Novell
Archive and Version Services

2.0

www.novell.com

USER GUIDE FOR NETWARE® 6.5

February28, 2005

Novell®

Legal Notices

Online Documentation: To access the online documentation for this and other Novell products, and to get updates, see www.novell.com/documentation.

Novell Trademarks

eDirectory is a trademark of Novell, Inc.

NetWare is a registered trademark of Novell, Inc. in the United States and other countries.

Novell is a registered trademark of Novell, Inc. in the United States and other countries.

Novell Storage Services is a trademark of Novell, Inc.

Third-Party Materials

All third-party trademarks are the property of their respective owners.

Contents

About This Guide

This guide describes how to conveniently access, retrieve, and restore multiple historical versions of your files that are saved and maintained in a Novell® Archive and Version Services 2.0 for NetWare® database.

This guide is intended for users and is divided into the following sections:

- Chapter 1, "Overview of Archive and Version Services," on page 9
- Chapter 2, "What's New," on page 13
- Chapter 3, "Prerequisites and Guidelines for Retrieving File Versions," on page 15
- Chapter 4, "Restoring File Versions with the NSS File Version Utility," on page 19
- Chapter 5, "Restoring File Versions with NetStorage," on page 27

Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in 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 Linux* or UNIX*, should use forward slashes as required by your software.

User Comments

We want to hear your comments and suggestions about this manual and the other documentation included with NetWare 6.5. To contact us, use the User Comments feature at the bottom of any page in the online documentation.

Documentation Updates

For the most recent version of the *Novell Archive and Version Services 2.0 User Guide for NetWare 6.5*, see the latest NetWare 6.5 documentation (http://www.novell.com/documentation/lg/nw65/index.html).

Additional Documentation

Novell Archive and Version Services allows users to restore individual file recovery of previously versioned files from an archive. Your network administrator installs, configures, and maintains the archive server where your files are versioned and stored in an archive database. For information, see the *Novell Archive and Version Services 2.0 Administration Guide for NetWare 6.5*.

Novell NetStorage provides the Web-based interface for retrieving files from the Novell Archive and Version Services server. For information, see *NetWare 6.5 NetStorage Administration Guide*.

1 Overview of Archive and Version Services

Novell® Archive and Version Services 2.0 for NetWare® captures and stores periodic versions of your network files in an archive database. As you work, the archive server transparently saves versions of your network files that you create, modify, or rename during a scheduled interval. If you rename or delete a directory or file, then create another one with the same name, the archive distinguishes those instances and maintains sets of the related versions. Over time, the archive database reflects the history of your network files and directories.

Archive and Version Services allows you to search for a previous version of a file and restore it in only a few minutes. You can access file versions from anywhere, at any time, without the help of your system administrator.

This section discusses the following:

- "Individual File Losses Can Impact Business" on page 9
- "Benefits of Archive and Version Services" on page 10
- "Key Concepts of Archive and Version Services" on page 10
- "What's Next" on page 11

Individual File Losses Can Impact Business

Most enterprises rely on your best practices and personal habits to protect your individual files between backups. Standard backup procedures capture network files periodically to prevent catastrophic loss. However, backups do not track modifications, renaming, and deletions you make to files in between backups. You might employ different techniques to ensure that you do not lose critical files. For example, you might save multiple versions of a file under different names as you modify it over time. You might save the file in different locations. You might do both.

Despite precautions, almost every user has accidentally modified, lost, or deleted a key file. When problems occur, you are left with two choices:

- Wait for the administrator to recover the file from backup media, if the file was backed up at all.
- Painstakingly rebuild the file from draft versions or from scratch.

File Recovery and Restoration Efforts Waste Resources

Whenever you lose a file, you and your company lose the time and resources invested in creating the data in it. Both file recovery and reconstruction efforts waste valuable resources:

- It's inefficient. You cannot access backup files without administrator action.
- It's inconvenient. You must waste time re-creating materials.
- It's costly. Data loss can affect the enterprise's ability to meet business commitments. Time lost can impact your ability to meet milestones, thereby impacting delivery to other processes down the line.

System-Level Backup and Recovery Measures Are Not Enough

Most enterprises implement some type of system-level data backup and recovery to prevent against major data losses. Backups occur periodically to prevent catastrophic losses of data. Often, the files you lose have a life cycle shorter than the major backup cycles. Until now, these data losses have been an unfortunate cost of doing business.

Recovery of a single file is not a simple process. Only the administrator can access the backup media to retrieve and recover the file. You must know exactly when the file existed so that the administrator can find the right version of the file.

Even after the file is recovered, you must update the file with changes made between the time it was backed up until the time it was modified, deleted, or lost.

Benefits of Archive and Version Services

With Novell Archive and Version Services for NetWare, if you lose a key file, you have resources available to recover quickly and relatively painlessly. You simply view a list of recent versions of the file, select the file needed, then recover it.

Novell Archive and Version Services offers many benefits:

- ◆ The versioning process is transparent until you need to restore a previous version of a file. Versioning does not affect how applications behave and requires no action on your part.

- ◆ All security features and permissions are in effect for the file versions.

- ◆ Versioning supports heterogeneous work environments:

    - ◆ Versioning works with any type of file from any type of application.

    - ◆ You can restore file versions while working from anywhere, at any time, using a Web browser and an Internet or network connection.

You control the version recovery; there is no need to completely rebuild a file or to involve the IT department to restore it. Novell Archive and Version Services helps to minimize your unproductive time and frees the administrator to focus on other critical issues.

Key Concepts of Archive and Version Services

Your administrator configures and manages the Novell Archive and Version Services for files stored on Novell Storage Services™ volumes on a NetWare 6.5 or later server. To take advantage of this service, it is important to understand several key concepts.

File Versions

File versions are point-in-time copies of network files that reside in an archive database. Your network administrator determines which file types are eligible for versioning and how frequently versioning occurs for each data volume. Eligible files that change during an interval of time, called an *epoch*, are versioned at the end of the interval. No matter how many changes you make to your files during an epoch, only those eligible files that exist at the end of the epoch are versioned and stored in the archive database. Metadata changes for eligible files are also noted in the database. File versions reside in the archive database until they are manually deleted or until they meet criteria for automatic deletion.

Versioning Schedule

Your system administrator establishes a versioning schedule that meets user requirements for file versioning, given limited storage and bandwidth resources.

Archive Database

File versions reside in the archive database on the archive server. You can retrieve file versions from the archive database at any time, from anywhere, using the Novell NetStorage Archive function. You can also use the NSS File Version Utility on your Windows* 2000/XP/2003 workstation to retrieve files from the archive database. You can restore files with all of their rights and metadata in tact to your NetWare 6.5 or later NSS volume. You can also download a file version to your local workstation without the file's rights and metadata.

