Installation Guide for UNIX

iPlanet™ Messaging Server

Release 5.2

February 2002

Contents

About This Guide

This guide explains how to install iPlanet™ Messaging Server 5.2 and its accompanying software components. iPlanet Messaging Server provides a powerful and flexible cross-platform solution to meet the email needs of enterprises and messaging hosts of all sizes using open Internet standards.

Topics covered in this chapter include:

- Who Should Read This Book
- What You Need to Know
- How This Book is Organized
- Document Conventions
- Where to Find Related Information
- Where to Find This Book Online

Who Should Read This Book

You should read this book if you are responsible for installing and deploying iPlanet Messaging Server at your site.

NOTE	The installation program does not give you the option to migrate any existing mailboxes and message queues from Netscape Messaging Server or Sun Internet Mail Server products to iPlanet Messaging Server. If you choose to migrate your existing data, you should refer to the *iPlanet Messaging Server Migration Guide*.

What You Need to Know

This book assumes that you are responsible for installing the Messaging Server software and that you have a general understanding of the following:

*   The Internet and the World Wide Web

*   iPlanet Administration Server

*   iPlanet Directory Server and LDAP

*   Netscape Console

How This Book is Organized

This book contains the following chapters and appendixes:

- About This Guide (this chapter)

- Chapter 1, "Preparing for Installation."

  This chapter provides much of the information you will need to know before beginning the installation. Some of the topics covered include system requirements, installation options, and descriptions of the components that you will install.

- Chapter 2, "Installation Instructions."

  In this chapter, you will learn how to run the `setup` program, the directory `setup` program (`ims_dssetup.pl`), and silent installation. In addition, you will be walked through common installation scenarios and post-installation configuration procedures.

- Chapter 3, "Installation Questions."

  This chapter explains the questions that make up the Messaging Server installation and will show you how to respond to these questions in order to get the appropriate installation.

The following two chapters describe optional features that you might consider when installing iPlanet Messaging Server 5.2.

- Chapter 4, "High Availability."

  This chapter describes the high availability models and outlines the advantages and disadvantages of each model. It also provides pre- and post-installation instructions and some configuration information. High Availability products discussed in this chapter include: Veritas Cluster Server 1.1 or higher, Sun Cluster 2.2, Sun Cluster 3.0 U1 (Update 1), and Sun Cluster 3.0 U2 (Update 2).

- Chapter 5, "Installing the Messaging Multiplexor."

  This chapter contains detailed instructions for installing and starting the Messaging Multiplexor. It also contains sample configuration files. Detailed information about the Messaging Multiplexor can also be found in the *iPlanet Messaging Server Administrator's Guide* and *iPlanet Messaging Server Reference Manual.*

- Appendix A, "Installing iPlanet Directory Server 5.1."

  This appendix describes how to install and configure iPlanet Directory Server 5.1 with iPlanet Messaging Server. While iPlanet Directory Server 5.1 is not bundled with the Messaging Server installation program, you can configure this version of Directory Server to work with Messaging Server by following these instructions.

- Appendix B, "Running the Uninstall Program."

  This appendix provides instructions on how to run the `uninstall` program to remove instances of Messaging Server.

- Appendix C, "Upgrading Your Messaging Server."

  This appendix contains instructions on how to upgrade from previous versions of iPlanet Messaging Server to iPlanet Messaging Server 5.2.

Document Conventions

Monospaced Font

`Monospaced font` is used for any text that appears on the computer screen or text that you should type. It is also used for filenames, distinguished names, functions, and examples.

Bold Monospaced Font

`Bold monospaced font` is used to represent text within a code example that you should type. For example, you might see something like this:

```
./setup
Sun-Netscape Alliance
iPlanet Server Products Installation/Uninstallation
------------------------------------------------------------------

Welcome to the iPlanet Server Products installation program. This
program will install iPlanet Server Products and the iPlanet Console
on your computer.

It is recommended that you have "root" privilege to install the
software.

Tips for using the installation program:

- Press "Enter" to choose the default and go to the next screen
- Type "Control-B" to go back to the previous screen
- Type "Control-C" to cancel the installation program
- You can enter multiple items using commas to separate them.
For example: 1, 2, 3

Would you like to continue with installation? [Yes]:
```

In this example, **`./setup`** is what you would type at the command line and the rest is what would appear as a result.

Italicized Font

Italicized font is used to represent text that you enter using information that is unique to your installation (for example, variables). It is used for server paths and names and account IDs.

For example, throughout this document you will see path references of the form:

server-root`/msg-`*serverID*`/...`

In these situations, *server-root* represents the directory path in which you install the server, and `msg-`*serverID* represents the server instance you use when you install it. For example, if you install your server in the directory `/usr/iplanet/server5` and use the server instance `tango`, the actual path is:

`/usr/iplanet/server5/msg-tango/`

Square or Straight Brackets

Square (or straight) brackets [] are used to enclose optional parameters. For example, in this document you will see the usage for the setup command described as follows:

```
./setup [options] [argument]
```

It is possible to run the setup command by itself as follows to start the Messaging Server installation:

```
./setup
```

However, the presence of [options] and [arguments] indicate that there are additional optional parameters that may be added to the setup command. For example, you could use setup command with the -k option to keep the installation cache:

```
./setup -k
```

Command Line Prompts

Command line prompts (for example, % for a C-Shell, or $ for a Korn or Bourne shell) are not displayed in the examples. Depending on which operating system environment you are using, you will see a variety of different command line prompts. However, you should enter the command as it appears in the document unless specifically noted otherwise.

Where to Find Related Information

In addition to this guide, iPlanet Messaging Server comes with supplementary information for administrators as well as documentation for end users and developers. Use the following URL to see all the Messaging Server documentation:

```
http://docs.iplanet.com/docs/manuals/messaging.html
```

Listed below are the additional documents that are available:

- *iPlanet Messaging Server Administrator's Guide*
- *iPlanet Messaging Server Reference Manual*
- *iPlanet Messaging Server Schema Reference*
- *iPlanet Messaging Server Provisioning Guide*

- *iPlanet Delegated Administrator for Messaging Installation Guide*

The iPlanet Messaging Server product suite contains other products such as Netscape Console, Directory Server, and Administration Server. Documentation for these and other products can be found at the following URL:

`http://docs.iplanet.com/docs/manuals/index.html`

Where to Find This Book Online

You can find the *iPlanet Messaging Server 5.2 Installation Guide* online in PDF and HTML formats. This book can be found at the following URL:

`http://docs.iplanet.com/docs/manuals/messaging.html`

Preparing for Installation

This chapter contains the following sections to help you prepare for a UNIX installation of iPlanet Messaging Server 5.2:

- Installation Overview
- System Requirements
- Graphical Overview of the Messaging Suite
- Installation Components
- Product Hierarchy and Interaction
- Configuring an Existing Directory Server
- Types of Installations
- Suggested Guidelines
- Installation Steps
- iPlanet Messaging Server Installation Checklist

Installation Overview

iPlanet Messaging Server™ 5.2 uses a common installation program for performing the installation process. The program provides a consistent installation interface and procedure across the entire iPlanet Server product set.

In addition, Messaging Server provides tools for completing and upgrading your installation, for stopping and starting various server processes, for migrating existing users to an upgraded server, and so on.

Before you install Messaging Server, you should verify that the systems on which you plan to install the software meet the minimum product requirements. In addition, you should have a general understanding of Messaging Server components and the directory schema used by them. If you have not already done so, you should read Chapter 1 of the *iPlanet Messaging Server Provisioning Guide* before proceeding with installation. It is also a good idea to plan how you want to configure the software components before you begin the installation process.

The Messaging Server installation program contains everything you need to install this release of Messaging Server, including:

- iPlanet Messaging Server 5.2

- iPlanet Web Server Enterprise Edition 6.0 SP 2 (Service Pack 2)

- Netscape Administration Server 4.2

- Netscape Directory Server 4.16

- Netscape Console

- iPlanet Delegated Administrator for Messaging 1.2

- iPlanet Messaging Server Directory setup (`ims_dssetup`) if you have an existing Directory Server.

| NOTE | Although this installation guide provides instructions for installing Messaging Server with Netscape Directory Server 4.16, iPlanet strongly recommends that for new deployments, Messaging Server should be installed with iPlanet Directory Server 5.1. For instructions on installing iPlanet Directory Server 5.1 with Messaging Server, first refer to Appendix A, "Installing iPlanet Directory Server 5.1."

For existing Messaging Server deployments, you can install Messaging Server with Netscape Directory Server 4.16. If you use Class of Service or counter plug-ins, you should also install Messaging Server with Netscape Directory Server 4.16. Since you already have an existing 4.1x Directory Server installation, you must first run the `ims_dssetup` utility to prepare the directory before you install Messaging Server. For more information, see "Configuring an Existing Directory Server" on page 28.

If you are installing both iPlanet Messaging Server and Directory Server on the same machine and at the same time (for example, in the case of an evaluation installation), you can install Netscape Directory Server 4.16 during the Messaging Server installation process. See "Installation Scenarios" on page 45 for more information.

Because an HA agent does not exist for iPlanet Directory Server, you cannot configure high availability with iPlanet Directory Server 5.1. Instead, you should use other solutions, such as directory replication. For more information on alternate availability solutions, see the *iPlanet Directory Server Deployment Guide.*

Note that the currently planned end of service life for Netscape Directory Server 4.16 is scheduled for January 24, 2003. |

System Requirements

This section outlines the minimum hardware and software requirements and installation privileges needed to install Messaging Server. You should make certain that these requirements are met before performing the installation. Refer to the *iPlanet Messaging Server 5.2 Release Notes* for any updates to hardware or software requirements.

Hardware Requirements

The minimum hardware requirements for Messaging Server are:

- Approximately 500 MB of disk space for a standard installation. For production systems, you should plan at least 1 GB to support the product binaries.

- 128 MB of RAM. For production systems, you should have a minimum of 256 MB of RAM; be sure to allocate this accordingly, depending on the size of your site and number of users.

- Adequate space for your user mailboxes (message store), database, log files, and message queue directory. These can grow in size dramatically depending on the size of your site, so be sure to allocate space accordingly.

Software Requirements

Messaging Server is supported on Solaris 2.6, Solaris 8, and HP-UX 11.0. This guide will focus on these UNIX platforms. Please refer to *iPlanet Messaging Server Installation Guide for Windows NT* to install Messaging Server on Windows NT. The following patches are required with for each UNIX platform:

- Solaris 2.6 for Sparc requires patch 105591-09 (Shared library patch for C++), patch 106613-01 (character set conversion), and other recommended patches.

  - If you install Messaging Server in the ja_JP.PCK locale, the `imadmin` command line utility will not work properly without the 106361-10 patch.

- Solaris 8 for Sparc requires patch 108827-08 and 109461-02 (or later versions) in addition to the recommended patches listed in the link below.

A list of recommended patches for Solaris 2.6 and Solaris 8 can be found at the following URL:

```
http://access1.sun.com/patch.public/.
```

Additionally, ensure that in your Solaris setup, it is clearly specified how to route to hosts that are not on the local subnet:

- ❍ The `/etc/defaultrouter` should contain the IP address of the gateway system. This address must be on a local subnet.

- ❍ The `/etc/resolv.conf` exists and contains the proper entries for reachable DNS servers and domain suffixes.

- ❍ In `/etc/nsswitch.conf`, the `hosts:` line has the `dns` keyword added.

- HP-UX 11.0 with the following required operating system bundles and patches:

  - ❍ XSWGR1100 (HP-UX 11.0 General Release Patches, September 2000)

  - ❍ XSWHWCR1100 (HP-UX 11.0 Hardware Enablement and Critical Patches, September 2001)

  - ❍ QPK1100 (HP-UX 11.00 Quality Pack, September 2001)

  - ❍ PHCO_21902 (`df(1M)` cumulative patch)

  - ❍ PHCO_22314 (`libc` cumulative patch)

  - ❍ PHCO_23499 (LVM commands cumulative patch)

  A list of recommended patches for HP-UX 11.00 can be found at the following URL:

  `http://us-support.external.hp.com/index.html/`

To use the iPlanet Delegated Administrator command-line utilities, it is required that you also install the iPlanet Delegated Administrator for Messaging from the product CD or the iPlanet Web site. See the *iPlanet Messaging Server Delegated Administrator for Messaging Installation and Administration Guide.*

For Messenger Express access, Messaging Server requires a JavaScript-enabled browser. For optimal performance, iPlanet recommends using the following browsers:

- Netscape Communicator™ 4.7 or later

- Internet Explorer 5.5 SP2 (Service Pack 2)

Graphical Overview of the Messaging Suite

Figure 1-1 illustrates the relationships between the various products and components within the Messaging Suite.

Figure 1-1   Messaging Suite Products and Components
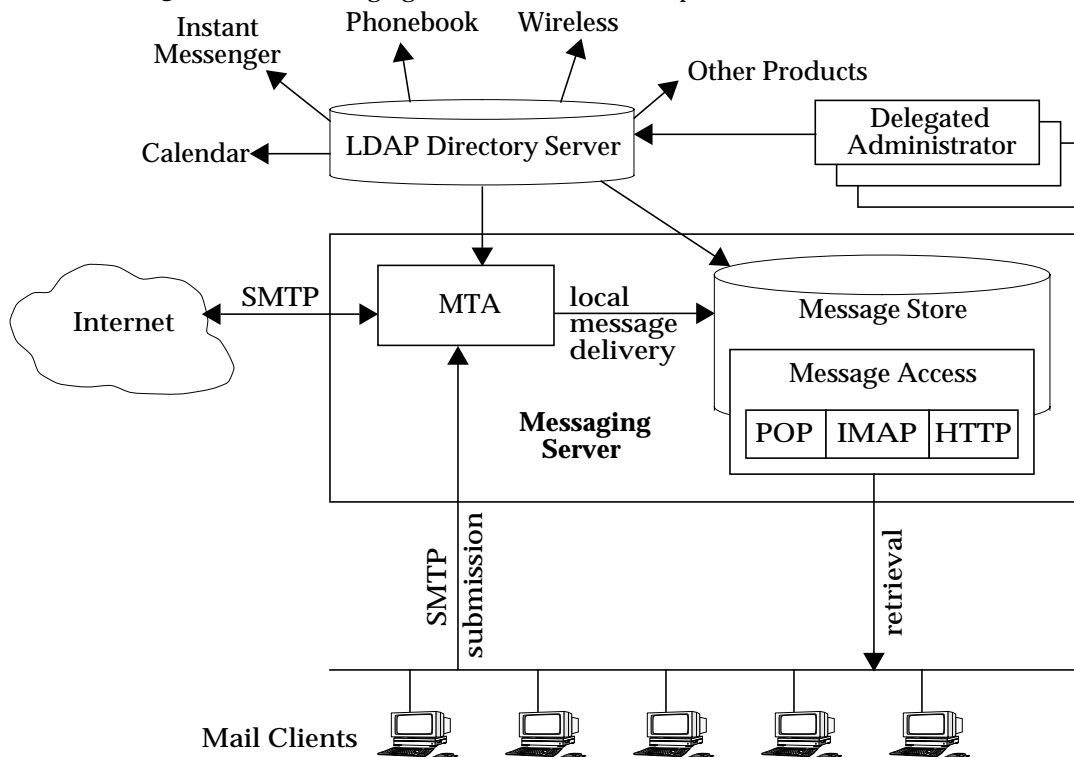
Installation Components

The Messaging Server suite contains the following separate software components:

- Netscape Server Core

- Directory Suite

- Administration Services

- iPlanet Messaging Applications

Netscape Server Core

During the installation, you will have the option of installing the Netscape Server Core, which contains the products described in the following subsections:

- Netscape Product Core Components (Netscape Console 4.2)

- Netscape Core Java Classes

- Java Runtime Environment (JRE)

Netscape Product Core Components (Netscape Console 4.2)

Netscape Console provides the common user interface for all Netscape and iPlanet server products. From it you can perform common server administration functions, such as stopping and starting non-SMTP servers, installing new server instances, and managing user and group information. Netscape Console can be installed stand alone on any machine on your network and can be used to manage remote servers.

Netscape Core Java Classes

The Java classes run and support the Netscape and iPlanet server product core components.

Java Runtime Environment (JRE)

The tools and binaries needed to run and support the Netscape and iPlanet server product core components.

Directory Suite

The products in the Directory Suite are described in the following subsections (For a description on iPlanet Directory Server 5.1, refer to Appendix A, "Installing iPlanet Directory Server 5.1."):

• Netscape Directory Server

• Netscape Directory Server Console

Netscape Directory Server

The Directory Server is iPlanet's LDAP-compliant server that manages directory database services and responds to requests from LDAP clients such as Messaging Server. It runs as the `ns-slapd` process on your machine

Netscape Directory Server Console

This is the portion of the Netscape Console designed specifically for use with the Directory Server. The Directory Server Console enables you to perform most Directory Server administrative tasks, such as starting and stopping the server, managing access control, viewing and configuring server logs, backing up and restoring directory databases, and so forth.

Administration Services

The products in the Administration Services installation component are described in the following subsections:

• Netscape Administration Server

• Administration Server Console

Netscape Administration Server

The Administration Server receives communications from the Netscape Console and passes those communications to the appropriate iPlanet server. Your site will have at least one Administration Server for each *server-root* in which you have installed an iPlanet server.

Administration Server Console

This is the portion of the Netscape Console designed specifically for use with the Administration Server. You can perform most Administration Server tasks through the Administration Server Console (for example, starting and stopping servers).

iPlanet Messaging Applications

The products and components in the Messaging Applications installation component are described in the following subsections. The following components make up Messaging applications:

- iPlanet Message Store and Message Access (MSMA)

- iPlanet Message Transfer Agent (MTA)

- iPlanet Messaging Multiplexor (MMP)

- High Availability for iPlanet Messaging Server (HA)

- iPlanet Delegated Administrator for Messaging Command Line Utilities (iDA)

iPlanet Message Store and Message Access (MSMA)

Messaging Server provides the foundation for unified messaging services through its universal Message Store. Access to the message store is available through multiple protocols (HTTP, POP, IMAP). The Message Access component is responsible for handling the retrieval of messages from the Message Store.

iPlanet Message Transfer Agent (MTA)

The MTA handles tasks such as routing and delivering user mail and handling SMTP authentication. The MTA provides support for features such as hosted domains, domain aliases, and server-side filters.

iPlanet Messaging Multiplexor (MMP)

The MMP is a proxy server that acts as a single point of connection to multiple instances of Messaging Server. With the MMP, large-scale mail-service providers can distribute POP and IMAP user mailboxes (as well as SMTP Proxy) across many machines to increase messaging capacity. All users connect to the single Multiplexor server, which redirects each connection to the appropriate mail server.

For information on MMP installation, see Chapter 5, "Installing the Messaging Multiplexor."

High Availability for iPlanet Messaging Server (HA)

High Availability enables server management functions such as expansion of message store capacity and backup and recovery of user folders. Messaging Server is designed to integrate with the Veritas Cluster Server 1.1 or later, Sun Cluster 2.2, Sun Cluster 3.0 U1 and Sun Cluster 3.0 U2 high availability clustering software.

For information about the various high availability models, configuration information, and installation instructions, see Chapter 4, "High Availability."

iPlanet Delegated Administrator for Messaging Command Line Utilities (iDA)

These command line utilities (CLIs) provide the capability to perform provisioning on domains, users, and groups. They also grant privileges to the Domain Administrators.

Product Hierarchy and Interaction

This section outlines dependencies within the installation components and sub-components, shows you how to determine port numbers, and describes the interaction between installation products.

Installation Component and Sub-Component Dependencies

Each Messaging Server component has multiple sub-components. There are dependencies that allow or prevent you from installing various components together. Table 1-1 shows the components and sub-component dependencies.

Table 1-1   Messaging Server Component and Sub-component Dependencies

Sub-Components	Corresponding Component Group	Dependent on:
Netscape Server Products Core Components	Netscape Server Products Core Components	n/a
Netscape Core Java Classes	Netscape Server Products Core Components	n/a
Java Runtime Environment	Netscape Server Products Core Components	n/a
Directory Server	Directory Suite	Netscape Server Products Core Components
		Netscape Administration Server
Directory Server Console	Directory Suite	n/a
Netscape Administration Server	Administration Services	Netscape Server Products Core Components
Administration Server Console	Administration Services	Netscape Server Products Core Components
iPlanet Message Store and Message Access	iPlanet Messaging Suite	Administration Services Component
iPlanet Internet Message Transport Agent	iPlanet Messaging Suite	Administration Services Component
iPlanet Messaging Multiplexor	iPlanet Messaging Suite	iPlanet Messaging Libraries
High Availability for iPlanet Messaging Server	iPlanet Messaging Suite	n/a

Table 1-1 Messaging Server Component and Sub-component Dependencies *(Continued)*

Sub-Components	Corresponding Component Group	Dependent on:
iPlanet Delegated Administrator Command Line Utilities	iPlanet Messaging Suite	n/a

Port Numbers

Throughout the installation program, you will choose port numbers for various services. These port numbers can be any number from 1 to 65535. Be sure to specify different port numbers to avoid any conflicts in your Messaging installation. By the end of your installation, the following port numbers will be designated:

- Standard Directory Server LDAP port for managing and provisioning users and services (Default: 389).

- Administration Server HTTP port for listening to the Netscape Console requests (Choose a port number that is easy to remember. For example: 55555).

- Messenger Express (Webmail) HTTP port (Default: 80).

- Delegated Administrator for Messaging HTTP port (Default: 8080) This port should correspond to the iPlanet Web Server User HTTP port. See the *iPlanet Delegated Administrator for Messaging and Collaboration Installation and Administration Guide* for more information.

The following default port numbers may be specified during the installation process; if you select Custom Installation (or if these any of these ports are in use), these port numbers can be changed:

- POP3 (default 110)

- IMAP4 (default: 143)

- SMTP (default: 25)

The Administration Server must run as `root` if the Directory Server is going to use standard port numbers (only `root` authenticated user accounts can access ports lower than 1024.).

TIP	It is recommended that you record all of the port numbers you specify during the installation, along with the specific component using that port number. See Table 1-2 on page 34.

When and Where to Install each Product

Although the Directory Server is included, you may choose to use an existing Directory Server and not install the one that is included with the Messaging Server. If you do so, you must run `ims_dssetup` (See "Running the ims_dssetup Utility" on page 40.) against that existing Directory Server prior to installing the Messaging Server. See "Configuring an Existing Directory Server" on page 28 for more information.

The iPlanet Web Server must be installed on the same machine as the Delegated Administrator, but the Messaging Server can be installed on a separate machine. Since the existence of the Web Server is required for the Delegated Administrator, you must install the Web Server before you install the Delegated Administrator.

The Delegated Administrator should be installed immediately after the Messaging Server; if you start to provision the Messaging Server before installing the Delegated Administrator, you may encounter some complications in the Delegated Administrator installation.

TIP	It is recommended that you install the Messaging Server first, then the Web Server, then the Delegated Administrator.

Required Information for the iPlanet Delegated Administrator for Messaging Installation

The Delegated Administrator requires the following information from the Messaging Server installation; make sure you accurately record this information in Table 1-2 on page 34, before or during the Messaging Server installation. Relevant iPlanet Delegated Administrator information to note during Messaging installation includes:

- Fully Qualified host name and domain name of the Users and Groups Directory Server

- Port number on which the Users and Groups Directory Server listens

- Suffix for this Users and Groups Directory Server

- Bind DN and password of the Directory Manager

- Login ID and password for the Service Administrator (also known as the Top-Level Administrator for the Delegated Administrator)

- Messaging Server host name and domain name

- Host name and port of the Web server that will host the iPlanet Delegated Administrator for Messaging

Configuring an Existing Directory Server

This section provides information for configuring an existing Directory Server in preparation for a Messaging Server installation. If you do not have an existing Directory Server, or you want to install the Directory Server that comes with the Messaging Server, you do not need to read this section.

| NOTE | To install iPlanet Directory Server 5.1 with Messaging Server, refer to Appendix A, "Installing iPlanet Directory Server 5.1." |

Messaging Server is compatible with Netscape Directory Server 4.1x. Messaging Server and Directory Server need not be installed and run on the same platform. While Messaging Server requires Solaris 2.6, 8, HP-UX 11.00, or Windows NT 4.0, the Directory Server can run on any platform on which it is supported. For example, a Directory Server running on Solaris can provide LDAP services to a messaging server running on HP-UX or Windows NT.

NOTE	If you plan to use an existing Directory Server with Messaging Server, you must use the `ims_dssetup` program to configure it as described in "Running the ims_dssetup Utility" on page 40.

Choosing a Configuration Directory Server

All iPlanet servers use a Directory Server to store configuration information. This information is stored in the `o=NetscapeRoot` directory tree. Your configuration directory is the Directory Server that contains the `o=NetscapeRoot` tree used by your servers. For more information, refer to your Directory Server documentation.

When setting up your Directory Servers, you will want to centralize the administrative configuration settings on a single LDAP server and use it to host the configurations of any number of iPlanet Servers. When you open Netscape Console for any server, you will see all the other servers that are using the same LDAP server as the Configuration Server directory.

Administration Domains

On any configuration LDAP server, you can group your servers under different administration domains for increased manageability. When you first install a Directory server and choose it to be your Configuration Directory Server, you can specify an Administration Domain. If you later want to add administration domains to an existing Configuration Directory Server, you can use the Administration Console.

The administration domain allows you to logically group iPlanet servers together so that you can more easily distribute server administrative tasks. A common scenario is for two divisions in a company to each want control of their individual iPlanet servers. However, you may still want some centralized control of all the servers in your enterprise. Administration domains allow you to meet these conflicting goals.

Administration domains have the following qualities:

- All servers share the same configuration directory, regardless of the domain that they belong to.

- Servers in two different domains may use two different user directories for authentication and user management.

- The configuration directory administrator has complete access to all installed Netscape servers, regardless of the domain that they belong to.

- Each administration domain can be configured with an administration domain owner. This owner has complete access to all the servers in the domain but does not have access to the servers in any other administration domain.

- The administration domain owner can grant individual users administrative access on a server by server basis within the domain.

Choosing a Users and Groups Directory Server

When setting up Messaging Server, it is recommended that you specify one Directory Server as the Configuration Directory Server and another Directory Server for Users and Groups for increased manageability.

When you install the Messaging Server, there are two ways to specify your Users and Groups Directory Server:

- Use an existing Users and Groups Directory Server with your Messaging Server installation.

- Install a new version of the Users and Groups Directory Server with your Messaging Server installation.

NOTE   After completing the installation, you can use Netscape Console to change the Users and Groups Directory that your Messaging Server uses, regardless of what was specified during the installation.

Types of Installations

The Messaging Server installation program lets you install in four basic ways:

- **Express Installation**. This type of installation performs a "quick" installation. Because most options at this level are automatically configured with default values, it is recommended for novice users. Use Express Installation if you want to evaluate Messaging Server.

- **Typical Installation**. This type of installation is more complex than the Express level. Some options are automatically configured with default values, but some options require that you choose or enter the value you want to use. Typical installation is recommended for intermediate users or for any installation that does not require custom configuration. Use this type of installation if you are performing a normal installation of Messaging Server.

- **Custom Installation**. This is the most complex type of installation. You must choose and enter all configuration options. Custom installation is recommended for expert users. Use this type of installation if you want to perform advanced activities during installation such as specifying SMTP and IMAP network ports other than the default values.

- **Silent Installation.** Use this type of installation if you want to automate your installation process when installing more than one instance of Messaging Server. This feature is especially useful for installing several servers in your enterprise. Instructions on how to run this type of installation are described in "Silent Installation" on page 43.

Suggested Guidelines

This section contains suggested guidelines you should follow as you prepare for your Messaging Server installation.

- **Installation Privileges.** You must install Messaging Server logged in as `root`.

- **Host and Domain Names.** The iPlanet installation utilities assume that your host and domain names are defined correctly in your UNIX system files. Make sure that the `hostname` command returns the correct information before installing iPlanet servers. If your system does not support the `domainname` command, check the domain name in the `/etc/resolv.conf` file.

- **Server-root Directories.** The Messaging Server, Directory Server, and Administration Servers are installed into directories referred to as *server-roots.* These directories provide a known file location structure (file directory path) that enables the servers to identify one another.

