Novell ConsoleOne®

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USER GUIDE

Novell®

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Contents

About This Guide

This guide explains what ConsoleOne® is and how to install, use, and troubleshoot it.

> **TIP:** This guide covers only the core ConsoleOne capabilities that you get if you download ConsoleOne from the Novell® Product Downloads Site (http://download.novell.com). For information on ConsoleOne capabilities added by other products, see the documentation for those products.

This guide includes the following sections:

Additional Documentation

For documentation on eDirectory™ and the eDirectory management utilities, see the *Novell eDirectory 8.7 Administration Guide* (http://www.novell.com/documentation/lg/edir87/index.html) and the *Novell iManager 1.5.1 Administration Guide* (http://www.novell.com/documentation/lg/imanager151/index.html).

Documentation Updates

For the most recent version of the *ConsoleOne 1.3.x User Guide*, see the ConsoleOne 1.3.*x* Documentation (http://www.novell.com/documentation/lg/consol13/index.html) Web Site.

Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items within a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as UNIX, should use forward slashes as required by your software.

Getting Started

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ConsoleOne® is a Java*-based tool for managing your network and its resources. By default, it lets you manage:

- Novell® eDirectory™ objects, schema, partitions, and replicas
- NetWare® server resources

If you install other Novell products, additional capabilities are snapped in to ConsoleOne automatically. For example, if you install Novell eDirectory, the capability to configure the LDAP interface to eDirectory is snapped in to ConsoleOne automatically.

This chapter explains what's new in this ConsoleOne release, why you should use ConsoleOne instead of legacy tools like NetWare Administrator, and how to install and start ConsoleOne.

In This Chapter

- Section 1.1, "What's New in This Release?," on page 13
- Section 1.2, "Why Use ConsoleOne?," on page 14
- Section 1.3, "Accessibility Improvements," on page 16
- Section 1.4, "Snap-Ins from Other Products," on page 17
- Section 1.5, "Installing and Starting ConsoleOne," on page 17
- Section 1.6, "Uninstalling ConsoleOne," on page 26

1.1 What's New in This Release?

This release includes several core capabilities that are new since ConsoleOne 1.2d. The following sections elsewhere in this guide describe these capabilities:

- Section 1.3, "Accessibility Improvements," on page 16
- "Checking Partition Continuity" on page 75

In addition, the following capabilities have been enhanced in this release of ConsoleOne:

Capability	Enhancement
Section 2.1, "Browsing and Finding Objects," on page 29	If a tree is running NDS eDirectory 8.5 or later and is configured for DNS federation, you can access contexts in that tree whether or not you are logged in to it. This enables you to make rights and membership assignments across trees.
Section 3.1, "Creating User Accounts," on page 41	You can now create rights assignments and volume space restrictions for new users through a template.
Section 6.2, "Defining and Using Auxiliary Classes," on page 67	You can now extend individual eDirectory objects with the properties defined in auxiliary classes. Previously, only applications could do this.

Capability	Enhancement
Section 8.1, "Viewing and Modifying Server and File System Information," on page 81	You can now modify the properties of multiple files, folders, or volumes simultaneously. You can also launch NetWare Management Portal from the server object.
Section 2.3, "Editing Object Properties," on page 34	You can now customize the property pages for each type of object by reordering, hiding, or showing individual pages. Your customizations are saved across ConsoleOne sessions.
Section 1.5, "Installing and Starting ConsoleOne," on page 17	You can now install and run ConsoleOne on Linux*, Solaris*, and Tru64* computers in addition to Windows and NetWare.

NOTE: The following are applicable to ConsoleOne 1.3.6h or higher versions.

- JRE 1.4.2_13 is bundled with ConsoleOne 1.3.6h release.
- Xplat libraries have been removed from ConsoleOne Windows build.
- Novell Client Version 4.91 SP3 or higher is recommended.

1.2 Why Use ConsoleOne?

Novell is committed to ConsoleOne as a single management tool and is working hard to improve its capabilities and performance so you won't need legacy tools like NetWare Administrator. Following are some of the advantages of ConsoleOne over legacy tools. A few limitations are also listed after the advantages.

Advantage	Explanation
Use on a Windows* computer or a NetWare server	Because ConsoleOne is Java-based, it can run on Windows, NetWare, Linux*, Solaris*, and Tru64 UNIX*. The legacy NetWare Administrator, NDS Manager™, and Schema Manager tools run only on Windows.
Manage the latest Novell products	ConsoleOne lets you manage the latest Novell products and enhancements, whereas NetWare Administrator and other legacy tools aren't being updated to do so. For example, you can administer DirXML, Single Sign-on, and Certificate Server only in ConsoleOne.
Browse huge eDirectory trees	If your tree is running NDS 8 and has containers with thousands of objects, browsing it in ConsoleOne is faster and more consistent. NetWare Administrator is slower opening large containers and is limited by available RAM.
Access eDirectory resources through DNS federation	If a tree is running NDS eDirectory 8.5 or later and is configured for DNS federation, ConsoleOne lets you access contexts in that tree whether or not you are logged in to the tree. This allows you to treat multiple eDirectory trees as a single system for purposes of assigning rights and memberships. No legacy tool exposes this capability. See Section 2.1, "Browsing and Finding Objects," on page 29.

Advantage	Explanation
Create filtered eDirectory replicas	If your tree is running NDS eDirectory 8.5 or later, ConsoleOne lets you create filtered replicas that contain only the objects and properties needed for synchronization with specific applications like PeopleSoft*. No legacy tool has this capability. See Section 7.2, "Managing Replication," on page 78.
Generate eDirectory reports	ConsoleOne lets you generate reports on eDirectory objects, users, groups, and security. No legacy tool has these capabilities. See "Generating Reports" on page 89.
Create all eDirectory object types	ConsoleOne lets you create any object type defined in the schema of your eDirectory tree, including custom types you've added. NetWare Administrator can only create object types for which it has snap-ins. See Section 2.2, "Creating and Manipulating Objects," on page 32.
Modify all object types, one at a time or several at once	ConsoleOne lets you generically edit any object property defined in the schema of your eDirectory tree, including custom properties you've added. No legacy tool has this capability. ConsoleOne also lets you modify multiple objects of any class in a single operation, including files and folders on NetWare volumes. NetWare Administrator lets you do this only on User objects. See Section 2.2, "Creating and Manipulating Objects," on page 32.
Define and use auxiliary classes	ConsoleOne lets you define auxiliary classes and extend any eDirectory object with the properties defined in auxiliary classes. No legacy tool has this capability. See Section 6.2, "Defining and Using Auxiliary Classes," on page 67.
Assign ASN.1 identifiers to classes and attributes	ConsoleOne lets you assign ASN.1 identifiers to object classes and attributes in the schema of your eDirectory tree. No legacy tool has this capability. See Section 6.1, "Defining Custom Object Classes and Properties," on page 66.
Set up role-based administration	ConsoleOne lets you create roles in eDirectory so you can delegate administrative responsibilities. A role is a list of specific application functions that a person can perform. For an application function to be added to a role, it must exist as a task object in your eDirectory tree. For details, see "Configuring Role-Based Administration" on page 59.

At the time of this publishing, ConsoleOne also has a few limitations compared to legacy tools. Most of these will no longer exist in future releases.

Limitation	Explanation
Can't manage print services	For now, you should use NetWare Administrator to manage network print services.
Can't remotely repair eDirectory or check partition continuity	For now, you should use the legacy NDS Manager tool to remotely repair eDirectory on individual servers, to check partition continuity, or to abort a partition operation that was started by another administrator.
Can't generate eDirectory schema reports	For now, you should use the legacy Schema Manager tool to generate reports on the schema of your eDirectory tree, unless you design your own report forms to generate schema reports in ConsoleOne. See Section 9.4, "Designing Custom Reports," on page 96.

Limitation	Explanation
Can't create or run new user setup scripts	ConsoleOne lets you create all aspects of user templates except for setup scripts. Also, ConsoleOne can't execute a setup script when creating a new user account from a template. You must use NetWare Administrator to perform these tasks.
Can't manage some older Novell products	A few older Novell products haven't shipped ConsoleOne snap-ins yet, such as NetWare for SAA*. For now, you can use NetWare Administrator to manage these products.
Performance can be sluggish on older hardware	Because ConsoleOne is Java-based, it can be sluggish when run on older hardware. If you have the hardware configuration recommended in Section 1.5, "Installing and Starting ConsoleOne," on page 17, performance is reasonably good. The biggest performance booster is adding RAM.
Minor user-interface quirks	ConsoleOne still has a few minor quirks in the user interface. For details, see Section 10.10, "Known Quirks and Limitations," on page 102.

1.3 Accessibility Improvements

ConsoleOne 1.3.*x* on Windows includes enhancements in the software and documentation to make accessibility easier for people with disabilities.

If you are unfamiliar with the control or shortcut keys used in Java software, you can find a list of these keys at the Swing Component Keystroke Assignments (http://java.sun.com/j2se/1.3/docs/api/javax/swing/doc-files/Key-Index.html) Web site.

To navigate in the JavaHelp online help system, you can use the tab keys to navigate to control icons. JavaHelp loses focus when the text window is active, although the up and down arrows will scroll the help text. You can also use the following JavaHelp controls:

- Ctrl+T = next link
- Ctrl+Shift+T = previous link
- Ctrl+Space = activate selected link

JavaHelp 1.1 is currently inaccessible via JAWS screen reader software. To access JavaHelp with a screen reader, use the IBM Self-Voicing Kit available from the AlphaWorks (http://www.alphaworks.ibm.com/tech/svk) Web site.

1.3.1 Accessibility Usage

To enable the new ConsoleOne accessibility feature, complete the following procedure:

1 Install Java Access Bridge.

The Java Access Bridge exposes the Java Accessibility API in a Windows DLL so that Windows Assistive Technologies can interact with Java applications that use the Java Accessibility API.

To set up the Java Access Bridge for use with ConsoleOne, complete the following steps:

1a Download the Java Access Bridge from the Java Access Bridge Website (http://java.sun.com/products/accessbridge).

1b Unpack the Java Access Bridge into the C:\AccessBridge-1_2 directory and enter the following:

```
C:\AccessBridge-1_2\installer\Install
```

For more information on installing and configuring the Java Access Bridge, see the Java Access Bridge readme (http://java.sun.com/products/accessbridge/README.txt).

2 Place a copy of the C:\AccessBridge-1_2\installer\installerFiles\accessibility.properties file in the *ConsoleOne_installation_path*\JRE\LIB folder. By default, this folder is at C:\NOVELL\CONSOLEONE\1.2\JRE\LIB.

1.4 Snap-Ins from Other Products

If you installed or will install a product that includes ConsoleOne snap-ins and you want to retain those snap-ins in this release of ConsoleOne, make sure those snap-ins are installed in the same place as this release of ConsoleOne. The following are some points to consider:

- ConsoleOne 1.2 snap-ins are compatible with this release of ConsoleOne, but ConsoleOne 1.1 snap-ins aren't.

    If your product provides only ConsoleOne 1.1 snap-ins, you might want to install this release of ConsoleOne in a different place than ConsoleOne 1.1. By default, ConsoleOne 1.1 is installed on the NetWare server in sys:\public\mgmt\console1.

- Novell products typically install ConsoleOne snap-ins on the SYS volume of a NetWare server. For example, NDS 8 installs the snap-in for LDAP in sys:\public\mgmt\consoleone\1.2.

- If you install this release of ConsoleOne on the SYS volume of a NetWare server, it overwrites ConsoleOne 1.2*x* and disables ConsoleOne 1.1. However, existing ConsoleOne 1.2 snap-ins are retained.

- If you install this release of ConsoleOne locally on a workstation hard disk, other products such as eDirectory might not be able to find the right place to add snap-ins to the installation. In such a case, it is up to you to move any snap-ins from other products into the new installation.

    - On NetWare, move the snap-in to sys\public\mgmt\consoleone\1.2.

    - On Windows, move the snap-ins to c:\novell\consoleone\1.2.

    - On UNIX, move the snap-ins to /usr/ConsoleOne/bin/ConsoleOne.

- To see a list of registered ConsoleOne snap-ins installed on your ConsoleOne machine, click Help > About Snap-ins. Click the name of an individual snap-in to view the version number.

- Updated Novell product snap-ins can be downloaded from the Novell Product Downloads Site (http://download.novell.com).

1.5 Installing and Starting ConsoleOne

ConsoleOne is typically installed as part of a larger product, such as Novell eDirectory or NetWare. If this release of ConsoleOne hasn't been installed by a larger product, you can install it using the procedure below for your platform.

In This Section

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1.5.1 Windows

You can install and run ConsoleOne locally on a Windows workstation or server, or you can install it remotely on a NetWare or Windows server and run it through a mapped or shared drive pointing to that server. If you install locally on a workstation, other Novell products such as Novell eDirectory might not be able to add needed snap-ins to your installation. For this reason, we recommend a server installation.

System Requirements for Windows

Operating System	One of the following releases:
	◆ 2000 Advanced Server SP4
	◆ 2000 Professional SP4
	◆ 2000 Server SP4
	◆ XP Professional SP2
	◆ Server 2003
	TIP: You can download Novell clients from the Novell Product Downloads Site (http://download.novell.com).
	NOTE: Windows Vista is not a supported platform for ConsoleOne.
RAM	Recommended: 128 MB
	Minimum: 64 MB
	TIP: 128 MB is required to generate reports in ConsoleOne.
Processor	Recommended: 200 MHz or faster
Disk Space	38 MB (required only for a local installation)
Screen Resolution	Minimum: 800 x 600 with 256 colors

Installing ConsoleOne on Windows

Prerequisites for installing ConsoleOne 1.3.6h on Windows

- ◆ Novell Client Version 4.91
- ◆ Novell Client Version 4.91 SP3 or above is recommended

Use this procedure to install ConsoleOne locally on a Windows server or workstation. To install ConsoleOne remotely on a NetWare server, see "NetWare" on page 20.

1 If a previous version of ConsoleOne is running on the Windows computer, exit it.

2 Insert the CD that contains ConsoleOne, or go to the Novell Product Downloads Site (http://download.novell.com).

3 Browse the CD or Web site until you find the available ConsoleOne packages > select the package for Windows/NetWare.

> **TIP:** If you are using a CD that runs an installation program and you see an option to install just ConsoleOne, choose that option and skip to Step 6.

4 If you are using the Web site, download and unzip the ConsoleOne files to a temporary area. If you are using a CD, skip this step.

5 Run the installation executable file (setup.exe or consoleone.exe).

6 Follow the instructions on the screen to complete the installation.

> **TIP:** If you are installing on a Windows server and you will run ConsoleOne remotely through drive sharing, don't forget to share the folder where you install ConsoleOne. Some Novell products require that this share be established before running the installation program.

Starting ConsoleOne on Windows

If ConsoleOne is installed locally on the Windows computer, simply double-click the ConsoleOne icon on the desktop.

If ConsoleOne is installed remotely on a NetWare or Windows server and you don't have a shortcut to that installation, do the following:

1 In Windows Explorer, find the mapped or shared drive that represents the server volume where ConsoleOne is installed > browse to the folder where ConsoleOne is installed.

By default, this is:

Windows	`c:\novell\consoleone\1.2`
NetWare	`sys:public\mgmt\consoleone\1.2`

> **IMPORTANT:** You must browse for ConsoleOne on a drive that is mapped to a letter, not a UNC path.

2 In the BIN subfolder, double-click consoleone.exe.

3 (Optional) For future use, create a shortcut on your desktop to the remote consoleone.exe file.

For help with navigating and performing basic tasks in ConsoleOne, see "Administration Basics" on page 29. If you encounter problems starting or using ConsoleOne, see "Troubleshooting" on page 99.

Configuring ConsoleOne Accessibility

To make ConsoleOne accessible to Windows assistive technologies, you must install the Java Access Bridge. The Java Access Bridge is a technology used to expose the Java Accessibility API in a Windows DLL so that Windows assistive technologies can provide access to applications and applets running with a Java Virtual Machine running on a Windows system which implement the Java Accessibility API.

To set up the Java Access Bridge for use with ConsoleOne, follow these steps:

1 Download the Java Access Bridge from the Java Access Bridge (http://java.sun.com/products/accessbridge) Web site.

2 Unpack the Java Access Bridge into the c:\accessbridge-1_0 directory > run the following command:

c:\accessbridge-1_0\installer\install

For more information on installing and configuring the Java Access Bridge, see the Java Access Bridge Readme (http://java.sun.com/products/accessbridge/README.txt).

3 Place a copy of the following files in your novell\consoleone\1.2\consoleoneext directory:

jaccess-1_3.jar[lnbrk]access-bridge.jar

4 Place a copy of accessibility.properties in your novell\consoleone\1.2\jre\lib directory.

5 Copy the following files to your Windows DLL directory (for example, c:\winnt\system32 or c:\windows\system):

javaaccessbridge.dll[lnbrk]windowsaccessbridge.dll

1.5.2 NetWare

If you install ConsoleOne on a NetWare server, you can run it locally on that server or remotely on a Windows computer with a drive mapped to that server. Installing ConsoleOne on a NetWare server also allows other Novell products such as eDirectory to add needed snap-ins to your installation.

System Requirements for NetWare

Operating System	NetWare 6.5 Support Pack 5 or later
	TIP: You can get NetWare support packs from the Product Updates (http://support.novell.com/filefinder/6385/index.html) site.
Processor	Recommended: 200 MHz or faster
Disk Space	38 MB
Screen Resolution	Minimum: 800 x 600 with 256 colors (required only to run locally on the server)

Installing ConsoleOne on NetWare

1 Bring down Java and any Java applications that are running on the server, including the server GUI.

You can do this by entering JAVA -EXIT at the console prompt.

2 Have all users who are currently running ConsoleOne remotely through a connection to the server exit their ConsoleOne sessions.

3 At a Windows workstation, map a drive letter to the root of the server's SYS volume.

4 At the same workstation, insert the CD that contains ConsoleOne, or go to the Novell Free Downloads site (http://download.novell.com).

5 Browse the CD or Web site until you find the available ConsoleOne packages > select the package for Windows/NetWare.

> **TIP:** If you are using a CD that runs an installation program and you see an option to install just ConsoleOne, choose that option and skip to Step 8.

6 If you are using the Web site, download and unzip the ConsoleOne files to a temporary area. If you are using a CD, skip this step.

