



Sun N1 System Manager 1.2 Installation and Configuration Guide

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Preface

The *Sun N1 System Manager 1.2 Installation and Configuration Guide* describes the requirements for installing and configuring the Sun N1™ System Manager software on your management server.

Who Should Use This Book

This guide is intended for system administrators who are responsible for installing the N1 System Manager software and hardware. The system administrators must have extensive knowledge and experience in the following areas:

- The Linux and Solaris™ operating systems, and the network administration tools provided by each operating system
 - DNS, DHCP, IP addressing, subnetworks, VLANs, SNMP, and mail services
-

How This Book Is Organized

- [Chapter 1](#) describes how to install, configure, and tune the N1 System Manager software on a management server for the first time.
- [Chapter 2](#) describes how to upgrade an existing N1 System Manager 1.1 installation to N1 System Manager 1.2, and how to upgrade the provisionable server management agents from version 1.1 to version 1.2.
- [Chapter 3](#) describes how to uninstall the N1 System Manager software.
- [Chapter 4](#) provides a list of problems and error messages, and the procedures for resolving the problems.

Related Documentation

This guide is part of a six-volume implementation reference set. The set should be read in the following order:

- *Sun N1 System Manager 1.2 Release Notes*
- *Sun N1 System Manager 1.2 Introduction*
- *Sun N1 System Manager 1.2 Site Preparation Guide*
- *Sun N1 System Manager 1.2 Administration Guide*
- *Sun N1 System Manager 1.2 Command Line Reference Manual*

Documentation, Support, and Training

The Sun web site provides information about the following additional resources:

- Documentation (<http://www.sun.com/documentation/>)
- Support (<http://www.sun.com/support/>)
- Training (<http://www.sun.com/training/>)

Typographic Conventions

The following table describes the typographic conventions that are used in this book.

TABLE P-1 Typographic Conventions

Typeface	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your .login file. Use <code>ls -a</code> to list all files. machine_name% you have mail.
AaBbCc123	What you type, contrasted with onscreen computer output	machine_name% su Password:

TABLE P-1 Typographic Conventions (Continued)

Typeface	Meaning	Example
<i>aabbcc123</i>	Placeholder: replace with a real name or value	The command to remove a file is <i>rm filename</i> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . <i>A cache</i> is a copy that is stored locally. Do <i>not</i> save the file. Note: Some emphasized items appear bold online.

Shell Prompts in Command Examples

The following table shows the default UNIX[®] system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P-2 Shell Prompts

Shell	Prompt
C shell	machine_name%
C shell for superuser	machine_name#
Bourne shell and Korn shell	\$
Bourne shell and Korn shell for superuser	#

Installing and Configuring the Sun N1 System Manager Software

This chapter provides the procedures for installing and configuring the Sun N1 System Manager software on the management server for the first time. The following topics are discussed:

- “Sun N1 System Manager Installation Prerequisites” on page 11
- “Installing the Sun N1 System Manager 1.2 Software” on page 13
- “Configuring the N1 System Manager System” on page 16
- “Preparing for Production” on page 22
- “Performance Guidelines” on page 23
- “N1 System Manager Performance Tuning” on page 23

Sun N1 System Manager Installation Prerequisites

The following prerequisites must be met before you can install the Sun N1 System Manager software:

- The hardware must be connected and configured as described in Chapter 2, “Sun N1 System Manager System and Network Preparation,” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

- An OS version appropriate for the management server hardware type must be installed on the N1 System Manager management server, as described in Chapter 3, “Installing and Configuring an OS on the Management Server,” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

Two methods of installing the Sun N1 System Manager are available:

- If the server you have selected for the management server has a DVD drive installed, you can install the Sun N1 System Manager software from the installation DVD-ROM as described in “[To Install the N1 System Manager Software](#)” on page 13.
- If the server you have selected for the management server does not have a DVD drive installed, you must download, unpack, and mount the N1 System Manager installation ISO image as described next in “[To Download and Mount the Sun N1 System Manager Installation ISO Image](#)” on page 12.

▼ To Download and Mount the Sun N1 System Manager Installation ISO Image

Steps 1. **Log in as root to the N1 System Manager management server.**

2. **(Optional) Download and install the Sun Download Manager.**

Downloads of large files using web browsers can sometimes fail. For this reason, use the Sun Download Manager to download the N1 System Manager installation ISO image. For instructions about how to download and install the Sun Download Manager, go to <http://www.sun.com/download/sdm/index.xml>.

3. **Download and unpack the N1 System Manager installation ISO image to the management server.**

Refer to your N1 System Manager eFulfillment documentation and email for your download location, and download the ISO image appropriate for the operating system you have installed on your management server:

- `n1sm-1.2-ga-linux-x86-iso.zip`
- `n1sm-1.2-ga-solaris-x86-iso.zip`
- `n1sm-1.2-ga-solaris-sparc-iso.zip`

4. **Unpack the N1 System Manager installation ISO image zip file.**

Type `unzip ISO-image-name.zip`, where *ISO-image-name* is the name of the N1 System Manager installation ISO image zip file that you downloaded.

5. **Create a mount point directory for the installation ISO image on the management server and mount the ISO image.**

Assume you have saved the N1 System Manager installation ISO image as `n1sm-install.iso`, and that the ISO image is to be mounted on the mount point directory named `/n1sminstall`. You would then create the mount point directory

and mount the ISO image as follows:

■ Solaris:

```
# mkdir /nlsminstall
# lofiadm -a /nlsm-install.iso
/dev/lofi/1
# mount -F hsfs -o ro /dev/lofi/1 /nlsminstall/
```

If your management server has other `lofi` devices installed, the `lofiadm -a /nlsm-install.iso` command displays a different `lofi` device, for example `/dev/lofi/2`. Use the name of the displayed `lofiadmin -a` command in the `mount -F` command.

■ Linux:

```
# mkdir /nlsminstall
# mount -o loop,ro /nlsm-install.iso /nlsminstall
```

Next Steps Install the Sun N1 System Manager software as described in the next section.

Installing the Sun N1 System Manager 1.2 Software

This section provides the procedure for installing N1 System Manager 1.2 software on the management server for the first time.