- **Create nobody for HP-UX installations.** Prior to an HP-UX installation, you will need to create a user called `nobody` who has no privileges, does not reside in any group, is not `root`, and does not have a home directory. The user, `nobody,` should not be a user in your Messaging or Directory Server.

- **Resource Contention.** To avoid resource contention between the servers, it is recommended that you install the Directory Server on a different machine than where you install Messaging Server. This is not necessary for single system installations, like an evaluation installation.

- **Hardened Solaris Machines.** To install Messaging Server on a hardened Solaris machine, create a dummy file called `libx11.so.4` in a directory (such as `/tmp`). Add that directory to the LD_LIBRARY_PATH variable prior to installation.

- **High Availability installation.** High availability for the Messaging Server is not installed by default; be sure to select High Availability Components from the Custom Installation menu if you install Sun Cluster 2.2 or Veritas Cluster Server 1.1 or later. For specific instructions, see Chapter 4, "High Availability."

NOTE	If you install Sun Cluster 3.0 U1 or U2, you should select Custom Installation as your installation type, however you should not select High Availability components option during Messaging Server installation. See Chapter 4, "High Availability."

Because an HA agent does not exist for iPlanet Directory Server, you cannot configure high availability with iPlanet Directory Server 5.1. Instead, you should use other solutions, such as directory replication. For more information on alternate availability solutions, see the *iPlanet Directory Server Deployment Guide.*

- **MMP installation.** The MMP is not installed by default; be sure to select it from the menu if you want it installed. You may use either the Typical or Custom installation to install the MMP. See Chapter 5, "Installing the Messaging Multiplexor."

Installation Steps

The basic steps that should be followed for installing Messaging Server and its suite of products are listed below:

1. Review "System Requirements" on page 18 and verify that they have been met.

2. Record the information you'll need to complete the installation based on the type of installation you want to perform (for example, IDs, passwords, and so forth) as described in Table 1-2 on page 34.

3. Determine whether you want to use an existing Directory Server or install the Directory Server that is included with the Messaging Server.

   a. If you choose to use an existing Directory Server, you must run the `ims_dssetup` script on this existing Directory Server before you install Messaging Server. For more information, see "Running the ims_dssetup Utility" on page 40.

   b. If you do not have an existing Directory Server, you must install the Directory Server provided with the Messaging Server installation. Messaging Server installation creates only one instance of the Directory Server.

NOTE	If you install the Directory Server that comes with the Messaging Server, you do not need to run the `ims_dssetup.pl` program that is described in "Running the ims_dssetup Utility" on page 40; this utility is only used for a pre-existing Directory Server to prepare it for the Messaging Server installation.

4. Make sure that the installation files are available, either from the product CD or downloaded from the iPlanet Web site. See "Transferring Messaging Server Installation Files" on page 38 for more information.

5. Run the `setup` program to perform the installation. See Chapter 2, "Installation Instructions" for more information on how to run the `setup` program.

6. Verify that the installation was successful.

iPlanet Messaging Server Installation Checklist

Use Table 1-2 to record installation and configuration values during the installation process. This information will be particularly helpful when installing other Messaging products and for subsequent installations of Messaging Server.

Table 1-2 iPlanet Messaging Server Installation Checklist

Parameter	Specified During	Value
Location of Product CD Image	The path of the install-binaries from the installation CD or from the iPlanet Web site.	Example: `/usr/temp/msg51opt` *install-binaries:*_____
Directory Manager DN	Messaging Server Installation: Directory Manager Settings	Directory Manager DN Example (default): `cn=Directory Manager` Password: `iPlAnEt1` Directory Manager DN: _____ Password: _____
Directory Server Identifier, Port, and Suffix	Messaging Server Installation: Directory Server Settings	Server Identifier Example: `budgie` Server Port Example: 389 (default) User Suffix Example: `o=siroe.com` Server Identifier _____ Port _____ Suffix_____
Directory Host and Domain Name	Messaging Server Installation: Directory Server Settings	Host and Domain Name Example: `budgie.siroe.com` Host Name Identifier _____
Administration Server Port for Messaging and Directory Servers	Messaging Server Installation: Administrator Server Port Selection Also specified in the Web Server installation	Administration Port Example: `5000` Administration Port Number: _____
Messaging Server Ports SMTP Webmail (Messenger Express) POP3 IMAP4	Messaging Server Installation: Messaging Server Ports	Ports Example (defaults): POP3: `110`　　　　　POP3: _____ IMAP4: `143`　　　　IMAP4: _____ SMTP: `25`　　　　　SMTP: _____ Webmail: `80`　　　　Webmail: _____

Table 1-2 iPlanet Messaging Server Installation Checklist *(Continued)*

Parameter	Specified During	Value
Messaging Server Fully Qualified Host Name	Messaging Server Installation: Messaging Server Host and Domain Name	Fully qualified example: `budgie.siroe.com` Host example: `budgie` Domain example: `siroe.com` Messaging Server Fully Qualified Host Name: _____
Messaging Server Service Administrator	Messaging Server Installation: Service Administration	User example (default): `ServiceAdmin` Password example: `iPlAnEt1` Messaging Server Services User: _____ Password: _____
Postmaster User Account	Messaging Server Installation: Postmaster Address	Postmaster Address example: `pma@siroe.com` Postmaster Address: _____
Delegated Administrator for Messaging running on Web Server Port	Messaging Server Installation: Messaging Server Delegated Administration Host and Port (Web Server installation)	Delegated Administration Host and Port example: Host Name: `budgie.siroe.com` Port: `8080` (default) Delegated Administration Host Name: _____ Port Number: _____
Web Server Port	Delegated Administrator for Messaging Product Installation (Web Server installation)	Administration Server Port for Web Server Example: `8000` Administration Server Port for Web Server: Port Number:_____

Web Server Configuration Directory	Delegated Administrator for Messaging Product Installation	Example:
		`/usr/netscape/server4/https-budgie/ \`
		`config`
		
		Directory:_____

Installation Instructions

This chapter describes how to run the `setup` program, directory `setup` program, and silent installation. In addition, common installation scenarios are outlined. It is assumed that you have reviewed the previous sections in Chapter 1, "Preparing for Installation."

This chapter includes the following sections:

- Installation Readiness

- Transferring Messaging Server Installation Files

- Running the ims_dssetup Utility

- Running the Setup Program

- Silent Installation

- Installation Scenarios

    ❍ Scenario One: Install Messaging and Directory Servers on the Same Machine

    ❍ Scenario Two: Install Messaging Server with Existing Configuration and Users and Groups Directory Servers

    ❍ Scenario Three: Install Messaging Server with Existing Users and Groups Directory Server and New Configuration Directory Server

    ❍ Scenario Four: Replicated Users and Groups Directory Server

- Post-Installation Configuration

Installation Readiness

At this point, you are almost ready to run the `setup` program and begin Messaging Server installation. You should be able to answer "yes" to the following questions before you continue:

1. Have you reviewed the "System Requirements" on page 18 and verified that they have been met?

2. Have you reviewed the "Product Hierarchy and Interaction" on page 25 to determine which components you will be installing and where you will be installing them?

3. Have you determined the "Types of Installations" on page 31 that you would like to perform, and have you gathered all of the necessary information?

4. Have you decided if you will use an existing Directory Server or install the one that comes with the Messaging Server? You should review "Configuring an Existing Directory Server" on page 28 for more information on using an existing Directory Server.

5. Are you ready to your record installation and configuration values in the installation checklist in Table 1-2 on page 34?

Transferring Messaging Server Installation Files

To transfer and extract the product archive files, use the following steps.

From the Web

To transfer and extract the compressed installation program files from the iPlanet Web site, locate the Messaging Server archive file. The file will be in the format *archive*`.tar.gz`, where *archive* represents the name of the compressed archive file.

After you have located the archive file:

1. Create a directory (for example, `/opt/msg5install`) on the machine that will host the Messaging Server and copy the archive file to that directory.

2. Go to the directory where you copied the archive file and then uncompress and extract the contents. Use the following command:

```
gunzip -c arhive.tar.gz | tar -xvf -
```

From the CD

1. Locate the Messaging Server archive from the product CD:

   Insert the CD into the CD-ROM drive on your installation machine and locate the `/solaris` (for Solaris 2.6 and Solaris 8) or `/hpux` (for HP-UX 11.0) directory. Next, locate the appropriate subdirectory you want to install:

   ❍ ES - iPlanet Web Server

   ❍ iDA - iPlanet Delegated Administrator for Messaging

   ❍ iMS - iPlanet Messaging Server

NOTE	If you do not have an existing Directory Server installation, skip the next step. It is recommended that you install a new configuration directory server with the HP or Solaris version of Messaging Server if you are migrating your users and groups from Netscape Messaging System or Sun Internet Messaging System. Refer to the *iPlanet Messaging Server Migration Guide* for more information.

2. Copy the `dssetup.zip` archive (on CD: `/solaris/iMS/msg/dssetup.zip` or `/hpux/iMS/msg/dssetup.zip`) to the machine where you installed your existing Directory Server. Unzip the archive and make sure there is an `ims_dssetup.pl` file and a `config` sub-directory containing files with `*.conf` and `*.ldif` file extensions.

NOTE	If you have two existing directory servers (one for users and groups and one for configuration data), you will need to run the `ims_dssetup` on both directory servers.

Running the ims_dssetup Utility

This section provides instructions on how to run the ims_dssetup utility to configure an existing Directory Server for Messaging Server installation. If you do not have an existing Directory Server, you do not need to read this section. The

---

NOTE   If you install iPlanet Directory Server 5.1 with Messaging Server, you must run the ims_dssetup.pl script. For more information, see Appendix A, "Installing iPlanet Directory Server 5.1."

---

ims_dssetup utility is located in the msg directory where you downloaded the archive file from the web; on the CD-ROM, it is also located in the msg directory:

1. Execute the ims_dssetup utility with the following command:

   ```
   perl ims_dssetup.pl
   ```

NOTE   The ims_dssetup.pl utility is a Perl script; the existing Directory Server installation provides a Perl (version 5.005) executable program in the *server-root*/install directory of the existing Directory Server installation. It is recommended that you use this Perl executable.

---

2. Enter y to continue,

   ```
   Welcome to the iMS Directory Server preparation tool.

   This tool prepares your directory server for the iPlanet
   Messaging Server install.

   Do you want to continue [y]:
   ```

3. Specify the Directory Server root where the existing directory server resides.

   ```
   Please enter the full path to the directory where Netscape
   Directory Server was installed.

   Directory server root [/usr/iplanet/server5] :
   ```

4. Select a Directory Server instance that you plan to use with the Messaging Server installation.

   ```
   Please select a directory server instance from the following
   list:

   [1]    slapd-budgie
   ```

```
Which instance do you want [1]:
```

5. Determine if the Directory Server will be used for both configuration and users and groups schema.

```
Is this server used for a users/groups directory [yes]:
```

6. Specify the base suffix for the DC tree or press Return to accept the default value. In the DC Tree, the convention is to set the root to o=internet.

```
Please enter the base suffix for DC Tree [o=internet]:
```

7. Specify the base suffix under which the Users and Groups data should be set up. Press Return to accept the default value.

```
Please enter the base suffix under which the Users/Groups data
should be set up [o=siroe.com] :
```

8. Answer yes or press Return to update the schema files.

```
Do you want to update the schema files [yes]:
```

9. Answer yes or press Return to configure the new indexes.

```
Do you want to configure new indexes [yes]:
```

10. Specify the schema directory; this is the config subdirectory of the directory where the ims_dssetup utility is located:

```
Please enter the schema directory
[/usr/iplanet/server5/msg/config]:
```

11. Determine the directory manager who will manage the Users and Group data. Specify a directory manager or press Return to accept the default value:

```
Please enter the directory manager DN [cn=Directory Manager]:
Password:
```

At this point, you will see a summary of your options. It will look similar to the following:

```
Here is a summary of the settings that you chose:

Server Root              : /usr/iplanet/server5
Server Instance          : slapd-budgie
Update Schema            : yes
Users/Groups Directory   : yes
DC Root                  : o=internet
User/Group Root          : o=siroe.com
Add New Indexes          : yes
Schema Directory         : /usr/iplanet/server5/msg/config
```

```
Answer yes or press Return to continue, or answer no to start over.
Do you want to continue [y]:
```

If you answer no to Question 5, then you will not be asked Question 6, Question 7, and Question 9; additionally, these options will not be listed in the summary.

At this point, the configuration of the specified Directory Server begins.

Running the Setup Program

The installation binaries, where the iPlanet Messaging Server files reside, contain the setup program. Make sure you are logged on as root when you run the setup program. See "Suggested Guidelines" on page 31 to review the guidelines prior to installing Messaging Server.

You can run the setup command as follows:

```
./setup [options]
```

The optional parameters for the setup command are listed in Table 2-1:

Table 2-1   Optional parameters for the setup command

Parameter	Description
-s	Silent installation mode. This parameter must be used in conjunction with the -f *file* parameter.
-f *file*	Specify file as the silent installation script. This parameter must be used in conjunction with the -s parameter.
-k	Keep the installation cache. This parameter cannot be used with the -s parameter.

Silent Installation

The installation program allows you to create a silent installation cache file that can be used to quickly install additional Messaging Server instances in your enterprise. When you use the `-k` option during your first installation, you create the silent installation cache file. All of your responses to the installation prompts are recorded in that file.

By running the silent installation, you instruct the `setup` program to read the silent installation cache file. The `setup` program uses the responses in this file rather than ask the same installation questions again for subsequent Messaging Server installations. When you use the cache file in a new installation, you are not asked any questions. Instead, all of the cache file responses are automatically applied as the new installation parameters.

The silent installation cache file is saved in the `/`*server-root*`/setup` directory. For example, if you installed the server into `/usr/iplanet/server5`, the cache file for that installation is:

```
/usr/iplanet/server5/setup/install.inf
```

To use the cache file for a fast installation of another iPlanet Messaging Server 5.2 instance, follow these steps:

1. Copy the silent installation cache file to the installation directory that you are using for the new installation.

2. Review and edit the silent installation cache file as necessary.

   You will probably want to change some of the parameters and specifications in the cache file. For example, the host name for this installation may be different than the host name recorded in the cache file. Remember that the parameters listed in the cache file will be automatically applied to this installation.

3. Run setup with the -s -f *filename* options where *filename* represents the full path and name of the silent installation cache file (Additional setup options are listed in "Running the Setup Program" on page 42.). For example:

```
./setup -s -f /home/foo/install.inf
```

NOTE	When you use a cache file, no new cache file is created from a silent installation.
	If you have many similar server configurations to set up, you can place the configuration file and the server installation package on each machine. You execute the setup program on each machine; it then extracts all information it needs from the configuration file as it performs the installation.

Installation Scenarios

This section describes four common Messaging Server installation scenarios:

NOTE   The instructions in these scenarios are geared for a Custom
Installation. If you are performing an Express or Typical
Installation, you will not see all of the questions listed here.

- "Scenario One: Install Messaging and Directory Servers on the Same Machine."
  You are installing the Messaging Server and Directory Server on the same
  server. Typically, you will follow this installation scenario when you want to
  evaluate the Messaging Server product.

- "Scenario Two: Install Messaging Server with Existing Configuration and
  Users and Groups Directory Servers." You are installing the Messaging Server
  with an existing Configuration and Users and Groups Directory Server.

- "Scenario Three: Install Messaging Server with Existing Users and Groups
  Directory Server and New Configuration Directory Server." You are installing
  the Messaging Server with an existing Users and Groups Directory Server
  only. You may follow this installation scenario if you migrate your users and
  groups from the Netscape Messaging Server to iPlanet Messaging Server. Refer
  to the *iPlanet Messaging Server Migration Guide* for more information.

- "Scenario Four: Replicated Users and Groups Directory Server." You are
  installing Messaging Server using Scenarios Two or Three, however, you are
  using an existing replicated Users and Groups Directory Server.

NOTE   If you are installing the Messaging Server with an existing
Directory Server, you must run the `ims_dssetup` utility against that
existing Directory Server to prepare it for the Messaging Server
installation. For more information, see "Configuring an Existing
Directory Server" on page 24 and "Running the ims_dssetup
Utility" on page 40.

For some questions, you are instructed to provide a specific answer; for the others, you will need to provide your own answer. Detailed information about each question can be found in Chapter 3, "Installation Questions."

TIP	It is important that you record your answer for each question (See Table 1-2 on page 34.); you may need them for another product installation (for example, iPlanet Delegated Administrator for Messaging requires answers to several of the questions specified during the Messaging Server installation. See "Required Information for the iPlanet Delegated Administrator for Messaging Installation" on page 28.).

After you have completed installing Messaging Server, the server processes will not start by default. Instead, you will need to manually start these processes. For more information on the STORED, POP, IMAP, HTTP, and MTA processes, see chapter on configuring general messaging capabilities in the *iPlanet Messaging Server Administrator's Guide.*

NOTE	It is strongly recommended that you run the `script` command to record your entire installation process. Review the UNIX man page for more information.
	Even if you are not planning a silent installation, you might additionally want to use the `-k` parameter to record your answers to the installation questions. Doing so will help iPlanet Support quickly diagnose any installation problems.

Scenario One: Install Messaging and Directory Servers on the Same Machine

Follow the installation instructions provided below if you are installing Messaging and Directory Servers on the same machine:

1. Go to the directory where you downloaded the install files. For example:

   ```
   cd /opt/msg5install
   ```

2. Run the `setup` program to begin installation. See "Running the Setup Program" on page 42 for more information on `setup`. For example:

   ```
   ./setup -k
   ```

3. Provide answers for the following questions as described in Chapter 3, "Installation Questions."

   - Question 1. Welcome Screen

   - Question 2. License Agreement

   - Question 3. Install Netscape Servers

   - Question 4. Installation Type

   - Question 5. Installation Location (server-root)

   - Question 6. iPlanet Server Products Components (select all the components on this screen.)

   - Question 7. Netscape Server Products Core Components

   - Question 8. Directory Components

   - Question 9. Administration Services Components

   - Question 10. iPlanet Messaging Suite Components

   - Question 11. Fully Qualified Domain Name of the installation machine

   - Question 12. System User and System Group

   - Question 16. Register with an existing Configuration Directory Server?

   - Question 25. Do you want another Directory Server to store your Users and Groups data? (answer `no` to this question)

   - Question 21. Directory Server network port

   - Question 22. Unique ID for this Directory Server

- ❍ Question 19. Login ID and password of the Configuration Server Administrator
- ❍ Question 23. Suffix
- ❍ Question 24. Bind DN and password of the Directory Manager
- ❍ Question 20. Administration Domain
- ❍ Question 30. Directory Server replication
- ❍ Question 31. Sample entries (answer `no` to this question)
- ❍ Question 32. Populate your new Directory Instance with some data (answer `none` to this question)
- ❍ Question 33. Disable schema checking (answer `no` to this question)
- ❍ Question 34. Administration Server Port
- ❍ Question 35. Bind the Administration Server to a specific IP address rather than the default IP address of the current host?
- ❍ Question 36. User name of the Administration Server
- ❍ Question 37. Unique identifier for this Messaging Server
- ❍ Question 38. Messaging Server host name and domain name
- ❍ Question 39. User name of the Messaging Server
- ❍ Question 40. Default domain and organization for the Messaging Server
- ❍ Question 42. Host name and port of the Web server that will host the iPlanet Delegated Administrator for Messaging
- ❍ Question 43. Specify whether or not the Messaging Server will be run from behind a firewall
- ❍ Question 44. Customize the root of your domain component tree
- ❍ Question 45. Primary message store directory
- ❍ Question 46. TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express
- ❍ Question 47. Login ID and password for the Service Administrator
- ❍ Question 48. Email address that you want to add to the postmaster group

Scenario Two: Install Messaging Server with Existing Configuration and Users and Groups Directory Servers

Follow the installation instructions provided below if you are installing Messaging Server with existing Configuration and Users and Groups Directory Servers:

1. Go to the directory where you downloaded the install files. For example:

   ```
   cd /opt/msg5install
   ```

2. Run the `setup` program to begin the installation. See "Running the Setup Program" on page 42 for more information on `setup`. For example:

   ```
   ./setup -k
   ```

3. Provide answers for the following questions as described in Chapter 3, "Installation Questions."

   ○ Question 1. Welcome Screen

   ○ Question 2. License Agreement

   ○ Question 3. Install Netscape Servers

   ○ Question 4. Installation Type

   ○ Question 5. Installation Location (server-root)

   ○ Question 6. iPlanet Server Products Components (select all components except Directory Server)

   ○ Question 7. Netscape Server Products Core Components

   ○ Question 8. Directory Components

   ○ Question 10. iPlanet Messaging Suite Components

   ○ Question 11. Fully Qualified Domain Name of the installation machine

   ○ Question 12. System User and System Group

   ○ Question 13. LDAP URL of the Directory Server (Configuration Directory)

   ○ Question 14. Administration Domain in the Configuration Directory

   ○ Question 15. Login ID and password of the Configuration Server Administrator

   ○ Question 34. Administration Server Port

❍ Question 35. Bind the Administration Server to a specific IP address rather than the default IP address of the current host?

❍ Question 36. User name of the Administration Server

❍ Question 37. Unique identifier for this Messaging Server

❍ Question 38. Messaging Server host name and domain name

❍ Question 39. User name of the Messaging Server

❍ Question 40. Default domain and organization for the Messaging Server

❍ Question 42. Host name and port of the Web server that will host the iPlanet Delegated Administrator for Messaging

❍ Question 43. Specify whether or not the Messaging Server will be run from behind a firewall

❍ Question 44. Customize the root of your domain component tree

❍ Question 45. Primary message store directory

❍ Question 46. TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express

Scenario Three: Install Messaging Server with Existing Users and Groups Directory Server and New Configuration Directory Server

Follow the installation instructions provided below if you are installing the Messaging Server with an existing Users and Groups Directory Server only:

1. Go to the directory where you downloaded the installation files. For example:

   ```
   cd /opt/msg5install
   ```

2. Run the setup program to begin the installation. See "Running the Setup Program" on page 42 for more information on setup. For example:

   ```
   ./setup -k
   ```

3. Provide answers for the following questions as described in Chapter 3, "Installation Questions."

   ❍ Question 1. Welcome Screen

   ❍ Question 2. License Agreement

❍ Question 3. Install Netscape Servers

❍ Question 4. Installation Type

❍ Question 5. Installation Location (server-root)

❍ Question 6. iPlanet Server Products Components (select all the components on this screen)

❍ Question 7. Netscape Server Products Core Components

❍ Question 9. Administration Services Components

❍ Question 10. iPlanet Messaging Suite Components

❍ Question 11. Fully Qualified Domain Name of the installation machine

❍ Question 12. System User and System Group

❍ Question 16. Register with an existing Configuration Directory Server? (answer `no` to this question)

❍ Question 25. Do you want another Directory Server to store your Users and Groups data? (answer `yes` to this question)

❍ Question 26. Fully Qualified host name and domain name of the Users and Groups Directory Server

❍ Question 27. Port number on which the Users and Groups Directory Server listens

❍ Question 28. Suffix for this Users and Groups Directory Server

❍ Question 29. Login ID and password for the Users and Groups Server Administrator

❍ Question 21. Directory Server network port

❍ Question 22. Unique ID for this Directory Server

❍ Question 19. Login ID and password of the Configuration Server Administrator

❍ Question 24. Bind DN and password of the Directory Manager

❍ Question 20. Administration Domain

❍ Question 30. Directory Server replication

❍ Question 31. Sample entries (answer `no` to this question)

❍ Question 32. Populate your new Directory Instance with some data (answer `none` to this question)

- ❍ Question 33. Disable schema checking (answer no to this question)

- ❍ Question 34. Administration Server Port

- ❍ Question 35. Bind the Administration Server to a specific IP address rather than the default IP address of the current host?

- ❍ Question 36. User name of the Administration Server

- ❍ Question 37. Unique identifier for this Messaging Server

- ❍ Question 38. Messaging Server host name and domain name

- ❍ Question 39. User name of the Messaging Server

- ❍ Question 40. Default domain and organization for the Messaging Server

- ❍ Question 42. Host name and port of the Web server that will host the iPlanet Delegated Administrator for Messaging

- ❍ Question 43. Specify whether or not the Messaging Server will be run from behind a firewall

- ❍ Question 44. Customize the root of your domain component tree

- ❍ Question 45. Primary message store directory

- ❍ Question 46. TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express

- ❍ Question 47. Login ID and password for the Service Administrator

- ❍ Question 48. Email address that you want to add to the postmaster group

Scenario Four: Replicated Users and Groups Directory Server

If you install Messaging Server with a replicated users and group directory in Scenarios Two or Three, you must follow these additional steps before installing Messaging Server:

1. Run `ims_dssetup.pl` on the supplier and consumer Users and Groups Directory Servers (See "Running the ims_dssetup Utility," on page 40).

2. Create an account (for example: `uid=AManager, ou=People, o=siroe.com`) for the supplier Users and Groups Directory Server. Use one of the following provisioning interfaces to do so:

  ❍ Messaging Server LDAP directory (See the *iPlanet Messaging Server Provisioning Guide.*)

  ❍ iPlanet Delegated Administrator for Messaging console (See the i*Planet Delegated Administrator for Messaging and Collaboration Installation and Administration Guide.*)

  ❍ iPlanet Delegated Administrator for Messaging command-line utilities (See the chapter on Delegated Administrator command-line utilities in the *iPlanet Messaging Server Reference Manual.*)

  ❍ iPlanet Messaging Server Administration Console (Refer to Netscape Console documentation: `http://docs.iplanet.com/docs/manuals/console.html`.)

3. On the supplier Users and Groups directory server, use the `ldapmodify` command to give the account full access to the DC Root (such as `o=internet`), the Personal Address Book suffix (such as `o=pab`), and the Users and Groups Directory Server suffix (for example, `o=siroe.com`).

In the following example, the account is given access to the Personal Address Book suffix:

```
ldapmodify -D "cn=Directory Manager" -w password < aci.ldif
```

The modify entry file `aci.ldif` contains the following information:

```
dn: o=pab
changetype: modify
add: aci
aci: (target="ldap:///o=pab")(targetattr="*")(version \
  3.0; acl "Full Access to AManager"; allow (all) userdn= \
  "ldap:///uid=AManager,ou=People, o=siroe.com";)
```

In addition, use the `ldapmodify` command to give the account access to the DC Root and to the Users and Groups Directory Server suffix. Be sure to modify the `aci.ldif` file for each suffix.

Refer to the *iPlanet Messaging Server Provisioning Guide* for more information on using the `ldapmodify` command when modifying access to accounts.

4. Set up the SIR replication agreement for the DC Root, Personal Address Book suffix, and the Users and Groups Directory Server suffix. See the *Netscape Directory Server Administration Guide* for more information: `http://docs.iplanet.com/docs/manuals/directory.html`

5. Click the Configuration Tab in the consumer Netscape Directory Server Console.

6. In the Settings Tab, enter the supplier Users and Groups Directory Server in the Referrals to: field.

7. Set the User Directory Host and Port to point to the consumer Users and Groups Directory Server. To do so, go to the Netscape Console window, and click the Directory button in the Users and Groups Tab.

8. Install Messaging Server starting as explained in the previous scenarios. See "Installation Scenarios," on page 45 for more information.

    Be sure to install Messaging Server with the distinguished name (DN) of the replicated Users and Groups Directory Server account that you created in Step 2 of this section.

Post-Installation Configuration

The following section describes post-installation steps you should review prior to testing your messaging system.

Configuring SMTP Blocking

The Messaging Server is by default configured to block attempted SMTP relays; that is, it rejects attempted message submissions to external addresses from unauthenticated external sources (external systems are any other system than the host on which the server itself resides). This default configuration is quite aggressive in blocking SMTP relaying in that it considers all other systems to be external systems.

After installation, it is important to manually modify your configuration to match the needs of your site. Specifically, your messaging server should recognize its own internal systems and subnets from which SMTP relaying should always be accepted. If you do not update this configuration, you might encounter problems when testing your MTA configuration.

IMAP and POP clients that attempt to submit messages via the Messaging Server system's SMTP server destined for external addresses, and who do not authenticate using SMTP AUTH (SASL), will find their submission attempts rejected. Which systems and subnets are recognized as internal is normally controlled by the INTERNAL_IP mapping table, which may be found in the file *server-instance*/imta/config/mappings.