7 Run the installation executable file (setup.exe or consoleone.exe).

8 Follow the instructions on the screen to complete the installation. When you are prompted for the location to install to, select the drive that is mapped to the root of the server's SYS volume.

> **IMPORTANT:** You must select a drive that is mapped to a letter, not a UNC path.

Starting ConsoleOne on NetWare

To start ConsoleOne locally on a NetWare server, enter `C1START` at the console prompt.

To start ConsoleOne remotely from a Windows computer with a drive mapped to the NetWare server, see "Starting ConsoleOne on Windows" on page 19.

For help with navigating and performing basic tasks in ConsoleOne, see "Administration Basics" on page 29. If you encounter problems starting or using ConsoleOne, see "Troubleshooting" on page 99.

1.5.3 Linux

You can install and run ConsoleOne locally on a Linux computer. You can also run it from another computer through an X terminal (remote) session, if that computer has an X windowing subsystem.

System Requirements for Linux

> **IMPORTANT:** For ConsoleOne v1.3.6d onwards, if the Linux Kernel version installed in your system is 2.6, the Java runtime environment (JRE) that is included in the ConsoleOne installation package will not be installed. For Kernel version 2.4, you can choose to install JRE or not.

Operating System	One of the following (or later) releases:
	◆ Red Hat Enterprise Linux WS 4.0
	◆ Red Hat AS 3.0
	◆ SLES 9.0 SP3
	◆ SLES 10
	◆ SUSE Linux Professional 9.3
	◆ SUSE Linux 10.1
	◆ SLED 10
	◆ OES SP3
RAM	Recommended: 128 MB
	Minimum: 64 MB
Processor	Recommended: 200 MHz or faster

Disk Space	With JRE: 32 MB
	Without JRE: 5 MB
Screen Resolution	Minimum: 800 x 600 with 256 colors

IMPORTANT: This release of ConsoleOne is compatible with NDS eDirectory 8.5 and later releases but not with earlier releases. If the ConsoleOne installation program detects that an eDirectory release earlier than 8.5 is on the machine, it will abort the installation.

Installing ConsoleOne on Linux

1 If previous versions of ConsoleOne and eDirectory are running on the Linux computer, shut them down and uninstall them completely from the system (remove all the associated files).

2 Insert the CD that contains ConsoleOne, or go to the Novell Free Downloads site (http:// download.novell.com).

3 Locate the ConsoleOne installation program (the c1-install file) on the CD or by downloading it from the Web site as follows:

Source	Steps to Locate the c1-install File
CD	Change to the ConsoleOne/Linux directory.
Web site	1. Click Management > ConsoleOne for Linux.
	2. Follow the instructions on the Web site to download the ConsoleOne package (the c1linux.tar file).
	3. Unpack the file you just downloaded (type `tar xf c1linux.tar` at the system prompt).
	4. Change to the ConsoleOne/Linux directory that was created by unpacking the download file.

4 Run the ConsoleOne installation program (type `c1-install` at the system prompt).

5 Follow the prompts to complete the installation.

IMPORTANT: For ConsoleOne v1.3.6d onwards, if the Linux Kernel version installed in your system is 2.6, the Java runtime environment (JRE) that is included in the ConsoleOne installation package will not be installed. For Kernel version 2.4, you can choose to install JRE or not.

After ConsoleOne is installed, you can uninstall it at any time by entering the `c1-uninstall` command at the system prompt. The c1-install and c1-uninstall commands can include some optional parameters for running in unattended mode or installing/uninstalling individual components.

For details on the command syntax, type `c1-install -h` or `c1-uninstall -h` at the system prompt (applicable only to ConsoleOne 1.3.6 for lower).

For a log of ConsoleOne installation or uninstallation results, see the corresponding log file created in the /var directory.

Starting ConsoleOne on Linux

At the system prompt of a local session or an X terminal (remote) session, enter the following command:

```
/usr/ConsoleOne/bin/ConsoleOne
```

For help with navigating and performing basic tasks in ConsoleOne, see "Administration Basics" on page 29. If you encounter problems starting or using ConsoleOne, see "Troubleshooting" on page 99.

1.5.4 Solaris

You can install and run ConsoleOne locally on a Solaris computer. You can also run it from another computer through an X terminal (remote) session, if that computer has an X windowing subsystem.

System Requirements for Solaris

IMPORTANT: This release of ConsoleOne for Solaris has been tested only on the Sun* 1.4.2_13 Java runtime environment (JRE). This JRE is included in the ConsoleOne installation package in case you don't have it. If you do have it, you can choose not to install it.

Operating System	One of the following (or later) releases:
	◆ Solaris 2.9 or later
	TIP: You can get Solaris patches at SunSolve Online (http://sunsolve.sun.com).
Disk Space	With JRE: 64 MB
	Without JRE: 20 MB
Screen Resolution	Minimum: 800 x 600 with 256 colors

IMPORTANT: This release of ConsoleOne is compatible with NDS eDirectory 8.5 and later releases but not with earlier releases. If the ConsoleOne installation program detects that an eDirectory release earlier than 8.5 is on the machine, it will abort the installation.

Installing ConsoleOne on Solaris

1 If previous versions of ConsoleOne and eDirectory are running on the Solaris computer, shut them down and uninstall them completely from the system (remove all the associated files).

2 Insert the CD that contains ConsoleOne, or go to the Novell Free Downloads site (http://download.novell.com).

3 Locate the ConsoleOne installation program (the c1-install file) on the CD or by downloading it from the Web site as follows:

Source	Steps to Locate the c1-install File
CD	Change to the ConsoleOne/Solaris directory.

Source	Steps to Locate the c1-install File
Web site	1. Click Management > ConsoleOne for Solaris.
	2. Follow the instructions on the Web site to download the ConsoleOne package (the c1sol.tar file).
	3. Unpack the file you just downloaded (type `tar xf c1sol.tar` at the system prompt).
	4. Change to the ConsoleOne/Solaris directory that was created by unpacking the download file.

4 Run the ConsoleOne installation program (type `c1-install` at the system prompt).

5 Follow the prompts to complete the installation.

> **IMPORTANT:** This release of ConsoleOne for Solaris has been tested only on the Sun 1.4.2_13 Java runtime environment (JRE). This JRE is included in the ConsoleOne installation package in case you don't have it. If you do have it and it's already installed, select No when you are prompted whether to install it.

After ConsoleOne is installed, you can uninstall it at any time by entering the `c1-uninstall` command at the system prompt. The c1-install and c1-uninstall commands can include some optional parameters for running in unattended mode or installing/uninstalling individual components.

For details on the command syntax, type `c1-install -h` or `c1-uninstall -h` at the system prompt (applicable only to ConsoleOne 1.3.6 for lower).

For a log of ConsoleOne installation or uninstallation results, see the corresponding log file created in the /var directory.

Starting ConsoleOne on Solaris

At the system prompt of a local session or an X terminal (remote) session, enter the following command:
```
/usr/ConsoleOne/bin/ConsoleOne
```

For help with navigating and performing basic tasks in ConsoleOne, see "Administration Basics" on page 29. If you encounter problems starting or using ConsoleOne, see "Troubleshooting" on page 99.

1.5.5 Tru64 UNIX

You can install and run ConsoleOne locally on a Tru64 UNIX computer. You can also run it from another computer through an X terminal (remote) session, if that computer has an X windowing subsystem.

System Requirements for Tru64 UNIX

> **IMPORTANT:** This release of ConsoleOne for Tru64 UNIX has been tested only on the Compaq* 1.2.2 Java runtime environment (JRE). This JRE is included in the ConsoleOne installation package in case you don't have it. If you do have it, you can choose not to install it.

Operating System	Compaq Tru64 UNIX 5.0a or later
RAM	Recommended: 128 MB
	Minimum: 64 MB
Disk Space	With JRE: 20 MB
	Without JRE: 5 MB
Screen Resolution	Minimum: 800 x 600 with 256 colors

IMPORTANT: This release of ConsoleOne is compatible with NDS eDirectory 8.5 and later releases but not with earlier releases. If the ConsoleOne installation program detects that an eDirectory release earlier than 8.5 is on the machine, it will abort the installation.

Installing ConsoleOne on Tru64

1 If previous versions of ConsoleOne and eDirectory are running on the Tru64 UNIX computer, shut them down and uninstall them completely from the system (remove all the associated files).

2 Insert the CD that contains ConsoleOne, or go to the Novell Free Downloads site (http://download.novell.com).

3 Locate the ConsoleOne installation program (the c1-install file) on the CD or by downloading it from the Web site as follows:

Source	Steps to Locate the c1-install File
CD	Change to the ConsoleOne/Tru64 directory.
Web site	1. Click Management > ConsoleOne for Tru64.
	2. Follow the instructions on the Web site to download the ConsoleOne package (the c1tru64.tar file).
	3. Unpack the file you just downloaded (type `tar xf c1tru64.tar` at the system prompt).
	4. Change to the ConsoleOne/Tru64 directory that was created by unpacking the download file.

4 Run the ConsoleOne installation program (type `c1-install` at the system prompt).

5 Follow the prompts to complete the installation.

IMPORTANT: This release of ConsoleOne for Tru64 UNIX has been tested only on the Compaq* 1.2.2 Java runtime environment (JRE). This JRE is included in the ConsoleOne installation package in case you don't have it. If you do have it and it's already installed, select No when you are prompted whether to install it.

After ConsoleOne is installed, you can uninstall it at any time by entering the `c1-uninstall` command at the system prompt. The c1-install and c1-uninstall commands can include some optional parameters for running in unattended mode or installing/uninstalling individual components.

For details on the command syntax, type `c1-install -h` or `c1-uninstall -h` at the system prompt (applicable only to ConsoleOne 1.3.6 for lower).

For a log of ConsoleOne installation or uninstallation results, see the corresponding log file created in the /var directory.

Starting ConsoleOne on Tru64 UNIX

At the system prompt of a local session or an X terminal (remote) session, enter the following command:

```
/usr/ConsoleOne/bin/ConsoleOne
```

For help with navigating and performing basic tasks in ConsoleOne, see "Administration Basics" on page 29. If you encounter problems starting or using ConsoleOne, see "Troubleshooting" on page 99.

1.6 Uninstalling ConsoleOne

This section contains the following information:

- "Using Add/Remove Programs on a Windows Server or Workstation" on page 26
- "Manually Uninstalling ConsoleOne" on page 26

1.6.1 Using Add/Remove Programs on a Windows Server or Workstation

1 From the Windows NT/2000 server where eDirectory is installed, click Start > Settings > Control Panel > Add/Remove Programs.

2 Select eDirectory, ConsoleOne, or the SLP Directory Agent from the list, then click Add/Remove.

3 Confirm that you want to remove your selection by clicking Yes.

The Installation Wizard removes the program from the server.

1.6.2 Manually Uninstalling ConsoleOne

If using Add/Remove Program does not work to uninstall ConsoleOne, follow these steps to manually uninstall ConsoleOne.

1 Delete the following directories:

- C:\Novell\ConsoleOne
- C:\Program Files\Common Files\Novell\NI

2 Use REGEDIT to edit the windows registry and remove the following keys:

- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App Paths\ConsoleOne.exe
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\CONSOLE1
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\C1RPTING

3 Restart the workstation.

Administration Basics

2

In ConsoleOne®, your network and its resources are presented as a set of objects that are organized into various containers, with My World at the top. Use the left pane to expand and collapse containers. Use the right pane to work with specific resources.

Figure 2-1   *ConsoleOne Management Tool*
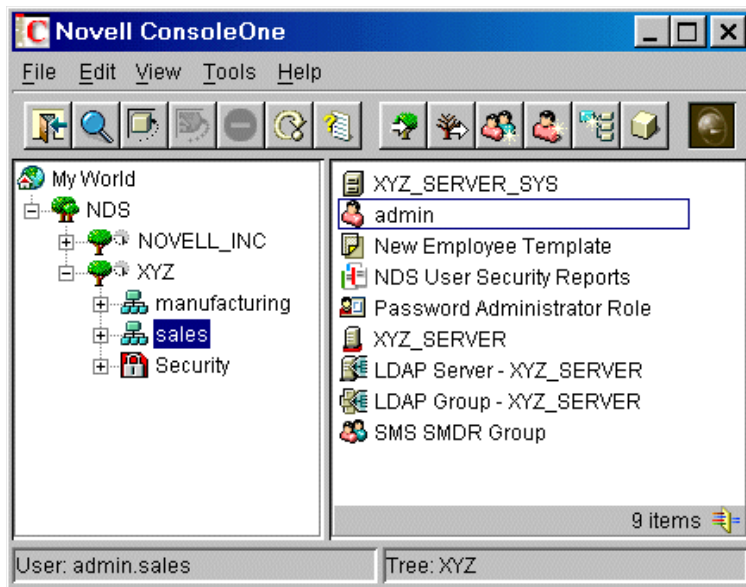
In general, you perform administration tasks by browsing to an object, right-clicking it, and then selecting an action. The available actions depend on the type of object. For example, the New Object action is available only on containers.

This chapter explains how to perform essential tasks like finding objects, creating and modifying objects, and organizing objects into containers. For information on common Novell® eDirectory™ object types, see "Object Classes and Properties (http://www.novell.com/documentation/edir871/ edir871/data/fbabihje.html#fbabihje)" in the *Novell eDirectory Administration Guide*.

In This Chapter

- Section 2.1, "Browsing and Finding Objects," on page 29
- Section 2.2, "Creating and Manipulating Objects," on page 32
- Section 2.3, "Editing Object Properties," on page 34
- Section 2.4, "Organizing Objects into Containers," on page 36
- Section 2.5, "Customizing Views," on page 38

2.1 Browsing and Finding Objects

In the left pane you'll see the "NDS" container, which holds the eDirectory trees that you are currently logged in to. You can cause additional eDirectory trees to appear in the NDS container by

logging in to those trees. For trees that are running NDS® eDirectory 8.5 or later and are configured for DNS federation, you can cause specific contexts of those trees to appear in the NDS container without actually logging in to those trees.

Once you are in an eDirectory tree or context and its objects are listed in the right pane, you can use the techniques described below to locate the specific objects you want to manage.

In This Section

2.1.1 Logging In to an eDirectory Tree

1 Click anywhere in the "NDS" container.

2 On the toolbar, click NDS Authenticate.

3 Fill in the Login dialog box.

> **TIP:** To see a list of the eDirectory trees you can log in to, click the tree icon. If the tree you want isn't listed, see Section 10.4, "Can't Find the eDirectory Tree That I Want to Log In To," on page 101.

4 Click Login.

The new tree is added to the NDS container in ConsoleOne.

2.1.2 Logging Out of an eDirectory Tree

1 Click the eDirectory tree that you want to log out of.

2 On the toolbar, click NDS Unauthenticate.

The tree is removed from the NDS container.

2.1.3 Accessing an eDirectory Context through DNS Federation

This procedure works only if the target eDirectory context is in a tree that is running NDS eDirectory 8.5 or later and is configured for DNS federation.

1 Click anywhere in the "NDS" container.

2 Click View > Set Context.

3 Enter the full DNS name for the eDirectory context that you are trying to access, including an ending dns and a period (.).

Example: `sales.xyz.com.dns.`

4 Click OK.

If the DNS name resolves correctly, the eDirectory context you are trying to access should appear in the NDS container. You can browse and manage objects in the eDirectory context the same as in any eDirectory tree.

2.1.4 Jumping to an Object in the Right Pane

1 Click anywhere in the right pane.

2 Start typing the name of an object in the current container or view > press Enter to jump to the object.

2.1.5 Filtering Extraneous Objects from View

Any filters you apply to a view remain in effect for your current ConsoleOne session only. When you restart ConsoleOne, they are cleared.

1 Click View > Filter.

2 (Optional) In Name, enter a wildcard pattern to apply as a filter on the object names.

An asterisk (*) is the only wildcard allowed.

Example: `xyz*` hides all objects except those whose names start with "xyz."

3 Under Object Type, select the object types you want shown and deselect those you want hidden.

4 Click OK.

2.1.6 Finding an Object by Distinguished Name

1 In the left pane, click any part of the eDirectory tree that contains the object.

2 Begin typing the name of the object to go to.

As you type, the Go To dialog box appears.

3 Finish typing the distinguished name of the object.

Click Help for details on using separators and other special characters.

Example: `djones.salses.xyz_corp`

4 Click OK.

2.1.7 Finding an Object by Name and Type

1 In the left pane, click the eDirectory container that you want to start searching from.

2 Click Edit > Find.

3 If you want to include subcontainers in the search, select Search Subcontainers.

4 In Name, enter all or part of the object name.

If you enter only part of the name, include an asterisk wildcard.

Example: `johnw*`

5 In Object Type, select the type of object to find.

6 Click Find.

In the search results list, you can right-click objects to perform actions just like in the ConsoleOne right pane.

2.1.8 Finding Objects by Property Values

1 In the left pane, click the eDirectory container that you want to start searching from.

2 Click Edit > Find.

3 In Find Type, select Advanced.

4 In the query-building area of the dialog box, specify your search criteria.

Click Help for details.

5 Click Find.

In the search results list, you can right-click objects to perform actions just like in the ConsoleOne right pane.

2.2 Creating and Manipulating Objects

Once you have located the network resources (objects) you want to manage, you can change their behavior by modifying their properties. You can also delete, move, and rename objects or create new ones as needed.

In This Section

- "Creating an Object" on page 32
- "Modifying an Object's Properties" on page 33
- "Modifying Multiple Objects Simultaneously" on page 33
- "Renaming an Object" on page 34
- "Moving Objects" on page 34
- "Deleting Objects" on page 34

2.2.1 Creating an Object

1 Right-click the container that you want to create the object in > click New > click Object.

There are restrictions on the types of objects you can create in different container types. For details, see the documentation for your particular task or application.

2 Under Class, select the type of object > click OK.

3 If you get a warning that no snap-in is available to create the object, complete the appropriate action from the table below, depending on your level of understanding of the object you are creating.

Understanding Level	Action
Thorough—you understand this object type and how its properties are used.	Click Yes in the warning box.
	You will be allowed to set the object's mandatory properties using generic editors. After creating the object, you can set other properties using the generic Other property page.
Minimal—you understand what the object is but not how its properties are used in any detail.	Click No in the warning box > quit this procedure.
	You will need to install a product that provides a ConsoleOne snap-in to create and manage this object type.

