Arcserve® Backup for Windows

Agent for Lotus Domino Guide

r16.5

arcserve®

Arcserve Product References

This document references the following Arcserve products:

- Arcserve® Backup
- Arcserve® Unified Data Protection
- Arcserve® Unified Data Protection Agent for Windows
- Arcserve® Unified Data Protection Agent for Linux
- Arcserve® Replication and High Availability

Contact Arcserve

The Arcserve Support team offers a rich set of resources for resolving your technical issues and provides easy access to important product information.

https://www.arcserve.com/support

With Arcserve Support:

- You can get in direct touch with the same library of information that is shared internally by our Arcserve Support experts. This site provides you with access to our knowledge-base (KB) documents. From here you easily search for and find the product-related KB articles which contain field-tested solutions for many top issues and common problems.
- You can use our Live Chat link to instantly launch a real-time conversation between you and the Arcserve Support team. With Live Chat, you can get immediate answers to your concerns and questions, while still maintaining access to the product.
- You can participate in the Arcserve Global User Community to ask and answer questions, share tips and tricks, discuss best practices and participate in conversations with your peers.
- You can open a support ticket. By opening a support ticket online, you can expect a callback from one of our experts in the product area you are inquiring about.

You can access other helpful resources appropriate for your Arcserve product.

Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Updated to include user feedback, enhancements, corrections, and other minor changes to help improve the usability and understanding of the product or the documentation itself.

- Updated Installation Prerequisites (see page 13) to include information about installing the Agent for Open Files.

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Chapter 1: Introducing the Agent for Lotus Domino

Arcserve Backup is a comprehensive storage solution for applications, databases, distributed servers, and file systems. It provides backup and restore capabilities for databases, business-critical applications, and network clients.

The Agent for Lotus Domino is one of the agents offered by Arcserve Backup. The agent communicates with Lotus Domino to back up the Lotus Domino database on a local or remote server.

This guide describes how you can install, configure, and use the Arcserve Backup Agent for Lotus Domino on the Windows platform.

This section contains the following topics:

Agent Overview

The Agent for Lotus Domino uses the native Lotus Domino backup Application Programming Interface (API) to back up Lotus Domino databases and transaction logs. You can backup any online or offline Lotus Domino database. When you use online backup, you do not have to replicate the database, and do not have to stop the Lotus Domino server.

Using the agent, you can do the following:

Perform Full Backup

Back up all database files that belong to a Lotus Domino server to a tape or file system device through the Arcserve Backup server. The agent also backs up transaction log files if the Lotus Domino *transaction log* option is enabled and the *log style* is set to archive. A transaction log is a listing of all the transactions that occurred on a database from a specific point in time.

Perform Incremental and Differential Backup

Select an incremental or a differential backup method and schedule repeating jobs. For Lotus Domino servers with archived transaction log style, the incremental and differential jobs will back up the transaction log files and database files with a new database instance ID (DBIID) on your Lotus Domino server. For all other cases, the incremental and differential jobs will include all database files that were modified. If a system or media fails, you can use both the transaction logs and the full database backup to recover your databases.

Restore

Restore databases and transaction log files. The agent provides the capability to restore these to either their original location or to an alternate location.

Recover

Recover a database after it has been restored. The recovery process uses the transaction logs to "roll forward" the database to its current state (full automatic recovery) or to a specified point in time (point-in-time automatic recovery).

Note: The recovery process is only applied to Lotus Domino servers that have transaction logging enabled.

Use as Agent Server

Operate as a Windows NT, Windows 2003, or Windows Server 2008 service and configure the Setup or the Control Panel Services applet to start automatically. This feature allows the agent to run without requiring a user to log in to the server.

Use Partitioned Servers

Operate multiple instances of Lotus Domino servers on a single computer. With this feature of Lotus Domino, all partitions share the same Lotus Domino program directory and the same set of executable files. However, each partition has its own unique data directory with its own copy of the Notes.ini file. Arcserve Backup Agent for Lotus Domino supports partitioned servers and allows you to browse, backup, and restore databases located on different Lotus Domino servers at the same time.

Schedule backup jobs based on your needs

You can schedule backup jobs to run at a specified time and on a specified day of the week. For example, you can submit a job for a date you specify and select a repeat method, or you can select a rotation scheme (a preset weekly backup strategy consisting of full backup jobs).