For instance, on an Messaging Server system whose IP address is 123.45.67.89, the default INTERNAL_IP mapping table would appear as follows:

```
INTERNAL_IP
<blank line>
<space> $(123.45.67.89/32)  $Y
<space> 127.0.0.1  $Y
<space> *  $N
```

Here the initial entry, using the `$(IP-pattern/signicant-prefix-bits)` syntax, is specifying that any IP address that matches all 32 bits of 123.45.67.89 should match and be considered internal. The second entry recognizes the loopback IP address `127.0.0.1` as internal. The final entry specifies that all other IP addresses should not be considered internal.

You may add additional entries by specifying additional IP addresses or subnets before the final $N entry. These entries must specify an IP address or subnet (using the $(.../...) syntax to specify a subnet) on the left side and $Y on the right side. Or you may modify the existing $(.../...) entry to accept a more general subnet.

For instance, if this same sample site has a class-C network, that is, it owns all of the `123.45.67.0` subnet, then the site would want to modify the initial entry so that the mapping table appears as follows:

```
INTERNAL_IP
<blank line>
<space> $(123.45.67.89/24)  $Y
<space> 127.0.0.1  $Y
<space> *  $N
```

Or if the site owns only those IP addresses in the range
123.45.67.80-123.45.67.99, then the site would want to use:

```
INTERNAL_IP
<blank line>
<sp> ! Match IP addresses in the range 123.45.67.80-123.45.67.95
<sp> $(123.45.67.80/28)  $Y
<sp> ! Match IP addresses in the range 123.45.67.96-123.45.67.99
<sp> $(123.45.67.96/30)  $Y
<sp> 127.0.0.1  $Y
<sp> *  $N
```

Note that the *server-instance*/imsimta test -match utility can be useful for
checking whether an IP address matches a particular $(.../...) test condition. The
imsimta test -mapping utility can be more generally useful in checking that your
INTERNAL_IP mapping table returns the desired results for various IP address
inputs.

After modifying your INTERNAL_IP mapping table, be sure to issue the
server-instance/imsimta refresh command so that the changes take effect.

Further information on the mapping file and general mapping table format, as well
as information on imsimta command line utilities, can be found in the *iPlanet
Messaging Server Reference Manual*. In addition, information on the INTERNAL_IP
mapping table can be found in the *iPlanet Messaging Server Administrator's Guide*.

Installation Questions

This chapter provides a description of all of the questions you may be asked during an installation. Depending on your installation options (for example, whether you are performing a Typical or Custom installation), you may or may not see all of the questions described in this chapter.

It is assumed that you have reviewed the previous sections in Chapter 2, "Installation Instructions." In particular, you should review "Installation Scenarios" on page 45 to determine how the installation questions (detailed in this chapter) correspond to common installation scenarios. When you review the scenarios, you can also determine the questions you will need to answer and the order in which you will need to answer them.

This chapter includes the following sections:

- Common Questions

- Component Questions

- Directory Server Questions

- Administration Server Questions

- Messaging Server Questions

Common Questions

You will see the questions in this section regardless of the type of installation you are performing.

1. Welcome Screen

```
Welcome to the iPlanet Server Products installation program. This
program will install iPlanet Server Products and the iPlanet
Console on your computer.

It is recommended that you have "root" privilege to install the
software.

Tips for using the installation program:
  - Press "Enter" to choose the default and go to the next screen
  - Type "Control-B" to go back to the previous screen
  - Type "Control-C" to cancel the installation program
  - You can enter multiple items using commas to separate them.
     For example: 1, 2, 3

Would you like to continue with installation? [Yes]:
```

This is the first screen you will see. It reminds you that you must have the privileges of a root user in order to perform the installation, and also provides some keyboard shortcuts and instructions for how to select multiple items from a menu. Be sure to read this screen, then answer yes or press **Return** to continue with the installation.

2. License Agreement

```
BY INSTALLING THIS SOFTWARE YOU ARE CONSENTING TO BE BOUND BY AND
ARE BECOMING A PARTY TO THE AGREEMENT FOUND IN THE LICENSE.TXT
FILE. IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT,
PLEASE DO NOT INSTALL OR USE THIS SOFTWARE.

Do you agree to the license terms? [No]:
```

Read the license agreement and answer yes to this question to continue. The license agreement is located in the LICENSE.txt file in the directory where you downloaded the installation software.

3. Install Netscape Servers

    ```
    Select the items you would like to install:

    1. iPlanet Servers

       Installs iPlanet Servers with the integrated Netscape Console
       onto your computer.

    2. Netscape Console

       Installs Netscape Console as a stand-alone Java application
       on your computer.

    To accept the default shown in brackets, press the Enter key.

    Select the component you want to install [1]:
    ```

    Select option 1 from this menu to continue. Choose option 2 if you only want to administer a server installed on a remote machine. For example, if you are using a Windows NT machine and want to administer a Messaging Server hosted on another machine (UNIX or Windows NT), you need to install only the Netscape Console. This installation guide will not cover installing just the Netscape Console. Refer to the Netscape Console documentation if you want more information. Note that Netscape Servers and iPlanet Servers refer to the same set of components.

4. Installation Type

    ```
    Choose an installation type:

    1. Express installation
       Allows you to quickly install the servers using the most
       common options and pre-defined defaults. Useful for quick
       evaluation of the products.

    2. Typical installation
       Allows you to specify common defaults and options.

    3. Custom installation
       Allows you to specify more advanced options. This is
       recommended for experienced server administrators only.

    To accept the default shown in brackets, press the Enter key.

    Choose an installation type [2]:
    ```

    Select an installation type from this menu. For a more information on each installation type, see "Types of Installations" on page 31.

5. Installation Location (*server-root*)

```
This program will extract the server files and install them into
a directory you specify. That directory is called the server root
in the product documentation and will contain the server
programs, the Administration Server, and the server configuration
files.

To accept the default shown in brackets, press the Enter key.

Install location [/usr/iplanet/server5]:
```

Specify the desired installation location, or press Return to accept the default. This installation location is referred to as the *server-root* in the remainder of this document.

Component Questions

The questions in this section relate to the Messaging Server suite of products and which ones you would like to install. Be sure to review "Installation Component and Sub-Component Dependencies" on page 25 prior to determining the components you will install.

6. iPlanet Server Products Components

```
iPlanet Server Products components:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

1. Netscape Server Products Core Components (3)
2. Directory (Not for new installs, use iDS 5.1 instead) (2)
3. Administration Services (2)
4. iPlanet Messaging Suite (5)

Specify the components you wish to install [All]:
```

Specify which products in the Messaging Server suite you want to install. For a detailed description of each product and component, see "Installation Components" on page 21.

7. Netscape Server Products Core Components

```
Netscape Server Products Core Components components:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

1. Netscape Server Products Core Components
2. Netscape Core Java classes
3. Java Runtime Environment

Specify the components you wish to install [1, 2, 3]:
```

Specify which of the Netscape Server Products Core components you want to install. See "Netscape Server Core" on page 21 for details on each component.

8. Directory Components

```
Directory (Not for new installs, use iDS 5.1 instead) components:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

1. Netscape Directory Server
2. Netscape Directory Server Console

Specify the components you wish to install [1, 2]:
```

Specify which of the Directory components you want to install. See "Directory Suite" on page 22 for details on each component.

9. Administration Services Components

```
Administration Services components:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

1. Netscape Administration Server
2. Administration Server Console

Specify the components you wish to install [1, 2]:
```

Specify which of the Administration Services components you want to install. See "Administration Services" on page 22 for details on each component.

10. iPlanet Messaging Suite Components

```
iPlanet Messaging Applications components:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

1. iPlanet Message Store and Message Access
2. iPlanet Internet Message Transport Agent
3. iPlanet Messaging Multiplexor
4. Sun Cluster 2.2/Veritas HA for iPlanet Messaging Server
5. iPlanet Delegated Administrator Command Line Utilities

Specify the components you wish to install [1, 2, 5,]:
```

Specify which iPlanet Messaging Applications components you want to install. See "iPlanet Messaging Applications" on page 23 for details on each component.

Directory Server Questions

The questions in this section relate to Netscape Directory Server 4.1x. The questions you will see and the answers you are expected to provide differ depending on your specific installation scenario.

11. Fully Qualified Domain Name of the installation machine

```
Enter the fully qualified domain name of the computer on which
you're installing server software. Using the form

   <hostname>.<domainname>

Example: eros.airius.com.

To accept the default shown in brackets, press the Enter key.

Computer name [budgie.siroe.com]:
```

Specify the fully qualified domain name of the machine on which you are installing the server software.

12. System User and System Group

```
Choose a Unix user and group to represent the iPlanet server in
the user directory.  The iPlanet server will run as this user. It
is recommended that this user should have no privileges in the
computer network system.  The Administration Server will give
this group some permissions in the server root to perform
server-specific operations.

If you have not yet created a user and group for the iPlanet
server, create this user and group using your native UNIX system
utilities.

To accept the default shown in brackets, press the Return key.

System User [nobody]:
```

System User and System Group are configuration variables used to set ownership for the configuration files and directories that are shared by all the servers in the *server-root* (for example, SSL key files, LDAP tools, libraries, and so on). Any server installed in the same *server-root* would have the same privileges in terms of accessing this information.

NOTE For HP-UX platforms, make sure that you create a user called `nobody` prior to installation. See "Suggested Guidelines" on page 31 for details.

The default for both the system user and group is `nobody`; this account should already exist on all Solaris systems. It is recommended that rather than using the default, you create a new user for running your Messaging Server (for example, `imsuser`). This user should be in the same group as the user in Step 39.

NOTE The system group ID should be the same as the one used for the Directory Server so that the Messaging Server has access to configuration and security data. For security reasons, it is recommended that this user ID does not have any privileges elsewhere on the system.

---

13. LDAP URL of the Directory Server

```
iPlanet Server Products require an LDAP-based Directory Server
for the administration of server configuration. This server
contains the Configuration Directory.

Enter the non-secured LDAP URL of the server that contains the
Configuration Directory using the form:

   ldap://<hostname>:<port>

URL of Directory Server [ldap://budgie.siroe.com:389/]:
```

Specify the LDAP URL of your existing Directory Server in the form
`ldap://`*hostname*`:`*port*. This question will be asked if you have an existing
Directory Server. To determine the *port* that the Directory Server is using,
check the `slapd.conf` file in this Directory Server's
server-root/`slapd-`*serverID*/`config` directory. See your Directory Server
documentation for detailed information.

14. Administration Domain in the Configuration Directory

```
Please specify the name of the Administration Domain in the
Configuration Directory where your server configuration
information is to be stored.

You must have already been granted write access to this
Administration Domain in order to install the software.

To accept the default shown in brackets, press the Enter key.

Administration Domain name [siroe.com]:
```

You may use the same domain name that you used for your Configuration
Directory Server, or some other Administration Domain that you may have
created in your Configuration Directory Server. The Administration Domain is
part of the Configuration Directory Server; if you are managing multiple
software releases at the same time, or are managing information about
multiple domains, you can use the Administration Domain to keep them
separate.

You are asked this question if you chose to install Messaging Server with an
existing Directory Server.

15. Login ID and password of the Configuration Server Administrator

```
Enter the User ID or Distinguished Name of the administrator who
is authorized to access the Configuration Directory at

   ldap://budgie.siroe.com:6892/

Configuration Admin ID or DN: [admin]:
```

This is the user name and associated password of the account that can make configuration changes to the servers through Netscape Console. The Configuration Server Administrator has administration privileges over all of the servers (such as Messaging Server) that use the Configuration Directory Server instance, but not over the Configuration Directory Server itself.

You are asked this question if you choose to use an existing Configuration Directory Server, and you install any server that will use this existing Configuration Directory Server. The default is `admin`.

16. Register with an existing Configuration Directory Server?

```
Netscape server information is stored in the Netscape
configuration directory server, which you may have already set
up. If so, you should configure this server to be managed by the
configuration server. To do so, the following information about
the configuration server is required: the fully qualified host
name of the form <hostname>.<domainname>(e.g.
hostname.domain.com), the port number, the suffix, and the DN and
password of a user having permission to write the configuration
information, usually the Netscape configuration directory
administrator.

If you want to install this software as a standalone server, or
if you want this instance to serve as your Netscape configuration
directory server, press Enter.

Do you want to register this software with an existing Netscape
configuration directory server? [No]:
```

If you answer `yes` to this question, make certain that your existing Configuration Directory Server is up and running, and that you have run the `ims_dssetup` script against it to prepare it for this Messaging Server installation. For more information, see "Configuring an Existing Directory Server" on page 28.

17. Fully Qualified Domain Name of the existing Configuration Directory Server in the form *hostname.domainname*

```
Enter the fully qualified domain name of the Netscape
configuration directory server host in the form
<hostname>.<domainname> (e.g. hostname.domain.com).

Netscape configuration directory server host name:
```

Specify the fully qualified domain name of the machine on which the existing Configuration Directory Server resides.

18. Port number on which the Configuration Directory Server listens

```
Please specify the port number on which the Netscape
configuration directory server listens.

Netscape configuration directory server port number [389]:
```

To determine the *port* that the server is using, check the `slapd.conf` file in this Directory Server's *server-root*/`slapd`-*serverID*/`config` directory. See your Directory Server documentation for detailed information.

You are asked this question if you are installing the Messaging Server with an existing Configuration Directory Server.

19. Login ID and password of the Configuration Server Administrator

```
To write configuration information into the Netscape
configuration directory, you must bind to the server as an entity
with the appropriate permissions.  Usually, the Netscape
configuration directory administrator is used for this purpose,
although you can give other directory accounts the proper access.

Netscape configuration directory server administrator ID [admin]:
```

The Configuration Server Administrator can make configuration changes to the servers through Netscape Console. This user has administration privileges over all of the servers (such as Messaging Server) that use the Configuration Directory Server instance, but not over the Configuration Directory Server itself.

You are asked this question if you do not have an existing Configuration Directory Server or you chose to install the one included with the Messaging Server software. You are prompted for the password twice.

20. Administration Domain

```
The Administration Domain is a part of the configuration
directory server used to store information about Netscape
software.  If you are managing multiple software releases at the
same time, or managing information about multiple domains, you
may use the Administration Domain to keep them separate.

If you are not using administrative domains, press Enter to
select the default.  Otherwise, enter some descriptive, unique
name for the administration domain, such as the name of the
organization responsible for managing the domain.

Administration Domain [siroe.com]:
```

Specify the Administration Domain; refer to your Directory Server documentation for information about Administration Domains.

You are asked this question if you do not have an existing Directory Server and you are installing the one included with the Messaging Server.

21. Directory Server network port

```
The standard directory server network port number is 389.
However, if you are not logged as the superuser, or port 389 is
in use, the default value will be a random unused port number
greater than 1024. If you want to use port 389, make sure that
you are logged in as the superuser, that port 389 is not in use,
and that you run the admin server as the superuser.
```

```
Directory server network port [389]:
```

Specify the Directory Server network port number.

You are asked this question if you do not have an existing Directory Server and you are installing the one included with Messaging Server.

22. Unique ID for this Directory Server

```
Each instance of a directory server requires a unique identifier.
Press Enter to accept the default, or type in another name and
press Enter.
```

```
Directory server identifier [budgie]:
```

This is the unique identifier for this instance of the Directory Server; each Directory Server instance must have a unique identifier, called a *serverID*. The installation program automatically adds the prefix "`slapd-`" to the name you specify. For example, if you name the server instance `tango`, the installation program creates the *serverID* called `slapd-tango`.

23. Suffix

```
The suffix is the root of your directory tree. You may have more
than one suffix.
```

```
Suffix [o=siroe.com]:
```

This is the root of your directory tree beneath which users and groups for all hosted domains are defined, including the hosted domain that corresponds to the default domain. The Messaging Server installation program will attempt to provide a reasonable default; you may change this if you like. However, you must provide a properly formatted organizational DN in the following format:

o=*suffix*

CAUTION   The root suffix you specify here must be the same for the Messaging Server, Directory Server, and Delegated Administrator. If you already have a Directory Server installed, you must use this existing root suffix for the Messaging Server and Delegated Administrator.

You are asked this question if you do not have an existing Directory Server and you are installing the one included with the Messaging Server. The suffix you specify here will be created for you.

24. Bind DN and password of the Directory Manager

```
Certain directory server operations require an administrative
user. This user is referred to as the Directory Manager and
typically has a bind Distinguished Name (DN) of cn=Directory
Manager.  Press Enter to accept the default value, or enter
another DN.  In either case, you will be prompted for the
password for this user.  The password must be at least 8
characters long.
```

```
Directory Manager DN [cn=Directory Manager]:
```

The Directory Manager has privileges to make changes in the Directory Server schema. This user has overall administrator privileges on the Directory Server and all iPlanet servers that make use of the Directory Server (for example, the Messaging Server) and has full administration access to all entries in the Directory Server.

The default and recommended DN is cn=Directory Manager.

25. Do you want another Directory Server to store your Users and Groups data?

```
If you already have a directory server you want to use to store
your data, such as user and group information, answer Yes to the
following question.  You will be prompted for the host, port,
suffix, and bind DN to use for that directory server.

If you want this directory server to store your data, answer No.

Do you want to use another directory to store your data? [No]:
```

If you answer `yes` to this question, make certain that your existing Users and Groups Directory Server is up and running, and that you have run the `ims_dssetup` script against it to prepare it for this Messaging Server installation. For more information, see "Configuring an Existing Directory Server" on page 28.

26. Fully Qualified host name and domain name of the Users and Groups Directory Server

```
Enter the fully qualified domain name of the user directory host
of the form <hostname>.<domainname> (e.g. hostname.domain.com).

User directory host name :
```

Specify the fully qualified host name and domain name of the machine on which the existing Users and Groups Directory Server resides in the form *hostname . domainname* (for example: `budgie.siroe.com`).

27. Port number on which the Users and Groups Directory Server listens

```
Please specify the port number on which the user directory
listens.

User directory port number [389]:
```

To determine the *port* that the server is using, check the `slapd.conf` file in this Directory Server's *server-root*/`slapd`-*serverID*/`config` directory. See your Directory Server documentation for detailed information.

28. Suffix for this Users and Groups Directory Server

```
Please specify the suffix for the user directory server.

User directory server suffix [o=siroe.com]:
```

You are asked this question if you are installing the Messaging Server with an existing Users and Groups Directory Server. The suffix you specify here must already exist.

29. Login ID and password for the Users and Groups Server Administrator

```
In order to add and modify information in the user directory, you
must be able to bind to the server as an entity with the correct
permissions.  This user is usually the Directory Manager,
although other users may be given the proper access.  You will
also be asked to provide the password.

User directory administrator ID [cn=Directory Manager]:
```

This person has administration privileges for the Users and Groups directories on the Directory Server. You can use different directories for managing server configuration (a Configuration Server) and for users and groups (a Users and Groups Server). The Users and Groups Server Administrator should have all privileges over the Users and Groups directory. The default and recommended value is `cn=Directory Manager`.

NOTE	The Users and Groups Administrator account is not created by the `ims_dssetup` utility; you must create this account from the Messaging Server installation.

30. Directory Server replication

```
Replication is used to duplicate all or part of a directory
server to another directory server.  This can be used for
failsafe purposes, to ensure that the directory data is always
online and up-to-date in case one server goes down.  It is also
useful for distributing directory data from a central main
repository to remote directory servers.

Do you want to configure this directory server to use
replication? [No]:
```

If you answer No, you can configure the Directory Server to use replication at a later time. Refer to your Directory Server documentation for detailed information and instructions.

31. Sample entries

```
You may install some sample entries in this directory instance.
These entries will be installed in a separate suffix and will not
interfere with the normal operation of the directory server.

Do you want to install the sample entries? [No]:
```

The samples are installed in a separate suffix and will not interfere with the normal operation of this Directory Server.

32. Populate your new Directory Instance with some data

```
You may wish to populate your new directory instance with some
data. You may already have a file in LDIF format to use or some
suggested entries can be added.  If you want to import entries
from an LDIF file, you may type in the full path and filename at
the prompt.  If you want the install program to add the suggested
entries, type the word suggest at the prompt.  The suggested
entries are common container entries under your specified suffix,
such as ou=People and ou=Groups, which are commonly used to hold
the entries for the persons and groups in your organization.  If
you do not want to add any of these entries, type the word none
at the prompt.

Type the full path and filename, the word suggest, or the word
none [suggest]:
```

If you want to import entries from an existing LDIF file, specify the full path and filename. If you want the install program to add the suggested entries, type the word "suggest" at the prompt. If you do not want any of these entries, type the word "none" at the prompt. While the default is "suggest," it is recommended that you either specify an existing LDIF file or you specify "none" to avoid creating unnecessary additional entries.

33. Disable schema checking

```
If you are going to import an old database immediately after or
during installation, and you think you may have problems with
your old schema, you may want to turn off schema checking until
after the import.  If you choose to do this, schema checking will
remain off until you manually turn it back on.  Netscape
recommends that you turn it back on as soon as possible.

Do you want to disable schema checking? [No]:
```

Answer No if you do not want to disable schema checking. If you choose to turn schema checking off, it will remain off until you manually turn it back on. It is recommended that you turn it back on as soon as possible.

Administration Server Questions

The questions in this section relate to the Administration Server. The questions you will see and the answers you are expected to provide differ depending on your specific installation scenario.

34. Administration Server Port

```
The Administration Server is separate from any of your
application servers since it listens to a different port and
access to it is restricted.
```

```
Pick a port number between 1024 and 65535 to run your
Administration Server on. You should NOT use a port number which
you plan to run an application server on, rather, select a number
which you will remember and which will not be used for anything
else.
```

```
The default in brackets was randomly selected from the available
ports on your system. To accept the default, press return.
```

```
Administration port [6910]:
```

You should pick an unused port number between 1024 and 65535.

NOTE   Be sure to note this port number. If you forget to do so, you can find it in the *server-root*/admin-serv/config/adm.conf file.

---

35. Bind the Administration Server to a specific IP address rather than the default IP address of the current host?

```
If you want to configure the Administration Server to bind to a
specific IP address rather than the default IP address of the
current host, enter the address below.
```

```
To accept the default shown in brackets, press the Return key.
```

```
IP address [192.18.126.126]:
```

Refer to your Administration Server documentation for detailed information.

36. User name of the Administration Server

```
The Administration Server program runs as a certain user on your
system. This user should be different than the one which your
application servers run as. Only the user you select will be able
to write to your configuration files. If you run the
Administration Server as "root", you will be able to use the
Server Administration screen to start and stop your application
servers.

Run Administration Server as [root]:
```

The Administration Server runs as this user who will have write privileges for all of your configuration files. This user should be different from your Directory Server user. The default and recommended user is root, that lets you use the Netscape Console interface to start and stop your servers.

NOTE	The Administration Server is primarily used to change Users and Groups information. To administer your Directory Server and Messaging Server configurations, it is recommended that you use Netscape Console.

Messaging Server Questions

The questions in this section relate to the Messaging Server. The questions you will see and the answers you are expected to provide differ depending on your specific installation scenario.

37. Unique identifier for this Messaging Server

```
The instance name is the unique identifier for this installed
Messaging Server. It is customary to use the host name as
instance name. However, you may choose any name you wish.

The instance name will be prefixed with "msg-" to identify the
installed server as a Messaging Server.

Instance Name [budgie]:
```

This is the unique identifier for this instance of the Messaging Server; each Messaging Server instance must have a unique identifier, called a *serverID*. The installation program automatically adds the prefix "msg-" to the name you specify. For example, if you name the server instance tango, the installation program creates the *serverID* called msg-tango.

It is recommended that server identifiers be a single, unqualified element using only alphanumeric characters, hyphens, and underscores.

38. Messaging Server host name and domain name

```
The Messaging Server responds to requests for a particular host
and domain. It is recommended you use the host and domain name of
the machine on which you are installing the Messaging Server.
```

```
Host Name [budgie.siroe.com]:
```

This is the host and domain name of the machine where the Messaging Server resides and executes commands. Be sure to specify this in the form *hostname.domainname* (for example: `budgie.siroe.com`).

39. User name of the Messaging Server

```
The Messaging Server runs as a privileged user. The account
should already exist on the system and should be a member of the
iPlanet Group.
```

```
User Name [mailsrv]:
```

This is the user ID under which the Messaging Server runs; the Messaging Server must be run as a privileged user.

The messaging data files, such as the message store, are owned by this user, meaning that this user should be highly secure. This user should also be a member of the iPlanet group (See Step 12 on page 63.). In the course of operation, servers will assign some directory permissions to this user and the iPlanet group for certain server-specific operations. The default user ID is `mailsrv`.

40. Default domain and organization for the Messaging Server

```
Please enter the default domain and the default organization DN
below. The default domain is the domain of unqualified user-id's
that do not belong to any particular domain.
```

```
The default organization DN should represent the subtree under
which all users that belong to the default domain are located.
All users that belong to the default domain are managed under
this subtree.
```

```
Default Domain [budgie.siroe.com]:
```

```
Default Organization DN [o=budgie.siroe, o=siroe.com]:
```

Specify the domain and organization for this Messaging Server. The default domain is the domain of unqualified user IDs that do not belong to any particular domain. The default organization DN should represent the subtree under which all users belonging to the default domain are located. All users belonging to the default domain are managed under this subtree.

41. Distinguished name and password of the Directory Manager

```
The Directory Manager DN and password.

ldap://budgie.siroe.com:389/o=siroe.com

User DN:
```

Certain Directory Server operations require an administrative user. This user is referred to as the Directory Manager and typically has a bind Distinguished Name (DN) of `cn=Directory Manager`. Specify the DN and password for the Directory Manager.

42. Host name and port of the Web server that will host the iPlanet Delegated Administrator for Messaging

```
The Messaging Server requires the use of a Delegated
Administration Server. The Delegated Administration Server is
used by administrators and endusers to manage user accounts and
their preferences.

A Delegated Administration Server does not have to exist at the
given host and port. It may be installed later.

Host Name [budgie.siroe.com]:
```

Messaging Server requires the use of a Delegated Administration Server, which is used by administrators and end users to manage user accounts and their preferences.

NOTE	A Delegated Administrator server does not have to pre-exist at this specified port and server; it can be installed later.

The host name must be the name of the machine that will host the Web server for the Delegated Administrator; this machine can be either local or remote. The port number is the port on which that Web server listens.

NOTE	If you choose to install the iPlanet Delegated Administrator for Messaging client on a different machine from the iPlanet Delegated Administrator for Messaging CLI, then you will be asked for this information in the iPlanet Delegated Administrator for Messaging installation. Be sure to record it.

43. Specify whether or not the Messaging Server will be run from behind a firewall

```
The Messaging Server can route mail through a firewall. The
firewall controls access between the Internet and your internal
network.
```

```
If you choose to operate your Messaging Server behind a firewall,
you must specify the fully qualified host name of the Smart Host,
which has the Messaging Server routing information.
```

```
If your Messaging Server cannot route mail to a recipient's
address, it forwards the message to its Smart Host.
```

```
   [1]  Yes, the Messaging Server is behind a firewall.
   [2]  No, the Messaging Server will not use a firewall.
```

```
Will the Messaging Server use a firewall [2]:
```

Select option 1 if your Messaging Server is behind a firewall; you must specify the fully qualified host name of the Smart Host, which has the ability to route messages beyond the firewall.

44. Customize the root of your domain component tree

```
Please specify the root of your domain component tree.
```

```
[o=internet]:
```

In most instances, the default o=internet is sufficient for specifying your dcroot.

45. Primary message store directory

```
The Messaging Server will use the directory shown below as its
primary message store.
```
```
Store Directory
[/usr/iplanet/server5/msg-budgie/store/partition/primary]:
```

This is the path to the message storage area to which messages will be written and from which they will be retrieved. You must specify the absolute path name for this directory. The default location is
server-root/msg-*serverID*/store/partition/primary.

NOTE	If you specify a non-default path, you will need to manually create the directory, since Installer will not do so (unless it is a default path).

