

Novell iFolder[®]

2.1

June 25, 2004

INSTALLATION AND ADMINISTRATION
GUIDE

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Novell[®]

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Novell iFolder 2.1 Installation and Administration Guide

[June 25, 2004](#)

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About This Guide

This guide describes how to install, configure, and manage Novell® iFolder® 2.1x.

The guide is intended for iFolder administrators and is divided into the following sections:

- ◆ Chapter 1, “Overview of iFolder,” on page 11
- ◆ Chapter 2, “Understanding the Novell iFolder Architecture,” on page 17
- ◆ Chapter 3, “Preparing to Install iFolder 2.1,” on page 21
- ◆ Chapter 4, “Installing iFolder 2.1 on NetWare,” on page 31
- ◆ Chapter 5, “Installing iFolder 2.1 on Windows 2000 Server,” on page 37
- ◆ Chapter 6, “Installing iFolder 2.1 on Red Hat Linux 8,” on page 45
- ◆ Chapter 7, “Installing iFolder 2.1.2 on Novell Nterprise Linux Services,” on page 53
- ◆ Chapter 8, “Installing iFolder 2.1.3 on Windows 2003 and Windows 2000 Server,” on page 55
- ◆ Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,” on page 65
- ◆ Appendix A, “In-Depth Look at Authentication, Encryption, and Synchronization,” on page 141
- ◆ Appendix B, “Upgrading from iFolder Standard Edition to iFolder 2.1,” on page 143
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- ◆ Appendix G, “Uninstalling iFolder 2.1 on a Red Hat Linux 8 Server,” on page 167
- ◆ Appendix H, “Product History of iFolder,” on page 169

Additional Documentation

For documentation on installing, configuring, and managing iFolder, see the following:

- ◆ [Online documentation for iFolder server and client \(http://www.novell.com/documentation/ig/ifolder21/index.html\)](http://www.novell.com/documentation/ig/ifolder21/index.html)
- ◆ [Novell iFolder Cool Solutions Web site \(http://www.novell.com/coolsolutions/ifmag\)](http://www.novell.com/coolsolutions/ifmag) for tips and tricks
- ◆ [Novell iFolder Support Knowledgebase Web site \(http://support.novell.com\)](http://support.novell.com) for emerging issues for iFolder server and client

Documentation Updates

For the most recent version of the *Novell iFolder 2.1 Installation and Administration Guide*, see the [Novell iFolder Documentation Web site \(http://www.novell.com/documentation/lg/ifolder21/index.html\)](http://www.novell.com/documentation/lg/ifolder21/index.html)

For emerging issues, see the [Novell iFolder 2.1 Readme Addendum \(Technical Information Document 10079972\) \(http://support.novell.com/cgi-bin/search/searchtid.cgi?/10079972.htm\)](http://support.novell.com/cgi-bin/search/searchtid.cgi?/10079972.htm).

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 the software.

1

Overview of iFolder

Novell® iFolder® 2.1 is a Net services software solution that lets mobile professionals access their local files from anywhere—online, offline, all the time—across multiple workstations and the Net. All the user needs is an active network or Internet connection and the iFolder client, a Web browser, or NetDrive.

For a user, iFolder is like having a single, virtual work folder accessible from any computer. It provides a simple, convenient, and secure way to access, back up, and synchronize files. Whether working on an office or home computer, on a disconnected notebook, or even at an Internet kiosk in an airport halfway around the world, his files are instantly available.

When connected to the iFolder server, iFolder automatically backs up the work done on local files to an account on the iFolder server. Files are always protected and easily recovered in the event the local data is lost. And later, when the user moves on to a different location and a different computer, iFolder automatically synchronizes his files to reflect the work completed elsewhere—with no manual disk copies or file transfers required.

With iFolder, each user's work environment can revolve around the individual instead of a particular location or hardware configuration. Because the data travels transparently with the user, wherever in the world he or she needs to be, and resides concurrently in the user's iFolder account on the server, the user can be confident that the local data is current and safe. The user no longer needs to worry about e-mailing files, keeping track of multiple versions of files on different portable storage media, and dealing with complicated remote logins and temperamental VPN clients.

This overview describes the following information about iFolder:

- ◆ [“Benefits of iFolder for the Enterprise” on page 11](#)
- ◆ [“Benefits of iFolder for Users” on page 13](#)
- ◆ [“Key Features of iFolder” on page 14](#)
- ◆ [“Additional Software Shipped with iFolder” on page 15](#)
- ◆ [“What’s New” on page 16](#)
- ◆ [“What’s Next” on page 16](#)

Benefits of iFolder for the Enterprise

Novell iFolder gives IT managers a secure, manageable, and easy-to-implement file management solution that makes every computer user in a company more productive by eliminating the hassles of creating, storing, and managing files across multiple devices and locations. Benefits of iFolder to the enterprise include the following:

- ◆ [“Seamless Data Access” on page 12](#)
- ◆ [“Data Safeguards and Data Recovery” on page 12](#)

- ◆ “Reliable Data Security” on page 12
- ◆ “Productive Mobile Users” on page 12
- ◆ “Cross-Platform Support” on page 13
- ◆ “Simple Data and Account Management” on page 13
- ◆ “No Training Requirements” on page 13

Seamless Data Access

Novell iFolder greatly simplifies the IT department’s ability to keep users productive. It empowers users by enabling their data to follow them wherever they go.

The days of users e-mailing themselves project files so they can work on them from home are gone, along with the frustration associated with sorting through different versions of the same file on different machines. iFolder stores and synchronizes users’ work in such a way that no matter what client or what location they log in from, their files are available and in the condition that they expect them to be.

Data Safeguards and Data Recovery

With Novell iFolder encryption, data stored on the server is secure not only from unauthorized access, but it also can be easily safeguarded from system crashes and disasters that can result in data loss. When a user saves a file locally, the iFolder client can automatically update data to the iFolder server, where it immediately becomes available for an organization’s regular network backup operations.

iFolder makes it easier for IT managers to ensure that all of an organization’s critical data is protected. iFolder also gives Internet Service Providers (ISPs) the ability to offer a user-trusted backup solution for their customers’ critical business or personal data.

Reliable Data Security

With Novell iFolder encryption, stored data is secure from unauthorized network access. In the past, executives fearing unauthorized access to sensitive data have been hesitant to store some confidential documents on the network. iFolder eliminates this concern, encrypting all data before it moves it across the Internet and stores it on the Novell iFolder server, keeping it out of the hands of unauthorized users.

Productive Mobile Users

A Novell iFolder solution makes it significantly easier to support mobile users. VPN connections are no longer needed to deliver secure data access to mobile users. Users do not need to learn or perform any special procedures to access their files when working from home or on the road. iFolder does away with version inconsistency, making it simple for users to access the most up-to-date version of their documents from any connected desktop, laptop, Web browser, or handheld device.

In preparation to travel or work from home, users no longer need to copy essential data to their laptops from various desktop and network locations. The iFolder client can automatically update users’ laptops and desktops with the most current versions of their files. Even if a user loses a laptop, all those files can still be accessed with any computer connected to the Internet.

Cross-Platform Support

The cross-platform capabilities of Novell iFolder enable it to easily mesh with any organization's Web infrastructure. The iFolder server integrates with either the Apache Web server on NetWare® and Linux* or the Microsoft* Internet Information Server (IIS) Web server on Windows* 2000, enabling organizations to run iFolder on their preferred platforms. Additionally, the solution's Lightweight Directory Access Protocol (LDAP) support for user authentication allows organizations to leverage Novell eDirectory™ on NetWare, Linux, and Windows 2000 servers, or Microsoft Active Directory* on Windows 2000 servers.

Large-Scale Deployment

One of the key features of iFolder is its ability to scale to a large and growing environment. You can install iFolder on multiple servers, allowing your iFolder environment to grow with your business.

There is no practical limit to the number of iFolder servers that you can have in your iFolder network—a single iFolder server handles up to 10,000 user accounts, depending on the amount of memory available. The servers appear as a single iFolder system for management and user access.

Because iFolder takes care of redirecting user authentication requests to the correct iFolder server, the login procedure is a seamless experience for the user. As your iFolder network grows, your management costs stay the same, because the management of all iFolder servers is centralized through the iFolder Management Console.

Simple Data and Account Management

Novell iFolder was designed to allow for easy setup and management by IT professionals. The iFolder server can be managed from any location, using a standard Web browser.

iFolder also frees IT departments from routine maintenance tasks with its automatic file updates, synchronization, and encryption. Also, because local files are automatically updated to the network, iFolder ensures that data is protected on both corporate and individual levels.

IT managers also have the option to manage Novell iFolder accounts, using the power of Novell eDirectory or Microsoft Active Directory (on Windows 2000 servers only).

No Training Requirements

IT personnel no longer need to condition or train users to perform special tasks to ensure the consistency of data stored on their laptops and on the network. With Novell iFolder, users simply store their files in the local iFolder directory on their PCs. Their files will be automatically updated to the iFolder server and any other workstations that they use. iFolder works seamlessly behind the scenes so users don't even need to know it's there.

Benefits of iFolder for Users

Working in multiple locations has traditionally meant that you had to conscientiously manage file versions, secure data transfer, and periodic data backups for multiple workstations. Novell iFolder is an easy way to make sure your files are secure, accessible, and up to date.

With iFolder, you always have convenient and secure access to the most recent version of your documents. All you need is an active network or Internet connection and the Novell iFolder client software or a Web browser.

Novell iFolder provides the following benefits:

- ◆ Guards against local data loss by automatically backing up your local files to the iFolder server and your multiple workstations.
- ◆ Transparently updates your files to the iFolder server and your multiple workstations with the iFolder client.
- ◆ Tracks and logs changes made while you work offline and synchronizes those changes when you go online.
- ◆ Provides access to your files on the iFolder server from any workstation without the iFolder client, using a Web browser.
- ◆ With encryption enabled, protects data as it travels across the wire and while stored on the iFolder server.
- ◆ Makes files on the iFolder server available for regularly scheduled data backup.

Key Features of iFolder

Key features of Novell iFolder 2.1 include the following:

- ◆ Support for the following server operating systems:

Server Operating System	iFolder 2.1	iFolder 2.1.1 (Bundled with NetWare 6.5)	iFolder 2.1.2 (Bundled with NetWare 6.5 Support Pack 1)	iFolder 2.1.2 (Bundled with Novell Nterprise™ Linux Services)
NetWare 5.1 with Support Pack 5 or later	Yes			
NetWare 6.0 with Support Pack 2 or later	Yes			
Microsoft Windows 2000 Server with Service Pack 3 or later	Yes			
Red Hat* Linux 8	Yes			
NetWare 6.5 or later		Yes		
NetWare 6.5 Support Pack 1 or later			Yes	
Red Hat Enterprise Linux AS				Yes
Red Hat Enterprise Linux ES				Yes
SUSE® Linux Enterprise Server 8				Yes

- ◆ Support for the following LDAP systems:

Version of iFolder	Novell eDirectory	Microsoft Active Directory
iFolder 2.1	eDirectory 8.6.2 or later	Windows 2000 Server Service Pack 3 or later

Version of iFolder	Novell eDirectory	Microsoft Active Directory
iFolder 2.1.1	eDirectory 8.6.2 or later	No
iFolder 2.1.2	eDirectory 8.7.3 or later	No

- ◆ Large-scale deployment support with multiple iFolder servers acting as a single system.
- ◆ Report generator for administrators to view statistics on iFolder users and the iFolder system.
- ◆ Automatic upgrade from previous versions for NetWare and Windows 2000 installations in an eDirectory environment.
- ◆ Automatic synchronization of files by the iFolder client between the iFolder server and local workstations through a standard Internet connection.
- ◆ Client support for the following workstation operating systems:
 - ◆ Windows 98SE
 - ◆ Windows 2000 Professional
 - ◆ Windows XP Home and Professional
- ◆ Web browser access to iFolder from any workstation without an iFolder client.
- ◆ Web browser access to iFolder from any handheld device without an iFolder client.
- ◆ Concurrent access to multiple iFolder accounts, using Novell NetDrive to map drives to the iFolder server.
- ◆ Thin-client support through Novell NetDrive for Citrix* Metaframe* servers, Windows 2000 Terminal Server, and ZENworks® OnDemand Services™.
- ◆ Proxy and authentication support in the iFolder client.
- ◆ File encryption across the wire and on the iFolder server to protect user data from unauthorized access.
- ◆ Management of iFolder server and accounts through a Web browser.
- ◆ Ability for administrators to recover a user's passphrase.
- ◆ Ability of end user to select the location of the local iFolder directory.

For information about key features of the iFolder client, see the *Novell iFolder 2.1 User Guide*.

Additional Software Shipped with iFolder

The Novell iFolder solution also ships with Novell NetDrive, a client software package that users can install on their Windows workstations. NetDrive allows a user to map a network drive to an iFolder server, using the iFolder protocol instead of the Novell Client™ or the iFolder client.

One advantage of NetDrive is that it allows a user to be logged in to multiple iFolder accounts from the same workstation and at the same time. NetDrive also synchronizes the iFolder data a user works with between a temporary local iFolder directory and the iFolder server while the user works with select files. When the user logs out of NetDrive, NetDrive completes the uploads in progress, if any, then deletes and purges the temporary local iFolder directory and all of the files in it. With NetDrive, the user does not need to manually upload and download files or delete files from the local workstation as is required with a Web browser-based interface.

For more information on how to install and use NetDrive on a user workstation, see the NetDrive documentation, located in the *Novell NetDrive 4.1 User Guide*.

What's New

The Novell iFolder 2.1 software adds the following features:

- ◆ The iFolder server supports a modified and extended set of operating systems, as listed in [“Key Features of iFolder” on page 14](#). iFolder 2.1 and later no longer supports Solaris*.
- ◆ The iFolder server is compatible with eDirectory for all platforms and also with Microsoft Active Directory for Windows 2000 Server with Service Pack 3 or later.
- ◆ The iFolder client provides improved support for proxy settings and login.
- ◆ Novell NetDrive has been updated for greater interoperability.

For information about which platforms are supported in different versions of iFolder, see [Appendix H, “Product History of iFolder,” on page 169](#).

What's Next

For a description of how iFolder works, see [Chapter 2, “Understanding the Novell iFolder Architecture,” on page 17](#).

For instructions on how to install and configure iFolder, begin with [Chapter 3, “Preparing to Install iFolder 2.1,” on page 21](#).

2

Understanding the Novell iFolder Architecture

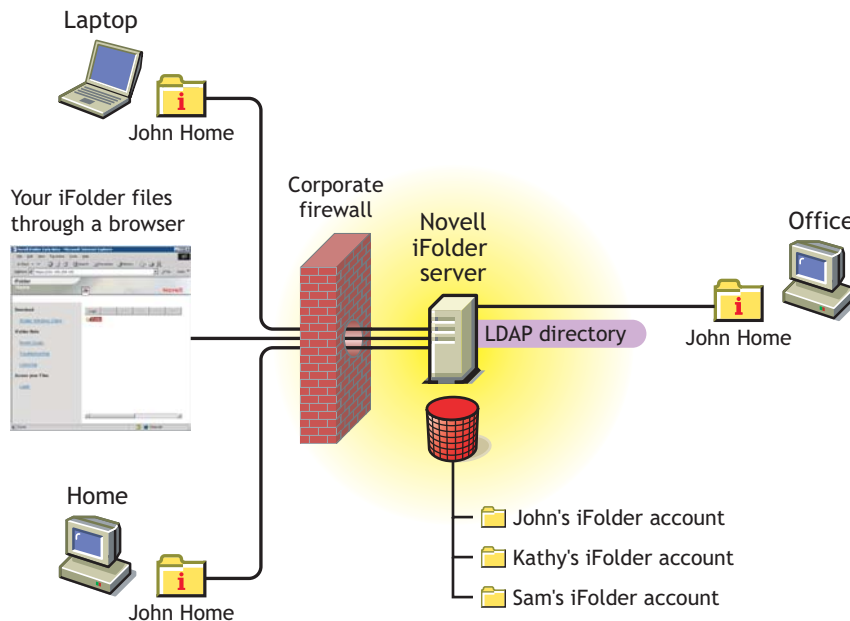
Novell® iFolder® 2.1 lets users manage files automatically. No matter where users choose to work, iFolder does all the file management for them. This means that even though users are working locally, all of their data is being securely uploaded and saved to the network. This data protection is automatic, secure, and transparent to users.

There are three pieces to Novell iFolder: the iFolder server software, the iFolder client software, and the iFolder Java* applet. These pieces work together seamlessly to provide users with instant access to any iFolder files stored on their hard drives from anywhere in the world.

Figure 1 illustrates how the Novell iFolder server is accessed from different computers or locations. The iFolder server and storage component are central to the several access options.

For example, John authenticates to the iFolder server, using LDAPv3. John can access his iFolder data from home, work, or through a browser. When he works on a local computer, John is accessing his data locally. The iFolder server is responsible for making sure that all of John's computers have the latest version of his data. If he accesses his account through a browser, John is actually looking at the data that is stored on the iFolder server.

Figure 1 Typical iFolder Deployment Scenario



For information on the different access methods to use when accessing iFolder data, see the *Novell iFolder 2.1 User Guide*.

For information about synchronization, see “[Authentication and Synchronization](#)” on page 19.

Large-Scale Deployment

One of the key features of iFolder is its ability to scale to a large and growing environment. You can install iFolder on multiple servers, allowing your iFolder environment to grow with your business.

There is no practical limit to the number of iFolder servers that you can have in your iFolder network—a single iFolder server handles up to 10,000 user accounts. In turn, each of these servers together acts as one system.

Because iFolder takes care of redirecting user authentication requests to the correct iFolder server, the login procedure is a seamless experience for the end user. Plus, as your iFolder network grows, your management costs stay the same, because the management of all iFolder servers is centralized through the iFolder Management Console.

Web Servers and iFolder

The iFolder server software uses Apache as its default Web server for NetWare[®] and Linux server operating systems. On Windows 2000, iFolder uses the IIS Web server.

For NetWare servers with Apache-based solutions, when iFolder is active, it can run in the operating system space or in protected memory space. Because iFolder requires some configuration changes to Apache-specific files, we recommend that you install iFolder on a server that does not have other applications that rely on Apache.

If you *do* have other applications that use Apache, these applications might not work after you install iFolder. Check the port settings of the other applications to resolve any conflicts.

LDAP and iFolder

LDAP is a directory protocol that enables you to communicate with servers that use a directory service.

iFolder uses LDAP for user authentication. It uses Novell eDirectory[™] or Microsoft Active Directory (for Windows 2000) as a central location for all of its LDAP objects that are specific to iFolder.

You can have iFolder and LDAP running on the same server or on different servers, but they must exist in the same tree.

LDAP Directories

iFolder uses two different types of LDAP directories: the Global Settings LDAP directory and the User LDAP directory.

The Global Settings LDAP directory stores information about the iFolder system configuration and has iFolder Settings, iFolder Server, and LDAP Server objects. (For more information on these objects, see [“Logging In to the iFolder Management Console” on page 70.](#))

The User LDAP directory authenticates iFolder users and adds the iFolder Server Name and the Disk Quota attribute to User objects. You must enable User objects for iFolder services in the iFolder Management Console before users can create their iFolder accounts.

Regardless of how many iFolder servers you have, you have only one Global Setting LDAP. However, you can have up to eight User LDAP directories. Multiple LDAP directories benefit companies whose User objects are already divided into different LDAP directories.

For example, if you have an LDAP directory for all of your vendors, another for your full-time employees, and another for your temporary hires, you can set up three User LDAP directories in iFolder to handle the iFolder accounts for each directory. This way, you can maintain your current organization and group management. For information, see [“Managing User LDAP Servers” on page 123](#).

Authentication and Synchronization

When a user logs in, the iFolder client authenticates to the iFolder server by sending the encrypted username and password through an Internet connection to the iFolder server. The iFolder server uses this information to verify that the user exists, and then checks to see if the User object has been enabled in the iFolder Management Console to use iFolder.

After the User object has been enabled, a user’s iFolder account must be initialized on the iFolder server before the user can begin using iFolder on his or her local workstation. An iFolder account is initialized the first time a user logs in to the iFolder server with the iFolder client or with the iFolder Java applet. After the user account is created, the administrator can manage the account via the iFolder Management Console.

After the first login, a user can begin to add files to the local iFolder directory and automatic synchronization begins. The iFolder client is always aware of any local activity and, based on the synchronization preferences chosen by you or the user, the iFolder client regularly asks the iFolder server for a download of any new data. After the iFolder server downloads the data, it uploads any updates from the iFolder local directory. When the user access his account from a different computer, the iFolder server first downloads any updates before uploading the iFolder client changes.

For More Information

For a more technical description of how iFolder works, see [Appendix A, “In-Depth Look at Authentication, Encryption, and Synchronization,” on page 141](#).

3

Preparing to Install iFolder 2.1

Before installing the standalone release of Novell® iFolder® 2.1 server software on your enterprise server, prepare your network resources. Make sure you understand your installation or upgrade scenario and meet the prerequisites for that scenario.

- ♦ [“Installation Scenarios for iFolder 2.1” on page 21](#)
- ♦ [“Installation Scenarios for iFolder 2.1.x” on page 22](#)
- ♦ [“Upgrade Scenarios for iFolder” on page 23](#)
- ♦ [“Prerequisites for iFolder 2.1” on page 24](#)
- ♦ [“Prerequisites for iFolder 2.1.x” on page 27](#)
- ♦ [“Download Instructions for iFolder 2.1” on page 27](#)
- ♦ [“What’s Next” on page 28](#)

Installation Scenarios for iFolder 2.1

The standalone version of Novell iFolder 2.1 server software supports the following server operating systems:

- ♦ Novell NetWare® 5.1 Support Pack 5 or later
- ♦ Novell NetWare 6.0 Support Pack 2 or later
- ♦ Windows 2000 Service Pack 3 or later
- ♦ Red Hat Linux 8

Novell iFolder requires that you have an LDAP server that is active, synchronized, and working properly. Your LDAP server must be in the same tree as your iFolder server. You can point to the LDAP master server or to a replica.

iFolder 2.1 supports Novell eDirectory™ for the supported versions of NetWare, Windows, and Linux. It extends the cross-platform interoperability to include support for Microsoft Active Directory for Windows 2000 Service Pack 3 or later server operating environments. Previous versions of iFolder were interoperable with only eDirectory.

Novell iFolder 2.1 supports four installation scenarios:

Server Operating System	Web Server	LDAP Server
NetWare	Apache 1.3.26 or 1.3.27	eDirectory
Windows 2000	IIS	eDirectory
Windows 2000	IIS	Active Directory

Server Operating System	Web Server	LDAP Server
Red Hat Linux 8	Apache 2.0.43	eDirectory

Installation Scenarios for iFolder 2.1.x

Novell iFolder 2.1.1 and 2.1.2 are bundled versions of iFolder 2.1. The planning, prerequisites, and installation instructions are integrated into the installation sequence of the product in which iFolder is bundled.

The following installation scenarios exist for Novell iFolder 2.1.x.

- ◆ [“Installing iFolder 2.1.1 with NetWare 6.5” on page 22](#)
- ◆ [“Installing iFolder 2.1.2 with NetWare 6.5 Support Pack 1” on page 22](#)
- ◆ [“Installing iFolder 2.1.2 with Novell Nterprise Linux Services” on page 22](#)

Installing iFolder 2.1.1 with NetWare 6.5

As bundled with NetWare 6.5, Novell iFolder 2.1.1 supports one basic installation scenario.

Server Operating System	Web Server	LDAP Server
NetWare 6.5	Apache 2.0.43	eDirectory 8.6.2 or later

The instructions in this guide do not apply when installing iFolder 2.1.1 with NetWare 6.5. Please follow the prerequisite and installation instructions provided in the [NetWare 6.5 Overview and Installation Guide](#).

For instructions on managing your iFolder 2.1.1 server, please refer to [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,” on page 65](#).

Installing iFolder 2.1.2 with NetWare 6.5 Support Pack 1

As bundled with NetWare 6.5 Support Pack 1, Novell iFolder 2.1.2 supports one basic installation scenario.

Server Operating System	Web Server	LDAP Server
NetWare 6.5 Support Pack 1	Apache 2.0.43	eDirectory 8.7.3

The instructions in this guide do not apply when installing iFolder 2.1.2 with NetWare 6.5 Support Pack 1. Please follow the prerequisite and installation instructions provided in the [NetWare 6.5 Overview and Installation Guide](#).

For instructions on managing your iFolder 2.1.2 server, please refer to [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,” on page 65](#).

Installing iFolder 2.1.2 with Novell Nterprise Linux Services

As bundled with the Novell Nterprise™ Linux Services 1.0 and later, Novell iFolder 2.1.2 supports three basic installation scenarios.

Server Operating System	Web Server	LDAP Server
Red Hat Enterprise Linux AS 2.1	Apache 2.0.48	eDirectory 8.7.3
Red Hat Enterprise Linux ES 2.1	Apache 2.0.48	eDirectory 8.7.3
SUSE® Linux Enterprise Server 8	Apache 2.0.48	eDirectory 8.7.3

The instructions in this guide do not apply when installing iFolder 2.1.2 with Novell Nterprise Linux Services. Please follow the prerequisite and installation instructions provided in the *Novell Nterprise Linux Services Installation Guide*.

For instructions on managing your iFolder 2.1.2 server, please refer to [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,”](#) on page 65.

Upgrade Scenarios for iFolder

Novell iFolder 2.1 supports automatic upgrades from previous versions of iFolder as noted in the table below. You can uninstall your current version of iFolder, then install iFolder 2.1 if you do not want to retain the current settings for the product. For Red Hat Linux, you must uninstall, then install iFolder 2.1; automatic upgrade is not supported.

Server Operating System and LDAP Service	Preexisting iFolder Version	Automatic Upgrade ¹ to iFolder	Uninstall + Install ¹ iFolder
NetWare with eDirectory	Standard Edition	2.1	2.1
	2.0 Professional Edition	2.1	2.1
	2.1	2.1.1 or 2.1.2	2.1.1 or 2.1.2
	2.1.1	2.1.2	2.1.2
Windows 2000 with eDirectory	Standard Edition	2.1	2.1
	2.0 Professional Edition	2.1	2.1
Windows 2000 with Active Directory	None	No	No
Windows NT 4 with eDirectory	Standard Edition	No	No
	2.0 Professional Edition	No	No
Red Hat Linux with eDirectory	2.0 Professional Edition	No	2.1
Red Hat Enterprise Linux AS with eDirectory	None	No	No
Red Hat Enterprise Linux ES with eDirectory	None	No	No
SUSE Linux Enterprise Server 8 with eDirectory	None	No	No
Solaris with eDirectory	2.0 Professional Edition	No	No

¹ Update your platform to the supported versions of the operating system and LDAP service.

Prerequisites for iFolder 2.1

Before you install iFolder 2.1 on your enterprise server, make sure you meet the following prerequisites for your server platform:

- ◆ [“Prerequisites for All iFolder 2.1 Servers” on page 24](#)
- ◆ [“Prerequisites for NetWare Servers for iFolder 2.1” on page 25](#)
- ◆ [“Prerequisites for Windows 2000 Servers for iFolder 2.1” on page 26](#)
- ◆ [“Prerequisites for Linux Servers for iFolder 2.1” on page 26](#)

Prerequisites for All iFolder 2.1 Servers

Before you install Novell iFolder 2.1, make sure your server and enterprise network environment meet all of the following prerequisites. See [“Installation Scenarios for iFolder 2.1” on page 21](#) for the server environment scenarios.

- Configure an enterprise server with the following components:
 - ◆ Minimum 450 MHz Intel* Pentium* II processor.
 - ◆ Minimum 512 MB RAM. Add more RAM if the server supports programs or services other than iFolder. Add more RAM according to how many concurrent connections you intend to support.
 - ◆ Storage capacity for server software (about 15 MB) plus the user data for all the users' iFolder accounts.

As a guide, consider the expected number of users and the quota of storage allotted for each iFolder user account. Also, consider the likely growth associated with each of the parameters to anticipate future demand for storage.

For example, if you have 500 users and allocate a disk quota of 200 MB to each user, you must provide at least 100 GB of storage for iFolder accounts. Of course, not all users will fill their quota immediately. You must assess your initial needs, then monitor and expand physical capacity as usage grows.
 - ◆ An active network or Internet connection with full two-way access to other computers on the network or Internet, or both, depending on your deployment
- Install your preferred server operating system, including current service packs and patches.
- Install and configure Apache Web Server or IIS Server software on your server.
- Install and configure your Novell eDirectory or Microsoft Active Directory LDAP server, including current service packs and patches. Make sure that your LDAP server is active, synchronized, and working properly.
- Make sure the DNS name and IP address of the enterprise server you want to use as your iFolder server are listed on the DNS server. The IP address must be unique within your network environment.
- To extend the schema for your LDAP server, you must have the appropriate rights or credentials to the root of the tree where you plan to install the iFolder server in your network.

Prerequisites for NetWare Servers for iFolder 2.1

Before you install Novell iFolder 2.1, make sure your NetWare server and enterprise network environment meet all of the following prerequisites. See “[Prerequisites for All iFolder 2.1 Servers](#)” on page 24 for additional requirements.

- Install and configure Novell NetWare 5.1 Support Pack 5 or NetWare 6.0 Support Pack 2 on your iFolder server.
- Install Novell eDirectory 8.6.2 or later as your LDAP server. Make sure it is active, synchronized, and working properly.

Your LDAP server and iFolder server can reside on the same machine or different machines.

- Create a storage volume accessible from the NetWare server where you want to store the user data for the iFolder accounts.

It is standard practice to store user data on a volume other than the sys: volume on the NetWare server. Storage solutions can include any NSS volume options supported by NetWare, including direct attached storage and storage area networks.

- Install and configure a Windows 98SE or NT 4, 2000 Professional, or XP Professional workstation.

You will use the workstation to install the iFolder software on your NetWare server across an active network connection.

- Install IE 5.0 or later on your installation workstation.
- If the NetWare server where you will be installing iFolder is not configured to use the CIFS (Common Internet File Services) protocol, install the Novell Client™ on your installation workstation.

You can download a current version of the Novell Client at the [Novell Product Downloads Web site \(http://download.novell.com\)](http://download.novell.com).

- Install Apache Web Server 1.3.26 or 1.3.27.

With iFolder 2.1 for NetWare 5.1 Support Pack 5 and NetWare 6.0 Support Pack 2 servers, you must use Apache Web Server 1.3.26 or 1.3.27. If you use another version of Apache, iFolder does not work as designed.

A binary distribution of Apache Web Server 1.3.27 was made available with NetWare 6.0 Support Pack 2 on the *Netware 6 Support Pack 2 Overlay CD*. These versions might already be installed on your NetWare 6.0 servers.

For NetWare 6.0 servers, upgrade to Support Pack 2, then reinstall the original Apache 1.3.27 binary distribution. Do not install iFolder on an upgraded version of Apache other than Apache 1.3.27.

For NetWare 5.1 Support Pack 5 servers, download NetWare 6.0 Support Pack 2 or the *NetWare 6.0 Support Pack 2 Overlay CD*, then extract the contents to a temporary location. Locate the Products/Novonyx/aapache.zip file, which contains the binary distribution of Apache Web Server 1.3.27, extract the contents of the aapache.zip file to a temporary directory, then copy the contents of the temporary directory to the sys:\apache directory on your NetWare 5.1 server.

Prerequisites for Windows 2000 Servers for iFolder 2.1

Before you install Novell iFolder 2.1, make sure your Windows 2000 server and enterprise network environment meet all of the following prerequisites. See [“Prerequisites for All iFolder 2.1 Servers” on page 24](#) for additional requirements.

- Install Windows 2000 Service Pack 3, including all patches.
- Create a storage volume accessible from the Windows server where you want to store the user data for the iFolder accounts.

It is standard practice to store user data on a volume other than the system volume. Storage solutions can include any volume options supported by Windows, including direct attached storage and storage area networks.

- Install Novell eDirectory 8.6.2 or later or install Microsoft Active Directory (from Windows 2000 Server with Service Pack 3 or later) as your LDAP server. Make sure it is active, synchronized, and working properly.

Your LDAP server and your iFolder server can reside on the same machine or on different machines.

- If you use Active Directory as your LDAP server, you must meet these additional requirements:
 - ◆ In Active Directory environments, if you have shared schema domain controllers, all must be active and synchronized to enable the schema extension during the iFolder installation.
 - ◆ You must have the necessary rights to extend the Active Directory schema. During a Complete install, iFolder extends the schema. Alternately, you can run the install to extend the schema independently, using the Extend Schema Only option.
- Install and configure IIS Server on the iFolder server, including service packs and patches.
- Install Internet Explorer (IE) 5.0 or later on your server.

Prerequisites for Linux Servers for iFolder 2.1

Before you install Novell iFolder 2.1, make sure your Linux server and enterprise network environment meet all of the following prerequisites. See [“Prerequisites for All iFolder 2.1 Servers” on page 24](#) for additional requirements.

- Install and configure Red Hat Linux 8 server on your iFolder server, including all service packs and patches.
- Create a storage volume accessible from the Linux server where you want to store the user data for the iFolder accounts.

It is standard practice to store user data on a volume other than the system volume. Storage solutions can include any volume options supported by Red Hat Linux, including direct attached storage and storage area networks.

- Install Novell eDirectory as your LDAP server. Make sure it is active, synchronized, and working properly.

Your LDAP server and iFolder server can reside on the same machine.

- Install Apache Web Server 2.0.43 or later on your Linux server. For information, see [“Installing Apache 2.0.43 on Red Hat Linux 8” on page 45](#).

- ❑ If you plan to use SSL mode for iFolder, set up a self-signed root certificate so that Apache will run in SSL mode.
- ❑ Install Internet Explorer (IE) 5.0 or later on the Windows workstation that you will use for iFolder server administration.

