

Installation Guide for Windows NT

iPlanet™ Messaging Server

Release 5.2

February 2002

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About This Guide

This guide explains how to install iPlanet™ Messaging Server 5.2 for Windows NT and its accompanying software components. 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 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 to the newly installed 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
- Netscape Administration Server
- Netscape Directory Server and LDAP
- Netscape Console
- Windows NT Administration

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 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 Messaging Server installation and will show you how to respond to these questions in order to get the appropriate installation.

- Chapter 4, “Installing the Messaging Multiplexor.”

This chapter contains detailed instructions for installing and starting the Messaging Multiplexor. It also contains sample configuration files. Additional information about the Messaging Multiplexor can be found in the *iPlanet Messaging Server Administrator's Guide* and the *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 iPlanet Messaging Server, you can configure this version of Directory Server to work with Messaging Server by following these instructions.

- Appendix B, “Using 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 iPlanet Messaging Server 5.1 to 5.2.

Document Conventions

In this guide, file and directory paths are given in the Windows format (with back slashes separating directory names). If you reference other iPlanet Messaging Server documentation, you may notice that UNIX conventions designate file and directory paths (with front slashes separating directories).

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`



In this example, `setup` is what you would type at the command prompt, 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 `c:\iplanet\server5` and use the server instance `tango`, the actual path is:

```
c:\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
```

Where to Find Related Information

In addition to this guide, 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 Message Server Migration Guide*
- *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 Messaging Server 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>

Where to Find This Book Online

Preparing for Installation

This chapter contains the following sections to help you prepare for a Windows NT 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
- Installation 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 the 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:

- Messaging Server
- iPlanet Web Server Enterprise Edition 6.0 SP2 (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 43 for more information.

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.

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 the 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 Windows NT Server 4.0 with Service Pack 6A (SP6A). This guide will focus on the Windows NT installation. Please refer to *iPlanet Messaging Server Installation Guide for UNIX* for Solaris and HP-UX installations.

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. Refer to the *iPlanet Messaging Server Delegated Administrator for Messaging Installation and Administration Guide*.

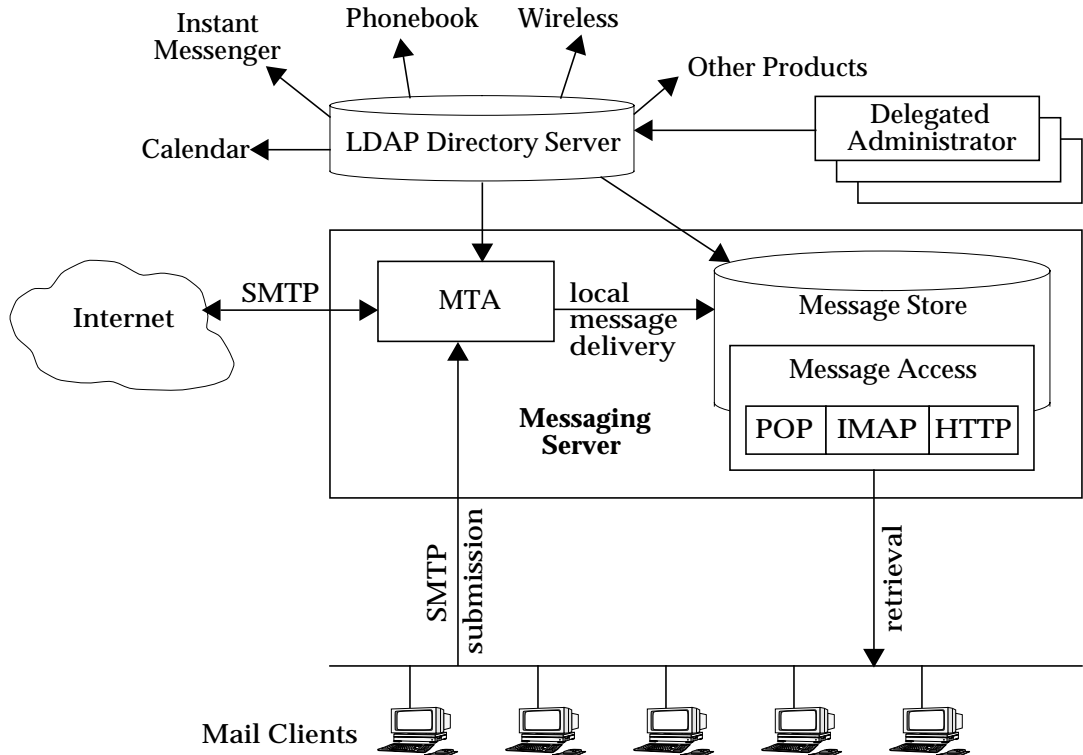
For Messenger Express access, Messaging Server requires a JavaScript-enabled browser. For optimal performance, iPlanet recommends using the following browsers:

- 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 and components 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. :

- Netscape Directory Server
- Netscape Directory Server Console

For information on iPlanet Directory Server 5.1, see Appendix A, “Installing iPlanet Directory Server 5.1.”

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-slaped` 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. It is important to note that, unlike the UNIX version of Messaging Server, the Windows NT version does not have a High Availability model. The following components make up the Messaging applications:

- iPlanet Message Store and Message Access (MSMA)
- iPlanet Message Transfer Agent (MTA)
- iPlanet Messaging Multiplexor (MMP)
- 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, 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 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 4, “Installing the Messaging Multiplexor.”

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
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 any port number is in use), these port numbers can be changed:

- POP3 (default 110)
- IMAP4 (default: 143)
- SMTP (default: 25) - If you have an SMTP server running on port 25 (like Microsoft Exchange), you will need to modify your port settings. You can either shut down that server, so you can run Messaging Server on port 25, or you can select Custom Installation to specify a different SMTP port for Messaging Server. See “Types of Installations” on page 30 for more information on Custom Installation.

The Administration Server must have Administrator privileges 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 33.

When and Where to Install each Product

Although the Directory Server is included, you may choose to use an existing Directory Server. If you do so, you must run `ims_dssetup.pl` (See “Running the `ims_dssetup` Script” on page 38.) 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 Messaging Server can be installed on a separate machine. Since the existence of the Web Server is required for Delegated Administrator for Messaging, you must install the Web Server before you install the Delegated Administrator for Messaging.

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

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

Required Information for the iPlanet Delegated Administrator for Messaging Installation

The Delegated Administrator installation requires information from the Messaging Server installation; make sure you record this information accurately before or during Messaging Server installation in Table 1-2 on page 33. Relevant iPlanet Delegated Administrator information to note during Messaging installation includes:

- LDAP URL of the Users and Groups Directory Server
- Bind DN and Password of the Directory Manager
- Messenger Express (Webmail) port in TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express (Webmail)
- Login ID and Password for the Service Administrator (also known as the Top-Level Administrator for the Delegated Administrator)
- Messaging Server Host and Domain Names
- Host name and Port of the iPlanet Delegated Administrator for Messaging Web Server

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.

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.pl` to configure it as described in “Running the `ims_dssetup` Script” on page 38.

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. In this way, 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 by four basic methods:

- **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 require that you choose or enter the value you wish 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 advance 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 41.

Installation Guidelines

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

- **Windows NT System Account.** On Windows NT, you can run the Netscape servers logged in as any valid user. However, you will want to run the servers under the system account (logged on as Administrator) to ensure that you have all account privileges required to manage the servers. Superuser privileges (Administrator) are required for iPlanet Messaging 5.2 installations.
- **Host and domain names on Windows NT.** iPlanet installation utilities assume that your host, domain names, and DNS servers are correctly defined in your network settings in your Control Panel. Make sure that you have the `hostname` defined in your network settings.

- **Static IP address.** For Windows NT, you cannot install Messaging Server with DHCP (Dynamic Host Configuration Protocol). You must have a static IP address prior to installation. To find your IP address, type `ipconfig` at the command prompt.
- **Server-Root Directory.** Messaging, Directory, 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. Messaging Server will be installed in the default *server-root* directory unless you specify otherwise in the installation program. The default *server-root* directory for Messaging Server is:

```
c:\iplanet\server5
```

NOTE Be sure not to use any spaces in the *server-root*. See the following example:

```
C:\Program Files\iPlanet\Server5
```

In this example, there is a space between `Program Files`, therefore there will be installation problems if this *server-root* directory path is used.

During installation, if the *server-root* directory resides on a FAT partition, a warning message will appear, indicating that you should choose a *server-root* in an NTFS partition.

- **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.
- **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 4, “Installing the Messaging Multiplexor” for more information.

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, etc.) as described in the Table 1-2 on page 33.
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.pl` script on this existing Directory Server before you install Messaging Server. For more information, see "Running the `ims_dssetup` Script" on page 38.
 - b. If you do not have an existing Directory Server or you choose not to use 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` script; this is only used for a pre-existing Directory Server to prepare it for the Messaging Server installation. See "Running the `ims_dssetup` Script" on page 38 for instructions on how to run `ims_dssetup.pl`.

4. Make sure that the install files are available, either from the product CD or downloaded from the iPlanet Web site. See "Transferring Messaging Server Installation Files" on page 36 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: c:\temp\msg51install <i>install-binaries:</i> _____
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 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 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: _____
Web Server Configuration Directory	Delegated Administrator for Messaging Product Installation	Example: c:\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.”

- Installation Readiness
- Transferring Messaging Server Installation Files
- Running the `ims_dssetup` Script
- 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 24 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 30 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 record your installation and configuration values in the installation checklist in Table 1-2 on page 33?

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. Download and unzip the zipped archive of Messaging Server from:

<http://www.iplanet.com/downloads>.

1. Unzip the `m52DIU.zip` archive.
2. Create a directory (such as `c:\tmp\msg52`) on the machine that will host Messaging Server and copy the archive files to that directory.

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 archive `\ntx86`. 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 Windows NT version of Messaging Server if you are migrating your users and groups from Netscape Messaging System. Refer to the *iPlanet Messaging Server Migration Guide* for more information.

2. Copy the `ims_dssetup` archive (on CD: `\ntx86\iMS\msg`) 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.pl` on both directory servers.

Running the ims_dssetup Script

This section provides instructions on how to run the `ims_dssetup.pl` script 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 `ims_dssetup.pl` script 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` script 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 `c:\server-root\install` directory of the existing Directory Server installation. It is recommended that you use this version of the Perl script.

2. Enter `y` to continue,

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

```
This tool prepares your directory server and 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 [c:\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 for iMS[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.pl` script is located:

Please enter the schema directory
[`c:\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           : c:\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     : c:\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 directory where the iPlanet Messaging Server files (such as `c:\temp\msg5install`) reside, contains the `setup.exe` program.

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
<code>-s</code>	Silent installation mode. This parameter must be used in conjunction with the <code>-f file</code> parameter.
<code>-f file</code>	Specify file as the silent installation script. This parameter must be used in conjunction with <code>-s</code> parameter.
<code>-k</code>	Keep the installation cache. This parameter cannot be used with the <code>-s</code> parameter.

To run `setup`, follow these steps:

1. Login as Administrator.

You must have superuser privileges (logged in as Administrator) to run the installation program.

2. Run the `setup` command from the binary directories, using optional parameters (listed above) if necessary.

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 `c:\server-root\setup` directory. For example, if you installed the server into `c:\iplanet\server5`, the cache file for that installation is:

```
c:\iplanet\server5\setup\install.inf
```

To use the cache file for a fast installation of another Messaging Server 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 40.). For example:

```
setup -s -f c:\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 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` script against that existing Directory Server to prepare it for the Messaging Server installation. For more information, see “Configuring an Existing Directory Server” on page 28 and “Running the `ims_dssetup` Script” on page 38.

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 in the Table 1-2 on page 33; 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 27 for more information.

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 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 instruction provided below if you are installing Messaging and Directory Servers on the same machine:

1. Go to the directory where you downloaded the installation files and click on the `setup.exe` program.
2. Run the `setup` program to begin installation. See “Running the Setup Program” on page 40 for more information.
3. Provide answers for the following questions as described in Chapter 3, “Installation Questions.”
 - Question 1: Welcome Screen
 - Question 2: License Agreement
 - Question 3: Select Server or Console Installation (Choose “iPlanet Servers”)
 - Question 4: Installation Type (Choose “Custom Installation”)
 - Question 5: Installation Location (server-root)
 - Question 6: iPlanet Server Products Components (select all the components on this screen.)
 - Question 7: LDAP URL of the Configuration Directory Server (Choose “This instance will be the configuration directory server.”)
 - Question 8: LDAP URL of the Users and Groups Directory Server (Choose “Store data in this directory server.”)
 - Question 9: Directory Server Settings
 - Question 10: Netscape Configuration and Directory Server Administrator
 - Question 14: Administration Domain
 - Question 15: Bind DN and Password of the Directory Manager
 - Question 16: Directory Server Replication
 - Question 17: Populate Directory Server with Sample Data
 - Question 18: Disable Schema Checking (Uncheck “Disable Schema Checking”)
 - Question 19: Administration Server IP Address

- Question 20: Administration Server Port
- Question 21: Unique Identifier for this Messaging Server
- Question 22: Messaging Server Host and Domain Names
- Question 23: Default Domain and Organization for the Messaging Server
- Question 24: Distinguished Name and Password of the Directory Manager
- Question 25: Host name and Port of the iPlanet Delegated Administrator for Messaging Web Server
- Question 26: Messaging Server Firewall
- Question 27: Customizable Root of Domain Component Tree
- Question 28: Primary Message Store Directory
- Question 29: TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express (Webmail)
- Question 30: Login ID and Password for the Service Administrator
- Question 31: Messaging Server Postmaster Address
- Question 32: Configuration Summary

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 an existing Configuration and Users and Groups Directory Servers.

1. Go to the directory where you downloaded the installation files and click on the `setup.exe` program.
2. Run the `setup` program to begin the installation. See “Running the Setup Program” on page 40 for more information.
3. Provide answers for the following questions as described in Chapter 3, “Installation Questions.”
 - Question 1: Welcome Screen
 - Question 2: License Agreement
 - Question 3: Select Server or Console Installation (Choose “iPlanet Servers”)
 - Question 4: Installation Type (Choose “Custom Installation”)
 - Question 5: Installation Location (server-root)
 - Question 6: iPlanet Server Products Components (Choose all component options except option 2 “Netscape Directory Suite”)
 - Question 19: Administration Server IP Address
 - Question 20: Administration Server Port (Choose an Administration Server Port number that is different the Administration Server Port of the Directory Server. Record this port number in the Table 1-2 on page 33 as you will need it for the iPlanet Delegated Administrator for Messaging installation.)
 - Question 11: Configuration Administrator
 - Question 12: Server Configuration Directory
 - Question 13: Administration Domain in Server Configuration Directory
 - Question 21: Unique Identifier for this Messaging Server
 - Question 22: Messaging Server Host and Domain Names
 - Question 23: Default Domain and Organization for the Messaging Server

- Question 24: Distinguished Name and Password of the Directory Manager
- Question 25: Host name and Port of the iPlanet Delegated Administrator for Messaging Web Server
- Question 26: Messaging Server Firewall
- Question 27: Customizable Root of Domain Component Tree
- Question 28: Primary Message Store Directory
- Question 29: TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express (Webmail)
- Question 30: Login ID and Password for the Service Administrator
- Question 31: Messaging Server Postmaster Address
- Question 32: Configuration Summary

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 and click on the `setup.exe` program.
2. Run the `setup` program to begin the installation. See “Running the Setup Program” on page 40 for more information.
3. Provide answers for the following questions as described in Chapter 3, “Installation Questions.”
 - Question 1: Welcome Screen
 - Question 2: License Agreement
 - Question 3: Select Server or Console Installation (Select “iPlanet Servers”)
 - Question 4: Installation Type (Choose “Custom Installation”)
 - Question 5: Installation Location (server-root)
 - Question 6: iPlanet Server Products Components (Choose all component options)
 - Question 7: LDAP URL of the Configuration Directory Server (Choose “This instance will be the configuration directory server.”)
 - Question 8: LDAP URL of the Users and Groups Directory Server (Choose “Store data in an existing directory server.”)
 - Question 9: Directory Server Settings (Use the configuration server settings of Configuration Directory Server.)
 - Question 10: Netscape Configuration and Directory Server Administrator
 - Question 14: Administration Domain
 - Question 15: Bind DN and Password of the Directory Manager
 - Question 16: Directory Server Replication (Click on “Do not configure as a Supplier” and “Do not configure as a Consumer.”)
 - Question 17: Populate Directory Server with Sample Data

- Question 18: Disable Schema Checking (Uncheck “Disable Schema Checking.”)
- Question 19: Administration Server IP Address
- Question 20: Administration Server Port (Choose an Administration Server Port number that is different the Administration Server Port of the Directory Server. Record this port number in the Table 1-2 on page 33 as you will need it for the iPlanet Delegated Administrator for Messaging installation.)
- Question 21: Unique Identifier for this Messaging Server
- Question 22: Messaging Server Host and Domain Names
- Question 23: Default Domain and Organization for the Messaging Server
- Question 24: Distinguished Name and Password of the Directory Manager
- Question 25: Host name and Port of the iPlanet Delegated Administrator for Messaging Web Server
- Question 26: Messaging Server Firewall
- Question 27: Customizable Root of Domain Component Tree
- Question 28: Primary Message Store Directory
- Question 29: TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express (Webmail)
- Question 30: Login ID and Password for the Service Administrator
- Question 31: Messaging Server Postmaster Address
- Question 32: Configuration Summary

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` Script,” on page 38).
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 *iPlanet 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 43 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/significant-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 43 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:

- Installation Dialog Boxes by Installation Type
- Common Questions
- Component Questions
- Directory Server Questions
- Administration Server Questions
- Messaging Server Questions

Installation Dialog Boxes by Installation Type

The following table shows the various installation dialog boxes you may encounter, depending on the type of installation you perform. For more details, refer to “Types of Installations” on page 30.