Licensing

You can install and verify the license for the Arcserve Backup Agent for Lotus Domino on the Arcserve Backup primary server or a stand-alone server. When you upgrade the agent to this version from any version prior to r15, you must enter both the current version upgrade key and the old license key for the agent on the primary server, or the stand-alone server. If you are not upgrading from a version prior to r15, you will only need to enter the current version upgrade key.

If you are using an older version of the agent, then Arcserve Backup checks for the license on the computer where you have installed the agent. For more information about licensing, see the *Implementation Guide*.

Architecture

Arcserve Backup Agent for Lotus Domino provides services that allow Arcserve Backup to back up and restore databases.

The following illustration shows the overall relationship between Arcserve Backup and Lotus Domino:
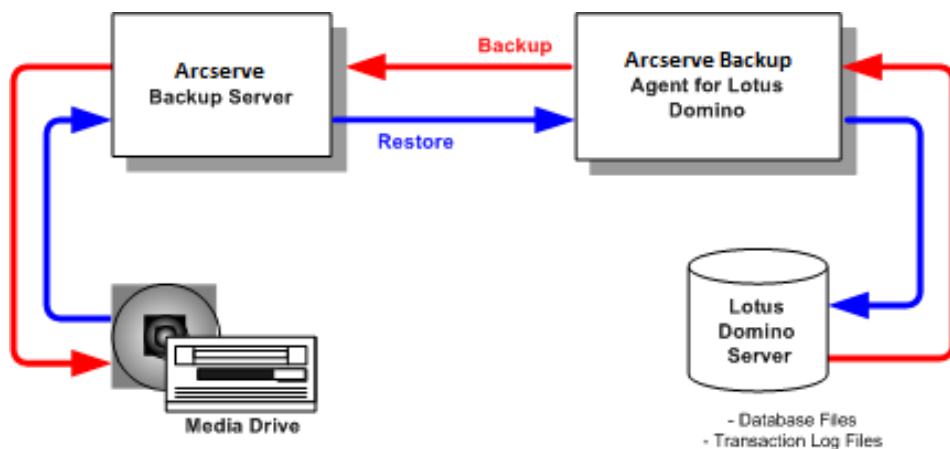
Database Instance Identifier (DBIID)

When transaction logging is enabled, Lotus Domino assigns a database instance identifier (DBIID) tag to each database. When Lotus Domino records a transaction in the log, it includes the DBIID. During recovery, Lotus Domino uses this DBIID to match transactions to databases.

Some database maintenance activities can cause Lotus Domino to assign a new DBIID to a database. After Lotus Domino assigns a new DBIID, all new transactions recorded in the log use this DBIID. However, any old transactions would still have the old DBIID and would no longer correspond to the new DBIID. As a result, Lotus Domino cannot apply these old transactions to the database.

Note: To avoid losing data, you should immediately perform a full database backup whenever a database receives a new DBIID.

When you perform this backup, you capture all the database transactions up until that point and ensure that Lotus Domino needs only the new transactions (with the new DBIID) to restore the database.

Backup Strategies

The goal of a good backup strategy is to prevent the loss of valuable data by ensuring that the data can be recovered from a combination of backup data and transaction log files. The key to any successful backup strategy is to perform regular backups. Although different Lotus Domino installations and databases often require different backup frequencies, all installations and databases should be backed up at regular intervals.

Important! You should plan your backup and recovery strategies before you begin using the Lotus Domino server. If you do not plan these strategies before using the Lotus Domino server, you may not be able to recover your data if a disk failure occurs.

A typical backup strategy for Lotus Domino would be to perform full backups (database files and transaction log files) of the Lotus Domino server on a weekly basis. In addition, incremental backups (ready-to-archive logs and database files with newly assigned DBIID since the last backup) would be performed on a daily basis. The actual frequency of backups will depend upon the average number of transactions in the Lotus Domino server.

To ensure that backup files contain the most current transactions, you should back up your transaction logs more frequently than your databases. For example, you could back up a transaction log once a day and the entire database once a week. If you have to restore the database, the most recently backed up transaction log would then be no more than twenty-four hours old. More frequent transaction log backups would give you files with transactions that are even more current.

