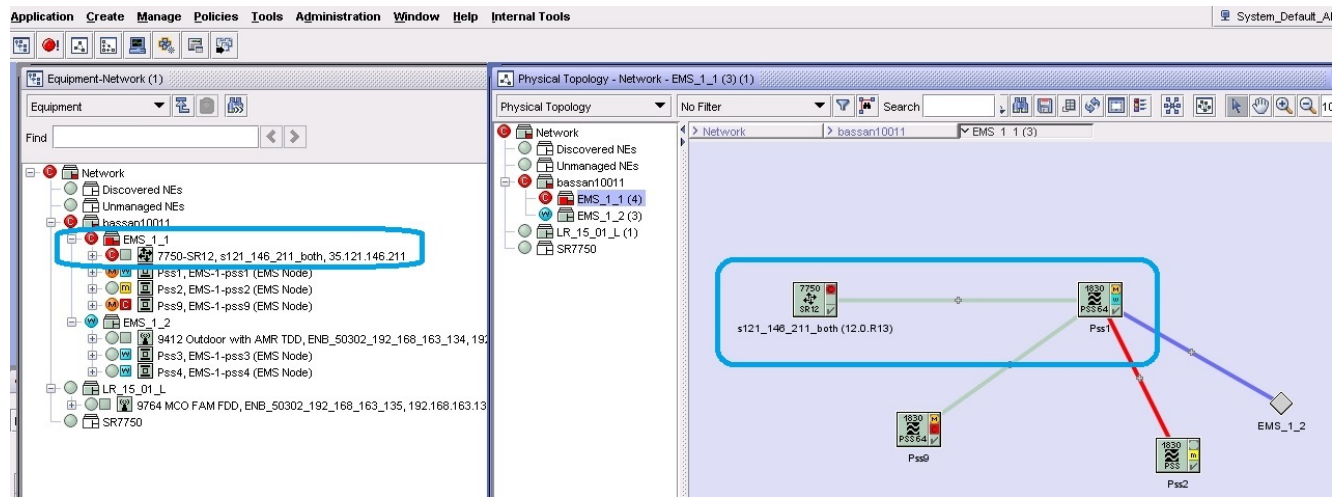
Equipment groups allow you to organize the network into logical groupings of NEs; for example, in a geographical area, or by equipment type. An equipment group is sometimes called a topology group. Some of the views in the view selector, for example the Equipment view, allow you to use the navigation 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 [4.7 “To manage the 1350 OMS as an EMS in the 5620 SAM” \(p. 46\)](#) 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.

When the communication between the 5620 SAM and the 1350 OMS is lost, the EMSNetworkElementSystemUnreachable alarm is generated on one of the HIP NEs in the EMS equipment group. The alarm is retained in the HIP NE even after the HIP NE is dragged and dropped into another equipment group. If no HIP NEs remain in the EMS equipment group, the EMSNetworkElementSystemUnreachable alarm is not generated.

Figure 4 EMS equipment group



### 4.3.3 Status of HIP NEs on topology map and equipment tree

The following colors of HIP NE icons represent the status of HIP NEs:

- Green means that HIP NEs are up.
- Yellow means that HIP NEs are being synchronized.
- Red means that HIP NEs are down. The supervision state is up and the communication state is down in the 1350 OMS. The 5620 SAM generates ReachabilityProblem alarms.
- Purple means that HIP NEs are in a suspended management state. The supervision state is down and the communication state is down in the 1350 OMS. The 5620 SAM generates NodeSuspended alarms.

### 4.3.4 HIP NE version and location

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

See [4.9 “To view HIP-NE location and version from the equipment tree” \(p. 52\)](#) for more information about how to view the NE version and location from the equipment tree.

See [4.10 “To view the HIP-NE version and location from the inventory list” \(p. 54\)](#) for more information about how to view the NE version and location from the inventory list.

### 4.3.5 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 following navigation URLs are supported and the syntax is configured during the EM System creation in the Administration→Discovery Manager→Discovery Rule→EM System→Element Manager (Create) form.

- NE navigation URL
- Link navigation URL
- Port to port link navigation URL

Figure 5, “Link URL — Element manager” (p. 41) shows the navigation URLs.

#### 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. See 4.7 “To manage the 1350 OMS as an EMS in the 5620 SAM” (p. 46) for more information about managing the 1350 OMS as an EMS in the 5620 SAM. Figure 5, “Link URL — Element manager” (p. 41) shows the navigation URLs.

#### NE navigation URL syntax

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

#### Link navigation URL syntax

```
https://$activeEmsAddress/oms1350/mainOtn/extNav?entity=
link&displayName=$displayName&endPoint1Fdn=
$endPoint1NeRn&endPoint2Fdn=$endPoint2NeRn&notes=
$notes&timestamps=$timestamps&samServerAddress=
$samServerAddress&userName=$userName&userGroup=
$userGroup&tokenId=$token
```



### Port to port link navigation URL syntax

```
https://$activeEmsAddress/oms1350/mainOtn/extNav?entity=
link&activeEmsAddress=$activeEmsAddress&displayName=
$displayName&neLabel=$neLabel&portLabel=$portLabel&description=
$description&notes=$notes&timestamps=
$timestamps&samServerAddress=$samServerAddress&userName=
$userName&userGroup=$userGroup&tokenId=$token
```

Figure 5 Link URL — Element manager

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

General Faults

Host Name: MAINOTNE

▼ Communication

Connection Status: ☒ Server IP Address: 135.250.73.10 Server Port Number: 28082

Connection Status: ☐ Second Server IP Address: 0.0.0.0 Second Server Port Number: 0

▼ Identification

User Name: oms

Password:

▼ Connection Information

Network Connection Status: Up

Last Connection Status Update Time: 2016/12/07 15:42:59 180 IST

▼ 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 7269

▼ Navigation

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

Port to Port Link navigation Url: https://\$activeEmsAddress:8443/oms1350/mainOtn/extNav?entity=link&activeEmsAddress=\$activeEmsAddress&displayName=\$displayName&neLabel=\$neLabel&portLabel=\$portLabel&description=\$description&notes=\$notes&timestamps=\$timestamps&samServerAddress=\$samServerAddress&userName=\$userName&userGroup=\$userGroup&tokenId=\$token

User Activity

OK Cancel Apply



## 4.4 OIM workspace

### 4.4.1 General information

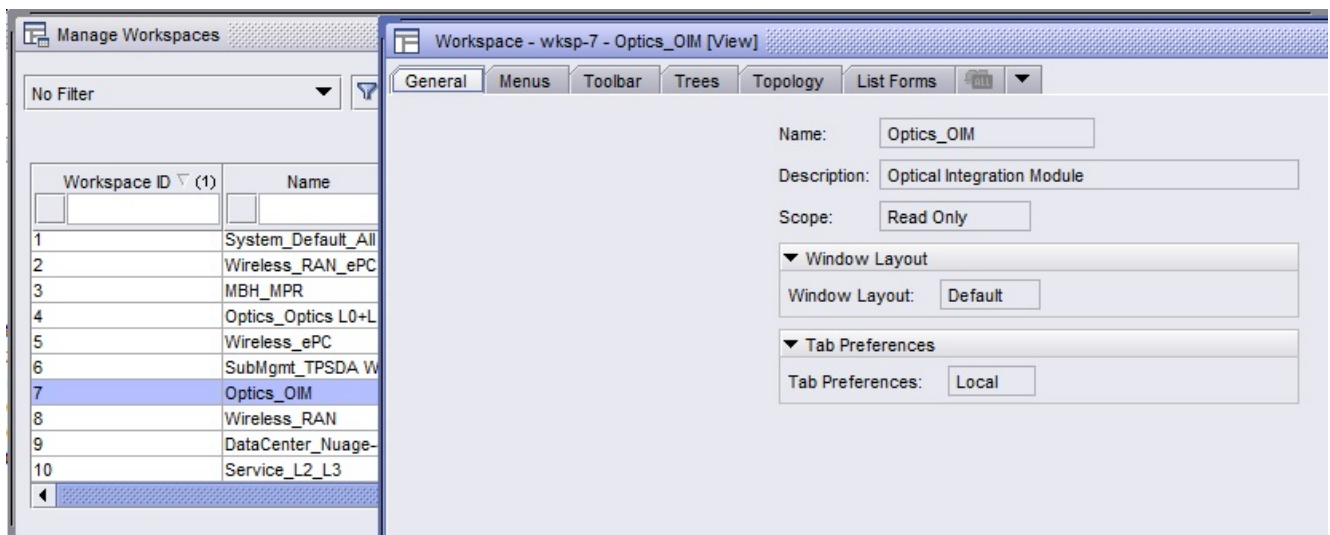
A workspace is a configuration of the main 5620 SAM GUI elements, such as the window layout or menu options. System-defined workspaces are provided, but you can also create and save your own customized workspaces to simplify navigation and operation according to your requirements. See *5620 SAM User 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 6, “OIM workspace” \(p. 43\)](#) shows the OIM workspace configuration forms.

