

***OnLine***  
***Element Management Software***  
***Installation and Administration Guide***

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# Chapter 1

## General Information

### 1.1 Introduction

OnLine is a network-element management application that provides extensive capabilities for monitoring, configuring, and testing a network of Integrated Multiple Access Communications Servers (IMACS). It normally installs on a single Sun Ultra workstation running HP OpenView Network Node Manager 5.x\* (NNM) under Solaris 2.x\*\* (see [page 2-1](#) for workstation requirements). For management of larger networks, it can also be installed in a distributed environment that utilizes additional Sun workstations to enhance performance.

OnLine uses NNM and Solaris services to implement a graphical user interface (GUI) for operators and administrators. It can be run from any remote workstation that has X-terminal access to the Sun workstation(s) on which it is installed. The following X-terminal software emulator has been tested and certified for use on a pc workstation running Windows 95:

- Exceed 5.X and 6.X from Hummingbird Communications Ltd.

This guide covers installation and administration of OnLine in a logical sequence that assumes the following personnel responsibilities (although one person could be responsible for all):

- Solaris system administrator
- OnLine administrator
- OnLine operator.

For information on operating OnLine, see the *OnLine Operator Guide* listed on [page 1-4](#).

*Note:* Although OnLine is very easy to use, installation and configuration of Solaris and NNM requires considerable familiarity with Solaris system administration. If you prefer, Premisys will configure your workstation and install the OnLine for a nominal fee. To arrange for this service, contact Premisys Technical Support (see [page 1-4](#)).

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\*. Version 5.0 or higher. To avoid potential Year 2000 problems, check with Hewlett Packard for information on any required upgrades (<http://www.hp.com/openview/products/yr2000.html>).

\*\* . Version 2.5 or higher. To avoid potential Year 2000 problems, it is recommended that you install Solaris 2.6. For Year 2000 compliance on Solaris 2.5 and prior, Y2000 patches (available from Sun) must be installed.

### 1.1.1 Solaris System Administrator

The Solaris system administrator has:

- Root login access to the Solaris system
- Sufficient Solaris and NNM training to perform the following tasks:
  - Install Solaris, HP OpenView, and OnLine on a Sun workstation.
  - Configure a TCP/IP connection to the telecommunications network(s) that OnLine will manage.
  - Establish Solaris user accounts for the OnLine administrator and operators.
  - Provide X-terminal access to the Sun workstation for all remote workstations from which OnLine will be run.
  - Start the NNM and OnLine processes.
  - Back up and restore NNM and OnLine files as required.

### 1.1.2 OnLine Administrator

The OnLine administrator has:

- Administrator login access to NNM and OnLine.
- Sufficient Solaris, NNM, and OnLine training to perform the following tasks:
  - Administer the OnLine database.
  - Generate OnLine Maps.
  - Create OnLine Operator accounts. Each account designates a specific network domain (sites and network access elements) that the operator is responsible for managing.
  - Generate OnLine Reports.

### 1.1.3 OnLine Operator

The OnLine operator has:

- Operator login access to OnLine.
- Sufficient Solaris and OnLine training to perform the following tasks:
  - Start and end an OnLine session from the Solaris command prompt.
  - Log in to OnLine.
  - Manage the sites and network access elements in the assigned domain.

## 1.2 Contents

- [Chapter 1, “General Information,”](#) describes document conventions used in this guide, its intended audience, and related documents. It also lists who to contact for training services and technical support.
- [Chapter 2, “Installation and Solaris Administration,”](#) describes how to install OnLine on the Sun workstation.
- [Chapter 3, “OnLine Processes,”](#) describes the processes that OnLine uses to implement its graphical user interface and network-element management capabilities.
- [Chapter 4, “OnLine Administration,”](#) describes the tasks for which the OnLine administrator is responsible.
- [Chapter 5, “Frequently Asked Questions,”](#) provides ancillary information about installing and configuring OnLine.
- [Appendix A, “Network Element Configuration Screens,”](#) provides configuration screens that show how to set up network elements for IP communications over an Ethernet network.
- [Appendix B, “Distributed Workstation Installation,”](#) describes how to install OnLine in a distributed environment in which subsets of the OnLine processes run under NNM on networked Sun workstations to reduce overhead and processing time.

## 1.3 Typographic Conventions

<b>Bold</b>	Used for command, function, and process names in narrative text. (In procedural text, <code>Fixed</code> or <b>Fixed Bold</b> is used in lieu of <b>Bold</b> where applicable).
<i>Italic</i>	In a command syntax description, indicates generic arguments or options; these should be replaced with user-supplied values. Also used for book titles, notes in the text requiring special attention, or to <i>emphasize</i> terms.
<b><i>Bold Italic</i></b>	Indicates a GUI menu selection (see “GUI Basics” in the <i>OnLine Operator Guide</i> for an overview of the OnLine graphical user interface). A colon (:) following a menu name indicates you select the menu, then the item. An item followed by an arrow (→) indicates that a drop down menu displays the next item.
<code>Fixed</code>	Indicates computer input or output, file names, path names, the contents of files or directories, or GUI window/dialog box names.
<b>Fixed Bold</b>	Indicates text typed by the operator.
[ ]	In a command syntax description, surrounds optional elements. Do not type the brackets themselves.

---

	In a command syntax description, separates alternate items. Only one of the alternate items may be used in any given invocation. Do not type the   character. In contexts other than syntax descriptions, the   character stands for the pipe feature, which directs the output of one command into another command.
{ }	In a command syntax description, groups alternate items. Do not type the braces themselves.
...	In a command syntax description, indicates an element that may be repeated. Do not type the dots themselves.

## 1.4 Related Documents

The *OnLine Operator Guide*, Publication No. 000-001130, provides detailed information on using OnLine to manage network access elements.

*HP OpenView Network Node Manager (NNM) documentation* can be downloaded at [http://ovweb.external.hp.com/lpe/doc\\_serv/](http://ovweb.external.hp.com/lpe/doc_serv/).

*Solaris documentation* can be downloaded at <http://docs.sun.com/ab2>. Titles that pertain to OnLine installation and administration include:

- *Solaris Advanced Installation Guide*
- *System Administration Guide*
- *TCP/IP and Data Communications Administration Guide*
- *Solaris User's Guide*
- *Solaris Common Desktop Environment User's Guide*

For a *Network Access Element Reference Guide*, contact the vendor from whom you purchased OnLine.

## **1.5 Training Services**

Premisys Communications, Inc. offers technical training for OnLine. For information regarding training, call 1-510-353-2738.

## **1.6 Technical Support**

If you purchased OnLine from Premisys Communications, Inc., call Premisys Technical Support at 1-510-353-7686 for information or technical assistance.

If you purchased OnLine from an authorized dealer, distributor, value added reseller (VAR) or other third party, contact that vendor for information or technical assistance.



# Chapter 2

## Installation and Solaris Administration

### 2.1 Introduction

This chapter describes how to install or update OnLine on a Sun Ultra Sparc workstation (see [Figure 2-1 on page 2-2](#)). The information applies both to a single-workstation configuration, and also to a central-workstation configuration in a distributed environment. If applicable, see [Appendix B](#) for information on:

- Installing subsets of OnLine processes on distributed workstations.
- Configuring central and distributed workstations for remote login privileges.

### 2.2 Workstation Requirements

[Table 2-1](#) lists requirements for the workstation on which OnLine is installed. The disk space and memory requirements are calculated by formulas given in the *HP OpenView Network Node Manager 5.0 Performance and Configuration Guide, March 1997*. A stand-alone configuration is used with the following functionalities of NNM: topology, event, agent, licensing, process control, object daemons, local network discovery and monitoring.

**Table 2-1. Workstation Requirements**

Nodes <sup>1</sup> (max.)	Operators (max.)	Workstation	Memory <sup>2</sup> (MB)	Disk Space <sup>3</sup> (MB)	Video Card
250	10	Sun Ultra 1-2	160	132.7	24-bit color
250	20	Sun Ultra 1-2	310	132.7	24-bit color

1. For networks greater than 250 devices please contact Premisys or your authorized dealer, distributor, value added reseller (VAR) or other third party vendor.
2. Memory requirements are given for simultaneous sessions of all operators.
3. This is the disk space required for NNM and OnLine only. The minimum recommended disk space for the OnLine workstation is 2 GB.

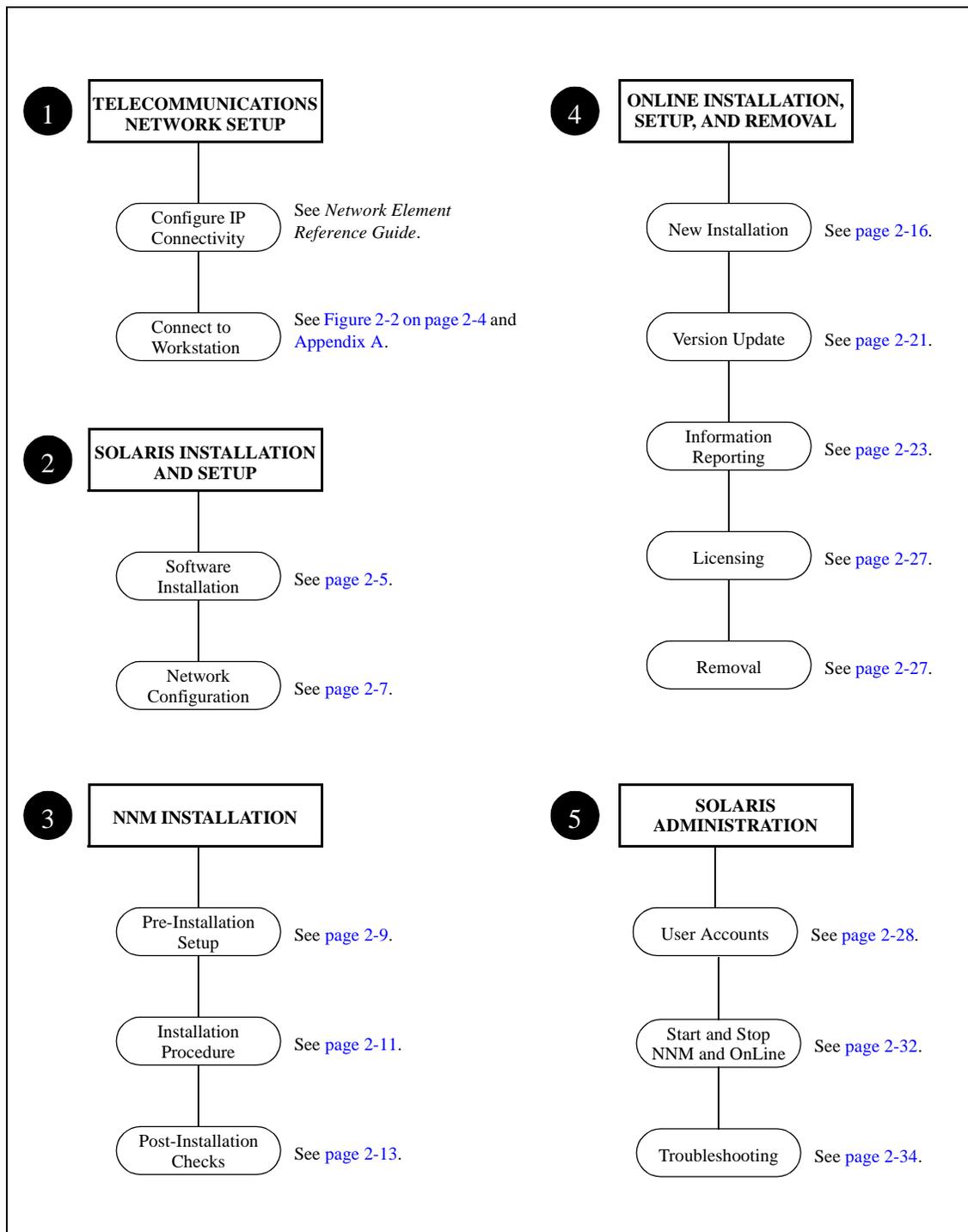


Figure 2-1. Software Installation and Workstation Configuration Overview

## 2.3 Installation Overview

The OnLine software uses HP OpenView Network Node Manager (NNM) and Solaris services for Internet Protocol (IP) communications with access elements in a telecommunications network.

### 2.3.1 Existing Workstation

If your organization has an existing UNIX network, ask the system or network administrator to accomplish the tasks listed below.

- Configure IP connectivity for the network access elements that OnLine is to administer (see your *Network Element Reference Guide*).
- Connect the OnLine workstation to the network (see [Figure 2-2 on page 2-4](#) for a test configuration example).
- Install Solaris and NNM on the workstation (see “[Existing Solaris Installation](#)” on [page 2-7](#) for hard disk drive partitioning considerations).
- Ping all network access elements that OnLine is to administer to verify IP connectivity.
- Install OnLine as described on [page 2-16](#).
- Create Solaris user accounts for all OnLine users (see [page 2-28](#)).
- If applicable, set up X-terminal connectivity for all remote workstations from which OnLine will be run.

**Note:** *The OnLine CD-ROM contains scripts that you can run to automatically set the environment necessary to install and run NNM and OnLine; see “[Pre-Installation Setup](#)” on [page 2-9](#) for information on using the scripts.*

### 2.3.2 New Workstation

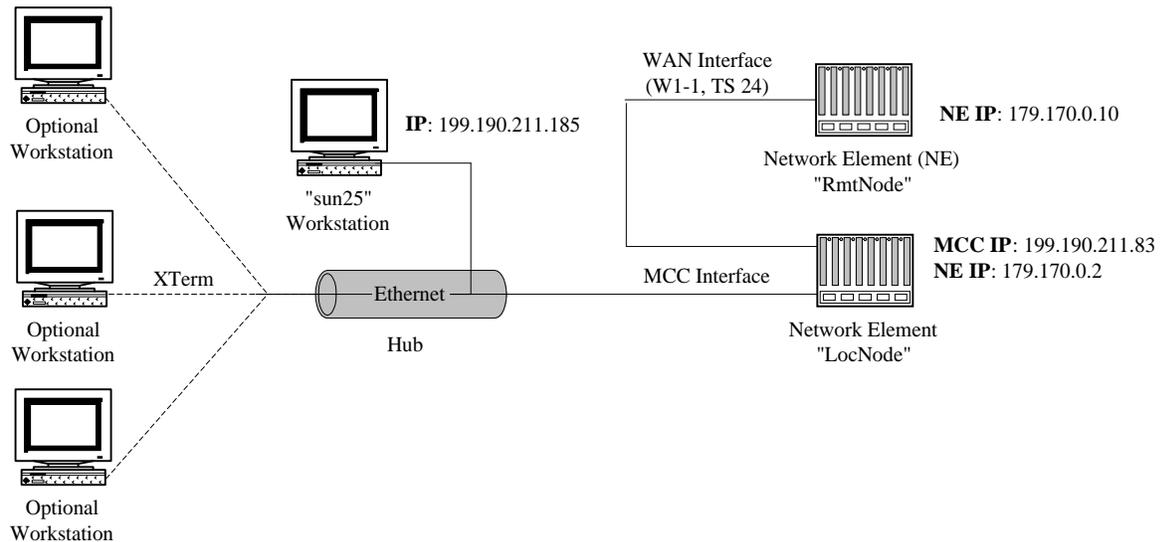
If your organization does not have a UNIX system or network administrator, the simplest way to set up the OnLine workstation is to use local files and static routes for IP communications with the access elements in the telecommunications network. (See the *Sun Microsystems TCP/IP and Data Communications Administration Guide* for information on network planning and IP address assignment.) To assist in this process, [Figure 2-2](#) shows a basic test configuration that you can build to experiment with network connectivity and verify OnLine performance.

### 2.3.3 Test Configuration

The test configuration shown in [Figure 2-2](#) consists of a two-node telecommunications network connected to the OnLine workstation through an Ethernet hub. The Management Channel Concentrator (MCC) card in the LocNode is the gateway for both nodes. It communicates with:

- the OnLine workstation via the Ethernet hub.
- the LocNode CPU directly.
- the RmtNode CPU via timeslot 24 of the W1-1 WAN interface.

See your *Network Element Reference Guide* for information on network-element connection and setup. [Appendix A](#) shows configuration screens for the MCC, CPU, and WAN cards used in the test configuration.



**Figure 2-2. Network Test Configuration**

## 2.3.4 Installation Instructions

The following paragraphs provide instructions for installing Solaris, NNM, and OnLine. Although some instructions are specific to the test configuration shown in [Figure 2-2](#), they also provide overviews that are applicable to other configurations.

*Note:* All information is provided for example purposes and is not intended to supersede instructions specified in the Solaris and NNM vendor manuals. If you intend to use the test configuration as a basis for configuring a working telecommunications network, **USE VALID IP ADDRESSES OBTAINED FROM THE InterNIC** (contact information is available at <http://rs.internic.net/contact.html>).

## 2.4 Solaris Installation

Installing Solaris on the workstation is the first step of the installation process. The following paragraphs provide general instructions for installing or updating the Solaris operating system from CD-ROM. For more detailed information, see “Planning Your Installation” in the *Solaris SMCC Information Library* booklet supplied with your workstation. The “Troubleshooting” section in the booklet provides information on resolving problems that you might encounter during installation.

### 2.4.1 Software Installation

If you are installing Solaris on the workstation for the first time, proceed to “New Installation”. If Solaris is already installed on the workstation, go to “[Existing Solaris Installation](#)” on page 2-7 to verify that the hard disk is partitioned adequately.

#### 2.4.1.1 New Installation

1. Turn on power to the workstation, insert the Solaris CD-ROM in the drive, and follow the instructions on the screen to start the Solaris Interactive Installation program.

2. Respond to the installation prompts.

**Note:** *The following recommendations apply specifically to the test configuration shown in Figure 2-2. If your configuration is different, respond as appropriate but be sure to create disk partitions that are at least as large as those listed below. These partition sizes are the minimum required to ensure successful installation of NNM and OnLine, as well any patches that might be required for future updates.*

Host Name	sun25
Networked	Yes
IP Address	199.190.211.185
Name Service	None
System Part of a subnet	No
Netmask	255.255.255.0
Allocate space for diskless...	Continue (no space allocated)
Software Group	Entire Distribution plus OEM support
Select Disks	Select disk
Preserve existing data	Preserve (to save) or Continue (to remove)
File Layout	Auto Layout
Create File System	Select all
Customize Disks	Disk 1
	/ 200
	/usr/openwin 322
	overlap 2028
	/var 178
	swap 240
	/opt 600
	/usr 286
	/export/home 200
	Capacity: 2028 MB
	Allocated: 2028 MB

**Note:** *Do not put a slash (/) in front of swap. Solaris uses the swap value to calculate the size required for the /tmp directory.*

Free:	0 MB
Rounding Error:	1 MB
Mount Remote File System	Continue
Profile	Begin Installation
Reboot	Auto Reboot

3. When Solaris installation is completed, log in to the Common Desktop Environment as **root**, open a terminal window, and enter the following to eject the CD-ROM.

```
# cd /
# eject
```

**Note:** *If desired, you can log in to the OpenWindows Desktop instead; the functionality is the same but some windows look different than those shown in this chapter.*

4. When the drive opens, remove the CD-ROM.

5. Continue with “Network Configuration” on page 2-7.

### 2.4.1.2 Existing Solaris Installation

If Solaris is already installed on the workstation, open a terminal window and use the `df -k` command to verify that the hard disk is partitioned adequately (see “Customize Disks” on the previous page for minimum partition sizes.). If you need to re-partition the hard disk, proceed as follows:

1. Insert the Solaris CD-ROM in the drive.
2. Log in as `root` and open a terminal window.
3. Enter `init 0` at the command prompt to place the workstation in the power down state.
4. When the `ok` prompt displays, enter `boot cdrom` to start the Solaris Interactive Installation program.
5. Respond to the installation prompts (see step 2 on the previous page).
6. When Solaris installation is completed, enter the following to eject the CD-ROM.

```
# cd /  
# eject
```

7. When the drive opens, remove the CD-ROM.

## 2.4.2 Network Configuration

To configure static routing for a network after installing Solaris, you need to update the `/etc/inet/hosts` file and build static routes to the access elements. For the network shown in Figure 2-1, you would do the following:

1. Log in to the Solaris Common Desktop Environment (CDE) as `root`. (If desired, you can log in to the OpenWindows Desktop instead; the functionality is the same but some windows look different than those shown in this chapter.)
2. Use `vi` or the Solaris Text Editor (see [page 2-8](#)) to add the following entries to the `/etc/inet/hosts` file.

```
179.170.0.2      LocNode  
179.170.0.10    RmtNode  
199.190.211.83  MCC          # gateway to nodes
```

3. After saving the file, use the `cat /etc/inet/hosts` command to verify that the information was entered properly.
4. Use the `route add` command to build a static route to LocNode and RmtNode.

```
# route add 179.170.0.0 199.190.211.83  
add net 179.170.0.0: gateway 199.190.211.83
```

5. Use the `netstat -r` command to verify the routes through the gateway(s). The information that will display depends on your workstation configuration, but each gateway you specified in the previous step must appear in the listing. For the following example, the entry `179.170.0.0 MCC UG 0 31` confirms the route through the MCC card to `LocNode (179.170.0.2)` and `RmtNode (179.170.0.10)`.

```
Routing Table:
Destination  Gateway      Flags  Ref    Use  Interface
-----
199.190.211.0  sun25        U       3       2    le0
179.170.0.0    MCC          UG      0      31
224.0.0.0      sun25        U       3       0    le0
localhost      localhost    UH      0     4148    lo0
```

6. If your workstation is connected to the telecommunications network, ping the MCC gateway and network elements to verify IP communications over the network. If not, be sure to ping them before starting OnLine.

```
# ping MCC
MCC is alive
# ping LocNode
LocNode is alive
# ping RmtNode
RmtNode is alive
```

Routes that you create using the `route add` command are temporary and do not reinstate when the workstation re-boots. If you want to create permanent routes that are automatically reinstated on re-boot, use a text editor to add the command(s) at the end of the `/etc/rc2.d/S69inet` file and press the Return key after typing the command. To add the MCC route at the end of the file for example, type `route add 179.170.0.0 199.190.211.83` and press the Return key.

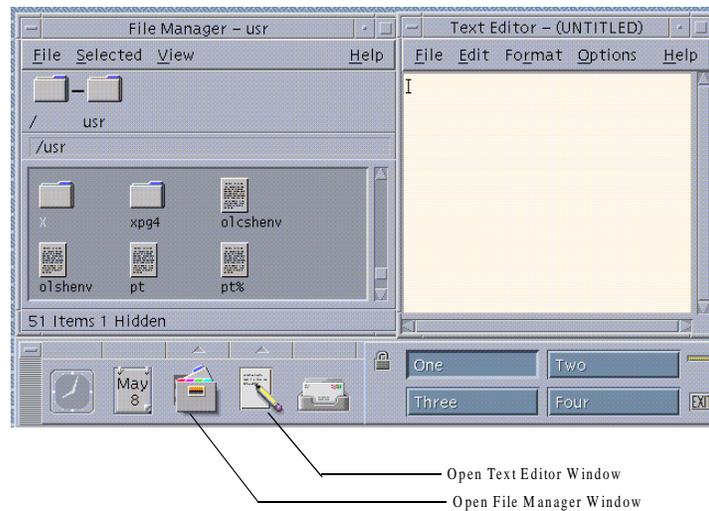
### 2.4.3 Solaris Common Desktop Environment

If you are new to the UNIX environment, you might find it easiest to use the Solaris Common Desktop Environment (CDE) tools to create, edit, manage text files.

- [Figure 2-3](#) shows CDE File Manager and Text Editor windows displayed above the Control Panel.
- To create a new text file:
  - Open a Text Editor window.
  - Type the text.
  - Save the file to the appropriate path.

**Note:** *The CDE File Manager uses text-page icons to identify data files and lightning-bolt icons to identify executable files. You can double click text files to open them, but DO NOT DOUBLE CLICK AN EXECUTABLE FILE UNLESS SPECIFICALLY INSTRUCTED TO DO SO.*

- To edit a text file, double click the file in a File Manager window. The file opens in a Text Editor window.



**Figure 2-3. Solaris CDE File Manager and Text Editor**

## 2.5 NNM Installation

After installing and configuring Solaris, you must install NNM before you can install OnLine. The following paragraphs provide general instructions for installing NNM on a Sun workstation that has no other HP OpenView products installed. For more detailed information, see the *HP OpenView Network Node Manager Products Installation Guide*.

**Note:** *Read Pre-Installation Setup instructions before performing NNM Installation.*

### 2.5.1 Pre-Installation Setup

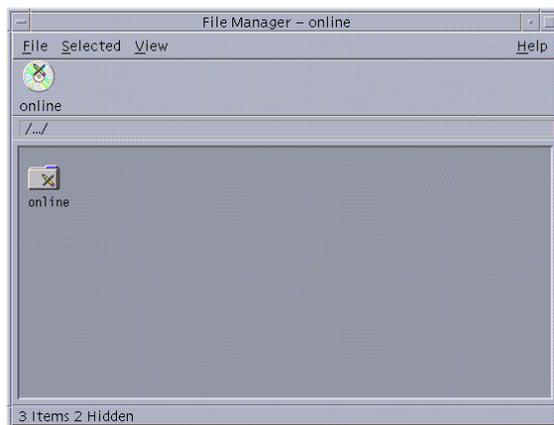
The OnLine CD-ROM includes a `prehpininstall.sh` script. If you are an inexperienced user, we strongly advise that you source this script before installing NNM. Sourcing the script ensures that:

- Semaphores are enabled on the Solaris workstation.
- The `root` environment includes the path statements required to administer NNM and OnLine.

**Note:** *When you install OnLine, you will be offered the choice of creating login files that set the proper environment automatically whenever `root` opens a terminal window.*

To source the OnLine `prehpininstall.sh` script, proceed as follows.

1. Log in as **root** and open a terminal window.
2. Insert the OnLine CD-ROM in the drive. The workstation auto-reads the CD-ROM and opens a File Manager OnLine CDROM window (see [Figure 2-4 on page 2-10](#)).



**Figure 2-4. File Manager OnLine CDROM Window**

3. Change to the installation directory on the OnLine CD-ROM.

```
# cd /cdrom/online/online
# pwd
/cdrom/online/online
# ls
install.sh      prehpinstall.sh  remove.sh       update.sh
online.tar      readme           rinstall
```

4. Source the `prehpinstall.sh` script.

```
# . ./prehpinstall.sh
```

If the script adds semaphore-enable statements to the `/etc/system` file, a message directs you to reboot the system. Enter `init 6` to reboot the system, then repeat this procedure starting at step 1.

```
You need to reboot your system before installing HPOV NNM v5.01.
access control disabled, clients can connect from any host
# init 6
```

If semaphore-enable statements are already in the file, a message confirms that you can start installation of NNM.

```
access control disabled, clients can connect from any host
Environment variables are set. Now you may start installation of HPOV NNM
v5.01.
```

5. The `prehpinstall.sh` script sets up a temporary environment for **root** that applies only to the terminal window from which it is run. Do one of the following:
  - Use this terminal window for the remainder of the NNM and OnLine installation procedures.

- Source the `prehpininstall.sh` script from each new terminal window you open.
6. Verify that the `root` environment includes the required paths (for some configurations, additional or duplicate paths might also be displayed):

```
# echo $PATH
.: /usr/dt/bin:/usr/openwin/bin:/bin:/usr/bin:/usr/ucb:/usr/sbin:/opt/OV
/bin:/opt/online/prnms/bin
```

7. Enter the following to eject the OnLine CD-ROM.

```
# cd /
# eject
```

8. When the drive opens, remove the OnLine CD-ROM.

## 2.5.2 Installation Procedure

Do the following to install NNM from CD-ROM. If a problem is detected, refer to the troubleshooting section in the *HP OpenView Network Node Manager Products Installation Guide*.

1. Verify that the `root` environment includes the required paths (for some configurations, additional or duplicate paths might also be displayed).

```
# echo $PATH
.: /usr/dt/bin:/usr/openwin/bin:/bin:/usr/bin:/usr/ucb:/usr/sbin:/opt/OV
/bin:/opt/online/prnms/bin
```

2. Insert the NNM CD-ROM in the drive. The workstation auto-reads the CD-ROM and opens a File Manager—NNM CD-ROM Window.
3. Change to the installation directory on the NNM CD-ROM.

```
# cd /cdrom/nnm_5_01
# pwd
/cdrom/nnm_5_01
# ls
OVDEPOT                SD-SETUP-HP9           allcommonremove
ReleaseNotes           SD-SETUP-SOLARIS      common.nnm
SD-SETUP-HP10          SD-SETUP-SOLARIS25    install
```

4. Run the NNM `install` script.

```
# ./install
The following languages are supported by software in this depot:
 1) English
 2) Japanese
Enter the number corresponding to the preferred language: 1

You could have purchased either of two NNM products.
Look at the product name on the Entitlement Certificate or the
Update Letter that was shipped to you with NNM to determine
which of the products to choose.

 1) Network Node Manager Enterprise product
 2) Network Node Manager 250 product

Enter the number corresponding to the product you purchased: 2

Do you want to install the manpages? (y|n): y
```

```

Do you want to install printable manuals? (y|n): n
This installation will put the following software on your system:

    HP OpenView Network Node Manager entry product for Solaris 2.x
    HP OpenView Network Node Manager man pages
    Emanate SNMP Simple Agent
    Emanate SNMP Simple Agent Man Pages

```

There are many factors that can affect the amount of time this installation could take. However, it averages around 30 to 45 minutes.

```

Do you want to continue with this installation? (y|n): y
The installation should complete without further interaction.

```

WARNING: do NOT use the kill command or Control-C to get out of this installation because that could leave your system in a corrupt state.