File Eligibility Policy

Your administrator sets criteria to determine which files are eligible for versioning. Files can be included or excluded according to their path, file extension, or filename patterns. If your files meet the resultant criteria, they are eligible for versioning. You do not have direct control over which of your files are versioned, when the versioning occurs, or what the state of your files is when the epoch ends and the file versions are copied to the archive database. Work with your administrator to establish your versioning needs.

Version Delete Policy

The administrator controls how long file versions are kept and how many file versions can exist at a time. Versioned files might have a limited lifetime in the archive. The delete policy for volumes can be configured to allow indefinite retention of at least one most recent file version. Work with your administrator to establish your file retention needs.

NSS File Version Utility for Native Windows File Retrieval and Restoration

The NSS File Version Utility provides convenient and direct access to archived versions of your files in a native Windows environment. The utility integrates with your Windows desktop to provide a Versions option. The utility allows you to view recent versions of your files in the archive database and restore the desired file. Select the desired version of the file, then click Restore to download the file locally or to restore the file version to a network storage location.

Novell NetStorage for Web-Based File Retrieval and Restoration

Novell NetStorage provides Web-based access to archived versions of your files via an active network or Internet connection. The Archive function allows you to view recent versions of your files in the archive database and restore the desired file. Select the previous version of the file, then click Restore to download the file locally or to restore the file version to its last storage location.

What's Next

Use the following table to determine where to find the information you need.

If You Need	Do This
To understand the prerequisites and caveats for retrieving file versions	"Prerequisites and Guidelines for Retrieving File Versions" on page 15

If You Need	Do This
To use the Windows-based NSS File Version Utility to access file versions	"Restoring File Versions with the NSS File Version Utility" on page 19
To use the Web-based Archive function to access file versions with Novell NetStorage	"Restoring File Versions with NetStorage" on page 27

2 What's New

Novell® Archive and Version Services 2.0 for NetWare® provides the following enhancements for users over Novell Archive and Version Services 1.0, released in NetWare 6.5:

◆ **Novell Storage Services™ File Version Utility for Windows:** You can now retrieve files natively from your Windows computer with the Versions function of the NSS File Version Utility. For information, see "Restoring File Versions with the NSS File Version Utility" on page 19.

◆ **Archive Function:** Updates were made in the Novell NetStorage Archive function. The interface now allows you to retrieve file versions even if the original parent directory is deleted or renamed.

◆ **Archive Database:** The archive database now uses MySQL to organize and host file versions, which greatly reduces the time involved in searching for file versions.

3 Prerequisites and Guidelines for Retrieving File Versions

Before you can access interval-based versions of your files, your network administrator must configure Novell® Archive and Version Services 2.0 for NetWare® to capture those versions. This section explains how your administrator can configure the service to meet your archival needs.

Prerequisites for Retrieving File Versions

Previous versions of your files can exist in the archive database only after your files meet the following prerequisites:

- Your administrator must configure file versioning for the Novell Storage Services™ data volume on the NetWare 6.5 or later server where your data is stored.

- Your administrator sets criteria to determine which files are eligible for versioning, such as by path or file extension. If your files meet the criteria, they are eligible for versioning.

- Versioning occurs for eligible files at scheduled intervals, called epochs. Your administrator can also manually pause versioning jobs and run jobs on demand.

- A file's lifetime must span the end of one epoch to be versioned. Only files that exist when the versioning occurs are versioned. If you create and delete a file within the epoch, it cannot be versioned.

- It does not matter how much or how often you change an eligible file during a epoch. The versioning process captures the file in whatever state it is in at the end of the epoch. You do not have direct control over which of your files are versioned, when the versioning occurs, or what the state of your files is when the epoch ends and the file versions are copied to the archive database.

- Versioned files typically have a limited lifetime in the archive. The administrator configures a delete policy that sets the maximum keep time and the maximum number of versions to retain. The delete policy for volumes can be configured to allow indefinite retention of at least one most recent file version.

- To use the NSS File Version Utility, you must download and install the shell extension software that integrates the File Version Utility with your Windows* operating system.

- To access files using Novell NetStorage, your administrator must install and configure a Novell NetStorage server and add Archive access to NetStorage services.

For information about the versioning policies for your network files, contact your system administrator.

Guidelines for Availability of File Versions

After your system meets the , there are several reasons that previous versions of a current, renamed, or deleted file might not exist in the archive database.

File Versions Are No Longer Supported for Your Files

If your file is in a volume or directory that is no longer configured for versioning, file versions might not be available. For information, contact your system administrator.

File's Lifetime Does Not Span the End of an Epoch

A file is versioned only if its lifetime spans the end of an epoch. If you create a file after an epoch begins, and delete it before the end of the epoch, the file cannot be versioned. A file's version might not be available if its scheduled versioning processes is paused or delayed for a period of time that exceeded the lifetime of the file. Although the frequency of the epoch usually is less than the typical lifetime of your files, there might be occasions when the versioning time is extended. For example, if the time it takes to save versions of all the files eligible for versioning exceeds the schedule epoch time interval, some scheduled epochs might be skipped until the current process ends and the next scheduled start time occurs.

File Is Open During the Versioning Process

If a file is open during the versioning process, a copy of the file cannot be saved to the archive database. In OES NetWare, your administrator has the option of using NSS pool snapshot technology during the versioning process to save point-in-time copies of both closed and open files. If snapshot technology is not used, the files that are eligible for versioning are copied directly from the source volume. In this case, exclusively open files cannot be versioned.

File Is Deleted before A Version Is Saved

If your file exists at the end of an epoch, but you delete it before it can be copied to the archive database, that file version is not saved to the archive database.

File Version Exceeded Retention Thresholds

Typically, the file's archived versions are deleted automatically from the archive database as they exceed the maximum time to keep versions or the maximum number of versions permitted, as configured by the administrator.

Filenames and Case Sensitivity

For NetWare, filenames are case insensitive. If you use the Rename command to modify the case of any letters in a filename, its file versions are saved under the same name.

Prerequisites for Using the NSS File Version Utility

The NSS File Version Utility supports Windows 2000/XP/2003, with either NCP™ or CIFS support. The NSS File Version Utility installation file (nwver.exe) is located in the *Novell Open Enterprise Server Products* CD in the \tools\nsstools directory. Ask your system administrator if the utility is available to you for download.

Prerequisites for Using the NetStorage Archive Function

If your administrator provides access to your network files with Novell NetStorage, you can use its Archive function to locate and restore file versions from anywhere, at any time, using a compatible Web browser (such as Mozilla Firefox or Internet Explorer) and a network or Internet connection.

4 Restoring File Versions with the NSS File Version Utility

Novell® Archive and Version Services 2.0 for NetWare® provides convenient and direct access to previously archived versions of your files through the Novell Storage Services™ File Version Utility. Archived file versions can reside in the archive database only if certain prerequisites are met. For information, see "Prerequisites and Guidelines for Retrieving File Versions" on page 15.