You can set the Optics\_OIM as the default workspace. See [4.5 “To set the Optics\\_OIM workspace as the default workspace” \(p. 44\)](#) for more information.

Figure 6 OIM workspace



---

## 4.5 To set the Optics\_OIM workspace as the default workspace

### 4.5.1 Steps

- 1 \_\_\_\_\_  
Choose Application→User Preferences from the 5620 SAM main menu. The User Preferences form opens.
- 2 \_\_\_\_\_  
Click on the Workspaces tab and click Add. The Add Workspace form opens.
- 3 \_\_\_\_\_  
Choose Optics\_OIM and click OK. The Add Workspace form closes and the Optics\_OIM workspace is listed in the User Preferences form.
- 4 \_\_\_\_\_  
Choose the Optics\_OIM workspace and click Set as Default.
- 5 \_\_\_\_\_  
Save your changes and close the form.

END OF STEPS \_\_\_\_\_

## 4.6 OIM considerations and limitations

### 4.6.1 General information

Table 4, “OIM considerations and limitations” (p. 45) lists the important considerations and limitations for OIM.

Table 4 OIM considerations and limitations

Type	Considerations/limitations
Links	<ul style="list-style-type: none"> <li>If a physical link is modified in the 1350 OMS, you can either restart HIP or resynchronize HIP NEs involved in the physical link for the modifications to reflect in the 5620 SAM.</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>All navigations from the 5620 SAM take more than 10 s.</li> <li>You cannot disable Opt_Connection navigation from the 5620 SAM to the 1350 OMS using the 5620 SAM.</li> <li>Navigation from alarms on physical links will launch 5620 SAM instead of OMS. This is an expected behavior and not a bug.</li> </ul>
Objects	<ul style="list-style-type: none"> <li>Modification of HIP-node name is not supported.</li> <li>Compound node appears as two NEs in the 5620 SAM.</li> <li>Shelf, slot, and port objects are not displayed in order in the equipment tree.</li> </ul>
Ports	<ul style="list-style-type: none"> <li>Port CTPs will not be listed in 5620 SAM.</li> <li>If you need to navigate to a service which terminates on a CTP, physical link should be provisioned between SR port and 1830 PSS physical port. For example, 11DPE12E-1-1-C1-1 will not be listed in the 5620 SAM. You should configure link to 11DPE12E-1-1-C1.</li> </ul>
Status	<ul style="list-style-type: none"> <li>Port administrative state will always be shown as “UP” as part of notification. You need to perform manual synchronization to update the status.</li> </ul>
Synchronization	<ul style="list-style-type: none"> <li>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.</li> <li>If the link, equipment, or alarm is not as per HIP guidelines, all of the further synchronizations for specific type are skipped.</li> </ul>
User	<ul style="list-style-type: none"> <li>You cannot use the same browser to log in to two different 1350 OMS users simultaneously. One of the users will be logged off.</li> </ul>

---

## 4.7 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.

### 4.7.1 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 [4.8 “To change the HIP user name and password” \(p. 49\)](#) 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 [4.8 “To change the HIP user name and password” \(p. 49\)](#) for more information about changing the user password.
- Confirm Password — Re-enter the password. See [4.8 “To change the HIP user name and password” \(p. 49\)](#) for more information about changing the user password.

Navigation panel parameters

- NE navigation URL — See [4.3.5 “Configuring navigation URLs” \(p. 40\)](#) for URL syntax
- Link navigation URL — See [4.3.5 “Configuring navigation URLs” \(p. 40\)](#) for URL syntax
- Port to port Link navigation URL — See [4.3.5 “Configuring navigation URLs” \(p. 40\)](#) for URL syntax

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**

---



---

## 4.8 To change the HIP user name and password

### 4.8.1 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** 

---

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

### 4.9.1 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 7 HIP-NE properties

Network Element - EMS-2-pss128 - Pss128 [Edit]

EMS-2-pss128 - Pss128

General Polling NFV EMS Network Element TCA Deployment Faults

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

Custom Properties

Custom Property 1: N/A

Custom Property 2: N/A

Custom Property 3: N/A

Latitude/Longitude Configuration

Latitude(degrees): 145.32

Longitude(degrees): 12.4

Resync NE Resync Audit Navigate User Activity Actions

**END OF STEPS**

---

---

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

### 4.10.1 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 8 Inventory list

Manage Equipment

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

Count: 6 Page 1 of 1

Site ID	Site Name	Software Version	Location	Chassis Type (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

END OF STEPS

---

## Node navigation

### 4.11 Overview

#### 4.11.1 Purpose

This section provides information about node navigation.

#### 4.11.2 Contents

4.11	Overview	56
4.12	Optical node navigation	57
4.13	To cross-launch the 1350 OMS web GUI from an optical node or a link context	60



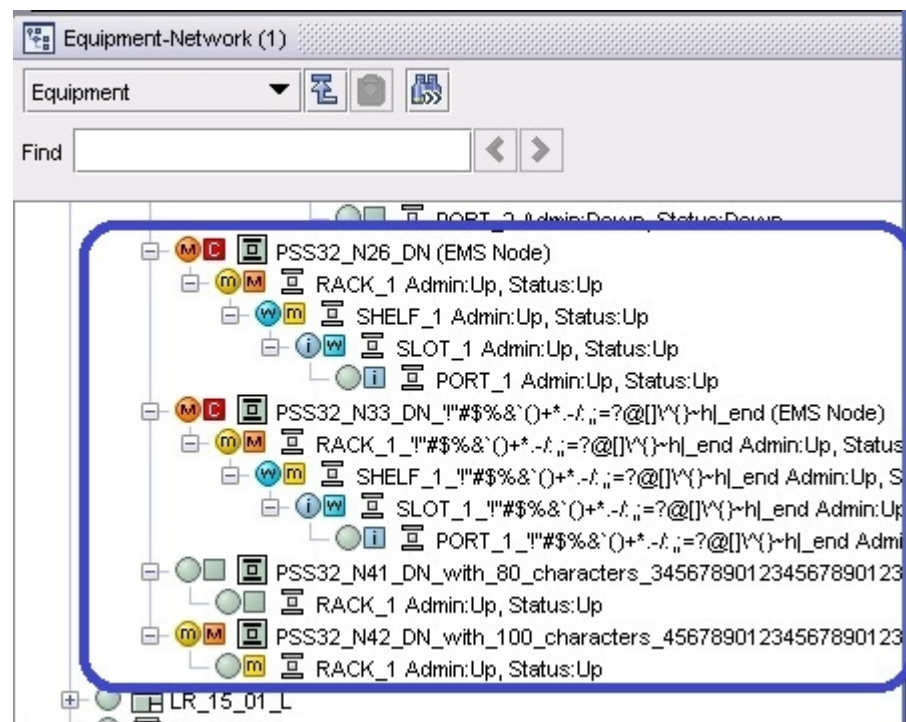
## 4.12 Optical node navigation

### 4.12.1 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. 57) shows the optical node inventory and hardware.

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



### 4.12.2 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 4.13 “To cross-launch the 1350 OMS web GUI

from an optical node or a link context” (p. 58) for more information about cross launch from the 5620 SAM to the 1350 OMS.

Figure 10, “Navigation from the topology map” (p. 57) shows the navigation from the topology map. Figure 11, “Navigation to the 1350 OMS EQM” (p. 59) shows the 1350 OMS EQM application that opens when the HIP NE is 1830 PSS. Figure 12, “Navigation to the 1646 SMC” (p. 59) shows the 1646 SMC application that opens when the HIP NE is 1646 SMC.

