

Novell Archive and Version Services

2.1 User Guide

Open Enterprise Server 11

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Novell.

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About This Guide

This guide describes how to access, retrieve, and restore multiple historical versions of your files that are saved and maintained in a Novell Archive and Version Services 2.1 on a Novell Open Enterprise Server (OES) 11 Support Pack 1 (SP1) server.

- ♦ Chapter 1, “Overview of Archive and Version Services,” on page 7
- ♦ Chapter 2, “What’s New or Changed in Archive and Version Services,” on page 11
- ♦ Chapter 3, “Prerequisites and Guidelines for Retrieving File Versions,” on page 13
- ♦ Chapter 4, “Installing and Using the NSS File Version Utility,” on page 17
- ♦ Chapter 5, “Restoring File Versions with NetStorage,” on page 27
- ♦ Chapter 6, “Troubleshooting,” on page 39

Audience

This guide is intended for users in the enterprise who have network files that are subject to interval-based archival by Novell Archive and Version Services.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comment feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

For the most recent version of the *Novell Archive and Version Services 2.1 User Guide*, see the latest [Novell Open Enterprise Server 11 documentation \(http://www.novell.com/documentation/beta/oes11/index.html\)](http://www.novell.com/documentation/beta/oes11/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 [OES 11: Novell Archive and Version Services 2.1 Administration Guide](#).

Novell NetStorage provides the Web-based interface for retrieving files from the Novell Archive and Version Services server. For information, see Using NetStorage in the [OES 11 SP1: NetStorage Administration Guide for Linux](#).

1 Overview of Archive and Version Services

Novell Archive and Version Services 2.1 on OES 11 SP1 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 delete during a scheduled interval. If you rename or delete a directory or file, then create another one with the same name, the archive server distinguishes those instances and maintains sets of the related versions.

Archive and Version Services frees the administrator to focus on other critical IT issues. You can view a list of versions of the source files, select the required file, then recover it. You can access file versions from anywhere, at any time, using a Web browser and an active network or Internet connection without the help of your administrator.

This section discusses the following:

- ♦ [Section 1.1, “Individual File Losses Can Impact Business,” on page 7](#)
- ♦ [Section 1.2, “Benefits of Archive and Version Services,” on page 8](#)
- ♦ [Section 1.3, “Key Concepts of Archive and Version Services,” on page 8](#)
- ♦ [Section 1.4, “What’s Next,” on page 10](#)

1.1 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.

1.2 Benefits of Archive and Version Services

With Novell Archive and Version Services for OES 11 SP1, 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 an active network or Internet 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.

1.3 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 (NSS) volumes on a OES 11 SP1 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.

NOTE: Filename with a special character colon(:) is not eligible for versioning.

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 Archive function in Novell NetStorage. You can also use the NSS File Version Utility on your Windows 2000/ XP /Vista or SUSE Linux Enterprise Desktop (SLED)10 or SLED 10 SP1 workstation to retrieve files from the archive database. For security reasons, the restored file or directory and its content are assigned their most recent settings for file system attributes, trustees, and trustee rights to your OES 11 SP1 NSS volume.

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.

Versioning Policy

Administrator sets the versioning criteria like files to be versioned, when versioning occurs, or the state of the files when the epoch ends, filters, delete policy for all the files on a particular volume. All this information is displayed in the Versioning Policy, Right-click the Archive icon in the system tray and select *View Versioning Policy* to view the details.

NSS File Version Utility for File or Directory Retrieval and Restoration

The NSS File Version Utility provides convenient and direct access to archived versions of your files using either Windows or Linux desktop. *Restore Archived Versions* option is available when you right-click a file or directory in the explorer. The utility allows you to view recent versions of your files in the archive database and restore the desired file.

Novell NetStorage for Web-Based File Retrieval and Restoration

Novell NetStorage provides Web-based access to archived versions of your files using a web browser and 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.

1.4 What's Next

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

Table 1-1 *Possible Tasks*

If You Need	Do This
To understand the requirements for retrieving file versions	"Prerequisites and Guidelines for Retrieving File Versions" on page 13
To use the Windows-based NSS File Version Utility to access file versions	"Installing and Using the NSS File Version Utility" on page 17
To use the Web-based Archive function in Novell NetStorage to access file versions	"Restoring File Versions with NetStorage" on page 27

2 What's New or Changed in Archive and Version Services

This section describes enhancements and changes in Archive and Version Services since the initial release of Novell Open Enterprise Server (OES) 11.

- ♦ [Section 2.1, "What's New \(OES11\)," on page 11](#)

2.1 What's New (OES11)

The Archive and Version Services 2.1 service has been modified to run on OES 11. There are no other changes in the OES 11 release of Archive and Version Services 2.1.

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 2.1. This section explains how your administrator can configure the service to meet your archival needs.

- ♦ [Section 3.1, “Prerequisites for Retrieving File Versions,” on page 13](#)
- ♦ [Section 3.2, “Guidelines for Availability of File Versions,” on page 14](#)
- ♦ [Section 3.3, “NSS File Version Utility,” on page 15](#)
- ♦ [Section 3.4, “Prerequisites for Using the NetStorage Archive Function,” on page 15](#)

3.1 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 a OES 11 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 the executable from the Welcome page and install on your Windows or SLED desktop.
- ♦ To access versions using Novell NetStorage, your administrator must install and configure a Novell NetStorage server, then configure NetStorage services to access Archive service.