If a previous version of the N1 System Manager software is installed on your management server, upgrade your management server as described in [Chapter 2](#).

The N1 System Manager software installation process might require up to two hours to complete depending on your network configuration.



Caution – Dedicate the management server only to N1 System Manager software. Do not install other applications on the management server.

▼ To Install the N1 System Manager Software

Steps 1. Log in as root to the N1 System Manager management server.

2. Change directory to the N1 System Manager installation source.

If you are installing from the N1 System Manager DVD, change directory as follows.

- Solaris SPARC-based management server:
`# cd /cdrom/n1_system_mgr/Solaris_sparc/Product/installer`
- Solaris x86-based management server:
`# cd /cdrom/n1_system_mgr/Solaris_x86/Product/installer`
- Linux x86-based management server:
`# cd /cdrom/n1_system_mgr/Linux_x86/Product/installer`

If you are installing from an N1 System Manager installation ISO image, substitute your mount point directory name for /cdrom in the path names.

3. Type `./install` to start the installation process

The Software Evaluation Agreement appears.

4. Choose whether to accept the agreement and continue installation.

Read the agreement carefully. Type **y** to continue installation, or type **n** to exit the installation.

When you continue installation, the installation script checks for required Perl modules. When this process completes, the N1SM Installer process checks whether a prior version of N1 System Manager 1.1 is installed on your management server.

Note – If version 1.1 is installed, the installation process displays the following message and then exits.

```
Version 1.1 is already installed
Invoke installer with -u option to upgrade
```

If the above message is displayed, upgrade your management server as described in [Chapter 2](#)

The appearance of the N1SM Installer menu and the components installed by the N1SM installer depend on the operating system installed on the management server, as shown by the following examples.

■ Solaris 10 Based Management Server

N1SM Installer (version 1.2 on SunOS)

1. Install OS packages.	[Not Completed]
2. Install Expect.	[Not Completed]
3. Install IPMI tool.	[Not Completed]
4. Install JDK 1.5.	[Not Completed]
5. Install service provisioning components.	[Not Completed]
6. Install OS provisioning components.	[Not Completed]
7. Copy DHCP configuration file.	[Not Completed]
8. Install user interface components.	[Not Completed]
9. Install service container components.	[Not Completed]
10. Install N1 System Manager.	[Not Completed]

Non-interactive install in progress

Executing current step: Install OS packages...

■ Linux Based Management Server

N1SM Installer (version 1.2 on Linux)

1. Check that required RPM packages are present.	[Not Completed]
2. Install IPMI tool.	[Not Completed]
3. Install JDK 1.5.	[Not Completed]
4. Install Python.	[Not Completed]
5. Install service provisioning components.	[Not Completed]
6. Install OS provisioning components.	[Not Completed]
7. Copy DHCP configuration file.	[Not Completed]
8. Install user interface components.	[Not Completed]
9. Install service container components.	[Not Completed]
10. Install N1 System Manager.	[Not Completed]

Non-interactive install in progress.

Note – If you have installed Red Hat Enterprise Linux (RHEL) 3.0 AS Update 2, Update 3, or Update 4 on the management server and have installed RPMs other than those from RHEL 3.0 AS Update 2 through Update 4, you might be warned after Step 1 of the install completes that the RPMs might not work with the N1 System Manager. A list of the expected RPMs is displayed, followed by a list of the RPMs that were found. You are informed that this is only a warning and may continue with the install by pressing **c**. This option is in addition to options currently available for when an installation step fails (**t** to try again or **x** to exit.)

If you installed RedHat Enterprise Linux AS Update 3 or later, the following message might be displayed after installation of the service container components completes:

```
This installer has determined that some rpms currently
installed on this system have later versions than those currently
required by N1SM. If you encounter any problems related to these
substitutions, you might need to obtain and install the exact version
of the software required by the installer before re-installing N1SM.
```

The installation process runs each step in sequence. When a step completes successfully, the status of the step is updated to Completed.

If a step fails, you are notified, and the status remains Not Completed or is changed to Partially Run. Exit the installation process and examine the log file `/var/tmp/installer.log.latest` to determine the cause of the failure. Correct the problem and then run the installation process again.

You are informed when the installation process completes, and are then prompted to run the configuration utility.

N1SM installation is complete
Run the `n1smconfig` utility to configure N1SM.

Next Steps Configure the N1 System Manager system as directed in the next section, [“Configuring the N1 System Manager System” on page 16.](#)

Configuring the N1 System Manager System

This section provides the procedures for configuring the N1 System Manager system.

Initial configuration is performed by running the `n1smconfig` command. If needed, you can reconfigure the N1 System Manager at any time by running the `n1smconfig` command again.



Caution – Running `n1smconfig` and accepting the changes will stop and then restart your N1 System Manager system.

▼ To Configure the N1 System Manager System

Before You Begin The N1 System Manager software must be successfully installed as described in [“Installing the Sun N1 System Manager 1.2 Software” on page 13.](#)

Steps 1. **Log in as root to the N1 System Manager management server.**

2. **Type `n1smconfig` to start the configuration process.**

You are asked whether you want to continue. Type **y** to continue.

The current system configuration appears, followed by a description of the provisioning network. The configuration process then displays the network interfaces that have been detected. You are then prompted to specify the interface for the provisioning network.

3. **Specify the interface to be used by the provisioning network.**

Type the management server interface name that is to be used by the provisioning network, for example, `eth1`, `hme0`, `bge1`, and so on, depending on the machine architecture and installed OS.

You are asked whether you want to specify a range of IP addresses for the DHCP server to use.

4. Choose whether to configure the DHCP server address range.

If you choose to configure the DHCP IP address range, the range of IP addresses you provide will be allocated to the provisionable server for loading operating systems and updates over the provisioning network.

If you choose not to configure the DHCP IP address range, then you must specify static addressing when using the N1 System Manager `load` operation for OS profiles.

Note – The management server does not provide DHCP services for the data network. If you plan to dynamically configure IP services on the data network, you must provide an external DHCP server for the data network. You must not have another DHCP server on the same provisioning network.

