Installation Guide

Sun™ ONE Meta-Directory

Version 5.1.1

Contents

Preface

The *Sun ONE Meta-Directory Installation Guide* describes how to install Sun ONE Meta-Directory 5.1.1 and related components.

This preface contains these sections:

- What You Are Expected to Know

- Sun ONE Meta-Directory 5.1.1 Documentation Set

- Organization of This Guide

- Documentation Conventions

- Related Third-Party Web Site References

- Where to Find Additional Information

- Your Feedback on the Documentation

What You Are Expected to Know

This guide is for system administrators who want to install Sun ONE Meta-Directory 5.1.1 on a single machine. It is assumed that the administrator has experience working with directory servers and Lightweight Directory Access Protocol (LDAP) as well as knowledge of either or both of the Windows Operating System and Solaris Operating System.

Sun ONE Meta-Directory 5.1.1 Documentation Set

Read through the documentation set for Sun ONE Meta-Directory ™ 5.1.1before installing the software. The set, which is available at the Meta-Directory documentation web site, see http://docs.sun.com/prod/S1_MetaDir_511.

It contains the following titles:

*   *Sun ONE Meta-Directory Deployment Guide* describes how to plan and implement a Meta-Directory solution to meet the requirements of your organization.

*   **Sun ONE Meta-Directory Installation Guide** (this guide) tells how to install Meta-Directory software on machines running either the Windows Operating System or the Solaris Operating System.

*   *Sun ONE Product Brief* documents key concepts of the Sun ONE Meta-Directory.

*   *Sun ONE Meta-Directory Administration Guide* documents how to configure and administer the Meta-Directory system from both the Meta-Directory console and the command-line.

*   *Sun ONE Meta-Directory Release Notes* include information about what is new in this release, last minute installation tips, known software limitations, and how to report problems.

In order to use Meta-Directory, a Sun ONE Directory Server must be installed and configured. Therefore, it is recommended that you see the *Sun ONE Directory Server Deployment Guide* and *Sun ONE Directory Server Installation Guide* before beginning the installation process for Meta-Directory.

Organization of This Guide

Sun ONE Meta-Directory Installation Guide (this guide) contains instructions on how to install Sun ONE Meta-Directory on servers using either the Windows or the Solaris Operating System. It consists of the following chapters:

*   Chapter 1, "Preparing for Installation" describes what you need prior to beginning installation.

*   Chapter 2, "Installing on Solaris Systems" describes the installation process on a machine using the Solaris Operating System.

- Chapter 3, "Installing on Windows Systems" describes the installation process on a machine using the Windows operating system.

- Chapter 4, "Performing Silent Installation" describes the process for installing Meta-Directory on multiple machines or from a remote terminal.

- Chapter 5, "Upgrading to Meta-Directory 5.1.1" describes the process of upgrading from the previous version of Meta-Directory to the present version.

- Chapter 6, "Uninstalling Meta-Directory" describes the process for uninstalling Meta-Directory from the system.

- Chapter 7, "Performing Backup and Restore Operations" descibes the process of backing up or restoring Meta-Directory.

Documentation Conventions

In all of Meta-Directory documentation, certain typographic conventions and terminology are used to simplify discussion and to help better understand the material.

Typographic Conventions

This book uses the following typographic conventions:

- *Italic type* is used within text for book titles, new terminology, emphasis, and words used in the literal sense.

- `Monospace font` is used for sample code and code listings, API and language elements (such as function names and class names), filenames, pathnames, directory names, HTML tags, and any text that must be typed on the screen.

- *Italic serif font* is used within code and code fragments to indicate variable placeholders. For example, the following command uses *filename* as a variable placeholder for an argument to the gunzip command:

```
gunzip -d filename .tar.gz
```

Terminology

Below is a list of the general terms that are used in the Meta-Directory documentation set:

- *Meta-Directory* refers to iPlanet Meta-Directory or Sun ONE Meta-Directory and any installed instances of the Sun ONE Meta-Directory software.

- Sun ONE Meta-Directory 5.1.1 is certified with Sun ONE Directory Server 5.1 (formerly iPlanet Directory Server 5.1) and Sun ONE Directory Server 5.2.

- *Meta-Directory components* refers to the collective set of Sun ONE Meta-Directory components and software you have installed and running on your system, including the Join Engine and any external data source connectors.

- E*xternal data source* refers to any user data that originates outside of the core Meta-Directory components, whether the data is coming from another database, directory server, data file, or other source of data.

- *Directory Server* refers to an installed instance of Sun ONE Directory Server.

  Sun ONE Meta-Directory can synchronize data using any LDAPv2 and LDAPv3-compliant directory server, as long as the LDAP server supports a change log mechanism similar to the one implemented in Netscape Directory Server 4.1*x*. The term *Directory Server* refers to the instances of iPlanet Directory Server, Sun ONE Directory Server and Netscape Directory Server that you have installed to work with Sun ONE Meta-Directory.

- Similarly the term *Administration Server* refers to an installed instance of Netscape Administration Server, Sun ONE Administration Server or iPlanet Administration Server, whether it be used with the Meta-Directory components or another Sun ONE server.

- *NETSITE_ROOT* is a variable placeholder for the home directory where you have installed Sun ONE Meta-Directory and any other Sun ONE servers installed into the same server group.

- The term *flow* is used rather loosely to refer to the process of synchronizing data between an external data source and the Meta View. You 'flow' data through a connector to the Connector View and then 'flow' it to the Meta View. The contrary is also true, you 'flow' data from the Meta View back to the Connector Views and out to the external data sources.

Related Third-Party Web Site References

NOTE	Sun is not responsible for the availability of third-party Web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

Where to Find Additional Information

In addition to Sun ONE Meta-Directory documentation set, you should be familiar with the documentation for products that are used in conjunction with it. Of particular interest are the Sun ONE Console and Sun ONE Directory Server documentation sets. This section lists additional sources of information you may find helpful as you use Sun ONE Meta-Directory.

Sun ONE Console Documentation

You can find the Sun ONE Console documentation at the following site:

http://docs.sun.com/prod/s1.ipconsole.2

Sun ONE Directory Server Documentation

You can find the Sun ONE Directory Server documentation at the following site:

http://docs.sun.com/db/prod/2121#hic

Directory Server Developer Information

In addition to the Directory Server documentation, you can find information on Meta-Directory, LDAP, the Sun ONE Directory Server, and associated technologies at the following Sun ONE developer sites:

http://www.sun.com/developers

Other Sun ONE Product Documentation

Documentation for all Sun ONE servers and technologies can be found at the following web site:

http://docs.sun.com/prod/sunone

Sun ONE Support

Other useful Sun ONE information can be found at the following locations:

Sun ONE Training
http://www.sun.com/training

Sun ONE Support information
http://www.sun.com/support

Sun ONE Product Information
http://www.sun.com/products

Your Feedback on the Documentation

Sun Microsystems is interested in improving this documentation and welcomes your comments and suggestions. Use the following web-based form to provide feedback to us:

http://www.sun.com/hwdocs/feedback/

Please provide the full document title and part number in the appropriate fields. The part number can be found on the title page of the book or at the top of the document, and is usually a seven or nine digit number. For example, the part number of the *Sun ONE Meta-Directory Installation Guide* is 817-3896-10.

Preparing for Installation

Before beginning the installation process, you should be familiar with the components of the Sun ONE Meta-Directory 5.1.1 suite and verify that the system meets the recommended requirements.

This chapter contains these sections:

- Supported Platforms Overview
- Meta-Directory Components
- System Requirements for Solaris Systems
- System Requirements for Windows Systems
- Installation Privileges
- Required Installation Information
- Standard Deployment Sequence

Supported Platforms Overview

This section lists the supported operating systems and software requirements of Meta-Directory 5.1.1 software.

Operating Systems and Platforms

The following table lists the supported platforms for Meta-Directory.

Table 1-1   List of supported operating systems

Operating System	Supported
Sun Solaris™ 9 Operating System (SPARC® Platform Edition)	Yes
Sun Solaris™ 8 Operating System (SPARC® Platform Edition)	Yes
Sun Solaris™ 2.6 Operating System (SPARC® Platform Edition)	No
Microsoft Windows 2000 (Advanced) Server SP3	Yes
Microsoft Windows 2000 Server SP3	Yes
Microsoft Windows 2000 Professional	No
Microsoft Windows XP	No
Solaris™ x86 Platform Edition	No
Sun Linux™ 5.0 Operating System	No

Supported Software Pre-requisites

The following software must be installed (depending on the connectors you are using) with the Sun ONE Meta-Directory 5.1.1 software:

- Sun ONE Directory Server.
  Sun ONE Meta-Directory 5.1.1 is certified with Sun ONE Directory Server 5.1 and 5.2.

