# Installation Guide

Netscape Directory Server

Version 4.1


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Netscape Communications Corporation 501 East Middlefield Road, Mountain View, CA 94043

# Contents

# Introduction

Welcome to the Netscape Directory Server and the Internet. Netscape Communications Corporation is the premier provider of open software that lets people and companies exchange information and conduct commerce over enterprise networks and the Internet.

## What Is in This Book?

This manual explains the various ways of installing the Netscape Directory Server and the NT synchronization service. Before you read this book, you should read the *Netscape Directory Server Deployment Guide*. That manual documents server concepts and provides tips and guidelines for planning your directory service.

After you finish planning your directory service, use this manual to install the Netscape Directory Server software components.

**Note** This book does not describe installation of the Netscape Directory Server Gateway since the gateway is now automatically installed when the Directory Server is installed. For details on gateway customization and installing the gateway under a stand-alone web server, see the *Netscape Gateway Customization Guide*.

## Conventions Used in This Book

`Monospaced font`—This typeface 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.

**Sidebar text** Sidebar text marks important information. Make sure you read the information before continuing with a task.

|—The vertical bar is used as a separator for user interface elements. For example, File|New means you should click the File menu and choose New. Server Status|View Log means you should click the Server Status button in the Server Manager and then click the View Log link.

Throughout this book you will see path references of the form:

```
<NSHOME>/slapd-<serverID>/...
```

In these situations, `<NSHOME>` represents the directory where you installed the server, and `<serverID>` represents the server identifier you gave the server when you installed it. For example, if you installed your server in `/export/ns-home` and gave the server an identifier of tango, then the actual path would be:

```
/export/ns-home/slapd-tango/. . .
```

Also, all paths specified in this manual are in Unix format. If you are using a Windows NT-based Directory Server, you should assume the Windows NT equivalent file paths whenever Unix file paths are shown in this book.

Chapter

1

# Preparing for Installation

Before you begin installing the Netscape Directory Server, you should verify that the systems on which you plan to install the software meet the minimum product requirements. In addition, you should understand what the various Directory Server components are and the order in which they should be installed. It is also a good idea to plan how you want to configure the software components before you begin the installation process.

This chapter contains information to help you prepare for installation, in the following sections:



The *Netscape Directory Server Deployment Guide* contains basic directory concepts as well as planning tips and guidelines that will help you successfully deploy and install your directory service. You should read that manual before proceeding with the installation process.

# Computer System Requirements

Before you can install the Netscape Directory Server, you must make sure you have met the minimum hardware and operating system requirements. The basic minimum requirements are as follows:

- Roughly 200 MB of disk space for a bare-bones installation. For production systems, you should plan at least 1 GB to support the product binaries, database, and log files; 2 GB and greater may be required for very large directories.
- 32 MB of RAM. However, you should plan from 256 MB to 1 GB of RAM for best performance on large production systems.
- One of the following operating systems at the appropriate version and patch levels:
  - Sun Solaris
  - Hewlett-Packard HP-UX
  - Microsoft Windows NT
  - IBM AIX
  - Digital Unix
  - Linux
  - SGI IRIX
- DNS must be properly configured on your system, and a static IP address must be assigned to your machine.

The currently supported operating system version numbers and patch requirements can be found at the following URL:

http://home.netscape.com/eng/server/directory/4.1/installation.html

# Installation Privileges

It is recommended that you install Directory Server as root (under Unix) or administrator (under NT). Root privileges are required for Directory Server installations if you plan to use the default port numbers (which are less than 1024).

# Installation Components

The Netscape Directory Server product contains four separate software components as follows:

- **Netscape Console**—The Netscape Console provides the common user interface for all Netscape server products. From it you can perform common server administration functions, such as stopping and starting 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 used to manage remote servers.

- **Administration Server**—The Administration Server is a common front end to all Netscape servers. It receives communications from Netscape Console and passes those communications on to the appropriate Netscape server. Your site will have at least one Administration Server for each server root in which you have installed a Netscape server.

- **Directory Server**—The Directory Server is Netscape's LDAP implementation. The Directory Server runs as the `ns-slapd` process (Unix) or `slapd` service (Windows NT) on your machine. This is the server that manages the directory databases and responds to client requests. The Directory Server is a required component.

  For fault-tolerance, you may choose to install additional instances of the Directory Server on different machines throughout your organization to store copies of all or part of the directory tree. This process is called *replication*. The server that contains the master copy of the directory data is called the supplier server. The server(s) that contain the replicated directory data are called consumer servers. The order in which you install supplier and consumer servers depends on whether you are performing a new installation or an upgrade. See "Installation Process Overview" on page 19 for details.

- **Directory Server gateway**—The Directory Server gateway is an LDAP client that you can access from a web browser. You use LDAP clients to access or change directory information. The Directory Server gateway is automatically installed when you install a Directory Server instance. You can access the gateway either from the Administration Server or you can configure a web server to manage the gateway.
- **Directory Express**—A customized version of the Directory Server gateway. Directory Express is intended for read-only directory access such as might be required for corporate phonebook usage. Directory Express is installed and managed in the same way as the Directory Server gateway.
- **NT Synchronization Service**—The NT Synchronization Service allows you to synchronize the entries in your Windows NT directory with your Netscape Directory Server entries. Install this component only if you want to synchronize your Netscape directory with your Windows NT directory so that when entries are created, modified, or deleted in one directory, the Synchronization Service makes the corresponding change to the other directory.

The order in which you install and configure the various components depends on whether you are performing a new installation or an upgrade. See “Installation Process Overview” on page 19 for details.

# Configuration Decisions

During Directory Server installation, you will be prompted for basic configuration information. You should decide how you are going to configure these basic parameters before you begin the installation process. You will be prompted for some or all of following information (depending on the type of installation that you decide to perform):

- Port number (see “Choose Unique Port Numbers” on page 13)
- Server root (see “Create a New Server Root” on page 14)
- Users and groups to run the server as (see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14)

- Your directory suffix (see “Determine your Directory Suffix” on page 16)
- Several different authentication user IDs (see “Defining Authentication Entities” on page 15)
- The location of the configuration and user Directory Servers (see “Determine the Location of the Configuration Directory” on page 16 and “Determine the Location of the User Directory” on page 18)
- The administration domain (see “Determine the Administration Domain” on page 18

# Choose Unique Port Numbers

Port numbers can be any number from 1 to 65535. Keep the following in mind when choosing a port number:

- The standard Directory Server (LDAP) port number is 389.
- The standard encrypted (LDAPS) port number is 636. Do not use this port number for the standard port even if 636 is not already in use.
- Under Unix, the Administration Server must run as root if the Directory Server is going to use standard port numbers (only root authenticated user accounts can access ports lower than 1024.) Under Windows NT, the Administration Server must run with administrator privileges if the Directory Server is going to use standard port numbers.
- Make sure the ports you choose are not already in use. Further, if you are using both LDAP and LDAPS communications, make sure the port numbers chosen for these two types of access are not identical.

For information on how to set up LDAPS communications for your Directory Server, see the *Netscape Directory Server Administrator’s Guide*.

# Create a New Server Root

Your server root is the directory where you install your Netscape servers. In the Netscape Directory Server documentation, it is referenced as <NSHOME>.

The server root must meet the following requirements:

- the directory must be on a local disk drive -- you cannot use a networked drive for installation purposes
- the directory must be empty, or contain only Netscape 4.x servers
- the server root directory must not be the same as the directory from which you are running the setup program

By default, the server root directory is

- `/usr/netscape/server4` on Unix systems
- `c:\netscape\server4` on Windows NT systems

# Decide Which User and Group to Run Netscape Servers As (Unix only)

For security reasons, it is always best to run Unix-based production servers with normal privileges. That is, you do not want to run the Directory Server with root privileges. However, you will have to run the Administration Server with root privileges if you want to use the standard Directory Server ports.

You must therefore decide what user accounts you will use for the following purposes:

- The user and group to run the Directory Server as. For Unix systems that support it, the special user account nobody is recommended. Also use group nobody if it is allowed by your operating system.
- The user and group to run the Administration Server as. For installations that use the default port numbers, this must be root. However, if you can use ports over 1024, then you should run the Administration Server as a normal user and group (use nobody if it is allowed by your operating system).

For sites that are installing multiple Netscape Servers, consider installing each server under a unique user name (such as uid `slapd` for Directory Server, or uid `msg` for Messaging Server). Doing this can help you with general system administration. However, you should use a common group for all Netscape servers, such as gid `Netscape`, to ensure that files can be shared between servers when necessary.

Before you can install the directory and the Administration Servers, you must make sure that these user and group accounts exist on your system.

# Defining Authentication Entities

As you install the Netscape Directory Server and the Administration Server, you will be asked for various user names, distinguished names (DN), and passwords. This list of login and bind entities will differ depending on the type of installation that you are performing:

- Directory Manager DN and password. The Directory Manager DN is the special directory entry to which access control does not apply. Think of the directory manager as your directory's superuser. (In the 1.x and 3.x release of the Directory Server, the Directory Manager DN was known as the root DN).

  The default Directory Manager DN is `cn=Directory Manager`. Because the Directory Manager DN is a special entry that is not stored in the directory tree (instead, it is stored in slapd.conf), the Directory Manager DN does not have to conform to any suffix configured for your Directory Server. Also, you should not create an actual Directory Server entry to use with the directory manager DN.

  The Directory Manager password must be at least 8 characters long.

- Configuration Directory Administrator ID and password. The configuration directory administrator is the person responsible for managing all the Netscape Servers accessible through the Netscape console. If you log in with this user ID, then you can administer any Netscape server that you can see in the server topology area of the Netscape console.

  For security, the configuration directory administrator should not be the same as the directory manager. The default configuration directory administrator ID is `admin`.

- Administration Server User and password. You are prompted for this only during custom installations. The Administration Server user is the special user that has “root” privileges for the local Administration Server. Authentication as this person allows you to administer all the Netscape servers stored in the local server root.

  The Administration Server user ID and password is used only if the Directory Server is down and so you are unable to log in as the configuration directory administrator. The existence of this user ID means that you can access the Administration Server and perform disaster recovery activities such as starting the Directory Server, reading log files, and so forth.

  For most situations, the Administration Server user and password should be identical to the configuration directory administrator ID and password.

# Determine your Directory Suffix

A directory suffix is the directory entry that represents the first entry in a directory tree. You will need at least one directory suffix for the tree that will contain your enterprise’s data. Netscape recommends that you select a directory suffix that corresponds to the DNS host name used by your enterprise. For example, if your organization uses the DNS name of `airius.com`, then select a suffix of `o=airius.com`.

For more information on suffixes and directory trees, see the *Netscape Directory Server Deployment Guide.*

# Determine the Location of the Configuration Directory

All 4.x Netscape servers use an instance of the 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 Netscape servers.

If you are installing the Directory Server only to support other Netscape servers, then that Directory Server is your configuration directory. If you are installing the Directory Server to use as part of a general directory service, then you will

have multiple Directory Servers installed in your enterprise and you must decide which one will host the `o=NetscapeRoot` tree. You must make this decision before you install any 4.x Netscape servers (including Netscape Directory Server).

For ease of upgrades, it is recommended you use a Directory Server instance that is dedicated to supporting the `o=NetscapeRoot` tree; this server instance should perform no other function with regard to managing your enterprise's directory data. Also, do not use port 389 for this server instance because doing so could prevent you from installing a Directory Server on that host that can be used for management of your enterprise's directory data.

Because the configuration directory normally experiences very little traffic, you can allow its server instance to coexist on a machine with another, more heavily loaded, Directory Server instance. However, for very large sites that are installing a large number of Netscape servers, you may want to dedicate a low-end machine to the configuration directory so as to not hurt the performance of your other production servers. Netscape server installations result in write activities to the configuration directory. For large enough sites, this write activity could result in a short-term performance hit to your other directory activities.