Figure 10 Navigation from the topology map

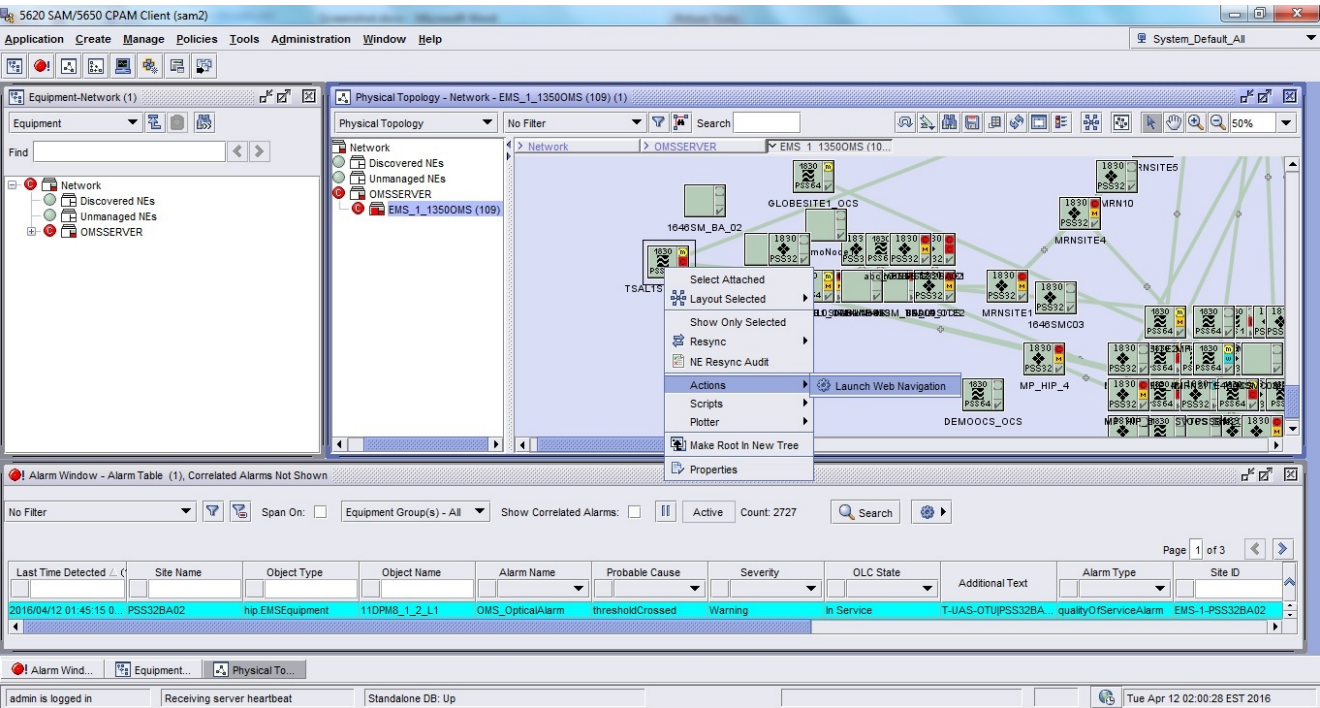


Figure 11 Navigation to the 1350 OMS EQM

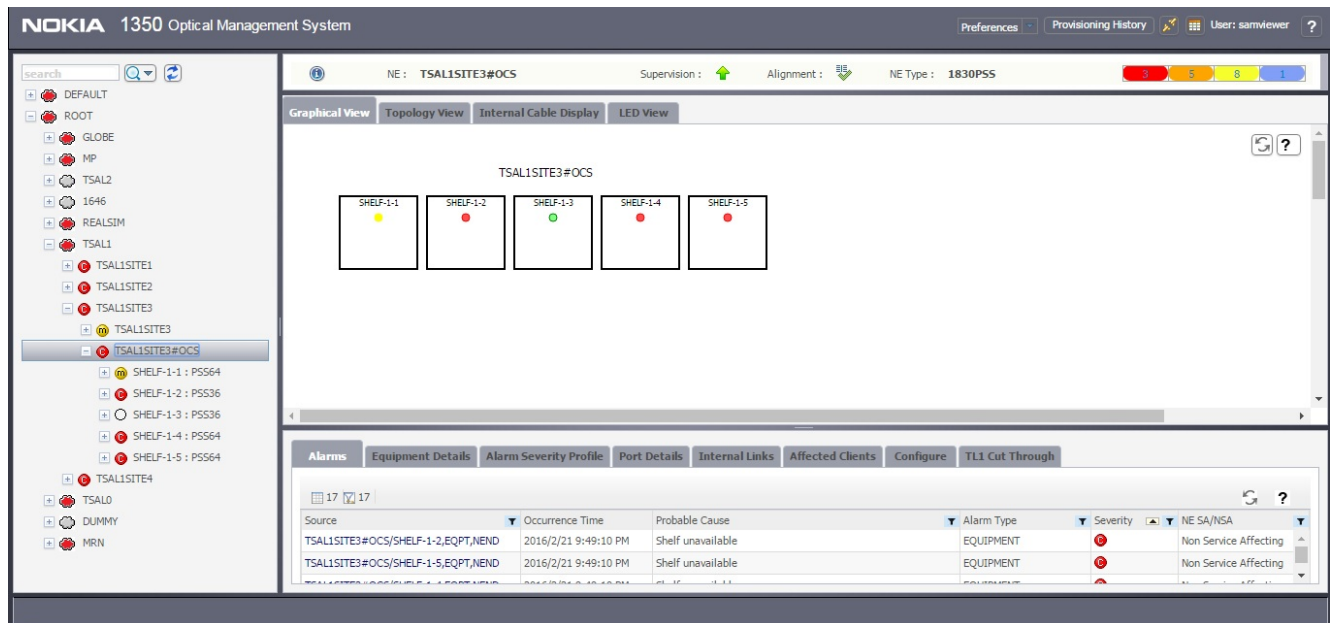
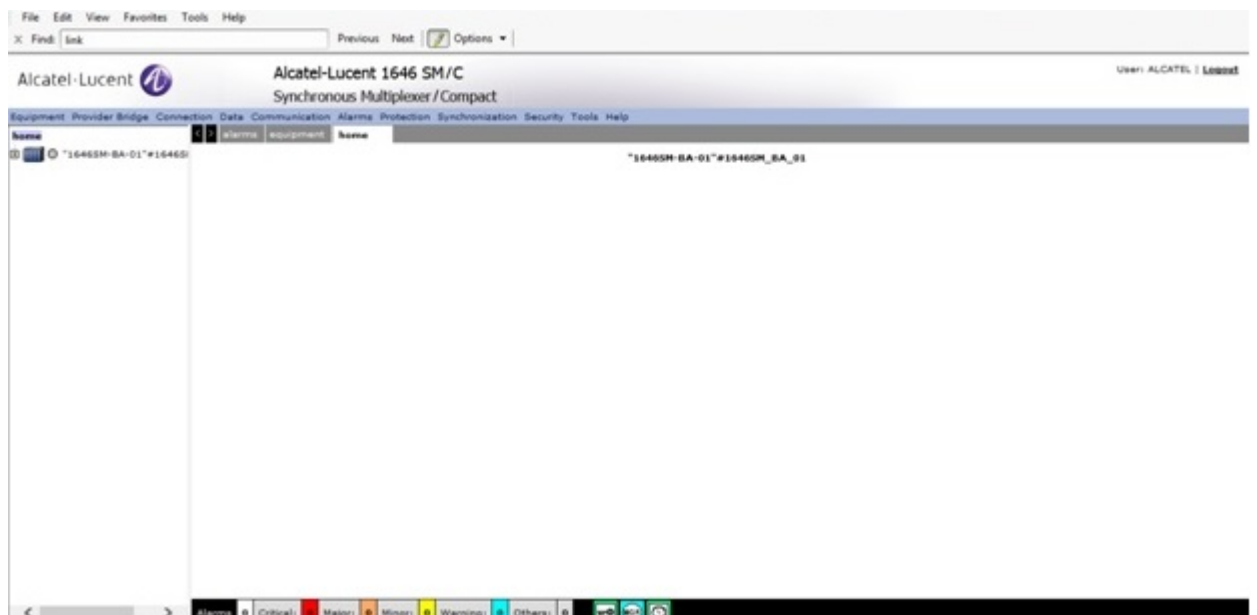


Figure 12 Navigation to the 1646 SMC



---

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

### **4.13.1 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.

### **4.13.2 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

4.14 Overview

4.14.1 Purpose

This section provides information about link navigation.