---

46. TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express

```
The Messaging Server uses TCP/IP ports for sending and receiving
messages.
```
```
POP3 Port [110]:
```
```
IMAP Port [143]:
```
```
SMTP Port [25]:
```
```
Messenger Express Port [80]:
```

The default port numbers are:

- ❍ POP3 (110)
- ❍ IMAP (143)
- ❍ SMTP (25)
- ❍ Messenger Express (80)

47. Login ID and password for the Service Administrator

```
The Messaging Server requires a Service Administrator account to
exist in the Users Directory Server. The account has privileges
to manage the various services of the Messaging Server.

The account will be created and given the necessary privileges.

User ID [ServiceAdmin]:
```

This is the top-level administrator for the Delegated Administrator. The Messaging Server requires that this account exist in the Users and Groups Directory Server; this user has privileges (for example, create, modify, or delete) to manage any user, group, domain, domain organization, and mailing list defined in the directory.

Additionally, the Service Administrator is implicitly granted Store Administrator privileges; for example, they can authenticate as another user via the proxy and perform such functions as checking their quota status.

48. Email address that you want to add to the postmaster group

```
A Postmaster alias will be created and used to distribute
administrative email related to the Messaging Server. Mail sent
to the Postmaster will be distributed to the members of the
postmaster group. An email address that will be the initial
member of the postmaster group is required. The given address
(e.g. admin@domain.com) must be a valid address (it will NOT be
created during the install).
```

```
Do not use an email address that begins with "Postmaster@".  This
email address is already assigned to the Postmaster alias.
```

```
Email Address:
```

A postmaster group (like the email group) will be created by the installation program and you are asked to specify an email address which will be made a member of that group. Any mail addressed to the postmaster in the Users and Groups Directory Server will be sent to this email account. Note that this alias is not recognized until the `imsimta dirsync` command is run. See the *iPlanet Messaging Server Reference Manual* for more information on `imsimta dirsync`.

NOTE	The email address you specify for the postmaster is accepted during installation; a postmaster group is added and the email address is added to the postmaster group. However, the email address that you specify may not previously exist in the Directory Server. In this case, a user or group account must be created with this email address, using either the Console or the iPlanet Delegated Administrator for Messaging.

High Availability

This chapter contains the following sections to help you determine which high availability (HA) model is right for you, and how to set up your system to run high availability with Messaging Server:

*   "High Availability Models" on page 82

*   "Installing High Availability," on page 87

*   "Additional Configuration Notes" on page 105

*   "Uninstalling High Availability" on page 110

NOTE	At this time high availability is only available on Solaris platforms.

High Availability Models

There are different high availability models that can be used with Messaging Server. Three of the more basic ones are:

- "Asymmetric" on page 82 (hot standby)

- "Symmetric" on page 83

- "N+1 (N Over 1)" on page 85

Each of these models is described in greater detail in the following subsections. In addition, the following topics are covered:

- "Which High Availability Model is Right for you?" on page 86

- "System Down Time Calculations" on page 86

Note that different HA products may or may not support different models. Refer to the HA documentation to determine which models are supported.

Asymmetric

The basic asymmetric or "hot standby" high availability model (Figure 4-1) consists of two clustered host machines or "nodes." A logical IP address and associated host name are designated to both nodes.

In this model, only one node is active at any given time; the backup or hot standby node remains idle most of the time. A single shared disk array between both nodes is configured and is mastered by the active or "primary" node. The message store partitions and Mail Transport Agent (MTA) queues reside on this shared volume.

Figure 4-1   Asymmetric High Availability Model
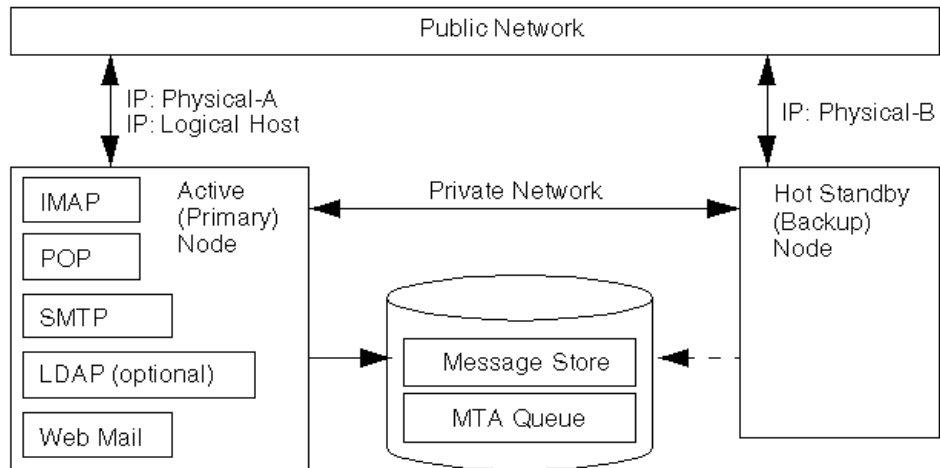
Before failover, the active node is Physical-A. Upon failover, Physical-B becomes the active node and the shared volume is switched so that it is mastered by Physical-B. All services are stopped on Physical-A and started on Physical-B.

The advantage of this model is that the backup node is dedicated and completely reserved for the primary node; there is no resource contention on the backup node when a failover occurs. However, this model also means that the backup node stays idle most of the time and this resource is thus under utilized.

Symmetric

The basic symmetric or "dual services" high availability model consists of two hosting machines, each with its own logical IP address. Each logical node is associated with one physical node, and each physical node controls one disk array with two storage volumes. One volume is used for its local message store partitions and MTA queues, and the other is a mirror image of its partner's message store partitions and MTA queues.

In the symmetric high availability mode (Figure 4-2), both nodes are active concurrently, and each node serves as a backup node for the other. Under normal conditions, each node runs only instances of the messaging server.

Figure 4-2   Symmetric High Availability Model
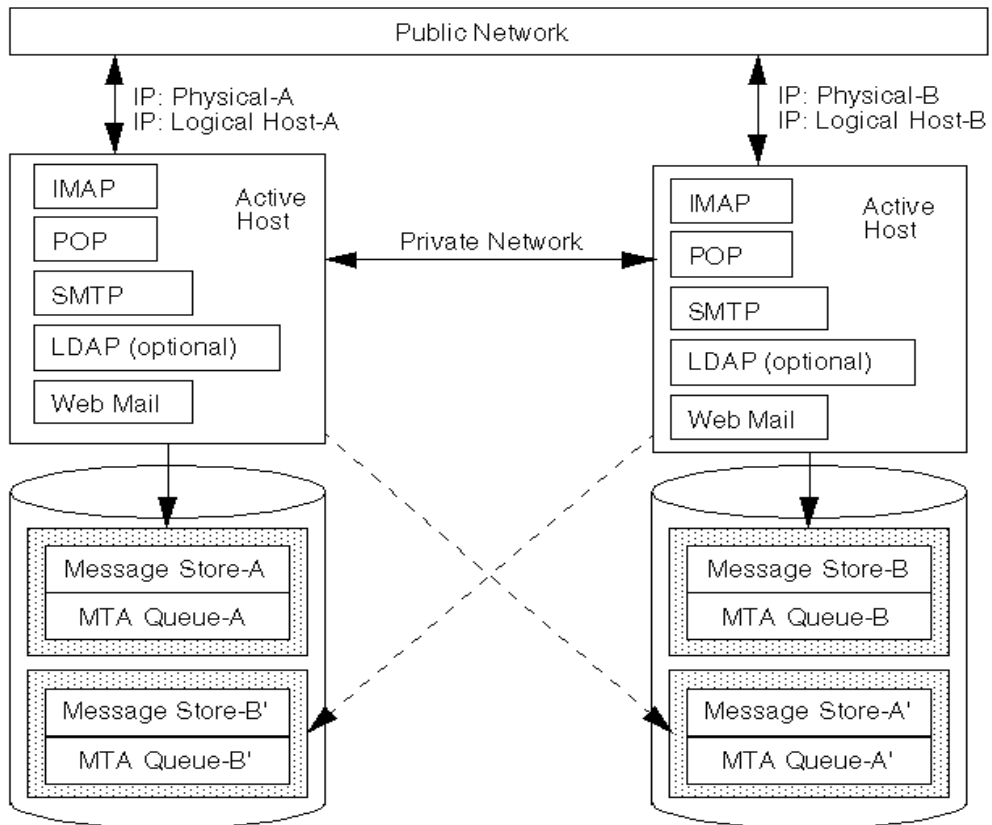
Upon failover, the services on the failing node are shut down and restarted on the backup node. At this point, the backup node is running all instances of Messaging Server from both nodes and is managing two separate volumes.

The advantage of this model is that both nodes are active simultaneously, thus fully utilizing machine resources. However, during a failure, the backup node will have more resource contention as it runs services for all instances of the Messaging Server from both nodes. Therefore, you should repair the failed node as quickly as possible and switch the servers back to their dual services state.

This model also provides a backup storage array; in the event of a disk array failure, its mirror image can be picked up by the service on its backup node.

N+1 (N Over 1)

The N + 1 or "N over 1" model operates in a multi-node asymmetrical configuration. N logical host names and N shared disk arrays are required. A single backup node is reserved as a hot standby for all the other nodes. The backup node is capable of concurrently running all of the Messaging Server instances from the N nodes.

Figure 4-3 illustrates the basic N + 1 high availability model.

Figure 4-3   N + 1 High Availability Model
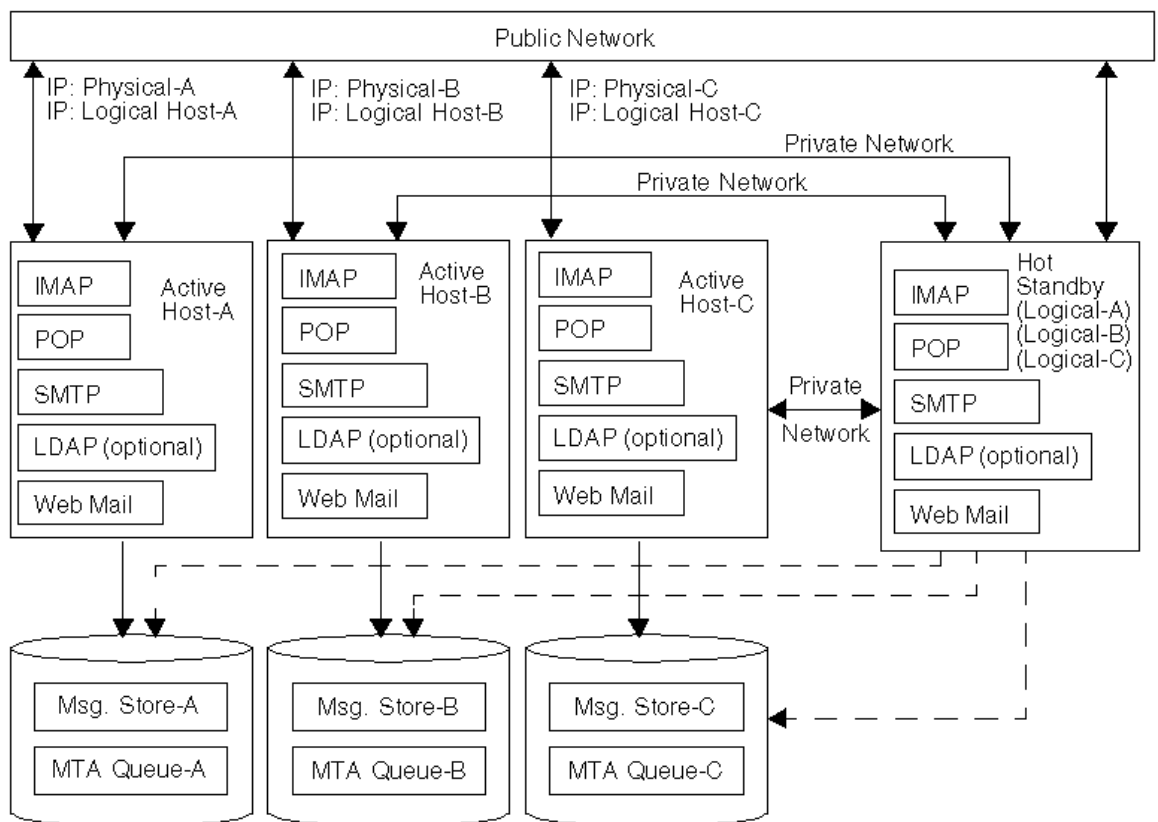
Upon failover of one or more active nodes, the backup node picks up the failing node's responsibilities.

The advantages of the N + 1 model are that the server load can be distributed to multiple nodes and that only one backup node is necessary to sustain all the possible node failures. Thus, the machine idle ratio is 1/N as opposed to 1/1, as is the case in a single asymmetric model.

Which High Availability Model is Right for you?

Table 4-1 summarizes the advantages and disadvantages of each high availability model. Use this information to help you determine which model is right for you.

Table 4-1 High Availability Model Advantages and Disadvantages

Model	Advantages	Disadvantages	Recommended User
Asymmetric	• Simple Configuration • Backup node is 100 percent reserved	• Machine resources are not fully utilized	A small service provider with plans to expand in the future.
Symmetric	• Better use of system resources • Higher availability	• Resource contention on backup node • Mirrored disks reduce disk write performance	A medium-sized service provider with no expansion plans on their backup systems in the near future.
N + 1	• Load distribution • Easy expansion	• Configuration complexity	A large service provider who requires distribution with no resource constraints.

System Down Time Calculations

Table 4-2 illustrates the probability that on any given day the mail service will be unavailable due to system failure. These calculations assume that on average, each server goes down for one day every three months due to either a system crash or server hang, and that each storage device goes down one day every 12 months. They also ignore the small probability of both nodes being down simultaneously.

Table 4-2 System Down Time Calculations

Model	Server Down Time Probability
Single server (no high availability)	Pr(down) = (4 days of system down + 1 day of storage down)/365 = 1.37%
Asymmetric	Pr(down) = (0 days of system down + 1 day of storage down)/365 = 0.27%
Symmetric	Pr(down) = (0 days of system down + 0 days of storage down)/365 = (near 0)

Table 4-2 System Down Time Calculations *(Continued)*

Model	Server Down Time Probability
N + 1	Pr(down) = (0 days of system down + 1 day of storage down)/(365xN) = 0.27%/N

Installing High Availability

This section provides the information you need to install the Veritas Cluster Server 1.1 or later, Sun Cluster 2.2, or Sun Cluster 3.0 Update 1 or 2 high availability clustering software and prepare it for use with the Messaging Server. (Refer to your Veritas or Sun Cluster Server documentation for detailed installation instructions and information as needed.). The following topics are covered in this section:

- "Cluster Agent Installation" on page 87

- "Veritas Cluster Server Agent Installation" on page 89

- "Sun Cluster 2.2 Agent Installation" on page 93

- "Sun Cluster 3.0 U1 and U2 Agent Installation," on page 96

NOTE	Because an HA agent does not exist for iPlanet Directory Server, you cannot configure High Availability with iPlanet Directory Server 5.1. Instead, you should use other solutions, such as directory replication. For more information on alternate availability solutions, see the *iPlanet Directory Server Deployment Guide.*

Cluster Agent Installation

A cluster agent is a Messaging Server program that runs under the cluster framework. During the Messaging Server 5.2 installation process, if you choose to install the High Availability component, the setup program will automatically detect the clustering software you have installed on your server and install the appropriate set of agent programs into the appropriate location.

NOTE	If you are installing Veritas Cluster Server or Sun Cluster 2.2, the setup program will only copy one set of agents—VCS 1.1 or SC 2.2 —onto your server, so be sure to install and configure only one type of clustering software on your server.

For Veritas Clustering Software, the agent type file is located in the `/etc/VRTSvcs/conf/config` directory and the agent programs are in the `/opt/VRTSvcs/bin/MsgSrv` directory. For Sun Cluster 2.2, the agents are installed in the `/opt/SUNWcluster/ha/msg` directory.

Some items of note regarding the Messaging Server installation and high availability (Veritas Sun Cluster, Sun Cluster 2.2, and Sun Cluster 3.0 U1 and U2):

• High availability for the Messaging Server is not installed by default; be sure to select High Availability Components from the Custom Installation menu if you install Sun Cluster 2.2 or Veritas Cluster Server 1.1 or later.

NOTE   If you install Sun Cluster 3.0 U1 or U2, you should select Custom Installation as your installation type, however you should not select Sun Cluster 2.2/Veritas HA component during Messaging Server installation.

• When running the installation, make sure that the HA logical host names and associated IP addresses for Messaging and Directory servers are functioning (for example, active). The reason for this is because portions of the installation will make TCP connections using them (for example, to provision the directory server with configuration information). If Messaging and Directory servers are to run on the same host, then they may use the same logical host name and IP address. Run the installation on the cluster node currently pointed at by the HA logical host name for the messaging server.

• When you are asked for the *server-root* (see Step 5 in Chapter 3, "Installation Questions."), be sure that the *server-root* is on the shared file system; otherwise, high availability will not work correctly. For example, after failing over to another node, the servers will no longer see the data accumulated by the servers on the failed node.

• When you are asked for the fully-qualified domain name of the messaging server host (see Step 11 in Chapter 3, "Installation Questions."), be sure to specify the fully-qualified HA logical host name for the messaging server. During the install, TCP connections using this logical host name will be attempted.

• When you are asked for the IP address of Messaging Server (see Step 35 in Chapter 3, "Installation Questions."), be sure to specify the IP address associated with the logical host name for Messaging Server. Do not use the IP address for the physical host.

If you are using the Veritas Cluster Server 1.1 or later high availability software, go to "Veritas Cluster Server Agent Installation" on page 89. If you are using the Sun Cluster 2.2 high availability software, go to "Sun Cluster 2.2 Agent Installation" on page 93. If you are using Sun Cluster 3.0 U1 or U2 high availability software, go to "Sun Cluster 3.0 U1 and U2 Agent Installation," on page 96.

Veritas Cluster Server Agent Installation

After you decide which high availability model you want to implement, you are ready to install the Veritas Cluster Server software and prepare it for use with Messaging Server. The procedures in this section must be completed before you install the Messaging Server.

NOTE	It is assumed that you are already familiar with Veritas Cluster Server concepts and commands.

The following topics are covered in this section:

- "Pre-Installation Instructions" on page 89
- "Installing High Availability" on page 91
- "Post-Installation Instructions" on page 91
- "Configuring High Availability for Veritas Cluster Server" on page 92

The example used in this section is based on a simple, two node cluster server (the asymmetric model).

The basic asymmetric model requires one public and two private network interfaces and one shared disk. The private network interface is used for cluster communications. The shared disk must be connected to both nodes.

Pre-Installation Instructions

This section describes the procedures for installing the Veritas Cluster Server and preparing it for use with the Messaging Server.

To install and set up the Veritas Cluster Server for use with Messaging Server:

1. Install Veritas Cluster Server 1.1 or later on both nodes.

2. Configure and start the Veritas Cluster Server.

NOTE	For these first two steps, you should refer to your Veritas Cluster Server documentation for detailed information and instructions.

3. Create the `/etc/VRTSvcs/conf/config/main.cf` file.

4. Create a service group called `iMS5`.

Within this service group:

   a. Create the `network` resource (specify `NIC` as the resource type).

   Use the public network interface name for the Device attribute (for example, `hme0`).

   b. Create the `logical_IP` resource (specify `IP` as the resource type).

   Use the logical IP for the Address attribute and the public interface for the Device attribute.

   c. Create a `sharedg` resource (specify `DiskGroup` as the resource type).

   Use the disk group name for the DiskGroup attribute.

   d. Create a `mountshared` resource (specify `Mount` as the resource type).

   Use the shared device name `BlockDevice`, specify `MountPoint` as the mount point, and set `FSType` to the appropriate file system type.

5. Bring all of the above resources online on the primary (active) node.

6. Start the dependency tree as follows: the `logical_IP` resource depends on the `network` resource, and the `mountshared` resource depends on the `sharedg` resource. Your dependency tree should look like this:
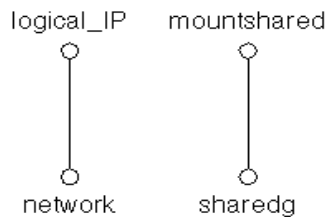
Installing High Availability

At this point, you have successfully installed Veritas Cluster Server and have prepared it for the Messaging Server installation.

On the primary node, install Messaging Server and High Availability. To do so, follow these steps:

1. Run the `setup` program on the primary node to start the Messaging Server installation:

   ```
   ./setup
   ```

2. Select Custom installation from the list of installation types.

3. Select the Sun Cluster 2.2/Veritas HA component in addition to the Messaging Server components you are installing on the primary node.

On the secondary node, you should only install High Availability. To do so, follow these steps:

1. Conduct a failover to the secondary node.

2. Run the `setup` program on the secondary node to start the Messaging Server installation:

   ```
   ./setup
   ```

3. From the list of installation types, select Custom installation, then select just the Sun Cluster 2.2/Veritas HA component from the iPlanet Messaging Applications.

During the Messaging Server installation, the `setup` program checks to see if the Veritas Cluster Server has been installed and properly configured. If so, then the appropriate high availability files are installed.

Post-Installation Instructions

After installing high availability, follow these post-installation steps for both nodes:

1. Stop the Veritas Cluster Server.

2. Add the following line in `main.cf`:

   ```
   include "MsgSrvTypes.cf"
   ```

3. Start the Veritas Cluster Server.

4. Create a resource named `mail` (specify `MsgSrv` as the resource type) and enter the instance name (`InstanceName`) and the log host name (`LogHostName`).

5. Set the `logical_IP` and `mountshared` resources as children of the `mail` resource.

   This means that the mail resource depends on both the `logical_IP` and `mountshared` resources.

   Your dependency tree should now look like this:
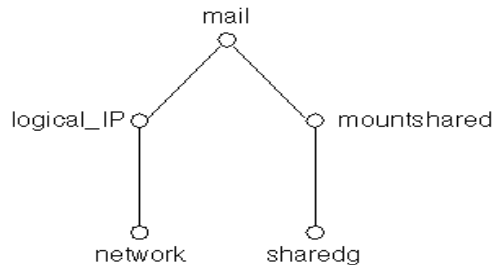
Now, you are ready. On any node, bring up the `mail` resource online. This automatically starts the mail server on that node.

Configuring High Availability for Veritas Cluster Server

To configure high availability for the Veritas Cluster Server, you can modify the parameters in the `MsgSvrType` configuration file. Below is the relevant entry:

```
type MsgSrv (
    static int MonitorInterval = 180
    statis int MonitorTimeout = 180
    static int OnlineRetryLimit = 1
    static int OnlineWaitLimit = 1
    static int RestartLimit = 2
    static str ArgList[] = { State, InstanceName, LogHostName,
PrtStatus, DebugMode }
    NameRule = resource.InstanceName
    str InstanceName
    str LogHostName
    str PrtStatus
    str DebugMode
)
```

Table 4-3 describes the various parameters:

Table 4-3 MsgSrv Parameters

Parameter	Description
MonitorInterval	The duration in seconds between each probing.
MonitorTimeout	The duration in seconds before a probe times out.
OnlineRetryLimit	The number of times to retry online.
OnlineWaitLimit	The number of MonitorIntervals to wait after completing the online procedure and before the resource comes online.
RestartLimit	The number of restarts before the resource is failed over.

Table 4-4 describes the various arguments:

Table 4-4 MsgSrv Arguments

Parameter	Description
State	Indicates if the service is online or not in this system. This value is not changeable by the user.
InstanceName	The Messaging Server's instance name without the msg- prefix.
LogHostName	The logical host name that is associated with this instance.
PrtStatus	If set to TRUE, the online status is printed to the Veritas Cluster Server log file.
DebugMode	If set to TRUE, the debugging information is sent to the Veritas Cluster Server log file.

Sun Cluster 2.2 Agent Installation

After you decide which high availability model you want to implement, you are ready to install the Sun Cluster high availability software and prepare it for use with Messaging Server. The following topics are covered in this section:

The procedures in this section must be completed before you install the Messaging Server.

NOTE	It is assumed that you are already familiar with Sun Cluster concepts and commands.

The example used in this section is based on a simple, two node cluster server (the asymmetric model).

The basic asymmetric model requires one public and two private network interfaces and one shared disk. The private network interface is used for cluster communications. The shared disk must be connected to both nodes.

Pre-Installation Instructions

This section describes the procedures for installing the Sun Cluster software and preparing it for use with Messaging Server.

To install and set up the Sun Cluster for use with Messaging Server:

1. Install Sun Cluster 2.2 on both nodes.

NOTE	The HA fault monitor agent requires the `tcpclnt` binary file in Sun Cluster 2.2 SUNWscpro package. It is mandatory to install this probing feature; otherwise, unresponsive messaging servers will not be detected.

2. Configure and start the Sun Cluster so you have access to both the logical IP and the shared volume.

NOTE	For these first two steps, you should refer to your Sun Cluster documentation for detailed information and instructions.

Installing High Availability

At this point, you have successfully installed Sun Cluster software and have prepared it for the Messaging Server installation.

On the primary node, install Messaging Server and High Availability. To do so, follow these steps:

1. Run the `setup` program on the primary node to start the Messaging Server installation:

    `./setup`

2. Select Custom installation from the list of installation types.

3. Select the Sun Cluster 2.2/Veritas HA component in addition to the Messaging Server components you are installing on the primary node.

On the secondary node, you should only install High Availability. To do so, follow these steps:

1. Switch the `logical_IP` and shared disk to the secondary node.

2. Run the `setup` program on the secondary node to start the Messaging Server installation:

    `./setup`

3. From the list of installation types, select Custom installation, then select just the Sun Cluster 2.2/Veritas HA component from the iPlanet Messaging Applications.

During the Messaging Server installation, the `setup` program checks to see if the Sun Cluster software has been installed and properly configured. If so, then the appropriate high availability files are installed.

Post-Installation Instructions

You must perform the following on the secondary node:

1. Conduct a failover to the secondary node.

2. Copy the *server-root*`/bin/msg/ha/sc/config/ims_ha.cnf` file to your administrative file system disk mount point directory for this logical host (for example, `/$LOGICAL_HOSTNAME`).

3. Additionally, you must first register the Messaging Server data service before using it by running the `hareg -Y` command.

4. If you want to change the logical host timeout value, use the following command:

    `scconf` *cluster_name* `-l` *seconds*

    where *cluster_name* is the name of the cluster and *seconds* is the number of seconds you want to set for the timeout value. The number of seconds should be twice the number of seconds needed for the start to complete. For more information, refer to your Sun Cluster documentation.

Directory Server Configuration

If you install and configure your Directory Server under the same *server-root* as the Messaging Server, there is no need for additional Sun Cluster agent files. If not, then there is an existing Sun-supplied agent package that you can use. The package is SUNWscnsl, which is supported by the Sun Cluster team at Sun.

Sun Cluster 3.0 U1 and U2 Agent Installation

This section describes how to install and configure the Messaging Server as a Sun Cluster 3.0 U1 or U2 (Update 1 or 2) Highly Available (HA) Data Service. The following topics are covered in this section:

- "Sun Cluster 3.0 U1 and U2 Prerequisites" on page 96

- "Installing the Messaging Server HA support for Sun Cluster 3.0 U1 and U2" on page 97

- "Configuring the Messaging Server HA Support for Sun Cluster 3.0 U1 and U2" on page 97

Documentation for Sun Cluster 3.0 U1 and U2 can be found at:

```
http://docs.sun.com/ab2/coll.572.8/
```

Sun Cluster 3.0 U1 and U2 Prerequisites

This section presumes the following:

- Sun Cluster 3.0 U1 or U2 is installed in a Solaris 8 environment with required patches.

- The HA agent for Netscape Directory Server is installed (on Sun Cluster 3.0 U1 or U2 Agent CDROMs). While it is not required to use the Netscape Directory Server HA agent, it is strongly recommended, and the documentation assumes you are doing so.

- If the system is using shared disks, either Solstice DiskSuite or Veritas Volume Manager is used.

- Veritas File System (VxFS) is not supported with Sun Cluster 3.0 U1.

NOTE	Veritas File System (VxFS) is now supported with Sun Cluster 3.0 U2.

Installing the Messaging Server HA support for Sun Cluster 3.0 U1 and U2

Each cluster node only requires one package to be installed to run the Messaging Server:

*   SUNWscims from the iPlanet Messaging Server CD in the directory `solaris/iMS_sc30`.