Prerequisites for iFolder 2.1.x

For prerequisite and installation instructions for iFolder 2.1.x server, see the installation guide of the product in which iFolder is bundled. Use the table below to determine which installation guide applies to your version of iFolder 2.1.x.

If You Have This Version of iFolder Bundled with This Product	Then Refer To
iFolder 2.1.1	NetWare 6.5 <i>NetWare 6.5 Overview and Installation Guide</i>
iFolder 2.1.2	NetWare 6.5 Support Pack 1 <i>NetWare 6.5 Overview and Installation Guide</i>
iFolder 2.1.2	Novell Nterprise™ Linux Services <i>Novell Nterprise Linux Services Installation Guide</i>
iFolder 2.1.2	Novell Nterprise Linux Services Support Pack 1 <i>Novell Nterprise Linux Services Installation Guide</i>

Download Instructions for iFolder 2.1

After you meet all the general prerequisites and server-specific prerequisites for your preferred server configuration, you are ready to download the Novell iFolder 2.1 server installation program and your preferred LDAP server software.

- ◆ “[Downloading Novell iFolder 2.1](#)” on page 27
- ◆ “[Downloading Novell eDirectory or Microsoft Active Directory](#)” on page 27

Downloading Novell iFolder 2.1

- 1 Download Novell iFolder 2.1 at the [Novell Product Downloads Web site \(http://download.novell.com\)](http://download.novell.com).
- 2 Review the readme.txt file in the product.

Remember the location of the downloaded program installation file; you will need it when you are ready to install iFolder server.

If you purchased NetWare 6.5, iFolder 2.1.1 is available on the *NetWare 6.5 CD 2 (Products)*. iFolder 2.1.2 is available in the NetWare 6.5 Support Pack 1 build.

If you purchased Novell Nterprise Linux Services, iFolder 2.1.2 is available in the NNLS download file.

Downloading Novell eDirectory or Microsoft Active Directory

Novell iFolder requires that you have an LDAP server that is active, synchronized, and working properly. iFolder is compatible with eDirectory and Active Directory in the configurations discussed in “[Installation Scenarios for iFolder 2.1](#)” on page 21.

Novell eDirectory

Novell iFolder 2.1 requires Novell eDirectory 8.6.2 or later.

To get copy of eDirectory:

- 1 Download eDirectory at the [Novell Download Web site \(http://download.novell.com\)](http://download.novell.com).
- 2 Review the readme.txt file in the product.
- 3 Obtain your license file from www.novell.com/products/edirectory/customer_license.htm (http://www.novell.com/products/edirectory/customer_license.htm).

Active Directory

For Windows 2000 servers, iFolder 2.1 is compatible with both eDirectory and Microsoft Active Directory. If you want to use iFolder with Active Directory, the Active Directory software is a component of Windows 2000 Service Pack 3 or later server software.

For information about Active Directory, see the [Microsoft Web site \(http://www.microsoft.com\)](http://www.microsoft.com).

What's Next

Choose one of the possible installation or upgrade scenarios, then use the table below to determine where next to go to install iFolder:

To Install This Version of iFolder	On This Server Operating System	Do This
iFolder 2.1	NetWare 5.1 Support Pack 5 or later or NetWare 6.0 Support Pack 2 or later with Novell eDirectory	For standalone servers, see Chapter 4, "Installing iFolder 2.1 on NetWare," on page 31 . For NetWare clusters, see "Configuring an iFolder Server Cluster on NetWare 5.1 and 6.0" on page 145 in Configuring iFolder on Novell Cluster Services .
	Windows 2000 Service Pack 3 or later with Novell eDirectory	"Installing iFolder on Windows/IIS/eDirectory" on page 37
	Windows 2000 Service Pack 3 or later with Microsoft Active Directory	"Installing iFolder on Windows/IIS/Active Directory" on page 41
	Red Hat Linux 8 with Novell eDirectory	Chapter 6, "Installing iFolder 2.1 on Red Hat Linux 8," on page 45
iFolder 2.1.1 or 2.1.2	NetWare 6.5 or later with Novell eDirectory	For NetWare servers, see the NetWare 6.5 Overview and Installation Guide .
		For NetWare clusters, see "Configuring an iFolder Server Cluster on NetWare 6.5 and Later" on page 147 in Configuring iFolder on Novell Cluster Services .
iFolder 2.1.2	All Enterprise Linux server operating systems supported by Novell Nterprise Linux Services 1.0 and later	Novell Nterprise Linux Services Installation Guide

Upgrading from iFolder 2.0 Professional Edition to iFolder 2.1

Upgrading from iFolder 2.0 Professional Edition to iFolder 2.1 is a straightforward process. If you meet the prerequisites for this upgrade path as outlined in “[Upgrade Scenarios for iFolder](#)” on [page 23](#), use the preceding table to determine where to go for installation instructions.

Upgrading from iFolder Standard Edition to iFolder 2.1

Upgrading from iFolder Standard Edition to iFolder 2.1 requires special considerations before you upgrade. If you meet the prerequisites for this upgrade path as outlined in “[Upgrade Scenarios for iFolder](#)” on [page 23](#), follow the instructions in “[Upgrading from iFolder Standard Edition to iFolder 2.1](#)” on [page 143](#).

4

Installing iFolder 2.1 on NetWare

This section describes the how to install the standalone version of Novell® iFolder® 2.1 server software, using the following configuration:

Server Operating System	Web Server	LDAP Server
NetWare®	Apache	Novell eDirectory™

NOTE: The instructions in this section do not apply when installing iFolder 2.1.x, as bundled with Novell NetWare 6.5 and later. Please follow the prerequisite and installation instructions provided in the [NetWare 6.5 Overview and Installation Guide](#).

For a description of known issues related to installation, see the [Novell iFolder 2.1 Readme](#).

The following topics are discussed:

- ◆ [“Confirming Prerequisites” on page 31](#)
- ◆ [“Installing iFolder Server” on page 31](#)
- ◆ [“What’s Next” on page 35](#)

Confirming Prerequisites

Before you install Novell iFolder 2.1, make sure you have met the following prerequisites and download requirements:

- ◆ For general iFolder server prerequisites, see [“Prerequisites for All iFolder 2.1 Servers” on page 24](#).
- ◆ For prerequisites specific to NetWare, see [“Prerequisites for NetWare Servers for iFolder 2.1” on page 25](#).
- ◆ For instructions for downloading Novell iFolder 2.1, see [“Download Instructions for iFolder 2.1” on page 27](#).

Installing iFolder Server

After you have met all the prerequisites for installing iFolder on NetWare, you are ready to install Novell iFolder 2.1.

- 1 On your installation workstation, map a drive to the sys: volume on the destination server where you want to install the iFolder server. Map the drive, using one of these methods:
 - ◆ If you use CIFS on the destination NetWare server, map a drive, using Windows Explorer.

- ◆ If you do not use CIFS on the destination NetWare server, map a drive, using the Novell Client™.

Remember this drive letter; you need it in [Step 6 on page 32](#) to enter as the installation drive path.

- 2** On your NetWare server, you must bring the Apache Web site down to install, upgrade, repair, or uninstall the iFolder server.

For Apache 1.3.26 and 1.3.27, enter the following command from the NetWare command prompt:

```
nvxadmdn . ncf
```

- 3** To start the installation, go to the temporary directory on your workstation where you saved the installation program, then double-click the installation program icon.

The iFolder Installation Wizard opens on the desktop of your installation workstation.

- 4** Do one of the following:

- ◆ **New Installation of iFolder 2.1:** Continue or Cancel the installation.

If you click Continue, proceed to [Step 5 on page 32](#).

If you click Cancel, the installation program exits and iFolder server is not installed. You can restart the install at a later time.

- ◆ **Upgrade Installation or Repair of iFolder 2.1:** If you are installing iFolder 2.1 on an existing iFolder server, the Installation Wizard automatically detects it. Proceed to [Step 10 on page 34](#).

- 5** For new iFolder 2.1 installations, read the End User License Agreement, then do one of the following:

- ◆ Agree (click Yes)

The installation program proceeds.

- ◆ Disagree (click No)

The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.

- 6** Specify the directory on the destination NetWare server where you want iFolder server to be installed. Browse to select the drive letter that you mapped in [Step 1 on page 31](#).

- 7** Configure the global settings for the eDirectory LDAP server that your iFolder server uses, then click Next.

- ◆ **LDAP hostname or IP:** Enter the DNS name (such as ldap1.your-domain-name.com) or IP address (such as 192.168.1.1) of the server that acts as your LDAP server.

This might be the same server that you are configuring as your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **Port:** Select the port type, based your security needs, for data exchanges between your LDAP server and your iFolder server.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

If you use Clear Text, the LDAP Group object must be able to allow clear text passwords. To verify this, launch ConsoleOne[®], locate the context where your server resides, right-click the LDAP Group object, click Parameters, and make sure the Allow Clear Text Passwords check box is checked.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Select SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

- ◆ **LDAP Context Where iFolder Admin User Is Located:** Enter the LDAP context where you iFolder Admin User objects are located. For example, o=all.

If you are entering more than one context, separate them with semicolons and with no spaces. For example,

```
o=all;o=novell
```

Do not include spaces between delimiters in the context. For example,

```
o=novell;ou=users,o=novell
```

- 8 Configure the iFolder settings for the NetWare server that will be your iFolder server, then click next.

- ◆ **iFolder Server Host Name or IP:** Enter the DNS name (such as nif1.your-domain-name.com) or the IP address (such as 192.168.1.1) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

If you are planning to create a Novell cluster server, use the DNS name here. For information, see [Step 1 on page 150](#).

To specify a port, append the IP address of the server with a colon followed by the port number. For example, 192.168.1.1:80.

- ◆ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example,

```
admin
```

The iFolder Admin Names are the users who have permission to manage the iFolder server, using the iFolder Management Console. You can assign more than one user ID to be an iFolder administrator. If you have multiple user IDs, separate them with semicolons and with no spaces. For example,

```
admin;jsmith;acatt
```

IMPORTANT: All of the users identified here must exist in the context identified in [Step 7 on page 32](#).

- ◆ **Local iFolder User Database Path:** Specify the path to the directory on the iFolder server where user data for all the iFolder accounts will be stored. For example, *sys:\iFolder* or *nif-user:\iFolder*, where *sys:* or *nif-user:* is the name of the preexisting volume and *iFolder* is the location of iFolder user data.

The default location is *sys:\iFolder* because a *sys:* volume is the only NSS volume known to exist prior to the definition of your storage architecture solution for the NetWare

server. By using a separate volume for user data, you can avoid filling up your sys: volume.

The iFolder installation creates a directory on an existing volume, but it does not create a new volume. You must create the alternate volume prior to installing iFolder. Otherwise, the installation will fail.

Do one of the following:

- ◆ Specify the preexisting volume other than sys: and the directory where you want to store user data. For example, *nif-user:\iFolder*, where *nif-user* is the name of the preexisting volume and *iFolder* is the location of iFolder user data.
- ◆ Specify the default location of sys:\iFolder for now. If desired, you can change the location later by editing the value in the Apache\iFolderServer\httpd_ifolder_nw.conf file.

- 9 Review the settings you provided in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are done, click Next, then go to [Step 11 on page 35](#).

- 10 If a version of iFolder already exists on the server as identified in [Step 4 on page 32](#), you can upgrade, repair, or uninstall that version.

Do one of the following:

- ◆ **Upgrade to iFolder 2.1:** Click Upgrade/Repair, then do one of the following:
 - ◆ **Upgrade from iFolder Standard Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

IMPORTANT: You might need to follow a manual upgrade process if you have a large number of users who have extended characters in their passphrases. You must also follow special precautions if you decide to concurrently use both iFolder 1.x and iFolder 2.1 systems. For information, see [Appendix B, "Upgrading from iFolder Standard Edition to iFolder 2.1," on page 143](#).

To accept, click Yes. The installation continues and uses the current settings of your iFolder 1.x server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

In iFolder 2.1, the iFolder policies are stored in the iFolderSettings object in eDirectory™ instead of the ifolder.xml file. After the upgrade process completes, manually remove the ifolder.xml file from the iFolder data directory. By default, this location is *sys:\ifolder\ifolder.xml*. Replace *sys:\ifolder* with the actual path to your iFolder data directory.

- ◆ **Upgrade from iFolder 2.0 Professional Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

To accept, click Yes. The installation continues and uses the current settings of your iFolder 2.0 server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

- ◆ **Decline the Upgrade:** To decline, click No. Your iFolder server is not upgraded.

- ◆ **Repair iFolder 2.1:** The iFolder Installation Wizard requests that you confirm the repair of iFolder 2.1.

To accept, click Yes. The reinstall continues and uses the current settings of your iFolder 2.1 server as the default settings. iFolder notifies you when the repair installation is complete. User data remains untouched.

To decline, click No. Your iFolder 2.1 server is not repaired.

- ◆ **Uninstall iFolder 2.1:** Click Uninstall. The iFolder Installation Wizard requests that you confirm the uninstall.

To accept, click Yes. The iFolder uninstall process stops the iFolder server and removes all iFolder files and settings. iFolder notifies you when the uninstall is complete. User data remains on the server; you must remove it manually.

To decline, click No. iFolder will not be uninstalled.

- 11** To exit the Installation Wizard, click Finish.
- 12** After the software is installed or upgraded on your NetWare server, you must bring the Apache Web site down and up again to make the changes permanent.

For Apache Web Server 1.3.26 and 1.3.27, at the command prompt, enter

```
nvxadmdn.ncf
```

Allow enough time for the Web server to shut down gracefully, then at the command prompt, enter

```
nvxadmup.ncf
```

After the server restarts, iFolder is active on your system.

If this is a new installation of iFolder, continue to **Step 13 on page 35**. If this is an upgrade, your upgrade is successfully completed.

- 13** If this is a new installation, you must extend the eDirectory schema before you can use the iFolder server.

13a To open the iFolder Management Console, do one of the following:

- ◆ Select the Administer iFolder option on the last window of the iFolder installation process.
- ◆ From a Web browser on your installation workstation, go to the iFolder Management Console, click File > Open, then enter the following URL:

```
https://nifl.your-domain-name.com/iFolderServer/Admin
```

IMPORTANT: This URL is case sensitive.

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

13b Log in to the Global Settings page.

On successful login, iFolder extends the eDirectory schema. This can take several seconds, so expect a 10- to 30-second delay in the response.

When the browser opens to the Global Settings General Information page, the installation is complete.

What's Next

Follow the instructions for configuring and managing your iFolder server in the **Chapter 9, "Using the iFolder Management Console to Configure Your iFolder System," on page 65**. You must enable iFolder services for a user before the user can initialize an iFolder account.

After you provision a user's account for iFolder services, to initialize the iFolder account, a user must log in to the iFolder server, using the iFolder client, the iFolder Java applet available on the iFolder Web site, or NetDrive.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to initialize their iFolder user accounts.

To install the iFolder client on workstations, follow the instructions in the *iFolder 2.1 Quick Start* and the *Novell iFolder 2.1 User Guide*, available on the [Novell iFolder online documentation Web site](http://www.novell.com/documentation/lg/ifolder21/index.html) (<http://www.novell.com/documentation/lg/ifolder21/index.html>).

To install iFolder on additional servers, follow the instructions in “[Configuring iFolder on Additional Servers](#)” on page 77.

For more information about known issues for iFolder servers and workstations, see the *Novell iFolder 2.1 Readme*.

5

Installing iFolder 2.1 on Windows 2000 Server

This section describes how to install the standalone version of Novell® iFolder® 2.1 server software on Microsoft Windows 2000 Service Pack 3, using the following configurations:

Server Operating System	Web Server	LDAP Server
Windows 2000	IIS	Novell eDirectory™
Windows 2000	IIS	Active Directory

For a description of known issues related to installation, see the *Novell iFolder 2.1 Readme*.

See the following sections for installation and configuration information:

- ◆ [“Confirming Prerequisites” on page 37](#)
- ◆ [“Installing iFolder on Windows/IIS/eDirectory” on page 37](#)
- ◆ [“Installing iFolder on Windows/IIS/Active Directory” on page 41](#)
- ◆ [“What’s Next” on page 35](#)

Confirming Prerequisites

Before you install Novell iFolder, make sure you have met the following prerequisites and download requirements:

- ◆ For general iFolder server prerequisites, see [“Prerequisites for All iFolder 2.1 Servers” on page 24](#).
- ◆ For prerequisites particular to Windows 2000 server, see [“Prerequisites for Windows 2000 Servers for iFolder 2.1” on page 26](#).
- ◆ For instructions for downloading the Novell iFolder 2.1 installation program, see [“Download Instructions for iFolder 2.1” on page 27](#).

Installing iFolder on Windows/IIS/eDirectory

This section describes how to install Novell iFolder, using the following configuration:

Server Operating System	Web Server	LDAP Server
Windows 2000	IIS	Novell eDirectory

After you have met the prerequisites for this configuration, you are ready to install iFolder.

- 1 If you plan to use LDAP over SSL, locate a self-signed root certificate (rootcert.der) for your iFolder server.

You can export a self-signed root certificate from your certificate server. For information, see your Windows 2000 Server documentation or visit the [Microsoft Web site \(http://www.microsoft.com\)](http://www.microsoft.com).

Save the rootcert.der file to a location on the iFolder server or to a floppy disk. For example, a:\rootcert.der. Remember this location; you need it in [Step 8 on page 38](#).

- 2 If your IIS server is not currently running, start your IIS server.
- 3 To start the installation, go to the temporary directory where you saved the installation program, then double-click the installation program icon.
- 4 The iFolder Installation Wizard opens on your desktop. Do one of the following:
 - ♦ **New Installation of iFolder 2.1:** Select to either Continue or Cancel the installation.
If you click Continue, proceed to [Step 5 on page 38](#).
If you click Cancel, the installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
 - ♦ **Upgrade Installation or Repair of iFolder 2.1:** If you are installing iFolder 2.1 on an existing iFolder server, the Installation Wizard automatically detects it. Proceed to [Step 11 on page 39](#).
- 5 For new iFolder 2.1 installations, read the End User License Agreement, then do one of the following:
 - ♦ Agree (click Yes)
The installation program proceeds.
 - ♦ Disagree (click No)
The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
- 6 To select Novell eDirectory as your LDAP server, click eDirectory.
TIP: If you have an Active Directory LDAP server and want to install the iFolder server on a Windows 2000 server, follow the installation procedures in ["Installing iFolder on Windows/IIS/Active Directory" on page 41](#).
- 7 Specify the directory on the destination server where you want iFolder server to be installed. Browse to select the drive letter that you mapped in [Step 1 on page 38](#).
- 8 Configure the global settings for the eDirectory LDAP server that your iFolder server uses, then click Next.
 - ♦ **LDAP Host Name or IP:** Specify the DNS name (such as *ldap1.your-domain-name.com*) or IP address (such as *192.168.1.1*) of the server that acts as your LDAP server. Replace *ldap1.your-domain-name.com* or *192.168.1.1* with the actual DNS name or IP address of your LDAP server.
This can be the same server that you are configuring as your iFolder server.
IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.
 - ♦ **Port:** Select the port type, based your security needs, for data exchanges between your LDAP server and your iFolder server.
Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

- ◆ **Root Certificate Path:** If you selected the SSL option, provide the full directory path to your self-signed root certificate you created or identified in [Step 1 on page 38](#).

For example, type a:\rootcert.der if you exported the certificate to a floppy disk.

- ◆ **LDAP Context Where iFolder Admin User Is Located:** Specify the LDAP context. For example, o=all.

9 Configure the iFolder settings for the Windows 2000 server that will be your iFolder server, then click Next.

- ◆ **iFolder Server Host Name or IP:** Specify the DNS name (such as nif1.your-domain-name.com) or the IP address (such as 192.168.1.1) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example, admin.

The iFolder Admin Names are the users who have permission to manage the iFolder server. You can assign multiple users to be iFolder administrators. For multiple Admin Names, separate them with semicolons and with no spaces. For example,

```
administrator;jsmith;acatt
```

IMPORTANT: All of the users identified here must exist in the context identified in [Step 8 on page 38](#).

- ◆ **Local iFolder User Database Path:** Specify the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, *e:\iFolder*, where *e:* is the preexisting volume and *iFolder* is the directory. If desired, you can edit the value later in the Windows Registry.

IMPORTANT: The volume you specify must already exist on the Windows server. The iFolder installation program does not create it for you.

10 Review the settings you provided in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are done, click Next.

11 If a version of iFolder already exists on the server as identified in [Step 4 on page 38](#), do one of the following:

- ◆ **Upgrade to iFolder 2.1:** Click Upgrade/Repair, then do one of the following:
 - ◆ **Upgrade from iFolder Standard Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

To accept, click Yes. The installation continues and uses the current settings of your iFolder 1.x server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

IMPORTANT: You might need to follow a manual upgrade process if you have a large number of users who have extended characters in their passphrases. You must also follow special precautions if you decide to concurrently use both iFolder 1.0x and iFolder 2.1 systems. For information, see [Appendix B, “Upgrading from iFolder Standard Edition to iFolder 2.1,” on page 143.](#)

To decline, click No. Your iFolder server is not upgraded.

- ◆ **Upgrade from iFolder 2.0 Professional Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

To accept, click Yes. The installation continues and uses the current settings of your iFolder 2.0 server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

To decline, click No. Your iFolder server is not upgraded.

- ◆ **Repair iFolder 2.1:** Click Upgrade/Repair. The iFolder Installation Wizard requests that you confirm the repair of iFolder 2.1.

To accept, click Yes. The reinstall continues and uses the current settings of your iFolder 2.1 server as the default settings. iFolder notifies you when the repair installation is complete. User data remains untouched.

To decline, click No. Your iFolder 2.1 server is not repaired.

- ◆ **Uninstall iFolder 2.1:** Click Uninstall. The iFolder Installation Wizard requests that you confirm the uninstall.

To accept, click Yes. The iFolder uninstall process stops the iFolder server and removes all iFolder files and settings. iFolder notifies you when the uninstall is complete. User data remains on the server; you must remove it manually.

To decline, click No. iFolder is not uninstalled.

12 To exit the Installation Wizard, click Finish.

13 Extend the eDirectory schema.

13a Open the iFolder Management Console.

Do one of the following:

- ◆ Select the Administer iFolder option on the last window of the iFolder installation.
- ◆ From a Web browser on your installation workstation, go to the iFolder Management Console by clicking File > Open, then entering the following URL:

```
https://nif1.your-domain-name.com/iFolderServer/Admin
```

IMPORTANT: This address is case sensitive.

Replace *nif1.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

13b Click the Global Settings icon.

13c Log in to the Global Settings page as the Admin user with schema extension privileges.

On successful login, iFolder extends the eDirectory schema. This can take several seconds, so expect a 10- to 30-second delay in the response. When the browser opens to the Global Settings page, the installation is complete.

Installing iFolder on Windows/IIS/Active Directory

This section describes how to install Novell iFolder, using the following configuration:

Server Operating System	Web Server	LDAP Server
Windows 2000	IIS	Active Directory

After you have met all the prerequisites for this configuration, you are ready to install Novell iFolder 2.1.

- 1** If you plan to use LDAP over SSL, locate a self-signed root certificate (rootcert.der) for your iFolder server.

You can export a self-signed root certificate from your certificate server. For information, see your Windows 2000 Server documentation or visit the [Microsoft Web site \(http://www.microsoft.com\)](http://www.microsoft.com).

Save the rootcert.der file to a location on the iFolder server or to a floppy disk. For example, a:\rootcert.der. Remember this location; you need it in [Step 9 on page 42](#).

- 2** If your IIS server is not currently running, start your IIS server.
- 3** To start the installation, go to the temporary directory where you saved the installation program, then double-click the installation program icon.
- 4** The iFolder Installation Wizard opens on your desktop. Do one of the following:
 - ♦ **New Installation of iFolder 2.1:** Continue or Cancel the installation.
If you click Continue, proceed to [Step 5 on page 41](#).
If you click Cancel, the installation program exits and iFolder server is not installed. You can restart the install at a later time.
 - ♦ **Repair of iFolder 2.1:** If you are installing iFolder 2.1 to repair an existing iFolder server, the Installation Wizard automatically detects it. Proceed to [Step 13 on page 43](#).
- 5** For new iFolder 2.1 installations, read the End User License Agreement, then do one of the following:
 - ♦ Agree (click Yes)
The installation program proceeds.
 - ♦ Disagree (click No)
The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
- 6** To select Microsoft Active Directory as your LDAP server, click Active Directory.
NOTE: If you have an eDirectory LDAP server and want to install the iFolder server software on a Windows 2000 server, follow the installation procedures in ["Installing iFolder on Windows/IIS/eDirectory" on page 37](#).
- 7** Select to extend the Active Directory schema, install iFolder, or both by selecting one of the following options:
 - ♦ **Complete Install:** Install the iFolder server and extend the Active Directory schema.
This option requires that you have the necessary credentials as the iFolder administrator and as the schema administrator.

- ◆ **Install iFolder Server Only:** Install the iFolder server.

Before you install iFolder server, you must extend the schema. Run the iFolder installation program with the appropriate schema administrator credentials and follow the Extend Directory Schema Only path.

- ◆ **Extend Directory Schema Only:** Extend the Active Directory schema for an LDAP server.

This option only extends the schema. It does not install the iFolder server software to your iFolder server. Before you can use the iFolder server, you must repeat the installation with the appropriate iFolder administrator credentials to follow the Install iFolder Server Only path.

If a secondary Active Directory LDAP server exists outside the forest where the primary Active Directory LDAP server is installed, you must run the iFolder installation program again and select this option to extend the schema for the secondary Active Directory LDAP server.

- 8 If you chose the Complete Install or Extend Directory Schema Only options in [Step 7 on page 41](#), verify your credentials to extend your Active Directory schema by specifying your schema administrator Distinguished Name and Password.

- ◆ **Distinguished Name:** Type the full context, using commas with no spaces as delimiters. For example, type `cn=administrator,cn=users,dc=your-domain-name,dc=com`.
- ◆ **Password:** Type your schema administrator password in this case-sensitive field.

- 9 Configure the global settings for your Active Directory LDAP server that your iFolder server uses, then click Next.

- ◆ **LDAP Host Name:** Specify the DNS name (such as `ldap1.your-domain-name.com`) of the server that acts as your LDAP server.

Replace `ldap1.your-domain-name.com` with the actual DNS name of your LDAP server.

This might be the same server that you are configuring as your iFolder server.

IMPORTANT: The DNS name you use must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **Port:** Select the port type, based your security needs, for data exchanges between your LDAP server and your iFolder server.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

- ◆ **LDAP Context Where iFolder Admin User Is Located:** Specify the LDAP context. For example, `cn=administrator,cn=users,dc=your-domain-name,dc=com`.

IMPORTANT: Make sure the first context in the list is the one that the iFolder administrator is in.

10 Configure the iFolder settings for your iFolder server, then click Next.

- ◆ **iFolder Server Host Name or IP:** Enter the DNS name (such as `nifl.your-domain-name.com`) or the IP address (such as `192.168.1.1`) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example, `administrator`.

The iFolder Admin Names are the users who have permission to manage the iFolder server, using the iFolder Management Console. You can assign more than one user ID to be an iFolder administrator.

IMPORTANT: All of the users identified here must exist in the context identified in [Step 9 on page 42](#).

If you have multiple user IDs, separate them with semicolons and with no spaces. For example,

```
administrator;jsmith;acatt
```

- ◆ **Local iFolder User Database Path:** Specify the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, `e:\iFolder`, where `e:` is the volume and `iFolder` is the directory. You can edit the value later, if desired, in the Windows Registry.

IMPORTANT: The volume you specify must already exist on the Windows server. The iFolder installation program will not create it for you dynamically.

- ◆ **Install on Which IIS Web Site?:** If there are multiple Web sites on your server, select where you want to install iFolder.

11 Review the settings you entered in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are done, click Next.

12 Log in to Global Settings in the iFolder Management Console to finalize the installation.

12a Open the iFolder Management Console.

Do one of the following:

- ◆ Select the Administer iFolder option on the last window of the iFolder installation process.
- ◆ From a Web browser on your installation workstation, go to the iFolder Management Console, click File > Open, then enter the following URL:

```
https://nifl.your-domain-name.com/iFolderServer/Admin
```

IMPORTANT: This address is case sensitive.

Replace `nifl.your-domain-name.com` with the actual DNS name or IP address of your iFolder server.

12b Click Global Settings, then log in.

When the browser opens to the Global Settings page, the installation is complete.

13 If a version of iFolder 2.1 already exists on the server as identified in [Step 4 on page 41](#), do one of the following:

- ◆ **Repair iFolder 2.1:** Click Upgrade/Repair. The iFolder Installation Wizard requests that you confirm the repair of iFolder 2.1.

To accept, click Yes. The reinstall continues and uses the current settings of your iFolder 2.1 server as the default settings. iFolder notifies you when the repair installation is complete. User data remains untouched.

To decline, click No. Your iFolder 2.1 server is not repaired.

- ◆ **Uninstall iFolder 2.1:** Click Uninstall. The iFolder Installation Wizard requests that you confirm the uninstall of iFolder 2.1.

To accept, click Yes. The iFolder uninstall process stops the iFolder server and removes all iFolder files and settings. iFolder notifies you when the uninstall is complete.

IMPORTANT: User data remains on the server; you must remove it manually. The extensions of the Active Directory schema also remain.

To decline, click No. iFolder 2.1 is not uninstalled.

- ◆ **Extend Directory Schema Only:** Click Extend Directory Schema Only.

Use this option to extend the schema for secondary or additional Active Directory LDAP servers that exist outside the forest where the primary Active Directory LDAP server is installed.

To enter your schema administrator credentials, see [Step 8 on page 42](#).

To enter the information about your secondary LDAP server, see [Step 9 on page 42](#).

14 To exit the Installation Wizard, click Finish.

What's Next

Follow the instructions for configuring and managing your iFolder server in the [Chapter 9, "Using the iFolder Management Console to Configure Your iFolder System,"](#) on page 65.

After you provision a user's account for iFolder services, a user must initialize the account by logging in to the iFolder server, using the iFolder client, the iFolder Java applet available on the iFolder Web site, or NetDrive to initialize an individual iFolder account.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to initialize their iFolder user accounts.

To install the iFolder client on your workstations, follow the instructions in the [iFolder 2.1 Quick Start](#) and the [Novell iFolder 2.1 User Guide](#), available on the [Novell iFolder online documentation Web site](#) (<http://www.novell.com/documentation/lg/ifolder21/index.html>).

To install iFolder on additional servers, follow the instructions in ["Configuring iFolder on Additional Servers"](#) on page 77.

For more information about known issues for iFolder servers and workstations, see the [Novell iFolder 2.1 Readme](#).

For a description of known issues related to installation, see the [Novell iFolder 2.1 Readme](#).

6

Installing iFolder 2.1 on Red Hat Linux 8

This section describes the how to install the standalone version of Novell® iFolder® 2.1 server, using the following configuration:

Server Operating System	Web Server	LDAP Server
Red Hat Linux 8	Apache 2.0.43	Novell eDirectory™

NOTE: The instructions in this section do not apply when installing iFolder 2.1.2, as bundled with Novell Nterprise™ Linux Services. Please follow the prerequisite and installation instructions provided in the *Novell Nterprise Linux Services Installation Guide*.

For a description of known issues related to installation, see the *Novell iFolder 2.1 Readme*.

The following topics are discussed:

- ♦ “Installing Apache 2.0.43 on Red Hat Linux 8” on page 45
- ♦ “Confirming Prerequisites” on page 46
- ♦ “Installing iFolder Server, Using a GUI” on page 46
- ♦ “Installing iFolder Server, Using a Console” on page 49
- ♦ “What’s Next” on page 51

Installing Apache 2.0.43 on Red Hat Linux 8

The iFolder 2.1 installation program ifolder2.1-linux.tgz includes a binary distribution of Apache Web Server 2.0.43.

- 1** If Apache Web Server is installed on your Red Hat Linux 8 server, uninstall it by removing the related program files. For example, at the command prompt enter

```
rm -rf /usr/local/apachex
```

where *apachex* is the directory that contains Apache program files.

- 2** Go to the directory where you downloaded the installation program ifolder2.1-linux.tgz.

For example, at the command prompt, enter

```
cd <path to download location>
```

- 3** To unpack the compressed TAR file, at the command prompt, enter

```
tar -zxvf ifolder2.1-linux.tgz
```

This creates the following directories and files:

- ♦ ifolder2.1-linux/

- ♦ ifolder2.1-install-linux
- ♦ ifolder2.1-linux/apache2-linux/
 - ♦ gencerts.sh
 - ♦ httpd-2.0.43-i686-pc-linux-gnu.readme
 - ♦ httpd-2.0.43-i686-pc-linux-gnu.tar.gz

4 To unpack the Apache software, at the server prompt, enter

```
cd ifolder2.1-linux/apache2-linux/
tar xzfv httpd-2.0.43-i686-pc-linux-gnu.tar.gz
```

5 To install Apache 2.0.43, at the command prompt, enter

```
cd httpd-2.0.43
./install-bindist.sh
```

This installs Apache 2.0.43 in /usr/local/apache2.

6 Edit the /usr/local/apache2/conf/httpd.conf file to add the following line at the end of the file:

```
include /usr/local/ifolder/Server/httpd_ifolder_unix.conf
```

The httpd_ifolder_unix.conf file contains the iFolder server settings.

7 Start Apache by doing one of the following:

- ♦ For clear text, at the command prompt, enter


```
/usr/local/apache2/bin/apachectl start
```
- ♦ For SSL, at the command prompt, enter


```
/usr/local/apache2/bin/apachectl startssl
```

Confirming Prerequisites

Before you install Novell iFolder 2.1, make sure you have met the following prerequisites and download requirements:

- For general iFolder server prerequisites, see [“Prerequisites for All iFolder 2.1 Servers” on page 24](#).
- For prerequisites particular to Linux, see [“Prerequisites for Linux Servers for iFolder 2.1” on page 26](#).
- For instructions for downloading Novell iFolder 2.1, see [“Download Instructions for iFolder 2.1” on page 27](#).