Table 3-1 Installation Dialog Boxes

Dialog Box	Express	Typical	Custom
Welcome	X	X	X
Software License Agreement	X	X	X
Select Server or Console Installation	X	X	X
By default, the Netscape Servers radio button is clicked.			
Type of Installation	X	X	X
By default, the Typical radio button is clicked.			
Location of Installation	X	X	X
The default install directory is: c:\iPlanet\Server5			
Components to Install	X	X	X
By default, the following components are selected:			
<ul style="list-style-type: none"> • Netscape Server Family Core Components • Directory Suite • Administration Services • iPlanet Messaging Server 5.2 			
Directory Server 4.1 - 1		X	X
The Directory Suite is installed on the same machine as iPlanet Messaging Server by default. The Directory Server instance acts as a “Configuration Server” for the iPlanet Messaging Server.			
Directory Server 4.1 - 2		X	X
The Configuration Server stores data such as user and group information by default.			

Table 3-1 Installation Dialog Boxes (Continued)

Dialog Box	Express	Typical	Custom
Directory Server 4.1 Server Settings		X	X
In this Dialog box, you will enter the following details:			
<ul style="list-style-type: none"> • Server Identifier - the default server identifier is the machine name where the installation will run. • Server Port - The default server port for communication is 389. • User and Group Suffix - The default suffix for the server is <code>o=Windows NT</code>, where <code>domainname</code> is the DNS domain name for the machine. This corresponds to <code>o=isp</code> in the <i>iPlanet Messaging Server 5.0 Provisioning Guide</i>. 			
Directory Server 4.1 Netscape configuration directory server administrator	X	X	X
In this Dialog box, you will enter the Administrator user name and password for the Configuration Server. The default Administrator user name is "admin."			
Configuration Administrator	X	X	X
You are asked to specify your existing Configuration Administrator ID and Configuration ID password if you install Messaging Server with existing Directory Servers.			
Server Configuration Directory	X	X	X
You are asked to specify your existing Configuration Directory Server host name and port if you install Messaging Server with existing Directory Servers.			
Administration Domain in Server Configuration Directory	X	X	X
You will specify the administration domain of your existing Configuration Server Directory if you are installing Messaging Server with existing Directory Servers.			
Directory Server 4.1 Administration Domain		X	X
The administration domain for the Configuration Server is <code>domainname</code> , where <code>domainname</code> is the DNS domain name for the machine.			

Table 3-1 Installation Dialog Boxes (Continued)

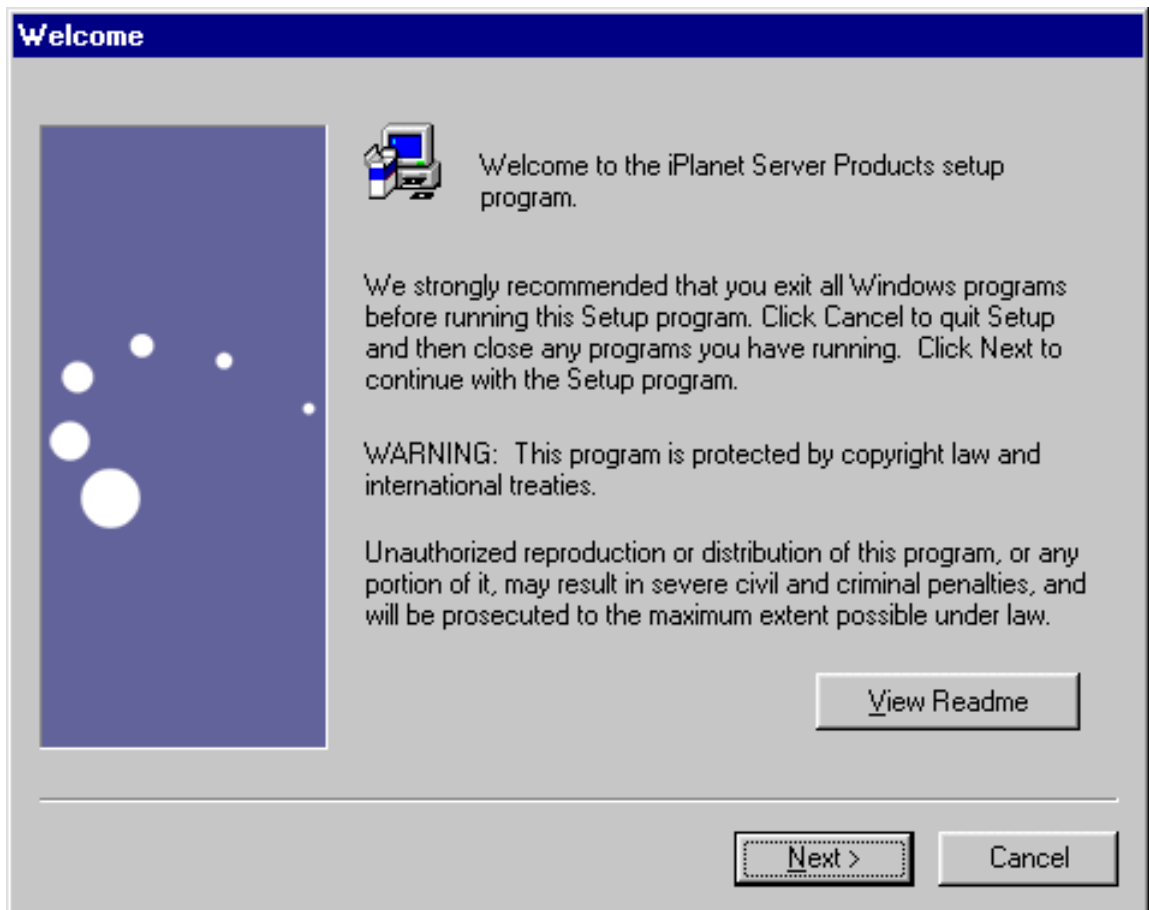
Dialog Box	Express	Typical	Custom
Directory Server 4.1 Directory Manager Settings	X	X	X
A Directory Manager identifies an administrative user whose access privileges are needed during certain Directory Server operations.			
Enter Directory Manager details:			
<ul style="list-style-type: none"> • Directory Manager Distinguished Name (DN) is of the form <code>cn=Directory Manager</code>. • Password for the Directory Manager. 			
Directory Server 4.1 Configure Server for Replication			X
Directory Server 4.1 Populate Database			X
Directory Server 4.1 Disable Schema Checking			X
Administration Server IP Address			X
Administration Server Port Selection		X	X
Enter the communication port for the Administration Server.			
Messaging Server Instance Name			X
Messaging Server Host and Domain Names		X	X
Messaging Server Default Domain and Organization	X	X	X
Messaging Server Directory Manager Credentials	X	X	X
Messaging Server Delegated Administration Host and Port	X	X	X
Messaging Server Firewall		X	X
Customize Domain Component Tree			X
Messaging Server Store Directory			X
Messaging Server Ports			X
Messaging Server Service Administrator	X	X	X
Messaging Server Postmaster Address	X	X	X
Configuration Summary	X	X	X

Common Questions

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

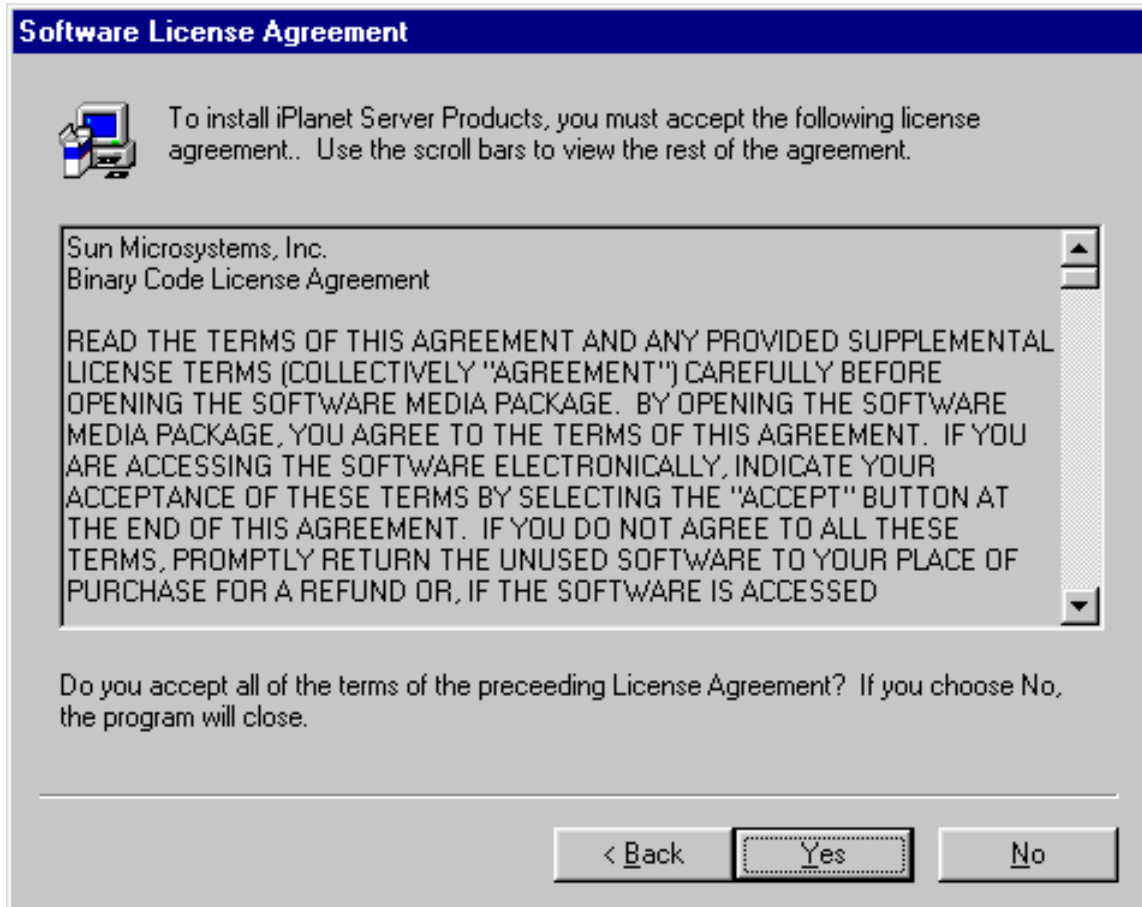
1. Welcome Screen

This is the first screen you will see. Be sure to read this screen, then click Next to continue with the installation.



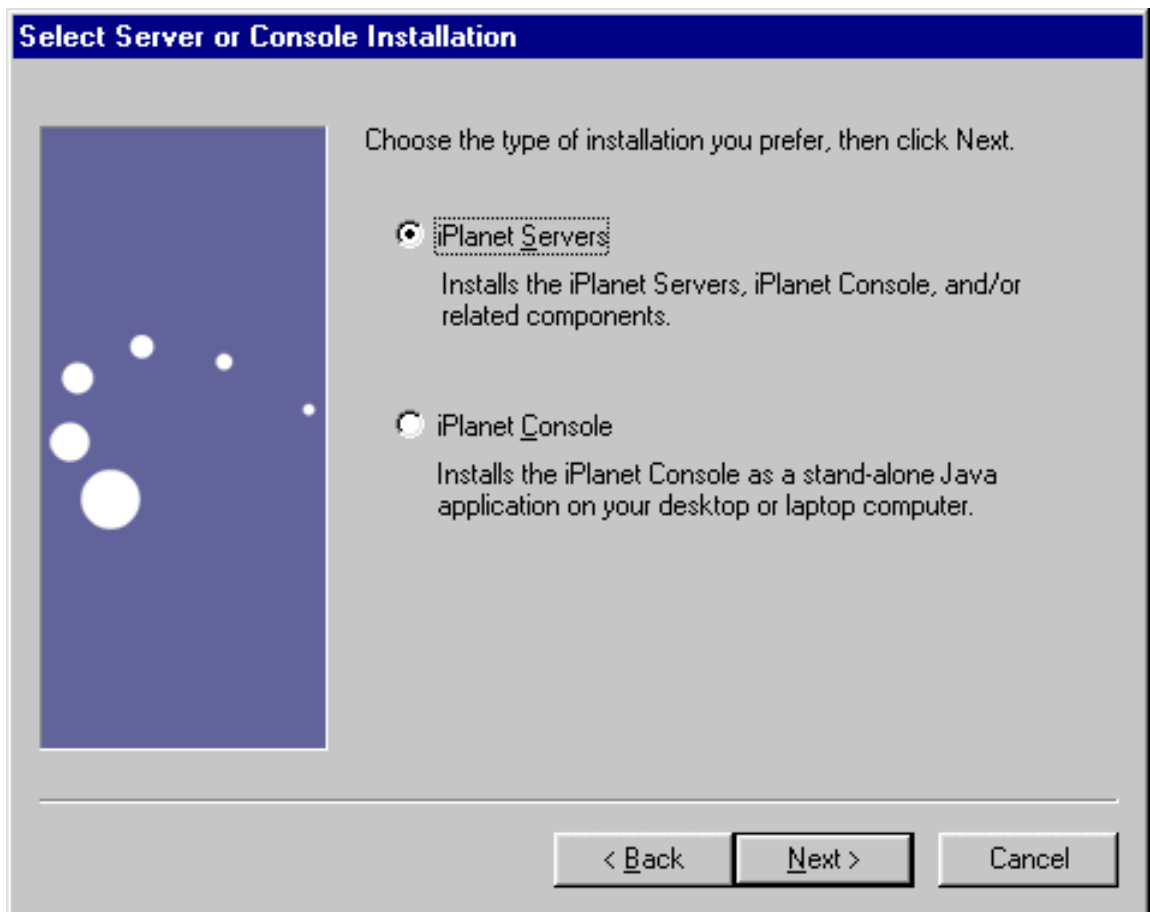
2. License Agreement

As part of the installation process, you will be asked if you agree to the terms listed in the license agreement which is located in the `LICENSE.txt` file in the directory where you downloaded the installation software. After reading the license agreement, click on Yes to continue with the installation.



3. Select Server or Console Installation

You are given the option to install the iPlanet Servers (includes the Netscape Console and related components) or solely the Netscape Console, also known as iPlanet Console. The default is to install iPlanet Servers option. You can choose the Netscape Console option (without the Messaging Server) 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 iPlanet Messaging Server hosted on another machine (Unix or Windows NT), you only need to install the Netscape Console. The following instructions assume that you install the iPlanet Servers option.