4.14.2 Contents

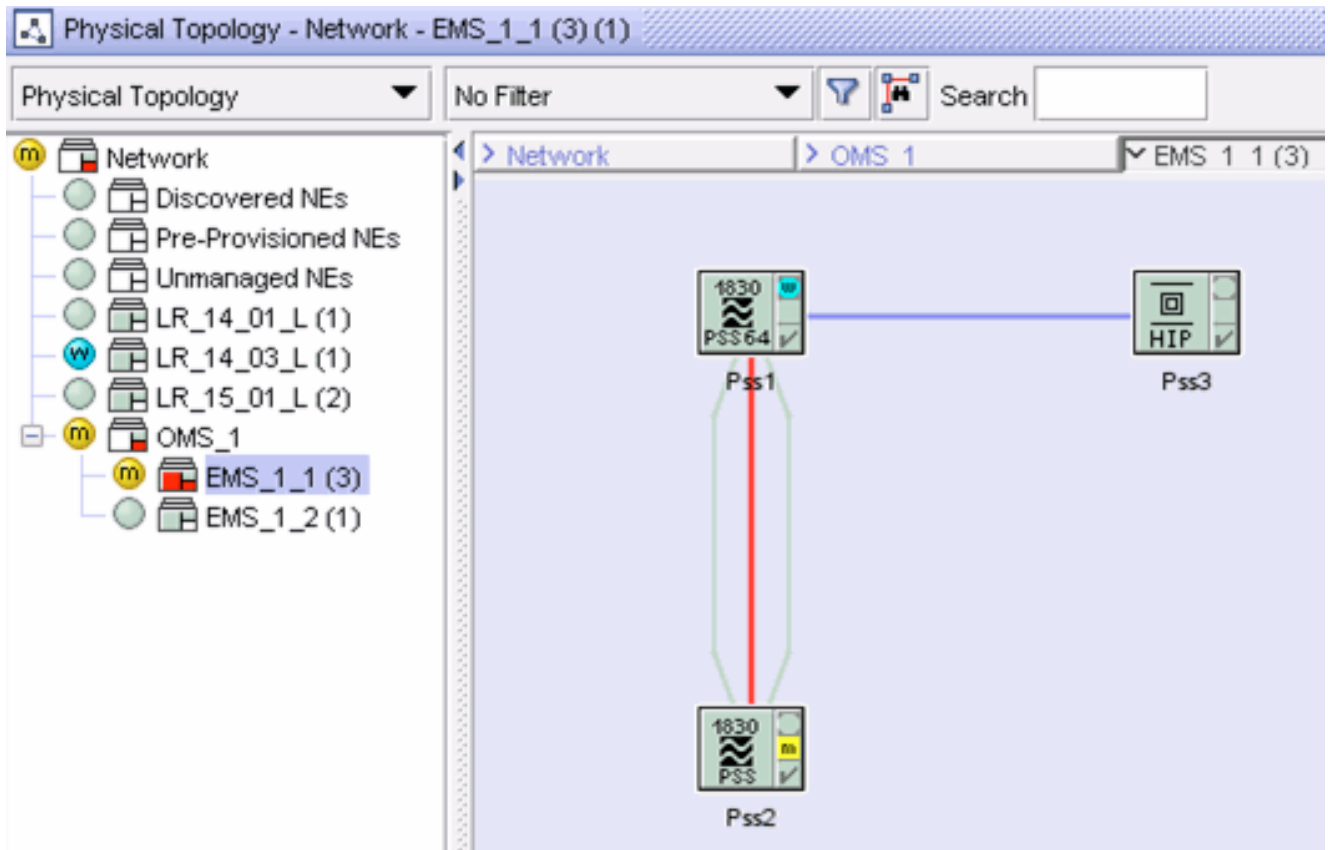
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<a href="#">4.15 Optical link navigation</a>	<a href="#">63</a>

## 4.15 Optical link navigation

### 4.15.1 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



### 4.15.2 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 [4.13 “To cross-launch the 1350 OMS web GUI from an optical node or a link context” \(p. 60\)](#) for more information about cross launch from the 5620 SAM to the 1350 OMS.

Figure 14 Expand group





Figure 15 Navigation from the 5620 SAM

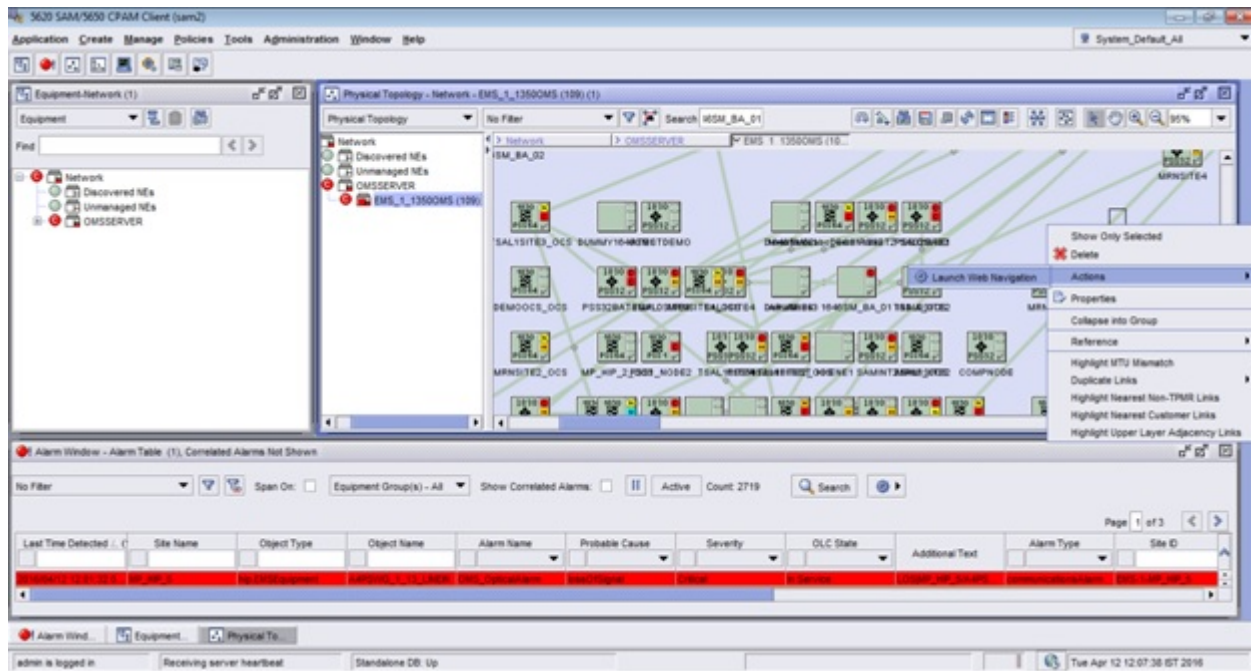
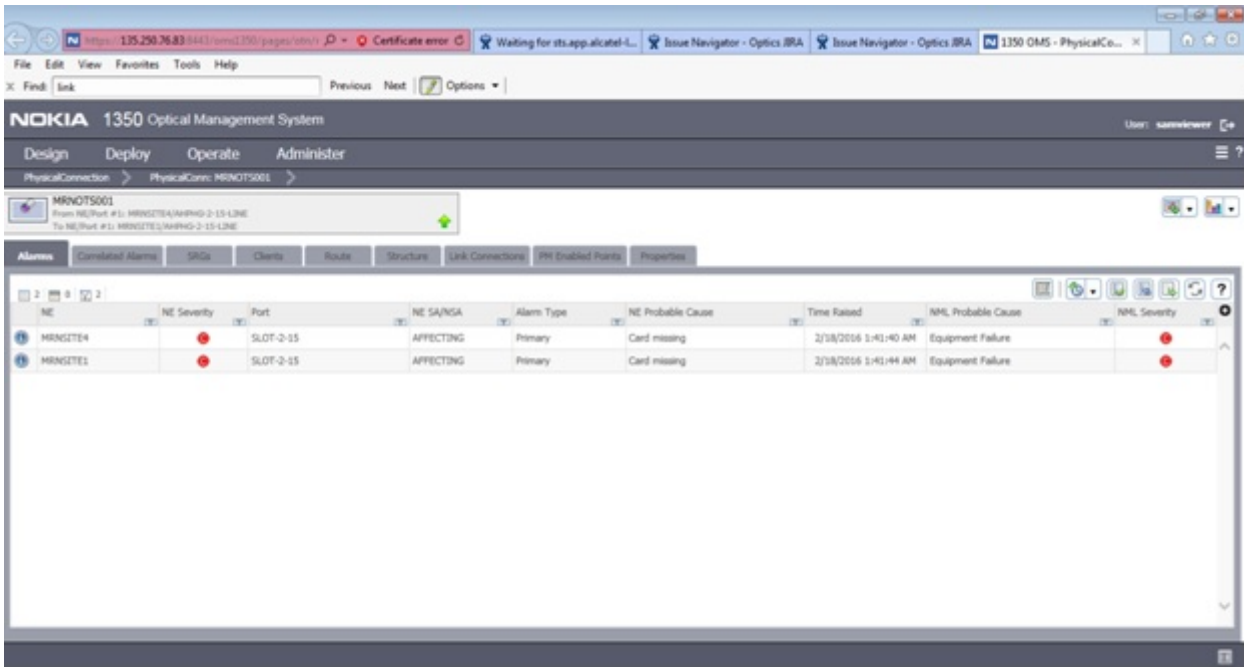


Figure 16 Navigation to the 1350 OMS Physical Connection



4.15.3 Link navigation — MPLS tunnels

MPLS link navigation is also supported from the 5620 SAM. You can navigate from MPLS adjacency link between SRs to the corresponding DSR service in the 1350 OMS. See “[Link configuration between 7750 SR and 1830 PSS HIP NE](#)” (p. 71) for more information about configuring a link between 7750 SR and 1830 PSS HIP NE.