- Type **y** if you want to specify a range of IP addresses for the DHCP server to use.



Caution – If the management port address is on the same subnet as the provisioning subnet, ensure that the management server IP addresses do not match any of the addresses in the specified range. This rule ensures that the DHCP server does not assign a duplicate IP address to a client that does not resolve using the DHCP client clause.

You are prompted to type the starting DHCP IP address. Type the starting IP address for the DHCP server to use.

You are prompted to type the ending IP address. Type the ending IP address for the DHCP server to use.

- Type **n** if you do not want to specify a range of IP addresses

A description of the management network is displayed, followed by the network interfaces that have been detected. You are then prompted to specify the interface for the management network.

5. Specify the interface to be used by the management network.

Type the interface name that is to be used for the management network, for example `eth1`, `hme0`, `bge1`, and so on depending on the machine architecture and installed OS.

You are then prompted to configure the DNS name servers and search list entries.

6. Choose whether to configure the name servers.

- Type **y** if you want to configure the name servers and domain search list. You are prompted for the name server addresses. Go to [Step 7](#).
- Type **n** if you accept the displayed name servers and domain search list. You are asked whether you want to configure the SMTP server for event notification. Go to [Step 9](#).

7. Configure the name servers.

Type the IP addresses of the name servers, separated by a single space. For example:

```
129.111.111.11 129.111.111.22
```

You are prompted to enter the search domain suffix list.

8. Specify the search domains.

Type the names of the domains that are to be used for DNS search separated by a single space. For example:

```
location-one.company.com location-two.company.com location-three.company.com
```

You are asked whether you want to configure the SMTP server for event notification.

9. Choose whether to configure SMTP for event notification.

- Type **y** if you want to configure the SMTP server. You are prompted for the name of the SMTP server, or the IP address of the SMTP server. Go to [Step 10](#).
- Type **n** if you do not want to configure the SMTP server. You are asked whether you want to modify logging configuration. Go to [Step 11](#).

10. Specify the SMTP server name or IP address.

Type either the fully qualified SMTP server name, or the IP address for the SMTP server. For example:

```
smtp.mycompany.com
```

or

```
129.111.222.33
```

You are asked whether you want to modify logging event configuration.

11. Modify logging event configuration

- Type **y** if you want to configure logging. Information about logging configuration appears. Go to [Step 12](#).
- Type **n** if you do not want to configure logging. You are asked whether you want to enable the N1 System Manager to start at each boot. Go to [Step 15](#).

12. Configure logging.

Press Return to accept the default of "ALL" or type the specifications as directed. You are prompted to enter the event logging severity value.

13. Specify the event logging severity value.

Take one of the following actions:

- Press Return to accept the default value of 0
- Review the following event severity levels, and then type the number corresponding to the desired level of event logging.
 - 0 = unknown
 - 1 = other
 - 2 = information
 - 3 = warning
 - 4 = minor
 - 5 = major
 - 6 = critical
 - 7 = fatal
- Type **q** to quit without specifying a severity value. Logging configuration is not performed.

The configuration process displays information about OS deployment and job time out configuration. You are then asked whether you want to modify job time out configuration.

14. Choose whether to modify job time out configuration.

Some OS distributions are very large, and might take longer than the default time when provisioning a server. If you plan to provision large OS distributions, increase the time out values.

- Type **y** if you want to modify job time out configuration.

A description of job and step time out values appears. Type the new time out values when prompted.
- Type **n** if you do not want to modify time out configuration.

You are asked whether to enable N1 System Manager (N1SM) startup at each boot.

15. Choose whether to start the N1 System Manager system at each boot.

- Type **y** to start the N1 System Manager system each time the system boots.
- Type **n** if you want to start the N1 System Manager system manually after the management server has been rebooted. You are notified that you can start the N1 System Manager manually.

To start the N1 System Manager after configuration has successfully completed, type the command `/etc/init.d/n1sm init start`.

You are asked whether you want to enable auto-login to the ILOM Web GUI on provisionable servers that offer the auto-login feature.

16. Choose whether to enable the provisionable server ILOM GUI auto-login feature.

The Sun Fire™ X4100 and Sun Fire X4200 servers provide a web GUI for performing various system administration tasks such as connecting remote devices and performing system monitoring. If you enable the ILOM GUI auto-login feature, then you will automatically be logged onto the Sun Fire X4100 or X4200 when you click its Open Web Console link in the browser interface. If you do not enable the auto-login feature, you are prompted for the password when you click the Open Web Console link. For further information, see “To Open the Sun ILOM Web GUI for a Sun Fire X4000 Series Server” in *Sun N1 System Manager 1.2 Online Help*.



Caution – Enabling the Web Console (Sun ILOM Web GUI) automatic login feature for Sun Fire X4100 and X4200 servers exposes the server’s service processor credentials to users who can view the web page source for the login page.

- Type **y** to enable the auto-login feature.
- Type **n** if you do not want to enable the auto-login feature.

If you are configuring a Solaris based management server, you are then asked whether you want to enable the SSHv1 protocol so that you can access the provisionable server’s serial console. Go to [Step 17](#).

If you are configuring a Linux-based management server, you are then asked whether you want to modify the ALOM email alert settings. Go to [Step 18](#)

17. Choose whether to enable the SSHv1 protocol on a Solaris-based management server.

SSHv1 is required to enable provisionable server remote serial console access from a Solaris-based N1 System Manager browser interface. For more information, see “To Open the Serial Console for a Server” in *Sun N1 System Manager 1.2 Online Help*.



Caution – The following SSHv1 security issues should be considered:

- The applet used for the serial console access from the browser interface does not provide a certificate-based authentication of the applet. The applet uses SSHv1 only for communication back to the management server, and requires that SSHv1 is enabled for the management server. Users concerned about this issue can use the serial console feature from the command line through the `connect` command.
 - SSH fingerprints used during connections from the management server to the provisioning network interfaces on the provisionable servers are automatically acknowledged by the N1 System Manager software, which may make the provisionable servers vulnerable to man-in-the middle attacks.
-

- Type **y** to enable SSHv1.
- Type **n** if you do not want to enable SSHv1.