General Backup Considerations

Consider the following points when you plan to back up a database:

- The importance of each database
- The volatility of each database

- The size of each database

- The length of time available on any day to perform backups (referred to as the backup window of opportunity)

- The time required to recover the database if a failure occurs

Importance

The importance of a database is often the most crucial factor in determining your backup strategy. Consider the following strategies while backing up important or critical databases:

- Back up these databases often.

- Archive the associated transaction log files so that they can be recovered up to the latest committed transaction.

- Archive the associated transaction log files often.

  Note: When you archive transaction log files frequently, you reduce the number of transactions potentially lost if your database and transaction log files fail and have to be recovered.

Volatility

The volatility of a database often determines your backup strategy. Volatile databases should be backed up more frequently to reduce the potential for data loss. You may also need to back up the database on a daily basis to reduce the size of transaction log files and the time needed to roll forward through these log files during recovery.

Size

The size of a database often affects when and how often you can back it up. For example, very large databases take a long time to back up. Because of the long backup time, you may have to back up very large databases only once a week, during weekends. If the size of a database indicates weekly backups, then it is vital that you archive the associated transaction log files more frequently than the database itself. If the database is also important, or volatile, you should back up the transaction log files daily.

Backup Window of Opportunity

The backup window of opportunity you have available often determines when you can back up a database. For example, a database that is heavily used during the work day but used little after 6 p.m. gives you a 12-hour or 13-hour, nightly backup window of opportunity. In contrast, a database that is used heavily 24 hours a day, Monday through Friday, but not used on weekends gives you a two-day, weekend backup window of opportunity. In either case, you must adjust your backup strategy to accommodate the backup window of opportunity available to you.

Length of Recovery Time

To decrease the time needed to recover a database, you can implement the following strategies:

■ Try to reduce the size of the database before backing it up by using commands to reorganize indexes or reclaim unused index space.

■ Back up the database more often. More frequent database backups result in smaller transaction log files that take less time to roll forward through.

■ Keep archived transaction log files available on disk. If you keep transaction log files on disk, you will only need to recover the database's checkpoint but not its log files.

■ Have a standby system that is ready, or nearly ready, to take over from your online system. For example, you can regularly recover the latest database and transaction log files to the standby system so that the standby system can quickly replace the online system if it fails.

Automatic Repeat Backups

You can set backup jobs to run at repeating intervals. For example, to run a backup job every Sunday at midnight, set the repeating interval to seven days and, when you submit the job, schedule it to run on Sunday at midnight. After the backup completes, Arcserve Backup automatically reschedules the job to execute every Sunday at midnight. You can set the repeating interval by choosing from the Repeat Method list, which is displayed on the Schedule tab of the Backup Manager. When you set the repeating interval, set the Backup Method to Full on the Schedule tab.

Chapter 2: Installing the Agent for Lotus Domino

This chapter describes how you can install and configure the Arcserve Backup Agent for Lotus Domino. To install and configure Arcserve Backup you must be familiar with the characteristics, requirements, and administrator responsibilities of the specified operating systems.

This section contains the following topics:

Installation Prerequisites

Before installing the Arcserve Backup Agent for Lotus Domino, verify the following:

- Your system meets the minimum requirements needed to install the Arcserve Backup Agent for Lotus Domino. For a list of requirements, see the readme file.

- An additional 30 MB of hard disk space is available to install Arcserve Backup Agent for Lotus Domino.

- You have administrative privileges or the proper authority to install software on the computers where you will be installing the agent.

- To support transaction log backups, you have enabled the transaction logging option and set the transaction log style to archive.

  When enabling transaction logging, Lotus Domino turns logging on automatically for most of the databases and templates. The Lotus Domino server administrator can turn logging on and off individually for each database using the Database Advanced Properties. The Lotus Domino server administrator can also specify the location and the size of the transaction log.

Note: You do not need to install the Arcserve Backup Agent for Open Files on the Lotus Domino servers that you are protecting. The Agent for Open Files is beneficial when you want to protect files that are open or in use by active applications. Because the Agent for Lotus Domino is an application-specific agent that is dedicated to protecting Lotus Domino servers, it offers a complete solution that encompasses all the features offered by the Agent for Open Files.