This section discusses the following tasks:

- "Installing the File Version Utility" on page 19
- "Understanding the NSS File Version Utility" on page 20
- "Searching for File Versions" on page 23
- "Viewing Information about a File Version" on page 24
- "Viewing the Contents of a File Version" on page 24
- "Restoring a File Version" on page 24
- "Deleting All Versions of an Archived File" on page 25

Installing the File Version Utility

Before you install the NSS File Version Utility, make sure your workstation meets the prerequisites outlined in "Prerequisites for Using the NSS File Version Utility" on page 16.

1 Download the NSS File Version Utility executable file (nwver.exe) to your Windows workstation.

The NSS File Versions Utility (nwver.exe) is on the *Novell Open Enterprise Server 6.5 Product CD* in the \tools\nsstools directory. Ask your system administrator where you can get a copy of the file on your network.

2 To open the installation wizard, double-click nwver.exe.

3 Follow the on-screen instructions to install the product.

You must accept the software license agreement to allow the installation.

4 Click Finish.

After a successful installation, the Versions option is available in the Microsoft* Explorer file manager. When you right-click a file or directory, the Versions option appears in the menu if the data is stored on a NetWare 6.5 or later server.

Understanding the NSS File Version Utility

The NSS File Version Utility integrates with your Microsoft Windows desktop to provide a Versions option. You can use it to locate and restore previous versions of current, renamed, or deleted files from the archive database, without requiring the help of your network administrator.

This section discusses the following:

- "The Archived Files List" on page 20
- "The Versions of the Archived File List" on page 21
- "Information about a File Version" on page 22

The Archived Files List

The Archived Files list, located in the lower area of the dialog box, displays the files and directories that exist in the archive database. The list is displayed in a browsable tree view.

Figure 1　　Sample of File Versions in the File Version Utility
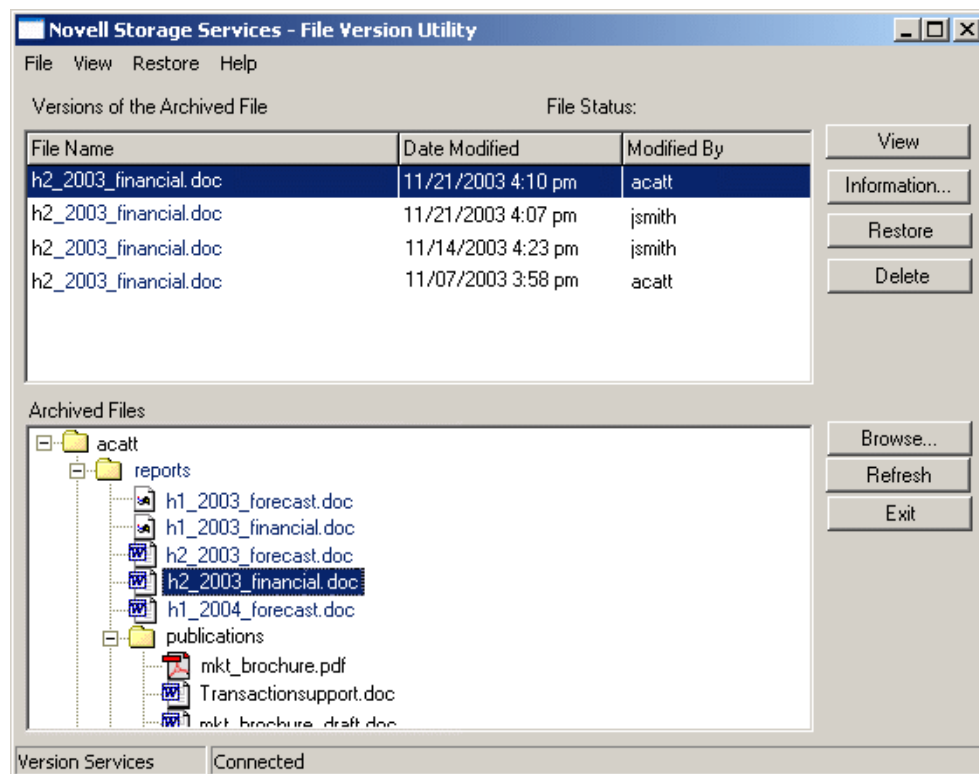
Double-click a folder to expand a tree view of the archived directories and files. Use the scroll bar to view the entire list. You can also navigate the tree view using arrow keys on your keyboard. To expand a directory, select the directory, then click Enter or the Down-arrow. To move from a file list to its parent directory, click the Up-arrow.

To browse other directories from within the File Version Utility, click Browse. You can also browse using your file browser while the File Version Utility is open. Whenever you click a directory or file in your file browser, if file versions are available, the directory or file appears in the Archived Files tree view field.

Only files or directories to which you have rights appear in the list. Directories can contain other directories, files, or unknown entries.

◆ **Directory:** A folder icon distinguishes the entry as a unique directory within the selected directory.

◆ **File:** An application icon distinguishes the entry as a unique file within the selected directory.

◆ **Unknown:** An unknown-file-type icon distinguishes the entry as a directory or file that has multiple version sets with the same name. Typically, multiple version sets occur when a source file or directory has been renamed or deleted and the old filename has been reused. Click the entry to retrieve information to clarify which it is.

If the entry represents a multiple version set for a directory, you receive a message to inform you of how many directories by that name are available. Click OK to acknowledge the message. The single unknown entry is replaced by multiple directories, each with the same name. Click each entry to view a list of its versions.

For example, suppose an unknown entry named reports, as shown on the left in Figure 2. When you click the reports icon to determine its contents, a message reports that three directory versions exist. The single icon expands to three directory icons by the same name, as shown on the right in Figure 2.

Figure 2   Example of the Expansion of Multiple Directory Version Sets

Unknown File or Multiple Version Set   Multiple Directory Version Sets

To determine which directory to explore for your file version of interest, click on each directory version to view information about it in the Directory Information list. The list displays the version's Status (Current, Renamed, or Deleted) and the Date Modified. If the path to the selected directory version differs from the current path, the path is also displayed.

If the entry represents a file multiple version set, the Versions of the Archived File list displays the file sets. Use the Date Modified and Modified By information to determine which file version set contains the file version you are seeking. Click a file version set to open a list of file versions for that file.

The Versions of the Archived File List

In the Versions of the Archived File list, the file versions appear from newest to oldest. Use the following information to help identify the file version you want to restore:

◆ **File Name:** The name of the file at the time it was modified during an epoch.

◆ **Date Modified:** The time stamp when the file version was saved.

◆ **Modified By:** The username of the person who last modified the source file before the file was versioned.

◆ **View:** Downloads the file to a temporary local directory and opens it for viewing. Your workstation must have the appropriate application to open the file.

◆ **Information:** Displays metadata about the file version. For more information, see "Information about a File Version" on page 22.

Restoring File Versions with the NSS File Version Utility   **21**

Information about a File Version

Novell Archive and Version Services tracks a file version by its source volume, the relative path where the file was located when it was versioned, the filename of the source file, the time stamp of the version, and the person who last modified the file during the epoch.