The current ALOM email alert settings are displayed. You are asked whether you want to modify the ALOM email alert settings.

18. Choose whether to specify the ALOM email settings.

Some servers use email to send hardware monitoring alerts to the N1 System Manager. If you want to receive and view the alerts on the Event Logging tab of the browser interface, you need to specify the ALOM alert email settings.

- Type **n** if you do not want to modify the displayed alert settings.
If you are configuring a Linux-based management server, the configuration process displays the proposed system settings. You are asked whether you want to apply the settings. Go to [Step 20](#).
- Type **y** to modify the displayed ALOM email alert settings.
You are prompted for the ALOM email alert user name.

19. Specify the ALOM email alert settings.

a. Specify the email alert user name.

Type the account name that you provided in “To Configure the System Files and Account for the Mail Service” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

For example: n1smadmin

You are prompted for the email alert folder.

b. Specify the email folder in which the email alerts are to be stored.

Press Enter or Return to accept the default value of Inbox, or type the name of an email folder.

You are prompted for the email protocol

c. Specify the email alert protocol.

Type the name of the email protocol used by the management server. Valid entries are pop3 or imap.

You are prompted for the email alert user account password.

d. Specify the account password.

Type the password that you provided in “To Configure the System Files and Account for the Mail Service” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

You are prompted for the email alert user account email address.

e. Type the user account email address.

For example: `n1smadmin@company.com`

You are prompted for the IP address of the email server.

f. Specify the IP address of the mail server.

- If you have installed and enabled an email server on the management server, type the IP address of the management server management network interface.
- If you have installed and enabled an email server on a different machine that is accessible by the management server management network interface, , type the IP address of that machine.

The mail settings you have specified are displayed, and you are asked whether you want to accept the settings.

g. Choose whether to accept the settings.

- Type **n** if the settings are not correct. The ALOM email alert settings process is restarted, and you are prompted to specify the email alert user name.
- Type **y** to accept the email alert settings.

The configuration process displays all of the proposed changes to the system settings. You are asked whether you want to apply the settings.

20. Review the proposed settings.

- Type **y** to apply the settings.
You are prompted to press Enter to start the N1 System Manager.
- Type **n** if the settings are not correct.
You are notified that you must reconfigure and apply settings for the N1 System Manager to work properly. The configuration process then exits to the system prompt. To configure the N1 System Manager, run the `n1smconfig` command again.

Next Steps Prepare the N1 System Manager system for production as described next in [“Preparing for Production” on page 22](#).

Preparing for Production

This section provides guidelines and procedures for tuning the N1 System Manager.

You should tune the N1 System Manager for maximum performance based on the number of provisionable servers you plan to manage before you run discovery.

Performance Guidelines

To ensure the best performance in your N1 System Manager environment, adhere to the following guidelines and recommendations:

- Before you run discovery, tune the N1 System Manager as described in [“To Increase the N1 System Manager Performance” on page 23](#).
- Maximize the number of servers per group, and run operations against groups instead of against a large number of individual servers. Running operations on a group minimizes the number of groups you need to manage and minimizes the number of jobs you need to submit in order to accomplish a given task.

N1 System Manager Performance Tuning

Tune the N1 System Manager for maximum performance based on the number of provisionable servers you plan to manage. The following procedure should be done before you run discovery.

▼ To Increase the N1 System Manager Performance

Steps 1. Log in to the management server as root.

2. Linux only: Update the NFS file.

a. Edit the file `/etc/sysconfig/nfs` file and add the following line:

```
RPCNFSDCOUNT=32
```

b. Save and close the file.

c. Type `/etc/init.d/nfs restart` to restart NFS.

3. Update the `package.cache.xml` file.

Edit the `/opt/sun/nlmc/lib/package.cache.xml` file and locate the line containing attribute `name="FirmwareInfos"`. Update the line to read as follows:

```
<attribute name="FirmwareInfos" refresh-interval="-1" delay="none" persistent="true"> />
```

This instruction ensures that the first invocation of the `show server` command after a restart of the N1 System Manager does not take a long time to complete.

4. Stop all N1 System Manager processes.

Type `/etc/init.d/n1sminit stop` to stop the N1 System Manager.

Wait for all N1 System Manager processes to stop.

5. Start all N1 System Manager processes.

Type `/etc/init.d/n1sminit start` to start the N1 System Manager.

Next Steps

- Log in to the N1 System Manager as described in “Introduction to Accessing the N1 System Manager” in *Sun N1 System Manager 1.2 Administration Guide*.
- Define the N1 System Manager users as described in “Managing Users” in *Sun N1 System Manager 1.2 Administration Guide*.
- Define the N1 System Manager roles as described in “Managing Roles” in *Sun N1 System Manager 1.2 Administration Guide*.
- Run discovery to locate and identify the provisionable servers as described in “Discovering Servers” in *Sun N1 System Manager 1.2 Administration Guide*.
- Create the operating system distributions for the provisionable servers as described in “Managing OS Distributions” in *Sun N1 System Manager 1.2 Administration Guide*.
- Create the operating system profiles for the provisionable servers as described in “Managing OS Profiles” in *Sun N1 System Manager 1.2 Administration Guide*.
- Install the operating system distributions on the provisionable servers as described in “Installing OS Distributions by Deploying OS Profiles” in *Sun N1 System Manager 1.2 Administration Guide*.

For problem resolution procedures, see [Chapter 4](#) in this guide, and see Chapter 6, “Troubleshooting,” in *Sun N1 System Manager 1.2 Administration Guide*.

Upgrading the Sun N1 System Manager Software and Provisionable Server Management Agents

This chapter provides the procedures for upgrading your N1 System Manager 1.1 management server to N1 System Manager 1.2, and for upgrading the provisionable server OS management agents to version 1.2.