Install the Agent in Windows 32-bit or 64-bit Environment

The Arcserve Backup Agent for Lotus Domino (for both, Windows 32-bit and Windows 64-bit) follows the standard installation procedure for the system components, agents, and options of Arcserve Backup. For more information about this procedure, see the *Implementation Guide*.

Important! If you are upgrading from a previous release of Arcserve Backup Agent for Lotus Domino, you must immediately schedule a full backup after the upgrade.

Configure the Agent

Before you start configuring Arcserve Backup Agent for Lotus Domino, you must know the path that contains the Lotus Domino server notes.ini file.

Configure Access Rights to the Server

Arcserve Backup Agent for Lotus Domino connects to the Lotus Domino server through the Lotus API. Therefore, for security reasons, it is important that a user is authorized and has access rights to connect internally to the Lotus Domino server to run the components of the agent.

Before you start using the Agent for Lotus Domino, you must configure access to the Lotus Domino server that you want to back up.

To configure access rights to the server

1. Click the Windows Start button, point to Programs, CA, ARCserve Backup, and Lotus Domino Agent Configuration.

    The Backup Agent for Lotus Domino Configuration dialog opens.

2. Enter the location of the notes.ini file, the server ID file name, and the corresponding password to access the server ID file.

    Note: The server ID filename and corresponding password are only required when backing up the shared email database. Typically, for Lotus Domino partitioned servers, the notes.ini file is located in the Lotus Domino data path. For Lotus Domino single servers, the notes.ini file is located in the Lotus Domino home directory.

3. Click Finish.

    The configuration information is sent to the Registry Editor and the configuration is completed.

Configure the Registry Editor

You can customize and modify several of the settings for Arcserve Backup Agent for Lotus Domino in the Windows Registry by using the Windows REGEDT32 utility, which is available for Windows NT, Windows 2003 and Windows Server 2008.

Note: You can modify options from the Registry Editor; we recommend that you do not change the options. For assistance, contact Arcserve Support at https://www.arcserve.com/support.

To configure the Registry Editor

1. Open the Registry Editor.

2. Expand the tree in the browser of the Registry Editor by selecting one of the following:

    On x86 systems

    HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\CA ARCServe
    Backup\DSAgent\CurrentVersion\agent\dbanotes@(Lotus Domino server name)

    On x64 systems

    HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\CA ARCServe
    Backup\DSAgent\CurrentVersion\agent\dbanotes@(Lotus Domino server name)

3. Double-click the option you want to configure in the list on the right pane.

4. Modify the settings as required.

5. When you finish configuring options for the agent, close the Registry Editor and restart the Arcserve Backup Agent RPC server.

Registry Parameter Modifications

You can modify the following registry parameters:

dll

Specifies location of the Arcserve Backup Agent for Lotus Domino executable file (dbanotes.dll).

NotesIniDir

Specifies the location of notes.ini file.

NotesHomeDir

Specifies the location of the Lotus Domino home directory (Lotus\Domino).

NotesDataPath

Specifies the location of the Lotus Domino data path (Lotus\Domino\data).

dsaobject1

Specifies the location of the Lotus Domino ID file, for example, server.id.

debug

Specifies the debugging level or the extent of generated trace files for the corresponding Lotus Domino server (dbanotes@servername.trc). These trace files contain useful troubleshooting information for Arcserve Technical Support.

You can set this parameter by opening the DWORD Editor dialog and setting the debug levels.

Values: 0 (no trace files), 1 (generate general trace files), 2 (generate detailed trace files)
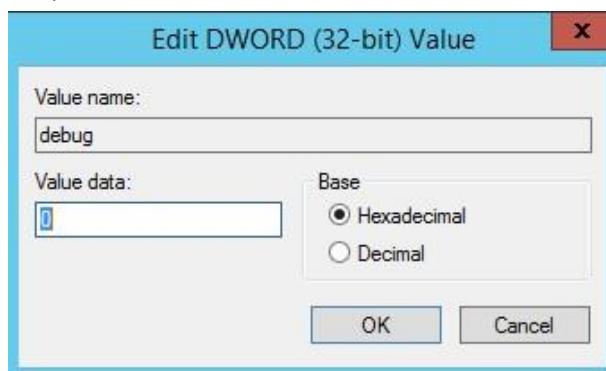
PreviousInstanceName

Restores a Lotus Domino instance that no longer exists on the current host server. In this case, the settings for the current Lotus Domino instance will be used to attempt to restore and recover the non-existent Lotus Domino instance.