- MySQL Connector/J V 2.0.14 JDBC driver to access the MySQL database. This is typically distributed as a JAR. This can be downloaded from:
  http://www.mysql.com/downloads/api-jdbc-stable.html.

- MySQL-Max 3.23.51
  This can be downloaded from: http://www.mysql.com.
  Alternatively, you could download the binary from:
  http://mysql.mirror.stop.hu/downloads/mysql-3.23.html.

- Solaris Operating System patches for Java Runtime Environment 1.4.1 or higher.

- nsPerl 5.8.2 is a required Perl component used by the Join Engine and Universal Text Connectors.

- nsPerl 5.8.2 is used by Sun ONE Console and installed automatically.

Supported Connector Platforms

The following table lists the supported platforms for each connector on Solaris and Windows operating systems. The supported version for every operating system is also available in this table.

Table 1-2   List platforms supported for the various connector

Connector	Solaris 8 Solaris 9	Microsoft Windows 2000 (Advanced) Server SP3 Windows 2000 Server SP3	Comments
Universal Text Parser/Universal Text	Yes	Yes	
NT Domain	No	Yes	
Oracle Database	Yes	Yes	Oracle Database Connector requires Oracle 8.1.5, 8.1.7, or 9.2.0 (server and client). Oracle client software must be installed on the system running the Join Engine. The server (database) software can exist on a different machine.
Microsoft Windows Active Directory	No	Yes	Active Directory Connector database platforms requires ADSI 2.5 on the system running the Active Directory Connector. It connects to a system hosting the Active Directory (usually running the Windows 2000 platform). Active Directory on Windows 2000 is recommended.
Microsoft Exchange	No	Yes	
Lotus Notes	Yes	Yes	Lotus Notes 4.x and 5.0.x should work but are not supported. Changelog is placed in a database using MySQL. Lotus Notes 5.0.10 and 5.0.12 connector synchronizes users and groups between Lotus Notes and CV.

Table 1-2   List platforms supported for the various connector

Connector	Solaris 8 Solaris 9	Microsoft Windows 2000 (Advanced) Server SP3 Windows 2000 Server SP3	Comments
Novell eDirectory	Yes	Yes	Novell eDirectory Server 8.6.2 or 8.7 is supported. Changelog is placed in a database using MySQL.

Meta-Directory Components

The following describes the components in the Meta-Directory software suite:

Table 1-3   List of components included in Meta-Directory and their description

Component	Description
Server Core Components	Are shared files that help Meta-Directory integrate with existing Sun ONE systems. The files include: • Server Products Common files • Core Java Classes • Java Runtime Environment 1.4.1 or higher
Sun ONE Administration Services	Consists of the Sun ONE Administration Server and Sun ONE Console. Administration Server is the common interface for all Sun ONE servers. There is at least one Administration Server instance for each server root in which a Sun ONE server is installed. You can stop and start servers, install server instances, and manage user and group information using the Sun ONE Console. **Note:** Sun ONE Console can also be installed as a stand-alone application.
nsPerl	Is a version of Perl with enhancements made that are required by Meta-Directory. (The standard version of Perl, available at http://www.cpan.org/, is not sufficient.)
Join Engine	Is the core service of Meta-Directory. It links information from different external data sources to an LDAP directory server. In addition, it also tracks changes to the data.

Table 1-3   List of components included in Meta-Directory and their description

Component	Description
Universal Connector	Is a generic text parser. A building block for various connectors that provide bi-directional flow of data between an external data source and its Connector View.
	It includes a Perl script and config files that, when manually configured, flow data in three standard file formats: LDAP Data Interchange Format (LDIF), Comma-Separated Values (CSV), and Name/Value Pairs (NVP). UTC coupled with the Perl script and the config file for one of these file formats is called the Universal Text Parser (UTP).
Sun ONE Console	Provides the user interface that helps configure Meta-Directory components and manage the flow of information between the external data source, Connector Views, and Meta View.
NT Domain Connector	Provides two-way flow of user and group data specifically between a Windows database and its Connector View.
Active Directory Connector	Provides two-way flow of user and group data specifically between the Windows Active Directory and its Connector View.
Microsoft Exchange Connector	Provides two-way flow of user and group data specifically between the Microsoft Exchange Server and its Connector View.
	Note: NT Domain, Active Directory, and Microsoft Exchange connectors are *not* installed on a machine that uses the Solaris Operating System.
Database Connector	Is a direct connector that provides the Join Engine with two-way access to a Oracle relational database server.
Novell Directory Connector	Provides two-way flow of user and group data specifically between a tree in Novell Directory Server and its Connector View. Default configurations allow you to synchronize Novell Directory Server's 'inetOrgPerson' objectclass with Sun ONE Directory Server's 'inetOrgPerson' objectclass and Novell Directory Server's 'groupOfNames' objectclass with Sun ONE Directory Server's 'groupOfUniqueNames' objectclass. However, it is not limited to synchronize entries that belong to only these two object classes. In addition, you can extend the schema at either the data source end and allow synchronization of entries belonging to any object class.
	A list of dependent components that must be selected with the 'Novell Directory Connector' during its installation are:
	• Server Core Components
	• Administration Services
	• nsPerl
	• Meta-Directory Console
	Note: If one or more of these are not selected, the installation fails.

Table 1-3 List of components included in Meta-Directory and their description

Component	Description
Lotus Notes Connector	Provides two-way flow of user and group data specifically Lotus Notes directory (domino directory) and its Connector View. Default configurations allow you to synchronize Lotus Notes directory's 'dominoPerson' objectclass with Sun ONE Directory Server's 'inetOrgPerson' objectclass and Lotus Notes directory's 'dominoGroup' objectclass with Sun ONE Directory Server's 'groupOfUniqueNames' objectclass. However, it is not limited to synchronize entries belonging to only these two object classes. In addition, you can extend the schema at either data source end and allow synchronization of entries belonging to any object class. A list of dependent components that must be selected with the 'Lotus Notes Connector' during its installation are: • Server Core Components • Administration Services • nsPerl • Meta-Directory Console
PerLDAP	Provides the LDAP interface in PERL.

System Requirements for Solaris Systems

Before installing Meta-Directory on a Solaris-based machine, you should verify that the machine meets the requirements described in this section.

Hardware Requirements

The disk space allocation for Meta-Directory must allow for users supported on the server, changelogs, and other generated files. A minimum of 1 GB disk space is highly recommended for any Meta-Directory installation.

The minimum RAM requirements are 512 MB for machines dedicated to running Meta-Directory processes. If you install Sun ONE Directory Server on the same machine as Meta-Directory, 1 GB of RAM is recommended.

Software Requirements

Sun ONE Meta-Directory runs Sun Solaris™ 8 Operating System (SPARC®
Platform Edition) or Sun Solaris™ 9 Operating System (SPARC® Platform Edition).
Successful installation of Meta-Directory requires that a series of patches be
installed. For a list of these patches and installation instructions, see "Performing
the Installation" on page 22.

System Requirements for Windows Systems

Before installing Meta-Directory on a machine running Windows, you should
verify that it meets the recommended requirements described in this section.

Hardware Requirements

An Intel Pentium II-based computer with a 300Mhz or higher CPU and 100 MB of
disk space is recommended for the basic installation of the Join Engine and
connectors; however, optimal operation of these components requires much more.
(The disk space allocation for Meta-Directory must allow for users supported on
the server, changelogs, and other generated files.) A minimum of 1 GB disk space is
highly recommended for any Meta-Directory installation.

The minimum RAM requirements is 256 MB for machines dedicated to running
Meta-Directory processes. If you install Sun ONE Directory Server on the same
machine as Meta-Directory, 1 GB of RAM is recommended.

Software Requirements

Installation of Sun ONE Meta-Directory 5.1.1 requires one of the following:

- Microsoft Windows 2000 Server SP3

- Microsoft Windows 2000 (Advanced) Server SP3

In addition, installation requires administrator or domain administrator privileges.
Windows should also be configured to include TCP/IP transport and use DNS,
LMHOSTS, or WINS to resolve host names.

Installation Privileges

It is recommended to install Meta-Directory as *root* (for Solaris) or Administrator (for Windows).

Required Installation Information

During installation, you will be prompted for the following configuration information:

- Server root

- User and group for allocation of permissions

- Location of the configuration directory

- Port number of the configuration directory

- Administration domain of the configuration directory

- Administration ID and password of the administrator

- Directory Server configuration information

    For more information, see the Sun ONE Directory Server documentation.

Standard Deployment Sequence

The standard deployment sequence for Meta-Directory includes the installation of a directory server and the core Meta-Directory components (including one of each type of connector) on a single machine.

1. Install and configure an LDAP directory server, creating a directory information tree (DIT) structure.

    For more information, see the Sun ONE Directory Server documentation.