Figure 17, “[MPLS link — LDP navigation](#)” (p. 67) shows navigation from LDP.

Figure 18, “[MPLS link — RSVP navigation](#)” (p. 68) shows navigation from RSVP.

Figure 17 MPLS link — LDP navigation

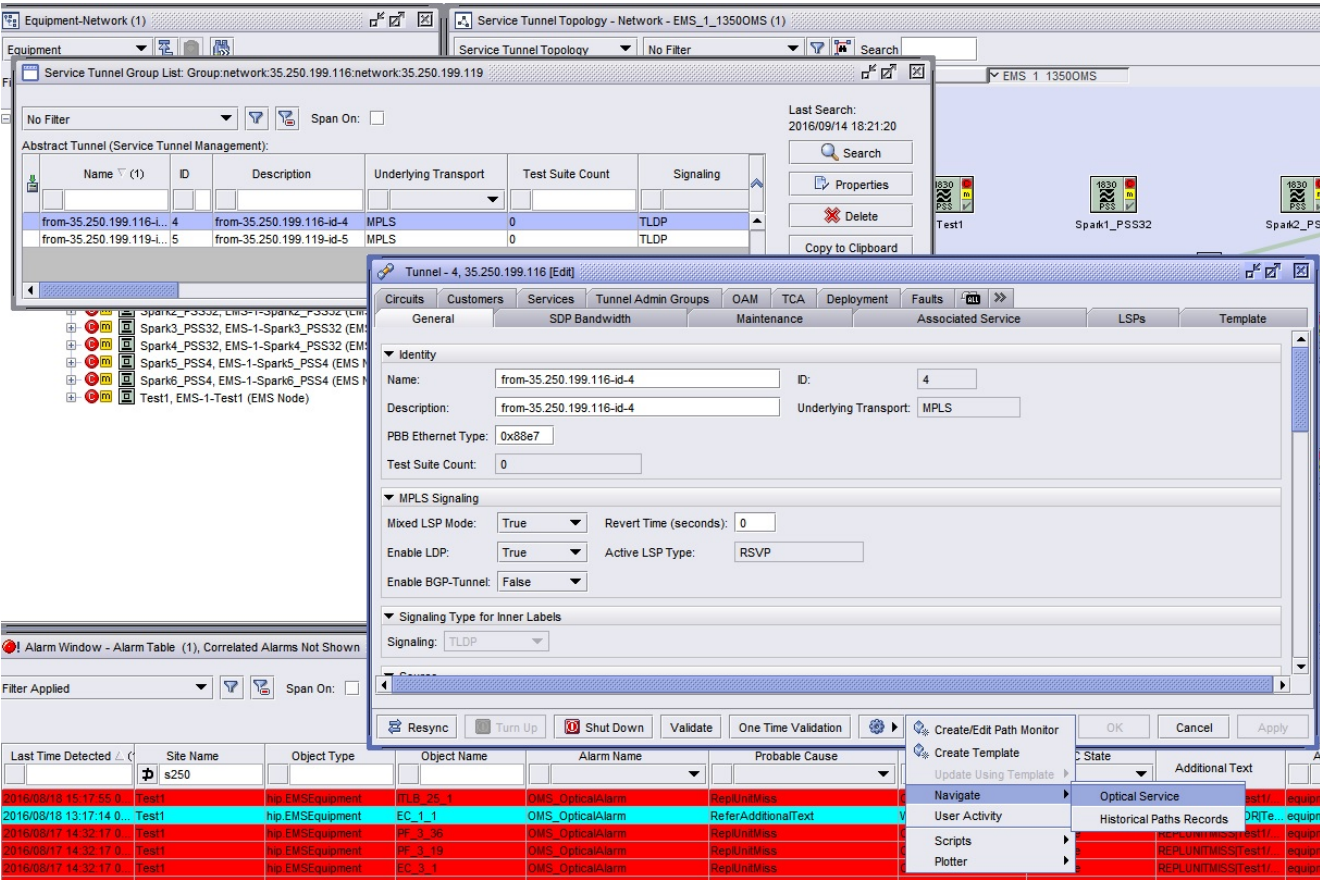
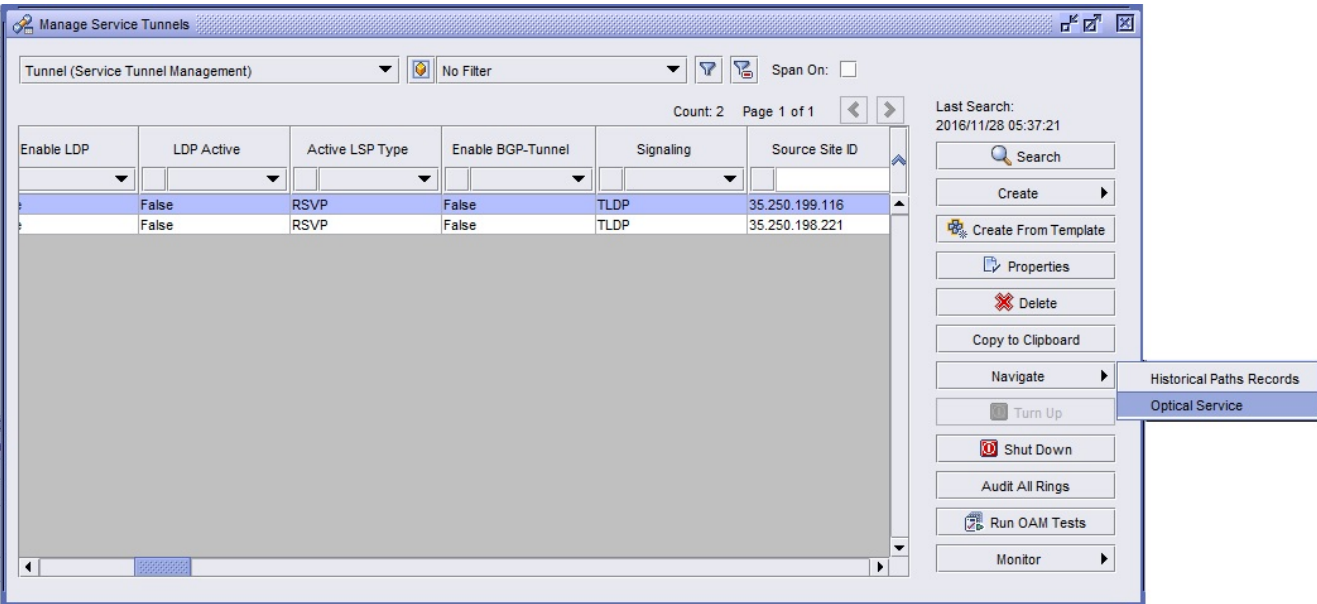