Use the Information option to view the properties of the selected file version. From a list of file versions, select the file version of interest, then click Information.

Figure 3   Sample File Information Window in the File Version Utility
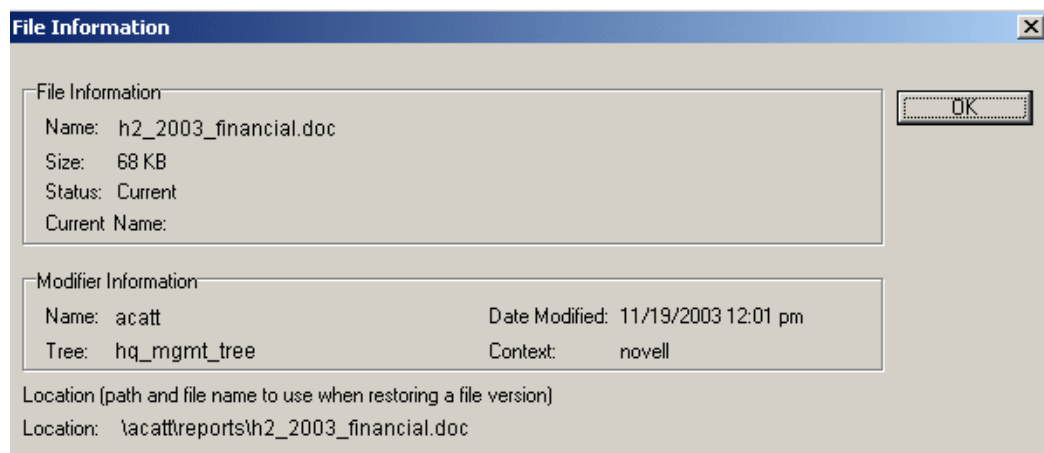
The File Information window provides the following metadata about a selected file version:

File Information

For the selected file version, the File Information area displays the following information:

 - **Name:** The filename when the selected version was saved.

 - **Size:** The amount of disk space consumed by the file version.

 - **Status:** The current state of the selected version's source file. There are three types of status:

   - **Current:** The source file or directory currently exists in the same path and with the same filename as the file version.

   - **Renamed:** The source file for the selected version currently exists in the same path, but the source file has been renamed. An authorized user renamed the source file one or more times, using the file manager's Rename option, since the version was saved.

   - **Deleted:** The source file for the selected version no longer exists in the same path as the file version. An authorized user might have deleted the source file, moved the source file from its known path, or deleted the source file's parent directory.

 - **Current Name:** If the file version status is Renamed, the current name of a source file used to create the selected file version. Otherwise, this field is empty.

Modifier Information

The Modifier Information area displays the following information:

 - **Name:** The username of the person who last modified the file during the epoch when the file version was created.

 - **Date Modified:** The date and time the source file was modified for the selected file version.

  ◆ **Tree:** The Novell eDirectory™ tree where the user was logged in when the user modified the source file.

  ◆ **Context:** The Novell eDirectory context where the user was logged in when the user modified the source file.

Location

The Location is the network path and filename where the source file existed when it was versioned. This is the default destination and filename used when restoring a file version.

Searching for File Versions

1 In your file browser, browse to locate the network directory or file that might have versions available in the archive database.

  If the file or directory you are seeking has been deleted, begin your search in the network directory where it last existed.

2 To open the File Version Utility, right-click the directory or file of interest, then click Versions.

Figure 4   **Versions Option in the Windows Shortcut Menu**
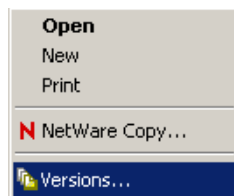
  It can take a few seconds to a few minutes to create a list of all the file versions for a selected directory or file. The more file versions there are in the archive database, the longer the time needed to retrieve the list of files. Allow more time if you select a directory that contains lots of files.

3 (Conditional) If Novell Archive and Version Services is not supported for the selected volume, an error message reports the following:

```
Version services are not available. Contact your NetWare system
administrator to enable this feature.
```

  Either services are temporarily unavailable, or they have never been configured. If you know that your files are being versioned, contact your system administrator to determine the length of the service outage and try again later.

4 Browse the Archived Files list to select the archived file you want to see versions of.

  For information, see "The Archived Files List" on page 20. See Figure 1 for an example of the FVU.

5 In the Versions of the Archived File list, scroll to find the file version of interest.

  For information, see "The Versions of the Archived File List" on page 21. See Figure 1 for an example of the FVU.

6 (Optional) Use the Information option to view the properties of the selected file version. From the available files in the Versions of Archived Files list, select the file version of interest, then click Information.

7 (Optional) Use the View option to view the contents of a selected file version. From the available files in the Versions of Archived Files list, select the file version of interest, then click View.

IMPORTANT: Your workstation must have the appropriate application software to open the file.

Viewing Information about a File Version

Use the Information option to view the properties of the selected file version. From the Versions of the Archived File list, select the file version of interest, then click Information.

For information, see "Information about a File Version" on page 22.

Viewing the Contents of a File Version

Use the View option to open a selected file version. It downloads the file to your local temporary directory, then opens the file with the appropriate application so you can view the contents.

IMPORTANT: Your workstation must have the appropriate application software to open the file.

From the Versions of the Archived File list, select the file version of interest, then click View.

Restoring a File Version

Use the Restore option to download and save a selected file version to a specified location on your network or on your local workstation. A restored file has all the permissions and rights that it had at the time it was versioned.

By default, a selected file version is restored to the location where the source file existed when the file version was made. The default path and filename are displayed in the Location field.

To restore the file to a different location, edit the Server Name and Volume Name fields, as needed, then type the full path, including the filename, in the Location field. You can also click Browse to browse to a location.

WARNING: The restored version overwrites any file by the specified name in the destination directory.

1 From a list of file versions, select the file version to restore.

2 To specify where you want to restore the selected file version, use one of these methods:

◆ Use the default path displayed in Location, which is the original location of the file at the time it was versioned.

◆ Modify the Server Name and Volume Name fields, then type the full path, including the filename, in the Location field.

◆ Click Browse to find the desired network or local location where you want to restore the file.

Make sure that the filename is included in the path.

3 (Conditional) To avoid overwriting an existing file with the same name in the destination location, specify a unique filename for the file version in the Location field.

4 Click Restore.

Upon a successful restore, a confirmation message affirms the location of the restored file.

5 Click OK to dismiss the confirmation.

Deleting All Versions of an Archived File

Use the Delete option to delete all file versions currently listed in the Versions of Archived Files list.

WARNING: The listed file versions are immediately purged from the archive database and are no longer recoverable from the archive. If your administrator backs up the archive database or has configured a salvage area for deleted files on the archive volume, the deleted file versions might be available through other means. Contact your administrator, if needed.

From a list of file versions, verify that the displayed versions are the versions you want to delete, then click Delete. Click OK to confirm that you want to delete all versions.