Also, as with any directory installation, consider replicating the configuration directory to increase availability and reliability. See the *Netscape Directory Server Deployment Guide* for information on using replication and DNS round robins to increase directory availability.

**WARNING** Corrupting the configuration directory tree can result in the necessity of reinstalling all other Netscape servers that are registered in that configuration directory. Remember the following guidelines when dealing with the configuration directory:

1. Always back up your configuration directory after you install a new Netscape server.
2. Never change the hostname or portnumber used by the configuration directory.
3. Never directly modify the configuration directory tree. Only the setup program for the various Netscape servers should ever modify the configuration.

# Determine the Location of the User Directory

Just as the configuration directory is the Directory Server that is used for Netscape server administration, the user directory is the Directory Server that contains your enterprise's data. That is, this is the Directory Server that contains the information that you want the Directory Server to store.

For most directory installations, the user directory and the configuration directory should be two separate server instances. These server instances can be installed on the same machine, but for best results you should consider placing the configuration directory on separate physical machine.

Between your user directory and your configuration directory, it is your user directory that will receive the overwhelming percentage of the directory traffic. For this reason, you should give the user directory the greatest computing resources. Because the configuration directory should receive very little traffic, it can be installed on a machine with very low-end resources (such as a minimally-equipped Pentium).

Also, you should use the default directory ports (389 and 636) for the user directory. If your configuration directory is managed by a server instance dedicated to that purpose, you should use some non-standard port for the configuration directory.

You can not install a user directory until you have installed a configuration directory somewhere on your network.

# Determine the Administration Domain

The administration domain allows you to logically group Netscape 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 Netscape 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.

Typical and Custom Installation ask you to identify the administration domain that the server will belong to. For many installations, you can have just one administration domain. In this case, pick a name that is representative of your organization.

For other installations, you may want different domains because of the demands at your site. In this latter case, try to name your administration domains after the organizations that will control the servers in that domain.

For example, if you are an ISP and you have three customers for whom you are installing and managing Netscape servers, create three administration domains each named after a different customer.

# Installation Process Overview

After you make decisions about which components to install and how to configure the components, you are ready to begin installing. The installation process varies depending on whether you are performing a new installation or upgrading from a previous version of the Directory Server. In both cases, there is a specific order you should follow when installing components. The following sections outline the process for each method.

# New Installation Process

The Directory Server allows you to install in four basic ways:

- Express Installation. Use this if you are installing for the purposes of evaluating or testing Netscape Directory Server. Express installation is described in “Using Express Installation” on page 23.
- Typical Installation. Use this if you are performing a normal install of the Directory Server. Typical installation is described in “Using Typical Installation” on page 26.
- Custom Installation. Use this if you want to perform advance activities during installation such as creating a consumer server. Several of the more common tasks that you might want to perform during custom installation are described in Chapter 3, “Using Custom Install.”
- Silent Installation. Use this if you want to script your installation process. This is especially useful for installing multiple consumer servers around your enterprise. Silent install is described in Chapter 4, “Silent Installation.”

Beyond determining which type of installation you should use, the process for installing Netscape Directory Server is as follows:

1. Plan your directory service. By planning your directory tree in advance, you can design a service that is easy to manage and easy to scale as your organization grows. For guidance on planning your directory tree, refer to the *Netscape Directory Server Deployment Guide*.
2. Install your Directory Server as described later in this manual.
3. Create the directory tree. You do not have to populate your entire tree now; however, you should create the basic structure for your tree, including all major branch points. For information about the different methods of creating a directory entry, see “Creating Directory Entries” in the *Netscape Directory Server Deployment Guide* or see “Creating a Directory Tree” on page 32.

4. Create additional Directory Server instances. These additional Directory Server instances will be your consumer servers. Netscape recommends that you create at least one consumer server.

5. If you want to maintain Windows NT user and group information in your Netscape directory service, you must install and configure the NT Synchronization Service. See Chapter 5, “Installing and Configuring the Synch Service,” for instructions.

# Upgrade Process

When upgrading your directory service, you should use the following sequence when installing Directory Server software components:

1. Upgrade all of your consumer servers.

2. Upgrade your supplier server.

3. If you are using the NT Synchronization Service, upgrade it after you finish upgrading your supplier and consumer servers. See Chapter 5, “Installing and Configuring the Synch Service,” for instructions.

The upgrade process from versions 1.03 and 3.01 of the Netscape Directory Server are described in Chapter 6, “Upgrading the Directory Server.”

Chapter

2

# Using Express and Typical Install

This chapter describes how to perform basic installation activities. This chapter contains the following sections:



It also describes how a 4.x Directory Server can be used with 3.x Netscape servers. For information on performing custom installations, see Chapter 3, "Using Custom Install." For information on performing silent installs, see Chapter 4, "Silent Installation."

## Using Express Installation

Use express installation if you are installing the Directory Server to evaluate or test the product. Because express installation does not offer you the choice of selecting your server port number or your directory suffix, you should not use it for production installations.

To perform an express installation, do the following:

1. On Unix machines, log in as root (root login is required for express installation). On Windows NT machines, login with Administrator privileges.
2. If you have not already done so, download the product binaries file to the installation directory.
3. On Unix, unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where *<filename>* corresponds to the product binaries that you want to unpack.

   On Windows NT, unzip the product binaries.
4. Run the setup program. You can find it in the directory to which you untarred or unzipped the installation files.
5. When you are asked what you would like to install, select the default, Netscape Servers.
6. When you are asked what type of installation you would like to perform, select Express Installation.
7. For server root or destination directory, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.
8. For server components, select the default (all components). On Windows NT, you can deselect the NT Synchronization Service component if you are not going to synchronize user and group information between this Windows NT host and your Directory Server. For information on how to install the NT Synchronization Service, see Chapter 5, “Installing and Configuring the Synch Service.”

9. Unix only. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

10. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges (think of this as the root or superuser identity for the Netscape Console).

11. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was labeled the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name does not need to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

12. For Directory Manager password, enter a value that is at least 8 characters in length.

The server is then unpackaged, minimally configured, and started. You are told what host and port number the Administration Server is listening on.

When you are asked if you want to delete the `install.inf` file, select the default (Yes).

Note the following about your new Directory Server installation:

- The Directory Server is listening on port 389.
- The server is configured to use the following suffixes:
  - — o=<your machine's DNS domain name> That is, if your machine is named `test.airius.com`, then you will have the suffix `o=airius.com` configured for this server.
  - — `dc=<host>, dc=<domain>, dc=<domain>`
  - — `o=NetscapeRoot`

  Do not modify the contents of the directory under the last two suffixes. Either place data under the first suffix, or create a new suffix to be used for this purpose.

# Using Typical Installation

Most first time installations of the 4.1 Directory Server can be performed using typical installation. You should also use typical installation when you are upgrading from a previous version of the Directory Server. For information on upgrading from a previous version of the Directory Server, see Chapter 6, "Upgrading the Directory Server."

Typical installation differs slightly depending on whether you are installing on Unix or Windows NT. The following sections outline the different procedures.

## Using Typical Installation on Unix

To perform a typical installation on Unix:

1. Log in as root.
2. If you have not already done so, download the product binaries file to the installation directory

3. Unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.

4. Run the setup program. You can find it in the directory where you untarred installation files.

5. When you are asked what you would like to install, select the default, Netscape Servers.

6. When you are asked what type of installation you would like to perform, select the default, Typical Installation.

7. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

8. For Netscape Server Family, Netscape Server Family Core Components, Netscape Directory Suite, and Administration Services components, select the default (all components).

9. For hostname, select the default (which is the local host).

10. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

11. For configuration directory, select the default if this directory will host your `o=NetscapeRoot` tree. Otherwise, enter `Yes`. You will then be asked for the contact information for the configuration directory. If the server you are currently installing is not the configuration directory, then the configuration directory must exist before you can continue this installation.

12. For the server that will host your user data, you must decide if this Directory Server will store your enterprise’s data. For most cases, you can select the default. However, if this server instance is intended to be only a configuration directory, then you should enter `Yes`.

13. For the Directory Server port, select the default (389) unless you already have another application using that port.

14. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

15. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges.

16. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

17. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

18. For Directory Manager password, enter a value that is at least 8 characters long.

19. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see "Determine the Administration Domain" on page 18.

20. For administration port number, enter a value that is not in use. Be sure to record this value.

21. For the user you want to run the Administration Server as, enter `Root`. This is the default. For information on why you should run the Administration Server as root, see "Decide Which User and Group to Run Netscape Servers As (Unix only)" on page 14.

The server is then unpackaged, minimally configured, and started. You are told what host and port number the Administration Server is listening on.

The server is configured to use the following suffixes:

- The suffix that you configured.
- `dc=<host>, dc=<domain>, dc=<domain>`
- `o=NetscapeRoot`

Do not modify the contents of the directory under the last two suffixes. Instead, place your directory data under the suffix that you created, or create a new suffix for this purpose. For details on how to create a new suffix for use by your Directory Server, see the *Netscape Directory Server Administrator's Guide*.

When you are asked if you want to delete the `install.inf` file (or installation cache), for security reasons you should select `Yes`.

# Using Typical Installation on Windows NT

To perform a typical installation on Windows NT:

1. Log in as administrator.
2. If you have not already done so, download the product binaries file to the installation directory.
3. Unzip the product binaries files and run the setup program.
4. When you are asked what you would like to install, select the default, Netscape Servers.
5. When you are asked what type of installation you would like to perform, select the default, Typical.
6. For server installation root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.
7. For Components, select the default (all components). Do not select the NT Synchronization Service component if you are not going to synchronize user and group information between this Windows NT host and your Directory Server. For information on how to install the NT Synchronization Service, see Chapter 5, “Installing and Configuring the Synch Service.”
8. For configuration directory, select the default if this directory will host your o=NetscapeRoot tree. Otherwise, enter the appropriate contact information for the configuration directory. If this Directory Server is not the configuration directory, then the configuration directory must exist and be running before you can continue this installation.
9. For the directory to store data in, you must decide if this Directory Server instance will store your enterprise’s data. For most cases, you can select the default, “Store data in this Directory Server”. However, if this server instance is intended to be only a configuration directory, then you should select “Store data in an existing Directory Server.”

10. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's hostname is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

11. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your Internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

12. For the Directory Server port, select the default (389) unless you already have another application using that port.

13. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges.

14. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see "Determine the Administration Domain" on page 18.

15. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are

    ```
    cn=Directory Manager
    cn=root
    uid=admin
    ```

16. For Directory Manager password, enter a value that is at least 8 characters long.

17. For administration port number, enter a value that is not in use. Be sure to record this value.

The server is then unpackaged, minimally configured, and started. You are told which host and port number the Administration Server is listening on.

The server is configured to use the following suffixes:

- The suffix that you configured.
- `dc=<host>, dc=<domain>, dc=<domain>`
- `o=NetscapeRoot`

Do not modify the contents of the directory under the last two suffixes. Instead, place your directory data under the suffix that you created, or create a new suffix for this purpose. For details on how to create a new suffix for use by your Directory Server, see the *Netscape Directory Server Administrator's Guide*.

When you are asked if you want to delete the `install.inf` file (or installation cache), for security reasons you should select Yes.

# Creating a Directory Tree

During installation, a simple directory database was created for you. In addition, a simple directory structure was placed in the database for you to use. This directory structure contained basic access control and the major branch points for the recommended directory structure.

At this time, you must populate your database with user entries. There are several ways you can create a directory:

- Create a database from LDIF—Use this method if you want to use the sample directory shipped with the Directory Server, if you are importing entries from another directory via LDIF, or if you have more than a few entries to add at once. For more information about LDIF, refer to the *Netscape Directory Server Administrator's Guide*.

- Start your Directory Server with an empty database—This method requires you to populate your directory using an LDAP client such as the Directory Server gateway or the `ldapmodify` command-line utility. Use this method if you have just a few entries to add at a time. For information on setting up the Directory Server gateway, see the *Netscape Gateway Customization Guide*.