Install the SUNWscims package on each cluster node using `pkgadd`. For example:

```
# pkgadd –d . SUNWscims
```

Once the package is installed, you are ready to configure Messaging Server for HA.

Configuring the Messaging Server HA Support for Sun Cluster 3.0 U1 and U2

This section describes how to configure HA support for the iPlanet Messaging Server by describing different configuration examples:

*   "Simple Example" on page 97

*   "Complex Example" on page 102

NOTE	The Messaging Server must be installed in the global file system directories, not the local system.

After installing Messaging Server, be sure to review "Binding IP Addresses for Single and Multiple Messaging Server Instances on a Server" on page 105 for additional configuration steps associated with configuring HA support.

Simple Example

This example assumes that the messaging and directory server run on the same cluster node and use the same HA logical host name and IP address. The physical host names are assumed to be mail-1 and mail-2, with an HA logical host name of mail. Figure 4-4 depicts the nested dependencies of the different HA resources you will create in configuring Messaging Server HA support.

Figure 4-4   A Simple iPlanet Messaging Server HA configuration
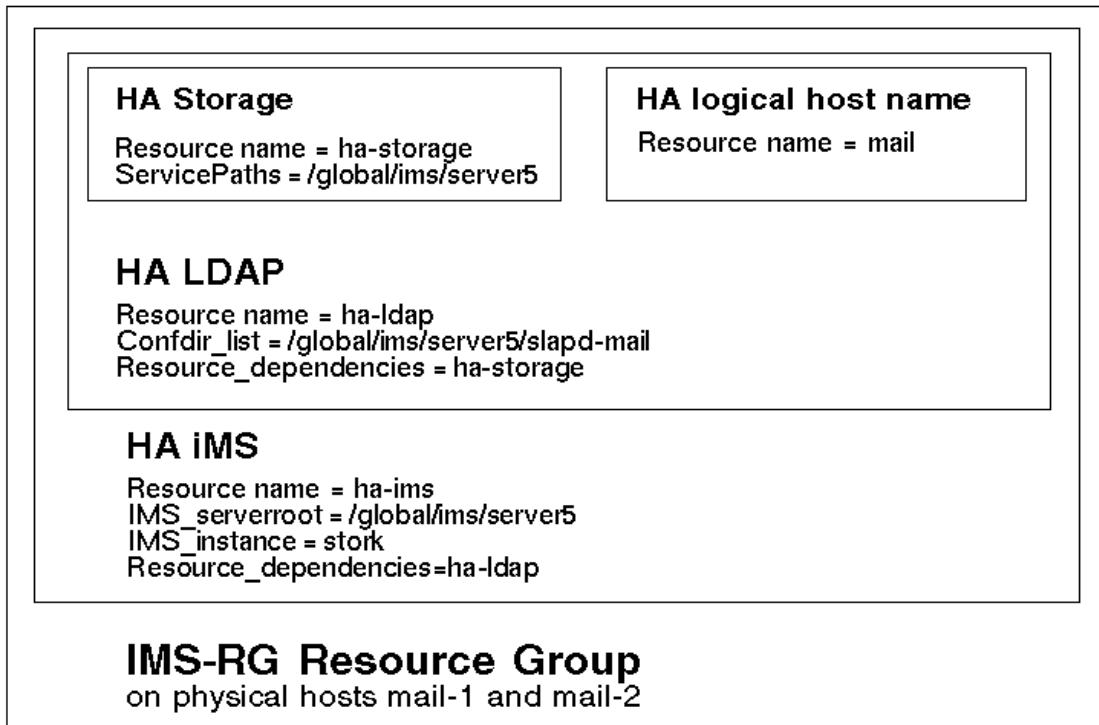
Before proceeding, make sure that the Messaging Server is shut down on all cluster nodes. The easiest way to check this is to issue the command:

```
# ps -ef | grep server-root
```

on each cluster node where *server-root* is the path to the Messaging Server top-level directory (for example, `/global/ims/server5/`). If no messaging servers are running, then you should see no processes other than your `grep`.

1. Become the root user and open a console.

    All of the following Sun Cluster commands require that you have logged in as root. You will also want to have a console or window for viewing messages output to `/dev/console`.

2. Add required resource types.

    Configure Sun Cluster to know about the resources types we will be using. This is done with the `scrgadm -a -t` command:

```
# scrgadm -a -t SUNW.HAStorage
# scrgadm -a -t SUNW.nsldap
# scrgadm -a -t SUNW.ims
```

3. Create a resource group for the Messaging Server instance.

   If you have not done so already, create a resource group and make it visible on the cluster nodes which will run the Messaging Server instance. The following command creates a resource group named IMS-RG, making it visible on the cluster nodes mail-1 and mail-2:

   ```
   # scrgadm -a -g IMS-RG -h mail-1,mail-2
   ```

   You may, of course, use whatever name you wish for the resource group.

4. Create an HA logical host name resource.

   If you have not done so already, create and enable a resource for the HA logical host name, placing it in the resource group for the Messaging Server instance. The following command does so using the logical host name mail. Since the -j switch is omitted, the name of the resource created will also be mail.

   ```
   # scrgadm -a -L -g IMS-RG -l mail
   # scswitch -Z -g IMS-RG
   ```

5. Install Messaging Server.

   Install Messaging Server using the HA logical host name created and enabled in Step 4. Make sure you replicate /etc/msgregistry.inf on the secondary node.

   For instructions on installing Messaging Server, see Chapter 2, "Installation Instructions."

NOTE	If you install Sun Cluster 3.0 U1 or U2, you should select Custom Installation as your installation type, however you should not select High Availability components during Messaging Server installation.

6. Now, start the messaging servers with the start-msg command in the *msgserver-root* directory.

7. Run the ha_ip_config script to bind the IP addresses for the msg-*instance* on the servers. For instructions on running the script, see "Binding IP Addresses for Single and Multiple Messaging Server Instances on a Server" on page 105.

8. Run stop-msg ha in the *msgserver-root* directory to stop the messaging servers.

9. Stop the directory and administration server processes with the following commands:

msgserver-root/slapd-*instance*/stop-slapd
msgserver-root/stop-admin

10. Create an HA storage resource.

Next, you need to create an HA storage resource type for the file systems on which the messaging and directory server are dependent. The following command creates an HA storage resource named `ha-storage` and the file system `/global/ims/server5` is placed under its control:

```
# scrgadm -a -j ha-storage -g IMS-RG \
-t SUNW.HAStorage \
-x ServicePaths=/global/ims/server5
```

The comma-separated list of `ServicePaths` are the mount points of the cluster file systems on which the messaging and directory server are both dependent. In the above example, only one mount point, `/global/ims/server5` is specified. If one of the servers has additional file systems on which it is dependent, then you can create an additional HA storage resource and in Step 6 or 8 indicate that additional dependency.

11. Create an HA LDAP resource.

To your growing resource group, add a resource of type `SUNW.nsldap` to monitor the directory server. The `Confdir_list` extension property of `SUNW.nsldap` is used to indicate the path to the directory server's top level directory on the global file system. Note also that this resource is dependent upon both the HA logical host name and HA storage resources established in Steps 4 and 5. However, since the `SUNW.nsldap` resource type specifies `Network_resources_used` in its resource type registration file, you do not need to explicitly specify the HA logical host name resource in the `Resource_dependencies` option below. You only need to specify the HA storage resource with that option. The following command accomplishes all of this, naming the HA LDAP resource `ha-ldap`.

```
# scrgadm -a -j ha-ldap -t SUNW.nsldap -g IMS-RG \
    -x Confdir_list=/global/ims/server5/slapd-mail \
    -y Resource_dependencies=ha-storage
```

12. Enable the HA LDAP resource.

Before proceeding with creating the HA Messaging Server resource, we must bring the HA LDAP resource online. This because the act of creating the HA Messaging Server resource will attempt to validate the Messaging Server resource definition. Part of doing that requires accessing the Messaging Server configuration information stored in the LDAP server.

If you skipped Steps 3 through 5 because you had done them previously, then the IMS-RG resource group is partially online already. In that case, issue the following commands to enable the HA storage and LDAP resources:

```
# scswitch -e -j ha-storage
# scswitch -e -j ha-ldap
```

If you did execute Steps 3 through 5, then instead use the command:

```
# scswitch -Z -g IMS-RG
```

13. Create an HA Messaging Server resource.

It's now time to create the HA Messaging Server resource and add it to the resource group. This resource is dependent upon the HA logical name, HA storage, and HA LDAP resources. As with the HA LDAP resource, we do not need to specify the HA logical name resource. Moreover, since the HA LDAP resource is itself dependent upon the HA storage resource, we merely need to specify a dependency upon the HA LDAP resource.

In creating the HA Messaging Server resource, we need to indicate the path to the Messaging Server top-level directory—the *server-root* path—as well as the name of the Messaging Server instance to make HA. These are done with the `IMS_serverroot` and `IMS_instance` extension properties as shown in the following command.

```
# scrgadm -a -j ha-ims -t SUNW.ims -g IMS-RG \
        -x IMS_serverroot=/global/ims/server5 \
        -x IMS_instance=stork \
        -y Resource_dependencies=ha-ldap
```

The above command, makes an HA Messaging Server resource named `ha-ims` for the Messaging Server instance `stork` installed on the global file system at `/global/ims/server5`. The HA Messaging Server resource is dependent upon the HA LDAP resource named `ldap` created in Step 6 above.

If the Messaging Server instance has file system dependencies beyond that of the directory server, then you can create an additional HA storage resource for those additional file systems. Then include that additional HA storage resource name in the `Resource_dependencies` option of the above command.

14. Enable the Messaging Server resource.

It's now time to activate the HA Messaging Server resource, thereby bringing the messaging server online. To do this, use the command

```
# scswitch -e -j ha-ims
```

The above command enables the ha-ims resource of the IMS-RG resource group. Since the IMS-RG resource was previously brought online, the above command also brings ha-ims online.

15. Verify that things are working.

Use the scstat command to see if the IMS-RG resource group is online. You may want to look at the output directed to the console device for any diagnostic information. Also look in the syslog file, /var/adm/messages.

16. Fail the resource group over to another cluster node.

Manually fail the resource group over to another cluster node. Use the scstat command to see what node the resource group is currently running on ("online" on). For instance, if it is online on mail-1, then fail it over to mail-2 with the command:

```
# scswitch -z -g IMS-RG -h mail-2
```

Complex Example

In this more complicated example, we consider the case where iPlanet Messaging Server is dependent upon the following:

- An LDAP server running on the same node and containing configuration information.

- An LDAP server running on a different node and containing user information.

- Some additional file systems containing message store partitions and MTA message queues.

Figure 4-5 shows how these dependencies are realized using Sun Cluster resource groups. Key parameters of each resource are shown in the figure. The commands required to realize this configuration follow.

Figure 4-5 A complex iPlanet Messaging Server HA configuration

HA Storage
Resource name = ha-ims-serverroot
ServicePaths = /global/ims/server5

HA logical host name
Resource name = mail

HA LDAP
Resource name = ha-ldap-config
Confdir_list = /global/ims/server5/slapd-mail
Resource_dependencies = ha-ims-serverroot

HA Storage
Resource name = ha-ims-data
ServicePaths = /global/ims/store, global/ims/queues

HA iMS
Resource name = ha-ims
IMS_serverroot = /global/ims/server5
IMS_instance = stork
Resource_dependencies = ha-ldap-config, ha-ims-data
RG_dependencies = LDAP-USER-RG

IMS-RG Resource Group
on physical hosts mail-1 and mail-2

HA Storage
Resource name = ha-ids-disk
ServicePaths = /global/ids

HA logical host name
Resource name = ldap

HA LDAP
Resource name = ha-ldap-user
Confdir_list = /global/ids/slapd-ldap
Resource_dependencies = ha-ida-disk

LDAP-USER-RG Resource Group
on physical hosts ldap-1 and ldap-2

```
# scrgadm -a -t SUNW.HAStorage              Make these resource types known
# scrgadm -a -t SUNW.nsldap
# scrgadm -a -t SUNW.ims

# scrgadm -a -g LDAP-USER-RG -h ldap-1,ldap-2    Create LDAP-USER-RG resource group

# scrgadm -a -L -g LDAP-USER-RG -l ldap          Create HA logical host name

# scswitch -Z -g LDAP-USER-RG                     Bring LDAP-USER-RG online
       ...Install and configure directory server in /global/ids

# scrgadm -a -j ha-ids-disk -g LDAP-USER-RG \    Create HA storage resource
         -t SUNW.HAStorage \
         -x ServicePaths=/global/ids

# scrgadm -a -j ha-ldap-user -g LDAP-USER-RG \   Create HA LDAP resource
         -t SUNW.nsldap \
         -x Confdir_list=/global/ids/slapd-ldap \
         -y Resource_dependencies=ha-ids-disk

# scswitch -e -j ha-ids-disk              Bring rest of LDAP-USER-RG online
# scswitch -e -j ha-ldap-user

# scrgadm -a -g IMS-RG -h mail-1,mail-2           Create IMS-RG resource group

# scrgadm -a -L -g IMS-RG -l mail                 Create HA logical host name

# scswitch -Z -g IMS-RG                           Bring IMS-RG online
     ...Install and configure messaging server and 2nd directory server in /global/ims/server5

# scrgadm -a -j ha-ims-serverroot -g IMS-RG \    Create HA storage resource
         -t SUNW.HAStorage \
         -x ServicePaths=/global/ims/server5

# scrgadm -a -j ha-ldap-config -g IMS-RG \       Create HA LDAP resource
         -t SUNW.nsldap \
         -x Confdir_list=/global/ims/server5/slapd-mail \
         -y Resource_dependencies=ha-ims-serverroot

# scrgadm -a -j ha-ims-data -g IMS-RG  \         Create another HA storage resource
         -t SUNW.HAStorage \
         -x ServicePaths=/global/ims/store,/global/ims/queues

# scswitch -e -j ha-ims-serverroot              Bring LDAP online
# scswitch -e -j ha-ldap-config

# scrgadm -a -j ha-ims -g IMS-RG   \            Create HA Messaging Server resource
         -t SUNW.ims \
         -x IMS_serverroot=/global/ims/server5 \
         -x IMS_instance=stork \
         -y Resource_dependencies=ha-ldap-config,ha-ims-data \
         -y RG_dependencies=LDAP-USER-RG
```

```
# scrgadm -a -t SUNW.HAStorage              Make these resource types known

# scswitch -e -j ha-ims-data               Bring Messaging Server online
# scswitch -e -j ha-ims
```

Additional Configuration Notes

If you are using the Symmetric or N + 1 high availability models, there are some additional things you should be aware of during installation and configuration in order to prepare the Cluster Server for Messaging Server.

This section covers those issues and procedures for Veritas Cluster Server 1.1 or later, Sun Cluster 2.2, Sun Cluster 3.0 U1, and Sun Cluster 3.0 U2:

• "Binding IP Addresses for Single and Multiple Messaging Server Instances on a Server" on page 105

• "Making Additional Messaging Server Instances Highly Available" on page 108

NOTE	During the Messaging Server installation, be sure that all the mail services are offline during the installation process; running mail services may interfere with the Messaging Server installation.

Binding IP Addresses for Single and Multiple Messaging Server Instances on a Server

Single and multiple instances of the Messaging Server running on a server require that the correct IP address binds to each instance.

NOTE	This section is applicable to Sun Cluster 2.2, Sun Cluster 3.0 U1 and U2, and Veritas Cluster Server version 1.1 or later.

The following section provides instructions on how to bind the IP address for each instance. If this is not done correctly, the instances could interfere with each other.

Part of configuring Messaging Server for HA involves configuring the interface address on which the Messaging Servers bind and listen for connections. By default, the servers bind to all available interface addresses. However, in an HA environment, you want to the servers to bind specifically to the interface address associated with an HA logical host name. (Were they to bind to all available interfaces, then difficulties would arise when two different Messaging Server instances attempt to run on the same physical host.)

A script is therefore provided to configure the interface address used by the servers belonging to a given Messaging Server instance. Optionally, the script can be directed to configure an LDAP server instance living in the same Messaging Server root to use the same interface address. Note that the script identifies the interface address by means of the IP address which you have or will be associating with the HA logical host name used by the servers.

If the LDAP server or servers you will be using are located on a different host, then the `ha_ip_config` script does not configure those LDAP servers. In general, they should not require additional configuration as a result of configuring the Messaging Server to be HA.

The script effects the configuration changes by modifying or creating the following configuration files. For the file

server-root/msg-*instance*/imta/config/dispatcher.cnf

it adds or changes INTERFACE_ADDRESS option for the SMTP and SMTP Submit servers. For the file

server-root/msg-*instance*/imta/config/job_controller.cnf

it adds or changes the INTERFACE_ADDRESS option for the Job Controller. For the file

server-root/slapd-*instance*/config/slapd.conf

it adds or changes the listenhost option for the LDAP server (optional) and, finally it sets the configutil service.listenaddr parameter used by the POP, IMAP, and Messenger Express HTTP servers.

Note that the original configuration files, if any, are renamed to *.pre-ha.

Run the script as follows:

1. Become root.

2. Execute *server-root*/bin/msg/install/bin/ha_ip_config

3. The script presents the questions described below. The script may be aborted by typing `control-d` in response to any of the questions. Default answers to the questions will appear within square brackets, [ ]. To accept the default answer, simply press the RETURN key.

   a. Logical IP address: Specify the IP address assigned to the logical host name which the Messaging Server instance will be using. The IP address must be specified in dotted decimal form, for example, 10.0.100.10.

   b. Messaging Server root: Specify the absolute path to the top-level directory in which Messaging Server is installed. Within this directory resides the Messaging Server instances, each in a `msg-*` subdirectory.

   c. Messaging Server instance name: Specify the name of the Messaging Server instance to configure. Do not include the leading `msg-` in the instance name.

   d. Also configure an LDAP server instance in the same Messaging Server root: Answer "yes" if you would like to configure an LDAP server instance located in the same Messaging Server root. The LDAP server instance will be configured with the same IP address as the Messaging Server instance. Answer "no" to skip configuring an LDAP server instance.

   This question will not appear if the Messaging Server root does not contain any subdirectories whose name begin with `slapd-`.

   e. LDAP instance name: specify the name of the LDAP server instance to configure. Omit the leading `slapd-` from the instance name.

   This question will not appear if you answered "no" to previous question on configuring an LDAP server instance (d).

   f. Do you wish to change any of the above choices: answer "no" to accept your answers and effect the configuration change. Answer "yes" if you wish to alter your answers.

4. If running or potentially running more than one instance of the messaging server on the same node, then edit the `job_controller.cnf` files located in the *server-root*/`msg-instance/imta/config/` directories. Ensure that each instance is using a different TCP port number for the Job Controllers. This is done via the TCP_PORT option setting in that file.

NOTE   If you do not change the IP address of the physical host name to the IP address of the logical host name, you will only have access to the Administration Server on the physical host that you specified during Messaging Server installation.

To set the IP address of the logical host name, make sure you chose the Custom installation option when you installed Messaging Server on a cluster. Question 35 allows you to specify the Administration Server to a specific IP address.

If you chose the Typical installation option, you can still change the IP address from the physical host to the IP address of the logical host for the Administration Server. To do so, use the `admin_ip.pl` utility. For more information on this utility, consult your iPlanet Console documentation at:
`http://docs.iplanet.com/docs/manuals/console.html`

Testing Nodes

Before proceeding, take the time to ensure that the iPlanet Messaging Server can be started and stopped on each node in the cluster. Begin by testing on the node on which you installed the Messaging Server. Then, fail the logical host name over to another cluster node with the command (Sun Cluster 3.0 U1 and U2):

```
# scswitch -z -g IMS-RG -h name-of-physical-host-to-failover-to
```

When you're done testing, be sure to shut down the Messaging Server before configuring it for HA. Likewise for the directory server if running it on a different host or otherwise separated from Messaging Server.

Making Additional Messaging Server Instances Highly Available

If you are using Veritas Cluster Server 1.1 or later, you must create a second service group in addition to the `iMS5` group you created earlier. This group should have the same set of resources and the same dependency tree as `iMS5`.

If you are using Sun Cluster 2.2, create another logical host which consists of a different logical IP and a shared volume. The new instance can then be installed on this volume.

NOTE	When bringing up Sun Cluster 2.2 using the `hareg -Y` command, be sure there is only one instance on each node. Sun Cluster 2.2 does not allow you to bring up multiple logical IPs on one node using this command.

For Sun Cluster 3.0 U1 or U2, whether or not you create another resource group will depend upon the usage of the additional Messaging Server instance. If failover of the additional instance is to be independent of the existing instance, then you will likely want to create a new resource group for the additional instance. If, however, the additional instance should failover when the existing instance does, then you may want to use the same resource group for both instances.

Uninstalling High Availability

This section describes how to uninstall high availability. The following topics are covered:

- "Uninstalling Veritas Cluster Server and Sun Cluster 2.2" on page 110
- "Uninstalling Messaging Server HA Support for Sun Cluster 3.0 U1 and U2" on page 112

Uninstalling Veritas Cluster Server and Sun Cluster 2.2

The High Availability `uninstall` instructions differ depending on whether you are removing Veritas Cluster Server or Sun Cluster. If you are using the Veritas Cluster Server high availability software, go to "Uninstalling High Availability for Veritas Cluster Server" on page 110. If you are using the Sun Cluster 2.2 high availability software, go to "Uninstalling High Availability for SunCluster 2.2" on page 111.

Uninstalling High Availability for Veritas Cluster Server

To uninstall the high availability components for Veritas Cluster Server:

1. Bring the `iMS5` service group offline and disable its resources.

2. Remove the dependencies between the `mail` resource, the `logical_IP` resource, and the `mountshared` resource.

3. Bring the `iMS5` service group back online so the `sharedg` resource is available.

4. If you are using the `dirsync` option, remove the `dirsync` entries from the cron job table on both nodes.

5. Delete all of the Veritas Cluster Server resources created during installation.

6. Stop the Veritas Cluster Server and remove following files on both nodes, if no more instances exist:

   ```
   /etc/VRTSvcs/conf/config/MsgSrvTypes.cf
   /opt/VRTSvcs/bin/MsgSrv/online
   /opt/VRTSvcs/bin/MsgSrv/offline
   /opt/VRTSvcs/bin/MsgSrv/clean
   /opt/VRTSvcs/bin/MsgSrv/monitor
   /opt/VRTSvcs/bin/MsgSrv/sub.pl
   ```

7. Remove the Messaging Server entries from the
    `/etc/VRTSvcs/conf/config/main.cf` file on both nodes.

8. Remove the `/opt/VRTSvcs/bin/MsgSrv/` directory from both nodes.

9. If the directory server is installed in the same *server-root* directory as messaging
    server, be sure the directory server is running.

10. Perform the normal uninstall procedures as described in Appendix B,
    "Running the Uninstall Program."

11. Remove the instance entry from the `/etc/msgregistry.inf` file on both nodes
    if multiple instances are installed; otherwise, remove the
    `/etc/msgregistry.inf` file on both nodes.

Uninstalling High Availability for SunCluster 2.2

To uninstall the high availability components for SunCluster:

1. Run the following command to stop all processes:

    ```
    hareg -n
    ```

2. If the directory server is installed in the same *server-root* directory as messaging
    server, be sure the directory server is running.

3. Perform the normal uninstall procedures as described in Appendix B,
    "Running the Uninstall Program."

4. Remove the instance entry from the `/etc/msgregistry.inf` file on both nodes
    if multiple instances are installed; otherwise, remove the
    `/etc/msgregistry.inf` file on both nodes.

5. Run the following command:

    ```
    hareg -u ims50
    ```

    Note that you must perform Step 1 before performing this step.

6. Remove the following:

    ```
    /opt/SUNWcluster/ha/msg/ims_common
    /opt/SUNWcluster/ha/msg/ims_fm_probe
    /opt/SUNWcluster/ha/msg/ims_start_net
    /opt/SUNWcluster/ha/msg/ims_stop_net
    ```

7. Remove the `ims_ha.cnf` file from your system disk mount point directory for
    the logical host (for example, `/$LOGICAL_HOST`).

Uninstalling Messaging Server HA Support for Sun Cluster 3.0 U1 and U2

This section describes how to undo the HA configuration for Sun Cluster 3.0 U1 and U2. This section assumes the simple example configuration (described in the "Simple Example," on page 97). For other configurations, the specific commands (for example, Step 3) may be different but will otherwise follow the same logical order.

1. Become the root user.

   All of the following Sun Cluster commands require that you be running as user root.

2. Bring the resource group offline.

   To shut down all of the resources in the resource group, issue the command

   ```
   # scswitch -F -g IMS-RG
   ```

   This shuts down all resources within the resource group (for example, the Messaging Server, LDAP, and the HA logical host name.

3. Disable the individual resources.

   Next, remove the resources one-by-one from the resource group with the commands

   ```
   # scswitch -n -j ha-ims
   # scswitch -n -j ha-ldap
   # scswitch -n -j ha-storage
   # scswitch -n -j mail
   ```

4. Remove the individual resources from the resource group.

   Once the resources have been disabled, you may remove them one-by-one from the resource group with the commands:

   ```
   # scrgadm -r -j ha-ims
   # scrgadm -r -j ha-ldap
   # scrgadm -r -j ha-storage
   # scrgadm -r -j mail
   ```

5. Remove the resource group.

   Once the all the resources have been removed from the resource group, the resource group itself may be removed with the command:

   ```
   # scrgadm -r -g IMS-RG
   ```

6. Remove the resource types (optional).

Should you need to remove the resource types from the cluster, issue the commands:

```
# scrgadm -r -t SUNW.ims
# scrgadm -r -t SUNW.nsldap
# scrgadm -r -t SUNW.HAStorage
```

Installing the Messaging Multiplexor

This chapter contains the following sections to help you install and configure the Messaging Multiplexor:

- Installing and Configuring Multiplexor

- Starting the Multiplexor

- Sample Messaging Topology

Installing and Configuring Multiplexor

The iPlanet Messaging Multiplexor (MMP) is a specialized messaging server that acts as a single point of connection to multiple messaging servers. With the Multiplexor, large-scale messaging-service providers can distribute POP and IMAP user mailboxes across many machines to increase messaging capacity. All users connect to the single Multiplexor server that will direct each connection to the appropriate messaging server.

NOTE	To configure HTTP user mailboxes (like Messenger Express), see the chapter on "Configuring and Administering Multiplexor Support" in the *iPlanet Messaging Server Administrator's Guide*.

You can install the MMP at the same time as you install Messaging Server, or you can install it later using the `setup` program. Either way, you first need to prepare the system to support the MMP.

NOTE	If you install MMP on the same machine as Messaging Server, you must perform a Custom Installation of Messaging Server, so that the POP and IMAP servers can be set to non-standard ports. That way, the MMP and Messaging Server ports will not conflict with one another.

More information about the MMP can be found in the following:

*   *iPlanet Messaging Server Administrator's Guide*

*   *iPlanet Messaging Server Reference Manual*

Before You Install

Before installing the MMP:

1. Choose the machine on which you will install the MMP. It is best to use a separate machine for the MMP.

NOTE	It is recommended that the MMP not be installed on a machine that is also running either Messaging Server or Directory Server.

2. Check that the system meets all the hardware and software requirements for using iPlanet Messaging Server. For more information about installation requirements, see "System Requirements" on page 18.

3. On the machine that the MMP is to be installed on, create a new user to be used by the MMP. This new user must belong to a group. Suggested names for the user are `mmpsrv` or `mailsrv`. The default is `mailsrv`.

4. Set up the LDAP Directory Server and its host machine for use with Messaging Server, if they are not already set up. For more information, see Chapter 2, "Installation Instructions."

5. If you already have an older version (prior to iPlanet Messaging Server 5.0) of the MMP installed and want to replace it, you must remove the old version of MMP before you can install the new one. To do this, run the Messaging Server `uninstall` script located in *server-root.* See also Appendix B, "Running the Uninstall Program."