5 Restoring File Versions with NetStorage

Novell® Archive and Version Services 2.0 for NetWare® provides convenient and direct access to previously archived versions of your files through Novell NetStorage, a Web-based enterprise portal. Versions of current, renamed, and deleted files can reside in the archive database on the archive server if certain prerequisites are met. For information about prerequisites, see Chapter 3, "Prerequisites and Guidelines for Retrieving File Versions," on page 15.

With Novell NetStorage and the Archive function, you can access your file versions in a heterogeneous workstation environment. You can retrieve file versions from any workstation operating platform, including Windows, Macintosh*, Linux, and UNIX. All you need is a Web browser and an active Internet or network connection. Restore the desired file version, with all rights and metadata in tact, to a NetWare storage location, or download the file version to your local workstation.

This section discusses the following tasks:

  ◆ "Accessing Novell NetStorage" on page 27

  ◆ "Navigating the NetStorage Archive Interface" on page 28

  ◆ "Restoring File Versions Using NetStorage" on page 32

For more information about Novell NetStorage, see the *NetWare 6.5 NetStorage Administration Guide*.

Accessing Novell NetStorage

1 Activate your Internet or network connection.

2 Make sure your Web browser is set to work online.

3 Open your Web browser to one of the following URLs, depending on your preference:

  ◆ **Folder View:** In your Web browser's Location field, enter

    `https://`*ns1.domain.com*`/NetStorage`

  ◆ **Text View:** In your Web browser's Location field, enter

    `https://`*ns1.domain.com*`/oneNet/NetStorage`

  Replace *ns1.domain.com* with the actual DNS name or IP address of your NetStorage server. Get this information from your system administrator.

  IMPORTANT: Both Novell NetStorage URLs are case sensitive.

For more information about accessing and using Novell NetStorage, see the *NetWare 6.5 NetStorage Administration Guide*.

Navigating the NetStorage Archive Interface

At the end of each scheduled epoch, the Novell Archive and Version Services captures a point-in-time copy of your eligible file structures and files. Over time, the archive database reflects the history of your network files and directories. You can access and restore file versions of current, renamed, and deleted files.

After you rename or delete your current files and directories, any related file versions remain in the archive database until affected by the archive's delete policy. As you search for file versions, you can encounter multiple instances of sets of versions for any given filename or directory name. You must distinguish them based on your own knowledge of the history of a file.

To help you search the archive for a specific file version, the NetStorage Archive access interface provides three levels of search dialogs:

- "Directory Contents Dialog Box" on page 28
- "Multiple Version Sets Dialog Box" on page 30
- "File Versions Dialog Box" on page 31

Directory Contents Dialog Box

The Directory Contents dialog box lists a selected directory's contents that exist in the archive database. Only files or directories to which you have rights appear in the list.

Directory entries can be directories, file version sets, and multiple version sets of a file or directory. If you have ever renamed or deleted a directory or file, then created another one with the same name, the archive distinguishes those instances and maintains sets of the related versions.

The Directory Contents dialog box conveys the following information:

- **Location:** The directory path. For example: data/guest.
- **Name:** The full name of the directory or file, including any file extensions. For example: myfile.txt.
- **Content List:** A list of items found in the archived directory, including subdirectories, files, and version sets for a file.
  - **Directory:** A folder icon distinguishes the entry as a unique directory within the selected directory.
  - **File:** A page icon distinguishes the entry as a unique file within the selected directory.
  - **Multiple Version Sets of a Directory or File**: A question-mark (?) icon distinguishes the entry as a directory or file that has multiple version sets with the same name.

An Example Search of a Directory in the Archive Database

As an example, consider a situation in which a user wants to restore a previous version of a file "11 Steps to Signing Success.doc". The user begins the search by right-clicking a file in from the NetStorage interface, then clicking Archive, as shown below. (See Figure 5.) The version set for the file in the guest directory did not contain the version of the file the user needed.

Figure 5   Sample NetStorage Browser
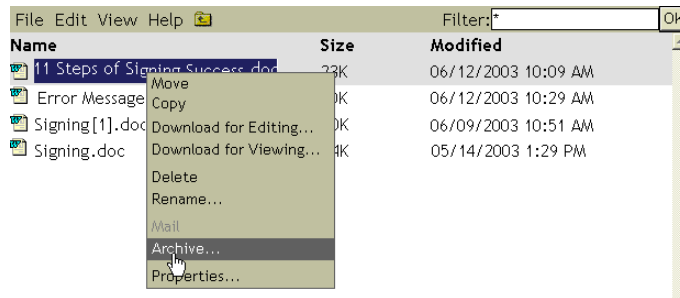
The user moves up a level in the NetStorage browser to select the guest directory, then clicks File > Archive. A sample Directory Contents dialog box, shown in Figure 6, lists the contents of the *uservol*:\data\guest directory.

Figure 6   Sample Archive Directory Contents Dialog Box
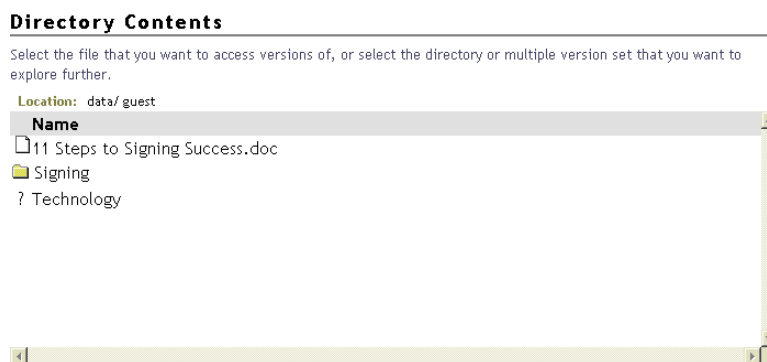
In this second search effort, the user decides to follow the path in the Technology subdirectory. As indicated by the question-mark icon, the Technology directory has multiple version sets available. To see the sample results of clicking on Technology, see Figure 8, "Sample Multiple Version Sets Dialog Box," on page 31.

After selecting a directory-based version set in the Multiple Version Sets dialog, another Directory Contents dialog box appears to let the user choose a file version set in that subdirectory. (See Figure 7.) Then, the user clicks the file version set for "11 Steps to Signing Success.doc". See Figure 9, "Sample File Versions Dialog Box," on page 32 for the results of this search.

Figure 7   Sample Archive Directory Contents Dialog Box for a Subdirectory
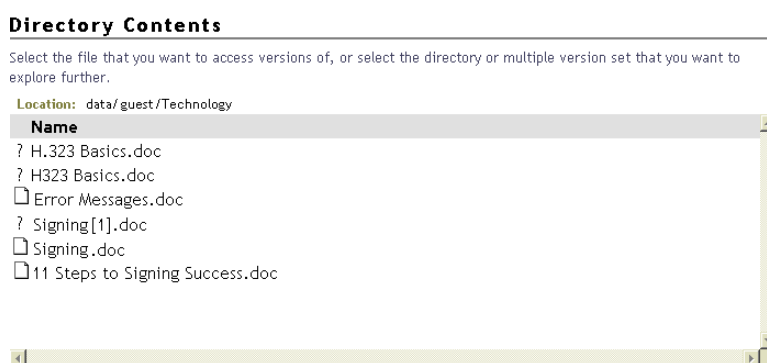
Multiple Version Sets Dialog Box

The Multiple Version Sets dialog box lists the multiple instances of versions for the selected file or directory. Only files or directories to which you have rights appear in the list.