The following topics are discussed:

- [“Upgrading to Sun N1 System Manager 1.2” on page 25](#)
- [“Upgrading the Provisionable Server OS Management Agents” on page 29](#)

Upgrading to Sun N1 System Manager 1.2

This section provides the procedure for upgrading N1 System Manager 1.1 on the management server to N1 System Manager 1.2, and the procedure for configuring the ALOM email alerts

The following topics are discussed:

- [“To Upgrade the Sun N1 System Manager Software” on page 25](#)
- [“To Configure the ALOM Email Alert Settings” on page 28](#)

▼ To Upgrade the Sun N1 System Manager Software

Before You Begin

Back up your N1 System Manager 1.1 installation as described in “Backing Up and Restoring N1 System Manager Database and Configuration Files” in *Sun N1 System Manager 1.2 Administration Guide*.

- Steps**
1. Log in as root to the N1 System Manager management server.

2. Stop all N1 System Manager processes.

Type `/etc/init.d/n1sminit stop` in a terminal window. Wait for the message N1 services stopped to appear before continuing.

3. Change directory to the N1 System Manager installation source.

If you are installing from the N1 System Manager DVD, change directory as follows.

- Solaris SPARC-based management server:

```
# cd /cdrom/n1_system_mgr/Solaris_sparc/Product/installer
```

- Solaris x86-based management server:

```
# cd /cdrom/n1_system_mgr/Solaris_x86/Product/installer
```

- Linux x86-based management server:

```
# cd /cdrom/n1_system_mgr/Linux_x86/Product/installer
```

If you are installing from an N1 System Manager installation ISO image, substitute your mount point directory name for `/cdrom` in the path names.

4. Type `./install -u` to start the upgrade installation process

The Software Evaluation Agreement appears.

5. Choose whether to accept the agreement and continue installation.

Read the agreement carefully. Type **y** to continue installation, or type **n** to exit the installation.

When you continue the upgrade, the upgrade script checks for required Perl modules. When this process completes, the upgrade process then checks the component versions on the management server against the application versions in the N1 System Manager 1.2 installation media. The N1SM Installer upgrade menu then appears, listing which components are up to date, and for which components an upgrade is available.

The appearance of the N1SM Upgrade menu, and the list of components to be upgraded depends on the operating system installed on the management server as shown by the following examples.

- Solaris 10 Based Management Server

N1SM Upgrade (version 1.1 to 1.2 on SunOS)

1. Install IPMI tool.	[Upgrade Available]
2. Install JDK 1.5.	[Up To Date]
3. Install service provisioning components.	[Up To Date]
4. Install OS provisioning components.	[Upgrade Available]
5. Install user interface components.	[Upgrade Available]
6. Install service container components.	[Upgrade Available]
7. Install N1 System Manager.	[Upgrade Available]

Non-interactive install in progress

Executing current step: Install OS packages...

– Linux Based Management Server

N1SM Upgrade (version 1.1 to 1.2 on Linux)

- | | |
|---|---------------------|
| 1. Install IPMI tool. | [Upgrade Available] |
| 2. Install JDK 1.5. | [Up To Date] |
| 3. Install Python. | [Up To Date] |
| 4. Install service provisioning components. | [Up To Date] |
| 5. Install OS provisioning components. | [Upgrade Available] |
| 6. Install user interface components. | [Upgrade Available] |
| 7. Install service container components. | [Upgrade Available] |
| 8. Install N1 System Manager. | [Upgrade Available] |

Non-interactive upgrade in progress.

Executing current step: Install IPMI tool...

The installation process runs each step in sequence. When a step completes successfully, the status of the step is changed to [Up to Date].

If a step fails, you are notified, and the status remains [Upgrade Available] or is changed to [Partially Run]. Exit the installation process and examine the log file `/var/tmp/installer.log.latest` to determine the cause of the failure. Correct the problem and then run the upgrade process again.

When the upgrade process completes, all running N1 System Manager processes are stopped and restarted, and then you are informed that the N1SM upgrade process is complete. The following messages are then displayed:

Please use "nlsconfig -A" to configure email alerts for ALOM and to configure your management interface.

Please use `"/opt/sun/nlmc/bin/agentupgrade"` to upgrade the agents on provisionable servers with OS deployments.
bash-3.00#

The installation process then exits.

Next Steps Configure the ALOM email alert settings as described next in [“To Configure the ALOM Email Alert Settings”](#) on page 28.

▼ To Configure the ALOM Email Alert Settings

- Steps**
1. **Log in as root to the N1 System Manager management server.**
 2. **Configure the ALOM email alert settings by typing `n1smconfig -A`.**
You are notified that proper settings are required to send email alerts, and the existing values are displayed. You are then asked whether to modify the email alert settings.
 3. **Choose whether to modify the email alert settings.**
 - Type **n** to accept the displayed settings. The email alert configuration process exits to the system prompt.
 - Type **y** to modify the email alert configuration.
You are prompted for the email alert user name.
 4. **Specify the email alert user name.**
Type the account name that you provided in "To Configure the System Files and Account for the Mail Service" in *Sun N1 System Manager 1.2 Site Preparation Guide*.

For example: `n1smadmin`

You are prompted for the email alert folder.
 5. **Specify the email folder in which the email alerts are to be stored.**
Type the name of an email folder for the alert account, for example, `inbox`

You are prompted for the email protocol
 6. **Specify the email alert protocol.**
Type the name of the email protocol used by the management server. Valid entries are `pop3` or `imap`.

You are prompted for the email alert user account password.
 7. **Type the password for the email alert user account.**
Type the password that you provided in "To Configure the System Files and Account for the Mail Service" in *Sun N1 System Manager 1.2 Site Preparation Guide*.

You are prompted for the email alert user account email address.
 8. **Type the user account email address.**
For example: `n1smadmin@company.com`

You are prompted for the IP address of the email server.
 9. **Specify the IP address of the email server.**

- If you have installed and enabled an email server on the management server, type the IP address of the management server management network interface.
- If you have installed and enabled an email server on a different machine that is accessible by the management server management network interface, type the IP address of that machine.

The values you have specified are displayed, and you are asked whether you want to use the values.

10. Choose whether to accept the displayed email alert settings.

- Type **n** if the settings are not correct. The ALOM email alert settings process is restarted, and you are prompted to specify the email alert user name.
- Type **y** to use the displayed email alert settings.

The settings are displayed again, and you are asked whether you want to apply the settings.