If you want to closely track the progress of the installation, open a separate terminal window and give the command:

```

    tail -f /var/adm/sw/swagent.log
Notes and warnings will be written to this log as well as
indications of the installation's progress.

```

```

===== 08/18/98 11:37:12 PDT BEGIN swinstall SESSION (setup mode)

```

```

    * The target "/" does not exist and will be created.
    * Analysis phase succeeded for "/".
    * Execution phase succeeded for "/".

```

```

    * More information may be found in the agent logfile (location
      is /var/adm/sw/swagent.log).

```

```

===== 08/18/98 11:44:24 PDT END swinstall SESSION (setup mode)

```

```

*****
* Your installation was successful. *
* *
* Review the notes and warnings from this installation *
* found in the last session recorded in the log file *
* (/var/adm/sw/swagent.log). Each session is marked with*
* the starting date and time. *
* *
* Please refer to your installation manual for more *
* information about what to do next. *
* *
*****

```

See the /var/adm/sw/swagent.log) for installation results.

5. Enter the following to eject the NNM CD-ROM.

```

# cd /
# eject

```

6. When the drive opens, remove the NNM CD-ROM.

## 2.5.3 Post-Installation Checks

After installing NNM, proceed as follows to verify that everything is configured properly for installation of OnLine. If a problem is detected, refer to the troubleshooting section in the *HP OpenView Network Node Manager Products Installation Guide*.

1. Verify that the root environment includes the required paths (for some configurations, additional or duplicate paths might also be displayed):

```
# echo $PATH
.: /usr/dt/bin: /usr/openwin/bin: /bin: /usr/bin: /usr/ucb: /usr/sbin: /opt/OV
/bin: /opt/online/prnms/bin
```

2. Enter **ovstart** to start the NNM processes and wait for the command prompt to display (approximately one minute). Then enter **ovstatus | more** to verify that all required NNM processes are running. (press the Spacebar or Return key to scroll the status messages).

```
# ovstart
# ovstatus | more
object manager name: OVSPMD
state:                RUNNING
PID:                  1401
exit status:         -

object manager name: ovwdb
state:                RUNNING
PID:                  1402
last message:        Initialization complete.
exit status:         -

object manager name: ovtrapd
state:                RUNNING
PID:                  1405
last message:        Initialization complete.
exit status:         -

object manager name: ovactiond
state:                RUNNING
PID:                  1406
last message:        Initialization complete.
exit status:         -

object manager name: pmd
state:                RUNNING
PID:                  1403
last message:        Initialization complete.
exit status:         -

object manager name: netmon1
state:                RUNNING
PID:                  1408
last message:        Initialization complete.
exit status:         -

object manager name: snmpCollect1
state:                RUNNING
PID:                  1409
last message:        Initialization complete.
exit status:         -
```

---

1. Only required for distributed NNM configurations; might not be running otherwise.

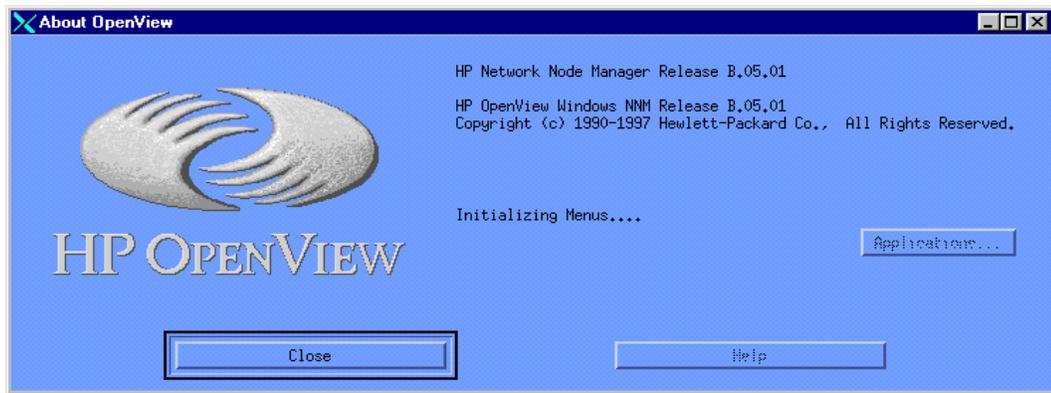
```

object manager name: ovtopmd
state:                RUNNING
PID:                 1407
last message:        Connected to native database: "openview".
exit status:         -

object manager name: OVLICENSEMgr1
state:                RUNNING
PID:                 1404
exit status:         -

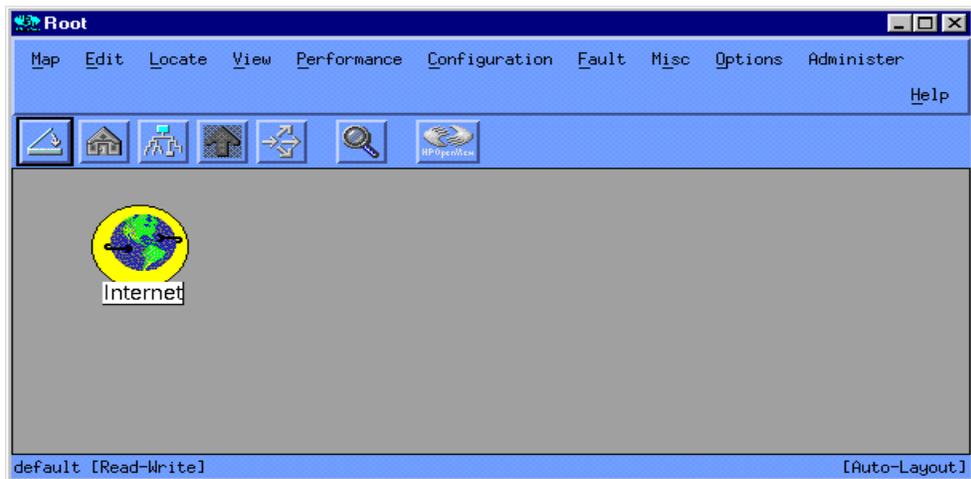
#
    
```

3. Enter `ovw&` to start the NNM GUI. The Start-Up Screen displays while NNM is loading the GUI (see [Figure 2-5](#)).



**Figure 2-5. Start-Up Screen**

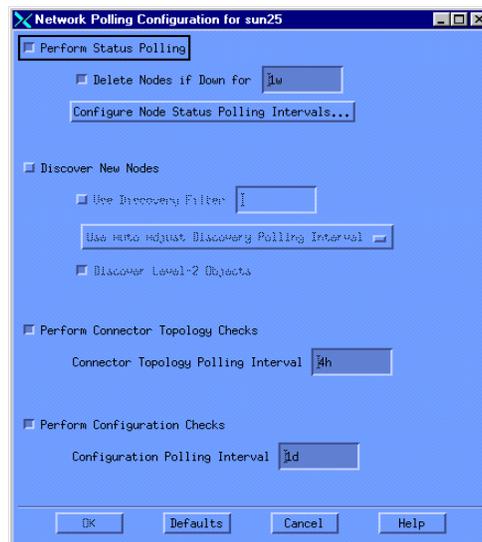
4. When NNM completes loading the GUI, the default Network Map displays (see [Figure 2-6](#)).



**Figure 2-6. Default Network Map**

1. OVLICENSEMgr will not be running if you have not yet installed an NNM permanent license.

5. While the HP Map is initializing, the message [Synchronizing] appears in the lower left corner of the window.
6. It is recommend you turn off NNM auto discovery to reduce network traffic and avoid potential bottlenecks. To do so, select **Options:Network Polling Configuration:IP**; the Network Polling Configuration window opens (see [Figure 2-7](#)).



**Figure 2-7. NNM Network Polling Configuration Window**

7. Click **Discover New Nodes** to remove the checkmark from the selection box and then click **OK** to close the Network Polling Configuration window.
8. Select **Map:Exit** to close the map window. An OpenView Windows Warning dialog box displays (see [Figure 2-8](#)).



**Figure 2-8. NNM Exit Warning Dialog Box**

9. Click **OK**. The dialog box, and all open windows close.

## 2.6 OnLine Installation or Update

The OnLine CD-ROM contains scripts for installing, updating and removing OnLine. The path is specified by setting `$PRNMS` before running a script. The default path `/opt/online/prnms` is set automatically when you run the `prehpininstall.sh` script to set the environment for `root` (see “[Pre-Installation Setup](#)” on page 2-9). If you want to install OnLine in a different location, see “[Do I Have to Install OnLine in the Default Directory?](#)” on page 5-1.

- Use the `install.sh` script for a first time installation of OnLine, or to update Release 1.0 to the current version (see “[New Installation](#)” below).
- Use the `update.sh` script to update Release 1.1 or later to the current version (see “[Version Update](#)” on page 2-21). You are offered the choice of preserving or overwriting the existing OnLine database.
- Use the `reinstall.sh` script to install a subset of the OnLine processes on a remote workstation (see [Appendix B](#) ).
- If necessary, use the `remove.sh` to remove OnLine (see “[OnLine Removal](#)” on page 2-27).

### 2.6.1 New Installation

The following paragraphs describe how to perform a first time installation of OnLine or update Release 1.0 to the current version. Before performing the installation:

- Read “Database Considerations” for instructions on how to save and restore an existing Release 1.0 database.
- Read “Installation Prompts” to become familiar with the choices that will be presented when you perform the “Installation Procedure”.

#### 2.6.1.1 Database Considerations

Do the following if you are updating OnLine Release 1.0 to the current version and want to save the existing database.

1. Before running the installation script, copy the OnLine database to the `/tmp` directory. If Release 1.0 was installed in the default directory, enter the following; otherwise, change `/opt/online/prnms` to the appropriate `pathname`.

```
# cp -r /opt/online/prnms/db /tmp/save_db
# ls /tmp/save_db
admin    work
```

2. After installing OnLine, remove the new database and restore the saved database to the `$PRNMS` directory.

```
# rm -r $PRNMS/db
#ls $PRNMS
bin  cards  config  flexlm  hist  images  log  ovw  uid
# cp -r /tmp/save_db $PRNMS/db
#ls $PRNMS
bin  cards  config  db  flexlm  hist  images  log  ovw  uid
```

### 2.6.1.2 Installation Prompts

The following paragraphs describe the two choices you are prompted to make when you run the OnLine installation script. **READ THIS INFORMATION AND MAKE YOUR DECISIONS BEFORE PERFORMING THE ONLINE INSTALLATION PROCEDURE.**

Default choices are shown in parenthesis. Press the Return key to accept the default choice or type the appropriate letter before pressing Return to select the alternate choice. To cancel a choice, press Ctrl-C to terminate the installation script.

#### Root Login files

The following prompt asks whether you want to create login files that set the proper environment for managing NNM and OnLine whenever `root` opens a terminal window.

```
Do you want to update the login files of root ? [y/(n)]
If you want to create login files for root, choose y. The following files
will be created: /.profile, /.cshrc, and /.kshrc.
```

If you want to create login files for `root`, type `y` before pressing the Return key. If login files already exist, the required statements will be appended at the end of the files.

If you do not want to create login files for `root`, press the Return key to choose `(n)`. To manage NNM and OnLine, `root` will have to set a temporary environment after logging in—either by entering the required PATH statements from the command line or by sourcing a file that contains these statements. See [“How Do I Create a Temporary Environment?”](#) on page 5-1 for details.

#### FLEXlm License Manager

The following prompt asks whether you want the OnLine license manager to be started automatically whenever the workstation boots.

```
If you are not using FLEXlm license manager for any other application
you may start OnLine license manager from a boot script.
Would you like to do that? (y/n)
```

Before making a choice, you must determine whether any other applications are currently using FLEXlm. To do so, use the `ps -ef | grep lmgrd` command to check whether the FLEXlm daemon `lmgrd` is running:

- If `lmgrd` is not running, you will see a response similar to the following:

```
# ps -ef | grep lmgrd
root 1994 1402 0 16:42:11 pts/4 0:00 grep lmgrd
```

- If `lmgrd` is running, the response will include additional entries such as those shown below:

```
#ps -ef | grep lmgrd
arkady 15250      1  0   Sep 17 ?          0:00 ./lmgrd -c
/opt/ems5.0/i5/prnms/config/license.dat -l
/opt/ems5.0/i5/prnms/log/
arkady 15251 15250  0   Sep 17 ?          0:00 olld -T sun25
6.1 4 -c /opt/ems5.0/i5/prnms/config/license.dat -lmgrd_port
69
#
```

*Note:* In the above example, the license file in use is for a development version of OnLine.

If `lmgrd` is running, choose `n` to prevent auto-start of the FLEXlm license manager at boot. See [“How Do I Start the FLEXlm License Manger?” on page 5-2](#) for instructions on how to set up the license manager after installing OnLine.

If `lmgrd` is not running, choose `y` to enable auto-start of the FLEXlm license manager at boot or `n` to reject this option. If you choose `n`, `root` will have to start the FLEXlm license manager after each boot of the workstation to enable use of OnLine. See [“How Do I Start the FLEXlm License Manger?” on page 5-2](#) for instructions.

### 2.6.1.3 Installation Procedure

Proceed as follows, to install OnLine. If a problem is detected, refer to [“Installation and Solaris Administration Troubleshooting” on page 2-34](#).

1. If this is a new installation, proceed to step 2. If you are updating Release 1.0, do the following before going to step 2.
  - a. Close all NNM GUI windows.
  - b. Enter `prstop` to stop the OnLine processes. Messages display in the terminal window while the processes are shutting down. When the messages pause, press the Return key to restore the command prompt and then enter `prstatus` to verify that the processes are not running.

```
# prstop
# prstatus
ps: -o is an invalid non-numeric argument for -p option
```

2. Verify that `$PRNMS` specifies the location to which you want to install OnLine. (You can set `$PRNMS` to the default location by running the `prehpininstall.sh` script; see [“Pre-Installation Setup” on page 2-9](#) for details).

```
# echo $PRNMS
/opt/online/prnms
```

3. Insert the OnLine CD-ROM in the drive and change to the directory that contains the Online scripts:

```
# cd /cdrom/online/online
# pwd
/cdrom/online/online
# ls
install.sh      prehpinstall.sh  remove.sh        update.sh
online.tar      readme           rinstall
```

4. Enter **cat readme | more** to display the `readme` file which contains the latest information about OnLine. Press the Spacebar or Return key to scroll through the file.

5. Enter **./install.sh** and respond to the installation prompts.

**Note:** *If lmgrd is running, make sure that you choose n at the prompt:*

```
You may start OnLine license manager from a boot script.
Would you like to do that? (y/n)
```

**This choice prevents auto-start of the FLEXlm license manager at boot.**

```
Your current PRNMS is : /opt/online/prnms. Press any key to continue >
Directory /opt/online/prnms does not exist; trying to create...
```

```
Do you want to update the login files of root ? [y/(n)]y
```

```
Checking for the Online-EMS Home Directory ...Not Found
OLH:
```

```
These are existing login files:
```

```
The OV_BIN environment variable is now: /opt/OV/bin
```

```
Press any key to continue >
To process the .profile ...
Creating it ...
To process the .kshrc ...
Creating it ...
To process the .cshrc ...
Creating it ...
Modification of login environment is completed.
If you are not using FLEXlm license manager for any other application
you may start OnLine license manager from a boot script.
Would you like to do that? (y/n)
```

```
y
Installing Online-EMS to the directory /opt/online/prnms
```

```
.
.
.
Online-EMS installation is now complete.
Please make sure that environment variable PRNMS
is set for all Online-EMS users as follows:
    for "sh" shell: PRNMS=/opt/online/prnms;export PRNMS
    for "csh" shell: setenv PRNMS /opt/online/prnms
```

```
Please also make sure that environment variables are set for HPOV NNM.
Best way to set these variables is to add following line to the user\'s
.profile or .login file:
```

```
    for "sh" shell: . /opt/OV/bin/ov.envvars.sh
    for "csh" shell: source /opt/OV/bin/ov.envvars.csh
```

6. Enter **prverify** to ensure that the installation was successful.

```
# prverify
Started verification of Online-EMS 1.x configuration ...
.
:
:
*****
Verification completed. No errors discovered.
*****
```

7. After verification is completed, change to the `$PRNMS` directory:

```
# echo $PRNMS
/opt/online/prnms
# cd $PRNMS
# pwd
/opt/online/prnms
```

8. Enter **ovstatus | more** to verify that all required NNM processes are running. The status messages that should display are shown on pages 2-13 and 2-14. Press the Spacebar or Return key to scroll the status messages. If any required NNM processes are not running, type **ovstart** and wait for the command prompt to display.
9. The FLEXlm license manager must be running in order to start the OnLine processes. If you chose the auto start option, the installation script should have started FLEXlm. If you did not choose the auto-start option, start FLEXlm now; see [“How Do I Start the FLEXlm License Manger?”](#) on page 5-2 for instructions.

To check whether FLEXlm is running, use the **ps -ef | grep lmgrd** command.

- a. If `lmgrd` is not running, you will see a response similar to the following:

```
# ps -ef | grep lmgrd
root 1994 1402 0 16:42:11 pts/4 0:00 grep lmgrd
```

- b. If `lmgrd` is running, the response will include additional entries such as those shown below:

```
# ps -ef | grep lmgrd
root 2499 2498 0 16:47:40 ? 0:00 olld -T sun25 6.1 4
-c /opt/online/prnms/config/license.dat -lmgrd_port /opt/on
root 2498 1 0 16:47:38 pts/4 0:00
/opt/online/prnms/flexlm/lmgrd -c
/opt/online/prnms/config/license.dat -l /opt/
root 2503 1402 0 16:48:34 pts/4 0:00 grep lmgrd
```

10. Enter **prstart** to start the OnLine processes. Messages display in the terminal window while the processes are initializing. When the messages pause, press the Return key to restore the command prompt and then enter **prstatus** to verify that the processes are running.

```
# prstart
.
.
# prstatus
USER STATE ELAPSED COMMAND
```

```

root      S      0:09 /opt/online/prnms/bin/pralarm
root      S      0:09 /opt/online/prnms/bin/prdb
root      S      0:09 /opt/online/prnms/bin/prnb

```

If any of the processes do not start, refer to [“Installation and Solaris Administration Troubleshooting” on page 2-34](#).

11. Enter the following to eject the OnLine CD-ROM:

```

# cd /
# eject

```

12. When the drive opens, remove the OnLine CD-ROM.

## 2.6.2 Version Update

To update OnLine Release 1.1 or later to the current version, proceed as follows:

1. Log in as `root`, open a terminal window and, if necessary, set the proper environment for managing NNM and OnLine.
2. Close all NNM GUI windows.
3. Enter `prstop` to stop the OnLine processes. Messages display in the terminal window while the processes are shutting down. When the messages pause, press the Return key to restore the command prompt and then enter `prstatus` to verify that the processes are not running.

```

# prstop
# prstatus
ps: -o is an invalid non-numeric argument for -p option

```

4. Verify that `$PRNMS` specifies the location at which OnLine is installed.

```

# ls $PRNMS
bin  cards  config  db  flexlm  hist  images  log  ovw  uid

```

5. Enter `$PRNMS/flexlm/lmutil lmstat` to check the status of the FLEXlm license manager. If it is running, shut it down before proceeding to the next step.

If the license manager is running, you will see a response similar to the following:

```

# $PRNMS/flexlm/lmutil lmstat
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Sun 9/13/1998 14:41

License server status: 27000@sun25
License file(s) on sun25: /opt/online/prnms/config/license.dat:

sun25: license server UP (MASTER) v6.1

Vendor daemon status (on sun25):

olld: UP v6.1
#

```

If the license manager is not running, the response will be:

```
# $PRNMS/flexlm/lmutil lmstat
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Sun 9/13/1998 14:55

Error getting status: Cannot find license file -1,359:2 (No such file or
directory)
#
```

To shut down the license manager, enter **\$PRNMS/flexlm/lmutil lmdown**:

```
# $PRNMS/flexlm/lmutil lmdown
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.

      Port@Host          Vendors
1) 27000@sun25          olld

Are you sure (y/n)? y
Shut down FLEXlm server on node sun25
      1 FLEXlm License Server shut down
#
```

6. Insert the OnLine CD-ROM in the drive and change to the directory that contains the Online scripts:

```
# cd /cdrom/online/online
# pwd
/cdrom/online/online
# ls
install.sh      prehpininstall.sh  remove.sh        update.sh
online.tar      readme             reinstall
```

7. Enter **cat readme | more** to display the `readme` file which contains the latest information about OnLine. Press the Spacebar or Return key to scroll through the file.
8. Enter **update.sh** to install OnLine in the directory specified by `$PRNMS`. You will be offered the option of saving or overwriting the existing database. When prompted, enter **y** to save the database or **n** to overwrite the database.

```
# ./update.sh
Installing Online-EMS to the directory /opt/online/prnms
The database of previous OnLine EMS installation is found. Replace?
(y/n)
n
x bin, 0 bytes, 0 tape blocks
.
.
.
Online-EMS installation is now complete.
Please make sure that environment variable PRNMS
is set for all Online-EMS users as follows:
      for "sh" shell: PRNMS=/opt/online/prnms;export PRNMS
      for "csh" shell: setenv PRNMS /opt/online/prnms

Please also make sure that environment variables are set for HPOV NNM.
Best way to set these variables is to add following line to the user\'s
.profile or .login file:
      for "sh" shell: . /opt/OV/bin/ov.envvars.sh
      for "csh" shell: source /opt/OV/bin/ov.envvars.csh
#
```

9. Change to the `$PRNMS` directory:

```
# echo $PRNMS
/opt/online/prnms
# cd $PRNMS
# pwd
/opt/online/prnms
```

10. You must restart the FLEXlm license manager before you can start the OnLine processes. Do the following:
- If auto-start of the license manager at boot is enabled, reboot the workstation.
  - If auto-start of the license manager at boot is not enabled, restart the license manager manually.

11. Enter `ovstatus | more` to verify that all required NNM processes are running. The status messages that should display are shown on pages 2-13 and 2-14. Press the Spacebar or Return key to scroll the status messages. If any required NNM processes are not running, type `ovstart` and wait for the command prompt to display.

12. Enter `prstart` to start the OnLine processes. Messages display in the terminal window while the processes are initializing. When the messages pause, press the Return key to restore the command prompt and then enter `prstatus` to verify that the processes are running.

```
# prstart
.
.
# prstatus
USER STATE      ELAPSED COMMAND
  root      S 009 /opt/online/prnms/bin/pralarm
  root      S 0:09 /opt/online/prnms/bin/prdb
  root      S 0:09 /opt/online/prnms/bin/prnb
```

If any of the processes do not start, refer to [“Installation and Solaris Administration Troubleshooting” on page 2-34](#).

13. Enter the following to eject the OnLine CD-ROM.

```
# cd /
# eject
```

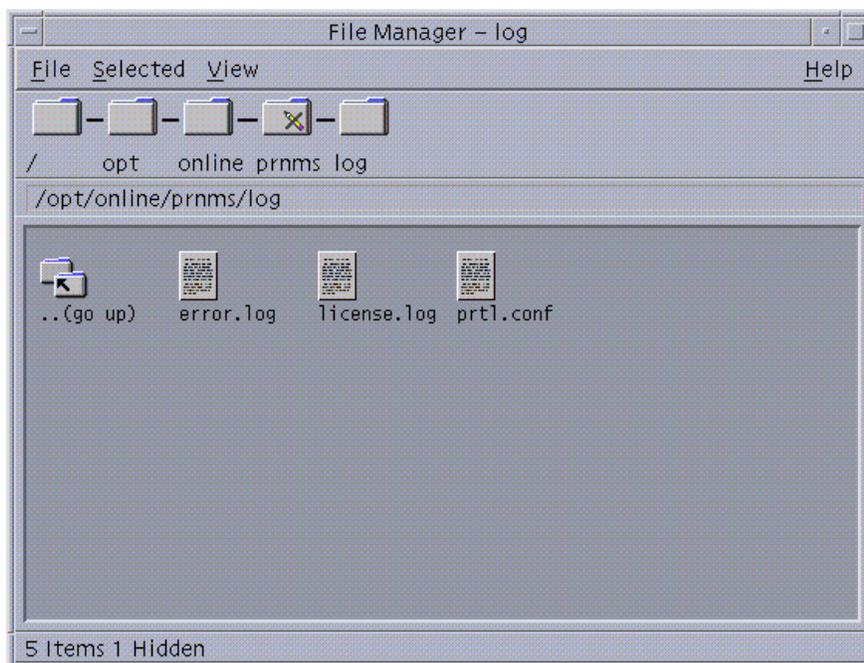
14. When the drive opens, remove the OnLine CD-ROM.

## 2.7 OnLine Information Reporting

OnLine provides extensive information reporting features. When you install or update OnLine, the `prt1.conf` file in the `$PRNMS/log` directory (see [Figure 2-9](#)) is pre-configured to specify two log files for information reporting and to direct Trace Messages to the terminal window from which you start the OnLine processes. The two log files are `$PRNMS/log/audit.log` and `$PRNMS/log/error.log`; they are created automatically

when OnLine first writes information to them and can be viewed using a text editor or the `cat filename | more` command. The Trace Messages can be reviewed by scrolling the terminal window display.

- `audit.log` – logs all changes made to the OnLine database (which is the repository for network-configuration and user-account data).
- `error.log` – logs error messages intended for use by system administrators and support personnel in resolving system conflicts that could degrade or impede OnLine operation.
- Trace Messages – report information intended for use by developers in analyzing OnLine performance, execution, and system integration.



**Figure 2-9. OnLine \$PRNMS/log Directory**

The following paragraphs describe how to edit the parameter settings in the `prt1.conf` file to change the information-reporting levels or destinations. The default parameter settings are `PLA=audit.log` and `PLD=error.log`.

### 2.7.1 Audit Messages

The `PLA` parameter setting in the `prt1.conf` file specifies the destination to which database audit messages are written. The default value `PLA=audit.log` directs OnLine to write the audit messages to the `$PRNMS/log/audit.log` file.

- If you prefer that OnLine write database audit messages to a different file, change the `PLA` parameter setting to `PLA=absolute_pathname`. For example, to write the information to an audit log file located in the `/tmp` directory, change the parameter setting to `PLA=/tmp/audit.log`. OnLine automatically creates the specified file if it does not already exist.
- If you prefer that OnLine display the database audit messages in the terminal window from which the OnLine processes are started, delete the line that contains the `PLA` parameter setting.

## 2.7.2 Error Messages

The `PLD` parameter setting in the `prt1.conf` file specifies the destination to which error messages are written and the `PLL` parameter setting specifies the severity level for error reporting. The default value `PLD=error.log` directs OnLine to write the error messages to the `$PRNMS/log/error.log` file. The `PLL` parameter defaults to `PLL=notice` when an absolute setting is not specified.

- To change the error logging level, add a line in the `prt1.conf` file that sets the `PLL` parameter to one of the values listed below. The list is arranged in descending order of severity. Each setting automatically includes all severity levels above it. For example, to enable logging of all error messages, set `PLL=info`; to enable logging of only warning, serious, and critical error messages, set `PLL=warning`; and so forth.
  - `PLL=crit` – Log unrecoverable errors (such as file corruption) which can cause OnLine processes to terminate.
  - `PLL=err` – Log serious but recoverable errors (such as disk-full condition and error return codes from system calls and third party APIs).
  - `PLL=warning` – Log application-level discrepancies (i.e., rule file mismatches or SNMP error returns).
  - `PLL=notice` – Log special workarounds (such as retries with `bind [2]` call, or restoring to local configuration files if the database server is not available).
  - `PLL=info` – Log normal application execution stages (such as starting and finishing processes, launching child processes, and accepting connections).
- If you prefer that OnLine write error messages to a different file, change the `PLD` parameter setting to `PLD=absolute_pathname`. For example, to write the information to an error log file located in the `/tmp` directory, change the parameter setting to `PLD=/tmp/error.log`. OnLine automatically creates the specified file if it does not already exist.
- If you prefer that OnLine display the error messages in the terminal window from which the OnLine processes are started, delete the line that contains the `PLD` parameter setting.

### 2.7.3 Trace Messages

The `PTD` parameter setting in the `prt1.conf` file specifies the destination to which trace messages are written and the `PTL` parameter setting specifies the severity level of the trace messages. The unspecified default value for `PTD` directs OnLine to display the trace messages in the terminal window from which the OnLine processes are started. The `PTL` parameter defaults to `PTL=notice` when an absolute setting is not specified.

- To change the trace logging level, set the `PTL` parameter to one of the values listed below. The list is arranged in descending order of severity. Each setting automatically includes all severity levels above it. For example, to enable logging of all trace messages, set `PTL=info`; to enable logging of only warning trace messages, set `PTL=warning`; and so forth.
  - `PTL=warning` – Log application errors (such as failing memory allocation, unexpected internal data structure states, and so forth).
  - `PTL=notice` – Log special or unusual situations (such as breaking a lock on a timeout or retrying a remote request).
  - `PTL=info` – Log normal module execution information (which might be useful for diagnosing and localizing a problem).
  - `PTL=debug` – Log detailed dumps of internal data structures (which are intended to aid a developer during source-code debugging).
- If you prefer that OnLine write trace messages to a log file, add a line in the `prt1.conf` file that sets `PTD=absolute_pathname`. For example, to write the information to a trace log file located in the `$PRNMS/log` directory, change the parameter setting to `PTD=$PRNMS/log/trace.log`. OnLine automatically creates the specified file if it does not already exist.

## 2.8 TFTP Server Option

OnLine can provide NVRAM backup and restore access to a tftp server for applicable network access elements (see the *OnLine 1.2 Release Notes*). Although tftp server software is not supplied with OnLine, it is readily available in commercial, shareware, and freeware versions. The software can reside on the OnLine workstation, or on any other workstation that has IP connectivity to the OnLine workstation.