There are several reasons that multiple version sets can exist for a given file or directory:

- ◆ You previously had a file with the specified filename, then renamed it. Later, you created a new file with the same filename.

- ◆ You deleted a file. Later, you named a new file using the same filename.

- ◆ You renamed a file to a new name, then renamed the file using the same characters as in the first filename, but modified the case. The archive database considers these three instances to be the same source file, but tracks its file version under the three filenames. For a renamed source file, the archive database presents its file versions as separate version sets with different filenames.

  For example, let's imagine that you renamed fileA as fileB, then renamed fileB as filea. Under each filename, versions were made. When you retrieve previous versions of filea, the archive presents you with multiple version sets named as filea, fileB, and fileA. You choose the set that contains the file version you want to restore.

The list can contain multiple version sets for files (page icon) and for directories (folder icon). Each entry consists of the following information:

- ◆ **Location:** The directory path. For example: data/userid/home.

- ◆ **Name:** The full name of the directory or file, including its extension. For example: myfile.txt

- ◆ **Status:** The state of the versioned files (or directories) available by this name.

  - ◆ **Current:** The source file or directory currently exists.

  - ◆ **Renamed:** The source file or directory existed previously but is now named something else.

  - ◆ **Deleted:** The source file or directory existed previously but was deleted.

- ◆ **Modified:** The last time that this file was versioned or that files in this directory were versioned.

- ◆ **Modifier:** The userID of the individual who last modified the file or directory.

An Example Search of Multiple Directory Versions in the Archive Database

Continuing the example in "Directory Contents Dialog Box" on page 28, the user selected the Technology option (see Figure 6 on page 29). The Multiple Version Sets dialog box (see Figure 8 on page 31) shows that the user used the same directory name multiple times in the recent past. The user deleted a directory, then later created a new directory with the same name. Multiple version sets remain in the archive database for each of the previous versions of the directory.

The user chooses the version of the directory based on the last date the directory was modified. See Figure 7 on page 29 for the results of this continued search.

Figure 8   Sample Multiple Version Sets Dialog Box
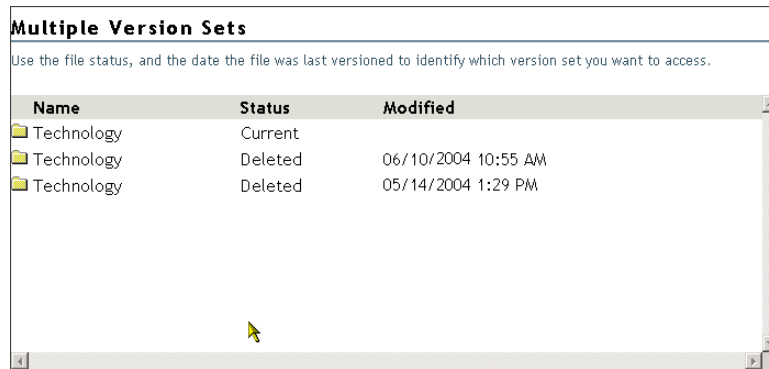
File Versions Dialog Box

The File Versions dialog box lists previous versions of the selected file that exist in the archive database. If you do not have rights to the file or to its versions, no entries appear.

The File Versions dialog box, such as the example shown below, provides the following information:

◆ **Location:** The directory path.

◆ **Name:** The full name of the file, including its extension. For example, myfile.txt.

◆ **Size:** The file size in kilobytes (KB).

◆ **Archived:** The time stamp when the file version was made.

You can perform one or more of the following tasks on a selected file version.

◆ **Restore To:** Contains the path and filename where the restored file version will reside. Type the path and filename you want to use, or click the Browse icon to browse to a location, type the new filename, then click OK.

◆ **Restore:** Click Restore to automatically download and save the selected file version to the path shown in the Restore To field. A restored file has all the permissions and rights assigned to it that it had at the time it was versioned.

WARNING: Any file in the path with the same name as the file version will be overwritten. This destroys the contents of the current network file.

◆ **Download:** Opens a Download dialog box. Browse to the location where you want to save a copy of the file version, rename the file (if desired), then click OK.

Click Close to back out of the download process.

The downloaded file inherits all the permissions and rights that you normally would have for any new file that you create on the network.

◆ **View:** Downloads the file to your local temporary directory, then opens the file with the appropriate application so that you can view the contents.

IMPORTANT: You must have the application installed on your workstation in order to open the file to view it.

◆ **Close:** Closes the dialog box.

**An Example Search of File Version Sets in the Archive Database**

Continuing the example in "Directory Contents Dialog Box" on page 28, the user selected the "11 Steps to Signing Success.doc" file version in the Technology folder. (See Figure 7 on page 29.) Figure 9 shows the results of that search.

Figure 9   Sample File Versions Dialog Box
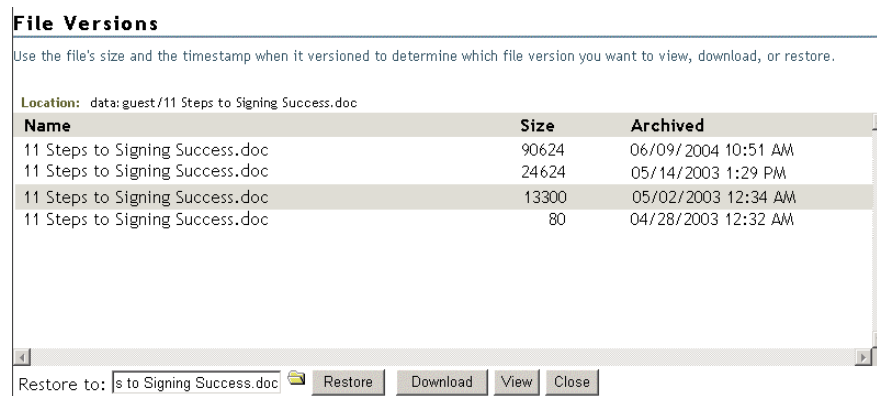
Clicking the browser directory icon, the user searches for the location where the file is to be restored, as shown in the figure below.