NOTE	Meta-Directory must be configured to work with a Directory Server that has a changelog feature. In Directory Server 5.x this changelog uses the *Retro-Changelog* plug-in that is configured from the Directory Server console. This plug-in is backward compatible with the changelog implementation in Netscape/iPlanet Directory Server 4.16, both changelogs are supported. After the creating the retro-changelog, you must restart the directory server.
	The changelog can be queried using ldap://hostname:port:/cn=changelog

2. Type the following URLs to verify that the directory server is responding to LDAP:

Table 1-4   LDAP Verification URLs

Type This URL	To Display
`ldap://hostname:port`	Information about the LDAP server
`ldap://hostname:port/your_suffix`	Everything under the given suffix that has anonymous access
`ldap://hostname:port/cn=schema`	The directory server's schema
`ldap://hostname:port/cn=monitor`	Directory server statistics

3. Start the administration server, accessing the directory server as Directory Manager.

4. Enable the changelog.

   For more information, see the Directory Server documentation.

5. Modify the configuration parameters to optimize the directory server configuration for estimated directory tree size and load.

   For more information, see the Directory Server documentation.

6. Populate the directory server database with user entries. (Usually, you can import a LDIF file to complete this.)

7. Execute `setup.sh` on Solaris or `setup.bat` on Windows from the installation directory to install Meta-Directory.

The setup script installs the necessary components. For more information, see Chapter 2, "Installing on Solaris Systems" or Chapter 3, "Installing on Windows Systems".

8. Register the user name and password of an appropriate *Configuration Administrator*.

The *Configuration Administrator* creates and manages the information stored in the server configuration directory. The user name and password entered is verified during the installation process.

9. Before starting the Meta-Directory 5.1.1 Administration console, the online Help requires these:

   a. If running console on a different machine or as a different user, then the `xhost + command` must be executed and the `DISPLAY` environment variable set appropriately.

   b. The 'netscape' executable for the Netscape browser must be in the PATH.

   c. While logging onto the console, you must make sure that the URL points to the hostname and port where the administration server of Meta-Directory is installed.

10. Start Meta-Directory 5.1.1 and create an instance of the Join Engine.

Meta view, where the Join Engine stores the entries, is created during this process. For more information, see the *Sun ONE Meta-Directory Administration Guide.*

11. Connector instances are created and configured.

Use Meta-Directory console to configure connectors, define connector tasks, and configure Connector View setup in the Join Engine. Procedures depend on the type of connector being installed. For more information, see the *Sun ONE Meta-Directory Administration Guide.*

12. Test the system.

Installing on Solaris Systems

This chapter describes how to install Meta-Directory on a server using the Sun Solaris™ 8 Operating System (SPARC® Platform Edition) and Sun Solaris™ 9 Operating System (SPARC® Platform Edition). It also contains information on installing the system patches that are required prior to the installation process.

This chapter includes these sections:

- Installing Recommended Patches
- Performing the Installation

Installing Recommended Patches

If installing Meta-Directory on a server running Solaris 8 or Solaris 9, you must install the *Recommended Patch Clusters* and *Localized JRE* patches for *Java™ 2 Standard Edition (J2SE™) 1.4.1 or higher*. Also, ensure that `libCrun.so.1` and `libCstd.so.1` C++ run-time libraries are installed.

- Recommended Patch Cluster for Solaris 8 or Solaris 9 can be downloaded from:
  http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access

- Solaris Operating System patches for Java 2 Standard Edition (J2SE) 1.4.1 Localized JRE patch set can be downloaded from:
  http://java.sun.com/products/archive/j2se/1.4.1/index.html

  You must be a registered Sun customer to download the J2SE patches. Registration is free and can be completed at the patch download site.

- C++ run-time libraries patch can be downloaded from:
  http://sunsolve.sun.com/pub-cgi/findPatch.pl?patchId=108434&rev=13

Recommended Patch Cluster for Solaris 8 or Solaris 9

Consult the latest patch report at http://www.sunsolve.sun.com.

➤ **Verifying Patch installation**

Enter the showrev -p command after installing the patch; it displays a complete list of installed patches. Compare this list with the patch list in the documentation to verify that the appropriate patches are installed.

Performing the Installation

NOTE	It is recommended that the Directory Server documentation is available for reference during this installation process. It can be found at http://docs.sun.com/db/prod/2121#hic.

➤ **To install Meta-Directory on Solaris-based systems**

1. Log onto the system as the Superuser (root).

2. Download the Meta-Directory for Solaris binary.

   Binary is a file compressed with gzip (visit http://www.gzip.org to download this compression utility.)

3. Decompress the binary file using this command:

   ```
   # gzip -dc filename.tar.gz | tar xvf -
   ```

4. Execute the ./setup.sh command to run the setup program.

5. It displays a message suggesting that both Directory Server and Meta-Directory cannot be installed in the same directory tree. Press Return to continue.

6. Type y to accept the license agreement, and press Return.

7. Select the default Sun ONE Servers installation, and then press Return to continue.

NOTE	Use the *Sun ONE Console* option to install the Sun ONE Console again.

8. Enter the complete path (server root) to install Meta-Directory.

The directory location must be different from the one in which you are running the setup program; it cannot be installed in the same directory where it was decompressed.

NOTE	The setup program creates the installation directory, if it does not exist. However, you may have to verify the *write* access permission after the installation.

9. Press Return to install all of Sun ONE Server product components.

For a list and description of the components, see Chapter 1, "Preparing for Installation."

10. Press Return to install the Server Core Components, Core Java classes, and Java Runtime Environment.

11. Press Return to install Sun ONE Administration Server and Administration Server Console.

12. Press Return to install nsPerl 5.8.2.

13. Press Return to install Meta-Directory Console.

14. Press Return to install Meta-Directory Join Engine.

15. Press Return to install Meta-Directory Universal connector.

16. Press Return to install Meta-Directory Database connector.

17. Enter the fully-qualified domain name of the system on which Meta-Directory is being installed, and then press Return.

18. Enter the user and group that should represent the Sun ONE server in the user directory.

Ideally, this user should not have permissions in the computer network system. The Administration Server grants this group the permissions to perform server-specific operations.

19. Enter the URL of the Directory Server that contains the Configuration Directory and the non-secure port address (default port address is 389.) Click Next to continue.

This function requires the use of the Sun ONE Directory Server. Ensure that the Directory Server is currently running to verify the information.

20. Enter the domain name (for example, `sunone.com`) to specify the administration domain in the Configuration Directory. Click Next to continue.

21. Enter the user ID or distinguished name (DN) and password of the configuration administrator to access the Configuration Directory. Click Next to continue, the domain name specified in *step 20* and the configuration administrator specified here is verified.

The configuration administrator creates and manages information stored in the Configuration Directory. Make sure the user entry exists and is valid.

22. Choose an administration port number and click Next to continue.

By default, the setup program chooses an administration port number. If you use the default port number, ensure that it is currently not being used. Be sure to note the port number.

Meta-Directory files and components are installed to the system.

Installing on Windows Systems

This chapter describes how to install Meta-Directory on a Windows-based machine. For a list of supported Windows platforms, see Chapter 1, "Preparing for Installation."

Performing the Installation

Follow the procedure described below to install Meta-Directory on a Windows-based machine.

➤ **To install Meta-Directory on Window-based systems**

1. Log onto Windows as a user with administrator permissions.

2. Download the compressed Meta-Directory for Windows installation program.

   Decompress the installation program before you proceed to Step 3. WinZip can be obtained from http://www.winzip.com.

3. Run the setup.bat file from the directory where the installation program was decompressed.

4. Click View ReadMe to see any last-minute instructions, installation updates, and news, or click Next to continue.

5. Type y to accept the license agreement, and then press Enter.

6. Select the installation of *default Sun ONE Servers* and click Next to continue.

   The *Sun ONE Console* option can be used to re-install the Sun ONE Console.

NOTE	If none of the components is selected, 5 MB (minimum) will still be used for the installation of `uninst.exe`, `srvcore`, and other related files.

7. Do one of the following:

   ❍ Click Next to accept the default installation directory.

      - Or -

   ❍ Click Browse to navigate and change the location of the installation directory, and then click Next.

CAUTION	• If installing Meta-Directory 5.1.1 on the same machine where Directory Server 5.1 is installed, you must choose a directory *different* from the Directory Server installation location.
	• If you choose to install Meta-Directory 5.1.1 on the same machine where Directory Server 5.2 is installed, then you must install Meta-Directory 5.1.1 in the *same* directory location where the Directory Server is installed.

8. Select or deselect the components and subcomponents for installation, and then click Next to continue. nsPerl 5.8.2 is a required component used by the Join Engine and connectors. To install nsPerl 5.8.2, do these:

   a. Select nsPerl from the 'Components To Install' screen, and then click Change.

   b. Select nsPerl 5.8.2 from the 'Subcomponents To Install' screen.

   c. Click Continue and proceed with the installation.