Installing iFolder Server, Using a GUI

After you have met all the prerequisites for this configuration, you are ready to install Novell iFolder 2.1 on your Linux server. This procedure is for a GUI install. For a console install, see [“Installing iFolder Server, Using a Console” on page 49](#).

- 1** Go to the directory where you saved the installation program ifolder2.1-linux.tgz.
- 2** To unpack the compressed TAR file, enter the following line at the command prompt:

```
tar -zxvf ifolder2.1-linux.tgz
```

This creates the following directories and files:

- ◆ ifolder2.1-linux/
 - ◆ ifolder2.1-install-linux
- ◆ ifolder2.1-linux/apache2-linux/
 - ◆ gencerts.sh
 - ◆ httpd-2.0.43-i686-pc-linux-gnu.readme
 - ◆ httpd-2.0.43-i686-pc-linux-gnu.tar.gz

- 3** To begin the iFolder installation, go to the /root/ifolder2.1-linux directory, then enter the following lines at the command prompt:

```
cd /root/ifolder2.1-linux
./ifolder2.1-install-linux
```

This launches a GUI install process.

- 4** Read the End User License Agreement, then click one of the following:

- ◆ **Accept**
Click Next. The installation process proceeds.
- ◆ **Do not accept**
Click Exit. The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.

- 5** Specify the directory location where you want to install iFolder, then click Next. The default path and directory is /usr/local/iFolder.

- 6** Configure the global settings for your eDirectory LDAP server that your iFolder server uses.

- ◆ **LDAP Host Name or IP:** Specify the DNS name (such as ldap1.your-domain-name.com) or IP address (such as 192.168.1.1) of the server that acts as your LDAP server.

For Linux, this is the same server that you are configuring as your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **Port:** Select the port type, based your security needs, for data exchanges between your LDAP server and your iFolder server.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

- ◆ **LDAP Context Where iFolder Admin User Is Located:** Specify the LDAP context. For example, `o=all`.

7 Configure the iFolder settings for your iFolder server, then click Next.

- ◆ **iFolder Server Host Name or IP:** Specify the DNS name (such as `nifl.your-domain-name.com`) or the IP address (such as `192.168.1.1`) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example, `admin`.

The iFolder Admin Names are the users who have permission to manage the iFolder server. You can assign more than one user ID to be an iFolder administrator.

IMPORTANT: All of the users identified here must exist in the context identified in [Step 6 on page 47](#).

If you have multiple user IDs, separate them with semicolons and with no spaces. For example,

```
admin;jsmith;acatt
```

- ◆ **Local iFolder User Database Path:** Specify the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, `usr/local/ifolderdata`. If desired, you can edit this value later in the `usr/local/iFolderServer/httpd_ifolder_unix.conf` file.

IMPORTANT: If you specify another volume name, that volume must already exist on the Linux server. The iFolder installation program will not create it for you.

8 Review the settings you entered in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are satisfied with your settings, click Done.

9 After the software is installed on your Linux server, you must start the Apache Web server to make the changes permanent.

Do one of the following, depending on whether you selected a Clear Text port or SSL port for your iFolder server settings:

- ◆ **Clear Text:** Enter the following from the Linux command prompt:

```
ulimit -n 2048
/usr/local/apache2/bin/apachectl start
```

- ◆ **SSL:** Enter the following lines from the Linux command prompt:

```
ulimit -n 2048
/usr/local/apache2/bin/apachectl startssl
```

10 Extend the eDirectory schema.

10a Open the iFolder Management Console.

Do one of the following:

- ◆ Select the Administer iFolder option on the last window of the iFolder installation.
- ◆ From a Web browser on your installation workstation, go to the iFolder Management Console, click File > Open, then enter the following URL:

`https://nifl.your-domain-name.com/iFolderServer/Admin`

IMPORTANT: This address is case sensitive.

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

10b Click the Global Settings icon.

10c Log in to the Global Settings page as the Admin user.

On successful login, iFolder extends the eDirectory schema. This can take several seconds, so expect a 10- to 30-second delay in the response.

When the browser opens to the Global Settings page, the installation is complete.

Installing iFolder Server, Using a Console

After you have met all the prerequisites for this configuration, you are ready to install Novell iFolder 2.1 on your Linux server. This procedure is for a console install. For a GUI install, see [“Installing iFolder Server, Using a GUI” on page 46](#).

1 Go to the directory where you saved the installation program `ifolder2.1-linux.tgz`.

2 To unpack the compressed TAR file, enter the following line at the command prompt:

```
tar -zxvf ifolder2.1-linux.tgz
```

This creates the following directories and files:

- ◆ `ifolder2.1-linux/`
 - ◆ `ifolder2.1-install-linux`
- ◆ `ifolder2.1-linux/apache2-linux/`
 - ◆ `gencerts.sh`
 - ◆ `httpd-2.0.43-i686-pc-linux-gnu.readme`
 - ◆ `httpd-2.0.43-i686-pc-linux-gnu.tar.gz`

3 To begin the iFolder installation, go to the `/root/ifolder2.1-linux` directory, then enter these lines at the command prompt:

```
cd /root/ifolder2.1-linux  
./ifolder2.1-install-linux -i console
```

This launches a console install process.

4 Read the End User License Agreement, select one of the following, then press Enter:

- ◆ Accept
Proceed to [Step 5 on page 47](#).

- ◆ Do not accept

The installation program exits and the iFolder server is not installed. You can restart the install at a later time.

5 Specify the directory location where you want to install iFolder, then press Enter. The default path and directory is `/usr/local/ifolder`.

6 Complete the Web Server Information for your iFolder server.

6a Specify the iFolder server hostname or IP address, then press Enter.

Type the DNS name (such as nifl.your-domain-name.com) or the IP address (such as 192.168.1.1) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

6b Specify the HTTP and HTTPS ports to use for your iFolder server, then press Enter.

7 Specify the global LDAP Settings for your eDirectory LDAP server.

7a Specify the LDAP hostname or IP address of your LDAP server, then press Enter.

Type the DNS name (such as ldap1.your-domain-name.com) or IP address (such as 192.168.1.1) of the server that acts as your LDAP server.

For Linux, this is the same server that you are configuring as your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

7b Specify the LDAP port type, based on your security needs, for data exchanges between the iFolder server and LDAP server, then press Enter.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections

7c If you selected SSL as your LDAP setting in **Step 7b**, specify the location (full path and directory) of your self-signed root certificate, then press Enter.

7d Specify the LDAP context where the iFolder Admin user is located, then press Enter.

For example, o=all.

8 Specify the iFolder Settings for your iFolder server.

8a Type your Local iFolder User Database Path, then press Enter.

This is the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, usr/local/ifolderdata.

IMPORTANT: If you specify another volume name, that volume must already exist on the Linux server. The iFolder installation program will not create it for you.

8b Specify iFolder Admin Names, then press Enter.

Type the default user ID for the iFolder administrator for this iFolder server. For example, admin.

The iFolder Admin Names are the users who have permission to manage the iFolder server. You can assign more than one user ID to be an iFolder administrator.

IMPORTANT: All of the users identified here must exist in the context identified in [Step 7d on page 50](#).

If you have multiple user IDs, separate them with semicolons and with no spaces. For example,

```
admin;jsmith;acatt
```

- 9** After the software is installed on your Linux server, you must start the Apache Web server to make the changes permanent.

Do one of the following, depending on whether you selected a Clear Text port or SSL port for your iFolder server settings:

- ♦ **Clear Text:** Enter these commands from the Linux command prompt:

```
ulimit -n 2048  
  
/usr/local/apache2/bin/apachectl start
```

- ♦ **SSL:** Enter these commands from the Linux command prompt:

```
ulimit -n 2048  
  
/usr/local/apache2/bin/apachectl startssl
```

- 10** Extend the eDirectory schema.

- 10a** Open the iFolder Management Console.

Do one of the following:

- ♦ Select the Administer iFolder option in the last window of the iFolder installation process.
- ♦ From a Web browser on your installation workstation, go to the iFolder Management Console, click File > Open, then enter the following URL:

```
https://nifl.your-domain-name.com/iFolderServer/Admin
```

IMPORTANT: This address is case sensitive.

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

- 10b** Click the Global Settings icon.

- 10c** Log in to the Global Settings page as the Admin user.

On successful login, iFolder extends the eDirectory schema. This can take several seconds, so expect a 10- to 30-second delay in the response.

When the browser opens to the Global Settings General Information page, the installation is complete.

What's Next

Follow the instructions for configuring and managing your iFolder server in [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,” on page 65](#).

After you provision a user's account for iFolder services, to initialize an iFolder account, a user must log in to the iFolder server, using the iFolder client, the iFolder Web site Login (not the PDA Login), or NetDrive.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to initialize their iFolder user accounts.

To install the iFolder client on your workstations, follow the instructions in the *iFolder 2.1 Quick Start* and the *Novell iFolder 2.1 User Guide*, available on the [Novell iFolder online documentation Web site \(http://www.novell.com/documentation/lg/ifolder21/index.html\)](http://www.novell.com/documentation/lg/ifolder21/index.html).

To install iFolder on additional servers, follow the instructions in “[Configuring iFolder on Additional Servers](#)” on page 77.

For more information about known issues for iFolder servers and workstations, see the *Novell iFolder 2.1 Readme*.

7

Installing iFolder 2.1.2 on Novell Nterprise Linux Services

For instructions on installing Novell® iFolder® 2.1.2 on Novell Nterprise™ Linux™ Services, please follow the prerequisites and installation instructions provided in the *Novell Nterprise Linux Services Installation Guide*.

As bundled with Nterprise Linux Services and later, iFolder 2.1.2 supports the following server configurations:

Server Operating Systems	Web Server	LDAP Server
Red Hat Enterprise Linux AS 2.1	Apache Web Server 2.0.48	Novell eDirectory™ 8.7.3
Red Hat Enterprise Linux ES 2.1		
SUSE Linux Enterprise Server 8.0		

For a description of known issues related to installation, see the *Novell iFolder 2.1 Readme*.

What's Next

Follow the instructions for configuring and managing your iFolder server in [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,”](#) on page 65.

After you provision a user's account for iFolder services, to initialize an iFolder account, a user must log in to the iFolder server, using the iFolder client, the iFolder Web site Login, or NetDrive.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to initialize their iFolder user accounts.

To install the iFolder client on your workstations, follow the instructions in the *iFolder 2.1 Quick Start* and the *Novell iFolder 2.1 User Guide*, available on the [Novell iFolder online documentation Web site \(http://www.novell.com/documentation/lg/ifolder21/index.html\)](http://www.novell.com/documentation/lg/ifolder21/index.html).

To install iFolder on additional servers, follow the instructions in [“Configuring iFolder on Additional Servers”](#) on page 77.

For more information about known issues for iFolder servers and workstations, see the *Novell iFolder 2.1 Readme*.

8

Installing iFolder 2.1.3 on Windows 2003 and Windows 2000 Server

This section describes how to install the standalone version of Novell® iFolder® 2.1.3 server software on Microsoft Windows 2003, using the following configurations:

Server Operating System	Web Server	LDAP Server
Windows 2003	IIS 6.0	Novell eDirectory™ and Active Directory
Windows 2000	IIS 6.0	Novell eDirectory™ and Active Directory

For more information about known issues for iFolder servers and workstations, see the *Novell iFolder 2.1 Readme*.

See the following sections for installation and configuration information:

- ◆ [Confirming Prerequisites \(page 55\)](#)
- ◆ [Installing iFolder on Windows/IIS/eDirectory \(page 55\)](#)
- ◆ [Installing iFolder on Windows/IIS/eDirectory \(page 55\)](#)
- ◆ [What's Next \(page 35\)](#)

Confirming Prerequisites

Before you install Novell iFolder, make sure you have met the following prerequisites and download requirements:

- Windows 2003 server
- IIS 6.0
- For general iFolder server prerequisites, see [“Prerequisites for All iFolder 2.1 Servers” on page 24](#).
- For instructions for downloading the Novell iFolder 2.1 installation program, see [“Download Instructions for iFolder 2.1” on page 27](#).

Installing iFolder on Windows/IIS/eDirectory

This section describes how to install Novell iFolder, using the following configuration:

Server Operating System	Web Server	LDAP Server
Windows 2003	IIS	Novell eDirectory

After you have met the prerequisites for this configuration, you are ready to install iFolder.

- 1 If you plan to use LDAP over SSL, locate a self-signed root certificate (rootcert.der) for your iFolder server.

You can export a self-signed root certificate from your certificate server. For information, see the Windows 2003 Server documentation or visit the [Microsoft Web site \(http://www.microsoft.com\)](http://www.microsoft.com).

Save the rootcert.der file to a location on the iFolder server or to a floppy disk. For example, a:\rootcert.der. Remember this location; you need it in [Step 8](#).

- 2 If the IIS server is not currently running, start it.
- 3 To start the installation, go to the temporary directory where you saved the installation program, then double-click the installation program icon.
- 4 The iFolder Installation Wizard opens on your desktop. Do one of the following:
 - ♦ **New Installation of iFolder 2.1:** Select to either Continue or Cancel the installation.

If you click Continue, proceed to [Step 5](#).

If you click Cancel, the installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
 - ♦ **Upgrade Installation or Repair of iFolder 2.1:** If you are installing iFolder 2.1 on an existing iFolder server, the Installation Wizard automatically detects it. Proceed to [Step 11 on page 58](#).
- 5 For new iFolder 2.1 installations, read the End User License Agreement, then do one of the following:
 - ♦ Agree (click Yes)

The installation program proceeds.
 - ♦ Disagree (click No)

The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
- 6 To select Novell eDirectory as your LDAP server, click eDirectory.

TIP: If you have an Active Directory LDAP server and want to install the iFolder server on a Windows 2003 server, follow the installation procedures in ["Installing iFolder on Windows/IIS/Active Directory" on page 59](#).
- 7 Specify the directory on the destination server where you want iFolder server to be installed. Browse to select the drive letter that you mapped in [Step 1](#).
- 8 Configure the global settings for the eDirectory LDAP server that your iFolder server uses, then click Next.
 - ♦ **LDAP Host Name or IP:** Specify the DNS name (such as *ldap1.your-domain-name.com*) or IP address (such as *192.168.1.1*) of the server that acts as your LDAP server. Replace *ldap1.your-domain-name.com* or *192.168.1.1* with the actual DNS name or IP address of your LDAP server.

This can be the same server that you are configuring as your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **Port:** Select the port type, based on your security needs, for data exchanges between your LDAP server and your iFolder server.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

- ◆ **Root Certificate Path:** If you selected the SSL option, provide the full directory path to your self-signed root certificate you created or identified in [Step 1 on page 56](#).

For example, type a:\rootcert.der if you exported the certificate to a floppy disk.

- ◆ **LDAP Context Where iFolder Admin User Is Located:** Specify the LDAP context. For example, o=all.

- 9 Configure the iFolder settings for the Windows 2003 server that will be your iFolder server, then click Next.

- ◆ **iFolder Server Host Name or IP:** Specify the DNS name (such as nif1.your-domain-name.com) or the IP address (such as 192.168.1.1) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example, admin.

The iFolder Admin Names are the users who have permission to manage the iFolder server. You can assign multiple users to be iFolder administrators. For multiple Admin Names, separate them with semicolons and with no spaces. For example,

```
administrator;jsmith;acatt
```

IMPORTANT: All of the users identified here must have admin privileges and must exist in the context identified in [Step 8 on page 56](#).

- ◆ **Local iFolder User Database Path:** Specify the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, e:\iFolder, where e: is the preexisting volume and iFolder is the directory. If desired, you can edit the value later in the Windows Registry.

IMPORTANT: The volume you specify must already exist on the Windows server. The iFolder installation program does not create it for you.

- ◆ **Install on Which IIS Web Site?:** If there are multiple Web sites on your server, select where you want to install iFolder.

- 10** Review the settings you provided in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are done, click Next.

- 11** If a version of iFolder already exists on the server as identified in [Step 4 on page 56](#), do one of the following:

- ◆ **Upgrade to iFolder 2.1:** Click Upgrade/Repair, then do one of the following:
 - ◆ **Upgrade from iFolder Standard Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

To accept, click Yes. The installation continues and uses the current settings of your iFolder 1.x server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

IMPORTANT: You might need to follow a manual upgrade process if you have a large number of users who have extended characters in their passphrases. You must also follow special precautions if you decide to concurrently use both iFolder 1.0x and iFolder 2.1 systems. For information, see [Appendix B, “Upgrading from iFolder Standard Edition to iFolder 2.1,” on page 143](#).

To decline, click No. Your iFolder server is not upgraded.

- ◆ **Upgrade from iFolder 2.0 Professional Edition:** The iFolder Installation Wizard requests that you confirm the upgrade to iFolder 2.1.

To accept, click Yes. The installation continues and uses the current settings of your iFolder 2.0 server as the default settings for iFolder 2.1. iFolder notifies you when the upgrade installation is complete. User data remains untouched.

To decline, click No. Your iFolder server is not upgraded.

- ◆ **Repair iFolder 2.1:** Click Upgrade/Repair. The iFolder Installation Wizard requests that you confirm the repair of iFolder 2.1.

To accept, click Yes. The reinstall continues and uses the current settings of your iFolder 2.1 server as the default settings. iFolder notifies you when the repair installation is complete. User data remains untouched.

To decline, click No. Your iFolder 2.1 server is not repaired.

- ◆ **Uninstall iFolder 2.1:** Click Uninstall. The iFolder Installation Wizard requests that you confirm the uninstall.

To accept, click Yes. The iFolder uninstall process stops the iFolder services and removes all iFolder files and settings. iFolder notifies you when the uninstall is complete. User data remains on the server; you must remove it manually.

To decline, click No. iFolder is not uninstalled.

- 12** To exit the Installation Wizard, click Finish.

- 13** Extend the eDirectory schema.

- 13a** Open the iFolder Management Console.

Do one of the following:

- ◆ Select the Administer iFolder option on the last window of the iFolder installation.
- ◆ From a Web browser on your installation workstation, go to the iFolder Management Console by clicking File > Open, then entering the following URL:

`https://nif1.your-domain-name.com/iFolderServer/Admin`

IMPORTANT: This address is case sensitive.

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

13b Click the Global Settings icon.

13c Log in to the Global Settings page as the Admin user with schema extension privileges.

On successful login, iFolder extends the eDirectory schema. This can take several seconds, so expect a 10- to 30-second delay in the response. When the browser opens to the Global Settings page, the installation is complete.

Installing iFolder on Windows/IIS/Active Directory

This section describes how to install Novell iFolder, using the following configuration:

Server Operating System	Web Server	LDAP Server
Windows 2003	IIS	Active Directory

After you have met all the prerequisites for this configuration, you are ready to install Novell iFolder 2.1.

- 1** If the IIS server is not currently running, start it.
- 2** To start the installation, go to the temporary directory where you saved the installation program, then double-click the installation program icon.
- 3** The iFolder Installation Wizard opens on your desktop. Do one of the following:
 - ♦ **New Installation of iFolder 2.1:** Continue or Cancel the installation.
If you click Continue, proceed to [Step 4 on page 59](#).
If you click Cancel, the installation program exits and iFolder server is not installed. You can restart the install at a later time.
 - ♦ **Repair of iFolder 2.1:** If you are installing iFolder 2.1 to repair an existing iFolder server, the Installation Wizard automatically detects it. Proceed to [Step 12 on page 62](#).
- 4** For new iFolder 2.1 installations, read the End User License Agreement, then do one of the following:
 - ♦ Agree (click Yes)
The installation program proceeds.
 - ♦ Disagree (click No)
The installation program exits and the iFolder server is not installed. You can restart the installation at a later time.
- 5** To select Microsoft Active Directory as your LDAP server, click Active Directory.
NOTE: If you have an eDirectory LDAP server and want to install the iFolder server software on a Windows 2003 server, follow the installation procedures in ["Installing iFolder on Windows/IIS/eDirectory" on page 55](#).
- 6** Select to extend the Active Directory schema, install iFolder, or both by selecting one of the following options:
 - ♦ **Complete Install:** Install the iFolder server and extend the Active Directory schema.

This option requires that you have the necessary credentials as the iFolder administrator and as the schema administrator.

- ◆ **Install iFolder Server Only:** Install the iFolder server.

Before you install iFolder server, you must extend the schema. Run the iFolder installation program with the appropriate schema administrator credentials and follow the Extend Directory Schema Only path.

- ◆ **Extend Directory Schema Only:** Extend the Active Directory schema for an LDAP server.

This option only extends the schema. It does not install the iFolder server software to your iFolder server. Before you can use the iFolder server, you must repeat the installation with the appropriate iFolder administrator credentials to follow the Install iFolder Server Only path.

If a secondary Active Directory LDAP server exists outside the forest where the primary Active Directory LDAP server is installed, you must run the iFolder installation program again and select this option to extend the schema for the secondary Active Directory LDAP server.

- 7** If you chose the Complete Install or Extend Directory Schema Only options in [Step 6 on page 59](#), verify your credentials to extend your Active Directory schema by specifying your schema administrator Distinguished Name and Password.

- ◆ **Distinguished Name:** Type the full context, using commas with no spaces as delimiters. For example, type `cn=administrator,cn=users,dc=your-domain-name,dc=com`.
- ◆ **Password:** Type your schema administrator password in this case-sensitive field.

- 8** Configure the global settings for your Active Directory LDAP server that your iFolder server uses, then click Next.

- ◆ **LDAP Host Name:** Specify the DNS name (such as `ldap1.your-domain-name.com`) of the server that acts as your LDAP server.

Replace `ldap1.your-domain-name.com` with the actual DNS name of your LDAP server.

This might be the same server that you are configuring as your iFolder server.

IMPORTANT: The DNS name you use must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ◆ **Port:** Select the port type, based on your security needs, for data exchanges between your LDAP server and your iFolder server.

Select one of the following methods:

- ◆ **Clear Text:** Specify any valid TCP port number to use for Clear Text exchanges. By default, Port 389 is used for Clear Text.

Use Clear Text if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Clear Text is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

- ◆ **SSL:** Specify any valid TCP port number to use for SSL exchanges. By default, Port 636 is used for SSL.

Use SSL if you want to use SSL exchanges to provide your network with encryption and security when data is transferred across network connections.

In Active Directory, LDAP over SSL is not enabled by default. If you select 636 as the LDAP port during installation, ensure that LDAP over SSL is enabled and the server is listening on the port. Otherwise the schema extension will fail.

- ♦ **LDAP Context Where iFolder Admin User Is Located:** Specify the LDAP context. For example, `cn=administrator,cn=users,dc=your-domain-name,dc=com`.

IMPORTANT: Make sure the first context in the list is the one that the iFolder administrator is in.

9 Configure the iFolder settings for your iFolder server, then click Next.

- ♦ **iFolder Server Host Name or IP:** Enter the DNS name (such as `nif1.your-domain-name.com`) or the IP address (such as `192.168.1.1`) to use for your iFolder server.

IMPORTANT: If you use a DNS name, that name must already exist as an entry on your DNS server and point to the IP address of the destination server.

- ♦ **iFolder Admin Names:** Specify the default user ID for the iFolder administrator for this iFolder server. For example, `administrator`.

The iFolder Admin Names are the users who have permission to manage the iFolder server, using the iFolder Management Console. You can assign more than one user ID to be an iFolder administrator.

IMPORTANT: All of the users identified here must exist in the context identified in [Step 8 on page 60](#).

If you have multiple user IDs, separate them with semicolons and with no spaces. For example,

```
administrator;jsmith;acatt
```

- ♦ **Local iFolder User Database Path:** Specify the path on the iFolder server where user data for all the iFolder accounts will be stored. For example, `e:\iFolder`, where `e:` is the volume and `iFolder` is the directory. You can edit the value later, if desired, in the Windows Registry.

IMPORTANT: The volume you specify must already exist on the Windows server. The iFolder installation program will not create it for you dynamically.

- ♦ **Install on Which IIS Web Site?:** If there are multiple Web sites on your server, select where you want to install iFolder.

10 Review the settings you entered in the previous steps. To return to previous pages and change the settings, click Back and repeat the steps, as necessary.

When you are done, click Next.

11 Log in to Global Settings in the iFolder Management Console to finalize the installation.

11a Open the iFolder Management Console.

Do one of the following:

- ♦ Select the Administer iFolder option on the last window of the iFolder installation process.
- ♦ From a Web browser on your installation workstation, go to the iFolder Management Console, click File > Open, then enter the following URL:

```
https://nif1.your-domain-name.com/iFolderServer/Admin
```

IMPORTANT: This address is case sensitive.

Replace `nif1.your-domain-name.com` with the actual DNS name or IP address of your iFolder server.

11b Click Global Settings, then log in.

When the browser opens to the Global Settings page, the installation is complete.

12 If a version of iFolder 2.1 already exists on the server as identified in [Step 3 on page 59](#), do one of the following:

- ◆ **Repair iFolder 2.1:** Click Upgrade/Repair. The iFolder Installation Wizard requests that you confirm the repair of iFolder 2.1.

To accept, click Yes. The reinstall continues and uses the current settings of your iFolder 2.1 server as the default settings. iFolder notifies you when the repair installation is complete. User data remains untouched.

To decline, click No. Your iFolder 2.1 server is not repaired.

- ◆ **Uninstall iFolder 2.1:** Click Uninstall. The iFolder Installation Wizard requests that you confirm the uninstall of iFolder 2.1.

To accept, click Yes. The iFolder uninstall process stops the iFolder server and removes all iFolder files and settings. iFolder notifies you when the uninstall is complete.

IMPORTANT: User data remains on the server; you must remove it manually. The extensions of the Active Directory schema also remain.

To decline, click No. iFolder 2.1 is not uninstalled.

- ◆ **Extend Directory Schema Only:** Click Extend Directory Schema Only.

Use this option to extend the schema for secondary or additional Active Directory LDAP servers that exist outside the forest where the primary Active Directory LDAP server is installed.

To enter your schema administrator credentials, see [Step 8 on page 42](#).

To enter the information about your secondary LDAP server, see [Step 9 on page 42](#).

13 To exit the Installation Wizard, click Finish.

Post-Install Procedures

IIS 5.x has a wildcard MIME mapping that permits IIS to serve any file regardless of its extension. IIS 6.0 does not include this wildcard character MIME mapping and does not serve any type of extension that is not defined at the MimeMap node in the IIS metabase.

For more information, see the [Microsoft* Support Web Site \(http://support.microsoft.com/default.aspx?scid=kb;en-us;326965\)](http://support.microsoft.com/default.aspx?scid=kb;en-us;326965).

After installing iFolder on IIS 6.0, you must include the MIME mapping to allow it to serve .dat files. To do this:

- 1** Open the IIS Microsoft Management Console (MMC), right-click the update virtual directory, and then click Properties.
- 2** Select the HTTP Headers tab > click MIME Types.
- 3** Click New > In the Extension box, enable wildcard mapping by entering the following:
. *
- 4** In the MIME Type box, enter the following:
application/octet-stream
- 5** Apply the new settings, and then restart the World Wide Web Publishing Service.

The update directory now serves files with any file extension.

What's Next

Follow the instructions for configuring and managing your iFolder server in the [Chapter 9, “Using the iFolder Management Console to Configure Your iFolder System,”](#) on page 65.

After you provision a user's account for iFolder services, a user must initialize the account by logging in to the iFolder server, using the iFolder client, the iFolder Java applet available on the iFolder Web site, or NetDrive to initialize an individual iFolder account.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to initialize their iFolder user accounts.

To install the iFolder client on your workstations, follow the instructions in the [iFolder 2.1 Quick Start](#) and the [Novell iFolder 2.1 User Guide](#), available on the [Novell iFolder online documentation Web site \(http://www.novell.com/documentation/lg/ifolder21/index.html\)](#).

To install iFolder on additional servers, follow the instructions in [“Configuring iFolder on Additional Servers”](#) on page 77.

9

Using the iFolder Management Console to Configure Your iFolder System

The Novell® iFolder® Management Console is a Web-based, remote management tool used to configure global and user policies, manage user accounts, monitor performance, and generate reports for your iFolder system.

This section covers the following topics for managing Novell iFolder, using the iFolder Management Console:

- ♦ “Accessing iFolder Web Interfaces” on page 65
- ♦ “Configuring Your First iFolder Server” on page 69
- ♦ “Configuring iFolder on Additional Servers” on page 77

Accessing iFolder Web Interfaces

After iFolder has been installed on your server, you have access to two Web interfaces: the iFolder Management Console for administrators and the iFolder Web site for users. Novell NetStorage is also compatible with iFolder. You can configure NetStorage to provide access for your users to their iFolder data on the iFolder server, using a Web browser.

This section describes the following topics:

- ♦ “The iFolder Management Console for Administrators” on page 65
- ♦ “The iFolder Web Site for Users” on page 66
- ♦ “The Novell NetStorage Interface for iFolder 2.1.x” on page 68

The iFolder Management Console for Administrators

The iFolder Management Console lets you manage your iFolder servers, the LDAP servers assigned to authenticate iFolder activity, and your users’ iFolder accounts.

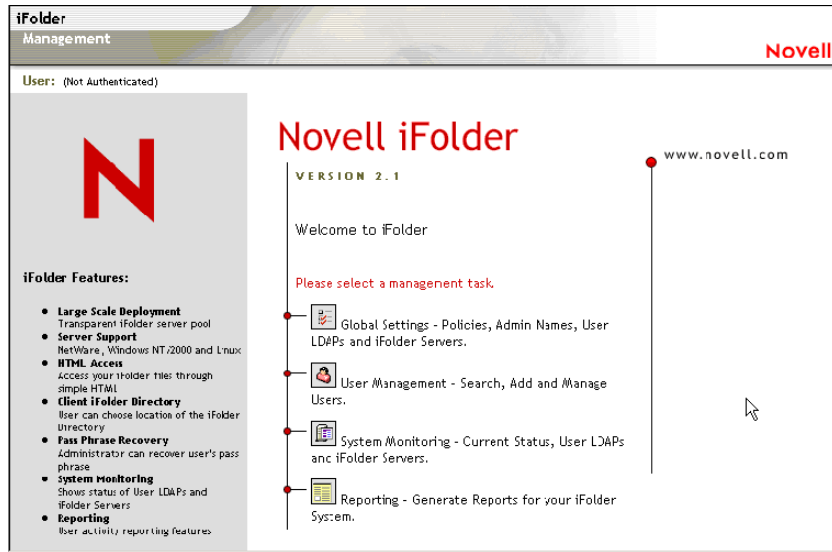
To access the iFolder Management Console, enter the following URL into your Web browser:

`https://nifl.your-domain-name.com/iFolderServer/Admin`

Replace *nifl.your-domain-name.com* with the IP address or the DNS name of your iFolder server.

For more information, see “Logging In to the iFolder Management Console” on page 70.

Figure 2 iFolder Management Console



The iFolder Web Site for Users

The iFolder Web site is where users can download the iFolder client and access their iFolder files via a Web browser, using the iFolder Java applet. The page contains links to do the iFolder client software for download, the *Novell iFolder Quick Start*, iFolder client Help, and other important information about Novell iFolder. You can modify this page to fit your company's internal needs.

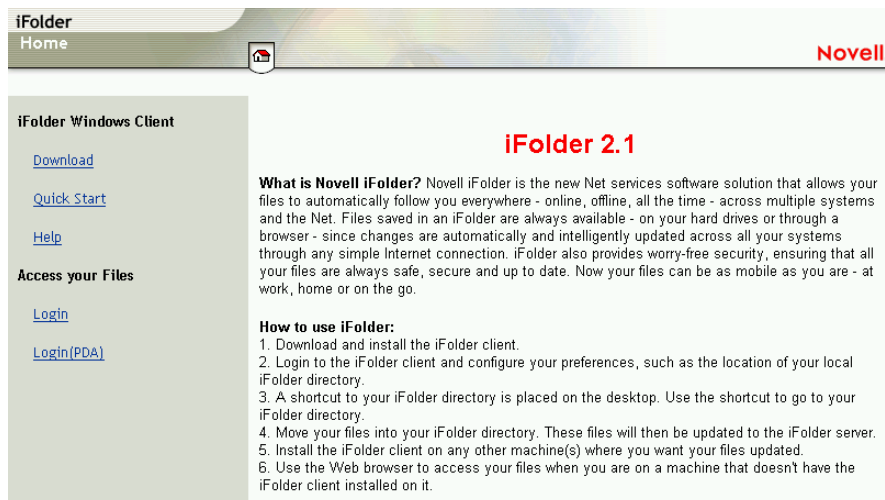
To access the default iFolder Web site, enter the following URL into your Web browser:

`https://nif1.your-domain-name.com/iFolder`

Replace *nif1.your-domain-name.com* with the IP address or the DNS name of your iFolder server.

After installing the iFolder client on a workstation, users can reach this site by right-clicking the iFolder icon in the system tray, then clicking iFolder Web site.

Figure 3 Default iFolder Client Web Site



iFolder Java Applet

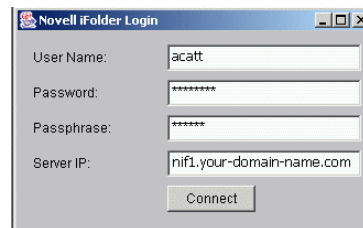
The Java applet is a simple Web-based browser that allows users to access their iFolder data on the server, without using the iFolder client. Users can create, upload, download, rename, and delete files, refresh the file listing, and log out of iFolder. In this folder view, click the plus icons to expand the folders.

To access iFolder data on the server, using the Java applet in your Web browser:

- 1 Go to the iFolder Web site.
- 2 Click Login in the left navigator.

This opens the Java applet login dialog.