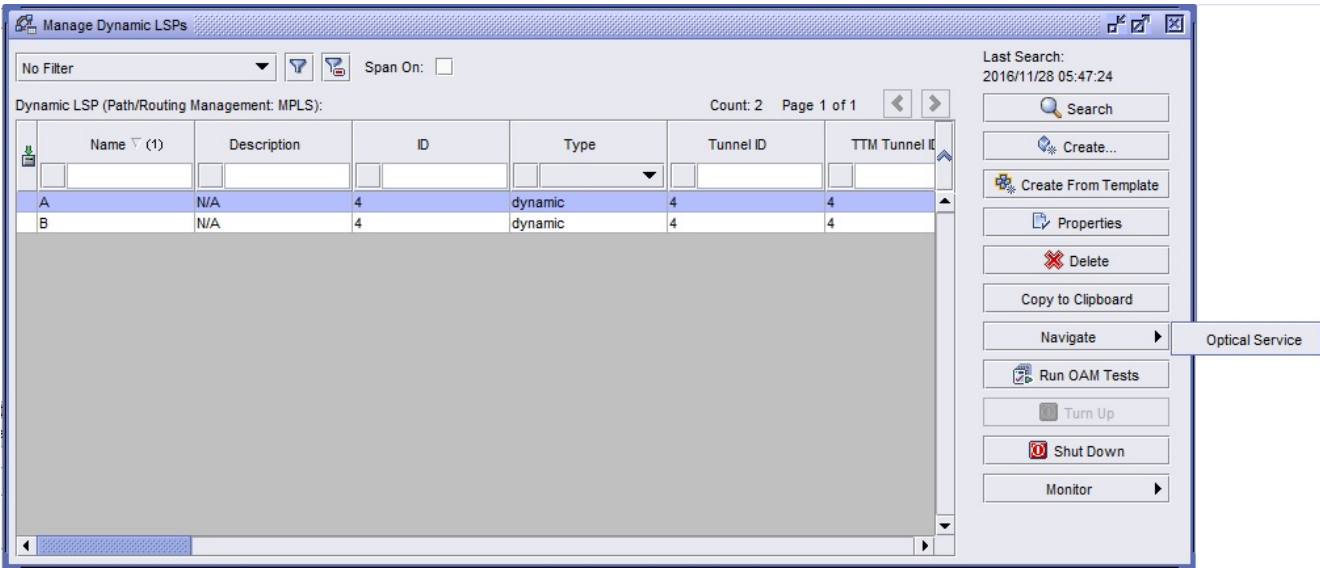
Figure 18 MPLS link — RSVP navigation



4.15.4 Link navigation — LSP

Figure 19, “LSP navigation” (p. 69) shows navigation from LSP. Navigation from the primary LSP only lists the DSR services in the primary path and navigation from secondary LSP only lists the DSR services in the secondary path. When the operational state of the LSP is down, the navigation is successful if the hops are configured manually.

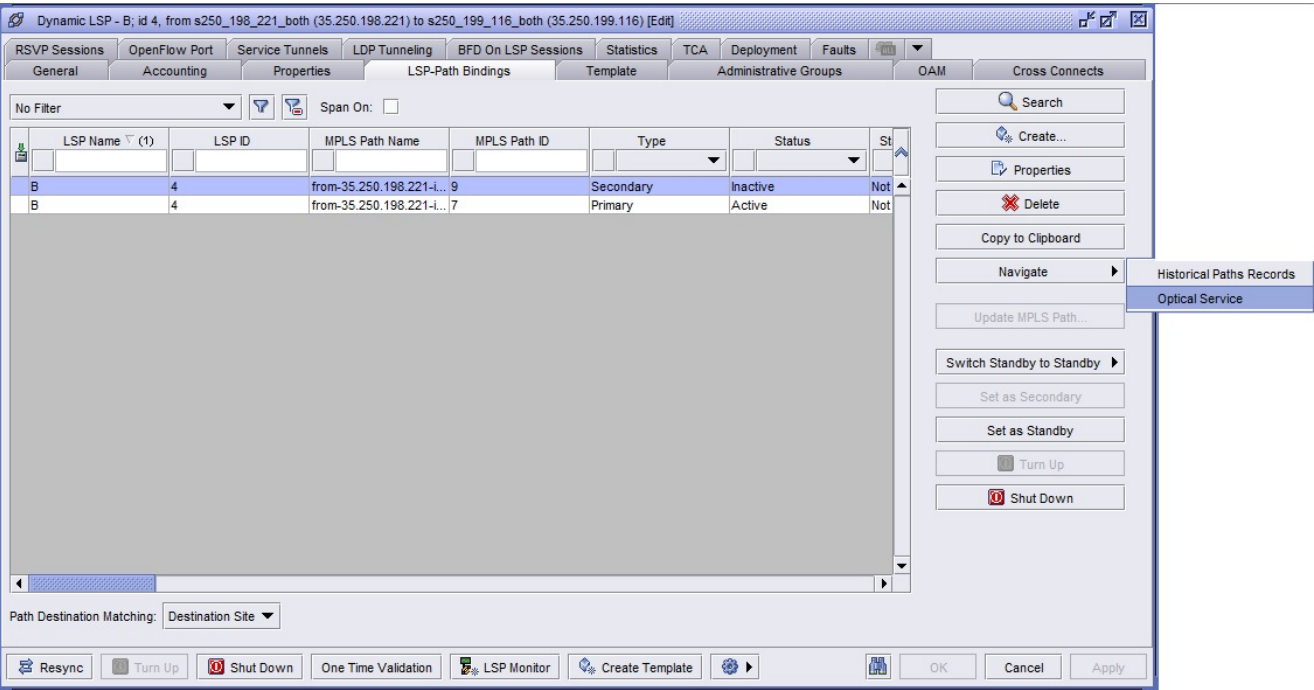
Figure 19 LSP navigation



4.15.5 Link navigation — LSP path binding

Figure 20, “LSP path navigation” (p. 70) shows navigation from LSP path binding.

Figure 20 LSP path navigation



---

## Link configuration between 7750 SR and 1830 PSS HIP NE

### 4.16 Overview

#### 4.16.1 Purpose

This section describes how to configure a physical link between a 7750 SR and a 1830 PSS HIP NE in the 1350 OMS managed as an EMS in the 5620 SAM.

#### 4.16.2 Contents

<a href="#">4.16 Overview</a>	<a href="#">71</a>
<a href="#">4.17 To create a link between a 7750 SR and 1830 PSS HIP NE</a>	<a href="#">72</a>

---

## 4.17 To create a link between a 7750 SR and 1830 PSS HIP NE

### 4.17.1 Steps

- 1 

---

Choose Create→Equipment→Physical Link from the 5620 SAM main menu. The Physical Link (Create) form opens.
- 2 

---

Configure the parameters.
- 3 

---

Set the Endpoint A Type and Endpoint B Type parameters as Port.
- 4 

---

Select the ports in the Endpoint A-Port and Endpoint B-Port panel.
- 5 

---

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

### 4.18 Overview

#### 4.18.1 Purpose

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

#### 4.18.2 Contents

<a href="#">4.18 Overview</a>	<a href="#">73</a>
<a href="#">4.19 To delete a 1350 OMS EMS from the 5620 SAM</a>	<a href="#">74</a>

---

## 4.19 To delete a 1350 OMS EMS from the 5620 SAM

### 4.19.1 Before you begin

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

### 4.19.2 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

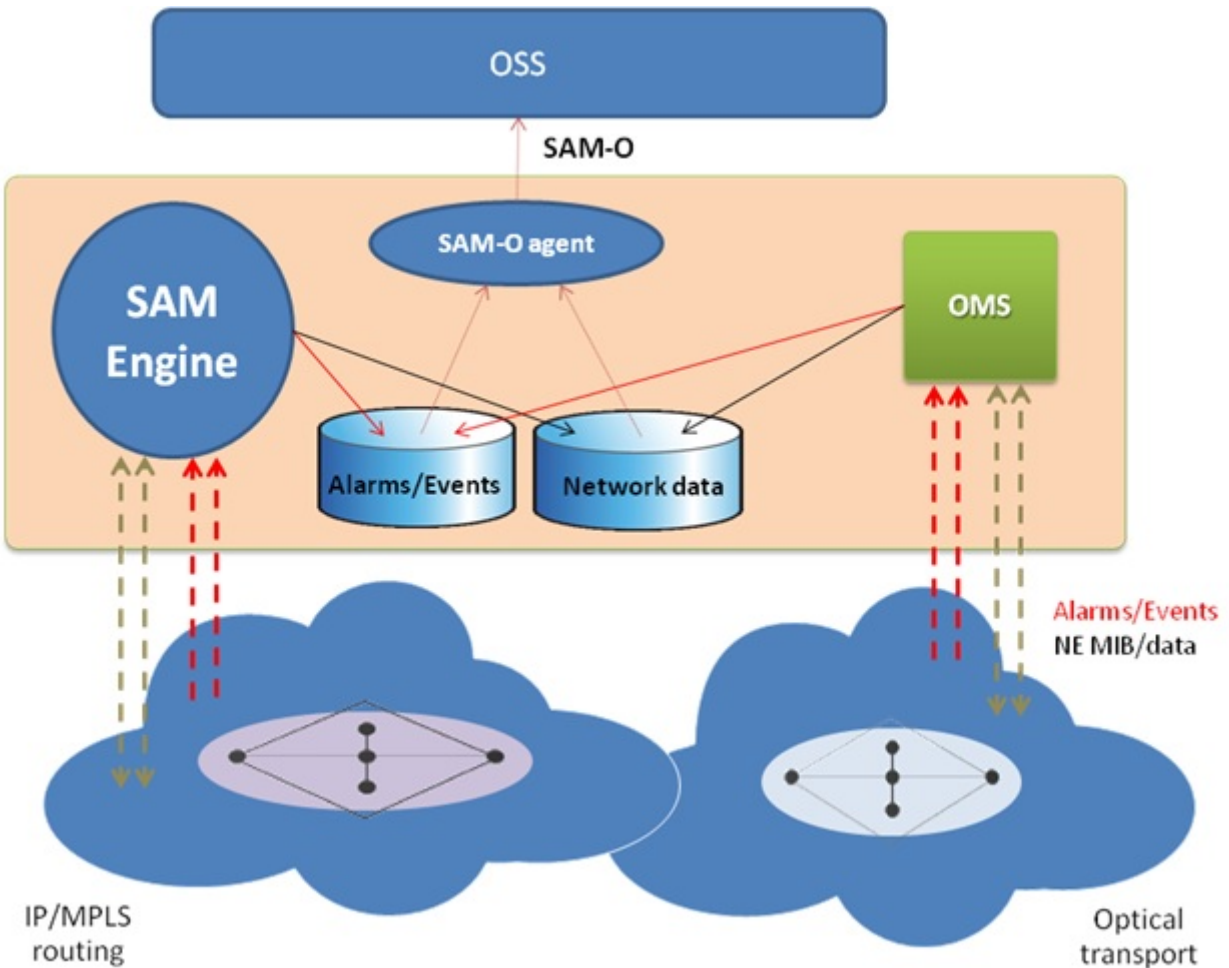
5.1	Overview	75
5.2	OSS integration	76
5.3	Fault and event management	77
5.4	To enable the 1350 OMS cross-launch from the 5620 SAM FM application	82
5.5	To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application	84