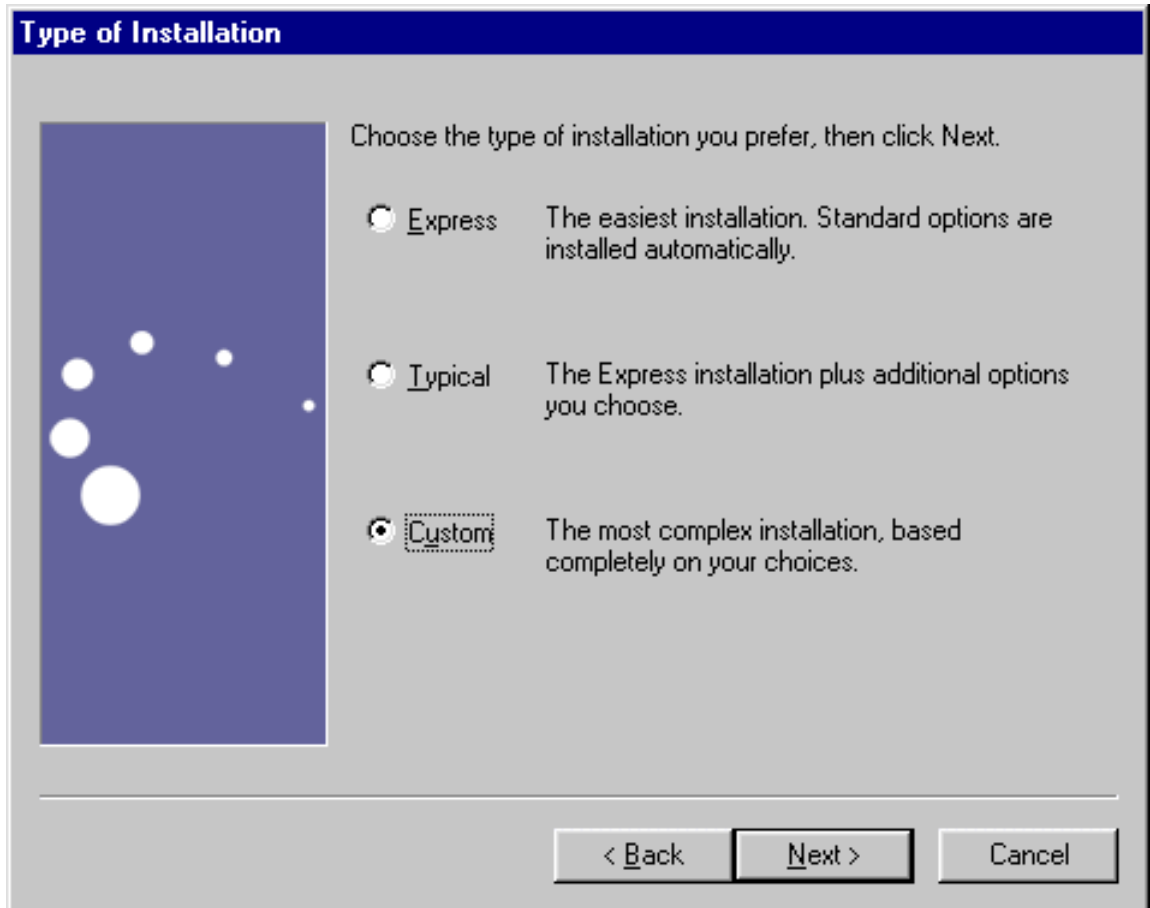


4. Installation Type

You are given the option to choose the type of installation you want to use. The same software is installed with each type of installation. The difference between the types of installations is the number of choices you have to make during the installation process. For more information, see “Types of Installations” on page 30. The three levels are:

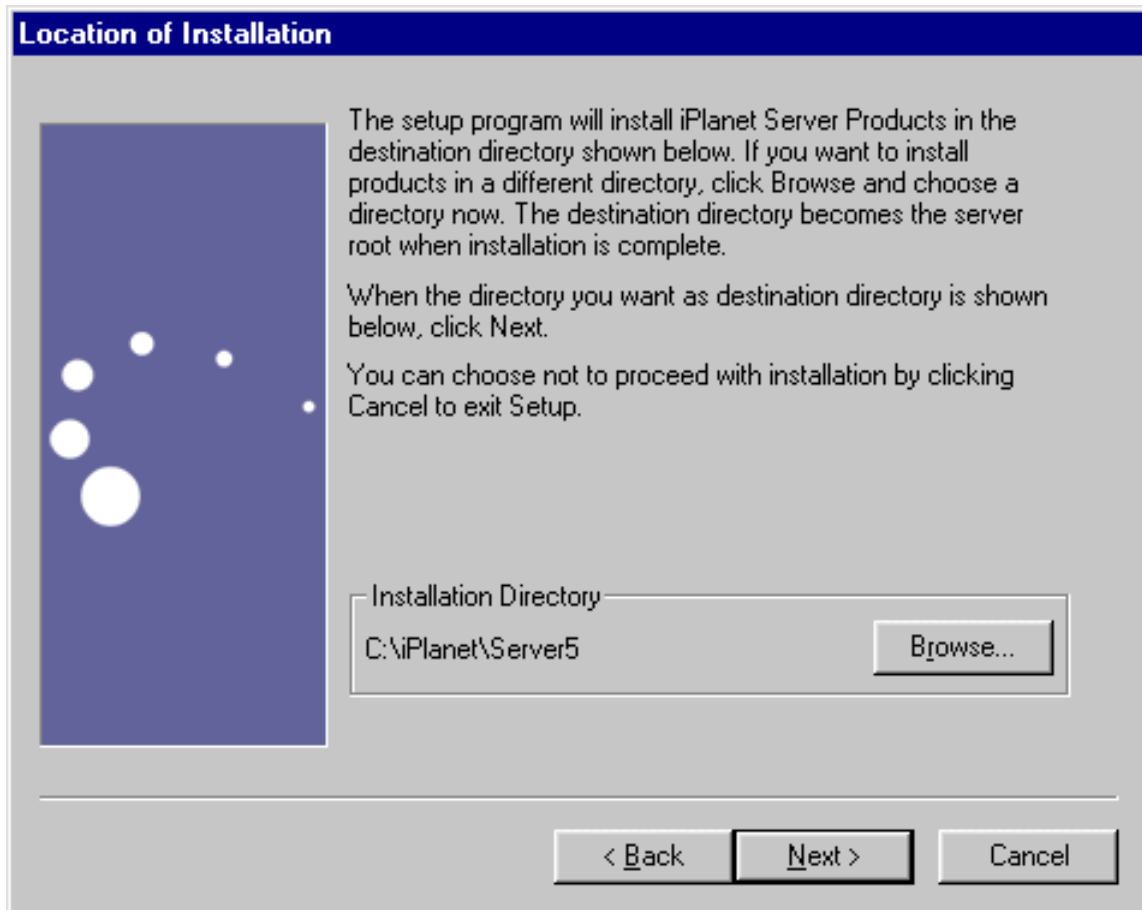
- **Express Installation.** This level is the simplest to run, but provides the fewest configuration options.
- **Typical Installation.** This level provides a balance between configuration options that you are asked to specify and those that are supplied automatically. This is the default level.
- **Custom Installation.** This level provides the greatest amount of configuration options and is intended for expert users.

After you select the installation level, you enter your installation and configuration information, according to the type of installation you selected. Refer to Table 3-1 on page 56 for the types of questions you may be asked depending on your installation type.



5. Installation Location (*server-root*)

Specify the desired installation location by clicking Browse. If you have not created an installation directory, you can do so at this time. Or, you can click Next to accept the default. The installation location is referred to as *server-root* for the remainder of this document. If you have an existing directory server, you should specify a different *server-root* for this installation.



Component Questions

The questions in this section relate to the Messaging Server suite of products you want to install.

6. iPlanet Server Products Components

Specify which products and components in the Messaging Server Suite you want to install. For a detailed description on each product and component, see “Installation Components” on page 20.

The choices are:

Netscape Server Family Core Components. These are the shared server libraries, iPlanet Core Java Classes, and the Java Runtime Environment. iPlanet Messaging Server requires installation on these libraries.

Directory Components. Includes Directory Server 4.16 Server and bundled components. See the Directory Server 4.1x Installation Guide for details.

NOTE A Directory Server is required to run iPlanet Messaging Server 5.2. The iPlanet Messaging Server 5.2 installation program includes Netscape Directory Server 4.16. However, for new Messaging Server deployments, it is recommended that you install Messaging Server with iPlanet Directory Server 5.1. See Appendix A, “Installing iPlanet Directory Server 5.1” for more information.

Administration Services. Includes the Administration Server and Netscape Console. iPlanet Messaging Server requires installation of Administration Services.

iPlanet Messaging Suite. Includes iPlanet Messaging Server, iPlanet Internet Message Transport Agent, and as an optional package, iPlanet Messaging Multiplexor. For more information on the Multiplexor, see Chapter 4, “Installing the Messaging Multiplexor.”

To install the product defaults and their corresponding sub-component defaults, click Next. You can also uncheck any components you do not wish to install. For example, if you are already using an existing Directory Server, you can uncheck the Netscape Directory Suite option.

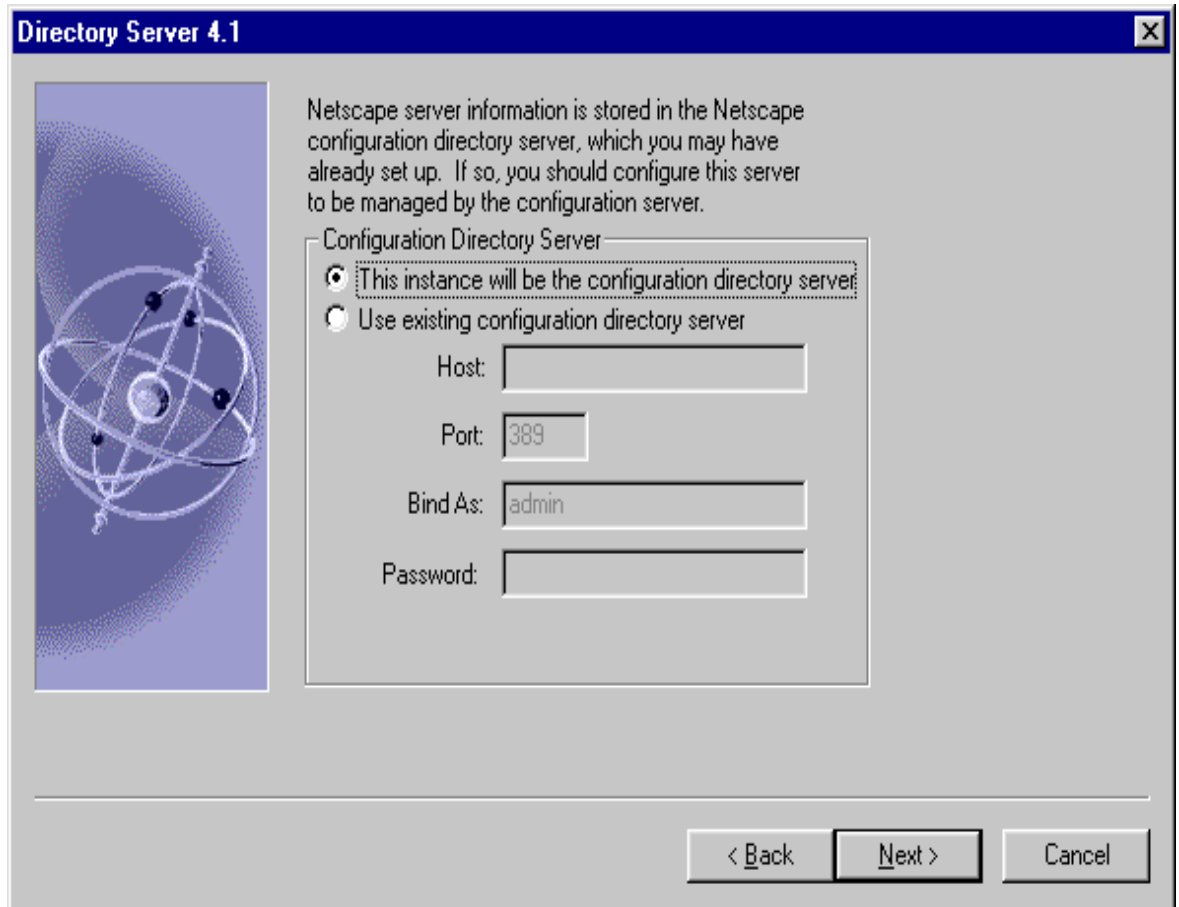
To change the sub-components that you want to install, first click the product name; then click Change. You will be able to view and change the default installation settings for all of the sub-components. For example, the iPlanet Messaging Multiplexor is not a checked sub-component under the iPlanet Messaging Server option. You can check this option if you want to install it with the iPlanet Messaging Server installation. See Table 1-2 on page 33 for details and dependencies on each component and sub-component.

Directory Server Questions

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

7. LDAP URL of the Configuration Directory Server

The default radio button is set to installing a new Configuration Directory Server instance. You can use this option if you are installing a new Configuration Directory Server as a part of the Messaging Server installation.



Additionally, if you are using an existing Configuration Directory Server, make certain that your existing Configuration Server is up and running, and that you have run the `ims_dssetup` script to prepare it for the iPlanet Messaging Server 5.2 installation.

8. LDAP URL of the Users and Groups Directory Server

The default radio button is set to installing a new Users and Groups Directory Server instance. You can use this option if you are installing a new Users and Groups Directory Server as a part of the Messaging Server installation. The Configuration Directory Server stored user and group information by default; you will have the opportunity to change the default at a later point.

However, if you are using an existing Users and Groups Directory Server, you will need to specify the LDAP URL of your existing Users and Groups Directory Server. To determine the port that the Directory Server is using, check the `slapd.conf` file in the Directory Server's `server-root/slaped-serverID/config` directory. For example:

```
Host: budgie.siroe.com  
Port: 389
```

In the 'Bind As' option, you should enter your Users and Groups Directory Manager DN. The password is the corresponding Directory Manager DN password. The user and group suffix 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. You must provide a properly formatted organizational DN in the following format:
`o=suffix`

For example:

```
Bind As: cn=Directory Manager  
Password: *****  
Suffix: o=siroe.com
```

CAUTION If you already have a Directory Server installed, you must use this existing root suffix for the iPlanet Messaging Server and the iPlanet Delegated Administrator for Messaging.

Directory Server 4.1

You may already have a directory server you want to use to store your data, such as user and group information.

Directory to store data

Store data in this directory server

Store data in an existing directory server

Host:

Port:

Bind As:

Password:

Suffix:

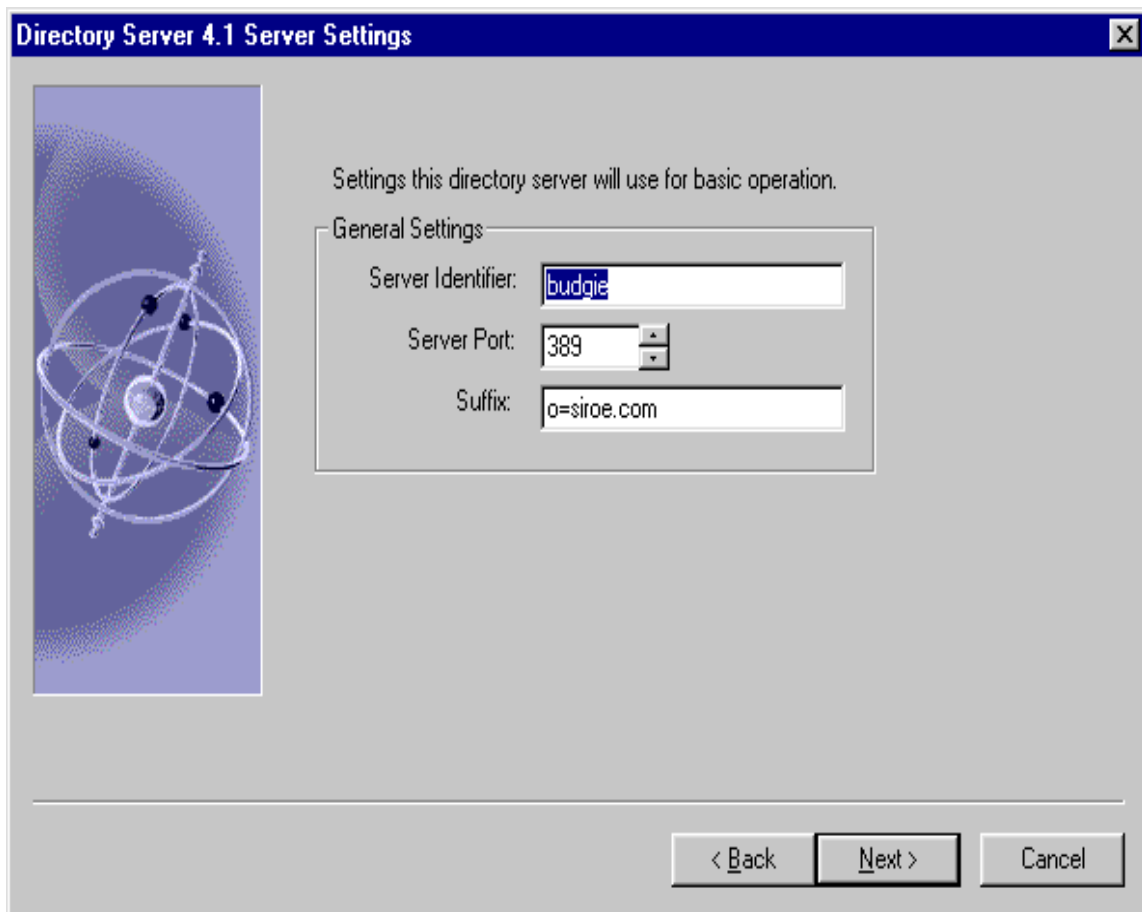
< Back Next > Cancel

Additionally, if you are using an existing Users and Group Directory Server, make certain that your existing Users and Group Server is up and running, and that you have run the `ims_dssetup` script to prepare it for the iPlanet Messaging Server 5.2 installation.