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

3.2 Guidelines for Availability of File Versions

After your system meets the [Section 3.1, “Prerequisites for Retrieving File Versions,”](#) on page 13, 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 11, 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 OES 11, filenames are case sensitive. If you use the `Rename` command to modify the case of any letters in a filename, its file versions are saved under different name.

3.3 NSS File Version Utility

- ♦ NSS File Version Utility for OES 11

Type	Description
Operating System	SLED 10 or SLED 10 SP 1
Dependencies	<ul style="list-style-type: none">♦ Novell Client 1.2 SP 2 or later♦ KDE or GNOME* base libraries♦ Mono 1.2.2
File Manager	Konqueror or Nautilus

- ♦ NSS File Version Utility for Windows

Type	Description
Operating System	<ul style="list-style-type: none">♦ Windows 2000 Professional SP4♦ Windows XP SP2♦ Windows Vista
Dependencies	<ul style="list-style-type: none">♦ Novell Client 4.9.1 SP 2 or later for Windows 2000/ XP♦ Microsoft .NET 2.0 framework♦ Novell Client 1.0 for Windows Vista

3.4 Prerequisites for Using the NetStorage Archive Function

If the 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 and a network or Internet connection.

You need any of the following Web browsers on your computer:

- ♦ Mozilla* Firefox* 1.5.x or later
- ♦ Mozilla Firefox for Macintosh 2.0.x
- ♦ Microsoft* Internet Explorer 6.0 SP 2 or later

4 Installing and Using the NSS File Version Utility

Novell Archive and Version Services 2.1 for OES 11 provide convenient and direct access to previously archived versions of your files using the Novell Storage Services (NSS) File Version Utility. The archived file versions reside in the archive database.

This section discusses the following tasks:

- ♦ [Section 4.1, “Installing NSS File Version Utility on Linux,” on page 17](#)
- ♦ [Section 4.2, “Installing NSS File Version Utility on Windows,” on page 18](#)
- ♦ [Section 4.3, “Log Files,” on page 18](#)
- ♦ [Section 4.4, “Viewing the Versioning Policy,” on page 19](#)
- ♦ [Section 4.5, “Using the NSS File Version Utility,” on page 21](#)

4.1 Installing NSS File Version Utility on Linux

After you have met the prerequisites, install the NSS File Version Utility on your workstation. For prerequisites, see [“NSS File Version Utility” on page 15](#).

- 1 Launch a Web browser, then open the Welcome page with the following URL:

`https://servername/`

Replace *servername* with the actual DNS name or IP address of the Archive server.

- 2 In the left navigator, select *Client Software > Archive Versioning*.

Depending on your requirement install the *Archive Versioning 32-bit Client for Linux* (`novell-versioning-client-i586.tar.gz`) or *Archive Versioning 64-bit Client for Linux* (`novell-versioning-client-x86_64.tar.gz`).

NOTE: The steps listed below are for 32-bit installation. To install on 64-bit, use `novell-versioning-client-x86_64.tar.gz`.

- 3 Install the following rpms:

- ♦ `novell-fileversionutility-linux-1.0.0-x.i586`
- ♦ Depending on your desktop install either KDE or GNOME plug-ins:
 - ♦ **KDE:** `novell-fileversionutility-linux-kdeplugin-1.0.0-x.i586`
 - ♦ **GNOME:** `novell-fileversionutility-linux-nautilus-plugin-1.0.0-x.i586`

After a successful installation, the *Restore Archived Versions* is available when you right-click a file or directory on a network drive (that is a mapped NSS volume).

If you are using a GNOME desktop, log in again for successful installation of the utility. The *Restore Archived Versions* is available when you right-click a file or directory on a network drive that is mapped to a NSS volume.

4.1.1 Uninstalling NSS File Version Utility

Remove the following rpms to uninstall the NSS File Version Utility:

- ♦ novell-fileversionutility-linux-kdeplugin-1.0.0-x.i586.rpm or
novell-fileversionutility-linux-nautilus-plugin-1.0.0-x.i586.rpm
- ♦ novell-fileversionutility-linux-1.0.0-x.i586.rpm

If you are using a GNOME desktop, log in again to your workstation to completely uninstall the NSS File Version utility.

4.2 Installing NSS File Version Utility on Windows

- 1 Launch a Web browser, then open the Welcome page with the following URL:

`https://servername/`

Replace *servername* with the actual DNS name or IP address of the Archive server.

- 2 In the left navigator, select *Client Software > Archive Versioning*.

Depending on your requirement install the *Archive Versioning 32-bit Client for Windows* (NSSFileVersionUtility.exe) or *Archive Versioning 64-bit Client for Windows Vista* (NSSFileVersionUtility_x64.exe).

- 3 Download and install the executable file to your Windows workstation.

NOTE: On Windows Vista 64-bit, you need to manually register the VshellExtn.dll. On the elevated command prompt, enter `regsvr32 VShellExtn.dll /s`

After a successful installation, the *Restore Archived Versions* is available when you right-click a file or directory on a network drive (that is a mapped NSS volume).

4.2.1 Uninstalling NSS File Version Utility

Uninstall the NSS File Version Utility using *Add or Remove Programs*.

NOTE: To perform clean uninstallation on Windows Vista, you must close the Versioning window, then perform uninstallation.

4.3 Log Files

- ♦ [Section 4.3.1, "Linux," on page 19](#)
- ♦ [Section 4.3.2, "Windows," on page 19](#)

4.3.1 Linux

The log.txt file is located in /\$home/.versioning folder.