## 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 21 The 5620 SAM and the 1350 OMS OSS integration



## 5.3 Fault and event management

### 5.3.1 Introduction

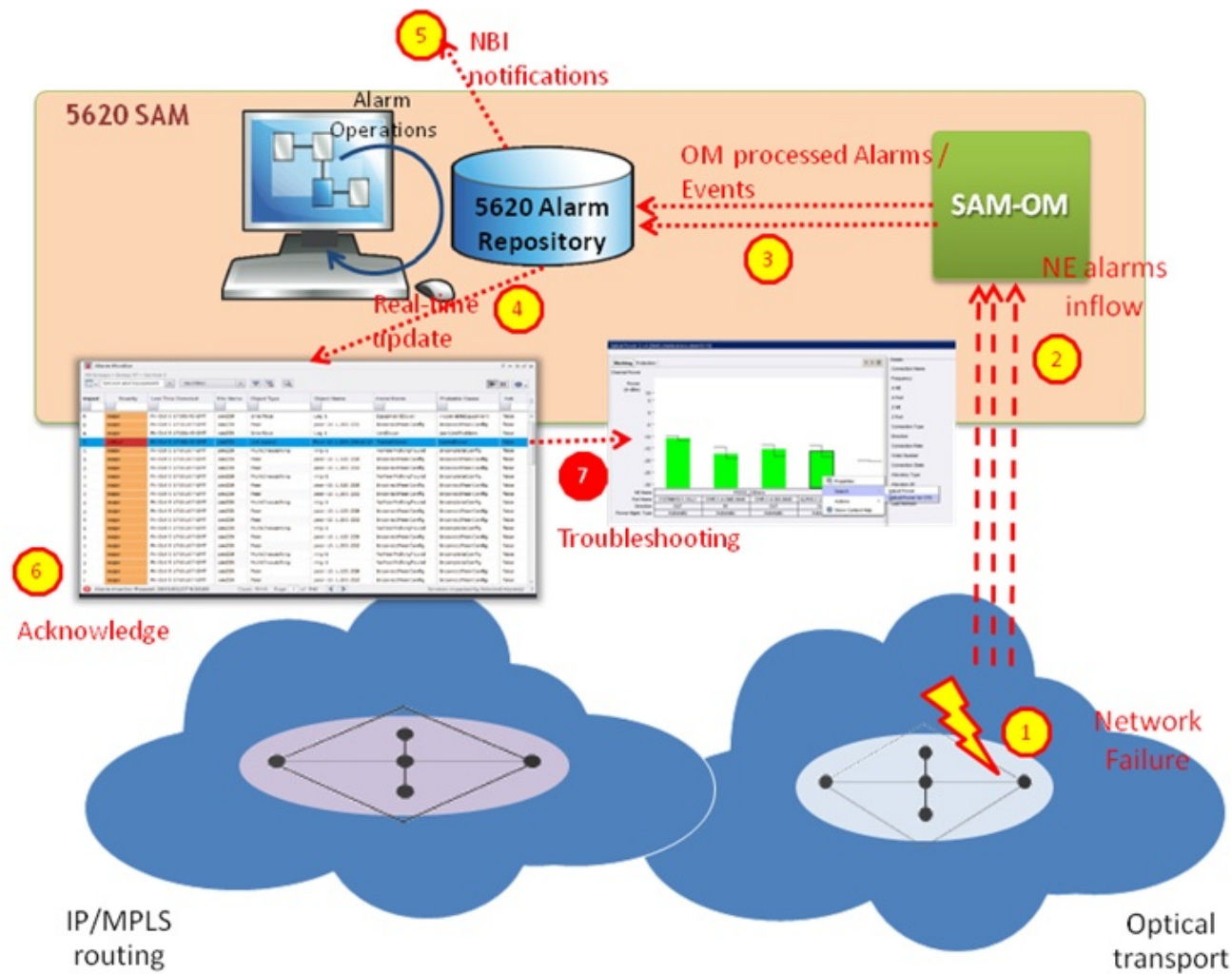
The 5620 SAM and the 1350 OMS integration supports an enhanced fault management application, to provide a single point of handling for the alarms of a multi-layer IP and optical network, and a centralized environment where the fault correlation process takes place.

### 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” \(p. 87\)](#) 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” \(p. 88\)](#) 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” \(p. 82\)](#) and [5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” \(p. 84\)](#) 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 22 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” \(p. 82\)](#) and [5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” \(p. 84\)](#) 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

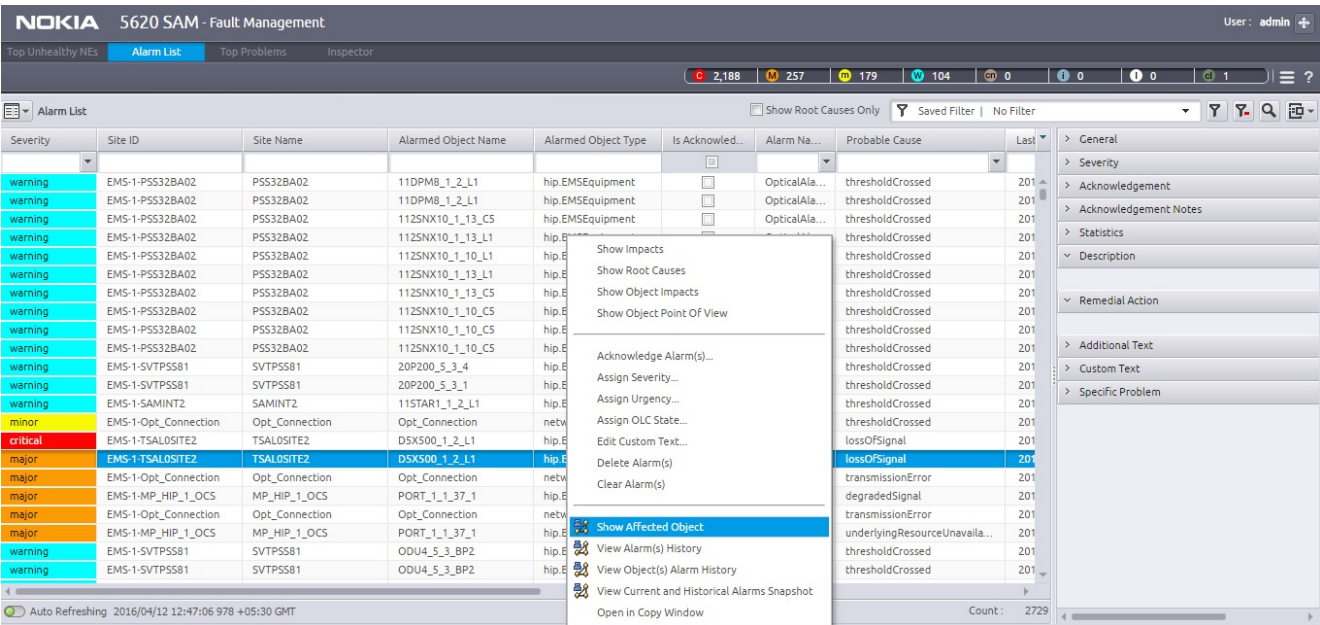
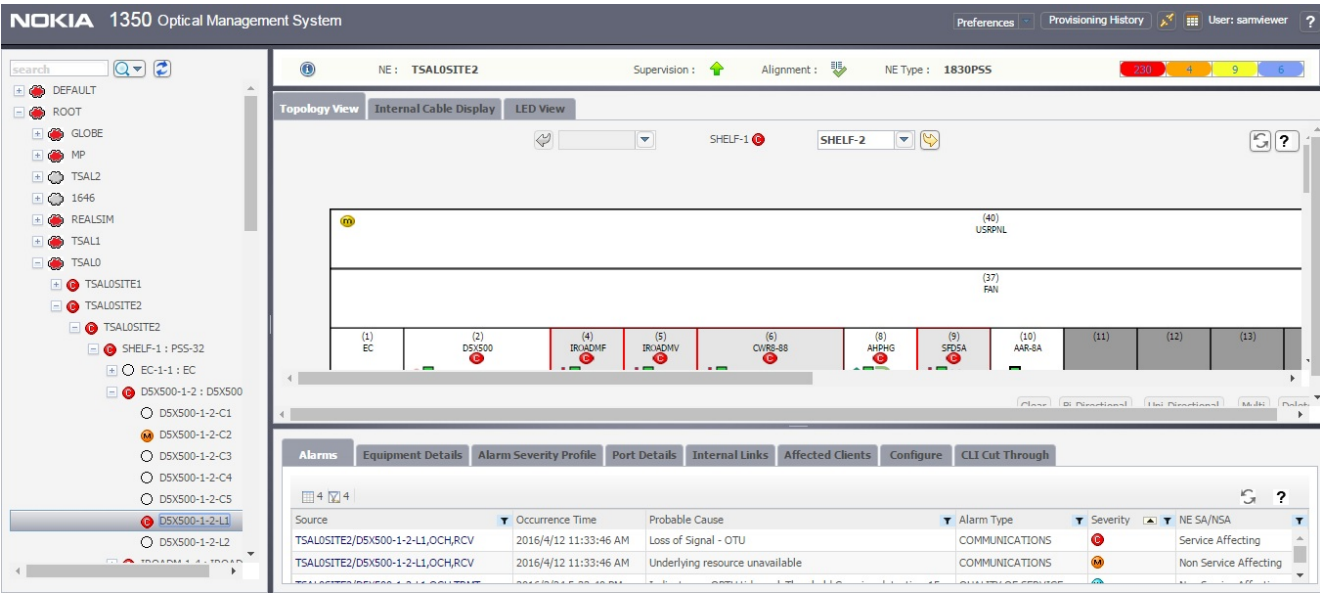