Multiplexor Files

The Messaging Multiplexor files are stored in the `mmp-`*hostname* subdirectory of the *server-root.* Each MMP instance will have its own `mmp-`*hostname* directory that contains the files described in Table 5-1:

Table 5-1   Messaging Multiplexor Configuration Files

File	Description
`PopProxyAService.cfg`	Configuration file specifying configuration variables used for POP services.
`PopProxyAService-def.cfg`	POP services configuration template. If the `PopProxyAService.cfg` file does not exist, the `PopProxyAService-def.cfg` template is copied to create a new `PopProxyAService.cfg` file.
`ImapProxyAService.cfg`	Configuration file specifying configuration variables used for IMAP services.
`ImapProxyAService-def.cfg`	IMAP services configuration template. If the `ImapProxyAService.cfg` file does not exist, the `ImapProxyAService-def.cfg` template is copied to create a new `ImapProxyAService.cfg` file.
`AService.cfg`	Configuration file specifying which services to start and a few options shared by both POP and IMAP services.

Table 5-1   Messaging Multiplexor Configuration Files *(Continued)*

File	Description
AService-def.cfg	Configuration template specifying which services to start and a few options shared by both POP and IMAP services. If the AService.cfg file does not exist, the AService-def.cfg template is copied to create a new AService.cfg file.
AService.rc	Script used to start, stop, restart, and reload the MMP. For more information, see "Starting the Multiplexor" on page 126.
	To enable automatic startup of the MMP after reboot, the AService.rc script can be copied to /etc/init.d and symbolically linked to the appropriate /etc/rc?.d directories. For more information about initialization and termination scripts, refer to the man page on init.d.
SmtpProxyAService.cfg	Optional configuration file specifying configuration variables used for SMTP proxy services. Required if you enable POP before SMTP; useful for maximizing support for SSL hardware even if POP before SMTP is not enabled. For more information on POP before SMTP, see the *iPlanet Messaging Server Administrator's Guide*.
SmtpProxyAService-def.cfg	Configuration template specifying configuration variables used for SMTP proxy services. If the SmtpProxyAService.cfg file does not exist, the SmtpProxyAService-def.cfg template is copied to create a new SmtpProxyAService.cfg file.

Multiplexor Installation

To install the MMP, you must use the Messaging Server `setup` program, which gives you the option of choosing to install the Messaging Multiplexor. For detailed information about the setup program refer to "Running the Setup Program" on page 42.

NOTE	The MMP is not installed by default; you must select it as part of the Messaging Server Applications component in the Messaging Server installation. If you install MMP with your Messaging Server installation, both components will use the same user ID (`mailsrv`). If you want to use a different user ID for MMP, it will need to be installed in a different *server-root* from your Messaging Server's *server-root*.

To install the MMP:

1. Login as `root`.

2. Run the Messaging Server `setup` program.

   ```
   ./setup
   ```

3. Answer yes or press Return for the following to continue with the installation:

   ```
   Welcome to the iPlanet Server Products installation program. This
   program will install iPlanet Server Products and the iPlanet
   Console on your computer.

   It is recommended that you have "root" privilege to install the
   software.

   Tips for using the installation program:
     - Press "Enter" to choose the default and go to the next screen
     - Type "Control-B" to go back to the previous screen
     - Type "Control-C" to cancel the installation program
     - You can enter multiple items using commas to separate them.
        For example: 1, 2, 3

   Would you like to continue with installation? [Yes]:
   ```

4. Read the license agreement and answer `yes` to the following question to continue. The license agreement is located in the `LICENSE.txt` file in the directory where you downloaded the installation software.

```
BY INSTALLING THIS SOFTWARE YOU ARE CONSENTING TO BE BOUND BY AND
ARE BECOMING A PARTY TO THE AGREEMENT FOUND IN THE LICENSE.TXT
FILE. IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT,
PLEASE DO NOT INSTALL OR USE THIS SOFTWARE.

Do you agree to the license terms? [No]:
```

5. Select option 1 from the following:

```
Select the items you would like to install:

1. iPlanet Servers

   Installs iPlanet Servers with the integrated Netscape Console
   onto your computer.

2. Netscape Console

   Installs Netscape Console as a stand-alone Java application
   on your computer.

To accept the default shown in brackets, press the Enter key.

Select the component you want to install [1]:
```

6. Select either the Typical or Custom installation from the following menu:

NOTE	You cannot install the Messaging Multiplexor with the Express Installation; you must use either the Typical or Custom Installation.

```
Choose an installation type:

1. Express installation

   Allows you to quickly install the servers using the most
   common options and pre-defined defaults. Useful for quick
   evaluation of the products.

2. Typical installation

   Allows you to specify common defaults and options.

3. Custom installation

   Allows you to specify more advanced options. This is
   recommended for experienced server administrators only.

To accept the default shown in brackets, press the Enter key.

Choose an installation type [2]:
```

7. **Specify the desired installation location, or press Return to accept the default.**

   ```
   This program will extract the server files and install them into
   a directory you specify. That directory is called the server root
   in the product documentation and will contain the server
   programs, the Administration Server, and the server configuration
   files.

   To accept the default shown in brackets, press the Enter key.

   Install location [/usr/iplanet/server5]:
   ```

8. **Select option 4 from the following menu:**

   ```
   iPlanet Server Products components:

   Components with a number in () contain additional subcomponents
   which you can select using subsequent screens.

   1. Netscape Server Products Core Components (3)
   2. Netscape Directory Suite (2)
   3. Administration Services (2)
   4. iPlanet Messaging Suite (5)

   Specify the components you wish to install [All]:
   ```

   Note that if you want to use SSL, you also have to install the Administration
   Server and Console on the same machine as MMP; in this case, select options 1,
   3, and 4. You will need to answer additional questions to set up the
   Administration Server and Console. For more information on these questions,
   see Chapter 3, "Installation Questions."

9. **Select option 3 from the following menu:**

   ```
   iPlanet Messaging Suite components:

   Components with a number in () contain additional subcomponents
   which you can select using subsequent screens.

   1. iPlanet Message Store and Message Access
   2. iPlanet Internet Message Transport Agent
   3. iPlanet Messaging Multiplexor
   4. High Availability for iPlanet Messaging Server
   5. iPlanet Delegated Administrator Command Line Utilities

   Specify the components you wish to install [1, 2, 5]:
   ```

10. **Specify the fully qualified domain name of the installation machine.**

    ```
    Enter the fully qualified domain name of the computer on which
    you're installing server software. Using the form
    <hostname>.<domainname>
    Example: eros.airius.com.
    ```

```
To accept the default shown in brackets, press the Enter key.

Computer name [budgie.siroe.com]:
```

11. Specify a system user and system group.

```
Choose a Unix user and group to represent the iPlanet server in
the user directory.  The iPlanet server will run as this user. It
is recommended that this user should have no privileges in the
computer network system.  The Administration Server will give
this group some permissions in the server root to perform
server-specific operations.

If you have not yet created a user and group for the iPlanet
server, create this user and group using your native UNIX system
utilities.

To accept the default shown in brackets, press the Return key.

System User [nobody]:
```

12. Specify the user ID under which the MMP will run:

```
The Mail Multiplexor runs as a privileged user. The account
should already exist on the system and should be a member of the
iPlanet Group.

Please enter the Mail Multiplexor user [mailsrv]:
```

At this point, the installation begins. Messages are displayed as the installation
proceeds.

Configuring the MMP to use SSL

To configure the MMP to use SSL, do the following:

NOTE	It is assumed that the MMP is installed on a machine that does not have a Message Store or MTA.

1. Install the Administration Console, Administration Server, and MMP on the
machine.

Point the MMP to a Directory Server on a different machine that is already
configured as a Messaging Server Message Store.

2. Go to your *server-root* and run `startconsole` to login to the Netscape Console:

```
./startconsole
```

3. Open up the "server group" for the MMP server.

   The MMP server does not appear, but the Administration Server does; double-click on the Administration Server icon.

4. Click the "configuration" tab and within that tab, click on the "Encryption" tab.

5. Click "Certificate Setup Wizard."

   The setup wizard walks you through a certificate request.

6. Install the certificate as the certificate for "This Server."

7. From the command line, make the following symbolic links to simplify things:

   ```
   cd server-root/mmp-hostname
   ln -s ../alias/admin-serv-instance-cert7.db cert7.db
   ln -s ../alias/admin-serv-instance-key3.db key3.db
   ln -s ../admin-serv/config/secmod.db secmod.db
   ```

   Also, make sure that those files are owned by the user ID under which the MMP will run.

8. Create an `sslpassword.conf` file in this directory.

   This file contains:

   ```
   Internal (Software) Token:password
   ```

   where *password* is the password you specified in the Certificate Setup Wizard.

NOTE	An alternative approach to steps 1-8 is to copy the following files: `cert7.db`, `key3.db`, `secmod.db`, and `sslpassword.conf` from an existing Messaging or Directory Server. These servers must have a server certificate and a key appropriate for the same domain already installed.

---

9. Edit the `ImapProxyAService.cfg` file and uncomment all the SSL settings.

10. If you want SSL and POP, edit the `PopProxyAService.cfg` file and uncomment all the SSL settings.

    Additionally, you must edit the `AService.cfg` file and add "|995" after the "110" in the `ServiceList` setting.

11. Make sure that the `BindDN` and `BindPass` options are set in the `ImapProxyAService.cfg` and `PopProxyAService.cfg` files.

It is possible to copy these values from the `local.ugldapbinddn` and `local.ugldapbindcred configutil` options on the Messaging Server, but you can also create a new user with search privileges (for plain text support) or search privileges and user password read privileges (for CRAM-MD5/APOP support). You should also set the `DefaultDomain` option to your default domain (the domain to use for unqualified user names).

If you just want server-side SSL support, you are finished. Start the MMP with the following command:

```
AService.rc start
```

If you want client certificate based login, do the following:

12. Get a copy of a client certificate and the CA certificate which signed it.

13. Start the Netscape Console and Certificate Wizard as before (on the same machine as the MMP), but this time import the CA certificate as a "Trusted Certificate Authority."

14. Use the Store Administrator you created during your Messaging Server installation.

For more information, see the *iPlanet Messaging Server Administrator's Guide.*

15. Create a `certmap.conf` file for the MMP. For example:

```
certmap default      default
default:DNComps
default:FilterComps  e=mail
```

This means to search for a match with the "e" field in the certificate DN by looking at the "mail" attribute in the LDAP server.

16. Edit your `ImapProxyAService.cfg` file and:

    a. Set `CertMapFile` to `certmap.conf`

    b. Set `StoreAdmin` and `StorePass` to values from Step 14.

    c. Set `CertmapDN` to the root of your Users and Groups tree.

17. If you want client certificates with POP3, repeat Step 16 for the `PopProxyAService.cfg` file.

18. If the MMP is not already running, start it with:

```
AService.rc start
```

or

```
AService.rc restart
```

19. Import the client certificate into your client. In Netscape, click on the padlock (Security) icon, then select "Yours" under "Certificates," then select "Import a Certificate..." and follow the instructions.

NOTE   All your users will have to perform this step if you want to use client certificates everywhere.

Creating Additional Instances

Use the Messaging Server setup program to create new instances of the MMP after an initial installation. You will run through the same installation procedure as when you created your first instance; you will be asked all the same questions. The setup program automatically creates a new instance in the *server-root*; for example, if you are installing on a machine called `tarpit`, the first instance you created would be called `mmp-tarpit`, and the second instance would be `mmp-tarpit-1`.

Modifying an Existing Instance

To modify an existing instance of the MMP, edit the `ImapProxyAService.cfg` and/or `PopProxyAService.cfg` configuration files as necessary. These configuration files are located in the `mmp-`*hostname* subdirectory.

Starting the Multiplexor

To start an instance of the Messaging Multiplexor, run the `AService.rc` script in the *server-root*/`mmp`–*hostname* directory:

```
./AService.rc [options]
```

Optional parameters for the `AService.rc` script are described below in Table 5-2.

**Table 5-2**   Optional Parameters for the `AService.rc` Script

Option	Description
start	Start the MMP (even if one is already running).
stop	Stop the most recently started MMP.
restart	Stop the most recently started MMP, then start an MMP.
reload	Causes an MMP that is already running to reload its configuration without disrupting any active connections.

Sample Messaging Topology

The fictional Siroe Corporation has two Multiplexors on separate machines, each supporting several Messaging Servers. POP and IMAP user mailboxes are split across the Messaging Server machines, with each server dedicated exclusively to POP or exclusively to IMAP. (You can restrict client access to POP services alone by removing the IMAP-server binary; likewise, you can restrict client access to IMAP services alone by removing the POP-server binary.) Each Multiplexor also supports only POP or only IMAP. The LDAP directory service is on a separate, dedicated machine.

This topology is illustrated below in Figure 5-1.

Figure 5-1   Multiple MMPs Supporting Multiple Messaging Servers
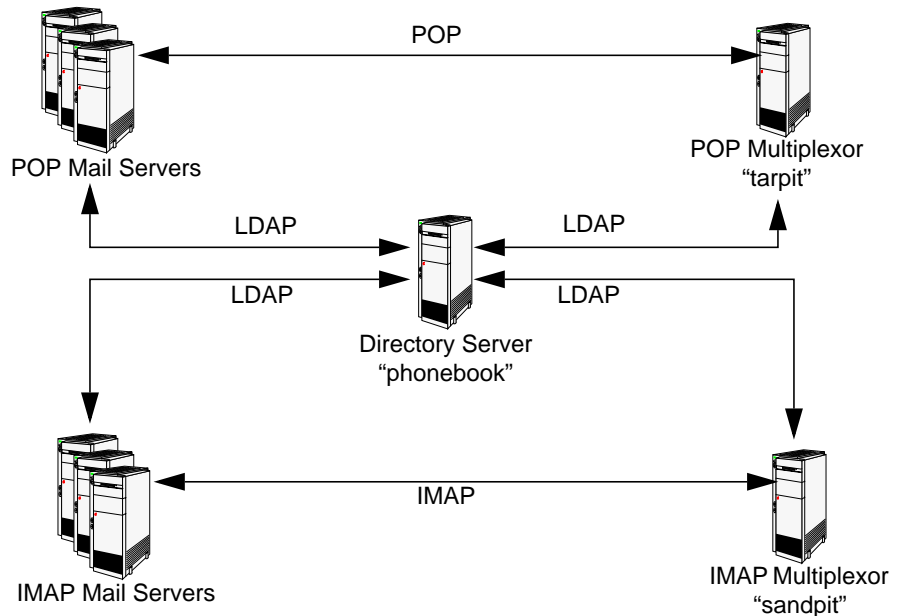
IMAP Configuration Example

The IMAP Multiplexor in Figure 5-1 is installed on sandpit, a machine with two processors. This Multiplexor is listening to the standard port for IMAP connections (143). Multiplexor communicates with the LDAP server on the host phonebook for user mailbox information, and it routes the connection to the appropriate IMAP server. It overrides the IMAP capability string, provides a virtual domain file, and supports SSL communications.

This is its `ImapProxyAService.cfg` configuration file:

```
default:LdapUrl            ldap://phonebook/o=Siroe.com
default:LogDir             /usr/iplanet/server5/mmp-sandpit/log
default:LogLevel           5
default:BindDN             "cn=Directory Manager"
default:BindPass           secret
default:BacksidePort       143
default:Timeout            1800
default:Capability         "IMAP4 IMAP4rev1 ACL QUOTA LITERAL+ NAMESPACE
UIDPLUS CHILDREN LANGUAGE XSENDER X-NETSCAPE XSERVERINFO AUTH=PLAIN"
default:SearchFormat       (uid=%s)
default:SSLEnable          yes
default:SSLPorts           993
default:SSLSecmodFile      /usr/iplanet/server5/mmp-sandpit/secmod.db
default:SSLCertFile        /usr/iplanet/server5/mmp-sandpit/cert7.db
default:SSLKeyFile         /usr/iplanet/server5/mmp-sandpit/key3.db
default:SSLKeyPasswdFile   ""
default:SSLCipherSpecs     all
default:SSLCertNicknames   Siroe.com Server-Cert
default:SSLCacheDir        /usr/iplanet/server5/mmp-sandpit
default:SSLBacksidePort    993
default:VirtualDomainFile  /usr/iplanet/server5/mmp-sandpit/vdmap.cfg
default:VirtualDomainDelim @
default:ServerDownAlert    "your IMAP server appears to be temporarily out of
service"
default:MailHostAttrs      mailHost
default:PreAuth            no
default:CRAMs              no
default:AuthCacheSize      10000
default:AuthCacheTTL       900
default:AuthService        no
default:AuthServiceTTL     0
default:BGMax              10000
default:BGPenalty          2
default:BGMaxBadness       60
default:BGDecay            900
default:BGLinear           no
default:BGExcluded         /usr/iplanet/server5/mmp-sandpit/bgexcl.cfg
default:ConnLimits         0.0.0.0|0.0.0.0:20
default:LdapCacheSize      10000
default:LdapCacheTTL       900
default:HostedDomains      yes
default:DefaultDomain      Siroe.com
```

POP Configuration Example

The POP Multiplexor example in Figure 5-1 is installed on tarpit, a machine with four processors. This Multiplexor is listening to the standard port for POP connections (110). Multiplexor communicates with the LDAP server on the host phonebook for user mailbox information, and it routes the connection to the appropriate POP server. It also provides a spoof message file.

This is its `PopProxyAService.cfg` configuration file:

```
default:LdapUrl              ldap://phonebook/o=Siroe.com
default:LogDir               /usr/iplanet/server5/mmp-tarpit/log
default:LogLevel             5
default:BindDN               "cn=Directory Manager"
default:BindPass             password
default:BacksidePort         110
default:Timeout              1800
default:Capability           "IMAP4 IMAP4rev1 ACL QUOTA LITERAL+ NAMESPACE
UIDPLUS CHILDREN LANGUAGE XSENDER X-NETSCAPE XSERVERINFO AUTH=PLAIN"
default:SearchFormat         (uid=%s)
default:SSLEnable            no
default:VirtualDomainFile    /usr/iplanet/server5/mmp-tarpit/vdmap.cfg
default:VirtualDomainDelim   @
default:MailHostAttrs        mailHost
default:PreAuth              no
default:CRAMs                no
default:AuthCacheSize        10000
default:AuthCacheTTL         900
default:AuthService          no
default:AuthServiceTTL       0
default:BGMax                10000
default:BGPenalty            2
default:BGMaxBadness         60
default:BGDecay              900
default:BGLinear             no
default:BGExcluded           /usr/iplanet/server5/mmp-tarpit/bgexcl.cfg
default:ConnLimits           0.0.0.0|0.0.0.0:20
default:LdapCacheSize        10000
default:LdapCacheTTL         900
default:HostedDomains        yes
default:DefaultDomain        Siroe.com
```

Sample Messaging Topology

Installing iPlanet Directory Server 5.1

This appendix explains how to install iPlanet Messaging Server 5.2 with iPlanet Directory Server 5.1.

By default, the Netscape Directory Server 4.16 product is bundled with the Messaging Server installation program. To install Messaging Server with Netscape Directory Server 4.16, see Chapter 2, "Installation Instructions."

While Netscape Directory Server 4.16 provides key functionality and support to Messaging Server, iPlanet Directory Server 5.1 has improved features, including: Class of Service, roles, multi-master replication, and multiple database support.

NOTE	For more information on iPlanet Directory Server 5.1, refer to the documentation at: `http://docs.iplanet.com/docs/manuals/directory.html`

Installing Directory Server with Messaging Server

To install iPlanet Directory Server 5.1 with iPlanet Messaging Server 5.2, follow these steps:

1. Locate the iPlanet Directory Server 5.1 archive in the product installation CD or at the iPlanet downloads Web site.

2. Install iPlanet Directory Server. For installation instructions, refer to the *iPlanet Directory Server Installation Guide.*

3. Run the `ims_dssetup.pl` script on the host where iPlanet Directory Server 5.1 is installed. For instructions on running `ims_dssetup.pl`, see "Running the ims_dssetup Utility," on page 40.

   While it is possible to add schema over protocol, it is necessary to run the `ims_dssetup.pl` script in order to place the schema files with the system-defined schema.

4. Install iPlanet Messaging Server 5.2. For Messaging Server installation information, review this book in its entirety. For specific instructions, see Chapter 2, "Installation Instructions."

   a. If you install iPlanet Messaging Server 5.2 on the same machine as iPlanet Directory Server 5.1, you must install it in a different *server-root* from the one in which iPlanet Directory Server 5.1 is installed.

   b. During the installation, be sure to de-select the bundled directory server component. Specifically, you should not select Netscape Directory Suite in Step 6 of the messaging server installation process.

5. If you use the Console interface to manage your servers, you will have a console to manage iPlanet Directory Server 5.1 and a console to manage iPlanet Messaging Server 5.2.

   a. To manage iPlanet Directory Server 5.1, run `startconsole` from the directory server *server-root* to invoke iPlanet 5.0 Console.

   b. To manage iPlanet Messaging Server 5.2, run the `startconsole` command from the messaging server *server-root*. Running this command will invoke Netscape 4.2 Console.

NOTE	Note which console corresponds to which server.
	You should only manage iPlanet Messaging Server 5.2 through Netscape Console 4.2, and you should only manage iPlanet Directory Server 5.1 through iPlanet Console 5.0.

Uninstalling Directory Server and Messaging Server

If you want to uninstall iPlanet Directory Server 5.1 and iPlanet Messaging Server 5.2, you should run the Messaging Server `uninstall` program (see Appendix B, "Running the Uninstall Program") prior to uninstalling Directory Server. For instructions on how to uninstall the Directory Server, see the Directory Server documentation (`http://docs.iplanet.com/docs/manuals/directory.html`).

Running the Uninstall Program

This appendix describes how to remove an existing instance of the Messaging Server from a machine.

NOTE	The `uninstall` program will not attempt to remove any log files, silent installation files, or mailboxes; if you want to remove these, you must do so manually.
	The `uninstall` program does not remove any high availability components. See "Uninstalling High Availability" on page 110 for instructions on removing the high availability components.

In the directory in which you installed the Messaging Server files, you will find the `uninstall` program. To run `uninstall`, use the following steps:

1. Login as `root`.

2. Change to the *server-root* directory.

NOTE	Do not manually stop the Directory Server; the `uninstall` program requires the Directory Server to be up and running and it will handle the shutting down of the Directory Server.

3. Run the `uninstall` program:

   ./uninstall

NOTE	The screens you see here may vary depending on which components you have installed. This example assumes you have all components installed.

4. Select which components you want to remove:

    ```
    The following are the SuiteSpot components currently installed on
    your machine:

    Components with a number in () contain additional subcomponents
    which you can select using subsequent screens.

        1. Netscape Server Products Core Components (3)
        2. Netscape Directory Suite (2)
        3. Administration Services (2)
        4. iPlanet Messaging Applications (5)

    Select the components you wish to uninstall (default: all) [All]:
    ```

5. Select which Server Core Product components you want to remove:

    ```
    The following are the Netscape Server Products Core Components
    components currently installed on your machine:

    Components with a number in () contain additional subcomponents
    which you can select using subsequent screens.

        1. Netscape Server Products Core Components
        2. Netscape Core Java classes
        3. Java Runtime Environment

    Specify the components you wish to uninstall [1, 2, 3]:
    ```

6. Select which Directory Suite components you want to remove.

    ```
    The following are the Netscape Directory Suite components
    currently installed on your machine:

    Components with a number in () contain additional subcomponents
    which you can select using subsequent screens.

        1. Netscape Directory Server
        2. Netscape Directory Server Console

    Specify the components you wish to uninstall [1, 2]:
    ```

7. Select which Administration Services components you want to remove:

    ```
    The following are the Administration Services components
    currently installed on your machine:

    Components with a number in () contain additional subcomponents
    which you can select using subsequent screens.

        1. Netscape Administration Server
        2. Administration Server Console

    Specify the components you wish to uninstall [1, 2]:
    ```

8. Select which iPlanet Messaging Suite components you want to remove. Note that if you install the Messaging Server sub-components (Message Store and the MTA) simultaneously with the MMP, you will have problems during uninstallation. The workaround is to run `stop-msg`, before running the `uninstall` program.

```
The following are the iPlanet Messaging Suite components
currently installed on your machine:

Components with a number in () contain additional subcomponents
which you can select using subsequent screens.

    1. iPlanet Message Store and Message Access
    2. iPlanet Internet Message Transport Agent
    3. iPlanet Messaging Multiplexor
    4. High Availability for iPlanet Messaging Server
    5. iPlanet Delegated Administrator Command Line Utilities

Specify the components you wish to uninstall [1, 2, 5]:
```

CAUTION If you installed any high availability components, you must manually remove them (See "Uninstalling Veritas Cluster Server and Sun Cluster 2.2" on page 110). Although it is presented as an option, the automatic un-install of high availability components is not supported at this time; do not select this option.

---

9. Enter the login ID and password of the Configuration Administrator:

```
Enter the User ID or Distinguished Name of the administrator who
is authorized to access the Configuration Directory at

    ldap://budgie.siroe.com:389/

Configuration Admin ID or DN: [admin]:
```

At this point, the `uninstall` program should begin removing the various components you specified from your system.

Your uninstall is now complete.

In some cases, uninstall may not be able to remove some or all of your installation files. Please check for any remaining files and remove them manually. If you choose to re-install the same instance, you should check the msgregistry.inf file in the /etc directory to make sure it does not contain the old messaging server instance. If the file contains old server information, you should delete that information in the file, prior to re-installing another server instance.

NOTE	The uninstall script does not reinstate the original sendmail link. You must manually restore this link if you want receive mail on the server via sendmail.

Upgrading Your Messaging Server

This appendix contains instructions to help you upgrade previous versions of iPlanet Messaging Server to iPlanet Messaging Server 5.2. It covers the following sections:

- "Pre-Upgrade Instructions," on page 139

- "Upgrade to Messaging Server 5.2," on page 143

- "Upgrade to Messaging Server 5.2 with High Availability," on page 146

- "Backout Procedure," on page 148

TIP   It is recommended that you read through the entire upgrade procedure before attempting the upgrade.

Pre-Upgrade Instructions

This section describes the steps you should follow prior to upgrading your iPlanet Messaging Server to version 5.2. The following topics are discussed:

- "Stop Messaging Processes," on page 140

- "Back Up the Existing Messaging Server Installation," on page 140

- "Upgrade Directory Server," on page 142

Stop Messaging Processes

Prior to running the upgrade program, you should first stop specific messaging processes to ensure a successful upgrade. To do so, follow these steps:

1. Stop accepting incoming mail by stopping the MTA dispatcher with the `imsimta stop dispatcher` command. For more information on MTA commands, see the *iPlanet Messaging Server Reference Manual*.

2. Stop the rest of the services that can be used to modify Messaging Server settings. Specifically, stop the following services with the appropriate commands:

   ❍ *msgserver-root*/stop-admin

   ❍ *msgserver-root*/msg-*instance*/stop-msg

   ❍ *webserver-root*/https-admserv/stop

   ❍ *webserver-root*/https-*machine*/stop

NOTE	Do not stop the Directory Server; it should be running when you upgrade the messaging server.

---

3. If you have installed High Availability, go to the section "Upgrade to Messaging Server 5.2 with High Availability" on page 146. If you have not installed High Availability, go directly to the next section ("Back Up the Existing Messaging Server Installation" on page 140).

Back Up the Existing Messaging Server Installation

Prior to beginning the upgrade process, it is strongly recommended that you back up your messaging server installation. To do so, follow these steps:

1. It is recommended that you back up the entire *server-root* directory by using a backup mechanism you already have in place.

2. Determine if there are messages in the message queues (directory *msgserver-root*/msg-*instance*/imta/queue). These queues contain messages that were in transit when the servers were stopped as described in the section on "Stop Messaging Processes," on page 140.

   If the message queues contain any messages, be sure to save the *msgserver-root*/msg-*instance*/imta/queue directory in a different location.

3. To perform a full backup of the LDAP Directory Server, run the db2ldif program in directory *server-root*/slapd-*instance*/ for each slapd instance (in particular, the configuration and the users/groups directories). The db2ldif file will export the data to an LDIF file using a *date*.ldif file naming convention in the *msgserver-root*/slapd-*instance*/ldif directory.