As you are populating your directory, consider your access control needs and set access control accordingly. If you do not set any access control for your directory, you will be able to access your directory only as the root DN. For more information on access control, see the *Netscape Directory Server Deployment Guide* and the *Netscape Directory Server Administrator's Guide*.

# Using Netscape SuiteSpot 3.x Servers with a Netscape 4.x Directory Server

The Netscape 3.x Directory Server used to contain functionality to automatically include SuiteSpot settings in the directory. This functionality was available both during installation and through the directory manager forms. The 4.x Directory Server no longer includes any such functionality for automatic integration with SuiteSpot 3.x servers. However, there are work-arounds available.

First, if you are migrating from Netscape 3.x Directory Server to 4.x, then all you need to do is complete the migration process. All your SuiteSpot settings will be preserved during the migration, and your 3.x Netscape servers should continue to work flawlessly with your new 4.x Directory Server. For information on migrating Directory Servers to 4.x, see Chapter 6, "Upgrading the Directory Server."

If, however, you are installing a brand-new 3.x SuiteSpot server and you want that server to work with a 4.x Directory Server that has never before been used by a 3.x server, then you need to add a few additional entries to your 4.x Directory Server. A template for these entries is available in the following file:

```
<NSHOME>/slapd-<server ID>/ldif/suitespot3.ldif
```

This file contains the basic entries and permissions necessary to allow a 3.x SuiteSpot server to work with the 4.x Directory Server. Use the `ldapmodify` command-line tool to add the contents of this file to your already running 4.x

Directory Server. Doing so adds the same directory entries to your 4.x Directory Server as if you had used the “Database Management” | “SuiteSpot Settings” form in the 3.x Directory Server manager.

For information on how to add LDIF to a Directory Server with `ldapmodify`, see the *Netscape Directory Server Administrator’s Guide*. For details on managing SuiteSpot integration, see the “Managing SuiteSpot Integration” section in chapter 4 of the *Netscape Directory Server 3.x Administrator’s Guide*.

Chapter

3

# Using Custom Install

This chapter describes how to perform various types of custom installations. It is assumed that before you attempt a custom installation, you already familiar with the Netscape Directory Server, its usage, and its basic concepts.

This chapter describes the following activities during installation:



## Creating an SIR Consumer Server

This section describes how to create a consumer server for supplier-initiated replication (SIR) using custom install. The procedure is described first for Unix installations, and then for Windows NT. (See "SIR Consumer Server Installs on Windows NT" on page 39.) For more information about SIR, refer to the *Netscape Directory Server Administrator's Guide*.

# SIR Consumer Server Installs on Unix

1. Log in as root.
2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.
3. Unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.
4. Run the setup program. You can find it in the directory where you untarred installation files.
5. When you are asked what you would like to install, select the default, Netscape Servers.
6. When you are asked what type of installation you would like to perform, select the Custom Installation.
7. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.
8. For Netscape Server Family, Netscape Server Family Core Components, Netscape Directory Suite, and Administration Services components, select the default (all components).
9. For host name, select the default (which is the local host).
10. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

11. For configuration directory, enter `Yes`. This allows you to use your existing supplier server as the configuration directory. If you want this consumer server to be its own configuration directory, then enter `No` for this prompt. The next few steps assume that you entered `Yes` for this prompt. If you are entering `No` then skip to step 14.

12. For configuration directory host name and port number, enter the fully qualified domain name of the machine on which the configuration directory is running, and then enter the port number that the configuration directory is listening to.

13. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges. This user ID and password was created when the configuration directory was installed.

14. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see “Determine the Administration Domain” on page 18.

15. For the Directory Server port, select the default (389) unless you already have another application using that port.

16. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine’s host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

17. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

18. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

19. For Directory Manager password, enter a value that is at least 8 characters long.

20. For set up replication, enter `Yes`.

21. For set up a supplier server, select the default (this server is not a supplier).

22. For set up a consumer server, select the first option (SIR).

23. For Supplier DN and password, enter the distinguished name and password that the supplier server will use when updating this consumer server.

24. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

25. For administration port number, enter a value that is not in use. Be sure to record this value.

26. For the IP address to bind to, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

27. For server administrator ID, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you specified for the Configuration Directory Administrator.

28. For the user you want to run the Administration Server as, enter `Root`. This is the default. For information on why you should run the Administration Server as root, see "Decide Which User and Group to Run Netscape Servers As (Unix only)" on page 14.

The server is then installed and started. You still must initialize your consumer server from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# SIR Consumer Server Installs on Windows NT

1. Log in as administrator.

2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.

3. Unzip the product binaries files and run the setup program.

4. When you are asked what you would like to install, select the default, Netscape Servers.

5. When you are asked what type of installation you would like to perform, select the Custom Installation.

6. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

7. For Netscape Server Family Core Components, Netscape Directory Suite, and NT Synchronization Service, select all the components except for the NT Synchronization Service. (NT Synchronization Service installation is described separately in Chapter 5, “Installing and Configuring the Synch Service.”

8. For configuration directory, select “Use existing configuration Directory Server.” This allows you to use your existing supplier server as the configuration directory.

   If you want this consumer server to be its own configuration directory, then select “This instance will be the configuration directory.”

   The next few steps assume that you are using an existing configuration directory. If not then skip to step 11.

9. For host and port, enter the fully qualified domain name of the machine on which the configuration directory is running, and then enter the port number that the configuration directory is listening to.

10. For Bind As and password, enter the configuration directory user ID and password. That is, enter the user ID and password that you log in as when you want to authenticate to the console with full privileges. This user ID and password were created when the configuration directory was installed.

11. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see “Determine the Administration Domain” on page 18.

12. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization’s directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

13. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

14. For the Directory Server port, select the default (389) unless you already have another application using that port.

15. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

16. For Directory Manager password, enter a value that is at least 8 characters long.

17. For Configure server for replication, select "A consumer that will have updates pushed to it from another server (SIR)".

18. For Supplier DN and password, enter the distinguished name and password that the supplier server will use when updating this consumer server.

19. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

20. For Administration Server IP Address, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

21. For Administration Server Authentication, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you use for the Configuration Directory Administrator.

22. For administration port number, enter a value that is not in use. Be sure to record this value.

The server is then installed and started. You still must initialize your consumer server from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# Creating a CIR Consumer Server

This section describes how to create a consumer server for consumer-initiated replication (CIR) using custom install. The procedure is described first for Unix installations, and then for Windows NT. (See "CIR Consumer Server Installs on Windows NT" on page 47.) For more information about CIR, refer to the *Netscape Directory Server Administrator's Guide.*

## CIR Consumer Server Installs on Unix

1. Log in as root.

2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.

3. Unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.

4. Run the setup program. You can find it in the directory where you untarred installation files.

5. When you are asked what you would like to install, select the default, Netscape Servers.

6. When you are asked what type of installation you would like to perform, select Custom Installation.

7. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

8. For Netscape Server Family, Netscape Server Family Core Components, Netscape Directory Suite, and Administration Services components, select the default (all components).

9. For host name, select the default (which is the local host).

10. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

11. For configuration directory, enter `Yes`. This allows you to use your existing supplier server as the configuration directory.

    If you want this consumer server to be its own configuration directory, then enter `No` for this prompt.

    The next few steps assume that you entered `Yes` for this prompt. If you are entering `No` then skip to step 14.

12. For configuration directory host name and port number, enter the fully qualified domain name of the machine on which the configuration directory is running, and then enter the port number that the configuration directory is listening to.

13. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges. This userID and password was created when the configuration directory was installed.

14. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see “Determine the Administration Domain” on page 18.

15. For the Directory Server port, select the default (389) unless you already have another application using that port.

16. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine’s host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

17. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

18. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short

and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

```
cn=Directory Manager

cn=root

uid=admin
```

19. For Directory Manager password, enter a value that is at least 8 characters long.

20. For set up replication, enter `Yes`.

21. For set up a supplier server, select the default (this server is not a supplier).

22. For set up a consumer server, select the second option (CIR).

23. For supplier host name and port, enter the fully qualified DNS host name of the supplier server and the port that it is listening to.

24. For the replication DN and password, enter the distinguished name on the supplier server that has read, search, and compare privileges to the replicated tree, and to the supplier server's change log directory.

25. For the tree to replicate, enter the distinguished name of the root point of the directory tree that this consumer server will receive. That is, if you are replicating the tree under `ou=people, o=airius.com`, then enter that DN here.

    The setup program will now attempt to bind to your supplier server using the replication DN and password that you supplied. If the supplier server is not running, or if you have not yet created the replication DN on the supplier server, setup will indicate that it could not bind to the supplier server. However, the setup script will continue. Once your consumer server has been installed, you should go to your supplier server and create the directory entry and access control permissions that the consumer requires for replication purposes.

26. For replication synch interval, enter how long you want the consumer server to wait before checking to see if any updates are required. A value of 0 causes the consumer server to always stay in synch (there is no interval between update attempts).

27. For replication days, specify the days of the week on which replication can begin. Values are an integer, 0-6, representing a day of the week. That is, 0=Sunday, 1=Monday, 2=Tuesday, and so forth. To specify multiple days of the week, enter each integer with no delimiter between them. Thus, to replicate on Sunday and Wednesday, enter 03. To replicate every day of the week, select the default (all).

28. For replication time, enter the range of time during which replication can begin. Specify times in 24 hour format. For example, 0100-2300 allows replication to begin anytime between 1 a.m. and 11 p.m. To allow replication to begin any time during the day, select the default (all day).

29. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

30. For administration port number, enter a value that is not in use. Be sure to record this value.

31. For the IP address to bind to, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

32. For Server Administrator ID, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you specified for the Configuration Directory Administrator.

33. For the user you want to run the Administration Server as, enter `Root`. This is the default. For information on why you should run the Administration Server as root, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

The server is then installed and started. You still must initialize your consumer server from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# CIR Consumer Server Installs on Windows NT

1. Log in as administrator.
2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.
3. Unzip the product binaries files and run the setup program.
4. When you are asked what you would like to install, select the default, Netscape Servers.
5. When you are asked what type of installation you would like to perform, select Custom Installation.
6. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.
7. For Netscape Server Family Core Components, Netscape Directory Suite, and NT Synchronization Service, select all the components except for the NT Synchronization Service. (NT Synchronization Service installation is described separately in Chapter 5, "Installing and Configuring the Synch Service."
8. For configuration directory, select "Use existing configuration Directory Server." This allows you to use your existing supplier server as the configuration directory. If you want this consumer server to be its own configuration directory, then select "This instance will be the configuration directory." The next few steps assume that you are using an existing configuration directory. If not then skip to step 11.

9. For host and port, enter the fully qualified domain name of the machine on which the configuration directory is running, and then enter the port number that the configuration directory is listening to.

10. For Bind As and password, enter the configuration directory user ID and password. That is, enter the user ID and password that you log in as when you want to authenticate to the console with full privileges. This user ID and password was created when the configuration directory was installed.

11. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see "Determine the Administration Domain" on page 18.

12. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

13. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

14. For the Directory Server port, select the default (389) unless you already have another application using that port.

15. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short

and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

```
cn=Directory Manager
cn=root
uid=admin
```

16. For Directory Manager password, enter a value that is at least 8 characters long.

17. For Configure server for replication, select “A consumer that will pull updates from another server (CIR)”.

18. For host and port, enter the fully qualified DNS host name of the supplier server and the port that it is listening to.

19. For Bind As and password, enter the distinguished name on the supplier server that has read, search, and compare privileges to the replicated tree, and to the supplier server’s changelog directory.

20. For the Root of Replication, enter the distinguished name of the root point of the directory tree that this consumer server will receive. That is, if you are replicating the tree under `ou=people, o=airius.com`, then enter that DN here.

21. For replication days, specify the days of the week on which replication can begin. To replicate every day of the week, select the default (all).

22. For replication time, enter the range of time during which replication can begin. To allow replication to begin at any time during the day, select the default (all day).