Figure 10   Sample of Using the Browser Search to Complete the Restore To Field
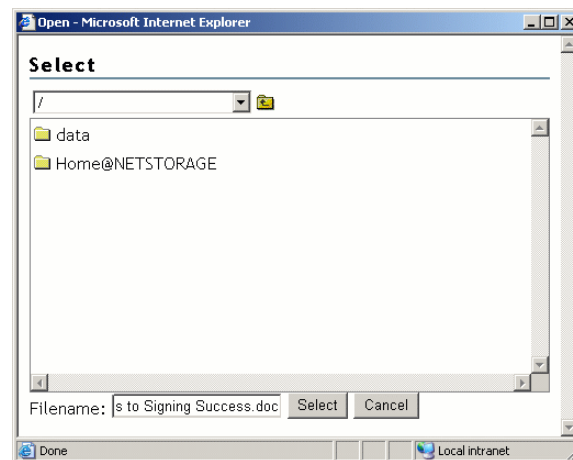
Restoring File Versions Using NetStorage

After your files meet the prerequisites for having previous versions located in the archive database, you can access file versions whenever you need to through the NetStorage interface. For information about prerequisites, see Chapter 3, "Prerequisites and Guidelines for Retrieving File Versions," on page 15.

To access and restore previous versions of a file:

1 Navigate to your NetStorage server interface.

   1a Launch an Internet Explorer (IE) Web browser by double-clicking the IE icon on your desktop.

1b In the IE main toolbar, click File > Open.

1c In the Open field of the Open dialog box, type the URL of your NetStorage server location.

For example: https://*arksvr.domain.com*/NetStorage

In place of *arksvr.domain.com,* substitute your archive server's actual Domain Name Service (DNS) name or IP address (such as 192.168.1.1). Get this information from your Archive and Version Services administrator.

2 At the NetStorage Login page, log in to the NetStorage server using your UserID and Password.

After you log in, the Web browser uses Hypertext Transfer Protocol (HTTP) to open NetStorage with a secure connection to your network data. The content on this Web page varies according to the services that your company offers to you. For an example, see the following figure.

Figure 11   A Sample NetStorage Browser-Based Interface
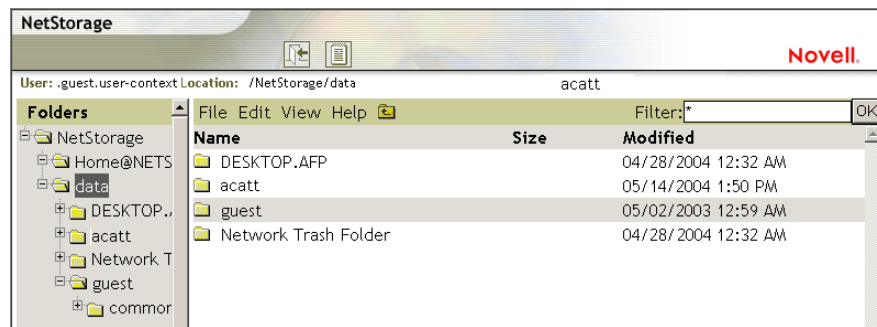
3 Use the left navigator of the NetStorage interface to find the file or directory that you want to use as your entry point into the archive database. Because the Archive search currently progresses only forward through directories in the archive database, it is best if you know the path of the file version before entering the Archive to search for the file.

Use the following table to determine what item to select as your entry point into the archive database:

| To Access the Archived Versions of	Navigate to This Location	Then Select This Item
A current file	The current file	The current file
A deleted file in a current directory	The directory that the deleted file was in when it was deleted	The directory that the deleted file was in
A deleted file in a deleted directory	The directory that the deleted directory was in when it was deleted	The directory that the deleted directory was in
All current files in a current directory	The current directory	The current directory
All deleted files in a deleted directory	The directory that the deleted directory was in when it was deleted	The directory that the deleted directory was in

4 To access the archive database, use one of the following methods:

◆ On the NetStorage main toolbar, click File > Archive.

Figure 12   A Sample NetStorage File Menu with Archive Option
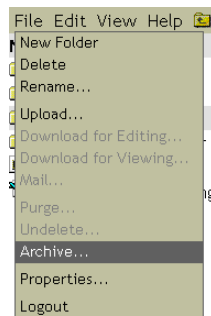
◆ Right-click the selected item to open a pop-up menu, then click Archive.

Figure 13   A Sample NetStorage Pop-Up Menu with Archive Option
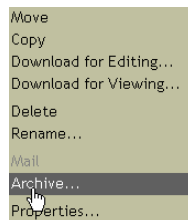
Use the following table to determine which step to go to next:

If You Select This Item	And This Condition Is True	Go to This Step
File	Only one file has ever used this name.	File Versions, Step 7 on page 36
	You previously used this filename for a deleted file or a renamed file, but versions of that file do not exist in the archive database.	File Versions, Step 7 on page 36
	You previously used this filename for a deleted file or a renamed file, and versions of that file still exist in the archive database.	Multiple Version Sets, Step 6 on page 35
Directory		Directory Contents, Step 5 on page 34

5 Directory Contents: If you selected a directory, review the archived contents of the selected directory, then select one of the items if you want to continue your search in this directory.

Depending on what you select, use the following table to determine which step to go to next:
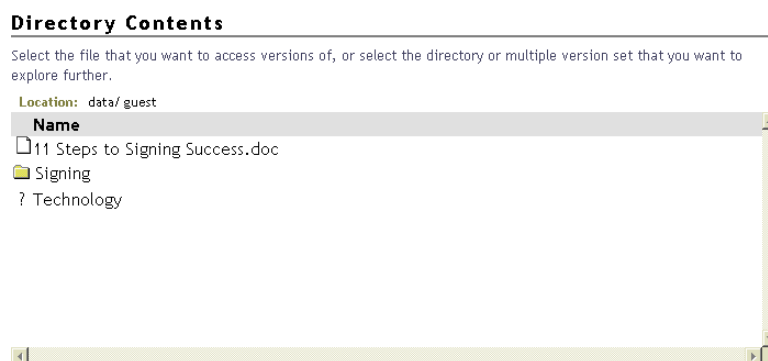
If You Select This Item	Go to This Step
Directory	Directory Contents (Step 5 on page 34)
File	File Versions (Step 7 on page 36)
Multiple versions (of a File or Directory)	Multiple Version Sets (Step 6 on page 35)
Nothing	Stop searching this directory.

You can stop your search in this directory if one of the following conditions is true:

◆ There are no items in the list. Either file versions do not exist for files in this directory or you do not have the rights to access those files.

◆ The list consists only of files and multiple version sets, but the file you want a version of is not listed.

Your Directory Contents dialog box looks similar to the following illustration. This example lists several unique files and multiple version sets that can be directories or files.

Figure 14   A Sample of the Archive Directory Contents Dialog Box


6 **Multiple Version Sets:** If multiple sets of file versions exist for that name, a Multiple Version Sets dialog box opens. Review the sets available of the selected file or directory, then select one of the items to continue your search in this directory.

Depending on what you select, use the following table to determine which step to go to next:

If You Select This Item	Go to This Step
Directory	Directory Contents (Step 5 on page 34)
File	File Versions (Step 7 on page 36)

Your Multiple Version Sets dialog box looks similar to the illustration in Figure 15 on page 36. This example lists multiple sets of file versions for the selected file. Review the state of the files that have existed.