   By default, all Meta-Directory components are selected for installation. You can deselect the components that you do not want to install. To choose the subcomponents of a particular component to install, select the component and click Change. For a list and description of the components, see Chapter 1, "Preparing for Installation."

NOTE	Certain components have dependencies on other components. If you select a component that has a dependency on a component that you do not select, a message is displayed suggesting that you to select the required component.

9. Enter the URL of the Directory Server and the non-SSL port address. Click Next to continue (default port address is 389).

   Sun ONE Meta-Directory 5.1.1 requires Sun ONE Directory Server 5.1 or 5.2. Ensure that the Directory Server is currently running to verify the information.

10. Enter the domain name (for example, `sunone.com`) to specify the administration domain in the server configuration directory. Click Next to continue.

11. Enter the user ID or distinguished name (DN) and password of the configuration administrator authorized to access the Configuration Directory. Click Next to continue. The specified domain name and configuration administrator password is verified.

    The configuration administrator creates and manages information stored in the server Configuration Directory. Make sure the user entry exists and is valid.

12. Choose an administration port number, and then click Next to continue.

    By default, the setup program chooses an administration port number. If you use the default port number, ensure it is currently not being used. Be sure to note the port number.

13. Click Install.

    Meta-Directory files and components are installed to the system. It is recommended to restart the machine after the installation is completed.

Performing Silent Installation

This chapter describes installing Meta-Directory using the 'Silent Installation' method. 'Silent Installation' involves defining the configuration information in a file, and then using it to install Meta-Directory from remote systems. You can also use this file to perform installations on multiple systems - simultaneously.

This chapter contains these sections:

- Install.inf File Description

- Creating an Install.inf File

- Using the Install.inf File

- Installing Meta-Directory Using the Install.inf File

- Install.inf File Examples

Install.inf File Description

The `install.inf` file is used to perform the silent installation of Meta-Directory. It is created during the initial installation of Meta-Directory and can be modified for use during unattended installations. The basic format of the file is this:

```
[General]
directive= value
directive= value
directive= value

...
[base]
directive= value
directive= value
directive= value

...
```

```
[admin]
directive= value
directive= value
directive= value
....
```

The keywords `[General]`, `[base]`, and `[admin]` are required. These keywords identify a specific aspect of the installation process. Directives are detailed specifications of each keyword.

Defining the Directives

The directives used in `install.inf` are of four types: `[General]`, `[Base]`, `[admin]`, and `[component]`.

General Directives

General installation directives specify information that will be common to all installations performed.

Table 4-1   [General] Installation Directives

Directive	Description
Components	Specifies one or all of following components that will be installed (mandatory):
	• srvrcore—uninstallation binaries
	• base—the base installation package
	• admin—the Administration Server binaries
ServerRoot	Specifies the complete path where the selected Meta-Directory components are installed (mandatory).
FullMachineName	Specifies the fully qualified domain name of the machine on which you are performing the silent installation. If is not present, the Common Install Shell will query the machine for its name.
SuiteSpotUserID	For Solaris® only: Specifies the name of the user under which Meta-Directory will run.
SuiteSpotGroup	For Solaris® only: Specifies the name of the group to which the SuiteSpotUserID belongs.

Table 4-1   [General] Installation Directives *(Continued)*

Directive	Description
ConfigDirectoryLdapURL	Specifies the URL of the directory server used to manage the information and data. The URL is specified in the following format: `ldap://<machinename>:<port>/<base DN>` (mandatory)
AdminDomain	Specifies the administration domain under which this server will be registered.
ConfigDirectoryAdminID	Specifies the user ID that has permission to access the configuration directory and the specified administration domain (mandatory).
ConfigDirectoryAdminPwd	Specifies the password for the user that has permission to access the configuration directory and the specified administration domain (mandatory).
UserDirectoryLdapURL	Specifies the URL of the directory server in this installation which requires write access to the user directory.
UserDirectoryAdminID	Specifies the user ID of the user that has administration privileges to the user directory.
UserDirectoryAdminPwd	Specifies the password for the user that has administration privileges to the user directory.

Base Directives

The [base] installation directive determines which of the components needed for the Sun ONE Console will be installed.

Table 4-2   [base] Installation Directive

Directive	Description
Components	The values for this directive are one, two, or all three of: • base — the shared libraries used by the Sun ONE Console • base-client — the Java Runtime Environment used by server consoles • base-jre — the Java Runtime Environment used by all other consoles

Admin Directives

The [admin] installation directives specify information needed by the administration server to manage the instance that is being installed.

Table 4-3   [admin] Installation Directives

Directive	Description
Components	Specifies which of the following admin components will be installed: • admin — installs the Administration Server. You must install the Administration Server to install and use other Sun ONE servers. • admin-client — installs Sun ONE Console. Do not install if you will remotely manage your servers from an instance of Sun ONE Console elsewhere on the network.
SysUser	For Solaris only: Specifies the user for which the Administration Server will run. For default installations, this user must be root.
Port	Specifies the port that the Administration Server will use. Note that the Administration Server's host name is given by FullMachineName, one of the general directives.
ServerAdminID	Specifies the administration ID that is used to access the Administration Server when the configuration directory is not responding.
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 system with more than one IP address and you do not want to use the first IP address for your Administration Server.

Component Directives

The [component] installation directives determine which, if any, of the Meta-Directory's components will be installed. Each component is its own directive. They can include all or some of the components in Table 4-1. (To understand how component directives are formed, see "Install.inf File Examples" on page 35.)

Table 4-4   [*component*] Installation Directives

Directive	Description
Components	Specifies the Meta-Directory component to be installed and have a value equal to themselves:
	• [nsperl]nsPerl (value includes a version number)
	• [join]Join engine
	• [utc]Universal connector
	• [metaconsole]Meta-Directory console
	• [ntdc]Windows NT domain connector
	• [adc]Active Directory connector
	• [dbc]Database connector
	• [exc]Exchange Connector
	• [nov] Novell Connector
	• [notes] Lotus Notes Connector
InstallType	Specifies the type of installation. The options are New, Upgrade, Migrate, Extraction, or Remove.
InstallUnitAction	Specifies the type of installation. The options are None, Create, Migrate, Repair, or Remove.
HaveReached	By the fault the value is 'True'.

NOTE   Disregard the `sf.` prefix in front of all component directives.

Creating an Install.inf File

➤ **To create the Install.inf file**
  On Solaris

Execute the setup script using the `-k` command-line option:

<Netsite_Root>/setup.sh -k

This creates the `install.inf` file, which is located here:

<Netsite_Root>/setup/install.inf

On Windows

1. Download the zipped file of Meta-Directory to temporary directory. Create a temporary directory if it does not exist.

2. From the temporary directory, decompress the zipped file using a decompression program such as WinZip.

3. Go to Start > Programs > Run to display the Command Prompt window.

4. Go the directory where you decompressed the binaries, and then type `setup.bat -k` to execute the setup batch file.

Using the Install.inf File

The `install.inf` file must be modified to perform installations on several machines. This section describes the modifications that are required.

➤ **Modify the following in the install.inf file**

1. Change the `FullMachineName` directive to the fully-qualified domain name of the new machine on which Meta-Directory will be installed.

NOTE	Ensure that `FullMachineName` defaults to the local host name.

2. Enter the path to the local machine in the `ServerIPAddress` directive.

NOTE	It is recommended to use the `ServerIPAddress` directive only if you are installing Meta-Directory on a machine with multiple IP addresses.

3. Ensure that the installation path used in the `ServerRoot` directive is system-appropriate.

NOTE	If you are installing on both Windows and Solaris machines, make sure the correct path delimiter is used. You may need to add or remove the Windows drive letter designation appropriately.

4. **Solaris only:** If you are installing more than one instance of Meta-Directory on the same host, ensure that the `ServerRoot` directive contains a unique value for each instance.

5. If you create the `install.inf` file on a Windows system, then the `SuiteSpotUserID` and `SuiteSpotGroup` directives should be set to `user nobody`. If you subsequently use this file on a Solaris machine, ensure the user and group names are appropriate for the machine. The `SuiteSpotUserID` and `SuiteSpotGroup` directives determine the user and group that Meta-Directory will run under when installed on a Solaris machine.

CAUTION   Be aware that the `install.inf` files contain server passwords and should be protected.

Installing Meta-Directory Using the Install.inf File

➤ **To install Meta-Directory using the install.inf file, run the setup script with the -s and -f command options**

On Solaris

<Netsite_Root>/setup.sh -sf install.inf

On Windows

<Netsite_Root>/setup.bat -sf install.inf

Install.inf File Examples

This section provides examples of the `install.inf` files for Solaris and Windows systems.