This scenario could occur for the following reasons:

■ If you have upgraded from a previous release of the agent to the current release and you have upgraded the Lotus Domino server to a partitioned server

■ If you have the current release of the agent and the name of the Lotus Domino server has been changed since the last backup.

To resolve the name of the previous instance, follow these guidelines:

■ If the data to be restored was backed up using a previous release of the agent, the name of the previous instance will always be dbanotes.

■ If the data to be restored was backed up using the current release of the agent, the name of the instance will be dbanotes@servername. (Sever name is the actual name of the Lotus Domino server.)

You can set this parameter by opening the DWORD Editor dialog and setting the debug levels.
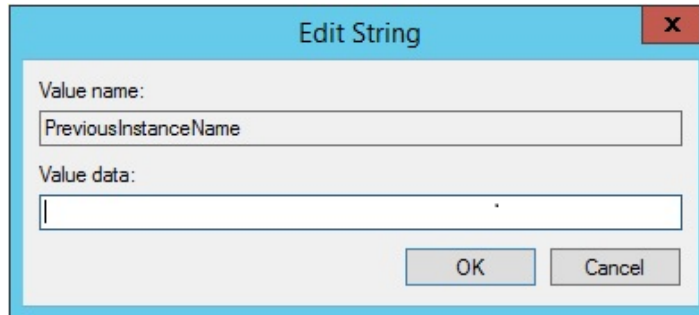
Important! Do not change the name of the Lotus Domino server after performing a backup. Any restore job will always try to use the settings for the same Lotus Domino server that was backed up. If you change the name of the Lotus Domino server, you will have to manually set the PreviousInstanceName registry key to perform a restore.

Uninstall the Agent

You can uninstall the Agent for Lotus Domino if you are not using it.

To uninstall the agent for Lotus Domino

1. Open Windows Control Panel.

2. Double-click Add or Remove Programs.

    The Add or Remove Programs window opens.

3. Select Arcserve Backup and then click Remove.

    The Arcserve Backup Remove Application window opens where you can select the components that you want to uninstall.

4. Select Arcserve Backup Agent for Lotus Domino, and then click Next.

    Warning messages if any appear.

5. Click Next.

6. Select the Click this check box to confirm that you want to remove the specified components from your computer check box and then click Remove.

    The agent is uninstalled and the updated list of Arcserve Backup components available on your server appears.

Chapter 3: Using the Agent for Lotus Domino

This chapter describes how you can back up and restore data using the Arcserve Backup Agent for Lotus Domino. For more information about the backup and restore features, see the *Administration Guide*.

This section contains the following topics:

Data Backup

Using Arcserve Backup Agent for Lotus Domino and the Backup Manager, you can select and submit a backup job, choosing any Lotus Domino server as your source and a tape device connected to a Arcserve Backup server as your destination. You can back up a complete Lotus Domino server or individual objects (database files and transaction log files) within the Lotus Domino server.

Prepare to Perform a Backup Job

Before you submit a backup job, complete the following tasks:

- Verify the integrity of the data in the database. To verify data integrity, open the database in a Lotus Domino client and review the contents for any discrepancies or errors.

- Specify the logon information for the Arcserve Backup Agent for Lotus Domino.

- Create a configuration file in the Arcserve Backup server home directory.

- Start Lotus Domino.

Specify Logon Information

Before you back up Lotus Domino data on a NAS device or network-shared device, you must specify the logon information for Arcserve Backup Agent for Lotus Domino.

To specify logon information for the Arcserve Backup Agent for Lotus Domino

1. Make sure that the logon credentials for the NAS device or the network-shared device are the same as the logon credentials for the host server that contains Arcserve Backup Agent for Lotus Domino.

2. Go to Windows Control Panel, double-click Administrative Tools and Services.

    The Services dialog opens.

3. Double-click Arcserve Backup Agent RPC Server.

    The Arcserve Backup Agent RPC Server Properties dialog opens.