4 In Name, enter a name for the new object.

If it's an eDirectory object, be sure to follow proper naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide* for details.

5 Specify any other information requested in the dialog box.

Click Help for details. (If you are using generic editors, no details are available.)

6 Click OK.

2.2.2 Modifying an Object's Properties

1 Right-click the object > click Properties.

2 Edit the property pages you want.

Click Help for details on specific properties. See Section 2.3, "Editing Object Properties," on page 34 for general information on using property pages.

3 Click OK.

2.2.3 Modifying Multiple Objects Simultaneously

1 Select the objects using one of the following methods:

- In the right pane, Shift+click or Ctrl+click multiple objects of the same type
- Click a group or template object to modify its members
- Click a container to modify the objects it contains

2 Click File > Properties of Multiple Objects.

3 If you selected a container in Step 1, in the dialog box double-click the object type that you want to modify; otherwise, skip this step.

4 On the Objects to Modify page, make sure only the objects that you want to modify are listed.

Add and delete objects as needed.

5 On the other property pages, specify the property values to set for all the selected objects.

Click Help for details on specific properties.

IMPORTANT: See for differences in how property pages work when editing multiple objects.

6 Click OK.

2.2.4 Renaming an Object

1 Right-click the object > click Rename.

2 In New Name, enter the new name.

If it's an eDirectory object, be sure to following proper naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide* for details.

3 Click Save Old Name if you want to save the old name of the object.

The old name is stored in the Other Name field of the object's General Identification property page.

4 Click OK.

2.2.5 Moving Objects

1 In the right pane, Shift+click or Ctrl+click the objects to select them.

TIP: You can't move a container object unless it's a partition root. For details, see .

2 Right-click your selection > click Move.

3 Click the browse button next to the Destination field > select the container to move the objects to > click OK.

4 If you want to create an alias in the old location for each object being moved, select Create an Alias for All Objects Being Moved.

This allows any operations that are dependent on the old location to continue uninterrupted until you can update those operations to reflect the new location.

5 Click OK.

2.2.6 Deleting Objects

1 Shift+click or Ctrl+click the objects to select them.

You can't delete a container object unless you first delete all its contents.

2 Right-click your selection > click Delete.

3 In the confirmation dialog box, click Yes.

2.3 Editing Object Properties

You can control an object's behavior by editing its properties. When using property pages, there are some general characteristics you need to be aware of as well as some characteristics that are unique to editing multiple objects simultaneously. You can also customize property pages.

In This Section

2.3.1 General Characteristics

The table below describes the general characteristics of using property pages.

Feature	Notes
OK, Cancel, Apply	These buttons affect **all** the property pages. OK and Apply save all changes to all pages (Apply leaves the dialog box open), and Cancel discards all changes on all pages.
Tabs	Each tab can have multiple property pages. To select the page you want, click the drop-down list on the tab.
	Fields that have this control beside them can have multiple values. To see all the values, click the control. To enter multiple values, type a value > press Enter > type another value > press Enter, and so on.
Disabled fields and options	Fields and options are disabled if: ◆ You don't have rights to modify the associated properties ◆ You need to modify some other setting first to enable the fields or options

2.3.2 Unique Characteristics of Editing Multiple Objects Simultaneously

The table below describes the unique characteristics of using property pages to edit multiple objects simultaneously.

Feature	Notes
Fields and lists	◆ No values are displayed in fields or lists because the existing values might be different for each object. ◆ For a single-value field, any value you enter will replace the existing value in each object when you click OK or Apply. ◆ For a multi-value field or list, any values you enter will be added to the existing values in each object when you click OK or Apply.
Check boxes	◆ Light-gray check boxes with a check in them are neutral. No changes will be made to these items in the existing objects when you click OK or Apply. ◆ White check boxes and dark-gray check boxes are live. Their settings will replace the existing settings in each object when you click OK or Apply.

Feature	Notes
Missing items	◆ Individual fields and options are missing if they apply only to specific object instances. For example, it isn't necessary to give multiple users the same last name, so the Last Name field is not displayed when editing multiple users.
	◆ Entire property pages are missing if they haven't been designed to allow editing of multiple objects. For example, the generic Other page isn't displayed when editing multiple objects.

2.3.3 Customizing Property Pages

For each type of object in ConsoleOne, you can customize the property pages by rearranging their order or hiding individual pages.

Your customizations are saved and used the next time you start ConsoleOne on the same computer.

1 Open the properties of an object of the type that you want to customize > click Page Options.

2 Rearrange the property pages the way you want.

    2a To move a tab or page to a different position, select it > click Move Up or Move Down.

        You can't move a page to a different tab.

    2b To hide or show a tab or page, select it > click Disable or Enable.

        Disabled items appear gray.

3 Click OK.

2.4 Organizing Objects into Containers

Once you are in an eDirectory tree, you can organize it by creating various types of containers and placing objects inside them. Objects in a container are security equivalent to the container automatically, so make sure you manage the container's rights accordingly. You can create aliases to provide access to a single object from multiple containers.

Below are procedures to create common container types and aliases. For information on creating container types for specific applications, see the documentation for those applications. For general eDirectory tree design considerations, see "Designing Your Novell eDirectory Network (http://www.novell.com/documentation/edir871/edir871/data/a2iiido.html#a2iiido)" in the *Novell eDirectory Administration Guide*.

In This Section

- "Creating an Organization Object" on page 37
- "Creating an Organizational Unit Object" on page 37
- "Creating a Locality Object" on page 37
- "Creating a Country Object" on page 37
- "Creating an Alias to an Object" on page 38

2.4.1 Creating an Organization Object

1 Right-click the tree, country, locality, or domain object that you want to create the organization object in > click New > click Object.

2 Under Class, select Organization > click OK.

3 In Name, enter a name up to 64 characters long.

Make sure to follow proper naming conventions. See "Designing Your Novell eDirectory Network (http://www.novell.com/documentation/edir871/edir871/data/a2iiido.html#a2iiido) in the *Novell eDirectory Administration Guide* for details.

Example: XYZ_CORP

4 If you want to assign additional property values as part of the creation process for the container, select Define Additional Properties.

For example, you might want to create a login script or set up intruder detection for the container.

5 Click OK.

2.4.2 Creating an Organizational Unit Object

1 Right-click the organization, organizational unit, locality, or domain object that you want to create the new organizational unit object in > click New > click Organizational Unit.

2 In Name, enter a name up to 64 characters long.

Make sure to follow proper naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide* for details.

Example: Marketing

3 If you want to assign additional property values as part of the creation process for the container, select Define Additional Properties.

For example, you might want to create a login script or set up intruder detection for the container.

4 Click OK.

2.4.3 Creating a Locality Object

1 Right-click the country, locality, domain, organization, or organizational unit object that you want to create the locality object in > click New > click Object.

2 Under Class, select Locality > click OK.

3 Fill in the Name and Named By fields.

Click Help for details.

4 Click OK.

2.4.4 Creating a Country Object

1 Right-click a tree or domain object > click New > click Object.

2 Under Class, select Country > click OK.

3 In Name, enter the two-letter ISO country code.

Click Help for details.

Example: `FR` for France

4 If you want to assign additional property values as part of the creation process for the container, select Define Additional Properties.

For example, you might want to provide a more descriptive name for the country.

5 Click OK.

2.4.5 Creating an Alias to an Object

1 Right-click the container that you want to create the alias in > click New > click Object.

2 Under Class, select Alias > click OK.

3 In Name, enter a name up to 64 characters long.

Make sure to follow proper naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide* for details.

Example: `SalesVolumeAlias`

4 Click the browse button next to the Object field > select the object you want the alias to represent > click OK.

5 If you want to assign additional property values as part of the creation process for the alias, select Define Additional Properties.

For example, you might want to assign trustees of the alias.

6 Click OK.

Users can use the alias as though it were the actual object that it represents.

2.5 Customizing Views

You can customize the views in the left and right panes in various ways. For example, you can set a different object than My World at the top of the left pane, and you can adjust the column width in the right pane. You can also show or hide the view title in the right pane. In an eDirectory tree, you can filter objects from view in the right pane. (See Section 2.1, "Browsing and Finding Objects," on page 29.)

TIP: Most customizations to the left and right pane are lost when you exit ConsoleOne. Only the window size, position, and view title setting are saved.

In This Section

- "Setting the Top Object in the Left Pane" on page 39
- "Showing or Hiding the View Title in the Right Pane" on page 39
- "Adjusting the Column Width in the Right Pane" on page 39

2.5.1 Setting the Top Object in the Left Pane

The steps to use depend on which object you want to set at the top, as described in the table below.

Object to Set at the Top	Steps
A container that's below the current top object	Right-click the container > click Set As Root.
A container that's above the current top object	Double-click ![icon] in the left pane until the container appears.
My World	Right-click ![icon] in the left pane > click Show My World.

2.5.2 Showing or Hiding the View Title in the Right Pane

By default, the right pane contains the Console view. You can switch it to the Partition and Replica view or to another view if one has been added by a snap-in. Regardless of which view the right pane contains, you can show or hide the view title at the top of the right pane.

Your setting to show or hide the view title is saved and used the next time you start ConsoleOne on the same computer.

To show or hide the view title, click View > Show View Title. A check mark is added to or removed from the menu item, depending on whether the view title is being shown or hidden.

2.5.3 Adjusting the Column Width in the Right Pane

1 Move the mouse pointer to the margin between the first and second columns.

2 When the pointer changes to a sizing arrow, drag the column to the width you want.

Managing User Accounts

3

Setting up a Novell® eDirectory™ user account involves creating a User object and setting properties to control login and the user's network computing environment. You can use a template object to facilitate these tasks.

You can create login scripts to cause users to be connected automatically to the files, printers, and other network resources they need when they log in. If several users use the same resources, you can put the login script commands in container and profile login scripts.

In This Chapter

3.1 Creating User Accounts

A user account is a User object in the eDirectory tree. A User object specifies a user's login name and supplies other information used by eDirectory and NetWare® to control the user's access to network resources. You can define user properties ahead of time in a template, before actually creating the User object.

In This Section

3.1.1 Creating a User Object

1 Right-click the container that you want to create the User object in > click New > click User.

2 Fill in the New User dialog box.

   Click Help for details.

   2a To apply a template during creation of the user object, select Use Template.

   2b To set additional user properties during creation of the user object, select Define Additional Properties.

3 Click OK.

4 If the Set Password dialog box appears, set the user's login password > click OK.

   IMPORTANT: If this dialog box appears and you cancel it, an eDirectory password (object-key pair) won't be created for the user account and the user won't be able to log in unless you set up some other means of authentication, such as an NMAS™ password. You can set an eDirectory password later on the Password Restrictions property page of the User object. If you

leave the password blank and click OK, the User object is created with a blank (null) eDirectory password and the user can log in without entering a password.

3.1.2 Creating a User Template

1 Right-click the container that you want to create the Template object in > click New > click Object.

2 Under Class, select Template > click OK.

3 Fill in the New Template dialog box.

Click Help for details.

3a To clone an existing Template or User object, select Use Template or User.

3b To set template properties immediately after creating the Template object, select Define Additional Properties.

After clicking OK, you'll see property pages that look similar to those of a User object. Help is available on all the property pages.

4 Click OK.

3.2 Setting Up Optional Account Features

After creating a User object, you can optionally set up the user's network computing environment, implement extra login security features, and set up an accounting of the user's NetWare server usage.

In This Section

- "Setting Up a User's Network Computing Environment" on page 42
- "Setting Up Extra Login Security for a User" on page 42
- "Setting Up an Accounting of a User's NetWare Server Usage" on page 43

3.2.1 Setting Up a User's Network Computing Environment

1 Right-click the User or Template object that you want to set up the network computing environment for > click Properties.

Use a Template object if you haven't created the User object yet.

2 On the General tab, select the Environment page.

3 Fill in the property page.

Click Help for details.

4 Click OK.

3.2.2 Setting Up Extra Login Security for a User

1 Right-click the User or Template object that you want to set up login security for > click Properties.

Use a Template object if you haven't created the User object yet.

2 On the Restrictions tab, fill in the property pages you want.

Click Help for details on any page.

Page	Use to
Password Restrictions	Set up a login password.
Address Restrictions	Restrict the locations the user can log in from.
Time Restrictions	Restrict the times when the user can be logged in. If the user will log in remotely, see Section 3.4, "Login Time Restrictions for Remote Users," on page 44.
Login Restrictions	◆ Limit the number of concurrent login sessions. ◆ Set a login expiration and lockout date.

3 Click OK.

4 To set up intruder detection for all the User objects in a container:

  4a Right-click the container > click Properties.

  4b On the General tab, select the Intruder Detection page.

  4c Fill in the property page.

     Click Help for details.

  4d Click OK.

3.2.3 Setting Up an Accounting of a User's NetWare Server Usage

1 Right-click the User or Template object that you want to set up the accounting for > click Properties.

  Use a Template object if you haven't created the User object yet.

2 On the Restrictions tab, select the Account Balance page.

3 Fill in the property page.

  Click Help for details.

4 Click OK.

5 Use NetWare Administrator to set up one or more NetWare servers to charge for network services.

  See the NetWare Administrator online help for details.

3.3 Setting Up Login Scripts

A login script is a list of commands that executes when a user logs in. It is typically used to connect the user to network resources like files and printers. Login scripts execute on the user's workstation in the following order:

1. Container login script
2. Profile login script
3. User login script

During login, if the system doesn't find any of these login scripts, it skips to the next one in the list. If none are found, the system executes a default script that maps a search drive to the SYS:PUBLIC folder on the user's default server. The default server is set on the Environment property page of the user object.

In This Section

- "Creating a Login Script" on page 44
- "Assigning a Profile to a User" on page 44

3.3.1 Creating a Login Script

1 Right-click the object that you want to create the login script on > click Properties.

To Have the Login Script Apply To	Create It On
One user only	The User object
One or more users that haven't been created yet	A Template object
All the users in a container	The container object
A set of users in one or more containers	A Profile object

2 On the Login Script page, enter the login script commands you want.

See *Novell Client for Windows* > Login Script Commands and Variables (http://www.novell.com/documentation/lg/noclienu/index.html) for details.

3 Click OK.

4 If you created the login script on a profile object, assign the profile to the users you want as explained below.

3.3.2 Assigning a Profile to a User

1 Right-click the User or Template object that you want to assign the profile to > click Properties.

Use a Template object if you haven't created the User object yet.

2 On the Login Script page, click the browse button next to the Profile field > select the profile object > click OK.

3 Click OK.

4 Ensure that the user effectively has the Browse right to the Profile object and the Read right to the Login Script property of the profile object.

See Section 4.4, "Viewing Effective Rights," on page 54 for details.

3.4 Login Time Restrictions for Remote Users

On the Time Restrictions property page of a User object, you can restrict the times when the user can be logged in to eDirectory. (By default, there are no login time restrictions.) If you set a login time restriction and the user is logged in when the restricted time arrives, the system issues a warning to

log out within five minutes. If the user is still logged in after five minutes, he or she is logged out automatically and loses any unsaved work.

If a user logs in remotely from a different time zone than the server processing the login request, any login time restrictions that have been set for the user are adjusted for the time difference. For example, if you restrict a user from logging in Mondays from 1:00 a.m. to 6:00 a.m. and the user logs in remotely from a time zone that is one hour later than the server, the restriction effectively becomes 2:00 a.m. to 7:00 a.m. for that user.

3.5 Password Management

Use the Password Restrictions page to set login password requirements for an User object.

User password are generally set upon creation of the User object (see "Creating a User Object" on page 41 for more information). At that point, you can specify whether to set a default eDirectory password for the new user, or you can create the User object without an eDirectory password. If you create the object without an eDirectory password, the user won't be able to log in unless you set up an alternate (non-eDirectory) means of authentication, such as a simple NMAS password. Or, you can create the User object without an eDirectory password and set the eDirectory password later using the Password Restrictions property page for the User object.

1 Right-click a User object, then click Properties.

2 Click Restrictions > Password Restrictions.

3 Choose from the following options:

Option	Description
Allow User to Change Password	Specifies whether this object is allowed to change its login password. The setting of this check box is stored in the Password Allow Change property of this object.
Require a Password	Specifies whether to prompt for a password during login. To cause this object to be prompted for a password, select this check box and enter the minimum number of characters required for the password in the Minimum Password Length field. You can enter a number from 1 to 128 or accept the default of 5. The setting of this check box is stored in the Password Required property of this object, and the minimum password length is stored in the Password Minimum Length property of this object.

Option	Description
Force Periodic Password Changes	Specifies whether to prompt this object to change its login password periodically. To cause the object to be prompted to change its login password periodically, select this check box and fill in the next two fields.
	◆ **Days Between Forced Changes** Specifies the number of days this object is allowed to use a password before it expires. You can enter a number from 1 to 365. The setting of the Force Periodic Password Changes check box and the contents of this field are stored in the Password Expiration Interval property of this object.
	◆ **Date Password Expires** Specifies the date and time this object's current password expires. Click the calendar icon next to this field to set an expiration date and time. Once this object changes its password and each time it changes the password thereafter, the system resets the expiration date forward the number of days specified in the Days Between Forced Changes field. The expiration date is stored in the Password Expiration Time property of this object.
Require Unique Passwords	Specifies whether to prevent this object from reusing any of its last eight login passwords. The setting of this check box is stored in the Password Unique Required property of this object.
Limit Grace Logins	Specifies whether to limit the number of grace logins this object is allowed. A grace login means the object can log in with an expired password. To limit the number of grace logins, select this check box and fill in the next two fields.
	◆ **Grace Logins Allowed** Specifies the number of grace logins this object is allowed. You can enter a number from 1 to 200 or accept the default of 6. The setting of the Limit Grace Logins check box and the contents of this field are stored in the Login Grace Limit property of this object.
	◆ **Remaining Grace Logins** Specifies the number of grace logins this object has left. Each time the object uses a grace login, the system decrements this value. Each time the object changes its login password, the system resets this value to the number of grace logins allowed. If the object has exhausted its grace logins and you want to grant a few more grace logins (this time only), or if you want to set a different number of grace logins for the next time the login password expires, enter a number in this field. The number of grace logins remaining is stored in the Login Grace Remaining property of this object.