By default only fatal errors are logged. To log debug or all messages configure the NovellVersioningClient.exe.config file located at opt/novell/versioning-client/bin folder and edit the level value parameters to DEBUG or ALL.

```
<level value="DEBUG"> or <level value="ALL">
```

4.3.2 Windows

The log.txt file is located in the Program\Application folder. For example, c:\Program Files\Novell\Versioning\log.txt.

By default only fatal errors are logged. To log debug or all messages configure the NovellVersioningClient.exe.config file and edit the level value parameters to DEBUG or ALL.

```
<level value="DEBUG"> or <level value="ALL">
```

In the Windows Vista 32-bit platform the log file is located at c:\users\<username>\AppData\Local\VirtualStore\Program Files\Novell\Versioning.

In the Windows Vista 64-bit platform to create log file, you have to configure the c:\Program Files\Novell\Versioning\NovellVersioningClient.exe.config file. To configure the NovellVersioningClient.exe.config file, edit the para name and value parameters:


```
<param name="File" value="c:\users\<username>\log.txt">
```

where the value of element param name must be File and the element value contains the desired location for the log file.

4.4 Viewing the Versioning Policy

The administrator sets the versioning criteria to filter the type of files to be versioned, duration and the number of versions retained for a given volume. Select the volume to view the policy set for all the files that are eligible for versioning.



You can view the versioning policy of the jobs that are in the running state.

- 1 Right-click  in the system tray, then click *View Versioning Policy*.

- 2 Select the volume.

If you encounter any errors, check the log.txt file. Configure the Versioning.Policy.exe.config file to log the error messages related to versioning policy in the log.txt file.

- 3 Refer to the table below for details on the fields.


Versioning Policy


Server Name : ServerName
Volume Name: vol1
Job Status : label26
Next Version time : label30

Filters :

	Include	Exclude
Path :	<input type="text"/>	<input type="text"/>
Extension :	<input type="text"/>	<input type="text"/>
Pattern :	<input type="text"/>	<input type="text"/>
Wildcard :	<input type="text"/>	<input type="text"/>

Job Schedule :

Every 20 Secs

Job Schedule :

Start Time : 10
Days :

☐ S
 ☐ W
 ☐ S
☐ M
 ☐ T
☐ T
 ☐ F

Delete Policy :

No Delete Policy

Delete Policy :

Delete Versions after : 1
Versions Available: 10

Ok

Option	Description
Server Name	The OES 11 server where the data to be versioned is located.
Volume Name	The OES 11 NSS volume where the data to be versioned is located.
Job Status	<p>The current operational state of the job.</p> <p>Scheduled: The job is scheduled to save file versions; currently it is not active.</p> <p>Running: The job is saving file versions to the archive database.</p> <p>Stopped: The archived data is available to you, but the job is disabled and no new versions are captured.</p> <p>Cleanup: The Clean Up Users job is in progress. The job removes obsolete user information.</p> <p>Not Configured: One or more of the job's settings are missing or invalid, or the default job settings for the job are missing or invalid.</p>
Next Version time	The next scheduled date and time to begin the versioning process.
Filters	Displays the filter settings for versioning the files and directories.
Job Schedule	The interval or start time for a job.
Delete Policy	Determines the files to delete from the archive database and when to delete them.

- 4 Click OK to close the Versioning Policy GUI.

For more information on job status, filters, job schedule and delete policy, see the “[Managing Jobs](#)” in the *OES 11: Novell Archive and Version Services 2.1 Administration Guide*.

4.5 Using the NSS File Version Utility

To restore the versions NSS File Version Utility integrates with your OES 11 workstation or Windows workstation.

Before using the NSS File Version Utility, ensure that you have met the following prerequisites:


- ♦ Map the NSS primary volume configured for the Archive server to your local workstation.
- ♦ Ensure that the administrator has assigned trustee rights to your file or the volume or the directory. For more information on assigning the trustee rights using the Novell Client, see the *Novell Client 2.0 SP3 for Linux Administration Guide* or *Novell Client 4.91 SP5 for Windows XP/2003 Installation and Administration Guide*.
- ♦ Ensure that the administrator has LUM-enabled the eDirectory user. For more information, see the *OES 11 SP1: Novell Linux User Management Administration Guide*.



The procedure for restoring versions using the NSS File Version Utility on Windows and Linux are similar. We have used Windows Vista for our example.

- ♦ [Section 4.5.1, “Accessing NSS File Version Utility,” on page 22](#)
- ♦ [Section 4.5.2, “Searching for File Versions,” on page 22](#)
- ♦ [Section 4.5.3, “Restoring a File Version,” on page 23](#)

- ♦ [Section 4.5.4, “Restoring Directory Content,” on page 24](#)
- ♦ [Section 4.5.5, “Deleting All Versions of an Archived File,” on page 26](#)

4.5.1 Accessing NSS File Version Utility

- 1 Right-click  in the system tray, then click *NSS File Version Utility*.

On the Gnome desktop the NSS File Version Utility icon  is not displayed. To view the  in the system tray, execute the following steps:

- 1a To open the *Session* window, enter

```
gnome-session-properties
```

- 1b To open the *New Startup program* window, click *Startup Programs > Add*.

- ♦ **Name:** Restore Archive Versions
- ♦ **Command:** /usr/bin/novell-versioning-client-system-tray
- ♦ **(Optional)Comment:** NSS File Version Utility to restore versions

Click *OK*.

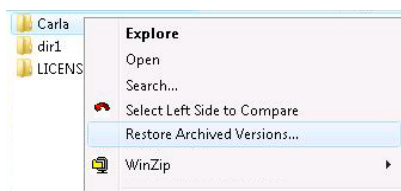
- 1c To enable the autostart, select *Restore Archive Versions*, then click *OK*.