Solaris Install.inf File Example

This is an example of an `install.inf` file generated on a Solaris-based system.

```
[General]

FullMachineName=restaurants.madisonparc.com

SuiteSpotUserID=root
```

```
SuitespotGroup=other

ConfigDirectoryAdminID=admin

ConfigDirectoryAdminPwd=netscape

ServerRoot=/usr/sunone/servers

AdminDomain=madisonparc.com

MachineName=restaurants

InstallTimeStamp=20030116102730Z

Components=

svrcore,base,admin,nsperl,metaconsole,join,utc,dbc,ndc,notes,perldap

ConfigDirectoryLdapURL=ldap://restaurants.madisonparc.com:3030/

LDAPPort=3030

LDAPHost=restaurants.madisonparc.com

AdminGroupDN=cn=Server Group (2),cn=restaurants.madisonparc.com,
ou=madisonparc.com, o=NetscapeRoot


[admin]

SysUser=root

Port=3032

ServerIpAddress=

ServerAdminID=admin

ServerAdminPwd=netscape

Components=admin,admin-client


[nsperl]

sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=nsperl582


[metaconsole]
```

```
sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=metaconsole


[join]

sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=join


[utc]

sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=utc


[dbc]

sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=dbc


[ndc]

sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=ndc


[notes]
```

```
sf.InstallUnitAction=Create

sf.HaveReached=True

sf.InstallType=New

Components=notes


[base]

Components=base,base-client,base-jre


[perldap]

Components=perldap
```

Windows Install.inf File Example

This is an example of an install.inf file generated on a Windows-based system.

```
[General]

AdminDomain=example.madisionparc.com

Components=base,admin,nsperl,metaconsole,join,utc,ntdc,adc,exc,dbc,ndc,not
es,perldap

ServerRoot=C:\SunONE\Servers

ConfigDirectoryLdapURL=ldap://example.madisionparc.com:5000/o=NetscapeRoot

ConfigDirectoryAdminID=uid=admin,ou=Administrators,ou=TopologyManagement,
o=NetscapeRoot

ConfigDirectoryAdminPwd=netscape

FullMachineName=example.madisionparc.com

SuiteSpotUserID=None

SuitespotGroup=None

SelectedComponents=base,base-client,base-jre,admin,admin-client,nsperl582,
metaconsole,join,utc,ntdc,adc,exc,dbc,ndc,notes,perldap

MachineName=talio

InstallTimeStamp=20030116103500Z
```

```
[base]
Components=base,base-client,base-jre
Reinstall=TRUE


[admin]
Components=admin,admin-client
Reinstall=TRUE
Port=5001
SysUser=root
ServerAdminID=uid=admin, ou=Administrators, ou=TopologyManagement,
o=NetscapeRoot
ServerAdminPwd=netscape


[nsperl]
Components=nsperl582
sf.InstallUnitAction=Create
sf.HaveReached=True
sf.InstallType=New


[metaconsole]
Components=metaconsole
Reinstall=TRUE
sf.InstallUnitAction=Create
sf.HaveReached=True
sf.InstallType=New


[join]
Components=join
Reinstall=TRUE
sf.InstallUnitAction=Create
```

```
                    sf.HaveReached=True

                    sf.InstallType=New


                    [utc]

                    Components=utc

                    Reinstall=TRUE

                    sf.InstallUnitAction=Create

                    sf.HaveReached=True

                    sf.InstallType=New


                    [ntdc]

                    Components=ntdc

                    Reinstall=TRUE

                    sf.InstallUnitAction=Create

                    sf.HaveReached=True

                    sf.InstallType=New


                    [adc]

                    Components=adc

                    Reinstall=TRUE

                    sf.InstallUnitAction=Create

                    sf.HaveReached=True

                    sf.InstallType=New


                    [exc]

                    Components=exc

                    Reinstall=TRUE

                    sf.InstallUnitAction=Create

                    sf.HaveReached=True

                    sf.InstallType=New
```

```
[dbc]
Components=dbc
Reinstall=TRUE
sf.InstallUnitAction=Create
sf.HaveReached=True
sf.InstallType=New

[ndc]
Components=ndc
Reinstall=TRUE
sf.InstallUnitAction=Create
sf.HaveReached=True
sf.InstallType=New

[notes]
Components=notes
Reinstall=TRUE
sf.InstallUnitAction=Create
sf.HaveReached=True
sf.InstallType=New

[perldap]
Components=perldap
Reinstall=TRUE

[base-client]
Reinstall=TRUE

[base-jre]
```

```
Reinstall=TRUE


[admin-client]

Reinstall=TRUE


[nsperl582]

Reinstall=TRUE
```

Upgrading to Meta-Directory 5.1.1

Sun ONE Meta-Directory 5.1.1 provides a utility that can be used to upgrade from Sun ONE Meta-Directory 5.1 or iPlanet Meta-Directory 5.0 and 5.0SP1 (including 5.0SP1 Patch 1 and 5.0SP1 Patch2).

This chapter contains these sections:

- Upgrade Overview
- Using the Upgrade Script
- Step by Step Upgrade Example
- Known Issues and Limitations
- Troubleshooting

Its recommended that all of the subsequent sections must be reviewed before you execute the upgrade tool.

Upgrade Overview

This section describes the script that is used to upgrade to Meta-Directory 5.1.1. The upgrade script (`upgrade.bat` on Windows and `upgrade.sh` on Solaris) is shipped with the Meta-Directory 5.1.1 software and is available along with the setup binary. Once you decompress the software program, the script must be executed from that location itself. It will not run if it is copied and executed from a different location.

The script uses `nsPerl 5.8.2` and `PerLDAP 1.4.1` which are installed with the Sun ONE Directory Server and with Meta-Directory 5.1.1. The script copies these components to a temporary location (specified by the user), decompresses the files, sets the environment, and then executes another script (`upgrade.pl`) which performs the upgrade related operations.

NOTE	Do not run the `upgrade.pl` script directly, use only `upgrade.sh` (Solaris) or `upgrade.bat` (Windows) for any upgrade related operations.

The upgrade script requires a command-line decompress utility to decompress the required binaries. It will prompt for the complete path of this utility to decompress `nsperl582.zip` file. If you want to perform this step manually, (for example, on Windows if you only have WinZip which is a GUI based utility), you should decompress the files manually and skip this part during the upgrade process.

When you run the script it displays a message "If you want to skip this unzipping part", type No if you have a command-line decompression utility and want the script to perform the operation. In this case, it first prompts for a new location where it copies the binaries. Make sure its a new location that can be created (appropriate permissions to create a directory in the should be available).

CAUTION	If the directory exists, the script fails.

The scripts then decompresses the required binaries, sets the environment, and continues with the upgrade process.

If you choose to skip the decompression part of the upgrade process, then you must do the following:

1. From the location where Meta-Directory software is decompressed, copy `nsperl/nsperl582.zip` to a temporary location.

2. Change the directory to the *temporary* location and decompress the above files.

3. Specify this temporary location when prompted by the upgrade script.

Using the Upgrade Script

This section describes the set of arguments and the options to use to perform the upgrade process. The upgrade process involves running the script twice. First, the script is executed to perform a backup of all the Meta-Directory configuration and server instances. This is run with `-U` option (upgrade). Then, with the `-R` option to restore the configuration.

Usage:

upgrade.sh -<*U/R*> [-h <*directory server hostname*>] -p <port> -D <*Directory Manager*> -w <*password*>

Table 5-1 describes the options used:

Table 5-1   List of options and their description

Option	Description
- U	Upgrade. Used the first time the script is run for upgrade. This retrieves all the Meta-Directory configuration and stores it in the LDIF files, and then deletes the existing configuration. Once the script is executed with this option, Meta-Directory does not run. The administrator can now uninstall the existing Meta-Directory (5.0/5.0SP1/5.1), and then install Sun ONE Meta-Directory 5.1.1. See Chapter 6, "Uninstalling Meta-Directory," for issues related to the uninstallation process.
- R	Restore. Used to restore the original Meta-Directory configuration that was created in the backup process. This ensures that the original configuration is restored with the enhancements provided in Meta-Directory 5.1.1.
- h	Valid host name (for example, restaurants. madisonparc.com) on which the Directory Server that contains the configuration is running (optional), else, the default would be the localhost.
- p	Port on which the directory server listens (mandatory), no default
- D	Directory Manager DN. For example, cn=Directory Manager. (mandatory)
- w	Directory Managers' password (mandatory)

For example:

```
./upgrade.sh -U -h ldap_host -p 389 -D cn=Directory Manager -w dmanager
```

NOTE	• Part of the Meta-Directory configuration is created by the Configuration Administrator. Thus, during the restore operation, the tool also prompts for the Configuration Administrator information and the password.
	• For a Universal Connector instance, if the configuration files such as; task.cfg, template.pl, and so on are located in the configuration directory (for example, $NETSITE_ROOT/utc-CV2/config) of the connector, these files are automatically backed up. However, if they are located elsewhere, then you must manually backup the files and copy them back to the same location after the restore process.