Option	Description
Change Password	Click this button to set this object's eDirectory password. It displays the Set Password dialog box. Once you set the password and click OK in the dialog box, you are returned to the Properties dialog box and you can't undo the password change by canceling the Properties dialog box. This button is disabled unless you have the Supervisor or Write right to the ACL or Password Management property of this object.

4 Click Apply > OK.

Administering Rights

<div style="text-align: right">4</div>

Rights are system flags that you can set on individual network resources to control access to those resources. When you assign rights, you always link them with a specific user, group, or other Novell® eDirectory™ object that is the trustee (possessor) of the rights. In ConsoleOne®, you can grant a trustee rights to two different kinds of resources:

- eDirectory objects

  Rights to these resources are stored in and applied by eDirectory. For details, see "eDirectory Rights (http://www.novell.com/documentation/edir871/edir871/data/fbachifb.html#fbachifb)" in the *Novell eDirectory Administration Guide*.

- Files and folders on NetWare® volumes

  Rights to these resources are stored in and applied by the NetWare file system. For details, see Section 4.5, "About NetWare Rights," on page 55.

When a user tries to access a resource, the system (eDirectory or NetWare) calculates the user's effective rights to that resource. In doing so, the system checks not only the user's explicit rights assignments but also any security equivalences held by the user and any filters that block the inheritance of explicit rights assignments. This chapter explains how to perform the tasks that control users' effective rights to resources.

In This Chapter

4.1 Assigning Rights Explicitly

When the default rights assignments in your eDirectory tree provide users with either too much or not enough access to resources, you can create or modify explicit rights assignments. When you create or modify a rights assignment, you start by selecting either the resource that you are controlling access to or the trustee (the eDirectory object that possesses, or will possess, the rights).

TIP: To manage users' rights collectively rather than individually, make a group, role, or container object the trustee. To restrict access to a resource globally (for all users), see Section 4.3, "Blocking Inheritance," on page 53. If the resource is a file or folder on a NetWare volume, you can also control access globally by setting attributes (see Section 8.1, "Viewing and Modifying Server and File System Information," on page 81).

In This Section

- "Controlling Access to the NetWare File System by Resource" on page 50
- "Controlling Access to the NetWare File System by Trustee" on page 50

- "Controlling Access to Novell eDirectory by Resource" on page 51
- "Controlling Access to Novell eDirectory by Trustee" on page 51

4.1.1 Controlling Access to the NetWare File System by Resource

1 Right-click the resource (file, folder, or volume) that you want to control access to > click Properties.

NOTE: Select a volume or folder to control access to all the resources below it.

---

2 On the Trustees page, edit the list of trustees and their rights assignments as needed.

For descriptions of the individual access rights, see Section 4.5, "About NetWare Rights," on page 55.

   2a To add an object as a trustee, click Add Trustee > select the object > click OK > under Access Rights, assign the trustee's rights.

   2b To modify a trustee's rights assignment, select the trustee > under Access Rights, modify the rights assignment as needed.

   2c To remove an object as a trustee, select the object > click Delete Trustee > Yes.

      The deleted trustee will no longer have explicit rights to the file or folder but might still have effective rights through inheritance or security equivalence.

3 Click OK.

4.1.2 Controlling Access to the NetWare File System by Trustee

1 Right-click the trustee (the object that possesses, or will possess, the rights) > select Properties.

2 On the Rights to Files and Folders page, click Show > select the NetWare volume containing the file system that you want to control access to > click OK.

The Files and Folders list is filled in with any files and folders that the trustee currently has rights assignments to on the selected volume.

3 Edit the rights assignments as needed.

For descriptions of the individual rights, see Section 4.5, "About NetWare Rights," on page 55.

   3a To add a rights assignment, click Add > select the file or folder to control access to > click OK > under Rights, assign the trustee's rights.

   3b To modify a rights assignment, select the file or folder to control access to > under Rights, modify the trustee's rights as needed.

   3c To remove a rights assignment, select the file or folder to control access to > click Delete > Yes.

      The trustee will no longer have explicit rights to the file or folder but might still have effective rights through inheritance or security equivalence.

4 Repeat Step 2 and Step 3 as needed to edit the trustee's rights assignments on other NetWare volumes.

5 Click OK.

4.1.3 Controlling Access to Novell eDirectory by Resource

1 Right-click the eDirectory resource (object) that you want to control access to > click Trustees of This Object.

NOTE: Choose a container to control access to all the objects below it.

---

2 Edit the list of trustees and their rights assignments as needed.

Click Help for details.

2a To modify a trustee's rights assignment, select the trustee > click Assigned Rights > modify the rights assignment as needed > click OK.

2b To add an object as a trustee, click Add Trustee > select the object > click OK > assign the trustee's rights > click OK.

When creating or modifying a rights assignment (in the Rights Assigned To dialog box), you can grant or deny access to the object as a whole, to all the properties of the object, and to individual properties. Click Help in the dialog box for details.

2c To remove an object as a trustee, select the object > click Delete Trustee > Yes.

The deleted trustee will no longer have explicit rights to the object or its properties but might still have effective rights through inheritance or security equivalence.

3 Click OK.

4.1.4 Controlling Access to Novell eDirectory by Trustee

1 Right-click the trustee (the object that possesses, or will possess, the rights) > select Rights to Other Objects.

2 In the search dialog box, specify the part of the eDirectory tree to be searched for eDirectory objects that the trustee currently has rights assignments to.

Click Help for details.

3 Click OK in the search dialog box.

A dialog box appears showing the progress of the search. When the search is done, the Rights to Other Objects page appears with the results of the search filled in.

4 Edit the trustee's eDirectory rights assignments as needed.

Click Help for details.

4a To add a rights assignment, click Add Object > select the object to control access to > click OK > assign the trustee's rights > click OK.

4b To modify a rights assignment, select the object to control access to > click Assigned Rights > modify the trustee's rights assignment as needed > click OK.

When creating or modifying a rights assignment (in the Rights Assigned To dialog box), you can grant or deny access to the object as a whole, to all the properties of the object, and to individual properties. Click Help in the dialog box for details.

4c To remove a rights assignment, select the object to control access to > click Delete Object > Yes.

The trustee will no longer have explicit rights to the object or its properties but might still have effective rights through inheritance or security equivalence.

5 Click OK.

4.2 Granting Equivalence

A user who is security equivalent to another eDirectory object effectively has all the rights of that object, both in eDirectory and in the NetWare file system. A user is automatically security equivalent to the groups and roles that he or she belongs to. All users are implicitly security equivalent to the [Public] trustee and to each container above their User objects in the eDirectory tree, including the Tree object. You can also explicitly grant a user security equivalence to any eDirectory object.

NOTE: The tasks in this section allow you to delegate administrative authority through eDirectory rights. If you have administration applications that use RBS roles, you can also delegate administrative authority by assigning users membership in those roles as explained in Section 5.3, "Assigning RBS Role Membership and Scope," on page 60.

In This Section

 ◆ "Granting Security Equivalence by Membership" on page 52
 ◆ "Granting Security Equivalence Explicitly" on page 52
 ◆ "Setting Up an Administrator Over an Object's Specific eDirectory Properties" on page 53

4.2.1 Granting Security Equivalence by Membership

1 If you haven't already done so, create the group or role object that you want the users to be security equivalent to.

See Section 2.2, "Creating and Manipulating Objects," on page 32 for details.

2 Grant the group or role the eDirectory and NetWare rights that you want the users to have.

See Section 4.1, "Assigning Rights Explicitly," on page 49 for details.

3 Edit the membership of the group or role to include those users who need the rights of the group or role.

 ◆ For a group object, use the Members property page.
 ◆ For an organizational role object, use the Occupant field on the Identification property page.
 ◆ For an RBS role object, use the Members of Role property page.

   See Section 5.3, "Assigning RBS Role Membership and Scope," on page 60 for details.

4 Click OK.

4.2.2 Granting Security Equivalence Explicitly

1 Right-click either the user or the object that you want the user to be security equivalent to > click Properties.

2 Grant the security equivalence as follows:

 ◆ If you chose the user, on the Memberships tab select the Security Equal To page > click Add > select the object that you want the user to be security equivalent to > click OK.

- If you chose the object that you want the user to be security equivalent to, on the Security Equal to Me page click Add > select the user > click OK.

The contents of these two property pages are synchronized by the system.

3 Click OK.

4.2.3 Setting Up an Administrator Over an Object's Specific eDirectory Properties

1 If you haven't already done so, create the user, group, role, or container object that you want to make a trustee of the object's specific properties.

If you create a container as a trustee, all objects inside and below the container will have the rights you grant. You must make the property inheritable or the container and its members will not have rights below its level.

2 Right-click the highest-level container that you want the administrator to manage > click Trustees of This Object.

3 On the property page, click Add Trustee > select the object that represents the administrator > click OK.

4 In the Rights Assigned To dialog box, click Add Property.

5 Deselect the Show All Properties check box.

6 For each property that the administrator will manage, assign the needed rights.

Be sure to select the Inheritable check box on each rights assignment. Click Help for details.

7 Click OK.

8 Click OK in the Properties dialog box.

4.3 Blocking Inheritance

In eDirectory, rights assignments on containers can be inheritable or non-inheritable. In the NetWare file system, all rights assignments on folders are inheritable. In both eDirectory and NetWare, you can block such inheritance on individual subordinate items so that the rights aren't effective on those items, no matter who the trustee is. One exception is that the Supervisor right can't be blocked in the NetWare file system.

In This Section

- "Blocking Inherited Rights to a File or Folder on a NetWare Volume" on page 53
- "Blocking Inherited Rights to an eDirectory Object or Property" on page 54

4.3.1 Blocking Inherited Rights to a File or Folder on a NetWare Volume

1 Right-click the file or folder > click Properties.

2 On the Inherited Rights Filter page, edit the filter as needed.

To block a right, deselect its check box. To let a right flow through, select its check box. The Supervisor right can't be blocked. The other check boxes are disabled if you don't have the

Supervisor or Access Control right to the file or folder. For descriptions of the individual rights, see Section 4.5, "About NetWare Rights," on page 55.

> **NOTE:** This filter won't block rights that are explicitly granted a trustee on this file or folder, since such rights aren't inherited.

3 Click OK.

4.3.2 Blocking Inherited Rights to an eDirectory Object or Property

1 Right-click the eDirectory object > click Properties.

2 On the NDS Rights tab, select the Inherited Rights Filters page.

This displays a list of the inherited rights filters that have already been set on the object.

3 On the property page, edit the list of inherited rights filters as needed.

To edit the list of filters, you must have the Supervisor or Access Control right to the ACL property of the object. You can set filters that block inherited rights to the object as a whole, to all the properties of the object, and to individual properties. Click Help for details.

> **NOTE:** These filters won't block rights that are explicitly granted a trustee on this object, since such rights aren't inherited.

4 Click OK.

4.4 Viewing Effective Rights

Effective rights are the actual rights users can exercise on specific network resources. They are calculated by the system (eDirectory or NetWare) based on explicit rights assignments, inheritance, and security equivalence. You can query the system to determine a user's effective rights to any resource.

In This Section

- "Viewing Effective Rights to a File or Folder on a NetWare Volume" on page 54
- "Viewing Effective Rights to an eDirectory Object or Property" on page 55

4.4.1 Viewing Effective Rights to a File or Folder on a NetWare Volume

1 Right-click the file, folder, or volume > click Properties.

Select a volume to view effective rights at the root of the file system.

2 On the Trustees page, click Effective Rights.

3 If the object whose effective rights you want to view isn't shown in the Trustee field, click the browse button next to the field > select the trustee you want > click OK.

4 View the effective rights.

For descriptions of the individual rights, see Section 4.5, "About NetWare Rights," on page 55.

5 Click OK.

4.4.2 Viewing Effective Rights to an eDirectory Object or Property

1 Right-click the eDirectory object > click Trustees of This Object.

2 On the NDS Rights tab, select the Effective Rights page.

3 If the object whose effective rights you want to view isn't shown in the For Trustee field, click the browse button next to the field > select the trustee you want > click OK.

4 View the effective rights you want.

You can view effective rights to the object as a whole, to all the properties of the object, and to individual properties. Click Help for details.

5 Click OK.

4.5 About NetWare Rights

This section describes the specific rights that users can have to files and folders on NetWare volumes, the possible sources of those rights, and how the NetWare file system calculates users' effective rights to files and folders.

In This Section

4.5.1 Descriptions of Rights

The following table describes the individual rights that a trustee can have to a file or folder on a NetWare volume.

Right	Description
Supervisor	Grants the trustee all rights to the file or folder and any subordinate items. This right can't be filtered (blocked) on the current file or folder or on subordinate items, nor can it be revoked on individual subordinate items.
Read	Grants the trustee the ability to open and read the file or folder and any subordinate items. This includes the ability to execute program files.
Write	Grants the trustee the ability to open and write to (modify) the file or folder and any subordinate items.
Create	Grants the trustee the ability to create new items and salvage deleted items in the folder and any subfolders.
Inheritable	Makes the rights to the selected property flow to all objects below.
Erase	Grants the trustee the ability to delete the file or folder and any subordinate items.
Modify	Grants the trustee the ability to change the name and attributes of the file or folder and any subordinate items. The trustee can't see or modify the actual contents of files.

Right	Description
File Scan	Grants the trustee the ability to see (in a listing or browser) the file or folder and any subordinate items, including its path back to the root of the volume.
Access Control	Grants the trustee the ability to change the trustee (rights) assignments and inherited rights filter of the file or folder.

4.5.2 Sources of Rights

A given file or folder can have multiple rights assignments associated with it, each linked with a different trustee (possessor) of the rights. Rights to a folder are inherited by the trustee to items within the folder, so the trustee can exercise the rights on subordinate items without having an explicit assignment on those items. You can, however, place a filter on individual subordinate items to block specific rights from being inherited. Such filters apply globally to all trustees holding the specified rights.

Besides having explicit and inherited rights to a file or folder, a user can also have rights to a file or folder through security equivalence to another eDirectory object. For example, if a user is a member of an eDirectory group or role and that group or role has been granted certain rights, the user effectively has those additional rights through security equivalence. For more information, see "eDirectory Rights (http://www.novell.com/documentation/edir871/edir871/data/fbachifb.html#fbachifb)" in the *Novell eDirectory Administration Guide*.

4.5.3 How NetWare Calculates Effective Rights

A user's effective rights are calculated by NetWare each time the user tries to access a file or folder on a NetWare volume. You can view a user's effective rights to any file or folder as explained in Section 4.4, "Viewing Effective Rights," on page 54. Following is the process used by NetWare to calculate effective rights.

This process is similar to, but not the same as, the process used by eDirectory to calculate users' effective rights to eDirectory objects and properties. For information on that process, see "eDirectory Rights (http://www.novell.com/documentation/edir871/edir871/data/fbachifb.html#fbachifb)" in the *Novell eDirectory Administration Guide*.

1. Checks whether the user effectively has the Supervisor right to the NetWare server where the target file or folder resides. (eDirectory supplies this information to NetWare.)
   - If so, the user effectively has all rights in the file system of the server, and the rest of this process is skipped.
   - If not, continues with the next step.
2. Determines which eDirectory objects the user is security equivalent to. (eDirectory supplies this information to NetWare.)
3. Descends to the next level in the file system along the path to the target file or folder.

   TIP: The next level below the NetWare server is the root folder of the volume.

4. Checks whether the user, or any of the objects that the user is security equivalent to, is assigned the Supervisor right at the current level.
   - If so, the user effectively has all rights from this level down in the file system, and the rest of this process is skipped.

- If not, continues with the next step.

5. Does the following for the user and each object that the user is security equivalent to:

   a. Checks whether the user (or object) is assigned any non-Supervisor rights at the current level. If so, sets the effective rights of the user (or object) to the rights specified in the assignment and skips to Step 6. If not, continues with the next substep.

   b. Removes from the current effective rights any rights that are blocked by an inheritance filter at the current level.

6. If the current level of the file system *is* the target file or folder, the user's final effective rights are the sum of his or her current effective rights and the current effective rights of each object that the user is security equivalent to. If the target file or folder hasn't been reached yet, returns to Step 3.

Configuring Role-Based Administration

5

ConsoleOne® gives you the option to extend the schema of your Novell® eDirectory™ tree to allow the creation of role-based services (RBS) objects. This enables administration applications to expose their functions as RBS module and task objects in your tree. You can then create RBS role objects that define the particular tasks that different users can perform in those administration applications.

NOTE: This approach to delegating administration works only if you have administration applications that use RBS objects. You can also delegate administration using eDirectory rights as explained in Section 4.2, "Granting Equivalence," on page 52.

In This Chapter

5.1 Setting Up Role-Based Services

Before administration applications can add RBS objects to your eDirectory tree, the schema of the tree must be extended to allow RBS object types. Typically, administration applications perform this schema extension automatically during installation. Regardless, you can complete the procedure below to ensure that your tree has the needed schema extensions.

5.1.1 Installing RBS Schema Extensions to Your eDirectory Tree

1 Click anywhere in an eDirectory tree.

2 Click Tools > Install.

3 Follow the instructions in the wizard to complete the installation.

   Be sure to select Role Based Services on the second screen. Help is available throughout the wizard.

5.2 Defining RBS Roles

RBS roles specify the tasks that users are authorized to perform in specific administration applications. Defining an RBS role includes creating an RBS role object and specifying the tasks that the role can perform. In some cases, administration applications might provide a few predefined RBS role objects that you can modify.

The application tasks that RBS roles can perform are exposed as RBS task objects in your eDirectory tree. These objects are added automatically during installation of one or more

administration applications. They are organized into one or more RBS modules, which are containers that correspond to the different functional modules of the application.

TIP: If your organization has developed a custom administration application that uses RBS objects, you can create the RBS objects for it manually as explained in Section 5.4, "Creating RBS Objects for Custom Applications," on page 61.

In This Section

- "Creating an RBS Role Object" on page 60
- "Specifying the Tasks That RBS Roles Can Perform" on page 60

5.2.1 Creating an RBS Role Object

1 Right-click the container that you want to create the RBS role object in > click New > click Object.

2 Under Class, select RBS:Role > click OK.

3 Enter a name for the new RBS role object.

Be sure to follow proper eDirectory naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide*.

Example: `Password Administrator Role`

4 Click OK.

5.2.2 Specifying the Tasks That RBS Roles Can Perform

1 Right-click an RBS role or RBS task object > click Properties.

RBS task objects are located only in RBS module containers.