- 2 Select the Archive volume to view the versions of the files.

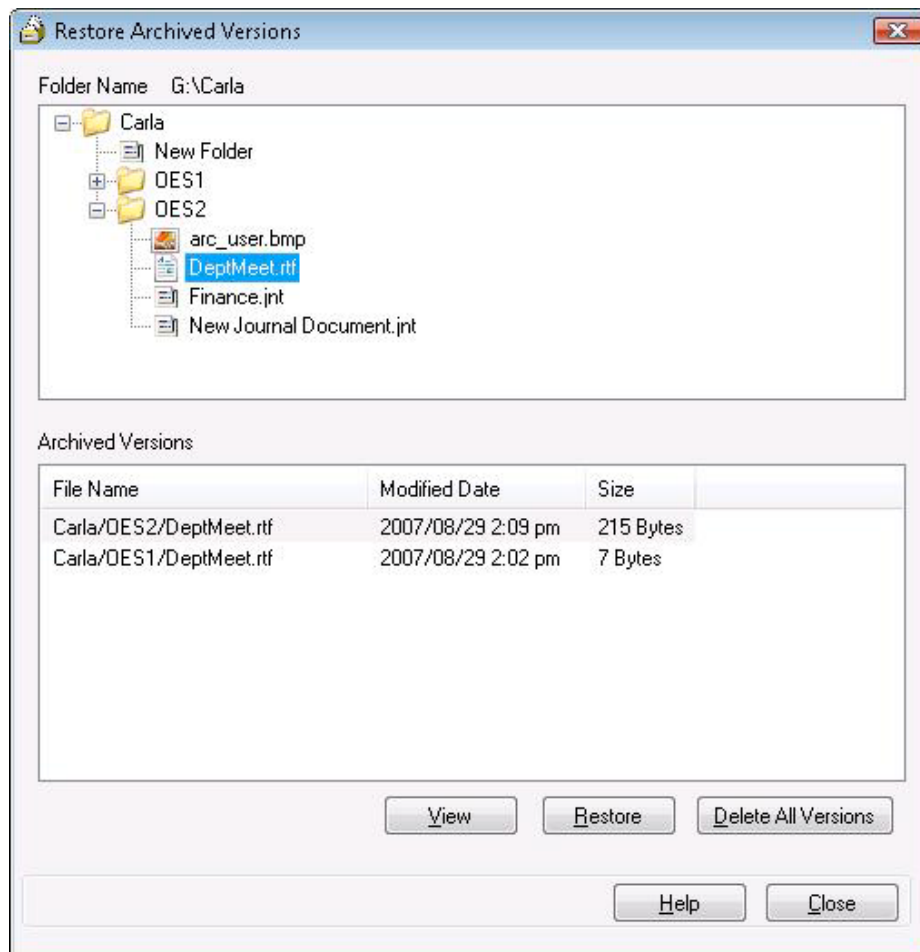
4.5.2 Searching for File Versions

- 1 In your file browser, browse to locate the network directory or file that stores the versions in the archive database.
- 2 To view versions of the files and folders in the *Carla* directory, right-click the directory, then select *Restore Archived Versions* or right-click the system tray, then select *Restore Archived Versions*. Select the volume that contains *Carla* directory, then click *OK* to display the *Restored Archived Versions* Window.

NOTE: If you are using File Version Utility on KDE Desktop, the *Restore Archived Versions* is available under *Actions* when you right-click a file or directory on a network drive.



- 3 Browse the *Archived Versions* list to select the archived file you want to view the versions.



- 4 Click *View* to view the contents of a selected versioned file.

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

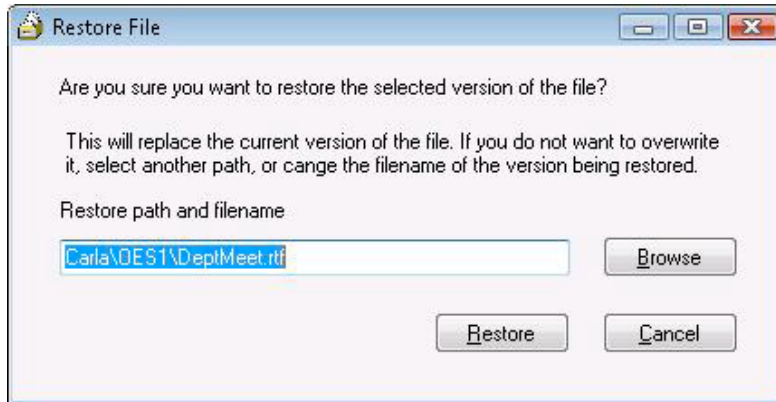
- 5 (Optional) Use *Restore* to restore the versions of the archived file or directory. On restoring versions, the renamed file or folder, displays an unknown object icon in the GUI window. Double click the unknown object to view, the file or folder icon.
 On restoring versions, the deleted folder, displays an unknown object icon in the GUI window. To browse the contents of the deleted folder save the folder to a different location.
 For more, see [“Restoring a File Version” on page 23](#) or [“Restoring Directory Content” on page 24](#).
- 6 (Optional) Use *Delete All Versions* to delete all the file versions currently listed in the *Archived Versions* list. For more information, see [“Deleting All Versions of an Archived File” on page 26](#).

4.5.3 Restoring a File Version

Use *Restore* to view a selected file version from your local workstation.