Figure 4 Java Applet Login Dialog for User File Access



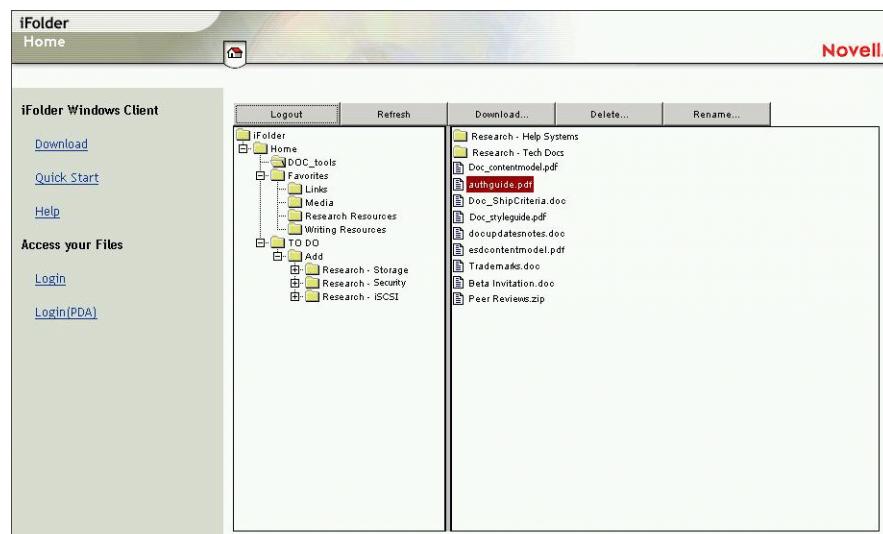
- 3 Type your username, password, passphrase (if needed), and iFolder server IP address (if different than the default address).

If the iFolder administrator has moved your iFolder account to different physical iFolder server since your account was first created, replace the default address with the known one. Otherwise, the login fails and iFolder returns a message with the correct iFolder server IP address.

If your first login attempt fails, repeat **Step 1** to **Step 3** and type the new iFolder server IP address in place of the default one.

- 4 Click Connect.

Figure 5 The iFolder Java Applet Interface for User File Access



iFolder 2.1 HTML Interface for PDA Access

In iFolder 2.1 only, users can access iFolder files, using the HTML interface in a Web browser:

1 To open the HTML login page, use one of these methods:

- ◆ Go to the iFolder Web site, then click Login (PDA).
- ◆ Enter the following URL in a Web browser:

```
https://nifl.your-domain-name.com/iFolder/MyFiles
```

Replace *nifl.your-domain-name.com* with the IP address or the DNS name of your iFolder server.

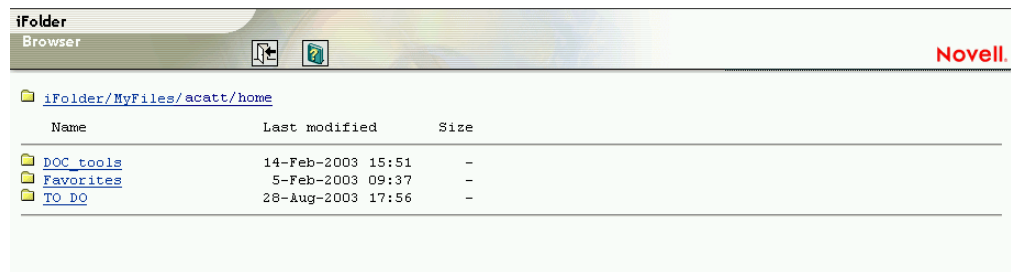
This opens the HTML login page.

2 Enter your username, password, and passphrase (if needed.)

3 Click Login.

This opens the HTML interface in your Web browser. Click the link beside the folder to expand the folders. Click the link beside the file to download the file to your local workstation, laptop, or handheld device.

Figure 6 The iFolder HTML Interface for User File Access



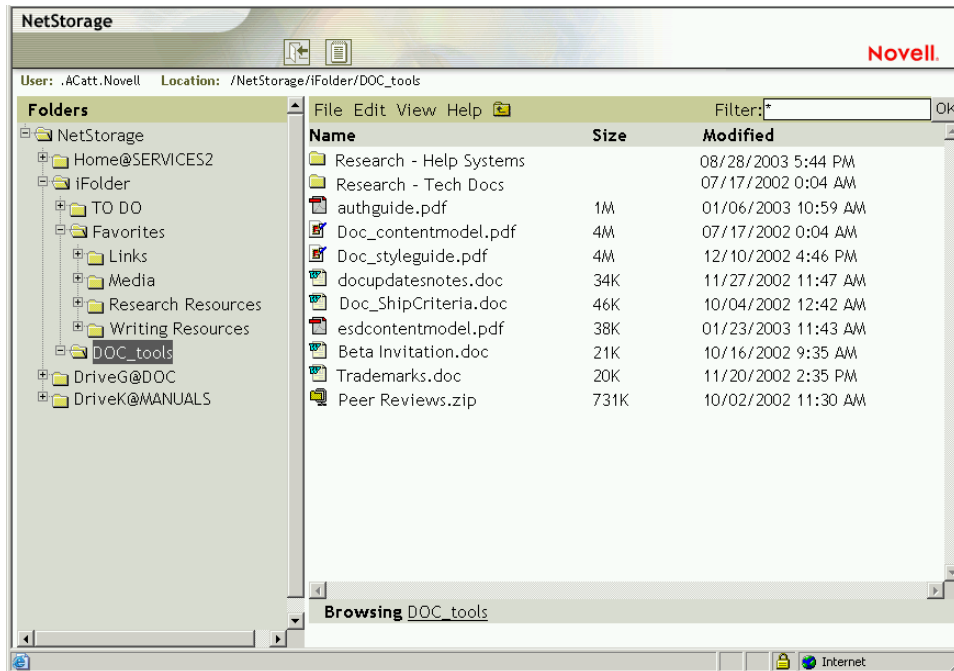
The Novell NetStorage Interface for iFolder 2.1.x

If you have Novell NetStorage services installed in your network, you can configure NetStorage to support iFolder data access. Novell NetStorage is available in the bundled release of iFolder 2.1.x with NetWare[®] 6.5 and later and with Novell Nterprise[™] Linux Services 1.0 and later.

Users can access iFolder data, using the NetStorage folder view, by entering the following URL in a Web browser:

```
https://nifl.your-domain-name.com/NetStorage
```

Figure 7 Example of the Novell NetStorage Folder View

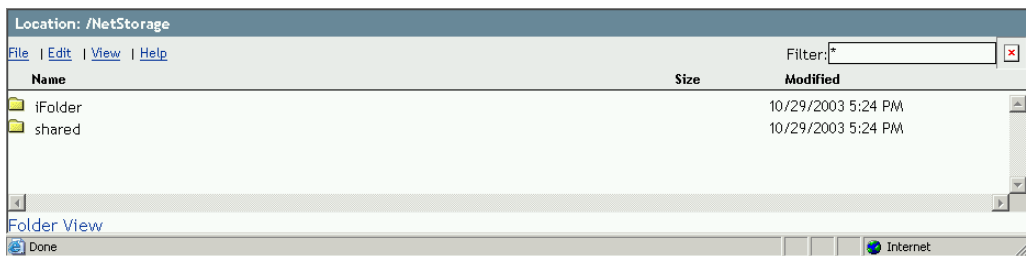


Users can access iFolder data, using the NetStorage text view, by entering the following URL in a Web browser:

`https://nif1.your-domain-name.com/oneNet/NetStorage`

IMPORTANT: The NetStorage folder view and text view URLs are case sensitive.

Figure 8 Example of the Novell NetStorage Text View



For information about installing and configuring Novell NetStorage on your network, see the *NetWare 6.5 NetStorage Administration Guide*.

Configuring Your First iFolder Server

This section describes how to configure your first Novell iFolder server by performing the following tasks:

1. “Logging In to the iFolder Management Console” on page 70
2. “Identifying the iFolder Objects in the Schema” on page 72
3. “Defining Your User Contexts” on page 72

4. “Provisioning User Objects for iFolder Services” on page 73
5. “Configuring Your User LDAP Server” on page 76
6. “What’s Next” on page 77

Logging In to the iFolder Management Console

- 1 To open the iFolder Management Console, use one of the following methods, depending on your version of iFolder:

- ◆ For iFolder 2.1, open your Web browser to the following URL:

`https://nifl.your-domain-name.com/iFolderServer/Admin`

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server. If you specified different ports during the installation, append the IP address of the server with a colon followed by the port number. For example,

`https://192.168.1.1:80/iFolderServer/Admin`

IMPORTANT: The iFolder Management Console URL is case sensitive.

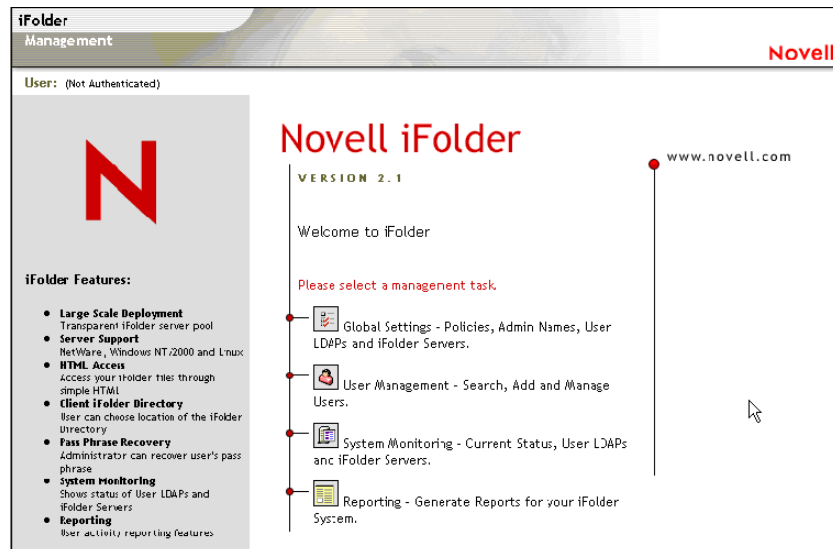
- ◆ For iFolder 2.1.x, you can also access the iFolder Management Console from Novell iManager. Open your Web browser to iManager to the following URL:


`https://nifl.your-domain-name.com/nps/iManager.html`

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.

Log in to iManager, then click the iFolder role in the left navigator. For information about iManager, see the *Novell iManager 2.0.x Administration Guide*.

Figure 9 iFolder Management Console Home Page

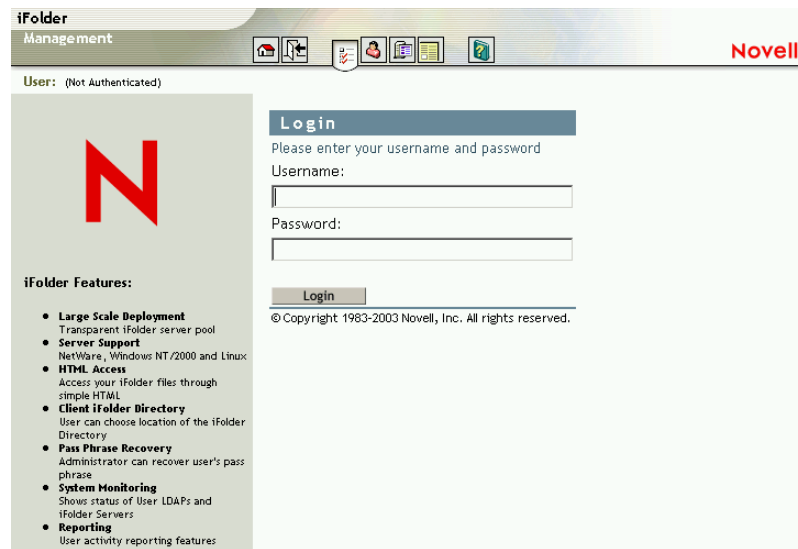


- 2 To log in to the iFolder Management Console, click Global Settings , then log in with your iFolder administrator username and password.

For Novell eDirectory™ environments, most installation scenarios require that you log in to the iFolder Management Console to extend the schema and complete the installation. However, in some installations scenarios, iFolder completes the schema extension during the installation process. For example, the iFolder installation extends the schema for Novell eDirectory configurations with iFolder 2.1.2 in Novell Nterprise™ Linux Services and for Microsoft Active Directory configurations with iFolder 2.1. See your installation instructions to determine which case applies to you.

If applicable, the first time you log in to the iFolder Management Console after the installation, you must log in as a user that has schema extension privileges. The initial login might take 10 to 30 seconds while iFolder extends the schema, creates objects, and writes attributes. Server objects are created in the Admin LDAP context that you specified during the iFolder installation.

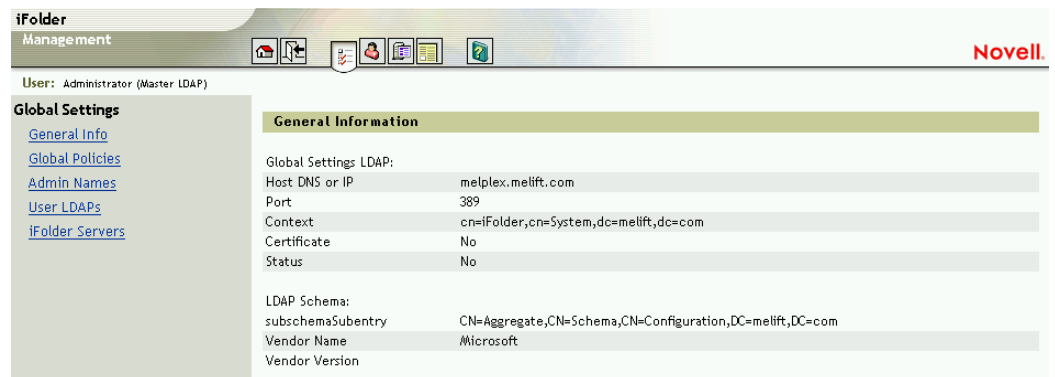
Figure 10 iFolder Management Console > Global Settings > Login



3 When the General Information page opens, your login is successful.

Successful login completes the server installation for your first server. The schema extension is not repeated on subsequent logins.

Figure 11 Global Settings > {Login} > General Information



Use this procedure to log in to the iFolder Management Console at any time to manage the iFolder server.

To optionally verify the schema extension, see [“Identifying the iFolder Objects in the Schema” on page 72](#).

To continue configuring your first iFolder server, see [“Defining Your User Contexts” on page 72](#).

Identifying the iFolder Objects in the Schema

The iFolder installation extends your LDAP schema to include the following objects:

- ◆ iFolder Settings object (iFolder_Settings) with the following attributes:
 - ◆ iFolderAdminNames
 - ◆ iFolderClientXML
 - ◆ iFolderDefaultServerName
 - ◆ iFolderkey1
 - ◆ iFolderkey2
 - ◆ iFolderServerXML
- ◆ iFolder User LDAP object (iFolder_ldap01) with the following attributes:
 - ◆ iFolderLDAPCertificate
 - ◆ iFolderLDAPContexts
 - ◆ iFolderLDAPDNSorIP
 - ◆ iFolderLDAPPort
- ◆ iFolder Server object (iFolder_server01) with the following attributes:
 - ◆ iFolderServerDNSorIP
 - ◆ iFolderServerSecureDNSorIP

The schema extension and the newly created objects enable your iFolder server to run with the LDAP settings you specified during the installation. These settings are used as your Global Settings LDAP. For more information, see [“LDAP Directories” on page 18](#).

The iFolder_Settings object is created only once and it holds all the Global LDAP settings. However, for every additional LDAP server and iFolder server that you add through the iFolder Management Console, a new iFolder_ldap and iFolder_server object are created that correspond to the new LDAP or iFolder server.

IMPORTANT: All iFolder management must be done through the iFolder Management Console.

To continue configuring an iFolder server, see [“Defining Your User Contexts” on page 72](#).

Defining Your User Contexts

During the iFolder installation, you specified the LDAP context of your Admin objects. For authentication purposes, you must now define the context where your users reside. After you define your user context, all the User objects that reside in the specified context appear in the iFolder Management Console.

As you add iFolder servers to your iFolder system, you might define different or the same user contexts for each server.

TIP: If you need to add a User object to your context, you can use the User Management > Add Users option in the iFolder Management Console.

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console”](#) on page 70.
- 2 Click Global Settings > User LDAPs, then click the server name of the server you want to manage.

Figure 12 Global Settings > User LDAPs > {Server Name} > User Contexts for This Server



- 3 From the Contexts listed, select the context where your users are located. iFolder searches the contexts you specify when authenticating users.
- 4 If you want LDAP to search subcontexts below the specified context during user authentication, check the Search Subcontexts check box.
- 5 If you want to add additional contexts to search, click Add.
- 6 Click Update to save these default user authentication settings.

To continue configuring an iFolder server, see [“Provisioning User Objects for iFolder Services”](#) on page 73.

Provisioning User Objects for iFolder Services

Before users can create and use iFolder accounts, you must first enable users' User objects on the LDAP server for iFolder services. Users can have only one account associated with a given user ID. However, any given user can have multiple accounts under different user IDs.

When you log in for the first time to the iFolder Management Console and click User Management, iFolder extends the User LDAP directory's schema to include the LDAP User Object. An Aux Class of iFolderUser and the following attributes are also assigned to each User object:

- ♦ iFolderServerName

- ◆ iFolderQuota

Only enable iFolder services for the usernames you want to give iFolder privileges. iFolder does not create and activate the associated iFolder account until the user first logs in to the iFolder server, using the iFolder client, the iFolder Java applet, or NetDrive.

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to create their iFolder user accounts.

After you provision the User objects, instruct your users to log in to the iFolder server to create an iFolder account.

To enable iFolder services for users:

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70.](#)

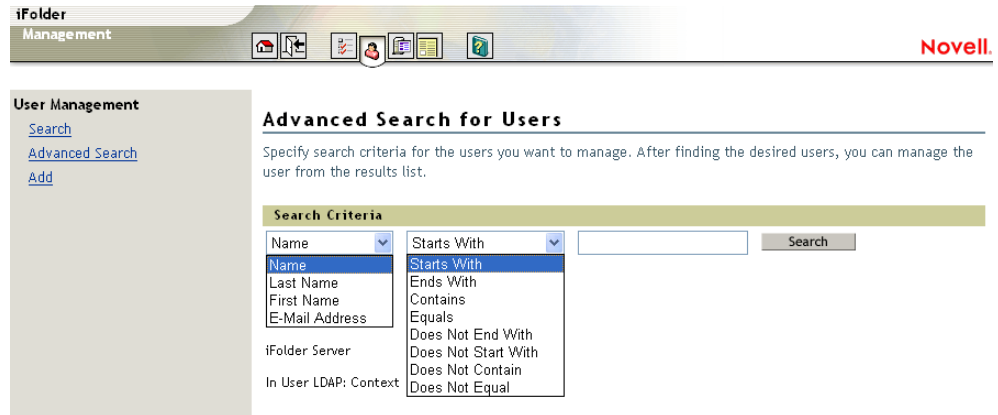
The first time you log in to User Management, iFolder extends the User LDAP’s schema. You must log in as a user with schema extension rights for the User LDAP servers you want to use for authenticating iFolder users on the specified server.

- 2 Click User Management .

- 3 Use the Advanced Search for Users, as shown in [Figure 13](#), to obtain a list of users whose accounts you want to manage.

IMPORTANT: If an Admin object resides on multiple LDAP servers, do not enable this object as an iFolder user. If you have only one LDAP server and one corresponding Admin user, you can enable this object; however, we do not recommend it.

Figure 13 Search Criteria for Advanced Searches



The iFolder Management Console provides an Advanced Search feature. You can use the following search criteria to narrow your search:

User Category Syntax	Operator Syntax
Name	Starts With
Last Name	Ends With
First Name	Contains

User Category Syntax	Operator Syntax
E-mail Address	Equals
User Type (All Users, iFolder Users, Non-iFolder Users)	Does Not Start With
iFolder Server (All, select from list)	Does Not End With
In User LDAP: Context (All, select from list)	Does Not Contain
	Does Not Equal

- 4** Enable or disable iFolder services for users, using one of these methods:
- ◆ **Single User:** Click the username link, then click Enable or Disable to change the iFolder privileges for the selected user.
 - ◆ **Multiple Users:** From the Advanced Search results, click Enable or Disable iFolder services for all of the users found that met the search criteria.
 - ◆ **Subset of Multiple Users:** From the Advanced Search results, check the check box beside any user whose status you want to change, then click Enable or Disable. The provisioning status changes for only those specified users.
 - ◆ **Subset of Multiple Users on a Specific iFolder Server:** From the Advanced Search results, select the server from the iFolder Server drop-down list, then click Enable or Disable. The provisioning status changes for only those users assigned to the specified server.

Figure 14 User Management > Advanced Search > Search Results

The screenshot shows the iFolder Management console interface. At the top, there is a navigation bar with the iFolder logo and the Novell logo. Below the navigation bar, the user is identified as 'Administrator (Master LDAP)'. The main content area is titled 'Advanced Search for Users' and includes a search criteria section with the following fields: Name (dropdown), Starts With (dropdown), User Type (radio buttons for All Users, iFolder Users, Non-iFolder Users), iFolder Server (dropdown set to All), and In User LDAP: Context (dropdown set to All). Below the search criteria, there are buttons for 'Enable' and 'Disable' with options for 'checked users as iFolder users', 'all found users as iFolder users', and 'all found iFolder users'. A list of users is displayed below, including administrator, krbtgt, tsinternetuser, guest, oliveoil, wimpy, iusr_melplex, and popeye.

If your first iFolder server is not also your LDAP server, continue with the next section, “[Configuring Your User LDAP Server](#).”

If your first iFolder server is also your LDAP server, the basic configuration tasks are complete. See “[What’s Next](#)” on page 77.

Configuring Your User LDAP Server

Novell iFolder uses your user LDAP directory to authenticate users on the iFolder server. The User LDAP directory stores the iFolder Server Name and the Disk Quota attribute of User objects for user accounts enabled with iFolder services.

If LDAP and iFolder are not running on the same server, configure the LDAP server information for iFolder:

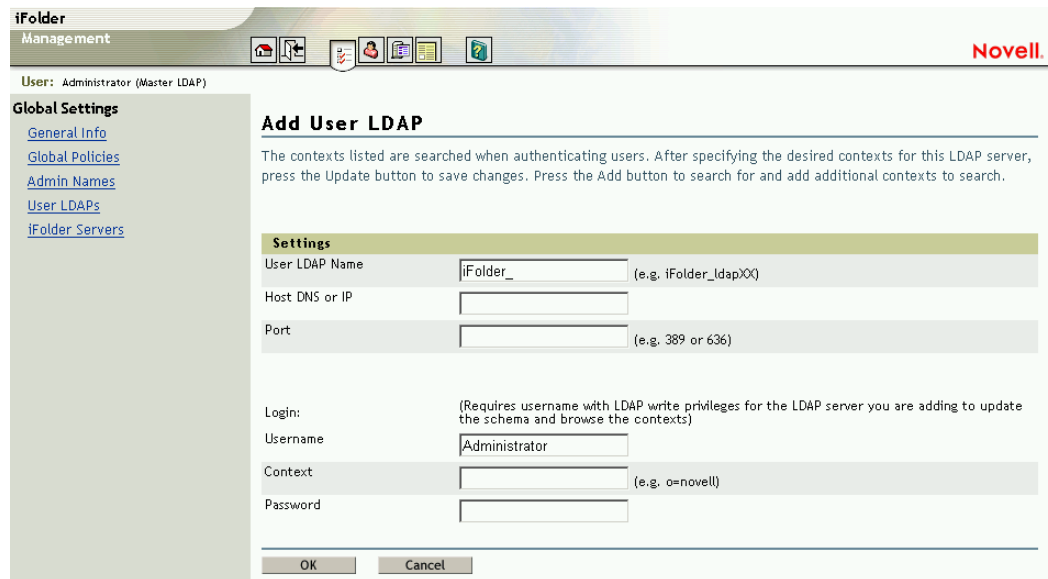
- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click log in. For details, see “[Logging In to the iFolder Management Console](#)” on page 70.

You must log in with an admin username that has write privileges to the LDAP server or servers you plan to modify or add.

- 2 Click Global Settings > User LDAPs, then click Add.

This opens the Add User LDAP subtask.

Figure 15 Global Settings > User LDAPs > Add > Add User LDAP



The screenshot shows the 'Add User LDAP' configuration window in the iFolder Management Console. The window title is 'iFolder Management' and the user is logged in as 'Administrator (Master LDAP)'. The left sidebar shows 'Global Settings' with links for 'General Info', 'Global Policies', 'Admin Names', 'User LDAPs', and 'iFolder Servers'. The main content area is titled 'Add User LDAP' and contains the following fields:

- Settings** section:
 - User LDAP Name: (e.g. iFolder_ldapXX)
 - Host DNS or IP:
 - Port: (e.g. 389 or 636)
- Login:** (Requires username with LDAP write privileges for the LDAP server you are adding to update the schema and browse the contexts)
 - Username:
 - Context: (e.g. o=novell)
 - Password:

At the bottom of the form are 'OK' and 'Cancel' buttons.

- 3 Enter your LDAP server’s configuration information.
 - ◆ **User LDAP Name:** The LDAP server host name.
 - ◆ **Host DNS or IP:** The LDAP server’s DNS name such as ldap1.your-domain-name.com or IP address such as 192.168.1.1.
 - ◆ **Port:** The port to use for communications between the iFolder server and the user LDAP server. Use Port 389 for clear text communications or use Port 636 for Secure Sockets Layer (SSL) communications.

- ◆ **Login Username:** The admin username for the LDAP server. This username must have write privileges for the LDAP server to support extending the schema and browsing contexts.
 - ◆ **Context:** The context you want iFolder to search to authenticate users for the iFolder server.
 - ◆ **Login Password:** The password for the Login Username.
- 4** Click OK, or click Cancel to abandon the process.

After you add your LDAP server to iFolder system configuration, you are finished with the mandatory iFolder server configuration. See [“What’s Next” on page 77](#).

What’s Next

The iFolder installation and mandatory configuration sets default behaviors for the iFolder server and client. Use the following table to determine what next to do to configure and manage your iFolder system, according to your business needs.

To Do This	Refer To
Configure the global client policies if you want them to differ from the default settings	“Configuring Global Client Policies” on page 102
Configure the global server policies if you want them to differ from the default settings	“Configuring Global Server Policies” on page 119
Provision User objects for iFolder services	“Provisioning User Objects for iFolder Services” on page 73
Expand your iFolder system by adding another iFolder server	“Configuring iFolder on Additional Servers” on page 77
Manage iFolder user accounts	“Managing iFolder User Accounts” on page 101
Manage your iFolder servers	“Managing iFolder Servers” on page 119

Configuring iFolder on Additional Servers

You can install iFolder on an unlimited number of servers to create your iFolder system.

- 1** Install iFolder on the additional server.

For links to specific installation instructions for your operating system, see the table in [“Installation Scenarios for iFolder 2.1” on page 21](#).
- 2** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 3** Add your iFolder server to the iFolder system.
 - 3a** Click Global Settings > iFolder Servers > Add.
 - 3b** Enter the appropriate information, then click Add.
 - ◆ **Public and Private iFolder Server Names:** If the DNS name or IP address of your iFolder server goes directly to the iFolder server without being routed through

another device, meaning that your iFolder server is not behind a firewall, you are only required to fill in the information beneath the Public heading.

If the DNS name or IP address of your iFolder server goes through another device, like an L4 switch or a firewall that redirects the request to the iFolder server, you need to fill in the information under both the Public and Private headings.

IMPORTANT: If you have Network Address Translation (NAT) functionality built into your routers or switches, enter both your iFolder public and private DNS names and IP addresses.

If your public DNS name or IP address redirects requests to a private iFolder IP address, specify a DNS name (not an IP address) as the public address of the iFolder server. Then make sure you use an internal DNS server to resolve the DNS name to the private address for internal users and use an external DNS server to resolve the DNS name to the public address of external users.

The Private settings allow the iFolder servers to communicate directly to each other within the iFolder system. The Public settings allow you to access the iFolder server from outside the firewall.

- ◆ **iFolder Ports:** The ports that you enter into the iFolder Management Console must match the ports that you specified during the iFolder installation. You can have multiple iFolder servers, using the same port numbers if they all have a unique DNS name or IP address.

Port 80 is used to send the encrypted username and password and data from the iFolder client to the iFolder server. iFolder uses RSA encryption to encrypt the username and password, and Blowfish encryption to encrypt the user data. Port 443 is used to access the iFolder Management Console and the Java applet via SSL and HTTPS.

Figure 16 Global Settings > iFolder Servers > Add > Add iFolder Server

The screenshot shows the 'Add iFolder Server' form in the iFolder Management console. The form is titled 'Add iFolder Server' and is divided into two main sections: 'Public' and 'Private'. The 'Public' section is for external access and includes fields for 'iFolder Server Name' (with a hint '(e.g. iFolder_server10X)'), 'Host DNS or IP', and 'Port' (with a hint '(e.g. 80)'). The 'Private' section is for internal server-to-server access and includes fields for 'Host DNS or IP' and 'Port' (with a hint '(e.g. 80)'). There are 'Add' and 'Cancel' buttons at the bottom of the form.

4 Add your LDAP server settings for the new server to the iFolder system.

4a Click the Global Settings icon at the top of the page, then click User LDAPs.

4b Click Add to add a User LDAP server.

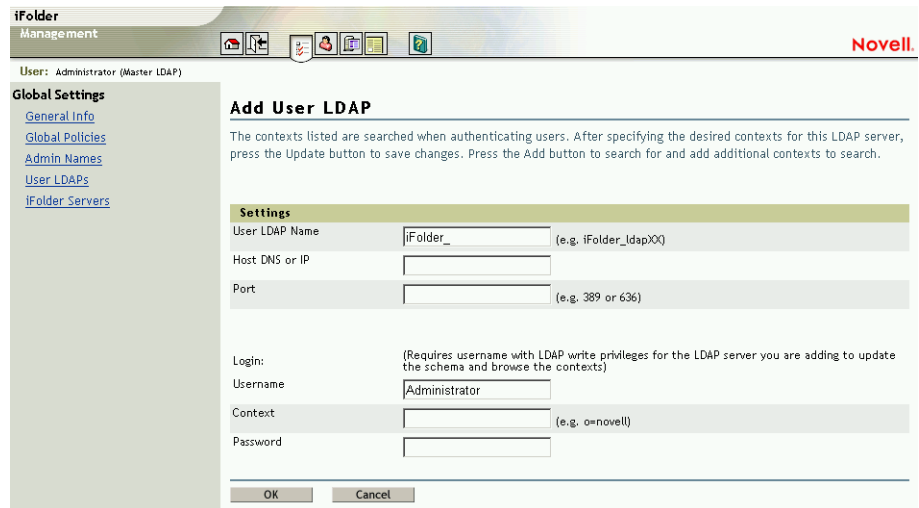
You can add up to eight LDAP directories. The Global User LDAP that you specified during the first installation of iFolder appears as iFolder_ldap01.

The LDAP directories are accessed in alphabetical order when iFolder users are authenticated. Be careful when naming your LDAP directories. iFolder searches the directories in alphabetical order. Thus, if your company uses more than one LDAP

directory, make sure you name the LDAP directories alphabetically, so that the first LDAP directories that are listed are the directories that have the majority of your iFolder users.

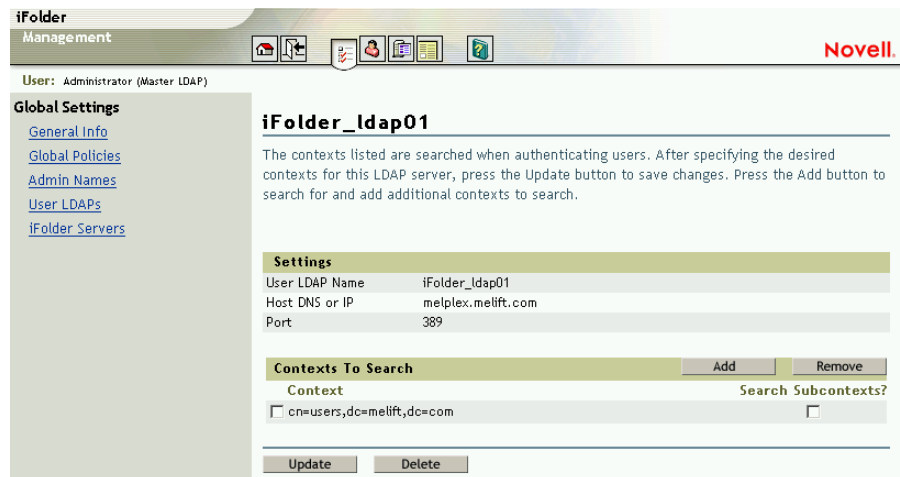
If you have users with the same username located in multiple contexts, iFolder will authenticate the first user it finds during LDAP authentication. All subsequent users who are located later in the LDAP authentication process will need to enter their usernames and full contexts in the User ID field of the iFolder client login box in order to properly authenticate and log in to the iFolder server.

Figure 17 Global Settings > User LDAPs > Add > Add User LDAP



- 4c** If you want LDAP to search subcontainers below the user context during user authentication, click Global Settings > User LDAPs, select the name of your LDAP server from the list, select your context from the drop-down list, check the check box, then click Update.

Figure 18 Global Settings > User LDAPs > Server Name > User Contexts for This Server



10

Managing iFolder User Accounts

Before you can manage client policies for your Novell® iFolder® system, you must perform the tasks described in:

- ◆ “Configuring Your First iFolder Server” on page 69
- ◆ “Configuring iFolder on Additional Servers” on page 77, as needed

IMPORTANT: If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to create their iFolder user accounts.

Users can download the iFolder client from the iFolder Web site. For information, see “The iFolder Web Site for Users” on page 66.

Before you can manage individual user accounts, your users must log in to the iFolder server, using the iFolder client or the iFolder Java applet to create their iFolder accounts.