2 On the Role Based Services tab, make the associations you want:

- For an RBS role, select the Role Content page > edit the list of tasks that the role can perform.
- For an RBS task, select the Member Of page > edit the list of roles that can perform the task.

3 Click OK.

5.3 Assigning RBS Role Membership and Scope

Once you have defined the RBS roles needed in your organization, you can assign the membership of each role. In doing so, you specify the scope in which each member can exercise the functions of the role. Depending on the administration application associated with the role functions, the scope is specified either as a context in the eDirectory tree or as an object that represents some other (non-eDirectory) kind of scope.

TIP: If an administration application defines scope in non-eDirectory terms, it will extend the schema of your eDirectory tree to include the needed scope object class. You can then create scope objects as explained in .

1 Right-click either the RBS role object or the object that represents the users who you want to assign as role members > click Properties.

You can assign users as role members individually or in groups, organizations, or organizational units. However, if you want each user to exercise the role within a different scope, you must assign role memberships individually.

2 On the Role Based Services tab, assign the role memberships you want:

- For an RBS role object, select the Members of Role page > edit the list of members and their scopes as needed.

  Click Help for details.

- For a user, group, organization, or organizational unit object, select the Assigned Roles page > edit the list of role memberships and scopes as needed.

  Click Help for details.

If you want a single role membership to have multiple, non-overlapping scopes (such as two different branches of the eDirectory tree), you must list that role membership multiple times, each with a different scope.

3 Click OK.

5.4 Creating RBS Objects for Custom Applications

Typically, administration applications that use RBS objects add the needed objects to your eDirectory tree automatically during installation. However, if your organization has developed a custom administration application that uses RBS objects, you can create the needed RBS objects manually. The following are the types of RBS objects you can create:

Object Type	Container or Leaf	Purpose	Example
Module	Container	Represents a module of the administration application, so that the application's tasks can be logically contained and uniquely identified.	An application might have User and Server modules that each contain a Create task.
Task	Leaf	Represents a specific application function.	Reset Login Password.
Scope	Leaf	Represents the scope in which a role member can exercise the functions of the role, if the application defines scope in non-eDirectory terms. **NOTE:** Before you can create a scope object, its class must exist in the schema of your eDirectory tree. A scope class is a subclass of RBS:External Scope.	An application that defines scope in Domain Name Service (DNS) terms might let you create scope objects such as: • com_xyz • com_xyz_usa • com_xyz_usa_ny

Object Type	Container or Leaf	Purpose	Example
Role	Leaf	Represents an administrative role. It lists the particular application tasks that role members can perform. See Section 5.2, "Defining RBS Roles," on page 59 to create this object type.	For a User Administration application, you might create roles such as: ◆ Rights Manager ◆ Password Administrator ◆ Employment Data Entry

In This Section

◆ "Creating an RBS Module Object" on page 62

◆ "Creating an RBS Task Object" on page 62

◆ "Creating an Object That Represents a Non-eDirectory Scope" on page 63

5.4.1 Creating an RBS Module Object

1 Right-click the organization or organizational unit that you want to create the RBS module object in > click New > click Object.

2 Under Class, select RBS:Module > click OK.

3 In Name, enter a name for the module.

Be sure to follow proper eDirectory naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide*.

Example: `User Administration Module`

4 Depending on how the administration application will use the module object, complete the appropriate steps:

Application Will Read the Object to Determine How to Invoke the Actual Module?	Steps
No	Click OK. You're done creating the module object.
Yes	1. Select Define Additional Properties > click OK. 2. On the Information page, specify the module's URL and software type if they are needed by the application. 3. On the Path page (Role Based Services tab), list any other modules required for execution of this module. Click Help for details. 4. Click OK.

5.4.2 Creating an RBS Task Object

1 Right-click the RBS module container that you want to create the RBS task object in > click New > click Object.

2 Under Class, select RBS:Task > click OK.

3 In Name, enter a name for the task.

Be sure to follow proper eDirectory naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide*.

Example: `Reset Login Password`

4 Depending on how the administration application will use the task object, complete the appropriate steps:

Application Will Read the Object to Determine How to Invoke the Actual Task?	Steps
No	Click OK. You're done creating the task object.
Yes	1. Select Define Additional Properties > click OK.
	2. On the Information page, specify the application function (entry point) to be invoked and any parameters to be passed on invocation.
	3. Click OK.

5.4.3 Creating an Object That Represents a Non-eDirectory Scope

1 If the class of object you will create isn't defined yet in the schema of your eDirectory tree, use Schema Manager to define it.

See "Defining a Custom Object Class" on page 66.

IMPORTANT: When completing the Class Creation wizard, be sure to set the Effective Class flag and select RBS:External Scope as the class to inherit from.

2 Right-click the container that you want to create the scope object in > click New > click Object.

3 Under Class, select the object class that represents the non-eDirectory scope > click OK.

4 In Name, enter a name for the scope.

Be sure to follow proper eDirectory naming conventions. See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide*.

Example: `DNS Scope com_xyz_usa`

5 Depending on how the administration application will use the scope object, complete the appropriate steps:

Application Will Read the Object to Determine the Actual Scope to Enforce?	Steps
No	Click OK. You're done creating the scope object.

Application Will Read the Object to Determine the Actual Scope to Enforce?	Steps
Yes	1. Select Define Additional Properties > click OK.
	2. On the property pages, specify the scope information required by the application. Click Help for details on specific pages.
	3. Click OK.

Extending the Novell eDirectory Schema

6

The schema of your Novell® eDirectory™ tree defines the classes of objects that the tree can contain, such as users, groups, and printers. It specifies the properties (attributes) that comprise each object type, including those that are required when creating the object and those that are optional. For details, see "Object Classes and Properties (http://www.novell.com/documentation/edir871/edir871/data/fbabihje.html#fbabihje)" and "Schema (http://www.novell.com/documentation/edir871/edir871/data/fbaddhch.html#fbaddhch)" in the *Novell eDirectory Administration Guide*.

To extend the schema of your eDirectory tree, you need the Supervisor right to the entire tree. To view the current schema, click anywhere in the tree, then click Tools > Schema Manager. A list of the available classes and properties appears, as shown below. Double-click a class or property to see information about it.

Figure 6-1 *Schema Manager*
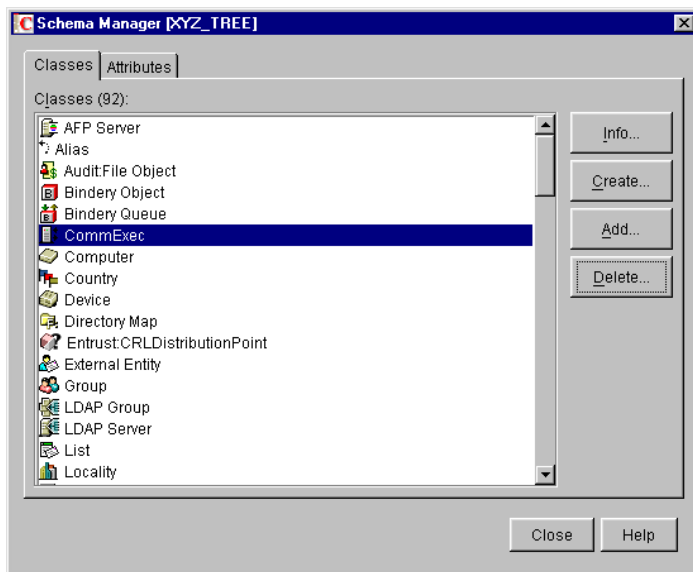
To extend the schema, see the appropriate section of this chapter.

In This Chapter

6.1 Defining Custom Object Classes and Properties

You can define your own custom types of properties and add them as optional properties to existing object classes as needed. (You can't add mandatory properties to existing classes.) You can also define entirely new classes of objects that contain both standard and custom properties.

In This Section

6.1.1 Defining a Custom Property

1 Click anywhere in the eDirectory tree whose schema you want to extend.

2 Click Tools > Schema Manager.

3 On the Attributes tab, click Create.

4 Follow the instructions in the wizard to define the new property.

Help is available throughout the wizard.

6.1.2 Adding Optional Properties to a Class

1 Click anywhere in the eDirectory tree whose schema you want to extend.

2 Click Tools > Schema Manager.

3 On the Classes tab, select the class you want to modify > click Add.

4 In the list on the left, double-click the properties you want to add.

If you add a property by mistake, double-click it in the list on the right.

5 Click OK.

Objects you create of this class will now have the properties you added. To set values for the added properties, use the generic Other property page of the object.

6.1.3 Defining a Custom Object Class

1 Click anywhere in the eDirectory tree whose schema you want to extend.

2 Click Tools > Schema Manager.

3 On the Classes tab, click Create.

4 Follow the instructions in the wizard to define the object class.

Help is available throughout the wizard.

If you need to define custom properties to add to the object class, cancel the class creation wizard and define the custom properties first as explained above.

6.2 Defining and Using Auxiliary Classes

An auxiliary class is a set of properties (attributes) that are added to particular eDirectory object instances rather than to an entire class of objects. For example, an e-mail application could extend the schema of your eDirectory tree to include an E-mail Properties auxiliary class and then extend individual objects with those properties as needed. With Schema Manager, you can define your own auxiliary classes. Then, in the main ConsoleOne® window, you can extend individual objects with the properties defined in your auxiliary classes.

In This Section

- "Defining an Auxiliary Class" on page 67
- "Extending an Object with the Properties of an Auxiliary Class" on page 67
- "Extending Multiple Objects Simultaneously with the Properties of an Auxiliary Class" on page 68
- "Modifying an Object's Auxiliary Properties" on page 69
- "Deleting Auxiliary Properties from an Object" on page 69
- "Deleting Auxiliary Properties from Multiple Objects Simultaneously" on page 70

6.2.1 Defining an Auxiliary Class

1 Click anywhere in the eDirectory tree whose schema you want to extend.

2 Click Tools > Schema Manager.

3 On the Classes tab, click Create.

4 Follow the instructions in the wizard to define the auxiliary class.

Make sure to select Auxiliary Class when setting the class flags. If you need to define custom properties to add to the auxiliary class, cancel the Class Creation wizard and define the custom properties first. See Section 6.1, "Defining Custom Object Classes and Properties," on page 66 for details.

6.2.2 Extending an Object with the Properties of an Auxiliary Class

1 In the main ConsoleOne window, right-click the object > click Extensions of This Object.

2 Depending on whether the auxiliary class that you want to use is already listed under Current Auxiliary Class Extensions, complete the appropriate action:

Auxiliary Class Is Already Listed?	Action
Yes	Quit this procedure.
	See instead "Modifying an Object's Auxiliary Properties" on page 69.
No	Click Add Extension > select the auxiliary class > click OK.

3 If a message appears stating that generic editors will be used, click OK.

4 On the screen that appears, set the property values you want.

Depending on which screen you're using, note the following:

Screen	Notes
Extensions tab (Properties dialog box)	◆ Both mandatory and optional properties of the auxiliary class might be listed. ◆ Click Help for details on specific properties.
New dialog box	◆ Only mandatory properties of the auxiliary class are listed. ◆ You must know the syntax of a property to set it correctly. For details, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. ◆ After setting the mandatory properties, you can set optional properties as explained in "Modifying an Object's Auxiliary Properties" on page 69.

5 Click OK.

6.2.3 Extending Multiple Objects Simultaneously with the Properties of an Auxiliary Class

1 In the ConsoleOne right pane, Shift+click or Ctrl+click the objects to select them.

The objects don't have to be the same type.

2 Right-click your selection > click Extensions of Multiple Objects.

3 Depending on whether the auxiliary class that you want to use is already listed under Current Auxiliary Class Extensions, complete the appropriate action:

TIP: Only those extensions that are common to all the selected objects are listed. Those that are specific to individual objects aren't listed.

Auxiliary Class Is Already Listed?	Action
Yes	Quit this procedure. See instead "Modifying an Object's Auxiliary Properties" on page 69. You'll have to modify the objects one at a time.
No	Click Add Extension > select the auxiliary class > click OK.

4 If a message appears stating that generic editors will be used, click OK.

5 On the screen that appears, set the property values you want.

IMPORTANT: Each property value you set will be applied to each selected object. If the property already exists in the object and is single-valued, the existing value will be replaced. If the property already exists and is multi-valued, the new values will be added to the existing values.

Depending on which screen you're using, also note the following:

Screen	Notes
Extensions tab	◆ Both mandatory and optional properties of the auxiliary class might be listed. ◆ Click Help for details on specific properties.
New dialog box	◆ Only mandatory properties of the auxiliary class are listed. ◆ You must know the syntax of a property to set it correctly. For details, see "Schema (http://www.novell.com/documentation/edir871/edir871/data/fbaddhch.html#fbaddhch)" in the *Novell eDirectory Administration Guide*. ◆ After setting the mandatory properties, you can set optional properties as explained below. You'll have to modify the objects one at a time.

6 Click OK.

6.2.4 Modifying an Object's Auxiliary Properties

1 In the main ConsoleOne window, right-click the object > click Properties.

2 On the Extensions tab, select the property page that's named after the auxiliary class. If the auxiliary class isn't listed or if there's no Extensions tab, use the generic Other page.

3 On the screen that appears, set the property values you want. Depending on which screen you're using, note the following:

Screen	Notes
Extensions tab	◆ Both mandatory and optional properties of the auxiliary class might be listed. ◆ Click Help for details on specific properties.
Other tab	◆ Only the properties of the auxiliary class that have already been set are listed. Click Add to set additional properties. ◆ You must know the syntax of a property to set it correctly. For details, see "Schema (http://www.novell.com/documentation/edir871/edir871/data/fbaddhch.html#fbaddhch)" in the *Novell eDirectory Administration Guide*.

4 Click OK.

6.2.5 Deleting Auxiliary Properties from an Object

1 In the main ConsoleOne window, right-click the object > click Extensions of This Object.

2 In the list of current auxiliary class extensions, select the auxiliary class whose properties you want to delete.

3 Click Remove Extension > Yes.

This deletes all the properties added by the auxiliary class except for any that the object already had innately.

6.2.6 Deleting Auxiliary Properties from Multiple Objects Simultaneously

1 In the ConsoleOne right pane, Shift+click or Ctrl+click the objects to select them.

The objects don't have to be the same type.

2 Right-click your selection > click Extensions of Multiple Objects.

3 Depending on whether the auxiliary class whose properties you want to delete is listed under Current Auxiliary Class Extensions, complete the appropriate action:

TIP: Only those extensions that are common to all the selected objects are listed. Those that are specific to individual objects aren't listed.

Auxiliary Class Is Listed?	Action
Yes	Select it > click Remove Extension > Yes.
	This deletes all the properties added by the auxiliary class except for any that the object already had innately.
No	Cancel the dialog box.
	You'll have to delete the auxiliary class from each object one at a time. See "Deleting Auxiliary Properties from an Object" on page 69.

6.3 Deleting Unused Classes and Properties

You can delete unused classes and properties (attributes) that aren't part of the base schema of your eDirectory tree. We recommend that you only delete classes that you've defined and that you're sure aren't being used. ConsoleOne only prevents you from deleting classes that are currently being used in locally replicated partitions.

In This Section

- "Deleting a Property from the Schema" on page 70
- "Deleting a Class from the Schema" on page 70

6.3.1 Deleting a Property from the Schema

1 Click anywhere in the eDirectory tree whose schema you want to modify.

2 Click Tools > Schema Manager.

3 On the Attributes tab, select the property > click Delete > click Yes.

6.3.2 Deleting a Class from the Schema

1 Click anywhere in the eDirectory tree whose schema you want to modify.

2 Click Tools > Schema Manager.

3 On the Classes tab, select the class > click Delete > click Yes.

Partitioning and Replicating Novell eDirectory

<div style="float:right; font-size:xx-large">7</div>

A partition is a subdivision of your Novell® eDirectory™ tree that can be stored and replicated as an independent unit across multiple servers. If your tree is large or spans WAN links, you can partition and replicate it to improve network performance and fault tolerance. For details, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" and "Partitions (http://www.novell.com/documentation/edir871/edir871/data/fbachabc.html#fbachabc)" in the *Novell eDirectory Administration Guide*.

To perform partition and replication operations, you need the Supervisor right to the part of the eDirectory tree that you will partition or replicate. In your tree, the containers that have an ⊹ icon next to them mark the points where the tree is partitioned. (Each of these containers is the root of a partition.) At such points, you can open a special view in the right pane (illustrated below) to see and configure the replicas of the partition. You can also access similar views from server objects in the tree.

Figure 7-1 *Partition and Replica View*
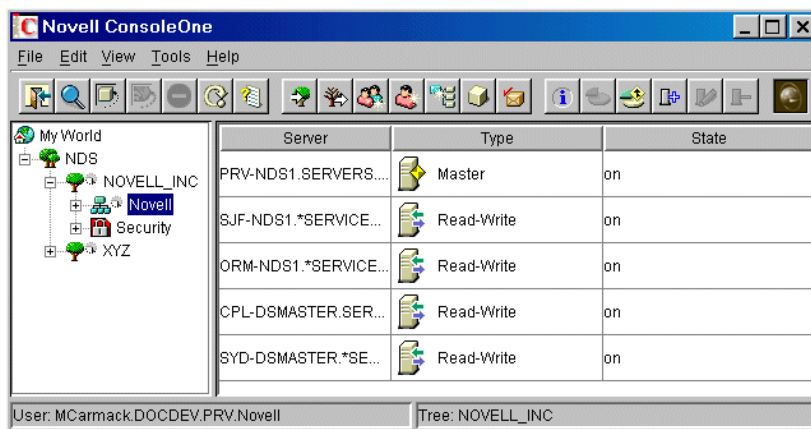
In This Chapter

7.1 Managing Partitions

By default, a small eDirectory tree is stored as a single partition that is replicated on the first three servers in the tree. The procedures below explain how to perform further partitioning operations. For concepts and guidelines on partitioning your tree, see "Guidelines for Partitioning Your Tree (http://www.novell.com/documentation/edir871/edir871/data/a2iiidv.html#a2iiidv)" and "Managing Partitions and Replicas (http://www.novell.com/documentation/edir871/edir871/data/a2iiiik.html#a2iiiik)" in the *Novell eDirectory Administration Guide*.