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

Figure 4-1 Restoration of a File



To restore the file to a different location, type the full path, including the filename, in the *Restore path and filename* or browse to the location. You can restore the file only to an NSS volume on a OES 2 or later server, the restored file is assigned its most recent settings for file system attributes, trustees, and trustee rights.

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

- 1 To restore the versions, select the file from a list of file versions.
- 2 To specify where you want to restore the selected file version, use one of these methods:
 - ♦ Use the default path displayed in the *Restore path and filename*, which is the original location of the file at the time it was versioned.

To avoid overwriting an existing file with the same name in the destination location, specify a unique filename.
 - ♦ Click *Browse* to find the desired location or type the full path, including the filename, indicating where to restore the file.

NOTE: Ensure that the filename is included in the path.

- 3 Click *Restore*.

For a successful restore, a confirmation message affirms the location of the restored file.
- 4 Click OK to dismiss the confirmation message.

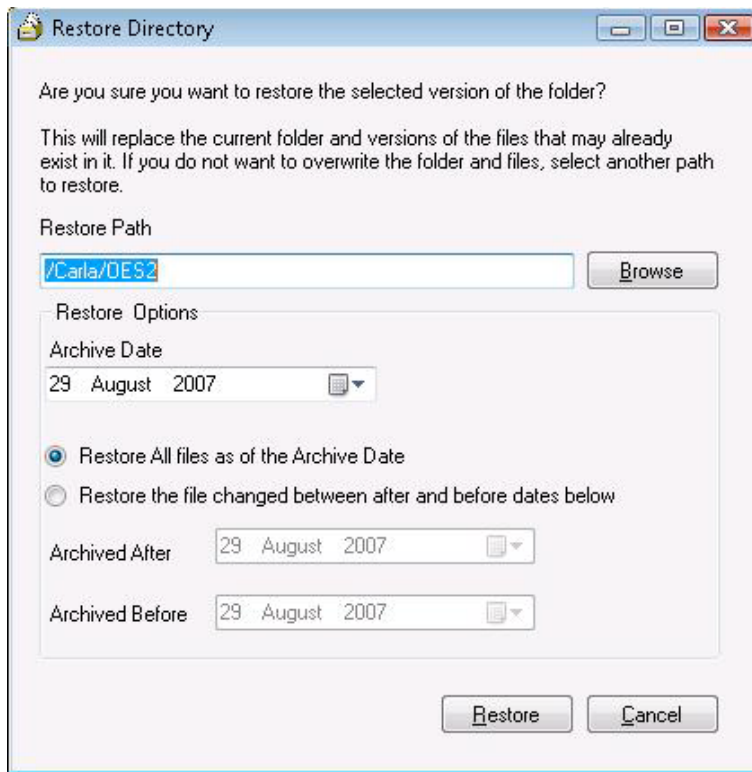
4.5.4 Restoring Directory Content

Select a directory and specify a date to restore the directory content for that time. You can also select a directory and specify a time period to search the archive for its files and subdirectories that were deleted, renamed, modified or file system trustee rights modified during that period. The search helps you locate the versions of interest.

The Archive volume contains versions of only those files and subdirectories that are eligible for versioning. All of the directory's file and subdirectory versions that were archived earlier than, but closest to, the specified snapshot time are candidates for restoration.

Use *Restore* to view the versions of a selected directory on your workstation.

Figure 4-2 Restoring Directory Contents



By default, a selected directory and its specified content are restored to the location where the source directory existed when the file versions and subdirectory versions were saved to the archive volume. The default path and directory name are displayed in the *Restore Path*.

To restore the directory to a different location, type the full path, including the directory name, in the *Restore path* or browse to the location. You can restore the directory only to a NSS volume on a OES 2 or later server, the restored directory and its contents are assigned their most recent settings for file system attributes, trustees, and trustee rights.

- 1 Locate the directory you want to restore.
- 2 Use one of these methods to specify the restore location on the network:
 - ♦ Use the default path displayed in the *Restore path*, which is the original location of the directory at the time it was versioned.

To avoid overwriting an existing file with the same name in the destination location, specify a unique directory name.

NOTE: On Windows client, you cannot manually add a new path for restoring versions, instead you must click *Browse* for the new path.

- ♦ Click *Browse* to find the desired network location where you want to restore the directory.

NOTE: Ensure that the directory name is included in the path.

- 3 Use one of these methods to specify the date to restore the archived folders and files:
 - ♦ Specify the date in the *Archive Date* to restore files.
 - ♦ Specify the date in the *Archived After* and *Archived Before* to search for the file versions between the specified date.

- 4 Click *Restore*.

On successful restoring the versions, a confirmation message affirms the location of the restored directory.

- 5 Click *OK* to dismiss the confirmation message.

4.5.5 Deleting All Versions of an Archived File

Use *Delete All Versions* to delete all file versions currently listed in the *Archived Versions* 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.

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

5 Restoring File Versions with NetStorage

Novell Archive and Version Services 2.1 on a OES 11 server 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 13.

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, and Linux. All you need is a Web browser and an active Internet or network connection. For security reasons, the file assigned their most recent settings for file system attributes, trustees, and trustee rights to your OES 11 NSS volume.

This section discusses the following tasks:

- ♦ [Section 5.1, “Accessing Novell NetStorage,”](#) on page 27
- ♦ [Section 5.2, “Navigating the NetStorage Archive Interface,”](#) on page 28
- ♦ [Section 5.3, “Restoring a File Version Using NetStorage,”](#) on page 33

NOTE: Restoring of directory versions is not supported using Novell NetStorage.