4. Click the Log On tab and select the *This account* option.

    The corresponding logon credentials are displayed.

5. Enter the same logon information that has been set to log on to the NAS device or network shared device.

Configuration File

Before you back up Lotus Domino data, you must create the NotesNetShare.cfg configuration file for the Arcserve Backup server in its home directory.

The following is an example of a NotesNetShare.cfg file format:

\\server213\d$ \\server100\lotus

server213

Specifies the host server (machine) where Arcserve Backup Agent for Lotus Domino is installed.

d$

Specifies the mapped driver to a NAS share named lotus.

server100

Specifies the NAS server name.

lotus

Specifies the NAS share.

The following is another example of a NotesNetShare.cfg file format:

\\123.456.789.1\f$ \\123.456.789.2\d$

In this example, 123.456.789.1 is the host server (machine) where Arcserve Backup Agent for Lotus Domino is installed, f$ is the mapped driver to the network-shared device, and \\123.456.789.2\d$ is where the Lotus Domino data directory is located.

Start Lotus Domino

Lotus Domino 6.x and Lotus Domino 7.x versions are not virtual-session aware. Therefore, before backing up data using Arcserve Backup Agent for Lotus Domino, you must start Lotus Domino using one of the following modes:

- Service mode

- Application mode

  You can start Lotus Domino in the Application mode by logging in through the console (instead of through a virtual session).

  Important! We recommend that you log in through the console, because, if you log in through a virtual session to start Lotus Domino in the Application Mode, you may experience some difficulties in using the agent.

Backup Manager Overview

The Backup Manager provides detailed information about your Arcserve Backup job. It lets you select the objects that you want to back up and the location where you want them backed up. The Backup Manager also lets you customize your backup jobs using filters, options, and scheduling. For more information about the Backup Manager, see the *Administration Guide*.

Backup Manager Tabs

Each backup job requires a specified source, destination (media), and schedule or method. The Backup Manager screen provides four tabs to customize the backup job:

Start Tab

Lets you choose the backup types and lets you enable or disable the staging option. Backup types include normal, deduplication, and Unix/Linux data mover backup.

Source Tab

Displays all Lotus Domino servers that have been properly configured in the Backup Agent for Lotus Domino Configuration dialog. Browsing a Lotus Domino server displays the list of objects located on that particular server. You can browse through the directories of Lotus Domino servers just as you would any other Arcserve Backup supported host or client.

Schedule Tab

Lets you select the schedule and method of the backup process. From this tab, you can either select a predefined backup strategy or customize a backup strategy to meet your requirements.

Destination Tab

Displays all device groups as they were defined in the Arcserve Backup Device Configuration (dvconfig.exe) file.

Backup Methods

The backup methods for Arcserve Backup Agent for Lotus Domino are displayed on the Schedule tab of the Backup Manager.

Full (Keep Archive Bit)

All selected items are backed up (full backup). You can select the entire Lotus Domino server (database files and transaction log files), specific database files, or transaction log files.

Full (Clear Archive Bit)

All selected items are backed up (full backup). You can select the entire Lotus Domino server (database files and transaction log files), specific database files, or transaction log files.

Note: For Arcserve Backup Agent for Lotus Domino, both the Full (Keep Archive Bit) and the Full (Clear Archive Bit) methods generate the same full backup. The Keep Archive Bit and Clear Archive Bit features are not applied to this agent.

Incremental

For Lotus Domino servers that have the archived transaction logging option enabled, the incremental backup will include only transaction log files and files with a new DBIID assigned since the last full or incremental backup. For Lotus Domino servers without transaction logs or that have the archived transaction logging option disabled, the incremental backup will include only files that were modified since the last full or incremental backup.

Differential

For Lotus Domino servers that have the archived transaction logging option enabled, the differential backup will include only transaction log files and files with a new DBIID assigned since the last full backup. For servers without transaction logs or for servers that have the archived transaction logging option disabled, the differential backup will include only files that were modified since the last full backup.

Note: It is possible that there were no transaction log files backed up during a job because there were no log files previously archived. In addition, by default the active transaction log file is also not backed up because the content of this file is volatile.