After installing and configuring the tftp server, provide the following information to each OnLine operator that is responsible for NVRAM backup and restore:

The IP address of the workstation on which the tftp server resides.

The naming convention to use for NVRAM backup files.

## 2.9 OnLine License Upgrade

OnLine is supplied with a permanent license that allows two user accounts (one administrator and one operator) specifying a total number of 2 or less network access elements. Contact the vendor from which you purchased OnLine for information on upgrading the license.

## 2.10 OnLine Removal

To remove OnLine, do the following:

1. Log in as `root`, open a terminal window and, if necessary, set the proper environment for managing NNM and OnLine.
2. Close all NNM GUI windows.
3. Enter `prstop` to stop the OnLine processes. Messages display in the terminal window while the processes are shutting down. When the messages pause, press the `Return` key to restore the command prompt and then enter `prstatus` to verify that the processes are not running.

```
# prstop
# prstatus
ps: -o is an invalid non-numeric argument for -p option
```

4. Verify that `$PRNMS` specifies the location at which OnLine is installed.

```
# ls $PRNMS
bin cards config db flexlm hist images log ovw uid
```

5. Insert the OnLine CD-ROM in the drive.

6. Change to the directory that contains the Online scripts:

```
# cd /cdrom/online/online
# ls
install.sh online.tar readme      remove.sh  update.sh
```

7. Enter `remove.sh` to remove the OnLine from the directory specified by the environment variable `PRNMS`. When prompted, type `y` or `n` to save or remove the database and then press the `Return` key.

```
# echo $PRNMS
/opt/online/prnms
# remove.sh
Removing Online-EMS from the directory /opt/online/prnms
Do you want to save your Online-EMS database? (y/n)
y
OK, Online-EMS database will not be removed. Deinstallation is in
progress ...
cd /opt/online/prnms
.
.
.
Removal is completed.
```

8. Enter the following to eject the OnLine CD-ROM.

```
# cd /
# eject
```

9. When the drive opens, remove the OnLine CD-ROM.

## 2.11 Solaris User Accounts

Each OnLine user should have a Solaris account that sets the proper environment at login. After OnLine is installed, root can run the `prlogin` script to create new user accounts or modify existing ones. All accounts that are created include start-up files that automatically set the proper environment for running OnLine when the user opens a terminal window after logging in. You are offered the choice of assigning the user to a group. It is recommended that you assign OnLine administrators to the `oladmin` group and OnLine operators to the `online` group.

You can also create user accounts using the Solaris Admin Tool. If you do so, however, you are responsible for setting the proper environment in the user start-up file(s). Alternatively, the user can set a temporary environment after logging in—either by entering the required PATH statements from the command line or by sourcing a file that contains these statements. See [“How Do I Create a Temporary Environment?” on page 5-2](#) for details.

To delete a user account, use the Solaris Admin Tool (see [page 2-31](#)).

### 2.11.1 Creating a New OnLine Administrator Account

Do the following to create a new OnLine administrator account.

1. Log in as `root`, open a terminal window and, if necessary, set the proper environment for managing NNM and OnLine.
2. Verify that `$PRNMS` specifies the location at which OnLine is installed.

```
# ls $PRNMS
bin  cards  config  db  flexlm  hist  images  log  ovw  uid
```

1. Change to the directory that contains the `prlogin` script.

```
# cd $PRNMS/bin
# ls
pradmin  prcom  prlogin  prnb      prpp      prstatus  prtest  prview
pralarm  prdb   prmap   prnotes  prstart   prstop    prverify
```

2. Execute the `prlogin` script.

```
# ./prlogin
```

3. Enter `1` to create a new account when prompted to choose `NEW`, `UPDATE`, or `CANCEL`.

```
Starting User-Account-Administration for Online-EMS 1.1 ...
```

You have two choices to prepare a user account for Online-EMS 1.1:

1. NEW - Create a new user account on Unix and initialize its environment settings for Online-EMS.
2. UPDATE - Use an existing user account and modify its environment settings for Online-EMS.
3. CANCEL - Do nothing

Please select your choice [ enter 1, 2, or 3 ] : 1

Checking for the OnLine Home Directory ...OK  
OLH: /opt/online

4. Enter a *login\_id* for the user when prompted to supply a user name.

IMPORTANT: The user name should be a single word with 2 to 8 lowercase letters or digits. Any input violating this rule may result in unpredictable problem

Please enter the desired user name: oladmin

Checking for an available User ID .....OK

5. Press the Return key to accept the suggested user ID unless you want to change it.

The next available user ID number is 1008  
Do you want to change this user ID number ? [y/(n)]

To change the user ID, choose **y** and then enter the desired user ID.

Do you want to change this user ID number ? [y/(n)]

Enter the desired 'oladmin' ID number :

6. Choose **y** at the next prompt to assign the user to the OnLine Administrator group. To confirm your choice, choose **n** when asked if you want to change the group.

Do you want to create the user account for administration ? [y/(n)]y

Then, the default group for the new user is : oladmin  
You are supposed to accept it, otherwise,  
the new user does not belong to OnLine-EMS.

Do you want to change the group ?  
[y/(n)]n

7. By convention, a user's home directory is /export/home/login\_id. Press the Return key to accept this default unless your organization uses a different convention.

Do you want to change /export/home/oladmin for home directory? [y/(n)]

If you want to change the home directory, type **y** and press the Return key. You will be prompted to choose a directory location within the existing file system.

8. When the prlogin script completes, it displays information about the account that was created.

user Name ..... oladmin

```

user ID #..... 1008
group ID # ..... 17 [oladmin]
home directory ..... /export/home/oladmin
using OnLine from ..... /opt/online

```

User Account Added

## 2.11.2 Creating a New OnLine Operator Account

To create a new OnLine operator account, proceed as directed in the previous paragraph except for step 6. Press the Return key to change the group when asked whether you want to create an administrator account.

```
Do you want to create the user account for administration ? [y/(n)]
```

```
Then, the default group for the new user is :   online
You are supposed to accept it, otherwise,
the new user does not belong to OnLine-EMS.
```

```
Do you want to change the group ? [y/(n)]n
```

```
... the group already existing
.
.
.
user Name ..... olop
user ID #..... 1009
group ID # ..... 16 [online]
home directory ..... /export/home/olop
using OnLine from ..... /opt/online

```

User Account Added

## 2.11.3 Modifying an Existing User Account

Do the following to modify an existing user account. The NNM and OnLine path statements will be appended at the end of the current login file(s).

1. Change to the directory that contains the `prlogin` script.

```

# cd $PRNMS/bin
# ls
pradmin  prcom  prlogin  prnb    prpp    prstatus  prtest  prview
pralarm  prdb   prmap    prnotes  prstart  prstop   prverify

```

2. Run the `prlogin` script.

```
# ./prlogin
```

3. Enter **2** when prompted to choose `NEW`, `UPDATE`, or `CANCEL`.

```
Starting User-Account-Administration for Online-EMS 1.1 ...
```

```
You have two choices to prepare a user account for Online-EMS 1.1:
```

1. `NEW` - Create a new user account on Unix and initialize its environment settings for Online-EMS.

```
2. UPDATE - Use an existing user account and modify its environment
           settings for Online-EMS.
```

```
3. CANCEL - Do nothing
```

```
Please select your choice [ enter 1, 2, or 3 ] : 2
```

```
Checking for the OnLine Home Directory ...OK
OLH: /opt/online
```

4. Press the Return key at the next prompt to access the list of user accounts on the workstation. Then enter the name of the account you want to modify.

```
To update only the current account, press 'y';
Otherwise, press 'n' or 'RETURN'
```

```
Do you want to update only current account ? [y/(n)]n
```

```
Checking for the OnLine Home Directory ...OK
OLH: /opt/online
```

```
There are following users on this workstation :
```

```
root daemon bin sys adm lp smtp uucp nuucp listen nobody noaccess
nobody4 pdemo arkady olnetop nwolop modbol oladmin olop
```

```
Among them, the following users belong to OnLine-EMS :
```

```
olnetop nwolop olop oladmin
```

```
Please enter the name of the user to be updated : arkady
```

```
Processing the login files ...
```

```
.
.
```

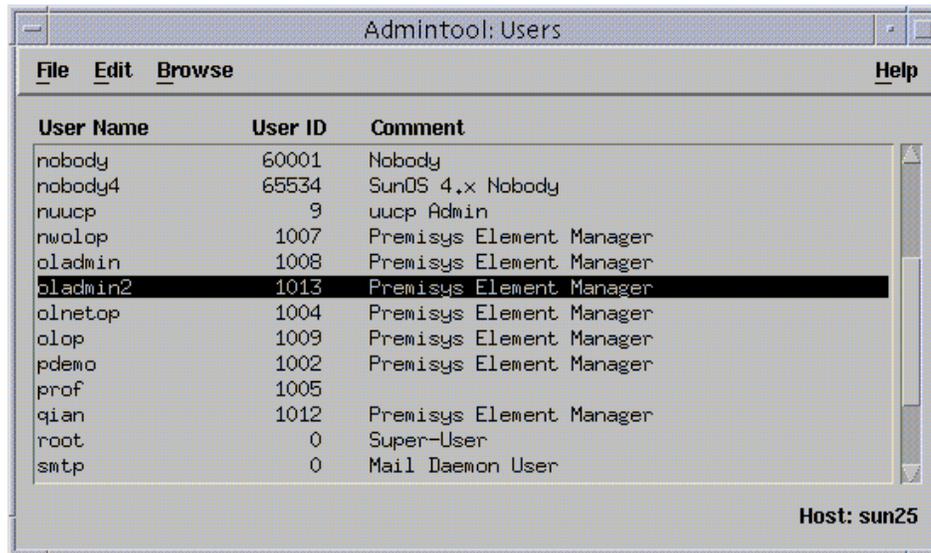
```
Modification of login environment is completed.
```

```
#
```

## 2.11.4 Deleting a User Account

To delete a user account, do the following:

1. Log in as **root** and open a terminal window.
2. Enter **admintool** at the command prompt. When the **Admintool** window opens, select **Browse:Users** to display the **Users** screen (see [Figure 2-10](#)).
3. Select the **User Name** you want to delete in the **Admintool:Users** window.



**Figure 2-10. Solaris Admintool: Users Window**

4. Select *Edit:Delete* to delete the account. An `Admintool:Warning` window opens (see [Figure 2-11](#)). Click the box next to `Delete Home Directory` if you want to remove the directory when you delete the user account.



**Figure 2-11. Solaris Admintool:Warning Window**

5. Click `Delete` to delete the user account. The `Admintool:Warning` window closes.

## 2.12 Starting and Stopping NNM and OnLine

To start or stop the NNM and OnLine processes, you must be `root` and have your environment set properly. In addition, the OnLine FLEXlm license manager must be running.

Both the NNM and OnLine processes must be running for a user to access OnLine from an NNM GUI. When starting the processes, NNM is started first and then OnLine is started. When stopping the processes the reverse is true.

- The required NNM processes are `OVSPMD`, `ovwdb`, `ovtrapd`, `ovactiond`, `pmd`, `ovtopmd`, and `ovrepld` (for some configurations, `netmon`, `snmpCollect`, and `OVLICENSEMgr` must also be running). To check whether the required processes are running, issue the command `ovstatus | more`.
- The FLEXlm license manager daemon is `lmgrd`. To check whether it is running for OnLine, use the `ps -ef | grep lmgrd` command.
  - If `lmgrd` is running for OnLine, you will see a response similar to the following:
 

```
# ps -ef | grep lmgrd
root 2499 2498 0 16:47:40 ?          0:00 olld -T sun25 6.1 4
-c /opt/online/prnms/config/license.dat -lmgrd_port /opt/on
root 2498 1 0 16:47:38 pts/4      0:00
/opt/online/prnms/flexlm/lmgrd -c
/opt/online/prnms/config/license.dat -l /opt/
root 2503 1402 0 16:48:34 pts/4    0:00 grep lmgrd
```
  - If `lmgrd` is not running for OnLine, there will be no `online` path statements in the response. See [“How Do I Start the FLEXlm License Manger?”](#) on page 5-2 for instructions on how to start `lmgrd` for OnLine.
 

```
# ps -ef | grep lmgrd
root 1994 1402 0 16:42:11 pts/4    0:00 grep lmgrd
```
- The OnLine daemons are `prnb`, `prdb`, `pralarm`, and (after the database is configured) `prcom`. To check whether they are running, issue the command `prstatus`.
- To start the NNM processes, enter `ovstart` at the command prompt. To stop the processes, enter `ovstop`.
- To start the OnLine processes, enter `prstart` at the command prompt. To stop the processes, enter `prstop`.
- To start the FLEXlm license manager, see [“How Do I Start the FLEXlm License Manger?”](#) on page 5-2.

## 2.13 Backup and Restore

You should back up the following NNM and OnLine data directories to tape or another workstation.

```
/var/opt/OV/share/databases/openview/mapdb
$PRNMS/db
```

If you can't back up the NNM and OnLine directories to tape or another workstation, at least copy them to the `/tmp` directory so you can restore them in the event that a file gets corrupted. To copy the data directories to the `/tmp` directory, do the following:

```
cp -r /var/opt/OV/share/databases/openview/mapdb /tmp/hpmap_db
cp -r $PRNMS/db /tmp/prnms_db
```

To restore the data directories from the `/tmp` directory, do the following:

```
cp -r /tmp/hpmap_db /var/opt/OV/share/databases/openview/mapdb
cp -r /tmp/prnms_db $PRNMS/db
```

## 2.14 Installation and Solaris Administration Troubleshooting

The following paragraphs describe how to solve problems you might encounter when installing, starting, or running OnLine. For similar information concerning NNM, refer to the troubleshooting section in the *HP OpenView Network Node Manager Products Installation Guide*.

### 2.14.1 OnLine Installation Problems

When you run the `prverify` script to confirm that OnLine was installed successfully, the following parameters are checked:

- Version of Solaris.
- NNM installation:
  - availability of `/opt/OV/bin` directory.
  - NNM environment variables.
  - Status of NNM processes.
- `PRNMS` environment variable.
- Availability of Online installation directory.
- Availability of Online scripts and executables.
- Online directory structure.
- Online file permissions.

If the installation was successful, you see the following message when the `prverify` script completes:

```
*****  
Verification completed. No errors discovered.  
*****
```

Should the `prverify` script detect a problem, an error message is reported in the terminal window from which you started the script, and also in the `$PRNMS/log/error.log` file. To view the log file, open it in a text editor or use the `cat $PRNMS/log/error.log | more` command to display it in a terminal window.

See [Figure 2-12](#) for an example of information reported by the `prverify` script and [Table 2-2](#) for instructions on correcting any problems that might be detected.

```

Started verification of Online-EMS 1.x configuration ...
1. Version of Solaris: 5.5.1

*****

2. HPOV installation

Contents of /opt/OV/bin:
total 96456
-r-xr-xr-x 1 bin bin 30796 Jun 21 1997 OVLICENSEMgr
-r-xr-xr-x 1 bin bin 143172 Jun 21 1997 findroute
-r-xr-xr-x 1 bin bin 5734 Jun 21 1997 freqSortEvtnt
-r-xr-xr-x 1 bin bin 563 Jun 21 1997 freqSortEvtnt.msg.euc
-r-xr-xr-x 1 bin bin 563 Jun 21 1997 freqSortEvtnt.msg.sjis
-r-xr-xr-x 1 bin bin 3779272 Jun 21 1997 ipmap
-r-xr-xr-x 1 bin bin 153800 Jun 21 1997 loadhosts
-r-xr-xr-x 2 bin bin 2341960 Jun 21 1997 mibform
-r-xr-xr-x 2 bin bin 2341960 Jun 21 1997 mibtable
-r-sr-xr-x 1 root bin 140188 Jun 21 1997 netcheck
-r-xr-xr-x 1 bin bin 125344 Jun 21 1997 netfmt
-r-xr--r-- 1 bin bin 1631220 Jun 21 1997 netmon
-r-xr-xr-x 1 bin bin 90076 Jun 21 1997 nettl
-r--r--r-- 1 root bin 5826 Jun 21 1997 nmcheckconf
-r-xr-xr-x 1 bin bin 135256 Jun 21 1997 nmdemandpoll
-r-xr-xr-x 1 bin bin 150312 Jun 21 1997 ntl_reader
-r--r--r-- 1 bin bin 1993 Jun 21 1997 ov.envvars.csh
-r--r--r-- 1 bin bin 2539 Jun 21 1997 ov.envvars.pl
-r--r--r-- 1 bin bin 2519 Jun 21 1997 ov.envvars.sh
-r-xr--r-- 1 bin bin 134820 Jun 21 1997 ovactiond
-r-xr--r-- 2 bin bin 1252228 Jun 21 1997 ovaddobj
-r-xr-xr-x 1 bin bin 14000 Apr 3 1994 ovaddr
-r-xr--r-- 3 bin bin 3414140 Jun 21 1997 ovcoldelsql
-r-xr-xr-x 1 bin bin 3363800 Jun 21 1997 ovcolsql
-r-xr--r-- 3 bin bin 3414140 Jun 21 1997 ovcolsql
-r-xr--r-- 3 bin bin 3414140 Jun 21 1997 ovcoltosql
-r-xr--r-- 1 bin bin 12365 Apr 3 1994 ovconfigure
-r-xr-xr-x 1 bin bin 3023528 Jun 21 1997 ovdbcheck
-r-xr--r-- 1 bin bin 12629 Jun 21 1997 ovdbcreate_usr
-r-xr--r-- 1 bin bin 3590 Jun 21 1997 ovdbdebug
-r-xr--r-- 1 bin bin 4523 Jun 21 1997 ovdbdebugi.sh
-r-xr--r-- 1 bin bin 6392 Jun 21 1997 ovdbdebugo.sh
-r-xr--r-- 1 bin bin 5171 Jun 21 1997 ovdblog_conf
-r-xr--r-- 1 bin bin 4045 Jun 21 1997 ovdblog_confo
-r-xr--r-- 1 bin bin 1885980 Jun 21 1997 ovdbpwent
-r-xr--r-- 1 bin bin 6843 Jun 21 1997 ovdbsetup
-r-xr--r-- 1 bin bin 8949 Jun 21 1997 ovdbsetupi.sh
-r-xr--r-- 1 bin bin 42203 Jun 21 1997 ovdbsetupo.sh
-r-xr--r-- 1 bin bin 7736 Jun 21 1997 ovdbtrend_dsko.sh
-r-xr--r-- 1 bin bin 3965 Jun 21 1997 ovdbusers_inst
-r-xr--r-- 2 bin bin 1252228 Jun 21 1997 ovdelobj
-r-xr-xr-x 8 bin bin 145520 Jun 21 1997 ovevent
-r-xr-xr-x 1 bin bin 2372292 Jun 21 1997 ovexec
-r-xr-xr-x 1 root bin 875552 Jun 21 1997 ovfiltercheck
-r-xr-xr-x 1 root bin 919248 Jun 21 1997 ovfiltermerge
-r-xr-xr-x 1 root bin 874728 Jun 21 1997 ovfiltertest
-r-xr-xr-x 1 bin bin 119808 Jun 21 1997 ovgethostbyname
-r-xr-xr-x 1 bin bin 3156876 Jun 21 1997 ovhelp
-r-xr-xr-x 1 bin bin 2787732 Jun 21 1997 ovhelpindex
-r-xr--r-- 1 bin bin 17663 Apr 3 1994 ovinstall
-r-xr--r-- 1 bin bin 2460 Apr 3 1994 ovkey
-r-xr-xr-x 1 bin bin 51980 Apr 3 1994 ovlicense

```

**Figure 2-12. Example of prverify Script Report (Sheet 1 of 5)**

-r-xr-xr-x	1	bin	bin	448416	Jun 21	1997	ovlmd
-r-xr-xr-x	1	bin	bin	158	Jun 21	1997	ovmapcount
-r-xr-xr-x	1	bin	bin	224248	Jun 21	1997	ovmapdump
-r-xr-xr-x	1	bin	bin	226640	Jun 21	1997	ovmapsnap
-r-xr-xr-x	1	bin	bin	393	Jun 21	1997	ovmibBrwEvent
-r-xr-xr-x	1	bin	bin	9616	Jun 21	1997	ovnmversion
-r-xr-xr-x	1	bin	bin	140636	Jun 21	1997	ovobjprint
-r-xr--r--	1	bin	bin	10032	Apr 3	1994	ovremove
-r-xr--r--	1	bin	bin	529356	Jun 21	1997	ovrepld
-r-xr--r--	1	bin	bin	570940	Jun 21	1997	ovserror
-r-xr--r--	1	bin	bin	723356	Jun 21	1997	ovspmd
-r-xr-xr-x	3	bin	bin	616408	Jun 21	1997	ovstart
-r-xr-xr-x	3	bin	bin	616408	Jun 21	1997	ovstatus
-r-xr-xr-x	3	bin	bin	616408	Jun 21	1997	ovstop
-r-xr-xr-x	1	bin	bin	1808	Jun 21	1997	ovterm
-r-xr--r--	1	bin	bin	4298112	Jun 21	1997	ovtopmd
-r-xr--r--	1	bin	bin	3073260	Jun 21	1997	ovtopoconv
-r-xr-xr-x	1	bin	bin	857292	Jun 21	1997	ovtopodump
-r-xr--r--	1	bin	bin	904908	Jun 21	1997	ovtopofix
-r-xr-xr-x	1	bin	bin	3286836	Jun 21	1997	ovtoposql
-r-xr--r--	1	bin	bin	141652	Jun 21	1997	ovtrapd
-r-xr-xr-x	1	bin	bin	10979	Apr 3	1994	ovverify
-r-xr-xr-x	1	bin	bin	2667	Jun 21	1997	ovversion
-r-xr-xr-x	1	bin	bin	6311236	Jun 21	1997	ovw
-r-xr-xr-x	5	bin	bin	8676	Jun 21	1997	ovwchgrp
-r-xr-xr-x	5	bin	bin	8676	Jun 21	1997	ovwchmod
-r-xr-xr-x	5	bin	bin	8676	Jun 21	1997	ovwchown
-r-xr-xr-x	1	bin	bin	492140	Jun 21	1997	ovwdb
-r-xr-xr-x	1	bin	bin	9244	Jun 21	1997	ovweb
-r-xr-xr-x	5	bin	bin	8676	Jun 21	1997	ovwls
-r-xr-xr-x	1	bin	bin	2335672	Jun 21	1997	ovnavigator
-r-xr-xr-x	5	bin	bin	8676	Jun 21	1997	ovwperms
-r-xr-xr-x	1	bin	bin	30270	Jun 21	1997	ovwsetupclient
-rwxrwxr-x	1	bin	bin	651880	Mar 27	1997	pmd
-rwxrwxr-x	1	bin	bin	35488	Mar 27	1997	pmdmgr
-r-xr-xr-x	1	bin	bin	9217	Jun 21	1997	printEvents
-r-xr-xr-x	1	bin	bin	848	Jun 21	1997	printEvents.msg.euc
-r-xr-xr-x	1	bin	bin	848	Jun 21	1997	printEvents.msg.sjis
-r-xr-xr-x	1	bin	bin	2038	Jun 21	1997	printwindow
-r-xr-xr-x	1	bin	bin	125916	Jun 21	1997	rbd
-r-xr-xr-x	1	bin	bin	154456	Jun 21	1997	rnetstat
-r-xr-xr-x	1	bin	bin	129040	Jun 21	1997	rpings
-r-xr-xr-x	1	bin	bin	206944	Jun 21	1997	snmpColDump
-r-xr--r--	1	bin	bin	491876	Jun 21	1997	snmpCollect
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpbulk
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpget
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpnext
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpnotify
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpset
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmptrap
-r-xr-xr-x	8	bin	bin	145520	Jun 21	1997	snmpwalk
-r-xr-xr-x	1	bin	bin	5046	Jun 21	1997	sortEvents
-r-xr-xr-x	1	bin	bin	484	Jun 21	1997	sortEvents.msg.euc
-r-xr-xr-x	1	bin	bin	484	Jun 21	1997	sortEvents.msg.sjis
-r-xr-xr-x	1	bin	bin	7136	Jun 21	1997	sourceEvents
-r-xr-xr-x	1	bin	bin	556	Jun 21	1997	sourceEvents.msg.euc
-r-xr-xr-x	1	bin	bin	556	Jun 21	1997	sourceEvents.msg.sjis
-r-xr-xr-x	1	bin	bin	2440124	Jun 21	1997	xnmappmon
-r-xr-xr-x	1	bin	bin	2443728	Jun 21	1997	xnmbrowser
-r-xr-xr-x	1	bin	bin	2459600	Jun 21	1997	xnmbuilder
-r-xr-xr-x	1	bin	bin	2462268	Jun 21	1997	xnmcollect
-r-xr-xr-x	1	bin	bin	2560956	Jun 21	1997	xnmevents
-r-xr-xr-x	1	bin	bin	2604632	Jun 21	1997	xnmgraph

Figure 2-12. Example of prverify Script Report (Sheet 2 of 5)

```

-r-xr-xr-x 1 bin bin 2440124 Jun 21 1997 xnmappmon
-r-xr-xr-x 1 bin bin 2443728 Jun 21 1997 xnmbrowser
-r-xr-xr-x 1 bin bin 2459600 Jun 21 1997 xnmbuilder
-r-xr-xr-x 1 bin bin 2462268 Jun 21 1997 xnmcollect
-r-xr-xr-x 1 bin bin 2560956 Jun 21 1997 xnmevents
-r-xr-xr-x 1 bin bin 2604632 Jun 21 1997 xnmgraph
-r-xr-xr-x 1 bin bin 2376648 Jun 21 1997 xnmloadmib
-r-xr-xr-x 1 bin bin 2360044 Jun 21 1997 xnmpolling
-r-xr-xr-x 1 bin bin 2410676 Jun 21 1997 xnmsnmpconf
-r-xr-xr-x 1 bin bin 2372 Jun 21 1997 xnmtelnet
-r-xr--r-- 1 bin bin 251268 Jun 21 1997 xnmtopoconf
-r-xr-xr-x 1 bin bin 2447808 Jun 21 1997 xnmtrap
-r-xr-xr-x 1 bin bin 3165 Jun 21 1997 xnmvt3k

-r-xr-xr-x 1 bin bin 484 Jun 21 1997 sortEvents.msg.sjis
-r-xr-xr-x 1 bin bin 7136 Jun 21 1997 sourceEvents
-r-xr-xr-x 1 bin bin 556 Jun 21 1997 sourceEvents.msg.euc
-r-xr-xr-x 1 bin bin 556 Jun 21 1997 sourceEvents.msg.sjis
-r-xr-xr-x 1 bin bin 2440124 Jun 21 1997 xnmappmon
-r-xr-xr-x 1 bin bin 2443728 Jun 21 1997 xnmbrowser
-r-xr-xr-x 1 bin bin 2459600 Jun 21 1997 xnmbuilder
-r-xr-xr-x 1 bin bin 2462268 Jun 21 1997 xnmcollect
-r-xr-xr-x 1 bin bin 2560956 Jun 21 1997 xnmevents
-r-xr-xr-x 1 bin bin 2604632 Jun 21 1997 xnmgraph
-r-xr-xr-x 1 bin bin 2376648 Jun 21 1997 xnmloadmib
-r-xr-xr-x 1 bin bin 2360044 Jun 21 1997 xnmpolling
-r-xr-xr-x 1 bin bin 2410676 Jun 21 1997 xnmsnmpconf
-r-xr-xr-x 1 bin bin 2372 Jun 21 1997 xnmtelnet
-r-xr--r-- 1 bin bin 251268 Jun 21 1997 xnmtopoconf
-r-xr-xr-x 1 bin bin 2447808 Jun 21 1997 xnmtrap
-r-xr-xr-x 1 bin bin 3165 Jun 21 1997 xnmvt3k

```

HPOV NNM environment variables are OK

- status of HPOV processes. Make sure that all processes are in RUNNING mode:

```

object manager name: OVsPMD
state: RUNNING
PID: 4093
exit status: -

object manager name: ovwdb
state: RUNNING
PID: 4094
last message: Initialization complete.
exit status: -

object manager name: ovtrapd
state: RUNNING
PID: 4096
last message: Initialization complete.
exit status: -

object manager name: ovactiond
state: RUNNING
PID: 4097
last message: Initialization complete.
exit status: -

```

**Figure 2-12. Example of prverify Script Report (Sheet 3 of 5)**

```

object manager name: pmd
state:                RUNNING
PID:                 4095
last message:        Initialization complete.
exit status:         -

object manager name: ovtopmd
state:                RUNNING
PID:                 4098
last message:        Connected to native database: "openview".
exit status:         -

object manager name: netmon
state:                NOT_RUNNING
PID:                 4099
last message:        Exited due to user request
exit status:         Exit(0)

object manager name: snmpCollect
state:                RUNNING
PID:                 4100
last message:        No values configured for collection.
exit status:         -

object manager name: ovrepld
state:                RUNNING
PID:                 4101
last message:        Initialization Complete.
exit status:         -

*****

3. PRNMS environment variable is /proj/vn/test/prnms

*****

4. Online-EMS 1.x installation directory is /proj/vn/test/prnms:
total 17
drwxrwxrwx  4 arkady  staff          512 Jan  5  1998 bd
drwxrwxrwx  2 arkady  staff        3584 Jul  30  12:06 bin
drwxrwxrwx  9 arkady  staff          512 Jul  14  11:04 cards
drwxrwxrwx  2 arkady  staff          512 Jul  19  11:11 config
drwxrwxrwx  4 arkady  staff          512 Jul  7  17:41 db
drwxrwxrwx  3 arkady  staff          512 May  21  15:35 distrib
drwxrwxrwx  2 arkady  staff          512 Jul  27  12:37 flexlm
drwxrwxrwx  2 arkady  staff          512 Jul  30  12:06 hist
drwxrwxrwx  2 arkady  staff        2560 Jun  29  12:23 images
drwxrwxrwx  2 arkady  staff          512 Jul  30  12:07 log
drwxrwxrwx  3 arkady  staff          512 Jul  27  12:39 ovw
drwxrwxrwx  2 arkady  staff        1024 Mar  20  14:17 uid

*****

```

Figure 2-12. Example of prverify Script Report (Sheet 4 of 5)

5. Check availability of Online-EMS 1.x scripts and executables

```
Found file /proj/vn/test/prnms/bin/prstatus
Found file /proj/vn/test/prnms/bin/prstart
Found file /proj/vn/test/prnms/bin/prstop
Found file /proj/vn/test/prnms/bin/prdb
Found file /proj/vn/test/prnms/bin/prnb
Found file /proj/vn/test/prnms/bin/pralarm
Found file /proj/vn/test/prnms/bin/prcom
Found file /proj/vn/test/prnms/bin/pradmin
Found file /proj/vn/test/prnms/bin/prview
Found file /proj/vn/test/prnms/bin/prnotes
Found file /proj/vn/test/prnms/bin/prmap
```

\*\*\*\*\*

6. Check Online-EMS 1.x directory structure

```
Found directory /proj/vn/test/prnms/bin
Found directory /proj/vn/test/prnms/cards
Found directory /proj/vn/test/prnms/config
Found directory /proj/vn/test/prnms/hist
Found directory /proj/vn/test/prnms/images
Found directory /proj/vn/test/prnms/log
Found directory /proj/vn/test/prnms/uid
Found directory /proj/vn/test/prnms/ovw
Found directory /proj/vn/test/prnms/db
Found directory /proj/vn/test/prnms/db/admin
Found directory /proj/vn/test/prnms/db/work
```

\*\*\*\*\*

7. Disk space:

Filesystem	1024-blocks	Used	Available	Capacity	Mounted on
/dev/dsk/c0t0d0s0	962582	810261	56071	94%	/
/dev/dsk/c0t1d0s0	1952573	1662137	95186	95%	/niles
/dev/dsk/c0t0d0s7	926766	711974	122122	85%	/export/home
swap	234728	352	234376	0%	/tmp
valhalla:/proj2	1094064	645520	393840	62%	/proj2
reactor:/users	796601	534642	182298	75%	/users
kodiak1:/home	4829640	4277272	69408	98%	/home
kodiak1:/eng	4829640	4277272	69408	98%	/eng
columbus:/proj	1038008	747400	186808	80%	/proj
columbus:/opt	731624	534968	123496	81%	/columbusopt
columbus:/lyon	1952568	1624720	132592	92%	/lyon
valhalla:/valhalla	731624	432624	225840	66%	/valhalla

\*\*\*\*\*

Verification completed. No errors discovered.