23. For replication synch interval, enter how long you want the consumer server to wait before checking to see if any updates are required.

    The setup program will now attempt to bind to your supplier server using the replication DN and password that you supplied. If the supplier server is not running, or if you have not yet created the replication DN on the supplier server, setup will indicate that it could not bind to the supplier server. However, the setup script will continue. Once your consumer server

has been installed, you should go to your supplier server and create the directory entry and access control permissions that the consumer requires for replication purposes.

24. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

25. For administration port number, enter a value that is not in use. Be sure to record this value.

26. For Administration Server IP Address, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

27. For Administration Server Authentication, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you use for the Configuration Directory Administrator.

The server is then installed and started. You still must initialize your consumer server from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# Creating an SIR Supplier Server

This section describes how to create a supplier server for SIR using custom install. The procedure is described first for Unix installations, and then for Windows NT. (See "SIR Supplier Server Installs on Windows NT".) For more information about SIR, refer to the *Netscape Directory Server Administrator's Guide.*

# SIR Supplier Server Installs on Unix

1. Log in as root.
2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.
3. Unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.
4. Run the setup program. You can find it in the directory where you untarred installation files.
5. When you are asked what you would like to install, select the default, Netscape Servers.
6. When you are asked what type of installation you would like to perform, select the Custom Installation.
7. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.
8. For Netscape Server Family, Netscape Server Family Core Components, Netscape Directory Suite, and Administration Services components, select the default (all components).
9. For host name, select the default (which is the local host).
10. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

11. For configuration directory, select the default if this directory will host your `o=NetscapeRoot` tree. Otherwise, enter `Yes`. You will then be asked for the contact information for the configuration directory. If the server you are currently installing is not the configuration directory, then the configuration directory must exist before you can continue this installation.

12. For user directory, select the default, `No`.

13. For the Directory Server port, select the default (389) unless you already have another application using that port.

14. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

15. For Configuration Directory Administrator ID and password, enter the name and password that you log in as when you want to authenticate to the console with full privileges.

16. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

17. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory.

It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

```
cn=Directory Manager
cn=root
uid=admin
```

18. For Directory Manager password, enter a value that is at least 8 characters long.

19. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see "Determine the Administration Domain" on page 18.

20. For set up replication, enter `Yes`.

21. For set up a supplier server, select the first option (SIR).

22. For change log suffix and change log database directory, select the defaults. This is the suffix used by the directory tree that will store all changes made to the supplier server, and the location of the database used to store these changes. These changes must be tracked so that the supplier can know how to update it's consumer servers.

23. For consumer host name and port, enter the fully qualified DNS name and port of the machine where a consumer server will be running.

24. For the replication DN and password, enter the supplier DN and password for the consumer server. For example, `cn=supplier`. By entering this value here, you are only telling the supplier server how to bind to the consumer server; you are not actually setting up the supplier DN on the consumer server. For information on how to set up a supplier DN, see the *Netscape Directory Server Administrator's Guide*.

25. For the tree to replicate, enter the distinguished name of the root point of the directory tree that this consumer server will receive. That is, if you are replicating the tree under `ou=people, o=airius.com`, then enter that DN here.

At this point the setup program will attempt to bind to your consumer server using the DN and password that you supplied. If the consumer server is not running, or if you have not yet created the supplier DN on the consumer server, setup will indicate that it could not bind to the consumer server. However, the setup script will continue. Once your supplier server has been installed, you should go to your consumer server and create the supplier DN required for replication purposes.

**26.** For replication days, specify the days of the week on which replication can begin. Values are an integer, 0-6, representing a day of the week. That is, 0=Sunday, 1=Monday, 2=Tuesday, and so forth. To specify multiple days of the week, enter each integer with no delimiter between them. Thus, to replicate on Sunday and Wednesday, enter 03. To replicate every day of the week, select the default (all).

**27.** For replication time, enter the range of time during which replication can begin. Specify times in 24 hour format. For example, 0100-2300 allows replication to begin anytime between 1 a.m. and 11 p.m. To allow replication to begin any time during the day, select the default (all day).

**28.** Now you are asked if you want to set up this supplier server to also be a consumer server. Do this if you are using replication chaining. Otherwise, select the default (NONE). For information on the questions you will be asked during a consumer server setup, see “SIR Consumer Server Installs on Unix” on page 36 or “CIR Consumer Server Installs on Unix” on page 42.

**29.** For sample entries, select the default `No`.

**30.** For import an LDIF file, enter the full path to an LDIF file if you have one available. Otherwise, enter the word `suggest`. `Suggest` creates a simple directory tree that conforms to Netscape's recommended directory structure.

**31.** For disable schema checking, select the default unless you think you may have a problem with old schema. You are strongly recommended to clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

**32.** For administration port number, enter a value that is not in use. Be sure to record this value.

33. For the IP address to bind to, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

34. For Server Administrator ID, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you specified for the Configuration Directory Administrator.

35. For the user you want to run the Administration Server as, enter `Root`. This is the default. For information on why you should run the Administration Server as root, see "Decide Which User and Group to Run Netscape Servers As (Unix only)" on page 14.

The server is then installed and started. You still must initialize your consumer server(s) from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# SIR Supplier Server Installs on Windows NT

1. Log in as administrator.

2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.

3. Unzip the product binaries files and run the setup program.

4. When you are asked what you would like to install, select the default, Netscape Servers.

5. When you are asked what type of installation you would like to perform, select Custom Installation.

6. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

7. For Netscape Server Family Core Components, Netscape Directory Suite, and NT Synchronization Service, select all the components except for the NT Synchronization Service. (NT Synchronization Service installation is described separately in Chapter 5, “Installing and Configuring the Synch Service.”

8. For configuration directory, select the default. However, if this directory will not host your `o=NetscapeRoot` tree then select “Use existing configuration Directory Server.” If you select this option, then the configuration directory must exist before you can continue this installation.

9. For Directory to store data, select the default (“Store data in this Directory Server.”)

10. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine’s host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

11. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization’s directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

12. For the Directory Server port, select the default (389) unless you already have another application using that port.

13. For Configuration Directory Administrator ID and password, enter the name and password that you log in as when you want to authenticate to the console with full privileges.

14. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see “Determine the Administration Domain” on page 18.

15. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

16. For Directory Manager password, enter a value that is at least 8 characters long.

17. For Configure server for replication, select “A supplier that will push updates to another server (SIR)”.

18. For changelog suffix and changelog database directory, select the defaults. This is the suffix used by the directory tree that will store all changes made to the supplier server, and the location of the database used to store these changes. These changes must be tracked so that the supplier can know how to update it’s consumer servers.

19. For host and port, enter the fully qualified DNS name and port of the machine where a consumer server will be running.

20. For the Bind As and password, enter the supplier DN and password for the consumer server. For example, `cn=supplier`. By entering this value here, you are only telling the supplier server how to bind to the consumer server; you are not actually setting up the supplier DN on the consumer server. For information on how to set up a supplier DN, see the *Netscape Directory Server Administrator’s Guide*.

21. For the Root of Replication, enter the distinguished name of the root point of the directory tree that this consumer server will receive. That is, if you are replicating the tree under `ou=people, o=airius.com`, then enter that DN here.

22. For replication days, specify the days of the week on which replication can begin. To replicate every day of the week, select the default (all).

23. For replication time, enter the range of time during which replication can begin. To allow replication to begin at any time during the day, select the default (all day).

24. For replication time, enter the range of time during which replication can begin. Specify times in 24 hour format. For example, 0100-2300 allows replication to begin anytime between 1 a.m. and 11 p.m. To allow replication to begin any time during the day, select the default (all day).

    At this point the setup program will attempt to bind to your consumer server using the DN and password that you supplied. If the consumer server is not running, or if you have not yet created the supplier DN on the consumer server, setup will indicate that it could not bind to the consumer server. However, the setup program will continue. Once your supplier server has been installed, you should go to your consumer server and create the supplier DN required for replication purposes.

25. For Sample organizational structure, select the default. This causes a simple directory tree to be created for you.

26. For Populate Database, select “Populate with custom database” if you have an LDIF file that you want to use to populate your directory. Otherwise, select the default (“Don’t populate”).

27. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

28. For administration port number, enter a value that is not in use. Be sure to record this value.

29. For Administration Server IP Address, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

30. For Administration Server Authentication, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you use for the Configuration Directory Administrator.

The server is then installed and started. You still must initialize your consumer server(s) from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# Creating a CIR Supplier Server

This section describes how to create a supplier server for CIR using custom install. The procedure is described first for Unix installations, and then for Windows NT. (See "CIR Supplier Server Installs on Windows NT".) For more information about CIR, refer to the *Netscape Directory Server Administrator's Guide*.

## CIR Supplier Server Installs on Unix

1. Log in as root.

2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.

3. Unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.

4. Run the setup program. You can find it in the directory where you untarred installation files.

5. When you are asked what you would like to install, select the default, Netscape Servers.

6. When you are asked what type of installation you would like to perform, select Custom Installation.

7. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

8. For Netscape Server Family, Netscape Server Family Core Components, Netscape Directory Suite, and Administration Services components, select the default (all components).

9. For host name, select the default (which is the local host).

10. For the user and group to run the servers as, enter the identity that you want this server to run as. For more information on the user and groups that you should use when running Netscape servers, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14.

11. For configuration directory, select the default if this directory will host your `o=NetscapeRoot` tree. Otherwise, enter `Yes`. You will then be asked for the contact information for the configuration directory. If the server you are currently installing is not the configuration directory, then the configuration directory must exist before you can continue this installation.

12. For user directory, select the default, `No`.

13. For the Directory Server port, select the default (389) unless you already have another application using that port.

14. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine’s host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

15. For Configuration Directory Administrator ID and password, enter the name and password that you will log in as when you want to authenticate to the console with full privileges. This userID and password was created when the configuration directory was installed.

16. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization's directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

17. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

18. For Directory Manager password, enter a value that is at least 8 characters long.

19. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see "Determine the Administration Domain" on page 18.

20. For set up replication, enter `Yes`.

21. For set up a supplier server, select option 2 (CIR).

22. For changelog suffix and changelog database directory, select the defaults. This is the suffix used by the directory tree that will store all changes made to the supplier server, and the location of the database used to store these changes. These changes must be tracked so that the supplier can know how to update it's consumer servers.

23. For Consumer Bind DN and password, enter the distinguished name on the supplier server that will have read, search, and compare privileges to the replicated tree, and to the supplier server's changelog directory. For example, if your supplier server is set up to use the directory suffix, `o=airius.com`, then you could use `cn=replication, o=airius.com`.

24. Now you are asked if you want to set up this supplier server to also be a consumer server. Do this if you are using replication chaining. Otherwise, select the default (NONE). For information on the questions you will be asked during a consumer server setup, see "SIR Consumer Server Installs on Unix" on page 36 or "CIR Consumer Server Installs on Unix" on page 42.

25. For sample entries, select the default `No`.

26. For import an LDIF file, enter the full path to an LDIF file if you have one available. Otherwise, enter the word `suggest`. `Suggest` creates a simple directory tree that conforms to Netscape's recommended directory structure.

27. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

28. For administration port number, enter a value that is not in use. Be sure to record this value.

29. For the IP address to bind to, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

30. For Server Administrator ID, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you specified for the Configuration Directory Administrator.

31. For the user you want to run the Administration Server as, enter `Root`. This is the default. For information on why you should run the Administration Server as root, see "Decide Which User and Group to Run Netscape Servers As (Unix only)" on page 14.

The server is then installed and started. You still must initialize your consumer server(s) from the supplier server's directory tree. See the *Netscape Directory Server Administrator's Guide* for information on consumer creation.

# CIR Supplier Server Installs on Windows NT

1. Log in as administrator.

2. If you have not already done so, download the product binaries file to the to the machine on which you want to install the server.