An iFolder administrator can perform the following user management tasks:

- ◆ “Enabling iFolder Services for Users” on page 101
- ◆ “Adding User Objects to the User LDAP Directory from iFolder User Management” on page 102
- ◆ “Configuring Global Client Policies” on page 102
- ◆ “Using the Remember Password Option” on page 106
- ◆ “Configuring the Security Passphrase” on page 107
- ◆ “Searching for Users in a User LDAP Directory” on page 108
- ◆ “Viewing a User’s iFolder Account Information” on page 110
- ◆ “Modifying Individual User Client Policies” on page 113
- ◆ “Recovering Passphrases” on page 114
- ◆ “Restoring Deleted or Corrupted Files” on page 115
- ◆ “Deleting User Data on the Server” on page 116
- ◆ “Preventing Data Loss When Resetting User Accounts” on page 116
- ◆ “Using the Conflict Bin” on page 117

Enabling iFolder Services for Users

To add iFolder user accounts to an existing iFolder server, you must enable iFolder services for the User objects. For information, see “Provisioning User Objects for iFolder Services” on page 73.

Adding User Objects to the User LDAP Directory from iFolder User Management

The User Management task allows you to add new User objects to your LDAP directory from within the Novell iFolder Management Console.

When you add a new iFolder user, you must specify the following:

- ◆ **User ID:** The unique network user ID for the new user account.
- ◆ **Password:** The user password for the new user account.
- ◆ **iFolder Server:** The iFolder server that provides iFolder services for the new user.
- ◆ **LDAP Context:** The LDAP context that authenticates the user to the iFolder server.

Adding a new user through the iFolder Management Console accomplishes the following tasks:

- ◆ It creates a User object in your LDAP directory and creates the corresponding user account.
- ◆ It adds the iFolderServerName and iFolderQuota attributes to the new User object. Because these attributes are iFolder-specific, you must manage them through the iFolder Management Console. All other attributes associated with the user account object must be managed through your LDAP directory's management tool.
- ◆ It automatically enables the use of iFolder services for that user account; you do not need to manually enable the new user account for iFolder services. The iFolder user account gets created and activated the first time this user logs in to the iFolder server.
- ◆ It lets you assign the new user to the Default iFolder Server. Whatever iFolder server you have specified as the default server at the time of the user's initial login becomes the user's assigned server.
- ◆ Typically, the Default iFolder Server is the first server that you installed iFolder on unless you manually changed this. To change your default server name, go to the Global Settings task of the iFolder Management Console, then click iFolder Servers. For instructions, see [Managing iFolder Servers](#).

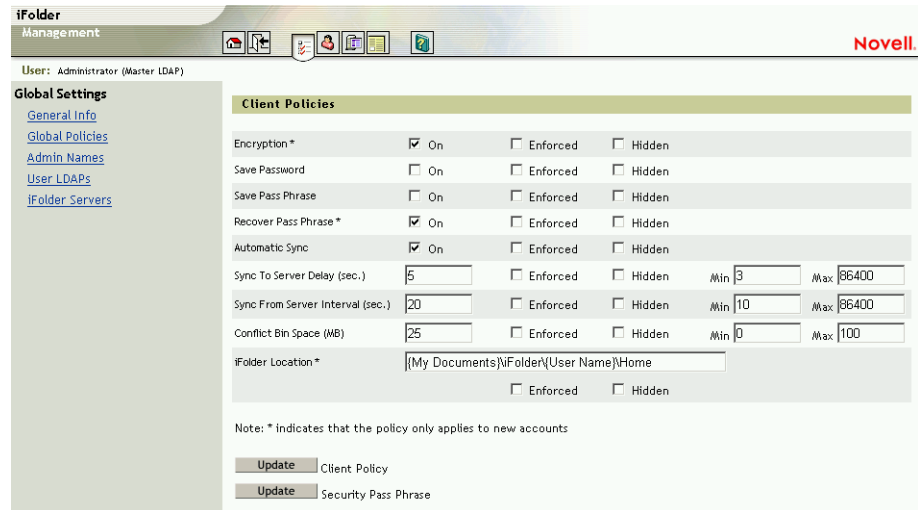
Configuring Global Client Policies

The iFolder administrator uses the global client policies to control which features the user can configure for the iFolder client and what the default settings are. Client policies are rules that govern the iFolder client behavior. Global policy settings apply to all iFolder clients and servers. You can override global policies for individual users by setting user policies.

Before you permit users to access the iFolder system for the first time, you must review the default settings and configure policies to meet your network needs. Later, if you modify policies, you must consider how iFolder effects your changes. In general, client policy changes require only that users log out and log in to the iFolder client to effect the changes. However, changes might not apply to existing accounts or clients. To apply the changes you make, click Update Client Policy.

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** Click Global Policies > Client Policies > Display > Client Policy Settings.

Figure 19 Global Settings > Global Policies > Client Policies > Display > Client Policies Settings



3 Set the global client policies, then click Update Client Policy.

For information about global server policies, which includes user disk quotas, see “[Configuring Global Server Policies](#)” on page 119.

Understanding iFolder Client Policies

Client policies specify default settings or values, whether the user can modify the default, and whether the user can view the policies.

The iFolder administrator sets three policy levels for the global client policies:

- ♦ **Default Policies:** To enable the policy, check the On check box or specify a value. If the default policy setting is not Enforced or Hidden, users can modify the default setting, according to their personal preferences.

In general, if you modify a policy's default setting, the change applies automatically to new iFolder accounts and new client installs or upgrades. For existing iFolder accounts and clients, if the specific policy is modifiable, you must enable Enforced to force this change to take effect.

If the specific policy is not modifiable for existing accounts, changes do not apply even if they are enforced or hidden. For examples, see Encryption and Recover Passphrase policies.

If the specific policy is not modifiable for existing instances of the iFolder client, a change does not apply even if it is enforced or hidden. For an example, see the iFolder Location policy.

- ♦ **Enforced:** To enforce the default setting, check the Enforced check box. If this option is enabled, the default setting is dimmed in the iFolder client. Users can view the default setting, but they cannot change it. If this option is disabled, users can modify the default setting, according to their personal preferences.

For both global and user client policies, you must enable the Enforced option when setting or changing policies that you want to override the user's personal preferences. Enforced settings apply automatically to new iFolder accounts. If the specific policy is modifiable for existing accounts or clients and you enable Enforced, the change takes effect the next time the user

logs in to their iFolder account, installs a new client, or upgrades an existing client. If it is not a modifiable policy for accounts or clients, enabling Enforced has no effect.

For user client policies, you must enable the Enforced option when setting or modifying a policy that you want to override the corresponding global client policy. If it is not a modifiable policy for iFolder accounts or clients, enabling Enforced for a user client policy has no effect.

- ◆ **Hidden:** To hide the policy and its default setting from the user, check the Hidden check box. Users cannot view or modify the default setting. Hidden features are enforced by default.

You set the default values and behavior for the following client policies:

- ◆ **Encryption:** [Default: On, Not Enforced, Not Hidden] Allows the user's local data to be encrypted as it leaves a workstation to travel to the iFolder server, resides on the server, and travels to another workstation, where it is unencrypted; the user's data resides on the user's workstations in unencrypted form.

Encryption policies cannot be modified for existing accounts. Once set for an iFolder account, the decision applies for the life of the account and across all instances of the iFolder client that the user installs. If you want to change marked features for all users after accounts exist, you must coordinate with users to delete their accounts and recreate them with the new settings enforced. For more information about encryption, see [“Authentication and Encryption” on page 141](#).

- ◆ **Save Password:** [Default: Off, Not Enforced, Not Hidden] Allows automatic entry of the user's password during any iFolder login sequence.

IMPORTANT: The iFolder client does not pass on system warnings about grace logins. If your organization requires frequent password changes, we recommend that users be notified of pending change requirements by alternate means so users can proactively change the stored password, if they select this option.

- ◆ **Save Passphrase:** [Default: Off, Not Enforced, Not Hidden] Allows automatic entry of the user's encryption passphrase during any iFolder login sequence.

- ◆ **Recover Passphrase:** [Default: On, Not Enforced, Not Hidden] Allows the iFolder administrator to recover the user's encryption passphrase.

IMPORTANT: Because the Passphrase is the user's encryption key, the administrator is able to decrypt the user's data files on the iFolder server. Allowing this option implies a trusted relationship for the iFolder administrator.

Recover Passphrase policies cannot be modified for existing accounts. Once set for an iFolder account, the decision applies for the life of the account and across all instances of the iFolder client that the user installs. If you want to change marked features for all users after accounts exist, you must coordinate with users to delete their accounts and recreate them with the new settings enforced.

- ◆ **Automatic Sync:** [Default: On, Not Enforced, Not Hidden] Allows the iFolder client to automatically synchronize the user's iFolder files between the local iFolder directory and the iFolder server.

- ◆ **Sync to Server Delay:** [Default: 5 seconds with a minimum of 3 seconds, Not Enforced, Not Hidden] If Automatic Sync is allowed, sets the default time (in seconds) that the iFolder client waits after a file in the local iFolder directory changes until it automatically uploads the file to the iFolder server. Also sets the minimum and maximum values allowed.

- ◆ **Sync from Server Interval:** [Default: 20 seconds with a minimum of 10 seconds, Not Enforced, Not Hidden] If Automatic Sync is allowed, sets the default time (in seconds) after a synchronization occurs that the iFolder client waits to check with the iFolder

server to determine if there are changed files it needs to automatically download to the local iFolder directory. Also sets the minimum and maximum values allowed.

For information on synchronization strategies for users, see the *Novell iFolder 2.1 User Guide*.

- ♦ **Conflict Bin Space:** [Default: 25 megabytes with a minimum of 0 (zero) megabytes, Not Enforced, Not Hidden] Sets the default size (in MB) of the Conflict Bin for the user's iFolder account. Also sets the minimum and maximum allowed values.

The iFolder client uses a Conflict Bin to help prevent the inadvertent loss of user files. Each workstation where users install the client has its own bin on the local hard drive. The iFolder client stores files in the bin on a first-in, first-out basis. As the bin size nears the maximum space allotted, the iFolder client purges documents from the bin to make room for newer files that might be in conflict. If a file in conflict exceeds the size of the bin, iFolder automatically purges the file from the bin.

In general, the default size of the Conflict Bin should be about 10 to 15 percent of the Initial Client Quota. At a minimum, the space allocated should be larger than the largest file size that a user might store in his or her iFolder account.

- ♦ **iFolder Location:** [Default: {My Documents}\iFolder\{User Name}\Home, Not Enforced, Not Hidden] Sets the default path of the user's local iFolder directory.

Changes to this policy apply only to new instances of the iFolder client for existing accounts or to new iFolder accounts.

Some policies apply only to new iFolder user accounts. The related options appear in the first instance of an iFolder client install for that user. After the user sets the preferences, the items no longer appear in the login sequence or in subsequent installations of the iFolder client by that user.

Changing the marked policy has no effect for existing users; it applies only for all subsequently created accounts. If you want to change marked features for all users after accounts exist, you must coordinate with users to delete their accounts and recreate them with the new settings enforced.

Examples of Global Client Policies

Consider the following examples to help you understand how to use the policy levels.

Example Policy: All users must enable iFolder encryption.

If you want every user to encrypt iFolder data, set Encryption to On, Enforced, and Hidden as a global client policy, then click Update Client Policy. The user must specify an encryption passphrase the first time he or she logs in to iFolder. The passphrase serves as the encryption key for the user's iFolder account.

Example Policy: Administrators must be allowed to recover user passphrases.

If you want to enable the iFolder administrator to recover all users' encryption passphrases, set Recover Passphrase to On, Enforced, Hidden and set the Security Passphrase for the administrators to use when recovering passphrases. Then click Update Client Policy. The first time a user logs in, iFolder does not prompt the user with the option to Recover Passphrase because the policy is mandatory and hidden from view.

Example Policy: Guest users must use clear text when storing iFolder data on the iFolder server.

If you want an individual user account to use clear text only, go to the User Account > Edit Client Policies, then set the Encryption, Save Passphrase, and Remember Passphrase policies to Off, Enforced, and Hidden as user client policies. Then click Update Client Policy. iFolder does not prompt the user with a choice to encrypt iFolder data.

Example Policy: Users must synchronize files manually to minimize bandwidth requirements.

If you want users to synchronize iFolder files only as needed, set Automatic Synchronization to Off, Enforced, and Not Hidden as a global client policy. Then click Update Client Policy. The users cannot take advantage of automatic synchronization. In the iFolder client, the automatic synchronization option is disabled (unchecked) and dimmed on the Account Information > Preferences page. The user must use the manual Sync and Stop Sync options to synchronize files, using the iFolder client.

Example Policy: Users must authenticate manually at login.

Because the client requires that users log in to change their passwords, they can be locked out if the password changes while they are logged out of iFolder. If your environment requires frequent password changes, you can avoid users being accidentally locked out of their iFolder accounts by setting Save Password to Off, Enforced, and Hidden as a global client policy. Then click Update Client Policy. The users must enter a valid password each time they log in to the iFolder client.

Using the Remember Password Option

If your network environment requires that users change passwords frequently, we recommend that you disable the Remember Password option for the iFolder client. The iFolder client will not alert users of expired passwords and users might exceed the number of grace logins allowed by your network. If a user enables the Remember Password option and the user's password expires while the user is logged out, the user will not be able to log in to iFolder to set the new password.

Disabling the Remember Password Option for All Users

To disable the Remember Password policy and make the option unavailable to your users:

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** Click Global Settings > Global Client Policies.
- 3** Disable the Remember Password option in the iFolder client.
 - 3a** Uncheck the Save Password check box.
 - 3b** Check the Enforced check box.
 - 3c** Check the Hidden check box.
- 4** Click Update Client Policies.
- 5** Click Logout, then close the Web browser.

Avoiding Being Locked Out When a Password Changes

If you enable the Remember Password option for users, make sure to notify users about their password expiration through other means. Users must follow some simple precautionary steps before changing their network passwords to avoid being locked out of their iFolder accounts.

If the Remember Password check box is checked in the iFolder client, users must follow these steps when changing the passwords associated with their iFolder usernames.

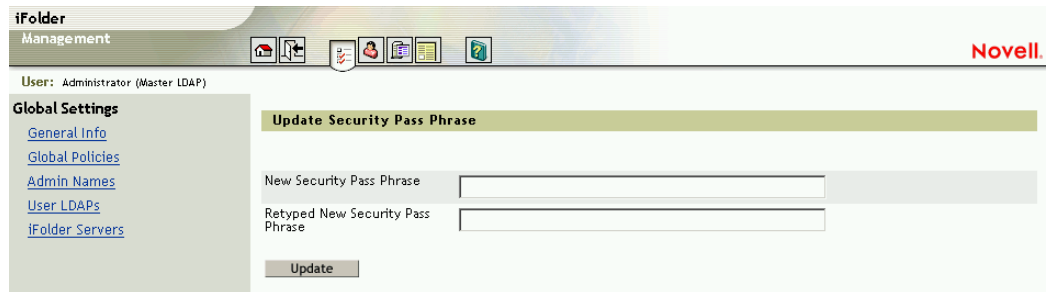
- 1** For every instance of the iFolder client where the Remember Password option is enabled, disable the Remember Password option.
 - 1a** Log in to the iFolder client.
 - 1b** Right-click the iFolder icon in the system tray, then click Account Information > Preferences.
 - 1c** Uncheck the Remember Password check box, click Apply, then click Yes.
 - 1d** Click File > Logout.
- 2** Log in to the network and change the password, following any procedures set by the network administrator.
- 3** Log in to iFolder, using the iFolder client, entering the new password instead of the old one.
- 4** If desired, re-enable the Remember Password option.
 - 4a** Right-click the iFolder icon in the system tray, then click Account Information > Preferences.
 - 4b** Check the Remember Password check box, click Apply, then click Yes.
 - 4c** Close the iFolder account management window.

Configuring the Security Passphrase

If Recover Passphrase is enabled, you must set a Security Passphrase for the iFolder administrator. You use the Security Passphrase to recover an iFolder user's passphrase if the user has forgotten it. However, in order to recover a passphrase, the user must have selected Enable Passphrase Recovery (or this policy was set to Enforced) on first login to the iFolder client.

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** Click Global Policies > Display Client Policies > Update Security Passphrase.
- 3** Enter a new Security Passphrase, then retype it.
- 4** Click Update.

Figure 20 Global Settings > Global Policies > Client Policies > Update Security Passphrase > Security Passphrase Settings



To change an existing Security Passphrase:

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2 Click Global Policies > Display Client Policies > Update Security Passphrase.
- 3 Enter the current Security Passphrase.
- 4 Enter a Security Passphrase, then retype it.
- 5 Click Update.

For more information on security passphrases, see [“Recovering Passphrases” on page 114](#).

Searching for Users in a User LDAP Directory

The User Management task of the Novell iFolder Management Console allows you to perform a simple search or an advanced search of your user LDAP directory for users whose accounts you want to manage.

Search

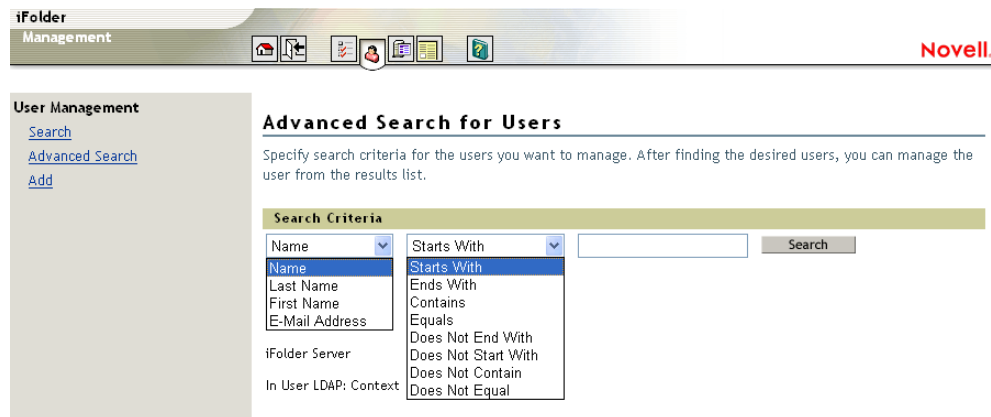
- 1 From the iFolder Management Console, click User Management, then click Search in the left navigator.
- 2 Use one of these methods to find the user account:
 - ◆ To list all the users in your system, regardless of where their accounts are located, leave the Enter Username field blank.
 - ◆ To narrow your search, type letters in the Enter Username field, then click Search. The search returns only the iFolder user accounts that begin with the letter or letters that you entered.
 - ◆ To find a known user account, type the username.
- 3 Click Search.

Advanced Search

- 1 From the iFolder Management Console, click User Management, then click Advanced Search.
- 2 Use the Advanced Search for Users, as shown in [Figure 13](#), to obtain a list of users whose accounts you want to manage.

IMPORTANT: If an Admin object resides on multiple LDAP servers, do not enable this object as an iFolder user. If you have only one LDAP server and one corresponding Admin user, you can enable this object; however, we do not recommend it.

Figure 21 Search Criteria for Advanced Searches



The iFolder Management Console provides an Advanced Search feature. You can use the following search criteria to narrow your search:

User Category Syntax	Operator Syntax
Name	Starts With
Last Name	Ends With
First Name	Contains
E-mail Address	Equals
User Type (All Users, iFolder Users, Non-iFolder Users)	Does Not Start With
iFolder Server (All, select from list)	Does Not End With
In User LDAP: Context (All, select from list)	Does Not Contain
	Does Not Equal

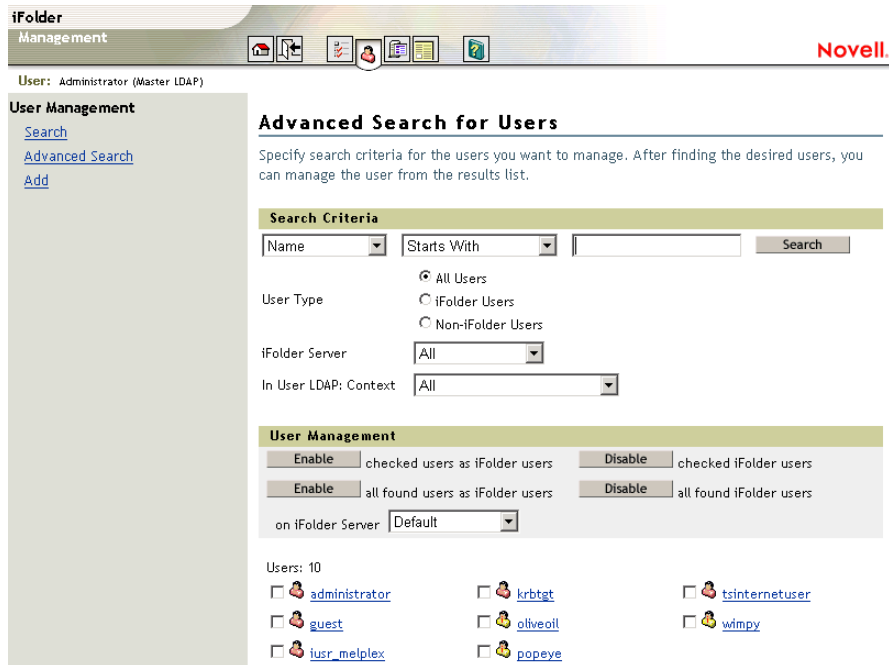
To search for multiple users whose usernames begin with different letters, type the first letter of each name separated by a semicolon. For example, if you wanted to search for all usernames that begin with the letters A through D, select Name and Starts With operators, then type the following in the user name field

a;b;c;d

3 Click Search.

The search returns a list of found user accounts. Each username is hyperlinked to the user's account information.

Figure 22 User Management > Advanced Search > Search Results



Viewing a User's iFolder Account Information

- 1 From the iFolder Management Console, click User Management.
- 2 Use the Search or Advanced Search feature to find the user account you want to manage. For information, see [“Searching for Users in a User LDAP Directory” on page 108](#).
- 3 Click the username.

The user's iFolder account page displays the following information about the selected user's iFolder account.

iFolder User

The username for the iFolder user. Also known as the user's common name.

Distinguished Name

The User object attributes that uniquely identify the selected user in the LDAP directory server. For example, `cn=acatt,cn=users,dc=mydomain,dc=com`.

User LDAP

The host name and DNS name or IP address of the user LDAP server that iFolder uses to authenticate the selected user. For example, `iFolder_ldap01 (ldap1.your-domain-name.com)`.

iFolder Server Name

The host name and DNS name or IP address of the iFolder server where the user's account and iFolder data reside. For example, `iFolder_server01 (nif1.your-domain-name.com)`.

iFolder Account Path

The path in the iFolder data directory where the specified user's data resides. For example, C8\CA3BA5B45C2BB11A098A1BD6042FF0B6. You need this location to restore a user's iFolder data from backup media or to move a user's iFolder data to another iFolder server.

In the iFolder data directory, the user accounts are separated alphabetically in to subdirectories. The account path begins with a two-digit hexadecimal directory name that represents the hashed alphanumeric character that is the first character in the username. The user account's directory is the hashed hexadecimal value of the username.

When you installed iFolder, you specified a location on the server where iFolder stores the users' iFolder data. For example, iFolder\Data\. The iFolder account path begins in the iFolder data directory, so you must prepend the account path with the iFolder data location to get the full path to the user's data. For example, iFolder\Data\C8\CA3BA5B45C2BB11A098A1BD6042FF0B6.

Disk Quota

The maximum storage space in megabytes on the iFolder server that you allocated to the user's account. By default, the user's initial disk quota is 200 MB.

Number of Connections

The total number of connections to the user's iFolder account that are currently active. The connections can originate from one or multiple workstations and can access the server, using different iFolder interfaces.

Syncs in Progress

The total number of active uploads or downloads across the current connections for the selected user account.

Last Sync

The time stamp of the last completed synchronization for the selected user account.

Memory in Use

The total amount of memory currently in use by processes related to the selected user account.

Used Space

The total storage space on the iFolder server currently consumed by the specified user's iFolder data.

Upload

The total amount of iFolder data in megabytes uploaded from the user's workstation to the iFolder server for the selected user account. This value includes all data uploaded since the account was activated.

Download

The total amount of iFolder data in megabytes downloaded from the iFolder server to the user's workstation for the selected user account. This value includes all data downloaded since the account was activated.

If the user has only one workstation, the Download value is usually very low, and might even be zero. However, if the user has multiple workstations, each time the user uploads data to the server from one workstation, the server downloads the data to the other workstations. Thus, an account with three workstations reports 1 MB of upload and 2 MB of download each time 1 MB is uploaded. The Download number can become quite large.

Number of Directories

The total number of directories (and subdirectories) in the user's iFolder directory. iFolder supports up to 32,765 directories within a user's iFolder directory. If the user exceed this number, iFolder stops writing to the local iFolder directory and data loss is likely.

Number of Files

The total number of files in the user's iFolder directory and subdirectories.

Encryption Status

Indicates whether encryption is enabled for the iFolder account. [Blowfish or No]

Client Policy

The policies that govern how the user's client interface behaves.

Figure 23 User Management > Advanced Search > User ID

The screenshot shows the iFolder Management interface. At the top, it says 'iFolder Management' and 'Novell'. Below that, it indicates the user is 'Administrator (Master LDAP)'. The main content area is titled 'User Management' and shows details for 'iFolder User: oliveoil'. The details include:

- Distinguished Name: cn=oliveoil,cn=users,dc=melift,dc=com
- User LDAP: iFolder_ldap01 (melplex.melift.com)
- iFolder Server Name: iFolder_server01 (melcpq.melift.com)
- iFolder Account Path: C8YCA3BA5B45C2BB11A098A1BD6042FF0B6
- Disk Quota: 3000 MB (with an 'Update' button)
- Buttons: 'Disable' and 'iFolder User'
- Current Status:**
 - Number of Connections: 0
 - Syncs in Progress: 0
 - Last Sync: Wed Feb 05 21:31:31 2003
 - Memory in Use: 144 Bytes
- Server Utilization:**
 - Used Space: 226 MB
 - Upload: 28633 MB
 - Download: 28295 MB
 - Number of Directories: 4
 - Number of Files: 18
- Account Settings:**
 - Encryption Status: No
 - Policy: Using client policies from Global Settings (with an 'Edit' button)
 - Buttons: 'Remove' and 'iFolder User Data'
 - Buttons: 'Recover' and 'iFolder User Pass Phrase'

Modifying Individual User Client Policies

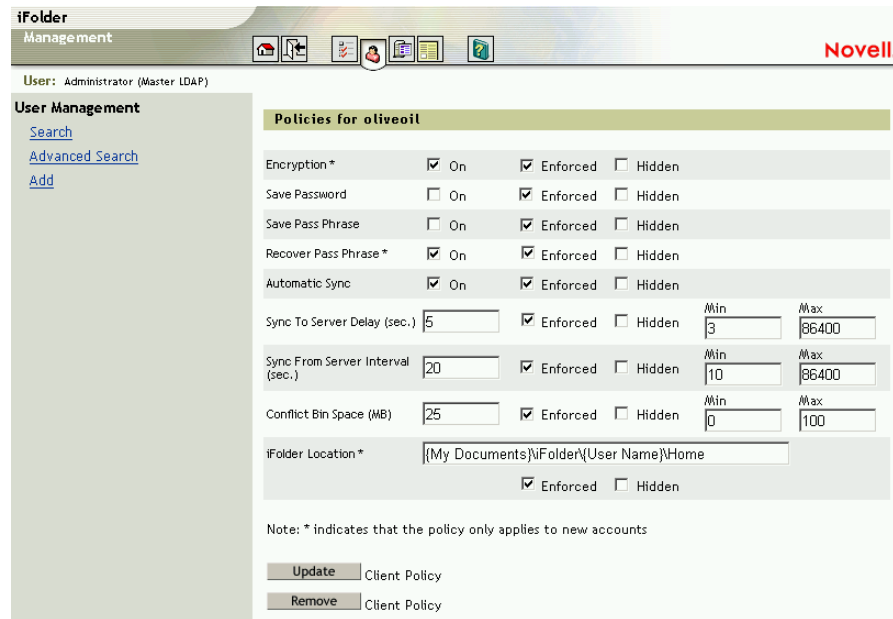
By default, global client policies apply to all iFolder user accounts. However, the iFolder administrator can modify the policy settings for a specific user from the User Management page.

To set iFolder client policies for an individual user: From the iFolder Management Console, click User Management > Advanced Search > User_ID > Edit.

The User Policy page opens to allow you to set policies that apply to the individual.

User-specific policy settings take precedence over the global policy settings only if you enable the Enforced option. Enable Enforced only for those policies that you want to override the default.

Figure 24 User Management > Advanced Search > User ID > Edit Policy > Policies for {User ID}



Setting User Client Policies

1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).

2 Use Search or Advanced Search to find the user in the LDAP directory whose iFolder account you want to manage.

Click the username for the user you found in Step 2.

Click Edit Client Policies to open the User Client Policies page.

Modify the fields of the policies that you want to differ from the global settings. For information on how to complete each field, see [“Configuring Global Client Policies” on page 102](#).

To override the corresponding global client policy, check the Enforced check box for each modified policy.

Click Update Client Policy to save the changes.

When the user next logs in to the account, iFolder uses the enforced global client policies and user client policies to create the appropriate default settings.

Typically, you set iFolder client policies before the first time the user logs on to the account. If the user's account already exists, you must coordinate the new settings with the user.

If you want to change the Encryption or Recover Passphrase options, you must delete the current user account, create a new account for that user, then set the user policies. The user must move data in the local iFolder directory to another folder, uninstall the iFolder client, reinstall the iFolder client, then move data back to the iFolder local directory to upload it to the iFolder server.

Re-Setting User Client Policies to the Global Client Policies

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** Use Search or Advanced Search to find the user in the LDAP directory whose iFolder account you want to manage. For information, see Searching the User LDAP Directory.
Click the username for the user you found in Step 2.
Click Edit Client Policies to open the User Client Policies page.
Click Remove Client Policy.
Click Update Client Policy to save the changes.
When the user next logs in to the account, the iFolder client applies enforced global settings to the iFolder account.

Recovering Passphrases

In order for the iFolder administrator recover a user's passphrase, either the policy must have been set to Enforced or the user must have enabled passphrase recovery the first time he or she logged in with the iFolder client.

- 1** If you have not already done so, set up your security passphrase.
See [“Configuring the Security Passphrase” on page 107](#).
- 2** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 3** To recover a user's passphrase, go to the User Management section of the iFolder Management Console.
- 4** Search for the appropriate user, then click the username.
- 5** Scroll down to the bottom of the list, then click Recover.
- 6** Enter your security passphrase, then click OK.
- 7** When the passphrase appears, let the user know what it is.

You can view user settings by clicking the iFolder Management Console > User Management > {Search or Advanced Search} > User_ID.

Figure 25 User Management > {Search or Advanced Search} > User_ID > Recover iFolder User Passphrase

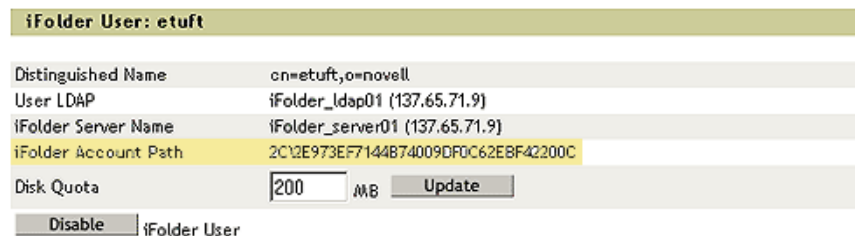


Restoring Deleted or Corrupted Files

If a user needs to recover data from a deleted or corrupted file, you can restore the user's folder to a secondary iFolder server. From there, the user can access the iFolder server's copy of his local files via a browser or NetDrive.

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2 Search for the user, then click the username to locate the iFolder Account Path.

Figure 26 Example of the Account Path in an iFolder User Account



- 3 Restore the folder located at the iFolder Account Path from a backup tape to a secondary iFolder server that the user can attach to.
- 4 Have the iFolder user use the Java applet or NetDrive to access the secondary iFolder server.

When the user logs in, the Java applet will show the user's data and the user can download the file that was previously deleted. Using the iFolder Java applet or NetDrive is a good choice because they do not synchronize data; they only give access.

Deleting User Data on the Server

If a user forgets his or her password, you can delete the user data on the iFolder server and then have the user log in again. When the user logs in, iFolder prompts the user for a new password.

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2 Click User Management in the tool bar.
- 3 Search for a specific user if you know the unique user ID; if not, find the user by doing an advanced search.
- 4 Click the username, scroll to the bottom of the page, then click Remove iFolder User Data.
- 5 Click OK to confirm the removal of the user data.

You can view user settings by clicking the iFolder Management Console > User Management > Search [or Advanced Search] > User_ID.

Figure 27 User Management > {Search or Advanced Search} > User_ID > Remove iFolder User Data

The screenshot shows the iFolder Management Console interface. The top navigation bar includes 'iFolder Management' and the Novell logo. The user is logged in as 'Administrator (Master LDAP)'. The 'User Management' section is active, showing a search for 'oliveoil'. The user details are as follows:

iFolder User: oliveoil	
Distinguished Name	cn=oliveoil,cn=users,dc=melift,dc=com
User LDAP	iFolder_ldap01 (melplex.melift.com)
iFolder Server Name	iFolder_server01 (melcpq.melift.com)
iFolder Account Path	C8\CA3BA5B45C2BB11A098A1BD6042FF0B6
Disk Quota	3000 MB <input type="button" value="Update"/>
<input type="button" value="Disable"/> iFolder User	
Current Status:	
Number of Connections	0
Syncs in Progress	0
Last Sync	Wed Feb 05 21:31:31 2003
Memory in Use	144 Bytes
Server Utilization:	
Used Space	226 MB
Upload	28633 MB
Download	28295 MB
Number of Directories	4
Number of Files	18
Account Settings:	
Encryption Status	No
Policy	Using client policies from Global Settings <input type="button" value="Edit"/>
<input type="button" value="Remove"/> iFolder User Data	
<input type="button" value="Recover"/> iFolder User Pass Phrase	

Preventing Data Loss When Resetting User Accounts

Before you delete the user account, the user must do the following to prevent data loss during an account reset:

- 1** Copy data from the current local iFolder directory to another local directory on the user workstation, then delete the local iFolder directory.
- 2** Uninstall the iFolder client from the user workstation.
 - 2a** Click Start > Settings > Control Panel > Add/Remove Programs > Change or Remove Programs.
 - 2b** Select Novell iFolder client, then click Change/Remove > Yes.
- 3** Go to the iFolder Web site to download the iFolder client software.