Type **y** to apply the settings, or type **n** to exit to the command prompt.

Next Steps Update the provisionable server OS management agents to version 1.2 as described next in [“Upgrading the Provisionable Server OS Management Agents” on page 29](#).

Troubleshooting For problem resolution procedures, see [Chapter 4](#) in this guide, and see Chapter 6, “Troubleshooting,” in *Sun N1 System Manager 1.2 Administration Guide*.

Upgrading the Provisionable Server OS Management Agents

This section provides the procedure for upgrading provisionable server version 1.1 OS management agents to version 1.2.

The `agentupgrade` command can be used to upgrade the OS management agent on all provisionable servers, a group of servers, provisionable servers running a specific operating system, a specific group of provisionable servers based on the server model, or a specific server.

Note – N1 System Manager 1.1 does not support sun4v servers such as the Sun Fire T1000 and T2000. Therefore, any Solaris s10s-hw2-04 or s10s-hw2-05 distributions that you created using N1 System Manager 1.1 do not contain the files required to support the Sun Fire T1000, T2000, and other sun4v servers.

To support the Sun Fire T1000, T2000, and other sun4v servers in N1 System Manager 1.2, you must recreate the distributions after running agentupgrade and then redeploy the distribution to the provisionable servers.

The agentupgrade syntax is as follows:

```
Usage: agentupgrade [--debug] [--role <role>]
      (--all|<servers>|--group <group>|--f_ip <ip>] [--f_runningos <os>]
      [--f_jobcount (0|1)] [--f_model <model>] [--f_name <name>])

      --debug      Show additional status information
      --role       Specify session role for execution

      --all        All healthy, powered on servers
      <servers>    List of space separated servers
      --group      Group name
      --f_*        Filter on property
```

The following agentupgrade parameters are exclusive. Only one of the parameters can be specified when running agentupgrade.

■ **--all**

Upgrade the OS management agent on all discovered provisionable servers.

■ **--servers**

Upgrade the OS management agent on the list of provisionable servers *servers* where *servers* is the IP address of the management port of each provisionable server. For example:

```
# agentupgrade 10.1.5.10 10.1.5.12 10.1.5.25
```

■ **--group**

Upgrade the OS management agent only on the provisionable servers in group *group name*.

■ **--f_***

Upgrade the OS management agent on only those provisionable servers specified where *--f_** is one or more of the following filters.

Note – All filters act as wild-cards. For example, if you type `agentupgrade --f_ip 10.1.1.1`, the filter matches IP addresses 110.1.1.10, 210.1.1.11, and so on. If you type `agentupgrade --f_model 40`, the filter matches server models 240, 440, V240, and V440.

- `agentupgrade --f_ip ip address`
Update the provisionable server at IP address *ip address*.
- `--f_runningos`
`agentupgrade --f_runningos running OS`
Update all provisionable servers that have the operating system *running OS* installed.
- `--f_jobcount (0|1)`
`agentupgrade --f_jobcount 0running OS` or `agentupgrade --f_jobcount 1running OS` where 0 specifies that no remote jobs are running on the provisionable server, and 1 specifies that one remote job is be running on the provisionable server.
- `--f_model`
`agentupgrade --f_model model`
Update all provisionable servers that are a machine type of *model*.
- `--f_name`
`agentupgrade --f_name provisionable server name`
Update only the provisionable servers that is named *provisionable server name*

The following parameters can be used with the above exclusive parameters.

- `--debug`
Show additional status information when running `agentupgrade`.
- `--role`
Run `agentupgrade` using the N1 System Manager using the security role *role*. For information about N1 System Manager security roles and use, see “Managing Roles” in *Sun N1 System Manager 1.2 Administration Guide*.

The following procedure illustrates an OS monitoring agent upgrade of all healthy provisionable servers.

▼ To Upgrade the Provisionable Server OS Management Agents

- Steps**
1. Ensure all provisionable servers that are to be updated are online and healthy.
 - a. Open a browser window and log in to the N1 System Manager.
 - b. Check the status of the provisionable servers and server groups.
 - c. Resolve any problems noted before going to the next step.

See Chapter 4, “Managing Servers and Server Groups,” in *Sun N1 System Manager 1.2 Administration Guide* and Chapter 5, “Monitoring Your Servers,” in *Sun N1 System Manager 1.2 Administration Guide*.
 2. Log in as root to the N1 System Manager management server.
 3. Upgrade the provisionable server monitoring agents by typing
`/opt/sun/n1gc/bin/agentupgrade --all`.

The agent upgrade process is sequential, and can take a long time if you have a large number of provisionable servers. As each provisionable server is updated, a status message is displayed that provides information about whether the agent update succeeded.

The output generated by the `agentupgrade` command is sent to stdout. If a provisionable server OS management agent cannot be updated, information about the failure is written to stdout, and the `agentupgrade` process continues.

You can also update the OS management agent on provisionable servers using the N1 System Manager browser. For more information, see “Adding and Upgrading Base Management and OS Monitoring Features” in *Sun N1 System Manager 1.2 Administration Guide* for procedures for updating provisionable servers. See “To Upgrade the OS Monitoring Feature on a Server” in *Sun N1 System Manager 1.2 Administration Guide* for specific procedures for updating the OS management agents on provisionable servers.

Uninstalling the Sun N1 System Manager Software

This chapter provides the procedures for uninstalling the N1 System Manager software from the management server.

Before you uninstall the N1 System Manager, back up the management system database and configuration files as described in “Backing Up and Restoring N1 System Manager Database and Configuration Files” in *Sun N1 System Manager 1.2 Administration Guide*.

Uninstalling the Sun N1 System Manager Software

This section provides the procedures for uninstalling the N1 System Manager software.

▼ To Uninstall the N1 System Manager Software

- Steps**
1. **Log in as root to the N1 System Manager management server.**
 2. **Stop all N1 System Manager processes.**
Type `/etc/init.d/n1smunit stop` in a terminal window. Wait for the message `N1 services stopped` to appear before continuing.

3. Type `/n1gc-setup/installer/install -e` to uninstall the N1 System Manager software.

Depending on the operating system installed on the management server, one of the following menus appears.