Step by Step Upgrade Example

This section describes the procedure of a typical upgrade process to Sun ONE Meta-Directory 5.1.1.

Before you run the upgrade utility, these conditions must be satisfied:

❍ Upgrade script should be executed by the Solaris userID or the Windows user name used to install the original servers (typically *root* for Solaris and administrator for Windows). The script also prompts for the Configuration Administrator password during the restore process.

❍ All the Meta-Directory servers must be stopped while running the upgrade script.

❍ Directory Server that contains the configuration must be running.

➤ **To perform the upgrade procedure**

   1. Start the Archive process. Run the script with –U option, as described:

      a. Change directory to the location where Meta-Directory software is decompressed.

      b. Type the following command. (Replace the arguments as required.)

```
$ ./upgrade.sh -U -h metadirectory.example.com -p 389 -D cn=Directory
Manager -w dmanager
```

      c. A message informing about the requirement of a command-line decompression program is displayed. It prompts you to either skip decompression or continue.

         • Type y to manually decompress the binaries, and then press Return. Once complete, goto Step f.

         - Or -

         • Type n to use a command-line decompression program and allow the script to decompress, and then press Return. Once complete, goto Step d.

      d. The script prompts for a temporary location to copy and decompress the binaries. Enter a new location (make sure it does not exist).

      e. The script prompts for the complete path of the decompression program. Enter the complete path where the program is located. The script then copies the binaries to the temporary location and decompresses the binaries. Once complete, goto Step h.

    f. Create a temporary folder and copy `nsperl/nsperl582.zip` and
`perldap/perldap141.zip` to this location.

    g. Decompress these binaries.

NOTE   You may allow the upgrade script to overwrite any file if it exists.
This may occur when attempting to decompress the `nsperl582.zip`
and `perldap141.zip` files.

---

    h. The script prompts for the location where you have already decompressed
the binaries. Enter the location and press Return.

    i. The script sets the environment and executes the `upgrade.pl` perl script.

    j. Specify the location of the backup directory or press Enter to accept the
default. Make sure that you have *write* permissions for this location. The
script backs up the Meta-Directory configuration to this directory as LDIF
files. If the directory exists, an error 'File Exists' message is displayed.

    The archive process detects the servers installed, backs up all the
configuration data in the LDIF files located in the backup directory, and
also deletes the existing configuration.

2. Uninstall existing Sun ONE Meta-Directory 5.0/5.1. If the Directory Server and
Meta-Directory are installed in the same server root, make sure that you
deselect all the Directory Server components. Also, restart the machine (on
Windows only) when the uninstallation is completed. This ensures that the
correct DLLs are always loaded. The following is the sequence of components
to be deselected on Windows:

    ❍   Server Core Components

    ❍   Administration Services

    ❍   Sun ONE Directory Server

    ❍   nsperl

    ❍   PerLDAP

3. If you are using Netscape or iPlanet Directory 4.x or 5.0, upgrade to Sun ONE
Directory Server 5.1 or later now. Follow the instructions in Directory Server
documentation for that.

The following is recommended when upgrading from prior Directory Server
versions to Directory Server 5.2:

❍ On Windows, if iPlanet Directory Server is installed and you are attempting to upgrade to Directory Server 5.2, then first, ensure that you stop all the Directory Servers that are currently running and then install Directory Server 5.2; else, the Directory Server 5.2 installation fails and the 'libnspr4.dll Access Denied' message is displayed.

❍ On Windows with the above case of upgrading existing Directory Server to Directory Server 5.2, nsldap*.dll in SYSTEM32 directory must be removed or renamed; else, the Directory Server 5.2 installation fails and message 'nsldap32v50.dll Access denied' is displayed. Restarting the system does not help and you need to manually rename or remove the offending DLLs to be able to complete the installation.

❍ Upgrading to Directory Server 5.2 from prior Directory Server versions would require you to manually enable the retro-changelog plug-in, since this does not migrated. If this is not completed, Meta-Directory servers do not start after the upgrade process is completed.

❍ For information on upgrading Directory Server, see Chapter 2 of the *Sun ONE Directory Server 5.2 Installation and Tuning Guide.* Also, you may need to see, Chapter 6 of the *Sun ONE Directory Server 5.2 Reference Manual.*

❍ On a distributed platform the ds jar cannot be downloaded to the Sun ONE console.

a. While installing Sun ONE Directory Server 5.1 or later, use the same parameters of the previous Directory Server. This includes the same LDAP port number, Administration Domain, Configuration Admin ID, and Directory Manager ID.

NOTE   The Sun ONE Directory 5.2 upgrade process requires that you to configure the new server on a different port. Once the upgrade/migrate process is completed. You may change the new server port to the original one.

---

b. Having the same port also means that you cannot have both previous and the new Directory Server instances running at the same time. Hence, stop the previous Directory Server instance prior to installing Directory Server 5.1/5.2 and running the upgrade script.

c. Run the upgrade script as described the *Directory Server Installation Guide* about upgrade to Sun ONE Directory Server 5.1/5.2. Once the Directory Server is upgraded, you may proceed with the Meta-Directory upgrade process.

d. You may leave the previous Directory Server at its original place. However, do not start the previous Directory Server or run the previous uninstallation program. This could result in permanent loss of configuration and data.

e. On Windows, disable the NT Services for the previous Directory Server instance and Administration Server to ensure that they do not get started when the machine is restarted.

CAUTION	Make sure that you select and install the same set of components that was previously installed.
	•For Windows: Restart the machine after Meta-Directory 5.1.1 has been installed, if the standard process does not prompt for a restart.
	•For Solaris: Unset `LD_LIBRARY_PATH` before running the installation setup for Meta-Directory 5.1.1, else, the default configuration may not be created.

4. Restore the original configuration by running the script again with the `-R` option.

a. Change directory to the location where Meta-Directory software is decompressed.

b. Type the following command. (Replace the arguments as required.)
```
$ ./upgrade -R -h metadirectory.example.com -p 389 -D cn=Directory
Manager -w dmanager
```

Follow Step c through Step i as described in archive process.

c. Specify the backup directory location or press Return to accept the default. Make sure it is the same location that was created during the backup step and that you have write permissions on it. The tool creates new configuration files in the backup directory, with each file prefixed with ?new_?. For example, for the Join Engine (`join-engine.ldif`) `new_join-engine.ldif` is created. These LDIF files and other files such as: jvm configuration and request scripts are used to reinstall as a new configuration.

d. Provide the configuration admin ID when prompted or press Return to accept the default. Enter the password.

e. The tool restores the Meta-Directory configuration and all the servers instances. On Windows, it creates the Windows NT service registry entries for the servers to run.

5. To verify a successful upgrade, you should start all the server instances from the Meta-Directory Console and flow sample data appropriately.

Post Upgrade Configuration

After completing the upgrade operation, you must copy the file system directory

If the Perl layer of the UTC connector is not customized and the location of your `template.pl` file is in the *NETSITE_ROOT*/utc-*<name>* `directory`, then do the following.

After the upgrade operation, when you restore the *NETSITE_ROOT*/utc-*<name>* directory, the connector still uses the old `template.pl` and the three `*.pm` files. (You would have had backed up the NETSITE_ROOT/utc-<name> directory, before the upgrade.)

Copy the new files (4) from *NETSITE*/bin/utc50/install/templates/universalparser to the correct location in the `NETSITE_ROOT/utc-`*<name>* directory.

In case of the Active Directory and Exchange connector, do the following:

1. Create a dummy instance of the connector, with the same parameters except for View Name and View ID. Do not start this connector.

2. Goto *NETSITE_ROOT*/adc-<name>/config or *NETSITE_ROOT*/exc-<name>/config directory.

3. Copy all the files from this directory to the actual connector's config directory.

4. Remove the duty connector.

Known Issues and Limitations

• Does not support migrations across platforms.

• Does not help in migrating the Meta-Directory configurations across different Directory Server installations or one machine to another machine.

• If you are using Netscape Directory Server 4.x, it is recommended to upgrade to Sun ONE Directory Server 5.1 or later. You may leave the prior Directory Server at its original place.

- During the restore process, new ldifs and other configuration files are created. If you have to repeat the restore process, you must make sure you delete all the new files created (starting with new_) in the backup directory and all its sub-directories before starting a new restore.

- No server instance in the Meta-Directory can have the View Name starting with 'new_'.

- Perl scripts used to configure Universal Text Parser are not updated to the latest version. Manually update these scipts if you require the problems resolved in this release.

Troubleshooting

The following section contains information on troubleshooting problems that may occur when upgrading from prior versions of Meta-Directory to version 5.1.1.