You can get the URL from your iFolder administrator. The iFolder Web site is typically located at the following URL:

```
http://nifl.your-domain-name.com/iFolder
```

Replace *nifl.your-domain-name.com* with the actual DNS name or IP address of your iFolder server.
- 4** Follow the download and installation instructions to install the iFolder client.
- 5** If the user ID, password, or encryption passphrase have changed, enter the new values during the reinstallation of the iFolder client.
- 6** Move the user data to the newly created local iFolder directory.
- 7** Either wait for the files to synchronize automatically, or right-click the iFolder icon in the system tray, then click Sync Now.

Using the Conflict Bin

The iFolder client has a feature called the Conflict Bin. A user will rarely need to access this option; however, it is useful to understand this feature. The following scenario illustrates what the Conflict Bin is and how it works.

Suppose that John is one of your iFolder users. John has the iFolder client installed on two computers: computer A and computer B. At some point in the day, John disconnects both of these computers from the network and continues to work from both computers offline. While he is working, he makes a change to one of his iFolder files on computer A and then, later in the day, he makes a different change to the same file on computer B. He then reconnects computer A to the network in order to synchronize the changes to the iFolder server. Then, John reconnects computer B to the network to synchronize the new change.

When computer B reconnects to the network and synchronizes the change to the iFolder server, the change that John made on computer A would be overwritten with the change that John made to that same file from computer B. To prevent data loss, iFolder saves the overwritten file to the Conflict Bin. John can access the Conflict Bin by right-clicking the iFolder icon located in the system tray of the computer that originally contained the file that was overwritten.

NOTE: If the problem file is larger than the quota set for the Conflict Bin, the file will not be saved in the bin; it will be discarded.

11

Managing iFolder Servers

Use the Novell® iFolder® Management Console to change your iFolder server's IP address, DNS name, or assigned ports.

Before you can manage server policies for your Novell iFolder system, you must perform the tasks described in:

- ♦ “Configuring Your First iFolder Server” on page 69
- ♦ “Configuring iFolder on Additional Servers” on page 77, as needed

This section describes the following management tasks:

- ♦ “Adding iFolder Servers” on page 119
- ♦ “Configuring Global Server Policies” on page 119
- ♦ “Managing the User Disk Quotas for iFolder User Accounts” on page 120

Adding iFolder Servers

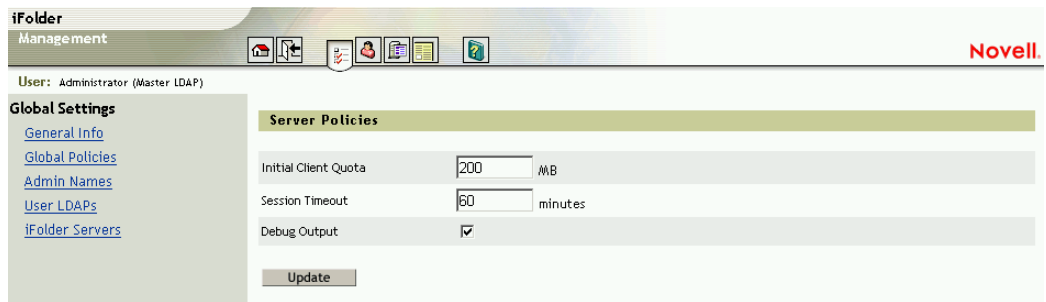
Your first iFolder server is automatically added to the iFolder Management Console for you. All additional iFolder servers must be manually added into the iFolder system in order for you to manage them. You can have an unlimited number of iFolder servers. For information on adding servers, see “Configuring iFolder on Additional Servers” on page 77.

Configuring Global Server Policies

Server policies are rules that govern how the iFolder server behaves for users. You can regulate how much disk space will be allotted to each iFolder user or how much time will pass before a session times out.

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see “Logging In to the iFolder Management Console” on page 70.
- 2** Click Global Policies, then click Display Server Policies.

Figure 28 Global Settings > Global Policies > Display Server Policies > Server Policies



3 Complete the following information:

- ◆ **Initial Client Quota:** [Default: 200 megabytes] Specify the amount of storage space (in MB) that will be the minimum amount assigned to new iFolder user accounts. The maximum disk quota size for an iFolder account is 8 TB. Changes to this value go into effect immediately only for new iFolder accounts.
- ◆ **Session Timeout:** [Default: 60 minutes] Specify the maximum length of time (in minutes) that a session will be continued when there is no synchronization activity. If the session times out, the client must go through a reconnect step before its next synchronization. Changes to this value go into effect immediately for all iFolder users.
- ◆ **Debug Output:** [Default: Enabled (checked)] Check the check box to enable synchronization activity to be logged and available for analysis. Changes to this value go into effect immediately for all iFolder users. For instructions on viewing the log, see [“Debugging Synchronization Activity on Your iFolder Server” on page 131](#).

4 Click Update Server Policies to enforce the changes.

Managing the User Disk Quotas for iFolder User Accounts

The Initial Client Quota, specified in the Global Server Policies, determines the default maximum disk space allocated to a new iFolder account. For information, see [“Configuring Global Server Policies” on page 119](#).

As the account matures, or for select users, you might need to expand or reduce the amount of space allocated to an iFolder account. The User Disk Quota specifies the actual maximum disk space allocated to an individual iFolder account. The maximum disk quota size for an iFolder account is 8 TB.

Modifications to the User Disk Quota apply immediately to the user's iFolder account. If you reduce the quota below the current size of the user's iFolder data, the user is not able to upload data to the iFolder server until the user deletes or moves a sufficient amount of data from his or her iFolder account.

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** From the iFolder Management Console, click User Management.
- 3** Use Search or Advanced Search to find the user in the LDAP directory whose iFolder account you want to manage.
- 4** Click the username for the user you found.

- 5** Specify the maximum amount of storage space in megabytes that the selected iFolder account can use on the iFolder server.
- 6** Click Update.

12 Managing User LDAP Servers

Novell® iFolder® uses your user LDAP directory to authenticate users on the iFolder server. The User LDAP directory stores the iFolder Server Name and the Disk Quota attribute to User objects for user accounts you have enabled for iFolder services. For information on enabling users, see [“Provisioning User Objects for iFolder Services” on page 73](#).

Use multiple LDAP directories, if needed, to maintain your current organization and group management even in the event of a server failure. Regardless of how many iFolder servers in your iFolder system, you can specify up to eight User LDAP directories.

Whenever you add an LDAP server through the iFolder Management Console for user authentication, you must log in, using an admin username that has write privileges to the LDAP server or servers you plan to modify or add.

This section describes the following User LDAP management tasks:

- ◆ [“Modifying User Contexts for the User LDAP Server” on page 123](#)
- ◆ [“Adding a User LDAP Server to the iFolder System” on page 124](#)
- ◆ [“Adding a User LDAP Server for a Linux-Based iFolder 2.1.2 Server” on page 124](#)
- ◆ [“Replacing a User LDAP Server for the iFolder System” on page 126](#)
- ◆ [“Replacing a User LDAP Server for the Linux-Based iFolder 2.1.2 Server” on page 126](#)
- ◆ [“Deleting a Single User LDAP Server from the iFolder System” on page 126](#)
- ◆ [“Deleting All User LDAP Servers from the iFolder System” on page 127](#)
- ◆ [“Using Clear Text or SSL Connections to the User LDAP Server” on page 127](#)

For more information on how iFolder and LDAP work together, see [Chapter 2, “Understanding the Novell iFolder Architecture,” on page 17](#).

Modifying User Contexts for the User LDAP Server

For each iFolder server, you must specify the contexts where you want an iFolder server to search for User objects during the user authentication process.

- 1** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2** Click Global Settings > User LDAPs.
The User LDAPs page lists the existing LDAP servers you have identified to iFolder.
- 3** Click the LDAP server that you want to modify.
- 4** Do one of the following:

- ◆ **Add Contexts:** Click Add. Select the context. To specify that iFolder should search the subcontainers of the context, check the Search Subcontainers check box. Click OK.

In the contexts field, list all of the contexts, separated by semicolons (;) with no spaces. The order of the contexts is the order in which the contexts will be searched. The first context that is listed should be the context that contains the Admin user.

- ◆ **Remove Contexts:** Check the Context check box next to one more contexts, then click Remove.

5 Click Update to save your changes.

If you do not click Update before moving to another location in the console or before exiting the console, your changes will be lost.

Adding a User LDAP Server to the iFolder System

You can specify up to eight User LDAP servers for your iFolder system. All user LDAPs must be in the same Novell eDirectory tree.

1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).

2 Click Global Settings > User LDAPs.

The User LDAPs page lists the existing LDAP servers you have identified to iFolder.

3 Click Add.

This opens the Add User LDAP page.

4 Type the following information:

- ◆ **User LDAP Name:** The LDAP server host name.
- ◆ **Host DNS or IP:** The LDAP server's DNS name such as ldap1.your-domain-name.com or IP address such as 192.168.1.1.
- ◆ **Port:** The port to use for communications between the iFolder server and the LDAP server. Choose Port 389 for clear text or Port 636 for Secure Sockets Layer (SSL) communications. For information, see [“Using Clear Text or SSL Connections to the User LDAP Server” on page 127](#).
- ◆ **Login Username:** The admin username for the LDAP server. This username must have write privileges for the LDAP server to support extending the schema and browsing contexts.
- ◆ **Context:** The context you want iFolder to search to authenticate users for the iFolder server.
- ◆ **Login Password:** The password for the Login Username.

5 Click OK, or click Cancel to abandon the process.

Adding a User LDAP Server for a Linux-Based iFolder 2.1.2 Server

This section describes how to add a user LDAP server to your iFolder 2.1.2 server for Enterprise Linux solutions. You can specify up to eight User LDAP servers for your iFolder system. All user LDAPs must be in the same Novell eDirectory tree.

- 1** Copy the self-signed root certificate file (RootCert.der) from

```
/etc/opt/novell/ifolder/RootCert.der
```

to the following location

```
/opt/novell/ifolder/Server/LDAP/import/RootCert.der
```

- 2** If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).

The iFolder Management Console opens to the Global Settings > General Information page, which shows the current LDAP settings for the iFolder server.

- 3** Click Global Settings > User LDAPs.

The User LDAPs page lists the existing LDAP servers you have identified to iFolder.

- 4** Click Add.

This opens the Add User LDAP page.

- 5** Type the following information:

- ◆ **User LDAP Name:** The LDAP server host name.
- ◆ **Host DNS or IP:** The LDAP server's DNS name such as ldap1.your-domain-name.com or IP address such as 192.168.1.1.
- ◆ **Port:** The port to use for communications between the iFolder server and the LDAP server. Choose Port 389 for clear text or Port 636 for Secure Sockets Layer (SSL) communications. For information, see [“Using Clear Text or SSL Connections to the User LDAP Server” on page 127](#).
- ◆ **Login Username:** The admin username for the LDAP server. This username must have write privileges for the LDAP server to support extending the schema and browsing contexts.
- ◆ **Context:** The context you want iFolder to search to authenticate users for the iFolder server.
- ◆ **Login Password:** The password for the Login Username.

- 6** Click OK, or click Cancel to abandon the process.

- 7** Add any additional search contexts for the new LDAP server, then click OK.

- 8** Exit the iFolder Management Console.

- 9** Modify the LdapHost directive in the httpd_ifolder_unix.conf file to point to the new LDAP server.

9a Open the /etc/opt/novell/ifolder/httpd_ifolder_unix.conf file in a text editor.

9b Replace the current setting of the LdapHost directive with the IP address or DNS name of the new LDAP server.

9c Save the file.

- 10** Restart iFolder.

- 10a** To stop the iFolder server gracefully, at the server console, enter

```
/etc/init.d/novell-httpd stop
```

- 10b** To start the iFolder server, at the server console, enter

```
etc/init.d/novell-httpd start
```

- 11 To verify the new User LDAP server settings, if you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).

The iFolder Management Console opens to the Global Settings > General Information page, which shows the current LDAP settings for the iFolder server.

Replacing a User LDAP Server for the iFolder System

If you have multiple User LDAP server resources available to your iFolder server, you can add or delete User LDAP resources from the list, as needed, within the 1 to 8 User LDAP servers allowed. However, if you have a single User LDAP server as a resource for your iFolder server and need to replace it with a different User LDAP server, you must add the new LDAP server before you delete the existing User LDAP server from the User LDAP resources for the server.

- 1 Add the new User LDAP server to your iFolder server. For information, see [“Adding a User LDAP Server to the iFolder System” on page 124](#).
- 2 Delete the old User LDAP server from your Linux-based iFolder 2.1.2 server. For information, see [“Deleting a Single User LDAP Server from the iFolder System” on page 126](#).

Replacing a User LDAP Server for the Linux-Based iFolder 2.1.2 Server

If you have multiple User LDAP server resources available to your iFolder server, you can add or delete User LDAP resources from the list, as needed, within the 1 to 8 User LDAP servers allowed. However, if you have a single User LDAP server as a resource for your iFolder server and need to replace it with a different User LDAP server, you must add the new LDAP server before you delete the existing User LDAP server from the User LDAP resources for the server.

To replace a User LDAP server on your Linux-based iFolder 2.1.2 server:

- 1 Add the new User LDAP server to your Linux-based iFolder 2.1.2 server. For information, see [“Adding a User LDAP Server for a Linux-Based iFolder 2.1.2 Server” on page 124](#).
- 2 Delete the old User LDAP server from your Linux-based iFolder 2.1.2 server. For information, see [“Deleting a Single User LDAP Server from the iFolder System” on page 126](#).

Deleting a Single User LDAP Server from the iFolder System

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2 Click Global Settings > User LDAPs.
The User LDAPs page lists the existing LDAP servers you have identified to iFolder.
- 3 Click the link for the LDAP server that you want to delete.
This opens the management page for the individual LDAP server.
- 4 Click Delete.

This removes the LDAP objects that are associated with the selected LDAP server from the LDAP directory. Its LDAP objects can no longer be managed through the iFolder Management Console.

Deleting All User LDAP Servers from the iFolder System

1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).

2 Click Global Settings > User LDAPs.

The User LDAPs page lists the existing LDAP servers you have identified to iFolder.

3 Click Delete All.

This removes the LDAP objects that are associated with all of the LDAP servers from the LDAP directory. The LDAP objects can no longer be managed through the iFolder Management Console. You must add LDAP servers to the list so that iFolder can authenticate users.

Using Clear Text or SSL Connections to the User LDAP Server

Select Port 389 if you want to use LDAP without SSL encryption or if your LDAP server does not support SSL. Port 389 is also a good choice if iFolder and LDAP are running on the same server. Because no communication or data is being transferred across network connections, no encryption is necessary.

IMPORTANT: If you select Port 389, the LDAP Group object must be marked to allow clear text passwords, using your LDAP server management tool.

Select Port 636 if you want to use SSL, which provides your network with encryption and security when data is transferred across network connections. SSL requires a Root Certificate.

If you select Port 636, make sure you have previously copied the LDAP trusted root certificate (rootcert.der file) from your LDAP server to a directory on your iFolder server. For example, in NetWare, copy the file from LDAP server's sys:\public directory to an iFolder server's sys:\public directory. If you use port 636, you must enter the path to the directory on your iFolder server where you copied the rootcert.der file.

When you add a secure LDAP server to your iFolder system, the root certificate is copied into an attribute of the iFolderSettings class on the Global Settings LDAP.

13

Monitoring Your iFolder System

The System Monitoring task of the Novell® iFolder® Management Console lists general information about the User LDAP servers and iFolder servers in your iFolder system. It also allows you to temporarily pause and resume synchronization services for an iFolder server.

This section discusses the following:

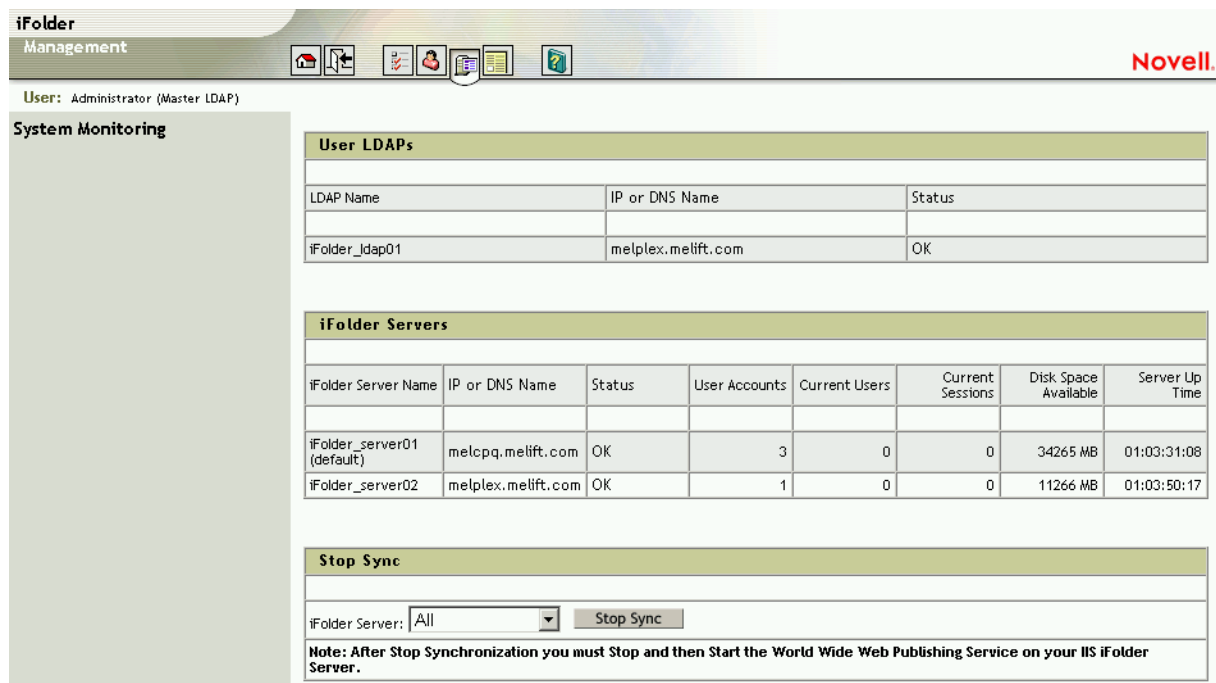
- ♦ “Accessing the iFolder System Monitoring Tool” on page 129
- ♦ “Monitoring User LDAP Server Status” on page 130
- ♦ “Monitoring iFolder Server Status” on page 130
- ♦ “Stopping Synchronization between iFolder Servers and Clients” on page 131
- ♦ “Debugging Synchronization Activity on Your iFolder Server” on page 131

Accessing the iFolder System Monitoring Tool

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see “Logging In to the iFolder Management Console” on page 70.

- 2 Click System Monitoring  in the tool bar.

Figure 29 Example of iFolder System Monitoring



Monitoring User LDAP Server Status

For each user LDAP server, the system reports the following:

- ◆ **LDAP Name:** The host name of the user LDAP server. For example, iFolder_ldap01.
- ◆ **IP Address or DNS Name:** The IP address or DNS name of the user LDAP server. For example, ldap1.your-domain-name.com or 192.168.1.1.
- ◆ **Status:** The current operational status of the user LDAP server, either OK (up and running) or No (down).

Monitoring iFolder Server Status

For each iFolder server in your iFolder system, iFolder reports the following:

- ◆ **iFolder Server Name:** The host name of the iFolder server. For example, iFolder_server01.
- ◆ **IP Address or DNS Name:** The IP address or DNS name of the iFolder server. For example, nif1.your-domain-name.com or 192.168.1.1.
- ◆ **Status:** The current operational status of the iFolder server, either OK (up and running) or No (down).
- ◆ **User Accounts:** The number of user accounts currently assigned to the iFolder server.
- ◆ **Current Users:** The number of users currently connected to the iFolder server.
- ◆ **Current Sessions:** The number of concurrent connections currently made between user workstations and the iFolder server. This might be more than the number of current users because a user might have multiple workstations synchronizing to a single user account.


- ♦ **Disk Space Available:** The amount of disk space that is available on the iFolder user data volume that is not currently in use.
- ♦ **Server Up Time:** The elapsed time between the last server start time and the current time, that is, the amount of time the iFolder server has been up and running.

Stopping Synchronization between iFolder Servers and Clients

You have the option to halt automatic synchronization between a specific iFolder server and its iFolder clients.

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).



- 2 Click System Monitoring  in the tool bar.
- 3 Select the server from the iFolder server drop-down list.
- 4 Click Stop Sync.
- 5 If you are using IIS, stop and start the Web server to put this change into effect.

Reverse this process to resume synchronization services.

Debugging Synchronization Activity on Your iFolder Server

You can view a log of synchronization activity on your Novell iFolder servers to help debug problems.

To enable or disable logging:

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).
- 2 From the iFolder Management Console, click Global Settings > Global Policies.
- 3 Click Display Server Policies.
- 4 Check the Debug Output check box to enable logging. Uncheck the Debug Output check box to disable logging.
- 5 Click Update Server Policies.

To view the log, use one of the following methods, depending on the server operating system and the version of iFolder you use:

- ♦ [“Using Debug Output in iFolder 2.1.x for NetWare Servers” on page 132](#)
- ♦ [“Using Debug Output in iFolder 2.1 for Windows 2000 Servers” on page 132](#)
- ♦ [“Using Debug Output in iFolder 2.1 for Linux Servers” on page 132](#)
- ♦ [“Using Debug Output in iFolder 2.1.2 for Enterprise Linux Servers” on page 133](#)

Using Debug Output in iFolder 2.1.x for NetWare Servers

You can view all of the synchronization activity on each NetWare server when you click Debug Output. The log information is output to the Apache screen located on each iFolder server.

Using Debug Output in iFolder 2.1 for Windows 2000 Servers

- 1 Create a logs directory at `c:\inetpub\wwwroot\iFolder\DocumentRoot`.
- 2 In the Windows Registry, go to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\iFolderServer`, then add the following line:

```
ifolderserverlogging c:\inetpub\wwwroot\iFolder\DocumentRoot\logs\index.html
```

- 3 To access the log, in a Web browser, enter the DNS name or IP address of your iFolder server, followed by the directory and filename.

For example, `http://nif1.your-domain-name.com/logs/index.html`, where `nif1.your-domain-name.com` is the actual DNS name or IP address of your iFolder server.

Using Debug Output in iFolder 2.1 for Linux Servers

- 1 To set permissions for the logs directory to allow Apache to create and write a file for logging, at the server console prompt, enter the following command:

```
chmod 760 /usr/local/apache2/ifolder/DocumentRoot/logs
```

- 2 Edit the `/usr/local/apache2/iFolderServer/httpd_ifolder_unix.conf` file by adding the following directive to the end of the Virtual Hosts sections for both port 80 and port 443:

```
iFolderServerLogging "/usr/local/apache2/ifolder/DocumentRoot/logs/index.html"
```

This allows iFolder to create the `index.html` file in the `/usr/local/apache2/ifolder/DocumentRoot/logs` directory and to write the synchronization activity for the iFolder server to it.

- 3 Restart your Apache server by entering the following commands at the server console:

```
/etc/init.d/httpd stop
```

```
/etc/init.d/httpd start
```

- 4 To access the iFolder log, do one of the following:

- ◆ In your Web browser, enter the DNS name or IP address of your iFolder server, followed by the directory and filename.

For example, go to the URL `http://nif1.your-domain-name.com/logs/index.html`, where `nif1.your-domain-name.com` is the actual DNS name or IP address of your iFolder server.

- ◆ At the server console, enter

```
tail -f pathandfilename
```

For example,

```
tail -f /usr/local/apache2/ifolder/DocumentRoot/logs/index.html
```

Using Debug Output in iFolder 2.1.2 for Enterprise Linux Servers

- 1 To create and set permissions for a directory where the log file resides, at the server console prompt, enter the following commands:

```
mkdir /var/opt/novell/ifolder/DocumentRoot/logs  
chmod 760 /var/opt/novell/ifolder/DocumentRoot/logs  
chown novlwww /var/opt/novell/ifolder/DocumentRoot/logs
```

- 2 Edit the `/etc/opt/novell/ifolder/httpd_ifolder_unix.conf` file by adding the following directive to the end of the file:

```
iFolderServerLogging "/var/opt/novell/ifolder/DocumentRoot/logs/index.html"
```

This allows iFolder to create the `index.html` file in the `/var/opt/novell/ifolder/DocumentRoot/logs` directory and to write the synchronization activity for the iFolder server to it.

- 3 Restart your Apache server by entering the following commands at the server console:

```
/etc/init.d/novell-httpd stop  
/etc/init.d/novell-httpd start
```

- 4 To access this information, do one of the following:

- ♦ In your Web browser, enter the DNS name or IP address of your iFolder server, followed by the directory and filename.

For example, go to the URL `http://nifl.your-domain-name.com/logs/index.html`, where `nifl.your-domain-name.com` is the actual DNS name or IP address of your iFolder server.

- ♦ At the server console, enter

```
tail -f pathandfilename
```

For example,

```
tail -f /var/opt/novell/ifolder/DocumentRoot/logs/index.html
```


14 Generating Reports for Your iFolder System

The Reporting option in the Novell® iFolder® Management Console generates statistics about your iFolder system, iFolder servers, user LDAP servers, or iFolder user accounts, then displays the information in report format.

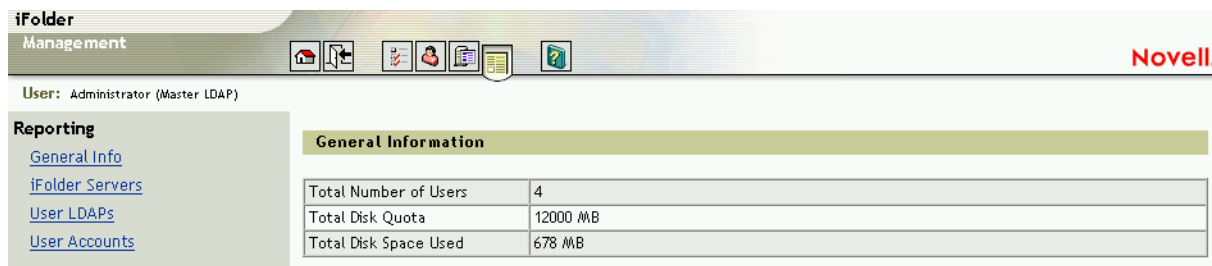
This section discusses the following topics:

- ◆ “Reporting General Information” on page 135
- ◆ “Reporting iFolder Server Information” on page 136
- ◆ “Reporting User LDAP Server Information” on page 137
- ◆ “Reporting iFolder User Account Information” on page 137
- ◆ “Creating Reports” on page 139
- ◆ “Exporting and Manipulating Reports” on page 139
- ◆ “Printing Reports” on page 139

Reporting General Information

The General Information report displays information about the number of users and the storage resources in use on each of the iFolder servers in your iFolder system.

Figure 30 Novell iFolder General Information Report



The screenshot shows the Novell iFolder Management console interface. At the top, it says "iFolder Management" and "Novell." The user is identified as "Administrator (Master LDAP)". On the left, there is a "Reporting" menu with links for "General Info", "iFolder Servers", "User LDAPs", and "User Accounts". The main content area displays a "General Information" report with the following data:

General Information	
Total Number of Users	4
Total Disk Quota	12000 MB
Total Disk Space Used	678 MB

The report includes the following data:

- ◆ **Total Number of Users:** The number of usernames provisioned with iFolder services that have activated a corresponding iFolder account.
- ◆ **Total Disk Quota:** The sum of all storage space on your iFolder system assigned to iFolder accounts based on all of the individual User Disk Quotas. This represents the maximum amount of space on your iFolder servers that is currently set aside for storing iFolder data. For example, 12000 MB.

- ◆ **Total Disk Space Used:** The sum of all storage space on your iFolder system currently used to store iFolder data based on the actual space consumed by all iFolder accounts. This represents the actual amount of space on your iFolder servers currently in use by all iFolder accounts. For example, 2309 MB.

Reporting iFolder Server Information

The iFolder Server report displays information about the operational state of your iFolder servers. You can view the information for all iFolder servers or a specified iFolder server in your iFolder system. From the Show Information about iFolder Server drop-down list, select All or select a specific iFolder server, then click Display.

Figure 31 Novell iFolder Servers Report

iFolder Server Name	IP Address or DNS	Server Up Time	iFolder Server Version	User Accounts	Current Users	Current Sessions	Total Disk Space Used	Total Disk Quota	iFolder Host OS	iFolder Host Web Server	User Data	Application Root
iFolder_server01 (default)	melcpq.melift.com	01:03:34:18	2.1 02/08/08	3	0	0	452 MB	9000 MB	Windows 2000	Microsoft IIS	C:\iFolder	C:\inetpub\wwwroot\iFolderServer
iFolder_server02	melplex.melift.com	01:03:53:27	2.1 03/01/31	1	0	0	226 MB	3000 MB	Windows 2000	Microsoft IIS	C:\iFolder	c:\inetpub\wwwroot\iFolderServer

The report includes the following data:

- ◆ **iFolder Server Name:** The host name of the iFolder server. For example, iFolder_server01.
- ◆ **IP or DNS Name:** The IP address (such as 192.168.1.1) or DNS name (such as nif1.your-domain-name.com) of the specified iFolder server.
- ◆ **Server Up Time:** The elapsed time since the last server reboot.
- ◆ **iFolder Server Version:** The iFolder version running on the specified server. [Version number and release date (mm/dd/yy)]
- ◆ **User Accounts:** The total number of iFolder accounts assigned to the specified iFolder server.
- ◆ **Current Users:** The total number of users currently logged in to the specified iFolder server.
- ◆ **Current Sessions:** The total number of iFolder sessions currently active on the specified iFolder server. For example, a user might be logged in from multiple machines concurrently to create multiple sessions.

Each iFolder server can support between 5,000 and 10,000 concurrent iFolder sessions, depending on the CPU, memory, and bandwidth available on the server.

- ◆ **Total Disk Space Used:** The total amount of space currently consumed by the all users' iFolder data on the specified iFolder server. For example, 12200 MB.
- ◆ **Total Disk Quota:** The total of all user disk quotas allocated to the iFolder accounts on the specified server. For example, 100,000 MB. The maximum disk quota size for an individual iFolder account is 8 TB.
- ◆ **iFolder Host OS:** The server operating system used by the iFolder server. For example, NetWare 6.5, Red Hat Linux, or Windows 2000.

- ♦ **iFolder Host Web Server:** The Web server that iFolder uses to manage user connections and to administer iFolder. [Apache Web Server or Microsoft IIS]
- ♦ **User Data:** The path to the directory location where all iFolder data is stored on the specified iFolder server.
- ♦ **Application Root:** The path to the directory location where the iFolder application is stored on the specified iFolder server.

Reporting User LDAP Server Information

Your iFolder system can specify up to 8 user LDAP servers to authenticate iFolder users when they log in to the iFolder servers. Use this report to determine how many of the usernames managed by a given user LDAP server are associated with existing iFolder accounts.

Figure 32 Novell iFolder User LDAP Servers Report

The screenshot shows the iFolder Management interface. The user is logged in as 'Administrator (Master LDAP)'. The 'Reporting' section is active, showing a table titled 'User LDAPs'. The table has the following data:

LDAP Name	IP or DNS Name	Status	LDAP Users	iFolder Users
iFolder_ldap01	melplex.melift.com	OK	10	4

Below the table is an 'Export' button.

The report includes the following data:

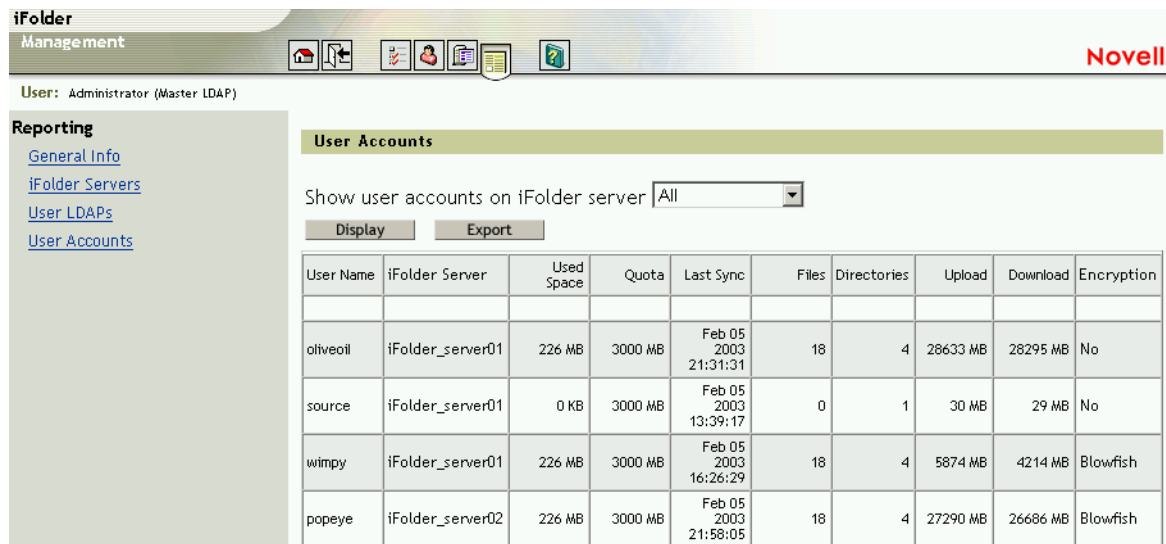
- ♦ **LDAP Name:** The host name of the specified LDAP server. For example, iFolder_ldap01.
- ♦ **IP or DNS Name:** The IP address (such as 192.168.1.1) or DNS name (such as ldap1.your-domain-name.com) of the specified LDAP server.
- ♦ **Status:** The current availability of the specified user LDAP server. [OK or No]
- ♦ **LDAP Users:** The total number of all network usernames authenticated by the specified user LDAP server.
- ♦ **iFolder Users:** The total number of iFolder user accounts authenticated by the specified user LDAP server.