3. Unzip the product binaries files and run the setup program.

4. When you are asked what you would like to install, select the default, Netscape Servers.

5. When you are asked what type of installation you would like to perform, select Custom Installation.

6. For server root, enter a full path to the location where you want to install your server. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

7. For Netscape Server Family Core Components, Netscape Directory Suite, and NT Synchronization Service, select all the components except for the NT Synchronization Service. (NT Synchronization Service installation is described separately in Chapter 5, “Installing and Configuring the Synch Service.”

8. For configuration directory, select the default. However, if this directory will not host your `o=NetscapeRoot` tree then select “Use existing configuration Directory Server.” If you select this option, then the configuration directory must exist before you can continue this installation.

9. For Directory to store data, select the default (“Store data in this Directory Server.”)

10. For server identifier, enter some unique value (normally the default is sufficient). This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine’s host name is `phonebook` then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled `slapd-phonebook`.

11. For a directory suffix, enter a distinguished name meaningful to your enterprise. This string is used to form the name of all your organization’s directory entries. Therefore, pick some name that is representative of your organization. It is recommended that you pick a suffix that corresponds to your internet DNS name.

    For example, if your organization uses the DNS name `airius.com`, then enter `o=airius.com` here.

12. For the Directory Server port, select the default (389) unless you already have another application using that port.

13. For Configuration Directory Administrator ID and password, enter the name and password that you log in as when you want to authenticate to the console with full privileges.

14. For Administration Domain, enter the domain that you want this server to belong to. The name that you enter should be a unique string that is descriptive of the organization responsible for administering the domain. For information on administration domains, see “Determine the Administration Domain” on page 18.

15. For Directory Manager DN, enter the distinguished name that you will use when managing the contents of your directory with unlimited privileges (in former releases of the Directory Server, the Directory Manager was known as the root DN). This is the entry that you bind to the directory as when you want access control to be ignored. This distinguished name can be short and does not have to conform to any suffix configured for your directory. It also should not correspond to an actual entry stored in your directory. Examples of possible directory manager DNs are:

    ```
    cn=Directory Manager

    cn=root

    uid=admin
    ```

16. For Directory Manager password, enter a value that is at least 8 characters long.

17. For Configure server for replication, select “A supplier that will have updates pulled from it by another server (CIR)”.

18. For changelog suffix and changelog database directory, select the defaults. This is the suffix used by the directory tree that will store all changes made to the supplier server, and the location of the database used to store these changes. These changes must be tracked so that the supplier can know how to update it’s consumer servers.

19. For Consumer DN Settings, select `Yes`. This causes an entry to be created on your server that has read, search, and compare privileges for the change log directory and the replicated tree. Your consumer server(s) will use this DN when pulling updates from this supplier server.

20. For Sample organizational structure, select the default. This causes a simple directory tree to be created for you.

21. For Populate Database, select “Populate with custom database” if you have an LDIF file that you want to use to populate your directory. Otherwise, select the default (“Don’t populate”).

22. For disable schema checking, select the default unless you think you may have a problem with old schema. It is strongly recommended that you clean up your directory schema before you import your LDIF to the Directory Server. Further, you should NOT run a production Directory Server with schema checking turned off.

23. For administration port number, enter a value that is not in use. Be sure to record this value.

24. For Administration Server IP Address, select the default unless you want the Administration Server to listen to some other IP address (this may be necessary for some multi-homed systems). If so, then enter that other IP address.

25. For Administration Server Authentication, enter the user ID and password that you will use to authenticate to the Administration Server when the Directory Server is not running. For best results, this user ID/password pair should be the same as the user ID/password that you use for the Configuration Directory Administrator.

The server is then installed and started. You still must initialize your consumer server(s) from the supplier server’s directory tree. See the *Netscape Directory Server Administrator’s Guide* for information on consumer creation.

# Installing the Stand-Alone Netscape Console

To install the stand-alone Netscape Console:

1. If you have not already done so, download the product binaries file to the to the machine on which you want to install the console.
2. On Unix systems, unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.

   On Windows NT systems, unzip the product binaries files.
3. Run the setup program. You can find it in the directory where you untarred the installation files.
4. When you are asked what you would like to install, select option 2, Netscape Console.
5. For installation location, enter a full path to the location where you want to install the console. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you.

To start the console, go to the console's installation location and run the `startconsole` program.

Chapter

4

# Silent Installation

Silent installation allows you to use a file to predefine all the answers that you would normally supply to the setup program interactively. This provides you with the ability to script the installation of your Directory Servers.

This chapter includes the following sections:



## Using Silent Installation

To use silent installation, you call the setup program with the `-s` and `-f` command line options. That is, to use silent installation:

1. On Unix machines, log in as `root`. On Windows NT machines, login with Administrator privileges.
2. If you have not already done so, download the product binaries file to the installation directory.

3. On Unix, unpack the product binaries file using the following command:

   ```
   # gzip -dc <filename>.tar.gz | tar -xvof-
   ```

   where <*filename*> corresponds to the product binaries that you want to unpack.

   On Windows NT, unzip the product binaries.

4. Prepare the file that will contain your installation directives.

5. Run the setup program with the `-s` and `-f` command line options:

   ```
   setup -s -f <filename>
   ```

   where <*filename*> is the name of the file that contains your installation directives.

The next section in this chapter provides some examples of the silent install files. Following that is a section that describes all of the silent installation directives that you can use when installing the Directory Server.

# Silent Installation Examples

Silent installation is intended for use at sites where many server instances must be created. For Directory Server, it is especially useful for heavily replicated sites that will create a large number of consumer servers.

This section first describes how to create silent installation files. It then provides examples of using silent installation to support the following common installation scenarios:


- "A Typical Installation" on page 72
- "Creating an SIR Consumer Server" on page 73
- "Creating a CIR Consumer Server" on page 74
- "Creating an SIR Supplier Server" on page 75
- "Creating a CIR Supplier Server" on page 76

- "Using an Existing Configuration Directory" on page 78
- "Installing the Stand-Alone Netscape Console" on page 79


You find a definition of the individual installation directives in "Installation Directives" on page 79.

# Creating Silent Installation Files

The best way to create a file for use with silent installation is to use the setup program to interactively create a server instance of the type that you want to duplicate around your enterprise. At the end of your installation process, the setup program will ask you if you want to save the `install.inf` file. This file contains all the directives that you would use with silent installation to create the server instance. You can then use this file to create other server instances of that type.

If you do not delete the file at installation time, you can find it at:

`<NSHOME>/setup/install.inf`

However, you will have to make some modifications to this file before you use it on other machines. Specifically, make sure you:

- Set the `FullMachineName` directive to a value appropriate for the local machine. In most circumstances, it is best to not use this directive because then FullMachineName will default to the local host name. However, if you use custom install to generate your initial server instance, then this directive will appear in the `install.inf` file. Either delete the directive from the file, or set it to an appropriate host name for each machine that you use the `install.inf` file on.
- Set the `ServerIPAddress` directive appropriate for the local machine. The same usage rules apply for ServerIPAddress as for FullMachineName. Specifically, try to not include ServerIPAddress in your `install.inf` file unless you absolutely have to (as may be necessary for multi-homed systems).
- Verify the installation path on the `ServerRoot` directive. If you are installing on both Windows NT and Unix machines, make sure the appropriate path delimiter is used. Add or remove the Windows NT drive letter designation as is appropriate for the host you are installing on.

- If you are installing more than one Directory Server on the same host, make sure the `ServerIdentifier` directive contains a unique value for each server instance.
- If you created your `install.inf` file on a Windows NT machine, then the `SuiteSpotUserID` and `SuiteSpotGroup` directives are both set to `nobody`. If you subsequently use this file on a Unix machine, make sure the user and group specified by these directives are appropriate for the machine. The SuiteSpotUserID and SuiteSpotGroup directives determine what user and group a server will run under when installed on a Unix system. For information on these directives, see “Installation Directives” on page 79.

# A Typical Installation

The following is the `install.inf` file that is generated for a typical installation:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   mcom.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:389/o=NetscapeRoot
UserDirectoryAdminID=   admin
UserDirectoryAdminPwd=   admin
UserDirectoryLdapURL= ldap://dir.airius.com:389/o=airius.com
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   Yes
SecurityOn=   No
UseExistingMC=   No
UseExistingUG=   No
ServerPort= 389
ServerIdentifier=   dir
Suffix=   o=mcom.com
RootDN=   cn=Directory Manager
UseReplication=   No
SetupSupplier=   No
SetupConsumer=   No
AddSampleEntries=   No
InstallLdifFile=   suggest
```

```
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   23611
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components=   admin,admin-client,base-jre

[base]
Components=   base,base-client
```

# Creating an SIR Consumer Server

The following is the `install.inf` file that is generated when you install a consumer server for supplier-initiated replication:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   airius.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:25389/o=NetscapeRoot
UserDirectoryLdapURL=   ldap://consumer1.airius.com:32389/o=airius.com
UserDirectoryAdminID=   cn=Directory Manager
UserDirectoryAdminPwd=   admin123
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   No
SecurityOn=   No
UseExistingMC=   yes
UseExistingUG=   No
ServerPort=   32389
ServerIdentifier=   consumer1
Suffix=   o=airius.com
RootDN=   cn=Directory Manager
UseReplication=   yes
SetupSupplier=   No
SetupConsumer=   1
AddSampleEntries=   No
InstallLdifFile=   suggest
```

```
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
UpdateDN=   cn=supplier
UpdatePwd=   supplier
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   2101
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components= admin,admin-client,base-jre

[base]
Components=   base,base-client
```

# Creating a CIR Consumer Server

The following is the `install.inf` file that is generated when you install a consumer server for consumer-initiated replication:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   airius.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:25389/o=NetscapeRoot
UserDirectoryLdapURL=   ldap://consumer2.airius.com:24389/o=airius.com
UserDirectoryAdminID=   cn=Directory Manager
UserDirectoryAdminPwd=   admin123
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   No
SecurityOn=   No
UseExistingMC=   yes
UseExistingUG=   No
ServerPort=   24389
ServerIdentifier=   consumer2
Suffix=   o=airius.com
RootDN=   cn=Directory Manager
UseReplication=   yes
SetupSupplier=   No
SetupConsumer=   2
```

```
AddSampleEntries=   No
InstallLdifFile=   suggest
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
CIRHost=   dir.airius.com
CIRPort=   25389
CIRBindDN=   cn=Replication Consumer, o=airius.com
CIRBindDNPwd=   replication
CIRSuffix=   ou=people, o=airius.com
CIRInterval=   0
CIRDays=
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   1547
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components= admin,admin-client,base-jre

[base]
Components=   base,base-client
```

# Creating an SIR Supplier Server

The following is the `install.inf` file that is generated when you install a supplier server for supplier-initiated replication:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   airius.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:12683/o=airius.com
UserDirectoryAdminID=   admin
UserDirectoryAdminPwd=   admin
UserDirectoryLdapURL=   ldap://dir.airius.com:12683/o=airius.com
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   Yes
SecurityOn=   No
UseExistingMC=   No
UseExistingUG=   No
```

```
ServerPort=   12683
ServerIdentifier=   supplier1
Suffix=   o=airius.com
RootDN=   cn=Directory Manager
UseReplication=   yes
SetupSupplier=   1
SetupConsumer=   No

AddSampleEntries=   No
InstallLdifFile=   suggest
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
ChangeLogSuffix=   cn=changelog
ChangeLogDir=   /usr/netscape/server4/slapd-supplier1/logs/changelogdb
SIRHost=   dir.airius.com
SIRPort=   25389
SIRBindDN=   cn=supplier
SIRBindDNPwd=   supplier
SIRSuffix=   ou=people,o=airius.com
SIRDays=
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   8741
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components= admin,admin-client,base-jre

[base]
Components=   base,base-client
```

# Creating a CIR Supplier Server

The following is the `install.inf` file that is generated when you install a supplier server for consumer-initiated replication:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   airius.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:2346/o=airius.com
UserDirectoryAdminID=   admin
```