N1SM Installer (SunOS)

- | | |
|---|-------------------|
| 1. Uninstall OS packages. | [Not Uninstalled] |
| 2. Uninstall Expect. | [Not Uninstalled] |
| 3. Uninstall IPMI tool. | [Not Uninstalled] |
| 4. Uninstall JDK 1.5. | [Not Uninstalled] |
| 5. Uninstall service provisioning components. | [Not Uninstalled] |
| 6. Uninstall OS provisioning components. | [Not Uninstalled] |
| 7. Uninstall user interface components. | [Not Uninstalled] |
| 8. Uninstall service container components. | [Not Uninstalled] |
| 9. Uninstall N1 System Manager. | [Not Uninstalled] |

Non-interactive uninstall in progress

Executing current step: Install OS packages...

N1SM Installer (Linux)

- | | |
|---|-------------------|
| 1. Uninstall empty directories. | [Not Uninstalled] |
| 2. Uninstall IPMI tool. | [Not Uninstalled] |
| 3. Uninstall JDK 1.5. | [Not Uninstalled] |
| 4. Uninstall Python. | [Not Uninstalled] |
| 5. Uninstall service provisioning components. | [Not Uninstalled] |
| 6. Uninstall OS provisioning components. | [Not Uninstalled] |
| 7. Uninstall user interface components. | [Not Uninstalled] |
| 8. Uninstall service container components. | [Not Uninstalled] |
| 9. Uninstall N1 System Manager. | [Not Uninstalled] |

Non-interactive uninstall in progress.

The uninstall process begins uninstalling the N1 System Manager software and components in reverse order. When the uninstall process completes, the message N1SM is uninstalled appears.

4. Reboot the management server before performing further tasks.

Troubleshooting

This chapter provides a list of error messages and problems you might encounter while installing the Sun N1 System Manager, and procedures for resolving the errors. The following topics are discussed:

- [“General Information” on page 35](#)
- [“Error Messages” on page 37](#)
- [“Problems” on page 38](#)
- [“Management Server Configuration” on page 39](#)
- [“Provisionable Server Firmware” on page 41](#)

General Information

This section provides information concerning N1 System Manager operational processes.

N1 System Manager Cannot Be Used to Manage System Management Servers

Do not use the N1 System Manager to manage servers that have system management software installed on them such as Sun Management Server, Sun Control Station, and any other system management applications including the N1 System Manager.

Discovery of Servers in the Factory Default State

If discovery is attempted on a provisionable server that is in the factory default state, the N1 System Manager discovery process will automatically attempt to configure the SSH and IPMI accounts on the provisionable server as part of discovery as shown in the following tables.

The discovery process will configure credentials as follows:

TABLE 4-1 SPARC Architecture Provisionable Server Default Credentials

Type	Telnet Login	Telnet Password
Netra 240 and 440	admin	admin
Sun Fire V210, V240, and V440	admin	admin
Sun Fire T1000 and T2000	admin	admin

TABLE 4-2 x86 Architecture Provisionable Server Default Credentials

Type	SSH Login	SSH Password	IPMI Login	IPMI Password	SNMP Read Community String
Sun Fire V20z and V40z	admin	admin	-	admin	public
Sun Fire X2100	-	-	Admin	admin	-
Sun Fire X4100 and X4200	root	changeme	root	changeme	public

If you have specified the SSH and IPMI login accounts and passwords, the discovery process will configure the provisionable server using the user-specified credentials. If only one credential is specified, the missing credential will be configured with one of the defaults specified above.

If you want to disable auto configuration, add the following line to the file `/etc/opt/sun/nlgc/domain.properties` before you run discovery:

```
com.sun.hss.domain.internal.discovery.initializeDevice=false
```

The N1 System Manager must be restarted for auto configuration disabling to take effect. Note that once auto configuration is disabled, any servers in factory default state cannot be discovered until their SSH and IPMI accounts are configured. For further information, see “Setting Up Provisionable Servers” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

DHCP Service Conflict With N1 Grid Service Provisioning System

If you are using both the N1 System Manager and the N1 Grid Service Provisioning System with the ISP plug-in, you must choose which product you want to use for OS deployment for a given target set of servers. Based on the product chosen for OS deployment, you must ensure that the DHCP service supplied by the other product is manually shut down (as the root user) using operating system commands. Failure to shut the service down might result in unreliable behavior of OS deployment operations as well as potential network related problems.

Error Messages

This section lists the error messages and resolutions for problems that might occur while installing the Sun N1 System Manager.

```
[alert] httpd: Could not determine the server's fully
qualified domain name, using 129.123.111.12 for ServerName
scs-httpd: Fri Nov 19 12:47:34 PST 2004 : Daemon started (pid=1473 1485 1486..
```

Cause: The system cannot determine the server's fully qualified domain name because the system file `/etc/resolv.conf` is not configured correctly.

Solution: Update the `/etc/resolv.conf` file as directed by [“To Update the /etc/resolv.conf File” on page 40.](#)

Error waiting for SPS to start.

Cause: Incorrect entry in the `/etc/hosts` file.

Solution: Update the `/etc/hosts` as directed by [“To Update the /etc/hosts File” on page 39.](#)

An exception occurred trying to update *SP-IPaddress*.

Please refer to the log file for more information.

Cause: Firmware versions 2.2 and above for the Sun Fire V20z servers do not support the PIC firmware upgrade. The upgrade of PIC firmware will fail, and the job step will show the above error message.

Solution: Do not load PIC firmware to the Sun Fire V20z servers.

Connect to *management server url:443* failed (Connection refused)

Description: When entering the Sun N1 System Manager server URL using the format `https://servername`, where *servername* is the name of the management server, the above error message is displayed.

Cause: The system file `/etc/resolv.conf` is not configured correctly.