4. While a full backup of the LDAP directory server is recommended, you might want to only perform selective backups. With the ldapsearch command, you can selectively back up the users/groups or personal address book entries. The following examples assume that the users/groups suffix is siroe.com and the users/group directory administrator is cn=Directory Manager. In the first example, entries with a suffix of o=siroe.com are retrieved and saved in the LDIF file /var/tmp/*date*.ug.ldif:

```
ldapsearch -L -h ldapserver -D "cn=Directory Manager" \
-w passwd -b "o=siroe.com" "objectclass=inetlocalmailrecipient" \
> /var/tmp/date.ug.ldif
```

In the second example, entries with a suffix of o=pab are retrieved and saved in the LDIF file /var/tmp/*date*.pab.ldif:

```
ldapsearch -L -h ldapserver -D "cn=Directory Manager" \
-w passwd -b "o=pab" "objectclass=*" \
> /var/tmp/date.pab.ldif
```

For more information on the ldapsearch command, refer to the iPlanet Directory Server documentation.

5. Save the Message Store by renaming the following directory where the message store is stored:

msgserver-root/msg-*instance*/store/partition/primary

and create an empty directory in its place.

If you mounted the entire Message Store in your installation, you can unmount the store to ensure that it is not written to during the upgrade. Use the following command:

umount *msgserver-root*/msg-*instance*/store/partition/primary

6. Save the existing files in the *server-root* directory by copying them to another directory location (You can exclude the message store, since you have already saved it in Step 5.). Saving the existing files in the *server-root* directory can recover the Messaging Server configuration if the upgrade fails for any reason.

Upgrade Directory Server

If the Messaging Server version to which you are upgrading uses the same Directory Server version as your existing Directory Server, you do not need to upgrade the Directory Server. However, if your existing directory server is, for example, Netscape Directory Server 4.13, you will need to upgrade the Directory Server, since iPlanet Messaging Server 5.2 is bundled with Netscape Directory Server 4.16.

Be sure you are logged in as root when you upgrade the Directory Server. To upgrade the Directory Server, follow these steps:

1. Run the Messaging Server program from the product binaries and install Directory Server in the same *server-root* directory as the previous instance of Directory Server. For example,

/usr/iplanet/server5/slapd-budgie/setup -k

2. When you are asked about the iPlanet Server Products Components you want to install, select Components 1 (Netscape Server Products Core Components), 2 (Netscape Directory Suite), and 3 (Administration Services). Do not to select Component 4 (Messaging Server Components) if you are upgrading only the directory server.

NOTE	You will need to run the setup program for each directory server instance.

3. Save the generated `install.inf` (located in *dirserver-root*`/setup/install.inf)` file that you created by using the `-k` option with the `setup` command.

4. Run the `ims_dssetup.pl` script to prepare your directory server for the Messaging Server upgrade. For more information, see "Running the ims_dssetup Utility," on page 40.

Upgrade to Messaging Server 5.2

To upgrade from an older version of iPlanet Messaging Server (such as iPlanet Messaging Server 5.1), follow these steps:

1. During initial installation, the following files and directories are backed up:

   server-root`/msg-`*instance*`/config/local.conf`
   server-root`/msg-`*instance*`/config/msg.conf`
   server-root`/msg-`*instance*`/imta/config`
   server-root`/msg-`*instance*`/html`

   These configuration directories and files are moved to the *server-root*`/msg-`*instance*`/backup.`*timestamp* directory where *timestamp* indicates the time at which the installation took place.

2. After the upgrade, you should compare these backed-up configuration files to the new configuration files in the *server-root*`/msg-`*instance*`/imta/config/` and reapply any customized settings.

NOTE	To facilitate the upgrade process, it is recommended that you review the parameters you recorded in Table 1-2 on page 34.

3. Make sure that your upgrade takes place on the same machine and the same *server-root* where you originally installed iPlanet Messaging Server.

4. Login as `root` and run `./setup -k` from Messaging installation binaries. This is the same `setup` program you would run if you were installing a new instance of Messaging Server.

5. When you are asked about the iPlanet Server Products Components you want to install, select Components 1 (Netscape Server Products Core Components), 3 (Administration Services), and 4 (Messaging Server Components) if you have already upgraded your directory server. If you did not upgrade your directory server, select the default (Components 1, 2, 3 (Directory Server Components), and 4).

6. During the installation process, Installer detects existing file, directory, and configuration values as the defaults and fills in missing values with standard default suggestions. You will get the following question when Installer detects the existing configuration values of your prior Messaging Server installation:

```
This machine has a Messaging Server instance installed already.
Please choose below whether you want to upgrade the existing
server instance or create a new server instance.


If you choose to create a new server instance, the configuration
for the existing server instance will not be touched. If you
choose to upgrade the existing server instance, any missing
configuration will be detected and the configuration will be
repaired if necessary.

   [1]  Create New
   [2]  Upgrade
```

Choose option 2 to upgrade your Messaging Server.

7. When you are asked about the LDAP URL of the Directory Server, be sure to specify the URL of the LDAP configuration Directory Server.

8. If the service administrator ID you chose during the original installation was not the ServiceAdmin default, you will be asked to re-enter your service administrator ID and password from the original installation.

The upgrade process will complete once Installer updates the necessary configuration values.

NOTE	Mailbox and message queues do not require migration from a 5.x to 5.2 system.

Note that after you have completed upgrading Messaging Server, the server processes will not start by default. Instead, you will need to manually start these processes. For more information on the STORED, POP, IMAP, HTTP, and MTA processes, see chapter on configuring general messaging capabilities in the *iPlanet Messaging Server Administrator's Guide.*

Post-Upgrade Instructions

After completing the Messaging Server upgrade, follow these additional steps:

1. To keep the result of the upgrade, save the following configuration files in another location:

   msgserver-root/setup/install.inf
   msgserver-root/msg-*instance*/config/local.conf
   msgserver-root/msg-*instance*/config/msg.conf
   msgserver-root/admin-serv/config/adm.conf
   msgserver-root/setup/msg/*.log

2. If you unmounted user mailboxes, you can now remount them. Or, if you moved the Message Store directory, you can now move the directory back to its original location (*msgserver-root*/msg-*instance*/store/partition/primary).

3. Run the ims_dssetup.pl script to enable the MTA direct LDAP lookup feature. For more information, see "Running the ims_dssetup Utility," on page 40. For more information on the MTA direct LDAP lookup feature, see the *iPlanet Messaging Server Administrator's Guide*.

   If you already ran the ims_dssetup.pl script in Step 4 of "Upgrade Directory Server" on page 142, you should skip this step.

4. If you have an existing iPlanet Web Server, you should upgrade it to the version supported (iPlanet Web Server 6.0 Service Pack 2) with iPlanet Messaging Server 5.2. While you cannot upgrade from previous versions of iPlanet Web Server or Netscape Enterprise Server to iPlanet Web Server 6.0 SP2, you can migrate your 4.x web server. For more information, refer to the *iPlanet Web Server Installation and Migration Guide*.

5. If you have an existing iPlanet Delegated Administrator for Messaging and Collaboration to manage users and groups, you will need to uninstall that version and install the version supported (iPlanet Delegated Administrator for Messaging and Collaboration 1.2) with Messaging Server 5.2.

   During the Delegated Administrator uninstall process, the web server configuration files, containing the Delegated Administrator-related data, are backed up and renamed with .nda extensions (for example, servlets.properties.nda). Consequently, you can keep the configuration from your previous version of Delegated Administrator. For more information, see the *iPlanet Delegated Administrator for Messaging and Collaboration Installation and Administration Guide*.

6. Restart the Messaging Server processes (Note that the Administration Server will automatically be started once the upgrade is finished):

   # *msgserver-root*/msg-*instance*/start-msg

   Use the following command if you are in a High Availability environment:
   # *msgserver-root*/msg-*instance*/start-msg ha

7. After restarting the Messaging Server processes, check for any errors by reviewing the `mail.log_current` file in directory *msgserver-root*/`msg-`*instance*/`log/imta`.

   Additionally, you should monitor the message queues to ensure that messages are not stuck in any queue.

Upgrade to Messaging Server 5.2 with High Availability

This section will explain how to upgrade Messaging Server with Sun Cluster or Veritas Cluster Servers. The following sections are described:

- "To Upgrade to Messaging Server 5.2 with Sun Cluster 2.2" on page 146
- "To Upgrade to Messaging Server 5.2 with Veritas Cluster Server" on page 147
- "To Upgrade to Messaging Server 5.2 with Sun Cluster 3.x" on page 148

To Upgrade to Messaging Server 5.2 with Sun Cluster 2.2

If you want to upgrade to iPlanet Messaging Server 5.2 and you have installed Sun Cluster 2.2 with a previous version of iPlanet Messaging Server, you should be sure to start the upgrade on the physical host that is currently mastered by the logical host. In addition, you should follow these steps:

1. Run the `hareg -n` command to shut down the Sun Cluster service.

2. Run the `hareg -u iMS50` command.

3. If the directory server is installed in the same *server-root* directory as messaging server, be sure the directory server is running.

4. Back up the existing Messaging Server. Review the instructions in "Back Up the Existing Messaging Server Installation" on page 140.

5. Upgrade the Directory Server, if necessary. Review the instructions in "Upgrade Directory Server" on page 142.

6. Upgrade the messaging server. See "Upgrade to Messaging Server 5.2" on page 143 for more information.

7. Configure Sun Cluster 2.2 by following the instructions in "Sun Cluster 2.2 Agent Installation" on page 93.

NOTE   It is strongly encouraged that you use Sun Cluster 3.x, since Sun Cluster 2.2 is a deprecated product as of this release. For more information, see the *iPlanet Messaging Server 5.2 Release Notes.*

To Upgrade to Messaging Server 5.2 with Veritas Cluster Server

If you want to upgrade to iPlanet Messaging Server 5.2 and you have installed Veritas Cluster Server with a previous version of iPlanet Messaging Server, you should follow these steps to upgrade:

1. Bring the `iMS5` service group offline and disable its resources.

2. Remove the dependencies between the `mail` resource, the `logical_IP` resource, and the `mountshared` resource.

3. Bring the `iMS5` service group back online.

4. If the directory server is installed in the same *server-root* directory as messaging server, be sure the directory server is running.

5. Back up the existing Messaging Server. Review the instructions in "Back Up the Existing Messaging Server Installation" on page 140.

6. Upgrade the Directory Server, if necessary. Review the instructions in "Upgrade Directory Server" on page 142.

7. Upgrade the messaging server. See "Upgrade to Messaging Server 5.2" on page 143 for more information.

8. Start the dependency tree as outlined in Step 6 of the Veritas Cluster Server "Pre-Installation Instructions" on page 89 and follow the rest of the Veritas Cluster Server installation instructions described in Chapter 4, "High Availability."

To Upgrade to Messaging Server 5.2 with Sun Cluster 3.x

If you want to upgrade to iPlanet Messaging Server 5.2 and you have installed Sun Cluster 3.0, Sun Cluster 3.0 Update 1, or Sun Cluster 3.0 Update 2 with a previous version of iPlanet Messaging Server, you should first upgrade the Messaging Server installation. See "Upgrade to Messaging Server 5.2," on page 143.

After completing the Messaging Server installation, you need to install the SUNWscims package (from the Messaging Server 5.2 CDROM) on each cluster node. See "Sun Cluster 3.0 U1 and U2 Agent Installation," on page 96 for more information. This process will upgrade your Messaging Server HA Agent.

Backout Procedure

If at any time you need to back out of the upgrade process, you should follow these steps to ensure a successful backout:

NOTE   The backout procedure assumes that you have done a full backup of your Messaging Server. For more information, see "Back Up the Existing Messaging Server Installation," on page 140.

---

1. Stop iPlanet Delegated Administrator for Messaging and Collaboration (if installed), iPlanet Web Server (if installed), Messaging Server, Directory Server, and Administration Server processes.

   Be sure to stop the processes in the order indicated above.

2. Unmount the Message Store directory:

   ```
   umount msgserver-root/msg-instance/store/partition/primary
   ```

   If you did not back up your Message Store directory, you can save the directory in another location.

3. Restore the Messaging Server from the backup. See "Back Up the Existing Messaging Server Installation," on page 140 for more information.

4. Remount the user mailboxes with the following command:

   `mount` *msgserver-root*`/msg-`*instance*`/store/partition/primary`

   Or, you can move the directory back to the
   msgserver-root`/msg-`*instance*`/store/partition/primary` from the location
   where you initially saved it. See Step 2.

5. Start the Administration Server, Directory Server, Messaging Server, iPlanet
   Web Server (if installed), iPlanet Delegated Administrator for Messaging and
   Collaboration (if installed) processes.

   Be sure to start the processes in the order indicated above.

Backout Procedure

Glossary

A record   A type of DNS record containing a host name and its associated IP address. A records are used by messaging servers on the Internet to route email. See also **Domain Name System (DNS)**, **MX record**.

access control   A method for controlling access to a server or to folders and files on a server.

access control information   (ACI) A single item of information from an access control list.

access control list   (ACL) A set of data associated with a directory that defines the permissions that users and/or groups have for accessing it.

access control rules   Rules specifying user permissions for a given set of directory entries or attributes.

access domain   Limits access to certain Messaging Server operations from within a specified domain. For example, an access domain can be used to limit where mail for an account can be collected.

account   Information that defines a specific user or user group. This information includes the user or group name, valid email address or addresses, and how and where email is delivered.

address   Information in an email message that determines where and how the message must be sent. Addresses are found both in message headers and in message envelopes. Envelope addresses determine how the message gets routed and delivered; header addresses are present merely for display purposes.

address handling   The actions performed by the MTA to detect errors in addressing, to rewrite addresses if necessary, and to match addresses to recipients.

addressing protocol   The addressing rules that make email possible. RFC 822 is the most widely used protocol on the Internet and the protocol supported by iPlanet Messaging Server. Other protocols include X.400 and UUCP (UNIX to UNIX Copy Protocol).

address token   The address element of a rewrite rule pattern.

administration console   See **Console**.

administration domain   A region of administraive control. See also **domain**.

administration privileges   A set of privileges that define a users administrative role.

administration server administrator   User who has administrative privileges to start or stop a server even when there is no Directory Server connection. The administration server administrator has restricted server tasks (typically only Restart Server and Stop Server) for all servers in a local server group. When an administration server is installed, this administrator's entry is automatically created locally (this administrator is not a user in the user directory).

administrator   A user with a defined set of administrative privileges. See also **configuration administrator**, **Directory Manager**, **administration server administrator**, **server administrator**, **message store administrator**, **top-level administrator**, **domain administrator**, **organization administrator**, **family group administrator**, **mail list owner**.

alias   An alternate name of an email address.

alias file   A file used to set aliases not set in a directory, such as the postmaster alias.

Allow filter   A Messaging Server access-control rule that identifies clients that are to be allowed access to one or more of the following services: POP, IMAP, or HTTP. See also **Deny filter**.

allowed attributes   The attributes that optionally can be present in entries using a particular object class, but are not required to be present. See also **attributes**, **required attributes**.

alternate address   A secondary address for an account, generally a variation on the primary address. In some cases it is convenient to have more than one address for a single account.

APOP   Authenticated Post Office Protocol. Similar to the Post Office Protocol (POP), but instead of using a plaintext password for authentication, it uses an encoding of the password together with a challenge string.

attributes   LDAP data is represented as attribute-value pairs. Any specific piece of information is associated with a descriptive attribute. See also **allowed attributes**, **required attributes**.

AUTH   An SMTP command enabling an SMTP client to specify an authentication method to the server, perform an authentication protocol exchange, and, if necessary, negotiate a security layer for subsequent protocol interactions.

authentication   (1) The process of proving the identity of a client user to iPlanet Messaging Server. (2) The process of proving the identity of iPlanet Messaging Server to a client or another server.

authentication certificate   A digital file sent from server to client or client to server to verify and authenticate the other party. The certificate ensures the authenticity of its holder (the client or server). Certificates are not transferable.

autoreply option file   A file used for setting options for autoreply, such as vacation notices.

AutoReply utility   A utility that automatically responds to messages sent to accounts with the AutoReply feature activated. Every account in iPlanet Messaging Server can be configured to automatically reply to incoming messages.

backbone   The primary connectivity mechanism of a distributed system. All systems that have connectivity to an intermediate system on the backbone are connected to each other. This does not prevent you from setting up systems to bypass the backbone for reasons of cost, performance, or security.

backend server   An email server whose only function is to store and retrieve email messages. Also called a message store server.

backup   The process of backing up the contents of folders from the message store to a backup device. See also **restore**.

banner   A text string displayed by a service such as IMAP when a client first connects to it.

base DN   A distinguished name entry in the directory from which searches will occur. Also known as a search base. For example, `ou=people, o=siroe.com`.

Berkeley DB   A transactional database store intended for high-concurrency read-write workloads, and for applications that require transactions and recoverability. iPlanet Messaging Server uses Berkeley databases for numerous purposes.

bind DN   A distinguished name used to authenticate to the Directory Server when performing an operation.

body   One part of an email message. Although headers and envelopes must follow a standard format, the body of the message has a content determined by the sender—the body can contain text, graphics, or even multimedia. Structured bodies follow the MIME standard.

class path   A path to directories and `.jar` files needed to run the servlet engine and servlet templates.

capability   A string, provided to clients, that defines the functionality available in a given IMAP service.

CA   Certificate Authority. An organization that issues digital certificates (digital identification) and makes its public key widely available to its intended audience.

Certificate Authority   See **CA**.

certificate-based authentication   Identification of a user from a digital certificate submitted by the client. See also **password authentication**.

certificate database   A file that contains a server's digital certificate(s). Also called a certificate file.

certificate name   The name that identifies a certificate and its owner.

channel   The fundamental MTA component that processes a message. A channel represents a connection with another computer system or group of systems. Each channel consists of one or more channel programs and an outgoing message queue for storing messages that are destined to be sent to one or more of the systems associated with the channel. See also **channel block**, **channel host table, channel program**.

channel block   A single channel definition. See also **channel host table**.

channel host table   The collective set of channel definitions.

channel program   Part of a channel that performs the following functions: (1) transmits messages to remote systems and deletes messages from the queue after they are sent and (2) accepts messages from remote systems placing them in the appropriate channel queues. See also **master channel program**, **slave channel program**.

cipher   An algorithm used in encryption.

ciphertext   Text that has been encrypted. Opposite of **cleartext**.

client   A software entity that requests services or information from a server.

CNAME record   A type of DNS record that maps a domain name alias to a domain name.

cleartext   Unencrypted text.

CLI   See **command line interface**.

client-server model   A computing model in which networked computers provide specific services to other client computers. Examples include the name-server/name-resolver paradigm of the DNS and file-server/file-client relationships such as NFS and diskless hosts.

cn   LDAP alias for common name.

command line interface   Command that can be executed from the command-line. Also called utility.

comment character   A character that, when placed at the beginning of a line, turns the line into a nonexecutable comment.

configuration administrator   Person who has administrative privileges to manage servers and configuration directory data in the entire iPlanet topology. The configuration administrator has unrestricted access to all resources in the iPlanet topology. This is the only administrator who can assign server access to other administrators. The configuration administrator initially manages administrative configuration until the administrators group and its members are in place.

Configuration Directory Server   A Directory Server that maintains configuration information for a server or set of servers.

configuration file   A file that contains the configuration parameters for a specific component of the iPlanet Messaging system.

congestion thresholds   A disk space limit that can be set by the system administrator that prevents the database from becoming overloaded by restricting new operations when system resources are insufficient.

Console   A GUI (graphical user interface) that enables you to configure, monitor, maintain, and troubleshoot many iPlanet components.

cookie   Text-only strings entered into the browser's memory automatically when you visit specific web sites. Cookies are programmed by the web page author. Users can either accept or deny cookies. Accepting the cookies allows the web page to load more quickly and is not a threat to the security of your machine.

CRAM-**MD5**   A lightweight standards track authentication mechanism documented in RFC 2195. It provides a fast (albeit somewhat weaker) alternative to TLS (SSL) when only the user's login password needs to be protected from network eavesdroppers.

cronjob   UNIX only. A task that is executed automatically by the cron daemon at a configured time. See also **crontab file**.

crontab file   UNIX only. A list of commands, one per line, that executes automatically at a given time.

daemon   A UNIX program that runs in the background, independent of a terminal, and performs a function whenever necessary. Common examples of daemon programs are mail handlers, license servers, and print daemons. On Windows NT machines, this type of program is called a service. See also **service**.

data store   A store that contains directory information, typically for an entire directory information tree.

DC Tree   Domain Component tree. A directory information tree that mirrors the DNS network syntax. An example of a distinguished name in a DC Tree would be `cn=billbob,dc=bridge,dc=net,o=internet`.

defragmentation   The Multipurpose Internet Mail Extensions (MIME) feature that enables a large message that has been broken down into smaller messages or fragments to be reassembled. A Message Partial Content-Type header field that appears in each of the fragments contains information that helps reassemble the fragments into one message. See also **fragmentation**.

Delegated Administrator Console   A web browser-based software console that allows domain administrators to add and modify users and groups to a hosted domain. Also allows end users to change their password, set message forwarding rules, set vacation rules, and list mail list subscriptions.

Delegated Administrator for Messaging and Collaboration. A set of interfaces (GUI and utilities) that allow domain administrators to add and modify users and groups to a hosted domain.

delegated administrator server   A daemon program that handles access control to the directory by hosted domains.

delete message   The act of marking a message for deletion. The deleted message is not removed from the message store until it is expunged or purged in a separate action by the user. See also **purge message**, **expunge message**.

delivery   See **message delivery**.

delivery status notification   A message giving status information about a message in route to a recipient. For example, a message indicating that delivery has been delayed because of network outages.

denial of service attack   A situation where an individual intentionally or inadvertently overwhelms your mail server by flooding it with messages. Your server's throughput could be significantly impacted or the server itself could become overloaded and nonfunctional.

Deny filter   A Messaging Server access-control rule that identifies clients that are to be denied access to one or more of the following services: POP, IMAP, or HTTP. See also **Allow filter**.

dereferencing an alias   Specifying, in a bind or search operation, that a directory service translate an alias distinguished name to the actual distinguished name of an entry.

DIGEST-MD5   A lightweight standards track authentication mechanism that is more secure then CRAM-MD5. Documented in RFC 2831 which also provides an option to protect the entire connection without the setup overhead of TLS (SSL).

directory context   The point in the directory tree information at which a search begins for entries used to authenticate a user and password for message store access. See also **base DN**.

directory entry   A set of directory attributes and their values identified by its distinguished name. Each entry contains an object class attribute that specifies the kind of object the entry describes and defines the set of attributes it contains.

directory information tree   The tree-like hierarchical structure in which directory entries are organized. Also called a DIT. DITs can be organized along the DNS (DC Trees) or Open Systems Interconnect networks (OSI trees).

directory lookup   The process of searching the directory for information on a given user or resource, based on that user or resource's name or other characteristic.

Directory Manager   User who has administrative privileges to the directory server database. Access control does not apply to this user (think of the directory manager as the directory's superuser).

directory schema   The set of rules that defines the data that can be stored in the directory.

Directory Server   The iPlanet directory service based on LDAP. See also **directory service**, **Lightweight Directory Access Protocol**, **Configuration Directory Server**, **User/Groups Directory Server**.

directory service   A logically centralized repository of information about people and resources within an organization. See also **Lightweight Directory Access Protocol**.

directory synchronization   The process of updating—that is, synchronizing—the MTA directory cache with the current directory information stored in the directory service. See also **MTA directory cache**.

disconnected state   The mail client connects to the server, makes a cache copy of selected messages, then disconnects from the server.

Dispatcher   The MTA component that handles connection requests for defined TCP ports. The Dispatcher is a multi-threaded connection dispatching agent that permits multiple multi-threaded servers to share responsibility for a given service. When using the Dispatcher, it is possible to have several multi-threaded SMTP server processes running concurrently.

distinguished name   The comma-separated sequence of attributes and values that specify the unique location of an entry within the directory information tree. Often abbreviated as DN.

distribution list   See **mail list**.

distribution list owner   See **mail list owner**.

DIT   See **directory information tree**.

DN   See **distinguished name**.

dn   LDAP alias for distinguished name. See also **distinguished name**.

DNS   See **Domain Name System**.

DNS alias   A host name that the DNS server recognizes as pointing to a different host—specifically a DNS CNAME record. Machines always have one real name, but they can have one or more aliases. For example, `www.siroe.domain` might be an alias that points to a real machine called `realthing.siroe.domain` where the server currently exists.

DNS database   A database of domain names (host names) and their corresponding IP addresses.

DNS domain   A group of computers whose host names share a common suffix, the domain name. Syntactically, an Internet domain name consists of a sequence of names (labels) separated by periods (dots), for example, `corp.mktng.siroe.com`. See also **domain**.

DNS spoofing   A form of network attack in which a DNS server has been subverted to provide false information.

document root   A directory on the server machine that contains files, images, and data that will be displayed to users accessing iPlanet Web Server.

domain   Resources under control of a single computer system. See also **administration domain**, **DNS domain**, **hosted domain**, **virtual domain**.

domain administrator   User who has administrative privileges to create, modify, and delete mail users, mail lists, and family accounts in a hosted domain by using the Delegated Administrator for Messaging and Collaboration GUI or CLIs. By default, this user can act as a message store administrator for all messaging servers in the topology.

domain alias   A domain entry that points to another domain. By using aliases, hosted domains can have several domain names.

domain hosting   The ability to host one or more domains on a shared messaging server. For example, the domains `siroe.com` and `sesta.org` might both be hosted on the `siroe.net` mail server. Users send mail to and receive mail from the hosted domain—the name of the mail server does not appear in the email address.

domain name   (1) A host name used in an email address. (2) A unique name that defines an administrative organization. Domains can contain other domains. Domain names are interpreted from right to left. For example, `siroe.com` is both the domain name of the Siroe Company and a subdomain of the top-level `com` domain. The `siroe.com` domain can be further divided into subdomains such as `corp.siroe.com`, and so on. See also **host name**, **fully-qualified domain name**.

Domain Name System (DNS)   A distributed name resolution software that allows computers to locate other computers on a network or the Internet by domain name. The system associates standard IP addresses with host names (such as `www.siroe.com`). Machines normally get this information from a DNS server. DNS servers provide a distributed, replicated, data query service for translating hostnames into Internet addresses. See also **A record**, **MX record**, **CNAME record**.

domain organization   A sub-domain below a hosted domain in the Organization Tree. Domain organizations are useful for companies that wish to organize their user and group entries along departmental lines.

domain part   The part of an email address to the right of the @ sign. For example, `siroe.com` is the domain part of the email address `dan@siroe.com`.

domain quota   The amount of space, configured by the system administrator, allocated to a domain for email messages.

domain rewrite rules   See **rewrite rules**.

domain template   The part of a rewrite rule that defines how the host/domain portion of an address is rewritten. It can include either a full static host/domain address or a single field substitution string, or both.

DSN   See **Delivery Status Notification**.

dsservd   A daemon that accesses the database files that hold the directory information, and communicates with directory clients using the LDAP protocol.

dssetup   A Directory Server preparation tool that makes an existing Directory Server ready for use by an iPlanet Messaging Server.

dynamic group   A mail group defined by an LDAP search URL. Users usually join the group by setting an LDAP attribute in their directory entry.

EHLO command   An SMTP command that queries a server to find out if the server supports extended SMTP commands. Defined in RFC 1869.

encryption   The process of disguising information so that it cannot be deciphered (decrypted) by anyone but the intended recipient who has the code key.

enterprise network   A network that consists of collections of networks connected to each other over a geographically dispersed area. The enterprise network serves the needs of a widely distributed company and is used by the company's mission-critical applications.

envelope   A container for transport information about the sender and the recipient of an email message. This information is not part of the message header. Envelopes are used by various email programs as messages are moved from place to place. Users see only the header and body of a message.

envelope field   A named item of information, such as `RCPT TO`, in a message envelope.

error handler   A program that handles errors. In Messaging Server, issues error messages and processes error action forms after the postmaster fills them out.

Error-Handler Action form   A form sent to the postmaster account that accompanies a received message that Messaging Server cannot handle. The postmaster fills out the form to instruct the server how to process the message.

error message   A message reporting an error or other situation. iPlanet Messaging Server generates messages in a number of situations, notably when it gets an email message that it can't handle. Others messages, called notification errors, are for informational purposes only.

ESMTP   See **Extended Simple Mail Transfer Protocol**.

ESP   Enterprise Service Provider.