```
UserDirectoryAdminPwd=   admin
UserDirectoryLdapURL=   ldap://dir.airius.com:2346/o=airius.com
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   Yes
SecurityOn=   No
UseExistingMC=   No
UseExistingUG=   No
ServerPort=   2346
ServerIdentifier=   supplier2
Suffix=   o=airius.com
RootDN=   cn=Directory Manager
UseReplication=   yes
SetupSupplier=   2
SetupConsumer=   No
AddSampleEntries=   No
InstallLdifFile=   suggest
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
ChangeLogSuffix=   cn=changelog
ChangeLogDir=   /usr/netscape/server4/slapd-supplier2/logs/changelogdb
ConsumerDN=   cn=replication, o=airius.com
ConsumerPwd=   replication
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   3622
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components= admin,admin-client,base-jre

[base]
Components=   base,base-client
```

# Using an Existing Configuration Directory

The following is the `install.inf` file generated when you perform a typical install and you use an existing Directory Server as the configuration directory:

```
[General]
FullMachineName=   dir.airius.com
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ServerRoot=   /usr/netscape/server4
AdminDomain=   airius.com
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ConfigDirectoryLdapURL=   ldap://dir.airius.com:25389/o=NetscapeRoot
UserDirectoryLdapURL=   ldap://dir.airius.com:18257/o=airius.com
UserDirectoryAdminID=   cn=Directory Manager
UserDirectoryAdminPwd=   admin123
Components=   svrcore,base,slapd,admin

[slapd]
SlapdConfigForMC=   No
SecurityOn=   No
UseExistingMC=   y
UseExistingUG=   No
ServerPort=   18257
ServerIdentifier=   directory
Suffix=   o=airius.com
RootDN=   cn=Directory Manager
UseReplication=   No
SetupSupplier=   No
SetupConsumer=   No
AddSampleEntries=   No
InstallLdifFile=   suggest
AddOrgEntries=   Yes
DisableSchemaChecking=   No
RootDNPwd=   admin123
Components=   slapd,slapd-client

[admin]
SysUser=   root
Port=   33646
ServerIpAddress=   111.11.11.11
ServerAdminID=   admin
ServerAdminPwd=   admin
Components= admin,admin-client,base-jre

[base]
Components=   base,base-client
```

## Installing the Stand-Alone Netscape Console

The following is the `install.inf` file that is generated when you install just the Netscape Console:

```
[General]
FullMachineName=   dir.airius.com
ConfigDirectoryLdapURL=   ldap://dir.airius.com:389/o=NetscapeRoot
SuiteSpotUserID=   nobody
SuiteSpotGroup=   nobody
ConfigDirectoryAdminID=   admin
ConfigDirectoryAdminPwd=   admin
ServerRoot=   /usr/netscape/server4
Components=   svrcore,base,slapd,admin

[base]
Components=   base-client

[slapd]
Components=   slapd-client

[admin]
Components= admin-client,base-jre
```

# Installation Directives

This section describes the basic format of the file used for silent installation. It then describes the directives that are available for each area of the silent installation file. Specifically, the following sections are provided here:

# Silent Installation File Format

When you use silent installation, you provide all the installation information in a file. This file is formatted as follows:

```
[General]
directive=value
directive=value
directive=value
...
[Base]
directive=value
directive=value
directive=value
...
[slapd]
directive=value
directive=value
directive=value
...
[admin]
directive=value
directive=value
directive=value
....
```

The keywords [`General]`, `[slapd]`, and `[admin]` are required. They indicate that the directives that follow are meant for a specific aspect of the installation. They must be provided in the file in the order indicated above.

# [General] Installation Directives

[General] installation directives specify information of global interest to the Netscape servers installed at your site. That is, the information you provide here will be common to all your Netscape servers.

The [General] installation directives are:

Table 4.1 [General] Installation Directives

| Directive | Description |
|---|---|
| Components | Specifies components to be installed. The list of available components will differ depending on the Netscape servers available on your installation media. For stand-alone directory installation, the list of components is:<br>• srvrcore—uninstallation binaries<br>• base—the base installation package<br>• admin—the Administration Server binaries<br>• slapd—the Directory Server binaries<br>This directive is required. At a minimum, you should always provide:<br>components = srvrcore, base, admin |
| ServerRoot | Specifies the full path to the directory where the Netscape server binaries are installed. This directive is required. |
| FullMachineName | Specifies the fully qualified domain name of the machine on which you are installing the server. The default is the local host name. |
| SuiteSpotUserID | Unix only. Specifies the username that Netscape servers will run as. This parameter does not apply to the user that the Administration Server runs as. See the SysUser directive in Table 4.10 for more information. The default is user nobody. |
| SuiteSpotGroup | Unix only. Specifies the group that Netscape servers will run as. The default is group nobody. |

Table 4.1 [General] Installation Directives (Continued)

| Directive | Description |
|---|---|
| ConfigDirectoryLdapURL | Specifies the LDAP URL that is used to connect to your configuration directory. LDAP URLs are described in the *Netscape Directory Server Administrator's Guide*. This directive is required. |
| AdminDomain | Specifies the administration domain under which this server will be registered. See "Determine the Administration Domain" on page 18 for more information about administration domains. |
| ConfigDirectoryAdminID | Specifies the user ID of the entry that has administration privileges to the configuration directory. This directive is required. |
| ConfigDirectoryAdminPwd | Specifies the password for the ConfigDirectoryAdminID. This directive is required. |
| UserDirectoryLdapURL | Specifies the LDAP URL that is used to connect to the directory where your user and group data is stored. If this directive is not supplied, the configuration directory is used for this purpose. LDAP URLs are described in the *Netscape Directory Server Administrator's Guide*. |
| UserDirectoryAdminID | Specifies the user ID of the entry that has administration privileges to the user directory. |
| UserDirectoryAdminPwd | Specifies the password for the UserDirectoryAdminID. |

# [Base] Installation Directives

There is only one [Base] installation directive and it allows you to determine whether the Netscape console is installed:

Table 4.2 [Base] Installation Directive

| Directive | Description |
|---|---|
| Components | Specifies the base components to be installed. The base components are:<br>• base—install the shared libraries used by all Netscape server consoles. You must install this package if you are also installing some other Netscape server.<br>• base-client—install the Java run time environment used by the server consoles.<br>• base-jre—causes the Java run time environment to be installed. Depending on your platform, this component may not be bundled with your software. If it is not, then you must install your own JRE and set the JAVA_HOME environment variable.<br>This directive is required if you are installing a Netscape server (versus, for example, just the Netscape Console). You must install both packages when you are installing a Netscape server. |

# [slapd] Installation Directives

[slapd] installation directives specify information of interest only to the Directory Server instance that you are currently installing. These directives are described in the following sections:



## Required [slapd] Installation Directives

You must provide the following directives when you use silent installation with Directory Server:

Table 4.3 Required [slapd] Installation Directives

| Directive | Description |
|---|---|
| Components | Specifies the slapd components to be installed. The slapd components are:<br>• slapd—install the Directory Server.<br>• slapd-client—install the Directory Server console.<br>This directive is required. It is recommended that you always install both components any time you install the Directory Server. |
| ServerPort | Specifies the port the server will use for LDAP connections. For information on selecting server port numbers, see "Choose Unique Port Numbers" on page 13 This directive is required. |
| ServerIdentifier | Specifies the server identifier. This directive is required.<br>This value is used as part of the name of the directory in which the Directory Server instance is installed. For example, if your machine's hostname is "phonebook" then this name is the default and selecting it will cause the Directory Server instance to be installed into a directory labeled "slapd-phonebook". |

Table 4.3 Required [slapd] Installation Directives (Continued)

| Directive | Description |
|---|---|
| Suffix | Specifies the suffix under which you will store your directory data. For information on suffixes, see “Determine your Directory Suffix” on page 16. This directive is required. |
| RootDN | Specifies the distinguished name used by the directory manager. For information on the directory manager, see “Defining Authentication Entities” on page 15. This directive is required. |
| RootDNPwd | Specifies the directory manager’s password. This directive is required. |

## Optional [slapd] Installation Directives

You may provide the following directives when you use silent installation with Directory Server:

Table 4.4 Optional [slapd] Installation Directives

| Directive | Description |
|---|---|
| AddSampleEntries | If set to Yes, this directive causes the airius.ldif sample directory to be loaded. Use this directive if you are installing the Directory Server for evaluation purposes and you do not already have an LDIF file to populate your directory with. Default is no. |
| AddOrgEntries | If set to Yes, this directive causes the new Directory Server instance to be created with a suggested directory structure and access control. If this directive is used and InstallLdifFile is also used, then this directive has no effect. Default is no. |
| InstallLdifFile | Causes the contents of the LDIF file to be used to populate your directory. |
| UseReplication | If set to Yes, either SetupConsumer or SetupSupplier must also be specified. Default is no. |

Table 4.4 Optional [slapd] Installation Directives (Continued)

| Directive | Description |
|---|---|
| SetupConsumer | Causes this server to be set up as a consumer server. Valid values are:<br>• 1—set up the consumer for supplier-initiated replication. See Table 4.5 for the list of directives you must use if you specify SetupConsumer=1.<br>• 2—set up the consumer for consumer-initiated replication. See Table 4.6 for the list of directives you must use if you specify SetupConsumer=2.<br>• No—Do not set up the server to be a consumer. This is the default. |
| SetupSupplier | Causes this server to be set up as a supplier server. Valid values are:<br>• 1—set up the supplier for supplier-initiated replication. See Table 4.8 for the list of directives you must use if you specify SetupSupplier=1.<br>• 2—set up the supplier for consumer-initiated replication. See Table 4.9 for the list of directives you must use if you specify SetupSupplier=2.<br>• No—Do not set up the server to be a supplier. This is the default. |

## Consumer Server [slapd] Installation Directives

The following tables show the directives you use if you specify the SetupConsumer directive.

If you are setting up a consumer server for use with supplier-initiated replication, use the following directives:

Table 4.5 Directives for SIR Consumer Server

| Directive | Description |
|---|---|
| UpdateDN | Specifies the supplier DN for this server. That is, this is the distinguished name of the entry used to update this consumer server. Only entities binding to this server with this DN can write to a tree replicated from some other server. |
| UpdatePwd | Password corresponding to the supplier DN (update DN). |

If you are setting up a consumer server for use with consumer-initiated replication, use the following directives:

Table 4.6 Directives for CIR Consumer Server

| Directive | Description |
|---|---|
| CIRHost | Specifies the hostname on which the supplier server resides. This directive is required if you are installing a CIR consumer. |
| CIRPort | Specifies the port number used for LDAP connections to the supplier server. This directive is required if you are installing a CIR consumer. |
| CIRSuffix | Specifies the distinguished name of the tree that is pulled from the supplier server. This directive is required if you are installing a CIR consumer. |

Table 4.6 Directives for CIR Consumer Server (Continued)

| Directive | Description |
|---|---|
| CIRBindDN | Specifies the distinguished name that this consumer server will use when binding to the supplier server and obtaining updates. This distinguished name must have read, search, and compare privileges for the directory tree that the consumer is obtaining from the supplier, as well as for the supplier's changelog database. This directive is required if you are installing a CIR consumer. |
| CIRBindDNPW | Password for the CIRBindDN. This directive is required if you are installing a CIR consumer. |
| CIRSecurityOn | A value of `On` causes the consumer server to use an SSL connection when obtaining updates from the supplier server. Default is `off`. |
| CIRInterval | Specifies the interval between update attempts. Units are in minutes, default is 10 minutes. A value of 0 causes the consumer server to always stay in synch (there is no interval between update attempts). |
| CIRDays | Specifies the days of the week on which replication can begin. Values are an integer, 0-6, representing a day of the week. That is, 0=Sunday, 1=Monday, 2=Tuesday, and so forth. To specify multiple days of the week, enter each integer with no delimiter between them. Thus, to replicate on Sunday and Wednesday, enter CIRDays=03. To replicate every day of the week, either use CIRDays=0123456, or do not specify this directive. |
| CIRTimes | Specifies the range of time during which replication can begin. Specify times in 24 hour format. For example, CIRTimes = 0100-2300 allows replication to begin anytime between 1 a.m. and 11 p.m. To allow replication to begin at anytime during the day, use CIRTimes=0000-0000, or do not specify this directive. |

## Supplier Server [slapd] Installation Directives

The following tables show the directives you use if you specify the SetupSupplier directive.

Anytime you create a supplier server, you must configure a changelog database. Use the following directives for this purpose:

Table 4.7 Changelog Directives for Supplier Servers

| Directive | Description |
|---|---|
| ChangelogDIR | Specifies the full path to the directory where your changelog database is stored. This parameter is required when you are configuring a supplier server. |
| ChangelogSuffix | Specifies the suffix for the changelog database. This parameter is required when you are configuring a supplier server. |

Use the following directives to set up a supplier server for use with supplier-initiated replication:

Table 4.8 Directives for SIR Supplier Servers

| Directive | Description |
|---|---|
| SIRHost | Specifies the hostname of the consumer server to which this server will supply data. |
| SIRPort | Specifies the port number of the consumer server to which this server will supply data. |
| SIRSuffix | Specifies the distinguished name of the root point of the directory tree that you are supplying to the consumer server. |
| SIRBindDN | Specifies the bind DN to use when supplying entries to the consumer server. Correspond's to the consumer's supplier DN. |
| SIRBindDNPW | Specifies the password for the SIRBindDN. |
| SIRSecurityOn | A value of `On` causes the consumer server to use an SSL connection when sending updates to the consumer server. Default is `off`. |

Table 4.8 Directives for SIR Supplier Servers (Continued)

| Directive | Description |
|---|---|
| SIRDays | Specifies the days of the week on which replication can begin. Values are an integer, 0-6, representing a day of the week. That is, 0=Sunday, 1=Monday, 2=Tuesday, and so forth. To specify multiple days of the week, enter each integer with no delimiter between them. Thus, to replicate on Sunday and Wednesday, enter SIRDays=03. To replicate every day of the week, either use SIRDays=0123456, or do not specify this directive. |
| SIRTimes | Specifies the range of time during which replication can begin. Specify times in 24 hour format. For example, SIRTimes = 0100-2300 allows replication to begin anytime between 1 a.m. and 11 pm. To allow replication to begin at anytime during the day, use CIRTimes=0000-0000, or do not specify this directive. |

Use the following directives to set up a supplier server for use with consumer-initiated replication:

Table 4.9 Directives for CIR Supplier Servers

| Directive | Description |
|---|---|
| ConsumerDN | Specifies the distinguished name that a consumer server uses to pull data from this supplier server. Used only by CIR consumer servers. This distinguished name must have read, search, and compare privileges for the replicated tree as well as for the changelog database. |
| ConsumerPwd | Specifies the password for the Consumer DN. |

# [admin] Installation Directives

[admin] installation directives specify information of interest only to your Directory Server's Administration Server. That is, this is the installation information required for the Administration Server that is used to manage the Directory Server instance that you are currently installing.

The [admin] installation directives are:

Table 4.10 [admin] Installation Directives

| Directive | Description |
|---|---|
| Components | Specifies the admin components to be installed. The base components are:<br>• admin—install the Administration Server. You must install the Administration Server if you are also installing some other Netscape server.<br>• admin-client—install the Netscape console. Specify just this component if you are installing the Netscape console as stand-alone. Do not install this component if you will remotely manage your servers and the console will be installed somewhere else on your network. |
| SysUser | Unix only. Specifies the user that the Administration Server will run as. For default installations that use the default Netscape port numbers, this user must be root. Root is the default. For information on what users your servers should run as, see “Decide Which User and Group to Run Netscape Servers As (Unix only)” on page 14 |
| Port | Specifies the port that the Administration Server will use. Note that the Administration Server's host name is given by the FullMachineName directive. For more information on FullMachineName, see Table 4.1. |
| ServerAdminID | Specifies the administration ID that can be used to access this Administration Server if the configuration directory is not responding. The default is to use the value specified by the ConfigDirectoryAdminID directive. See “Defining Authentication Entities” on page 15 for information on this directive. |

Table 4.10 [admin] Installation Directives (Continued)

| Directive | Description |
|---|---|
| ServerAdminPwd | Specifies the password for ServerAdminID. |
| ServerIPAddress | Specifies the IP address that the Administration Server will listen to. Use this directive if you are installing on a multi-homed system and you do not want to use the first IP address for your Administration Server. |

Chapter

5

# Installing and Configuring the Synch Service

When you install a Directory Server under Windows NT, you are given the option of installing the NT Synchronization Service. The NT Directory Synchronization Service allows you to synchronize the entries in your Windows NT directory with your Directory Server entries. Windows NT users, groups, and passwords can be synchronized. As entries are created, modified, or deleted in one directory, the synchronization service makes the corresponding change to the other directory.

The NT Synchronization Service and the Netscape Directory Server do not have to be installed on the same machine. Also, you can use the synchronization service with a Netscape Directory Server for Unix.

This chapter contains information about:

# Installing the Synchronization Service

To install the synchronization service, do the following:

1. While not required, it is strongly recommended that you use SSL with the synchronization service. Therefore, your first step should be to create a certificate database for use by the synchronization service. The easiest way to do this is to simply use the certificate database that you created when you set up SSL for your Directory Server. If your Directory Server is running on the same machine as your synchronization service, then you can just point the synchronization service at that same database. Otherwise, copy the Directory Server's certificate database to the machine where the synchronization service is running.

   If you do not want to use the Directory Server's certificate database, you can create a certificate database for the NT synchronization service using Communicator 4.x. When you do this, you only need to trust the Directory Server's Certificate Authority (you do not need to obtain any client or server certificates).

   For information on setting up SSL for the Directory Server, or for information on how to create certificate databases for LDAP clients, see the *Netscape Directory Server Administrator's Guide*.

2. Log in to Windows NT with administrator privileges.

3. If you have not already done so, download the product binaries file to the installation directory.

4. Double-click the self-extracting archive. This automatically starts the setup program.

5. When you are asked what you would like to install, select the default, Netscape Servers.

6. When you are asked what type of installation you would like to perform, select the default, Typical Installation.

7. For server installation root, enter a full path to the location where you want to install the synchronization service. The location that you enter must be some directory other than the directory from which you are running setup. If the directory that you specify does not exist, setup creates it for you. By default, setup installs the synchronization service in the following directory:

   `<NSHOME>/dssynch`

   where `<NSHOME>` is the location where your Directory Server is installed.

8. For Components, select "Netscape Server Family Core Components" and "Netscape Directory Server 4.1 Synch Service."

   Once the synchronization service is installed, the Synchronization Service Configuration Tool is launched. To successfully synchronize your Windows NT entries with the Netscape Directory Server, you must do two things:

   - Use the configuration tool to configure your synchronization service.
   - Go to the Directory Server Console and make sure that the Directory Server is configured correctly for use with the synchronization service.

9. Once you have finished installing and configuring the synchronization service, you must reboot the machine.

The following sections describe configuring the synchronization service in detail. To learn more about the Netscape NT Synchronization Service, see the *Netscape Directory Server Administrator's Guide.*

# Configuration on a Non-Primary Domain Controller

The NT Synchronization Service can be installed on any NT machine on which a domain privileged account can login. Usually you use the NT Primary Domain Controller (PDC), but your NT network may be configured so that an account on another machine has domain privileges. If this is the case, then you can install the NT synchronization service on that alternate machine.

Netscape recommends that you install the synchronization service on a PDC. However, if you choose to install on a non-PDC system, NT passwords will not be synchronized to the Directory Server and you must do the following so that the service can manage the NT domain's SAM file:

1. Locate an NT account that has domain privileges.