\*\*\*\*\*

-----

**Figure 2-12. Example of prverify Script Report (Sheet 5 of 5)**

**Table 2-2. Resolving OnLine Installation Problems**

<b>Error Message</b>	<b>Description and Corrective Action</b>
<pre>ERROR : HPOV NNM is not installed. Directory \$ovbindir is not found.</pre>	<p><b>Description</b></p> <p>NNM must be installed before you install Online.</p> <p><b>Corrective Action</b></p> <p>Install NNM (see <a href="#">page 2-9</a>) and then re-install OnLine (see <a href="#">page 2-16</a>).</p>
<pre>ERROR : HPOV NNM environment variables are not set.</pre>	<p><b>Description</b></p> <p>The NNM environment is not set properly.</p> <p><b>Corrective Action</b></p> <p>Do one of the following:</p> <ul style="list-style-type: none"> <li>• Run the OnLine <code>prehpininstall.sh</code> script (see <a href="#">page 2-9</a>).</li> <li>• Create a temporary environment (see <a href="#">page 5-2</a>).</li> <li>• Use the OnLine <code>prlogin</code> script to modify the <code>root</code> user account (see <a href="#">page 2-30</a>). Then, log out and log back in as <code>root</code> to set the environment.</li> </ul>
<pre>ERROR : You should specify PRNMS environment variable as directory where Online-EMS 1.x is located.</pre> <pre>ERROR : Online-EMS 1.x installation directory \$PRNMS does not exist</pre>	<p><b>Description</b></p> <p>The PRNMS environment variable is not set properly.</p> <p><b>Corrective Action</b></p> <p>Do one of the following:</p> <ul style="list-style-type: none"> <li>• Run the OnLine <code>prehpininstall.sh</code> script (see <a href="#">page 2-9</a>).</li> <li>• Create a temporary environment (see <a href="#">page 5-2</a>).</li> <li>• Use the OnLine <code>prlogin</code> script to modify the <code>root</code> user account (see <a href="#">page 2-30</a>). Then, log out and log back in as <code>root</code> to set the environment.</li> </ul>
<pre>ERROR : Online-EMS 1.x file \$PRNMS/bin/\$emsname does not exist.</pre>	<p><b>Description</b></p> <p>A fatal error occurred during OnLine installation.</p> <p><b>Corrective Action</b></p> <p>Re-install OnLine (see <a href="#">page 2-16</a>).</p>

## 2.14.2 Start-Up Problems

Table 2-3. addresses problems that could occur when you try to start OnLine. Depending on how you have OnLine information reporting set up (see [page 2-23](#)), an error message might display in the terminal window or be written to the error log.

**Table 2-3. Resolving OnLine Start-Up Problems**

Error Message	Description and Corrective Action
<pre>tcpSocket::Connect: Connection refused DBL: sock : cannot connect!!!  Thu Jul 30 14:35:48 1998 /proj/vn/test/prnms/bin/pralarm 7524 PLL crit PLM pralarm Alarm Manager:Can not get info from server</pre>	<p><b>Description</b></p> <p>Getting either of these error messages after entering <code>prstart</code> usually indicates that <code>pralarm</code> did not start.</p> <p><b>Corrective Action</b></p> <p>Enter <code>prstatus</code> to determine which OnLine processes are running.</p> <ul style="list-style-type: none"> <li>• If no <code>pralarm</code> process is running, enter <code>prstart</code> again.</li> <li>• Otherwise, enter <code>prstop</code> and then use the <code>ps -ef   grep pr</code> command to check whether any other version of OnLine is running (see <a href="#">“Checking All OnLine Processes” on page 2-43</a>).</li> </ul> <p>If OnLine processes are running, use the <code>kill -9</code> command to stop them and then type <code>prstart</code> again.</p> <p>If the problem persists, the most likely cause is that the database server port is taken by some other process.</p> <ul style="list-style-type: none"> <li>• Enter <code>prstop</code>.</li> <li>• Modify the <code>PRDB_PORT</code> setting in the <code>\$PRNMS/config/prdb.conf</code> file (see <a href="#">“Can I Run Other Applications Such as AnswerBook?” on page 5-7</a>).</li> <li>• Enter <code>prstart</code>.</li> </ul>

**Table 2-3. Resolving OnLine Start-Up Problems (Continued)**

Error Message	Description and Corrective Action
<pre> checkout failed: Cannot connect to license server The server (lmgrd) has not been started yet, or the wrong port@host or license file is be- ing used, or the port or hostname in the license file has been changed. Feature:          OnLine_EMS Server name:     spartal License          path: /proj/vn/test/prnms/config/li- cense.dat FLEXlm error:   -15,12 DBL: portServer = 22820  hostnam- eServer  localhost  DBL: sock = ok tcpSocket::Connect:  Connection refused DBL: sock : cannot connect!!! The daemon process prdb did not start; please fix the problem and run prstart again.  Thu Jul 30 14:35:47 1998 /proj/vn/test/prnms/bin/prdb 7518 PLL crit PLM pr*b Cannot get a license  Cannot initialise a license. Ex- it. Cannot get a license.  Cannot get the number of licensed nodes Cannot get the number of licensed operators </pre>	<p><b>Description</b></p> <p>Getting any of these error messages after entering <b>prstart</b> indicates a licensing problem. The possible causes are:</p> <ul style="list-style-type: none"> <li>• The license server <code>lmgrd</code> is not running.</li> <li>• The wrong license file is being used.</li> <li>• A port number has to specified in the license file to allow concurrent use of FLEXlm by OnLine and other applications.</li> <li>• You changed the Host Name of your workstation after installing FLEXlm.</li> </ul> <p><b>Corrective Action</b></p> <p>Make sure that:</p> <ul style="list-style-type: none"> <li>• FLEXlm license manager is running and using the <code>\$PRNMS/config/license.dat</code> license file (see <a href="#">“Starting and Stopping NNM and OnLine” on page 2-32</a>).</li> <li>• The <code>PRNMS/config/license.dat</code> license file contains valid data (see <a href="#">“Checking the OnLine License File” on page 2-43</a>).</li> </ul>

### 2.14.2.1 Checking All OnLine Processes

When you issue a `prstatus` command, you only receive information about the OnLine processes that were started from the current login session. To view information about all OnLine processes that are running, use the `ps -ef | grep pr` command.

- If no OnLine processes are running, you will see a listing similar to the following:

```
# ps -ef | grep pr
root 400 1 0 Sep 24 ? 0:01 /opt/online/prnms/flexlm/lmgrd
-c /opt/online/prnms/config/license.dat -l /opt/
root 406 400 0 Sep 24 ? 0:00 olld -T sun25 6.1 4 -c
/opt/online/prnms/config/license.dat -lmgrd_port 6978
root 22899 5641 0 10:58:28 pts/5 0:00 grep pr
#
```

- If any OnLine processes are running, additional information will display in the listing. The following example shows that `prcom`, `prdb`, `prnb` and `pralarm` are running

```
# ps -ef | grep pr
root 400 1 0 Sep 24 ? 0:01 /opt/online/prnms/flexlm/lmgrd
- /opt/online/prnms/config/license.dat -l /opt/
root 406 400 0 Sep 24 ? 0:00 olld -T sun25 6.1 4 -c
/opt/onlie/prnms/config/license.dat -lmgrd_port 6978
root 18880 18877 0 Oct 02 pts/5 0:00 /opt/online/prnms/bin/prcom
/vartmp/aaa0ego8b
root 18871 1 0 Oct 02 pts/5 0:00 /opt/online/prnms/bin/prdb
root 18874 1 0 Oct 02 pts/5 0:00 /opt/online/prnms/bin/prnb
root 18877 1 0 Oct 02 pts/5 0:04 /opt/online/prnms/bin/pralarm
root 22674 5641 0 10:55:41 pts/5 0:00 grep pr
#
```

When necessary, you can use the `kill -9 PID` command to terminate an OnLine process, regardless of the login session from which it was started. To terminate the processes shown above for the `ps -ef | grep pr` response, for example, you would enter the following:

```
kill -9 18880 to kill prcom
kill -9 18871 to kill prdb
kill -9 18874 to kill prnb
kill -9 18877 to kill pralarm
```

### 2.14.2.2 Checking the OnLine License File

You can view the contents of the `$PRNMS/config/license.dat` file by opening it in a text editor or using the `cat $PRNMS/config/license.dat` command to display it in the terminal window. [Figure 2-13](#) shows the license file for the test configurative referenced in this chapter, describes the contents of relevant user fields, and indicates which fields you are permitted to modify.

Enter the following to verify the Host Name and Host ID of your workstation and confirm the path to the vendor license daemon `olld`:

```
# hostname
sun25
# hostid
808fbb32
# ls $PRNMS/config/license.dat
/opt/online/prnms/config/license.dat
```

**Test Configuration license.dat File**

```

# cat license.dat
SERVER sun25 ANY

        #Put your DAEMON name here.

VENDOR olld /opt/online/prnms/flexlm/ollid

        ##### FEATURE LINES
        #####

FEATURE f1 olld 1.0 permanent 4 27A507D67DBF
FEATURE OnLine_EMS olld 1.1 permanent 3 66B5F0759749 \
        VENDOR_STRING=10d2u
FEATURE OnLine_EMS_operator olld 1.1 permanent 3 65FEA1701C86
#

```

The structure of the license.dat file is as follows:

```

SERVER hostname hostid port
VENDOR ollid full_path_to_the_vendor_daemon/ollid
FEATURE f1 ollid 1.0 permanent num some_key
FEATURE OnLine_EMS ollid 1.1 permanent num some_key
        VENDOR_STRING=num1_dnum2_u
FEATURE OnLine_EMS_operator ollid 1.1 permanent num some_key

```

Where

<i>hostname</i>	is the Host Name of your workstation. When <i>hostid</i> is set to <b>ANY</b> , you can change this value, if necessary, to specify the current Host Name of your workstation.
<i>hostid</i>	is the Host ID of your workstation. This field is set to <b>ANY</b> in the basic license supplied with OnLine. When a license is upgraded, <b>ANY</b> is replaced with the appropriate Host ID. You cannot change this value.
<i>port</i>	is the optional communication port number of the license manager daemon <i>lmgrd</i> . When necessary, you can change this value as described in <a href="#">“How Do I Start the FLEXlm License Manger?”</a> on page 5-2.
<i>full_path_to_the_vendor_daemon</i>	is the full path to the directory where <i>ollid</i> is located. When necessary, you can change this value to the appropriate path.
<i>num</i>	is a vendor specified value that you cannot change.
<i>some_key</i>	is a vendor supplied license key that you cannot change.
<i>num1_dnum2_u</i>	<i>num1_d</i> is the number of licensed devices to manage and <i>num2_u</i> is the number of licensed operators; for example, 250d10u. You cannot change these values.

**Figure 2-13. Online License Data File for Test Configuration**

### 2.14.3 Run-Time Problems

Table 2-4. addresses problems that might occur when OnLine is running. Depending on how you have OnLine information reporting set up (see [page 2-23](#)), an error message might display in the terminal window or be written to the error log.

**Table 2-4. Resolving OnLine Run-Time Problems**

Error Message	Description and Corrective Action
"HP OV is not running"	<p><b>Description</b></p> <p>One or more NNM processes are not running.</p> <p><b>Corrective Action</b></p> <p>Do the following (see <a href="#">page 2-32</a>):</p> <ul style="list-style-type: none"> <li>• Stop the OnLine processes (but not the FLEXlm license manager).</li> <li>• Start the NNM processes.</li> <li>• Re-start the OnLine processes.</li> </ul>
"cannot run some_process: execve failed"	<p><b>Description</b></p> <p>Getting either of these messages indicates that your workstation does not have enough memory or a swap file is not configured.</p> <p><b>Corrective Action</b></p> <p>Add a swap file (see <a href="#">“Creating a Swap File” on page 2-50</a>).</p>

Table 2-4. Resolving OnLine Run-Time Problems (Continued)

Error Message	Description and Corrective Action
<pre>get_server: cannot open config file  %s </pre>	<p><b>Description</b></p> <p>OnLine cannot open the <code>\$PRNMS/config/prdb.conf</code> file.</p> <p><b>Corrective Action</b></p> <p>Do the following:</p> <ul style="list-style-type: none"> <li>• Stop the OnLine processes (see <a href="#">page 2-32</a>).</li> <li>• Verify that <code>\$PRNMS</code> is set properly (<code>echo \$PRNMS</code>).</li> <li>• Make sure the <code>\$PRNMS/config/prdb.conf</code> file exists and has read permissions for all users.</li> </ul> <p>Use the <code>ls</code> command to check the file permissions:</p> <pre># ls -l \$PRNMS/config/prdb.conf -rw-rw-r-- 1 root root 35 Aug 29 13:47 /opt/online/prnms/config/prdb.conf</pre> <p>If the file permissions are not as shown use the <code>chmod</code> command to reinstate the default setting:</p> <pre># chmod 664 \$PRNMS/config/prdb.conf</pre> <ul style="list-style-type: none"> <li>• Start the OnLine processes (see <a href="#">page 2-32</a>).</li> </ul>
<pre>cannot start with server info  name: port </pre>	<p><b>Description</b></p> <p>OnLine detected an error in the <code>\$PRNMS/config/prdb.conf</code> file.</p> <p><b>Corrective Action</b></p> <p>Do the following:</p> <ul style="list-style-type: none"> <li>• Stop the OnLine processes (see <a href="#">page 2-32</a>).</li> <li>• Make sure that the <code>\$PRNMS/config/prdb.conf</code> file specifies the correct host name (see “<a href="#">Checking the \$PRNMS/config/prdb.conf File</a>” on <a href="#">page 2-51</a>) and that the host name is also entered in the <code>/etc/hosts</code> file.</li> <li>• Start the OnLine processes (see <a href="#">page 2-32</a>).</li> </ul>

Table 2-4. Resolving OnLine Run-Time Problems (Continued)

Error Message	Description and Corrective Action
get_server: hostname not found	<p><b>Description</b></p> <p>OnLine detected a hostname error in the <code>\$PRNMS/config/prdb.conf</code> file.</p> <p><b>Corrective Action</b></p> <p>Do the following:</p> <ul style="list-style-type: none"> <li>• Stop the OnLine processes (see <a href="#">page 2-32</a>).</li> <li>• Make sure that the <code>\$PRNMS/config/prdb.conf</code> file specifies the correct host name (see “<a href="#">Checking the \$PRNMS/config/prdb.conf File</a>” on <a href="#">page 2-51</a>) and that the host name is also entered in the <code>/etc/hosts</code> file.</li> <li>• Start the OnLine processes (see <a href="#">page 2-32</a>).</li> </ul>
cannot start prdb cannot start prnb	<p><b>Description</b></p> <p>OnLine cannot start the <code>prdb</code> and <code>prnb</code> processes.</p> <p><b>Corrective Action</b></p> <p>Do the following:</p> <ul style="list-style-type: none"> <li>• Stop the OnLine processes (see <a href="#">page 2-32</a>).</li> <li>• Verify that <code>\$PRNMS</code> is set properly (<code>echo \$PRNMS</code>). If it is, check for other error messages.</li> <li>• Start the OnLine processes (see <a href="#">page 2-32</a>).</li> </ul>
cannot open channel to OVw	<p><b>Description</b></p> <p>OnLine cannot communicate with NNM.</p> <p><b>Corrective Action</b></p> <p>Ensure that the NNM environment variables are set correctly and all required NNM processes are running (see <a href="#">page 2-32</a>). If the problem persists, refer to the troubleshooting section in the <i>HP OpenView Network Node Manager Products Installation Guide</i>.</p>

Table 2-4. Resolving OnLine Run-Time Problems (Continued)

Error Message	Description and Corrective Action
<p>cannot register some_name</p> <p>cannot init with ovdb</p>	<p><b>Description</b></p> <p>Getting either of these messages indicates OnLine cannot communicate with NNM.</p> <p><b>Corrective Action</b></p> <p>Ensure that the NNM environment variables are set correctly and all required NNM processes are running (see <a href="#">page 2-32</a>). If the problem persists, re-install OnLine and check for installation error messages.</p>
<p>Alarm Manager:Can not get info from server</p>	<p><b>Description</b></p> <p>pralarm cannot get information form prdb.</p> <p><b>Corrective Action</b></p> <p>Enter <code>prstatus</code> to check whether prdb is running.</p> <ul style="list-style-type: none"> <li>• If prdb is running, check that the <code>PRDB_HOST</code> parameter is set correctly in the <code>\$PRNMS/config/prdb.conf</code> file (see <a href="#">“Checking the \$PRNMS/config/prdb.conf File” on page 2-51</a>).</li> <li>• If prdb is not running, stop the OnLine processes and then re-start them (see <a href="#">page 2-32</a>).</li> </ul>
<p>pralarm failed to p_open prcom some_filename.</p>	<p><b>Description</b></p> <p>OnLine could not open the specified file.</p> <p><b>Corrective Action</b></p> <p>The <code>/tmp</code> directory on your workstation is full. You need to stop some applications that are using this directory.</p>

Table 2-4. Resolving OnLine Run-Time Problems (Continued)

Error Message	Description and Corrective Action
<pre>process_name can not bind local address</pre>	<p><b>Description</b></p> <p>OnLine could not access the specified port.</p> <p><b>Corrective Action</b></p> <p>When a process using some socket is killed, the port number used by this socket will not be available for some period of time (4 minutes, default). If you try to restart this process immediately, an error message could be received. To avoid this, set the tcp socket closing timeout to a lesser value (e.g., 2 sec).</p> <ul style="list-style-type: none"> <li>To check the current timeout value, use the <code>ndd</code> command. The value is reported in milliseconds; i.e., default value = 4 minutes = 240 seconds = 240000 milliseconds.</li> </ul> <pre># ndd /dev/tcp tcp_close_wait_interval 240000</pre> <ul style="list-style-type: none"> <li>To change the timeout value to two seconds, use the <code>ndd</code> command with the <code>-set</code> option.</li> </ul> <pre># ndd -set /dev/tcp tcp_close_wait_interval 2000 # ndd /dev/tcp tcp_close_wait_interval 2000</pre> <p>If the problem persists, it means that some other application is using the same port number. Use the <code>ps-ef   grep pr</code> command to check whether any other version of OnLine is running (see “<a href="#">Checking All OnLine Processes</a>” on page 2-43). If OnLine processes are running, use the <code>kill -9</code> command to stop them and then type <code>prstart</code> again.</p>
<pre>Error in talking to the device. Unable to fill Install Table for the IMACS</pre>	<p><b>Description</b></p> <p>Either the response from the snmp agent of the device is too slow or the host version of the device is not supported by OnLine.</p> <p><b>Corrective Action</b></p> <p>See your <i>Network Element Reference Guide</i> and the <code>readme</code> file on the OnLine CD-ROM.</p>
<pre>Slot for the card NAME was not found; exiting...</pre>	<p><b>Description</b></p> <p>OnLine discovered an unsupported configuration on the device.</p> <p><b>Corrective Action</b></p> <p>See your <i>Network Element Reference Guide</i> and the <code>readme</code> file on the OnLine CD-ROM.</p>

**Table 2-4. Resolving OnLine Run-Time Problems (Continued)**

Error Message	Description and Corrective Action
PRNMS Environment variable needs to be set	<p><b>Description</b></p> <p>The PRNMS variable is not set to the OnLine installation directory.</p> <p><b>Corrective Action</b></p> <p>Set the PRNMS environment variable to the OnLine installation directory (see <a href="#">“Do I Have to Install OnLine in the Default Directory?”</a> on page 5-1).</p>
<p>Cannot connect to comm COM- MIF:FAILED to receive response message from COMM for some_hostname COMMIF: LOST COMMUNICATION WITH COMM COMMIF:Please connect to comm be- fore Logging in COMMIF:CANNOT CONNECT TO COMM at IP some_ip at Port port_number</p>	<p><b>Description</b></p> <p>The OnLine process prcom is not running.</p> <p><b>Corrective Action</b></p> <p>Verify that the Host Name and Port Number fields are filled out correctly on the Database Administration COMM Screen (see <a href="#">Chapter 4, “OnLine Administration”</a>).</p>

### 2.14.3.1 Creating a Swap File

If you partitioned the hard disk drive as recommended (see [“Customize Disks”](#) on page 2-6), a swap area should be available on the drive. Use the `swap -l` command to check the amount of free space available (in 512-byte blocks).

```
# swap -l
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t0d0s4 32,4    16 492464 410640
```

If you need additional swap space, use the `mkfile` and `swap` commands to create and add another swap file. The following example creates a 10 Mbyte `swap2` file in the directory `/opt`. For additional information on the `swap` command, enter `man swap` (press the spacebar or Return key to scroll the man page that displays).

```
# mkfile 10m /opt/swap2
# swap -a /opt/swap2
# swap -l
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t0d0s4 32,4    16 492464 410640
/opt/swap2        -         16  20464  20464
```

To remove a swapfile use the `swap -d` command.

```
# swap -d /opt/swap2
# swap -l
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t0d0s4 32,4      16 492464 410640
# ls /opt/swap2
/opt/swap2
```

After removing the swap file, you can use the `rm` command to delete it.

```
# rm -i /opt/swap2
rm: remove /opt/swap2 (yes/no)? y
# ls /opt/swap2
/opt/swap2: No such file or directory
```

### 2.14.3.2 Checking the `$PRNMS/config/prdb.conf` File

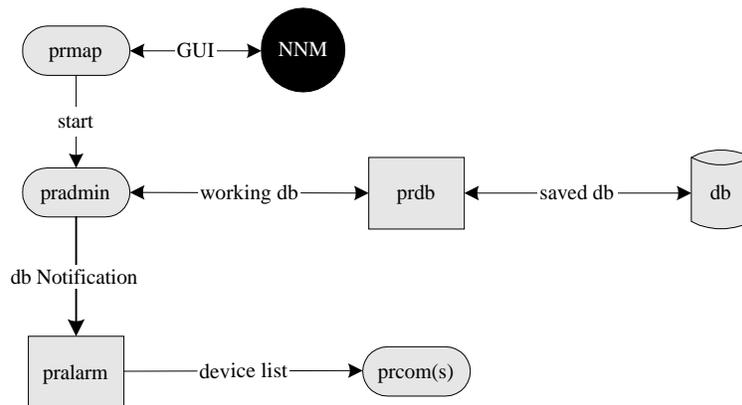
Do the following to check that this file contains valid entries:

- Open the `$PRNMS/config/prdb.conf` file in a text editor.

```
PRDB_HOST=localhost
PRDB_PORT=8900
```
- Make sure that the `PRDB_HOST=` entry specifies a valid hostname (either `localhost` or the actual Host Name of your workstation).
- Make sure that the `PRDB_PORT=` entry specifies a valid, unused port (“[How Do I Determine Whether a Port is in Use?](#)” on page 5-8). Valid port numbers are within the range of 5001 through 65335.
- Save and close the `$PRNMS/config/prdb.conf` file.







**Figure 3-2. OnLine Process Interaction for Administrator Session**

## 3.2 Processes

The OnLine processes consist of:

- Daemon processes that run in the background to provide services for OnLine. They are **pralarm**, **prdb**, and **prnb**.

There can be only one set of OnLine daemon processes per host. **prdb** and **prnb** are normally started by an OnLine start-up script (i.e., the **prstart** dispatch script described on [page 3-7](#)). When necessary, however, you can run the dispatch scripts included with OnLine to manually start and stop the daemons or check their status (see [page 3-6](#)).

- Application processes run in the foreground as required. These processes are started and stopped in response to OnLine user selections.

The application processes are: **pradmin**, **prcom**, **prmap**, **prnotes**, and **prview**.

### 3.2.1 pradmin

**pradmin** is launched by **prmap** to provide a GUI for configuring OnLine. It starts when the OnLine administrator logs in and terminates when the administrator logs out. All configuration changes are sent to **prdb** which stores saved changes in `admin.db` and unsaved changes in `work.db`. Saved changes are also dynamically propagated to **pralarm** and **prcom**.

*Note: Only one administrative session is allowed at a time. Attempting to start a second administrative session opens a dialogue box that offers to stop the current session and start a new one. If confirmed, **prdb** closes the current session and starts a new one.*

**prmap** is responsible for maintaining communications with **pradmin** and receiving notification when **pradmin** terminates.

### 3.2.2 pralarm

**pralarm** is normally started by **prstart** and stopped by **prstop**. It is responsible for:

- Launching and stopping all **prcom** processes.
- Receiving active network-element alarms from NNM and routing them to the appropriate **prcom** process. Any alarms (traps) received from network elements that are not being managed by OnLine are discarded.

### 3.2.3 prcom

**prcom** processes are normally started and stopped automatically by **pralarm**. Each process is associated with one or more sites, and services all of the network access elements that are members of the site(s). Functions provided by a **prcom** process include:

- Receiving active network-element alarms from **pralarm** and distributing them to all applications that are currently managing the element (**prview** and/or **prmap**).
- Distributing active alarm acknowledgments to all **prview** and/or **prmap** processes that are running.
- Fulfilling application requests for historical alarms.
- Providing SNMP services as required to implement network-element management and status requests received from **prview**.

### 3.2.4 prdb

**prdb** is normally started by an OnLine start-up script or as part of system boot-up. It is responsible for administering the following databases:

<code>admin.db</code>	Administration database (permanent, used to distribute information to <b>prmap</b> and <b>pralarm</b> ).
<code>work.db</code>	Working database (copy of administration database used by <b>pradmin</b> to store unsaved configuration changes).

**prdb** provides the following information to other processes:

<b>prmap</b>	Listings of network access elements assigned to users and the <b>prcom</b> processes assigned to the sites of which the elements are members.
<b>pradmin</b>	Working database.
<b>pralarm</b>	Listings of the network access elements associated with each <b>prcom</b> process defined in the administration database.

### 3.2.5 prmap

**prmap** is started by NNM, runs concurrently with it, and should exit when NNM exits. It coordinates between NNM maps and network access elements to provide the following functionality:

- User login and authentication.
- Launching of additional processes as applicable; for example: **pradmin**, **prview**, or **prnotes**.
- Updating the status of symbols representing network access elements based on alarms received from **prcom**.
- Navigating from a site view to an IP map view and vice versa.
- Displaying Active Alarms.
- Opening a GUI for generation of NNM maps by the OnLine administrator.
- Displaying audit, error, and/or trace logs.

### 3.2.6 prnb

**prnb** is normally started by an OnLine start-up script or as part of system boot-up. It is responsible for administering the notes database and providing notes handling information to **prnotes**. The notes database comprises the following files:

`notes.hdr` Notes header file.

`notes.dtl` Notes text file.

**prnb** also provides information to **prnotes** which is responsible for notes handling.

### 3.2.7 prnotes

**prnotes** is normally started and stopped by **prmap** (site notes) or **prview** (network access element notes). It provides the following functions:

- An interface for servicing a request to display a list of notes logged for a named item in a specified category (network access element, site, user, alarms, etc.).
- Notes handling capabilities—add, delete, modify.