For more information on using Novell NetStorage, see the [OES 11 SP1: NetStorage Administration Guide for Linux](#).

5.1 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.example.com/NetStorage`

- ♦ **Text View:** In your Web browser’s Location field, enter

`https://ns1.example.com/oneNet/NetStorage`

Replace `ns1.example.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 [OES 11 SP1: NetStorage Administration Guide for Linux](#).

5.2 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:

- ♦ [Section 5.2.1, "Directory Contents Dialog Box," on page 28](#)
- ♦ [Section 5.2.2, "Multiple Version Sets Dialog Box," on page 30](#)
- ♦ [Section 5.2.3, "File Versions Dialog Box," on page 31](#)

5.2.1 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.

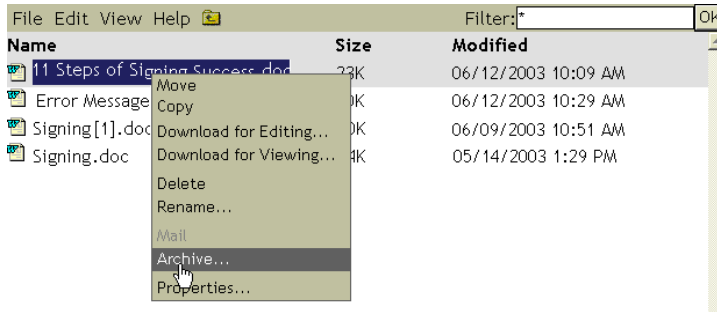
The Directory Contents dialog box conveys the following information:

- ♦ **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

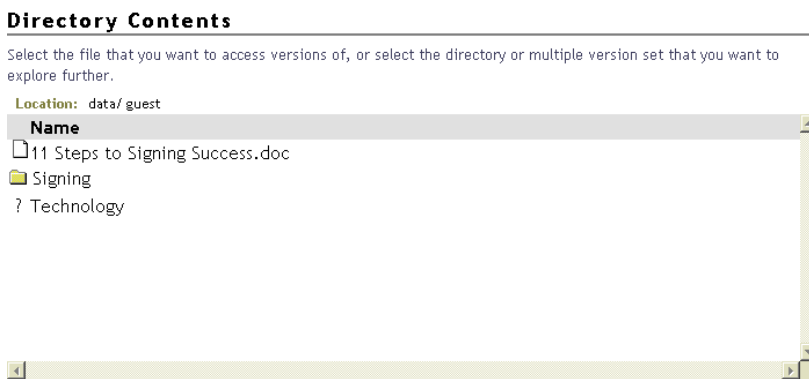
As an example, consider a situation in which a user wants to restore a previous version of a file "11 Steps to Signing Success.doc". The user begins the search by locating and right-clicking a file in from the NetStorage interface, then clicking *Archive*, as shown in the following figure. The version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

Figure 5-1 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 the following figure, lists the contents of the `uservol:\data\guest` directory.

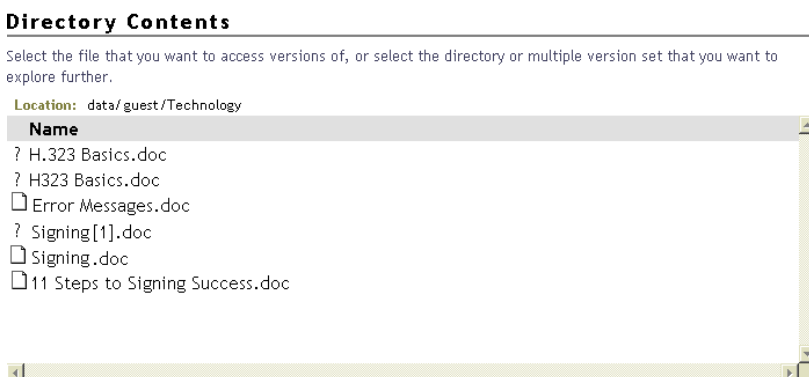
Figure 5-2 Sample Archive Directory Contents Dialog Box



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 5-4](#).

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, as shown in the following figure.

Figure 5-3 Sample Archive Directory Contents Dialog Box for a Subdirectory



Then, the user clicks the file version set for the “11 Steps to Signing Success.doc” file. See [Figure 5-5](#) for the results of this search.

5.2.2 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, suppose you renamed `fileA` as `fileB`, then renamed `fileB` as `filea`. Under each filename, versions were saved to the archive. 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.

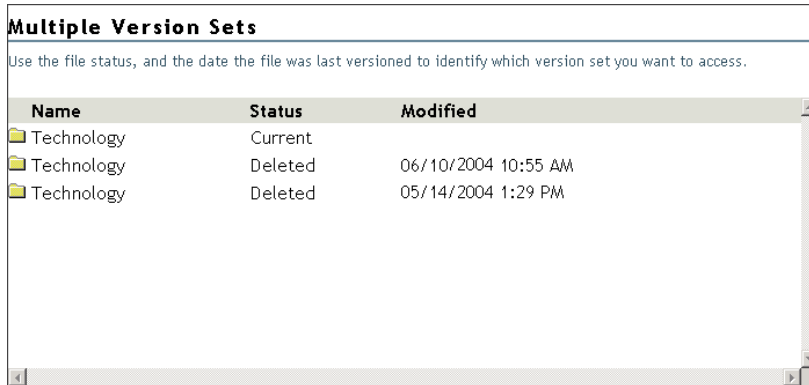
The list can contain multiple version sets for files (page icon) and for directories (folder icon). Each entry consists of the following information:

- ♦ **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` directory (see [Figure 5-2](#)). The Multiple Version Sets dialog box, as shown in the following figure, reveals 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.