2. From the Service Control Panel, select the NT Directory Synchronization Service.
3. Click "Startup."
4. In the "Log On As:" section, click "This Account."
5. Overwrite "LocalSystem" with the NT user name that has domain privileges.
6. Enter and confirm the user account's password.
7. Click OK.

# Configuring the Directory Server for NT Synchronization

Before you can use the NT Synchronization Service, you must configure your Directory Server for use with the synchronization service. This involves doing the following:

- If you are going to use SSL with the synchronization service (this is recommended) configure your Directory Server to use SSL communications. See "Managing SSL" in the *Netscape Directory Server Administrator's Guide*.
- Make sure that the Directory Server is configured for use with the synchronization service. To configure synchronization service settings using the Directory Server Console:

  1. On the Directory Server Console, select the Configuration tab and then select the root entry in the navigation tree in the left pane.
  2. Select the Settings tab in the right pane.
  3. Select the "Enable NT Synchronization Service" checkbox.

4. Specify a Synchronization Port Number. This is the port used by the Directory Server Synchronization plug-in for communication with the synchronization service.

5. If you using SSL during communications with the synchronization service, select the "Use SSL in NT Synchronization Service" checkbox.

6. Click Save and then restart the server.

# Configuring the Synchronization Service

You use the synchronization service configuration tool to configure your synchronization service. This tool is described in the *Netscape Directory Server Administrator's Guide* and in the help system available through the configuration tool. Complete the following steps in order to successfully start synchronization:



## Step 1: Configure Service Settings

In the Service Settings tab:

1. Enter the name of the domain that the synchronization service will manage, or the name of the Primary Domain Controller (PDC) that manages the domain.

   If you are installing the synchronization service for test purposes on a Windows NT Workstation that is not a domain member, enter the workstation hostname and the synchronization service will use the SAM file/directory of this workstation.

This field should default to the correct value unless you are installing the synchronization service on a machine that is not the PDC. If you are not installing on the PDC, see “Configuration on a Non-Primary Domain Controller” on page 95 for additional setup information.

2. Enter the port number on your local Windows NT system that the configuration tool uses to communicate with the synchronization service. Enter a unique port number in this field. The default port number is 5007. The port number can be any number between 1 and 65535 that is not in use by other TCP/IP applications.

3. Enter the location of the synchronization service event log file. This logfile is used by the synchronization service to record significant events and problems. Each time a user or group is added, deleted, modified, or renamed in the Windows NT domain, the synchronization service records the event to this file.

4. Indicate whether you want to use SSL for synchronization. You are strongly recommended to use SSL for synchronization because the synchronization service is transmitting user passwords to the Directory Server.

5. Enter the location of the certificate database file. This field is required if you are using SSL.

   If you have a certificate database that you created for your Windows NT-based Netscape Directory Server, then it is sufficient to reference that database in this field. If the Directory Server is installed on a Unix system, just copy the Directory Server certificate database to the synchronization service’s host machine.

   The database must be on a local disk, so even if your Directory Server is installed on a Windows NT machine, you may still have to physically copy the Directory Server's certificate database to the synchronization service’s Windows NT host.

   Alternatively, you can use Netscape Communicator 4.x to create a certificate database for use with your NT synchronization service (if you do this, you only need to trust your Directory Server’s certificate authority; you do not need to obtain any kind of a server or client certificate).

For information on how to create certificate database files for use with Directory Server clients, see the *Netscape Directory Server Administrator's Guide*.

# Step 2: Configure Directory Server Settings

In the Directory Server Settings tab, identify the following:

- The fully qualified DNS name of the host on which the Directory Server is running. If you are using replication in your directory service, make sure that the directory server that you synchronize with is a supplier server; do not synchronize with a consumer server.
- The port number which the Directory Server is using for communications. If the synchronization service is configured for SSL, then the default is 636. Otherwise it is 389. You cannot change this port number when the synchronization service is running.

  LDAP/LDAPS connections are not maintained for the life of the synchronization service. Instead, LDAP/LDAPS connections are established at each scheduled synchronization or when the administrator uses the "Synchronize" or "Add All Users & Groups" buttons on the configuration tool. If there is a problem creating the LDAP/LDAPS connection to the Directory Server, a dialog box will be raised and a message will be written to the synchronization log file. Such problems are often caused by misconfiguration of the synchronization service. See the *Netscape Directory Server Administrator's Guide* for information on these misconfigurations.
- The distinguished name and password that the synchronization service should use to bind to the Directory Server (for example, "`cn=admin, o=airius.com`"). This can either be the Root DN, or it can be a distinguished name that has full read, write, add, delete, search, and compare privileges to the Directory Server subtree(s) containing the NTUser entries. You are strongly recommended to avoid using the Root DN for normal bind operations such as this.

- The directory base for user entries. This is the directory subtree where the synchronization service will create, modify, and delete user entries. The default is `ou=people, o=<suffix>`. That is, if your directory's suffix is "`o=airius.com`", then by default all NT people entries are placed under `ou=people, o=airius.com`.

- The directory base for group entries. This is the directory subtree where the synchronization service will create, modify, and delete group entries. The default is `ou=groups, o=<suffix>`. That is, if your directory's suffix is "`o=airius.com`", then by default all NT group entries are placed under `ou=groups, o=airius.com`.

**Note** If the name of the directory subtree you want to use as the directory base for either users or groups contains a comma, you must escape the comma with a backslash (\) when you enter the value in the directory base field. For example, to use the Airius Bolivia, S.A. subtree as the directory base, you would enter `Airius Bolivia\, S.A.` in the directory base field.

- The directory tree in which you want to enforce uniqueness in the UID. Netscape servers require that all person entries in the directory have a unique `UID` attribute. Most Netscape servers are configured to enforce this uniqueness in the entire directory tree (that is, from the directory suffix down). If Netscape servers are managing users in areas of the directory tree different from the area the synchronization service is managing, then you should use your directory suffix for this field. Otherwise, simply enter the same DN you entered for the directory base for user entries.

  If you leave this field blank, the synchronization service will not enforce UID uniqueness. This is acceptable so long as the Directory Server itself is enforcing UID uniqueness. It does this through a server plugin which is turned on by default.

- The port number on which the Directory Server's synchronization plug-in accepts non-LDAP connections. Default is 5009. When the synchronization service starts up, it establishes several connections to this port, and these are maintained while the synchronization service is running. When these connections are established, a message is written to the synchronization log file. Absence of these messages from the logfile is a good indicator of a problem to come (another indication is if the "Synchronize" and "Add all Users/Groups" buttons are grayed out).

Synchronization from the Directory Server to NT cannot occur if these connections are not fully established. This sometimes occurs due to misconfiguration of the synchronization service. See the *Netscape Directory Server Administrator's Guide* for information on these misconfigurations.

- If you want to disable Directory Server to NT synchronization, click "Disable Synchronization from Directory Server to NT."
- If you want to disable group synchronization from the Directory Server to NT, click "Disable Group Synchronization from Directory Server."
- If you want to disable user synchronization from the Directory Server to NT, click "Disable User Synchronization from Directory Server."
- If you want to disable all password synchronization from the Directory Server to NT, click "Disable Password Synchronization from Directory Server."

# Step 3: Configure NT-to-Directory Synchronization

If you are supporting NT-to-directory synchronization go to the Synchronization Schedule tab and examine the schedule configured there. Directory-to-NT synchronization is not affected by this schedule; that form of synchronization occurs over the non-LDAP port immediately upon a relevant change being made to the directory.

# Step 4: Configure Account Details

If you are supporting NT-to-directory synchronization, the are two options you can select on the Accounts tab:

- Choose whether the synchronization service will create Netscape Messaging Server mail accounts. If the synchronization service will create messaging accounts, then you must also indicate the messaging domain name and how the email addresses will be generated by the synchronization service.

- Choose whether the Windows NT account's full name begins with a surname. Some cultures commonly begin their names with their surnames. If your Windows NT domain is populated with names such as these, then you must configure the synchronization service with this information so that it can determine how to populate the surname and givenname attributes for the NT user entries.

# Starting and Stopping the NT Synchronization Service

To start the synchronization service, go to the Status tab in the configuration tool and click Start or reboot the system. The synchronization service is configured to start whenever the Windows NT host is started.

When you first install and configure the synchronization service, you must reboot the synchronization service's host machine to start the synchronization service.

If you do not want the synchronization service to start when the Windows NT host is booted, you must change the service's startup state from `Automatic` to `Manual`. You do this using the Windows NT Services control panel.

Chapter

6

# Upgrading the Directory Server

You can upgrade to Netscape Directory Server 4.x from Netscape Directory Server 1.03 or later. This chapter describes how in the following sections:



## Migration Prerequisites

To migrate to Netscape Directory Server 4.x, you must be running directory 1.03 or later.

Before performing migration be aware that migration results in two instances of the Directory Server. One instance of the server is the configuration directory, that is, it contains all Netscape server registration information. The other server contains your migrated corporate data. The first Directory Server you install must be your configuration directory.

For more information on the configuration directory, see "Determine the Location of the Configuration Directory" on page 16.

Other requirements and suggestions for migration are:

- You must migrate using the same physical host; migration cannot occur over networked drives.
- Migration from 1.03 Directory Servers results in schema modifications (particularly schema deletions). You are advised to familiarize yourself with these schema changes. For details, see the Netscape Directory Server 3.0 release notes at:

  http://home.netscape.com/eng/server/directory/3.0/relnotes.html#new

  Your old schema files are backed up during the migration.
- Migration from 1.03 Directory Servers results in a conversion of your access control to a new format that was delivered in Directory 3.0. This conversion should occur with no difficulties, however you are advised to examine your access control after migration to ensure that it still works as expected.
- You are advised to familiarize yourself with features new in each release since you last installed your Directory Server. This information is available for each release in the following locations:

  http://home.netscape.com/eng/server/directory/3.0/relnotes.html#new

  http://home.netscape.com/eng/server/directory/3.1/relnotes.html#new

  http://home.netscape.com/eng/server/directory/4.0/relnotes.html#new

  http://home.netscape.com/eng/server/directory/4.1/relnotes.html#new

# Migrating Custom Schema

If you customized your old schema by modifying `slapd.at.conf` or `slapd.oc.conf` directly, then the server migration process will not migrate your custom schema for you. Instead, you are notified during migration that you have modified the standard schema and that you need to manually fix the problem. The migration process then saves a copy of your schema files and uses standard 4.1 schema files in their place. Your old schema is saved in `<NSHOME>/slapd-<serverID>/migrate_config`.

While the migration will complete in this situation, it may result in a directory that cannot be modified until you have straightened out your schema. Therefore, you are strongly recommended to separate your custom schema into files other than `slapd.oc.conf` and `slapd.at.conf` before you perform migration.

To separate your custom schema from your standard schema:

1. Examine your old `slapd.at.conf` and `slapd.oc.conf` files to discover all the schema additions that you made there.
2. Place your custom schema elements in the following files:

   ```
   <NSHOME>/slapd-<serverID>/config/slapd.user_at.conf
   <NSHOME>/slapd-<serverID>/config/slapd.user_oc.conf
   ```

   You should use these filenames because these are the names that the 3.x and 4.x schema configuration editor write to.
3. Include these files into your `slapd.conf` file using the `userat` and `useroc` directives. Place your new directives at the same place in the file as where the other configuration files are included. The order in which the various configuration files are included is not important.

Also, if you added attributes to standard object classes in `slapd.oc.conf`, then you must do the following:

1. Create a new object class that allows your custom attributes.
2. Place this new object class on every entry in your directory that uses the custom attributes.

**Note** To avoid the need to perform manual schema migration in the future, never modify any schema files directly. Instead, use the schema editor in the Directory Server Console to add schema elements.

# Upgrading a Single Directory Server to Version 4.x

Before you migrate your server, copy your configuration files to a safe place. The following files contain important configuration information:

- `slapd.conf`
- `dsgw.conf`
- `slapd.dynamic-ldbm.conf` (3.x servers only)
- `slapd.at.conf` and `slapd.oc.conf` (1.03 servers only)
- Custom schema files, if any.
- A recent backup of your database.

Once you have backed up your critical configuration information, do the following to migrate a server to 4.x:

1. Install a new 4.x Directory Server as described in Chapter 2, “Using Express and Typical Install,”, Chapter 3, “Using Custom Install,” or Chapter 4, “Silent Installation.” Do not use the same port number your production server uses (e.g. port 389) because this initial directory will be used for server registration purposes only.
2. Shutdown your old Directory Server (this will automatically be done for you if the server is not shut down when you begin migration).
3. Start the Netscape Console using an account that has full read access to the server root.
4. In the Netscape Console's navigation tree, select the Server Group folder for the host on which the migration is occurring.
5. In the Object menu, select “Migrate Server Config...”
6. Enter the full path to the old server’s installation root directory. For example:

   ```
   /usr/ns-home
   ```

7. Select the old server to migrate from the resulting list.

8. Select `Yes` to overwrite any existing SIE data.

9. Select the new server to migrate the old directory data to. Select "Create New Instance" to create a new instance to hold the data.

10. Enter the Root DN password. This will be used for your Directory Server 4.x directory manager password.

Your old server is then migrated. As a result of this migration, a new Directory Server 4.x server instance is installed using the configuration information obtained from your old Directory Server. In addition, the data from your old server is migrated to the new server and the new server is started.

# Upgrading a Replicated Site

Instances of Directory Server 1.03 and 3.x can replicate to a 4.x directory. Therefore, to migrate a replicated site to 4.x, do the following:

1. Migrate all your consumer servers first using the standard migration process.

2. Once all consumer servers have been migrated, migrate your supplier server.

3. If you are migrating a 1.03 supplier server, then you must configure the migrated server with a supplier DN password once the migration has been completed. Make sure you provide the same password as was configured for your 1.03 supplier server. For information on how to set a supplier DN password on a 4.x supplier server, see the *Netscape Directory Server Administrator's Guide*.

4. If you are migrating a 1.03 supplier server, you must reinitialize all your consumer servers after the supplier has been migrated. Remember that for database sizes larger than 5000 entries, you should use offline consumer creation. For smaller databases, you can use online consumer creation. For information on how to initialize consumer servers, see the *Netscape Directory Server Administrator's Guide*.

Chapter

7

# Troubleshooting

This chapter describes the most common installation problems and how to solve them.

**Clients cannot locate the server.**
First, try using the host name. If that does not work, use the fully qualified name (such as `www.domain.com`), and make sure the server is listed in the DNS. If that does not work, use the IP address.

**The port is in use.**
You probably did not shut down a server before you upgraded it. Shut down the old server, then manually start the upgraded one.

Another installed server might be using the port. Make sure the port you have chosen is not already being used by another server.

**I have forgotten the administration user name and password.**
To recreate the Administration Server username and password, you must login as the configuration directory administrator and change the Administration Server's username and password. For more information on changing the Administration Server password, see *Managing Servers with Netscape Console*.

**I have forgotten the configuration directory user name and password.**
The configuration directory administrator is the root DN of the Directory Server that hosts the configuration directory (that is, it hosts the `o=NetscapeRoot` tree). The root DN is also sometimes referred to as the Directory Manager.

You can find out what the root DN is by examining `<NSHOME>/slapd-<server ID>/config/slapd.conf` and looking for the `rootdn` parameter.

If you have forgotten the root DN password, you can reset it by doing the following:

1. Find the `rootpw` parameter in slapd.conf. If the parameter value is not encrypted in anyway (that is, it does not start with `{sha}` or `{crypt}`) then the password is exactly what is shown on the parameter.

2. If the parameter is encrypted, then delete the parameter value and replace it with some clear text value. For example, if you change the `rootpw` attribute so that it is:

   ```
   rootpw my_password
   ```

   then your root DN password will be `my_password`.

3. Restart your Directory Server.

4. Once your server has restarted, login as the root DN (the Directory Manager) and change the password. Make sure you select an encryption scheme when you do so.

For information on changing a Directory Server's root DN password, see the *Netscape Directory Server Administrator's Guide*.

# Index

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