ETRN   An SMTP command enabling a client to request that the server start the processing of its mail queues for messages that are waiting at the server for the client machine. Defined in RFC 1985.

expander   Part of an electronic mail delivery system that allows a message to be delivered to a list of addressees. Mail expanders are used to implement mail lists. Users send messages to a single address (for example, `hacks@somehost.edu`) and the mail expander takes care of delivery to the mailboxes in the list. Also called mail exploders. See also **EXPN**.

expansion   This term applies to the MTA processing of mail lists. The act of converting a message addressed to a mail list into enough copies for each mail list member.

EXPN   An SMTP command for expanding a mail list. Defined in RFC 821.

expunge message   The act of marking a message for deletion and then permanently removing it from the INBOX. See also **delete message**, **purge message**.

Extended Simple Mail Transfer Protocol (ESMTP)   An Internet message transport protocol. ESMTP adds optional commands to the SMTP command set for enhanced functionality, including the ability for ESMTP servers to discover which commands are implemented by the remote site.

extranet   The part of a company intranet that customers and suppliers can access. See also **intranet**.

facility   In a Messaging Server log-file entry, a designation of the software subsystem (such as Network or Account) that generated the log entry.

failover   The automatic transfer of a computer service from one system to another to provide redundant backup.

family group administrator   User who has administrative privileges to add and remove family members in a family group. This user can grant family group administrative access to other members of group.

firewall   A network configuration, usually both hardware and software, that forms a barrier between networked computers within an organization and those outside the organization. A firewall is commonly used to protect information such as a network's email, discussion groups, and data files within a physical building or organization site.

folder   A named collection of messages. Folders can contain other folders. Also called a mailbox. See also **personal folder**, **shared folder, INBOX**.

forwarding   See **message forwarding**.

FQDN   See **fully-qualified domain name**.

fragmentation   The Multipurpose Internet Mail Extensions (MIME) feature that allows the breaking up of a large message into smaller messages. See also **defragmentation**.

fully-qualified domain name (FQDN)   The unique name that identifies a specific Internet host. See also **domain name**.

gateway   The terms gateway and application gateway refer to systems that do translation from one native format to another. Examples include X.400 to/from RFC 822 electronic mail gateways. A machine that connects two or more electronic mail systems (especially dissimilar mail systems on two different networks) and transfers messages between them. Sometimes the mapping and translation can be complex, and it generally requires a store-and-forward scheme whereby the message is received from one system completely before it is transmitted to the next system after suitable translations.

greeting form   A message usually sent to users when an account is created for them. This form acts as confirmation of the new account and verification of its contents.

group   A group of LDAP mail entries that are organized under a distinguished name. Usually used as a mail list, but may also be used to grant certain administrative privileges to members of the group. See also **dynamic group**, **static group**.

group folders   These contain folders for shared and group folders. See also **shared folder**.

GUI   Graphical User Interface

HA   See **High Availability**.

hashdir   A command-line utility for determining which directory contains the message store for a particular user.

header   The portion of an email message that precedes the body of the message. The header is composed of field names followed by a colon and then values. Headers contain information useful to email programs and to users trying to make sense of the message. For example, headers include delivery information, summaries of contents, tracing, and MIME information; they tell whom the message is for, who sent it, when it was sent, and what it is about. Headers must be written according to RFC 822 so that email programs can read them.

header field   A named item of information, such as From: or To:, in a message header. Often referred to as a "header line".

High Availability   Enables the detection of a service interruption and provides recovery mechanisms in the event of a system failure or process fault. In addition, it allows a backup system to take over the services in the event of a primary system failure.

hop   A transmission between two computers.

host   The machine on which one or more servers reside.

hosted domain   An email domain that is outsourced by an ISP. That is, the ISP provides email domain hosting for an organization by operating and maintaining the email services for that organization. A hosted domain shares the same Messaging Server host with other hosted domains. In earlier LDAP-based email systems, a domain was supported by one or more email server hosts. With Messaging Server, many domains can be hosted on a single server. For each hosted domain, there is an LDAP entry that points to the user and group container for the domain. Hosted domains are also called virtual hosted domains or virtual domains. See also **domain**, **virtual domain**.

host name   The name of a particular machine within a domain. The host name is the IP host name, which might be either a "short-form" host name (for example, mail) or a fully qualified host name. The fully qualified host name consists of two parts: the host name and the domain name. For example, mail.siroe.com is the machine mail in the domain siroe.com. Host names must be unique within their domains. Your organization can have multiple machines named mail, as long as the machines reside in different subdomains; for example, mail.corp.siroe.com and mail.field.siroe.com. Host names always map to a specific IP address. See also **domain name**, **fully-qualified domain name**, **IP address**.

host name hiding   The practice of having domain-based email addresses that do not contain the name of a particular internal host.

HTTP   See **HyperText Transfer Protocol**.

hub   A host that acts as the single point of contact for the system. When two networks are separated by a firewall, for example, the firewall computer often acts as a mail hub.

HyperText Transfer Protocol   A standard protocol that allows the transfer of hypertext documents over the Web. iPlanet Messaging Server provides an HTTP service to support web-based email. See also **Messenger Express**.

IDENT   See **Identification Protocol**.

Identification Protocol   A protocol that provides a means to determine the identity of a remote process responsible for the remote end of a particular TCP connection. Defined in RFC 1413.

IMAP4   See **Internet Message Access Protocol Version 4**.

imsadmin commands   A set of command line utilities for managing domain administrators, users, and groups.

imsimta commands   A set of command line utilities for performing various maintenance, testing, and management tasks for the Message Transfer Agent (MTA).

INBOX   The name reserved for a user's default mailbox for mail delivery. INBOX is the only folder name that is case-insensitive. For example: INBOX, Inbox, and inbox are all valid names for a users default mailbox.

installation directory   The directory into which the binary (executable) files of a server are installed. For the Messaging Server, it is a subdirectory of the server root: *server-root*/bin/msg/. Se also **instance directory**, **server root**.

instance   A separately executable configuration of a server or other software entity on a given host. With a single installed set of binary files, it is possible to create multiple instances of iPlanet servers that can be run and accessed independently of each other.

instance directory   The directory that contains the files that define a specific instance of a server. For the Messaging Server, it is a subdirectory of the server root: *server-root*/msg-*instance*/, where *instance* is the name of the server as specified at installation. See also **installation directory**, **server root**.

Internet   The name given to the worldwide network of networks that uses TCP/IP protocols.

Internet Message Access Protocol Version 4 (IMAP4)   A standard protocol that allows users to be disconnected from the main messaging system and still be able to process their mail. The IMAP specification allows for administrative control for these disconnected users and for the synchronization of the users' message store once they reconnect to the messaging system.

Internet Protocol (IP)   The basic network-layer protocol on which the Internet and intranets are based.

internet protocol address   See **IP address**.

intranet   A network of TCP/IP networks within a company or organization. Intranets enable companies to employ the same types of servers and client software used for the World Wide Web for internal applications distributed over the corporate LAN. Sensitive information on an intranet that communicates with the Internet is usually protected by a firewall. See also **firewall**, **extranet**.

invalid user   An error condition that occurs during message handling. When this occurs, the message store sends a communication to the MTA, the message store deletes its copy of the message. The MTA bounces the message back to the sender and deletes its copy of the message.

IP   See **Internet Protocol**.

IP address   A set of numbers, separated by dots, such as `198.93.93.10`, that specifies the actual location of a machine on an intranet or the Internet. A 32-bit address assigned to hosts using TCP/IP.

iPlanet Setup   The installation program for all iPlanet servers and for iPlanet Console.

ISP   Internet Service Provider. A company that provides Internet services to its customers including email, electronic calendaring, access to the world wide web, and web hosting.

Job Controller   The MTA component responsible for scheduling and executing tasks upon request by various other MTA components.

key database   A file that contains the key pair(s) for a server's certificate(s). Also called a key file.

knowledge information   Part of the directory service infrastructure information. The directory server uses knowledge information to pass requests for information to other servers.

LDAP   See **Lightweight Directory Access Protocol**.

LDAP Data Interchange Format (LDIF)   The format used to represent Directory Server entries in text form.

LDAP filter   A method of specifying a set of entries, based on the presence of a particular attribute or attribute value.

LDAP referrals   An LDAP entry that consists of a symbolic link (referral) to another LDAP entry. An LDAP referral consists of an LDAP host and a distinguished name. LDAP referrals are often used to reference existing LDAP data so that this data does not have to be replicated. They are also used to maintain compatibility for programs that depend on a particular entry that may have been moved.

LDAP search string   A string with replaceable parameters that defines the attributes used for directory searches. For example, an LDAP search string of "uid=%s" means that searches are based on the user ID attribute.

LDAP Server   A software server that maintains an LDAP directory and services queries to the directory. The iPlanet Directory Services are implementations of an LDAP Server.

LDAP server failover   A backup feature for LDAP servers. If one LDAP server fails, the system can switch over to another LDAP server.

LDBM   LDAP Data Base Manager.

LDIF   See **LDAP Data Interchange Format**.

Legato Networker   A third-party backup utility distributed by Legato®.

level   A designation of logging verbosity, meaning the relative number of types of events that are recorded in log files. At a level of Emergency, for example, very few events are logged; at a level of Informational, on the other hand, very many events are logged.

Lightweight Directory Access Protocol (LDAP)   Directory service protocol designed to run over TCP/IP and across multiple platforms. A simplification of the X.500 Directory Access Protocol (DAP) that allows a single point of management for storage, retrieval, and distribution of information, including user profiles, mail lists, and configuration data across iPlanet servers. The iPlanet Directory Server uses the LDAP protocol.

listen port   The port that a server uses to communicate with clients and other servers.

local part   The part of an email address that identifies the recipient. See also **domain part**.

log directory   The directory in which all of a service's log files are kept.

log expiration   Deletion of a log file from the log directory after it has reached its maximum permitted age.

log rotation   Creation of a new log file to be the current log file. All subsequent logged events are to be written to the new current file. The log file that was the previous current file is no longer written to, but remains in the log directory.

lookup   Same as a search, using the specified parameters for sorting data.

mailbox   A place where messages are stored and viewed. See also **folder**.

mail client   The programs that help users send and receive email. This is the part of the various networks and mail programs that users have the most contact with. Mail clients create and submit messages for delivery, check for new incoming mail, and accept and organize incoming mail.

mail exchange record   See **MX record**.

mail list   A list of email addresses to which a message can be sent by way of a mail list address. Sometimes called a group.

mail list owner   A user who has administrative privileges to add members to and delete members from the mail list.

mail relay   A mail server that accepts mail from a MUA or MTA and relays it to the mail recipient's message store or another router.

mail router   See **mail relay**.

mailing list   See **mail list**.

mailing list owner   See **mail list owner.**

managed object   A collection of configurable attributes, for example, a collection of attributes for the directory service.

master channel program   A channel program that typically initiates a transfer to a remote system. See also **slave channel program**.

master directory server   The directory server that contains the data that will be replicated.

MD5   A message digest algorithm by RSA Data Security. MD5 can be used to produce a short digest of data that is unique with high probability. It is mathematically extremely hard to produce a piece of data that produces the same message digest email.

member   A user or group who receives a copy of an email addressed to a mail list. See also mail list, expansion, moderator, and owner.

message   The fundamental unit of email, a message consists of a header and a body and is often contained in an envelope while it is in transit from the sender to the recipient.

message access services   The protocol servers, software drivers, and libraries that support client access to the Messaging Server message store.

message delivery   The act that occurs when an MTA delivers a message to a local recipient (a mail folder or a program).

message forwarding   The act that occurs when an MTA sends a message delivered to a particular account to one or more new destinations as specified by the account's attributes. Forwarding may be configurable by the user. See also **message delivery**, **message routing**.

Message Handling System (MHS)   A group of connected MTAs, their user agents, and message stores.

message routing   The act of transferring a message from one MTA to another when the first MTA determines that the recipient is not a local account, but might exist elsewhere. Routing is normally configurable only by a network administrator. See also **message forwarding**.

message queue   The directory where messages accepted from clients and other mail servers are queued for delivery (immediate or deferred).

message quota   A limit defining how much disk space a particular folder can consume.

message store   The database of all locally delivered messages for a Messaging server instance. Messages can be stored on a single physical disk or stored across multiple physical disks.

message store administrator   User who has administrative privileges to manage the message store for a Messaging Server installation. This user can view and monitor mailboxes, and specify access control to the store. Using proxy authorization rights, this user can run certain utilities for managing the store.

message store partition   A message store or subset of a message store residing on a single physical file system partition.

message submission   The client User Agent (UA) transfers a message to the mail server and requests delivery.

Message Transfer Agent (MTA)   A specialized program for routing and delivering messages. MTAs work together to transfer messages and deliver them to the intended recipient. The MTA determines whether a message is delivered to the local message store or routed to another MTA for remote delivery.

Messaging Multiplexor   A specialized iPlanet Messaging Server that acts as a single point of connection to multiple mail servers, facilitating the distribution of a large user base across multiple mailbox hosts.

Messaging Server administrator   The administrator whose privileges include installation and administration of an iPlanet Messaging Server instance.

Messenger Express   A mail client that enables users to access their mailboxes through a browser-based (HTTP) interface. Messages, folders, and other mailbox information are displayed in HTML in a browser window. See also **webmail**.

Messenger Express Multiplexor   A proxy messaging server that acts as a Multiplexor; it allows you to connect to the HTTP service of iPlanet Messaging Server (Messenger Express). The Messenger Express Multiplexor facilitates distributing mail users across multiple server machines.

MHS   See **Message Handling System**.

MIME   See **Multipurpose Internet Mail Extension**.

MMP   See **Messaging Multiplexor**.

moderator   A person who first receives all email addressed to a mail list before (A) forwarding the message to the mail list, (B) editing the message and then forwarding it to the mail list, or (C) not forwarding the message to the mail list. See also **mail list**, **expansion**, **member**.

MTA   See **Message Transfer Agent**.

MTA configuration file   The file (`imta.cnf`) that contains all channel definitions for the Messaging Server as well as the rewrite rules that determine how addresses are rewritten for routing. See also **channel**, **rewrite rules**.

MTA directory cache   a snapshot of the directory service information about users and groups required by the MTA to process messages. See also **directory synchronization**.

MTA hop   The act of routing a message from one MTA to another.

MUA   See **user agent**.

Multiplexor   See **Messaging Multiplexor**.

Multipurpose Internet Mail Extension (MIME)   A protocol you can use to include multimedia in email messages by appending the multimedia file in the message.

MX record   Mail Exchange Record. A type of DNS record that maps one host name to another.

name resolution   The process of mapping an IP address to the corresponding name. See also **DNS**.

namespace   The tree structure of an LDAP directory. See also **directory information tree**.

naming attribute   The final attribute in a directory information tree distinguished name. See also **relative distinguished name**.

naming context   A specific suffix of a directory information tree that is identified by its DN. In iPlanet Directory Server, specific types of directory information are stored in naming contexts. For example, a naming context which stores all entries for marketing employees in the Siroe Corporation at the Boston office might be called `ou=mktg, ou=Boston, o=siroe, c=US`.

NDN   See **nondelivery notification**.

network manager   A program that reads, formats, and displays SNMP data. Also called an SNMP client.

next-hop list   A list of adjacent systems a mail route uses to determine where to transfer a message. The order of the systems in the next-hop list determines the order in which the mail route transfers messages to those systems.

node   An entry in the DIT.

nondelivery notification   During message transmission, if the MTA does not find a match between the address pattern and a rewrite rule, the MTA sends a nondelivery report back to the sender with the original message.

notary messages   Nondelivery notifications (NDNs) and delivery status notifications (DSNs) that conform to the NOTARY specifications RFC 1892.

notification message   A type of message, sent by the Messaging Server providing the status of message delivery processing, as well as the reasons for any delivery problems or outright failures. It is for information al purposes and requires no action from the postmaster. See also **delivery status notifications**.

object class   A template specifying the kind of object the entry describes and the set of attributes it contains. For example, iPlanet Directory Server specifies an `emailPerson` object class which has attributes such as `commonname`, `mail` (email address), `mailHost`, and `mailQuota`.

off-line state   A state in which the mail client downloads messages from a server system to a client system where they can be viewed and answered. The messages might or might not be deleted from the server.

online state   A state in which messages remain on the server and are remotely responded to by the mail client.

organization administrator   User who has administrative privileges to create, modify, and delete mail users and mail lists in an organization or suborganization by using the Delegated Administrator for Messaging and Collaboration GUI or CLIs.

OSI tree   A directory information tree that mirrors the Open Systems Interconnect network syntax. An example of a distinguished name in an OSI tree would be `cn=billt,o=bridge,c=us`.

partition   See **message store partition**.

password authentication   Identification of a user through user name and password. See also **certificate**-**based authentication**.

pattern   A string expression used for matching purposes, such as in Allow and Deny filters.

permanent failure   An error condition that occurs during message handling. When this occurs, the message store deletes its copy of an email message. The MTA bounces the message back to the sender and deletes its copy of the message.

personal folder   A folder that can be read only by the owner. See also **shared folder**.

plaintext   Refers to a method for transmitting data. The definition depends on the context. For example, with SSL plaintext passwords are encrypted and are therefore not sent as cleartext. With SASL, plaintext passwords are hashed, and only a hash of the password is sent as text.   See also **SSL** and **SASL**.

plaintext authentication   See **password authentication**.

POP3   See **Post Office Protocol Version 3**.

port number   A number that specifies an individual TCP/IP application on a host machine, providing a destination for transmitted data.

postmaster account   An alias for the email group and email addresses who receive system-generated messages from the Messaging Server. The postmaster account must point to a valid mailbox or mailboxes.

Post Office Protocol Version 3 (POP3) A protocol that provides a standard delivery method and that does not require the message transfer agent to have access to the user's mail folders. Not requiring access is an advantage in a networked environment, where often the mail client and the message transfer agent are on different computers.

process A self-contained, fully functional execution environment set up by an operating system. Each instance of an application typically runs in a separate process. See also **thread**.

protocol A formal description of messages to be exchanged and rules to be followed for two or more systems to exchange information.

provisioning The process of adding, modifying or deleting entries in the iPlanet Directory Server. These entries include users and groups and domain information.

proxy The mechanism whereby one system "fronts for" another system in responding to protocol requests. Proxy systems are used in network management to avoid having to implement full protocol stacks in simple devices, such as modems.

public key encryption A cryptographic method that uses a two-part key (code) that is made up of public and private components. To encrypt messages, the published public keys of the recipients are used. To decrypt the messages, the recipients use their unpublished private keys known only to them.

purge message The process of permanently removing messages that have been deleted and are no longer referenced in user and group folders and returning the space to the message store file system. See also **delete message**, **expunge message**.

queue See **message queue**.

RC2 A variable key-size block cipher by RSA Data Security.

RC4 A stream cipher by RSA Data Security. Faster than RC2.

RDN Relative distinguished name. The name of the actual entry itself, before the entry's ancestors have been appended to the string to form the full distinguished name.

referral   A process by which the directory server returns an information request to the client that submitted it, with information about the Directory Service Agent (DSA) that the client should contact with the request. See also **knowledge information**.

regular expression   A text string that uses special characters to represent ranges or classes of characters for the purpose of pattern matching.

relative distinguished name   See **RDN**.

relaying   The process of passing a message from one messaging server to another messaging server.

replica directory server   The directory that will receive a copy of all or part of the data.

required attributes   Attributes that must be present in entries using a particular object class. See also **allowed attributes**, **attributes**.

restore   The process of restoring the contents of folders from a backup device to the message store. See also **backup**.

reverse DNS lookup   The process of querying the DNS to resolve a numeric IP address into the equivalent fully qualified domain name.

rewrite rules   Also known as domain rewrite rules. A tool that the MTA uses to route messages to the correct host for delivery. Rewrite rules perform the following functions: (1) extract the host/domain specification from an address of an incoming message, (2) match the host/domain specification with a rewrite rule pattern, (3) rewrite the host/domain specification based on the domain template, and (4) decide which channel queue the message should be placed in.

RFC   Request For Comments. The document series, begun in 1969, describes the Internet suite of protocols and related experiments. Not all (in fact very few) RFCs describe Internet standards, but all Internet standards are published as RFCs. See `http://www.imc.org/rfcs.html`.

root entry   The top-level entry of the directory information tree (DIT) hierarchy.

router   A system responsible for determining which of several paths network traffic will follow. It uses a routing protocol to gain information about the network, and algorithms to choose the best route based on several criteria known as "routing matrix." In OSI terminology, a router is a Network Layer intermediate system. See also **gateway**.

routing   See **message routing**.

safe file system   A file system performs logging such that if a system crashes it is possible to rollback the data to a pre-crash state and restore all data. An example of a safe file system is Veritas File System, VxFS.

SASL   See **Simple Authentication and Security Layer**.

schema   Definitions—including structure and syntax—of the types of information that can be stored as entries in iPlanet Directory Server. When information that does not match the schema is stored in the directory, clients attempting to access the directory might be unable to display the proper results.

SCM   See **Service Control Manager**.

search base   See **base DN**.

Secure Sockets Layer (SSL)   A software library establishing a secure connection between two parties (client and server).

security-module database   A file that contains information describing hardware accelerators for SSL ciphers. Also called `secmod`.

sendmail   A common MTA used on UNIX machines. In most applications, iPlanet Messaging Server can be used as a drop-in replacement for sendmail.

server administrator   Person who performs server management tasks. The server administrator provides restricted access to tasks for a particular server, depending upon task ACIs. The configuration administrator must assign user access to a server. Once a user has server access permissions, that user is a server administrator who can provide server access permissions to users.

server instance   The directories, programs, and utilities representing a specific server software installation.

server root   The directory into which all iPlanet servers associated with a given Administration Server on a given host are installed. Typically designated *server-root*. See also **installation directory**, **instance directory**.

server side rules (SSR)   A set of rules for enabling server-side filtering of mail. Based on the Sieve mail filtering language.

service   (1) A function provided by a server. For example, iPlanet Messaging Server provides SMTP, POP, IMAP, and HTTP services. (2) A background process on Windows NT that does not have a user interface. iPlanet servers on Windows NT platforms run as services. Equivalent to **daemon** on UNIX platforms.

Service Control Manager   Windows NT administrative program for managing services.

servlet   server-side Java programs that Web servers run to generate content in response to a client request. Servlets are similar to applets in that they run on the server-side but do not use a user interface.

session   An instance of a client-server connection.

shared folder   A folder that can be read by more than one person. Shared folders have an owner who can specify read access to the folder and who can delete messages from the shared folder. The shared folder can also have a moderator who can edit, block, or forward incoming messages. Only IMAP folders can be shared. See also **personal folder**.

Sieve   A proposed language for filtering mail.

Simple Authentication and Security Layer (SASL)   A means for controlling the mechanisms by which POP, IMAP or SMTP clients identify themselves to the server. iPlanet Messaging Server support for SMTP SASL use complies with RFC 2554 (ESMTP AUTH). SASL is defined in RFC 2222.

Simple Mail Transfer Protocol (SMTP)   The email protocol most commonly used by the Internet and the protocol supported by the iPlanet Messaging Server. Defined in RFC 821, with associated message format descriptions in RFC 822.

SIMS   Sun Internet Mail Server.

single field substitution string   In a rewrite rule, part of the domain template that dynamically rewrites the specified address token of the host/domain address. See also **domain template**.

single sign-on   The ability for a user to authenticate once and gain access to multiple services (mail, directory, file services, and so on).

SIZE   An SMTP extension enabling a client to declare the size of a particular message to a server. The server may indicate to the client that it is or is not willing to accept the message based on the declared message size; the server can declare the maximum message size it is willing to accept to a client. Defined in RFC 1870.

slave channel program   A channel program that accepts transfers initiated by a remote system. See also **master channel program**.

smart host   The mail server in a domain to which other mail servers forward messages if they do not recognize the recipients.

SMTP   See **Simple Mail Transfer Protocol**.

SMTP AUTH   See **AUTH**.

sn   Aliased directory attribute for surname.

spoofing   A form of network attack in which a client attempting to access or send a message to a server misrepresents its host name.

SSL   See **Secure Sockets Layer**.

SSR   See **Server Side Rules**.

static group   A mail group defined statically by enumerating each group member. See also **dynamic group**.

subdomain   A portion of a domain. For example, in the domain name `corp.siroe.com`, `corp` is a subdomain of the domain `siroe.com`. See also **host name**, **fully-qualified domain name**.

subnet   The portion of an IP address that identifies a block of host IDs.

subordinate reference   The naming context that is a child of the naming context held by your directory server. See also **knowledge information**.

synchronization   (1) The update of data by a master directory server to a replica directory server. (2) The update of the MTA directory cache.

TCP   See **Transmission Control Protocol**.

TCP/IP   See **Transmission Control Protocol/Internet Protocol**.

thread   A lightweight execution instance within a process.

TLS   See **Transport Layer Security**.

top-level administrator   User who has administrative privileges to create, modify, and delete mail users, mail lists, family accounts, and domains in an entire Messaging Server namespace by using the Delegated Administrator for Messaging and Collaboration GUI or CLIs. By default, this user can act as a message store administrator for all messaging servers in the topology.

transient failure   An error condition that occurs during message handling. The remote MTA is unable to handle the message when it's delivered, but may be able to later. The local MTA returns the message to the queue and schedules it for retransmission at a later time.

Transmission Control Protocol (TCP)   The basic transport protocol in the Internet protocol suite that provides reliable, connection-oriented stream service between two hosts.

Transmission Control Protocol/Internet Protocol (TCP/IP)   The name given to the collection of network protocols used by the Internet protocol suite. The name refers to the two primary network protocols of the suite: TCP (Transmission Control Protocol), the transport layer protocol, and IP (Internet Protocol), the network layer protocol.

Transport Layer Security (TLS).   The standardized form of SSL. See also **Secure Sockets Layer**.

transport protocols   Provides the means to transfer messages between MTAs, for example SMTP and X.400.

UA   See **user agent**.

UBE   See **Unsolicited Bulk Email**.

UID   (1) User identification. A unique string identifying a user to a system. Also referred to as a userID. (2) Aliased directory attribute for userID (login name).

unified messaging   The concept of using a single message store for email, voicemail, fax, and other forms of communication. iPlanet Messaging Server provides the basis for a complete unified messaging solution.

Unsolicited Bulk Email (UBE)   Unrequested and unwanted email, sent from bulk distributors, usually for commercial purposes.

upper reference   Indicates the directory server that holds the naming context above your directory server's naming context in the directory information tree (DIT).

user account   An account for accessing a server, maintained as an entry on a directory server.

user agent (UA)   The client component, such as Netscape Communicator, that allows users to create, send, and receive mail messages.

User/Groups Directory Server   A Directory Server that maintains information about users and groups in an organization.

user entry or user profile   Fields that describe information about each user, required and optional, examples are: distinguished name, full name, title, telephone number, pager number, login name, password, home directory, and so on.

user folders   A user's email mailboxes.

user quota   The amount of space, configured by the system administrator, allocated to a user for email messages.

UUCP   UNIX to UNIX Copy Program. A protocol used for communication between consenting UNIX systems.

vanity domain   A domain name associated with an individual user—not with a specific server or hosted domain. A vanity domain is specified by using the `MailAlternateAddress` attribute. The vanity domain does not have an LDAP entry for the domain name. Vanity domains are useful for individuals or small organizations desiring a customized domain name, without the administration overhead of supporting their own hosted domain. Also called custom domain.

/var/mail   A name often used to refer to Berkeley-style inboxes in which new mail messages are stored sequentially in a single, flat text file.

Veritas Cluster Server   High availability clustering software from Veritas Software with which iPlanet Messaging Server can integrate.

virtual domain   (1) An ISP hosted domain. (2) A domain name added by the Messaging Multiplexor to a client's user ID for LDAP searching and for logging into a mailbox server. See also **domain**, **hosted domain**.

VRFY   An SMTP command for verifying a user name. Defined in RFC 821.

Web server   A software program or server computer equipped to offer World Wide Web access. A Web server accommodates requests from users, retrieves requested files or applications, and issues error messages.

webmail   A generic term for browser-based email services. A browser-based client—known as a "thin" client because more processing is done on the server—accesses mail that is always stored on a server. See also **Messenger Express**.

wildcard   A special character in a search string that can represent one or more other characters or ranges of characters.

workgroup   Local workgroup environment, where the server performs its own routing and delivery within a local office or workgroup. Interdepartmental mail is routed to a backbone server. See also **backbone**.

X.400   A message handling system standard.

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