Problem 1

"When upgrading from Meta-Directory 5.1 to Meta-Directory 5.1.1, the operation does not complete if the Oracle Connector View has large number of entries (more than 500K)"

Workaround

Perform the following procedure to upgrade to Meta-Directory 5.1.1

1. Stop the Join Engine and all the connectors that are running.

2. Disable the Retro-Changelog plug-in and then restart the Directory Server. Ensure that you execute this step to speedup the data backup and restore process.

3. Backup `cn=proxy views,ou=5,ou=meta-directory,ou=globalpreferences,ou=<admin-domain>,o=netscaperoot` tree. The `Export Databases` command from Directory Server Console can be used to backup this subtree.

   a. Select the appropriate Directory Server instance from the main console window and click Open to start the Directory Server Console.

   b. From the Task tab, click Export Databases to display the Export Databases dialog box.

    c. Select the sub-tree and navigate to the tree mentioned above. Enter the ldif file location in the 'LDIF File' field (this will be used to backup the data).

    d. Click OK which would start data backup in the specified LDIF file.

4. Delete the subtree `cn=proxy views,ou=5,ou=meta-directory,ou=global preferences,ou=<admin-domain>,o=netscaperoot` (see Step 3) from the Directory Server using `ldapsearch` and `ldapdelete` commands from the command-line prompt.

Usage:

```
ldapsearch -h <hostname> -p <port number> -D "cn=Directory Manager" -w
<password> -b "o=NetscapeRoot" "(cn:dn:=Proxy Views)" | grep "^dn:" |
sed -e 's/dn: <.*>/\1/' | ldapdelete -h <hostname> -p <port number> -D
"cn=Directory Manager" -w <password>
```

Replace the hostname, port number and bind password as per your configuration. Make sure that entire subtree including `cn=Proxy Views` is deleted from the directory.

5. Run the `upgrade.sh` or `upgrade.bat` file as applicable using `-U` option. This backs up and deletes the Meta-Directory configuration from the Directory server.

6. Uninstall the existing Meta-Directory. On Windows, ensure that you restart the system.

7. Install Meta Directory 5.1.1.

8. Run the `upgrade.sh` or `upgrade.bat` file as applicable using `-R` option. This restores the prior Meta-Directory configuration.

9. Restore the data back from the ldif file that was created (see Step 3). You can use `Import Databases` command from the Directory server Console.

This command is available in the same location where export databases command is found in Step 3.

10. Enable the Retro-Changelog plug-in and then restart the Directory Server. Now you are ready to start working on with Meta Directory.

This is a time estimate (sample) that is required to manually upgrade to Meta-Directory 5.1.1 if the Oracle Connector has 500K data (when the Retro-Changelog plug-in was disabled).
Backup time: 5 Min.
Data deletion time: 240 Min. (at 2100 entries per minute)
Upgrade with -U option = 5 Min.
Uninstallation of old meta = 10 Min.
Installation of new meta = 20 Min.
Upgrade with -R option = 5 Min.
Restoring data from ldif file = 200 min (at 2500 entries per minute)
Total time required to upgrade to Meta-Directory 5.1.1: 485 min (approximately, 8 hours). Note that 90% of the time is taken only to backup and restore the proxy view data.

Problem 2

"Upgrade.pl file fails to upgrade to Meta-Directory 5.1.1 when the configuration (NetscapeRoot) is shared"

Workaround

Perform the following upgrade procedure.

- Backup Meta Directory Configuration

- Backup Meta Directory File Systems

- Un-install Meta Directory

- Install Meta Directory 5.1.1

- Restore configuration from backup

- Restore File Systems from backup

- Add new configuration elements

- Create Windows Service (for Windows-based systems only)

1. Backup the Meta-Directory Configuration.

Meta Directory configuration is stored in the configuration directory. You can use the directory server console to perform the backup.

    a. Start Directory Server Console.

    b. Double-click the directory instance where configuration is stored.

    c. Select the Export to LDIF option.

    d. Backup the following directory sub-trees:

- `ou=Meta-Directory,ou=Global Preferences,ou=<admin domain>,o=NetscapeRoot`

- Under `cn=Server Group(n),cn=<hostname>,ou=<admin domain>,o=NetscapeRoot`, back up each Meta Directory Server instance.

  You can select the Server Group itself if it has only Meta-Directory servers under it. Be sure to select each Server Group and each host where Meta-Directory servers are installed.

2. Backup Meta Directory File Systems.

Each Connector instance and Join Engine has a directory that it uses to store status information. These directories are located under the server root, and are called "*join-engine*" or *<connector-name>* (for example, `utc-CV1`). Back up each of these directories. Make sure that you back up on all the hosts where Meta-Directory is installed.

3. Uninstall Meta Directory.

Run the uninstall program on each host where Meta-Directory is installed. On Windows machines, restart the machine to complete the uninstallation operation. Some files may not have been removed by the uninstall program, you may have to remove them manually.

4. Install Meta Directory 5.1.1.

Install Meta Directory 5.1.1 on each host, in the same server root. On Windows machines, restart the machine to complete the installation operation. Make sure that you provide the same host name as for the previous installations.

5. Restore configuration from backup.

Use the Directory Server Console to restore the configuration from the `ldif` files created in Step 1.

    a. Start Directory Server Console.

    b. Double-click the Directory Server instance where the configuration is stored.

    c. Select the Import option.

   d. Select one of the backed up `ldif` files.

   e. Make sure that the Continue on Error option is selected and the Add Only option is not selected.

   f. Click OK. Repeat for all of the backup ldif files created in Step 1.

   g. From the console, navigate to `cn=Server Group, cn=<hostname>, cn=<admin domain>, o=NetscapeRoot` and delete the `"Netscape Administration Server"` sub tree.

NOTE	It is normal for some of the entries to fail when being restored, since Meta Directory 5.1.1 has new updated versions of these entries.

---

6. Restore File Systems from backup.

Restore the directories backed up in Step 2. Make sure that the correct directories are restored on each host.

7. Add new configuration elements.

Meta-Directory 5.1.1 introduces several new configuration settings. You will need to update the configuration directory manually to include the following options. Use the Directory Server Console to perform this operation. All the DNs listed below are present under `"ou=5,ou=Meta-Directory,ou=Global Preferences,ou=<admin domain>,o=netscaperoot"`

The following table describes the new configuration settings for each connector type:

Table 5-2   List of connectors and their configuration settings

Connector	New Configuration Settings
Active Directory/Exchange/NT Domain/UTC connectors	• In the `"cn=<connector name>,cn=Connectors,cn=System"` entry, locate the mdsGeneralConfiguration attribute with the value "PerlDirectory=lib/nsPerlxxx". This contains an old version of Perl. Change it to "PerlDirectory=lib/nsPerl5.8.2". • In the same entry as above, add the following value for mdsGeneralConfiguration: "DisableAVLTree=0"
MS Exchange/NT Domain Connectors	In the `"cn=<connector name>,cn=Connectors,cn=System"` entry, add the following value for mdsGeneralConfiguration: "AttributesToBeEscapedLikeDn=member,uniqueMember"

Table 5-2   List of connectors and their configuration settings

Connector	New Configuration Settings
Active Directory Connectors	In the `"cn=<connector name>,cn=Connectors,cn=System"` entry, add the following value for mdsGeneralConfiguration: `"AttributesToBeEscapedLikeDn=member,uniqueMember,mdsAdMember"`
Lotus Notes Connectors (Solaris only)	For Lotus Notes connectors running on the Solaris Operating System, in the `"cn=1,cn=Tasks,cn=<connector name>,cn=Connectors,cn=System"` entry, add the following value for mdsGeneralConfiguration: `NotesInstallPath=`*<directory where Lotus Notes is Installed>*
Oracle Data Servers	If you have any Oracle Data Server instances, locate the corresponding entries under `"cn=Data Servers"` and add the following two values for mdsGeneralConfiguration: `"FlushSyncPtList="` and `"FlushCVIDList="`
Join Engine	The Join Engine configuration is located at `"cn=join-engine,cn=Meta-Directories,cn=System"`. Locate the mdsGeneralConfiguration value of `"PerlDirectory=lib/nsPerlxxx"`. Replace this with `"PerlDirectory=lib/nsPerl5.8.2"`.

Table 5-2   List of connectors and their configuration settings

Connector	New Configuration Settings
8. Create Windows Service (Windows Only)	Use the bundled SC.EXE tool to create Windows services for each join engine/connector instance installed on Windows hosts. The SC.EXE file is installed in the <*SERVERROOT*>•in\<connector type>\admin•in\mswin32 directory.
	The following command line can be used to create the service:
	`sc create <service name> binPath=<bin path> type=own start=demand DisplayName= <display name>`
	Where: Service name is "SunONE.<connector name>" (for example, SunONE.utc-CV1)
	The path to the bin directory:
	<*SERVER_ROOT*>/bin/utc50/bin/nsperlconn.exe for UTC connectors <*SERVER_ROOT*>/bin/adc50/bin/nsperlconn.exe for Active Directory connectors <*SERVER_ROOT*>/bin/exc50/bin/nsperlconn.exe for MS Exchange connectors <*SERVER_ROOT*>/bin/ntdc50/bin/nsperlconn.exe for NT Domain connectors <*SERVER_ROOT*>/bin/join50/bin/nsmds.exe for Join Engine <*SERVER_ROOT*>/bin/ndc50/bin/javaserver.exe for Novell connectors <*SERVER_ROOT*>/bin/notes50/bin/javaserver.exe for Lotus Notes connectors
	Display name is something like "Sun ONE Active Directory Connector (CV1) 5.1a" (including double quotes).