In This Section

7.1.1 Viewing Information about a Partition

1 In the left pane, right-click the root container of the partition (it should have an ⊡ icon next to it) > click Views > click Partition and Replica View.

The right pane displays a list of the servers that the partition is replicated on, along with the type and state of each replica. For descriptions of the replica types, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. For descriptions of the replica states, see Section 7.3, "About Replica States," on page 80.

2 View more information about the partition, such as when its replicas were last synchronized.

2a Make sure the partition root is still selected in the left pane.

2b On the toolbar, click Information.

The Partition Information dialog box appears. Click Help for details on individual information fields.

7.1.2 Splitting a Partition (Creating a Child Partition)

1 Make sure you understand the overall process for creating a partition.

See "Creating a Partition (http://www.novell.com/documentation/edir871/edir871/data/fbgdgigh.html#fbgdgigh)" in the *Novell eDirectory Administration Guide*.

2 Right-click the container that will be the root of the new (child) partition > click Views > click Partition and Replica View.

The right pane should display an empty replica list. If the list isn't empty, the container is already a partition root—select a different container.

3 On the toolbar, click Create Partition > OK.

7.1.3 Merging a Child Partition with Its Parent Partition

1 Right-click the root container of the child partition (it should have an ⊡ icon next to it) > click Views > click Partition and Replica View.

The right pane displays a list of the servers that the partition is replicated on, along with the type and state of each replica. For descriptions of the replica types, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. For descriptions of the replica states, see Section 7.3, "About Replica States," on page 80.

2 Make sure the child partition is ready to be merged as explained in "Merging a Partition (http://www.novell.com/documentation/edir871/edir871/data/fbgbbijg.html#fbgbbijg)" in the *Novell eDirectory Administration Guide*.

3 Make sure the child partition's root container is still selected in the left pane.

4 On the toolbar, click Merge Partition > OK.

7.1.4 Moving a Partition

1 Make sure the partition is ready to be moved as explained in "Moving Partitions (http://www.novell.com/documentation/edir871/edir871/data/fbgcadca.html#fbgcadca)" in the *Novell eDirectory Administration Guide*.

2 Select the root container of the partition (it should have an ⬚ icon next to it).

3 Click File > Move.

4 Click the browse button next to the Destination field > select the container to move the partition into > click OK.

5 (Recommended) Select the Create an Alias for All Objects Being Moved check box.

6 Click OK.
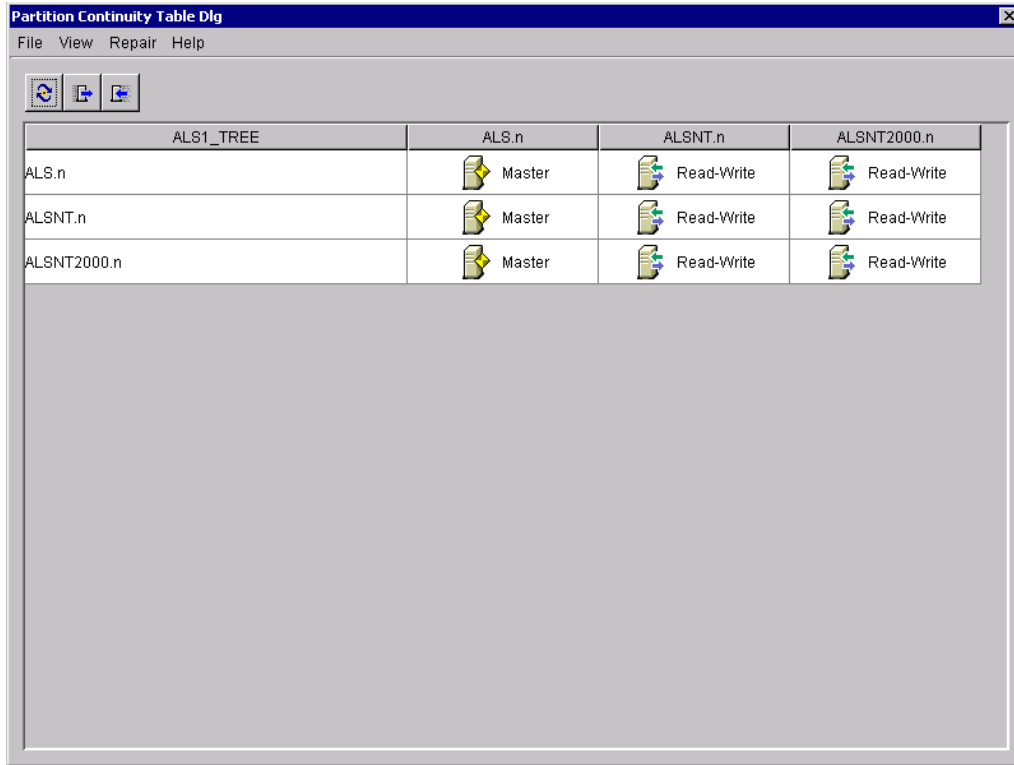
7.1.5 Checking Partition Continuity

Partition Continuity helps you identify whether any of a partition's replicas are experiencing synchronization errors. It does this by examining all of the servers holding replicas of a selected partition and verifying that each server has the same information for the partition's replica list (or replica ring). This operation is also known as "walking the replica ring."

If each server holding a replica of the chosen partition does not have an identical replica list, or if a replica cannot synchronize with the eDirectory Tree for any reason, the Partition Continuity Table displays one or more errors. Errors appear as exclamation points inside the replica icons.

The Partition Continuity Table displays the replica list (columns) of each server (rows) that holds a replica of the chosen partition. To understand the partition grid, read it horizontally, one server at a time. Each row represents the replica list of that server.

Figure 7-2 *Partition Continuity Table*

You might also see icons representing unreadable replicas. This does not necessarily signify that the servers can't talk. It might simply indicate that the client cannot contact the server for information.

You can check partition continuity in ConsoleOne® from the Partition and Replica View.

1 Click View > Partition and Replica View.

2 Select the partition whose synchronization status you want to view.

3 Click Partition Continuity ▧.

Using the Partition Continuity Table

You can use the Partition Continuity table for doing the following:

- ◆ "Viewing Replica Information" on page 76
- ◆ "Viewing Server Informations" on page 77
- ◆ "Synchronizing Replica Information" on page 77
- ◆ "Receiving Updates" on page 77
- ◆ "Sending Updates" on page 78

Viewing Replica Information

From the Partition Continuity Table, you can view information about a replica, such as its type, current state, and any synchronization errors.

1 Select a row in the Partition Continuity Table.

2 Click View > Information > Replica.

3 Select the replica (column) you want to view.

4 Click OK.

You can also double-click the replica icon in the table to view replica information.

Viewing Server Informations

From the Partition Continuity Table, you can view information about a server and the replicas it holds.

1 Select a row in the Partition Continuity Table.

2 Click View > Information > Server.

You can also double-click the server column in the table to view server information.

Synchronizing Replica Information

You can synchronize the replica information of every server that holds a replica of the selected partition with the replica information on the other servers.

1 Click Repair > Synchronize Immediately.

Receiving Updates

This operation forces the replica on the chosen server to receive all eDirectory objects from the master replica of the partition. While in process, this operation marks the replica on the chosen server as a new replica.

The replica state can be seen in the replica list of the server from the Tree View or the list of Partitions and Servers. The replica's current data will be overwritten with the data from the master replica.

Although eDirectory automatically synchronizes the directory data among replicas (so that each replica is sent the most recently updated directory objects), this operation lets you manually synchronize the directory objects of replicas if any non-master replicas get out of sync.

Perform this operation if a replica becomes corrupted or has not received updated data for an extended period of time.

From the Partition Continuity Table, you can identify which replicas are out of sync with the data of the master replica. They will appear in the partition grid with an exclamation point (!) on the replica icon.

You cannot select this option from a master replica. The master replica is assumed to be the most current and accurate copy of the partition. If it's not, assign one of the other replicas to be the master using the Change Replica Type operation. The current master replica will be changed automatically to read/write.

This operation may create a lot of network traffic, so it is best to run this operation during a period of light network traffic.

1 Click Repair > Receive Updates.

Sending Updates

When you send updates from a replica, the eDirectory objects in that replica are broadcast from the server the replica resides on to all the other replicas of the partition, including the master replica.

The other replicas of the partition will combine the new objects sent with the objects they already have. If the other replicas have data in addition to the data sent to them, they will retain that data.

Although eDirectory automatically synchronizes the directory data among replicas (so that each replica is sent the most recently updated directory objects), this operation lets you manually synchronize the directory objects of replicas if any replicas get out of sync.

1 Click Repair > Send Updates.

7.2 Managing Replication

When you create a new partition, by default eDirectory replicates the partition on one or more servers in your eDirectory tree. The procedures below explain how to further configure replication of your tree's partitions. For replication concepts and guidelines, see "Guidelines for Replicating Your Tree (http://www.novell.com/documentation/edir871/edir871/data/a2iiie1.html#a2iiie1)" and "Managing Partitions and Replicas (http://www.novell.com/documentation/edir871/edir871/data/a2iiiik.html#a2iiiik)" in the *Novell eDirectory Administration Guide*.

In This Section

- "Viewing Replication Information" on page 78
- "Adding a Replica" on page 79
- "Deleting a Replica" on page 79
- "Modifying a Replica" on page 79
- "Replicating Selected Data Only" on page 80

7.2.1 Viewing Replication Information

1 In the left pane, right-click either a server or a partition root (a container with an ⊞ icon next to it) > click Views > click Partition and Replica View.

Select a server to see all its replicas, no matter which partitions they replicate. Select a partition root to see all the partition's replicas, no matter which servers they are stored on.

The right pane displays a list of the replicas you chose, along with the type and state of each replica. For descriptions of the replica types, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. For descriptions of the replica states, see Section 7.3, "About Replica States," on page 80.

2 View more information on a particular replica, such as its last synchronization time and any errors.

　2a In the right pane, select the replica.

　2b On the toolbar, click the Information button.

The Replica Information dialog box appears. Click Help for details on individual information fields. If there are synchronization errors, click the question mark next to the error number for details.

7.2.2 Adding a Replica

1 In the left pane, right-click the root container of the partition that you want to replicate (it should have an ⬚ icon next to it) > click Views > click Partition and Replica View.

The right pane displays a list of the servers that the partition is already replicated on.

2 On the toolbar, click Add Replica.

3 Next to the Server Name field, click the browse button > select the server to create the new replica on > click OK.

4 Select the type of replica you want.

Click Help for details.

5 Click OK.

7.2.3 Deleting a Replica

1 In the left pane, right-click either the server that holds the replica, or the root container of the partition that the replica is a copy of (it should have an ⬚ icon next to it) > click Views > click Partition and Replica View.

The right pane displays a list of the replicas on the selected server or of the selected partition, along with the type and state of each replica. For descriptions of the replica types, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. For descriptions of the replica states, see Section 7.3, "About Replica States," on page 80.

2 Make sure you understand the implications of deleting the replica.

See "Adminstering Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbgciaad.html#fbgciaad)" in the *Novell eDirectory Administration Guide*.

3 In the right pane, select the replica.

4 On the toolbar, click Delete Replica > Yes.

7.2.4 Modifying a Replica

1 In the left pane, right-click either the server that holds the replica, or the root container of the partition that the replica is a copy of (it should have an ⬚ icon next to it) > click Views > click Partition and Replica View.

The right pane displays a list of the replicas on the selected server or of the selected partition, along with the type and state of each replica. For descriptions of the replica types, see "Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbaecheh.html#fbaecheh)" in the *Novell eDirectory Administration Guide*. For descriptions of the replica states, see Section 7.3, "About Replica States," on page 80.

2 Make sure you understand the implications of changing the replica.

See "Adminstering Replicas (http://www.novell.com/documentation/edir871/edir871/data/fbgciaad.html#fbgciaad)" in the *Novell eDirectory Administration Guide*.

3 On the toolbar, click Change Replica Type.

4 Modify the replica as needed.

Click Help for details.

4a To change the replica type, select the type you want.

4b For filtered replica types, see "Replicating Selected Data Only" on page 80 below.

5 Click OK.

7.2.5 Replicating Selected Data Only

When adding or modifying a replica as explained above, select a filtered replica type > click Create/Edit Filter > select only those types of objects and properties that you want the replica to contain.

For this to work, your tree must be running NDS eDirectory 8.5 or later.

7.3 About Replica States

An eDirectory replica can be in different states depending on the partition or replication operations it is undergoing. The following table describes the replica states that you might see in ConsoleOne.

State	Means That the Replica Is
On	Currently not undergoing any partition or replication operations
New	Being added as a new replica on the server
Dying	Being deleted from the server
Dead	Done being deleted from the server
Master Start	Being changed to a master replica
Master Done	Done being changed to a master replica
Change Type	Being changed to a different type of replica
Locked	Locked in preparation for a partition move or repair operation
Transition Move	Starting into a partition move operation
Move	In the midst of a partition move operation
Transition Split	Starting into a partition split operation (creation of a child partition)
Split	In the midst of a partition split operation (creation of a child partition)
Join	Being merged into its parent partition
Transition On	About to return to an On state
Unknown	In a state not known to ConsoleOne

Managing NetWare Server Resources

<div style="text-align: right; font-size: large;">8</div>

You can manage individual NetWare® servers and the file system resources on both traditional NetWare volumes and NSS volumes. For example, you can view and modify basic server information, launch NetWare Management Portal, assign server operators, copy and move files and folders, and salvage and purge deleted files. You can control volume space allocations (on traditional volumes only), assign file owners and attributes, make trustee (rights) assignments, and view volume usage statistics. For background information on NetWare file systems, see the *Traditional Files Services Administration Guide* (http://www.novell.com/documentation/lg/nw6p/trad_enu/data/h158rfoc.html) and the *Novell Storage Services Administration Guide* (http://www.novell.com/documentation/lg/nw6p/nss_enu/data/hn0r5fzo.html).

In ConsoleOne®, you browse NetWare servers, volumes, folders, and files like any other objects in your Novell® eDirectory™ tree. Volumes and folders are container objects that you can expand and collapse. Servers and files are leaf objects that you can manipulate and set properties for.

In This Chapter

8.1 Viewing and Modifying Server and File System Information

You can view and modify information about NetWare servers, volumes, files, and folders. For volumes, files, and folders, this information includes attributes, owners, and time of last modification or backup. You can also launch NetWare Management Portal from a server object in your eDirectory tree.

TIP: Attributes control how files and folders are handled during processes like compression, backup, and migration. They also control access to specific files and folders, overriding individual trustee (rights) assignments.

For volumes, you can also view current usage statistics and information about which file system features are enabled and disabled. For servers, you can view the current status, NetWare version number, and network address. You can also assign console operators and record information about the resources, services, and users supported by the server.

In This Section

8.1.1 Launching NetWare Management Portal from a Server Object

For this to work, the target NetWare server must be running the NetWare Management Portal software for NetWare 5, and NetWare Remote Manager for NetWare 6 (portal.nlm). This software loads by default in NetWare 5.1 and 6. You must also have a Web browser installed on your ConsoleOne workstation.

1 In your eDirectory tree, browse to the target NCP Server object.

2 Right-click the NCP Server object > click Launch Portal.

If you get an error message, the target server might not be running portal.nlm. Otherwise, the NetWare Portal or Remote Manager page should appear in your Web browser. For more information, see the *NetWare Management Portal Utility Guide* (http://www.novell.com/documentation/lg/nw51/port_enu/data/a3l0k9x.html) and the *NetWare Remote Manager Administration Guide* (http://www.novell.com/documentation/lg/nw6p/port_enu/data/a7hjvxo.html).

8.1.2 Viewing or Modifying Information about a NetWare Server

1 Right-click the NCP server object > click Properties.

2 Use the following property pages to view or modify the information you want.

Click Help for details on any page.

Page	Use To
General > Identification	View the server status, NetWare version number, or network address
General > Error Log	View or clear the server error log file
Operators	View or modify the list of users who have console operator privileges
Resources, Supported Services, Users	Record the resources, services, and users supported by the server (for your information only—this information is not used by the system in any way)

3 Click OK.

8.1.3 Viewing or Modifying Information about a Volume

1 Right-click the volume > click Properties.

2 To view or change the volume owner or information about recent volume events, use the Dates and Times page.

Click Help for details.

3 To view statistics on volume usage and information about which file system features are enabled and disabled, use the Statistics page.

Click Help for details.

4 Click OK.

8.1.4 Viewing Details on the Contents of a Volume or Folder

1 In the left pane, right-click the volume or folder > click Views > Details View.

The right pane lists the files and folders and their last modification date and current attribute settings. To resize a column, drag its border.

2 To interpret the information in the Attributes column, see Setting Directory or File Attributes (http://www.novell.com/documentation/lg/nw51/trad_enu/data/h8gdk9xq.html) in the *Traditional File Services Administration Guide*.

8.1.5 Viewing or Modifying Information about a File or Folder

1 Right-click the file, folder, or volume > click Properties.

Use a volume to access information about the root folder of the file system.

2 On the Attributes page, view or set the attributes you want.

For details, see Setting Directory or File Attributes (http://www.novell.com/documentation/lg/nw51/trad_enu/data/h8gdk9xq.html) in the *Traditional File Services Administration Guide*.

3 On the Facts page, view or modify the information you want.

Click Help for details.

4 Click OK.

8.1.6 Modifying Information about Multiple Files, Folders, or Volumes Simultaneously

1 In the right pane, Ctrl+click or Shift+click the files, folders, or volumes to select them.

2 Click File > Properties of Multiple Objects.

If this option is disabled, right-click your selection in the right pane > click Properties of Multiple Objects.

> **IMPORTANT:** See Section 2.3, "Editing Object Properties," on page 34 for differences in how property pages work when editing multiple objects.

3 On the Objects to Modify page, make sure only the objects you want to modify are listed.

Add and delete objects as needed.

4 On the Attributes page, set the attributes you want.

For details, see Setting Directory or File Attributes (http://www.novell.com/documentation/lg/nw51/trad_enu/data/h8gdk9xq.html) in the *Traditional File Services Administration Guide*.

5 (Volumes only) On the Dates and Times page, modify the information you want.

Click Help for details.

6 On the other pages, modify the information you want.

Click Help for details.