### 3.2.8 prview

**prview** is normally started and stopped by **prmap** in response to a user request to change the screen displayed in the map window. It provides the following functionality for monitoring and managing a network access element:

- Displays the Network Element Screen and the associated shelf-view and card-view windows which provide GUI interfaces for configuration, test, performance data gathering, status monitoring, and so forth.
- Accepts alarm information from **prcom** and changes the status display (color) of the affected network access element and circuit card.
- Provides an interface with **prcom** for the following:
  - Display and acknowledgment of active alarms for a specified network access element (also responsible for circuit creation and modification).
  - Display of historical alarms for a specified network access element.
  - Filtering of network access element alarms.
- Provides an interface with **prnotes** for creating, displaying, and modifying user notes for a network access element.

### 3.3 Dispatch Scripts

Dispatch scripts provide a convenient way to start, stop, and monitor OnLine daemon processes (**prdb**, **prnb**, and **pralarm** with **prcom[s]**). OnLine application processes (**pradmin**, **prview**, **prnotes**, and **prmap**) can be only monitored and not started or stopped by a dispatch script.

Dispatch scripts use the UNIX `ps` command to obtain relevant information about OnLine daemon processes and the `kill` command to stop them. The scripts **prstart** and **prstop** can be run only by the root; **prstatus** can be run by any user. No dedicated repository other than the standard UNIX process tables(s) is used by dispatch scripts.

The following paragraphs describe the dispatch scripts in manual page format.

### 3.3.1 prstart

#### NAME

**prstart** - start OnLine daemon processes

#### SYNOPSIS

**prstart** [ **-d** ] [ *daemon\_process\_name(s)* ]

#### DESCRIPTION

**prstart** starts the OnLine daemon processes. When invoked with no options, it starts all daemons.

One must be logged in as root to execute **prstart**. Since it does nothing when the daemon processes are already running, it is safe to execute **prstart** multiple times.

#### OPTIONS

##### **-d**

When invoked with the **-d** option, **prstart** starts the relevant daemon processes in separate `cmdtool` windows. This option is intended to assist in debugging.

*daemon-process-name(s)*

When invoked with one or more optional *daemon-process-name(s)*, **prstart** starts only the specified process(es). Allowed *daemon-process-name(s)* are: **prdb**, **prnb**, and **pralarm**. (**prcom** cannot be started by **prstart** directly; one should start **pralarm** which will start one or more **prcom** processes.)

#### EXAMPLES

1. Start all OnLine daemon processes:

```
% prstart
```

2. Start all OnLine daemon processes in separate `cmdtool` windows:

```
% prstart -d
```

3. Start OnLine daemon process **prdb** (administrative database):

```
% prstart prdb
```

### 3.3.2 prstatus

#### NAME

**prstatus** - report status of OnLine processes

#### SYNOPSIS

```
prstatus [ process_name(s) ] [ user_name(s) ]
```

#### DESCRIPTION

**prstatus** reports current status of the OnLine processes. When invoked with no options, it reports the status of all OnLine processes currently running for all users.

**prstatus** produces output similar to the UNIX `ps` command; i.e.,

```
ps -e -o user, s=STATE -o etime, args
```

*Note:* **prstatus** uses the following schemes to associate the command name that `ps` reports to an OnLine process name: 1) the names are equal, or 2) the command name equals the process name prefixed with `$PRNMS/bin`.

*These matching schemes mean that processes started with different values of environment variable `PRNMS` are not identified as OnLine processes and are not reported.*

#### OPTIONS

*process\_name(s)*

When **prstatus** is invoked with one or more optional *process\_name(s)*, it reports only on the specified process(es). Allowed process-names are: **pradmin**, **pralarm**, **prcom**, **prdb**, **prmap**, **prnb**, **prnotes**, and **prview**. Any other name is treated as a user name.

*user\_name(s)*

When **prstatus** is invoked with one or more optional *user\_name(s)*, it reports only on the process(es) running under the specified `user id(s)`.

## EXAMPLES

1. Display information about all OnLine processes that are currently running:

```
% prstatus
USER      STATE  ELAPSED  COMMAND
root      S      16:22:21 /home/akaplan/fasil/work/prnms/bin/prcom prcom.conf
akaplan   S      20:41    prview 199.190.210.1 Manager spartal 7500
akaplan   S      18:18:53 prview nm801 Manager spartal 4010 ak
akaplan   S      25:32    prnotes site fremont ak
xwang     T      7:22     prview nm801 Manager spartal 8106
akaplan   S      18:19:07 prmap
root      S 1-20:00:13 prnb
root      S 1-19:45:08 pralarm
root      S 1-19:45:07 /work/ems5/integ/i25/prnms/bin/prcom /var/tmp/aaaa000Rd
root      S 1-20:00:19 prdb
xwang     S 18:42:17 /home/xwang/work/my24/prnms/bin/prcom /var/tmp/aaaa001ya
akaplan   S      27:24    prnotes IMACS nm801 ak
```

2. Display information about all OnLine processes that are currently running for user akaplan:

```
% prstatus akaplan
USER      STATE  ELAPSED  COMMAND
akaplan   S      20:41    prview 199.190.210.1 Manager spartal 7500
akaplan   S      18:18:53 prview nm801 Manager spartal 4010 ak
akaplan   S      25:32    prnotes site fremont ak
akaplan   S      18:19:07 prmap
akaplan   S      27:24    prnotes IMACS nm801 ak
```

3. Display information about all OnLine **prview** processes that are currently running:

```
% prstatus prview
USER      STATE  ELAPSED  COMMAND
akaplan   S      20:41    prview 199.190.210.1 Manager spartal 7500
akaplan   S      18:18:53 prview nm801 Manager spartal 4010 ak
xwang     T      7:22     prview nm801 Manager spartal 8106
```

### 3.3.3 prstop

#### NAME

**prstop** - stop OnLine daemon processes

#### SYNOPSIS

**prstop** [ **-d** ] [ *daemon\_process\_names* ]

#### DESCRIPTION

**prstop** stops the OnLine daemon processes. When invoked with no options, it stops all daemons.

One must be logged in as root to execute **prstop**. Since it does nothing when the daemon processes are already stopped, it is safe to execute **prstop** multiple times.

#### OPTIONS

##### **-d**

When **prstop** is invoked with the **-d** option, it stops the relevant daemon processes as well as their parent processes. This is handy in case those processes were started using **prstart -d** (see [page 3-7](#) for more details).

*daemon-process-name(s)*

When **prstop** is invoked with one or more optional *daemon-process-name(s)*, it stops only the specified process(es). Allowed *daemon-process-name(s)* are: **prdb**, **prnb**, and **pralarm** (stopping **pralarm** will also stop any **prcom** processes that belong to it).

#### EXAMPLES

1. Stop all OnLine daemon processes:  
% **prstop**
2. Stop all OnLine daemon processes running in separate windows:  
% **prstop -d**
3. Stop OnLine daemon process **prdb** (administrative database):  
% **prstop prdb**

# Chapter 4

## OnLine Administration

### 4.1 Introduction

The OnLine administrator is responsible for configuring OnLine for use by operators who are assigned network domains to manage. See the *OnLine Operator Guide* for an overview of the graphical user interface (GUI) and the views an operator can display.

### 4.2 Before You Begin

The following paragraphs introduce basic concepts that you should become familiar with before administering OnLine.

#### 4.2.1 Administration Overview

The OnLine administrator is responsible for accomplishing the following tasks:

- Configuring the OnLine database.
- Creating OnLine operator accounts.
- Creating and generating an HP map for each operator.
- If desired, importing additional devices discovered by HP OpenView Network Node Manager (NNM); see “[Import](#)” on [page 4-15](#) for a description of this feature.
- Creating and viewing reports to list all created sites, comms network elements, and users, see “[Generating Administrator Reports](#)” on [page 4-17](#) for a description of this feature.

[Figure 4-1](#) shows a form you can use to organize the information that you will have to enter to configure the database and create user accounts.

[Figure 4-2](#) shows the recommended sequence for accomplishing the administrator tasks (which include generating the required NNM maps). It also describes the information fields that display on the OnLine database screens and in the NNM map generation window. Mandatory entries are shown in bold and optional entries are shown in normal text.

## 4.2.2 Configuring the Database

Database configuration consists of entering the required information on the `COMM`, `SITE`, `DEVICE`, and `USER` screens. Before doing this, however, it is recommended that you create a site plan which addresses the following:

- Sites – You must subdivide your network into functional sites of your choosing, each consisting of one or more access elements. For example, you could subdivide the Network Test Configuration shown on [page 2-4](#) into:
  - Two sites, each comprising a single access element.
  - A single site comprising both access elements.
- Comms – A communications process specifies a Solaris TCP/IP port (socket). The Comm services all the devices in the site and all users of those devices.

*Note:* The maximum number of operators that a Comm can service at one time is 15. For optimal performance, the number of devices serviced by the Comm should be limited to 15 or less.

You can specify any unused Comm Port Numbers within the range of 5001 through 65335. Use the `telnet host_name port_num` command to verify that your selections are not currently in use (see “[How Do I Determine Whether a Port is in Use?](#)” on [page 5-8](#)). Comm Port Numbers 28335 and above are typically available.

- Device Management – A device is a network access element. Each device can be assigned to more than one user, but only to one site.

## 4.2.3 Creating User Accounts

A user must have either an operator or administrator login account to OnLine. Each operator account designates the Devices assigned to the user and the HP Map from which to access the Devices.

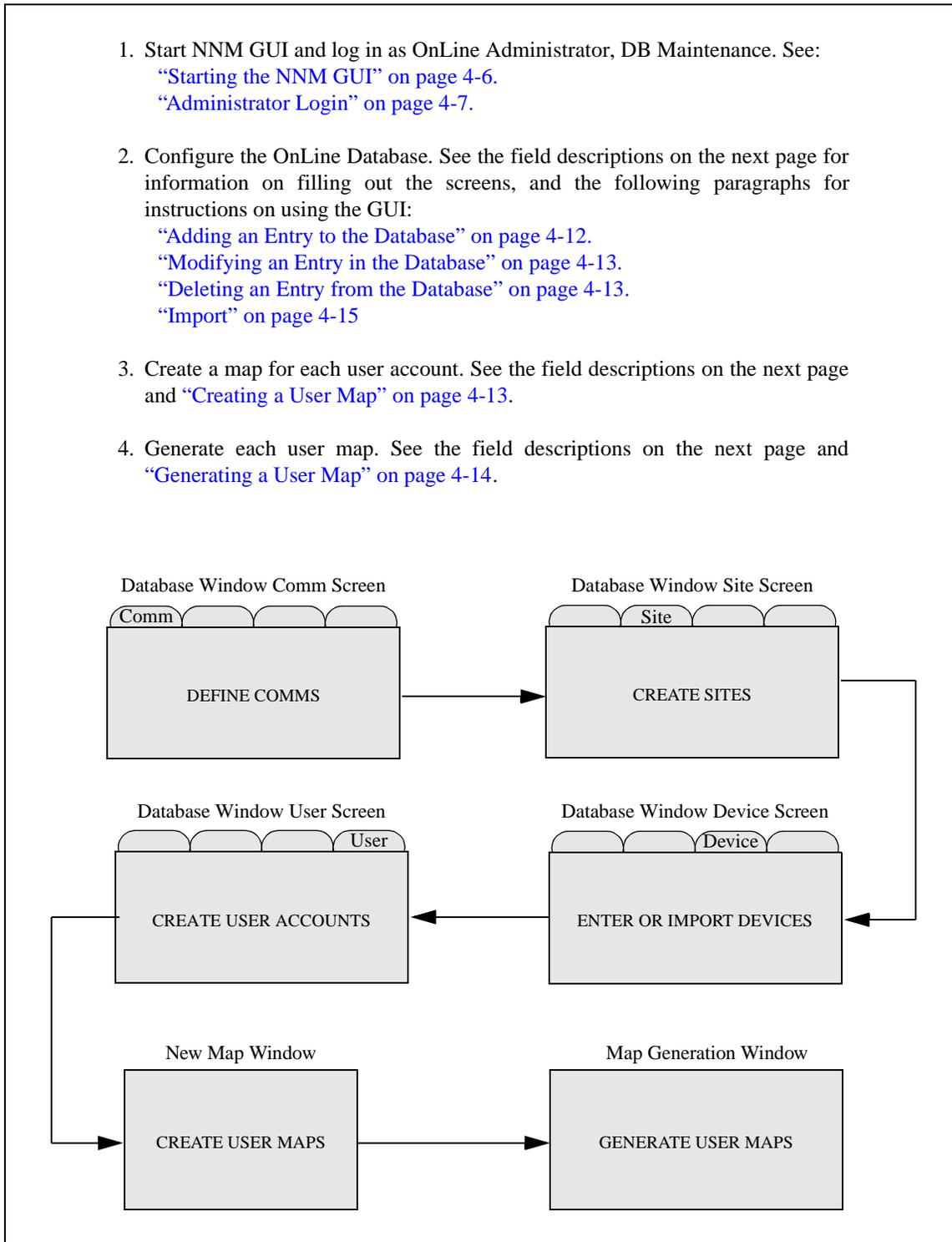
After a operator account is defined, an HP Map must be created and then generated so that NNM can access the assigned devices when the operator logs in to OnLine.

## 4.2.4 Administrator Reports

OnLine provides several reporting features to facilitate database and user-account administration (see [page 4-17](#)).



1. Start NNM GUI and log in as OnLine Administrator, DB Maintenance. See:
  - “Starting the NNM GUI” on page 4-6.
  - “Administrator Login” on page 4-7.
2. Configure the OnLine Database. See the field descriptions on the next page for information on filling out the screens, and the following paragraphs for instructions on using the GUI:
  - “Adding an Entry to the Database” on page 4-12.
  - “Modifying an Entry in the Database” on page 4-13.
  - “Deleting an Entry from the Database” on page 4-13.
  - “Import” on page 4-15
3. Create a map for each user account. See the field descriptions on the next page and “Creating a User Map” on page 4-13.
4. Generate each user map. See the field descriptions on the next page and “Generating a User Map” on page 4-14.



**Figure 4-2. OnLine Database Initial Setup (Sheet 1 of 2)**

<p>COMM SCREEN (see <a href="#">page 4-9</a>):</p> <p><b>Host Name</b> The name of the workstation.</p> <p><b>Port Number</b> The number of the TCP/IP port (socket) used for communications. Specify an unused port number within the range 5001 - 65335.</p>		<p>USER SCREEN (see <a href="#">page 4-12</a>):</p> <p><b>User Name</b> The OnLine login id of the user for which an account is being created.</p>	
<p>SITE SCREEN (see <a href="#">page 4-11</a>):</p> <p><b>Site Name</b> The name that displays for the site symbol on a user map. This can be any name you choose.</p>		<p><b>Network Name</b> The name that displays for the network symbol on the user map.</p> <p><b>HP Map Name</b> The name of the user map. After assigning an HP Map to the user, you must create it and then generate it before the user can display it in the NNM map window (see <a href="#">page 4-13</a>).</p>	
<p>Background Map An optional background map that displays in the map window when the User selects the Network Element map view. Make a single choice from the drop down menu of available maps.</p>		<p>Background map An optional background map that appears in the map window when the user selects Site map view. Make a single choice from the drop down menu of available maps.</p>	
<p><b>Comms</b> Make a single choice from the drop down menu of available communications processes. These are the processes you defined from the Comm screen.</p>		<p><b>Password</b> The OnLine login password of the user for which an account is being created. You must press the Return key to enter the password after typing it.</p>	
<p>DEVICE SCREEN (see <a href="#">page 4-11</a>):</p> <p><b>Device Name</b> IP name or address of the network element.</p> <p><b>Community Name</b> SNMP password (try <b>Manager</b> or consult your system/network administrator). Be sure to change the default Community Name (public) when importing devices.</p>		<p><b>Confirm</b> Re-type the password to confirm it and press the Return key.</p> <p><b>Devices</b> To assign devices to a user, select your choices from the Devices list and then click Save or Activate.</p> <p>The Devices list shows the IP names or address of the network elements you defined from the Device screen. Control-click to select/deselect individual devices, or shift-click to select/deselect a group of devices; your selections highlight.</p>	
<p><b>Sites</b> Make a single choice from a drop down menu of available sites. These are the sites you defined from the Site screen.</p>			
<p>NEW MAP WINDOW (see <a href="#">page 4-13</a>)</p> <p><b>Name</b> The name of the HP map.</p> <p>Layout for... N/A; accept default.</p> <p><b>Compound Status</b> Propagate Most Critical.</p> <p>Configurable ...N/A; accept default.</p> <p>Comments N/A.</p>		<p>MAP GENERATION WINDOW (see <a href="#">page 4-14</a>)</p> <p><b>User Name</b> The OnLine login id of the user for which the map is being generated.</p> <p><b>HP Map Name</b> The name of the user map.</p> <p><b>Network Name</b> The name that displays for the network symbol on the map.</p> <p>Background Map An optional background map that displays in Site Map view. Make a single choice from the drop down menu of available maps.</p>	
<p><i>Note: Mandatory entries are shown in bold. Optional entries are shown in normal text.</i></p>			

Figure 4-2. OnLine Database Initial Setup (Sheet 2 of 2)

## 4.3 OnLine Administrator Session

To configure an OnLine administrator session, start the NNM GUI and log in to OnLine as administrator. When you're done, log out and close the NNM GUI.

### 4.3.1 Starting the NNM GUI

To start the NNM GUI:

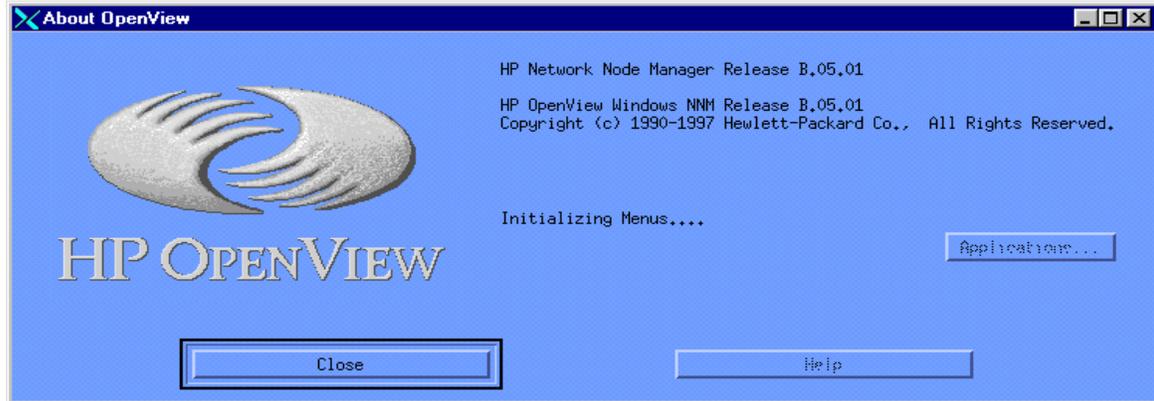
1. Log in to Solaris or configure an X-terminal connection.
2. Check that your environment is set correctly and that the NNM and OnLine processes are running.
  - a. Enter `echo $PATH` at the command prompt to verify that your environment is set correctly (for some configurations, additional or duplicate paths might also be displayed):

```
# echo $PATH
.:usr/dt/bin:/usr/openwin/bin:/bin:/usr/bin:/usr/ucb:/usr/sbin:/opt/OV/bin:/opt/online/prnms/bin
```

- b. The required NNM processes are `OVSPMD`, `ovwdb`, `ovtrapd`, `ovactiond`, `pmd`, `ovtopmd`, and `ovrepld` (for some configurations, `netmon`, `snmpCollect`, and `OVLICENSEMgr` must also be running). To check whether the required processes are running, issue the command `ovstatus | more..`
- c. Issue the command `prstatus` to verify that the following OnLine processes are running: `prnb`, `prdb`, `pralarm`, and (after the database is configured) `prcom`.

Contact the Solaris system administrator if your environment is not set correctly or any process is not running.

3. Enter `ovw&` to start the NNM GUI. The Start-Up Screen displays while NNM is loading the GUI (see [Figure 4-3](#)).



**Figure 4-3. Start-UP Screen**

4. When NNM completes loading, the default Network Map displays (see [Figure 4-4](#)).



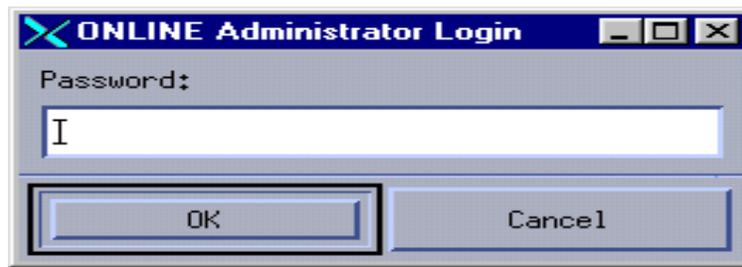
**Figure 4-4. Default Network Map**

5. While the HP Map is initializing, the message [Synchronizing] appears in the lower left corner of the window. Wait for the message to clear before performing any operations.

### 4.3.2 Administrator Login

To log in to OnLine as administrator:

1. Select **Administer:OnLine EMS->Login Admin->DB Maintenance**. The ONLINE Administrator Login window opens (see [Figure 4-5](#)).



**Figure 4-5. OnLine Administrator Login Window**

2. Enter your `Password` and click `OK`. If this is your first session, enter the default password `welcome` exactly as shown (the `Password` is case sensitive).

If no other administrator session is in progress, the `ONLINE Administrator` window opens and displays the `Comm` screen (see [Figure 4-6](#)).

If an administrator session is already in progress, a warning dialog box opens. You can choose to cancel your log in or terminate the other session (which will cause all unsaved work in progress to be lost). Click your choice.

To change the default administrator password, do the following:

1. Click the `User` tab to display the `User` screen (see [Figure 4-9](#)).
2. Select `Administrator` in the `Users` column.
3. Click the `Password` field and type the new password.
4. Press the `Return` key to move the cursor to the `Confirm` field.
5. Retype the password.
6. Click the `Save` button to store the new password in the `OnLine` working database.
7. Click the `Activate` button to enter the new password in the `OnLine` permanent database. To verify that the password is changed, log out and then log in.

### 4.3.3 Database Administration

[Figure 4-6](#) shows the operational components of the `ONLINE Administrator` window and [Table 4-1](#) describes their functions. This window displays when you log in as `OnLine Administrator` or select `Administer:OnLine EMS->Login Administrator->DB Maintenance` while logged in.

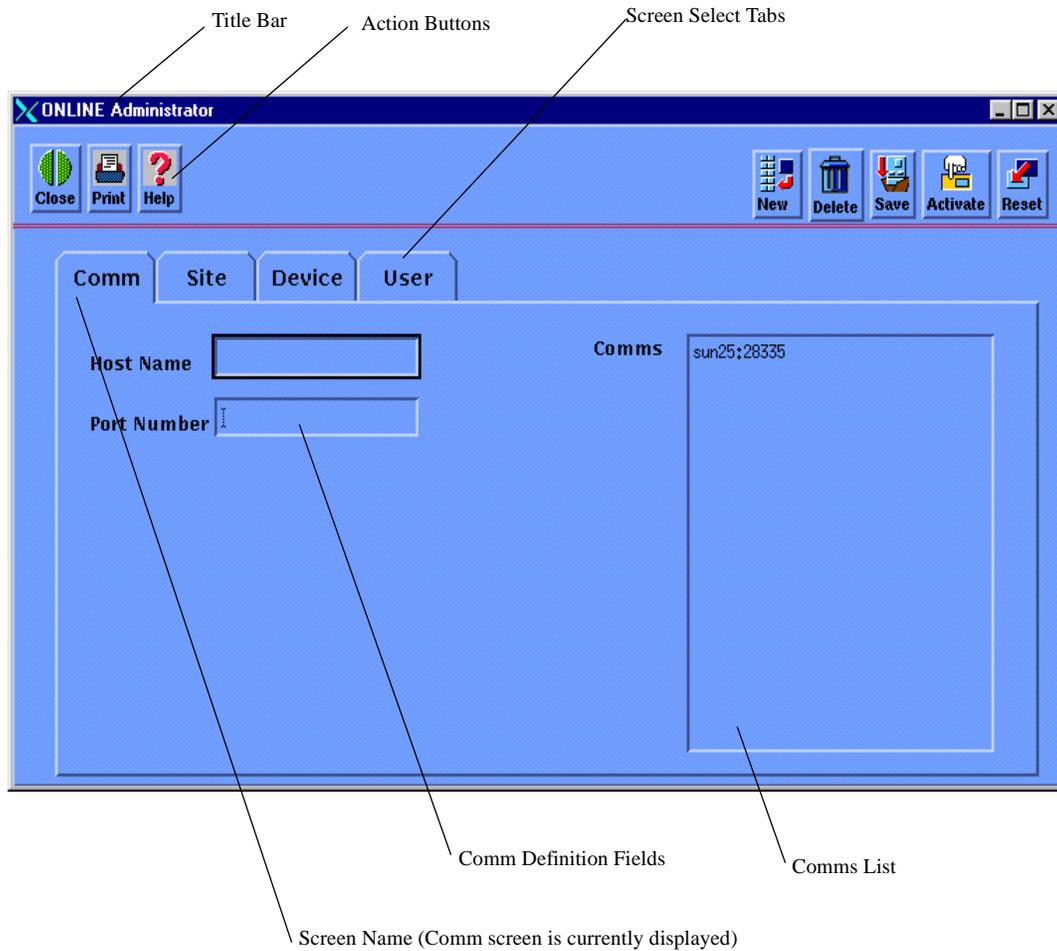


Figure 4-6. OnLine Administrator Window Comm Configuration Screen

**Table 4-1. OnLine Administrator Window Operational Components**

Component	Description																
Title Bar	Displays the name of the window.																
Screen Select Tabs	Click a tab to display the associated configuration screen.																
Action Buttons	<p>Click the action buttons to do the following:</p> <table border="0"> <tr> <td data-bbox="431 636 505 659">Close</td> <td data-bbox="643 636 1208 659">Dismiss the OnLine Administrator window.</td> </tr> <tr> <td data-bbox="431 682 505 705">Print</td> <td data-bbox="643 682 1338 705">Print the contents of the OnLine Administrator window.</td> </tr> <tr> <td data-bbox="431 728 493 751">Help</td> <td data-bbox="643 728 1029 751">Not supported in the current release.</td> </tr> <tr> <td data-bbox="431 774 477 798">New</td> <td data-bbox="643 774 1198 798">Clear the definition fields in the current screen view.</td> </tr> <tr> <td data-bbox="431 821 518 844">Delete</td> <td data-bbox="643 821 1149 844">Delete the selected item(s) from the list display.</td> </tr> <tr> <td data-bbox="431 867 493 890">Save</td> <td data-bbox="643 867 1377 953">Save all changes to the working (temporary) database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.</td> </tr> <tr> <td data-bbox="431 976 548 999">Activate</td> <td data-bbox="643 976 1354 1062">Write the changes stored in the working database into the administration (permanent) database. This makes them available to OnLine users.</td> </tr> <tr> <td data-bbox="431 1085 505 1108">Reset</td> <td data-bbox="643 1085 1382 1203">Remove your changes from the working database and restore the original information from the permanent database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.</td> </tr> </table>	Close	Dismiss the OnLine Administrator window.	Print	Print the contents of the OnLine Administrator window.	Help	Not supported in the current release.	New	Clear the definition fields in the current screen view.	Delete	Delete the selected item(s) from the list display.	Save	Save all changes to the working (temporary) database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.	Activate	Write the changes stored in the working database into the administration (permanent) database. This makes them available to OnLine users.	Reset	Remove your changes from the working database and restore the original information from the permanent database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.
Close	Dismiss the OnLine Administrator window.																
Print	Print the contents of the OnLine Administrator window.																
Help	Not supported in the current release.																
New	Clear the definition fields in the current screen view.																
Delete	Delete the selected item(s) from the list display.																
Save	Save all changes to the working (temporary) database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.																
Activate	Write the changes stored in the working database into the administration (permanent) database. This makes them available to OnLine users.																
Reset	Remove your changes from the working database and restore the original information from the permanent database. This includes the changes made on all of the configuration screens, not just the one that is currently displayed.																

### 4.3.3.1 Configuration Screens

Figures 4-6 through 4-9 show the following OnLine Administrator configuration screens, respectively: Comm, Site, Device and User. See page 4-5 for descriptions of the definition fields that appear for each screen.