Figure 24 Navigation to the 1350 OMS EQM





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” \(p. 82\)](#) and [5.5 “To cross-launch the 1350 OMS web GUI from the 5620 SAM FM application” \(p. 84\)](#) for more information about cross launch from the 5620 SAM FM application to the 1350 OMS.

Figure 25 Navigation from the 5620 SAM Fault Management Application

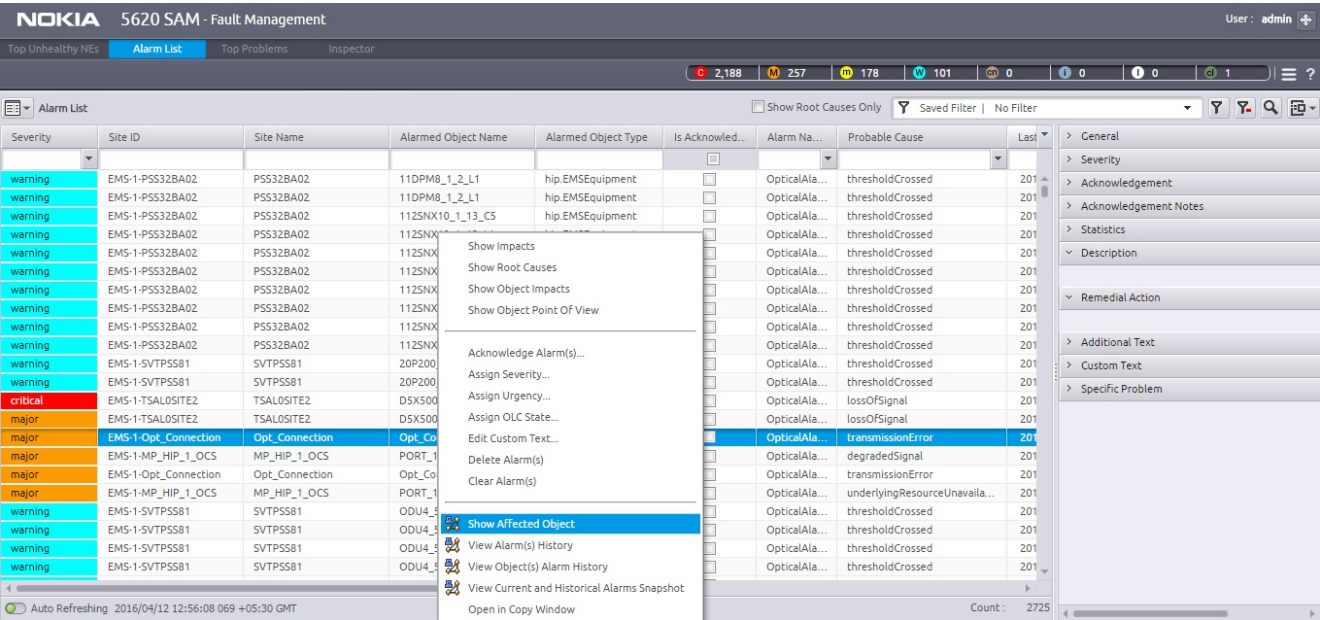
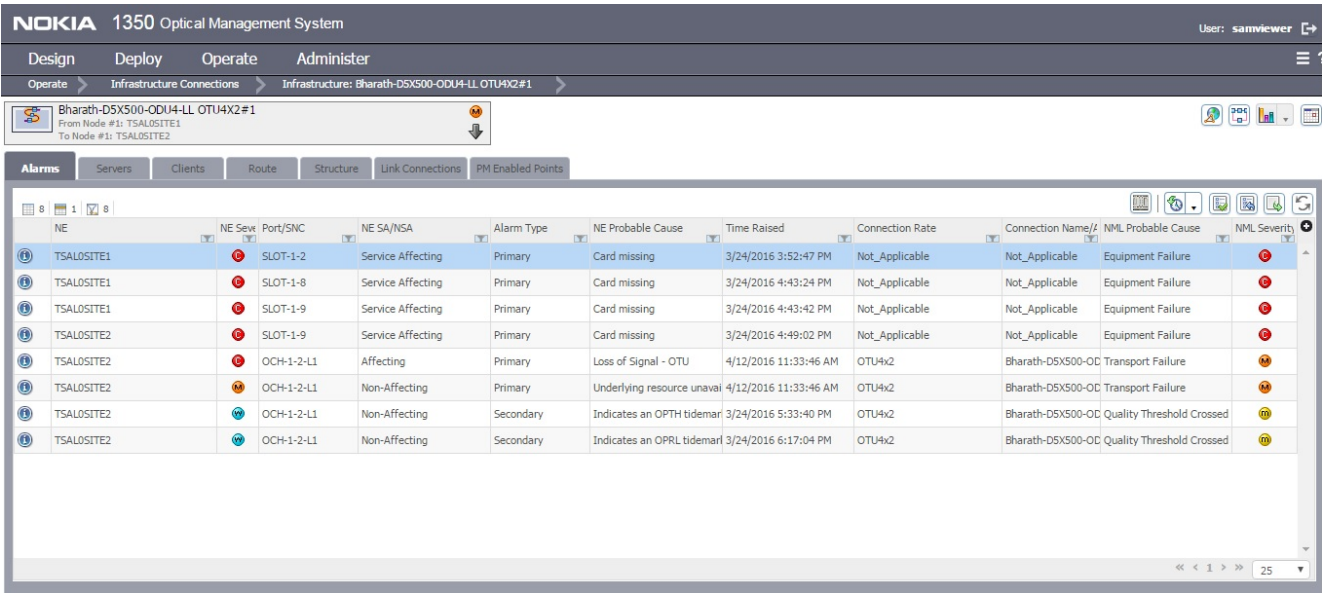




Figure 26 Navigation to the 1350 OMS correlated alarms



## 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.



#### 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$ ./nmsserver.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

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6.6	Problem: EMS is unreachable	90

## 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” \(p. 87\)](#) 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” \(p. 88\)](#) 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 \_\_\_\_\_