9. Directory Server Settings

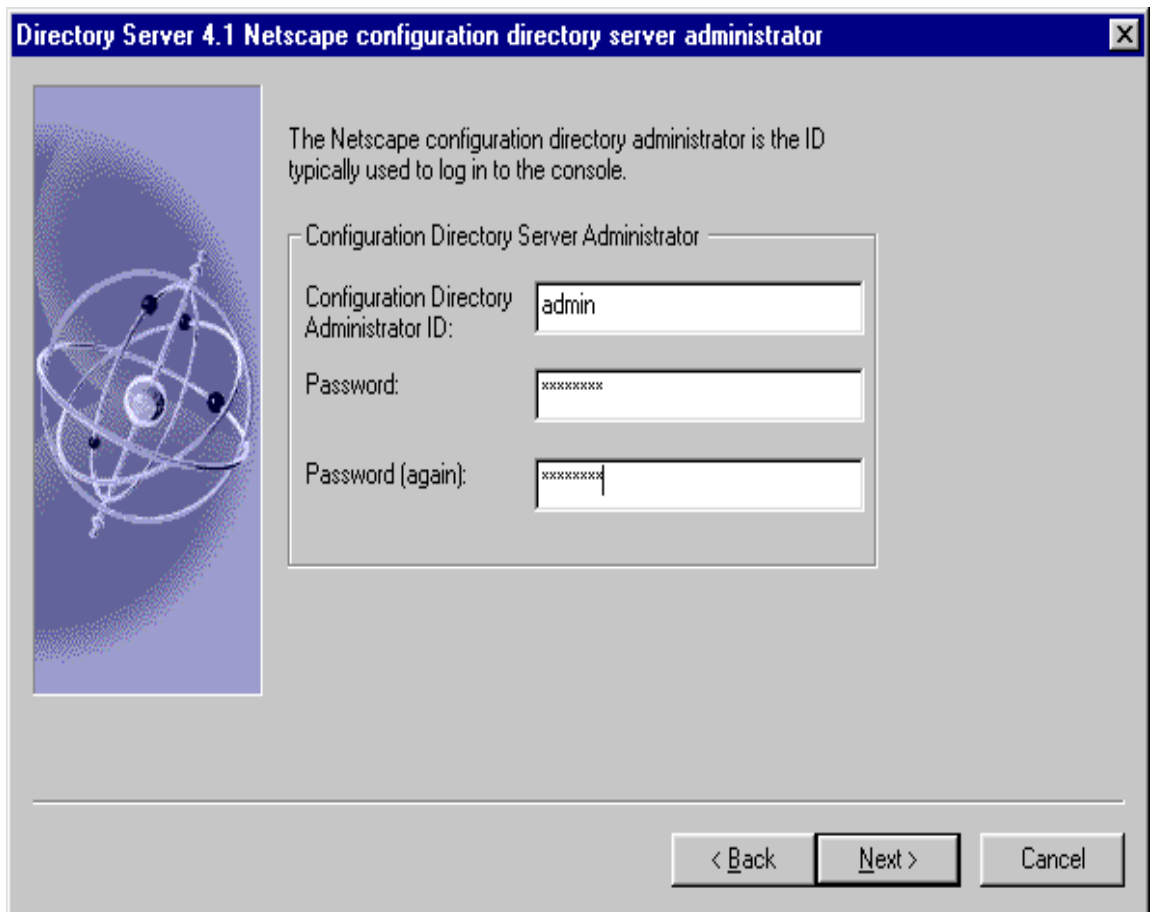
If you are installing iPlanet Messaging Server with a new Directory Server, then you will need to enter the following information:

- Server Identifier - default server identifier is the machine name where the installation will run.
- Server Port - default standard server port for LDAP communication is 389.
- Suffix - default suffix for the server is `o=domainname`, where `domainname` is the DNS domain name for the machine.



10. Netscape Configuration and Directory Server Administrator

This is the user ID (default: `admin`) and associated password that can make the configuration changes to servers through the Netscape Console. The Configuration Server Administrator has administration privileges over all of the servers that use the Configuration Directory Server instance, but not over the Configuration Directory Server itself. Server administration is restricted to people who access the server from the host you specify. When you open the Netscape Console, it will prompt you for Directory Server Administrator user ID and password.



The screenshot shows a dialog box titled "Directory Server 4.1 Netscape configuration directory server administrator". On the left is a graphic of an atom. The main text reads: "The Netscape configuration directory administrator is the ID typically used to log in to the console." Below this is a form with three input fields: "Configuration Directory Administrator ID:" with the value "admin", "Password:" with "*****", and "Password (again):" with "*****". At the bottom are three buttons: "< Back", "Next >", and "Cancel".

Directory Server 4.1 Netscape configuration directory server administrator

The Netscape configuration directory administrator is the ID typically used to log in to the console.

Configuration Directory Server Administrator

Configuration Directory Administrator ID:

Password:

Password (again):

< Back Next > Cancel

11. Configuration Administrator

You will see this question when you install Messaging Server with existing Configuration and Users and Groups Directory Servers. You are asked to specify your Configuration Administrator ID and Configuration ID password. This screen is similar to the one in Step 10.

12. Server Configuration Directory

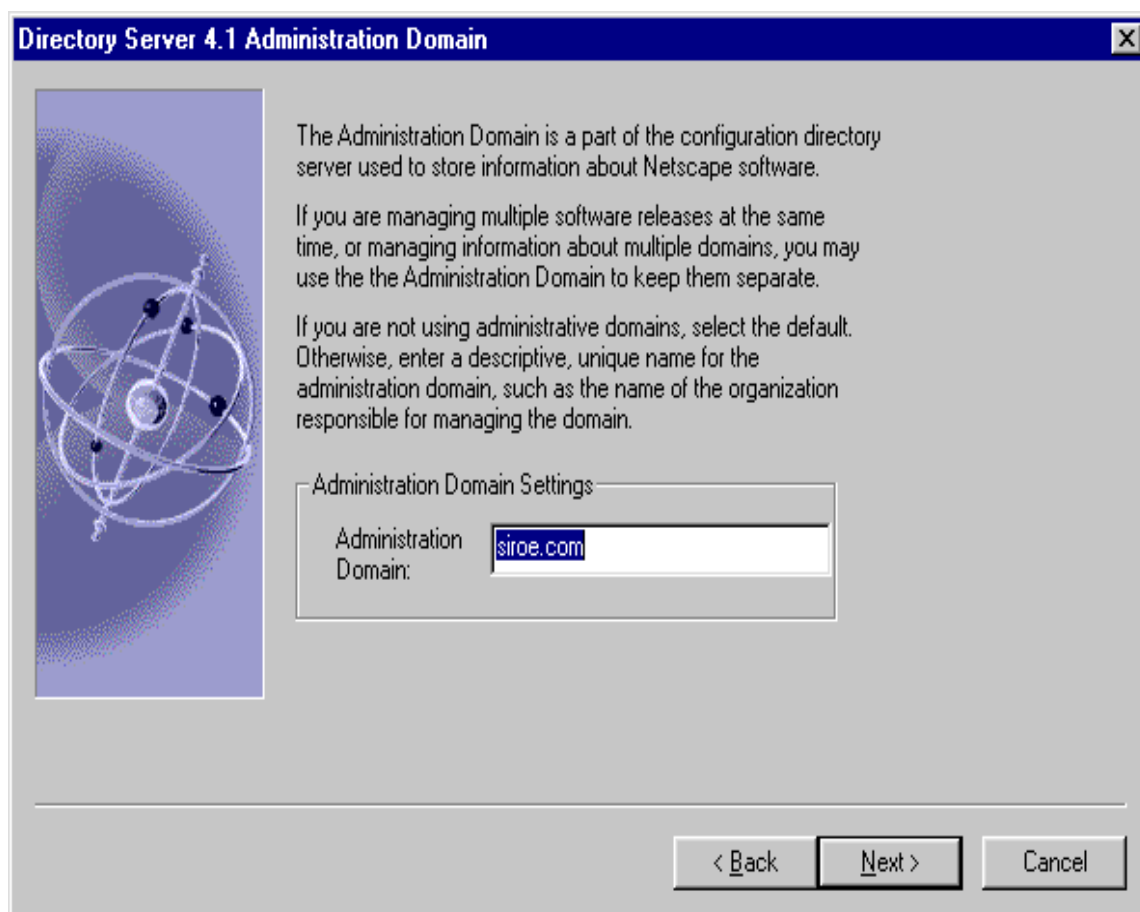
You will see this question when you install Messaging Server with existing Configuration and Users and Groups Directory Servers. You are asked to specify your Configuration Directory Server host name and port.

13. Administration Domain in Server Configuration Directory

You will see this question when you install Messaging Server with existing Configuration and Users and Groups Directory Servers. You are asked to specify the administration domain of the Configuration Server Directory where your server configuration information is stored. This is the domain of your organization, for example: `siroe.com`. This screen is similar to the one in Step 14.

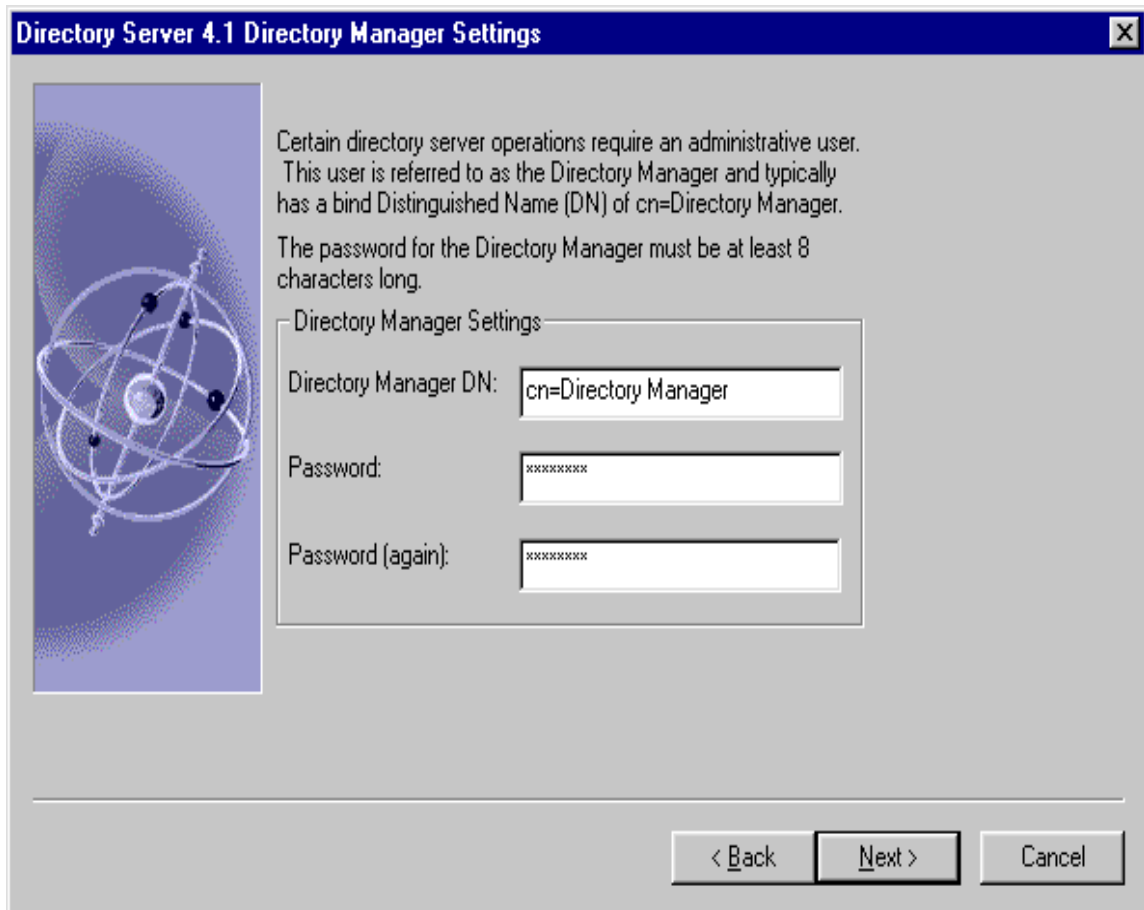
14. Administration Domain

Specify the administration domain of the Configuration Server Directory where your server configuration information is to be stored. This is the domain of your organization, for example: `siroe.com`. You should use the same domain name that you used for you Configuration Directory Server. You are asked this question if you do not have an existing Configuration Directory Server and you are installing the one included with the Messaging Server.



15. Bind DN and Password of the Directory Manager

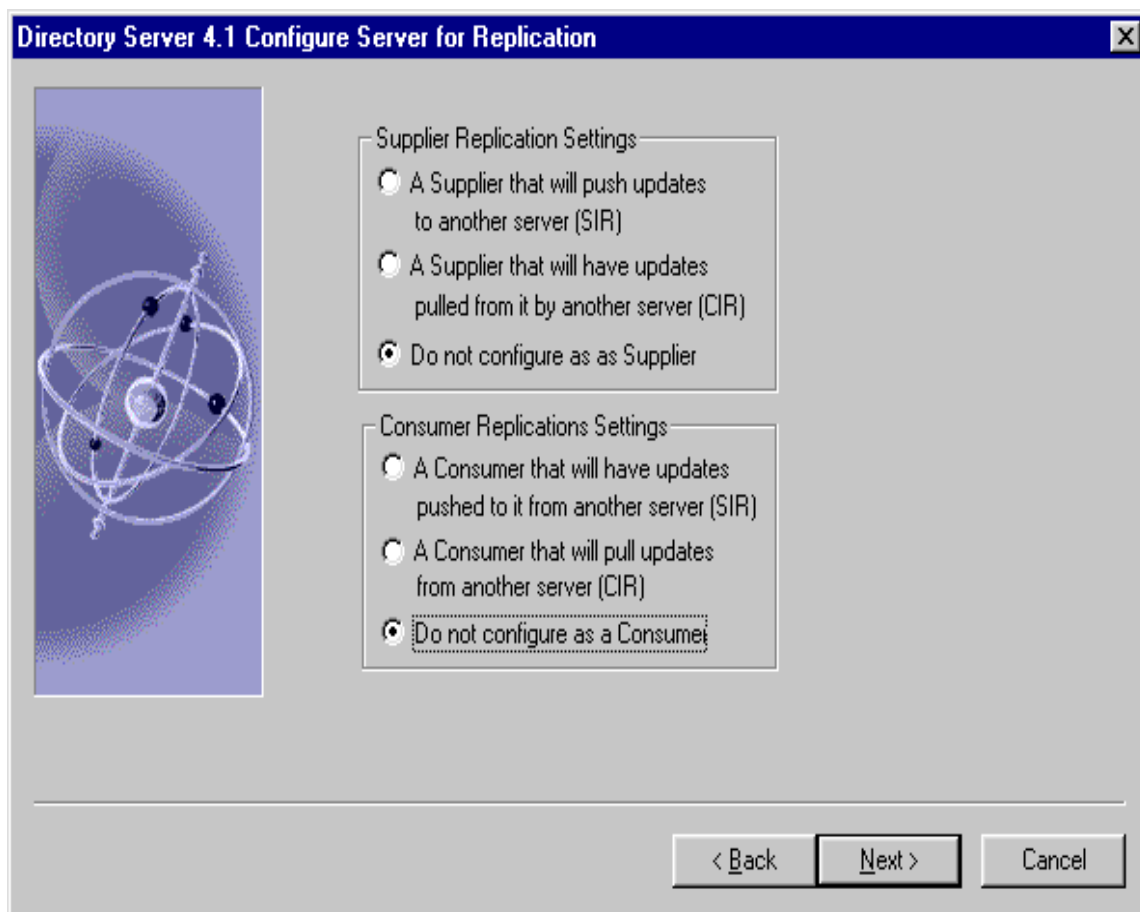
The Directory Manager has privileges to make changes in the Directory Server schema (has access to the Users and Groups Directory). This user has overall administrator privileges on the Directory Server and all iPlanet servers that make use of the Directory Server. The Directory Manager has full administration access to all entries in the Directory Server. The default and recommended DN is `cn=Directory Manager`.



16. Directory Server Replication

Replication is used to duplicate all or part of a Directory Server to another Directory Server. This can be used for fail safe 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.

NOTE If you choose not to configure as a Supplier and as a Consumer, you can configure the Directory Server at a later time. Refer to your Directory Server documentation for detailed information and instructions.