Solution: Update the `/etc/resolv.conf` as directed by [“To Update the /etc/resolv.conf File” on page 40.](#)

Fatal error: Command failed for target 'Makefile'

Example: Writing Makefile for Locale::gettext
Makefile out-of-date with respect to
/usr/perl5/5.8.4/lib/i86pc-solaris-64int/Config.pm
/usr/perl5/5.8.4/lib/i86pc-solaris-64
int/CORE/config.h
Cleaning current config before rebuilding Makefile...
make -f Makefile.old clean > /dev/null 2>&1 || /bin/sh -c true
/usr/bin/perl Makefile.PL
Writing Makefile for Locale::gettext
==> Your Makefile has been rebuilt. <==
==> Please rerun the make command. <==
false
*** Error code 255
make: Fatal error: Command failed for target 'Makefile'

Cause: The system date is incorrect.

Solution: Set the system date.

Starting dhcpd: [Failed]

Description: dhcpd fails to start during system boot. This message is normal if Sun N1 System Manager configuration has not been performed.

Solution: Configure the N1 System Manager system as described in [“Configuring the N1 System Manager System”](#) on page 16.

Problems

Cannot discover a provisionable server.

Cause: The provisionable server firmware might be too old.

Solution: Verify the firmware version and, if necessary, update the firmware as described in [“Provisionable Server Firmware”](#) on page 41.

Firmware update for Sun Fire V20z or Sun Fire V40z fails.

Cause: Auto-negotiate link speed has not been enabled on the management network switch.

Solution: Enable auto-negotiate link speed on the management network switch for all management network connections.

management server IP address resolves to 127.0.0.1 instead of a real IP address

Cause: /etc/hosts does not contain an IP address and server name assignment for the management server.

Solution: Update the `/etc/hosts` file as described in [“To Update the /etc/hosts File”](#) on page 39.

Unable to log onto a provisionable server management processor.

Cause: The service processor account and password are not known.

Solution: Reset the service processor accounts to the factory defaults as described by the hardware documentation

Management Server Configuration

This section provides the procedures for resolving problems with the management server configuration files.

▼ To Update the `/etc/hosts` File

- Step** ● **Edit `/etc/hosts` and ensure that the entries are similar to the following example:**

```
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1          localhost
111.222.333.44    machine-name loghost
```

where *111.222.333.44* is the IP address of the N1 System Manager server, and *machine-name* is the name of the N1 System Manager management server.

For example, if the machine name is `n1manager`, and the assigned IP address for `eth0` is `129.123.111.12`, then the `/etc/hosts` file should contain the following settings:

```
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1          localhost.localdomain localhost
129.123.111.12     n1manager loghost
```

You must reboot the system after updating the `/etc/hosts` file.

▼ To Update the `/etc/resolv.conf` File

- Step** ● **Edit `/etc/resolv.conf` and ensure that the entries are similar to the following:**

```
nameserver server 1 IP address
nameserver name server 2 IP address
nameserver name server 3 IP address
domain your-domain-name
search your-domain-name
```

For example, assume the IP address of the first DNS server is 129.123.111.12, the second DNS server is 129.123.111.24, and the third DNS server is 129.123.111.36. If your company domain name is `mydomain.com`, then the `/etc/resolv.conf` file would contain the following lines.

```
nameserver 129.123.111.12
nameserver name 129.123.111.24
nameserver name 129.123.111.36
domain mydomain.com
search mydomain.com
```

▼ To Disable Provisionable Server Automatic Configuration

The following procedure disables the automatic configuration of provisionable servers during discovery.

- Step** ● **Edit the `/etc/opt/sun/nlgc/domain.properties` file and add the following line to the file:**

```
com.sun.hss.domain.internal.discovery.initializeDevice=false
```

The N1 System Manager system must be restarted for auto configuration disabling to take effect. Note that once auto configuration is disabled, any servers in a factory default state cannot be discovered until their SSH and IPMI accounts are configured. For further information, see “Setting Up Provisionable Servers” in *Sun N1 System Manager 1.2 Site Preparation Guide*.

Provisionable Server Firmware

This section provides the list of supported provisionable server firmware versions, and procedures for verifying, downloading, and updating the provisionable server firmware.

The following table lists supported firmware versions by machine type.

Provisionable Server		
Type	Minimum	Best Practice
Netra 240 and 440 ALOM	1.4	1.5.3
Sun Fire T1000 ALOM	6.1.0	6.1.0
Sun Fire T2000 ALOM	6.0.1	6.0.1
Sun Fire V20z and V40z SP	Service Processor: 2.1.0.5	Service Processor: 2.3.0.11
Sun Fire V20z BIOS	1.27.4	1.33.5.2
Sun Fire V40z BIOS	1.27.4	2.33.5.2
Sun Fire V210, V240, and V440 ALOM	1.4	1.5.3
Sun Fire X2100 SP	4.0.9	4.11
Sun Fire X2100 BIOS	1.0.0	1.0.3
Sun Fire X4100 and X4200	1.0	1.0

To verify a provisionable server's firmware version, proceed as described in "To List the Firmware Updates Installed on a Provisionable Server" in *Sun N1 System Manager 1.2 Administration Guide*.

If the firmware version cannot be reported by the N1 System Manager, one or all of the following situations might be the cause:

- The IP address of the provisionable server's management processor has not been set, and thus the server cannot be discovered.

Check whether the management processor IP address has been set and, if it has been set, whether it is accessible by the N1 System Manager.

If the management processor IP address is not correct, assign an IP address to the processor as directed by the hardware documentation.

If the IP address is correct, go to the next item in this list.

- The provisionable server's management processor account credentials (login account and password) are not recognized by the N1 System Manager. Check the credentials used by the N1 System Manager, and then try accessing the provisionable server's management processor account. For information about the processor accounts, see ["Discovery of Servers in the Factory Default State" on page 36](#).

If you cannot access the management processor, reset the provisionable server to the factory defaults as directed by the hardware documentation, and reassign an IP address to the provisionable server's management processor. When you have completed resetting the provisionable server, run discovery on the server as described in "Discovering Servers" in *Sun N1 System Manager 1.2 Administration Guide*.

If discovery is successful, verify the firmware version as described in "To List the Firmware Updates Installed on a Provisionable Server" in *Sun N1 System Manager 1.2 Administration Guide*. If the firmware version still cannot be reported by the N1 System Manager, update the firmware to a supported version as directed by the hardware documentation.

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