7 Click OK.

8.2 Managing Files and Folders on NetWare Volumes

Once you have browsed into the file system on a NetWare volume, you can perform the file management task described below.

In This Section

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-
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8.2.1 Copying or Moving Files and Folders

1 In the right pane, Ctrl+click or Shift+click the files and/or folders to select them.

2 Press Ctrl+C to copy or Ctrl+X to move.

3 Select the folder or volume to copy or move your selection to.

4 Press Ctrl+V to paste the selection.

5 In the confirmation dialog box, indicate whether to keep users' trustee (rights) assignments to the items during the copy or move operation.

Other file and folder attributes are kept automatically, including the resource fork of any Mac OS* files.

8.2.2 Creating a File or Folder

1 Right-click the folder or volume that you want to create the new file or folder in > click New > click Object.

2 Under Class, select File or Directory > click OK.

3 In Name, enter a name for the new file or folder > click OK.

If you create a file using this procedure, it will be empty.

8.2.3 Renaming a File or Folder

1 Right-click the file or folder > click Rename.

2 In New Name, enter a new name for the file or folder > click OK.

8.2.4 Deleting Files and Folders

1 In the right pane, Ctrl+click or Shift+click the files and/or folders to select them.

2 Press Delete.

3 In the confirmation dialog box, click Yes.

8.3 Salvaging and Purging Deleted Files on NetWare Volumes

You can salvage (recover) files and folders that have been deleted from NetWare volumes if they haven't been purged yet. By default, NetWare volumes undergo purges periodically, but you can purge specific files and folders immediately to recover space if needed.

In This Section

◆ "Salvaging Deleted Files and Folders" on page 85

◆ "Purging Deleted Files and Folders" on page 85

8.3.1 Salvaging Deleted Files and Folders

1 In the left pane, right-click the volume or folder that the files and folders were deleted from > click Views > click Deleted File View.

The deleted files and folders appear in the right pane. To resize a column in the right pane, drag its border.

2 Ctrl+click or Shift+click the files and/or folders that you want to salvage.

3 Right-click your selection > click Salvage.

Salvaging a folder doesn't salvage its contents. You must salvage the folder first and then salvage its contents.

8.3.2 Purging Deleted Files and Folders

1 In the left pane, right-click the volume or folder that the files and folders were deleted from > click Views > click Deleted File View.

The deleted files and folders appear in the right pane. To resize a column in the right pane, drag its border.

2 Ctrl+click or Shift+click the files and/or folders that you want to purge.

WARNING: Purged files and folders can't be recovered. Once you click Purge, you can't cancel the operation.

3 Right-click your selection > click Purge.

8.4 Controlling Allocation of Volume Space

You can restrict the amount of volume space that individual users can use. You can also place limits on the size that individual folders can grow to.

Currently, you can perform these tasks only on traditional NetWare volumes, not on NSS volumes.

In This Section

8.4.1 Restricting a User's Volume Space

1 Right-click the volume > click Properties > select the Users with Space Restrictions page.

2 In the User Name column, if the user whose space you want to restrict is already listed, click the user > Modify.

Otherwise, click Add to add the user.

3 In the dialog box that appears, select Limit Volume Space > enter a space limit in the field > click OK.

4 Click OK in the Properties dialog box.

8.4.2 Restricting a Folder's Size

1 Right-click the folder > click Properties.

2 On the Facts page, select Restrict Size.

3 In Limit, enter a size limit in kilobytes.

The limit will be rounded to the nearest 64 kilobytes.

4 Click OK.

8.4.3 Removing a User's Space Restriction on a Volume

1 Right-click the volume > click Properties > select the Users with Space Restrictions page.

2 In the User Name column, click the user > Delete.

3 Click OK.

The user is now limited only by the available space on the volume.

8.4.4 Removing a Folder's Size Restriction

1 Right-click the folder > click Properties.

2 On the Facts page, deselect Restrict Size.

3 Click OK.

Any size restrictions on parent folders are still operative on this folder.

8.5 Creating eDirectory Objects to Facilitate File Management

When you install NetWare 4.*x*, 5.*x*, or 6 on a server, objects are automatically created in the eDirectory tree to let you manage the server and its volumes. You can create additional Server and Volume objects to manage the resources of servers that are in other eDirectory trees or that are running earlier NetWare versions. You can also create Directory Map objects to facilitate access to commonly used folders on NetWare volumes.

In This Section

8.5.1 Creating a NetWare Server Object

1 Make sure the actual NetWare server is up and accessible on the network.

2 Right-click the container that you want to create the server object in > click New > click Object.

3 Under Class, select NCP Server > click OK.

4 In Name, enter the actual name of the NetWare server that this object will represent.

Example: `SALES_SRV`

5 If you want to assign additional property values as part of the creation process for this server object, select Define Additional Properties.

For example, you might want to assign one or more users as server operators.

6 Click OK.

ConsoleOne attempts to find the specified server on the network. If it fails (for example, if you typed the name incorrectly), the Server object isn't created.

8.5.2 Creating a Volume Object

1 Make sure the eDirectory tree contains a Server object for the NetWare server that hosts the volume.

2 Make sure the NetWare server is up and the volume is mounted and accessible on the network.

3 Right-click the container that you want to create the Volume object in > click New > Object.

4 Under Class, select Volume > click OK.

5 In the dialog box, enter a name for the Volume object > select the host server and physical volume that the object will represent.

Click Help for details.

6 Click OK.

ConsoleOne attempts to find the specified volume on the network. If it fails, the Volume object isn't created.

8.5.3 Creating a Directory Map Object

1 Right-click the container that you want to create the directory map object in > click New > click Object.

2 Under Class, select Directory Map > click OK.

3 In the dialog box, enter a name for the directory map object > select the volume and path that the object will represent.

Click Help for details.

4 Click OK.

ConsoleOne creates the directory map object whether or not the specified path actually exists. Make sure it does exist or users won't be able to use the directory map to map drives.

Generating Reports

<div style="text-align: right; font-size: large;">9</div>

This release of ConsoleOne® includes some predefined report forms that you can use to generate reports on the objects in your eDirectory™ tree. Here's an example of one such report:

Figure 9-1 *Trustee Assignments Report Dialog Box*
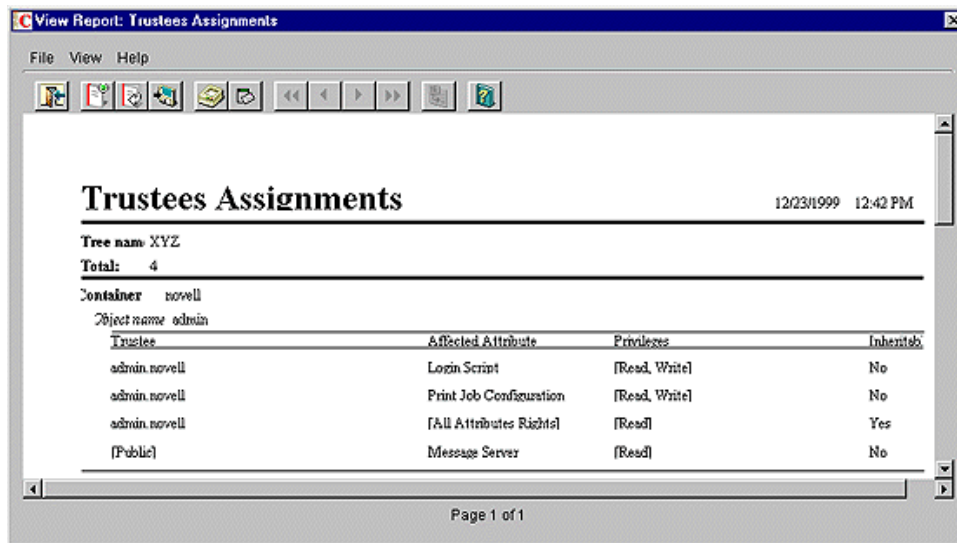
The predefined eDirectory report forms are packaged into three report catalog objects that you can add to your eDirectory tree. Other Novell® products might provide additional report catalogs that you can add to your tree. If you add the JReport* Designer tool (purchased separately) to your ConsoleOne installation, you can also design custom reports from scratch.

NOTE: Currently, you can generate reports only when running ConsoleOne on a Windows* computer that's configured as explained in Section 9.2, "Setting Up Reporting," on page 92. You can't generate reports when running ConsoleOne on a NetWare® server.

In This Chapter

9.1 Available Reports

The Novell-defined report forms included in this release of ConsoleOne are described below. Only the core report forms that ship with ConsoleOne are described. For descriptions of report forms provided by other products (such as ZENworks™), see the documentation for those products. Before you can generate reports using Novell-defined report catalogs, you must complete the setup described in Section 9.2, "Setting Up Reporting," on page 92.

Some reports forms include one or more subreports. You can ignore these—they are a by-product of the report design. In ConsoleOne lists, subreport names appear in all lowercase.

In This Section

- "eDirectory General Object Reports" on page 90
- "eDirectory User Security Reports" on page 90
- "eDirectory User and Group Reports" on page 91

9.1.1 eDirectory General Object Reports

This report catalog contains report forms that let you generate reports on the NetWare servers, print servers, and printers in your eDirectory tree. The following table describes the general object reports:

Report	Information Provided for Each Object
NetWare File Servers	NetWare server name, status, network address, operating system version, eDirectory version, list of operators.
Print Servers	Print server name, list of printers serviced by the print server, status of each printer, print queues used by the print server.
Printers	Printer name, print server that services the printer, list of print queues used by the printer.

9.1.2 eDirectory User Security Reports

This report catalog contains report forms that let you generate reports on eDirectory login and rights security for the users in your eDirectory tree. The following table describes the user security reports:

Report	Information Provided for Each Object
Disabled User Accounts	Name of disabled user account, other (unofficial) names of the user, status of the account—either disabled or expired (expiration date and time).
Users Locked by Intruder Detection	Username, whether the user account is locked due to intruder detection, network address from which login was attempted, number of failed login attempts, date and time the account will be unlocked if it's currently locked.
Security Equivalence	Username, list of objects that the user is explicitly security equivalent to (implicit or automatic security equivalences are not listed).

Report	Information Provided for Each Object
Template Security Settings	Template object name, security settings that will be applied to each new User object that is created from the template, including:

- ◆ Login password requirements
- ◆ Whether login is initially disabled
- ◆ Login expiration date and time
- ◆ Maximum number of concurrent login sessions allowed
- ◆ Restrictions on the times when the user can be logged in
- ◆ Group memberships
- ◆ Objects that the user is explicitly security equivalent to
- ◆ Trustees of the User object and their assigned rights
- ◆ The user's assigned rights to his or her own User object
- ◆ The user's assigned rights to other eDirectory objects
- ◆ The user's assigned rights to files and folders on NetWare volumes

Report	Information Provided for Each Object
Trustee Assignments	Name of resource (eDirectory object) that the trustee assignment controls access to, list of trustees (objects holding rights to the resource) and their assigned rights.
User Password Requirements	Username, other (unofficial) names for the user, whether a login password is required, whether the user can change his or her own password, minimum password length, whether the last eight passwords must be unique, maximum number of days a password can be used, number of grace logins allowed, number of grace logins remaining, password expiration date and time.
Users Not Logged In	Name of user who hasn't logged in for at least 90 days, other (unofficial) names for the user, last login date and time.
Users with Expired Passwords	Name of user whose password has expired, other (unofficial) names for the user, password expiration date and time, last login date and time.
Users with Multiple Workstation Logins	Name of user who is logged in from multiple workstations, other (unofficial) names for the user, number of workstations the user is logged in from, network addresses of the workstations.

9.1.3 eDirectory User and Group Reports

This report catalog contains report forms that let you generate reports on the users, groups, and organizational roles in your eDirectory tree. The following table describes user and group reports:

Report	Information Provided for Each Object
User Contact List	Username, first name, last name, telephone number, Internet e-mail address, postal address

Report	Information Provided for Each Object
Duplicate Common User Names	Name of duplicate user, number of users so named, first and last name of each user, context of each user
Group Membership	Group name, general information about the group (owner, description, location, department, and organization), list of members of the group
Organizational Roles	Organizational role name, description, list of occupants, list of other objects that are explicitly security equivalent to the organizational role
User Information	Username, first name, last name, employee ID, description, location, department
User Login Scripts	Username, other (unofficial) names for the user, description of the user, content of the user's login script

9.2 Setting Up Reporting

The reporting setup you need depends on the kind of reports you want to generate, as summarized in the table below. Steps for completing the reporting setup are given after the table.

IMPORTANT: Reporting works only if you run ConsoleOne on a Windows computer with 128 MB of RAM. It doesn't work if you run ConsoleOne on NetWare, Linux, Solaris, or Tru64. In addition, the eDirectory tree you are reporting on must contain a NetWare volume to install the report catalog files on. If your eDirectory tree doesn't contain a NetWare server, you can't set up reporting in ConsoleOne.

To Generate These Reports	Complete This Setup
Novell-defined eDirectory reports, with minimal customization	1. Install Reporting Services extensions to the schema of your eDirectory tree. 2. Install the Novell-defined report catalogs in your eDirectory tree. 3. On each Windows computer that you will use to generate reports, install the ODBC driver for eDirectory and configure the data source you want.
Reports provided by other products, such as ZENworks	See the documentation for the product that provides the reports.
Custom reports designed from scratch	1. Complete the above setup for generating Novell-defined eDirectory reports. 2. Add the JReport Designer tool to your ConsoleOne installation as explained in Section 9.4, "Designing Custom Reports," on page 96.

In This Section

- "Installing Reporting Services Schema Extensions" on page 93
- "Installing Novell-Defined Report Catalogs" on page 93
- "Installing the ODBC Driver for eDirectory on a Windows Computer" on page 93
- "Configuring the Data Source Used by a Report Catalog" on page 93

9.2.1 Installing Reporting Services Schema Extensions

1 Click anywhere in an eDirectory tree.

2 Click Tools > Install.

3 Follow the instructions in the wizard to complete the installation.

Be sure to select Reporting Services on the second screen. Help is available throughout the wizard.

9.2.2 Installing Novell-Defined Report Catalogs

1 Select the container that you want to put the Report Catalog objects in.

TIP: You can install the Catalog objects in as many containers as you want. This lets different organizations or departments configure their reports independently.

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2 Click Tools > Install Novell-Defined Reports.

3 Select the report catalogs to install and the location to store the associated catalog files.

See Section 9.1, "Available Reports," on page 89 for descriptions of the Novell-defined report catalogs.

Click Help for details on selecting the location to store the catalog files.

4 Click Install.

9.2.3 Installing the ODBC Driver for eDirectory on a Windows Computer

1 If ConsoleOne isn't installed locally on the Windows computer, in Windows Explorer locate the mapped or shared drive that represents the remote server volume where ConsoleOne is installed.

Otherwise, skip this step.

2 Browse to the folder where ConsoleOne is installed.

By default, this is:

| Windows | `C:\NOVELL\CONSOLEONE\1.2` |
| NetWare | `SYS:PUBLIC\MGMT\CONSOLEONE\1.2` |

---

3 In the \REPORTING\BIN subfolder, double-click ODBC.EXE.

4 Follow the instructions in the wizard to complete the installation.

9.2.4 Configuring the Data Source Used by a Report Catalog

1 In the Windows control panel, double-click the ODBC icon.

2 On the User DSN tab, click Add > select the ODBC driver to be used > click Finish.

Select Novell ODBC Driver for NDS if you want to use eDirectory as your data source. This is required for the Novell-defined eDirectory report catalogs.

3 In the Data Source Setup dialog box, enter a name for the data source and fill in any other information required by your reporting system > click OK.

The name should match the data source specified in the report catalog. For the Novell-defined eDirectory report catalogs, enter "NDS Reporting" as the name and skip the other fields in the dialog box. (They are ignored by the Novell-defined NDS report catalogs.)

4 Click OK.

9.3 Generating, Printing, and Saving Reports

Once you have set up reporting as explained in Section 9.2, "Setting Up Reporting," on page 92, you can perform the reporting tasks described below. When performing these tasks, you can use either a Novell-defined report catalog or a custom report catalog that you have designed.

The first task below applies only if you are using a report catalog that uses the Novell-defined NDS Reporting data source.

In This Section

- "Specifying the Part of Your eDirectory Tree (Context) to Report On" on page 94
- "Generating and Viewing a Report" on page 94
- "Printing a Report" on page 95
- "Saving a Report" on page 95
- "Exporting a Report" on page 95
- "Viewing a Previously Saved Report" on page 95
- "Customizing the Data-Selection Criteria (Query) Used to Generate a Report" on page 95

9.3.1 Specifying the Part of Your eDirectory Tree (Context) to Report On

1 Right-click the Report Catalog object that you will use to generate the reports > click Properties.

2 On the Identification page, click the browse button next to the Report Context field > select the eDirectory container that is to be the top of your reporting context > click OK.

Select the tree object to report on the entire tree. (This is the default.) All objects below the selected container will be included in your reports.

3 Click OK in the Properties dialog box.

The reporting context you set remains in effect for all reports generated using this report catalog, unless you change it again using this same procedure.

9.3.2 Generating and Viewing a Report

1 Right-click the Report Catalog object that contains the report form that you want to use > click Generate Report.

2 Select the report form and query to use.

Click Help for details.

3 Click OK.

A status box appears while the report is being generated. After the report is done generating, it appears in the View Report window (this may take a few moments). You can then print, save, or export the report as explained below.

9.3.3 Printing a Report

1 Generate the report as explained above.

2 On the toolbar of the View Report window, click Print.

3 Select the print options you want.

4 Click OK.

9.3.4 Saving a Report

1 Generate the report as explained above.

2 On the toolbar of the View Report window, click Save.

3 Enter a name for the report, or select a previously saved report to overwrite.

Click Help for details.

4 Click Save.

9.3.5 Exporting a Report

1 Generate the report as explained above.

2 On the toolbar of the View Report window, click Export Report.

3 Select the filename, path, and format to export to.

Click Help for details.

4 Click OK.

9.3.6 Viewing a Previously Saved Report

1 Right-click the report catalog object that was used to generate the report > click Open Report.

2 Select the form that was used to generate the report.

3 Under Available Reports, select the report.

4 Click OK.

9.3.7 Customizing the Data-Selection Criteria (Query) Used to Generate a Report

1 Right-click the Report Catalog object that you will use to generate the report > click Properties.

2 On the Queries page, select the form that you will use to generate the report.

3 Depending on what's listed under Available Queries, perform the appropriate action:

Available Queries	Action
Only the default query is listed	Click Add.
	NOTE: You can't customize the default query on this page. To customize it, see instead Section 9.4, "Designing Custom Reports," on page 96.
Additional (non-default) queries are listed	Select the query that you want to customize > click Open.