Troubleshooting

Uninstalling Meta-Directory

Sun ONE Meta-Directory 5.1.1 provides a utility to uninstall the complete software suite or remove only selected components.

This chapter contains these sections:

- Uninstalling on Solaris Systems

- Uninstalling on Windows Systems

Note: The silent uninstall option is not supported.

Uninstalling on Solaris Systems

NOTE	Before starting the uninstallation process, ensure that the Directory Server containing the Configuration Directory is running.

➤ **To uninstall Meta-Directory from a Solaris system**

1. Log onto the system as Superuser (root).

2. Locate the directory where Meta-Directory is installed.

3. Run `./uninstall.sh` file from the directory.

4. Select the default `All` to remove all components of Meta-Directory.

   Alternately, you can remove individual components by selecting them from the list that is displayed.

5. Enter the configuration administrator ID and password to remove the data that has been updated to the server.

    The `uninstall` utility will now remove most of the files.

6. Manually remove any remaining files to complete the uninstall process.

    See `/tmp/install.log` for details of the uninstallation process.

Uninstalling on Windows Systems

NOTE	• Ensure that the Directory Server containing the Configuration Directory is running, before you begin the uninstallation.
	• Uninstalling Meta-Directory 5.1.1 that shares the same installation directory of Directory Server 5.2 is a special case. See the "Uninstalling Meta-Directory 5.1.1 and Directory Server 5.2 if they Cohabit," section for specific instructions to perform this uninstallation.

➤ **To uninstall Meta-Directory on Windows-based systems**

1. Start the uninstallation program: Do one of the following:

    a. Choose Start > Settings > Control Panel.

    b. Double-click Add/Remove Programs. Click Yes when prompted 'If you are sure you would like to remove this item'.

        - Or -

    a. Using Windows Explorer, locate the directory where Meta-Directory is installed. By default, the installation directory is `C:\Program Files\Sun\ Servers\`.

    b. Double-click `uninst.exe` file.

2. Select the components to remove, and then click Uninstall.

    ❍ **To remove specific components only**: Deselect the components you want to retain, and then click Uninstall.

    ❍ **To remove specific subcomponents**: Select the component, and then click Sub Component. This displays a list of subcomponents. Select the desired subcomponents and click Continue. Once complete, click Uninstall.

NOTE	Certain components have dependencies on other components and cannot be removed without selecting both the components. If you select a component that has a dependency on another that was not selected, a message will be displayed suggesting you to select that component.

3. Enter the configuration administrator ID and password, and then click OK. This removes the data that has been updated to the server.

   After the uninstall process is completed, a message displays that some files have not been removed. You must manually remove these files to complete the uninstallation. For more details, see the `%TEMP%Install.log` file.

4. Manually remove any remaining Meta-Directory files.

Uninstalling Meta-Directory 5.1.1 and Directory Server 5.2 if they Cohabit

➤ **To uninstall Meta-Directory 5.1.1 if it cohabits with Directory Server 5.2**

1. Uninstall Meta-Directory as described in "Uninstalling on Windows Systems" section. When performing Step 2, do not select the 'Server Core Components' and 'Administration Services' options.
   Since, the Administration Server shares these components with the Directory Server and Meta-Directory server.

2. Using *regedit* (from Start > Run > type `regedit` to start the registry editor), modify the `RootPath` key value under `HKEY_LOCAL_MACHINE\SOFTWARE\Sun\Administration\5.2` to contain '/' instead of '\' (path delimiter).
   For example, `D:\Sun\Servers` must be modified to `D:/Sun/Servers`.

CAUTION	Modifying the registry key values could result in improper functioning of the system. You must have the expertise when using the registry editor for the modifying the registry keys.

3. Perform a complete uninstallation of the Directory Server. For details on this procedure, see *Directory Server Installation Guide.*

4. Delete the directories where Directory Server and Meta-Directory were installed.

5. Remove the following registry key:
```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Un
install\Sun ONE Server
```

6. If other Sun ONE products are not installed, then remove the following registry key:
```
HKEY_LOCAL_MACHINE\SOFTWARE\Sun
```

Performing Backup and Restore Operations

Meta-Directory uses the Directory Server to store most of its configuration and the data that flows between different components. Hence, the backup process for Meta-Directory requires backup of Directory Server. A typical deployment could contain several directory servers associated with a single Meta-Directory installation, containing configuration, and data; the Connector Views for each of the connectors and so on.

Thus, backing up Meta-Directory involves a backup of all the Directory Servers. It is assumed that when the 'Directory Server' is mentioned, you must then perform the same operation for the associated Directory Servers.

The following sections are discussed:

- Performing the Backup Operation

- Performing the Restore Operation

Performing the Backup Operation

Backup operation of Meta-Directory and Directory server involves backing up of all related files and directories, any external configuration files, and external data sources.

➤ **To perform the backup operation**

1. Make sure that no data is flowing between the external data sources, Connector Views, and Meta View. Also make sure no data is being changed in the Directory Server.

2. Copy the server roots of Meta-Directory (`Netsite_Root`) and Directory Server (location where these products are installed) to a backup location. This backup location can also be a tape drive or any storage system.

   This ensures that all the configuration, data, and binaries are backed up at once.

NOTE	For the Universal Text Connector, the configuration files such as `template.pl` and `task.cfg` are provided by the administrator and hence can be located external to `Netsite_Root`. In such a scenario, where these files are not automatically copied, you must perform a backup of these files separately.

---

3. External data sources such as: Oracle, Active Directory, Novell eDirectory, and so on should also be backed up to be in a consistent state when Meta-Directory is restored. See the appropriate products' documentation for information on backup and restore.

NOTES	• An SQL script is generated when an Oracle database connector instance is created; which runs on the Oracle database to create the required set of the tablespaces, triggers, and so on. Perform a backup of this SQL script. Use this to view the changes made to the database for the connector and for troubleshooting purposes. • Novell Directory Connector and the Lotus Notes Connector uses an intermediate changelog database in MySQL for change-detection with respect to data in the external data source. Each connector instance stores its changelog data in a different 'database'. Hence, to backup the complete Meta-Directory, you must backup each such database (in MySQL) separately (and restore them separately). For specific details on backup and recovery of databases in MySQL, see the '*Disaster Prevention and Recovery*' section in *MySQL* documentation.

Backing Up Meta-Directory Configuration Only

Use the `-B` option to backup the complete Meta-Directory configuration in the Directory Server. This captures the Meta-Directory configuration and server instances from the Directory, and stores it in the LDIF files. It also copies the configuration directories for each Meta-Directory server instance to a specified backup location.

Usage:

```
upgrade.pl -<B> [-h directory server hostname] -p port -D Directory Manager -w password
```

Where: B: Backup

For example:

```
nsperl upgrade.pl -B -h ldap_host -p 389 -D cn=Directory Manager -w
dmanager
```

Performing the Restore Operation

Use the -R option to completely restore Meta-Directory.

Usage:

```
upgrade.pl -<R> [-h directory server hostname] -p port -D Directory Manager -w password
```

Where: B: Backup

For example:

```
nsperl upgrade.pl -R -h ldap_host -p 389 -D cn=Directory Manager -w
dmanager
```

The -R option can only be used when the directory configuration is in a particular state. However, if the Meta-Directory configuration or the data is corrupted, you can restore from a previously generated complete backup (as described in the previous section) using the procedure described below.

➤ **To perform the restore operation**

1. Stop all the Meta-Directory servers and Directory servers (including the Administration servers).

2. Move the existing Netsite_Root and Directory Server root directories from their existing location to a different location. You could delete these directories/files once the restore of a prior backup is successful and if it is not required.

3. Restore the files and directories of Meta-Directory and Directory Server from the previously created backup location (such as: a tape drive). Ensure that you copy the files and directories to the same location where the original backup was located.

| NOTE | For a Universal Text Connector instance, if the configuration files such as: template.pl, task.cfg, and so on were backed up separately, then you must restore these files also to their original location. |

---

4. Restore the external data sources.

5. Restore the MySQL database that contains the *changelog* for the Lotus Notes and Novell Directory Connectors.

6. Start all the servers.

Index

W

S

U

Section **W**