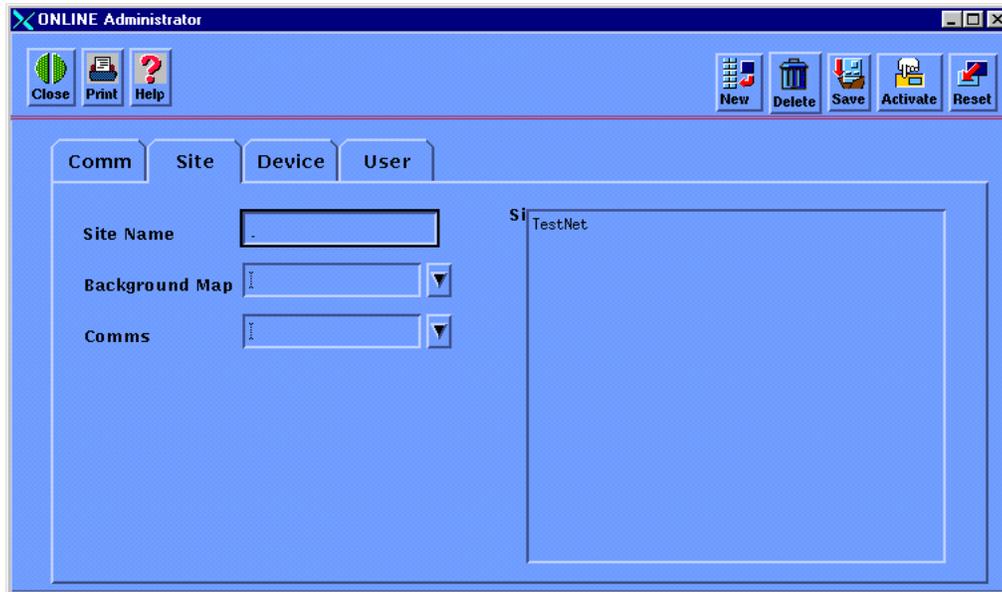


Figure 4-7. OnLine Administrator Window Site Configuration Screen

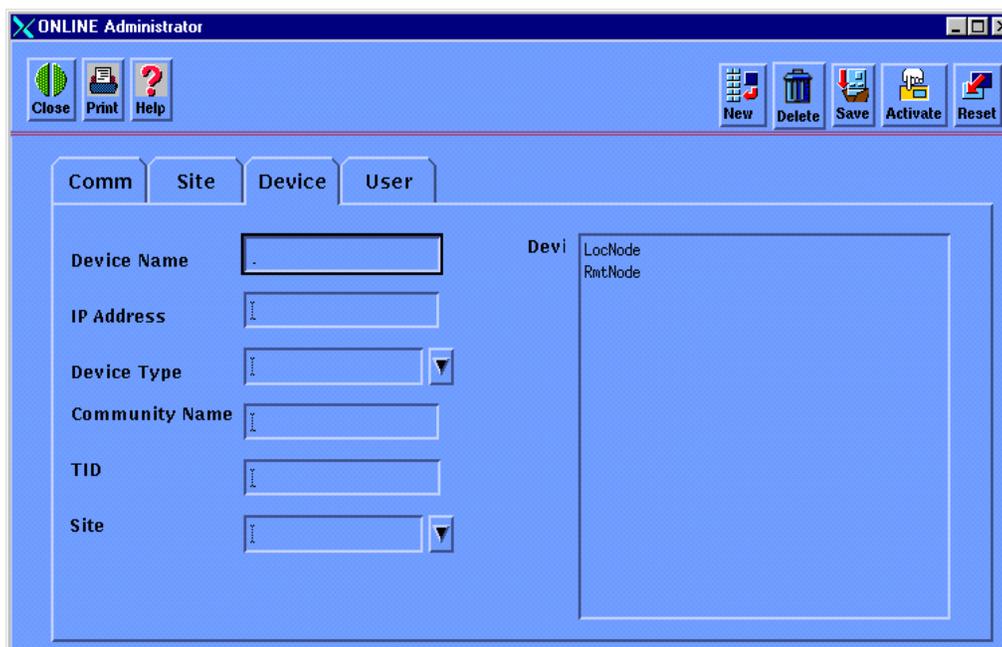
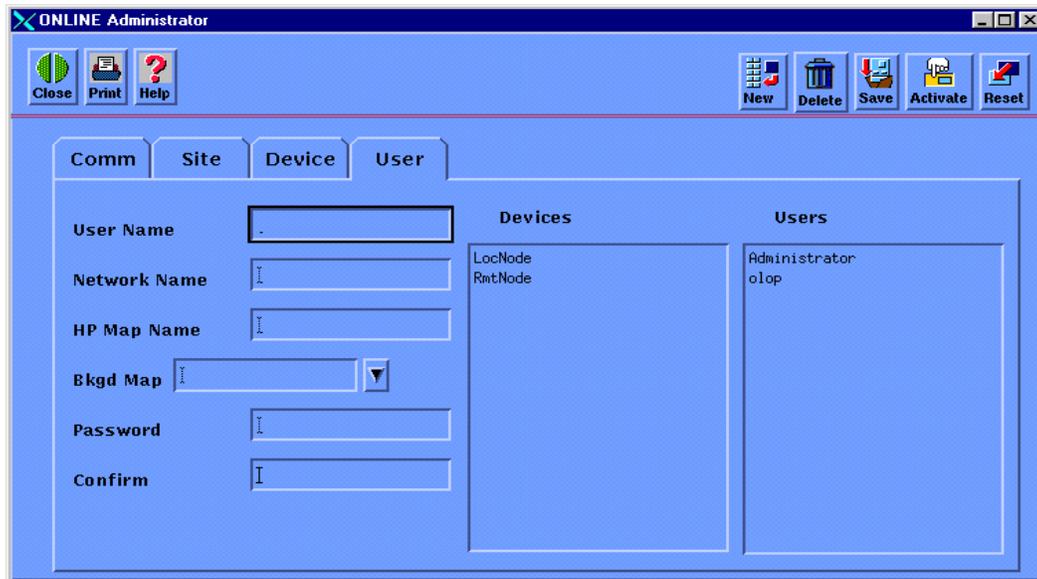


Figure 4-8. OnLine Administrator Window Device Configuration Screen



**Figure 4-9. OnLine Administrator Window User Configuration Screen**

### 4.3.3.2 Adding an Entry to the Database

To add an entry to the database, do the following:

1. Click the appropriate tab in the `OnLine Administrator` window to display the configuration screen.
2. Click the `New` button to clear the definition fields.
3. Fill out the definitions fields. If a down arrow appears next to a field, click the arrow and make a choice from the drop down menu that displays.

When adding a user, make sure that all network access elements you want to assign to the user are selected (highlighted) in the `Devices` list.

*Note:* Control-click to select or deselect a single element; shift-click to select or deselect a group of elements.

4. Click the `Save`, `Activate`, or `Reset` button to complete your entry (see [page 4-10](#)).

### 4.3.3.3 Modifying an Entry in the Database

To modify an entry in the database, do the following:

1. Click the appropriate tab in the `OnLine Administrator` window to display the configuration screen.
2. Click the entry that you want to modify in the list that appears to the right of the definition fields. Your selection highlights and the definition fields display current information for the selection.

When modifying a user account, make sure that all network elements you want to assign to the user are selected (highlighted) in the `Devices` list. If you want to remove a network element from the user account, control-click to deselect it in the `Devices` list.

3. Click the `Save`, `Activate`, or `Reset` button to complete your entry (see [page 4-10](#)).

### 4.3.3.4 Deleting an Entry from the Database

To delete an entry from the database, do the following:

1. Click the appropriate tab in the `OnLine Administrator` window to display the configuration screen.
2. Click the entry that you want to delete in the list that appears to the right of the definition fields. Your selection highlights
3. Click the `Delete` button to remove the entry, then click the `Save`, `Activate`, or `Reset` button to complete your entry (see [page 4-10](#)).

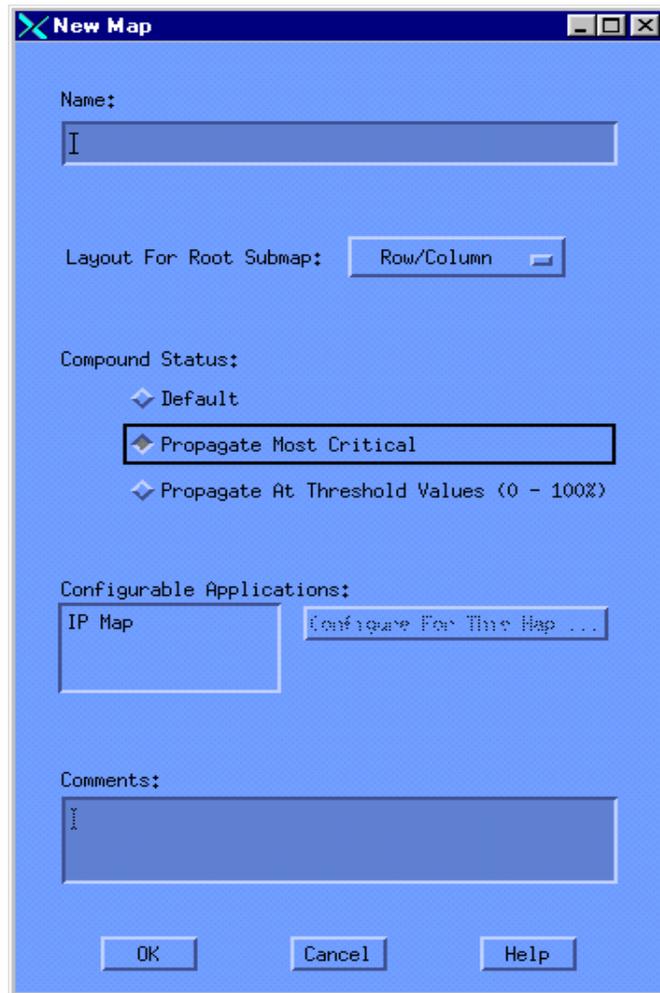
## 4.3.4 User Map

After defining a map for a user, you must create it and then generate it to make it available for selection by the user.

### 4.3.4.1 Creating a User Map

To create a user map do the following:

1. Select **Map:Maps->New...** The `New Map` window opens (see [Figure 4-10](#)).



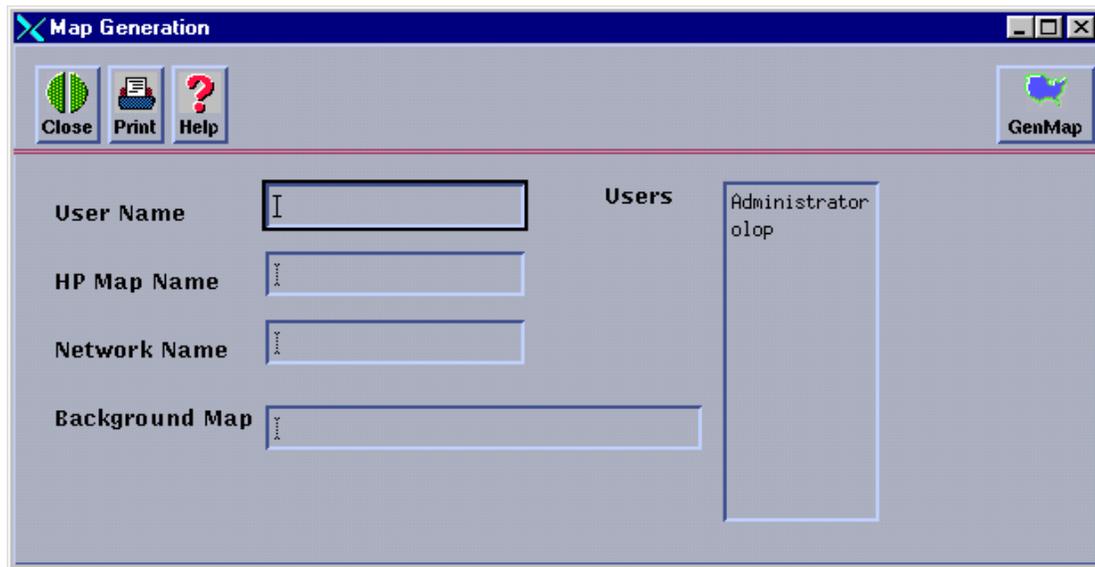
**Figure 4-10. New Map Window**

2. Click the `Propagate Most Critical` button. The button highlights.
3. Enter the name of the map in the `Name:` field.
4. Click `OK` to enter the map name in the NNM database. The `New Map` window closes.

#### 4.3.4.2 Generating a User Map

To generate a user map after creating it, do the following:

1. Select ***Administer:OnLine EMS->Login Admin->Map Generation***. If you are already logged in as administrator, the Map Generation window opens (see Figure 4-11). If not, the Administrator Login Window opens indicating that you must log in as administrator in order to generate a map (see page 4-8 for instructions on logging in as administrator).



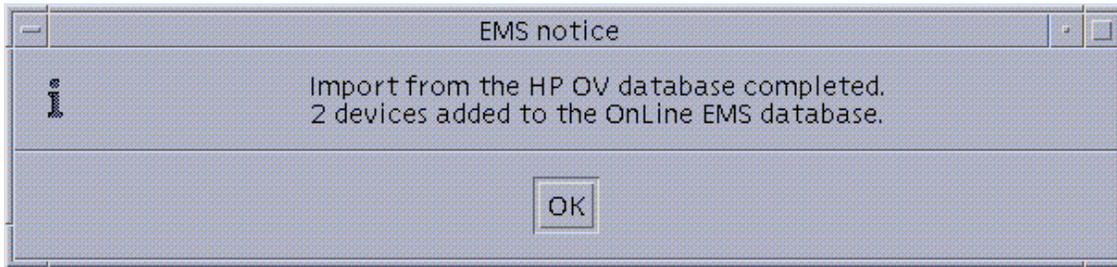
**Figure 4-11. Map Generation Window**

2. Do one of the following to assign the map you are going to generate to a user:
  - a. If the user already has an account, click the name in the `Users` list. Your selection highlights and the definition fields display information from the user account.
  - b. If the user does not have an account yet, fill in the definition fields.
3. Click the `GenMap` button to create the map.
4. For instructions on displaying the map, see “Logging in to OnLine as Operator” in the *OnLine Operator Guide*.

### 4.3.5 Import

When NNM auto discovery is turned on, you can import the devices it discovers into the administrative database. To do so, proceed as follows:

1. Select **Administer:OnLine EMS->Login Admin->Import**. If you are already logged in as administrator, a confirmation message appears in a dialog box when import is completed (see Figure 4-12). If not, the Administrator Login Window opens indicating that you must log in as administrator first (see [page 4-8](#) for instructions on logging in as administrator).



**Figure 4-12. Import Confirmation Dialog Box**

2. When the Import dialog box opens, click **OK** to acknowledge the confirmation message.
3. To view the devices, select **Administer:OnLine EMS->Login Admin->DB Maintenance**, then click the **Device** tab in the OnLine Administrator window. The devices added by NNM display in the **Devices** list (see [page 4-11](#)).

### 4.3.6 Generating Administrator Reports

To generate administrator reports, select *Administer:OnLine EMS->Login Admin->Report*. If you are already logged in as administrator, the OnLine Reports Generator window and its operational components are displayed (see Figure 4-13). If not, the Administrator Login Window opens indicating that you must log in as administrator first (see page 4-8 for instructions on logging in as administrator).

The operational components of the OnLine Reports Generator window are described in Table 4-2.

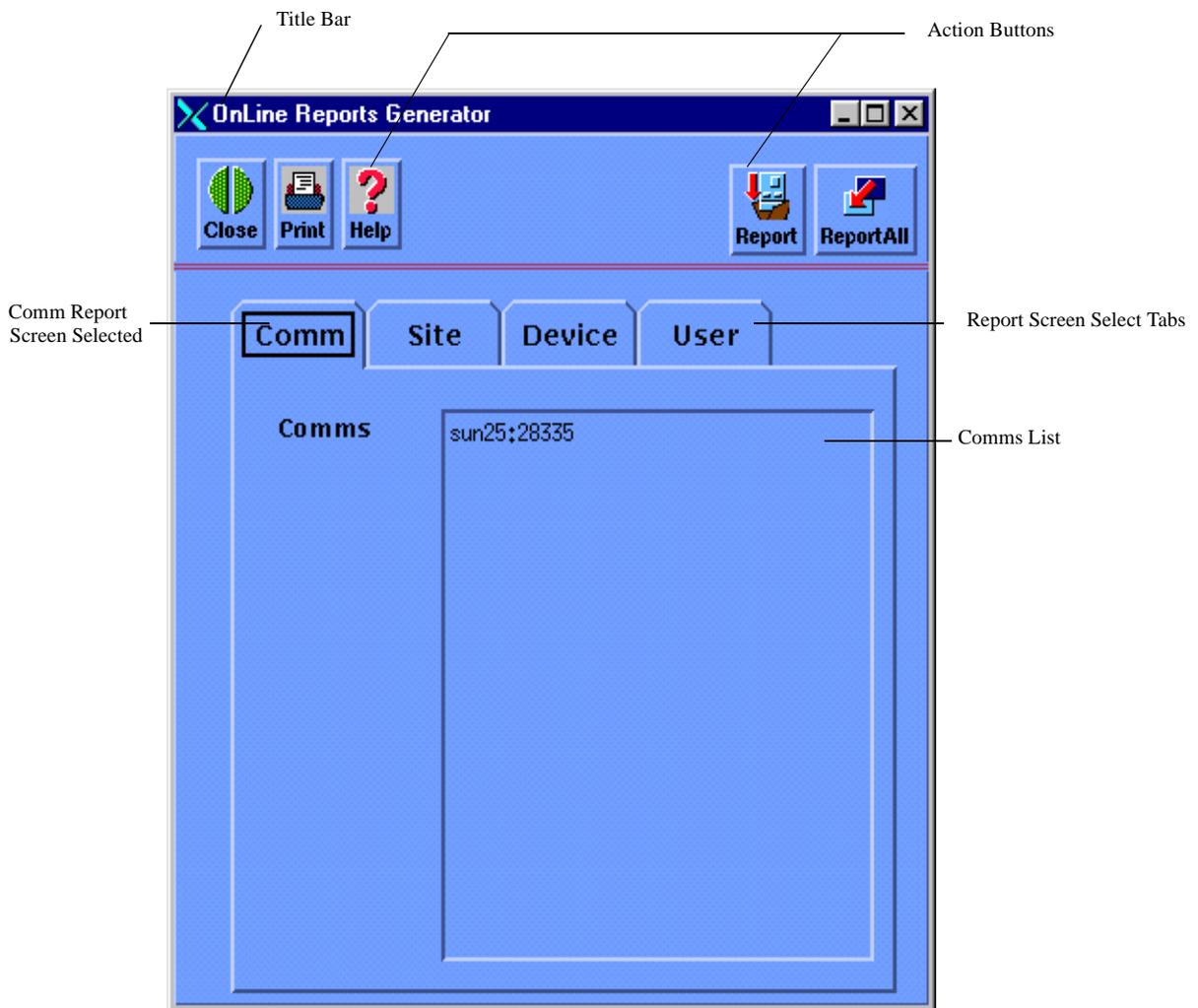


Figure 4-13. OnLine Reports Generator Window Comm Report Screen

**Table 4-2. OnLine Reports Generator Window Operational Components**

Component	Description										
Title Bar	Displays the name of the window.										
Report Select Tabs	Click a tab to select the associated report screen.										
Action Buttons	<p>Click the action buttons to do the following:</p> <table border="0"> <tr> <td data-bbox="431 638 505 663">Close</td> <td data-bbox="643 638 1273 663">Dismiss the OnLine Reports Generator window.</td> </tr> <tr> <td data-bbox="431 684 505 709">Print</td> <td data-bbox="643 684 1386 709">Print the contents of the OnLine Reports Generator window.</td> </tr> <tr> <td data-bbox="431 730 488 756">Help</td> <td data-bbox="643 730 1029 756">Not supported in the current release.</td> </tr> <tr> <td data-bbox="431 777 513 802">Report</td> <td data-bbox="643 777 1370 802">Generates specific report selected by an associated Report Select tab.</td> </tr> <tr> <td data-bbox="431 823 594 848">Report All</td> <td data-bbox="643 823 1289 848">Generates a report to list all comms, sites, devices, and users.</td> </tr> </table>	Close	Dismiss the OnLine Reports Generator window.	Print	Print the contents of the OnLine Reports Generator window.	Help	Not supported in the current release.	Report	Generates specific report selected by an associated Report Select tab.	Report All	Generates a report to list all comms, sites, devices, and users.
Close	Dismiss the OnLine Reports Generator window.										
Print	Print the contents of the OnLine Reports Generator window.										
Help	Not supported in the current release.										
Report	Generates specific report selected by an associated Report Select tab.										
Report All	Generates a report to list all comms, sites, devices, and users.										
Comms List	Lists all comms managed by the system administrator.										

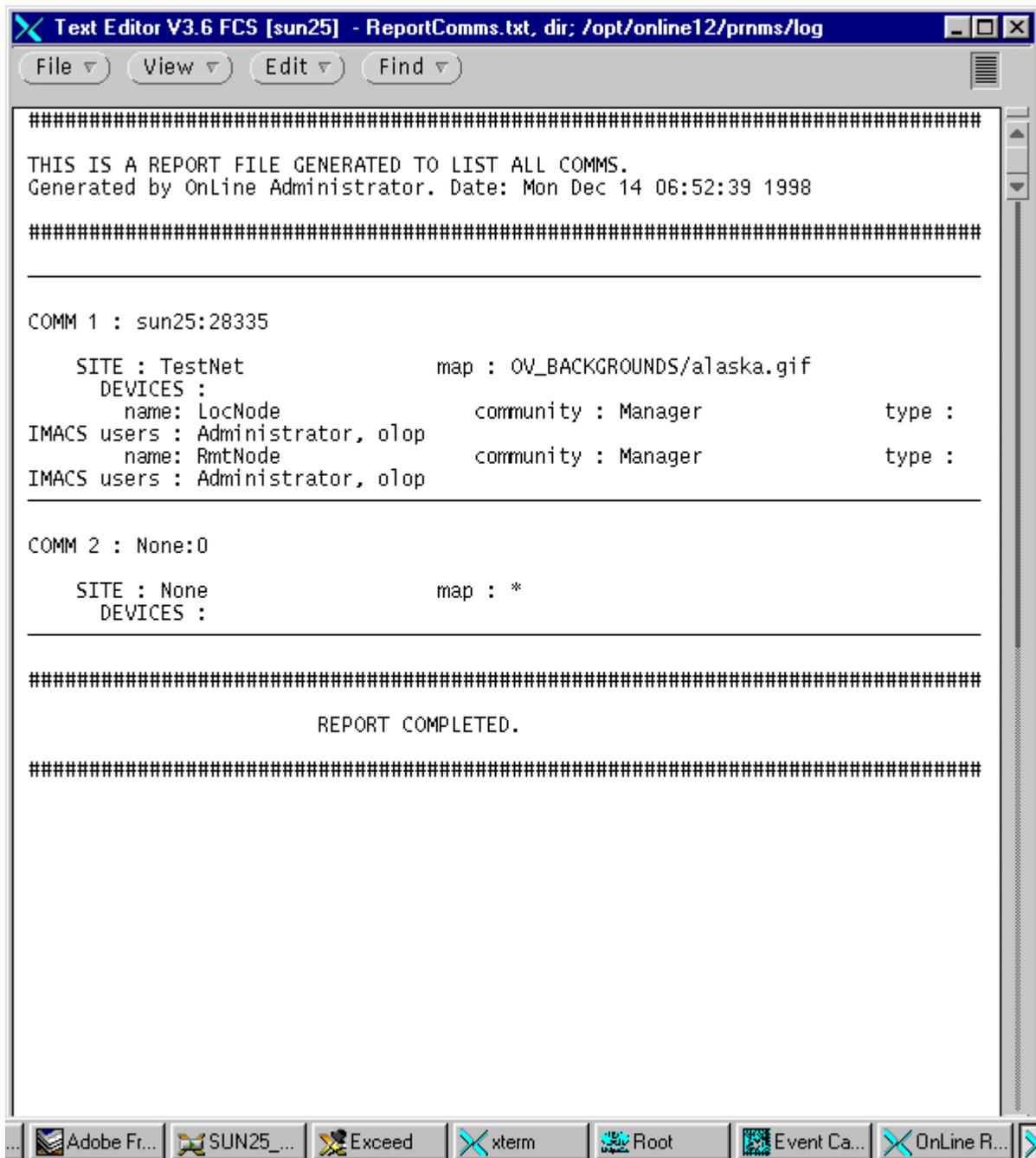
#### 4.3.6.1 Generating a Comm Report

To generate a comm report (see [Figure 4-14](#)), do the following:

1. Click the `Comm` tab in the OnLine Reports Generator window to display the Comm screen (see [Figure 4-13](#)).

**Note:** *Control-click to select or deselect a single item; shift-click to select or deselect a group of items.*

2. The initial display for the Comm screen shows all `Comms` deselected. If you want to generate a report that lists all `Comms`, click the `Report` button. To limit the report to specific `Comms`, select them before clicking the `Report` button.

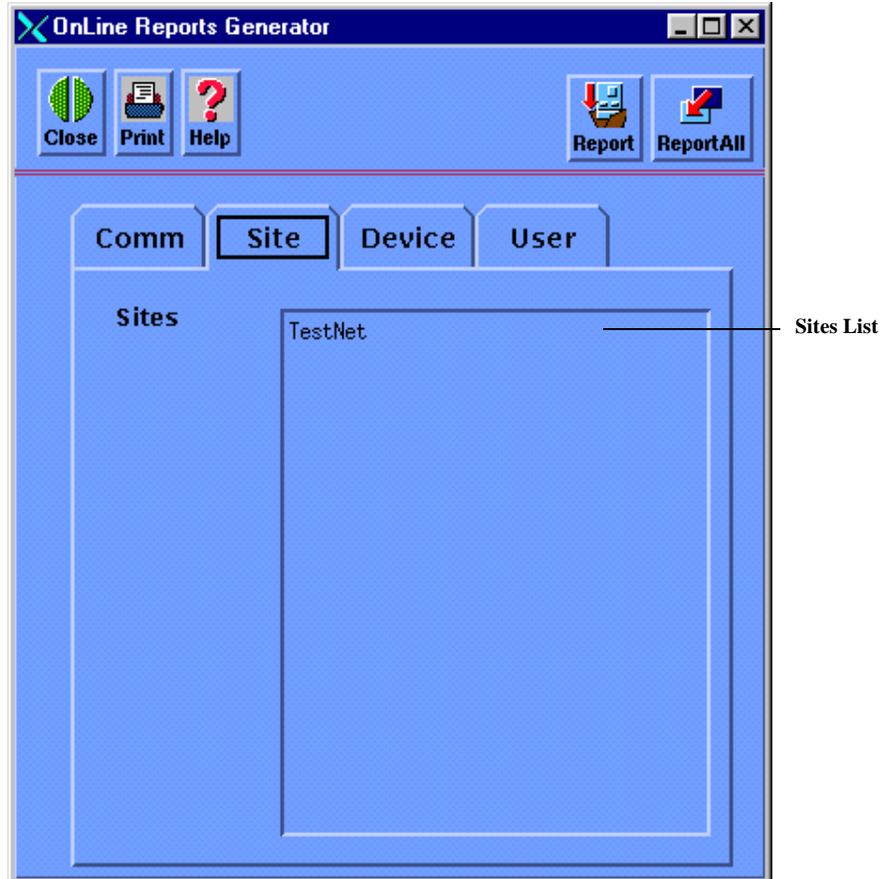


**Figure 4-14. Comm Report**

### 4.3.6.2 Generating a Site Report

To generate a site report (see [Figure 4-16](#)), do the following:

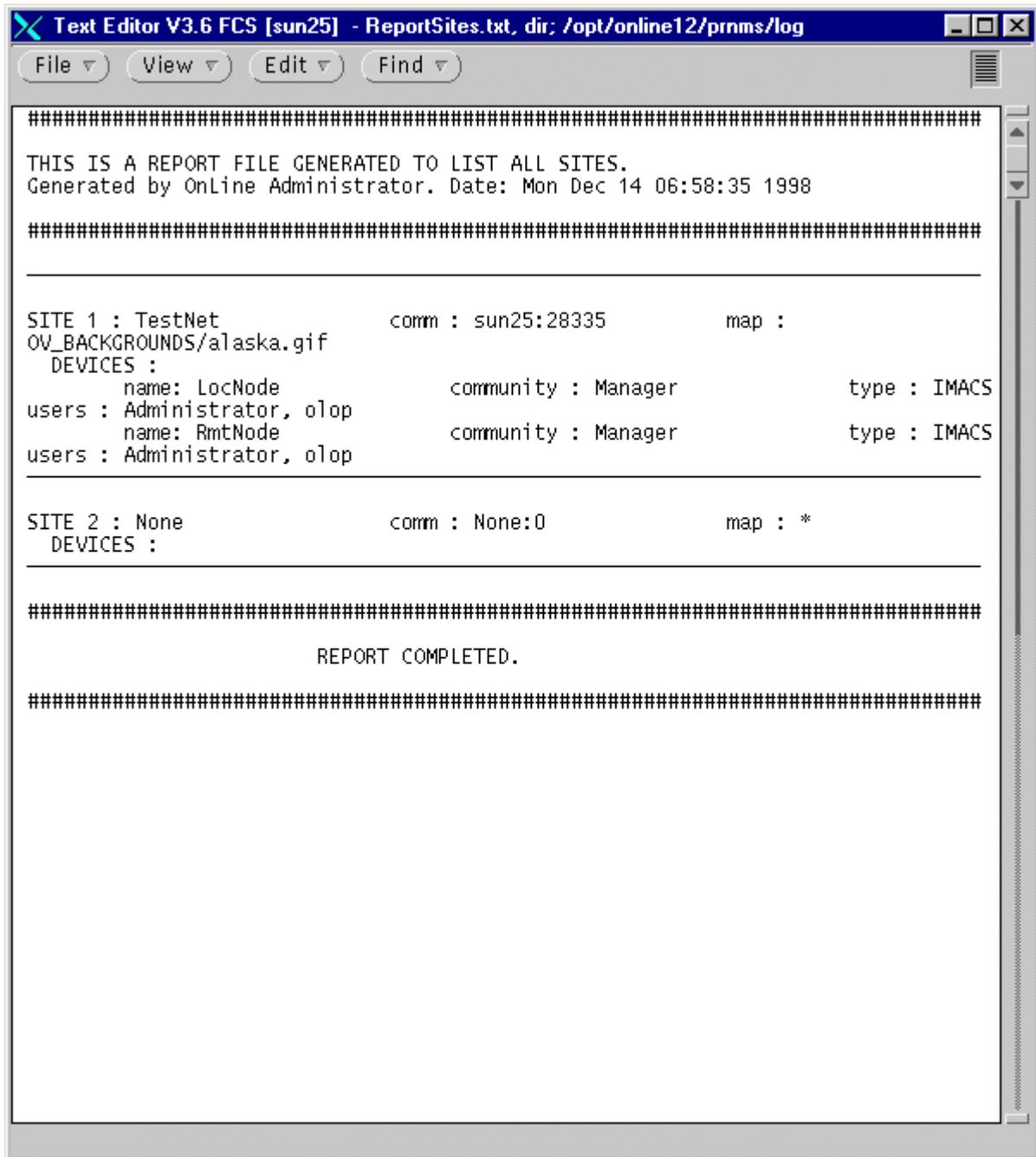
1. Click the Site tab in the OnLine Reports Generator window to display the Site screen (see [Figure 4-15](#)).