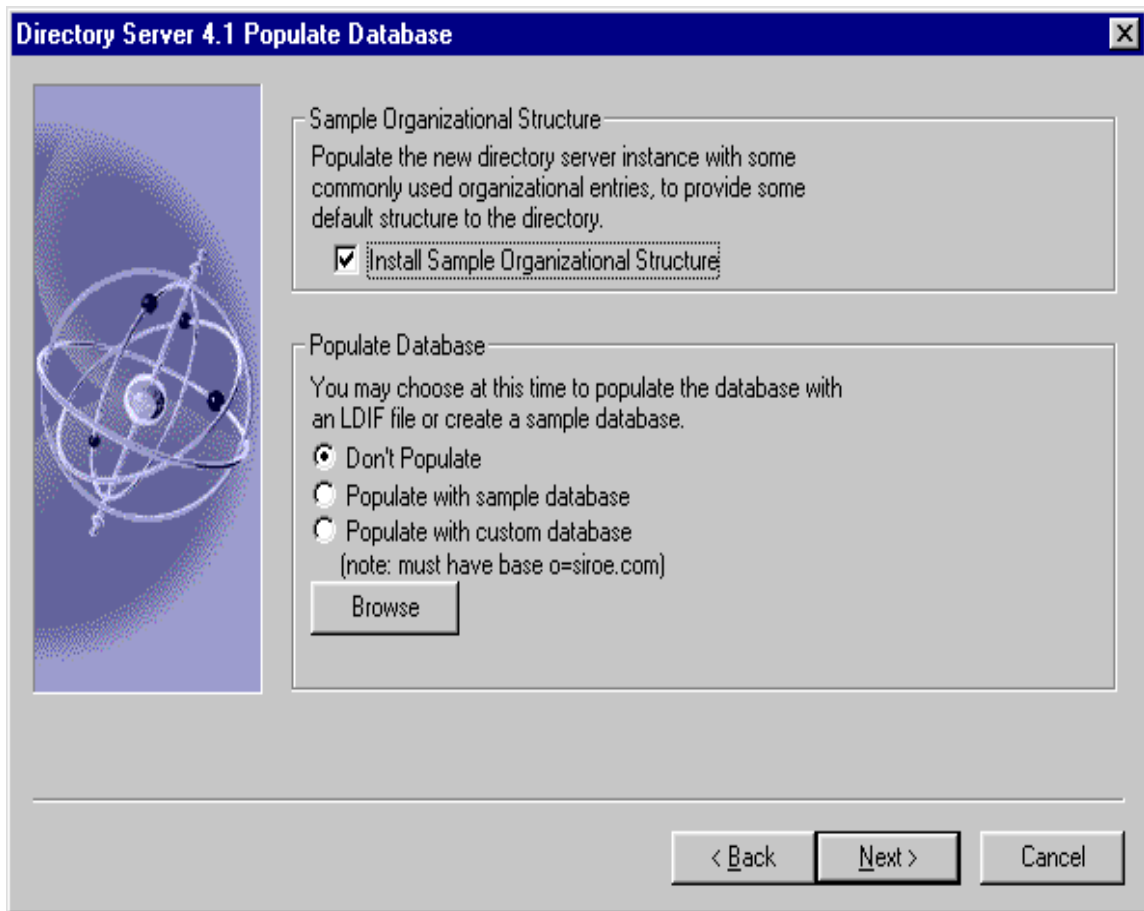


17. Populate Directory Server with Sample Data

Check the Install Sample Organizational Structure checkbox if you would like to add sample entries to your new directory server instance. The samples are installed in a separate suffix and will not interfere with the normal operation of the Directory Server.

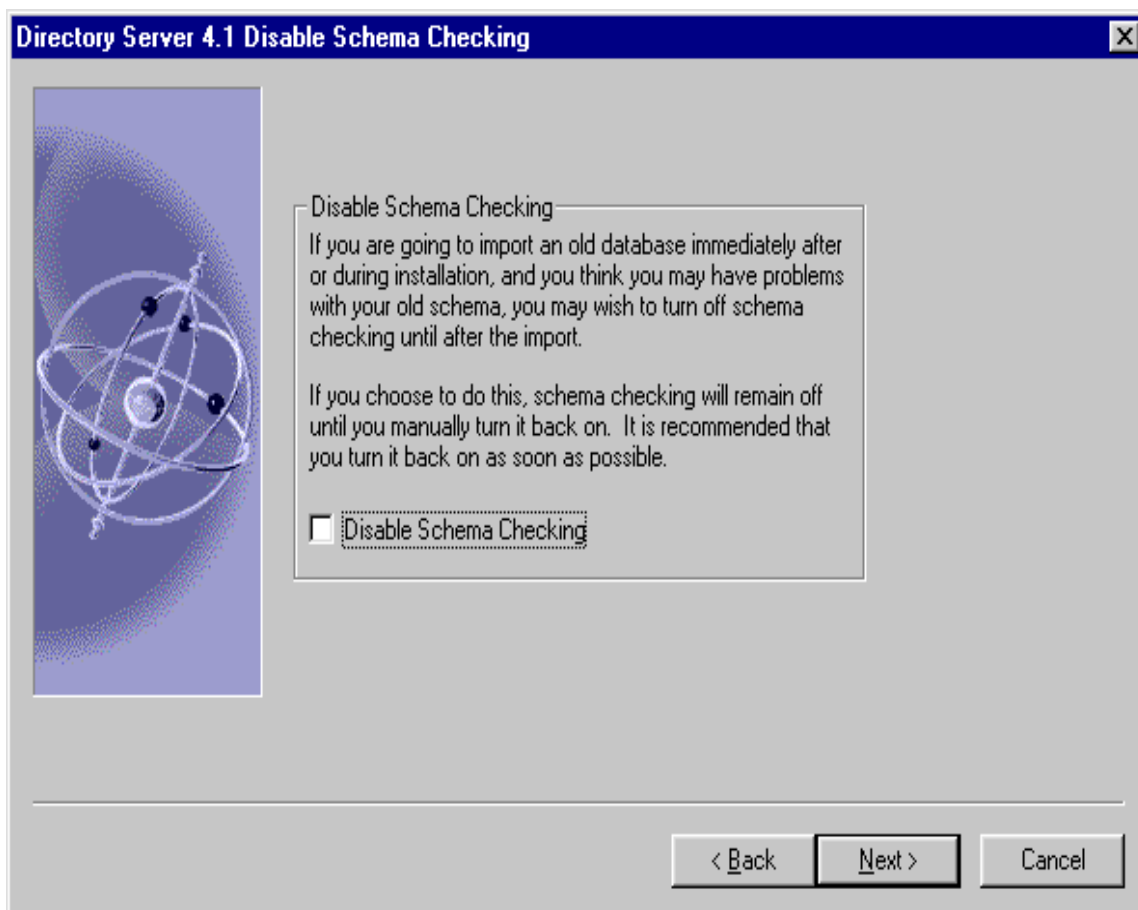
You may choose to populate the database with an LDIF file or by creating a sample database. If you import entries from an existing LDIF file, click on the “Populate with custom database button”, and click “Browse” to find and select the appropriate LDIF file.

It is recommended that you either choose to “populate with custom database” or you specify “don’t populate” to avoid creating unnecessary additional entries.



18. Disable Schema Checking

If you are going to import an old Directory Server database during or after installation, 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. It is recommended that you turn schema checking back on as soon as possible.

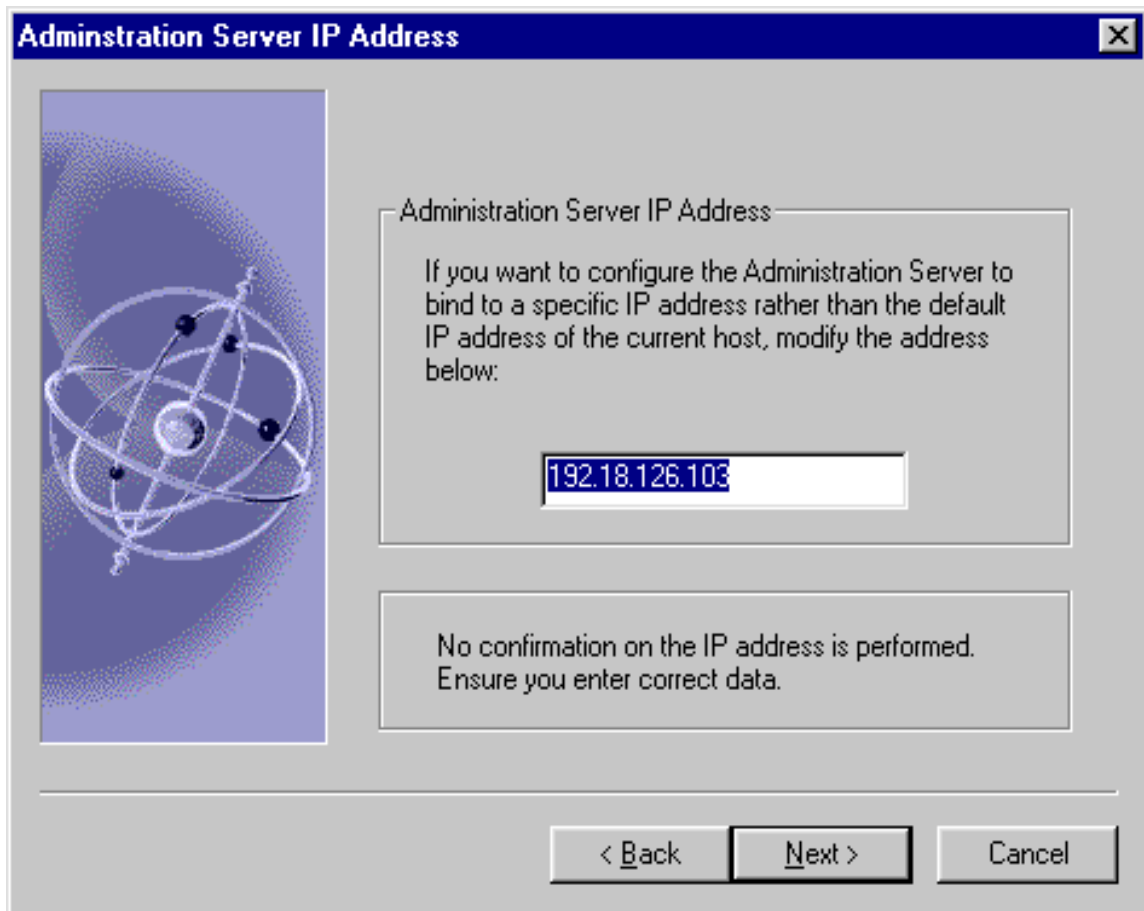


Administration Server Questions

The questions in this section related to the Administration Server. The questions you will see and the answers you are expected to provide differ.

19. Administration Server IP Address

You can bind the Administration Server to a specific IP address rather than to the default IP address of the current host. If the host machine has multiple IP addresses, you can specify which address the Administration Server should use. The default IP address of the current host is displayed in the following example:



20. Administration Server Port

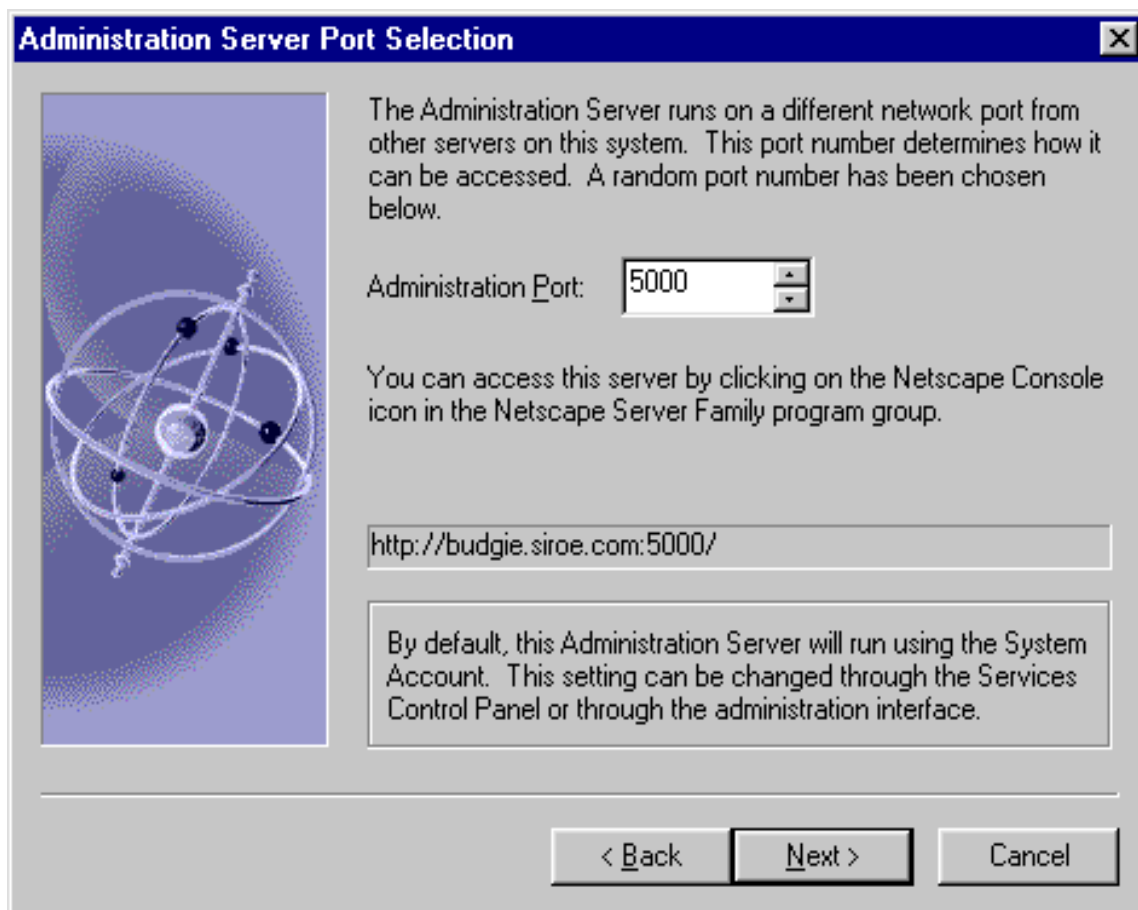
Supply the port to which the Administration Server listens. The Administration Server is separate from any other application server since it listens to a different port.

It is recommended that you choose a unique port number between 1024 and 65535 on which to run your Administration Server. Do not specify a port number on which you plan to run an application server.

Use the iPlanet Messaging Server Installation Checklist to record the server port information. You will use this port number when you log onto the Netscape Console.

NOTE You can also find your port number information at
c:\admin-serv\config\adm.conf.

Look for the line that begins with `port :`

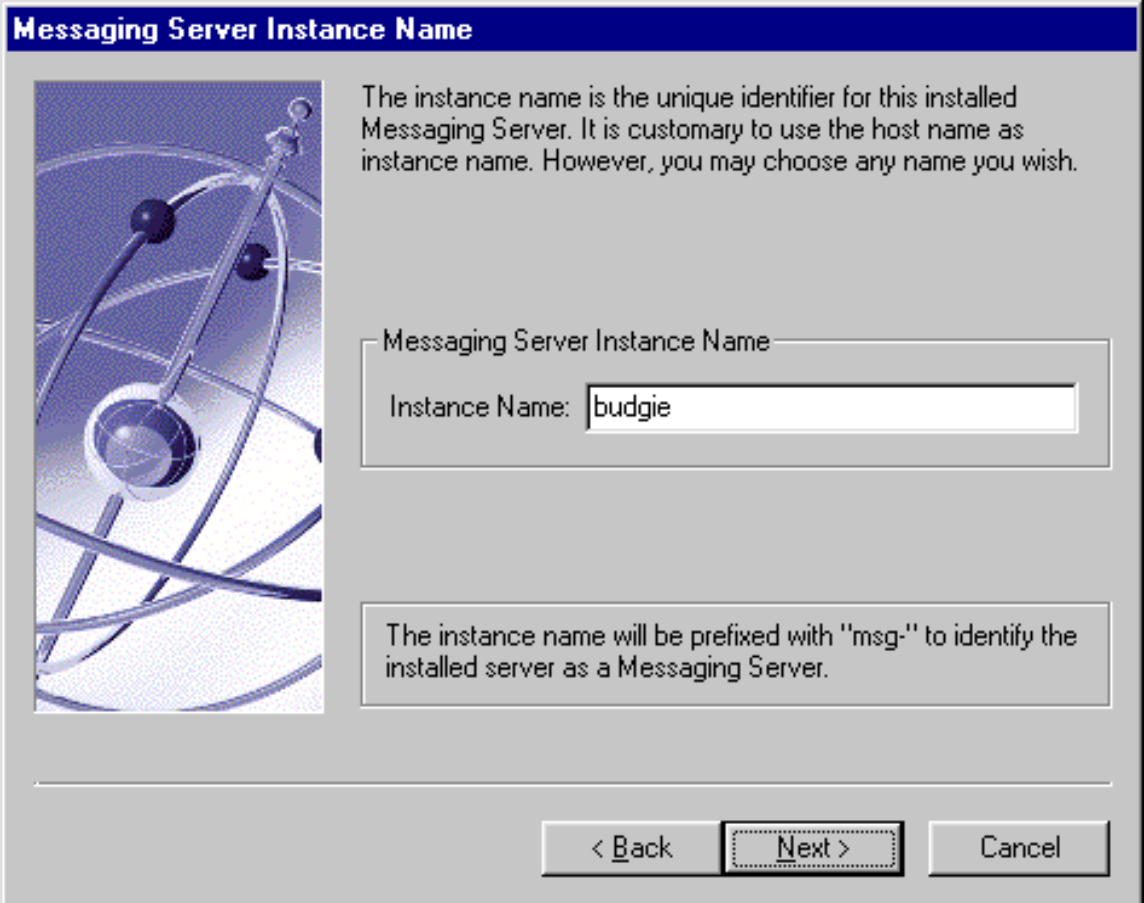


Messaging Server Questions

The questions in this section related to Messaging Server. The questions you will see and the answers you are expected to provide differ.