Reporting iFolder User Account Information

The iFolder User Account report displays information about the iFolder accounts on all servers in your iFolder system or about the iFolder accounts assigned to a specific iFolder server. Use this report to view a list of users by iFolder server, statistics about the storage and bandwidth consumed by an iFolder user account, and which user accounts use encryption versus clear text for data transfers between workstations and the iFolder server and while stored on the iFolder server.

You can view the iFolder user accounts information for all iFolder servers or a specified iFolder server in your iFolder system. From the Show User Accounts on iFolder Server drop-down list, select All or select a specific iFolder server, then click Display.

Figure 33 Novell iFolder User Accounts Report



The report includes the following data:

- ◆ **User Name:** The user's username associated with the iFolder account. For example, acatt.
- ◆ **iFolder Server:** The host name of the iFolder server. For example, iFolder_server01.
- ◆ **Used Space:** The total amount of space currently consumed by the user's iFolder data on the iFolder server. For example, 235 MB.
- ◆ **Quota:** The current user disk quota allocated to the iFolder account. For example, 500 MB. The maximum disk quota size for an iFolder account is 8 TB.
- ◆ **Last Sync:** The time stamp of the last synchronization of iFolder data. [MMM dd yyyy hh:mm:ss] (month, day, year, hours, minutes, and seconds)
- ◆ **Directories:** The total number of directories (including subdirectories) in the user's iFolder directory.

iFolder supports up to 32,765 directories within a user's iFolder directory. If the user exceed this number, iFolder stops writing to the local iFolder directory and data loss is likely. Typical iFolder users are unlikely to exceed this upper limit with normal use. However, you should monitor use to alert users if they are approaching this limit.

- ◆ **Upload:** The the total amount of the iFolder data uploaded from the user's workstation to the iFolder server since the account was activated.

An individual file must be smaller than 4 GB to be synchronized with iFolder. The smallest data transfer is a 4 KB block of data.

- ◆ **Download:** The the total amount of the iFolder data downloaded from the iFolder server to the user's workstation since the account was activated.


An individual file must be smaller than 4 GB to be synchronized with iFolder. The smallest data transfer is a 4 KB block of data.

- ◆ **Encryption:** Indicates whether encryption is enabled for the iFolder account. [Blowfish or No]

Creating Reports

- 1 If you are not logged in, go to the iFolder Management Console, click Global Settings, enter your administrator username and password, then click login. For details, see [“Logging In to the iFolder Management Console” on page 70](#).



- 2 Click Reporting  in the tool bar.
- 3 Do one of the following:
 - ♦ **General Info:** Click General Info.
 - ♦ **iFolder Servers:** Click iFolder Servers. From the Show Information about iFolder Server drop-down list, select All or select a specific iFolder server, then click Display.
 - ♦ **User LDAPs:** Click User LDAPs. Click View Report, or right-click the link for an option to save the report.
 - ♦ **User Accounts:** Click User Accounts. From the Show User Accounts on iFolder Server drop-down list, select All or select a specific iFolder server, then click Display.

Exporting and Manipulating Reports

- 1 Create a report. For information, see [“Creating Reports” on page 139](#).
- 2 Click Export.
- 3 Specify a name for the HTML file and a location where you want to save the file, then click Save.
- 4 Import the data into a spreadsheet application where you can create reports, graphs, and other visual presentations.

Printing Reports

To print the iFolder report as displayed on the Web page, use the print feature of your Web browser. For different formats, you must export the data and reorganize the data, using a spreadsheet application.

A

In-Depth Look at Authentication, Encryption, and Synchronization

This section gives you an in depth view of how Novell® iFolder® 2.1 authentication, encryption, and synchronization work. For an overview, see [Chapter 2, “Understanding the Novell iFolder Architecture,”](#) on page 17.

After the iFolder software is installed and configured, users can download and install the iFolder client. For installation instructions, see the [Novell iFolder Quick Start](#).

Before a user can use iFolder on his local workstation, the administrator must enable the user’s User object in the iFolder Management Console. You can control who is authorized to have an iFolder account by enabling User objects or, in other words, by giving those users authority to create and use iFolder accounts.

iFolder accounts are initialized the first time a provisioned user logs in to the iFolder server, using the iFolder client, the iFolder Web site Login (Java applet), or NetDrive. After a user account is initialized, the iFolder administrator manages it through the iFolder Management Console.

As users begin to populate their iFolder directories with data, the iFolder client supports automatic synchronization. Users can install the iFolder client on multiple workstations, which allows them to move between computers and locations easily, knowing their data is always secure, backed up on the network, and following them in its electronic footsteps so that the latest copy of their data is available from any location and at any time.

Authentication and Encryption

The iFolder client talks to the iFolder server over HTTP port 80, which is a clear text, unencrypted port. Data requests that are exchanged between the iFolder client and iFolder server are never encrypted. However, the username and password are always encrypted. Novell iFolder encrypts the data over the connection and while the file is on the iFolder server only if the user selects the encryption option at the time the account is initialized or if the iFolder administrator enforces the encryption option from the iFolder Management Console.

iFolder uses RSA encryption to encrypt the username and password and Blowfish encryption to encrypt the user data when it travels between the iFolder client and server. If data encryption is enabled, the data is actually encrypted as it travels across the wire to the iFolder server and is stored in its encrypted state on the iFolder server. However, the data is never stored encrypted on the local workstation.

When a user logs in, the iFolder client authenticates to the iFolder server by sending the encrypted username and password to the iFolder server. The iFolder server uses the user ID and password to perform an LDAP bind to an LDAP server. After the LDAP bind is successful, LDAP verifies that the user is connected to the correct iFolder server. If the user is on a different server, his request is directed to the correct server. iFolder uses the LDAP server to store its configuration settings and to specify what iFolder server the user is assigned to; this is how iFolder handles redirection.

When iFolder is installed and the Admin logs in to the iFolder Management Console, the Global Settings LDAP schema is extended and the following LDAP objects are added:

- ◆ iFolderLDAP
- ◆ iFolderServer
- ◆ iFolderServerAgentObject
- ◆ iFolderSettings

For more information on the attributes associated with these objects, see [“Logging In to the iFolder Management Console” on page 70](#).

Synchronization

After the initial login via the iFolder client, a user can begin to add files to his local iFolder directory, and automatic synchronization begins. The iFolder client is always aware of any local activity and, based on the synchronization preferences chosen by you or the user, the iFolder client regularly asks the iFolder server for a download of any new data. After the iFolder server downloads the data, it uploads any updates from the iFolder local directory. When the user accesses his account from a different computer, the iFolder server first downloads any updates before uploading the iFolder client changes.

Every time the iFolder client logs in to the iFolder server, it compares filemaps (metadata that describes information about the actual file in your local iFolder) and dirmaps (metadata information on your local iFolder directory) between itself and the iFolder server. Filemaps and dirmaps are located on the local workstation at `c:\program files\novell\iFolder\username\home`. If discrepancies are found between the filemaps and dirmaps, the iFolder client first downloads the new files from the server and then uploads any new local files. When files are uploaded or downloaded between the iFolder server or client, only the changes, not the whole file, are sent on a 4 KB block level across the wire. This results in fast download and uploads times, even at slower modem speeds.

IMPORTANT: There are some applications that rewrite the complete file regardless of how minor the change. Microsoft Word, for example, behaves like this. Thus, if the application that you are using completely rewrites the file, iFolder will recognize it as 100% new content and synchronize the whole file.

The iFolder server then receives these new files and adds them to its sync index, which lists the current state of the file system. The iFolder sync index is very small, consisting of only four bytes.

Whenever the sync indexes match between the iFolder server and the client, iFolder knows that no changes have been made. When that same user logs in from another workstation, the iFolder client compares its sync index to the iFolder server’s sync index and then downloads any changes. All along, the iFolder client is monitoring the file system and caching any changes. If there is a conflict between files, iFolder uses time stamps to resolve it. The newest time stamp wins and the old file is placed in the Conflict Bin, accessed through the iFolder system tray menu on the local workstation. For more information about the Conflict Bin, see [“Using the Conflict Bin” on page 117](#).

B

Upgrading from iFolder Standard Edition to iFolder 2.1

The Novell® iFolder® 2.1 server installation supports upgrading from Novell iFolder Standard Edition (1.x) in the install program for all operating systems that have valid upgrade paths. For information about valid upgrade paths, see [“Upgrade Scenarios for iFolder” on page 23](#).

IMPORTANT: You might need to follow a manual upgrade process if you have a large number of users who have extended characters in their passphrases. You must also follow special precautions if you decide to concurrently use both iFolder 1.x and iFolder 2.1 systems.

This section discusses the following:

- ♦ [“Conflict in the Passphrase Storage Method between iFolder 1.x and iFolder 2.1” on page 143](#)
- ♦ [“Upgrading Manually from iFolder 1.x to iFolder 2.1” on page 143](#)
- ♦ [“Compatibility Issues between iFolder Client and Server Versions” on page 144](#)

Conflict in the Passphrase Storage Method between iFolder 1.x and iFolder 2.1

If you have a large number of users who have extended characters in their passphrases, do not use the automatic uninstall function in the iFolder server installation program. Instead, manually uninstall the iFolder 1.x from your system and install the iFolder 2.1 version.

In a direct upgrade, the iFolder 2.1 client will not recognize the passphrase used by the iFolder 1.x client because the two clients use different formats for storing the encryption passphrase. The iFolder 1.x client uses an ANSI hash and the iFolder 2.1 client uses a Unicode* format. Whenever a user attempts to access an iFolder account through the Java applet, the login will fail and return a message prompting the user to contact the iFolder administrator to change the passphrase.

To avoid this problem, first uninstall iFolder 1.x and remove the user accounts from your existing iFolder server. Then, install iFolder 2.1 on your server.

After installing and configuring the iFolder 2.1 server, the users must install the iFolder 2.1 client on their workstations and log in to the iFolder server. The initial iFolder client login will prompt the users to enter a new passphrase. They can enter the old passphrase if they want to, because iFolder doesn't need a new passphrase; it simply needs to store the passphrase in a format that it can recognize.

By manually uninstalling iFolder 1.x and installing iFolder 2.1, you avoid the time-consuming task of manually removing each user account as the users report that they cannot log in.

Upgrading Manually from iFolder 1.x to iFolder 2.1

- 1 Stop the iFolder service or the Web server service on the server that you are going to upgrade.

- 2** Uninstall iFolder Standard Edition on the server that you want to upgrade.
- 3** Install iFolder 2.1, using one of the following methods.
 - ◆ **NetWare:** Follow the instructions in [Chapter 4, “Installing iFolder 2.1 on NetWare,”](#) on page 31.
 - ◆ **Windows 2000:** Follow the instructions in [“Installing iFolder on Windows/IIS/eDirectory”](#) on page 37.
 - ◆ **Red Hat Linux 8:** Follow the instructions in [“Installing iFolder 2.1 on Red Hat Linux 8”](#) on page 45.
- 4** If LDAP is running on the same server that holds your User objects, no additional LDAP configuration is required, and you can skip to [Step 5 on page 144](#).

However, if your LDAP server does *not* contain your User objects, do either of the following:

- ◆ In the iFolder Management Console, add your user contexts to your settings for the User LDAP directory.

To do this, log in to the Global Settings section of the iFolder Management Console, click User LDAPs, click the server name you are upgrading, enter the context of your User objects, then click Update.
- ◆ Add the LDAP directory that contains your User objects in the iFolder Management Console.

To do this, log in to the Global Settings section of the iFolder Management Console, then click User LDAPs.

For instructions, see [“Managing User LDAP Servers”](#) on page 123.

- 5** In the iFolder Management Console, click Global Settings > iFolder Servers.
- 6** Select the server you just upgraded to iFolder 2.1.
- 7** Click Upgrade.

This will assign the iFolder attribute to the iFolder users on the server that you just upgraded. This attribute authorizes your iFolder users to access the upgraded iFolder server.
- 8** After installing iFolder 2.1 server, have the users install the iFolder 2.1 client on their workstations and log in to the iFolder server. The initial iFolder client login will prompt the users to enter a new passphrase. They can enter the old passphrase if they want to, because iFolder doesn't need a new passphrase; it simply needs to store the passphrase in a format that it can recognize.

For additional information:

- ◆ **Installing iFolder on Additional Servers:** See [“Configuring iFolder on Additional Servers”](#) on page 77.
- ◆ **Managing iFolder:** See [“Accessing iFolder Web Interfaces”](#) on page 65.

Compatibility Issues between iFolder Client and Server Versions

The iFolder 2.1 client cannot access an iFolder 1.x server; similarly, an iFolder 1.x client cannot access an iFolder 2.1 server. If you have multiple iFolder versions available in your environment, make sure your users have the right client software for accounts located on different servers. Make sure the users understand that they must access the iFolder server with the correct version of the iFolder client. For example, use the iFolder 2.1 client to access files on an iFolder 2.1 server.

C

Configuring iFolder on Novell Cluster Services

This section discusses how to configure Novell® iFolder® 2.1 on Novell Cluster Services™. It discusses the following topics:

- ♦ “References for Setting Up Clusters on NetWare” on page 145
- ♦ “Configuring an iFolder Server Cluster on NetWare 5.1 and 6.0” on page 145
- ♦ “Configuring an iFolder Server Cluster on NetWare 6.5 and Later” on page 147

References for Setting Up Clusters on NetWare

Before you configure Novell iFolder 2.1 on Novell Cluster Services (NCS), you should have a basic understanding of how NCS works. The information in this section outlines only the basic steps for setting up Novell Cluster Services.

Consult the following references for setting up a cluster on NetWare®:

- ♦ **NetWare 5.1:** *Novell Cluster Services Overview and Installation Guide for NetWare 5.1* (<http://www.novell.com/documentation/lg/ncs>)
- ♦ **NetWare 6:** *Novell Cluster Services Overview and Installation Guide for NetWare 6.0* (<http://www.novell.com/documentation/lg/ncs6p/index.html>)
- ♦ **NetWare 6.5:** *Novell Cluster Services 1.7 Administration Guide*

NOTE: Novell Cluster Services runs only on NetWare software.

Configuring an iFolder Server Cluster on NetWare 5.1 and 6.0

In NetWare 5.1 and 6.0, the iFolder 2.1 server software resides and runs on the primary server. Each server node must have its own copy of the software.

To configure Novell iFolder on Novell Cluster Services:

- 1** Install iFolder on all NetWare servers in the cluster that you want to run iFolder.
See [Chapter 4, “Installing iFolder 2.1 on NetWare,” on page 31](#).
- 2** Stop the iFolder service on one of your iFolder servers in the cluster.
This will be your passive-standby iFolder server that iFolder will fail over to.
- 3** Create an NSS volume to use as the central repository of iFolder user accounts and data.
The size of this volume will vary, based on the number of iFolder users you plan to support and the storage quota allocated per user.

Do one of the following:

- ◆ **NetWare 5.1 Support Pack 5:** Create a Novell Storage Service (NSS) volume on your shared storage disk system, commonly referred to as a storage area network or SAN.
 - ◆ **NetWare 6 or later:** Create an NSS volume on a pool. If a pool already exists, make sure there is enough space on the pool for the NSS volume that you plan to make.
- 4** Enable the NSS volume for clustering by assigning an IP address or DNS name to the cluster-enabled volume.

Do one of the following:

- ◆ **NetWare 5.1 Support Pack 5:** Enable clustering on the NSS volume that you created in [Step 3 on page 145](#).
- ◆ **NetWare 6.0 or later:** Enable clustering on the pool you created in [Step 3 on page 145](#). (Enabling clustering on the pool automatically enables clustering on its NSS volume.)

Remember the IP address of the user-database volume; you will need it in [Step 6 on page 146](#).

- 5** Create a directory on the cluster-enabled volume where you want to store the iFolder user database.
- 6** On one of the active iFolder servers in the cluster, edit the `sys:\apache\ifolder\server\httpd_additions_nw.conf` file to set parameters for the LDAP Host, iFolderServerRoot, and Virtual Host. The parameters must be modified in the listings for the unsecured port (usually Port 80) and for the secured port (usually Port 443).

Modify the following parameters:

- ◆ **LDAP Host:** Set this (for Port 80 and Port 443) to the DNS name or IP address (such as `ldap1.your-domain-name.com` or `192.168.1.1`) that you assigned to the cluster-enabled volume in [Step 4 on page 146](#).
- ◆ **iFolderServerRoot:** Set this (for Port 80 and Port 443) to the directory that you created on the cluster-enabled volume in [Step 5 on page 146](#).

For example, if your cluster-enabled volume was called *sharedvol* and you had created a folder on that volume called *nifdir*, you would set the iFolderServerRoot to `sharedvol:\nifdir`.

- ◆ **Virtual Host:** Set this (for Port 80 and Port 443) to the DNS name or IP address (such as `lnf1.your-domain-name.com` or `192.168.1.1`) that you assigned to the cluster-enabled volume in [Step 4 on page 146](#).

When you are finished, save your edits.

- 7** Copy the edited `httpd_additions_nw.conf` file to the passive-standby iFolder server that you set up in [Step 2 on page 145](#).
- 8** On a different active iFolder server in the cluster, edit the `sys:\apache\ifolder\server\httpd.conf` file to set parameters for the Listen, ServerName, and SecureListen.

Modify the following parameters:

- ◆ **Listen:** Set this parameter to the IP address or DNS name of the cluster-enabled volume by either adding a new Listen parameter or modifying an existing one.
- ◆ **ServerName:** By default, this parameter displays the IP address of the server. Replace this IP address with the IP address or DNS name of the cluster-enabled volume.
- ◆ **SecureListen:** Change the IP address in the SecureListen *ipaddress* SSL CertificateIP parameter to the IP address or DNS name of the cluster-enabled volume.

When you are finished, save your edits.

- 9** Copy the edited `httpd.conf` file to the passive-standby iFolder server that you set up in [Step 2 on page 145](#).
- 10** Turn off the automatic start on reboot of iFolder on the member servers in the cluster by editing the `autoexec.ncf` file on the following iFolder servers in the cluster:
 - ♦ The iFolder server that you chose to be the passive standby server in [Step 2 on page 145](#).
 - ♦ The iFolder server where you modified the `httpd_additions_nw.conf` file in [Step 7 on page 146](#).
 - ♦ The iFolder server where you modified the `httpd.conf` file.

To modify the `autoexec.ncf` file, comment out the `startifolder` line. Adding a pound sign (#) in front of the line makes it a comment line. For example,

```
#startifolder
```

The `startifolder` command allows iFolder to start by default when you reboot your server. However, when you use iFolder in a clustered environment, iFolder is started by Novell Cluster Services.

- 11** Verify that the IP address for your cluster volume resource is correct.

To view the IP address from your workstation, launch ConsoleOne[®], browse to your cluster container object, right-click the cluster volume resource, then click Properties > IP address.
- 12** Set up Novell Cluster Services to start iFolder by default on reboot of the cluster.
 - 12a** In the Properties dialog box, click Scripts > Cluster Resource Load Script.
 - 12b** Add the following command to the end of the existing load script:

```
startifolder
```

- 12c** Click Apply.

- 13** Set up Novell Cluster Services to stop iFolder services by default on the server down command.
 - 13a** In the Properties dialog box, click Scripts > Cluster Resource Unload Script.
 - 13b** Add the following commands to the beginning of the existing unload script:

```
startifolder
```

```
delay 2
```

- 13c** Click Apply, then click Close.

Novell iFolder is now configured for Novell Cluster Services.

Configuring an iFolder Server Cluster on NetWare 6.5 and Later

In a NetWare 6.5 cluster, the Novell iFolder server software resides and runs on an external storage location shared by all server nodes in the cluster. You only need to install iFolder on the first server. Copy the software directory and user data directory to the shared location, then update the iFolder 2.1 configuration to support its new location.

Install NetWare with Apache on each of the other servers in the cluster, using the Basic pattern install option. After you install iFolder on the first server, copy the Web server instance of Apache

that supports iFolder to the shared location, leaving the admin server instance behind. Update files on each member server to point to the Web server instance of Apache for iFolder support.

This solution assumes that any other Web-based applications for this cluster will also reside in the cluster's shared volume and in the same instance of Apache. By default, the iFolder and Basic installations do not allow the POSIX Semantic Agent (PSA) module (psa.nss) to load because PSA causes problems for iFolder.

IMPORTANT: You must make sure that any other Web-based applications you want to install on the cluster do not load or need the PSA module.

Non-Web-enabled applications can be installed on servers in the cluster. If you cluster the non-Web-enabled applications, they must share the same shared volume that you defined for the cluster. However, if they are not clustered, they do not need to use the shared volume.

This topic discusses the following:

- ◆ [“Preparing to Configure Your iFolder Server Cluster” on page 148](#)
- ◆ [“Configuring Your iFolder Cluster Solution” on page 149](#)

Preparing to Configure Your iFolder Server Cluster

Prerequisites for Clustering in NetWare 6.5

Review the prerequisites for the following components of the clustered Novell iFolder configuration:

- ◆ Novell iFolder 2.1 on NetWare is discussed in [Chapter 3, “Preparing to Install iFolder 2.1,” on page 21](#).
- ◆ Novell Cluster Services for NetWare 6.5 is discussed in the *Novell Cluster Services 1.7 Administration Guide*.

Considerations for the Number of Nodes in the Cluster

Novell Cluster Services alone does not provide load-balancing services between nodes in the cluster. Load-balancing cluster solutions require cluster-aware applications or additional external hardware. Because Novell iFolder 2.1 is not a cluster-aware application, a load-balancing solution based on NetWare and the server hardware alone is not possible. Only one server in the cluster operates at any given time.

An active/passive, two-node cluster is the basic fault-tolerant, high-availability solution. You can add multiple passive (standby) servers, if desired, for increased availability. In an active/passive cluster configuration, one server is active and any other nodes serve as a standby servers. If the active server goes down, the Novell Cluster Services software handles the graceful failover to the next available server in the cluster.

The failover is transparent to users logged in to iFolder server accounts from the iFolder clients. Users logged in to the iFolder server via a Web browser might need to click Refresh to reactivate the link to the server.

Considerations for Storage Media in the Shared-Disk System

A Novell Cluster Services solution requires a storage-area-network (SAN) configuration to support the sharing of devices between multiple member nodes of the cluster. It is also possible to configure a two-node cluster, using two servers connected to a single external storage array, but this solution does not offer the same type of connection fault tolerance as a SAN.

In a shared-disk cluster, a single disk error can cause a volume failure if fault-tolerant measures are not used. Novell Cluster Services does not protect against disk and connection faults.

To add fault tolerance against a single disk failure to the shared-disk system, you can set up the devices you plan to use in the cluster as software RAID 1 (mirrored) devices or as software RAID 5 (striping with parity) devices. Make the software RAID devices sharable for clustering, then assign them as devices in the cluster-enabled pool. For information, see ““Using Software RAID Devices to Enhance Data Fault Tolerance and Performance”” in the *Novell Storage Services Administration Guide for NetWare 6.5*.

To add fault tolerance against a connection failure, NetWare supports multipath I/O to your storage devices. You can specify which path to use as the primary path between the server and the device for each member server, then specify the failover priority for other paths. For information, see ““Configuring Multiple Paths for Access Fault Tolerance”” in the *Novell Storage Services Administration Guide for NetWare 6.5*.

Considerations for Apache Instances

In Novell iFolder 2.1 and later, iFolder runs as a module on Apache. Any failure of the module causes the Apache instance to fail. This means that if you run multiple applications in a single instance of Apache, all the applications fail if one application module fails.

If you plan to run other applications that use Apache on a clustered server, we recommend that you install Novell iFolder first in its own instance of Apache. For information on setting up additional instances of Apache on a server, consult the [Apache Web site \(http://www.apache.org\)](http://www.apache.org).

Considerations for the LDAP Server Solution

As discussed in [Chapter 3, “Preparing to Install iFolder 2.1,” on page 21](#), you must install and configure at least one LDAP server before you install Novell iFolder. The LDAP server must be in the same local tree as the iFolder server. Although you can point iFolder to the master LDAP server or a replica, we recommend you point to the master LDAP server.

During the installation of iFolder on the primary server, you identify the primary LDAP server that the iFolder cluster uses. You specify the LDAP server’s address during the iFolder installation. If you change the LDAP server address later, you must change it in the iFolder configuration. After the cluster configuration is complete, you can add additional LDAP servers to the list to ensure fault tolerance. For information, see ““Managing User LDAP Servers”” on [page 123](#).

The LDAP service must always be available to iFolder in the event of failover. Typically, the LDAP server can be the same server as the iFolder server. However, in a clustered iFolder configuration, the LDAP server should not reside on any of the member nodes in the cluster. For example, if you put the LDAP server on the primary server and that server failed over, then the LDAP services would no longer be available to a standby server that becomes active. To ensure that the LDAP service is available to any of the nodes that might become active, put your LDAP service on a server other than the servers in the cluster, then point iFolder to it.

If you decide to place an LDAP server replica on every member node, the primary iFolder server must be the one that the install points to as the LDAP server. After the cluster install, with that designated primary server active, use the iFolder Management Console to set up the additional replicas as alternatives to be used in the event of server failover.

Configuring Your iFolder Cluster Solution

To configure Novell iFolder 2.1 on Novell Cluster Services for NetWare 6.5 and later:

- 1 On your Domain Name Service (DNS) server, create a Type A Host Resource record with a hostname that you want to assign to your virtual iFolder server. The IP address you associate with this hostname is the IP address that you want to assign to the virtual server that represents the cluster's shared pool.

For example, you could associate *nif.your-company-name.com* as the DNS hostname of the virtual iFolder server with *192.168.1.1* as the IP address of the virtual server that represents the cluster's shared pool. Replace *nif.your-company-name.com* with the actual DNS hostname and *192.168.1.1* with the actual IP address for your implementation.

- 2 Using the Novell iFolder 2.1 pattern install for NetWare 6.5, install iFolder on the server that you want to be the primary server in the cluster.

For instructions, see [Chapter 4, "Installing iFolder 2.1 on NetWare,"](#) on page 31.

In [Step 8 on page 33](#), remember to use the iFolder server's DNS hostname that you assigned to the iFolder server in [Step 1 on page 150](#). This allows the installation software to write the iFolder DNS hostname to the following locations:

- ◆ The `sys:\apache2\ifolder\server\httpd_ifolder_nw.conf` file
- ◆ The Novell iFolder client login window
- ◆ The Java applet for Web-based access to iFolder user accounts
- ◆ The PDA HTML for Web-based PDA access to iFolder user accounts

IMPORTANT: After the install, the iFolder service is configured and is running. Do not allow users to log into the iFolder server to create accounts yet.

- 3 On the primary server, stop the iFolder service. To do this, at the server console prompt, enter

stopifolder

- 4 Using the basic install, install NetWare 6.5 on the other servers that you want to be in the iFolder server cluster. This installs Apache 2.0 software along with the NetWare 6.5 operating system.

Because you are copying the Apache 2.0 software, the Novell iFolder software, and the iFolder user data directory to a shared volume, you only need to install iFolder on the first server.

- 5 On each server that you want to include in your iFolder server cluster, modify the `sys:\system\admsrvup.ncf` file to include the path information for the `apache2.nlm` file. This is necessary because you modify the `sys:\system\autoexec.ncf` in [Step 15 on page 153](#) to remark out the search path. After you copy the Web server instance of Apache to the shared volume in [Step 10 on page 151](#), explicitly stating the path to the server's copy of Apache enables you to find the administration instance of Apache for that server.

Make the following changes on each server in the cluster:

- 5a Map a drive on your workstation to the `sys:` volume of the server where you want to make the change. For example, map `sys:` to drive letter `Z:`.

- 5b Open the `z:\system\admsrvup.ncf` (`sys:\system\admsrvup.ncf`) file in a text editor.

- 5c Modify `apache2.nlm` by prepending it with the path to the file:

```
sys:\apache2\apache2.nlm
```

For example, change

```
load address space = adminsrv apache2.nlm
```

to

```
load address space = adminsrv sys:\apache2\apache2.nlm
```

5d Save and close the file.

- 6** On the primary server, install Novell Cluster Services. For details, see the *Novell Cluster Services 1.7 Administration Guide*.

Make sure to add all the NetWare 6.5 servers that you want to be members of the iFolder cluster.

- 7** Create an NSS volume in a pool in the shared devices in your storage area network. For example, create *nifvol* in the *nifpool*.

The basic steps are listed below; see the *Novell Storage Services Administration Guide for NetWare 6.5* for detailed instructions.

- 7a** (Optional) For a fault-tolerant shared-disk solution, create software RAID 1 or RAID 5 devices to use as virtual devices for the shared pool.

- 7b** Enable sharing on each of the devices that contributes space to the pool that you want to share among the cluster server nodes.

- 7c** Create a pool, using the shared devices and cluster-enable the pool. For example, create a new pool named *nifpool*.

NSS creates a virtual server for the cluster-enabled pool that has its own IP address. When you cluster-enable the pool, you must assign an IP address for this purpose. Because you want this virtual server to assume the role of the iFolder server for the cluster, you assign it the same IP address that you used in [Step 1 on page 150](#).

- 7d** Create a volume on the cluster-enabled pool. For example, create a new volume named *nifvol*.

Volumes in a cluster-enabled pool are cluster-enabled by default. This NSS volume becomes the central repository for all iFolder software and the iFolder user data. The size of this volume will vary, based on the number of iFolder users you plan to support and the storage quota allocated per user.

- 8** On your workstation, map the primary server's sys: volume to a drive on your workstation. For example, map sys: to drive *E:*, where *E* is the drive letter you assign.
- 9** On your workstation, map the primary server's shared volume that you created in [Step 7 on page 151](#) to a drive on your workstation. For example, map the *nifvol:* volume to drive *F:*, where *nifvol* is the shared volume's name and *F* is the drive letter you assign.

- 10** Using a directory browser, copy the Apache2 directory (physically located at sys:\apache2) and its contents from the mapped sys: volume to the mapped shared volume.

- 10a** In a directory browser, select *e:\apache2* on the system volume.

- 10b** Click Edit > Copy.

- 10c** Select the mapped drive of the shared volume *F:*.

- 10d** Click Edit > Paste.

A copy of the apache2 directory now resides at *f:\apache2*, which is actually the storage area *nifvol:\apache2*. This enables the Web software to be shared by all the servers in the iFolder server cluster.

You need to leave the original contents of the Apache 2 software on the sys: volume so that the administrative services of Apache 2 work properly.

- 11** Using a directory browser, move the iFolder user data directory (physically located by default at sys:\iFolder) and its contents from the mapped sys: volume to the mapped shared drive.

- 11a** In a directory browser, select *e:\iFolder*, where *iFolder* is the name of the directory on the system volume that you gave to the iFolder user data path in [Step 8 on page 33](#) of the iFolder installation.

- 11b** Click Edit > Cut.

- 11c** Select the mapped drive of the shared volume *F:*.

- 11d** Click Edit > Paste.

The iFolder directory is now at *f:\iFolder*, which is the storage area *nifvol:\iFolder* shared by designated servers in the iFolder server cluster.

- 12** Edit the *nifvol:\apache2\conf\httpd.conf* file you copied to the shared volume in [Step 10 on page 151](#).

- 12a** In a directory browser, select *f:\apache2\conf\httpd.conf*.

- 12b** Open *f:\apache2\conf\httpd.conf* (*nifvol:\apache2\conf\httpd.conf*) in a text editor.

- 12c** Modify all occurrences of *sys:/apache2* to *nifvol:/apache2*, where *nifvol* is the name of your shared volume.

For example, search for *sys:\apache2* and replace it with *nifvol:/apache2* so that the Include directive points to the shared volume for the iFolder configuration file. For example, change the following statement:

```
Include sys:/apache2/ifolder/server/httpd_ifolder_nw.conf
```

to this:

```
Include nifvol:/apache2/ifolder/server/httpd_ifolder_nw.conf
```

Make sure to search, using forward slashes and search again, using back slashes in case the usage varies within the file. For example, you must also search for *sys:\apache2* and replace it with *nifvol:\apache2*.

- 12d** Save and close the file.

- 13** Edit the *nifvol:\apache2\iFolder\server\httpd_ifolder_nw.conf* file you copied to the shared volume in [Step 10 on page 151](#).

- 13a** In a directory browser, select *f:\apache2\iFolder\server\httpd_ifolder_nw.conf*.

- 13b** Open *f:\apache2\iFolder\server\httpd_ifolder_nw.conf* (*nifvol:\apache2\iFolder\server\httpd_ifolder_nw.conf*) in a text editor.

- 13c** Modify all occurrences of *sys:* to *nifvol:*, where *nifvol* is the name of your shared volume.

If the User Data path you set up in the iFolder install is not on the sys: volume, you must also search for that volume name and replace it with *nifvol:*.

- 13d** Save and close the file.

- 14** Edit the *sys:\system\ap2webup.ncf* file so that the Apache 2.0 software starts the instance of Apache that is on the shared volume, then move the modified *ap2webup.ncf* file and *ap2webdn.ncf* to the *apache2* directory on the shared volume (*nifvol:\apache2\ap2webup.ncf*).

- 14a** In a directory browser, select *e:\system\ap2webup.ncf*.