**Figure 4-15. OnLine Reports Generator Window Site Report Screen**

*Note:* Control-click to select or deselect a single item; shift-click to select or deselect a group of items.

2. The initial display for the Site screen shows all Sites deselected. If you want to generate a report that lists all Sites, click the Report button. To limit the report to specific Sites, select them before clicking the Report button.

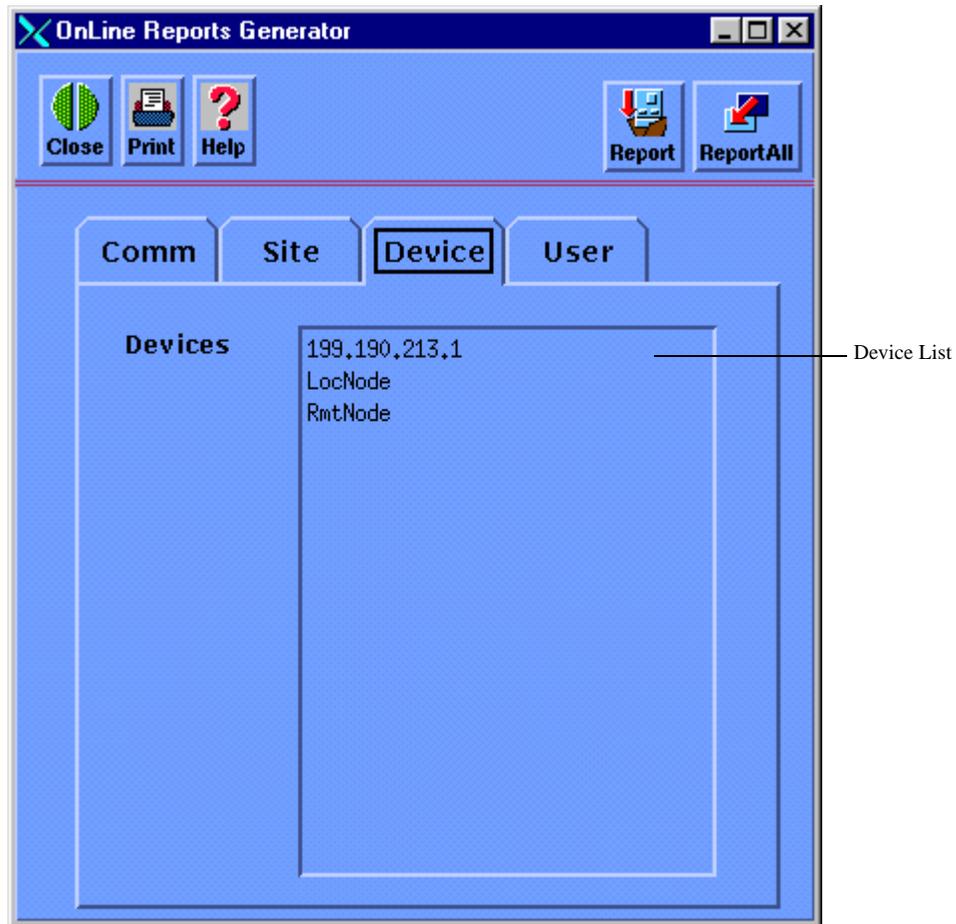


**Figure 4-16. Site Report**

### 4.3.6.3 Generating a Device Report

To generate a device report (see [Figure 4-18](#)), do the following:

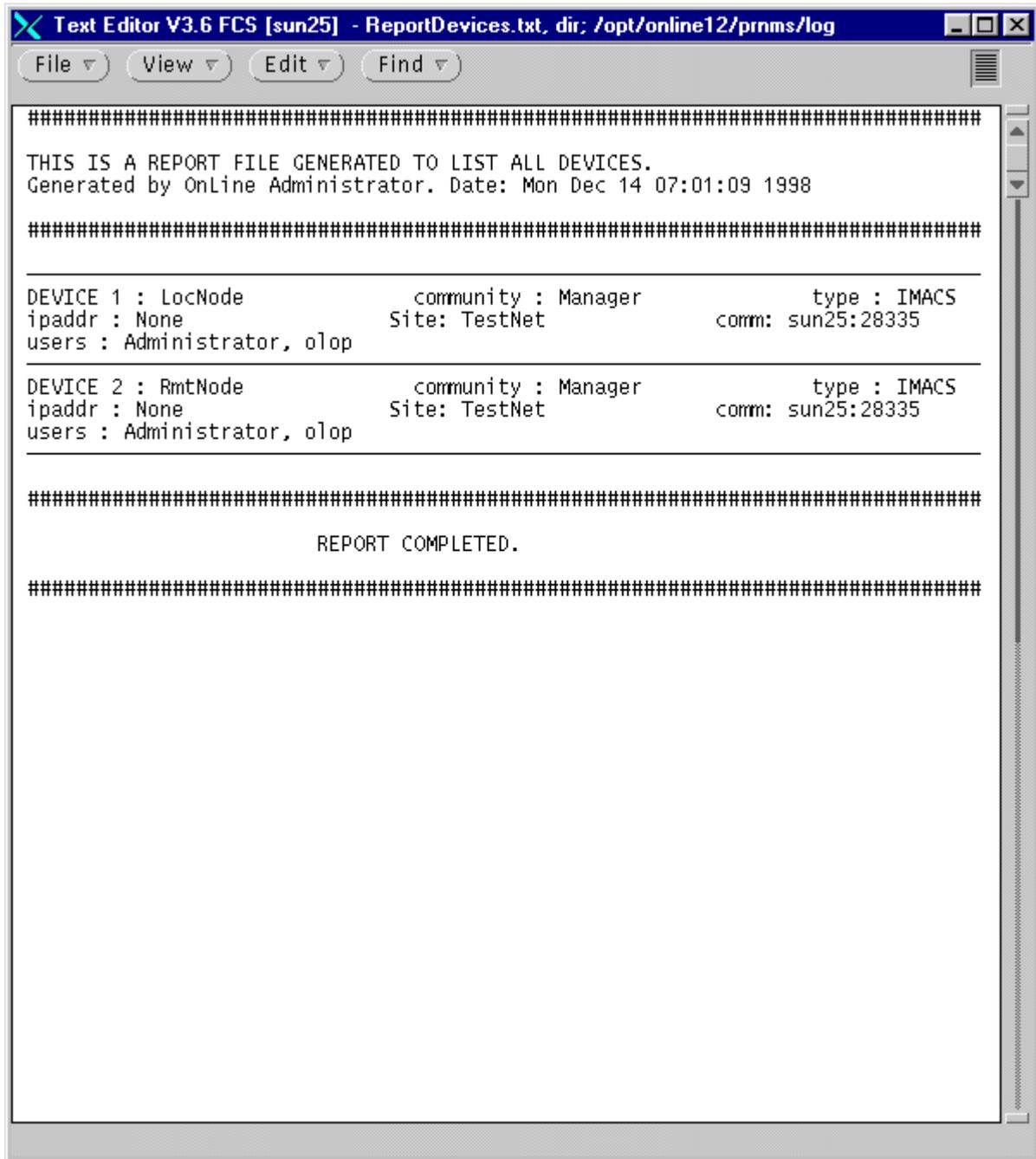
1. Click the `Device` tab in the `OnLine Reports Generator` window to display the `Device` screen (see [Figure 4-17](#)).



**Figure 4-17. OnLine Reports Generator Window Device Report Screen**

*Note:* Control-click to select or deselect a single item; shift-click to select or deselect a group of items.

2. The initial display for the `Device` screen shows all `Devices` deselected. If you want to generate a report that lists all `Devices`, click the `Report` button. To limit the report to specific `Devices`, select them before clicking the `Report` button.

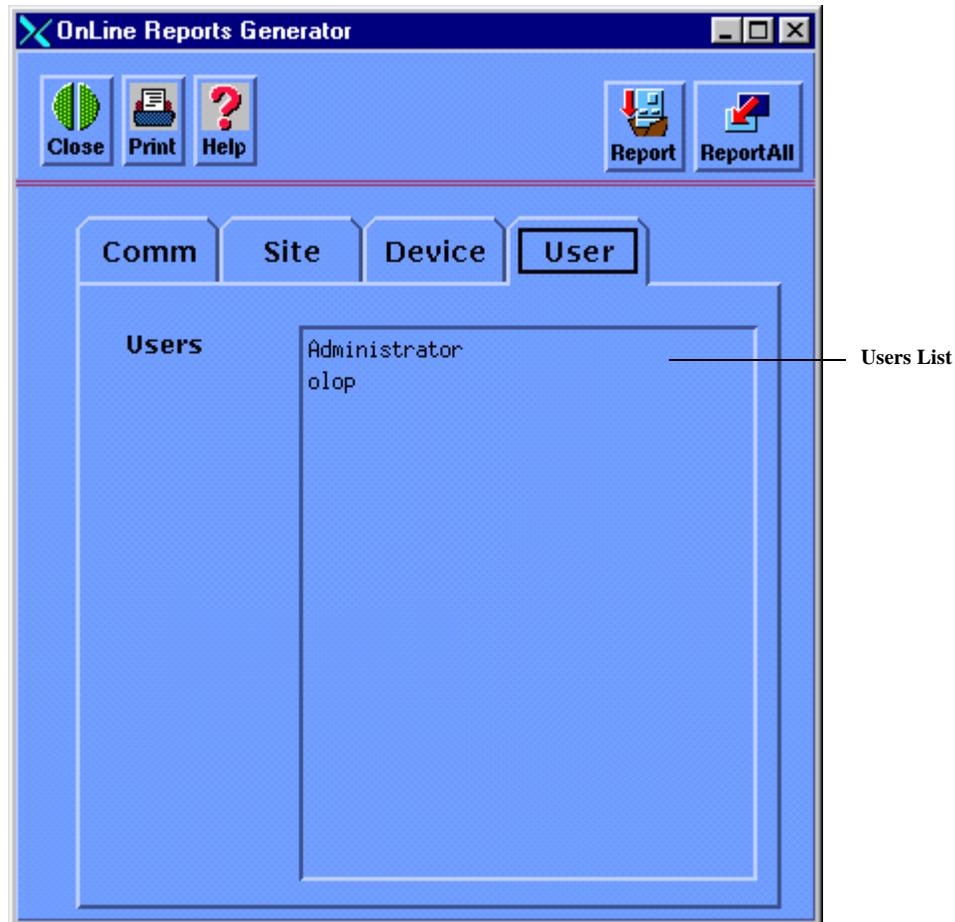


**Figure 4-18. Device Report**

#### 4.3.6.4 Generating a User Report

To generate a user report (see [Figure 4-20](#)), do the following:

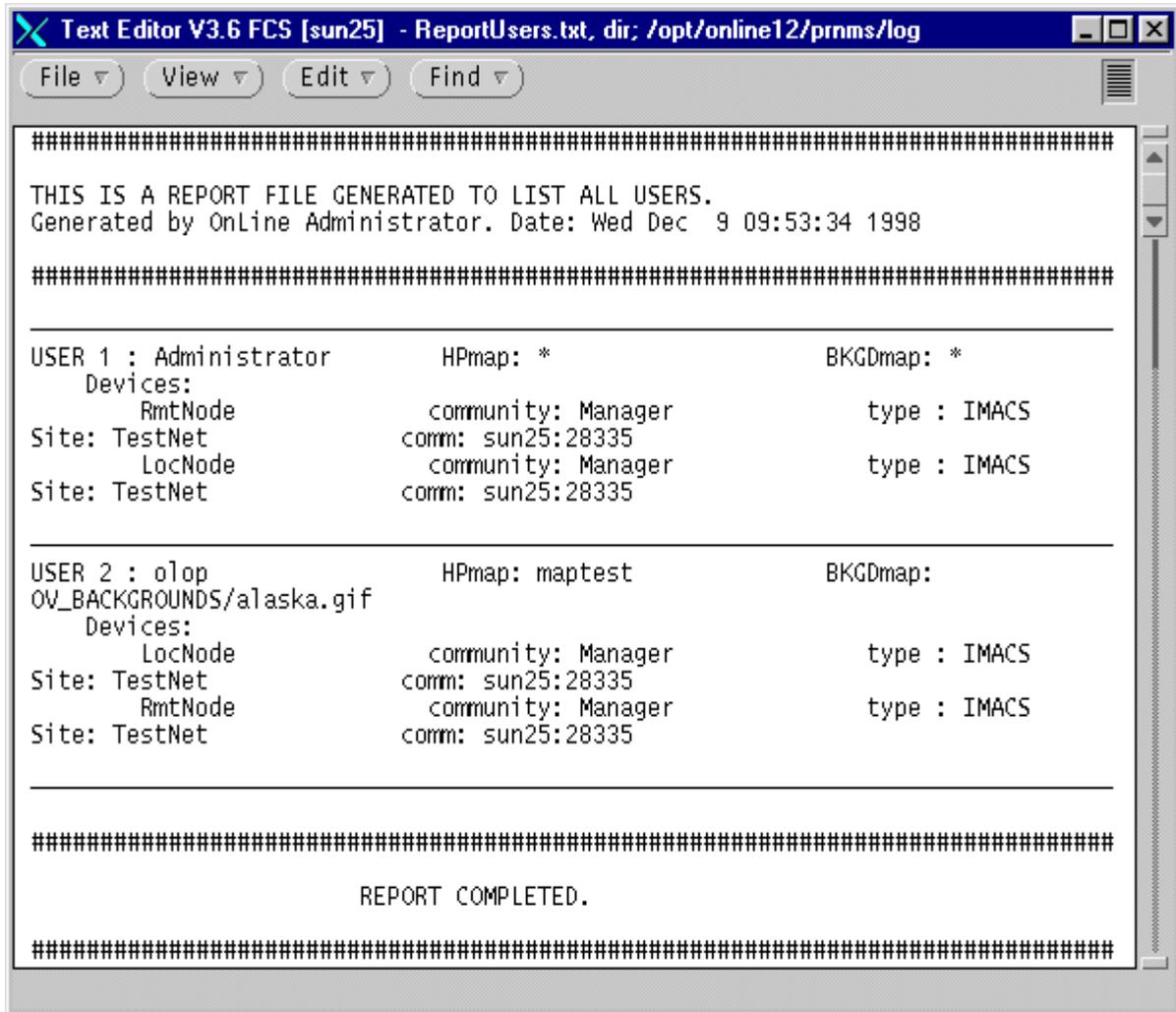
1. Click the `User` tab in the `OnLine Reports Generator` window to display the `User` report screen (see [Figure 4-19](#)).



**Figure 4-19. OnLine Reports Generator Window User Report Screen**

*Note:* Control-click to select or deselect a single item; shift-click to select or deselect a group of items.

2. The initial display for the `User` screen shows all `Users` deselected. If you want to generate a report that lists all `Users`, click the `Report` button. To limit the report to specific `Users`, select them before clicking the `Report` button.



**Figure 4-20. User Report**

**4.3.6.5 Generating All Reports**

To generate a report to list all comms, sites, devices, and users (see [Figure 4-21](#)), click the Report All button in the OnLine Reports Generator window (see [Figure 4-13](#)).

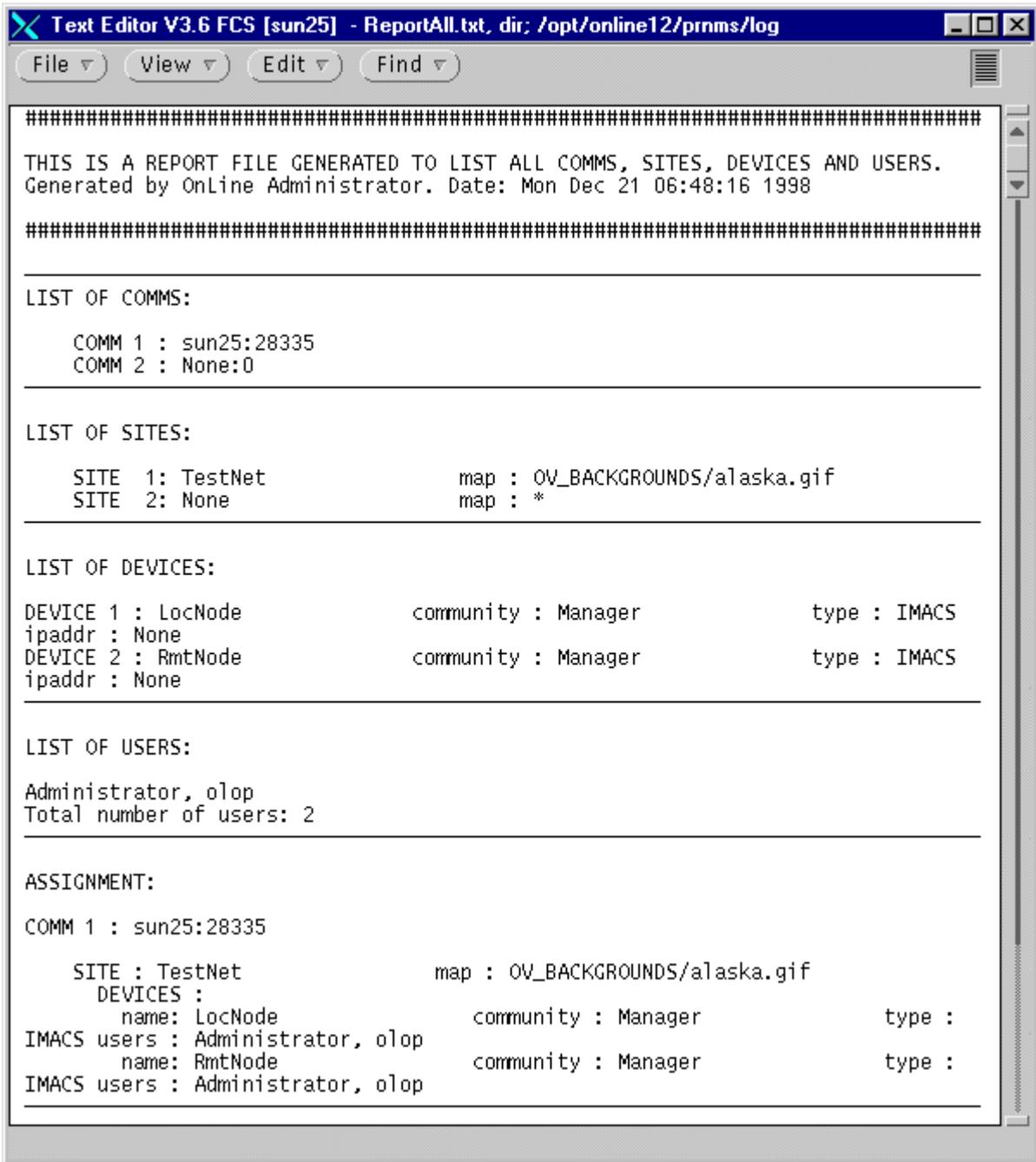


Figure 4-21. All Reports (Sheet 1 of 2)

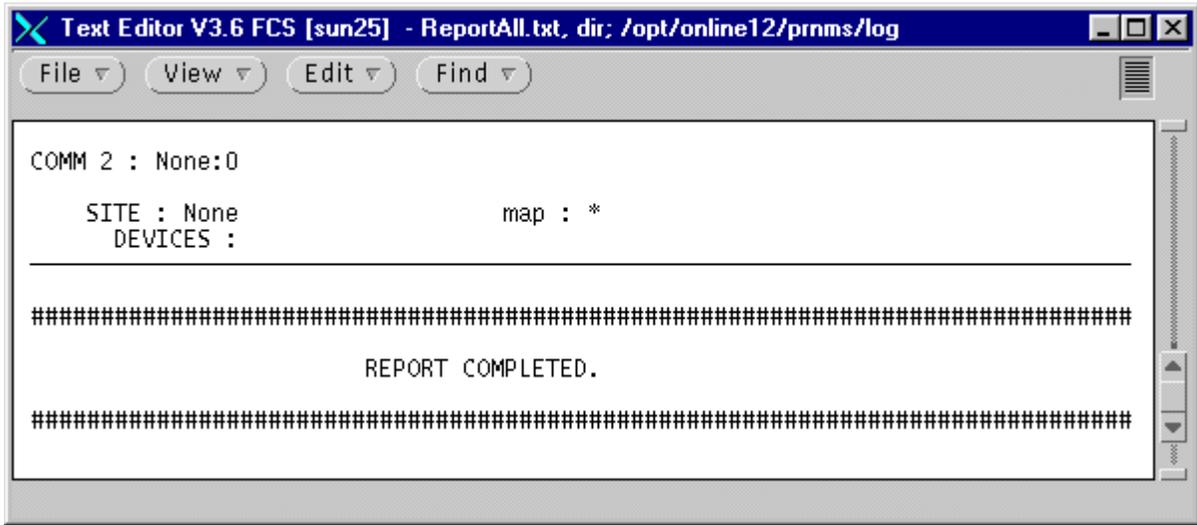


Figure 4-21. All Reports (Sheet 2 of 2)

### 4.3.7 Administrator Logout

To log out of OnLine as administrator, Select *Administer:OnLine EMS-> Logout.*

### 4.3.8 Closing the NNM GUI

To close the NNM GUI, do the following:

1. Close the NNM map window. An OpenView Windows Warning dialog box displays (see Figure 4-22).



Figure 4-22. NNM Exit Warning Dialog Box

2. Click OK. The dialog box, and all open windows close.



# Chapter 5

## Frequently Asked Questions

### 5.1 Introduction

This chapter addresses the following questions:

- Do I Have to Install OnLine in the Default Directory?
- How Do I Create a Temporary Environment?
- How Do I Start the FLEXlm License Manger?
- Can an Administrator Start the OnLine Processes?
- Can I Run Other Applications Such as AnswerBook?
- How Do I Determine Whether a Port is in Use?

### 5.2 Do I Have to Install OnLine in the Default Directory?

No. You can install OnLine in another location by changing the `$PRNMS` variable before running the `install.sh` script.

```
# PRNMS=absolute_path
# export PRNMS
# echo $PRNMS
# PRNMS=absolutepath
```

where *absolute\_path* is the name of the directory in which you want to install OnLine.

If you choose to do this, ensure that `$PRNMS` is set properly before running any of the following OnLine scripts:

- `install.sh` or `update.sh` to install or update OnLine on a stand-alone or central workstation.
- `prlogin` to create user accounts.
- `remove.sh` to remove OnLine.
- `rinstall.sh` to install or update OnLine on a distributed workstation.

## 5.3 How Do I Create a Temporary Environment?

To create a temporary environment, do one of the following:

- Enter the following statements at the command line:

```
#PRNMS=/opt/online/prnms
export PRNMS
#. /opt/OV/bin/ov.envvars.sh
#PATH=$PATH:/opt/OV/bin:$OV_BIN:$PRNMS/bin:/usr/openwin/bin:.
export PATH
#MANPATH=${MANPATH:-/usr/man:/usr/share/man}:$OV_MAN
#export MANPATH
#xhost +
#echo environment set
```

**Note:** *If you did not install OnLine in the default directory, change the PRNMS=/opt/online/prnms statement accordingly.*

- Use a text editor to create an environment file that contains the above statements and source the file from the command line (be sure to press the Return key after entering the last line).

```
# ./environment_file
access control disabled, clients can connect from any host
environment set
```

where `/environment_file` is the absolute path to the environment file.

## 5.4 How Do I Start the FLEXlm License Manger?

If no other applications are using FLEXlm, the easiest way to start it is by choosing the auto-start option when you install OnLine. Otherwise, you can start FLEXlm:

- manually from the command line.
- automatically from a start-up file that runs at boot.

If any problems are encountered, refer to [“Installation and Solaris Administration Troubleshooting”](#) on page 2-34.

## 5.4.1 Starting FLEXlm Manually

When you start FLEXlm from the command line you have to specify a license file for each application that will use it. Do the following:

1. Use the `ps -ef | grep lmgrd` command to check whether the FLEXlm process `lmgrd` is currently running.

When `lmgrd` is running, a response similar to the following specifies the license file(s) in use. In this example, the license file in use is for a development version of OnLine.

```
#ps -ef | grep lmgrd
arkady 15250      1 0   Sep 17 ?           0:00 ./lmgrd -c
/opt/ems5.0/i5/prnms/config/license.dat -l /opt/ems5.0/i5/prnms/log/
arkady 15251 15250 0   Sep 17 ?           0:00 olld -T sun25 6.1 4 -c
/opt/ems5.0/i5/prnms/config/license.dat -lmgrd_port 69
#
```

When `lmgrd` is not running, the response does not specify any license files.

```
# ps -ef | grep lmgrd
root 1994 1402 0 16:42:11 pts/4    0:00 grep lmgrd
```

If `lmgrd` is running, proceed to step 2. If not, enter the following to start FLEXlm for OnLine, and then use the `ps -ef | grep lmgrd` command to verify that `lmgrd` is using the OnLine license file.

```
# cd $PRNMS/flexlm
# ls
lmgrd  lmutil  olld    readme
# ./lmgrd -c $PRNMS/config/license.dat -l $PRNMS/log/licenselog&
# ps -ef | grep lmgrd
root 2499 2498 0 16:47:40 ?           0:00 olld -T sun25 6.1 4 -c
/opt/online/prnms/config/license.dat -lmgrd_port /opt/on
root 2498      1 0 16:47:38 pts/4    0:00
/opt/online/prnms/flexlm/lmgrd -c /opt/online/prnms/config/license.dat
-l /opt/
root 2503 1402 0 16:48:34 pts/4    0:00 grep lmgrd
#
```

2. Do a status check to get additional information about the license file(s) `lmgrd` is currently using. In the following example, two license files are in use for development versions of OnLine and no log file is specified. The license files are:

```
/opt/ems5.0/i5/prnms/config/license.dat and
/opt/ems5.0/i4/prnms/config/license.dat
```

```
# cd $PRNMS/flexlm
# ls
lmgrd  lmutil  olld    readme
# ./lmutil lmstat
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 8/28/1998 11:00

License server status: 27000@sun25
License file(s) on sun25:
/opt/ems5.0/i5/prnms/config/license.dat:/opt/ems5.0/i4/prnms/config/li
cense.dat:

sun25: license server UP (MASTER) v6.1
```

```
Vendor daemon status (on sun25):
```

```
o1ld: UP v6.1
```

3. Use the `cat filename` command to check whether any of the license files reported in step 2 specify a port number for the `VENDOR` entry (see [Figure 2-13 on page 2-44](#)). If no port number is specified in any file, continue with step 5. Otherwise, do the following before preceding to step 5.
  - a. Open the `$PRNMS/config/license.dat` file in a text editor.
  - b. Add the port number to the `VENDOR` entry in the `$PRNMS/config/license.dat` file.
  - c. Save and close the `$PRNMS/config/license.dat` file.

4. Shut down FLEXlm:

```
# ./lmutil lmdown
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.

      Port@Host          Vendors
1) 27000@sun25         o1ld

Are you sure (y/n)? y
Shut down FLEXlm server on node sun25
   1 FLEXlm License Server shut down
#
```

5. Restart FLEXlm specifying the `license.dat` filename(s) obtained in step 2, the OnLine license file, and the log file to which information will be written:

```
# $PRNMS/flexlm/lmgrd -c
/opt/ems5.0/i5/prnms/config/license.dat:/opt/ems5.0/i4/prnms/config/li
cense.dat:/opt/online/prnms/config/license.dat -l
/opt/online/prnms/log/license.log&
3973
# ./lmutil lmstat
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Thu 9/17/1998 12:59

License server status: 27000@sun25
   License file(s) on sun25:
/opt/ems5.0/i5/prnms/config/license.dat:/opt/ems5.0/i4/prnms/config/li
cense.dat:/opt/online/prnms/config/license.dat:

      sun25: license server UP (MASTER) v6.1

Vendor daemon status (on sun25):

      o1ld: UP v6.1
#
```

## 5.4.2 Starting FLEXlm Automatically

If desired, you can start FLEXlm for OnLine from a script that runs automatically at boot. To do so, proceed as follows:

1. Search the Solaris start-up files to see if any other application is starting the FLEXlm `lmgrd` process at boot.

```
# grep lmgrd /etc/rc*/*
```

When `lmgrd` is being started at boot, a response similar to the following indicates the file from which it is being started. For this example, the start-up file from which `lmgrd` is being started is `/etc/rc3.d/S98netmgt`.

```
# grep lmgrd /etc/rc*/*
/etc/rc3.d/S98netmgt:/opt/online/prnms/flexlm/lmgrd -c
/opt/online/prnms/config/license.dat -l
/opt/online/prnms/log/license.log
#
```

When `lmgrd` is not being started from a file at boot, there will be no response to the `grep` command:

```
# grep lmgrd /etc/rc*/*
#
```

2. If `lmgrd` is being started at boot, proceed to step 3. If not do the following:
  - a. Use a text editor to add the following line at the end of the `/etc/rc3.d/S98netmgt` file (be sure to press the Return key after entering the last line).

```
$PRNMS/flexlm/lmgrd -c $PRNMS/config/license.dat -l
$PRNMS/log/licenselog&
```

- b. Save the file and then close it.
- c. Enter `init 6` to reboot the workstation.
- d. When the login prompt appears, log in as `root` and open a terminal window.
- e. Use the `ps -ef | grep lmgrd` command to verify that `lmgrd` is running and using the OnLine license file

```
# ps -ef | grep lmgrd
root 2499 2498 0 16:47:40 ?          0:00 olld -T sun25 6.1 4 -c
/opt/online/prnms/config/license.dat -lmgrd_port /opt/on
root 2498 1 0 16:47:38 pts/4      0:00
/opt/online/prnms/flexlm/lmgrd -c /opt/online/prnms/config/license.dat
-l /opt/
root 2503 1402 0 16:48:34 pts/4    0:00 grep lmgrd
#
```

3. If `lmgrd` is being started from a file at boot, you need to change the `lmgrd` command to specify the current `license.dat` filename(s), the OnLine `license.dat` file, and the OnLine log file to which information will be written. Proceed as follows:
  - a. Use a text editor to open the file from which `lmgrd` is being started (e.g. `/etc/rc3.d/S98netmgt`).