21. Unique Identifier for this Messaging Server

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 `budgie`, the installation program creates the *serverID* called `msg-budgie`.



Messaging Server Instance Name

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.

Messaging Server Instance Name

Instance Name:


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

< Back Next > Cancel

22. Messaging Server Host and Domain Names

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*).

Messaging Server Host and Domain Names



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.

Messaging Server Host


Host Name:

< Back Next > Cancel

23. Default Domain and Organization for the Messaging Server

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.

Messaging Server Default Domain and Organization



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.

Messaging Server Default Domain and Organization

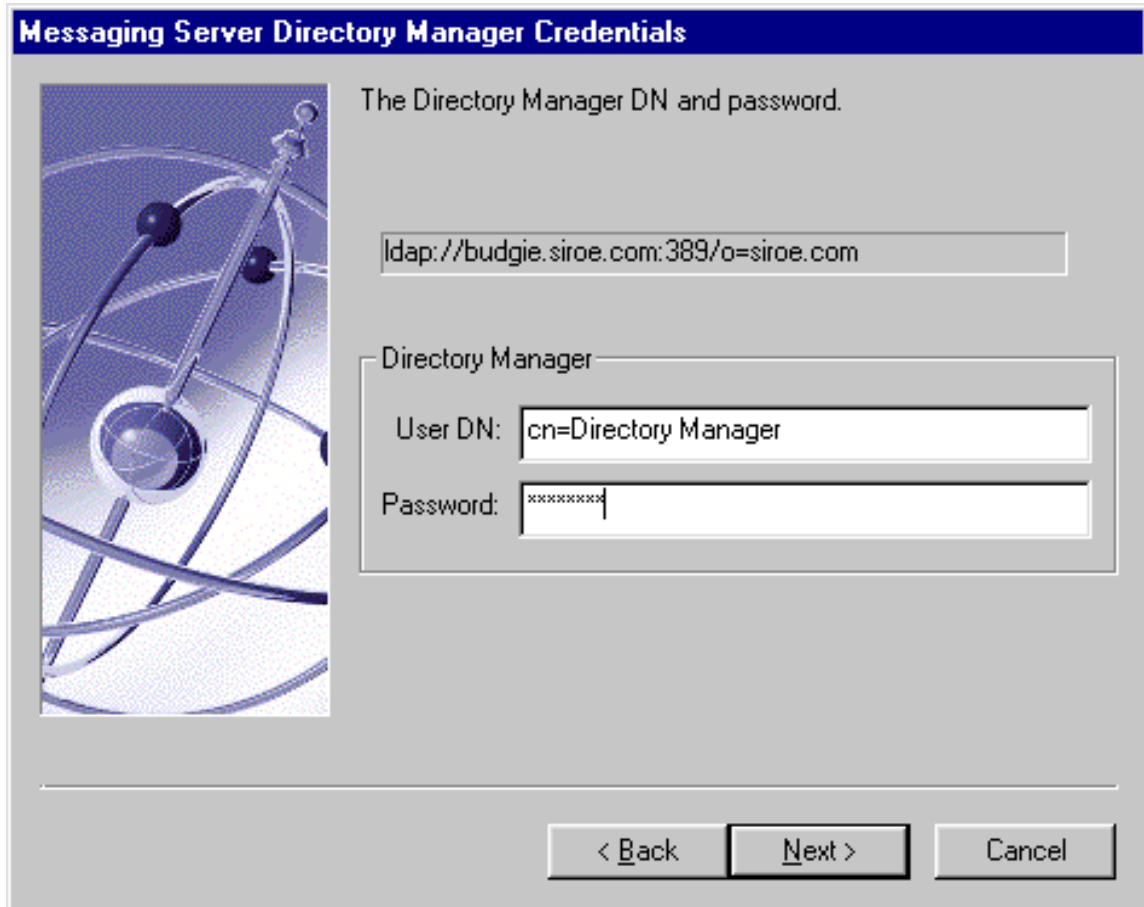
Default Domain:

Default Organization DN:

< Back Next > Cancel

24. Distinguished Name 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`. Specify the DN and password for the Directory Manager.



Messaging Server Directory Manager Credentials

The Directory Manager DN and password.

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

Directory Manager

User DN: `cn=Directory Manager`

Password: `*****`

< Back Next > Cancel

25. Host name and Port of the iPlanet Delegated Administrator for Messaging Web Server

iPlanet Messaging Server requires the use of a Delegated Administration Server. This application allows administrators and end users to manage user accounts and their preferences. The host name must be the name of the machine that will host the Web server for the Delegated Administrator; this machine can either be local or remote. The port number is the port on which the Web server listens. The default port number is: 8080.

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

If you choose to install the Delegated Administrator client (for example: the Command-Line Interface) on a different machine from the Delegated Administrator, then you will be asked for this information in the Delegated Administrator installation.

Messaging Server Delegated Administration Host and Port



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.

Delegated Administration Server Host and Port

Host Name:

Port:

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

< Back


Next >

Cancel

26. Messaging Server Firewall

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 ability to route messages beyond the firewall. If Messaging Server cannot route mail to a recipient's address, it forwards the message to its Smart Host.

Messaging Server Firewall



The Messaging Server can route mail destined for remote domains through a Smart Host. The Smart Host would then be responsible for routing the mail.

You would need a Smart Host if, for example, the Messaging Server were behind a firewall that prevented it from sending mail directly to the Internet. If you choose to use a Smart Host, you must specify the fully-qualified host name of the Smart Host.

If you do not configure a Smart Host, the Messaging Server will route outgoing mail directly.

Messaging Server Firewall

Yes, the Messaging Server will use a Smart Host.

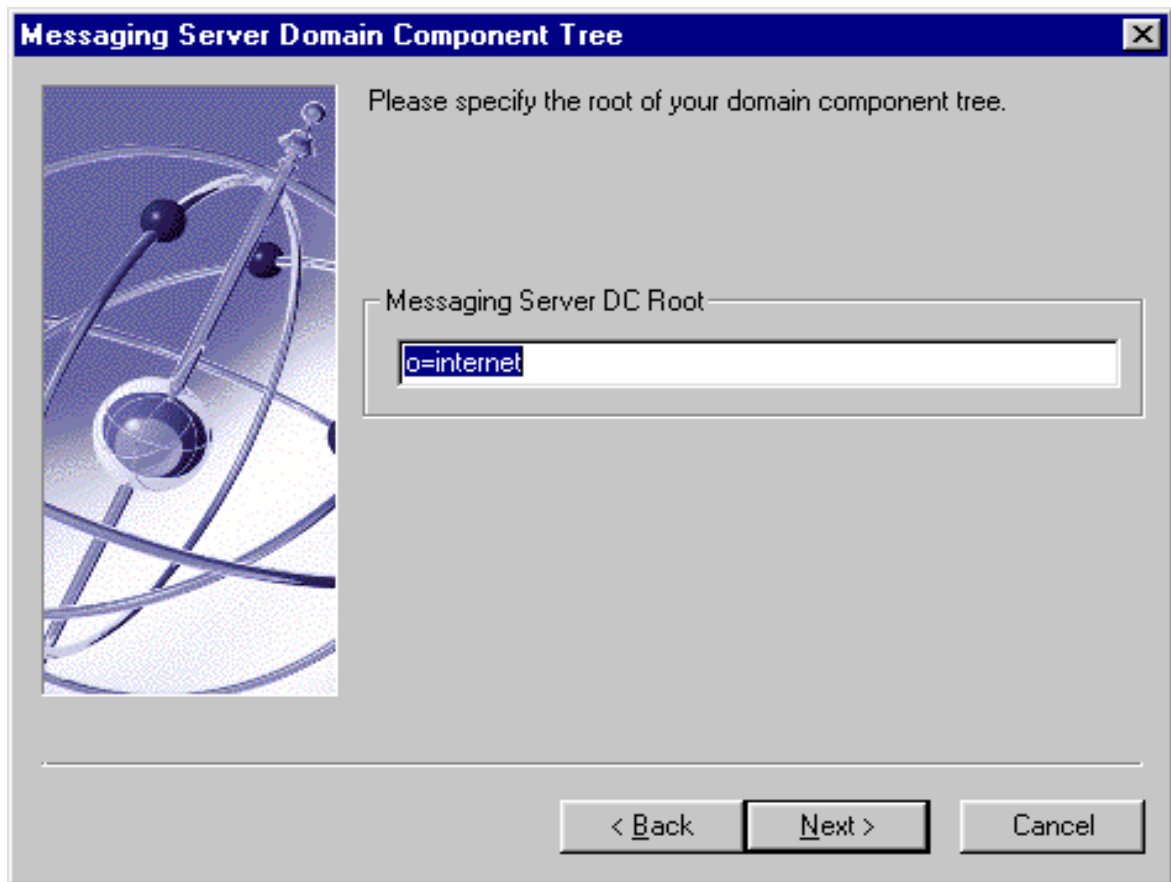
Smart Host:

No, the Messaging Server will not use a Smart Host.

< Back Next > Cancel

27. Customizable Root of Domain Component Tree

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



28. Primary Message Store Directory

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:

`c:\server-root\serverID\store\partition\primary.`



29. TCP/IP port numbers for POP3, IMAP, SMTP, and Messenger Express (Webmail)

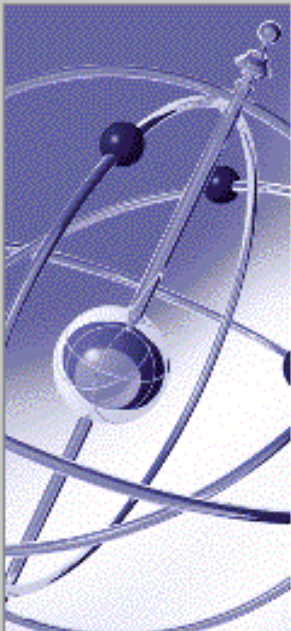
The port number specified must be a unique port that no other application is using. If the port is in use, you can either enter a different port, or accept the proposed default in which case you must kill whatever process is currently using that port before starting up Messaging Server.

NOTE When performing a Typical installation, this prompt will display if any of the default ports are in use.

The default port numbers are:

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

Messaging Server Ports



The Messaging Server uses TCP/IP ports for sending and receiving messages.

Messaging Server Ports

POP3 Port:

IMAP Port:

SMTP Port:

Webmail Port:

< Back Next > Cancel

30. Login ID and Password for the Service Administrator

This is the top-level administrator for the Delegated Administrator. Messaging Server requires that this account exists 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, or mailing list defined in the directory.

Additionally, Service Administrators are 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.

Messaging Server 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.

Service Administrator

User ID:

User Password:

Confirm Password:

The account will be created and given the necessary privileges.

< Back Next > Cancel

31. Messaging Server Postmaster Address

A postmaster group (for example, email group) will be created by the installation program; 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. 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`. After the installation process has completed, it is recommended that you reboot your system prior to using the iPlanet Messaging Server and its components.

NOTE The email address you specify for the postmaster is accepted during installation; a postmaster group is added and the mail address is added to the postmaster group. However, the mail 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.

Messaging Server Postmaster Address



There is no postmaster in the Users Directory Server:

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

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

Postmaster Email Address

Email Address: `pma@siroe.com`

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

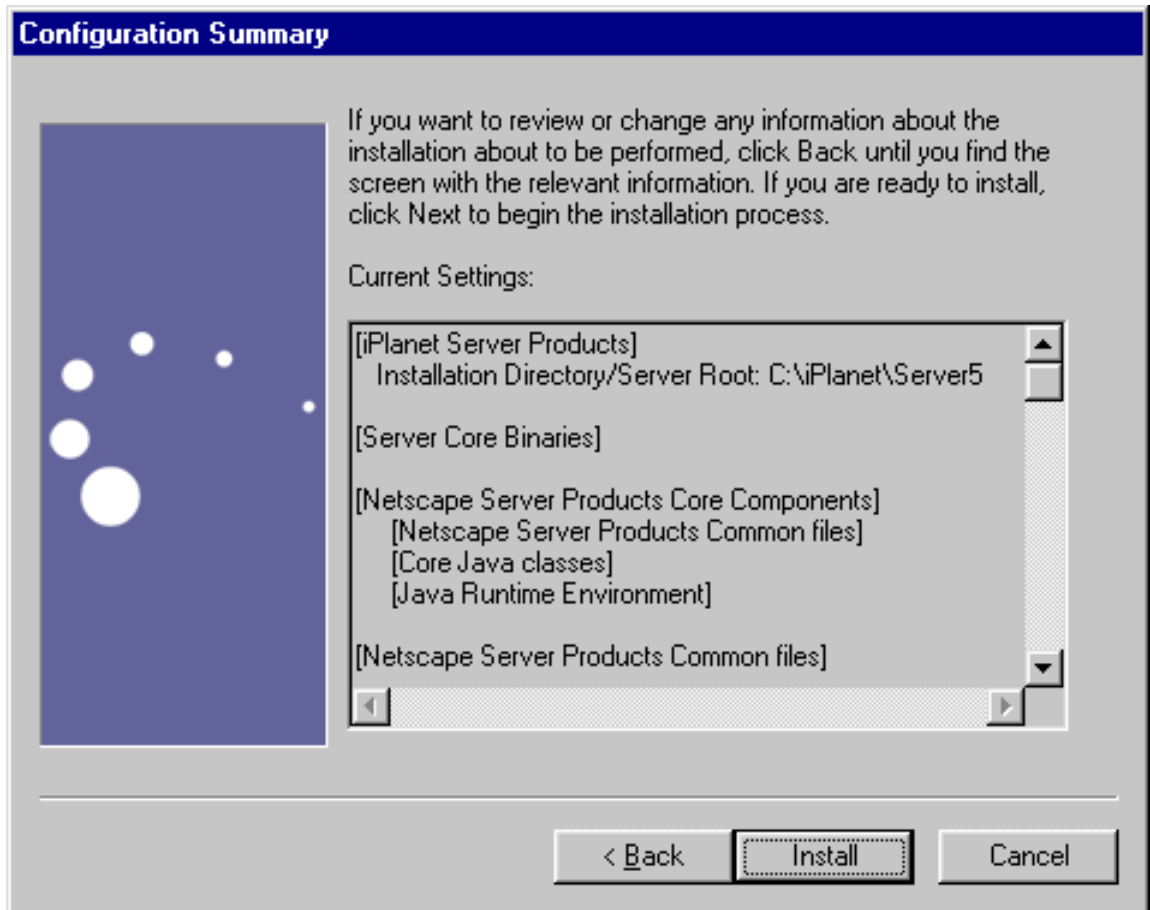
< Back

Next >

Cancel

32. Configuration Summary

In the last installation screen, you will get a summary of your installation and configuration parameters. The instructions indicate that you can click back to a section of the installation that you would like to change; note that you can only go as far back as the Messaging Server Default Domain and Organization Screen. Once the installation parameters have been finalized, you should press the “Install” button to begin the installation process.



Installing the Messaging Multiplexor

This chapter contains the following sections to help you install and configure the Messaging Multiplexor for Windows NT:

- 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 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 your 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, “System Requirements” on page 18.
3. 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.”

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 4-1:

Table 4-1 Messaging Multiplexor Configuration Files

File	Description
<code>PopProxyAService.cfg</code>	Configuration file specifying configuration variables used for POP services.
<code>PopProxyAService-def.cfg</code>	POP services configuration template. If the <code>PopProxyAService.cfg</code> file does not exist, the <code>PopProxyAService-def.cfg</code> template is copied to create a new <code>PopProxyAService.cfg</code> file.
<code>ImapProxyAService.cfg</code>	Configuration file specifying configuration variables used for IMAP services.
<code>ImapProxyAService-def.cfg</code>	IMAP services configuration template. If the <code>ImapProxyAService.cfg</code> file does not exist, the <code>ImapProxyAService-def.cfg</code> template is copied to create a new <code>ImapProxyAService.cfg</code> file.
<code>AService.cfg</code>	Configuration file specifying which services to start and a few options shared by both POP and IMAP services.
<code>AService-def.cfg</code>	Configuration template specifying which services to start and a few options shared by both POP and IMAP services. If the <code>AService.cfg</code> file does not exist, the <code>AService-def.cfg</code> template is copied to create a new <code>AService.cfg</code> file.
<code>AService.exe</code>	Executable used to start, stop, restart, and reload the MMP. For more information, see “Starting the Multiplexor” on page 116.

Table 4-1 Messaging Multiplexor Configuration Files (*Continued*)

File	Description
SmtproxyAService.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 <i>iPlanet Messaging Server Administrator's Guide</i> .
SmtproxyAService-def.cfg	Configuration template specifying configuration variables used for SMTP proxy services. If the SmtproxyAService.cfg file does not exist, the SmtproxyAService-def.cfg template is copied to create a new SmtproxyAService.cfg file.

Multiplexor Installation

To install the MMP, you must use the Messaging Server `setup.exe` program that gives you the option of choosing to install the Messaging Multiplexor. For detailed information about the `setup.exe` program refer to the “Running the Setup Program” on page 40.

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.