- 14b** Open `e:\system\ap2webup.ncf` file in a text editor.
- 14c** Modify `sys:\apache2` to `nifvol:\apache2`.
- 14d** Save and close the file.
- 14e** In the directory browser, select `e:\system\ap2webup.ncf` and `e:\system\ap2webdn.ncf`.
- 14f** Click Edit > Cut.
- 14g** Navigate to the `f:\apache2` (`nifvol:\apache2`) directory.
- 14h** Click Edit > Paste.
- 15** On each server that you want to include in your iFolder server cluster, edit the `sys:\system\autoexec.ncf` file so that Apache 2 does not start by default when the servers come up. Otherwise, each server tries to start the iFolder services. You want only Novell Cluster Services to have control over starting iFolder for the cluster.
- IMPORTANT:** If you later install additional software on the cluster that also uses Apache, you might need to repeat this step.
- Make the following changes on each server in the cluster:
- 15a** Map a drive on your workstation to the `sys:` volume of the server where you want to make the change. For example, map `sys:` to drive letter `X:`.
- 15b** In a directory browser, select `x:\system\autoexec.ncf`.
- 15c** Open `x:\system\autoexec.ncf` in a text editor.
- 15d** Comment out the following commands by placing a pound sign (#) in front of them, as shown.
- ```
#search add sys:\apache2

#ap2webup
```
- You will only see the `ap2webup` command on the primary server where you installed iFolder. The other server nodes in the cluster will not have the `ap2webup` line in their `autoexec.ncf` files.
- 15e** Save and close the file.
- 16** Set up Novell Cluster Services to start iFolder by default on reboot of the cluster.
- 16a** In the ConsoleOne Properties dialog box, click Scripts > Cluster Resource Load Script.
- 16b** Add the following commands to the end of the existing load script:
- ```
delay 2

search add nifvol:\apache2

ap2webup
```
- 16c** Click Apply.
- 17** Set up Novell Cluster Services to stop iFolder services by default on the server down command.
- 17a** In the ConsoleOne Properties dialog box, click Scripts > Cluster Resource Unload Script.
- 17b** Add the following commands to the beginning of the existing unload script:
- ```
ap2webdn
```
- 17c** Click Apply > Close.

- 18** You must offline the cluster resources, then online the cluster resources by restarting each of the servers in the cluster. For information, see the *Novell Cluster Services 1.7 Administration Guide*.

When the servers come back up, the Novell iFolder primary server will be running iFolder and the hot-standby servers will be live, waiting to be called to action.

Novell iFolder is now configured for Novell Cluster Services.

# D

## Interoperability Issues

This section describes the interoperability of Novell® iFolder® with the following products:

- ♦ “BorderManager 3.6 and 3.7” on page 155
- ♦ “GroupWise 5.5 and Later” on page 156
- ♦ “iChain 2.1 and 2.2” on page 156
- ♦ “NetDrive” on page 157
- ♦ “ZENworks OnDemand 2.0” on page 157
- ♦ “SecureLogin” on page 158
- ♦ “Port Number Assignments and Availability in Novell Products” on page 158

### BorderManager 3.6 and 3.7

#### Performance

If you are using a BorderManager® proxy server to redirect requests to your iFolder server, be advised that uploads to the iFolder server are very slow.

To alleviate this problem, enter the following at the BorderManager server console:

```
set tcp delayed ack=off
```

#### iFolder Still Connects When Authenticated Proxy Fails

If the proxy settings of the iFolder client fail, the iFolder client tries to connect directly (bypassing the proxy).

When using authenticated proxy, Internal (private) users might still gain access without providing authentication credentials if IP forwarding is enabled. To avoid this, simply make sure that IP forwarding is disabled on the proxy server.

#### Port Conflict

When proxy authentication is enabled, the default listening port is 443. If iFolder 2.1 and BorderManager are running on the same server and proxy authentication is enabled, either iFolder or BorderManager will need to listen on a different port.

#### NAT Loopback/Boomerang

If iFolder is running on a private segment and public access is allowed (via NAT), a public access address is specified in the iFolder server configuration. All requests to the private address will be forwarded to this public address. When trying to access iFolder from the private segment, the user will encounter the NAT loopback problem and the connection will fail.

The workaround is to use a DNS name as the user access address in the iFolder server configuration, and resolve this name to the public address for public users and to the private address for internal users.

## GroupWise 5.5 and Later

Do not try to synchronize your GroupWise® archive by setting a GroupWise archive path to the location of your iFolder directory. If you do this, the iFolder client will corrupt the GroupWise archive. This happens because iFolder does not synchronize files as a set and GroupWise needs the files in the archive to be maintained as a set of files.

This problem has been identified for GroupWise; however, similar problems might arise with any database that is implemented as a collection of linked files.

## iChain 2.1 and 2.2

There are several iChain® and iFolder compatibility issues, which severely limit the use of iChain services for an iFolder system.

### Caching of iFolder Content

We recommend disabling iChain caching of iFolder content. Because iFolder data is private and encrypted, caching might slow, rather than speed, access.

### Using HTTP Instead of HTTPS

When encryption is enabled, the iFolder client encrypts data with 128-bit Blowfish encryption for data transmission and storage on the iFolder server. Thus, iFolder sends all communications between workstations and the iFolder server securely, using http (rather than https).

iChain with Secure Exchange will try to redirect http traffic to https. Because iFolder uses http POSTs, and http POSTs cannot be redirected, these connections will fail with an http 409 error. For this reason, iChain Secure Exchange will work for HTML access only.

### Disabling Secure Exchange

If the iFolder server is behind the proxy server with Secure Exchange disabled, then iFolder Management, Applet, and HTML (PDA) access methods, which require https, will not work. In addition, NetDrive cannot connect to iFolder through iChain if Secure Exchange is enabled. Only iFolder client access will work.

### iFolder 2.1 and iChain 2.1 Interoperability Summary

| iChain 2.1 Configuration                      | iFolder 2.1 Client | iFolder 2.1 Applet | iFolder 2.1 HTML/PDA | NetDrive 4.1 | iFolder 2.1 Management Console |
|-----------------------------------------------|--------------------|--------------------|----------------------|--------------|--------------------------------|
| Authentication = Off<br>Secure Exchange = Off | Yes                | Yes                | No                   | Yes          | No                             |
| Authentication = Off<br>Secure Exchange = On  | No                 | No                 | Yes                  | No           | Yes                            |
| Authentication = On<br>Secure Exchange = Off  | No                 | No                 | No                   | No           | No                             |

| iChain 2.1 Configuration                    | iFolder 2.1 Client | iFolder 2.1 Applet | iFolder 2.1 HTML/PDA | NetDrive 4.1 | iFolder 2.1 Management Console |
|---------------------------------------------|--------------------|--------------------|----------------------|--------------|--------------------------------|
| Authentication = On<br>Secure Exchange = On | No                 | No                 | Yes                  | No           | Yes                            |

### iFolder 2.1 and iChain 2.2 Interoperability Summary

| iChain 2.2 Configuration                                                    | iFolder 2.1 Client | iFolder 2.1 Applet | iFolder 2.1 HTML/PDA Access | NetDrive 4.1 | iFolder 2.1 Management Console |
|-----------------------------------------------------------------------------|--------------------|--------------------|-----------------------------|--------------|--------------------------------|
| Authentication = Off<br>Secure Exchange = Off                               | Yes                | Yes                | No                          | Yes          | No                             |
| Authentication = Off<br>Secure Exchange = On                                | No                 | No                 | Yes                         | No           | Yes                            |
| Authentication = On<br>Authentication Header = Off<br>Secure Exchange = Off | No                 | No                 | No                          | No           | No                             |
| Authentication = On<br>Authentication Header = Off<br>Secure Exchange = On  | No                 | No                 | Yes                         | No           | Yes                            |
| Authentication = On<br>Authentication Header = On<br>Secure Exchange = Off  | Yes                | No                 | No                          | No           | No                             |
| Authentication = On<br>Authentication Header = On<br>Secure Exchange = On   | No                 | No                 | Yes                         | No           | Yes                            |

### Performance

If you are using an iChain proxy server to redirect requests to your iFolder server, be advised that uploads to the iFolder server are very slow, even with caching disabled.

This problem can be alleviated by entering the following at the iChain server console:

```
set tcp delayed ack=off
```

## NetDrive

If your global client policies include any enforced or hidden settings, the users must log in with the iFolder client to create their iFolder user accounts. Users must activate an iFolder account before attempting to use NetDrive to access the iFolder server.

## ZENworks OnDemand 2.0

The DeFrame™ client that ships with ZENworks® OnDemand Services™ 2.0 includes iFolder connectivity through NetDrive. This version of NetDrive does not work with iFolder 2.0 and later. Use the NetDrive version that is bundled with iFolder.

## SecureLogin

SecureLogin will not recognize the iFolder Java applet.

## Port Number Assignments and Availability in Novell Products

For information about port number assignments and availability in Novell products, see “[Port Number Assignments](http://www.novell.com/documentation/lg/nw6p/index.html?page=/documentation/lg/nw6p/adminenu/data/aclkn27.html)” in the NetWare 6 online documentation (<http://www.novell.com/documentation/lg/nw6p/index.html?page=/documentation/lg/nw6p/adminenu/data/aclkn27.html>).

# E

## Tips and Tricks for Optimizing iFolder

This section describes how to optimize the performance of your Novell® iFolder® 2.1 server, including the following tips and tricks:

- ◆ [“Optimizing the Available Space” on page 159](#)
- ◆ [“Optimizing Synchronization Delay and Polling Frequency” on page 159](#)
- ◆ [“Increasing Apache Threads” on page 159](#)
- ◆ [“Adding More RAM” on page 160](#)
- ◆ [“Synchronizing iFolder Client Data” on page 160](#)

### Optimizing the Available Space

You can improve the performance of your iFolder server by changing the amount of disk space allotted to each iFolder user.

Be careful; allotting large amounts of disk space to users could decrease the iFolder server’s performance.

### Optimizing Synchronization Delay and Polling Frequency

Change the default sync delay parameters if you have thousands of users and you need to improve the iFolder server performance.

Current defaults:

- ◆ 5-second delay after file activity
- ◆ 20-second server polling interval

To improve performance, make the following changes:

- ◆ 30-second delay after file activity
- ◆ 1-minute server polling interval

### Increasing Apache Threads

#### NetWare Servers

The default number of threads for Apache running on NetWare® is 150. The maximum number of threads is 2,048. Because no persistent connection is maintained, a socket is opened for each 32 KB of data. This means that you don’t need a thread per user session; however, the iFolder Web access does use one thread per connection.

To increase your threads:

- 1 Open the `httpd.conf` file that iFolder uses.
- 2 Search for the `ThreadsPerChild` parameter and increase the number that is listed.

The threads directly correlate with the bandwidth of your network cards. If you have a 100 MB network card, you can set your threads to 312 and max out the network card. If you have a 1 GB card, then you can increase the threads to 2,048 to maximize the card.

## Linux Servers

Linux can handle up to 20,000 threads.

To increase your threads:

- 1 Open the `httpd.conf` file that iFolder uses.
- 2 Increase the default number on the following parameters:
  - ◆ `ThreadLimit`
  - ◆ `MaxClients`
  - ◆ `ThreadsPerChild`

## Adding More RAM

iFolder uses 16 KB of memory per iFolder active session (or each thread). The minimum requirement of RAM for iFolder is 256 MB. Adding more RAM will improve your disk caching and server performance.

If you have

- ◆ Fewer than 2,000 users, use 256 MB of RAM.
- ◆ Between 2,000 and 4,000 users, increase your memory to 512 MB of RAM.
- ◆ More than 4,000 users, increase your memory to 1 GB of RAM.

## Synchronizing iFolder Client Data

For instructions on how to synchronize your Internet Explorer bookmarks, Palm\* Desktop Database, and Lotus\* Notes\*, see the *Novell iFolder 2.1 User Guide*.

Do not try to synchronize your GroupWise® archive by setting a GroupWise archive path to a location in your iFolder directory. If you do this, the iFolder client will corrupt the GroupWise archive. This happens because iFolder does not synchronize files as a set (it synchronizes just the changed portions of a file) and GroupWise needs the files in the archive to be maintained as a set of files.

This problem has been identified for GroupWise; however, similar problems might arise with any database that is implemented as a collection of linked files.



# F

## Frequently Asked Questions

This section answers typical questions asked by administrators of Novell® iFolder® 2.1 server software, including the following:

- ◆ “What is an iFolder server?” on page 162
- ◆ “Can I synchronize my home directory on the network with my local iFolder directory?” on page 162
- ◆ “Can I restore files if a user has deleted them from a local iFolder directory?” on page 162
- ◆ “Are the users’ iFolder files stored encrypted on their local workstations?” on page 162
- ◆ “How many directories can each user have in an iFolder account?” on page 162
- ◆ “Is there a maximum file size that can be synchronized to the iFolder server?” on page 162
- ◆ “What is the maximum storage quota for an iFolder account?” on page 163
- ◆ “How many concurrent connections to iFolder accounts does each iFolder server support?” on page 163
- ◆ “What is the key factor that limits the number of users an iFolder server can support?” on page 163
- ◆ “When a user makes changes to a file, what portion of the file is sent across the wire to the iFolder server?” on page 163
- ◆ “What happens to a user’s files if the user changes the location of the local iFolder directory?” on page 163
- ◆ “After installing iFolder 2.1 on a Microsoft 2000 server with IIS and Active Directory, I cannot create an iFolder\_ServerAgent.” on page 163
- ◆ “After installing iFolder 2.1 on a Microsoft 2000 server with IIS and Active Directory, I cannot create a new user with the iFolder Management Console.” on page 164
- ◆ “Why do my users have trouble logging in to the iFolder server across the Internet, but can log in while on the corporate network?” on page 164

### Additional Questions

For an additional listing of questions and answers that have been submitted by Admins and iFolder users, see the following:

- ◆ Ask the Experts section of the [iFolder Cool Solutions Q&A Collection \(http://www.novell.com/cool solutions/ifmag/ask\\_the\\_experts.html\)](http://www.novell.com/cool solutions/ifmag/ask_the_experts.html)
- ◆ Novell iFolder 2.1 User Guide

“iFolder 2.1.3 on Windows 2003 Server FAQs” on page 164

- ◆ “Why is the iFolder Administration page displaying error message such as “The application called an interface that was marshalled for a different thread”? What can I do to resolve this?” on page 164.
- ◆ “Why is the iFolder Advanced Search failing with the error “Bad Request (Invalid URL)”?” on page 164.
- ◆ “The iFolder login is failing for a multi-home Web site. What can I do to resolve this?” on page 164.

## What is an iFolder server?

An iFolder server is simply a server that is running the iFolder server software and some type of Web services, like the Apache Web service or IIS Web service.

## Can I synchronize my home directory on the network with my local iFolder directory?

No. iFolder hooks into the local file system; therefore, iFolder is unable to track changes from network drives.

## Can I restore files if a user has deleted them from a local iFolder directory?

Yes. However, you will need to restore that user’s iFolder directory from your tape backup to another iFolder server. See “[Restoring Deleted or Corrupted Files](#)” on page 115.

## Are the users’ iFolder files stored encrypted on their local workstations?

No, if an account is enabled for encryption, the iFolder data is encrypted only when it travels across the connection between the workstation and the server and when it is stored on the iFolder server.

## How many directories can each user have in an iFolder account?

iFolder supports up to 32,765 directories within a user’s local iFolder directory. If the user exceed this number, iFolder stops writing to the local directory and data loss is likely. Typical iFolder users are unlikely to exceed this upper limit with normal use.

Periodically monitor the number of directories in your local iFolder directory. Reorganize your folders, as needed, to keep the number of directories below this upper limit.

## Is there a maximum file size that can be synchronized to the iFolder server?

An individual file must be smaller than 4 GB.

## What is the maximum storage quota for an iFolder account?

The maximum size for an iFolder account is 8 TB.

## How many concurrent connections to iFolder accounts does each iFolder server support?

The iFolder server can support 5,000 to 10,000 concurrent connections to iFolder accounts.

## What is the key factor that limits the number of users an iFolder server can support?

The largest limiting factor on the number of users is the storage capacity available on the iFolder server.

## When a user makes changes to a file, what portion of the file is sent across the wire to the iFolder server?

iFolder synchronizes only the changed portions of a file on a 4 KB block level via an active network or Internet connection. Only the changes, or delta blocks, are sent across the wire and the iFolder server will reconcile the changes.

## What happens to a user's files if the user changes the location of the local iFolder directory?

The user must manually copy the iFolder files to the new location. To do this, complete the following steps:

- 1** Double-click the old iFolder shortcut on the desktop.
- 2** Click Edit > Select All.
- 3** Click Edit > Cut.
- 4** Close the window.
- 5** Double-click the new iFolder shortcut on the desktop.
- 6** Click Edit > Paste.
- 7** Log in and synchronize the files.

## After installing iFolder 2.1 on a Microsoft 2000 server with IIS and Active Directory, I cannot create an iFolder\_ServerAgent.

Look in the Active Directory Users and Computers utility to determine if the user actually exists. If it does, it probably means that you do not have a valid Service Pack 3 installed on your Microsoft 2000 IIS server. Reinstall Service Pack 3.

## After installing iFolder 2.1 on a Microsoft 2000 server with IIS and Active Directory, I cannot create a new user with the iFolder Management Console.

Look in the Active Directory Users and Computers utility to determine if the user actually exists. If it does, it probably means you do not have a valid Service Pack 3 installed on your Microsoft 2000 IIS server. Reinstall Service Pack 3.

## Why do my users have trouble logging in to the iFolder server across the Internet, but can log in while on the corporate network?

The browser is probably picking up the private IP address of the iFolder server instead of the public IP address. To solve this problem, make sure that the public IP address is the one used in the `ifolder_nav.html` file in the `sys:\apache\ifolder\documentroot\html` directory. Then enter a static NAT that translates the public IP address to the private IP address, and make sure that the ports used for iFolder are not blocked at the firewall.

## iFolder 2.1.3 on Windows 2003 Server FAQs

### Why is the iFolder Administration page displaying error message such as “The application called an interface that was marshalled for a different thread”? What can I do to resolve this?

The reason for this could be that the IIS Web site is configured to run in the IIS 5.0 isolation mode with security level set to `Medium`.

To resolve this, set the Security level to `Low`.

### Why is the iFolder Advanced Search failing with the error "Bad Request (Invalid URL)"?

The advanced search might be made on a context. Use the simple search page to search for the users.

### The iFolder login is failing for a multi-home Web site. What can I do to resolve this?

To resolve this, use the IP address instead of DNS name for the following settings:

- The `iFolderServerDNSorIP` and `iFolderServerSecureDNSorIP` attributes of the iFolder Server object

To do this,

- 1** In the iFolder Administration page, select the `Global Settings > iFolder Servers`.
  - 2** In the iFolder Servers page, select the Server for which the multi-home Web site login is failing.
  - 3** In the `Host DNS or IP` field of the selected server page, change the DNS name of the server to the IP address.
- Connection information for the client login.

❑ In the registry key located at

My Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\W3SVC\iFolderServer

Change the following:

- ◆ Replace the value of *iFolderServerDNSorIP* with the IP address of the iFolder Server.
- ◆ Replace the value of *ServerDNSorIP* with IP address of the iFolder Server.



# G

## Uninstalling iFolder 2.1 on a Red Hat Linux 8 Server

This section describes the following uninstall tasks for Novell® iFolder® 2.1 as installed on Red Hat Linux 8:

- ♦ “Uninstalling iFolder 2.1 from a Red Hat Linux 8 Server” on page 167
- ♦ “Removing iFolder 2.1 Objects from the eDirectory Schema” on page 167
- ♦ “Uninstalling Apache 2.0.43” on page 168

To uninstall iFolder 2.1.2 on supported versions of Enterprise Linux, see “Uninstalling NNLS Components” in the *Novell Enterprise Linux Services Installation Guide*.

### Uninstalling iFolder 2.1 from a Red Hat Linux 8 Server

- 1 Stop Apache by entering this line at the command prompt:

```
/usr/local/apache2/bin/apachectl stop
```

- 2 To remove the iFolder files, enter these lines at the command prompt:

```
cd /root
```

```
rm -rf /usr/local/ifolder < program files >
```

```
rm -rf /usr/local/ifolderdata < user data >
```

- 3 To go to the /usr/local/apache2/conf/ directory, enter this line at the command prompt:

```
cd /usr/local/apache2/conf
```

- 4 Using a text editor, remove the following line from the /usr/local/apache2/conf/httpd.conf file:

```
include /usr/local/ifolder/Server/httpd_ifolder_unix.conf
```

- 5 Start Apache by doing one of the following:

- ♦ For clear text, enter the following command:

```
/usr/local/apache2/bin/apachectl start
```

- ♦ For SSL, enter the following command:

```
/usr/local/apache2/bin/apachectl startssl
```

### Removing iFolder 2.1 Objects from the eDirectory Schema

- 1 Start ConsoleOne® by entering this line at the command prompt:

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

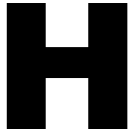
- 2** Select the tree in the eDirectory schema.
- 3** Click File > Authenticate.
- 4** Expand the tree, then select the organization.  
Objects appear in the right panel.
- 5** Delete all users who were made iFolder users.
- 6** Delete the following objects:
  - ◆ iFolder\_ServerAgent
  - ◆ iFolder\_Settings
  - ◆ iFolder\_ldapXX
  - ◆ iFolder\_serverXX
- 7** Remove the iFolder eDirectory schema extensions.
  - 7a** Click Tools > Schema Manager > Classes.
  - 7b** Delete the following:
    - ◆ iFolderLDAP
    - ◆ iFolderServer
    - ◆ iFolderSettings
    - ◆ iFolderUser
  - 7c** Click Tools > Schema Manager > Classes.
  - 7d** Delete the 14 items that begin with iFolder\*.
- 8** Close ConsoleOne.

## Uninstalling Apache 2.0.43

To remove Apache 2.0.43 from your Linux server, enter this line at the Linux command prompt:

```
rm -rf /usr/local/apache2
```





## Product History of iFolder

This section compares the different versions of Novell® iFolder® to clarify which operating systems, directories, and other components are supported in each of the following versions of iFolder:

- ◆ **iFolder Standard Edition**
  - ◆ **iFolder 1.0:** Independent product release that includes cross-platform support for NetWare and Windows
  - ◆ **iFolder 1.01:** Bundled release for support of Novell NetWare® 6
  - ◆ **iFolder 1.03:** Bundled release for support of Novell NetWare 6 with Support Pack 1 (Consolidated Support Pack 8)
- ◆ **iFolder 2.0 Professional Edition:** Independent product release for additional cross-platform support of Linux and UNIX
- ◆ **iFolder 2.1**
  - ◆ **iFolder 2.1:** Independent product release for additional support of Microsoft Active Directory with Windows 2000 with Service Pack 3
  - ◆ **iFolder 2.1.1:** Bundled release with Novell NetWare 6.5 for support of only Novell NetWare 6.5
  - ◆ **iFolder 2.1.2:** Bundled release with several products for support of only those operating systems
    - Novell Nterprise™ Linux Services for support of only the Enterprise Linux operating systems, as defined in the *Novell Nterprise Linux Services Installation Guide*.
    - Novell NetWare 6.5 Support Pack 1 for support of only Novell NetWare 6.5 Support Pack 1
    - Novell Nterprise Linux Services Support Pack 1 for support of only the Enterprise Linux operating systems, as defined in the *Novell Nterprise Linux Services Installation Guide*. In addition to English, this second release of iFolder 2.1.2 included localized versions of the iFolder 2.1.2 client in German, Spanish, French, Italian, Japanese, Portuguese, and Russian.
  - ◆ **iFolder 2.1.3:** Bundled release with Novell ZenWorks 6.5 for support of Windows 2003 and Windows 2000 server.

This section discusses the following topics:

- ◆ “Network Operating Systems Support” on page 170
- ◆ “Directory Services Support” on page 170
- ◆ “Workstation Operating Systems Support for iFolder Client” on page 171
- ◆ “Web Server Support” on page 171

- ◆ “iFolder User Access Support” on page 171
- ◆ “Feature Support” on page 172
- ◆ “Server Platform Options Included in Your Release” on page 172

## Network Operating Systems Support

| Network Operating System      | 1.0             | 1.01 (Bundled NetWare 6.0) | 1.03 (Bundled NetWare 6.0 SP1) | 2.0             | 2.1            | 2.1.1 (Bundled NetWare 6.5) | 2.1.2 (Bundled Netware 6.5 SP1) | 2.1.2 (Bundled NNLS & NNLS SP1) | 2.1.3 |
|-------------------------------|-----------------|----------------------------|--------------------------------|-----------------|----------------|-----------------------------|---------------------------------|---------------------------------|-------|
| NetWare 5.1                   | SP 3            | NA                         | NA                             | SP 4            | SP 5           | NA                          | NA                              | NA                              | No    |
| NetWare 6.0                   | No              | Yes                        | SP 1                           | SP 1            | SP 2           | NA                          | NA                              | NA                              | No    |
| NetWare 6.5                   | No              | No                         | No                             | No              | No             | Yes                         | SP 1                            | NA                              | No    |
| Windows NT 4                  | Service Pack 6A | NA                         | NA                             | Service Pack 6A | No             | No                          | No                              | No                              | No    |
| Windows 2000                  | Service Pack 1  | NA                         | NA                             | Service Pack 2  | Service Pack 3 | NA                          | NA                              | NA                              | Yes   |
| Red Hat Linux                 | No              | No                         | No                             | 7.2             | 8              | NA                          | NA                              | NA                              | No    |
| Red Hat Enterprise Linux AS   | No              | No                         | No                             | No              | No             | No                          | NA                              | 2.1                             | No    |
| Red Hat Enterprise Linux ES   | No              | No                         | No                             | No              | No             | No                          | NA                              | 2.1                             | No    |
| SUSE* Linux Enterprise Server | No              | No                         | No                             | No              | No             | No                          | NA                              | 8                               | No    |
| Sun* Solaris                  | No              | No                         | No                             | 8               | No             | No                          | No                              | No                              | No    |
| Windows 2003                  | No              | No                         | No                             | No              | No             | No                          | No                              | No                              | Yes   |

## Directory Services Support

| LDAP Directory Service     | 1.0 | 1.01 (Bundled) | 1.03 (Bundled) | 2.0 | 2.1   | 2.1.1 (Bundled) | 2.1.2 (Bundled) | 2.1.3 |
|----------------------------|-----|----------------|----------------|-----|-------|-----------------|-----------------|-------|
| Novell eDirectory™         | 8.0 | 8.5            | 8.5            | 8.6 | 8.6.2 | 8.6.2           | 8.7.3           | 8.7.3 |
| Microsoft Active Directory | No  | No             | No             | No  | Yes   | NA              | NA              | Yes   |

## Workstation Operating Systems Support for iFolder Client

| Workstation Operating System     | 1.0 | 1.01<br>(Bundled) | 1.03<br>(Bundled) | 2.0     | 2.1         | 2.1.1<br>(Bundled) | 2.1.2<br>(Bundled) |
|----------------------------------|-----|-------------------|-------------------|---------|-------------|--------------------|--------------------|
| Windows 95                       | Yes | Yes               | Yes               | Yes     | No          | No                 | No                 |
| Windows 98 or 98SE               | 98  | 98                | 98                | 98/98SE | 98/<br>98SE | 98SE               | 98SE               |
| Windows ME                       | Yes | Yes               | Yes               | Yes     | Yes         | Yes                | No                 |
| Windows NT 4 Professional        | Yes | Yes               | Yes               | Yes     | No          | No                 | No                 |
| Windows 2000 Professional        | Yes | Yes               | Yes               | Yes     | Yes         | Yes                | Yes                |
| Windows XP Home and Professional | No  | No                | No                | Yes     | Yes         | Yes                | Yes                |

## Web Server Support

| Web Server                 | 1.0             | 1.01<br>(Bundled) | 1.03<br>(Bundled) | 2.0             | 2.1            | 2.1.1<br>(Bundled) | 2.1.2<br>(Bundled) | 2.1.3 |
|----------------------------|-----------------|-------------------|-------------------|-----------------|----------------|--------------------|--------------------|-------|
| Apache on NetWare          | 1.3.20          | 1.3.20            | 1.3.20            | 1.3.26          | 1.3.27         | 1.3.27             | 1.3.27             | NA    |
| Apache on Linux or Solaris | NA              | NA                | NA                | 2.0.39          | 2.0.43         | NA                 | 2.0.48             | NA    |
| IIS on Windows NT 4        | Service Pack 6A | NA                | NA                | Service Pack 6A | No             | No                 | No                 | NA    |
| IIS on Windows 2000        | Service Pack 1  | NA                | NA                | Service Pack 2  | Service Pack 3 | NA                 | NA                 | Yes   |
| IIS on Windows 2003        | NA              | NA                | NA                | Service Pack 2  | Service Pack 3 | NA                 | NA                 | Yes   |

## iFolder User Access Support

| iFolder User Access Method           | iFolder Standard Edition (1.0, 1.01, 1.03) | iFolder 2.0 Professional Edition         | iFolder 2.1 (2.1, 2.1.1, 2.1.2)              |
|--------------------------------------|--------------------------------------------|------------------------------------------|----------------------------------------------|
| Novell iFolder client                | Yes                                        | Yes                                      | Yes                                          |
| Novell iFolder client, using a proxy | No                                         | Yes                                      | Yes, plus authentication                     |
| Web browser support                  | IE 5.0 or 5.5<br>Netscape* 4.7             | IE 5.0 or later<br>Netscape 4.7; not 6.0 | IE 5.0 or later<br>Netscape 7<br>Mozilla 1.4 |
| Web browser access (HTML or PDA)     | No                                         | Yes                                      | Yes                                          |

| iFolder User Access Method              | iFolder Standard Edition (1.0, 1.01, 1.03) | iFolder 2.0 Professional Edition | iFolder 2.1 (2.1, 2.1.1, 2.1.2)                                                  |
|-----------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------------------------------------------------|
| iFolder Java applet                     | No                                         | Sun JVM 1.3                      | For 2.1 and 2.1.1:<br>Sun JVM 1.3 to 1.4.1_02<br><br>for 2.1.2: Sun JVM 1.4.1_02 |
| Thin client support via Novell NetDrive | No                                         | 4.1                              | 4.1                                                                              |

## Feature Support

| Feature                                             | iFolder Standard Edition (1.0, 1.01, 1.03) | iFolder 2.0 Professional Edition | iFolder 2.1x |
|-----------------------------------------------------|--------------------------------------------|----------------------------------|--------------|
| Passphrase recovery                                 | No                                         | Yes                              | Yes          |
| Large-scale deployment of multiple iFolder servers  | No                                         | Yes                              | Yes          |
| User control of location of local iFolder directory | No                                         | Yes                              | Yes          |
| Report generator                                    | No                                         | Yes                              | Yes          |

## Server Platform Options Included in Your Release

If you purchase an independent release of Novell iFolder, it contains all of the platforms supported. However, if your release is bundled with an operating system, the bundle contains support for only that operating platform. The following table shows the operating platforms you can expect in your release of Novell iFolder. See [“Network Operating Systems Support” on page 170](#) to see the versions of the operating systems that your release supports.

| Network Operating System        | 1.0 | 1.01 (Bundled NetWare 6.0) | 1.03 (Bundled NetWare 6.0 Sp1) | 2.0 | 2.1 | 2.1.1 (Bundled NetWare 6.5) | 2.1.2 (Bundled NetWare 6.5 SP1) | 2.1.2 (Bundled NNLS & NNLS SP1) | 2.1.3 |
|---------------------------------|-----|----------------------------|--------------------------------|-----|-----|-----------------------------|---------------------------------|---------------------------------|-------|
| NetWare 5.1                     | Yes | No                         | No                             | Yes | Yes | No                          | No                              | No                              | No    |
| NetWare 6.0                     | No  | Yes                        | Yes                            | Yes | Yes | No                          | No                              | No                              | No    |
| NetWare 6.5                     | No  | No                         | No                             | No  | No  | Yes                         | Yes                             | No                              | No    |
| Windows NT 4                    | Yes | No                         | No                             | Yes | No  | No                          | No                              | No                              | No    |
| Windows 2000                    | Yes | No                         | No                             | Yes | Yes | No                          | No                              | No                              | Yes   |
| Red Hat Linux 8                 | No  | No                         | No                             | Yes | Yes | No                          | No                              | No                              | No    |
| Red Hat Enterprise Linux AS 2.1 | No  | No                         | No                             | No  | No  | No                          | No                              | Yes                             | No    |

| <b>Network Operating System</b> | <b>1.0</b> | <b>1.01<br/>(Bundled<br/>NetWare<br/>6.0)</b> | <b>1.03<br/>(Bundled<br/>NetWare<br/>6.0 Sp1)</b> | <b>2.0</b> | <b>2.1</b> | <b>2.1.1<br/>(Bundled<br/>NetWare<br/>6.5)</b> | <b>2.1.2<br/>(Bundled<br/>NetWare<br/>6.5 SP1)</b> | <b>2.1.2<br/>(Bundled<br/>NNLS &amp;<br/>NNLS<br/>SP1)</b> | <b>2.1.3</b> |
|---------------------------------|------------|-----------------------------------------------|---------------------------------------------------|------------|------------|------------------------------------------------|----------------------------------------------------|------------------------------------------------------------|--------------|
| Red Hat Enterprise Linux ES 2.1 | No         | No                                            | No                                                | No         | No         | No                                             | No                                                 | Yes                                                        | No           |
| SUSE Linux Enterprise Server 8  | No         | No                                            | No                                                | No         | No         | No                                             | No                                                 | Yes                                                        | No           |
| Sun Solaris                     | No         | No                                            | No                                                | Yes        | No         | No                                             | No                                                 | No                                                         | No           |
| Windows 2003                    |            |                                               |                                                   |            |            |                                                |                                                    |                                                            | Yes          |

If you have a bundled version of iFolder and you want to use it on another operating platform, you can purchase the full product and download Novell iFolder 2.1 at the [Novell Product Downloads Web site \(http://download.novell.com\)](http://download.novell.com).

