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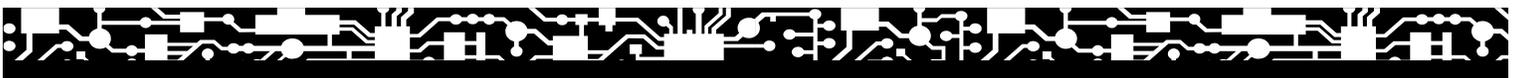


# ***Navis*<sup>™</sup> Optical Network Management System (NMS)**

**Release 6.1 (Pearl)**

Administration Guide

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# About this information product

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**Purpose** This preface provides an overview of this information product, which is the *Navis™ Optical Network Management System (NMS) Release 6.1 Administration Guide*.

The purpose of this *Administration Guide* is to explain to users how to administer the *Navis™ Optical Network Management System (NMS) Release 6.1*.

**Reason for reissue** Issue 2 of this *Administration Guide* is a new document that supports the *Navis™ Optical NMS, Release 6.1*.

**Safety labels** This document does not use safety labels.

**Intended audience** This document is written primarily for operations personnel who administer the *Navis™ Optical NMS*.

**How to use this information product**

This document contains:

- **task** information, which includes administration tasks (that is, step-by-step instructions).
- **conceptual** information, which is specific data related to the tasks.

Both types of information is presented within the chapters of this *Administration Guide*.

**Chapter descriptions**

The following table describes the information in each chapter of this *Administration Guide*.

Section	Title	Description
Preface	About this information product	Explains this document's purpose, its intended audience, and how to use the document.
Chapter 1	<a href="#">Chapter 1, "Administration overview"</a>	Provides an overview of the administration process.
Chapter 2	<a href="#">Chapter 2, "Platform Administration"</a>	Contains HP-UX and Windows configuration set-up, printer set-up, power on and power down tasks.
Chapter 3	<a href="#">Chapter 3, "System administration"</a>	Explains how to start and stop the system, set preferences, restart the database and how to perform other system administration tasks.

<b>Section</b>	<b>Title</b>	<b>Description</b>
Chapter 4	<a href="#">Chapter 4, “User and Domain Administration”</a>	Explains how to assign user privileges and restrict access to the system.
Chapter 5	<a href="#">Chapter 5, “Domain partitioning for provisioning operations”</a>	Contains tasks on how to list network elements, how to add and delete domains, and how to add channels to domains.
Chapter 6	<a href="#">Chapter 6, “Provisioning administration”</a>	Contains tasks on managing areas, aggregates, and scheduled entities.
Chapter 7	<a href="#">Chapter 7, “Reliability and service recovery ”</a>	Provides instructions on how to perform hot and cold backups.
Chapter 8	<a href="#">Chapter 8, “Off-line tool concepts”</a>	Contains tasks for off-line tools.
Chapter 9	<a href="#">Chapter 9, “EMS management ”</a>	Describes how to add new element management systems, perform a database synchronization, and view LAN status information.
Chapter 10	<a href="#">Chapter 10, “Trouble clearing”</a>	Contains troubleshooting procedures.
Chapter 11	<a href="#">Chapter 11, “Patch and Software Upgrade Tasks”</a>	Will provide specific instructions on how to upgrade the system.

Section	Title	Description
Appendix A	<a href="#">Appendix A, “Navis™ Optical NMS Filesystems”</a>	Contains a list of file systems.
Appendix B	<a href="#">Appendix B, “Navis™ Optical NMS Configuration Parameters”</a>	Contains a placeholder for general information about system configuration parameters.
Index	Index	Enables the user to find information on specific topics.

**Conventions used** This *Administration Guide* relies on the following typographical conventions to distinguish between computer input and output.

- When describing the Navis™ Optical NMS software, fields in windows and field entries are identified with **this font**.
- When describing the UNIX® environment, text and numbers that the user inputs to the computer are identified with boldface type.
- In the UNIX environment, text and numbers that the computer outputs to the user are identified with monospace type.

**Related documentation** This *Administration Guide* is part of a set of documents that supports the Navis™ Optical NMS.

#### List of documents

The document set that supports Navis™ Optical NMS comprises:

1. *Navis™ Optical Network Management System Getting Started Guide*, (365-309-276) instructs users how to begin using the product to provision and manage a network. This document includes tasks and conceptual information.
2. *Navis™ Optical Network Management System Applications and Planning Guide*, (365-309-277) describes the Navis™ Optical NMS features and applications, provides a product description and the hardware platforms for the product, and describes system planning and engineering, ordering, and product support. This document contains conceptual information only.

3. *Navis™ Optical Network Management System Provisioning Guide*, (365-309-278) instructs users how to use the product to provision and manage a network. This document includes tasks and conceptual information.
4. *Navis™ Optical Network Management System Maintenance Guide*, (365-309-279) instructs users on how to maintain the product and the network. This document includes tasks and conceptual information.
5. *Navis™ Optical Network Management System Administration Guide*, (365-309-280) instructs users on how to administer the product and the network. This document includes tasks and conceptual information.

### **Glossary**

This *Administration Guide* contains a glossary that will be helpful to users of theNavis™ Optical NMS.

### **On-line documentation**

On-line documentation for Navis™ Optical NMS is provided in two formats:

1. An on-line version, in HTML format, of this document set is provided as part of theNavis™ Optical NMS software.
2. An on-line version, in HTML format, of this document set is available on CD-ROM. The CD-ROM, which is titled *Navis™ Optical NMS User Documentation CD-ROM*, (365-309-281), includes the full set of documents listed previously.

### **Screen help**

The Navis™ Optical NMS software includes screen help for each form, which describes software includes screen help for each form, which describes the purpose of the form, each field, and each button.

### **How to comment**

To comment on this information product, go to the Online Comment Form (<http://www.lucent-info.com/comments>) or email your comments to the Comments Hotline ([ctiphotline@lucent.com](mailto:ctiphotline@lucent.com)).

**How to order** To order Navis™ Optical NMS information products, contact your Lucent Technologies customer team representative or contact Lucent Technologies at:

- From the United States, call 888-LUCENT8 (888-582-3688), prompt 1.
- From Canada, call 317-322-6619.
- From Europe, the Middle East, and Africa, call 317-322-6416.
- From Asia, the Pacific Region, China, the Caribbean, and Latin America, call 317-322-6411.



# 1 Administration overview

## Overview

---

**Purpose** This chapter provides an overview of the *Navis*<sup>™</sup> Optical Network Management System (NMS) administration process.

**Platform Administration and Navis<sup>™</sup> Optical NMS Administration**

This document contains the administrative operations on Navis<sup>™</sup> Optical NMS.

It covers the following administration categories:

- ***Platform Administration***, which contains critical platform setup tasks that are performed outside of the Navis<sup>™</sup> Optical NMS application. This category includes tasks for powering on or powering off workstations, adding users to workstations, and assigning user privileges.
- ***Navis<sup>™</sup> Optical NMS Administration***, which includes tasks and concepts specific to this application.

**Important Note**

This document contains:

- ***Task*** information, which includes administration tasks (that is, step-by-step instructions).
- ***Conceptual*** information, which is specific data related to the tasks.

Both types of information is presented within the chapters of this administration guide.

**Contents**

<a href="#">What is administration?</a>	<a href="#">1-3</a>
<a href="#">Who performs administration tasks?</a>	<a href="#">1-4</a>
<a href="#">Administer various hardware configurations</a>	<a href="#">1-5</a>



# What is administration?

---

**Introduction** Navis™ Optical NMS administration covers the following areas:

- Security management
- Geographic Domain administration
- Service Domain administration

**Administration Process** The administration process provides the following type of support to the Navis™ Optical NMS and the network:

- Security management support
- Provisioning support
- System support

**Security management** *Security management support* includes tasks associated with how to add and delete user IDs and profiles.

**Provisioning support** *Provisioning support* includes tasks used to add or delete geographic domains or to list network elements.

**System support** *System support* includes system-related tasks, such as how to backup or recover the system.



## Who performs administration tasks?

---

**Introduction** Administrative tasks are performed by users with a system administrator user type.

**Navis™ Optical NMS system administrator user types**

Navis™ Optical NMS has the following system administrator user types:

- *Navis™ Optical NMS System Administrator*, which is the **dacscan** user with privileges to start or stop the Navis™ Optical NMS.
- *Navis™ Optical NMS Administrator*, which is an **sa** user allowed to create other Navis™ Optical NMS application users.

In addition to those system administrator user types, there are also hardware administrators for UNIX and Windows systems known as *OS (Operating System) Superusers*. The OS Superuser has ultimate power over UNIX or Windows hardware, and are **root** and **Administrator** respectively.

For a description of Navis™ Optical NMS user types, see the *Administering users* section in Chapter 2 of this document.

**Functions** Users with system administrator privileges are able to perform tasks that enable them to:

- Provide security management, provisioning, and system support to the Navis™ Optical NMS host and to the Network Map.
- Control the appearance of the Network Map



## Administer various hardware configurations

---

**Introduction** Navis™ Optical NMS supports various hardware configurations.

**List of hardware configurations**

The following hardware configurations are supported:

- single server
- single server (with disk mirroring)
- local redundancy
- geographic redundancy

Refer to Chapter 5 (Hardware Platforms) of the *Navis™ Optical NMS Applications and Planning Guide*.







# 2 Platform Administration

## Overview

---

### Purpose

This chapter contains information on how to:

- use common UNIX commands
- power on HP and Windows servers and MC/ServiceGuard configurations
- power on HP and Windows workstations
- perform configuration setup tasks
- manage users on client/server workstations residing on HP-UX and Windows platforms
- create and delete SAGE workstation users
- add a printer
- power down HP and Windows workstations
- power down HP and Windows servers

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## Section I: Common UNIX commands

### Overview

---

**Purpose** This section describes a few UNIX commands used in the administration process. Some of these commands are used in this document's tasks, while others may be used when there is a need to access remote systems or to verify network communication status.

**Contents**

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## init command for changing run levels

---

- Introduction** An `init` command is used to change the run level of the Navis™ Optical NMS application on an HP-UX machine. The following describes two run levels, *run level 3* and *run level 4*.
- Run level 3** When the system administrator enters the `init 3` command, it causes the system to switch to run level 3, which shuts down the Navis™ Optical NMS application. The `init 3` command would be entered, for example, before creating a trace file.
- Run level 4** When the system administrator enters the `init 4` command, it causes the system to switch to run level 4, which starts up the Navis™ Optical NMS application. The `init 4` command would be entered, for example, after a trace file has been created.

□

## who command for verifying system run level

---

**Purpose** The who command allows you to verify system run level.

**Task** Use this task to determine the current run level of the system.

---

**1** Log into the host as root.

---

**2** At the prompt, enter who -r

**Result:**

A message displays a line of current run level information, such as run-level 3 Dec 30 11:26 3 0 S.

END OF STEPS

---



## ping command for verifying communication

---

**Description** The ping command is used to determine whether it is possible to communicate with a remote system. Failure to communicate may be caused by the remote system being switched off or the communication link not working correctly.

When a user enters `ping <host_name> -n 10` at a prompt, output similar to the following displays.

```
PING <host_name>.lucent.com: 64 byte packets
64 bytes from <ip_address>: icmp_seq=0. time=155. ms
64 bytes from <ip_address>: icmp_seq=1. time=155. ms
64 bytes from <ip_address>: icmp_seq=2. time=155. ms
64 bytes from <ip_address>: icmp_seq=3. time=154. ms
64 bytes from <ip_address>: icmp_seq=4. time=155. ms
64 bytes from <ip_address>: icmp_seq=5. time=154. ms
64 bytes from <ip_address>: icmp_seq=6. time=154. ms
64 bytes from <ip_address>: icmp_seq=7. time=155. ms
64 bytes from <ip_address>: icmp_seq=8. time=155. ms
64 bytes from <ip_address>: icmp_seq=9. time=157. ms
----<host_name> PING Statistics----
10 packets transmitted, 10 packets received, 0% packet
loss round-trip (ms) min/avg/max = 154/154/157
```

□

## telnet command for initiating remote sessions

---

**Description** The tel net command is used to initiate a session on a remote system. When tel net <system\_name> is entered at a prompt, the system requests the user to type the login ID and password. Once successfully logged in, the session is active until the user logs off of the remote system.



## uname command for displaying system information

---

**Purpose** The `uname` command allows you to identify the system with which a terminal is communicating.

**Task** Use this task to display system information.

---

**1** Log into a terminal as root.

---

**2** At the prompt, enter `uname -a`

**Result:**

A line similar to the following displays:

```
HP-UX <host_name> B.11.00 A 9000/810 2013485357  
two-user license.
```

END OF STEPS

---



## lanscan command for viewing LAN status

---

**Purpose** The `lanscan` command allows you to view the status of any of the LANs that are connected to the machine, including the LAN that connects the Navis™ Optical NMS to the EMS.

**Task** Perform the steps below to view LAN status information.

---

**1** Using the system console, log into either the primary or the standby host as root.

---

**2** Enter `lanscan`

**Result:**

The LAN status information is displayed.

END OF STEPS

---



## vgdisplay command for verifying mirroring status

---

**Purpose** The `vgdisplay` command is used to verify that the application and databases residing on separate disks are synchronized.

**About the mirrored disk configuration** A mirrored disk configuration eliminates the need to have a second server to serve as a backup. The application and database that reside on separate disks are mirrored onto a second set of disks. Information that is written to disk is reflected onto the mirrored counterpart. It is recommended that the mirroring status is checked from time to time to ensure that all the mirrored information is synchronized with the primary information.

**Before you begin** Ensure that the `LVSTATUS` is set to `SYNC`.

**Task** Perform the steps below to obtain mirroring status:

---

**1** Using the system console, log into the primary host as root.

---

**2** Enter `vgdisplay -v | pg` at the `#` prompt.

**Result:**

The mirroring status displays.

END OF STEPS

---



## Section II: Power on servers and MC/ServiceGuard configurations

### Overview

---

**Purpose** This section contains information on how to power on:

- Single-servers
- Geographic Redundancy servers
- Local Redundancy servers
- Windows terminal servers

#### Contents

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## Power on an HP server (single-server configuration)

---

**Purpose** Use the following task to power on an HP server that has a single-server hardware configuration.

**Important!** When the system is powered on, it *does not* automatically start the Navis™ Optical NMS application.

**Task** Use this task to power on the HP server (single-server configuration).

---

- 1 Switch on all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.
  - 2 Switch on the HP server (press the power switch or turn key, as appropriate).
- 

**Result:**

The HP server runs a sequence of diagnostics then boots into multi-user mode. The server is ready when the Console Login prompt displays on the controlling terminal.

END OF STEPS

---



## Power on HP servers (MC/ServiceGuard cluster - local redundancy configuration)

---

**Purpose** Use the following task to power on an MC/ServiceGuard cluster hardware configuration, which consists of HP servers in a local redundancy configuration.

**Important!** When the system is powered on, it *does not* automatically start the Navis™ Optical NMS application.

**Task** Use this task to power on the *primary* server and *standby* HP server(s) using a local redundancy configuration.

---

**1** Switch on all peripherals associated with the cluster, for example, control terminal(s), external disk drives, external tape drives, and modems.

---

**2** Switch on the *primary* HP server (press the power switch or turn key, as appropriate).

**Result:**

The HP server runs a sequence of diagnostics then boots into multi-user mode. The server is ready when the Console Login prompt displays on the controlling terminal.

---

**3** Switch on the *standby* HP server(s) (press the power switch or turn key, as appropriate).

**Result:**

The standby server(s) runs a sequence of diagnostics, then boots into multi-user mode. The server(s) is ready when the Console Login prompt displays on the controlling terminal.

END OF STEPS

---



## Power on an HP server (geographic redundancy configuration)

---

**Purpose** Use the following task to power on an HP server with any of the geographic redundancy configurations.

**Important!** When the system is powered on, it *does not* automatically start the Navis™ Optical NMS application. Note that the designation of *primary* and *standby* servers in this task refers to the *current* status of the servers *not* the status of the servers at installation.

**Task** Use this task to power on the HP server using a geographic redundancy configuration.

---

1 Start the primary server. See [“Power on an HP server \(single-server configuration\)” \(2-13\)](#).

---

2 Start the standby server. See [“Power on an HP server \(single-server configuration\)” \(2-13\)](#).

END OF STEPS

---



## Power on a Windows terminal server

---

**Purpose** Use the following task to power on a Windows terminal server.

**Task** Use this task to power on a Windows terminal server.

---

**1** Switch on all associated peripherals, for example, control terminal(s), external disk drives, external tape drives, and modems.

---

**2** Switch on the server (press the power switch or turn key, as appropriate).

**Result:**

The server runs a sequence of diagnostics. The server is ready when the Windows login dialog box displays.

END OF STEPS

---



## Section III: Power down servers and MC/ServiceGuard configurations

### Overview

---

**Purpose** This section contains information on how to power down:

- Single-servers and Geographic Redundancy servers
- an MC/ServiceGuard cluster
- Local Redundancy servers
- Windows terminal servers

#### Contents

<a href="#">Power down a single server</a>	<a href="#">2-18</a>
<a href="#">Power down MC/ServiceGuard cluster (local redundancy configuration)</a>	<a href="#">2-19</a>
<a href="#">Power down a server (geographic redundancy configuration)</a>	<a href="#">2-21</a>
<a href="#">Power down a Windows terminal server</a>	<a href="#">2-23</a>



## Power down a single server

---

**Purpose** Use the following task to power down a single server.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down. See [“Stop Navis™ Optical NMS on a single server” \(3-14\)](#).

**Task** Complete the following task to power down a single server.

---

**1** On the control terminal, log in as root.

---

**2** At the prompt, type `cd /`

**Result:**

The directory is changed.

---

**3** At the prompt, type `shutdown -h -y 0`

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
printed above
```

---

**4** Switch off the HP server (press the power switch or turn key, as appropriate).

**Result:**

The HP server is powered off.

---

**5** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS

---



## Power down MC/ServiceGuard cluster (local redundancy configuration)

---

**Purpose** Use the following task to power down an MC/ServiceGuard cluster hardware configuration, which contains HP servers in a local redundancy configuration.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down.

**Task** Perform the steps below to bring the server down when the local redundancy hardware configuration is used.

---

**1** Log into any server in the cluster as root.

---

**2** At the prompt, enter **sam** and then press **Enter**.

**Result:**

The System Administration Manager window's SAM Areas display.

---

**3** From the System Administration Manager window, select **Clusters > High Availability Clusters > Cluster Admin**.

---

**4** Select **ITM Cluster**, then select **Actions > Shutdown Cluster** .

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
printed above
```

---

**5** Switch off the HP server (press the power switch or turn key, as appropriate).

**Result:**

The HP server is powered off.

- 
- 6** Repeat [Step 3](#) through [Step 5](#) until all cluster servers are off.

- 
- 7** Switch off all peripherals associated with the cluster, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS



## Power down a server (geographic redundancy configuration)

---

**Purpose** Use the following task to power down an HP server that has any of the geographic redundancy configurations.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down. (See [“Stop Navis™ Optical NMS on a server with a geographic redundancy configuration” \(3-20\).](#))

**Task** Complete the following task to power down a server with a geographic redundancy configuration.

---

**1** Log in on the control terminal of the *primary* server as root.

---

**2** At the prompt, type `cd /`

**Result:**

The directory is changed.

---

**3** At the prompt, type `shutdown -h -y 0`

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
  printed above
```

---

**4** Switch off the HP server (press the power switch or turn key, as appropriate).

**Result:**

The HP server is powered off.

---

**5** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

- .....
- 6** Log in on the control terminal of the *secondary* server as root.
- .....

- 7** At the prompt, type `cd /`

**Result:**

The directory is changed.

.....

- 8** At the prompt, type `shutdown -h -y 0`

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
  printed above
```

.....

- 9** Switch off the HP server (press the power switch or turn key, as appropriate).

**Result:**

The HP server is powered off.

.....

- 10** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS

.....



## Power down a Windows terminal server

---

**Purpose** Use the following task to power down a Windows terminal server.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down.

**Task** Use this task to power down a Windows terminal server.

---

**1** Log in to the server as Administrator.

---

**2** Press the **Ctrl**, **Alt**, and **Del** buttons.

**Result:**

The Windows Security dialog box displays.

---

**3** Press the **Shut Down** button.

**Result:**

The Shut Down Windows dialog box displays.

---

**4** Select the **Shut Down...** radio button.

**Result:**

The Shutdown Computer dialog box displays.

---

**5** Select the **OK** radio button.

**Result:**

The Windows terminal server powers down.

---

**6** Switch off the terminal server (press the power switch or turn key, as appropriate).

**Result:**

The terminal server is powered off.

---

- 
- 7** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS

---



## Section IV: Power on HP and Windows workstations

### Overview

---

**Purpose** This section contains information on how to power on HP and Windows workstations.

**Contents**

<a href="#">Power on an HP-UX workstation</a>	<a href="#">2-26</a>
<a href="#">Power on a Windows workstation</a>	<a href="#">2-27</a>



## Power on an HP-UX workstation

---

**Purpose** Use the following task to power on an HP-UX workstation.

**Task** Use this task to power on the HP-UX workstation.

---

- 1 Switch on all associated peripherals, for example, control terminal(s), external disk drives, external tape drives, and modems.

---

- 2 Switch on the workstation (press the power switch or turn key, as appropriate).

**Result:**

The workstation runs a sequence of diagnostics and then boots to the X-Windows system. The workstation is ready when the Common Desktop Environment (CDE) login dialog box displays.

END OF STEPS

---



## Power on a Windows workstation

---

**Purpose** Use the following task to power on a Windows workstation.

**Task** Use this task to power on a Windows workstation.

---

- 1 Switch on all associated peripherals, for example, control terminal(s), external disk drives, external tape drives, and modems.

---

- 2 Switch on the workstation (press the power switch or turn key, as appropriate).

**Result:**

The workstation runs a sequence of diagnostics. The workstation is ready when the Windows login dialog box displays.

END OF STEPS

---



## Section V: Power down workstations

### Overview

---

**Purpose** This section contains information on how to power down HP and Windows workstations.

**Contents**

<a href="#">Power down an HP-UX workstation</a>	<a href="#">2-29</a>
<a href="#">Power down a Windows workstation</a>	<a href="#">2-30</a>



## Power down an HP-UX workstation

---

**Purpose** Use the following task to power down an HP-UX workstation.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down. (See [“Stop Navis™ Optical NMS” \(3-13\)](#).)

**Task** Use this task to power down an HP-UX workstation.

---

**1** Log in to the workstation as root.

---

**2** At the prompt, type `cd /`

**Result:**

The directory is changed.

---

**3** At the prompt, type `shutdown -h -y 0`

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
printed above
```

---

**4** Switch off the workstation (press the power switch or turn key, as appropriate).

**Result:**

The workstation is powered off.

---

**5** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS

---



## Power down a Windows workstation

---

**Purpose** Use the following task to power down a Windows workstation.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMS application has been shut down. See [“Stop Navis™ Optical NMS” \(3-13\)](#).

**Task** Use this task to power down a Windows workstation.

---

**1** Log in to the workstation as Administrator.

---

**2** Select **Start > Shut Down...**

**Result:**

The Shut Down Windows dialog box displays.

---

**3** Select the **Shut Down...** radio button then select **Yes**.

**Result:**

The Windows workstation powers down.

---

**4** Switch off the workstation (press the power switch or turn key, as appropriate).

**Result:**

The workstation is powered off.

---

**5** Switch off all associated peripherals, for example, the control terminal, external disk drives, external tape drives, and modems.

END OF STEPS

---



## Section VI: Configuration tasks

### Overview

---

**Purpose** This section contains tasks that explain how to configure Navis™ Optical NMS hardware and how to set up supporting processes.

**Contents**

<a href="#">Add a workstation to the Navis™ Optical NMS host</a>	<a href="#">2-32</a>
<a href="#">TIM TCP/IP configuration setup</a>	<a href="#">2-34</a>
<a href="#">Asynchronous port setup for TIM interface</a>	<a href="#">2-37</a>
<a href="#">Configuring a LAN Interface</a>	<a href="#">2-40</a>



## Add a workstation to the Navis™ Optical NMS host

---

**Purpose** Use this task to add a workstation to the Navis™ Optical NMS host.

**Task** Perform the steps below to add a workstation to the Navis™ Optical NMS host.

---

- 1 Log in to the Navis™ Optical NMS host as root.  

---
- 2 At the prompt, enter `ksh /install/add. ethers`  

---
- 3 At the prompt, enter `y` and press **Enter**.  

---
- 4 At the prompt, enter the workstation name and press **Enter**.  

---
- 5 Enter `y` to confirm that the name was entered correctly then press **Enter**.  

---
- 6 Enter the IP address then press **Enter**.

**Result:**

You are prompted to confirm your entry.

---

- 7 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.  

---
- 8 Log in to the workstation.  

---
- 9 At the prompt, enter `pg /etc/hosts` then view the display to determine if an entry exists for the workstation.

10

---

IF	THEN
an entry exists,	proceed to the next step.
an entry does not exist,	add the workstation information to the bottom of the <b>/etc/hosts</b> file.

---

11 Download the Navis™ Optical NMS GUI.

END OF STEPS

---



## TIM TCP/IP configuration setup

---

**Purpose** Use this task to set up a TIM TCP/IP configuration.

**Task** Perform the steps below to set up a TIM TCP/IP configuration.

---

1 Log into the host as root.

---

2 At the prompt, enter `init 3`

**Result:**

Navis<sup>™</sup> Optical NMS application is stopped.

---

3 At the prompt, enter `cd /etc/dscan`

```
touch .tim
```

```
chmod 666 .tim
```

**Result:**

The file's timestamp is updated and its permissions are changed.

---

4 At the prompt, enter `/etc/dscan/chg_env_var`

**Result:**

The following message will be displayed:

```
THE DEFAULT SETTINGS FOR <COMPANY_NAME> WILL NOW BE  
DISPLAYED
```

```
YOU WILL BE PROMPTED TO CONFIRM THE SETTINGS.  
ENTER TO CONTINUE:
```

---

5 Press Enter.

**Result:**

A list of settings display with a prompt requesting whether or not you want to change the settings.

---

6 Type `y` and press Enter to continue.

---

**Result:**

The WS-NMS Parameter Editor menu displays.

---

- 7** View the menu until you see the number corresponding to TIM\_PORT or TIM\_TCP.

**Important!** You may have to press **Enter** to view this selection.

---

- 8** At the prompt, enter the number corresponding to TIM\_PORT or TIM\_TCP.

**Result:**

The selection displays.

---

- 9** At the prompt, enter 2 and press **Enter**.

**Result:**

You are prompted to enter the IP address for TIM.

---

- 10** Enter the IP address then press **Enter**.

**Result:**

You are prompted to confirm your entry.

---

- 11** View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the TIM hostname.

---

- 12** Enter the hostname, then press **Enter**.

**Result:**

You are prompted to confirm your entry.

---

- 13** View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.
-

**Result:**

The following messages should display followed by a prompt to add or change the TIM Interface login and password.

Updated host's file successfully

Updated CCP file successfully

---

- 14** Add or change the password as required.

**Result:**

The following message displays.

Updated TIM login file successfully

---

- 15** Press **Enter** to return to the edit parameter menu and then type q and press **Enter** and type n and press **Enter**.

**Result:**

You have exited the menu.

---

- 16** Log into the host as dacscan.
- 

- 17** Copy the parameters to the following file in the database:

`/usr/dacscan/bin/DBinitParam`

**Result:**

A list of parameters display without entries for TIM\_PORT and TIM\_TCP.

---

- 18** Log into the host as root.
- 

- 19** At the prompt, enter `init 4`

**Result:**

Navis™ Optical NMS application is started.

END OF STEPS

---



## Asynchronous port setup for TIM interface

---

**Purpose** Use this task to set up an asynchronous port for the TIM interface.

**Task** Perform the steps below to set up an asynchronous port.

---

**1** Log into the host as root.

---

**2** At the prompt, enter **sam** then press **Enter**

**Result:**

The **sam** program begins.

---

**3** View the display, highlight **Peripheral Devices** -> then press **Enter**.

**Result:**

A new menu displays.

---

**4** Highlight **Terminals and Modems** then press **Enter**.

**Result:**

The current configuration displays.

---

**5** Press **F4**.

**Result:**

The main menu bar is activated.

---

**6** Select **Actions** then press **Enter**.

**Result:**

A drop down menu displays.

---

**7** Select **Add Modems** then press **Enter**.

**Result:**

A note menu displays.

---

- 
- 8** Select **OK**.
- Result:**
- A hardware scan will take place and eventually return with the installed Mux/Serial cards and their respective hardware paths.
- 
- 9** Highlight **Mux/Serial card with a h/w path of 12** then press **tab** three times.
- 
- 10** Enter the port number, press **tab** once, then enter 9600 for the baud rate.
- 
- 11** Press **tab** once, then unselect “Do you want the device for calling out?” Use defaults for all other prompts, then press **F5**.
- Result:**
- A device file is created, for example for port 3:  
/dev/ttyd0p3
- 
- 12** Write down the displayed device information then exit **sam**.
- 
- 13** At the prompt, enter **vi /etc/inittab** and press **Enter**.
- Result:**
- The file is displayed.
- 
- 14** Locate **a0:2:respawn:/etc/getty -h ttyd0p3 9600** then change the line to **a0:24:respawn:/etc/getty -h ttyd0p3 9600**
- 
- 15** Press **Esc**, then type **:wq**
- Result:**
- The file is saved.
- 
- 16** At the prompt, enter **init q** then press **Enter**.

**Result:**

The changed is initialized.

END OF STEPS

---



## Configuring a LAN Interface

---

**Purpose** Use this task to configure a LAN interface for Navis™ Optical NMS.

**Task** Perform the steps below to configure a LAN interface.

---

1 Log in to Navis™ Optical NMS as root.

---

2 At the prompt, enter `/etc/dscan/ConfigWaveStarLan`

**Result:**

The following prompt displays: Which interface is the WaveStar Lan connected to (default is lan1) ?

---

3 Enter `WAVESTAR LAN INTERFACE` from the checklist and press **Enter**.

**Result:**

A confirmation displays.

---

4 At the prompt, enter `y` and press **Enter**.

**Result:**

The following message displays: Verifying lan interface configuration. Please wait.... followed by a second message requesting the Internet address for the server on the Navis™ Optical NMS LAN.

---

5 Enter the Navis™ Optical NMS host Navis™ Optical NMS IP address from the checklist, then press **Enter**.

**Result:**

You are prompted to confirm your entry.

---

6 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.

END OF STEPS

---



## Section VII: Administering users

### Overview

---

**Purpose** This section describes Navis™ Optical NMS user types and contains tasks to create user IDs using a GUI-based or terminal-based version of the System Administration **SAM** program. It includes tasks for assigning user or administrator privileges on a Windows PC and a task for setting up a user ID for cut-through to WaveStar Optical EMS.

#### Navis™ Optical NMS User types

Navis™ Optical NMS has the following user types:

- *Navis™ Optical NMS System Administrator*, which consists of one **dacscan** user with privileges to start or stop the Navis™ Optical NMS.
- *Navis™ Optical NMS Administrator*, which is an application administrator. This user type has **sa** as its default administrator user ID which automatically resides in the Navis™ Optical NMS database as the first real user.  
The *Navis™ Optical NMS Administrator* may create other Navis™ Optical NMS application users – including those with **sa** privileges – and assign flexible permissions to permit/restrict user access to the Navis™ Optical NMS application's forms.
- *Navis™ Optical NMS User*, or those users with access to the Navis™ Optical NMS application.  
Within Navis™ Optical NMS, these users are assigned one of the following user types:
  - Regular User
  - Service Domain User
  - Geo Domain User

#### Contents

<a href="#">Create a User ID through SAM's GUI-based program</a>	<a href="#">2-43</a>
<a href="#">Create a User ID through SAM's terminal-based program</a>	<a href="#">2-47</a>
<a href="#">Assign user privileges to a user on a Windows PC</a>	<a href="#">2-51</a>

<a href="#">Assign user privileges to a user on a Windows 2000 PC</a>	<a href="#">2-53</a>
<a href="#">Assign system administrator privileges on a Windows PC</a>	<a href="#">2-55</a>
<a href="#">Add a user on the server</a>	<a href="#">2-57</a>
<a href="#">Set up a user ID for cut-through to WaveStar Optical EMS</a>	<a href="#">2-58</a>



## Create a User ID through SAM's GUI-based program

---

**Purpose** Use this task to create an application user ID through the GUI-based version of the **SAM** program using an HP-UX workstation.

**Task** Perform the steps below to create an OS user ID through SAM using an HP-UX workstation.

---

**1** Log into the workstation as root.

---

**2** On the Common Desktop Environment (CDE) panel (at the bottom of the screen), select the terminal icon to open a **dtterm** window.

**Result:**

A **dtterm** window displays.

---

**3** At the prompt, enter **sam** and then press **Enter**.

**Result:**

The System Administration Manager window's SAM Areas display.

---

**4** Double click the **Accounts for Users and Groups** icon.

**Result:**

The System Administration Manager form redisplay with Groups and Local Users icons.

---

**5** Double click the **Local Users** icon.

**Result:**

The Accounts for Users and Groups form displays.

---

**6** Select **Actions > Add**.

**Result:**

The Add a User Account form displays.

---

- 
- 7 In the **Login Name** field, enter a value of up to 8 characters representing the ID (such as the person's abbreviated name) .

**Important!** The valid characters allowed in the ID are lowercase letters (a-z), numbers (0-9), and one or more underscores (\_). The first character must be a lowercase letter. The underscores may be in any position after the first.

**Result:**

The **Home directory** field displays the directory path, which includes the Login Name field's value, such as **/home/<login\_name>**.

- 
- 8 At the **Create Home directory** field, select the box.

**Important!** The **Create Home Directory** box *must* be selected in order to successfully add the user. If this box is not checked, a corruption may occur in the **/etc/passwd** file that causes the computer to boot up in single user mode.

- 
- 9 In the **Primary Group Name** field, enter dba or users.

**Important!** In most cases, dba is selected. User IDs within the users group may be restricted from performing certain functions.

- 
- 10 In the **Start-up Program** field, enter **/usr/bin/ksh**.

**Important!** The remaining information is optional.

- 
- 11 Optionally complete the remaining fields then select the Set Passwords Options button.

**Result:**

The Password Options form is displayed.

- 
- 12 At the **Password Options** field, choose an option from the list then select **OK**.

**Result:**

The Password Options form closes and the Add a User Account window redisplay.

---

- 13** Select **OK** to continue.

**Result:**

The Set User Password dialog box is displayed.

---

- 14** Enter a password for the user ID, then click **OK**.

**Result:**

A verification message displays.

---

- 15** Re-enter a password for the user ID, then click **OK**.

**Result:**

A message displays that the user ID has been added.

---

- 16** To exit the Add a User Account form, select **File > Exit**.

**Result:**

The Accounts for Users and Groups form displays the new user ID.

---

- 17** To exit the Accounts for Users and Groups form, select **File > Exit SAM**.
- 

- 18** At the prompt, type `cat /etc/passwd | pg` then view the display to determine if permissions have been properly set for the created user ID in the **passwd** file.
- 

- 19** For each user entered in the **Login Name** field in [Step 7](#) of this task, use the [“Add a user” \(4-5\)](#) task to add the user to the Navis™ Optical NMS application.
-

Create a User ID through SAM's GUI-based program

**Important!** If this new user ID will be used for cut-through access to an EMS, then the user ID must be added to the EMS's GUI. See [“Set up a user ID for cut-through to WaveStar Optical EMS” \(2-58\)](#) for details.

END OF STEPS

---



## Create a User ID through SAM's terminal-based program

---

**Purpose** Use this task to create a user ID through the terminal (non-GUI) version of the SAM program, which may be accessed through a tel net session.

**Task** Perform the steps below to create an application user ID by accessing **SAM** through a tel net session.

---

**1** Log into a workstation.

---

**2** Click the **Start** button in the taskbar, then select **Run**

**Result:**

The Run dialog box displays.

---

**3** In the Run dialog box's **Open** field, enter tel net <i p\_address\_or\_hostname> and log into the host server containing the **SAM** program as **root**.

---

**4** At the prompt, type sam and press **Enter**.

**Result:**

A message displays indicating that the terminal version of **SAM** is started.

---

**5** Press **Enter**.

**Result:**

The **Sam Administration Manager** form is displayed.

---

**6** At the highlighted **Accounts for Users and Groups** selection, press **Enter**.

**Result:**

A menu of User and Group options is displayed.

---

- 
- 7 Using the down arrow key, highlight the **Users** item and press **Enter**.

**Result:**

The Accounts for Users and Groups form is displayed.

---

- 8 Using the **Tab** and arrow keys, scroll to the **Actions** menu selection, then press **Enter**.

**Result:**

The Actions menu is displayed.

---

- 9 At the highlighted **Add...** entry, press **Enter**.

**Result:**

The Add a User Account form is displayed.

---

- 10 In the **Login Name** field, enter a value of up to 8 characters representing the ID (such as the person's abbreviated name) and press **Enter**.

**Important!** The valid characters allowed in the ID are lowercase letters (a-z), numbers (0-9), and one or more underscores (\_). The first character must be a lowercase letter. The underscores may be in any position after the first.

**Result:**

The cursor bypasses the **User ID (UID)** field, which is already populated with a system-generated entry. The **Home directory** field displays the directory path, which includes the Login Name field's value, such as **/home/<login\_name>**.

---

- 11 Tab to **Create Home Directory**, then press **Enter** if **X** is not displayed in the box.

**Important!** The **Create Home Directory** box *must* be checked in order to successfully add the user. If this box is not checked, a corruption may occur in the **/etc/passwd** file that causes the computer to boot up in single user mode.

---

- 
- 12** Tab to the **Primary Group Name** field, type dba or users and press **Enter**.

**Important!** In most cases, dba is entered. User IDs within the users group may be restricted from performing certain functions.

---

- 13** In the **Start-Up Program** field, press **Enter**, tab to /usr/bin/ksh and press **Enter**.

**Result:**

The **Start-Up Program** field contains the selected entry.

---

- 14** Optionally complete the remaining fields, tab to **Set Password Options** and press **Enter**.

**Result:**

The Password Options dialog box displays.

---

- 15** Press **Enter** to display the list of password options, scroll to your selection, press **Enter**, tab to **OK**, then press **Enter**.

**Result:**

The Password Options dialog box closes.

---

- 16** Tab to **OK** and press **Enter**.

**Result:**

The Set User Password dialog box displays.

---

- 17** Enter a password then press **Enter**.

**Result:**

A verification message displays.

---

- 18** Re-enter a password, tab to **OK** then press **Enter**.

**Result:**

A message displays that the login has been added.

---

- 
- 19** To exit the Add a User Account form, tab to the **File** menu, highlight **Exit** then press **Enter**.

**Result:**

The Accounts for Users and Groups form is displayed.

---

- 20** To exit the Accounts for Users and Groups form, tab to the **File** menu, highlight **Exit SAM** then press **Enter**.
- 

- 21** At the prompt, type `cat /etc/passwd | pg` then view the display to determine if permissions have been properly set for the created user ID in the *passwd* file.
- 

- 22** At the prompt, type **exit**.

**Result:**

A logout root and telnet status message is displayed.

---

- 23** For each user entered in the **Login Name** field in [Step 10](#) of this task, perform the [“Add a user” \(4-5\)](#) task to add the user to the Navis™ Optical NMS application.

**Important!** If this new user ID will be used for cut-through access to an EMS, then the user ID must be added to the EMS's GUI. See [“Set up a user ID for cut-through to WaveStar Optical EMS” \(2-58\)](#) for details.

END OF STEPS

---



## Assign user privileges to a user on a Windows PC

---

**Purpose** Use this task to assign user privileges to a user on a PC running Windows software.

**Before you begin** Be sure that the user ID has been created.

**Permissions** You must have system administrator privileges on the PC in order to perform this task.

**Task** Perform the steps below to assign user privileges to a user on a Windows PC.

---

- 1 On the Windows main window, click on the **Start** button in the task bar.

**Result:**

A menu is displayed.

---

- 2 Select **Programs > Administrative Tools (Common) > User Manager**.

**Result:**

The **User Manager** window is displayed.

---

- 3 From the **User Manager** window, select **User > New User**.

**Result:**

The **New User** window is displayed.

---

- 4 Complete the required **Username** field and the optional **Full Name** and **Description** fields.
- 

- 5 In the **Password** field, enter the password associated with the new user ID.

.....  
6 In the **Confirm Password** field, enter the same password.

.....  
7 Uncheck **User Must Change Password at Next Logon** box.

.....  
8 Check the **Password Never Expires** box.

.....  
9 Select the **Groups** button.

**Result:**

The **Group Membership** screen is displayed.

.....  
10 On the **Group Membership** screen, view the **Member of** list for a **Users** entry. If **Users** is not listed, highlight **Users** in the **Not Member of** list and select the **Add** button.

**Important!** If an entry other than **Users** displays in the **Member of** list, highlight the entry, then select the **Remove** button to move the entry to the **Not Member of** list.

**Result:**

**Users** displays in the **Member of** list.

.....  
11 On the **Group Membership** screen, select **OK**.

**Result:**

The **Group Membership** screen closes.

.....  
12 On the **New User** screen, select **OK**.

**Result:**

The **New User** screen closes and the new user is listed on the **User Manager** screen.

.....  
E N D O F S T E P S



## Assign user privileges to a user on a Windows 2000 PC

---

**Purpose** Use this task to assign user privileges to a user on a PC running Windows 2000 software.

**Before you begin** Be sure that the user ID has been created.

**Permissions** You must have system administrator privileges on the PC in order to perform this task.

**Task** Perform the steps below to assign user privileges to a user on a Windows 2000 PC.

---

**1** Log into a workstation as an administrator.

---

**2** In the task bar, click the **Start** button, and then select **Settings > Control Panel**.

**Result:**

The Control Panel form displays.

---

**3** Double click the **Users and Passwords** icon.

**Result:**

The Users and Passwords form displays.

---

**4** Click the **Add . . .** button.

**Result:**

The Add New User form displays.

---

**5** Complete the **User name**, **Full name**, and **Description** fields, and then click the **Next** button.

**Result:**

The Add New User form displays the password fields.

- 
- 6** Complete the **Password** and **Confirm Password** fields, and then click the **Next** button.

**Result:**

The Add New User form displays access selections.

- 
- 7** Click **Standard user** (or other desired level of access), and then click the **Finish** button.

**Result:**

The user is added.

END OF STEPS



## Assign system administrator privileges on a Windows PC

---

**Purpose** Use this task to assign system administrator privileges to a user on a Windows PC.

**Before you begin** Be sure that the user ID has been created.

**Permissions** You must be authorized to perform this task.

**Tasks** Perform the steps below to create a system administrator login and assign system administrator privileges on a Windows PC.

---

- 1 On the Windows main window, click on the **Start** button in the task bar.

**Result:**

A menu is displayed.

---

- 2 Select **Programs > Administrative Tools (Common) > User Manager**.

**Result:**

The **User Manager** window is displayed.

---

- 3 From the **User Manager** window, select **User > New User**.

**Result:**

The **New User** window is displayed.

---

- 4 Complete the required **Username** field and the optional **Full Name** and **Description** fields.
- 

- 5 In the **Password** field, enter the password associated with the new user ID.
- 

- 6 In the **Confirm Password** field, enter the same password.
-

---

7 Uncheck **User Must Change Password at Next Logon** box.

---

8 Check the **Password Never Expires** box.

---

9 Select the **Groups** button.

**Result:**

The **Group Membership** screen is displayed.

---

10 On the **Group Membership** screen, view the **Member of** list for an **Administrators** entry. If **Administrators** is not listed, highlight **Administrators** in the **Not Member of** list and select the **Add** button.

**Important!** If an entry other than **Administrators** displays in the **Member of** list, highlight the entry then select the **Remove** button to move the entry to the **Not Member of** list.

**Result:**

**Administrators** displays in the **Member of** list.

---

11 On the **Group Membership** screen, select **OK**.

**Result:**

The **Group Membership** screen closes.

---

12 On the **New User** screen, select **OK**.

**Result:**

The **New User** screen closes and the new user is listed on the **User Manager** screen.

END OF STEPS

---



## Add a user on the server

---

**Note** There is no need to add any new users on the server. Any necessary User IDs should have already been loaded with the software.



## Set up a user ID for cut-through to WaveStar Optical EMS

---

**Purpose** In earlier WaveStar Optical EMS releases (pre-Release 4.2), a default **itm** user ID was hardcoded into the interface to support Navis™ Optical NMS cut-through connections to WaveStar Optical EMS. For WaveStar Optical EMS Release 4.2 and greater, a cut-through user ID (other than the default **itm** user ID) may be created and used for Navis™ Optical NMS to WaveStar Optical EMS cut-through connections.

Once the WaveStar Optical EMS cut-through user ID is created, it can be used in a cut-through session to apply geographic domain restrictions to ITM-SC or WaveStar Optical EMS, such as restricting network elements that a user is allowed to view.

Use this task to set up a user ID (other than the default **itm** user ID) for cut-through to WaveStar Optical EMS Release 4.2 and later releases.

**Task** Use the following steps to add a cut-through user ID to WaveStar Optical EMS.

---

- 1 Add a cut-through user ID to WaveStar Optical EMS. (See the “Add a User” task in the Security Management chapter of the *WaveStar Optical EMS Administration Guide* for details.)
- 2 Enable the user option in the Secure Access Gateway for Enterprises (SAGE) feature. See the *Secure Access Gateway for Enterprises (SAGE) Administration Guide*.

END OF STEPS

---



## Section VIII: Administer SAGE desktop integration users

### Overview

---

**Purpose** This section describes how to administer the Secure Access Gateway for Enterprises (SAGE) Desktop Integration feature.

**Definition: SAGE Desktop Integration** SAGE Desktop Integration is an optional feature for NMS applications that allows users to access multiple Navis™ Optical NMS systems through a web browser.

A system administrator may add or delete SAGE users to/from an HP-UX client workstation.

Since SAGE requires each user to have an individual profile, the system administrator needs to manage these, along with user logins and passwords. The administrator also needs to support users with how to log into SAGE, how to change passwords, how to modify user attributes, and how to interpret and respond to system messages.

**Related information** For more detailed system administration instructions, see the *Secure Access Gateway for Enterprises (SAGE) Administration Guide*.

#### Contents

<a href="#">Add a user to a SAGE workstation</a>	<a href="#">2-60</a>
<a href="#">Delete a user from a SAGE workstation</a>	<a href="#">2-62</a>



## Add a user to a SAGE workstation

---

**Purpose** Use this task to add a user to a SAGE workstation.

**Task** Perform the steps below to add a user to a SAGE client workstation.

---

**1** Log into the SAGE client workstation as system administrator.

---

**2** Click on the **IWS** icon.

**Result:**

The IWS HOME PAGE form is displayed.

---

**3** Click on the **NMS** icon.

**Result:**

The Navis™ Optical NMS Network Map is displayed.

---

**4** Select **Administration > Security Assignments > Users > Add**.

**Result:**

The Add User form is displayed.

---

**5** In the **User ID** field, type sawg and then click **OK**.

---

**6** In the **Description** field (if desired, this field is optional), enter a description to be associated with the user ID.

---

**7** In the **Profile** field's drop-down list, select **Combined Profile**.

**Result:**

The selected profile is displayed and the tasks associated with the profile selection are displayed in the **Assigned Tasks** area of the window.

- 
- 8** In the **User Type** field, select one of the following:
- If the user is *not* to be added to the Service Domain user list or to the Geographic Domain user list, select **Regular User**.
  - If the user is to be added to the Service Domain user list, select **Service Domain User**.
  - If the user is to be added to the Geographic Domain user list, select **Geo Domain User**.

- 
- 9** Click **Apply**.

**Important!** If a specific geographic domain is required for the new User ID, refer to [Chapter 5, “Domain partitioning for provisioning operations”](#) in this document.

**Result:**

A message displays at the bottom of the Add User form indicating that the user is added to the SAGE workstation.

- 
- 10** Click **OK**.

**Result:**

The Add User form closes.

- 
- 11** Type the user ID in the **User ID** field and click **OK**.

**Important!** If a specific geographic domain is required for the new User ID, refer to [Chapter 5, “Domain partitioning for provisioning operations”](#) in this document.

**Result:**

The user ID is added to the SAGE workstation.

END OF STEPS



## Delete a user from a SAGE workstation

---

**Purpose** Use this task to delete a user from a SAGE workstation.

**Task** Perform the steps below to delete a user from a SAGE workstation.

---

- 1 Log into the SAGE workstation as system administrator and then bring up theNavis™ Optical NMS Network Map.

**Result:**

The Navis™ Optical NMS Network Map is displayed.

---

- 2 On the Network Map, select **Administration > Security Assignments > Users > Display/Modify**.

**Result:**

The List of Users form displays.

---

- 3 Highlight the user ID to be deleted.
- 

- 4 From the **Actions** menu, select **Delete User**.

**Result:**

A confirmation box displays and asks if you really want to delete this user.

---

- 5 Click **Yes**.

**Result:**

The user ID is deleted.

---

- 6 Select **File > Close**.

**Result:**

The List of Users form closes.

END OF STEPS

---



## Section IX: Printer Administration

### Overview

---

**Purpose** This section describes how to add a network or local serial printer and how to set up the Common Desktop Environment (CDE) printer icon.

**Contents**

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<a href="#">Add a network printer</a>	<a href="#">2-66</a>
<a href="#">Add a local serial printer</a>	<a href="#">2-68</a>
<a href="#">Set up the Common Desktop Environment (CDE) printer icon</a>	<a href="#">2-69</a>



## Install a networked printer on a Navis™ Optical NMS server

---

**Purpose** Use this task to install a networked printer on a Navis™ Optical NMS server.

**Before you begin** Before you begin this task, collect the following information about the network printer from the system administrator and/or by printing the test/configuration page from the printer.

- Printer name
- IP Address
- LAN Hardware Address
- Name or IP address of the server providing spooler facilities

**Task** Perform the steps below to add a networked printer on a Navis™ Optical NMS server.

---

1 Take the printer off-line.

---

2 Press the **Menu** button until TEST MENU appears in the display.

---

3 Press the **Item** button until SELF TEST appears in the display.

---

4 Press **Enter**.

**Result:**

A printer status sheet prints. This status sheet indicates the LAN hardware address (LAN HW ADDRESS), network peripheral name (HOST NAME), and the IP address, if these values have been assigned to the printer.

---

5 Press **On Line**.

---

6 Using the system console, log in as root on the primary server via the system console.

- 
- 7** Enter `ksh /install/prtinstall` at the # prompt.

**Result:**

Additional prompts display.

- 
- 8** Respond to the IP address, printer name, and Type in the LAN Hardware Address prompts.

**Result:**

The network printer is added.

END OF STEPS



## Add a network printer

---

**Purpose** Use this task to add a network printer to your workstation.

**Before you begin** Before you begin this task, collect the following information:

- Printer name (the printer name must be six characters or less)
- IP Address

The network printer must be connected to Ethernet. The local serial printer must be connected to the asynchronous mux board.

**Task** Perform the steps below to add a network printer.

---

1 Take the printer off-line.

---

2 Press the **Menu** button until TEST MENU appears in the display.

---

3 Press the **Item** button until SELF TEST appears in the display.

---

4 Press **Enter**.

**Result:**

A printer status sheet prints. This status sheet indicates the LAN hardware address (LAN HW ADDRESS), network peripheral name (HOST NAME), and the IP address, if these values have been assigned to the printer.

---

5 Press **On Line**.

---

6 Using the system console, log in as root on the primary server via the system console.

---

7 Enter `ksh /install/prtinstall` at the # prompt.

**Result:**

Additional prompts display.

---

- 
- 8** Respond to the IP address, printer name, and Type in the LAN Hardware Address prompts.

**Result:**

The network printer is added.

END OF STEPS

---



## Add a local serial printer

---

**Purpose** Use this task to add a local serial printer.

**Before you begin** Before you begin this task, collect the following information:

- Printer name (the printer name must be six characters or less)

**Task** Perform the steps below to add a local serial printer to your workstation.

---

- 1 Using the system console, log in as root onto the primary server.  

---
- 2 Enter `ksh /install/prtinstall` at the # prompt.  

---
- 3 Answer the questions as appropriate.

**Result:**

The local serial printer is added.

END OF STEPS

---



## Set up the Common Desktop Environment (CDE) printer icon

---

**Purpose** Use this task to configure the workstation to print Navis™ Optical NMS forms to a local printer.

The workstation can be configured to enable the CDE printer icon to be used to print Navis™ Optical NMS forms to a local printer.

**Task** Perform the steps below to set up the CDE printer icon.

---

- 1 Log in as root.  

---
- 2 Enter `cd /confi g` at the UNIX prompt.  

---
- 3 Enter `vi sys.vuewmrc`  

---
- 4 Change the `PUSH_ACTION` variable in the “CONTROL Printer” section to `PUSH_ACTION f. action PrintPush`  

---
- 5 Save the file.  

---
- 6 Exit the file.  

---
- 7 Enter `cd /usr/vue/config/types`  

---
- 8 Enter `vi PrintPush.vf`  

---
- 9 Change the `EXEC-STRING` variable in the “Action PrintPush” section to `EXEC-STRING bin/ksh -c 'xwd -frame | xpr -device ps -cutoff 70 -rv | lp -o nb -o postscript'`  

---
- 10 Save the file.  

---
- 11 Exit the file.

- 
- 12** Select **Exit** on the CDE to reboot the workstation.

END OF STEPS

---





# 3 System administration

## Overview

---

**Purpose** This chapter describes tasks performed to administer Navis™ Optical NMS.

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<u><a href="#">Start Navis™ Optical NMS on a Windows terminal server</a></u>	<u><a href="#">3-9</a></u>
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## Section I: Start Navis™ Optical NMS server applications

### Overview

---

**Purpose** This section describes how to start Navis™ Optical NMS server applications.

**Background** The initial step to start Navis™ Optical NMS is to power on the server. (See the “power on” tasks in [Chapter 2, “Platform Administration”](#).) There are a few possible configurations users can have with the server, but the configurations fall into three main categories — local redundancy, geographic redundancy, and single-server. Within single-server, the configuration may or may not contain mirrored disks.

This section includes single-server configuration start tasks only. For start and stop tasks that support geographic and local redundancy configurations, see [“Section IV: Geographic redundancy configuration” \(3-18\)](#) and [“Section V: Local redundancy configuration” \(3-21\)](#).

**Start the host application** The host application starts when the Navis™ Optical NMS application is set to run level 4. See [“Run level 4” \(2-5\)](#) for additional details.

#### Contents

<a href="#">Start Navis™ Optical NMS on a single server</a>	<a href="#">3-5</a>
<a href="#">Start Navis™ Optical NMS on a Windows terminal server</a>	<a href="#">3-7</a>



## Start Navis™ Optical NMS on a single server

---

**Purpose** Use this procedure to start the Navis™ Optical NMS application on a single server.

**Before you begin** Before you begin this task, be sure that:

- the single server has been powered up. See [“Power on an HP server \(single-server configuration\)” \(2-13\)](#).
- the GUI has been downloaded on the workstation(s) or terminal server(s).

**Start Navis™ Optical NMS on a single server** Complete the following steps to start the Navis™ Optical NMS application on a single server.

---

**1** Log into the server as root.

---

**2** At the prompt, enter `who -r`.

**Result:**

A message displays a line of current run level information, such as `run-level 3 Oct 30 11:26 3 0 S`.

---

**3** Continue with one of the following options.

IF	THEN
run-level is 3,	proceed to the next step to continue.
run-level is 4,	the application is already running; no further action is necessary.
run-level is not 3 or 4,	contact the system support staff. (See the <i>Technical support</i> information located at the beginning of this document for details).

---

**4** At the prompt, enter `init 4`.

---

**Result:**

The run level is changed to run-level 4.

---

- 5** At the prompt, enter `tail -f/etc/rc.log`

**Important!** To terminate this command, press the **Ctrl** and **c** buttons.

**Result:**

The message,

WS-NMS Application has been started...

HP-UX run-level transition completed

<Weekday> MMM DD HH:MM:SS <timezone> YYYY

displays.

END OF STEPS

---



## Start Navis™ Optical NMS on a Windows terminal server

---

**Overview** Once the Windows terminal server is powered on, (see [“Power on a Windows terminal server” \(2-16\)](#)), it is not necessary to start the Navis™ Optical NMS application on a Windows terminal server, therefore no steps are required.



## Section II: Start Navis™ Optical NMS User Interface (UI) applications

### Overview

---

**Purpose** This section describes how to start Navis™ Optical NMS user interface applications.

**Background** Once the servers are powered up, (as described in the previous section of this chapter), users may start Navis™ Optical NMS:

- using the MC/ServiceGuard cluster configuration
- on an HP-UX workstation
- on a Windows workstation

This section includes information on how to start Navis™ Optical NMS on HP-UX and Windows workstations in a single-server configuration only. For information on how to start workstations in a MC/ServiceGuard cluster, see [“Section V: Local redundancy configuration” \(3-21\)](#).

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<a href="#">Start Navis™ Optical NMS on a Windows terminal server</a>	<a href="#">3-9</a>
<a href="#">Start Navis™ Optical NMS on an HP-UX workstation</a>	<a href="#">3-10</a>
<a href="#">Start Navis™ Optical NMS on a Windows workstation (PC)</a>	<a href="#">3-11</a>



## Start Navis™ Optical NMS on a Windows terminal server

---

**Overview** Once the Windows terminal server is powered on, (see [“Power on a Windows terminal server” \(2-16\)](#)), it is not necessary to start the Navis™ Optical NMS application on a Windows terminal server, therefore no steps are required.



## Start Navis™ Optical NMS on an HP-UX workstation

---

**Purpose** Use this procedure to start Navis™ Optical NMS on an HP-UX workstation.

**Before you begin** Before you begin, be sure that the HP-UX workstation is powered on. See [“Power on an HP-UX workstation” \(2-26\)](#).

**Task** Complete the following steps to start Navis™ Optical NMS on an HP-UX workstation.

---

- 1 Log in to the HP-UX workstation.

**Result:**

The Navis™ Optical NMS icon displays on the Common Desktop Environment (CDE) panel. (The icon *may* display as a Lucent logo.)

---

- 2 Continue with one of the following.

IF...	THEN...
the Navis™ Optical NMS icon <i>displays</i> on the Common Desktop Environment (CDE) panel:	double-click the icon. <b>Important!</b> The icon <i>may</i> display as a Lucent logo. <b>Result:</b> The Navis™ Optical NMS Network Map displays.
the icon <i>does not display</i> :	contact the system support staff. (See the <i>Technical support</i> information located at the beginning of this document for details.)

END OF STEPS

---



## Start Navis™ Optical NMS on a Windows workstation (PC)

---

**Purpose** Use this procedure to start the Navis™ Optical NMS application on a Windows workstation (PC).

**Before you begin** Before running Navis™ Optical NMS on a Windows workstation, the workstation must be powered on (see [“Power on a Windows workstation” \(2-27\)](#)) and the Navis™ Optical NMS application must be loaded on the workstation. This task assumes that the application has been already loaded on the workstation.

**Task** Complete the following steps to start Navis™ Optical NMS on a Windows workstation.

---

- 1 Log into the Windows workstation.

**Result:**

The Windows desktop displays.

---

- 2 Continue with one of the following.

IF...	THEN...
the icon <i>displays</i> on the desktop:	double-click the icon. <b>Result:</b> The Navis™ Optical NMS Network Map displays.
the icon <i>does not display</i> on the desktop:	contact the system support staff. (See the <i>Technical support</i> information located at the beginning of this document for details.)

END OF STEPS

---



## Section III: Stop Navis™ Optical NMS server and UI applications

### Overview

---

**Purpose** This section describes how to stop Navis™ Optical NMS.

**Stop the host application** The host application stops when Navis™ Optical NMS is brought to run level 3 (multi-user mode).

Under certain circumstances, it may be necessary to bring the Navis™ Optical NMS application to run level 3, for example, if the system needs a new software load. See [“Run level 3” \(2-5\)](#) for additional details.

This section includes single-server configuration stop tasks only. For stop tasks that support geographic and local redundancy configurations, see [“Section IV: Geographic redundancy configuration” \(3-18\)](#) and [“Section V: Local redundancy configuration” \(3-21\)](#).

#### Contents

<a href="#">Stop Navis™ Optical NMS</a>	<a href="#">3-13</a>
<a href="#">Stop Navis™ Optical NMS on a single server</a>	<a href="#">3-14</a>
<a href="#">Stop the Navis™ Optical NMS application on a Windows terminal server</a>	<a href="#">3-16</a>
<a href="#">Stop Navis™ Optical NMS with UPS</a>	<a href="#">3-17</a>



## Stop Navis™ Optical NMS

---

**Purpose** Use this procedure to stop the Navis™ Optical NMS application on PCs and HP-UX or Windows workstations.

Other tasks are required to support stopping the Navis™ Optical NMS application on servers with single, local redundancy, and geographic redundancy configurations. For example,

- to stop the Navis™ Optical NMS application on single servers, see [“Stop Navis™ Optical NMS on a single server” \(3-14\)](#).
- to stop the Navis™ Optical NMS application on servers running a local redundancy configuration, see [“Stop Navis™ Optical NMS application on a MC/ServiceGuard cluster” \(3-25\)](#).
- to stop the Navis™ Optical NMS application on servers running a geographic redundancy configuration, see [“Stop Navis™ Optical NMS on a server with a geographic redundancy configuration” \(3-20\)](#).

**Task** Complete the following task to stop the Navis™ Optical NMS application.

---

**1** On the Network Map, do one of the following:

- Select **File > Exit**.
- Select the close button in the top right corner of the Network Map.

**Result:**

A confirmation dialog box displays.

---

**2** At the dialog box, select **OK**.

**Result:**

The Navis™ Optical NMS session is terminated.

END OF STEPS

---



## Stop Navis™ Optical NMS on a single server

---

**Purpose** Use this procedure to stop the Navis™ Optical NMS application on a single server.

**Stop Navis™ Optical NMS on a single server** Complete the following steps to stop the Navis™ Optical NMS application on a single server.

---

1 Log into the server as root.

---

2 At the prompt, enter `who -r`.

**Result:**

A message displays a line of current run level information, such as `run-level 4 Oct 30 11:26 3 0 S`.

---

3 Continue with one of the following options.

IF	THEN
run-level is 4,	proceed to the next step to continue.
run-level is 3,	the application is not running; no further action is necessary.
run-level is not 3 or 4,	contact the system support staff. (See the <i>Technical support</i> information located at the beginning of this document for details).

---

4 At the prompt, enter `init 3`.

**Result:**

The run level is changed to `run-level 3`.

---

5 At the prompt, enter `tail -f/etc/rc.log`

**Important!** To terminate this command, press the **Ctrl** and **c** buttons.

**Result:**

The message,

HP-UX run-level transition completed

<Weekday> MMM DD HH:MM:SS <timezone> YYYY

displays.

END OF STEPS

---



## Stop the Navis™ Optical NMS application on a Windows terminal server

---

**Overview** Since the Navis™ Optical NMS application is not run on a Windows terminal server, no steps are required.



## Stop Navis™ Optical NMS with UPS

---

**Introduction** An Uninterruptible Power Supply (UPS) protects against power failures. It is used to protect the main servers and their essential peripherals from minutes of power failure. In the case of a longer power loss, the UPS enables the system to shut down gracefully.

**Configurable file** The UPS provides a configurable file that contains two timers used in the shutdown process. When the Navis™ Optical NMS application receives notification to indicate a loss of AC power, the application runs a shutdown script that results in a graceful shutdown of the application within the time limit of these timers:

- *shutdown\_delay\_mins*: This parameter indicates the number of minutes following notification that its UPS has switched to internal battery power before the UPS monitor initiates a shutdown. The default value for this parameter is one minute.
- *shutdown\_timeout\_mins*: This parameter indicates the number of minutes to monitor the shutdown operation before a reboot is initiated with the halt option. The default value for this parameter is five minutes.

These timers are tunable at time of installation and can be changed subsequent to installation; however, normally they should not need to be changed. UPS is not supported in local redundancy configurations and is only compatible with Non-Safeguard configurations.

Systems configured with UPS are brought into init level 4 automatically on power up.



## Section IV: Geographic redundancy configuration

### Overview

---

**Purpose** This section contains tasks to start and stop Navis™ Optical NMS on a server with a geographic redundancy configuration.

**Contents**

<a href="#">Start Navis™ Optical NMS on a server with a geographic redundancy configuration</a>	<a href="#">3-19</a>
<a href="#">Stop Navis™ Optical NMS on a server with a geographic redundancy configuration</a>	<a href="#">3-20</a>



## Start Navis™ Optical NMS on a server with a geographic redundancy configuration

---

**Purpose** Use this procedure to start the Navis™ Optical NMS application on a simplified or full geographic redundancy server.

**Before you begin** Be sure that the simplified or full geographic redundant server has been powered up. See [“Power on an HP server \(geographic redundancy configuration\)” \(2-15\)](#).

**Task** Perform the following step to Navis™ Optical NMS on a server with a simplified or full geographic redundancy configuration.

---

**1** Log in to the primary server as root.

---

**2** Enter `ksh /usr/dacscan/bin/StartUp`

**Result:**

Navis™ Optical NMS is initiated on the simplified or full geographic redundancy server. If problems are identified, the startup terminates.

END OF STEPS

---



## Stop Navis™ Optical NMS on a server with a geographic redundancy configuration

---

**Purpose** Use this procedure to stop Navis™ Optical NMS on a simplified or full geographic redundancy server.

**Task** Perform the following step to stop Navis™ Optical NMS on a server with a simplified or full server geographic redundancy configuration.

---

**1** Log on to the primary server using a geographic redundancy configuration as root.

---

**2** At the prompt, enter `ksh /usr/dacscan/bin/ShutDown`

**Result:**

The Navis™ Optical NMS application is stopped.

END OF STEPS

---



## Section V: Local redundancy configuration

### Overview

---

**Purpose** This section describes how to start and stop Navis™ Optical NMS on an MC/ServiceGuard cluster. It explains how to switch to a backup server using a local redundancy configuration using MC/ServiceGuard and includes package switching tasks and information on how to administer clusters.

A switchover may need to occur in the case of a hardware failure, software upgrade, or for general maintenance. If the primary server fails, the standby server takes over.

A configuration that has server redundancy enhances the availability of the system. Since Navis™ Optical NMS supports *single-server* (with or without disk mirroring), *local redundancy*, and *geographic redundancy* configurations, it has several tasks to support the configuration being used. There are no switchover tasks for the single-server configurations since they cannot be switched.

#### Monitoring the switchover

It is recommended to ensure that the monitoring process is present. The standby server has a pulse process that monitors the heartbeat of the primary server. These processes can be started and stopped manually. The pulse process resides on the Standby server. This process is used to determine whether the primary server is alive. The heartbeat process resides on the primary server. This process is used as a detection mechanism for the standby server.

#### Contents

<a href="#">Start Navis™ Optical NMS on a MC/ServiceGuard Cluster</a>	<a href="#">3-23</a>
<a href="#">Stop Navis™ Optical NMS application on a MC/ServiceGuard cluster</a>	<a href="#">3-25</a>
<a href="#">Start Navis™ Optical NMS on a specific MC/ServiceGuard node</a>	<a href="#">3-26</a>
<a href="#">Stop Navis™ Optical NMS on a specific node using SAM</a>	<a href="#">3-27</a>
<a href="#">Stop Navis™ Optical NMS package</a>	<a href="#">3-28</a>

<a href="#"><u>Switch to a standby server</u></a>	<a href="#"><u>3-29</u></a>
<a href="#"><u>Enable automatic package switching</u></a>	<a href="#"><u>3-30</u></a>
<a href="#"><u>Disable automatic package switching</u></a>	<a href="#"><u>3-31</u></a>
<a href="#"><u>Re-add the server to a cluster</u></a>	<a href="#"><u>3-32</u></a>
<a href="#"><u>View the cluster status information</u></a>	<a href="#"><u>3-33</u></a>

□

## Start Navis™ Optical NMS on a MC/ServiceGuard Cluster

---

**Purpose** Use this procedure to start Navis™ Optical NMS on a MC/ServiceGuard cluster configuration (local redundancy). This task may also be performed through SAM. See [“Start Navis™ Optical NMS on a specific MC/ServiceGuard node” \(3-26\)](#) for details.

**Before you begin** Be sure that the servers within the cluster have been powered up. See [“Power on HP servers \(MC/ServiceGuard cluster - local redundancy configuration\)” \(2-14\)](#).

**Task** Perform the following step to start Navis™ Optical NMS on a MC/ServiceGuard cluster.

---

- 1 Log into any server within the cluster as root.

---

- 2 To determine if the package is running on a member of the cluster, view the cluster/package status (see [“View the cluster status information” \(3-33\)](#) for details) then continue with one of the following options.

IF	THEN
the package <i>is not running</i> on a member of the cluster,	proceed to the next step to continue.
the package <i>is running</i> on a member of the cluster,	no further action is necessary.

---

- 3 Start the Navis™ Optical NMS package.

**Result:**

Navis™ Optical NMS package is started.

---

- 4 Repeatedly perform a status check to view the cluster/package status (see [“View the cluster status information” \(3-33\)](#) for details) until a Running status displays.

Start Navis™ Optical NMS on a  
MC/ServiceGuard Cluster

**Result:**

Application status will move from Halted to Starting to Running. Since the status changes take several minutes to complete, the status check is performed repeatedly until the desired results display.

END OF STEPS

---



# Stop Navis™ Optical NMS application on a MC/ServiceGuard cluster

**Purpose** Use this procedure to stop the Navis™ Optical NMS application on a MC/ServiceGuard cluster.

**Task** Perform the following step to stop the Navis™ Optical NMS application on a cluster.

- 1 Log into any server in the cluster as root.
- 
- 2 To determine if the package is running on a member of the cluster, view the cluster/package status (see [“View the cluster status information” \(3-33\)](#) for details) then continue with one of the following options.

IF	THEN
the package <i>is running</i> on a member of the cluster,	proceed to the next step to continue.
the package <i>is not running</i> on a member of the cluster,	no further action is necessary.

- 3 Stop the Navis™ Optical NMS package. See [“Stop Navis™ Optical NMS package” \(3-28\)](#).

**Result:**

Navis™ Optical NMS is stopped.

- 4 Repeatedly perform a status check to view the cluster/package status (see [“View the cluster status information” \(3-33\)](#) for details) until a `Halte`d status displays.

**Result:**

Application status will move from `Running` to `Stopping` to `Halte`d. Since the status changes take several minutes to complete, the status check is performed repeatedly until the desired results display.

END OF STEPS



## Start Navis™ Optical NMS on a specific MC/ServiceGuard node

---

**Purpose** Use this task to start the Navis™ Optical NMS application on a specific node using the SAM application. This task may be used, for example, to isolate a problem on the node.

**Start Navis™ Optical NMS on a specific node** Complete the following steps to start the Navis™ Optical NMS application on a specific node.

---

1 Log into either the primary or the standby machine as root.

---

2 Enter `sam` at the prompt.

**Result:**

The SAM application displays.

---

3 Select **Clusters > High Availability Clusters > Package Admin.**

---

4 Highlight the **ITMHost** entry.

---

5 On the pull down menu, select **Actions > Start a package > Start a package on a specific node.**

---

6 Check **enable package switching.**

---

7 Highlight **Node** entry.

---

8 Select **OK.**

**Result:**

The Navis™ Optical NMS application starts on the specific node.

END OF STEPS

---



## Stop Navis™ Optical NMS on a specific node using SAM

---

**Purpose** Use this procedure to stop the Navis™ Optical NMS application on a specific node using the SAM application.

**Task** Perform the steps below to stop the Navis™ Optical NMS application on a specific node.

---

**1** Log into either the primary or the standby machine as root.

---

**2** Enter `sam` at the prompt.

**Result:**

The SAM application displays.

---

**3** Select **Clusters > High Availability Clusters > Package Admin**.

---

**4** Highlight the **ITMHost** entry.

---

**5** On the pull down menu, select **Actions > Halt package**.

---

**6** At the displayed dialog box, confirm that the package should be halted.

**Result:**

The package is stopped.

END OF STEPS

---



## Stop Navis™ Optical NMS package

---

**Purpose** Use this procedure to stop the Navis™ Optical NMS package using the **SAM** application.

This task is specific to MC/ServiceGuard cluster configurations

**Task** Perform the following step to stop the Navis™ Optical NMS package.

---

**1** Log into the cluster as root.

---

**2** At the prompt, enter `sam` and then press **Enter**.

**Result:**

The System Administration Manager window's SAM Areas display.

---

**3** From the System Administration Manager window, select **Clusters > High Availability Clusters > Cluster Admin**

---

**4** Select **ITM Cluster**, then select **Actions > Shutdown Cluster** .

**Result:**

The shutdown process initiates and eventually displays the following message:

```
System has halted
OK to turn off power or reset system
UNLESS 'wait for UPS to turn off power' message was
printed above
```

END OF STEPS

---



## Switch to a standby server

---

**Purpose** Use this procedure to switch to a standby server when using the local redundancy configuration.

**Before you begin** If package switching is disabled, the user must first start up the application and then enable switching.

**Task** Perform the steps below to switch to a standby server (for local redundancy configuration).

---

**1** Log into either the primary or the standby machine as root.

---

**2** Enter `sam` at the prompt.

---

**3** Select the **Clusters** option.

---

**4** Select the **High Availability Clusters** option.

---

**5** Select the **Package Administration** option.

---

**6** Highlight the **ITMHost** entry.

---

**7** Select the **Actions** menu.

---

**8** Select the **Move a Package** option.

---

**9** Select the **Standby Host** entry.

---

**10** Select **OK**.

---

**11** Confirm that the system successfully switched over.

END OF STEPS

---



## Enable automatic package switching

---

**Purpose** Use this procedure to enable package switching (local redundancy configuration).

**Task** Perform the steps below to enable package switching.

---

**1** Using the system console, log into either the primary or the standby server as root.

---

**2** Enter `sam` at the prompt.

---

**3** Select the **Clusters** option.

---

**4** Select the **High Availability Clusters** option.

---

**5** Select the **Package Administration** option.

---

**6** Highlight the **ITMHost** entry.

---

**7** From the **Actions** menu, select **Modify Failover Options**.

---

**8** Change Automatic Switching value to **Enable**.

---

**9** Select **OK**.

**Result:**

Package switching is enabled.

END OF STEPS

---



## Disable automatic package switching

---

**Purpose** Use this procedure to disable automatic package switching (local redundancy configuration).

**Task** Perform the steps below to disable package switching.

---

**1** Using the system console, log into either the primary or the standby server as root.

---

**2** Enter `sam` at the prompt.

---

**3** Select the **Clusters** option.

---

**4** Select the **High Availability Clusters** option.

---

**5** Select the **Package Administration** option.

---

**6** Highlight the **ITMHost** entry.

---

**7** From the **Actions** menu, select **Modify Failover Options**.

---

**8** Change Automatic Switching value to **Disable**.

---

**9** Select **OK**.

**Result:**

Package Switching is disabled.

END OF STEPS

---



## Re-add the server to a cluster

---

**Purpose** Use this procedure to re-add the server to a cluster (local redundancy configuration).

**Task** Perform the steps below to re-add the server to the cluster.

---

**1** Using the system console, log into either the primary or the standby server as root.

---

**2** Enter `sam` at the prompt.

---

**3** Select **Clusters** option.

---

**4** Select **High Availability Clusters** option.

---

**5** Select **Package Administration** option.

---

**6** Highlight the **ITMHost** entry.

---

**7** From the **Actions** menu, select **Specify node to join the cluster**.

---

**8** Highlight **Host name**.

---

**9** Select **OK**.

**Result:**

Host node joins the cluster.

END OF STEPS

---



## View the cluster status information

---

**Purpose** Use this procedure to view the cluster status information (local redundancy configuration).

**Task** Perform the steps below to view the cluster status information.

---

**1** Using the system console, log into either the primary or the standby server as root.

---

**2** Enter `cmvi ewcl -v`

**Result:**

The cluster status information is displayed.

END OF STEPS

---



## Section VI: Restart and stop the Oracle database

### Overview

---

**Purpose** This section describes how to restart and stop the Oracle database.

**Definition: Oracle database** The Oracle database is used to retain persistent copies of application and customer data. Use of Oracle's Transaction Processing Option enables concurrency control and a high degree of data integrity.

**Important** Starting and stopping the database should be performed only at the direction of Lucent Customer Support.

#### Contents

<a href="#">Restart the Oracle database</a>	<a href="#">3-35</a>
<a href="#">Stop the Oracle database</a>	<a href="#">3-36</a>



## Restart the Oracle database

---

**Purpose** Use this procedure to restart the Oracle database.

**Important!** This procedure is only performed at the direction of Lucent Customer Support.

**Task** Perform the steps below to restart the Oracle database.

---

**1** Using the system console, log in as `oracle`.

---

**2** Enter `/usr/dacscan/tool bin/startdb.sh` at the prompt.

**Result:**

A message is displayed on the form to indicate that the database has been started.

END OF STEPS

---



## Stop the Oracle database

---

**Purpose** Use this task when there is a need to stop the Oracle database, which would need to occur, for example, before backing up the Oracle database.

**Important!** This procedure is only performed at the direction of Lucent Customer Support.

**Task** Perform the steps below to stop the Oracle database.

---

**1** Using the system console, log in as `oracle`.

---

**2** Stop the application on the primary server.

**Reference:**

For instructions, see the section [“Stop Navis™ Optical NMS” \(3-13\)](#), earlier in this chapter.

---

**3** Enter `/usr/dacscan/tool bin/shutdb. sh` at the prompt.

**Result:**

A message is displayed on the form and indicates that the database has been stopped.

END OF STEPS

---



## Section VII: Administer the system cron file

### Overview

---

- Purpose** This section describes how to administer the system cron file.
- Background** The cron file contains commands that are automatically executed at set times.
- Certain commands can be executed at desired times by using the system cron. The root cron and dacscan cron operate independently. The root cron has various administrative functions that are executed on a routine basis, such as daily backups and file system space monitoring. The dacscan cron has various application-related functions, such as database syncs and auto-implementation.
- File format** The read-only root cron file format is such that everything on the active line is separated by blanks or tabs. Each field of the active line correlates to a subset of time. The following is an example of an active line, with each field separated by a tab (indicated by -->):
- ```
mi n - ->hour - ->day - ->month - ->day-of-week - ->command
mi n: 0-59
hour: 0-23
day: 1-31
month: 1-12
day of week: 0-6 (Sunday=0)
command: program to be executed
```
- In place of numerics, an asterisk (\*) may be used to imply the whole range (wild card). A sample active line may look like:
- ```
01 04, 23 * * * ksh /usr/dacscan/bin/auto_backup &
```
- This line implies that the auto\_backup will execute in the background one minute past the 4th hour (4:01 a.m.) and, again, one minute past the 23rd hour (11:01 p.m.), every day, every month and every day of the week.
- The cron files can be edited however, editing should be performed only at the direction of Lucent Customer Support. Once the file is created/edited, it must be loaded into the cron.

#### Contents

<a href="#">View the dacscan cron file</a>	<a href="#">3-39</a>
<a href="#">View the root cron file</a>	<a href="#">3-40</a>

<a href="#">Edit the system cron file</a>
---

<a href="#">3-41</a>
----------------------



## View the dacsan cron file

---

**Purpose** Use this task to view the dacsan cron file.

**Important!** The dacsan cron file is a read-only file. It can only be edited by the superuser (root user).

**Task** Perform the steps below to view the dacsan cron file.

---

- 1 Using the system console, log into the primary server as dacsan.

**Important!** Using the root login, you can alternatively enter `su - dacsan` and enter the dacsan password.

---

- 2 Enter `crontab -l` at the `#` prompt.
- 

- 3 Press **Enter**.

**Result:**

The dacsan cron file is displayed.

END OF STEPS

---



## View the root cron file

---

**Purpose** Use this task to view the root cron file.

**Important!** The root cron file is a read-only file. It can only be edited by the superuser (root user).

**Task** Perform the steps below to view the root cron file.

---

**1** Using the system console, log into the primary server as root.

---

**2** Enter `crontab -l` at the `#` prompt.

---

**3** Press **Enter**.

**Result:**

The root cron file is displayed.

END OF STEPS

---



## Edit the system cron file

---

**Purpose** Use this procedure to change the desired execution times of commands in the system cron file.

**Important!** The system cron file can only be edited by the superuser (root user).

**Task** Perform the steps below to edit the system cron file.

---

**1** Using the system console, log into the primary server as root.

---

**2** At the # prompt, type `cd /usr/spool/cron/crontabs`

---

**3** At the # prompt, type `ls -l`

**Result:**

The files **root** and **dacscan** are listed.

---

**4** Open the **root** or **dacscan** file using the vi editor and then edit the desired parameter.

---

**5** Press **Esc**, and then type `:wq` to save and close the file.

---

**6** Use one of the following to read the revised file into the system cron.

IF...	THEN...
the <b>root</b> file was edited:	log in as root and then type: <code>crontab root</code> at the # prompt.  <b>Result:</b> The <b>root</b> file is read into the system cron.
the <b>dacscan</b> file was edited:	log in as dacscan and then type <code>crontab dacscan</code> at the # prompt.  <b>Result:</b> The <b>dacscan</b> file is read into the system cron.

END OF STEPS

---



## Section VIII: Monitor space

### Overview

---

**Purpose** Navis™ Optical NMS has an internal, space monitoring script that periodically checks its own filesystems to verify that they are not running out of space. The following describes Navis™ Optical NMS's script which produces warning and recovery messages as required.

□

## Monitor space

---

- Definition: Spacewatch program** Spacewatch is a space monitoring and recovery program that provides file-system monitoring once per hour for the following controller files:
- Provisioning documents directory (**/dacscan/prov**)
  - Alarms directory (**/dacscan/alarms**)
  - Application logs directory (**/dacscan/log**)
  - Database archives directory (**/dacscan/dbarch**)
  - Application users directory (**/dacscan/users**)
  - Application trace information directory (**/dacscan/trace**)
- Warning messages** If a controller file is over 60% full, Spacewatch provides a warning message to the system event log. The warning message is in the form of: "Log file" running low on space - clean up immediately!
- Recovery messages** Specific recovery actions are provided for **/dacscan/trace**, **dacscan/log**, **dacscan/dbarch**, and **dacscan/users** files, if its percentage fill is over 80%. The recovery message for the **dacscan/dbarch** controller file is: "Logfile" removed database archive file - back up database immediately!
- The recovery message for the **dacscan/trace** and **dacscan/log** files is: Removed log files - Archives may be incomplete!
- The recovery message for the **dacscan/users** file is: "Logfile" is running low on space, clean up immediately!



## Section IX: Administer performance monitoring data export

### Overview

---

**Purpose** This section describes how to administer the performance monitoring data export feature.

The Performance monitoring data file export is an optional feature that enables the automatic capture of all 24-hour performance monitoring data for all network elements controlled by Navis™ Optical NMS and ITM-SC. When it executes, it requests that all 24-hour performance monitoring data collected for the previous day is transferred to an ASCII file—one per Element Management System (EMS)—on a workstation or PC specified at the time of installation.

#### Contents

<a href="#">Performance monitoring variables</a>	<a href="#">3-45</a>
<a href="#">Display performance monitoring variable settings</a>	<a href="#">3-46</a>
<a href="#">Change the scheduled run time of the performance monitoring file transfer</a>	<a href="#">3-47</a>
<a href="#">Performance monitoring workstation set up task</a>	<a href="#">3-48</a>
<a href="#">Execute the performance monitoring export tool</a>	<a href="#">3-49</a>



## Performance monitoring variables

---

- Overview** The performance monitoring data file export feature executes according to the values specified by certain environment variables, which control how this feature operates:
- ***\$PM\_LOG\_WKST***: The workstation to which performance monitoring data is exported.  
***\$PM\_LOG\_DIR***: The directory on the above workstation to store the exported data.  
The user must create in this directory one subdirectory for each day of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, and Yesterday.
  - ***\$PM\_DATA\_FILE***: The file on the above workstation that contains the exported performance monitoring data.
  - ***\$PM\_DATA\_FILE\_DIR***: The directory on the server that contains the request files. One request file must be created for each EMS, based on the *\$PM\_DATA\_FILE* environment variable and the EMS name.
  - ***\$PM\_EMS\_TIMEOUT***: The duration (in seconds) that is allocated to the EMS to collect and export the requested data. When this duration expires, a time-out error is logged.
  - Given these environment variables, the most recently transferred performance monitoring data file is found at:  
Example:  
`$PM_LOG_WKST:$PM_LOG_DIR/<yesterday>/$PM_DATA_FILE`

The ***\$PM\_LOG\_WKST*** and the ***\$PM\_LOG\_DIR*** variables are located on the server in the `/etc/dscan` directory. Their values are set at installation. The remaining variables, (***\$PM\_DATA\_FILE*** , ***\$PM\_DATA\_FILE\_DIR*** and ***\$PM\_DATA\_TIMEOUT*** ) are set up when the export tool is run.

□

## Display performance monitoring variable settings

---

**Purpose** Use this task to display performance monitoring variable settings.

**Task** Use the steps below to display performance monitoring variable settings.

---

**1** From a workstation, log in as dacscan.

---

**2** To display performance monitoring variable settings, enter one of the following at the prompt.

- To display all variable settings, type `env`
- To display a specific variable's setting, type `echo <$variable_name>`

**Result:**

The setting(s) displays.

END OF STEPS

---



## Change the scheduled run time of the performance monitoring file transfer

---

**Purpose** The performance monitoring file transfer process is scheduled to run daily. By default, it is scheduled to run at 02:10 a.m. local time. Use this task to change the scheduled run time of the performance monitoring file transfer.

**Important!** This task should be performed only at the direction of Lucent Customer Support.

**Task** Perform the steps to change the scheduled run time of the performance monitoring data file transfer process.

---

**1** Log into the host as dacsan.

---

**2** Enter `crontab -e`

---

**3** Locate a line in the file which is used to clean up the old files and start the PM log file process, that is:

```
mm hh * * * ksh /usr/dacsan/toolbin/StartPmData.sh > /tmp/StartPmData.log
```

---

**4** Edit the **mm** and **hh** entries so that they correspond with the desired hour (hh) and minute (mm).

---

**5** Enter `<shif t:wq!>`

**Result:**

The scheduled run time of the performance monitoring data file transfer process is changed.

END OF STEPS

---



## Performance monitoring workstation set up task

---

**Purpose** Use this task to create a dacsan login ID on the workstation from which performance monitoring reports are requested, and to modify the `.rhosts` file.

**Before you begin** Before you begin this task, ensure that a dacsan login ID does not already exist on the workstation.

**Task** Use the steps below to create a dacsan login ID and to modify the `.rhosts` file.

---

**1** Create a dacsan login ID. See [“Section VII: Administering users” \(2-41\)](#).

---

**2** From a new terminal window on that workstation, log in as the dacsan user.

---

**3** Enter `cd $HOME`

---

**4** Using `vi`, create a file `.rhosts` if it does not exist and then modify the file by adding a single line with the name of the host machine where PF and performance monitoring servers are running for Navis™ Optical NMS.

---

**5** Log into the Navis™ Optical NMS host machine as dacsan.

---

**6** Enter `remsh <name of Workstation> uname -a` to test whether the `.rhosts` file works correctly.

**Result:**

The name and operating system of the workstation displays.

END OF STEPS

---



## Execute the performance monitoring export tool

---

**Purpose** The performance monitoring data export tool is accessible by any user from the host server. It is located in **/usr/dacscan/toolbin** and allows a host user to view the relevant log information, as well as to view the current environment associated with this feature. This tool also provides the means for a host user to reissue the request to transfer 24-hour performance monitoring data associated with the previous day.

As an optional feature of Navis™ Optical NMS, ITM-SC performance monitoring data can be exported to a designated workstation once the workstation has been set up. See [“Performance monitoring workstation set up task” \(3-48\)](#).

Use this procedure to view the relevant log information, view the current environment associated with the performance monitoring export tool, or to reissue the request to transfer the 24-hour performance monitoring data associated with the previous day.

**Task** Perform the steps below to execute the performance monitoring export tool.

---

- 1 From the system prompt, enter: `/usr/dacscan/toolbin/pm_export_tool`

**Result:**

A user menu displays.

---

2	IF	THEN
	You want to display the export performance monitoring data feature overview	Enter <b>1</b>
	You want to display the export performance monitoring data feature environment	Enter <b>2</b>

monitoring data export

Execute the performance monitoring export tool

IF	THEN
<p>You want to view the export performance monitoring data log entries for mm/dd/yyyy</p>	<p>Enter <b>3</b></p>
<p>You want to reissue the request to export 24-hour performance monitoring data  ( There is not an option to issue a request on an individual EMS basis.)</p>	<p>Enter <b>4</b></p>
<p>You want to quit executing the performance monitoring export tool.</p>	<p>Enter <b>5</b></p> <p><b>Result:</b> Relevant log files are created and are located in /usr/dacscan/toolbin.</p> <p>On a dedicated UNIX workstation, you can uncompress the performance monitoring data files by entering the command <code>gunzip -c &lt;filename&gt;</code></p>

END OF STEPS



## Section X: Network Map

### Overview

---

**Purpose** This section contains tasks associated with the Network Map, including tasks associated with Network elements, Out-of-domain Objects (ODOs), changing the background map and changing model names.

**Choosing a background map** A new background map must be selected carefully so that it does not obscure the icons and text displayed with it. For example, a map that is largely white will hide the white text of the icon names.

When selecting a background map, keep the following in mind:

- Select a map that is mainly of a different color than the icons and text displayed on the map.
- Select a map that includes colors that contrast sufficiently with the icons and text displayed on the map so that they are easily distinguished by the user.

#### Contents

<a href="#">Install a new background map</a>	<a href="#">3-52</a>
<a href="#">Update network element and Out-of-Domain Object (ODO) positions</a>	<a href="#">3-53</a>
<a href="#">Search the Location Reference Table</a>	<a href="#">3-54</a>
<a href="#">Modify noncontrolled network element information</a>	<a href="#">3-56</a>
<a href="#">Change model name</a>	<a href="#">3-58</a>



## Install a new background map

---

**Purpose** Use this task to install a new background map on HP-UX client machines or on Windows terminal servers.

The system administrator of the host will use an off-line hardware, (such as a scanner) to scan the customer's map and save it onto the host machine as a **.gif** file. This map may be an image (**.gif**) file scanned by the user and stored in the host machine's

**\$DEST/jnm/itm/data/customer** directory.

If you need assistance with performing this task, contact Lucent Customer Support.

### Choosing a background map

A new background map must be selected carefully so that it does not obscure the icons and text displayed with it. For example, a map that is largely white will hide the white text of the icon names.

When selecting a background map, keep the following in mind:

- Select a map that is mainly of a different color than the icons and text displayed on the map.
- Select a map that includes colors that contrast sufficiently with the icons and text displayed on the map so that they are easily distinguished by the user.

**Task** Perform the step below to install a new background map for all users.

---

- 1 Contact Lucent Customer Support to perform this task.

END OF STEPS

---



## Update network element and Out-of-Domain Object (ODO) positions

---

**Purpose** Use the following procedure to update network element and ODO positions on the Network Map.

**Before you begin** Be sure that you have *Configuration management*, *Element Management*, or *system administrator* privileges to permit you to save the updated network element and ODO positions on the Network Map. See [“Navis™ Optical NMS system administrator user types” \(1-4\)](#) for a description of what is allowable for system administrator users.

**Task** Complete the following task to permanently move a node or an ODO to a new position on the Network Map.

---

**1** On the Network Map, select the node or ODO you want to reposition.

---

**2** Drag and drop the node or ODO to the new location.

**Result:**

The node or ODO and its connecting links are repositioned.

---

**3** Select the following menu option: **File > Update Node and Label Map Positions**.

**Result:**

The network element or ODO's location is updated.

END OF STEPS

---



## Search the Location Reference Table

---

**Purpose** Use this procedure to search for location-type information for a specific network element. The user may query by Office/Location/NE ID, Area, or Node Type, or request a list of all location-type information.

Network element queries display controlled or noncontrolled network elements. Controlled network elements are those controlled or cataloged by Navis™ Optical NMS. Noncontrolled network elements include black boxes and ODOs. Note that re

Results received from controlled network element queries include information about the digital cross-connect systems that are part of the network.

**Task** Perform the steps below to search for location-type information for a specific network element.

---

1 On the Network Map, select **Administration**.

---

2 Select **Location Reference Table**.

**Result:**

The Location Reference Table Query Box is displayed.

---

3

IF	THEN
You want to query by <i>office location</i> or <i>network element ID</i> ,	Enter the office location or network element ID in the <b>Office Location/NE ID</b> field.
You want to query by <i>area ID</i> ,	Select a value from the <b>Area</b> drop-down list.
You want to query by <i>node type</i> ,	Select a value from the <b>Node Type</b> drop-down list.
You want to query <i>all available location-type information</i> ,	Leave all fields blank, then proceed to the last step.

- 
- 4 (Optional) Complete the **Additional Information** field.
- 

- 5 Select **OK**.

**Result:**

The Location Reference Table displays the requested location-type information.

When the value ITMM displays in the **Type** field, this represents Navis™ Optical NMS. When SNMS displays in the **Type** field, this represents Navis™ Optical EMS.

END OF STEPS

---



## Modify noncontrolled network element information

---

**Purpose** Use this procedure to modify the description or administration information of an existing noncontrolled network element, including black boxes and ODOs.

**Task** Complete the following task to modify the description or administrative information of a noncontrolled network element.

---

- 1 From the Network Map, select **Administration > Location Reference Table**.

**Result:**

The Location Reference Table Query Box is displayed.

---

- 2 In the **Office Location/NE ID** field, enter the appropriate existing noncontrolled network elements.
- 

- 3 *(Optional)* In the **Additional Information** field, enter any additional information.
- 

- 4 *(Optional)* Select the **Area** associated with the noncontrolled network element from the drop-down menu.
- 

- 5 *(Optional)* Select the **Node Type** associated with the noncontrolled network element from the drop-down menu.
- 

- 6 Click **OK**.

**Result:**

The Location Reference Table is displayed.

When the value ITMNM displays in the **Type** field, this represents Navis™ Optical NMS. When SNMS displays in the **Type** field, this represents Navis™ Optical EMS.

---

**7** To modify the information, either click the first box in a row to select the row or click a box in a specific column to modify the information. You may modify rows in the following columns:

- **Description**
- **Acronym**
- **Additional Information**

---

**8** Select **Actions > Update**.

---

**9** Select **File > Close**.

**Result:**

The description or administration information of the noncontrol network element is modified.

END OF STEPS

---



## Change model name

---

**Purpose** Use this procedure to change a model name.

**Task** Perform the following steps to change a model name.

---

- 1 Delete the network element that has a model name to be changed. See the *Navis™ Optical Network Management System Provisioning Guide's, Delete a Controlled Network Element* task for details.

**Result:**

The network element is deleted.

---

- 2 Add the network element and enter the new model name. See the *Add an ITM-SC Navis™ Optical EMS-controlled network element* task in the *Navis™ Optical NMS Provisioning Guide* for details.

**Important!** Note that Navis™ Optical EMS network elements do not need to be re-added since they are automatically discovered by Navis™ Optical NMS.

**Result:**

The network element is added and contains a new model name.

END OF STEPS

---



## Section XI: Set Filtering Criteria

### Overview

---

**Purpose** This section defines how to set filtering criteria for Navis™ Optical NMS alarms to be sent to the TNM Integration Module (TIM) northbound alarm interface.

#### Contents

<a href="#">Set filtering criteria for Navis™ Optical NMS alarms</a>	<a href="#">3-60</a>
--	----------------------



## Set filtering criteria for Navis™ Optical NMS alarms

---

**Purpose** Use this task to set filtering criteria for Navis™ Optical NMS alarms to be sent to the TIM northbound alarm interface.

**Task** Perform the steps below to set filtering criteria for Navis™ Optical NMS alarms.

---

- 1 Start the Navis™ Optical NMS application.

**Reference:**

For instructions, see the section [“Start Navis™ Optical NMS on an HP-UX workstation” \(3-10\)](#), earlier in this chapter.

---

- 2 On the Network Map, select **Administration > NB Transmission Filter...**

**Result:**

The Alarm Transmission Filter form is displayed.

---

- 3 To send Navis™ Optical NMS’s service-affecting and non-service affecting alarms to the TIM northbound alarm interface, select **Both** then click **OK**. To send Navis™ Optical NMS’s service-affecting alarms only to the TIM northbound alarm interface, select **SA** then click **OK**.

**Result:**

The filtering criteria is set to send either Navis™ Optical NMS’s service-affecting and non-service affecting alarms or service-affecting alarms to the TIM northbound alarm interface.

END OF STEPS

---



## Section XII: Set Preferences

### Overview

---

**Purpose** This section defines how to set preferences in Navis™ Optical NMS.

**Contents**

<a href="#">Set event indications preferences</a>	<a href="#">3-62</a>
<a href="#">Set map preferences</a>	<a href="#">3-63</a>
<a href="#">Set alarm preferences</a>	<a href="#">3-64</a>
<a href="#">Set Fault Management (FM) operational preferences</a>	<a href="#">3-65</a>
<a href="#">Set port address preferences</a>	<a href="#">3-67</a>



## Set event indications preferences

---

**Purpose** Use this procedure to set event indications preferences for the Network Event Summary.

**Task** Perform the steps below to set event indications preferences.

---

- 1 On the Network Map, select **Administration > Preferences**.

**Result:**

The Preferences form is displayed.

---

- 2 Select the **Event Indications** tab.

**Result:**

The Event Indications form displays.

---

- 3

IF	THEN
You want to set an audible beep when a new alarm is reported.	Select <b>Set Beep On</b> , then select the number of beeps to sound when a new alarm is reported.
You want to set the Event form to display in the foreground.	Select <b>Set Event form to Foreground</b> .

---

- 4 Select **OK**.

**Result:**

The form closes. Changes to the event indications will take effect during the next and subsequent sessions.

END OF STEPS

---



## Set map preferences

---

**Purpose** Use this procedure to set map preferences.

**Task** Perform the steps below to set map preferences.

---

- 1 On the Network Map, select **Administration > Preferences**.

**Result:**

The Preferences form is displayed.

---

- 2 Select the **Map** tab.

**Result:**

The Map form displays the **User Login View** and **Link Width** sections.

---

- 3
 

IF	THEN
You want to select a different map view,	In the <b>User Login View</b> section's <b>Map View</b> field, highlight an entry in the drop down list.  <b>Important! System Area Map</b> is the default.
You want to specify area or select no area,	In the <b>User Login View</b> section's <b>Expand Area</b> field, highlight an entry in the drop down list.
You want to change the Network Map's link width display,	In the <b>Link Width</b> section of the form, select <b>Normal</b> to have links display at a normal width or <b>Heavy</b> to have links display at a wide width.

---

- 4 Select **OK**.

**Result:**

The form closes. Changes to the map will take effect during the next and subsequent sessions.

END OF STEPS

---



## Set alarm preferences

---

**Purpose** Use this procedure to set alarm preferences on forms.

**Task** Perform the steps below to set alarm preferences on forms.

---

- 1 On the Network Map, select **Administration > Preferences**.

**Result:**

The Preferences form is displayed.

---

- 2 Select the **Alarm Information On Forms** tab.

**Result:**

The Alarm Information on Forms form displays.

---

- 3 Click each box corresponding to the form to be changed.

**Result:**

Each selected box is marked.

---

- 4 Select **OK**.

**Result:**

The form closes.

---

- 5 Close the Navis™ Optical NMS application then bring it back up.

**Result:**

Changes to the alarm preferences will take effect during the next and subsequent sessions.

END OF STEPS

---



## Set Fault Management (FM) operational preferences

---

**Purpose** Use this procedure to set FM operational preferences.

**Task** Perform the steps below to set FM operational preferences.

---

- 1 On the Network Map, select **Administration > Preferences**.

**Result:**

The Preferences form is displayed.

---

- 2 Select the **FM Operational Mode** tab.

**Result:**

The Fault Management Operational Mode form displays.

---

- 3

IF	THEN
You want to set fault management to use the alarm approach,	Select <b>Alarm Approach</b> .
You want to set fault management to use the service approach,	Select <b>Service Approach</b> .

---

- 4 Select **OK**.

**Result:**

An Attention dialog box displays indicating that the change will take effect for the next and subsequent sessions.

---

- 5 On the Attention dialog box, select **OK**.

**Result:**

The dialog box closes.

---

- 6 On the Fault Management Operational Mode form, select **OK**.

**Result:**

The Fault Management Operational Mode form closes.

END OF STEPS

---



## Set port address preferences

---

**Purpose** Use this procedure to set port address preferences.

**Important!** The **Port Address** tab only displays if the Port Aliasing feature is enabled during installation. If you have any questions, contact Lucent Customer Support.

**Task** Perform the steps below to set port address preferences.

---

- 1 On the Network Map, select **Administration > Preferences**.

**Result:**

The Preferences form is displayed.

---

- 2 Select the **Port Address** tab.

**Result:**

The Default Port Address form displays.

---

- 3

IF	THEN
you want the port address to default to a <i>customer-specific</i> selection,	select the customer-specific button.
you want the port address to default to network management,	select <b>Network Mgt.</b>

---

- 4 Select **OK**.

**Result:**

An Attention dialog box displays indicating that the change will take effect for the next and subsequent sessions.

---

- 5 On the Attention dialog box, select **OK**.

**Result:**

The dialog box closes.

---

- 
- 6** On the Default Port Address form, select **OK**.

**Result:**

The Default Port Address form closes.

END OF STEPS

---





# 4 User and Domain Administration

## Overview

---

**Purpose** This chapter describes tasks performed to assign privileges and restrict access to Navis™ Optical NMS, network elements, and the Configuration Management (CM), Fault Management (FM), Provisioning Management (PM), Pre-Plan, and administrative capabilities in Navis™ Optical NMS.

### Contents

<b><u>Section I: Administer users in Navis™ Optical NMS</u></b>	<b><u>4-3</u></b>
<u>Add a user</u>	<u>4-5</u>
<u>Modify a user</u>	<u>4-7</u>
<u>Delete a user</u>	<u>4-9</u>
<u>Add a user profile</u>	<u>4-10</u>
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<b><u>Section II: Geographic domain user administration</u></b>	<b><u>4-14</u></b>
<u>Add user(s) or network element(s) to a geographic domain</u>	<u>4-15</u>
<u>List users assigned to geographic domains</u>	<u>4-17</u>

<a href="#">List users assigned to a network element</a>	<a href="#">4-19</a>
<a href="#">List network elements assigned to user</a>	<a href="#">4-20</a>
<a href="#">Delete user(s) or network element(s) from a geographic domain</a>	<a href="#">4-21</a>
<b><a href="#">Section III: Service domain user administration</a></b>	<a href="#">4-23</a>
<a href="#">Add a user to a service domain</a>	<a href="#">4-24</a>
<a href="#">List service domain user(s)</a>	<a href="#">4-26</a>
<a href="#">Delete user(s) from a service domain</a>	<a href="#">4-27</a>



## Section I: Administer users in Navis™ Optical NMS

### Overview

---

- Purpose** This section describes how to administer users and user profiles in Navis™ Optical NMS.
- Background** Administrators are responsible for adding, modifying, and deleting Navis™ Optical NMS user IDs. They also define the tasks to which users may or may not access by assigning a user profile to a user ID.
- Navis™ Optical NMS User profile** A User profile defines the user's privileges by the tasks the user is permitted to perform.
- Navis™ Optical NMS has the following user profiles:
- ***Initial Profile***  
Assigned tasks are:
    - Fault Management
    - Configuration Management
    - Performance Monitoring
    - Preplan Management
    - NE Management
  - ***Combined Profile***  
Assigned tasks are:
    - Fault Management
    - Configuration Management
    - Performance Monitoring
    - Preplan Management
    - NE Management
    - System Administrator
    - Fault Management (View Only)
    - Configuration Management (View Only)
    - Performance Monitoring (View Only)
    - Preplan Management (View Only)

- Service Domain Administrator
- Geo Domain Administrator
- **Provisioning (View Only)** which has the Configuration Management-View assigned task.
- **Alarm Management** which has the Fault Management assigned task.
- **Geo Domain User** which has the same assigned tasks as the **Initial Profile**.
- **Service Domain User**  
Assigned tasks are:
  - Fault Management
  - Configuration Management
  - Performance Monitoring
  - Preplan Management
- **External CM User** which has the Configuration Management assigned task.

While each profile has a finite number of **assigned** tasks, the system administrator may choose which tasks to associate with the specific profile. For example, if it is determined that Configuration Management should not be in the Service Domain profile, the system administrator may unselect that task using the Modify Profile form. See [“Modify a user profile” \(4-11\)](#).

In addition to the user profiles listed above, a system administrator may add a new profile, or modify or delete existing profiles. Note that the **Initial Profile** can never be deleted and the **Combined Default Profile** cannot be modified nor deleted.

## Contents

<a href="#">Add a user</a>	<a href="#">4-5</a>
<a href="#">Modify a user</a>	<a href="#">4-7</a>
<a href="#">Delete a user</a>	<a href="#">4-9</a>
<a href="#">Add a user profile</a>	<a href="#">4-10</a>
<a href="#">Modify a user profile</a>	<a href="#">4-11</a>
<a href="#">Delete a user profile</a>	<a href="#">4-13</a>



## Add a user

---

**Purpose** Use this procedure to add a Regular User, Service Domain User, or Geographic Domain user to Navis™ Optical NMS.

**Permissions** You must be authorized to perform this task.

**Important!** Before you perform this task, the user ID must first be created in the **sam** program. See [“Create a User ID through SAM’s GUI-based program” \(2-43\)](#) and [“Create a User ID through SAM’s terminal-based program” \(2-47\)](#) for details.

**Task** Complete the following steps to add a Regular User, Service Domain User, or Geographic Domain user to Navis™ Optical NMS.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Users > Add**.

**Result:**

The Add User form displays.

---

- 3 In the **User ID** field, enter a user ID.
- 

- 4 In the **Description** field (if desired, this field is optional), enter a description to be associated with the user ID.
- 

- 5 In the **Profile** field, select a user profile from the drop-down list. (See the *User profile* description in Chapter 2 of this document for more details.)
-

If no user profile is selected, the user is automatically assigned **Initial Profile**.

**Result:**

The selected profile is displayed and the tasks associated with the profile selection are displayed in the **Assigned Tasks** area of the window.

---

**6** In the **User Type** field, select one of the following:

- If the user is *not* to be added to the Service Domain user list or to the Geographic Domain user list, select **Regular User**.
- If the user is to be added to the Service Domain user list, select **Service Domain User**.
- If the user is to be added to the Geographic Domain user list, select **Geo Domain User**.

---

**7** Click **Apply**.

**Result:**

A message displays at the bottom of the Add User form indicating that the user is added.

---

**8** Click **OK**.

**Result:**

The Add User form closes.

END OF STEPS



## Modify a user

---

**Purpose** Use this procedure to modify user ID information.

**Permissions** You must be authorized to perform this task.

**Task** Complete the following steps to modify a user:

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Users > Display/Modify**.

**Result:**

The List of Users form displays.

---

- 3 Highlight the user ID to be modified.
- 

- 4 From the **Actions** menu, select **Modify User**.

**Result:**

The Modify User form displays.

---

- 5 Change the **Description**, **Profile**, or **User Type** parameters as desired.
- 

- 6 Click **Apply**.

**Result:**

A message displays at the bottom of the Modify User form which states that the parameters for the selected user are modified.

---

- 7 Click **OK**.
-

**Result:**

The Modify User form closes.

---

- 8** From the List of Users form, select **File > Close**.

**Result:**

The List of Users form closes.

END OF STEPS

---



## Delete a user

---

**Purpose** Use this procedure to delete a Regular User, Service Domain User, or Geographic Domain user.

**Permissions** You must be authorized to perform this task.

Complete the following steps to delete a user:

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Users > Display/Modify**.

**Result:**

The List of Users form displays.

---

- 3 Highlight the user ID to be deleted.
- 

- 4 From the **Actions** menu, select **Delete User**.

**Result:**

A confirmation box displays and asks if you really want to delete this user.

---

- 5 Click **Yes**.

**Result:**

The user ID is deleted.

---

- 6 Select **File > Close**.

**Result:**

The List of Users form closes.

END OF STEPS

---

## Add a user profile

---

**Purpose** Use this procedure to add a user profile. See the *User profile* description in Chapter 2 of this document for more details.

**Permissions** You must be authorized to perform this task.

**Task** Complete the following steps to add a user profile:

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Profiles > Add**.

**Result:**

The Add Profile form is displayed.

---

- 3 In the **Profile Name** field, enter a name for the user profile (up to 30 characters).
- 

- 4 Add tasks to the user profile by moving them from the **Available Tasks** list to the **Selected Tasks** list.
- 

- 5 Click **Apply**.

**Result:**

The user profile is added and is now available for assignment to users.

---

- 6 Click **OK**.

**Result:**

The Add Profile form closes.

END OF STEPS

---



## Modify a user profile

---

**Purpose** Use this procedure to modify a user profile.

**Permissions** You must be authorized to perform this task.

**Task** Complete the following steps to modify a user profile:

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Profiles > Modify**.

**Result:**

The Modify Profile form displays.

---

- 3 In the **Profile Name** field, select the user profile to be modified from the drop-down list.

**Result:**

The selected and available tasks for the user profile are displayed.

---

- 4 Do one of the following:
    - Add tasks to the user profile by moving them from the **Available Tasks** list to the **Selected Tasks** list.
    - Remove tasks from the user profile by moving them from the **Selected Tasks** list to the **Available Tasks** list.
- 

- 5 Click **Apply**.

**Result:**

The user profile is modified.

---

---

**6** Click **OK**.

**Result:**

The Modify Profile form closes.

END OF STEPS

---



## Delete a user profile

---

**Purpose** Use this procedure to delete a user profile.

**Permissions** You must be authorized to perform this task.

**Task** Complete the following steps to delete a user profile:

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Security Assignments > Profiles > Delete**.

**Result:**

The Delete Profile form displays.

---

- 3 In the **Profile Name** field, select the name of the user profile to be deleted from the drop-down list.
- 

- 4 Click **Apply**.

**Result:**

A confirmation box displays and asks if you really want to delete this profile.

---

- 5 Click **Yes**.

**Result:**

The user profile is deleted.

---

- 6 Click **Close**.

**Result:**

The Delete Profile form closes.

END OF STEPS

---

## Section II: Geographic domain user administration

### Overview

---

**Purpose** This section describes how to add a user to or to delete a user from a geographic domain, or to list geographic domain information.

**Background** Geographic Domain Partitioning is an optional feature. If this feature is not installed, the following entry is grayed out on the Network Map:

**Administration > Domain Partitioning > Geographic Domain**

#### Contents

<a href="#">Add user(s) or network element(s) to a geographic domain</a>	<a href="#">4-15</a>
<a href="#">List users assigned to geographic domains</a>	<a href="#">4-17</a>
<a href="#">List users assigned to a network element</a>	<a href="#">4-19</a>
<a href="#">List network elements assigned to user</a>	<a href="#">4-20</a>
<a href="#">Delete user(s) or network element(s) from a geographic domain</a>	<a href="#">4-21</a>



## Add user(s) or network element(s) to a geographic domain

---

**Purpose** Use this procedure to add user(s) or network element(s) to a geographic domain.

**Permissions** Geographic domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Important!** When adding a user to a geographic domain, that user ID must first be defined as a **Geo Domain User** in Navis™ Optical NMS. See the [“Add a user” \(4-5\)](#) task in this chapter for details.

**Task** Complete the following procedure to add a user or a network element to a geographic domain.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 3 Select the **Domains** radio button.

**Result:**

A list of domains display in the **Domains** area of the form.

---

- 4 Under the **Domains** list, select a domain, then select **Actions > Modify Domain**.
-

Add user(s) or network element(s) to a geographic domain

**Result:**

The Geographical Domain Modify form is displayed.

---

**5** Do one of the following:

- To add user(s) to a geographic domain, click the **User** tab, highlight user(s), then click the **Add** button.
- To add a network element to a geographic domain, click the **NEs** tab, highlight network element(s), then click the **Add** button.

**Result:**

The selected user(s) or network element(s) are moved to the left of the window.

---

**6** On the Geographical Domain Modify form, click **OK**.

**Result:**

The Geographic Domain Modify form closes.

END OF STEPS

---



## List users assigned to geographic domains

---

**Purpose** Use this procedure to list users assigned to geographic domains and their assigned network elements.

**Permissions** Geographic domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Task** Complete the following procedure to list assigned users, their geographic domains and assigned network elements.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 3 Select the **Assigned Users** radio button.

**Result:**

A list of users display in the **Assigned Users** area of the form.

---

- 4 Select the radio button that matches the type of user to be viewed.
    - **Both** (which displays Domain and Inter-domain Users)
    - **Domain** (which displays Domain users only)
    - **Inter-Domain** (which displays users assigned to more than one geographic domain)
- 

- 5 Select a listed user.
-

List users assigned to geographic domains

**Result:**

The domains and network elements associated with the user are displayed.

END OF STEPS

---



## List users assigned to a network element

---

**Purpose** Use this procedure to list users assigned to a network element.

**Task** Complete the following procedure to display a list of all the users who have access to a particular network element.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 2 In the top field, select the **Assigned NEs** radio button.

**Result:**

The Assigned NEs list is displayed.

---

- 3 In the **Assigned NEs** list, select a network element.

**Result:**

The Assigned Users list displays, and all users who have access to the selected network element are displayed.

END OF STEPS

---



## List network elements assigned to user

---

**Purpose** Use this procedure to list network elements assigned to a user.

**Task** Complete the following procedure to list the network elements a specific user can access.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 2 In the top field, select the **Assigned Users** radio button.

**Result:**

The Assigned Users list is displayed.

---

- 3 Select the radio button that matches the type of user:

- **Both**
  - **Domain**
  - **Inter-Domain**
- 

- 4 Select the desired user.

**Result:**

The **Assigned NEs** list displays all the network elements to which the selected user has access via the selected domain.

END OF STEPS

---



## Delete user(s) or network element(s) from a geographic domain

---

**Purpose** Use this procedure to delete user(s) or network element(s) from a geographic domain.

**Permissions** Geographic domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Task** Complete the following procedure to delete user(s) or network element(s) from a geographic domain.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 3 Select the **Domains** radio button.

**Result:**

A list of domains display in the **Domains** area of the form.

---

- 4 Under the **Domains** list, select a domain, then select **Actions > Modify Domain**.

**Result:**

The Geographical Domain Modify form is displayed.

Delete user(s) or network element(s) from a geographic domain

---

- 5** Do one of the following:
- To remove user(s) from a geographic domain, click the **User** tab, highlight user(s), then click the **Remove** button.
  - To remove a network element from a geographic domain, click the **NEs** tab, highlight network element(s), then click the **Remove** button.

**Result:**

The selected user(s) or network element(s) are moved to the right of the window.

---

- 6** On the Geographical Domain Modify form, click **OK**.

**Result:**

The Geographic Domain Modify form closes.

END OF STEPS

---



## Section III: Service domain user administration

### Overview

---

**Purpose** This section describes how to add, modify, and delete users from service domains.

**Background** Service Domain Partitioning is an optional feature. If this feature is not installed, the following entry is grayed out on the Network Map:

**Administration > Domain Partitioning > Service Domain**

#### Contents

<a href="#">Add a user to a service domain</a>	<a href="#">4-24</a>
<a href="#">List service domain user(s)</a>	<a href="#">4-26</a>
<a href="#">Delete user(s) from a service domain</a>	<a href="#">4-27</a>



## Add a user to a service domain

---

**Purpose** Use this procedure to add a user to a service domain.

**Permissions** Service domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Important!** When adding a user to a service domain, that user ID must first be defined as a **Service Domain User** in Navis™ Optical NMS. See the [“Add a user” \(4-5\)](#) task in this chapter for details.

**Task** Complete the following procedure to add users to a service domain.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Users**.

**Result:**

The Service Domain Display/Modify Users form is displayed.

---

- 3 In the **Service Domain** field, select a service domain name.

**Result:**

The users assigned to that service domain display in the **Members** box and users not assigned to the service domain display in the **Non-Members** box.

---

- 4 To add user(s) to the **Members** box, highlight user(s) in the **Non-Members** box and click the left arrow button.
-

**Result:**

The selected user(s) are moved to **Members** box.

---

- 5** On the Service Domain Display/Modify form, click **OK**.

**Result:**

The Service Domain Display/Modify form closes.

END OF STEPS

---



## List service domain user(s)

---

**Purpose** Use this procedure to list members assigned to a service domain.

**Task** Complete the following procedure to list service domain users.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Users**

**Result:**

The Service Domain Display/Modify Users form displays.

---

- 3 From the **Service Domain** field, select a service domain.

**Result:**

The users assigned to the selected domain are listed in the left box, and the users not assigned to the domain display in the right box, if applicable.

END OF STEPS

---



## Delete user(s) from a service domain

---

**Purpose** Use this procedure to delete user(s) from a service domain.

**Permissions** Service domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Task** Complete the following task to delete user(s) from a service domain.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Users**.

**Result:**

The Service Domain Display/Modify Users form is displayed.

---

- 3 In the **Service Domain** field, select a service domain name.

**Result:**

The users assigned to that service domain display in the **Members** box and users not assigned to the service domain display in the **Non-Members** box.

---

- 4 To delete user(s) from the **Members** box, highlight user(s) in the **Members** box and click the right arrow button.

**Result:**

The selected user(s) are moved to **Non-Members** box.

---

- 5 On the Service Domain Display/Modify form, click **OK**.
-

Delete user(s) from a service domain

**Result:**

The Service Domain Display/Modify form closes.

END OF STEPS

---





# 5 Domain partitioning for provisioning operations

## Overview

---

**Purpose** This chapter describes tasks performed to administer the provisioning environment. In particular, this chapter discusses the administration of geographic domain partitioning and service domain partitioning.

### Contents

<b><u><a href="#">Section I: Geographic domain partitioning</a></u></b>	<b><u><a href="#">5-3</a></u></b>
<u><a href="#">Add a geographic domain</a></u>	<u><a href="#">5-7</a></u>
<u><a href="#">List a geographic domain</a></u>	<u><a href="#">5-9</a></u>
<u><a href="#">List network elements assigned to geographic domains</a></u>	<u><a href="#">5-10</a></u>
<u><a href="#">Modify a geographic domain</a></u>	<u><a href="#">5-11</a></u>
<u><a href="#">Delete a geographic domain</a></u>	<u><a href="#">5-13</a></u>
<b><u><a href="#">Section II: Service domain partitioning</a></u></b>	<b><u><a href="#">5-14</a></u></b>
<u><a href="#">Add a service domain</a></u>	<u><a href="#">5-16</a></u>
<u><a href="#">List trails assigned to a service domain</a></u>	<u><a href="#">5-17</a></u>
<u><a href="#">List channels assigned to a service domain</a></u>	<u><a href="#">5-18</a></u>
<u><a href="#">List ports assigned to a service domain</a></u>	<u><a href="#">5-19</a></u>
<u><a href="#">Modify the trails assigned to a service domain</a></u>	<u><a href="#">5-20</a></u>
<u><a href="#">Modify the channels assigned to a service domain</a></u>	<u><a href="#">5-22</a></u>

<a href="#">Modify the ports assigned to a service domain</a>	<a href="#">5-24</a>
<a href="#">Delete a service domain</a>	<a href="#">5-26</a>

## Section I: Geographic domain partitioning

### Overview

---

**Purpose** This section describes how to administer geographic domains. Geographic domain partitioning is an optional feature. If this feature is not installed, **Geographic Domain** is grayed out on the Domain Administration menu.

At installation, geographic domain can be set with one of the following options:

- View ALL option
- Restricted user option

**Geographic domain partitioning** Geographic domain partitioning allows you to group network elements into domains that are directly under the control of:

- Navis™ Optical NMS, (such as digital cross-connect system frames)
- ITM-SC (such as SLMs)
- Navis™ Optical EMS

Geographic domain partitioning facilitates:

- Grouping network elements into domains
- Assigning specific user access to the domains.

**Managing geographic domains** A network element may be assigned to only one geographic domain.

User access is limited to only those network elements that are assigned to domains to which the user has access on Navis™ Optical NMS. A user can be assigned to one or more domains; however, a network element may be assigned to only one domain.

Users who are assigned to more than one geographic domain are called *inter-domain* users.

These associations are set by system administrators.

To implement a circuit that crosses geographic domains for a user who is not an inter-domain user, the user implements that portion of the circuit that is in the user's graphical domain. The user then refers

the work item to another work group or to a user who has access to the remaining network elements of the other domain(s).

A single user can have more than one login (user ID). Each login can have access to different domains only if the login is permitted access to those domains. This access permits a user to have greater coverage during out-of-hours or weekend assignments using one login and the more restricted access during normal working hours by using a second login.

The Geographic Domain Administration form facilitates geographic domain partitioning by permitting a user with the proper security privileges, such as an Navis™ Optical NMS privileged user, to control the assignment of network elements and users to domains.

The network elements and users must first exist in the Navis™ Optical NMS database before they can be assigned to any domain. Network elements must be added in the standard fashion before using the geographic domain partitioning feature.

Users with correct privileges can view a list of:

- All users
- All network elements
- All geographic domains
- Users that have access to a particular geographic domain
- Network elements that are assigned to a particular geographic domain
- Users that are not assigned to any geographic domain
- Network elements that are not assigned to any geographic domain
- Network elements are assigned to geographic domains
- Users are assigned to geographic domains
- Users that have access to a particular network element

In the discussion that follows, the term network elements includes EMSs such as ITM-SCs and Navis™ Optical EMSs.

### **Assigning users to a geographic domain**

Only users with the user type *Geo Domain User* can access the Geographic Domain forms.

Specific users can then be assigned access to specific domains. This is done by the Admin User who selects the User Type when the user is added to the Navis™ Optical NMS system.

The network elements and users must first exist in the controller database before they can be assigned to any domain.

For a user to appear on the Geographic Domain Administration form, the user must exist in the database with a login.

Geographic domain partitioning recognizes three types of users with associated permissions:

- **Geographic Domain Admin User**, generally an Navis™ Optical NMS system administrator with superuser privileges, who has permission to:
  - Access all features and forms
  - Create geographic domains
  - Assign users to geographic domains
  - View all network elements and links in the network
- **Geographic Domain User**, who has permission to:
  - Control assigned network elements in the geographic domain (if this is a restricted geographic domain user).
  - Provision network element ports
  - View only the network elements and links within the user's assigned geographic domain (if this is a restricted geographic domain user).
- **Geographic Inter-Domain User**, who has permission to:
  - Control assigned network elements in multiple geographic domains
  - View only the network elements and links within the user's assigned geographic domains (if this is a restricted geographic domain user). A user with **View All** option sees all, but can only perform operations on nodes assigned in their geographic domain. The **View All** option also displays all Shared Risk Groups.

Note that none of the users listed above may add a service domain.

**Important!** The ability to view network elements and links is dependent upon the setup of the DBP variable **readall** at installation. If this variable is selected, the geographic

domain/inter-domain users can view network elements, however, these users will only be allowed to perform operations on network elements assigned to the geographic domain.

**Security permissions** A person with proper security permissions can create, delete, modify, or associate network elements, domains, and users.

**Multiple logins** A user can have multiple logins (user IDs). Each login can have access to different domains only if it is assigned to the geographic domain. This permits users to have greater coverage during out of hours or weekend assignments using one login, and more restricted access during normal work hours by using a second login. These associations are accomplished by use of the Add User form.

**Contents**

<a href="#">Add a geographic domain</a>	<a href="#">5-7</a>
<a href="#">List a geographic domain</a>	<a href="#">5-9</a>
<a href="#">List network elements assigned to geographic domains</a>	<a href="#">5-10</a>
<a href="#">Modify a geographic domain</a>	<a href="#">5-11</a>
<a href="#">Delete a geographic domain</a>	<a href="#">5-13</a>



## Add a geographic domain

---

**Purpose** Use this procedure to add a geographic domain.

**Before you begin** Geographic domain administration procedures can only be performed by those with the appropriate security privileges.

Network elements or users must be assigned to a geographic domain or the domain will not be created. If you assign either network elements or users, the domain will be created and you can assign or delete more users or network elements at a later time.

**Important!** Some geographic domains are created by default and cannot be deleted (for example, the ITM-SC controller domain and the **ALL** domain). Geographic domains created by default can be modified. You can add users to them.

**Task** Complete the following procedure to add a geographic domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Add**.

**Result:**

The Geographic Domain Add form is displayed.

---

- 2 In the **Domain** field, enter a name for the new geographic domain.
- 

3

IF	THEN
You want to add users to the geographic domain.	Select the <b>Users</b> tab.
You want to add network elements to the geographic domain.	Select the <b>NEs</b> tab.

---

- 4 Highlight the user or network element that is to be added or removed from the domain.
-

- 
- 5** Select the appropriate arrow button to add or delete the highlighted selection.

- 
- 6** Select **OK**.

**Result:**

The domain is created and its selected users and network elements are assigned to the new domain. An Attention form confirms that the geographic domain has been added.

- 
- 7** Select **OK**.

**Result:**

The Attention form closes.

END OF STEPS



## List a geographic domain

---

**Purpose** Use this procedure to list a geographic domain and its assigned users and network elements.

**Permissions** Geographic domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Task** Complete the following procedure to list a geographic domain and its assigned users and network elements.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 3 Select the **Domains** radio button.

**Result:**

A list of domains display in the **Domains** area of the form.

---

- 4 Select a listed domain.

**Result:**

The assigned users and network elements associated with the domain are displayed.

END OF STEPS

---



## List network elements assigned to geographic domains

---

**Purpose** Use this procedure to list network elements assigned to geographic domains and their assigned users.

**Permissions** Geographic domain administration procedures can only be performed by those with the appropriate security privileges. You must be authorized to perform this task.

**Task** Complete the following procedure to list network elements, their geographic domains and assigned users.

---

- 1 Start Navis™ Optical NMS. See [“Section I: Start Navis™ Optical NMS server applications” \(3-4\)](#) for details.

**Result:**

The Network Map displays.

---

- 2 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify...**

**Result:**

The Geographical Domain Administration form displays.

---

- 3 Select the **Assigned NEs** radio button.

**Result:**

A list of users display in the **Assigned NEs** area of the form.

---

- 4 Select a listed network element.

**Result:**

The geographic domains and assigned users are displayed.

END OF STEPS

---



## Modify a geographic domain

---

**Purpose** Use this procedure to modify a geographic domain. This procedure is used to:

- Add users to a geographic domain
- Delete users from a geographic domain
- Add network elements to a geographic domain
- Delete users from a geographic domain.

**Task** Perform the steps below to modify a geographic domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Display/Modify**.

**Result:**

The Geographical Domain Administration form is displayed.

---

- 2 In the top field, select the **Domains** radio button.

**Result:**

The **Domains** list is populated.

---

- 3 In the **Domains** list, select a domain.
- 

- 4 Select **Actions > Modify Domain**.

**Result:**

The Geographical Domain Modify form is displayed.

---

- 5

IF	THEN
You want to modify the users that are assigned to the domain.	Select the <b>Users</b> tab.

IF	THEN
You want to modify the network elements assigned to the domain.	Select the <b>NEs</b> tab.

.....

**6** Highlight the user or network element that is to be added or removed from the domain.

.....

**7** Select the appropriate arrow button to add or delete the highlighted selection.

.....

**8** Select **Apply**.

**Result:**

The selected network elements or users are assigned to or deleted from the domain.

.....

**9** Select **OK**.

**Result:**

The Geographical Domain Modify form closes.

.....

**10** Select **File > Close**.

**Result:**

The Geographical Domain Administration form closes.

.....

END OF STEPS



## Delete a geographic domain

---

**Purpose** Use this procedure to delete a domain from geographic domain partitioning.

**Task** Perform the steps below to delete a domain from geographic domain partitioning.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Geographical Domain > Delete**.

**Result:**

The Geographical Domain Delete form is displayed.

---

- 2 In the **Domain** field, select a geographic domain from the drop-down list.
- 

- 3 Select **Apply**.

**Result:**

A form displays for you to confirm that the geographic domain should be deleted.

---

- 4 Select **Yes**.

**Result:**

The confirmation form closes.

---

- 5 Select **Close**.

**Result:**

The Geographical Domain Delete form closes.

END OF STEPS

---



## Section II: Service domain partitioning

### Overview

---

<b>Purpose</b>	<p>This section describes how to administer service domains.</p> <p>Service domain partitioning is an optional feature. If this feature is not installed, Service Domain is grayed out on the Domain Administration menu.</p>
<b>Service domain partitioning</b>	<p>Service domain partitioning groups trails, channels, and ports into service domains and assigns specific users access to the service domains. Through the Virtual Private Network (VPN) feature, system administrators may now restrict a user's ability to assign channels. This restriction is made during the creation of the service domain.</p> <p>Service domains are created in one of the following modes:</p> <ul style="list-style-type: none"> <li>• Dedicated mode</li> <li>• Shared mode</li> </ul> <p>Either mode is selected in the <i>Add a Service Domain</i> process.</p>
<b>Dedicated mode</b>	<p>When Dedicated mode is selected, the user may group channels, trails, and ports into service domains. As a result, the user may assign channels and assign ports for trail provisioning purposes or assign trails, for example, to monitor fault and performance.</p>
<b>Shared mode</b>	<p>When Shared mode is selected, the VPN feature is implemented and no channel assignment is permitted. The user may only group trails and ports into service domains, assign ports for trail provisioning purposes, or assign trails for monitoring purposes.</p>
<b>Service domain forms</b>	<p>Service Domain Administration is accomplished through several service domain administration forms, which are accessed from the Network Map's Administration menu. The service domain forms do not create users or network elements. Only a person with proper security permissions can create, delete, or modify a domain.</p>

**Assign users to a service domain**

Channels and users must first exist in the controller database before they can be assigned to any domain. Service domain partitioning recognizes two types of users:

- *Service Domain Admin User*, generally an Navis™ Optical NMS system administrator with superuser privileges
- *Service Domain User*, who can access the service domain forms.

A *Service Domain User* cannot be a geographic domain user. A user may only be assigned to one service domain and *generally* may not belong to more than one service domain. If a user must be assigned to additional service domains, the user must be assigned additional user IDs. However, the user can only operate in the service domain that he or she is currently logged into by the user ID.

**Contents**

<a href="#">Add a service domain</a>	<a href="#">5-16</a>
<a href="#">List trails assigned to a service domain</a>	<a href="#">5-17</a>
<a href="#">List channels assigned to a service domain</a>	<a href="#">5-18</a>
<a href="#">List ports assigned to a service domain</a>	<a href="#">5-19</a>
<a href="#">Modify the trails assigned to a service domain</a>	<a href="#">5-20</a>
<a href="#">Modify the channels assigned to a service domain</a>	<a href="#">5-22</a>
<a href="#">Modify the ports assigned to a service domain</a>	<a href="#">5-24</a>
<a href="#">Delete a service domain</a>	<a href="#">5-26</a>



## Add a service domain

---

**Purpose** Use this procedure to add a service domain.

**Before you begin** Service domain administration procedures can only be performed by those with the appropriate security privileges.

**Task** **Important!** Channels, circuits, or users must be assigned to create the domain.

Complete the following procedure to add a service domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Add...**

**Result:**

The Service Domain Add box is displayed.

---

- 2 In the **Service Domain** field, enter a name for the service domain.
- 

- 3 In the **Service Domain Mode** field, select **Shared** (default) or **Dedicated**.
- 

- 4 Select the **OK** button.

**Result:**

An Attention form confirms that the service domain has been added.

---

- 5 Select **OK**.

**Result:**

The Attention form closes.

END OF STEPS

---



## List trails assigned to a service domain

---

**Purpose** Use this procedure to list trails that are assigned to a service domain.

**Task** Complete the following steps to list trails that are assigned to a service domain:

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

- 2 In the *Service Domain* field, select the domain name from the drop-down list.

- 3 Select the **Trails** tab.

- 4 Complete the **A Node** and **Z Node** fields.

**Important!** To view A Node and Z Node values, select the **A Node** or **Z Node** button to display a selection box. Next, select the **Find** button, select the value from the displayed list and select **OK**.

- 5 Select a trail type from the drop-down list.

- 6 Select **OK**.

**Result:**

The Service Domain Display/Modify Trails form displays and lists the trails assigned to the service domain.

END OF STEPS



## List channels assigned to a service domain

---

**Purpose** Use this procedure to list the channels assigned to a service domain.

**Task** Complete the following steps to list the channels assigned to a service domain:

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

- 2 In the **Service Domain** field, select the domain name from the drop-down list.

- 3 Select the **Channels** tab.

- 4 Complete the **A Node** and **Z Node** fields.

**Important!** To view *A Node* and *Z Node* values, select the **A Node** or **Z Node** button to display a Selection box. Next, select the **Find** button, select the value from the displayed list and select **OK**.

- 5 Select a trail type from the drop-down list.

- 6 Select a channel type from the drop-down list.

- 7 Select **OK**.

**Result:**

If the Service domain mode value is **Dedicated**, the Service Domain Display/Modify Channels form displays and lists the channels assigned to the service domain.

END OF STEPS



## List ports assigned to a service domain

---

**Purpose** Use this procedure to list ports that are assigned to a service domain.

**Task** Complete the following steps to list ports that are assigned to a service domain:

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

- 2 In the **Service Domain** field, select the domain name from the drop-down list.

- 3 Select the **Ports** tab.

- 4 Complete the **Node** field.

**Important!** Existing node values may be viewed by selecting the **Node** button.

- 5 Select the **Rate** value from the drop-down list.

- 6 Select **OK**.

**Result:**

The Service Domain Display/Modify Ports form displays and lists the ports assigned to the service domain.

END OF STEPS



## Modify the trails assigned to a service domain

---

**Purpose** Use this procedure to modify the trails assigned to a service domain.

**Before you begin** Service domain administration procedures can only be performed by those with the appropriate security privileges.

**Task** Complete the following task to modify the trails assigned to a service domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

---

- 2 In the **Service Domain** field, select the domain name from the drop-down list.
- 

- 3 Select the **Trails** tab.
- 

- 4 Complete the **A Node** and **Z Node** fields.

**Important!** A Node and Z Node values may be viewed by selecting the **A Node** or **Z Node** button to display a Selection box. Next, select the **Find** button, select the value from the displayed list and select **OK**.

---

- 5 Select a trail type from the drop-down list.
- 

- 6 Select **OK**.

**Result:**

The Service Domain Display/Modify form displays and lists the trails assigned to the service domain.

- 
- 7** Continue with one of the following:
- Add trails to the service domain by moving them from the **Non Member Trails** list to the **Member Trails** list.
  - Delete trails from the service domain by moving them from the **Member Trails** list to the **Non Member Trails** list.

- 
- 8** Select **Apply**.

**Result:**

The trails assigned to the service domain are modified. The **Non Member Trails** and **Member Trails** lists redisplay and show the modifications.

- 
- 9** Select **OK**.

**Result:**

The Service Domain Display/Modify Trails form closes.

END OF STEPS



## Modify the channels assigned to a service domain

---

**Purpose** Use this procedure to modify the channels assigned to a service domain.

**Before you begin** Service domain administration procedures can only be performed by those with the appropriate security privileges.

**Task** Complete the following task to modify the channels assigned to a service domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

---

- 2 In the **Service Domain** field, select the domain name from the drop-down list.
- 

- 3 Select the **Channels** tab.
- 

- 4 Complete the **A Node** and **Z Node** fields.

**Important!** A Node and Z Node values may be viewed by selecting the **A Node** or **Z Node** button to display a Selection box. Next, select the **Find** button, select the value from the displayed list and select **OK**.

---

- 5 Continue with one of the following:
  - Add channels to the service domain by moving them from the **Non Member Channels** list to the **Member Channels** list.
  - Delete channels from the service domain by moving them from the **Member Channels** list to the **Non Member Channels** list.

**Important!** Channels will not display if **Shared** was selected for the **Service Domain Mode** (when this service domain was added).

---

**6** Select **Apply**.

**Result:**

The channels assigned to the service domain are modified. The **Non Member Channels** and **Member** lists redisplay and show the modifications.

---

**7** Select **OK**.

**Result:**

The Service Domain Display/Modify Channels form closes.

END OF STEPS



## Modify the ports assigned to a service domain

---

**Purpose** Use this procedure to modify the ports assigned to a service domain.

**Before you begin** Service domain administration procedures can only be performed by those with the appropriate security privileges.

**Task** Complete the following task to modify the ports assigned to a service domain.

---

- 1 On the Network Map, select **Administration > Domain Partitioning > Service Domain > Display/Modify Trails/Channels/Ports**.

**Result:**

The Service Domain Query form is displayed.

---

- 2 In the **Service Domain** field, select the domain name from the drop-down list.
- 

- 3 Select the **Ports** tab.
- 

- 4 Complete the **Node** field.

**Important!** Existing node values may be viewed by selecting the **Node** button.

---

- 5 Select the **Rate** value from the drop-down list.
- 

- 6 Select **OK**.

**Result:**

The Service Domain Display/Modify Ports form displays and lists the ports assigned to the service domain.

- 
- 7** Continue with one of the following:
- Add ports to the service domain by moving them from the **Non Member Ports** list to the **Member Ports** list.
  - Delete ports from the service domain by moving them from the **Member Ports** list to the **Non Member Ports** list.

- 
- 8** Select **Apply**.

**Result:**

The ports assigned to the service domain are modified. The **Non Member Ports** and **Member Ports** lists redisplay and show the modifications.

- 
- 9** Select **OK**.

**Result:**

The Service Domain Display/Modify Ports form closes.

END OF STEPS



## Delete a service domain

---

**Purpose** Use this procedure to delete a service domain.

**Before you begin** Service domain administration procedures can only be performed by those with the appropriate security privileges.

Before deleting a service domain, be sure that:

- all ports, trails, and users have been unassigned from the service domain
- if the service mode is dedicated, all channels assigned to the domain have been unassigned from the service domain

**Task** Complete the following task to delete a service domain.

---

- 1 Select **Administration > Domain Partitioning > Service Domain > Delete...**

**Result:**

The Service Domain Delete form is displayed.

---

- 2 In the **Service Domain** field, select the domain name from the drop-down list.
- 

- 3 Select **Apply**.

**Result:**

A form displays for you to confirm that the service domain should be deleted.

---

- 4 Select **Yes**.

**Result:**

The confirmation form closes.

---

- 5 Select **Close**.
-

**Result:**

The Service Domain Delete form closes.

END OF STEPS

---







# 6 Provisioning administration

## Overview

---

**Purpose** This chapter contains topology and provisioning tasks performed to administer Navis™ Optical NMS.

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## Section I: Aggregates

### Overview

---

**Purpose** An *aggregate* is a collection of one or more network elements collapsed into a single node displayed on the Network Map. An aggregate may contain other aggregates.

This section discusses the provisioning tasks associated with aggregates as they relate to managing the topology of the Navis™ Optical NMS Network Map.

#### Contents

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<a href="#">Specify an aggregate's acronym</a>	<a href="#">6-11</a>



## Add an aggregate

---

**Purpose** Use this procedure to add an aggregate to the Navis™ Optical NMS Network Map.

**Task** Complete the following task to add an aggregate to the Navis™ Optical NMS Network Map.

---

- 1 On the Network Map, select **Administration > Aggregate > Add**.

**Result:**

The Aggregate Add form is displayed.

---

- 2 In the **Aggregate ID** field, enter the Aggregate ID.
- 

- 3 In the **Acronym** field, enter the Aggregate Acronym.
- 

- 4 From the **Non-Member List**, select the network element or elements you wish to add to the aggregate.

**Important!** To select more than one node, press the Control key. There is no limit on the number of network elements that can be selected at one time.

---

- 5 Left-click the right arrow to move the network elements appearing in the **Non-Member** list to the **Members** list.

**Result:**

The selected network elements appear within the **Members** list.

---

- 6 Left click **Apply**.

**Result:**

A confirmation window is displayed.

---

- 7 Left click **OK**.
-

**Result:**

You are returned to the Aggregate Add form.

---

**8** Left-click **OK**.

**Result:**

The Aggregate is added to the Network Map. A corresponding network element is displayed at the top left-hand side of the Network Map.

END OF STEPS

---



## Delete an aggregate

---

**Purpose** Use this procedure to delete an aggregate from the Navis™ Optical NMS Network Map.

**Task** Complete the following task to delete an aggregate from the Navis™ Optical NMS Network Map.

---

- 1 From the Network Map, select **Administration > Aggregate > Delete...**

**Result:**

The Aggregate List is displayed.

---

- 2 Left-click the **Aggregate** to be deleted.
- 

- 3 Left click **Apply**.

**Result:**

A confirmation window is displayed.

---

- 4 Left click **OK**.

**Result:**

You are returned to the Aggregate Add form.

---

- 5 Left-click **OK**.

**Result:**

The aggregate is deleted and is no longer displayed on the Network Map.

END OF STEPS

---



## Add an aggregate member

---

**Purpose** Use this procedure to add a member to an existing aggregate. A *member* can be defined as a network element, which constitute aggregates.

**Important!** There is not a limit on the number of members that may reside in an aggregate.

**Task** Complete the following task to add a member to an existing aggregate.

---

- 1 On the Network Map, select **Administration > Aggregate > Display/Modify**.

**Result:**

The Aggregate Modify form appears.

---

- 2 In the **Aggregate ID** pull-down menu, left-click the aggregate to be modified.

**Result:**

The aggregate members are displayed in the **Members** column.

---

- 3 In the **Non-members** column, left-click the network element to be added to the aggregate.

**Result:**

The network element is highlighted.

---

- 4 Left-click the **left-pointing arrow**.

**Result:**

The network element is moved to the **Members** column.

---

- 5 Left click **Apply**.

**Result:**

A confirmation window is displayed.

---

---

**6** Left click **OK**.

**Result:**

You are returned to the Aggregate Add form.

---

**7** Left click **Close**.

**Result:**

The screen closes and the network element becomes a new member of the aggregate.

END OF STEPS

---



## Remove an aggregate member

---

**Purpose** Use this procedure to remove a member from an existing aggregate. A *member* can be defined as a network element, which constitute an aggregate.

**Before you begin** Before removing a member from an aggregate, note the following items:

- The aggregate must have at least one member.
- You cannot delete the last aggregate member without deleting the aggregate itself.

**Task** Complete the following task to remove a member from an existing aggregate.

---

- 1 From the Network Map, select **Administration > Aggregate > Display/Modify**.

**Result:**

The Aggregate Modify window appears.

---

- 2 In the **Aggregate ID** menu, left-click the aggregate to be modified.

**Result:**

The aggregate members are displayed in the **Members** column.

---

- 3 In the **Members** column, left-click the network element to be deleted from the aggregate.

**Result:**

The network element becomes highlighted.

---

- 4 Left-click the **right-pointing arrow**.

**Result:**

The network element is moved to the **Non-members** column.

---

- 5 Left-click **Apply**.
-

**Result:**

A confirmation window is displayed.

---

- 6** Click **OK**.

**Result:**

You are returned to the Aggregate Add form.

---

- 7** Left click **Close**.

**Result:**

The screen closes. The member is removed from the aggregate.

END OF STEPS

---



## Specify an aggregate's acronym

---

**Purpose** Use this procedure to specify an aggregate's on-screen *acronym* (title formed from the initial letters or parts of the aggregate's full name).

**Related information** For related information, refer to the *Navis™ Optical NMS Application and Planning Guide*.

**Task** Complete the following task to modify an aggregate's on-screen acronym.

---

- 1 From the Network Map, select **Configuration > Aggregate > Display/Modify**.

**Result:**

The Aggregate Modify window appears.

---

- 2 In the **Aggregate ID** pull-down menu, select the aggregate whose acronym you wish to specify.

**Result:**

The members of the aggregate are displayed in the **Members** column.

---

- 3 Select **Acronym** and press the **Backspace** key.

**Result:**

The Aggregate List form is displayed.

---

- 4 Enter the new acronym.
- 

- 5 Click **Apply**.
- 

- 6 Click **OK**.

**Result:**

The aggregate acronym is modified. The change will dynamically appear on-screen.

END OF STEPS

---

## Section II: Areas

### Overview

---

**Purpose** This section describes areas and describes the tasks related to areas.

**Background** Networks managed by Navis™ Optical NMS can be subdivided into smaller, manageable networks called *areas*. When the network is subdivided into areas containing a limited set of nodes/aggregates and associated links, the potential to overcrowd the display is reduced and the system performance is improved as a smaller amount of information is exchanged by the subsystems.

Areas may be a set of nodes/aggregates:

- dedicated to a subscriber
- which are or are not connected
- in a geographic location or building

Areas may not reside within other areas.

Users can choose to view only the areas they are interested in, which reduces the potential to overcrowd the display and improves system performance because a smaller amount of information is exchanged by the subsystems.

Only a system administrator can create areas.