Figure 5-4 Sample Multiple Version Sets Dialog Box



5.2.3 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, then type the new filename. Click *OK* to restore the file.
- ♦ **Restore:** Click *Restore* to automatically download and save the selected file version to the path shown in the *Restore To* field. For security reasons, the file assigned their most recent settings for file system attributes, trustees, and trustee rights.

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.

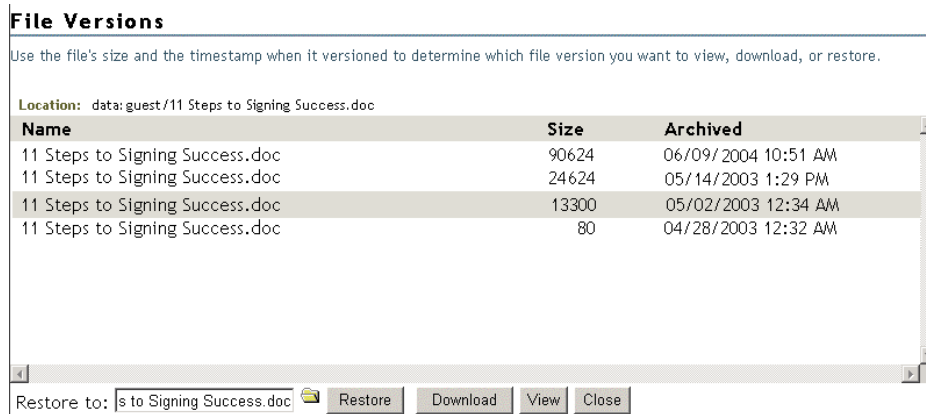
IMPORTANT: You must have the application installed on your workstation in order to open the file to view it.

- ♦ **Close:** Closes the dialog box.

An Example Search of File Version Sets in the Archive Database

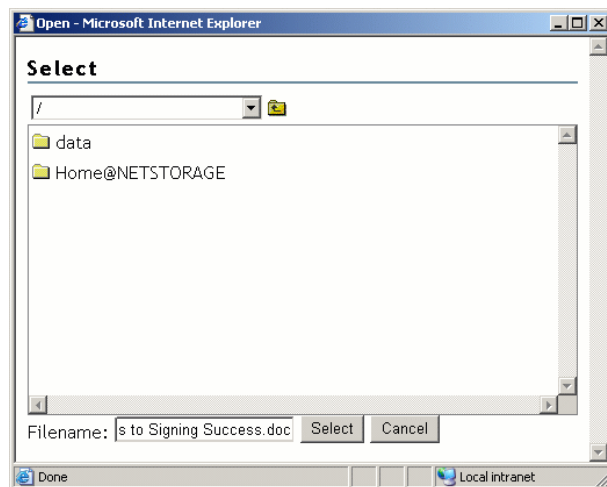
Continuing the example in [“Directory Contents Dialog Box” on page 28](#), the user selected the “11 Steps to Signing Success.doc” file version in the Technology folder. See the following figure to view the results of that search.

Figure 5-5 Sample File Versions Dialog Box



The user clicks the *Browse* icon to search for the location where the file is to be restored, as shown in the following figure.

Figure 5-6 Sample of Using the Browser Search to Complete the Restore To Field



5.3 Restoring a File Version 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 13](#).

To access and restore previous versions of a file:

- 1 Navigate to your NetStorage server interface.

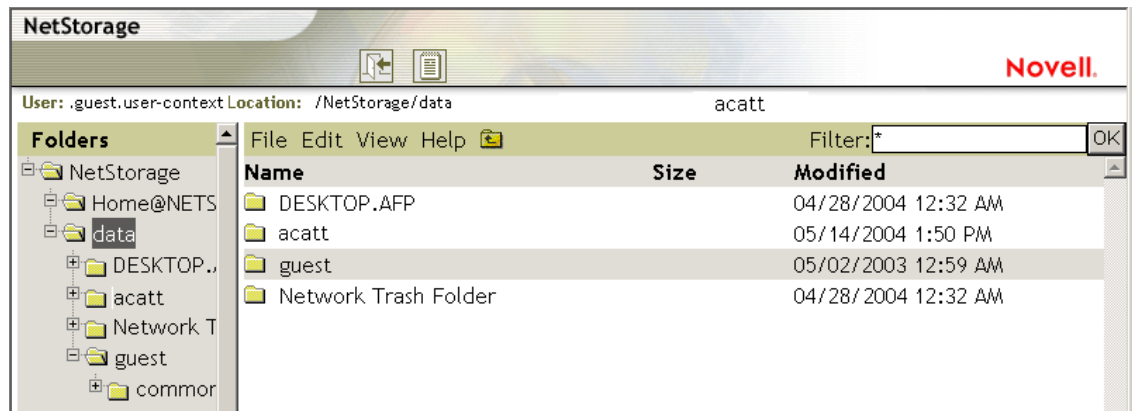
- 1a Launch an Internet Explorer (IE) Web browser by double-clicking the *IE* icon on your desktop.
- 1b In the *IE* main toolbar, click *File > Open*.
- 1c In the *Open* field of the Open dialog box, type the URL of your NetStorage server location.

`https://arksvr.example.com/oneNet/NetStorage`

Replace `arksvr.example.com`, with 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 Secure Hypertext Transfer Protocol (HTTPS) 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.