Figure 15 Sample Multiple Version Sets Dialog Box
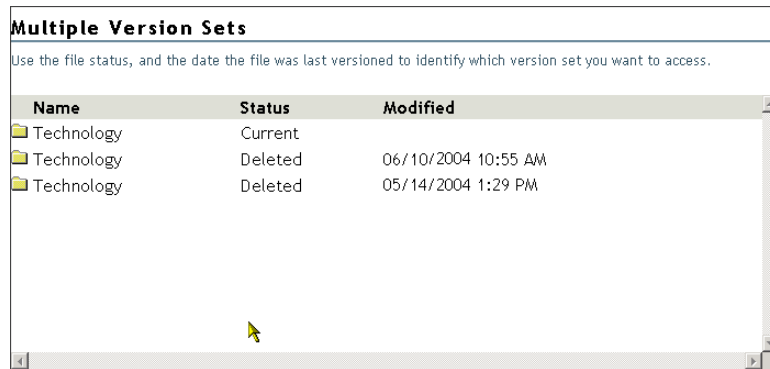
7 **File Versions:** Use the File Versions dialog box to restore a file version:

7a Review the archived time stamps of the versions in the list, then select the version of the file that you want to restore.

7b Specify the path and filename to use for the restored version.

In the Restore To field, type the path and filename where you want to restore the version, or browse to that location, type a filename, then click OK.

7c Click Restore.

WARNING: The restored version overwrites any file by that name in the Restore To location.

Figure 16 Sample File Versions Dialog Box
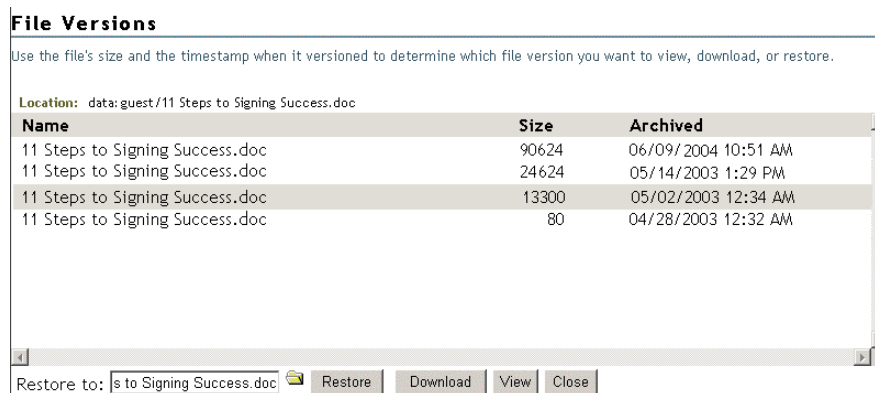
A **Documentation Updates**

This section contains information about documentation content changes made to the *Novell Archive and Version Services 2.0 User Guide for NetWare 6.5* since the initial release of NetWare® 6.5. If you are an existing user, review the change entries to readily identify modified content. If you are a new user, simply read the guide in its current state.

Refer to the publication date, which appears on the front cover and the Legal Notices page, to determine the release date of this guide. For the most recent version of the *Archive and Version Services User Guide*, see Novell documentation (http://www.novell.com/documentation/lg/nw65/arc_users/data/front.html).

In this section, content changes appear in chronological order, according to the publication date. Within a dated entry, changes are grouped and sequenced, according to where they appear in the document itself. Each change entry provides a link to the related topic and a brief description of the change.

This document was updated on the following dates:

- "May 14, 2004" on page 37
- "July 2, 2004" on page 38
- "August 8, 2004" on page 38
- "September 15, 2004" on page 39
- "December 20, 2004" on page 39
- "February 16, 2005" on page 40

May 14, 2004

Updates were made to the following sections. The changes are explained below.

- "Overview of Archive and Version Services" on page 37
- "Using Archive and Version Services with the File Version Utility" on page 38
- "Appendix A: Documentation Updates" on page 38

Overview of Archive and Version Services

The following change was made to this section:

Location	Change
Key Concepts of Archive and Version Services	Added information about the following: - File Eligibility Policy - NSS File Version Utility for Native Windows File Retrieval and Restoration

Location	Change
What's Next	Added a link to Restoring File Versions with the NSS File Version Utility.

Using Archive and Version Services with the File Version Utility

The Restoring File Versions with the NSS File Version Utility section in new in this release.

Appendix A: Documentation Updates

The Documentation Updates section is new in this release.

July 2, 2004

Updates were made to the following sections. The changes are explained below.

 ◆ "Meeting Prerequisites" on page 38

 ◆ "Using Archive and Version Services with the File Version Utility" on page 38

Meeting Prerequisites

The following change was made to this section:

Location	Change
Prerequisites for Using the NSS File Version Utility	The NSS File Version Utility supports Microsoft Windows 2000/XP/2003. To use the utility, make sure that your workstation operating system is one of the supported platforms.

Using Archive and Version Services with the File Version Utility

The following changes were made to this section:

Location	Change
Installing the File Version Utility	Before you install the NSS File Version Utility, make sure your workstation meets the prerequisites outlined in "Prerequisites for Using the NSS File Version Utility" on page 16.
Installing the File Version Utility	The NSS File Versions Utility (nwver.exe) is on the *NetWare 6.5 Product CD* in the \tools\nsstools directory for Support Pack 2. Ask your system administrator where you can get a copy of the file on your network.

August 8, 2004

Updates were made to the following section. The changes are explained below.

 ◆ "Overview of Archive and Version Services" on page 39

Overview of Archive and Version Services

The following change was made to this section:

Location	Change
Key Concepts of Archive and Version Services	Even though NetWare does not recognize case differences in filenames, Archive and Version Services considers filenames to be case sensitive. Using the Rename command to modify the case of any letters in a filename has the same effect as actually changing the name itself to ArkManager. At the end of an epoch, ArkManager creates a new version set under the changed name. Multiple sets of file versions exist for the file. When searching for file versions, you need to be aware of the case-sensitivity of versioned files to locate multiple version sets for a specified file.

September 15, 2004

Updates were made to the Patents.

December 20, 2004

Updates were made to the following sections. The changes are explained below.

- "Overview of Archive and Version Services" on page 39
- "What's New" on page 39
- "Understanding File Versioning" on page 39

Overview of Archive and Version Services

The following changes were made to this section:

Location	Change
Key Concepts of Archive and Version Services	Updates were made for clarity.

What's New

The What's New section is new.

Understanding File Versioning

The following changes were made to this section:

Location	Change
Prerequisites and Guidelines for Retrieving File Versions	Updates were made for clarity.

Location	Change
Prerequisites for Using the NetStorage Archive Function	This section is new.

February 16, 2005

Editorial updates were made to the document for NetWare 6.5 Support Pack 3.