**Definition: area** An area is a collection of nodes, aggregates, and their associated links. An area is displayed as an icon on the Area Panel of the Network Map. An area can be expanded, which causes the Expansion Panel to appear on the Network Map and display all of the nodes, aggregates, and links in the area.

There is no restriction in the number of network elements that can be included in an area, however a limit of 300 network elements in an area is recommended to avoid a cluttered display and performance problems.

#### Contents

<a href="#">Add an area</a>	<a href="#">6-14</a>
<a href="#">Modify an area</a>	<a href="#">6-16</a>

<a href="#">Delete an area</a>	<a href="#">6-18</a>
--------------------------------	----------------------

## Add an area

---

**Purpose** Use this procedure to add an area.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to add an area.

---

- 1 On the Network Map, select **Administration > Area > Add...**

**Result:**

The Area Create form is displayed.

---

- 2 In the **Area Name** field, enter a name for the area.
- 

- 3 Select **OK**.

**Result:**

The area is added. Note that an area icon displays in the top left side of the Area Panel on the Network Map. An entry for the new area appears in the Network Tree Panel on the Network Map.

END OF STEPS

---

**For more information** For instructions on how to add members to the area that was created with this task, see the following task, [“Modify an area” \(6-16\)](#)



## Modify an area

---

**Purpose** Use this procedure to modify an area.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to modify an area:

---

- 1 On the Network Map, select **Administration > Area > Display/Modify...**

**Result:**

The Area Modify form is displayed.

---

- 2 In the Area ID field, select the area from the drop-down list.

**Result:**

Non-members of the area display in the **Non-Members** list, and members of the area display in the **Members** list.

---

- 3 Do one of the following:

- Add nodes to the area by moving them from the **Non-Members** list to the **Members** list.
  - Delete nodes from the area by moving them from the **Members** list to the **Non-Members** list.
- 

- 4 Select **Apply**.

**Result:**

The area is modified. The **Non-Members** and **Members** lists redisplay and show the modifications.

---

- 5 Select **Close**.

**Result:**

The Area Modify form closes.

END OF STEPS

---



## Delete an area

---

**Purpose** Use this procedure to delete an area.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to delete an area:

---

- 1 On the Network Map, select **Administration > Area > Delete...**

**Result:**

The Area Delete form is displayed.

---

- 2 In the **Area Name** field, select the area from the drop-down menu.
- 

- 3 Select **OK**.

**Result:**

The area is deleted. Note that the area icon is deleted from the Area Panel on the Network Map. The entry for the area disappears from the Network Tree Panel on the Network Map.

END OF STEPS

---



## Section III: User Defined Area Map

### Overview

---

**Purpose** This section describes how to add, display/modify, or delete user defined area maps. These maps allow a specific user to define which network elements to display on the screen within a submap. (See [“Section IV: User Defined Submap” \(6-23\).](#))

**Contents**

<a href="#">Add a user defined area map</a>	<a href="#">6-20</a>
<a href="#">Display/modify a user defined area map</a>	<a href="#">6-21</a>
<a href="#">Delete a user defined area map</a>	<a href="#">6-22</a>



## Add a user defined area map

---

**Purpose** Use this procedure to add a user defined area map.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to add a user defined area map.

---

- 1 On the Network Map, select **Administration > User Defined Area Map > Add**

**Result:**

The Add User Defined Area Map form is displayed.

---

- 2 In the **User Defined Area Map Name** field, enter a name for the user defined map.
- 

- 3 To add member(s) to the new area map, select one or more entries from the **Non-Members** list, then click the left arrow button.

**Important!** You can optionally complete the **Filters** field to lessen the number of listed entries.

**Result:**

The selection(s) are moved to the **Members** list.

---

- 4 Select **OK**.

**Result:**

The new user defined area map is added and the Add User Defined Area Map form closes.

END OF STEPS

---



## Display/modify a user defined area map

---

**Purpose** Use this procedure to display/modify a user defined area map.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to display/modify a user defined area map:

---

- 1 On the Network Map, select **Administration > User Defined Area Map > Display/Modify**

**Result:**

The Modify User Defined Area Map form is displayed.

---

- 2 In the **User Defined Area Map Name** field, select the map to be displayed/modified.

**Result:**

The selected information displays.

---

- 3 Do one of the following:

- Make no changes and proceed to the next step.
  - Add member(s) to the area map by selecting one or more entries from the **Non-Members** list, then click the left arrow button.
  - Remove member(s) from the area map by selecting one or more entries from the **Members** list, then click the right arrow button.
- 

- 4 Select **OK**.

**Result:**

The area map is modified if changes were made.

END OF STEPS

---



## Delete a user defined area map

---

**Purpose** Use this procedure to delete a user-defined area map.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to delete a user defined area map:

---

- 1** On the Network Map, select **Administration > User Defined Area Map > Delete...**

**Result:**

The Delete User Defined Area Map form is displayed.

---

- 2** In the **User Defined Area Map Name** field, select a map name from the drop-down menu.

**Result:**

The selected information displays.

---

- 3** Select **OK**.

**Result:**

The user defined area map is deleted.

END OF STEPS

---



## Section IV: User Defined Submap

### Overview

---

**Purpose** This section describes how to add, display/modify, or delete user defined submaps which allow a specific user to define what areas to display on the screen. (See also [“Section II: Areas” \(6-12\)](#) and [“Section III: User Defined Area Map” \(6-19\)](#).)

**Contents**

<a href="#">Add a user defined submap</a>	<a href="#">6-24</a>
<a href="#">Display/modify a user defined submap</a>	<a href="#">6-25</a>
<a href="#">Delete a user defined submap</a>	<a href="#">6-26</a>



## Add a user defined submap

---

**Purpose** Use this procedure to add a user defined submap.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to add a user defined submap.

---

- 1 On the Network Map, select **Administration > User Defined Submap > Add**

**Result:**

The Add User Defined Submap form is displayed.

---

- 2 In the **User Defined Submap Name** field, enter a name for the user defined submap.
- 

- 3 To add member(s) to the new submap, select one or more entries from the **Non-Members** list, then click the left arrow button.

**Important!** You can optionally complete the **Filters** field to lessen the number of listed entries.

**Result:**

The selection(s) are moved to the **Members** list.

---

- 4 Select **OK**.

**Result:**

The new user defined submap is added and the Add User Defined Submap form closes.

END OF STEPS

---



## Display/modify a user defined submap

---

**Purpose** Use this procedure to display/modify a user defined submap.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to display/modify a user defined submap:

---

- 1 On the Network Map, select **Administration > User Defined Submap > Display/Modify**

**Result:**

The Modify User Defined Submap form is displayed.

---

- 2 In the **User Defined Submap Name** field, select the submap to be displayed/modified.

**Result:**

The selected information displays.

---

- 3 Do one of the following:

- Make no changes and proceed to the next step.
  - Add member(s) to the submap by selecting one or more entries from the **Non-Members** list, then click the left arrow button.
  - Remove member(s) from the submap by selecting one or more entries from the **Members** list, then click the right arrow button.
- 

- 4 Select **OK**.

**Result:**

The submap is modified if changes were made.

END OF STEPS

---



## Delete a user defined submap

---

**Purpose** Use this procedure to delete a user-defined submap.

**Permissions** You must be authorized to perform this task.

**Task** Perform the steps below to delete a user defined submap:

---

- 1 On the Network Map, select **Administration > User Defined Submap > Delete...**

**Result:**

The Delete User Defined Submap form is displayed.

---

- 2 In the **User Defined Submap Name** field, select a map name from the drop-down menu.

**Result:**

The selected information displays.

---

- 3 Select **OK**.

**Result:**

The user defined submap is deleted.

END OF STEPS

---



## Section V: Scheduled entities

### Overview

---

**Purpose** This section describes the administration of scheduled entities.

**Definition: Scheduled entity** A scheduled entity is a provisioning assignment for a facility, path, or circuit that has been designated to occur at a future date and time. All assignments, with the exception of digital links, can be scheduled.

#### Contents

<a href="#">View a list of scheduled entities</a>	<a href="#">6-28</a>
<a href="#">Delete a scheduled entity</a>	<a href="#">6-29</a>
<a href="#">Modify a scheduled entity</a>	<a href="#">6-30</a>
<a href="#">Filter the display of scheduled entities on the Scheduled List</a>	<a href="#">6-31</a>
<a href="#">View successful/failed scheduled entities through the Scheduled History List</a>	<a href="#">6-33</a>



## View a list of scheduled entities

---

**Purpose** Use this procedure to view a list of scheduled entities, such as a list of VC4s that have been scheduled for assignment or a list of scheduled facilities.

**Before you begin** The active form must be the Network Map.

**Task** Perform the steps below to view a list of scheduled entities.

---

- 1 On the Network Map, select **Administration > Scheduled List**.

**Result:**

The Scheduled List Query Box is displayed.

---

- 2 Enter the **Scheduled Entity**.
- 

- 3 Enter the **Schedule Type** from the menu.
- 

- 4 Select **OK**.

**Result:**

The Scheduled List form appears and displays the queried information.

END OF STEPS

---



## Delete a scheduled entity

---

**Purpose** Use this procedure to delete a scheduled entity.

**Task** Perform the steps below to delete a scheduled entity.

---

- 1 On the Network Map, select **Administration > Scheduled List**.

**Result:**

The Scheduled List Query Box is displayed.

---

- 2 Enter an existing **Scheduled Entity**.
- 

- 3 Enter a **Schedule Type** from the menu.
- 

- 4 Select **OK**.

**Result:**

The Scheduled List form is displayed with the queried information.

---

- 5 Select **Actions > Delete**.

**Result:**

A confirmation box is displayed which prompts the user to confirm the delete request.

---

- 6 Select **OK**.

**Result:**

The selected scheduled entity is deleted.

END OF STEPS

---



## Modify a scheduled entity

---

**Purpose** Use this procedure to modify a scheduled entity.

**Task** Perform the steps below to modify a scheduled entity.

---

- 1 On the Network Map, select **Administration > Scheduled List**.

**Result:**

The Scheduled List Query Box is displayed.

---

- 2 Enter an existing **Scheduled Entity**.
- 

- 3 Enter the **Schedule Type** from the menu.
- 

- 4 Select **OK**.

**Result:**

The Scheduled List form is displayed with the queried information.

---

- 5 Select **Actions > Modify**.

**Result:**

A popup form is displayed for the selected entity.

---

- 6 Change the Start Date, Start Time, or both.
- 

- 7 Select **OK**.

**Result:**

The selected scheduled entity is modified.

END OF STEPS

---



## Filter the display of scheduled entities on the Scheduled List

---

**Purpose** Use this procedure to filter the display of the scheduled entities on the Scheduled List.

**Task** Perform the steps below to filter the display of the scheduled entities on the Scheduled List.

---

- 1 On the Network Map, select **Administration > Scheduled List**.

**Result:**

The Scheduled List Query Box is displayed.

---

- 2 Enter a **Scheduled Entity**.
- 

- 3 Select **OK**.

**Result:**

The Scheduled List form is displayed with the queried information.

---

- 4 Select the **Scheduled Entity**.
- 

- 5 Select **View > Filter/Sort**.

**Result:**

The Scheduled List Sort/Filter form is displayed.

---

- 6 Select the **Filter** tab.

**Result:**

The Filter fields are displayed.

---

- 7 In the **Filter 1**, **Filter 2**, and **Filter 3** fields, select a field from the drop-down menu, then enter a value to the right of your selection.

Filter the display of scheduled entities on the Scheduled List

---



**WARNING**

*When the Date or Time fields are selected, enter the From and To date values in the appropriate fields.*

- 8 Select **OK**.

**Result:**

The filtered entities are displayed on the Scheduled List form.

END OF STEPS

---



## View successful/failed scheduled entities through the Scheduled History List

---

**Purpose** Use this procedure to query for a historical list of scheduled entities that were successfully completed or that failed during reinstatement.

**Task** Perform the steps below to query for a historical list of successful/failed scheduled entities.

---

- 1 On the Network Map, select **Administration > Scheduled History List**.

**Result:**

The Scheduled History List Query Box is displayed.

---

- 2 Enter a *Scheduled Entity*.
- 

- 3 Enter a *Schedule Type* from the menu.
- 

- 4 Select **OK**.

**Result:**

The Scheduled History List form is displayed with the queried information.

END OF STEPS

---



## Section VI: Provisioning maintenance tool

### Overview

---

**Purpose** This section describes the paper or virtual disconnect tool.

**Contents**

<a href="#">Virtual disconnect tool description</a>	<a href="#">6-35</a>
---	----------------------



## Virtual disconnect tool description

---

**Overview** The virtual disconnect tool is used to clean up the Navis™ Optical NMS database when facility, path, or circuit provisioning does not proceed as planned.

When cross connections are disconnected at the EMS or network element level without notification to the Navis™ Optical NMS, the record of the assignment in the Navis™ Optical NMS still exists.

The virtual disconnect tool is a means to clean up the Navis™ Optical NMS database without sending commands to the EMS or to the network elements.

This also might be required, for example, in the unlikely event that an operator incorrectly assigned a circuit to a wrong black box location when provisioning the circuit in Navis™ Optical NMS. The result of this script is to cause change to the Navis™ Optical NMS database without interacting with the network elements.

For the task used to perform this function, see the *Perform a Virtual Disconnect* task in the *Navis™ Optical NMS Provisioning Guide*.

□





# 7 Reliability and service recovery

## Overview

---

**Purpose** This chapter contains tasks performed to insure the reliability of Navis™ Optical NMS. It also contains system recovery tasks to use if Navis™ Optical NMS becomes unavailable, a routine maintenance task, and tasks associated with redundancy configurations.

### Contents

<b><u><a href="#">Section I: Perform backups</a></u></b>	<b><u><a href="#">7-3</a></u></b>
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<u><a href="#">Recovering Hot or Cold Backups</a></u>	<u><a href="#">7-9</a></u>
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## Section I: Perform backups

### Overview

---

**Purpose** This section describes how to perform various types of backups.

**Regular backups** The system can be set to perform daily backups. The time for the daily backups is set in the cron file. For information on how to edit the cron file, see [Chapter 3, “System administration”](#).

**Host database backup** Two types of backup are available to HP server systems:

- Hot backup
- Cold backup

Hot backups occur when the system is up and running (hot). Cold backups occur when the Navis™ Optical NMS is shut down (cold). The hot backup takes longer to complete than the cold backup, but the hot backup can be initiated while the Navis™ Optical NMS application is running. The application must be stopped before a cold backup can be initialized.

**Hot backup** The system automatically backs up the database on Sunday, Tuesday, Wednesday, Thursday, and Friday at 2:00 a.m. if a tape is present in the tape drive. A customer may alter the run frequency of hot backups by changing the run time in the **cron** file.

The system also performs a hot backup to machines in simplified geographic redundancy configurations. See [“Simplified and full geographic redundancy configurations” \(7-18\)](#) within this chapter for details.

The system is required to be at run level 4 for hot backup. See [“Run level 4” \(2-5\)](#) for more information on this run level.

No operator action is required during the hot backup, which takes from 60 to 180 minutes to complete, depending on the size of the database. The default database backup retention is 5 days (5 tapes/rotation).

**Important!** It is recommended that you maintain backup tape in the standby HP 9000 server.

**Cold backup** A cold backup is the most accurate type of backup.

Operator action is required during the cold backup procedure. The system is required to be set at run level 3 for cold backup. See [“Run level 3” \(2-5\)](#) for more information on this run level.

The system must be down to run cold backups. It is recommended that cold backups are run every week, however it is up to the customer to determine run frequency.

**Contents**

<a href="#">Perform a hot backup</a>	<a href="#">7-5</a>
<a href="#">Perform a cold backup</a>	<a href="#">7-6</a>



## Perform a hot backup

---

**Purpose** A hot backup occurs daily as the result of an entry in the cron file. This backup occurs when the system is up and running.

The following describes how to manually run a hot backup at a time other than when it is scheduled to run in cron.

**Task** Perform the steps below to perform a hot backup.

---

**1** Using the system console, log into the system as root.

---

**2** Remove the *daily backup tape* and insert the *hot backup tape* into the tape drive.

**Important!** Wait until the lights on the tape drive stop flashing.

---

**3** Enter `/bin/ksh /usr/dacscan/bin/hot_backup`

**Result:**

The hot backup begins. This will take 60-180 minutes to complete. The # prompt is issued to the system console once the backup is complete.

---

**4** Remove the *hot backup* tape.

---

**5** Label the tape *hot backup* and add the:

- current date
  - host server name
- 

**6** Store the tape in a safe place.

**Result:**

The hot backup is complete.

---

**7** Insert the *daily backup tape* into the tape drive.

END OF STEPS

---



## Perform a cold backup

---

**Purpose** A cold backup occurs when the NMS is shutdown (cold). This task should be completed *once a month*.

**Task** Perform the steps below to perform a cold backup.

---

1 Using the system console, log into the system as root.

---

2 At the prompt, type `init 3` to stop the Navis™ Optical NMS application.

**Reference:**

For instructions, see the section [“Stop Navis™ Optical NMS on a specific node using SAM” \(3-27\)](#), in [Chapter 3, “System administration”](#).

---

3 Log in to the Navis™ Optical NMS server as root.

---

4 Remove the *daily backup tape* and insert the *cold backup tape* into the tape drive.

---

5 Wait until the lights on the tape drive stop flashing.

---

6 Enter `/bin/ksh /usr/dacscan/bin/cold_backup`

**Result:**

The cold backup begins. This will take approximately 40 minutes to complete. The # prompt is issued to the system console once the backup is complete.

---

7 Remove the *cold backup* tape.

---

**8** Label the tape *cold backup* and add the:

- current date
- host server name

---

**9** Store the tape in a safe place.

---

**10** Insert the *daily backup tape* into the tape drive.

**Result:**

The backup is complete.

---

**11** At the prompt, enter `shutdown -ry 0` to reboot the host server to clean up UNIX system files.

**Result:**

The host server will shut down and restart. This will take approximately 10 minutes to complete and the prompt redisplay once the process is complete.

---

**12** Log into the system as root.

---

**13** At the prompt, enter `init 4` to start the Navis™ Optical NMS application.

**Result:**

The application is started.

---

**14** Optionally enter `top` to display the status of the start process. Press the **Ctrl** and **C** keys to exit the display.

END OF STEPS



## Section II: Perform recoveries

### Overview

---

**Purpose** This section describes how to perform various types of recoveries.

**Contents**

<a href="#">Recovering Hot or Cold Backups</a>	<a href="#">7-9</a>
<a href="#">Perform a hot backup recovery</a>	<a href="#">7-10</a>
<a href="#">Perform a cold backup recovery</a>	<a href="#">7-12</a>
<a href="#">Recover the database to a different server</a>	<a href="#">7-14</a>



## Recovering Hot or Cold Backups

---

**Introduction** Two types of recovery are available:

- Recovering a hot backup
- Recovering a cold backup

**Recovering a Hot Backup** Hot backups are recovered using the “hot\_recover” script. Navis™ Optical NMS must be shut down to perform this procedure.

**Recovering a Cold Backup** Cold backups are recovered using the “cold\_recover” script. Navis™ Optical NMS must be shut down to perform this procedure.

**Recovering the database to a different server** The database can be recovered onto a different server after a hot backup is completed.

### Assumptions

- Both systems have network connectivity to all Workstations, external servers (such as ITM-SCs), and network elements. This connectivity establishes a disaster recovery site.
- The systems have been installed with an identical release of Navis™ Optical NMS application software (including identical environment variable settings).
- The systems have both been licensed for identical features and network elements.
- The system administrators at both sites are synchronizing the following files:
  - **/etc/passwd**
  - **/etc/hosts**
  - **/usr/dacscan/oam/config\_data/cm/ccpm/ccpconfig** (all references to hostnames except those that contain the local hostname)
  - user’s accounts (use the HP-UX system administration tool “SAM”).

□

## Perform a hot backup recovery

---

**Purpose** Use this procedure to perform a hot backup recovery.

**Before You Begin** Be sure that you have the hot backup tape containing the:

- current date
- host server name

**Task** Perform the steps below to perform a hot backup recovery.

---

- 1 Using the system console, log into the system as root.

---

- 2 At the prompt, type `i n i t 3` to stop the Navis™ Optical NMS application.

**Reference:**

For instructions, see the section [“Stop Navis™ Optical NMS on a specific node using SAM” \(3-27\)](#), in [Chapter 3, “System administration”](#).

---

- 3 Insert the hot backup tape into the tape drive.

---

- 4 Wait until the lights on the tape drive stop flashing.

---

- 5 At the prompt, enter `su - dacscan`

---

- 6 At the prompt, enter `/bin/ksh /usr/dacscan/bin/hot_recover`

**Result:**

The hot backup recovery begins. This will take approximately 90 minutes to complete. The `#` prompt is issued to the system console once the hot backup recovery is complete.

---

- 7 Remove the tape.

- 
- 8** Label the tape with the current date, and store the tape in a safe place.

**Result:**

The hot backup recovery is complete.

- 
- 9** At the prompt, enter `i n i t 4` to start the Navis™ Optical NMS application.

**Result:**

The application is started.

END OF STEPS



## Perform a cold backup recovery

---

**Purpose** Use this procedure to perform a cold backup recovery.

**Before You Begin** Be sure that you have the cold backup tape containing the:

- current date
- host server name

**Task** Perform the steps below to perform cold backup recovery.

---

- 1 Using the system console, log into the system as root.

---

- 2 At the prompt, type `i n i t 3` to stop the Navis™ Optical NMS application.

**Reference:**

For instructions, see the section [“Stop Navis™ Optical NMS on a specific node using SAM” \(3-27\)](#), in [Chapter 3, “System administration”](#).

---

- 3 Insert a tape with a valid cold backup into the tape drive.

---

- 4 Wait until the lights on the tape drive stop flashing.

---

- 5 At the prompt, enter `su - dacscan`

---

- 6 Enter `/bin/ksh /usr/dacscan/bin/cold_recover`

**Result:**

A prompt appears and asks for the date of the backup tape.

---

- 7 Enter YYYYMMDD (or YYMMDD for older tapes).

**Important!** The date entered must match the date on the backup tape.

**Result:**

The cold backup recovery begins. This will take approximately 90 minutes to complete. The # prompt is issued to the system console once the backup is complete.

.....  
**8** Remove the tape.

.....  
**9** Label the tape with the current date, and store the tape in a safe place.

**Result:**

The cold backup recovery is complete.

.....  
**10** At the prompt, enter `i n i t 4` to start the Navis™ Optical NMS application.

**Result:**

The application is started.

.....  
E N D O F S T E P S



## Recover the database to a different server

---

**Purpose** Use this task to recover the database to a different server. This task may be used for system upgrades, or when it is necessary to analyze data when trouble clearing.

The task can only be performed after a hot backup has been completed.

### Before You Begin

- Create a hot backup tape at the site which has the source database, using the task [“Perform a hot backup” \(7-5\)](#), earlier in this chapter.
- Ensure that the destination system is at run level 3.
- Recover the hot backup tape at the destination site, using the task [“Perform a hot backup recovery” \(7-10\)](#), earlier in this chapter.
- On each workstation:
  - Ensure that the hostnames/IP addresses for both Navis™ Optical NMS systems (source and destination) are in `/etc/hosts`.
  - Ensure that the hostnames for both Navis™ Optical NMS systems (source and destination) are present in `/.rhosts`.
  - Ensure that the hostnames for both Navis™ Optical NMS systems (source and destination) are present in `/home/dacscan/.rhosts`.

**Task** Perform the steps below to recover the database to a different server.

---

- 1 Using the system console, log in as `dacscan` on the Navis™ Optical NMS server.

---

- 2 Enter `ksh /usr/dacscan/bin/local.sh`.

### Result:

This script resets the “active controller” field in the database with the name of the new hostname.

.....  
**3** Refer to ITM-SC or Navis™ Optical EMS documentation for procedures to enable the EMS to accept connection requests from the new Navis™ Optical NMS host.  
.....

**4** For any network elements that require knowledge of the connecting manager, refer to their documentation for procedures to enable connections.  
.....

**5** For each user on each workstation, reset the name of the Navis™ Optical NMS to which the user should connect.  
.....

**6** Enter the command `i n i t 4` to bring the system to run level 4.

**Result:**

The Navis™ Optical NMS application is started.

END OF STEPS  
.....



## Section III: Delete history

### Overview

---

**Purpose** This section describes the delete history tool.



## About this tool

---

**Background** Whenever a circuit is rearranged, the data from the previous circuit is retained in the Navis™ Optical NMS database. A circuit that has been rearranged several times accumulates a large amount of history information. The Delete History script retains only the necessary history data associated with each circuit, and deletes all unnecessary history data from the database.

The Delete History script consists of two parts:

- A script that automatically runs once, when upgrading the database to a new version. If you need to refer to any circuits listed in the history that are not the most recent non-RS (restoration), non-RI (reinstatement) circuits, you should print out these circuits before upgrading the database. The Delete History script will delete these circuits from the history during the upgrade.
- A daily script execution that runs immediately following each successful daily backup.

□

## Section IV: Redundancy

### Overview

---

**Purpose** This section describes redundancy configurations available to support Navis™ Optical NMS and Element Management System (EMS) failures.

This section describes how the redundancy process is supported with simplified geographic redundancy, full geographic redundancy, and local redundancy configurations.

#### **Geographic redundancy configurations**

Geographic redundancy configurations provide site protection by maintaining a primary and a standby server in separate locations and ensuring that the two servers are far enough apart so that natural disasters or adverse weather conditions cannot affect the servers at the same time.

There are two types of geographic redundancy: *simplified* and *full*. Both consist of a primary Navis™ Optical NMS server connected to a standby Navis™ Optical NMS server.

#### **Simplified and full geographic redundancy configurations**

Simplified and full geographic redundancy configurations differ in the frequency in which updates occur to the standby server's database. For example, for simplified geographic redundancy, data is transmitted from the primary server to the standby server during the hot backup process. Full geographic redundancy updates the standby server's database every 30 minutes through Navis™ Optical NMS's geographic redundancy software which manipulates Oracle files to perform the regular updates. If there is a failure, no more than 30 minutes of operations should be lost.

Note that there may be user activity on the standby server in the simplified geographic redundancy configuration however no user activity is permitted on this server in the full redundancy configuration.

**Full Geographic Redundancy 's support to EMS and Navis™ Optical NMS servers**

When a failure occurs to Navis™ Optical NMS servers, the full geographic redundancy process protects availability through its switchover process. Similarly, EMS geographic redundancy switchovers protect the availability of EMS servers. For both scenarios, procedures are available to address how to maintain Navis™ Optical NMS-EMS connectivity.

**Navis™ Optical NMS geographic redundancy commands**

Several Navis™ Optical NMS geographic redundancy commands are used to either set up the standby database, or reinitialize the primary database. These commands are:

- **InitializeStandby.sh** - creates a standby database on a standby machine and completes a Full Geographic Redundancy environment between the primary and standby machines.
- **GR\_Oracle.sh** - performs common functions related to the Oracle database, which includes how to retrieve system date, how to revoke or grant privileges, and how to retrieve information of Oracle files or archive logs.
- **OnlineStandby.sh** - runs on the standby database only in the event of a disaster, at which time it activates the standby database.
- **SwitchOver.sh** - performs switchover or switchback between primary and standby databases.
- **AlterStandby.sh** - synchronizes primary and standby databases or takes a data file off-line on standby database after physical structure of primary database was altered.
- **CleanGRARCH.sh** - cleans geographic redundancy archive file system.

**Navis™ Optical NMS local redundancy switchover**

The standby server has a pulse process that monitors the heartbeat of the primary server. These processes can be started and stopped manually. The pulse process resides on the standby server. This process is used to determine whether the primary server is alive. The heartbeat process resides on the primary server. This process is used as a detection mechanism to initiate automatic switchover for Navis™ Optical NMS local redundancy configurations.

**Local redundancy configuration switches to the standby server (MC/ServiceGuard)**

The local redundancy configuration is supported by a MC/ServiceGuard paradigm in which the primary and standby servers are connected to the same database. In this paradigm, the “primary” and the “standby” systems are treated as a “cluster”, and applications are bundled into “packages,” which can be launched on either of the machines in the cluster. When one of the machines in a cluster detects the loss of heartbeat from the other machine, the cluster is reformed without the failed machine. Any packages run on the failed machine are migrated to, and restarted on, the remaining machine. For applications that can take advantage of distributed computing, this solution allows the full resources of both machines to be utilized.

The incorporation of MC/ServiceGuard results in a local redundancy configuration with distinct Switchover/UX-like characteristics, namely an “primary” and a “standby” system. The entire application—with all its assets, is bundled as a single package and configured to run in a single instance. The MC/ServiceGuard configuration offers some failover performance over the Switchover/UX configuration, because a reboot is no longer required as part of the switchover.

**Automatic and manual switchovers**

Automatic switchovers occur when there is a link loss or when there is a failure of an association between a primary server and a network element. Manual switchovers occur when a user manually initializes a switchover to a standby server. Navis™ Optical NMS geographic redundancy configurations require manual switchover processing, while its local redundancy configurations feature automatic switchover.

Navis™ Optical NMS supports manual switchovers for the ITM-SC EMS and manual and automatic switchovers in Navis™ Optical EMS. (See [“EMS switchovers” \(7-22\)](#) for details). The support is designed to assure maximum availability of Navis™ Optical NMS while minimizing the downtime of the subtending EMS population, where several switchovers can be expected. While local redundancy switchovers are always automatic, the EMS geographic redundancy switchover process occurs manually only in the earlier releases of Navis™ Optical EMS (for example, R5.0) while Navis™ Optical EMS R5.1 supports both manual and automatic switchovers.

For example, in Navis™ Optical EMS releases earlier than R5.1, a command is entered to initiate switchover. Newer releases of Navis™ Optical EMS (Release 5.1 and beyond), manual switchovers are

handled through a Cluster Administrator GUI, which may be set up to support manual or automatic switchovers.

**Navis™ Optical EMS  
Cluster Administration GUI**

The Navis™ Optical EMS Cluster Administration GUI contains two icons to support local and remote servers. When a failure occurs, an 'X' displays on the failed server's icon, which is displayed in Navis™ Optical EMS. The 'X' clears once communication is re-established to the server.

In order to provide an instant status to Navis™ Optical NMS personnel, it is recommended that the GUI is placed on a convenient workstation at the Navis™ Optical NMS work center.

**Supporting EMS/Navis™  
Optical NMS server failures**

When failures occur to the Navis™ Optical EMS and ITM-SC EMS servers, they are either *automatically* resolved through redundancy software intervention methods in place, or must be resolved *manually* through the EMS system administrator's intervention.

Manual intervention varies by EMS server type, release number, and redundancy type. It also differs depending upon whether or not the failure occurs on the EMS side versus if it occurs on the Navis™ Optical NMS side.

The following tasks define the steps that need to be performed by Navis™ Optical NMS system administrators after any switchover occurs to an EMS server.

**Contents**

<a href="#">EMS switchovers</a>	<a href="#">7-22</a>
<a href="#">Restart Navis™ Optical NMS communication with EMS servers</a>	<a href="#">7-25</a>
<a href="#">Restart Navis™ Optical NMS communication with Navis™ Optical EMS local redundancy servers</a>	<a href="#">7-26</a>
<a href="#">Restart Navis™ Optical NMS's ability to communicate with Navis™ Optical EMS geographic redundancy servers</a>	<a href="#">7-27</a>
<a href="#">Restart Navis™ Optical NMS's ability to communicate with ITM-SC servers</a>	<a href="#">7-28</a>
<a href="#">Switch the roles of Navis™ Optical NMS servers (simplified or full geographic redundancy configuration)</a>	<a href="#">7-29</a>



## EMS switchovers

---

### **Navis™ Optical EMS switchover behavior (for geographic redundancy configurations)**

During the initial installation of the complex containing Navis™ Optical EMS servers in a geographic redundancy configuration, the `add. controller` command is entered *twice* in Navis™ Optical NMS. More specifically, the command is entered one time per Navis™ Optical EMS server.

Before a switchover occurs, the Navis™ Optical EMS primary and standby servers in a geographic redundancy configuration display on the Navis™ Optical NMS Network Controller Map as two green icons.

The two servers are distinguished by their adjacent "Controller Name" labels.

Assuming that Server A in this configuration is Active and Server B is in Standby mode, when Navis™ Optical EMS Server A fails, its icon turns to magenta while Server B's icon remains green. Once the Navis™ Optical EMS switchover occurs, about 7 minutes elapse between Server A's failure and Server B's new status. When Server A is repaired by the Navis™ Optical EMS staff, Server A's icon becomes green again, and two green icons display on the Navis™ Optical NMS Network Controller Map.

At this point, there is no Navis™ Optical NMS manual re-synchronization action required. Note that when the switchover occurred, Navis™ Optical NMS had interrupted communications to Navis™ Optical EMS Server A, however it held the orders during the 7 minute timeframe and then resumed communication with Navis™ Optical EMS Server B.

### **Navis™ Optical EMS switchover behavior (for local redundancy configurations)**

In Navis™ Optical EMS local redundancy configurations, the Navis™ Optical EMS MC/ServiceGuard cluster is assigned an arbitrary designation name, such as `<C_arbitrary_designation_name>` which serves as a Package IP address.

During the initial installation of Navis™ Optical EMS servers in a local redundancy configuration, the `add. controller` command must be used to uniquely support the Package IP address representing the cluster.

The actual Navis™ Optical EMS primary and standby servers within the cluster (for example, Server A and Server B) are designated in the

/etc/hosts file of the Navis™ Optical NMS server with their fully-qualified name, such as <servername>. <full\_name>. com.

Before a switchover occurs, the Navis™ Optical EMS cluster in a local redundancy configuration displays on the Navis™ Optical NMS Network Controller Map as one green icon.

Assuming that Server A in this configuration is *Active* and Server B is in *Standby* mode, when Navis™ Optical EMS Server A fails, the icon turns to magenta for a period of 3-5 minutes, after which the Navis™ Optical EMS local redundancy switchover occurs. Once switchover is complete, the icon turns back to green and Navis™ Optical NMS operation continues as usual with Navis™ Optical EMS Server B as *Active*.

At this point, there is no Navis™ Optical NMS manual re-synchronization action required. Note that when the switchover occurred, Navis™ Optical NMS had interrupted communications to Navis™ Optical EMS Server A, however it held the orders during the 3-5 minute timeframe and then resumed communication with Navis™ Optical EMS Server B.

**ITM-SC switchover  
behavior**

When ITM-SC servers experience a failure, the icons (in the geographic redundancy configuration) representing the failed machine changes its color.

On the Network Controller Map, the failed server's icon changes from *green* to *magenta*. This indicates that Navis™ Optical NMS has lost communications with the failed machine. Navis™ Optical NMS attempts to regain communication with the failed machine.

When the failed ITM-SC machine does not recover, switchover processing occurs in the background on the ITM-SC side to change the standby machine to the primary machine. The switchover occurs either automatically (through software intervention) or manually by the ITM-SC network operator. Once switchover is complete, the icon turns back to green and Navis™ Optical NMS operation continues as usual with the alternate ITM-SC server in *Active* state.

**Detecting EMS  
switchovers**

While the icon(s) changes colors on the Network Controller Map when EMS switchovers occur, it may not be clear as to exactly when the EMS switchovers occur. The restoral is automatic, yet there may be critical provisioning that must be re-sent because orders were placed in pending state during the switchover. A notification process is in place for newer releases of Navis™ Optical EMS through the Cluster Administration GUI. This process notifies Navis™ Optical NMS administrators (by a call, page, or email message), that a switchover has occurred.

Since the notification process is not in effect for ITM-SC switchovers or in prior releases of Navis™ Optical EMS, it is important to contact the network operator(s) responsible for the EMS in question if it is unclear as to which server is primary.



## Restart Navis™ Optical NMS communication with EMS servers

---

### **Restart Navis™ Optical NMS communication with EMS servers**

When icons representing EMS servers appear magenta for an extended period of time, use one of the following tasks to initiate communication to the EMS servers.

- To restart communication to Navis™ Optical EMS servers in a local redundancy configuration, see [“Restart Navis™ Optical NMS communication with Navis™ Optical EMS local redundancy servers” \(7-26\)](#).
- To restart communication to Navis™ Optical EMS servers in a geographic redundancy configuration, see [“Restart Navis™ Optical NMS’s ability to communicate with Navis™ Optical EMS geographic redundancy servers” \(7-27\)](#).
- To restart communication to ITM-SC servers, see [“Restart Navis™ Optical NMS’s ability to communicate with ITM-SC servers” \(7-28\)](#).

For additional information, see the *Database Maintenance* chapter in the *Navis™ Optical EMS Administration Guide* or the *Geographic Redundancy* chapter of the *ITM-SC Release 7.0 Administration Guide*.



## Restart Navis™ Optical NMS communication with Navis™ Optical EMS local redundancy servers

---

**Purpose** This task explains how to restart Navis™ Optical NMS communication with Navis™ Optical EMS servers residing in a local redundancy configuration. This task would be performed if the color of the icon representing the Navis™ Optical EMS cluster does not change from magenta to green after a period of 5 minutes.

**Task** Use the following steps to restart communication to Navis™ Optical EMS local redundancy servers.

---

- 1 On the Network Map, select **File > Open Network Controller Map**.

**Result:**

The Network Controller Map displays.

---

- 2 Select the icon representing the Navis™ Optical EMS cluster configuration, click the left mouse button, and select **Session > Start Communication**.

**Result:**

A dialog box containing the following text displays: START  
SESSION COMMAND SENT FOR FRAME:<ems\_ name>

---

- 3 On the dialog box, click **OK**.

**Result:**

Communication should start.

---

- 4 If communication does not start, contact the network operator(s) responsible for the Navis™ Optical EMS local redundancy servers.

END OF STEPS

---



## Restart Navis™ Optical NMS's ability to communicate with Navis™ Optical EMS geographic redundancy servers

---

**Purpose** This task explains how to restart Navis™ Optical NMS's ability to communicate with Navis™ Optical EMS servers residing in a geographic redundancy configuration. This task would be performed if the color of the icon representing a Navis™ Optical EMS server does not change from magenta to green after a period of time exceeding 7-15 minutes.

**Task** Use the following steps to restart Navis™ Optical NMS's ability to communicate with Navis™ Optical EMS geographic redundancy servers.

---

- 1 On the Network Map, select **File > Open Network Controller Map**.

**Result:**

The Network Controller Map displays.

---

- 2 Select the icon representing the Navis™ Optical EMS geographic redundancy configuration, click the left mouse button, and select **Session > Start Communication**.

**Result:**

A dialog box containing the following text displays: START SESSION COMMAND SENT FOR FRAME:<ems\_ name>

---

- 3 On the dialog box, click **OK**.

**Result:**

Communication should restart.

---

- 4 If communication does not restart, contact the network operator(s) responsible for the Navis™ Optical EMS geographic redundancy servers.

END OF STEPS

---



## Restart Navis™ Optical NMS's ability to communicate with ITM-SC servers

---

**Purpose** This task explains how to restart Navis™ Optical NMS's ability to communicate with ITM-SC servers residing in a geographic redundancy configuration. This task would be performed if the color of the icon representing the ITM-SC server does not change from magenta to green after several minutes.

**Task** Use the following steps to restart Navis™ Optical NMS's ability to communicate with ITM-SC servers.

---

- 1 On the Network Map, select **File > Open Network Controller Map**.

**Result:**

The icons representing the ITM-SC servers should display.

---

- 2 Select the icon representing the ITM-SC server, click the left mouse button, and select **Session > Start Communication**.

**Result:**

A dialog box containing the following text displays: START  
SESSION COMMAND SENT FOR FRAME:<ems\_ name>

---

- 3 On the dialog box, click **OK**.

**Result:**

Communication should restart.

---

- 4 If communication does not restart, contact the network operator(s) responsible for the ITM-SC servers.

END OF STEPS

---



## Switch the roles of Navis™ Optical NMS servers (simplified or full geographic redundancy configuration)

---

**Purpose** Use this procedure to switch the roles of Navis™ Optical NMS servers (primary becomes standby and standby becomes primary) when using the simplified or full geographic redundancy configuration. This task is performed, for example, when service is required to the primary server.

**Task** Perform the step below to switch the roles of the servers.

---

**1** Log into the standby server as **dacscan**.

---

**2** Enter `/usr/dacscan/bin/Switchover.sh`.

**Result:**

The roles of the servers are switched. (Primary becomes standby and standby becomes primary.)

END OF STEPS

---



## Section V: Geographic Redundancy configuration

### Overview

---

**Purpose** This section describes how to perform a task to support servers residing in a geographic redundancy configuration.

**Contents**

<a href="#">View which server is running the Navis™ Optical NMS application</a>	<a href="#">7-31</a>
---	----------------------



## View which server is running the Navis™ Optical NMS application

---

**Purpose** Use this procedure to view which server is running the Navis™ Optical NMS application.

This task is a geographic redundancy-only issue.

**Task** Perform the steps below to view which server is running the application.

---

**1** Do one of the following:

- Enter `cat /install/GR.rol e`
- On the Network Controller Map, locate the labeled Navis™ Optical NMS icon.

END OF STEPS

---



## Section VI: Routine maintenance

### Overview

---

**Purpose** This section describes how to perform a routine maintenance task to support single servers.

**Contents**

<a href="#">Clear single server buffers</a>
---

<a href="#">7-33</a>
----------------------



## Clear single server buffers

---

**Purpose** This task is used periodically to clear the buffers on single servers only.

**Task** Perform the steps below to clear single server buffers.

---

**1** Log into the single server as root.

---

**2** At the prompt, enter `i n i t 3`

**Result:**

Navis™ Optical NMS application is stopped.

---

**3** At the prompt, enter `who - r`

**Result:**

A message displays indicating the current run level and when the machine was last rebooted, such as `run-level 3 Dec 30 11:26 3 0 S.`

END OF STEPS

---







# 8 Off-line tool concepts

## Overview

---

**Purpose** This chapter describes off-line script tools provided with Navis™ Optical NMS. It also contains tasks associated with off-line tools.

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## Section I: Auto-Discovery Tool

### Overview

---

- Purpose** The Auto-Discovery Tool is a UNIX script that is used off-line from Navis™ Optical NMS in two instances:
- When new customers with an existing live network (not yet or already managed by an element management system), wish to migrate their network management to Navis™ Optical NMS.
  - When existing Navis™ Optical NMS customers who already have part of their network managed by Navis™ Optical NMS, wish to move another part of their network under Navis™ Optical NMS management.

Auto-Discovery tool performs two different tasks, which users can combine or run singly:

- Discover the network's connection layout based on input files. Auto-Discovery tool uses input files provided by the EMS to locate (discover) the connection's layout and will only discover connections defined by the data provided by the EMS. If the file defines only one part of a connection, a manual merging may be later needed to connect the connection's different sections. Auto-Discovery tool performs connection discovery in two phases. In the first phase, it discovers VC-4 layer connections; in the second phase, it discovers low-order connections. The tool can discover VC4-4c and AU3 connections during the first or second phases.
- Provision the discovered connections into Navis™ Optical NMS. For each discovered assignable path, the tool can automatically provision a circuit to ride exactly on the path.

Initially, Auto-Discovery tool is run to discover and provision paths. It is then run to provision the circuits riding atop the discovered paths. The tool discovers the VC-4 and structured connections in the same run. When the combo option is set, the tool achieves discovery of the lower order connections and their circuits in the same run.

This tool is used for a large number of circuits. If there are only a few circuits to be discovered, the In-effect order may be used.

- Prerequisites** Before using this tool:
1. All of the digital links belonging to the “migrated or discovered” network must be (manually) provisioned in the Navis™ Optical NMS first before the Auto-Discovery tool can be run.
  2. Two input files, a port file and a cross connect file must be “extracted” from each of the EMSs. These extractions are provided by running a script file in the EMS. See the topic [“Data import interface” \(8-7\)](#) in this chapter for details.

**Using the tool** The tasks which use this tool are provided after this description.

- Restrictions** The following restrictions apply to the Auto-Discovery tool:
- Users must run the tool while the Navis™ Optical NMS host is running.
  - While the tool is running, do not continue operational and provisioning procedures through Navis™ Optical NMS as it will slow down the tool’s performance. Auto-Discovery tool could fail if the user tries to access the same resources as the tool.
  - No commands are sent to the network element level.
  - Several instances of the tool cannot run simultaneously.
  - It is possible to run the tool to discover several levels of connections. It is not, however, possible to discover high-order (VC-4) and low-order connections within the same run.
  - The connections discovered by the tool may already have some alarms raised or may be affected by a server failure.
  - Input files describe the subnetwork involved in the auto-discovery. The tool supports filtering of these input files.
  - Users attempting to merge connections after path discovery may have to first delete the circuit before being able to merge the path.

**Supported network elements and connection types** For a complete list of supported network elements and connection types (circuits, combos, and paths), see the *Navis™ Optical NMS Provisioning Guide* for details.

### Unsupported connection types

The following connections are *not* supported by the Auto-Discovery tool:

- Loopback on Navis™ Optical NMS DACS
- One-way or broadcast connections
- Single node connection. That is, a connection where  $A\_NE=Z\_NE$
- The discovery of connections running through or ending on a black box

### Parameters

Auto-Discovery tool supports command line parameters and prompt options. If a user specifies a command line parameter, the tool prompts the user to confirm the parameters. If the user does not specify any parameter, the auto discovery tool prompts the user to confirm each of the following parameters:

- ***Input file names*** (default or new).
- ***WAIT\_TIME*** (default or new). ***WAIT\_TIME*** is the waiting period (in seconds) between two connection provisioning commands sent to Navis™ Optical NMS from the Auto-Discovery tool. It prevents Navis™ Optical NMS from being congested by a burst of provisioning commands. The default is 20 seconds.
- ***Network element models*** (when a model file is used). The user input file specifying models is located at ***/tmp/modelslst***.
- ***Network elements file*** (if a network element file is used). By default, the user input file specifying the list of network elements is located at ***/tmp/nes\_list***. Note: ITM-SC does not support the ***Network elements file*** option.
- ***Element management system files*** (if used). The default location for the EMS files used by the tool are located at ***/tmp/ems.port*** (for the port file) and ***/tmp/ems.xc*** (for the cross-connect file).

### Log files

Auto-Discovery tool generates three log files to track discovered and provisioned connections. The three log files are:

- ***/tmp/auto\_disc/auto\_disc.log***
- ***/tmp/auto\_disc/end2end.log***
- ***/tmp/auto\_disc/send\_g2.log***

### Discovered connections logs

When a connection is discovered by Auto-Discovery tool, it is logged to **/tmp/auto\_disc/newckts**. Each record consists of one line, and each line consists of A\_NE:Z\_NE:type:id:ckt\_id. Paths and combos are written to a flat file located at **/tmp/auto\_disc/path\_G2.line** and circuits are written to **/tmp/auto\_disc/ckt\_G2.line**.

The creation of a log file does not indicate that a connection has been successfully provisioned. The connection may be left in a pending state in NMS if there was an error during provisioning. It is possible to reapply the pending connections through Navis™ Optical NMS.

### Provisioned connections logs

When a discovered connection is provisioned in NMS, it is logged to the file **/tmp/auto\_disc/provckts**. Each record consists of one line. Each line consists of A\_NE: Z\_NE: type: i d: ckt\_i d.

When a discovered connection is provision in Navis™ Optical NMS, it is also logged in a specific format to be used as an input for the connection renaming tool. Only one port is logged for each provisioned connection. The file is located at **/tmp/auto\_disc/renameckts**.

### Error Log Files

The Auto Discovery tool stores any errors in a log file located at **/tmp/auto\_disc/circuit.err**. In addition to data validation errors, the tool will also log any layout inconsistencies and unsupported connection configurations.

**Tool files** The following files affect the auto-discovery and connection renaming tools' use:

- Network element model file
- Network element file
- Rate file

### The Network element model file

The model file restricts the Auto-Discovery tool's domain. Auto-Discovery tool will only discover the connections that run through network elements whose models are specified within this file.

For a complete list of models, see the *Navis™ Optical NMS Provisioning Guide* for details.

### **The Network Element file**

The network element file restricts the domain of Auto-Discovery tool. The Auto-Discovery tool will only discover the connections that run through the network elements specified by this file. Please refer to the *Navis™ Optical NMS Provisioning Guide* for details.

### **The Rate file**

The rate file restricts the connection types discoverable by the Auto-Discovery tool. The following rates are allowed in the file:

- VC4-64c
- VC-16c
- VC4-4c
- VC4
- AU3
- VC3
- VC2
- VC12

### **Data import interface**

The Auto Discovery tool's data import interface allows for the importation of data from an element management system to a network management system.

The data import interface consists of two files: a cross-connect file and a port file. The EMS extraction tool extracts from the EMS database all the ports and cross-connects supported by the Auto-Discovery tool and save them into these two files.

For each EMS, the interface is applicable to any network element type that supports at least one signal rate supported by the auto discovery tool. For a complete list of ITM-SC and Navis™ Optical EMS network elements, see the *Navis™ Optical NMS Provisioning Guide* for details.

### **The Cross-connect file**

The cross connect file contains the supported rates for the cross-connects. The file is applicable to the following rates:

- VC4-64c
- VC4-16c
- VC4-4c
- VC4

- AU3 (high-order VC-3)
- VC3 (low-order VC-3)
- VC-2
- VC-12

Depending on the network elements, the fixed cross-connect may or may not be part of the interface. For the Navis™ Optical NMS ADM 4/1 STM-4, the fixed line to line AU4 cross-connects are part of the interface. For the ADM 16/1, the fixed low-order cross-connect is not part of the interface when a VC-4 trail terminates on a tributary card. VC-3/VC-12 fixed cross-connects in the VC-4 are not returned.

In the case of a protected cross-connect (SNCP), the protected port is mapped in the toport parameter and the protecting port is mapped into the *newto* port.

**Table 8-1 Cross-Connect File Field Descriptions**

Field	Description
Field 1	EMS ID
Field 2	network element ID
Field 3	fromport address
Field 4	fromport physical type, for example, S16, S4, S1, S0, C1, C3, DS3, DS1
Field 5	toport address
Field 6	toport physical type
Field 7	newto address
Field 8	newto physical type
Field 9	cross-connect type (P for Protected, T for Unprotected)
Field 10	rate (VC-12/VC-2/VC-3/AU3/VC-4/VC4-4c/VC4-16c/VC4-64c)

### The Port file

The port file contains the rates supported by the interface for ports. The interface is applicable to the following rates:

- V4 (155 Mb/s or 140 Mb/s)
- VC-4 (140 Mb or VC-4 substructured)

- C3 (34 Mb)
- DS3 (45 Mb)
- C1 (2 Mb)
- DS1 (1.5 Mb)
- OC192/48/12/3 & EC1

For the low-order rates (all rates except VC-4), each port record corresponds to a SDH TTP port on a PDH interface card. The port information also includes information about the related PDH CTP port, when applicable. Note that OC192/48/12/3 is for Lambda Unite; EC1 is used for BandWidth Manager network elements only.

**Table 8-2 Port File Field Descriptions**

Field	Description
Field 1	Network element identifier (TID) of EMS
Field 2	TID of network element
Field 3	Port address
Field 4	Physical Type
Field 5	Param1
Field 6	Param 2
Field 7	pti_t
Field 8	pti_e
Field 9	pti_mode
Field 10	rate (C1, C3, DS3, DS1, VC4)



## Add or migrate networks to Navis™ Optical NMS management using the auto-discovery tool

---

**Purpose** Use this task to add or migrate networks to Navis™ Optical NMS management.

The auto-discovery tool is an off-line UNIX script that is used in two instances:

- When new customers who already have an existing live network (not yet or already EMS managed) wish to migrate their network management to Navis™ Optical NMS.
- When existing Navis™ Optical NMS customers, who already have a part of their network managed by Navis™ Optical NMS, wish to include another part of a live network under Navis™ Optical NMS management.

**Before you begin** Before using the auto-discovery tool, note the following items:

- One or more element managed systems already manage the network elements the auto-discovery tool will discover.
- At anytime, use [-h] to access screen help.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Use the following procedure to either migrate an existing live network to Navis™ Optical NMS management or to add another part of a live network already under Navis™ Optical NMS management to a Navis™ Optical NMS-managed network.

---

- 1 Run the EMS extraction tool, to extract the VC-4 data from each of the EMS databases, and export the data to the EMS disk. Refer to the ITM-SC documentation for instructions on this step.  

---
- 2 Copy the EMS files onto the Navis™ Optical NMS disk.  

---
- 3 Merge the EMS files into two files (the port and cross-connect files).  

---
- 4 Log in as dacsan.

- 
- 5 Enter `/usr/dacscan/tool bin/auto_disc` to discover the VC-4 connections and provision them into the NMS database using the EMS data.

**Result:**

The system sends IE commands to the element management system to verify the cross-connect and end ports used by the discovered connections.

- 
- 6 Specify the tool parameters, the `WAIT_TIME` variable and filenames. See [“Specify auto-discovery tool parameters” \(8-12\)](#) for details.

- 
- 7 Run the EMS extraction tool to extract the low-order data from the EMS database and export it to the EMS disk.

- 
- 8 Copy the EMS files on to the Navis™ Optical NMS disk.

- 
- 9 Enter `/usr/dacscan/tool bin/auto_disc` to discover the low-order connections and provision them in the NMS database using the EMS data.

**Important!** When the combo option is installed, this can be achieved in one run of the tool. When the combo option is not set, this has to be achieved in at least two steps. The tool is first run to discover and provision the paths. The tool is then run to provision the circuits riding on top of the discovered paths.

**Result:**

IE commands are sent to the EMS to verify the cross-connect and endports used by the discovered connections. The network is then added or migrated to Navis™ Optical NMS management.

END OF STEPS



## Specify auto-discovery tool parameters

---

**Purpose** Use this task to specify auto-discovery tool parameters.

The auto-discovery tool uses user-provided input files to discover a connection's layout. The tool will only discover connections defined by the data provided by the element management system. If the file only defines one part of a connection, a manual merging may be necessary to connect the connection's different sections.

**Task** Use the following procedure to specify and confirm the parameters used by the auto-discovery tool during operation.

---

1 Log in as dacscan.

---

2 Enter `/usr/dacscan/toolbin/autodisc`. The auto-discovery tool will then prompt you to confirm the following parameters:

- **Function [-f y/d/p]** - if set to *y* (Navis™ Optical NMS), the tool will discover connections and provision them in Navis™ Optical NMS.
  - If set to *d*, the tool will discover connections but will not provision them.
  - If set to *p*, the tool will just provision the already discovered connections.
- **Trail Type [-t path/ckt]** - specifies the connection type to discover. Must be set to *path* (default) if *combo* was set as an installation.
- **Send EMS [-s y/n]** - if set to *y* (default), will check provisioned connections against the element management system databases. If set to *n*, the connections will not be checked.
- **Rate [-r VC-2/VC-3/VC-12/VC-4/VC4-4c]** - causes the tool to only discover and provision the connections for the list of rates given in the parameter. VC-4 **cannot** be selected if a low-order rate (C3, C1, DS1, etc.) is elected. The default is VC-12.

- **Domain [-m no/model/nes]** - restricts the domain of the connection discovery process by filtering the EMS data with a list of network element types (model) or a list of network elements (nes).
  - If set to no (default), the tool discovers all the connections described in the input files without restriction, ignoring the existing model and network element files.

---

**3** Confirm the *WAIT\_TIME* variable.

**Result:**

The complete command line will discover the VC-4 connections and provision them into the Navis™ Optical NMS database using the element management system data.

END OF STEPS

---



## Section II: Rename network element tool

### Overview

---

**Purpose** This section describes how to change the identification of an existing network element using the rename network element tool.

**Renaming Tool** This tool is used to change the identification of an existing network element.

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--	----------------------



## Change the name of an existing network element

---

**Purpose** This task describes how to change the identification of an existing network element using the rename network element tool. This tool is first run on an ITM-SC server using the **ems\_db\_gnrt** command (which resides on the ITM-SC server in the **/opt/itm/sc/diag/bin** directory) and then run on the Navis<sup>™</sup> Optical NMS server.

**Before you begin** Before you change the name of an existing network element, consider the following items:

- Changing a network element's name should be first done in the ITM-SC that controls the network element. It is recommended that users perform an ITM-SC on-line archive before changing the network element's name.
- The user must ensure the uniqueness of the new network element name.
- Shut down the ITM-SC before running the off-line script. The Navis<sup>™</sup> Optical NMS user will not be able to communicate with the ITM-SC at this time.
- The user should remove the geographic redundancy in the ITM-SC for the network elements being changed.
- Navis<sup>™</sup> Optical NMS will only update the new name in the Circuit IDs that are in M.1400 format. For Circuit IDs with FREE FORMAT, it is the user's responsibility to update the Circuit IDs (using the Graphical Layout Parameters form).
- The Navis<sup>™</sup> Optical NMS will not dynamically update any current screen with the new network element ID name. From the Network Map, the user must select **File > Query Again** to display the new name.
- When renaming a network element, users must abide by a strict naming convention. Note that the new name cannot include a / character.

- Users should mind the following limitations when renaming an existing network element.
  - The system does not perform any alphabetic ordering after the network element name change.
  - Subnet ID, Aggregate ID, and Controller Name changes are not supported.
  - The system will not update any Kanji-related tables. This limitation is only relevant for Japanese customers.
  - For the changed name to be displayed, the user must restart the Navis™ Optical NMS user interface.
  - If a network element is deleted, has its name changed, or its Office identification does not have an associated TID name, it will remain on the Location Reference Table.
  - The performance monitoring start time is lost after a Management Information Base (MIB) download. Thus, any required information from a network element's performance monitoring report must be obtained before its name is changed.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task**            **Important!** Because the ITM-SC portion of this script may change, please refer to the ITM-SC user documentation for updated information on how to run this script on the ITM-SC system.

Perform the following steps to change the identification of an existing network element. Note that the steps used in the first part of this task apply to the ITM-SC server while the remaining steps apply to the Navis™ Optical NMS server.

---

- 1 Log into the ITM-SC host as `i2kadmi n` and enter the ITM-SC password .

**Result:**

The user is logged into the ITM-SC host.

---

- 2 At the prompt, type . `i tmsc_setup`

**Result:**

The ITM-SC set up begins.

- 3 At the prompt, enter `cd /opt/itm/sc/<latest_load_number>/ems/bin`.

**Result:**

The prompt resides at the specified directory.

- 4 At the prompt, enter `ls -l /opt/itm/sc/<latest_load_number>/ems/bin`.

**Result:**

The directory permissions display.

- 5 View the display to verify whether or not the `/bin` directory is set to 744, i.e., `drwxr--r--`.

6

IF	THEN
the <code>/bin</code> directory's permissions <b>are</b> set to 744,	proceed to the next step.
the <code>/bin</code> directory's permissions <b>are not</b> set to 744,	enter <code>chmod 744 /opt/itm/sc/&lt;latest_load_number&gt;/ems/bin</code>

- 7 Use a text editor to create a **node\_mapping** file that contains the old and new network element names.

**Important!** The new network element name cannot include a `/` character.

Be sure that the **node\_mapping** file contains one line each, in `old_name|new_name` format separated with a tab or a `|` character. A carriage return must separate each line.

- 8 At the prompt, enter `./ems_stop`.

**Result:**

The ITM-SC is stopped.

---

- 9** At the prompt, enter `./ems_db_gnrt -n`

This command checks existing network elements in the ITM-SC database.

---

- 10** Continue with one of the following steps:

- *If you know the value* assigned to the network element to be renamed, proceed to the next step to continue.
  - *If you do not know the value* assigned to the network element to be renamed, and would like to display the network element's associated new name from the node\_mapping file, enter `./ems_db_gnrt` then proceed to the next step.
- 

- 11** At the prompt, enter `./ems_db_gnrt -D <network_element_value> -N node_mapping`

**Result:**

The tool is initiated.

---

- 12** At the prompt, enter `y` to confirm the actions.

**Result:**

The renaming tool is executed and runs until the tool has successfully completed the renaming on the ITM-SC server. The renaming process may now begin on the Navis™ Optical NMS server.

---

- 13** While the ITM-SC is still down, log into the Navis™ Optical NMS host as root.
- 

- 14** At the prompt, enter `cd /usr/dacscan/tool bin`

**Result:**

The prompt resides at the directory where the `change_nei d` tool is located.

- 
- 15** Use a text editor to create an **nm.node** file.

This file has the same format as the **node\_mapping** file. Note that the last line of the **nm.node** file *must not* contain a carriage return. (See [Step 7.](#))

- 
- 16** At the prompt, enter `su - dacsan`.

**Result:**

This logs the user into the Navis™ Optical NMS host as the `dacsan` user.

- 
- 17** At the prompt, enter