To install a stand-alone version of the MMP, follow these steps:

1. Login as Administrator on Windows NT.

You must have super user privileges (logged in as Administrator) to run the installation program.

2. Run the `setup` command from the install binaries, using optional parameters (See Table 2-1 on page 40) if necessary.

NOTE If you are going to perform a Silent Installation, you must first run the `setup` command with the `-k` option. This creates a file called `install.inf` which is used for the Silent Installation. For more information, see “Silent Installation” on page 41.

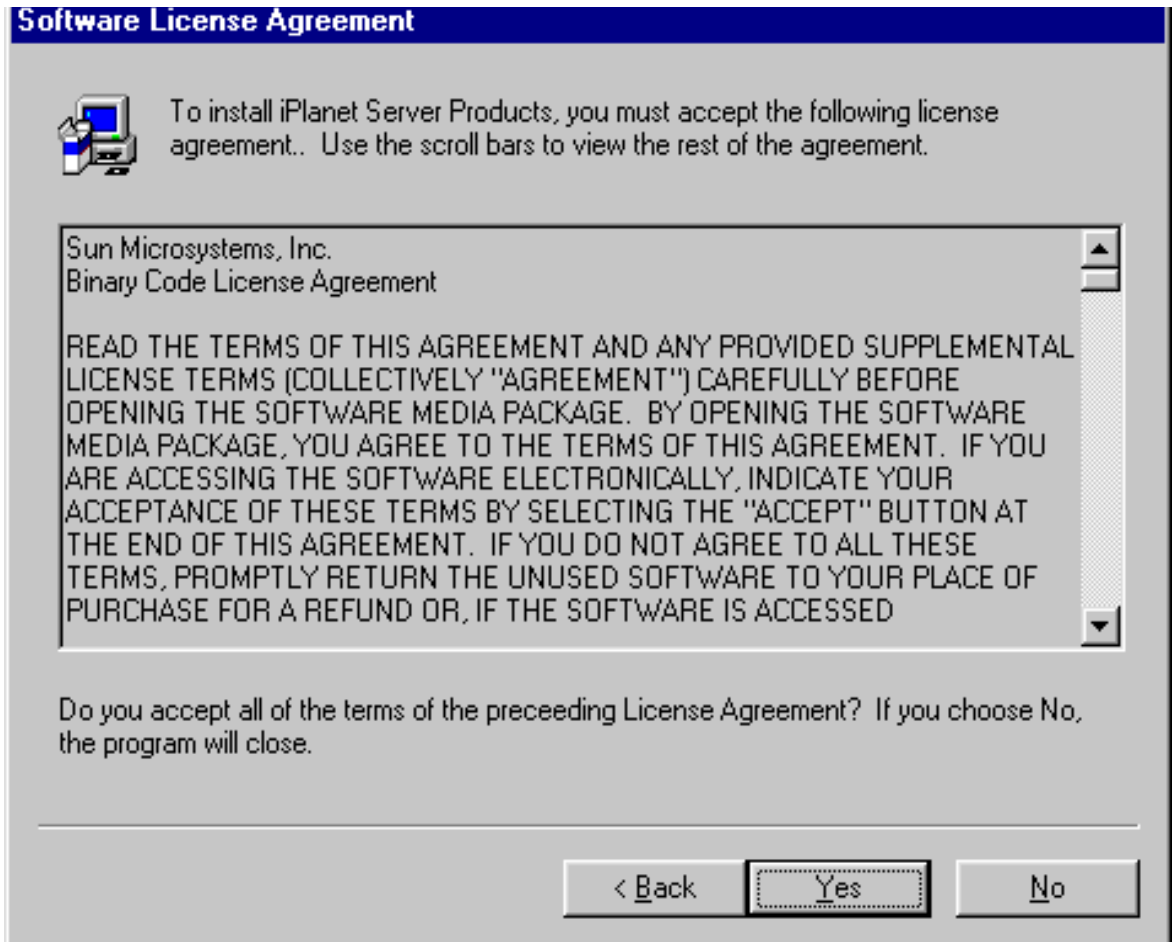
3. Welcome screen

This is the first screen you will see. Be sure to read this screen, then click **Next** to continue with the MMP installation.



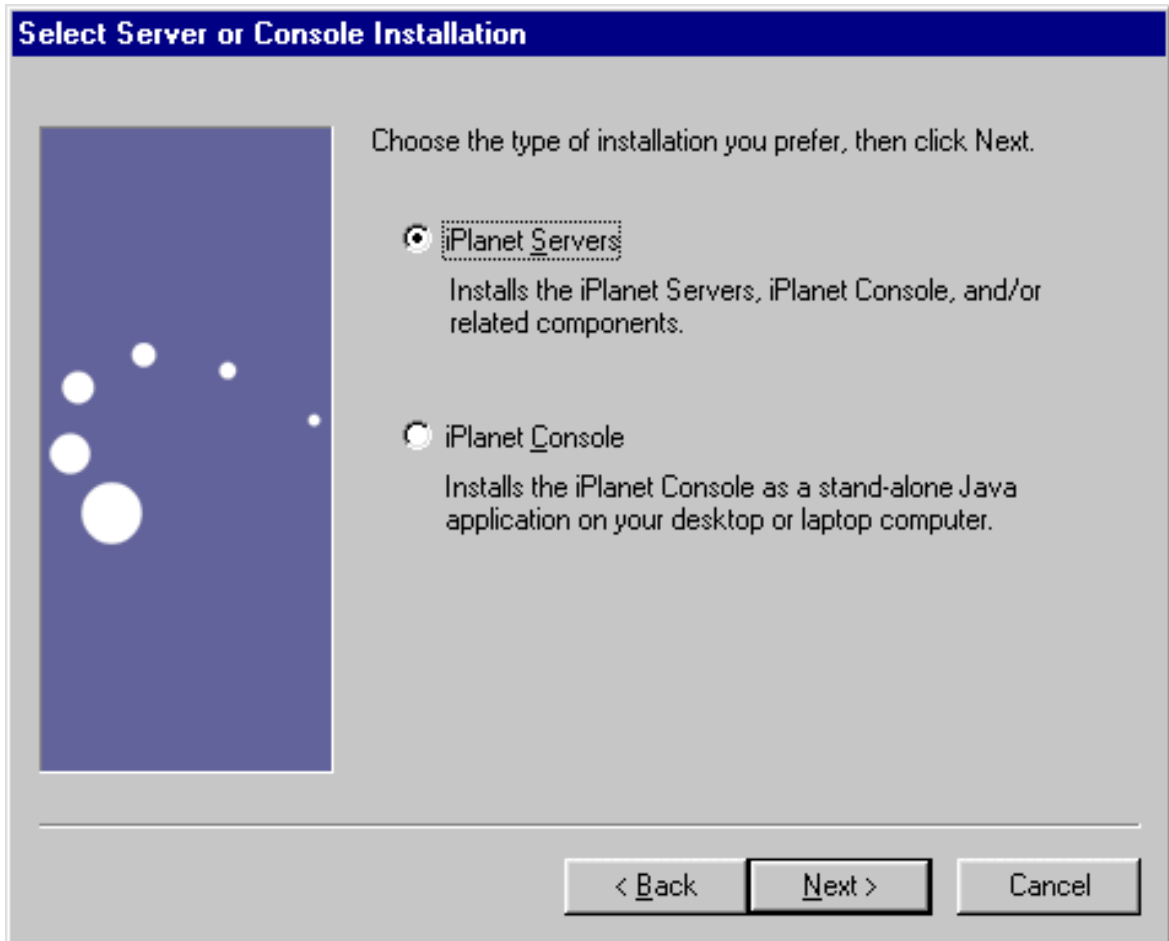
4. License Agreement

As part of the MMP installation process, you will be asked if you agree to the terms listed in the license agreement which is located in the `LICENSE.txt` file in the installation binaries. After reading the license agreement, click on **Yes** to continue with the installation.



5. Select Server or Console Installation

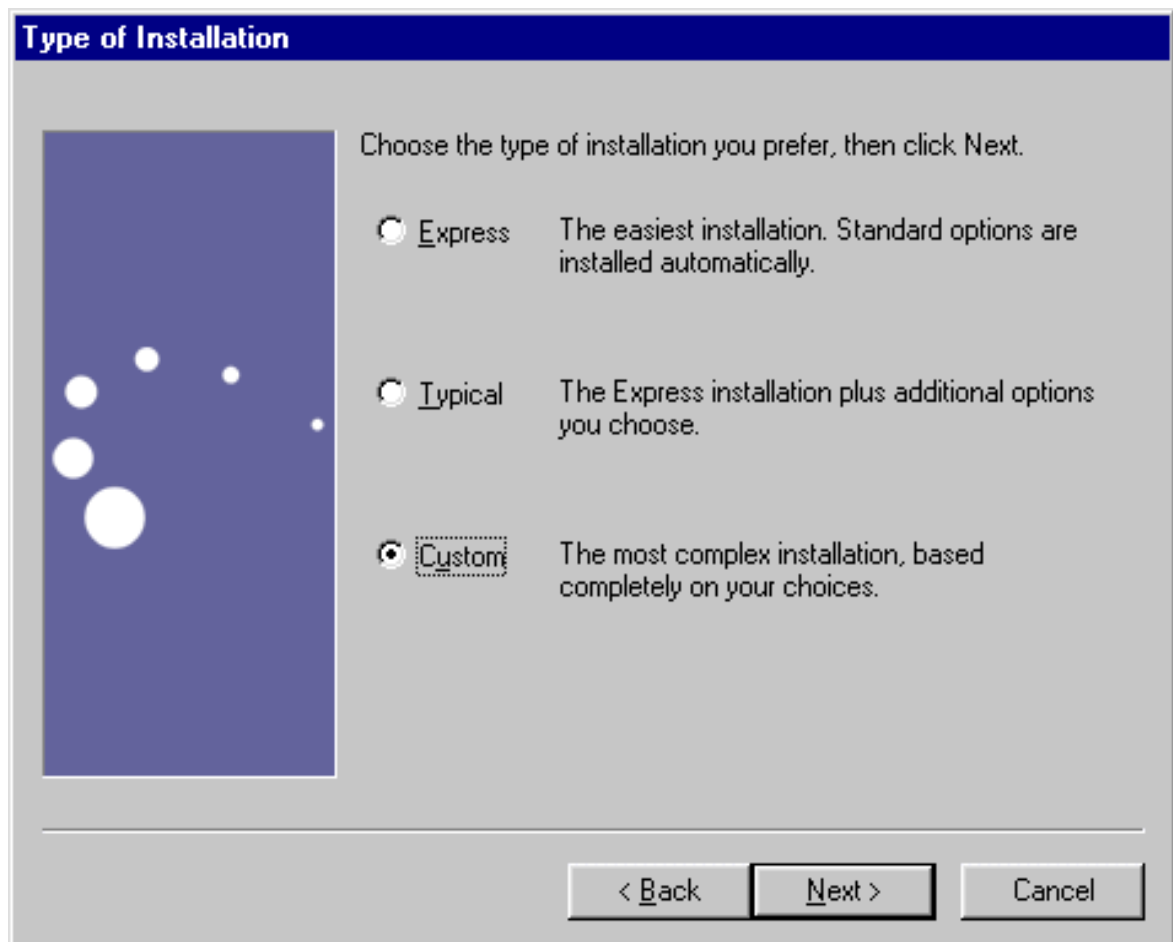
You are given the option to install the iPlanet Servers (which includes the iPlanet Console and related components) or solely the iPlanet Console, also referred to as Netscape Console. For the MMP installation, you should choose “iPlanet Servers.”



6. Installation Type

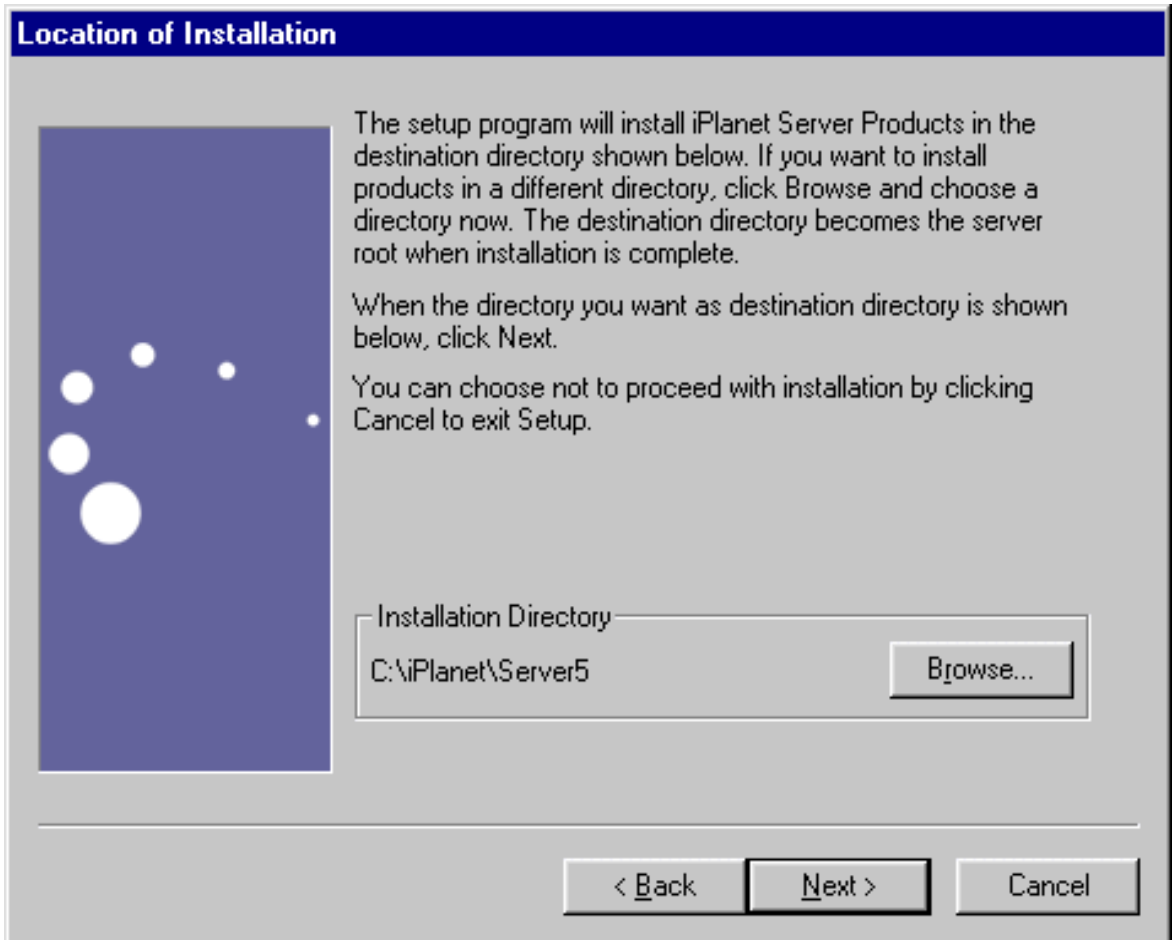
You are given the option to choose the type of installation you want to use. For the MMP, you cannot use the Express Installation Type. You can choose either Typical or Custom Installation. However, if you want to install both the Messaging Server and MMP on the same machine, you must install a Custom Installation so the POP and IMAP servers can be set to non-standard ports.

- **Typical Installation.** This level provides a balance between configuration options that you are asked to specify and those that are supplied automatically. This is the default level.
- **Custom Installation.** This level provides the greatest amount of configuration options and is intended for expert users. After you select the installation level, you enter your installation and configuration information, according to the type of installation you selected.



7. Installation Location (*server-root*)

Specify the desired installation location by clicking Browse. Or, you can click Next to accept the default.



8. Netscape Server Products Components

Specify which products in the Messaging Server Suite you want to install. For a detailed description on each product and component, see “Installation Components” on page 20.

For the MMP installation, click on iPlanet Messaging Server component and then click Change (In a stand-alone MMP installation, make sure iPlanet Messaging Server component is unchecked before clicking Change to select MMP.).