4 In the query-building dialog box, specify the data-selection criteria that you want to be used to generate the report.

Click Help for details.

5 (Optional) Click Generate Report to generate the report immediately using the criteria you specified.

After viewing the report, close the View Report window and modify the query further if needed.

6 When you are satisfied with the data-selection criteria you have specified, click OK in the query-building dialog box.

9.4 Designing Custom Reports

To design custom reports, you must complete the general reporting setup (see Section 9.2, "Setting Up Reporting," on page 92), and then add the JReport Designer tool (purchased separately) to the ConsoleOne installation that you will use to design reports. You can then create your own custom report catalogs and report forms.

In This Section

- "Adding JReport Designer to Your ConsoleOne Installation" on page 96
- "Creating a Custom Report Catalog" on page 97
- "Creating or Modifying Report Forms" on page 97

9.4.1 Adding JReport Designer to Your ConsoleOne Installation

1 From the Windows computer where ConsoleOne is installed, or from a Windows computer with a drive mapped to the NetWare server where ConsoleOne is installed, start a Web browser and go to the Novell ConsoleOne site (http://www.novell.com/products/consoles).

2 Locate and click the JReport Designer for ConsoleOne link.

This should take you to a Jinfonet Web site where you can download a package called JReport Designer for Novell Reporting Services. This package is designed to integrate the JReport Designer tool with your ConsoleOne installation. If you can't find the JReport Designer link on the ConsoleOne site, check the site again later. At the time of this publishing, the availability date for JReport Designer hasn't been finalized.

3 Follow the instructions on the Jinfonet Web site to download and run the JReport Designer for Novell Reporting Services setup program (DESIGNER.EXE or SETUP.EXE).

4 Follow the prompts to complete the setup. When you are prompted for the installation directory, choose the location of your ConsoleOne installation.

By default, this is:

Local Drive	`C:\NOVELL\CONSOLEONE\1.2`
Network Drive	`SYS:PUBLIC\MGMT\CONSOLEONE\1.2`

9.4.2 Creating a Custom Report Catalog

1 Right-click the container that you want to create the Report Catalog object in > click New > click Object.

2 Under Class, select Report Catalog > click OK.

3 In Name, enter a name for the new report catalog object.

Be sure to follow proper eDirectory naming conventions. (See "Naming Conventions (http://www.novell.com/documentation/edir871/edir871/data/a2iiidp.html#a2iiie9)" in the *Novell eDirectory Administration Guide*.)

Example: `Custom XYZ Reports`

4 Select the location to store the files associated with the report catalog, and select the data source to be used by the report catalog.

Click Help for details.

5 Click OK.

6 In the Add Table dialog box, select the database tables that your report forms will query > click Add.

Repeat this action as needed.

If you are using the Novell-defined NDS Reporting data source, most of the database tables correspond to eDirectory object classes.

7 Click Done in the Add Table dialog box.

8 Create the catalog's report forms as explained below.

9.4.3 Creating or Modifying Report Forms

1 Right-click the report catalog object that contains (or will contain) the report forms > click Properties.

2 On the Forms page, create and modify the report forms you want.

Click Help for details.

Clicking New or Open on the Forms page starts the JReport Designer tool. For information on using that tool, see the JReport User's Guide (http://www.jinfonet.com/docs.htm).

Troubleshooting

<div style="text-align: right">

10

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This chapter gives solutions to problems you might encounter when setting up or using ConsoleOne®. If this information doesn't solve your problem, you can try the following contacts:

Contact	Use to Get
Novell Support site (http://support.novell.com) or the vendor you purchased the software from	Free technical support
1-800-NETWARE	Direct, charged Novell® technical support
Novell Product Downloads site (http://download.novell.com)	ConsoleOne updates

In This Chapter

10.1 ConsoleOne Malfunctions or Won't Start

Possible Cause	Solution
You are starting ConsoleOne on a Windows computer that doesn't have the required drive mapping or Novell client software.	Make sure you have the system requirements and drive mappings specified for "Windows" on page 18.
You are starting ConsoleOne on a NetWare® server that doesn't have NJCL 2 installed properly.	Remove the \NJCLV2 folder from SYS:JAVA on your server and reinstall ConsoleOne. This installs a new copy of NJCL 2 on your server so that ConsoleOne will work.
You are starting ConsoleOne on a Linux or Solaris computer that doesn't have the correct Java runtime environment (JRE).	If you chose not to install the JRE during installation of ConsoleOne and your existing JRE is not the one noted in "System Requirements for Linux" on page 21 or "System Requirements for Solaris" on page 23, you might want to add the bundled JRE to your ConsoleOne installation (type `c1-install -c jre` at the system prompt, applicable to Consoleone 1.3.6f or lower). For Consoleone 1.3.6h or higher, type ♦ Linux : rpm -ivh NOVLc1Linuxjre-1.4.2-13.i386.rpm ♦ Solaris : pkgadd -vd NOVLc1jre.pkg If you are sure you want to run with a different JRE, then set the JRE_HOME or C1_JRE_HOME environment variable to the location of that JRE. ConsoleOne determines which JRE to use as follows: ♦ If C1_JRE_HOME is specified, that JRE is used. ♦ If the JRE bundled with ConsoleOne is installed, that JRE is used. ♦ If JRE_HOME is specified, that JRE is used. ♦ Otherwise, ConsoleOne displays an error message and quits.
You are starting ConsoleOne remotely through an X terminal session on a computer that doesn't have an X windowing subsystem.	If ConsoleOne is installed on a Linux or Solaris computer and you are trying to run it remotely through an X terminal session, the computer where you are running the terminal session must have an X windowing subsystem installed or it won't work. The X terminal session must be configured to permit transmissions from the remote host and to use the local X windowing subsystem for display.

10.2 Performance Is Sluggish

Possible Cause	Solution
This is often due to insufficient RAM. Under tight memory conditions, ConsoleOne might gradually slow down.	Make sure ConsoleOne is running on the system configuration recommended in Section 1.5, "Installing and Starting ConsoleOne," on page 17. Adding more RAM is the biggest performance booster, especially if you are generating reports. If ConsoleOne has been running for a long time, you might want to restart it.

10.3 I Need a Completely Local Installation

Possible Cause	Solution
The larger product that installed ConsoleOne might not provide the option to install ConsoleOne locally on your hard disk.	See Section 1.5, "Installing and Starting ConsoleOne," on page 17. Make sure to choose a local drive during the installation procedure.

10.4 Can't Find the eDirectory Tree That I Want to Log In To

Possible Cause	Solution
The server that you are viewing the network through can't see all the trees.	If you are running ConsoleOne on Windows, set a different server as your primary server in NetWare Connections (see the red N on the Windows taskbar). Then redisplay the list of trees in ConsoleOne.

10.5 Newly Created User Can't Log In

Possible Cause	Solution
If you cancelled the Set Password dialog box when creating the User object, an object-key pair (eDirectory™ password) wasn't created for the user account.	Go to the Password Restrictions property page of the User object and click Change Password to create an object-key pair (eDirectory password).

10.6 Can't Create Volume or Directory Map Object

Possible Cause	Solution
The eDirectory tree you are trying to create the Volume or Directory Map object in doesn't contain a NetWare server.	The tree must contain a NetWare server that hosts a NetWare volume or you can't create a Volume or Directory Map object in the tree.
	NOTE: To provide access from your tree to NetWare file systems in other trees, you can create NetWare Server and Volume objects in your tree that point to the NetWare servers and volumes in the other trees. The NetWare Server objects must be created before the Volume or Directory Map objects.

10.7 Can't Abort Partition Operation

Cause	Solution
ConsoleOne doesn't yet have the capability to abort a partition operation started by another administrator.	Use the legacy NDS® Manager™ tool.

10.8 Problems Generating a Report

Possible Cause	Solution
Insufficient RAM	Some of the larger reports require a lot of memory to generate. You should have at least 128 MB RAM on the Windows computer that you're using to generate the report.
Report catalog is corrupted	Delete and recreate the Report Catalog object. Then try generating the report again. To create a Report Catalog object, you must have a NetWare volume in your eDirectory tree to install the report catalog files on.
You might not have completed the required reporting setup	See Section 9.2, "Setting Up Reporting," on page 92.

10.9 Field or Option is Disabled

Possible Cause	Solution
You might need to modify some other setting before the field or option becomes available.	Click Help for information about using specific fields and options.
You might not have rights to access the information or perform the operation associated with the field or option.	Check your effective rights to the eDirectory property associated with the field or option. (See Section 4.4, "Viewing Effective Rights," on page 54.) If necessary, contact your network administrator to get the rights you need.

10.10 Known Quirks and Limitations

The following are known quirks and limitations of this release of ConsoleOne. Most of these should no longer exist in future releases.

Quirk or Limitation	Workaround
eDirectory searches return only the first 1,200 objects.	If your search returns 1,200 objects and you suspect there are more, refine the search criteria to return fewer objects.

Quirk or Limitation	Workaround
Jumping to an object in the right pane by typing its name doesn't work if there are more than 1,000 objects in the list.	Use Edit > Find to find the object, or use View > Filter to hide other object types and then type the object name.
Selecting large sets of eDirectory objects from a list of more than 1,000 objects doesn't work. (ConsoleOne retrieves the list of objects from eDirectory one chunk at a time and won't let you select across these invisible chunks.)	Select a smaller set of objects and repeat the operation as many times as needed to complete your task.
Applying a change to a multi-value property in eDirectory doesn't work if the total data size exceeds 48 KB. For example, deleting 1,000 usernames from a membership list would require about 48 KB if the average name were 24 characters. (Each character is two bytes.)	Apply the change in smaller chunks.
The count of eDirectory objects in the right pane (shown in the bottom right corner) is an estimate if there are more than 1,000 objects.	If your task involves more than 1,000 objects and an exact count is required, use NetWare Administrator.
Not all the values of a multi-value eDirectory property are shown if there are too many to fit in the RAM available to ConsoleOne.	Increase the available RAM (try closing all other programs) and redisplay the list. Currently, Novell eDirectory™ returns all the property values to ConsoleOne at once. A future eDirectory release will return them one chunk at a time.
Property names in lists are always shown in English. (ConsoleOne reads them directly from the eDirectory schema, which is in English only.)	If this prevents you from completing your task, go to the Novell Web site and submit an enhancement request. In the meantime, use NetWare Administrator to complete your task.
Restricting a user's volume space or a folder's size doesn't work on an NSS volume.	The ability to restrict space on an NSS volume will be added in a future release. NetWare Administrator doesn't have this capability either.
Generating and printing reports doesn't work if ConsoleOne is running on a non-Windows* computer.	Run ConsoleOne on a Windows computer with at least 128 MB RAM.
Most customizations to ConsoleOne views aren't saved across sessions. One exception is that customizations to object property pages (such as reordering and hiding pages) are saved.	For details, see Section 2.5, "Customizing Views," on page 38.
When running ConsoleOne on Linux, you can't enter more than a couple of values at a time in multi-value fields.	This is a problem with Java on Linux and will be fixed in a future release. For now, you must enter a couple values, close the properties, reopen the properties and enter a couple more values, and so on.
When running ConsoleOne on Solaris, if you click a link or menu option to go to a URL in a Web browser, the action fails if Netscape isn't installed and added to the system's PATH environment variable.	Install Netscape and add the directory where the Netscape executable file is located to your system's PATH environment variable.

Quirk or Limitation	Workaround
When running ConsoleOne on NetWare with lots of ConsoleOne snap-ins installed, you might receive the following error: An attempt was made to open or create a file that is already open. An error occurred reading the data from NDS. Some data may be incorrect or incomplete. The server console then displays the following error: Station # file lock threshold exceeded. Total violations #.	When trying to run ConsoleOne on a NetWare server where lots of snap-ins are installed, ConsoleOne will eventually run out of file lock resources on the server. The solution is to increase the file lock resource on the NetWare server.

10.11 ConsoleOne 1.3.4 Errors

When ConsoleOne 1.3.4 is used to access a server running NICI 2.4 or later, NICI 2.4 must also be installed on the workstation that is running ConsoleOne. If NICI 2.4 is not installed, the following errors will occur when browsing or modifying objects in eDirectory.

Error	Solution
"The dynamic link library CCSW32.DLL could not be found in the specified path."	Download and apply NICI 2.4 or later for Windows 95/98/NT/2000 to the client workstations running ConsoleOne 1.3.4. On the Novell Product Downloads (http://download.novell.com/index.jsp) page, search for and download Novell International Cryptographic Infrastructure. Once applied, this file will bring the NICI on the client to the same revision as that of the server, and the ConsoleOne error should be resolved.
"The native library that supports Certificate Server (PKIWrap) was not found. The Certificate Server snap-ins will not load."	Download and apply NICI 2.4 or later for Windows 95/98/NT/2000 to the client workstations running ConsoleOne 1.3.4. On the Novell Product Downloads (http://download.novell.com/index.jsp) page, search for and download Novell International Cryptographic Infrastructure. Once applied, this file will bring the NICI on the client to the same revision as that of the server, and the ConsoleOne error should be resolved.

10.12 Authentication and Password Modification Errors in ConsoleOne 1.3.6

ConsoleOne errors might be encountered during authentication and password modification operations when running on a Windows workstation with an older version of the Novell Client. ConsoleOne 1.3.6 on Windows requires one of the following versions:

- Novell Client for Windows 95/98 version 3.4 or later
- Novell Client for Windows NT/2000/XP version 4.9 or later

10.13 Menu Keyboard Navigation Indicators Are Not Displayed

When running ConsoleOne on some versions of Windows, the accelerator key indicators for menu items might not be displayed. This is due to a defect in the Sun JRE 1.4.1_01 that ConsoleOne uses when running on the Windows platform. The workaround to this problem is to configure Windows, in the Display Control Panel, to not hide keyboard navigation indicators.

10.14 Creating Objects Using ALT+255 Displays a Question Mark (?) Character in ConsoleOne 1.3.6

When you create an application object using a ASCII ALT+255 character, it gets displayed as a "?" instead of a " ". Therefore, this is wrongly displayed when the application objects are sorted in the reverse-alphabetical order in the NAL Application Explorer Folder on the Desktop.

To work around this issue, use an ALT+226 character instead of ALT+255.

10.15 Login Fails from Windows Workstation

When you create a user object and then create a password that contains extended characters, the loging fails from a Windows workstation.

To resolve this issue, do not use extended characters in the password.

10.16 Role Based Services Saves the Page Even if You Cancel the Property Book

If you add a role and define the scope for it and then do other operations, you need to delete the role before you exit from the properties page. Else, the role will be saved.

10.17 Unable to Delete Custom Attributes in the Other Tab of a User

To resolve this, grant supervisor entry rights to the 'Other' tab.

10.18 The Add and Delete Option Remains Disabled after Applying Changes on Other Property Book Page

Select the node (that is, the attribute you are adding), for example, Mailbox Location, before applying the changes.

10.19 The Splash Screen that Shows the Snapins Loading Does Not Get Displayed While Starting ConsoleOne

This behavior occurs in ConsoleOne v1.3.6e. This does not impact the launching or functionality of ConsoleOne.

10.20 ConsoleOne Import/Export functionality Failing on Solaris

When performing Import/Export functionality on Solaris, you may get error "Init succededCan not get language manager session handle. ICE is improperly installed. Exiting err = -7889", which indicates that message file is missing.

To resolve this error, do either of the following:

◆ Copy whatever files are present in /usr/res/en (or directory which has the message files) to /usr/res

◆ Export environment variable ICE_RES_PATH=/usr/res/en (or directory which has the message files)

ConsoleOne Command-Line Switches

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This appendix lists the command-line switches you can use when you start ConsoleOne® at the command prompt.

To start ConsoleOne at the command prompt, use the following commands:

Platform	Command
NetWare®	C1START
Windows*	consoleone.exe
	ConsoleOne is installed by default in the c:\novell\consoleone\1.2 directory.
Linux* and Solaris*	/usr/ConsoleOne/bin/ConsoleOne

A.1 -debug

Use this to output debug and error statements in ConsoleOne that are useful for developer debugging problems.

A.2 -fileout *filename*

This switch traps all output to the file specified, including exceptions and system outs.

A.3 -forceMaster

Using the -forceMaster switch when starting ConsoleOne will cause ConsoleOne to always talk to the master replica for the objects being accessed.

We don't recommend using this switch during normal use of ConsoleOne. Use this switch only under direction from Novell Technical Services℠ personnel.

A.4 -forceSnapinLoad

This switch indicates that ConsoleOne will read snap-in registration information by parsing the appropriate directories rather than reading registration information from the serialized file.

A.5 -libpath *path*

This switch adds JARs in those directories to all snap-ins class path. The default *path* for ConsoleOne is the lib and resources directories. For example, you might specify the *path* as
mylibs; c:\test\lib.

A.6 -prefdir *directory name*

Use this switch to save user preferences within the directory named in the *directory name* argument. When the directory is not specified, the shell.properties file is stored in the current working directory. If the directory name argument is specified as "user.home," the user.home environment variable, as defined in Java's system properties, will be used as the directory in which to store the user preferences. The user.home environment variable points to the user's home directory.

A.7 -snapinpath *path*

This switch adds the directories specified in *path* to the directories searched for snap-ins. These directories are treated just like the snap-in directory, which is the default directory in ConsoleOne.

For example, you might specify the *<path>* as:

```
mysnapins; C:\engineering\snapins
```

A.8 -systemout

This switch does not hide the output for exceptions, system outs, etc. Normally, ConsoleOne traps all output to the system console, including system outs. By using this command line switch, output is not trapped to the system console.

A.9 -vboundary *size*

Use this flag to change the virtual boundary when reading children. The virtual boundary sets the maximum number of children that are read into memory. If a container has more children than this limit, a virtual enumeration is used. When virtual enumerations are used, all objects are shown, even ones that are normally hidden, such as the ZEN policy objects. The default virtual boundary is 1000.

A.10 -windowout

This switch traps all output to a window, including exceptions and system outs.