```
cd ../tool bin
./change_nei d nm. node
```

- 
- 18** At the prompt, enter `N`.

**Result:**

The renaming tool is executed and runs until the tool has successfully completed the renaming on the Navis™ Optical NMS server.

- 
- 19** Upon completion, log into the ITM-SC server as `i2kadmi n` and enter the password.

**Result:**

The user is logged into the ITM-SC host.

- 
- 20** To start the ITM-SC application, at the prompt, type:

```
./ itm_sc_ setup
ems_ start
```

**Result:**

The ITM-SC application is restarted.

21

IF	THEN
<p>The renamed network element <i>is a Navis™ Optical NMS DACS 4/4/1</i>,</p>	<p>Use the following steps to change the network element name on the network element through Navis™ Optical NMS VCIT.</p> <ol style="list-style-type: none"> <li>1. Login to the Navis™ Optical NMS DACS 4/4/1 network element via VCIT.</li> <li>2. Select <b>Provision &gt; SystemID</b>.</li> <li>3. At the <b>SystemID</b> field, enter the new network element name.</li> <li>4. In the <b>FrameID</b> field, enter a value, for example, <b>0</b>.</li> <li>5. Select the <b>Change</b> button. The network element name has been changed.</li> <li>6. Perform a MIB-Upload to ITM-SC for the renamed Navis™ Optical NMS DACS network elements.</li> </ol>
<p>The renamed network element <i>is not a Navis™ Optical NMS DACS 4/4/1</i>,</p>	<p>Perform a MIB download for all renamed network elements. It is normal for this download to take a long period of time to complete.</p>

22 Restart the Navis™ Optical NMS GUI and synchronize its database with the ITM-SC server.

END OF STEPS



## Section III: INSERTNODE and REMOVENODE tools

### Overview

---

**Purpose** This section contains information on the INSERTNODE and REMOVENODE tools which are UNIX scripts that allow users to insert and remove network elements from Navis™ Optical NMS. These tools automatically update the Navis™ Optical NMS database.

This tool uses cross-connect and port files when inserting a node; there is no file needed when removing a node.

**Features** The INSERTNODE and REMOVENODE tools provide the following features:

- Updates Navis™ Optical NMS configuration locally. It will not send any commands to the element management system.
- Digital links can be part of a path-switched ring or a line-switched ring.
- Supports MSP digital link and Optical Multiplex Section (OMS) with OMS Protection (OMSP).
- Handles the updates of one-way, two-way, and broadcast paths/circuits.
- Handles fault management reconciliation in case trails or ports involved in the procedure are alarmed.
- Supports combo circuits that are handled the same as VC-N paths.
- Handles path trace parameters, PTI and PT mismatch detection mode.
- Supports the removal of a black box from a physical link
- Supports inserting a node into a digital link. Supports all types of digital links (from STM-0 to STM-64).
- Supports inserting a node into an OMS and optical link.
- Supports removing a node from two digital links. All types of digital links (from STM-0 to STM-64) are supported.
- Supports removing a node from 2 OMS and 2 Optical Layer (OL).
- Supports black box removal.

**Using the tool** The tasks which utilize these tools are located after this description.

**Supported network elements** For a complete list of supported ITM-SC and Navis™ Optical EMS network elements, see the *Navis™ Optical NMS Provisioning Guide* for details.

**Supported physical link types** The tool supports the following physical type links:

For inserting a node:

- Optical Multiplex Section
- Optical Link

For removing a node:

- Optical Multiplex section
- Optical Layer

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## Insert an ITM-SC controlled node into a digital link using INSERTNODE

---

**Purpose** Use this procedure to insert an ITM-SC controlled network element into a digital link using the **INSERTNODE** tool. Upon completion, the task generates a cross connect and port file to update the Navis™ Optical NMS database.

**Before you begin** Before you insert an ITM-SC controlled network element into a digital link, consider the following items.

- Be sure that the network element to be inserted on the database of the Navis™ Optical NMS is correctly installed on the network and is already known by Navis™ Optical NMS, that is, it displays on the Navis™ Optical NMS Network Map. This occurs when all ports are provisioned and all cross connections are made on the EMS being managed by Navis™ Optical NMS.
- When inserting a node, the network element has to be pre-provisioned; all ports are provisioned and cross connected as needed to provide services.
- This task can be used before or after the fibers are physically reconnected to insert or remove a node.
- The advantage of using the tool before reconnecting the fibers is that if the process succeeds, this will ensure that the reconnection of the fiber will minimize the risk of interrupting any logical paths carried by the physical layer.
- The EMS will provide a file with port provisioning and cross connect status. This file should be created just before the tool is executed. A user will transfer this file to the Navis™ Optical NMS host and will specify the full path at the beginning of the task.
- If more cross connections than needed is reported by the EMS, this is not an error. These cross connections will be displayed in the Uncorrelated cross connect forms after a DBSynch is done by the user.
- The user has to provide the connection ID for those connections that have to be merged or replaced by two new ones.

Insert an ITM-SC controlled node into a  
digital link using INSERTNODE

- The physical link where the node is inserted or removed should be in the in-effect state. There should not be any scheduled paths riding on the digital link to be updated.
- There should not be preplan paths associated with any of the paths carried by the physical link to be updated.
- Performance Monitoring (PM) data collection on the physical links should be stopped prior to execution of this task. When inserting a node, PM data collection should be stopped on the VC-4 substructured paths, terminating on the inserted node. Note that PM on the path going through the inserted node does not have to be stopped.
- The regenerators or amplifiers with OMS must be removed from the digital links before running this tool. After the task is completed, a user will put back the regenerators/amplifiers on the new physical links.
- The Navis™ Optical NMS user interface may not reflect the correct configuration at the run time of the tool. While the tool is in progress, a user should refrain from modifying/deleting existing paths that ride on the digital link where the tool is being executed. It is recommended that the user interface should be down when the tool is run. If not, a user has to refresh the Network Map and any forms that are open.
- There is no time slot or frequency interchange in the cross connects on the inserted/removed node. Cross connections with timeslot or frequency interchange will not be reported by the EMS. SNCP cross connects in the inserted/removed node will also not be reported by the EMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Perform the following steps to insert an ITM-SC controlled node into a digital link using the **INSERTNODE** tool.

---

- 1 Log into the ITM-SC host as i2kadmi n.

**Result:**

The ITM-SC host will request a password.

- .....
- 2 Enter the ITM-SC password for the `i2kadmin` login.

**Result:**

The user is logged into the ITM-SC host.

.....

- 3 At the prompt, enter

```
. itm_sc_setup
```

```
db_in_wrapper <node_name> <A EID> <Z EID>
```

**Result:**

`db_in_wrapper` is executed and two files are generated containing cross connect and tributary information in the following format:

```
/home/i2kadmin/db_sc_xc_ddmmyyyy_hhmm
```

```
/home/i2kadmin/db_sc_pp_ddmmyyyy_hhmm
```

.....

- 4 Use **ftp** or **rcp** to get these two files to the Navis™ Optical NMS host **/usr/dacscan/data** then record the path name on the Navis™ Optical NMS host.
- .....

- 5 Log into the Navis™ Optical NMS host as root.

**Result:**

A password is requested.

.....

- 6 Enter the password for the root login.

**Result:**

The user is logged into the into the Navis™ Optical NMS host as root.

.....

- 7 At the prompt, enter `cd /usr/dacscan/data`
- .....

- 8 At the prompt, enter

```
chmod 777 db_sc_xc_ddmmyyyy_hhmm
```

.....

Insert an ITM-SC controlled node into a  
digital link using INSERTNODE

```
chmod 777 db_sc_pp_ddmmyyyy hmmm
```

---

- 9 At the prompt, enter

```
su - dacscan
```

```
cd /usr/dacscan/bin
```

**Result:**

The user changes to dacscan and the prompt displays in the requested directory.

---

- 10 At the prompt, enter

```
INSERTNODE
```

**Result:**

The INSERTNODE tool is initiated.

---

- 11 At the CLO/Order Number prompt, enter the value of the digital link where the new node will be inserted.
- 

- 12 At the Network Element Name prompt, enter the name of the network element that will be inserted.
- 

- 13 At the PORT ADDRESS to original A prompt, enter the service port address (in NMS-Port Address-format) that will connect to the original digital link's A location.
- 

- 14 At the PORT ADDRESS to original Z prompt, enter the service port address (in NMS-Port Address-format) that will connect to the original digital link's Z location.
- 

- 15 At the Digital Link 1 CKT ID prompt, enter the circuit ID for the first new digital link.

**Result:**

This link's terminations will be the original digital link's A location on the <new\_node\_name>.

---

- .....
- 16** At the Digital Link 2 CKT ID prompt, enter the circuit ID for the second new digital link.

**Result:**

This link's terminations will be the original digital link's Z location on the <new\_node\_name>.

.....

- 17** At the EMS Port Provision File prompt, enter the full path name of the EMS port provisioning file.
- .....

- 18** At the EMS Cross Connect File prompt, enter the full path name of the EMS cross connect file.
- .....

- 19** At the Is this all correct prompt, enter Y or N then continue with one of the following options to determine if a CAC/CLO (CCL) data file should be generated.
- .....

**20**

IF	THEN
Do you want to Purge the CCL Data? displays when the <b>INSERTNODE</b> tool is running:	select N(o)

Insert an ITM-SC controlled node into a  
digital link using INSERTNODE

IF	THEN
<p>an older version of Fault Management (FM) is being used in Navis™ Optical NMS:</p>	<p>generate a CCL file with the following steps.</p> <ul style="list-style-type: none"> <li>• Log into the Navis™ Optical NMS server as dacscan, then run the <b>\$/usr/dacscan/toolbin/gen_ins_ccl.sh</b> tool.</li> <li>• At the Do you want to Purge the CCL data? prompt, select <b>Y(es)</b> to create the <b>/dacscan/words/sc/db_nm_ccl_&lt;datemmyy_hourminute&gt; file.</b></li> <li>• <b>ftp</b> the file to the ITM-SC server as i2kadmi n where the network element is managed and enter the password.</li> <li>• Enter the following: <pre> . itm_sc_setup chmod 775 db_nm_ccl_datemmyy_ hourminute db_nm_ccl_datemmyy_ hourminute </pre> <p>During the import of the CCL file, the ITM-SC application will be stopped/started, so management will be temporarily lost of all network elements managed by this ITM-SC server.</p> </li> </ul>

END OF STEPS



## Insert a Navis™ Optical EMS-controlled node into a digital link using INSERTNODE

---

**Purpose** Use this task to insert a Navis™ Optical EMS-controlled network element into a digital link using the **INSERTNODE** tool. Upon completion, the task generates a cross connect and port file to update the Navis™ Optical NMS database.

**Before you begin** Before you insert an Navis™ Optical EMS controlled network element into a digital link, consider the following items.

- Be sure that the network element to be inserted on the database of the Navis™ Optical NMS is correctly installed on the network and is already known by Navis™ Optical NMS, that is, it displays on the Navis™ Optical NMS Network Map. This occurs when all ports are provisioned and all cross connections are made on the EMS being managed by Navis™ Optical NMS. **Important!** A cross-connect sync must be done on the network element prior to running the INSERTNODE tool.
- When inserting a node, the network element has to be pre-provisioned; all ports are provisioned and cross connected as needed to provide services.
- This task can be used before or after the fibers are physically reconnected to insert or remove a node.
- The advantage of using the tool before reconnecting the fibers is that if the process succeeds, this will ensure that the reconnection of the fiber will minimize the risk of interrupting any logical paths carried by the physical layer.
- The EMS will provide a file with port provisioning and cross connect status. This file should be created just before the tool is executed. A user will transfer this file to the Navis™ Optical NMS NMS host and will specify the full path at the beginning of the task.
- If more cross connections than needed is reported by the EMS, this is not an error. These cross connections will be displayed in the Uncorrelated cross connect forms after a DBSynch is done by the user.
- The user has to provide the connection ID for those connections that have to be merged or replaced by two new ones.

Insert a Navis™ Optical EMS-controlled  
node into a digital link using  
INSERTNODE

- The physical link where the node is inserted or removed should be in the in-effect state. There should not be any scheduled paths riding on the digital link to be updated.
- There should not be preplan paths associated with any of the paths carried by the physical link to be updated.
- Performance Monitoring (PM) data collection on the physical links should be stopped prior to execution of this task. When inserting a node, PM data collection should be stopped on the VC-4 substructured paths, terminating on the inserted node. Note that PM on the path going through the inserted node does not have to be stopped.
- The regenerators or amplifiers with OMS must be removed from the digital links before running this tool. After the task is completed, a user will put back the regenerators/amplifiers on the new physical links.
- The Navis™ Optical NMS user interface may not reflect the correct configuration at the run time of the tool. While the tool is in progress, a user should refrain from modifying/deleting existing paths that ride on the digital link where the tool is being executed. It is recommended that the user interface should be down when the tool is run. If not, a user has to refresh the Network Map and any forms that are open.
- There is no time slot or frequency interchange in the cross connects on the inserted/removed node. Cross connections with timeslot or frequency interchange will not be reported by the EMS. SNCP cross connects in the inserted/removed node will also not be reported by the EMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Perform the following steps to insert a Navis™ Optical EMS-controlled node into a digital link using the **INSERTNODE** tool.

.....

**1** Log into Navis™ Optical EMS as `ems`.

.....

**2** At the prompt, enter

`cd /ems/bin`

Insert a Navis™ Optical EMS-controlled  
node into a digital link using  
INSERTNODE

<node\_path>

**Result:**

<node\_path> is executed and the following two files are  
generated:

/tmp/db\_snms\_xc\_ddmmyyyy\_hhmm  
/tmp/db\_snms\_pp\_ddmmyyyy\_hhmm

- 
- 3** Use **ftp** or **rcp** to get these two files to the Navis™ Optical NMS host  
**/usr/dacscan/data** then record the path name on the Navis™ Optical  
NMS host.

- 
- 4** Via the Navis™ Optical NMS GUI, perform a cross-connect sync on  
the network element that is to be inserted.

- 
- 5** Log into the Navis™ Optical NMS host machine as root and enter the  
password.

- 
- 6** At the prompt, enter `cd /usr/dacscan/data`

- 
- 7** At the prompt, enter
- ```
chmod 777 db_snms_xc_ddmmyyyy hhmm  
chmod 777 db_snms_pp_ddmmyyyy hhmm
```

- 
- 8** At the prompt, enter `su - dacscan`

**Result:**

The user is changed to dacscan.

- 
- 9** At the prompt, enter
- ```
cd /usr/dacscan/bin
```

**Result:**

The prompt displays in the requested directory.

Insert a Navis™ Optical EMS-controlled  
node into a digital link using  
INSERTNODE

- 10 At the prompt, enter

INSERTNODE

**Result:**

The INSERTNODE tool is initiated.

- 11 At the CLO/Order Number prompt, enter the value of the digital link  
where the new node will be inserted.

- 12 At the Network Element Name prompt, enter the name of the network  
element that will be inserted.

- 13 At the PORT ADDRESS to original A prompt, enter the service port  
address (in NMS-Port Address-format) that will connect to the original  
digital link's A location.

- 14 At the PORT ADDRESS to original Z prompt, enter the service port  
address (in NMS-Port Address-format) that will connect to the original  
digital link's Z location.

- 15 At the Digital Link 1 CKT ID prompt, enter the circuit ID for the  
first new digital link.

**Result:**

This link's terminations will be the original digital link's A  
location on the <new\_node\_name>.

- 16 At the Digital Link 2 CKT ID prompt, enter the circuit ID for the  
second new digital link.

**Result:**

This link's terminations will be the original digital link's Z  
location on the <new\_node\_name>.

Section III: INSERTNODE and  
REMOVENODE tools  
Insert a Navis™ Optical EMS-controlled  
node into a digital link using  
INSERTNODE

- .....
- 17** At the EMS Port Provision File prompt, enter the full path name of the EMS port provisioning file.  
.....
  - 18** At the EMS Cross Connect File prompt, enter the full path name of the EMS cross connect file.  
.....
  - 19** At the Is this all correct prompt, enter Y or N.

END OF STEPS



## Delete an ITM-SC controlled node from a digital link using REMOVENODE

---

**Purpose** Use this task to remove an ITM-SC controlled network element from a digital link using the **REMOVENODE** tool.

**Before you begin** Before you remove an ITM-SC controlled network element from a digital link, consider the following items.

- This task can be used before or after the fibers are physically reconnected to insert or remove a node.
- The advantage of using the tool before reconnecting the fibers is that if the process succeeds, this will ensure that the reconnection of the fiber will minimize the risk of interrupting any logical paths carried by the physical layer.
- The EMS will provide a file with port provisioning and cross connect status. This file should be created just before the tool is executed. A user will transfer this file to the Navis™ Optical NMS host and will specify the full path at the beginning of the task.
- If more cross connections than needed is reported by the EMS, this is not an error. These cross connections will be displayed in the Uncorrelated cross connect forms after a DBSynch is done by the user.
- The user has to provide the connection ID for those connections that have to be merged or replaced by two new ones.
- The physical link where the node is inserted or removed should be in the in-effect state. There should not be any scheduled paths riding on the digital link to be updated.
- There should not be preplan paths associated with any of the paths carried by the physical link to be updated.
- The regenerators or amplifiers with OMS must be removed from the digital links before running this tool. After the task is completed, a user will put back the regenerators/amplifiers on the new physical links.

Delete an ITM-SC controlled node from a  
digital link using REMOVENODE

- The Navis™ Optical NMS user interface may not reflect the correct configuration at the run time of the tool. While the tool is in progress, a user should refrain from modifying/deleting existing paths that ride on the digital link where the tool is being executed. It is recommended that the user interface should be down when the tool is run. If not, a user has to refresh the Network Map and any forms that are open.
- There is no time slot or frequency interchange in the cross connects on the inserted/removed node. Cross connections with timeslot or frequency interchange will not be reported by the EMS. SNCP cross connects in the inserted/removed node will also not be reported by the EMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Perform the following steps to remove an ITM-SC controlled node from a digital link.

- 1 Log into the Navis™ Optical NMS server as dacscan.  
.....
- 2 At the prompt, enter **cd /usr/dacscan/bin** then enter **REMOVENODE**.  
**Result:**  
The tool is initiated and a prompt displays.  
.....
- 3 At the Network Element name prompt, enter the name of the network that will be removed.  
.....
- 4 At the *first* CLO/Order Number prompt, enter the value of the first digital link from where the node will be removed.  
.....
- 5 At the *second* CLO/Order Number prompt, enter the value of the second digital link from where the node will be removed.  
.....
- 6 Enter the CKT ID (All Fields of the Format) for the new digital link.

Delete an ITM-SC controlled node from a  
digital link using REMOVENODE

- 7 At the Is this all correct prompt, enter Y or N then continue with one of the following options to determine if a CAC/CLO (CCL) data file should be generated.

8

IF	THEN
Do you want to Purge the CCL Data? displays when the <b>REMOVENODE</b> tool is running:	select N(o)
an older version of Fault Management (FM) is being used in Navis™ Optical NMS:	generate a CCL file with the following steps. <ul style="list-style-type: none"> <li>• Log into the Navis™ Optical NMS server as dacscan, then run the <b>\$/usr/dacscan/toolbin/gen_rem_ccl.sh</b> tool.</li> <li>• At the Do you want to Purge the CCL data? prompt, select <b>Y(es)</b> to create the <b>/dacscan/words/sc/db_nm_ccl_&lt;datemmyy_hourminute&gt; file.</b></li> <li>• <b>ftp</b> the file to the ITM-SC server as i2kadmi n where the network element is managed and enter the password.</li> <li>• Enter the following:                             <pre>. itm_sc_setup chmod 775 db_nm_ccl_datemmyy_ hourminute db_import_ccl db_nm_ccl_datemmyy_ hourminute db_in_wrapper</pre>                             During the import of the CCL file, the ITM-SC application will be stopped/started, so management will be temporarily lost of all network elements managed by this ITM-SC server.                         </li> </ul>

END OF STEPS



## Delete a Navis™ Optical EMS-controlled node from a digital link using REMOVENODE

---

**Purpose** Use this task to remove a Navis™ Optical EMS-controlled network element from a digital link using the **REMOVENODE** tool.

- Before you begin** Before you remove a Navis™ Optical EMS network element from a digital link, consider the following items.
- This task can be used before or after the fibers are physically reconnected to insert or remove a node.
  - The advantage of using the tool before reconnecting the fibers is that if the process succeeds, this will ensure that the reconnection of the fiber will minimize the risk of interrupting any logical paths carried by the physical layer.
  - The EMS will provide a file with port provisioning and cross connect status. This file should be created just before the tool is executed. A user will transfer this file to the Navis™ Optical NMS host and will specify the full path at the beginning of the task.
  - If more cross connections than needed is reported by the EMS, this is not an error. These cross connections will be displayed in the Uncorrelated cross connect forms after a DBSynch is done by the user.
  - The user has to provide the connection ID for those connections that have to be merged or replaced by two new ones.
  - The physical link where the node is inserted or removed should be in the in-effect state. There should not be any scheduled paths riding on the digital link to be updated.
  - There should not be preplan paths associated with any of the paths carried by the physical link to be updated.
  - The regenerators or amplifiers with OMS must be removed from the digital links before running this tool. After the task is completed, a user will put back the regenerators/amplifiers on the new physical links.

Delete a Navis™ Optical EMS-controlled  
node from a digital link using  
REMOVENODE

- The Navis™ Optical NMS user interface may not reflect the correct configuration at the run time of the tool. While the tool is in progress, a user should refrain from modifying/deleting existing paths that ride on the digital link where the tool is being executed. It is recommended that the user interface should be down when the tool is run. If not, a user has to refresh the Network Map and any forms that are open.
- There is no time slot or frequency interchange in the cross connects on the inserted/removed node. Cross connections with timeslot or frequency interchange will not be reported by the EMS. SNCP cross connects in the inserted/removed node will also not be reported by the EMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Perform the following steps to remove an Navis™ Optical EMS-controlled node from a digital link.

- 1 Log into the Navis™ Optical NMS server as dacscan.
- 2 At the prompt, enter `cd /usr/dacscan/bin` then enter `REMOVENODE`.

**Result:**

The tool is initiated and a prompt displays.

- 3 At the **Network Element name** prompt, enter the name of the network element that will be removed.
- 4 At the *first* CLO/Order Number prompt, enter the value of the first digital link from where the node will be removed.
- 5 At the *second* CLO/Order Number prompt, enter the value of the second digital link from where the node will be removed.
- 6 Enter the CKT ID (All Fields of the Format) for the new digital link.

Section III: INSERTNODE and  
REMOVENODE tools  
Delete a Navis™ Optical EMS-controlled  
node from a digital link using  
REMOVENODE

**7** At the Is this all correct prompt, enter Y or N.

END OF STEPS



## Section IV: Network element reparenting tool

### Overview

---

**Purpose** This section describes the reparenting process, which involves moving network elements from one EMS to another EMS or transferring EMS resources from one Navis™ Optical NMS to another Navis™ Optical NMS.

**Reparenting Tool** This tool supports *Network Element Reparenting*, which is reparenting network elements between two ITM-SCs or two Navis™ Optical EMSs and *Navis™ Optical NMS Reparenting*, or transferring EMS resources from one Navis™ Optical NMS to another Navis™ Optical NMS. Both processes are covered in the following tasks.

#### Contents

<a href="#">Reparenting ITM-SC controlled Network Elements</a>	<a href="#">8-41</a>
<a href="#">Reparenting Navis™ Optical EMS-controlled network elements</a>	<a href="#">8-43</a>
<a href="#">Reparenting Navis™ Optical NMS EMS resources to another Navis™ Optical NMS</a>	<a href="#">8-46</a>



# Reparenting ITM-SC controlled Network Elements

---

**Purpose** This section describes how to reparent ITM-SC controlled network elements.

**Before you begin** Before you use this tool, be sure that:

- No provisioning or software download or upload activities are occurring to the network elements involved in the reparenting process.
- There are no pending circuits connected to target network element(s).
- Network element alarms are cleared from the ITM-SC.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the reparenting tool.

---

- 1 To verify that there are no pending circuits, at the Network Map, select the target network element.

**Result:**

A menu displays.

---

- 2 From the displayed menu, select **NE Port Assignments**.

**Result:**

The NE Assignments Query box form displays.

---

- 3 Click the **More** button, then under **Order Status**, select **Pending**.

**Result:**

If pending circuits exist, a list displays.

---

- 4
 

IF	THEN
pending circuits <i>display</i> ,	end this task.

IF	THEN
pending circuits <i>do not display</i> ,	continue with the next step.

5 After receiving a notification from ITM-SC that network elements have been deleted from an old ITM-SC as a result of an ITM-SC export tool run, login to the server as dacscan then enter cd /usr/dacscan/tool bin.

6 At the command line, type and include the location of the input file containing information on each target network element and old and new ITM-SC information.

**Result:**

The old ITM-SC data related to the target network elements is changed to the new ITM-SC data in Navis™ Optical NMS.

7 Before performing this step, be sure that:

- The online ITM-SC import tool is run to add target network elements to the new ITM-SC.
- A message is sent from ITM-SC to notify Navis™ Optical NMS that the network elements have been created.
- Alarms are sent to Navis™ Optical NMS.

In Navis™ Optical NMS, clear alarms associated with this process. Refer to the *Navis™ Optical NMS Maintenance Guide* for details.

END OF STEPS



## Reparenting Navis™ Optical EMS-controlled network elements

---

**Purpose** This section describes how to reparent Navis™ Optical EMS-controlled network elements.

**Before you begin** Before you use this tool, be sure that:

- no provisioning or software download or upload activities are occurring to the network elements involved in the reparenting process.
- there are no pending circuits connected to target network element(s).

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the reparenting tool:

---

1 Log into the old Navis™ Optical EMS as `ems`.

---

2 At the prompt, enter `NEReparentSource <network_element_TID>`.

**Important!** `<network_element_TID>` represents the TID of the network element being reparented.

**Result:**

A `tmp_<network_element_TID>.data` file is created in `$TMFA_DATA_DIR`.

---

3 Repeat [Step 2](#) for each network element to be reparented.

---

4 Using the old Navis™ Optical EMS GUI, delete the network element(s). See the *Delete a Network Element* task in the *Navis™ Optical EMS Provisioning Guide* for details.

**Result:**

Each network element(s) is deleted.

---

5 Using `ftp`, send each `tmp_<network_element_TID>.data` file from the old Navis™ Optical EMS to the new Navis™ Optical EMS.

---

Reparenting Navis™ Optical EMS-controlled  
network elements

**Important!** Be sure to retain the files in **\$TMFA\_DATA\_DIR**.

- .....
- 6 Physically move the network element connections from the old Navis™ Optical EMS to the new Navis™ Optical EMS.

.....

  - 7 Log into the new Navis™ Optical EMS as `ems`.

.....

  - 8 On the new Navis™ Optical EMS, use the Navis™ Optical EMS GUI to add the network element(s) and then wait for the Dynamic Network Operation (DNO) to complete before proceeding to the next step. See the *Add a Network Element* tasks in the *Navis™ Optical EMS Provisioning Guide* for details.

**Result:**

The network elements are added.

- .....
- 9 At the prompt, enter `NEReparentTarget <network_element_TID>` for each network element that needs to be reparented.

**Result:**

A `ne_snc_ids.dat` file is created in **\$TMFA\_DATA\_DIR**.

Note that only one `ne_snc_ids.dat` file is created, no matter how many network elements are involved.

- .....
- 10 Using `ftp`, send the `ne_snc_ids.dat` file from the new Navis™ Optical EMS to the Navis™ Optical NMS host under the `/tmp/reparent` directory.

**Result:**

The `ne_snc_ids.dat` file is sent to the Navis™ Optical NMS host.

- .....
- 11 On the Navis™ Optical NMS host in the `/tmp/reparent` directory, create a one-line, `ems_map.dat` file in `<OLD_Navis™ Optical EMS_NAME>|<NEW_Navis™ Optical EMS_NAME>` format.

Reparenting Navis™ Optical EMS-controlled  
network elements

**Important!** Note that the Navis™ Optical EMS names must be all caps as they appear on the Network Controller Map and separated by the | character, for example: **TUNA|SHARK**.

- 
- 12** Login to the Navis™ Optical NMS server as dacscan, then enter **cd /usr/dacscan/toolbin/reparent**.

**Result:**

The user logs into the Navis™ Optical NMS server and the prompt displays in the requested directory.

- 
- 13** At the prompt, enter  
`./reparent.ksh SNMS`

**Result:**

The reparenting tool is initiated.

- 
- 14** From the Navis™ Optical NMS Controller Map, synchronize both of the Navis™ Optical EMSs. See [“Synchronize the Navis™ Optical NMS database with an EMS database” \(9-23\)](#).

END OF STEPS



# Reparenting Navis™ Optical NMS EMS resources to another Navis™ Optical NMS

---

**Purpose** This section describes how to reparent Navis™ Optical NMS EMS resources to another Navis™ Optical NMS (that is, one EMS at a time) using the reparenting tool.

**Before you begin** Before you use this tool, be sure that:

- the Navis™ Optical NMSs involved in this process are not connected to any other northbound system.
- the ID of the EMS to be moved is unique.
- the target network elements are not involved in an ITM-SC geographic redundancy switch.
- the EMS is not involved in an ITM-SC geographic redundancy.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the tool:

---

<b>1</b>	<b>IF</b>	<b>THEN</b>
	<i>there are</i> circuits/digital links that are connected beyond the EMS domain,	disconnect them then proceed to the next step.
	<i>there are not</i> circuits/digital links that are connected beyond the EMS domain,	proceed to the next step.

---

**2** Login to the server as dacscan then enter **cd /usr/dacscan/toolbin.**

---

**3** Run the export data tool to extract data from the current Navis™ Optical NMS to datafiles.

**Result:**

Data is stored to datafiles.

Reparenting Navis™ Optical NMS EMS  
resources to another Navis™ Optical NMS

---

- 4 Disconnect the old EMS (for example, ITM-SC) and its managed network elements from the old Navis™ Optical NMS, then re-add the EMS and its managed network elements to the target Navis™ Optical NMS (see [“Add an ITM-SC” \(9-14\)](#)).
- 

- 5 Run the import data tool.

**Result:**

Data is imported to the target Navis™ Optical NMS.

---

- 6 Disconnect circuit orders. See the [“Virtual disconnect tool description” \(6-35\)](#) for details.

**Result:**

This cleans up circuit provisioning information that was stored in the old Navis™ Optical NMS and is now successfully transferred to the target Navis™ Optical NMS.

---

- 7 Run the clean up tool.

**Result:**

This cleans up all remaining data that was stored in the old Navis™ Optical NMS and is now successfully transferred to the target Navis™ Optical NMS.

---

- 8 Perform a database synchronization with the new Navis™ Optical NMS and ITM-SC.

**Result:**

This is performed to ensure that data is consistent between the new Navis™ Optical NMS and ITM-SC.

END OF STEPS

---



## Section V: Upgrade Navis™ Optical NMS OLS 400G to Navis™ Optical NMS OLS 800G

### Overview

---

**Purpose** This section describes how to upgrade Navis™ Optical NMS OLS 400G network elements to Navis™ Optical NMS OLS 800G network elements to add more circuit packs and increase their capacity. The script changes *most* network elements having a release level lower than R5.0 to R5.0 with the exception of Navis™ Optical NMS OLS 400G R4.0 network elements, which *cannot* be upgraded.

Note that Navis™ Optical NMS OLS 400G R6.0 network elements will also not change to R5.0 as a result of this script.

#### Contents

<a href="#">Upgrade Navis™ Optical NMS OLS 400G to Navis™ Optical NMS OLS 800G</a>	<a href="#">8-49</a>
--	----------------------

## Upgrade Navis™ Optical NMS OLS 400G to Navis™ Optical NMS OLS 800G

---

**Purpose** This task describes how to increase the capacity of an Navis™ Optical NMS OLS 400G network element by upgrading it to Navis™ Optical NMS OLS 800G.

**Before you begin** Before you begin this upgrade, be sure that:

- the database has been backed up
- no provisioning activities involving the target Navis™ Optical NMS OLS 400G network element(s) occur during the upgrade process.
- the upgrade is complete in Navis™ Optical EMS which may be detected by Navis™ Optical NMS after receiving a second *State Change* alarm from Navis™ Optical EMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the upgrade tool.

---

- 1 After receiving an alarm notification from Navis™ Optical EMS that the upgrade is complete, back up the Navis™ Optical NMS database. See [“Section I: Perform backups” \(7-3\)](#).
- 2 Log into the server as dacscan then enter **cd /usr/dacscan/toolbin**.
- 3 Open the log files then enter **<network\_element\_identifier(s)>** to run the script.

**Result:**

The script either reads the entered TID(s) or a file containing a list of Navis™ Optical NMS OLS 400G TIDs to be upgraded to Navis™ Optical NMS OLS 800G. The script accepts entries for multiple network elements residing under the *same* Navis™ Optical EMS however the script must be run separately when network elements reside under *different* Navis™ Optical EMSs.

- 
- 4 Once the run is complete, select **View > Network View Reset** to refresh the GUI and display the upgraded network elements.

- 
- 5 Synchronize Navis™ Optical NMS with Navis™ Optical EMS. See [“Synchronize the Navis™ Optical NMS database with an EMS database” \(9-23\)](#)

END OF STEPS

---



# Section VI: Upgrade Navis™ Optical NMS OLS 400G’s network elements from CMISE mode to TL1 mode

## Overview

---

**Purpose** Navis™ Optical NMS OLS 400G R6.0 network elements use a TL1 mode protocol. Earlier Navis™ Optical NMS OLS 400G network elements used the Common Management Information Service Element (CMISE) mode protocol.

When Navis™ Optical NMS OLS 400G network elements need to be upgraded from an earlier release to R6.0, a script is run in Navis™ Optical NMS.

Before running the script, the Navis™ Optical NMS OLS 400G network element(s) must first be upgraded to R6.0 in Navis™ Optical EMS. Note that Navis™ Optical NMS OLS 400G R4.0 network elements *cannot* be upgraded to R6.0.

**Contents**

<a href="#">Use the CMISE to TL1 upgrade tool for Navis™ Optical NMS OLS 400G</a>	<a href="#">8-52</a>
---	----------------------



## Use the CMISE to TL1 upgrade tool for Navis™ Optical NMS OLS 400G

---

**Purpose** This task describes how to upgrade Navis™ Optical NMS OLS 400G network elements (R6.0 and beyond) in Navis™ Optical NMS.

**Before you begin** Before you use this tool, be sure that:

- the Navis™ Optical NMS database has been backed up.
- no provisioning activities involving the target Navis™ Optical NMS OLS 400G network element(s) occur during the upgrade process.
- the Network Event Summary form has displayed a network element software upgrade event to indicate that Navis™ Optical NMS OLS 400G network element(s) have been upgraded from CMISE mode to TL1 mode in Navis™ Optical EMS. See the “In Service Upgrade of Navis™ Optical NMS OLS 400G Software from Release 5.0 to Release 6.0 TL1 Mode” task in the *Navis™ Optical EMS Provisioning Guide*.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the upgrade tool:

---

- 1 After the Network Event Summary form displays a network element software upgrade event , backup the Navis™ Optical NMS database. See [“Section I: Perform backups” \(7-3\)](#).
- 2 Log into the server as dacscan then enter **cd /usr/dacscan/toolbin**.
- 3 Open the log files then enter **<network\_element\_identifier(s)>** to run the script.

**Result:**

The script either reads the entered TID(s) or a file containing a list of Navis™ Optical NMS OLS 400G TIDs then upgrades the node type from CMISE to TL1.

Use the CMISE to TL1 upgrade tool for  
Navis™ Optical NMS OLS 400G

Note that the script accepts entries for multiple network elements residing under the *same* Navis™ Optical EMS however the script must be run separately when network elements reside under *different* Navis™ Optical EMSs.

- 
- 4 Once the run is complete, synchronize Navis™ Optical NMS with Navis™ Optical EMS. See [“Synchronize the Navis™ Optical NMS database with an EMS database” \(9-23\)](#)

END OF STEPS

---



## Section VII: Connection renaming tool

### Overview

---

- Purpose** The Connection renaming tool is a UNIX script used to:
- Rename a large number of network connections using a list of trail/circuit identifications (connection identifications) as input.
  - Rename discovered network connections with a given naming rule after a path discovery procedure

Usable independently of the Auto-Discovery tool, the Connection Renaming tool takes a user-provided input file, containing every trail identification as a parameter, and retrieves the connections to which the end ports belong and renames them with the trail identification. The tool only renames the connections defined in the input file. If the file provides at least one end port of a connection, the tool will rename the related connection.

The tool is applicable to any in-effect SDH and PDH connection provisioned in Navis™ Optical NMS.

**Using the tool** The tasks which utilize this tool are contained after this description.

- Restrictions** The following restrictions apply to the Connection Renaming tool:
- Not applicable to new network objects introduced with the optical layer.
  - Only applicable if the free format option for the trail/circuit ID is set.
  - Local to Navis™ Optical NMS. No commands will be sent to the network elements level.
  - Users must provide a file containing the end ports of the connections they wish to rename.
  - The trail identifications provided in the input file must be unique in Navis™ Optical NMS.
  - There is no consistency check when a file provides a connection's two end ports. If a user provides two different trail ids for the two end ports, then the tool will rename the connection with one of the two trail IDs without error.

- Several instances of the tool cannot be run simultaneously.
- Users must refresh screens to reflect new connection identifications.
- Recommended that users only operate the tool while the Navis™ Optical NMS host is running.

**Log files** When the Connection Renaming tool successfully renames a connection, it logs the renamed connection to **/tmp/auto\_disc/rename\_ckts**. The file format is structured so each record is a line. Each line consists of:

```
old_trail_id:new_trail_id
```

#### Error Log

The tool logs errors to **/tmp/err\_rename.log**. Errors are logged to a file for the following reasons:

- The data validation fails.
- The trail ID is not unique in Navis™ Optical NMS.
- The input file's port does not have any related connection

There is no error if the trail identification in the user input file is the same as the current trail identification in the database.

**Supported interfaces** The Connection renaming tool supports the following interfaces: ITM-SC and Navis™ Optical EMS.

#### Contents

<a href="#">Rename network connections with the connection renaming tool</a>	<a href="#">8-56</a>
--	----------------------



## Rename network connections with the connection renaming tool

---

**Purpose** Use this task to rename network connections using the connection renaming tool.

The connection renaming tool is a UNIX script that is used to rename large numbers of network connections using a list of connection or *trail* identifications as input.

**Before you begin** Before using the connection renaming tool, consider the following items:

- You must run the connection renaming tool while Navis™ Optical NMS is running.
- Be sure that the circuits are set at the free format option.
- Although not recommended, it is possible to continue operation procedures through the Navis™ Optical NMS interface while the tool is running.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Use the following procedure to rename network connections using the Connection Renaming tool.

---

1 Log in as dacscan.

---

2 At the prompt, enter `cd /tmp/auto_disc`

**Result:**

The directory is changed

---

3 At the prompt, type `ls` and then view the display to confirm that the input port file is listed in this directory.

**Important!** If `<port_input_filename>` is not listed, then it must be created. The `<port_input_filename>` is a text file consisting of a record set, with each record consisting of one

line. Each line consists of a set of fields separated by | and populated as follows:

- Field 1: TID of the network element.
- Field 2: Port address, using the EMS format.
- Field 3: Rate. (Values are C1, C3, D3, D1, C4, V12, V2, AU3, V3, V4, V4-4c, V4-16c)
- Field 4: Trail ID, which is the new ID that the user is assigning to the trail.

- 
- 4 At the prompt, type `/usr/dacscan/toolbin/rename_ckt /tmp/<port_input_filename>`

**Result:**

The connection renaming tool uses the port input file to specify the trail ID of the connections to be renamed. The tool will, for each record of the input file, identify the IE connection and rename the Trail ID with the specified ID. It will then update the trail ID within the Navis™ Optical NMS database.

- 
- 5 Verify the renamed connection at `/tmp/auto_disc/rename_ckts`.

**Result:**

The renamed connections should appear. Note that each record consists of `old_trail_id:new_trail:id`.

END OF STEPS



## Section VIII: Bulk link provisioning tool

### Overview

---

**Purpose** This section describes the bulk link provisioning tool, which is used to perform a bulk transfer of topological links from provisioning systems, such as the Physical Resource Manager, to Navis™ Optical NMS. This off-line tool abstracts the topological links into a bulk process then performs a bulk add of the links to Navis™ Optical NMS as if they were added individually through the Navis™ Optical NMS GUI.

**About this tool** Before running this tool, an input file is created which contains one line per Navis™ Optical NMS link to be provisioned. The created file is entered in the bulk link provisioning tool command and run with one of the following options:

- **-v**, which performs a pre-provisioning run to validate the input file *without* provisioning links. Depending on the results of the validation, users may edit the input file and rerun this command until the results predict that a clean run will occur.
- **-p**, which runs the bulk link provisioning command.
- **-a**, which takes the latest provisioning run and audits the Navis™ Optical NMS database against the input file.

When a link is detected in this run that is not *In-Effect*, this is noted in the error file, *link\_audit.log* which lists each suspect input line along with one audit error message per error.

#### Contents

<a href="#">Bulk link provisioning tool task</a>	<a href="#">8-59</a>
--	----------------------



## Bulk link provisioning tool task

---

**Purpose** This section describes how to perform bulk link provisioning in Navis™ Optical NMS.

**Before you begin** Consider the following before running the bulk link provisioning tool.

**Important!** This tool is expected to be run during *off-hours* to avoid the impact that the process may have on system response. If this is your first time running this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the bulk link provisioning tool:

---

- 1 Log into the server as `dacscan` then enter **`cd /usr/dacscan/toolbin`**.  

---
  - 2 In the **`/usr/dacscan/toolbin`** directory, create an input file.  

---
  - 3 In the input file, add one row of the following data, separated by the | character for each Navis™ Optical NMS link to be provisioned.
    - The full 'A' network element identifier **`<aloc>`**.
    - The full 'Z' network element identifier **`<zloc>`**.
    - The network element-level port address of the service link at the **A** location.
    - The network element-level port address of the service link at the **Z** location.
    - The coded rate of the link **`<link_type>`**.
    - The free-format label for the circuit ID field **`<link_ID>`**.
    - The coded Multiplex Section Protection (MSP) configuration. Values are **`1X1MSP`**, **`1+MSP`** or **`none`**.
    - The free-format label denoting the **protecting link** or **`none`**.
    - The network element-level port address of the protecting link at **A\_location** or **`none`**.
    - The network element-level port address of the protecting link at **Z\_location** or **`none`**.
-

- The MSP protection group name for **1X1MSP** or **none**.
- The type of MSP configuration: **UNI**, **BI**, **NTT** or **none**.

Note that if the row is being created for *MSP* links, the protecting link and service link fields must be consistent for the sequential array of fields. The row must also have the same **A** network element ID and **Z** network element ID while conforming to the correct MSP port groupings at either end. The protecting link and service link must also have the same link ID.

4 Save and close the file, then select one of the following options from the next step.

5

IF	THEN
You want to validate data in the input file <i>without</i> provisioning links,	enter <b>linkgroup_prov NM_links -v</b>  <b>Result:</b> All records in the data file are validated and error messages are logged to a file.
You want to provision a group of <i>In-Effect</i> links,	enter <b>linkgroup_prov NM_links -p</b>  <b>Result:</b> A group of links are provisioned.
You want to take the latest provisioning run and audit the Navis™ Optical NMS database against the input file,	enter <b>linkgroup_prov NM_links -a</b>  <b>Result:</b> The run is audited and any non- <i>In-Effect</i> links are noted in the link_audit.log error file.

END OF STEPS



# Section IX: Bulk circuit provisioning tool

## Overview

---

**Purpose** This section describes the bulk circuit provisioning tool.

**Contents**

<a href="#">Bulk circuit provisioning tool task</a>	<a href="#">8-62</a>
---	----------------------



## Bulk circuit provisioning tool task

---

**Purpose** This task describes how to use the bulk circuit provisioning tool.

**Before you begin** Before you run the bulk circuit provisioning tool, be sure to create a VC-12 from the Network Map.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the bulk circuit provisioning tool.

---

- 1 Using the Network Map, create a VC-12 and optionally create a CEPT-1 on the VC-12. See the *Add a Circuit* tasks in the *Navis™ Optical NMS Provisioning Guide*.

---

- 2 Log into the server as dacscan then enter `cd /usr/dacscan/toolbin`.

---

- 3 In the `/usr/dacscan/toolbin` directory, create a **data\_file** file.

---

- 4 Add the following information to **data\_file**, then save and close the file.
  - Circuit ID <CKT\_ID> of the created VC-12 circuit, e.g., **HTN1 HTN2 VC12S.2000**.
  - Total number of VC-12 circuits to be created during the bulk provisioning, e.g., **2**
  - External port address of the VC-12 at the A\_location
  - External port address of the VC-12 at the Z\_location
  - A to Z Path Trace ID (transmitting).
  - Z to A Path Trace ID (receiving).

- **Y(es)** or **N(o)** value to specify if a CEPT-1 should be created over the VC-12.
- **Y(es)** or **N(o)** value to specify if alarms should be ignored during the bulk provisioning.

For example, **data\_file**'s contents may appear as follows:

```
HTN1 HTN2 VC12S.2000|2
S1/1/2/1/1-3|S1/1/2/1/1-3|0|0|N|Y
S1/1/4/1/1-3|S1/1/4/1/1-3|0|0|N|Y
```

The first line represents the circuit ID followed by the total number of circuits to be created. The second and third lines contain the a frame, z frame, A to Z and Z to A path trace IDs, and the assign CEPT-1 and ignore alarm values.

- 
- 5 In the **/usr/dacscan/toolbin** directory, create and save an index file that contains the directory path of the **data\_file**, e.g., **/usr/dacscan/toolbin/data\_file**.

- 
- 6 At the prompt, enter **/usr/dacscan/toolbin/group\_prov <indexfilename> -p**

**Result:**

A prompt displays requesting a proxy host.

If you are not prompted to enter the proxy host, none of the VC-12s will be added and an error message displays indicating that there are other proxyproc processes on the system.

- 
- 7 At the prompt, enter the proxy host.

**Result:**

The script continues to run.

END OF STEPS



## Section X: ODO tool

### Overview

---

**Purpose** This section describes how to convert black boxes into individual ODOs with an Off-line tool.

**Contents**

<a href="#">ODO tool task</a>	<a href="#">8-65</a>
-------------------------------	----------------------

## ODO tool task

---

**Purpose** Run this tool to convert black boxes into ODOs.

**Important!** This tool will do an Off-line change of the database, so it is recommended that you have a recent backup of the database as a means of undoing the effects of this tool, if needed.

**Before you begin** Before running the tool, ensure that:

- Navis™ Optical NMS is not being used by any users.
- the nodes connected to the black boxes being converted into ODOs are located in the same area as the black boxes in Navis™ Optical NMS.

**Important!** If this is your first time using this tool, contact Lucent Customer Support for assistance.

**Task** Complete the following steps to run the Navis™ Optical NMS ODO tool.

---

**1** Log into the server as **dacscan**.

---

**2** At the prompt, enter `cd /usr/dacscan/tool bin`

**Result:**

The prompt resides in the appropriate directory.

---

**3** At the prompt, enter `BB_ODO [-f filename] [-l logfile]`

**Result:**

The ODO tool prompts the user for a desired action.

---

<b>4</b>	<b>IF</b>	<b>THEN</b>
	you want to extract the black boxes,	proceed to Step <a href="#">Step 5</a> to continue.

IF	THEN
you want to convert the Black Boxes in the ASCII file to ODO elements	proceed to Step <a href="#">Step 6</a> to continue.

- 
- 5 Extract the black boxes and store them in an ASCII file. The default filename is **BB\_ODO.txt**. The default logfile is **BB\_ODO.log**. The user may override these defaults by supplying appropriate arguments.

**Result:**

A list of black box elements is created in the system.

- 
- 6 Convert the black boxes in the ASCII file to ODO elements.

**Result:**

The tool will name each ODO as ODO\_CILLIKEY\_running\_number, where CILLIKEY represents the node to which ODO is connected. As each black box in the ASCII file is converted, the tool:

- Checks the Navis™ Optical NMS database for the existing blackbox.
- Verifies that the black box is connected to one or more real network elements in the Navis™ Optical NMS database. If more than one network element is connected, the tool will convert the black box into individual ODOs for each network element. Area/submap will be updated with ODOs.
- Preserves existing Link IDs and clients of the ODOs, when the black box is converted into individual ODOs.
- Creates an aggregate in the Navis™ Optical NMS database for the ODOs. The tool will name the aggregate with the same name as the black box that is split. Area/submap will be updated.

- Produces a log file that contains the results of the conversion tool and stores them. If a black box requested by the tool does not exist in the database, a message indicating "black box name" and error "not found in NMS DB" will be stored in log file.
- Requests the host to update the GUI display upon completing its operations.

If the tool fails to successfully convert a particular black box into an ODO/aggregate, the tool will abandon the operation on this black box and undo any partial changes in the conversion process. The tool will create an entry for this failure in the tool error log file.

END OF STEPS

---







# 9 EMS management

## Overview

---

**Purpose** This chapter describes tasks performed to interact with subsystems in the network.

### Contents

<b><u>Section I: Interact with Navis™ Optical EMSs</u></b>	<u>9-3</u>
<u>Add a new element management system (EMS)</u>	<u>9-4</u>
<u>Add a new Navis™ Optical EMS</u>	<u>9-6</u>
<u>Set up a Navis™ Optical EMS for cut-through</u>	<u>9-9</u>
<u>Add an ITM-SC</u>	<u>9-14</u>
<u>Set up an ITM-SC for cut-through</u>	<u>9-17</u>
<u>Cut-through to an EMS</u>	<u>9-22</u>
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<u>Alarm database audit</u>	<u>9-31</u>

<a href="#">Database synchronization</a>	<a href="#">9-32</a>
--	----------------------

# Section I: Interact with Navis™ Optical EMSs

## Overview

---

**Purpose** This section describes how to administer the following Element Management Systems (EMSs):

- ITM-SC
- Navis™ Optical EMS

**Definition: EMS** An EMS is a graphical user interface-based element manager used for network management.

**Definition: ITM-SC** An ITM-SC is an application that provides services to the network management system to enable it to set up end-to-end paths and to monitor overall network behavior.

**Definition: Navis™ Optical EMS** Navis™ Optical EMS is a management system for the Navis™ product family, providing Element Management Layer (EML) management functions for Navis™ products. This system has configuration management, fault management, performance management, and security management functions.

### Contents

<a href="#">Add a new element management system (EMS)</a>	<a href="#">9-4</a>
<a href="#">Add a new Navis™ Optical EMS</a>	<a href="#">9-6</a>
<a href="#">Set up a Navis™ Optical EMS for cut-through</a>	<a href="#">9-9</a>
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<a href="#">Synchronize the Navis™ Optical NMS database with an EMS database</a>	<a href="#">9-23</a>
<a href="#">Refederate a Navis™ Optical EMS server</a>	<a href="#">9-25</a>



## Add a new element management system (EMS)

---

**Purpose** This task is used to initiate adding a new EMS on the Navis™ Optical NMS Controller. The remaining add process is supported by subsequent tasks referenced in the last step of this task.

The following EMSs are supported:

- Navis™ Optical EMS
- ITM-SC

**Important!** The number of EMSs that may be added varies with the Navis™ Optical NMS configuration installed. The limit for ITM-SC is 20 subnetwork controllers. When the limit is reached, an error message is displayed after the last step of the procedure to inform the user that the EMS could not be added because it exceeded the number allowed. The task below must be run for each EMS to be added.

**Before you begin** Before you begin this task, collect the following information:

- EMS system name
- EMS Internet address

**Task** Perform the steps below to add a new EMS.

---

**1** Log in as root to the Navis™ Optical NMS host.

---

**2** At the prompt, enter `ksh /usr/dacscan/bin/add.controller` and press Enter.

**Result:**

The following prompt is displayed, along with a numbered list of EMSs:

Which Controller do you want to add?

---

**Important!** The following lists only those entries supported by Navis™ Optical NMS.

**3**

Section I: Interact with Navis™ Optical  
EMSs  
Add a new element management system  
(EMS)

IF	THEN
you select <b>8</b> and press Enter,	See <a href="#">Step 4</a> in <a href="#">“Add an ITM-SC” (9-14)</a> to continue.
you select <b>17</b> and press Enter,	See <a href="#">Step 4</a> in <a href="#">“Add a new Navis™ Optical EMS” (9-6)</a> to continue.

END OF STEPS



## Add a new Navis™ Optical EMS

---

**Purpose** Use this task to add a new Navis™ Optical EMS on the Navis™ Optical NMS.

**Important!** The task below must be run for each Navis™ Optical EMS to be added.

**Before you begin** Before you begin this task, collect the following information:

- EMS system name
- EMS Internet address

**Task** Perform the steps below to add a new Navis™ Optical EMS.

---

1 Log in as root to the Navis™ Optical NMS host.

---

2 At the prompt, enter `ksh /usr/dacscan/bin/add.controller` and press Enter.

**Result:**

The following prompt is displayed:

Which Controller do you want to add?

---

3 At the prompt, enter 17 and press Enter.

**Result:**

The following prompt is displayed:

What is the name of the WaveStar SNMS?

---

4 Enter the name of the Navis™ Optical EMS then press Enter.

**Result:**

You are prompted to confirm your entry.

---

5 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.

---

**Result:**

You are prompted to enter the IP address for the Navis™ Optical EMS.

---

- 6 Enter the IP address then press Enter.

**Important!** If the machine to be added is in a *local redundancy configuration*, the *Package* IP address should be entered.

**Result:**

You are prompted to confirm your entry.

---

- 7 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the Acronym.

---

- 8 Enter the acronym using all CAPS. Note that this entry is a unique identifier, which should not be more than four characters long. Generally, the first four characters of the Navis™ Optical EMS hostname are used.

**Result:**

You are prompted to confirm your entry.

---

- 9 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

The original activity screen displays.

---

- 10 Continue with one of the following steps.
- If you have *have* additional Navis™ Optical EMSs to add, for example, if a geographic redundancy configuration is in place, repeat [Step 4](#) through [Step 9](#) to continue.
  - If you *do not have* additional Navis™ Optical EMSs to add, proceed to the next step.
-

Add a new Navis™ Optical EMS

- 
- 11** Enter `quit` to exit the script.

**Result:**

The script is exited.

- 
- 12** Using the system console, log in to the new EMS as root.

END OF STEPS



## Set up a Navis™ Optical EMS for cut-through

---

**Purpose** Use this task to configure a Navis™ Optical EMS for cut-through purposes.

**Before you begin** Before you begin this task, be sure that:

- the Navis™ Optical EMS server is running when this task is being performed.
- the Navis™ Optical EMS server must have an entry in its host file for the Navis™ Optical NMS server to allow orbix to communicate successfully.

**Important!** To enable cut-through to a R4.2 Navis™ Optical EMS, the Navis™ Optical NMS user invoking the cut-through must also exist on the Navis™ Optical EMS. It is also essential that SAGE is enabled at the Navis™ Optical EMS for the cut-through to work. For user administration and enabling SAGE, please refer to the relevant Navis™ Optical EMS documentation.

**Task** Perform the steps below to set up a Navis™ Optical EMS to permit cut-through sessions to occur.

---

**1** Log in as root to the Navis™ Optical NMS host.

---

**2** At the prompt, enter `who - r`

**Result:**

The current run-level displays.

---

**3**

IF	THEN
the run-level value is 3 (or less),	proceed to the next step.
the run-level value is <i>greater</i> than 3, and this is a <i>single server configuration</i> ,	type <code>i n i t 3</code> and proceed to the next step.

Set up a Navis™ Optical EMS for  
cut-through

IF	THEN
the run-level value is <i>greater</i> than 3, and this is a <i>geographic redundancy configuration</i> ,	use the <a href="#">“Stop Navis™ Optical NMS on a server with a geographic redundancy configuration” (3-20)</a> task.
the run-level value is <i>greater</i> than 3, and this is a <i>local redundancy configuration</i> ,	use the <a href="#">“Stop Navis™ Optical NMS application on a MC/ServiceGuard cluster” (3-25)</a> task.

- 4 At the prompt, enter `ksh /usr/dacscan/bin/add.controller` and press Enter.

**Result:**

A list displays.

- 5 At the prompt, enter 17 and press Enter.

**Result:**

The following prompt is displayed:

What is the name of the SNMS?

- 6 Enter the name of the Navis™ Optical EMS then press Enter.

**Result:**

You are prompted to confirm your entry.

- 7 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the IP address for the Navis™ Optical EMS.

- 8 Enter the IP address then press Enter.

**Result:**

You are prompted to confirm your entry.

Set up a Navis™ Optical EMS for  
cut-through

- 
- 9 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the Acronym.

---

- 10 Enter the acronym using all CAPS. Note that this entry is a unique identifier, which should not be more than four characters long. Generally, the first four characters of the Navis™ Optical EMS hostname are used.

**Result:**

You are prompted to confirm your entry.

---

- 11 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

The script is exited.

---

- 12 Use vi to edit the /etc/hosts file to add an alias which is the fully qualified domain name. For example, change the file's <IP\_address> <hostname> #Navis™ Optical EMS entry to <IP\_address> <hostname> <fully\_qualified\_pathname> #Navis™ Optical EMS

- 
- 13 At the prompt, enter chown dacscan /var/dacscan/log/data/orbixd.log\*

**Result:**

The owner of the orbixd.log file is changed.

---

- 14 At the prompt, enter /usr/dacscan/bin/AddEMS.sh to add any joint Navis™ Optical EMS/Navis™ Optical NMS clients to the Navis™ Optical EMS server.

**Result:**

A menu displays.

---

Set up a Navis™ Optical EMS for  
cut-through

- 
- 15** Select option **2** for the Navis™ Optical EMS server.
- 
- 16** Continue with one of the following steps.
- If an MC/ServiceGuard configuration is in place, repeat [Step 4](#) through [Step 15](#) to continue.
  - If an MC/ServiceGuard configuration is not in place, proceed to the next step.
- 
- 17** At the Enter the Navis™ Optical EMS Server Name, then press [return]:? prompt, enter the hostname of the Navis™ Optical EMS.
- 
- 18** At the Enter the Version of the Navis™ Optical EMS, then press [return]: prompt, enter the Navis™ Optical EMS version.
- Important!** Press **Return** if this is not applicable.
- 
- 19** At the Are the WS-NMS GUI and Navis™ Optical EMS GUI installed on the same desktop(y/n)? prompt, enter **y** if a joint workstation is deployed or **n** if the Navis™ Optical NMS and Navis™ Optical EMS GUIs are running on separate machines.
- 
- 20** Continue with one of the following options.
- If **n** was selected in the last step, continue with [Step 22](#).
  - If **y** was selected in the last step, enter the IP address of the Navis™ Optical NMS and Navis™ Optical EMS GUIs (when prompted) then continue with the next step.
- 
- 21** Review the displayed prompt, then enter **y** if the information is correct.

**Result:**

The original list displays

Set up a Navis™ Optical EMS for  
cut-through

- .....
- 22** Continue with one of the following steps.
- If an MC/ServiceGuard (local redundancy) configuration is in place, repeat [Step 17](#) through [Step 21](#) to continue.
  - If an MC/ServiceGuard configuration is not in place, proceed to the next step.
- .....
- 23** Select `quit` from the displayed list.
- .....
- 24** Start the Navis™ Optical NMS application with one of the following options:
- If a single server configuration applies, use the [“Start Navis™ Optical NMS on a single server” \(3-5\)](#) task.
  - If an MC/ServiceGuard (local redundancy) configuration applies, use the [“Start Navis™ Optical NMS on a MC/ServiceGuard Cluster” \(3-23\)](#) task.
  - If an geographic redundancy configuration applies, use the [“Start Navis™ Optical NMS on a server with a geographic redundancy configuration” \(3-19\)](#) task.
- .....
- 25** At the prompt, enter `who -r`
- Result:**
- The run-level status displays.
- END OF STEPS
- .....



## Add an ITM-SC

---

**Purpose** Use this task to add an ITM-SC on the Navis™ Optical NMS.

**Important!** This task must be run for each ITM-SC to be added. The number of ITM-SCs that may be added varies with the Navis™ Optical NMS configuration installed. The limit for ITM-SC is 20 subnetwork controllers. When the limit is reached, an error message is displayed after the last step of the procedure to inform the user that the EMS could not be added because it exceeded the number allowed.

**Before you begin** Before you begin this task, collect the following information:

- system name for the ITM-SC to be added
- IP address for the ITM-SC to be added

**Task** Perform the steps below to add an ITM-SC.

---

**1** Log in as root to the Navis™ Optical NMS host.

---

**2** At the prompt, enter `ksh /usr/dacscan/bin/add.controller` and press Enter.

**Result:**

A list displays.

---

**3** At the prompt, enter `8` and press Enter.

**Result:**

The following prompt is displayed:

What is the name of the ITM-SC?

---

**4** Enter the name of the ITM-SC then press **Enter**.

**Result:**

You are prompted to confirm your entry.

---

- 
- 5 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the IP address for the ITM-SC.

---

- 6 Enter the IP address then press Enter.

**Result:**

You are prompted to confirm your entry.

---

- 7 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the Acronym.

---

- 8 Enter the acronym using all CAPS. Note that this entry is a unique identifier, which should not be more than four characters long. Generally, the first four characters of the ITM-SC hostname are used.

**Result:**

You are prompted to confirm your entry.

---

- 9 View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

The user, i2kadmi n is created and you are prompted to enter a new password for the new user ID.

---

- 10 At the prompt, enter a password and then re-enter the same password to continue.

**Result:**

The original activity screen displays.

---

- 
- 11** Continue with one of the following steps.
- If you have *have* additional ITM-SCs to add, for example, if a geographic redundancy configuration is in place, repeat [Step 3](#) through [Step 10](#) to continue.
  - If you *do not have* additional ITM-SCs to add, proceed to the next step.
- 
- 12** Enter `quit` to exit the script then continue with one of the following steps.
- If you are using an HP machine, open an `hpterm` window and type `vi /etc/hosts`.
  - If you are using a Windows machine, use an editor to access the `..\etc\Hosts` file.
- 
- 13** Add the host name and the IP address of the new EMS to the `hosts` or `Hostsfile` (if the hostname and IP address are not already present) then save the file.
- 
- 14** If a second ITM-SC host is applicable, for example if geographic redundancy configuration is in place, repeat [Step 13](#), otherwise proceed to the next step.
- 
- 15** Using the system console, log in to the new EMS as `root`.
- 
- 16** Enter `/opt/itm/sc/tool box/bin/itm_sc_set_itmm_name` to configure the EMS to communicate with Navis™ Optical NMS.

**Result:**

The ITM-SC is added.

END OF STEPS



## Set up an ITM-SC for cut-through

---

**Purpose** Use this task to configure an ITM-SC for cut-through purposes.

**Before you begin** Before you begin this task, be sure that:

- the Navis™ Optical NMS and ITM-SC servers are fully installed.
- the ITM-SC server is running when this task is being performed.
- a user ID already exists with privileges that will permit cut-through to the ITM-SC.

**Task** Perform the steps below to configure an ITM-SC for cut-through purposes.

---

**1** Login as root to the Navis™ Optical NMS server.

---

**2** At the prompt, enter `who - r`

**Result:**

The current run-level displays.

---

**3**

IF	THEN
the run-level value is 3 (or less),	proceed to the next step.
the run-level value is <i>greater</i> than 3, and this is a <i>single server configuration</i> ,	type <code>i n i t 3</code> and proceed to the next step.
the run-level value is <i>greater</i> than 3, and this is a <i>geographic redundancy configuration</i> ,	use the <a href="#">“Stop Navis™ Optical NMS on a server with a geographic redundancy configuration” (3-20)</a> task.
the run-level value is <i>greater</i> than 3, and this is a <i>local redundancy configuration</i> ,	use the <a href="#">“Stop Navis™ Optical NMS application on a MC/ServiceGuard cluster” (3-25)</a> task.

EMSs

Set up an ITM-SC for cut-through

- .....
- 4 At the prompt, enter `ksh /usr/dacscan/bin/add.controller` and press **Enter**.

**Result:**

A list displays.

.....

- 5 At the prompt, enter `8` and press **Enter**.

**Result:**

The following prompt is displayed:

Which type of EMS Controller do you want to cut-thru from ITM-NM GUI?

.....

- 6 Enter the name of the ITM-SC to be added for cut-through support then press **Enter**.

**Result:**

You are prompted to confirm your entry.

.....

- 7 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the IP address for the ITM-SC.

.....

- 8 Enter the IP address then press **Enter**.

**Result:**

You are prompted to confirm your entry.

.....

- 9 View the entry, then enter `y` if it is correct, or `n` if it is not correct, and then enter the correct entry to continue.

**Result:**

You are prompted to enter the Acronym.

.....

- 
- 10** Enter the acronym using all CAPS. Note that this entry is a unique identifier, which should not be more than four characters long. Generally, the first four characters of the ITM-SC hostname are used.

**Result:**

You are prompted to confirm your entry.

---

- 11** View the entry, then enter y if it is correct, or n if it is not correct, and then enter the correct entry to continue.

**Result:**

The user, i2kadmi n is created and you are prompted to enter a new password for the new user ID.

---

- 12** At the prompt, enter a password and then re-enter the same password to continue.

**Result:**

The script completes then exits.

---

- 13** Continue with one of the following steps.

- If an MC/ServiceGuard configuration is in place, repeat [Step 4](#) through [Step 12](#) to continue.
  - If an MC/ServiceGuard configuration is not in place, proceed to the next step.
- 

- 14** At the prompt, enter `/usr/dacscan/bin/AddEMS.sh` to configure the desktop cut-through for the ITM-SC.

**Result:**

A menu displays.

---

- 15** Select **ITM-SC (SDH add/drop multiplexers)**.
- 

- 16** At the Enter the SC Server Name, then press [return]:? prompt, enter the hostname of the Navis™ Optical EMS.
-

- 
- 17** At the Enter the Version of the SC <ITM-SC Name>, then press [return]: **prompt, enter the Navis™ Optical EMS version.**

**Important!** Press **Return** if this is not applicable.

---

- 18** At the Are the WS-NMS GUI and SC GUI installed on the same desktop(y/n)? **prompt, enter y if a joint workstation is deployed or n if the Navis™ Optical NMS and Navis™ Optical EMS GUIs are running on separate machines.**
- 

- 19** Continue with one of the following options.

- If n was selected in the last step, enter the IP address of the Navis™ Optical NMS GUI, enter **all** if you want all Navis™ Optical NMS desktops to access the same pool of ITM-SC GUI workstations, then enter the IP address of the ITM-SC GUI.
  - If y was selected in the last step, enter the IP address of the Navis™ Optical NMS and ITM-SC GUIs (when prompted).
- 

- 20** Review the displayed prompt, then enter y if the information is correct.

**Result:**

The original list displays

---

- 21** Continue with one of the following steps.

- If an MC/ServiceGuard (local redundancy) configuration is in place, repeat [Step 14](#) through [Step 20](#) to continue.
  - If an MC/ServiceGuard configuration is not in place, proceed to the next step.
- 

- 22** Select `quit` from the displayed list.
-

.....  
**23** Start the Navis™ Optical NMS application with one of the following options:

- If a single server configuration applies, use the [“Start Navis™ Optical NMS on a single server” \(3-5\)](#) task.
- If an MC/ServiceGuard (local redundancy) configuration applies, use the [“Start Navis™ Optical NMS on a MC/ServiceGuard Cluster” \(3-23\)](#) task.
- If an geographic redundancy configuration applies, use the [“Start Navis™ Optical NMS on a server with a geographic redundancy configuration” \(3-19\)](#) task.

.....  
**24** At the prompt, enter enter **who -r**

**Result:**

The run-level status displays.

END OF STEPS



## Cut-through to an EMS

---

**Purpose** Use this task to cut-through to ITM-SC or Navis™ Optical EMS using the Navis™ Optical NMS.

**Task** Perform the step below to cut-through to ITM-SC or Navis™ Optical EMS EMSs.

---

- 1 On the Network Map or the Network Controller Map, right-click on an EMS, then select then select **Session > Login to EMS**.

**Result:**

A dialog box displays, indicating that the request is processing.

END OF STEPS

---



## Synchronize the Navis™ Optical NMS database with an EMS database

---

**Purpose** Use this procedure to synchronize the Navis™ Optical NMS database with an EMS database.

**Task** Complete the following task to synchronize the Navis™ Optical NMS database with an EMS database.

---

- 1 From the Network Map, select **File -> Open Network Controller Map**.

**Result:**

The Network Controller Map is displayed.

---

- 2 On the Network Controller Map, right-click the desired EMS node, then select **Node -> Session -> Start Database Synchronization**.

**Result:**

The Database Download/Synchronization form is displayed and its **EMS ID** field is pre-populated with the name of the EMS.

---

- 3 From the **Type** field's drop-down menu, select a synchronization type then press **Apply**.
- 

4	IF	THEN
	You select <b>Alarm</b> ,	an alarm synchronization occurs with all the network elements under control of this EMS.
	You select <b>Port</b> ,	a port synchronization is initiated.
	You select <b>Switch</b> ,	a switch synchronization is initiated.
	You select <b>All</b> ,	a full frame synchronization process occurs, including alarm, equipment, switch, cross-connect, and protection group synchronization.

Synchronize the Navis™ Optical NMS  
database with an EMS database

IF	THEN
You select <b>Cross Connect</b> ,	a cross-connections synchronization process occurs to update the From Port, To Port, and type of cross-connection information in the Cross-Connection Map database.
You select <b>Protection Group</b> ,	a synchronization occurs to the listed protection groups.

END OF STEPS



## Refederate a Navis™ Optical EMS server

---

**Purpose** When the Navis™ Optical EMS application is upgraded to a new release, there is a need to refederate Navis™ Optical EMS server(s), which involves re-establishing the association between the Navis™ Optical NMS and Navis™ Optical EMS Orbix instances. Use this task to refederate a Navis™ Optical EMS server from a Navis™ Optical NMS server.

**Important!** This task applies to Navis™ Optical EMS R4.2 (or greater). If the task is not run, communication would be severed between the Navis™ Optical EMS server(s) and the Navis™ Optical NMS server because the associated Inter-operable Object Reference (IOR) string would be lost. The task also relies on the naming service repository being intact. If corruption is suspected, then refer to Navis™ Optical NMS release notes.

**Before you begin** Before you begin this task, be sure that the Navis™ Optical NMSserver is at run level 4. See [“Run level 4” \(2-5\)](#) for details.

**Task** Perform the steps below to refederate Navis™ Optical EMS server(s) from a Navis™ Optical NMS server.

---

- 1 Using a terminal window on the Navis™ Optical NMS server, log in as dascan.  

---
  - 2 At the prompt, enter `/bin/ksh/install/refederate_snms <Navis™ Optical EMS_hostname>`  

---
  - 3 Using a terminal window on the Navis™ Optical NMS server, log in as root.  

---
  - 4 Determine whether or not the version of the Navis™ Optical EMS has changed.
    - If the version of the Navis™ Optical EMS *has not changed*, proceed to [Step 15](#) to continue.
    - If the version of the Navis™ Optical EMS *has changed*, continue with the next step.
-

- .....
- 5** At the prompt, enter `i n i t 3` to bring Navis™ Optical NMS to run level 3.  
.....
  - 6** At the prompt, enter `/usr/dacscan/bi n/AddEMS. sh`  
.....
  - 7** Select option **2** (for Navis™ Optical EMS server).  
.....
  - 8** At the Enter the SNMS Server Name, then press [return]:?  
prompt, enter the hostname of the Navis™ Optical EMS.  
.....
  - 9** At the Enter the Version of the SNMS <SNMS Name>, then  
press [return]: prompt, enter the Navis™ Optical EMS version.  
.....
  - 10** At the Are the WS-NMS GUI and SNMS GUI installed on the  
same desktop(y/n)? prompt, enter `y` if a joint workstation is  
deployed or `n` if the Navis™ Optical NMS and Navis™ Optical EMS  
GUIs are running on separate machines.  
.....
  - 11** If `y` was selected in the last step, enter the IP address of the Navis™  
Optical NMS and Navis™ Optical EMS GUIs (when prompted). If `n`  
was selected in the last step, enter the IP address of the Navis™  
Optical NMS GUI, and then enter the IP address of the ITM-SC GUI.  
.....
  - 12** Review the displayed prompt, then enter `y` if the information is  
correct.  
.....
  - 13** Select `qui t` from the displayed list.  
.....
  - 14** At the prompt, enter `i n i t 4` to bring Navis™ Optical NMS to run  
level 4.

- 
- 15** At the Navis™ Optical NMS client GUI, click the desired Navis™ Optical EMS server icon, then select **Session > Start Communication**.

**Result:**

A dialog box containing the following text displays: START  
SESSION COMMAND SENT FOR FRAME:<ems\_ name>

---

- 16** On the dialog box, click **OK**.

**Result:**

Communication is re-established between the Navis™ Optical EMS and Navis™ Optical NMS servers. The **emsmmap.cfg** file is also automatically updated where necessary, therefore, no editing of this file is required.

If communication cannot be immediately established with the refederated Navis™ Optical EMS server, restart the Navis™ Optical NMS application using the **init 3/init 4** commands. See *Start the host application* in [Chapter 3, “System administration”](#) for details.

- 
- 17** For each Navis™ Optical EMS server to be refederated, repeat [Step 1](#) through [Step 15](#) of this task.

END OF STEPS

---



## Section II: Miscellaneous management communication tasks

### Overview

---

**Purpose** This section contains a LAN communications task.

**Contents**

<a href="#">Enable or disable LAN communications</a>	<a href="#">9-29</a>
--	----------------------



## Enable or disable LAN communications

---

**Purpose** Use this task to enable or disable the LAN.

**Task** Perform the steps below to enable or disable the LAN communications using either sam or by entering a command.

---

**1** Using the system console, log into the primary host as root.

---

**2** Determine if you are using sam or command line entries to enable or disable the LAN.

IF	THEN
sam will be used:	bring up sam and then select
command entries will be used:	at the prompt, enter <code>ifconfig up</code> to enable the LAN or <code>ifconfig down</code> to disable the LAN.

END OF STEPS

---



## Section III: Database audit and synchronization

### Overview

---

**Purpose** This section describes alarm database audits and database synchronization processes and their impact to stored data.

**Contents**

<a href="#">Alarm database audit</a>	<a href="#">9-31</a>
<a href="#">Database synchronization</a>	<a href="#">9-32</a>



## Alarm database audit

---

**Overview** To optimize certain searches, the Navis™ Optical NMS fault management module has redundancy in its data storage, which leads to occasional deviation in data. The Alarm Database Audit feature corrects this deviation.

An alarm Database Audit for alarms is triggered by one of the following:

- A nightly cron job (according to the schedule defined during installation) that automatically triggers the audit at the scheduled time.

The cron job is not triggered if an alarm sync with an EMS is currently in progress.

- Automatic audit after a manually triggered alarm sync with an EMS (such as ITM-SC).

At the end of an Alarm Database Audit, a broadcast message is sent that indicates that the audit is completed. A broadcast message is not sent if the Alarm Database Audit does not find any discrepancies.



## Database synchronization

---

**Overview** The Database Synchronization form (described in an earlier chapter) is used to perform a synchronization between the Controller database and the database of an individual digital cross-connect system.

With the Synchronization function, the Controller database is synchronized with the database of an individual digital cross-connect system. The synchronization can be a partial or full synchronization based on your selection.

The Controller supports following types of Database Synchronization processes:

- Alarm Database Synchronization
- Cross Connection Map Database Synchronization
- Equipment Database Synchronization
- Complete Database Synchronization

Facility-based port parameter data synchronization can only be performed manually (on-demand). The other three types of data synchronization can be performed either automatically or manually. The Controller displays associated commands, data and status messages on the Data-base Synchronization form.





# 10 Trouble clearing

## Overview

---

**Purpose** This chapter describes how to turn on trace and view trace files. For information on fault management and performance monitoring tasks, refer to the Navis™ Optical NMS Maintenance Guide.

**Navis™ Optical NMS home directory** The home directory of Navis™ Optical NMS is **/usr/dacscan**. The application servers reside in the **bin** directory of the home directory. Each server has trace information linked to it and it can be turned on and off via the **tinfo** file in **/usr/dacscan/bin**.

**Important!** The trace files should never be removed while the application is up under any circumstances.

**Definition: trace file** A trace file contains information that identifies equipment status at a given point in time. The typical use of a trace file is to send it to Lucent technical support to be used as part of their remote troubleshooting activities.

### Contents

<a href="#">Create a host trace file on a server</a>	<a href="#">10-3</a>
<a href="#">Create Fault Management (FM) and Southbound/northbound trace file</a>	<a href="#">10-5</a>

<a href="#">Create a trace file on an HP-UX workstation or on a PC</a>	<a href="#">10-7</a>
<a href="#">View the log files</a>	<a href="#">10-9</a>
<a href="#">View the log file on an HP workstation</a>	<a href="#">10-11</a>
<a href="#">Clear trace files on a server</a>	<a href="#">10-12</a>
<a href="#">Determine software patch</a>	<a href="#">10-13</a>
<a href="#">Display the release and load ID</a>	<a href="#">10-14</a>
<a href="#">Create a single file for trace data</a>	<a href="#">10-15</a>
<a href="#">View the console.log file on a Windows PC</a>	<a href="#">10-16</a>



## Create a host trace file on a server

---

**Purpose** Use this procedure to turn on a host trace at a particular server and to create a host trace file for capturing information.

**Before you begin** Before you begin this task, ensure that the application is at run level 3.

**Task** Perform the steps below to create a trace file.

---

- 1 Enter the command `who -r` to check the current run level.

**Result:**

The run level number displays, such as `run-level 3`.

---

- 2 If the displayed run level is higher than 3, enter the command `init 3` to bring the application up to run level 3.
- 

- 3 Using the system console, log in to the primary host as `dacscan`.
- 

- 4 At the prompt, enter `cd /usr/dacscan/bin` to change to the directory containing the **tinfo** file.
- 

- 5 To edit the **tinfo** file, enter `vi tinfo`.
- 

- 6 In the **tinfo** file, locate a line containing the following format:  
**<servername> -1 0 <servername>. 0 Y**

**Important!** In your **tinfo** file, **<servername>** will be replaced with the actual server name.

---

- 7 To increase the trace level from 0 (the lowest level) to 5, press the **Esc** button, then type `: 1, $s/- 1 0/- 1 5/` then press **Enter**.

**Result:**

The lines containing those entries will be substituted with the higher trace level value, such as <servername> -1 5  
<servername>.0 y

- 8 Save and exit the file.

**Result:**

The file is saved with the new trace level.

- 9 At the prompt, enter **init 4** to bring the application up to run level 4.

**Result:**

Trace is turned on. A trace file is generated and contains a name in the following format: <servername>.<pid><host\_name>.

- 10 Verify that the trace file **/dacscan/trace/<servername>.<pid>** exists.

**Result:**

The file displays in the appropriate directory.

- 11 To decrease the trace level from 5 to 0, repeat steps [Step 4](#) to [Step 6](#) to bring up the `ti nfo` file.

**Result:**

The `ti nfo` file displays .

- 12 Press the **Esc** button, then type `: 1, $s/- 1 5/- 1 0/` then press **Enter**.

- 13 Write and save the file.

**Result:**

The file is saved with the new trace level.

To increase the available space in the `/dacscan/trace` directory, only retain the latest version of each file, and use `rm ul og. <old_date>` command to remove old trace files.

END OF STEPS



## Create Fault Management (FM) and Southbound/northbound trace file

---

**Purpose** Use this procedure to create an FM and southbound/northbound interface trace file on a particular server.

**Before you begin** Before you begin this task, ensure that the application is at run level 3.

**Task** Perform the steps below to create a FM and Southbound/northbound trace file.

---

- 1 Enter the command `who -r` to check the current run level.

**Result:**

The run level number displays, such as `run-level 3`.

---

- 2 If the displayed run level is higher than 3, enter the command `init 3` to bring the application up to run level 3.
- 

- 3 Using the system console, log in to the primary host as `dacscan`.
- 

- 4 At the prompt, enter `cd /usr/dacscan` and type `ls` to verify that the **NMSconfig** file exists.
- 

- 5
 

IF	THEN
the NMSconfig file exists,	proceed to the next step.

IF	THEN
the NMSconfig file does not exist,	create the file with the following information: EMSTRACE fm_notif -1 -1 0 EMSTRACE fm_gfs -1 -1 -1 EMSTRACE fm_rms -1 -1 -1 EMSTRACE fm_tt 0 -1 0 EMSTRACE fm_server -1 -1 0 EMSTRACE coproc -1 -1 0 EMSTRACE SBGW200LSrv -1 -1 -1 EMSTRACE Cor2tuxSvr -1 -1 -1 EMSTRACE brokerSrv -1 -1 -1 EMSTRACE I2KNL -1 -1 -1 EMSTRACE fm_fls -1 -1 0 EMSTRACE tmf_gateway -1 -1 0 EMSTRACE STMFGWSrv -1 -1 -1 EMSTRACE ExtObserverSrv -1 -1 -1 EMSTRACE ExtAlarmSynchSrv -1 -1 -1 TRACELOGSIZE 5000

6 Save and exit the file.

**Result:**

The file is saved with the new trace level.

7 At the prompt, enter **init 4** to bring the application up to run level 4.

**Result:**

Trace is turned on.

8 At the prompt, enter **cat NMSconfig** to verify that the trace file exists.

**Result:**

The file displays.

END OF STEPS



## Create a trace file on an HP-UX workstation or on a PC

---

**Purpose** Use this procedure to create a trace file for capturing information on an HP-UX workstation or a PC console.

**Important!** Trace files should never be removed.

**Before you begin** Before you begin this task, start the Navis™ Optical NMS application. See the [“Start Navis™ Optical NMS on an HP-UX workstation” \(3-10\)](#) and [“Start Navis™ Optical NMS on a Windows workstation \(PC\)” \(3-11\)](#) tasks for details.

**Task** Perform the steps below to turn create a trace file on an HP workstation or on a Windows PC.

---

1	IF	THEN
	<i>you want to</i> increase global tracing and turn on F-interface tracing <i>at an HP-UX</i> console,	log in to the HP-UX workstation (GUI machine) as dacsan.
	<i>you want to</i> increase global tracing and turn on F-interface tracing <i>at a PC</i> console,	log in to the PC as sa.

---

2	IF	THEN
	you would like to increase trace on an <i>HP-UX</i> workstation,	edit the <code>/usr/add-on/ui/jui/bin/run_jnm</code> file by changing <code>gt=1</code> to <code>gt=4</code> <code>fi nt. tr=4</code>
	tyou would like to increase trace on a <i>PC</i> ,	edit the <code>&lt;drive&gt;:\jui\bin\run_jnm.bat</code> file by changing <code>gt=1</code> to <code>gt=4</code> <code>fi nt. tr=4</code>

---

**3** Save the edited `run_jnm` or `run_jnm.bat` file.

---

**4** Shut down and restart the Navis™ Optical NMS GUI.

For instructions, see the [“Stop Navis™ Optical NMS” \(3-13\)](#), [“Start Navis™ Optical NMS on an HP-UX workstation” \(3-10\)](#), and [“Start Navis™ Optical NMS on a Windows workstation \(PC\)” \(3-11\)](#) tasks in this document.

**Result:**

Tracing is turned on and a trace file is generated.

---

- 5** Verify that the trace file exists.

**Result:**

The file displays in the appropriate directory.

END OF STEPS

---



## View the log files

---

**Overview** Operator transaction logs are stored in compressed format in the **/dacscan/log/data** directory with the following naming convention:

**<log-prefix>.<julian-date>.<hour>.<minute>**

The following is a list of log files:

- sys (System Event) - records all system error messages. File name is **nms.log.<hostname>**.
- dcs (Digital cross connect log) - records communication information with the DACS in the network. File name is **ne.log.<hostname>**.
- Notification log file - **notif.log.<hostname>**
- Orbix log file - **orbix.log.<hostname>**.
- HP client log file - File name is **console.log** and is stored at **/home/<user\_name>/NM/<workstationname>.<pid>/jui/logs \ /console.log**
- PC client log file - The file is stored at **<drive>:\jui\logs\<user>.log**

All log files are maintained up to seven days; the oldest file is overwritten first. One log file is retained for each day of the week.

**Log Files** All significant events associated with the database backup and transfer scheme are logged.

The events are also retained in log files in **/dacscan/tmp**.

### Log file management for joint workstations

Joint workstation logs record all ICA client sessions from a joint workstation. The log files for the joint workstation are not automatically deleted by the system. For space consideration, it is recommended that the system administrator or user manually delete the log files that are no longer necessary.

#### Location of log files

Joint workstation log files are located in **c:\jui\logs** and use the format **<username><win station name>#<a random number>** where:

- **<username>** is any valid user
- **<win station number>** is the console on which the GUI is run

- # is the actual character #, and
- <a random number> is any random number assigned (<999). The random number is attached to the log file to prevent a user with the same user ID from overwriting a log file that is already in use.



## View the log file on an HP workstation

---

**Purpose** Use this procedure to view the log file residing on an HP workstation.

**Task** Perform the steps below to view the log file.

---

- 1** Using the system console, log in to the primary host as dacscan  

---
- 2** Change to the directory containing the log file to be viewed. Type `cd /<full_directory_pathname> cd /<full_directory_path>`  
For example, type `cd /home/<user>/NM/<workstation>.<pid>/jui/logs/console.log`  

---
- 3** Enter **pg <logfile name>.log**

**Result:**

The contents of the log file is displayed.

END OF STEPS

---



## Clear trace files on a server

---

**Purpose** Use this task to clear log or trace files on a server.

**Important!** Before performing this task, be sure that you are in the correct directory, or a disaster may occur. All deleted files *will not* be recovered

**Task** Perform the steps below to clear log or trace files on a server.

---

**1** Using the system console, log in to the primary host as dacsan.

---

**2** At the prompt, type:

```
cd /dacsan/trace
```

**Result:**

The directory has changed to the one containing the trace files.

---

**3** At the prompt, type:

```
for i in `ls`  
do  
>$i  
done
```

**Result:**

The trace file's contents are cleared.

END OF STEPS

---



## Determine software patch

---

**Purpose** Use this task to determine which software patch is loaded.

**Task** Perform the steps below to determine which software patch is loaded.

---

**1** Using the system console, log in to the primary host as dacscan

---

**2** At the prompt, type `swl ist | grep PATCH`

**Result:**

A complete patch list displays.

END OF STEPS

---



## Display the release and load ID

---

**Purpose** Use this procedure to display the Navis™ Optical NMS release number and load ID.

**Task** Complete the steps below to display the Navis™ Optical NMS release number and load ID.

---

**1** Log into the server as **root** or **dacscan**.

---

**2** To display the release number, enter `cat /etc/dscan/release`.

**Result:**

The current release number is displayed.

---

**3** To display the load ID, enter `cat /etc/dscan/ws-nmsr-loadid`.

**Result:**

The current load ID is displayed.

END OF STEPS

---



## Create a single file for trace data

---

**Purpose** Use this task to create one file containing information from one or more trace files produced on the server.

**Task** Perform the steps below to copy trace source into one file.

---

**1** Using the system console, log in to the primary host as dacscan.

---

**2** At the prompt, type:

```
cd /dacscan/trace
```

**Result:**

The directory has changed to the one containing the trace files.

---

**3** At the prompt, type:

```
tar cvf trace.tar ./*
```

**Result:**

The files will be copied into a single file.

END OF STEPS

---



## View the console.log file on a Windows PC

---

**Purpose** Use this procedure to view the console.log file residing on a PC.

**Task** Perform the steps below to view the log file.

---

- 1 Log in to the PC as **sa**

---

- 2 Using Notepad or Wordpad, display the **console.log** file which resides in **<drive\_letter>:\jui\logs\**

**Result:**

The file displays.

END OF STEPS

---





# 11 Patch and Software Upgrade Tasks

## Overview

---

**Purpose** This chapter will provide Navis™ Optical NMS patch and upgrade information.

**Information** Information not available.

**Contents**

<a href="#">Patch information</a>	<a href="#">11-2</a>
-----------------------------------	----------------------



## Patch information

---

**Description** Information not available.





# Appendix A: Navis™ Optical NMS Filesystems

## Navis™ Optical NMS file systems

---

**Introduction** This appendix contains a list of the Navis™ Optical NMS file systems.

**List of file systems** The following lists the directory structure supported within Navis™ Optical NMS.

1. Root directory (*/*)
2. OS kernel (*/stand*)
3. Spool directories (*/var*)
4. Core OS components (*/usr*)
5. Optional software (*/opt*)
6. Provisioning documents directory (*/dacscan/prov*)
7. Alarms directory (*/dacscan/alarms*)
8. Three Oracle tablespace directories (*/oradb*, */oradb2*, */oradb3*)
9. Application logs directory (*/dacscan/log*)
10. Database redo logs and archives directory (*/dacscan/dbarch* and */dacscan/journal*)
11. Application users directory (*/dacscan/users*)
12. Application trace information directory (*/dacscan/trace*)
13. Temporary directory (*/tmp*)
14. Application temporary space (*/dacscan/tmp*)

15. Application software (**/usr/dacscan**)
16. Application software patch history (**/patch**)
17. Filesystem used for the PAMs feature (**/ITM\_QA**)





# Appendix B: Navis™ Optical NMS Configuration Parameters

## Overview

---

**Description** To change Navis™ Optical NMS configuration parameters, contact Lucent Customer Support.







# Glossary

## **A Action**

Order Action - Represents the work activities against a facility/circuit order.

### **Add Channel**

One direction of a bidirectional signal; a wavelength being added into the single flow.

### **Add Side**

Hardware that handles a signal coming in from the network to an end terminal.

### **ADM**

Add-drop multiplexer

### **Aggregate**

A collection of one or more network elements and/or aggregates. An aggregate is represented by a single icon on the Network Map.

### **AIS**

Alarm Indication Signal

### **AL**

Alarm List

### **Alarm**

An event, or a pair of events, that indicates there is a problem that must be resolved by the operator. Alarms appear in the Alarm List. There are different types of alarms, including current alarms, repeat alarms, and historic alarms.

### **Alarmed Object**

A network resource on which a problem exists or has existed, and on which a user needs to take action. The network resource can be a piece of equipment, a port, or a trail.

### **Archive**

The act of copying information to an external device. The file may then be referred to as an archive file.

**Area**

Networks managed by Navis™ Optical NMS can be subdivided into smaller, manageable networks called areas. An area is a collection of nodes and/or aggregates, and their associated links. An area is represented by a single icon on the Network Map. Subdividing a network into areas reduces overcrowding on the display and improves system performance because smaller amounts of information are exchanged by the subsystems.

**Assignable**

A characteristic of a trail set at the time of provisioning. In Navis™ Optical NMS, a trail should be set as assignable if it is expected that at least one client trail will be provisioned for it.

---

**B BBE**

Background Block Errors - An errored block not occurring as part of an SES.

**Black box**

A functional network unit, displayed on the Network Map, that is not monitored or controlled by Navis™ Optical NMS. An example of a black box is a non-Lucent network element.

**BLSR**

Bidirectional Line Switched Ring

---

**C CAC**

Circuit access code - A code unique to a particular circuit that equates to a particular Circuit Identification name for the same facility/circuit. The code is randomly generated in the circuit provisioning system. The CAC does not change during a facility's lifetime.

**Catalogued connection**

A connection that physically or logically exists in the network, and that is recorded in Navis™ Optical NMS.

**Channel**

When either a digital link, path, or facility is channelized, it is subdivided into channels. For Time Division Multiplexing (TDM) equipment, channels represent the time slots with which information is carried within a digital link or in a server trail. Channels are created by Navis™ Optical NMS for use during circuit/trail provisioning. When creating channels for digital links, depending on the network element capability, alternate channels are created. The channel is given an identity when it becomes either a provisioned path or facility, or a subdivision of a digital link, path, or facility.

**Channel Type**

Indicates the type of channel riding on a facility/circuit.

---

**Circuit**

A transmission path through the network, terminating at equipment at both the A and Z ends. The transmission path combines equipments and channels of facilities. The circuit has a defined purpose such as data, video, or voice.

**Circulate**

The act of moving the window at the bottom of a stack (of windows) to the top of the stack.

**CKT**

Circuit

**CLO**

Circuit Layout Order - Code (number) identifying a specific circuit layout order (configuration), and used as the work item tracking key for a circuit order.

**COI**

Complete Order/Item state - The last state in most circuit order life cycles.

**Cold backup**

A backup that is performed while Navis™ Optical NMS is not running.

**Combo circuit**

The SDH version of *one step combo* provisioning is an optional feature in which *24N*, *30N*, *480N*, *672N*, *672N*, and *1920N* circuits/paths can be provisioned without an explicit provisioning of *TUI2-VC11S*, *VC-12*, *VC-3*, *AU3S*, and *VC-4* respectively. These circuits/paths provisioned via *one step* provisioning are identified using *VC12S-24N*, *VC12S-30N*, *VC3S-480N*, *VC3S-672N*, *AU3S-672N* and *VC4S-1920N* respectively. The selection of either *TUI2-VC11S-24N*, *VC12S-30N*, *VC3S-480N*, *VC3S-672N*, *AU3S-672N* or *VC4S-1920N* for provisioning is the selection of *24N*, *30N*, *480N*, *672N*, *672N*, and *1920N* provisioning respectively.

**Connection**

Generic name for all transmission objects managed by Navis™ Optical NMS. A connection can be a trail or a subnetwork connection or a link connection.

**Console**

A local terminal which is dedicated to administering a single host machine, and connected directly via a console port.

**Controlled network element**

A network element controlled by Navis™ Optical NMS that displays on the network maps as nodes interconnected by digital links. These network elements are in constant communication with their EMS and are controlled by commands sent from the EMS. They also report and show alarms. *See* Network element.

**CORBA**

Common Object Resource Broker Architecture

**CTM**

Channel Terminations state - The state in a circuit order's life cycle where the user enters channel termination information.

**Current Alarm**

A new alarm received by, or generated by, Navis™ Optical NMS.

**Customer equipment**

*See* Equipment.

---

**D DA**

Digital Cross Connect Alarm - Displays the type of digital cross-connect alarms that are active on the port. Possible values are: E (equipment alarm), S (signal or loss of signal alarm), P (performance), M (multiple alarms).

**Days Past Due**

The number of calendar days (0-30) past the due date of a pending order.

**DB**

Database

**DB Sync**

Database Synchronization - Refers to the synchronization of digital cross-connect system databases with the Navis™ Optical NMS database.

**DCS**

Display Construction Set

**DD**

Due date - Date when the work requested by the order is to be completed.

**Default Weight**

Navis™ Optical NMS calculated link weight.

**Dense Wavelength Division Multiplexing (DWDM)**

A connection that combines multiple optical signals to increase capacity. These signals are amplified as a group and then transported over a single fiber.

**Digital link**

Fiber or electrical connections between two points. These transport facilities are assignable to high-order and low-order circuits to carry customer services.

---

Digital links can be of two types: Synchronous Digital Hierarchy (SDH) or Plesiochronous Digital Hierarchy (PDH).

- SDH digital links are synonymous with multiplexer sections. They connect two SDH network elements, black boxes or equipment.
- PDH digital links are asynchronous connections between two PDH ports of the network elements assignable to the PDH circuits.

**DISC**

Disconnect (improper disconnect) - Indicates whether a facility/facility channel has been improperly disconnected. If it has, a “D” appears in this field and Navis™ Optical NMS lists it as In-Effect.

**Domain**

A collection of network elements that can be assigned to specific users in “database partitioning.”

**Drop Channel**

One direction of a bidirectional signal; a wavelength being dropped from the single flow.

**Drop Side**

Hardware that handles a signal leaving an end terminal and heading out to the network.

**DTE**

Data Terminating Equipment

**DTS**

Digital Transmission System

**DWDM**

Dense Wavelength Division Multiplexing

**DXC**

Digital Cross-Connect System - A generic term for electronic cross-connect systems.

**DXC Model**

The model of the digital cross-connect system frame.

**DXCAM**

Digital Cross Connect Administration and Maintenance

---

**E E**

Specifies an alarm condition for the equipment assigned to an area.

**E1**

International facility on which DS0 channels are multiplexed up. The E1 carries 32 channels; channel 0 is used for signaling between DACS frames. Channel 16 may be used for carrying DS0 signaling. Otherwise, channel 16 may be used for customer service and signaling is carried inband.

**EBC**

Errored Block Count

**EML**

Element Management Layer

**EMS**

Element Management System

**Equipment**

Equipment is a network element that will never be controllable. Customer equipment does not report alarms and the Navis™ Optical NMS does not send provisioning commands to customer equipment. Customer equipment does not appear on the Network Map but does appear at the Graphical Layout of the provisioned digital link, path, and/or circuit. Although customer equipment is not displayed on the Network Map, it can be a place holder for end lines. *Also called* customer equipment.

**ES**

Errored Seconds - A one-second period with one or more errored blocks or at least one defect.

**Event**

Something that has happened — either in the transmission network, or in an EMS that Navis™ Optical NMS is managing, or within Navis™ Optical NMS itself. Examples of events include an operation that has succeeded, an operation that has failed, or failure of a network resource. Failure events give rise to alarms. Some events occur as a pair (a raise followed by a clear).

**External Address**

Address used by Navis™ Optical NMS in configuration management.

---

**F Facility**

A carrier of low-order trails. A facility is a channel-assignable trail.

**Fault State**

The state of an alarmed object with respect to its ability to carry traffic.

There are three fault state values:

- “Working” indicates that the object can carry traffic as intended.
- “Degraded” indicates that the object is still carrying traffic but has lost some protection or the quality of traffic is impaired.
- “Failed” indicates that the object is not carrying traffic.

**Faulted connection**

A connection that has an event correlated against it.

**FM**

Fault Management

**Form**

A task window where the user can enter data, perform commands, and view data from the system.

**Full Geographic Redundancy**

*See* Geographic Redundancy

---

**G Geographic domain**

A geographic domain is a partition of the network that is defined to include a group of network elements.

**Geographic domain partitioning**

Geographic Domain Partitioning is an optional feature that allows a network to be partitioned into geographic domains. A geographic domain is a partition of the network that is defined to include a group of network elements. Access to the geographic domains can be controlled on a per-user basis.

**Geographic redundancy**

Geographic redundancy provides site protection by maintaining a primary server and a standby server in separate locations and ensuring that the two servers are far enough apart so that natural disasters or adverse weather conditions cannot affect the primary and standby servers at the same time. The database of the standby server is maintained as a copy of the primary server. If the primary server fails, the standby server can be manually brought on-line.

There are two types of geographic redundancy:

- *simplified*, an optional Navis™ Optical NMS feature which uses nightly backups to update the database of the standby server.
- *full*, an optional Navis™ Optical NMS feature which uses a mirroring facility to update the database of the standby server every 30 minutes.

The two types of geographic redundancy differ in the frequency of database updates from the primary server to the standby server.

**GR**

Geographic Redundancy

**GUI**

Graphical User Interface

---

**H Historic alarm**

An alarm that has been deleted.

**Hot backup**

A backup that is performed while Navis™ Optical NMS is running.

---

**I IMP**

Implementation state - The state in the life cycle of a circuit order where the digital cross-connect system commands are implemented.

**IMR**

Implementation Roll state - The state in the life cycle of a circuit order that permits testing between the bridge and roll commands.

**Int ChType**

Internal Channel Type

**Integrated Transport Management - Cross-Connect Module (ITM-XM)**

An EMS to which Navis™ Optical NMS has direct access; no interface is required.

**Integrated Transport Management - Subnetwork Controller (ITM-SC)**

Previously known as Transport Management Application Group (TMAG).

**Internal Address**

Address sent to the network element via the ITM-SC (Element Management System), sometimes referred to as the software address of the port. This address is specified by the vendor.

**IOR**

Inter-operable Object Reference

**ITM-PRM**

Integrated Transport Management - Physical Resource Manager

---

**ITM-SC**

*See* Integrated Transport Management - Subnetwork Controller.

**ITM-XM**

*See* Integrated Transport Management - Cross-Connect Module.

---

**L LAY**

Layout state

**Local Terminal**

The terminal that resides next to the digital cross-connect in the central office and can be used to interface directly with the ITM-SC. Also known as “console terminal”.

**Location**

The location code of the equipment or digital cross-connect frame.

**LOF**

Loss of frame

**Log**

Record of past and/or current activities.

**Logical Port Address (External or Internal)**

Address of a channel (logical channel) riding on a higher-order system; the higher-order system is terminated on a physical port. There are two address formats: *network-level* (external) and *EMS-level* or *Network Element level* (internal).

**LOM**

Loss of multiframe

**LOP**

Loss of pointer

**LOS**

Loss of signal

**LSR**

Line-Switched Ring

---

**M MDI**

Miscellaneous Discrete Input

---

**MDO**

Miscellaneous Discrete Output

**MIB**

Management Information Base. A conceptually organized database that contains the management information accessed through SNMP.

**MODE**

Execution (Restoration) mode of a preplan circuit.

**MS**

Multiplex Section

**MS-SPRING**

Multiplex Section-Shared Protection Ring

**MSP**

Multiplex Section Protection

**MT**

Moyens de Transmission (Transmission Means)- A digital transmission medium (facility) of specific bandwidth between A Location and Z Location. Contract circuits are routed on MTs.

---

**N Navis Optical Element Management System (EMS)**

Navis<sup>™</sup> Optical EMS is a management system for the WaveStar product family, providing Element Management Layer (EML) management functions for WaveStar products. This system has configuration management, fault management, performance management, and security management functions.

**NE**

Network Element

**NEID**

Network Element Identifier of digital cross-connect systems under ITM-SC. (Same as **TID**.)

**Network**

A network carries a payload from one point to another. This payload can consist of data, voice, video, or images. Only circuits carry data. Digital links, facilities, and paths carry the circuits that carry the data.

**Network connection**

A transport connection that is connected at each end to a trail termination point.

**Network element**

A network element is a functional unit in a customer's network that the Navis™ Optical NMS displays on the Network Map and is monitored by the Navis™ Optical NMS user through the graphical user interface. Network elements supply switching, transmission, or multiplexing functionality in a network. A network element is either *controlled* or *noncontrolled*.

**Node**

Physical location representing any managed equipment, including regenerators.

**Non-assignable**

A characteristic of a trail set at the time of provisioning. In Navis™ Optical NMS, a trail should be set as non-assignable if it is expected that no client trail will be provisioned for it.

**Non-service-affecting alarm**

Alarms categorized as *non-service-affecting* indicate that at least one channelized facility, without provisioned circuits, is alarmed.

**Noncontrolled network element**

A noncontrolled network element is a Black box or Customer equipment that cannot be controlled by Navis™ Optical NMS. These network elements do not report alarms. Noncontrolled network elements support only manual provisioning and are listed in the database as a part of provisioning records. *See* Network element.

**NSA**

Non-service-affecting

**NTN**

Network Telephone Number - Used on a network to represent a physical address.

**NTN1**

Network Telephone Number - Primary telephone number of the digital cross-connect frame on the packet network.

**NTN2**

Network Telephone Number - Backup telephone number of the digital cross-connect frame on the packet network.

---

**O**   **OA**  
Optical Amplifier

**OCH**  
Optical Channel

**OFS**

Out-of-Frame Seconds

**OLS**

Optical Line System

**OMS**

Optical Multiplex Section

**Order**

Circuit Order number

**OTU**

Optical Translator Unit

---

**P Path**

An SDH transmission object between two SDH/virtual ports. There are high-order paths (VC-4) and low-order paths (VC-3 and VC-12).

**PDH**

Plesiochronous Digital Hierarchy

**Performance Monitoring (PM) Export**

An optional feature that allows performance-monitoring information to be exported to a predefined data file, which can be used for a variety of purposes.

**Physical Port**

The object responsible for the processing of the signal on the communication infrastructure.

- For an SDH port, the physical port is the processing from the fiber to the MS level.
- For a PDH port, the physical port is the PDH processing before insertion/extraction to the SDH.
- For an optical port, the physical port is the processing from fiber to the optical MS level.

**Physical Port Address (external or internal)**

Address of the port that physically terminates a facility.

**Plesiochronous Digital Hierarchy**

A transmission hierarchy wherein all the elements have the same nominal digital rate but are synchronized on different clocks (near synchronization).

**Port**

The port address of the facility.

**Post**

Command to initiate the continuity check of a facility/circuit layout across the network and to determine the route of a facility or circuit.

**Preplan Circuit**

The preplan circuit is the protecting circuit used to restore the service circuit. Also known as service circuit.

**Preplan Restoration**

An optional feature that allows a dedicated backup route to be specified for paths and circuits. When Preplan Restoration is used, a disrupted circuit is temporarily rerouted on an alternate route to restore service. The restoration process is triggered manually or automatically by an alarm. Once the alarm situation is resolved, the restored circuit can be manually reinstated to its original route.

**Primary Alarm**

An alarm that is a direct result of a failure in the network, such as Loss of Service (LOS).

**Protection Path**

The protection path is a backup route that protects the service path. The service path is the path that is standards operational.

**PSR**

Path-Switched Ring

**PTI**

Path Trace Identifier

**PTP**

Port

---

**R Receive Date**

The date an order is received.

**Redline**

Indicates whether circuit requires special service protection marking and treatment.

**Refederate**

The process of re-establishing the association between the Navis™ Optical NMS and Navis™ Optical EMS Orbix instances.

**Repeat Alarm**

A type of current alarm; a current alarm that has the same source as probable cause as another current alarm becomes a repeat alarm.

**Response Display**

You specify whether you want to see all responses from the frame, only your own responses, or your own and alarm responses.

**Ring**

Rings are formed when the digital links connect all participating network elements to form a closed loop.

**RNAME**

The system name that identifies the specific DTE to use to communicate with the packet network and the host name.

---

**S SA**

Service affecting

**Scheduled entity**

A provisioning assignment for a facility, path, or circuit that has been designated to occur at a future date and time. All assignments, with the exception of digital links, can be scheduled.

**SDH**

Synchronous Digital Hierarchy

**Section**

A trail in a section layer.

**Service Circuit**

*See* Preplan circuit.

**Service Domain**

A partition of the network that is defined to include a subset of a network's link connections (channels) and physical ports and their derived connectivity.

**Service domain partitioning**

Service Domain Partitioning is an optional feature that allows a network to be partitioned into service domains. A service domain is a partition of the network that is defined to include a subset of a network's link connections (channels) and physical ports and their derived connectivity. Access to the service domains can be controlled on a per-user basis.

**Service Path**

The path that is standards operational. The protection path is a backup route that protects the service path.

**Service-affecting alarm**

Alarms categorized as *service-affecting* indicate that at least one non-channelized facility is alarmed or that at least one channelized facility with provisioned circuits is alarmed.

**SES**

Severely Errored Seconds - A one-second period that contains 30% or more errored blocks or at least one defect. SES is a subset of ES.

**Shared Risk Group**

A group of entities that share the risk among fibers which use the same conduit.

**SI**

Session indicator - Type of session between the Navis™ Optical NMS and the DACS: DS (Navis™ Optical NMS Session) or VS (VCIT Session).

**Simplified Geographic Redundancy**

*See* Geographic Redundancy.

**SNC**

Subnetwork Connection

**SNCP**

Subnetwork Connection Protection

**SNMP**

Simple Network Management Protocol

**SNMS**

*See* Navis Optical Element Management System (EMS).

**Speed**

Baud rate

**Status**

Current condition or state of progress of an instance or object.

**Subnetwork**

A collection of interconnected network elements that has a certain behavior. The subnet concept allows Navis™ Optical NMS to manage fixed cross-connect systems and rings through SDH multiplexers. Also called a "subnet."

**Synchronous Digital Hierarchy**

A transmission hierarchy wherein all the elements are synchronized.

---

## **T Tandem connection**

A sublayer between the management system connection and path layer that allows users to monitor the quality of the signal transport within its managed domain. Tandem connections also provide users with information about the total quality of a signal before the signal travels from the user's managed network to a network managed by a different user. Users can create tandem connections on paths that do not terminate in its managed network but traverse its network from other user managed networks.

### **TCA**

Threshold Crossing Alert

### **TCAL**

Traffic Correlated Alarm List

### **TCM**

Tandem Connection Monitoring

### **Termination**

Port address

### **TID**

Target Identifier - The target identification name of the digital cross-connect frame, that is used in the network to identify a digital cross-connect frame. (Same as **NEID**.)

### **TMAG**

*See* Transport Manager Application Group.

### **TP**

Termination Point

### **Trail Termination Point**

The transport, trail termination, and adaptation functions that terminate a trail.

### **Transport Manager Application Group**

An interface that uses Lucent proprietary TMAG protocol to interface with the ITM-SC EMS.

### **Tributary Port**

Generally forms the add/drop side of an ISM. This is where signals going from the tributary side to the line side of an ISM get added, or where signals going from the line side to the tributary side of an ISM get dropped. The tributary ports terminate 2-Mb/s (CEPT-1 or VC-12), 140 Mb/s (CEPT-4 clear channel), or 155 Mb/s (STM-1 clear channel or TUG structured) signals.

**TTP**

Trail Termination Point

---

**U UAP**

Unavailable Period

**UAS**

Unavailable Seconds - A period containing 10 or more consecutive Severely Errored Seconds.

**UID**

User Identification - Host login of the user.

**Uncatalogued connection**

A connection that physically or logically exists in the network, and that is *not* recorded in Navis™ Optical NMS.

**Uncorrelated Alarm**

Specifies an alarm condition that exists on ports or network elements assigned to an area that does not terminate links, trails, or circuits in Navis™ Optical NMS.

**Uncorrelated Event**

An event that does not affect any trail provisioned in Navis™ Optical NMS.

**User defined area maps**

These maps allow a specific user to define which network elements to display on the screen within a submap. See *User defined submaps*.

**User defined sub maps**

These maps allow a specific user to define what areas to display on the screen. See *Area* and *User defined area maps*.

**User ID**

A login ID. Each user ID represents a person who has been granted access to use Navis™ Optical NMS.

**User Profile**

A user profile is an association of a list of tasks with a User ID. The user profile controls which tasks the user is allowed to perform.

---

**V VCIT**

Virtual Craft Interface Terminal

---

**Virtual Port**

Terminates the two line ports in a protection scheme. You enter the line port addresses in the normal manner. The virtual port address is in addition.

**Virtual Port Address (External or Internal)**

Addressing scheme that allows you to enter a virtual port address that controls the two line ports; the address allows one line port to be the service port and the other line port to be the protection port. Virtual port addressing is a protection scheme.

**VPN**

Virtual Private Network

---

**W Work Log**

The history of a work item; a log of significant operations performed on work items.

---

**X X.25**

A protocol for communication between packet-switched public data networks and user devices in the packet-switched mode. Recommendations for this protocol were developed by a group formerly known as the International Telegraph and Telephone Consultative Committee (CCITT), now known as the International Telecommunication Union Telecommunication Standardization Sector (ITU-TSS).



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