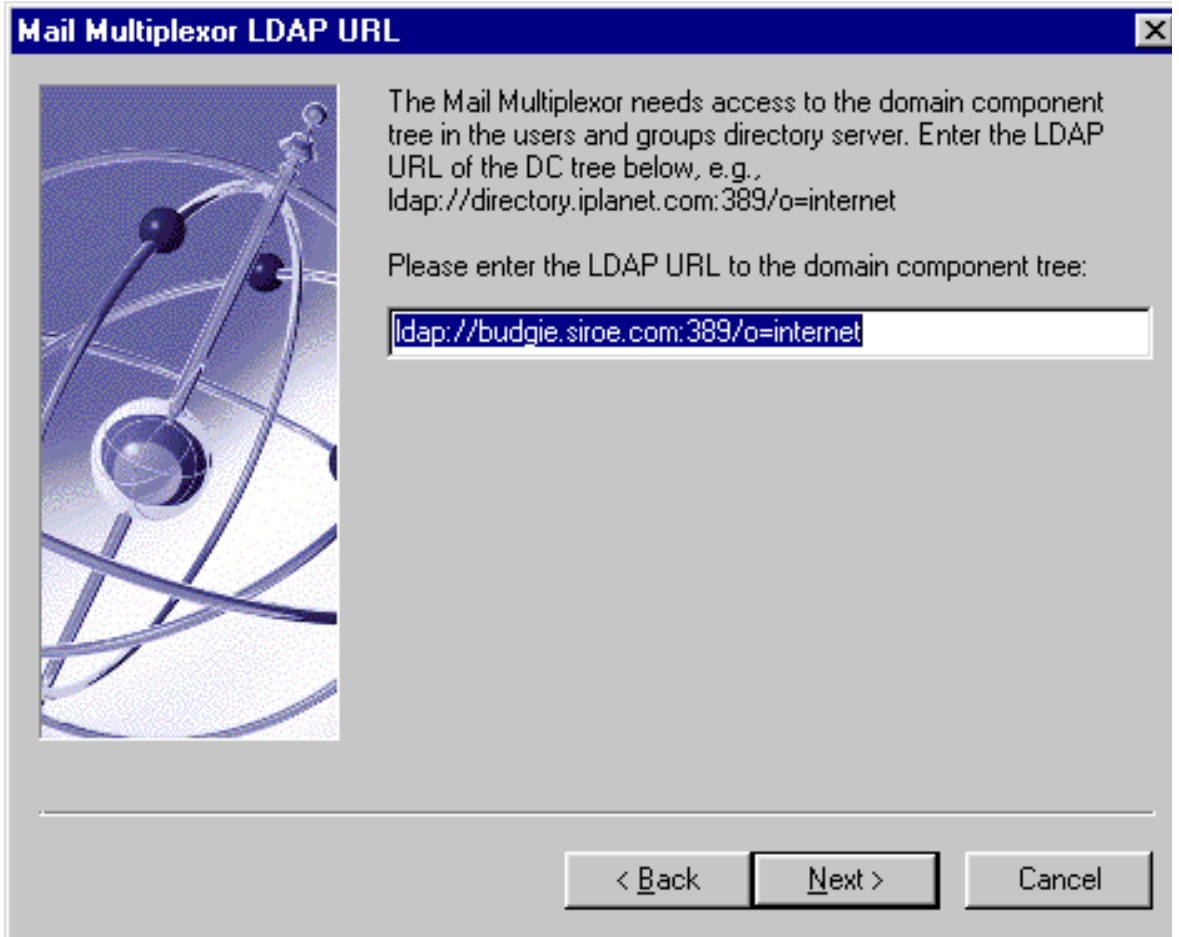
The Messaging Server component includes Messaging Server, iPlanet Internet Message Transport Agent, and iPlanet Messaging Multiplexor.

Make sure that iPlanet Messaging Multiplexor is the only sub-component checked (in a stand-alone MMP installation) before clicking Next.

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.”

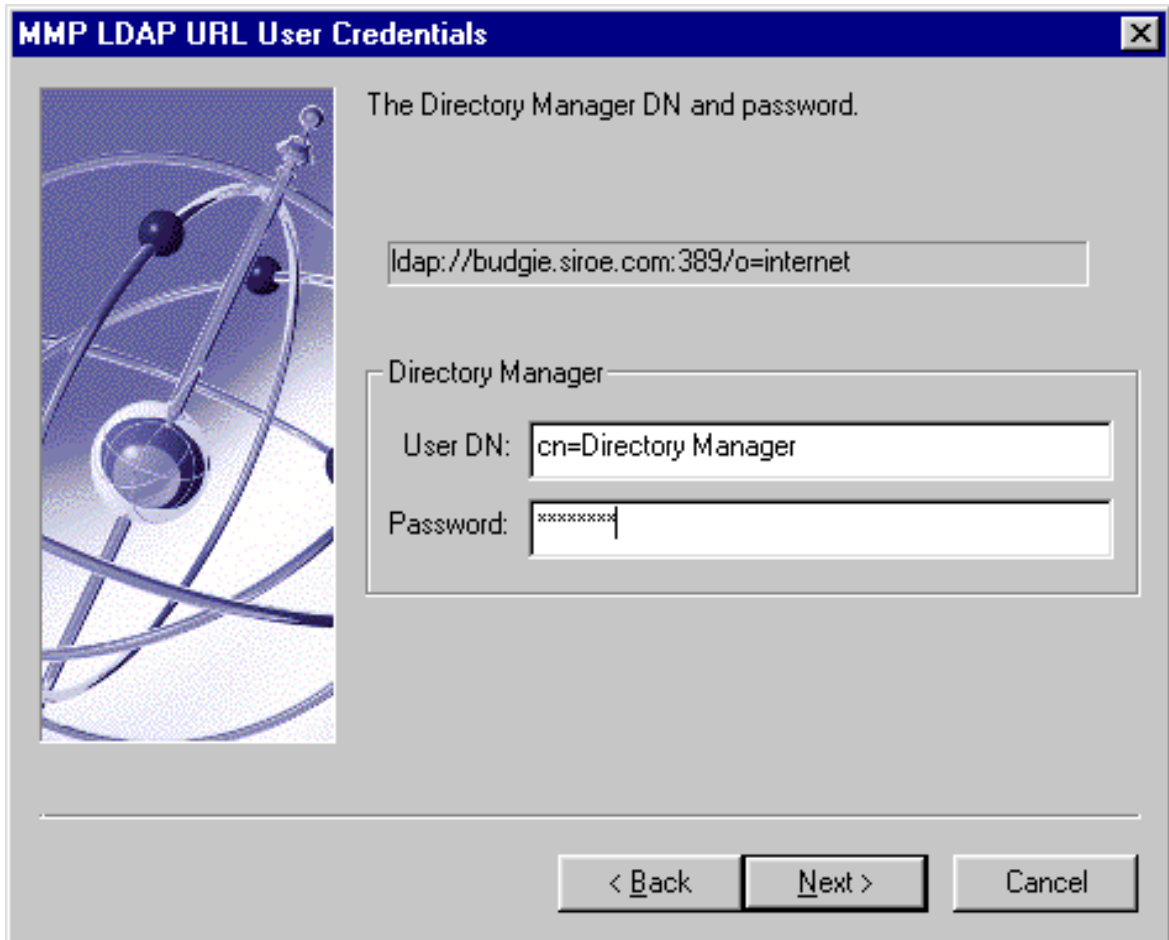
9. MMP Users and Groups Directory URL

Enter the LDAP URL of the DC tree so that the MMP will be able to access the DC tree in the Users and Groups Directory Server. This is usually in the following format: `ldap://user-group_directory_server_hostname>:port/o=internet`



10. MMP LDAP URL User Credentials

Enter the Bind DN and password of the Directory Manager or any LDAP user with read access to the Users and Groups Directory.



MMP LDAP URL User Credentials

The Directory Manager DN and password.

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

Directory Manager

User DN: cn=Directory Manager

Password: xxxxxxxx

< Back Next > Cancel

At this point, the installation begins. Various messages are displayed as the installation proceeds.

Configuring the MMP to use SSL

The MMP supports both unencrypted and encrypted (SSL) communications between the Messaging Server(s) and their mail clients. 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 double-click the iPlanet Console icon:
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. 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.
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.

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 through Services in the Control Panel.

If you want client-side SSL support, do the following:

12. A “Trusted Certificate Authority” should be installed on Messaging or Directory Server with an installed server certificate for the same domain.
13. Use the Store Administrator you created during your Messaging Server installation.

For more information, refer to the *iPlanet Messaging Server Administrator's Guide*.

14. 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.

15. Edit your `ImapProxyAService.cfg` file and:
 - a. Set `CertMapFile` to `certmap.conf`
 - b. Set `StoreAdmin` and `StorePass` to values from Step 13.
 - c. Set `CertmapDN` to the root of your Users and Groups tree.
16. If you want client certificates with POP3, repeat Step 15 for the `PopProxyAService.cfg` file.
17. If the MMP is not already running, start it through Services in the Control Panel.

18. 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` 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 MMP, go to Services in the Windows NT Control Panel and click on “Start.” You can also click on “Stop” to stop the MMP. The service options are described below in Table 4-2.

Table 4-2 MMP Service Options

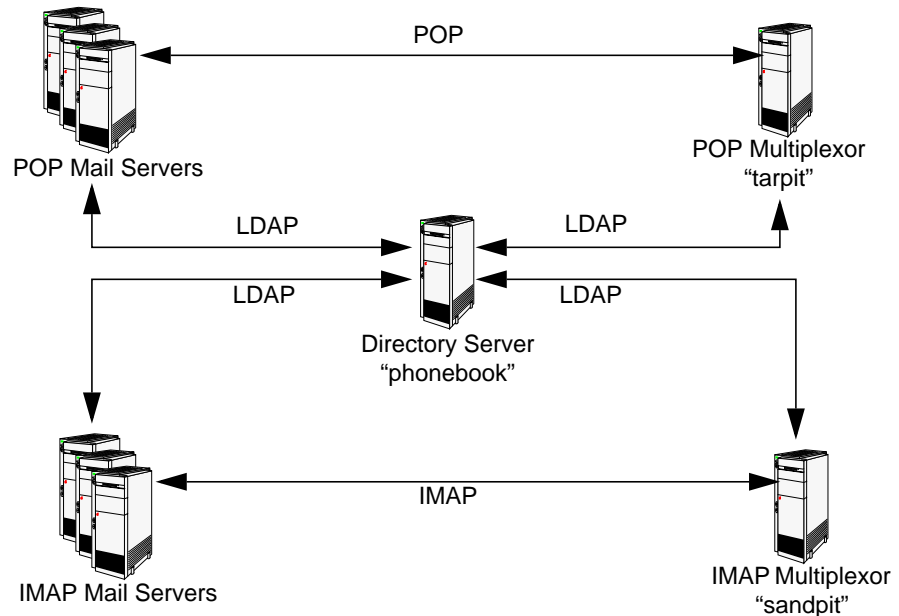
Option	Description
start	Starts the MMP (even if one is already running).
stop	Stops the most recently started MMP.
restart	To restart on Windows NT, stop the most recently started MMP and then start an MMP.
reload	To reload the MMP, go to the <code>mmp-instance</code> directory and type <code>AService refresh</code> at the command prompt.

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 4-1.

Figure 4-1 Multiple MMPs Supporting Multiple Messaging Servers



IMAP Configuration Example

The IMAP Multiplexor in Figure 4-1 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           c:\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    c:\iplanet\server5\mmp-sandpit\secmod.db
default:SSLCertFile      c:\iplanet\server5\mmp-sandpit\cert7.db
default:SSLKeyFile       c:\iplanet\server5\mmp-sandpit\key3.db
default:SSLKeyPasswdFile ""
default:SSLCipherSpecs   all
default:SSLCertNicknames Siroe.com Server-Cert
default:SSLCacheDir      c:\iplanet\iplanet\server5\mmp-sandpit
default:SSLBacksidePort  993
default:VirtualDomainFile c:\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       c:\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 4-1 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          c:\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 c:\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      c:\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 consoles 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>).

Using the Uninstall Program

This appendix describes how to remove an existing instance of 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.

In the directory where you installed the Messaging Server files, you will find the `uninstall` program. To uninstall, use the following steps:

1. Login as Administrator.

You must have superuser privileges (that is, logged in as Administrator) to run the `uninstall` program successfully.

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; it will handle the shutting down of the Directory Server.

3. Run the uninstall program.

Double-click on the `uninstall.exe` located in the `server-root` directory or choose Add/Remove Programs from the Control Panel.

4. The `uninstall` program will prompt you for the following information:

- Click on the Netscape Server Family Core, the Netscape Administration Suite, and the iPlanet Messaging Server components you want to uninstall. Refer to Table 1-1 on page 24 to determine which components and sub-components you can uninstall.

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.

- Enter the login and password for the Configuration Administrator.

At this point, `uninstall` should begin removing the various components that you specified from your system.

Your Messaging Server instance has now been removed.

In some cases, `uninstall` may not be able to remove some or all of your installation files. Check for any remaining files and remove them manually.

Make sure that the `server-root` directory is empty if you plan to re-install the messaging server into the same directory. In addition, if you choose to re-install the same instance, you should check the `msgregistry.inf` file in the `system32` 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.

Upgrading Your Messaging Server

This appendix contains instructions to help you upgrade previous versions of iPlanet Messaging Server 5.1 to iPlanet Messaging Server 5.2. It covers the following sections:

- “Pre-Upgrade Instructions,” on page 127
- “Upgrade to Messaging Server 5.2,” on page 130
- “Backout Procedure,” on page 134

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 128
- “Back Up the Existing Messaging Server Installation,” on page 128
- “Upgrade Directory Server,” on page 130

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:
 - `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.

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 any backup mechanism you already have in place.
2. You might want to 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 128.

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 ldapsrv -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 ldapsrv -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,

```
c:\iplanet\server5\slapd-budgie\setup -k
```

2. When you are asked about the iPlanet Server Products Components you want to install, be sure to 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` Script” on page 38.

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
```

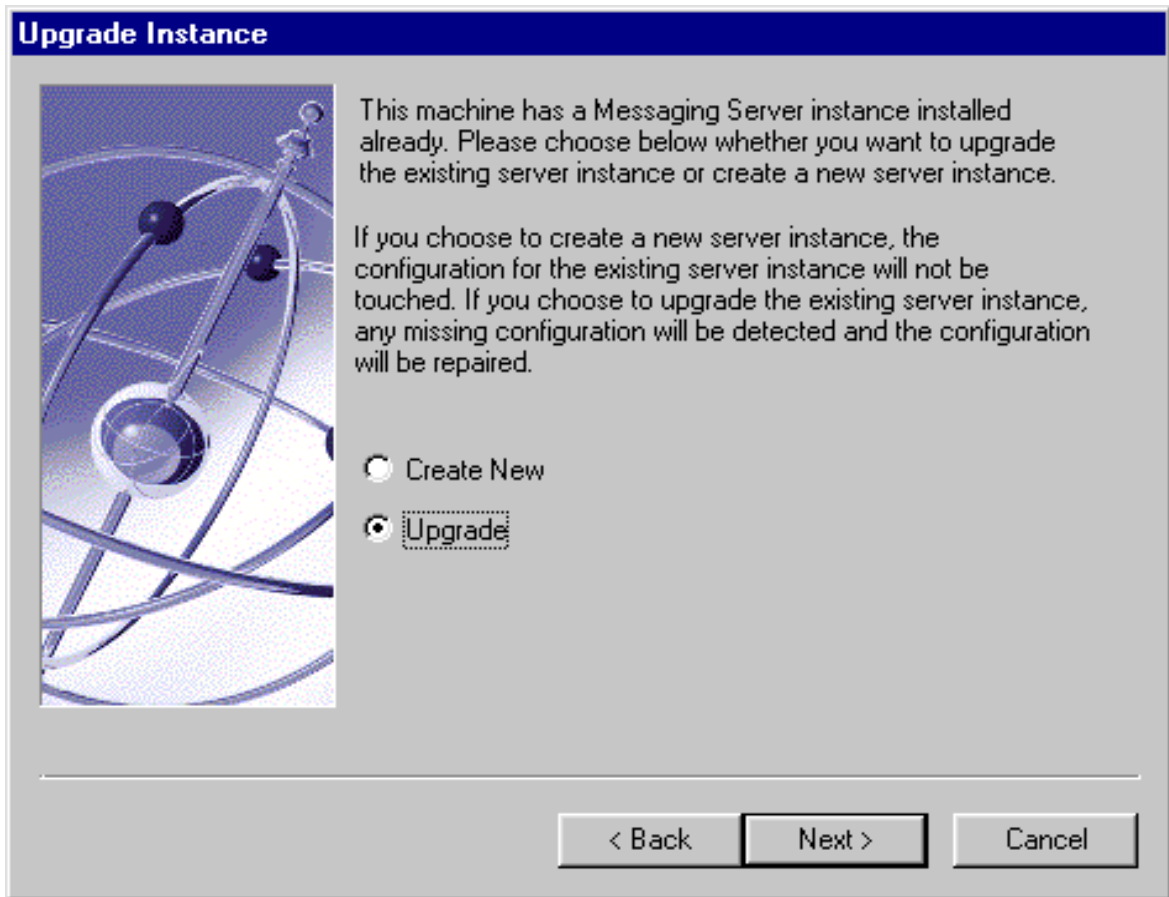
These configuration files and directories are moved to the `server-root\msg-instance\backup.timestamp` directory where *timestamp* indicates the time at which the installation took place.

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 Administrator 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:



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` Script” on page 38. 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 130, 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
```

7. After restarting the Messaging Server processes, check for any errors by reviewing the `mail.log_current` file in directory `msgserver-root\msg-instance\imta\log`.

Additionally, you should monitor the message queues to ensure that messages are not stuck in any queue.

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*.

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 128.

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 the message store, 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 128 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 administrative control. See also **domain**.

administration privileges A set of privileges that define a user's 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 than 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/*. See 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 informational 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**.

VERFY 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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