- b. Change the `lmgrd` command to read:

```
$PRNMS/flexlm/lmgrd -c
current_license_file(s):$PRNMS/config/license.dat
-l $PRNMS/config/loc.log &
```

For the example shown in step 1, the line should read:

```
$PRNMS/flexlm/lmgrd -c opt/ems5.0/latest/prnms/config/license.dat
:$PRNMS/config/license.dat -l $PRNMS/config/loc.log &
```

- c. Save the file and then close it.
- d. Proceed as directed in steps 1 through 3 of paragraph 5.4.1 to add any required port number to the `VENDOR` entry in the `$PRNMS/config/license.dat` file. Do not perform steps 4 and 5 of the procedure, however; continue with step e below.
- e. Enter `init 6` to reboot the workstation.
- f. When the login prompt appears, log in as `root` and open a terminal window.
- g. Use the `$PRNMS/flexlm/lmstat` command to verify that `lmgrd` started and is running and using the specified license and log files. For example:

```
# ./lmutil lmstat
lmutil - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Thu 9/17/1998 12:59

License server status: 27000@sun25
License file(s) on sun25:
opt/ems5.0/latest/prnms/config/license.dat:/opt/online/prnms/config/li
cense.dat:

sun25: license server UP (MASTER) v6.1

Vendor daemon status (on sun25):

o1ld: UP v6.1
#
```

## 5.5 Can an Administrator Start the OnLine Processes?

The default file permissions for OnLine are such that only `root` can start the OnLine processes. If you want the OnLine administrator to start the processes, you need to give all users write access to the `$PRNMS/bin/pralarm` file and the `$PRNMS/db` directory. To do so, enter the following:

```
# chmod a+w pralarm
# ls -l $PRNMS/bin/pralarm
-rwxrwxrwx 1 root root 560828 Sep 11 11:31
/opt/online/prnms/bin/pralarm
# chmod -R a+w $PRNMS/db
# ls -l $PRNMS/db
total 4
drwxrwxrwx 2 root root 512 Sep 23 10:26 admin
-rw-rw-rw- 1 root other 0 Sep 23 10:26 notes.dtl
-rw-rw-rw- 1 root other 0 Sep 23 10:26 notes.hdr
drwxrwxrwx 2 root root 512 Sep 23 10:26 work
#
```

## 5.6 Can I Run Other Applications Such as AnswerBook?

Yes, but you might have to change a port assignment if there is a conflict. To change the port, proceed as follows:

1. Open the `/etc/services` file in a text editor.
2. Go to the line that contains the port assignment for the `ovtopmd` process.  

```
ovtopmd 8888/tcp #OpenView IP Topology daemon
```
3. Change port number `8888` to valid unused port number (see [“How Do I Determine Whether a Port is in Use?”](#) on page 5-8).
4. Save the file and close it.

If changing the `ovtopmd` port does not solve the problem, try changing the `PRDB_PORT` assignment in the `$PRNMS/config/prdb.conf` file:

1. Open the `PRNMS/config/prdb.conf` file in a text editor.
2. Go to the line that contains the `PRDB_PORT` assignment.  

```
PRDB_PORT=8900
```
3. Change port number `8900` to a valid unused port number (see [“How Do I Determine Whether a Port is in Use?”](#) on page 5-8).
4. Save the file and close it.

## 5.7 How Do I Determine Whether a Port is in Use?

Valid port numbers are within the range of 5001 through 65536. Use the `telnet hostname port_number` command to check whether a port is currently in use.

- When a port is in use, you see the following response to the `telnet` command:

```
# telnet sun25 28335
Trying 199.190.211.185...
Connected to sun25.
Escape character is '^]'.
```

To end the telnet session, type `^]` and then type `quit` when the `telnet>` prompt appears.

```
^]
telnet> quit
Connection closed.
#
```

- When a port is not in use, the response is:

```
# telnet sun25 55000
Trying 199.190.211.185...
telnet: Unable to connect to remote host: Connection refused
#
```

# Appendix A

## Network Element Configuration Screens

### A.1 Introduction

This appendix provides configuration screens that show how to set up the MCC, CPU, and WAN cards used in the Network Test Configuration (see [page 2-4](#)). Information footnoted below a configuration screen indicates the values you should enter in fields that do not report their contents. For example, in [Figure A-1](#) the IPADDR field displays the generic value `ip`. The actual value that you should enter in the field is `199.190.211.185`.

### A.2 LocNode MCC Card Screens

Figures [A-1](#) and [A-2](#) show the LocNode MCC card screens.

```

LocNode | P3 MCC | Rev C1-0 Ser 00098 | 08-17-98 06:51
Version #:1.1
STATE | E | OOS | U8
STATE | actv | OOS | U7
IPADDR | ip1 | OOS | U6
NETMSK | ip2 | OOS | U4
DEF RT | stat3
RIP | off
SH | off
WEIGHT | 01
FRMT-MAIN | bxr
FRMT-SUB | bxr
IF-TYPE | unnum

Save | Undo | Refresh | Copy | < | > | porT | Nstat | Main

1. IPADDR = 199.190.211.83
2. NETMSK = 255.255.255.0
3. DEF RT = stat = 199.190.211.185

```

**Figure A-1. LocNode MCC Card Home Screen**

LocNode	P3	MCC	Rev	C1-0	Ser	00098	08-17-98 07:09	
Version #:1.1								
	1	2	3	4	5	6	7	8
STATE	actv	stdby	stdby	stdby	stdby	stdby	stdby	stdby
WAN/SERV	w1-1	none	none	none	none	none	none	none
TS	24	n/a	n/a	n/a	n/a	n/a	n/a	n/a
IPADDR	ip <sup>1</sup>	ip	ip	ip	ip	ip	ip	ip
NETMSK	ip <sup>2</sup>	ip	ip	ip	ip	ip	ip	ip
FORMAT	b7r	b7r	b7r	b7r	b7r	b7r	b7r	b7r
RIP	off	off	off	off	off	off	off	off
SH	off	off	off	off	off	off	off	off
WEIGHT	01	01	01	01	01	01	01	01

Save | Undo | Refresh | Copy | < | > | port | Nstat | Main

- 1. IPADDR = 179.170.0.10 (i.e., the address of the RmtNode)
- 2. NETMSK = 255.255.255.252

Figure A-2. LocNode MCC Card Port Screen

### A.3 LocNode WAN Card Screen

Figure A-3 shows the LocNode WAN card screen.

LocNode	W1	DSX+DSX	Rev	E2-0	Ser	02871	08-17-98 07:20	
		DSX			DSX		OOS	U8
STATE		actv	STATE		stdby		OOS	U7
MODE		xcon	MODE		xcon		OOS	U6
FORMAT		esf	FORMAT		esf		OOS	U4
LINE CODE		b8zs	LINE CODE		b8zs			
PULSE		n/a	PULSE		n/a			
LINE LEN		133	LINE LEN		133			
SLIP LIM		126	SLIP LIM		126			
AIS/ALM		none	AIS/ALM		none			
LINE LB		off	LINE LB		off			
LOCAL LB		off	LOCAL LB		off			
CH LB		off	CH LB		off			
LB ADDR		01	LB ADDR		01			
LB GEN		off	LB GEN		off			
LB DET		w/to	LB DET		w/to			
ESF/NMS RP		at&t	ESF/NMS RP		at&t			
EER THRHD		10e-4	EER THRHD		10e-4			
RDNT RULES		none	RDNT RULES		none			
GROUP		none	GROUP		none			

Save | Undo | Refresh | Xcon | Perf | Farstat | Test | switch | pArs | Main

Figure A-3. LocNode WAN Card Home Screen

## A.4 LocNode CPU Card Screens

Figures A-4 and A-5 show the LocNode CPU card screens.

```

LocNode | C1 CPU XCON          Rev A0-0 Ser 02175 | 08-17-98 07:24

          1                                OOS    U8
NODE ID   LocNode                          OOS    U7
SUPERUSER *****                          OOS    U6
MANAGER   Manager                          OOS    U4
OPERATOR  Operator
VIEWER    Viewer
SYS CONT. sun25 operator
SYS LOC   near sun25 workstation

SYS PH#
ALRM SEQ  all
ACO       latch

C1  Active  Host 5.0.0      Voice 5.0.0

Save | Undo | Refresh | Prt | tcp/Ip | Main

```

**Figure A-4. LocNode CPU Card Home Screen**

```

LocNode | C1 CPU XCON          Rev A0-0 Ser 02175 | 08-17-98 07:25

          1                                OOS    U8
HOST IP STATE  actv                          OOS    U7
HOST IP ADDR   179.170.0.2                    OOS    U6
HOST NETMASK   255.255.255.248                OOS    U4
DEFAULT IP PORT servr
DEFAULT IP SLOT P3
DEFAULT IP UNIT 1
RPT1 IP ADDR   199.190.211.185
RPT1 COMMUN STR Manager
RPT2 IP ADDR   0.0.0.0
RPT2 COMMUN STR
RPT3 IP ADDR   0.0.0.0
RPT3 COMMUN STR

Ping | Netstat | rOute | Save | Undo | Refresh | Main

```

**Figure A-5. LocNode CPU Card TCP/IP Screen**

## A.5 LocNode Interface Card Screen

Figure A-6 shows the LocNode Interface card screen.

LocNode		IF INTF+modem	Rev A1-0	Ser 00933	08-17-98 07:29	
		1			OOS	U8
PRIMARY CLOCK	int				OOS	U7
EXT RATE	n/a				OOS	U6
EXT FORMAT	n/a				OOS	U4
EXT FRAME	n/a					
SECONDARY CLOCK	int					
EXT RATE	n/a					
EXT FORMAT	n/a					
EXT FRAME	n/a					
CURRENT CLK	int					

Save | Undo | Refresh | Time | ACO | proFiles | taBs | Ports | Mai

Figure A-6. LocNode Interface Card Home Screen

## A.6 RmtNode CPU Card Screens

Figures A-7 and A-8 show the RmtNode CPU card screens.

RmtNode		C1 CPU RCON	Rev C1-0	Ser 00146	02-19-02 22:23	
		1			OOS	U3
NODE ID	RmtNode					
SUPERUSER	*****					
MANAGER	Manager					
OPERATOR	Operator					
VIEWER	Viewer					
SYS CONT.	OnLine Operator					
SYS LOC	Off Site					
SYS PH#						
ALRM SEQ	all					
ACO	latch					
C1	Active	Host 3.7.1		Voice 3.7.1		

Save | Undo | Refresh | Prt | tcp/Ip | Main

Figure A-7. RmtNode CPU Card Home Screen

```

RmtNode | C1 CPU RCON | Rev C1-0 Ser 00146 | 02-19-02 22:24
1 OOS U3
HOST IP STATE actv
HOST IP ADDR 179.170.0.10
HOST NETMASK 255.255.255.252
DEFAULT IP PORT wan
DEFAULT IP SLOT W1
DEFAULT IP UNIT 1
RPT1 IP ADDR 199.190.211.185
RPT1 COMMUN STR Manager
RPT2 IP ADDR 0.0.0.0
RPT2 COMMUN STR
RPT3 IP ADDR 0.0.0.0
RPT3 COMMUN STR

Ping | Netstat | rOute | Save | Undo | Refresh | Main
    
```

Figure A-8. RmtNode CPU Card TCP/IP Screen

## A.7 RmtNode WAN Card Screen

Figure A-9 shows the RmtNode WAN card screen.

```

RmtNode | W1 DSX+DSX | Rev E2-0 Ser 02864 | 02-19-02 22:26
STATE DSX STATE DSX OOS U3
MODE actv stdby
FORMAT term
FORMAT esf
LINE CODE b8zs LINE CODE b8zs
PULSE n/a PULSE n/a
LINE LEN 133 LINE LEN 133
SLIP LIM 126 SLIP LIM 126
AIS/ALM none AIS/ALM none
LINE LB off LINE LB off
LOCAL LB off LOCAL LB off
CH LB off CH LB off
LB ADDR 01 LB ADDR 01
LB GEN off LB GEN off
LB DET w/to LB DET w/to
ESF/NMS RP c-b7r ESF/NMS RP at&t
EER THRHD 10e-4 EER THRHD 10e-4
RDNT RULES none RDNT RULES none
GROUP n/a GROUP n/a

Save | Undo | Refresh | Xcon | Perf | Farstat | Test | sWitch | pArs | Main
    
```

Figure A-9. RmtNode WAN Card Home Screen

## A.8 RmtNode Interface Card Screen

Figure A-10 shows the RmtNode Interface card screen.

RmtNode	IF	INTF+modem	Rev A0-0	Ser 00000	02-19-02 22:29
		1			OOS U3
PRIMARY CLOCK	w1-1				
EXT RATE	n/a				
EXT FORMAT	n/a				
EXT FRAME	n/a				
SECONDARY CLOCK	int				
EXT RATE	n/a				
EXT FORMAT	n/a				
EXT FRAME	n/a				
CURRENT CLK	w1-1				

Save | Undo | Refresh | Time | ACO | proFiles | taBs | Ports | Mai

**Figure A-10. RmtNode Interface Card Home Screen**

# Appendix B

## Distributed Workstation Installation

### B.1 Introduction

This appendix describes how to install OnLine in a distributed environment. In this environment:

- A complete set of OnLine processes runs under HP OpenView Network Node Manager (NNM) and Solaris on a central workstation that communicates with the network access elements which OnLine is managing.
- Subsets of the OnLine processes run under NNM and Solaris on distributed workstations that are networked to the central workstation.

Figure [B-1 on page B-2](#) shows typical interconnection of a distributed installation. The advantage of this configuration is that much of the overhead required to generate multiple OnLine GUIs is off-loaded to distributed workstations where the majority of operator accounts reside. This allows central workstation resources to be dedicated to managing and processing communications with network access elements.

### B.2 Scope

The following information is a supplement to the preceding chapters and mirrors their organization. Information that is unique to a distributed workstation installation is described in detail. Other information that is common to distributed and single workstation installations is covered by reference, with differences noted as applicable.

### B.3 Workstation Requirements

See paragraph [2.2 on page 2-1](#).

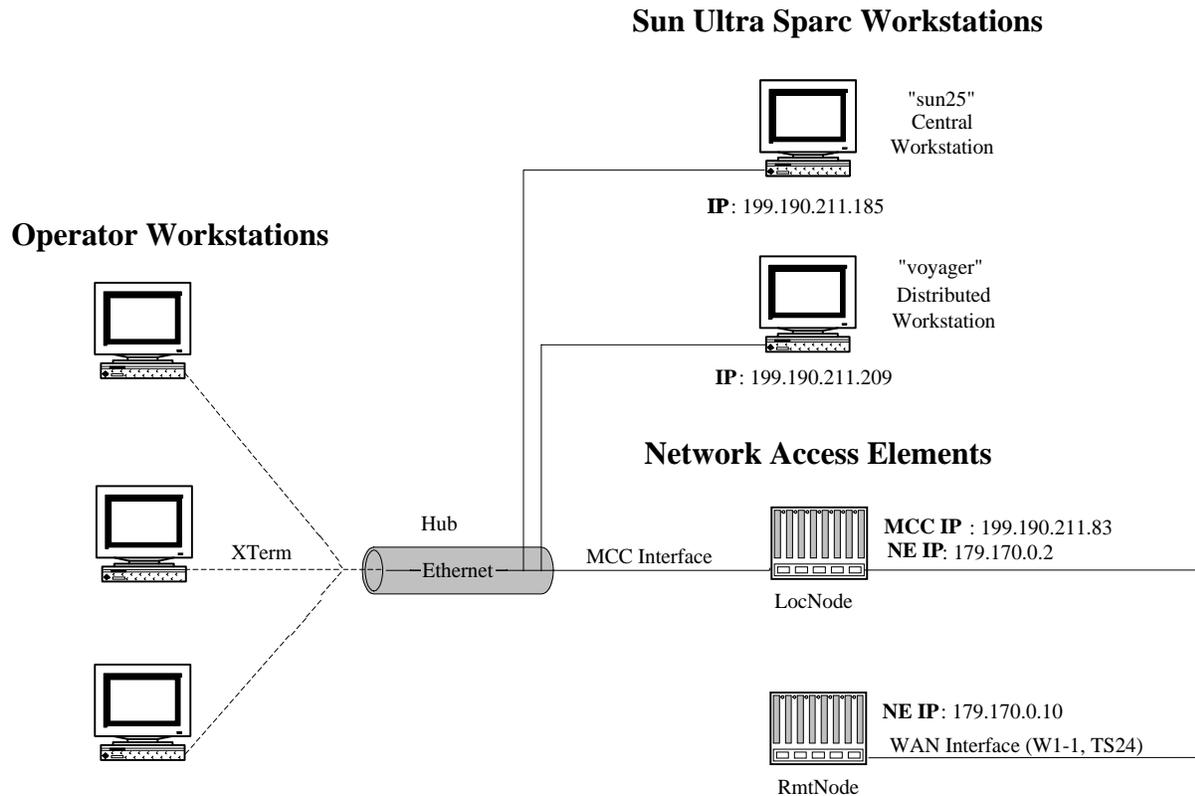


Figure B-1. Distributed Installation Network Test Configuration

## B.4 Installation Overview

The OnLine application on the central workstation uses NNM and Solaris services for:

- IP communications with the access elements in the telecommunications network that OnLine is administering.
- IP communications with the OnLine processes installed on the distributed workstation(s).
- Generation of screen displays in the NNM GUI map window.

The OnLine processes on the distributed workstation(s) use NNM and Solaris services for:

- IP communications with the OnLine application installed on the central workstation.
- Generation of screen displays in the NNM GUI map window.

## B.4.1 Existing Workstations

If your organization has an existing UNIX network, ask the system or network administrator to accomplish the following tasks:

- Configure IP connectivity for the network access elements that OnLine is to administer.
- Connect the OnLine central and distributed workstations to the network.
- Install Solaris and NNM on the central and distributed workstations (see [“Existing Solaris Installation”](#) on page 2-7 for hard disk drive partitioning considerations).
- Verify IP connectivity between:
  - the central and distributed workstation.
  - the central workstation and all network access elements that OnLine is to administer.
- Install OnLine on the central workstation; see [“Central Workstation Installation”](#) on page B-5.
- Install OnLine on the distributed workstation(s); see [“Distributed Workstation Installation”](#) on page B-6.
- Create UNIX user accounts for the OnLine administrator and operators, and also for `root` (see pages B-6 and B-9).
  - The OnLine administrator and `root` should have `oladmin` group accounts on the central and distributed workstations. A user account for `root` is necessary because installation of OnLine requires `root` to log in remotely to the central workstation from the distributed workstation(s); `root` can use the account to configure a Telnet session, then change to `superuser`.
  - The OnLine operators should have `online` group accounts on the workstations from which they will run OnLine. For optimal performance, the majority of these accounts should be on the distributed workstation(s).
- Set up X-terminal connectivity for all remote workstations from which OnLine will be run.

## B.4.2 New Workstations

If your organization does not have a UNIX system or network administrator, the simplest way to set up the OnLine workstations is to use local files and static routes for IP communications. (See the *Sun Microsystems TCP/IP and Data Communications Administration Guide* for information on network planning and IP address assignment.) To assist in this process, [Figure B-1](#) shows a basic test configuration that you can build to experiment with network connectivity and verify OnLine performance.

### B.4.3 Test Configuration

The test configuration shown in [Figure B-1](#) consists of the following equipment groups interconnected through an Ethernet hub:

- OnLine central and distributed workstations.
- A two-node telecommunications network that uses a Management Channel Concentrator (MCC) card for IP connectivity with the OnLine central workstation. The MCC card, located in the LocNode, is the gateway for both nodes. It communicates with:
  - the OnLine central workstation via the Ethernet hub.
  - the LocNode CPU directly.
  - the RmtNode CPU via timeslot 24 of the W1-1 WAN interface.

See your *Network Element Reference Guide* for information on network-element connection and setup. [Appendix A](#) shows configuration screens for the MCC, CPU, and WAN cards used in the test configuration.

### B.4.4 Installation Instructions

The following paragraphs provide instructions for installing Solaris, NNM, and OnLine on the central and distributed workstations. Although some instructions are specific to the test configuration shown in [Figure B-1](#), they also provide overviews that are applicable to other configurations. All information is provided for example purposes and is not intended to supersede instructions specified in the Solaris and NNM vendor manuals. If you intend to use the test configuration as a basis for configuring a working telecommunications network, USE VALID IP ADDRESSES OBTAINED FROM THE InterNIC (contact information is available at <http://rs.internic.net/contact.html>).

## B.5 Central Workstation Installation

The following paragraphs describe how to install Solaris, NNM and OnLine on the central workstation.

### B.5.1 Solaris Installation

Proceed as directed in paragraph [2.4 on page 2-5](#), then continue as follows:

- Add the distributed workstation (`voyager`) to the entries in the `/etc/inet/hosts` file.

```
179.170.0.2      LocNode
179.170.0.10    RmtNode
199.190.211.83  MCC          # gateway to nodes
199.190.211.209 voyager      # distributed workstation
```

- Enter the name of the distributed workstation in the `/.rhosts` and `/etc/hosts.equiv` files (you might have to create the `/.rhosts` file if it doesn't already exist):

```
voyager
```

- Ping the distributed workstation to verify that you can communicate with it.

```
# ping voyager
voyager is alive
```

### B.5.2 NNM Installation

After installing and configuring Solaris, you must install NNM before you can install OnLine. Proceed as directed in paragraph [2.5 on page 2-9](#).

### B.5.3 OnLine Installation or Update

See paragraph [2.6 on page 2-16](#) for instructions. Note that when you update OnLine on the central workstation you must also update it on all of the distributed workstations.

### B.5.4 OnLine Information Reporting

See paragraph [2.7 on page 2-23](#) for information on changing the default information logging scheme.

## B.5.5 OnLine Licensing

OnLine is supplied with a permanent license that allows two user accounts (one administrator and one operator) specifying a total number of 10 or less network access elements. See paragraph 2.9 on page 2-27 for instructions on upgrading the license.

## B.5.6 OnLine Removal

To remove OnLine from the central workstation, proceed as directed in paragraph 2.10 on page 2-27.

## B.5.7 Solaris User Accounts

Paragraph 2.11 on page 2-28 describes how to create, modify, and delete Solaris accounts for OnLine users. Be sure to create a user account for `root` as well as for the OnLine administrator and all operators who will run OnLine from the central workstation. A user account for `root` is necessary because installation of OnLine requires `root` to log in remotely to the central workstation from the distributed workstation(s); `root` can use the account to configure a Telnet session, then change to `superuser`.

# B.6 Distributed Workstation Installation

The following paragraphs describe how to install Solaris, NNM and OnLine on a distributed workstation. Installation of OnLine requires `root` to log in remotely to the central workstation and run the OnLine `rinstall` script from CD-ROM. Make sure that the OnLine CD-ROM is installed in the drive on the central workstation.

## B.6.1 Solaris Installation

Proceed as directed in paragraph 2.4 on page 2-5, except do not do the “Network Configuration” procedure on page 2-7. Instead, do the following after installing Solaris:

- Enter the name and IP address of the central workstation (`sun25`) in the `/etc/inet/hosts` file.

```
199.190.211.185    sun25            # central workstation
```
- Enter the name of the central workstation in the `/.rhosts` and `/etc/hosts.equiv` files (you might have to create the `/.rhosts` file if it doesn't already exist):

```
sun25
```

- Ping the central workstation to verify that you can communicate with it.

```
# ping sun25
sun25 is alive
```

## B.6.2 NNM Installation

After installing and configuring Solaris, you must install NNM before you can install OnLine. Proceed as directed in [2.5 on page 2-9](#).

## B.6.3 OnLine Installation or Update

The same procedure is used to install or update OnLine on a distributed workstation.

- Install or update OnLine on the central workstation first.
- If you are doing an initial installation of OnLine, install Solaris and NNM on the distributed workstation.
- Proceed as follows to install or update OnLine remotely from the distributed workstation.

*Note:* In the following examples, the default shell prompts were changed to display the name of the workstation that the user is logged in to.

1. Log in as root and open a terminal window.
2. Change the prompt to show the name of the distributed workstation.

```
$PS1="distributed>" ; export PS1
distributed>
```

3. Open a second terminal window and `telnet` into the central workstation.

```
$ telnet sun25
Trying 199.190.211.185...
Connected to sun25.
Escape character is '^]'.

UNIX(r) System V Release 4.0 (voyager)
```

4. Log in to your `root` user account on the central workstation:

```
login: user_root
Password:
Last login: Fri Jul 10 09:40:46 from sun25
Sun Microsystems Inc. SunOS 5.5 Generic November 1995
$
```

5. Change to superuser to gain root privileges on the central workstation; the prompt changes to a pound sign (#) to confirm that you have `root` privileges.

```
$ su
Password:
#
```

6. Change the prompt to show the name of the central workstation.

```
$PS1="#_central>" ; export PS1
central>
```

7. Set `$PRNMS` to the absolute pathname of the directory in which online is installed.

```
#_central> PRNMS=/opt/online/prnms
#_central> PRNMS
#_central> $PRNMS
/opt/online/prnms
#_central> ls $PRNMS
bin  cards  config  db  flexlm  hist  images  log  ovw  uid
```

8. Change to the OnLine installation directory:

```
#_central> cd /cdrom/online/online
#_central> pwd
/cdrom/online/online
#_central> ls
install.sh      prehpinstall.sh      remove.sh          update.sh
online.tar      readme                rinstall
```

9. Enter `cat readme | more` to display the `readme` file which contains the latest information about OnLine. Press the Spacebar or Return key to scroll through the file.
10. Enter `./rinstall` to start the remote installation script and then enter the name of the remote workstation when prompted:

```
# ./rinstall
Enter hostnames for remote installation of prview:
voyager
```

If this is a new installation, the script continues automatically.

```
/opt/online/prnms: No such file or directory
mkdir voyager:/opt/online/prnms
.
.
returned from voyager
```

If this is an update, you will be asked to confirm that you want to continue. Type `y` or `n` to continue or cancel, then press the Return key.

```
./rinstall
Enter hostnames for remote installation of prview:
voyager

WARNING:  On the host voyager, there is already
          a directory: /opt/online/prnms
          This directory may hold current version or
          old version.

Please double check it before continue installation!

Do you still want to continue installation ? [y/n]y
mkdir voyager:/opt/online/prnms
.
```

returned from voyager

## B.6.4 OnLine Information Reporting

When you install OnLine on the distributed workstation, the `prt1.conf` file is automatically copied from the central workstation. See paragraph [2.7 on page 2-23](#) for configuration options.

## B.6.5 OnLine Licensing

The OnLine FLEXlm license manager runs on the central workstation only. It is not used on the distributed workstations.

## B.6.6 OnLine Removal

To remove OnLine from a distributed workstation:

1. Log in to the distributed workstation as `root` and open a terminal window, or Telnet into the distributed workstation and change to superuser.
2. Use the `rm -r pathname` command to remove all OnLine files and directories; e.g.,  
`rm -r /opt/online.`

## B.6.7 Solaris User Accounts

Paragraph [2.11 on page 2-28](#) describes how to create, modify, and delete Solaris accounts for OnLine users. Be sure to create a user account for `root` as well as for the OnLine administrator and all operators who will run OnLine from the central workstation. The user account for `root` is necessary for `root` to configure a Telnet connection to a remote workstation, after logging in to the workstation, `root` can change to `superuser`.

## B.7 OnLine Processes

A complete set of OnLine processes runs on the central workstation and a subset (`prmap` and `prview`) runs on each distributed workstation. All processes function as described in [Chapter 3](#).

## B.8 Starting and Stopping NNM

To start or stop the NNM processes, you must be `root` and have your environment set properly. The NNM processes must be running to open an NNM GUI.

*Note:* It is not necessary to start the OnLine processes on the distributed workstation. When you open an NNM GUI Online will connect to processes running on the central workstation.

- The required NNM processes are `OVsPMD`, `ovwdb`, `ovtrapd`, `ovactiond`, `pmd`, `ovtopmd`, and `ovrepld` (for some configurations, `netmon`, `snmpCollect`, and `OVLICENSEMgr` must also be running). To check whether the required processes are running, issue the command `ovstatus | more`.
- To start the NNM processes, enter `ovstart` at the command prompt. To stop the processes, enter `ovstop`.

## B.9 Backup and Restore

You should back up the following NNM directory to tape or another workstation.

```
/var/opt/OV/share/databases/openview/mapdb
```

If you can't back up the directory to tape or another workstation, at least copy it to `/tmp` so you can restore it in the event that a file gets corrupted.

```
cp -r /var/opt/OV/share/databases/openview/mapdb /tmp/hpmap_db
```

To restore the directory from `/tmp`, do the following:

```
cp -r /tmp/hpmap_db /var/opt/OV/share/databases/openview/mapdb
```

## B.10 OnLine Administration

You have to create an OnLine user account on the workstation from which the user is going to run OnLine (see [Chapter 4](#)). This is necessary because the HP map you generate for the user is only accessible from the workstation on which the account is created.