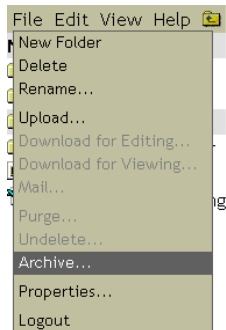
- 3 Use the left navigator of the NetStorage interface to find the file or directory that you want to use as your entry point into the archive database. Because the *Archive* search currently progresses only forward through directories in the archive database, it is best if you know the path of the file 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:

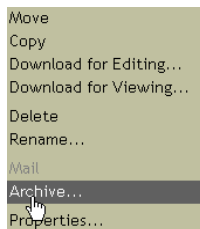
To Access the Archived Versions of this Storage Object	Navigate to This Location	Then Select This Item
A current file	The current file	The current file
A deleted file in a current directory	The directory that the deleted file was in when it was deleted	The directory that the deleted file was in
A deleted 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*.



- ◆ Right-click the selected item to open a pop-up menu, then click *Archive*.



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 37
	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 37
	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 36
Directory		Directory Contents, Step 5 on page 35

- 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. Repeat the current step (Step 5).
File	File Versions. This is Step 7 on page 37 .
Multiple versions (of a File or Directory)	Multiple Version Sets. This is Step 6 on page 36 .
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.

Directory Contents

Select the file that you want to access versions of, or select the directory or multiple version set that you want to explore further.

Location: data/ guest

Name
11 Steps to Signing Success.doc
Signing
? Technology

- 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. This is Step 5 on page 35 .
File	File Versions. This is Step 7 on page 37 .

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

Multiple Version Sets		
Use the file status, and the date the file was last versioned to identify which version set you want to access.		
Name	Status	Modified
Technology	Current	
Technology	Deleted	06/10/2004 10:55 AM
Technology	Deleted	05/14/2004 1:29 PM

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.

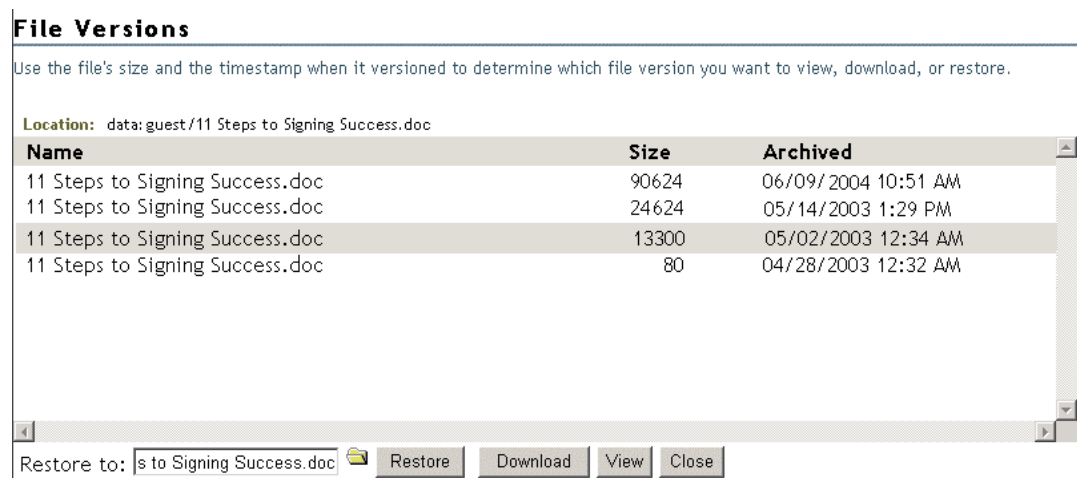
7b Specify the path and filename to use for the restored version.

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.

For a large target file, the *Archive* function might time out while waiting for the file transfer to be completed. If this happens, dismiss the error message and keep checking the process manually. Upon a successful restore, a confirmation message affirms the location of the restored file.



6 Troubleshooting

This section discusses potential issues and workaround for Novell Archive and Version Services.

6.1 NSS File Version Utility

- ♦ [“Error message: Novell Archive and Version Service is not available. Contact your system administrator.” on page 39](#)
- ♦ [“The Restore Archived Versions option is not available on installation of NSS File Version Utility for Linux.” on page 39](#)
- ♦ [“Un-installing NSS File Version Utility on Windows Vista may hang the workstation.” on page 39](#)
- ♦ [“Browse icon is not functional for restoring files using NetStorage in Firefox* browser” on page 40](#)

Error message: Novell Archive and Version Service is not available. Contact your system administrator.

Possible Cause: Either Novell Archive and Version Services are not configured or temporarily unavailable for the selected volume.

Action 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.

The Restore Archived Versions option is not available on installation of NSS File Version Utility for Linux.

Action: On installation of the NSS File Version Utility, you must re-login the Nautilus file manager for availability of Restore Archived Versions option.


On uninstalling the NSS File Version Utility, you must re-launch the Nautilus file manager or re-login for removal of Restore Archived Versions option from menu.

Un-installing NSS File Version Utility on Windows Vista may hang the workstation.

Possible cause: The `VshellExtn.dll` is not un-registered.

Action: You need to manually un-register the `VshellExtn.dll` before un-installing NSS File Version Utility. On the elevated command prompt, enter `regsvr32 VShellExtn.dll /u` to un-register the file, then un-install the NSS File Version Utility.

Browse icon is not functional for restoring files using NetStorage in Firefox* browser

Explanation: When you are restoring file versions with NetStorage in a Firefox browser, the Browse icon  that allows you to browse for the location of the file to be restored is not functional.

Action: Enter the path manually in the *Restore to* field.