Perform a Backup

A backup job must have a data source (source) from which data is extracted and a storage device (destination) on which to store the extracted data. To back up data from Lotus Domino, you must submit a backup job using the Backup Manager, choosing the Lotus Domino server objects as the source and the Arcserve Backup device as your destination.

Note: The Agent for Lotus Domino does not support data encryption and data compression at the agent server.
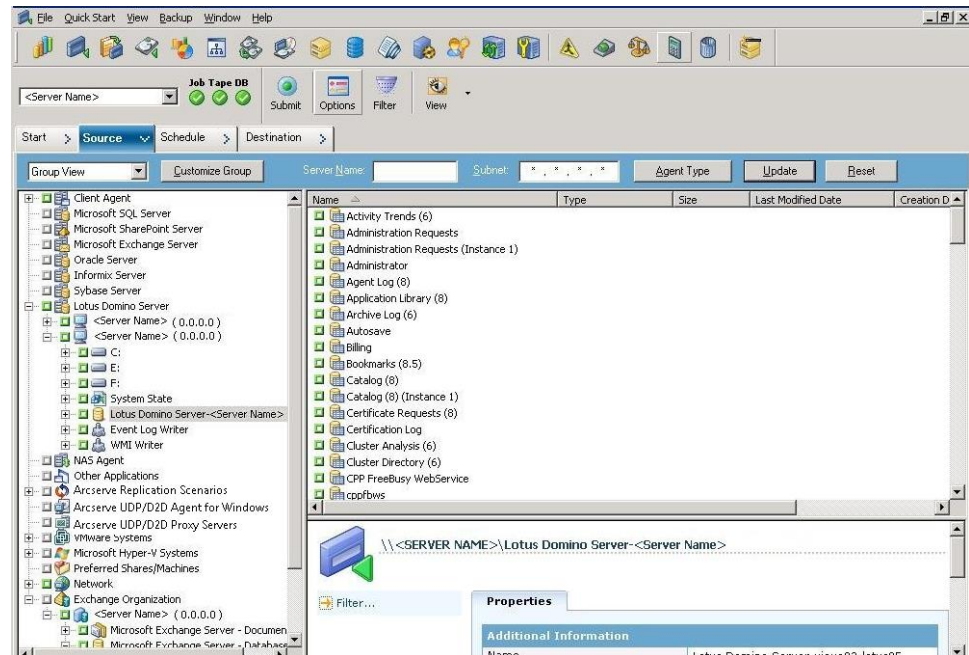
To back up data

1. Click Quick Start, Backup.

   The Backup Manager window appears.

2. On the Source tab, expand the host server that contains the Lotus Domino server that you want to back up.

   The corresponding tree expands to display the servers that you can back up.

   Note: If the length of your Lotus Domino server name is more than the maximum number of allowed characters, Arcserve Backup will automatically truncate the additional characters and replace the last two remaining characters of the string with 01. If there is another Lotus Domino server with the same name, Arcserve Backup again truncates the name down to the maximum number of characters and replaces the last two characters of the string with 02.

For Arcserve Backup r12, the maximum length of the server name is 30 characters. For Arcserve Backup r12.1 and later, the maximum length of the server name is 79 characters.

For example, for Arcserve Backup r12:

■ If the Lotus Domino server name is

"User1223334444555556666667777777" (32 characters)

■ Arcserve Backup will truncate the name to 30 and modify the last 2 remaining characters as follows:

"User12233344445555566666677701" (30 characters)

■ If you create another Lotus Domino server with the same name as the previous one, then Arcserve Backup will modify the name as follows:

"User12233344445555566666677702" (30 characters)

For Example for Arcserve Backup r12.1 and later:

■ If the Lotus Domino server name is

"User11111111112222222222333333333344444444445555555555666666666 677777777778888888" (81 characters)

■ Arcserve Backup will truncate the name to 79 and modify the last 2 remaining characters as follows:

"User11111111112222222222333333333344444444445555555555666666666 6777777777788801" (79 characters)

■ If you create another Lotus Domino server with the same name as the previous one, then Arcserve Backup will modify the name as follows:

"User11111111112222222222333333333344444444445555555555666666666 6777777777788802" (79 characters)

3. Click the Lotus Domino server that includes the database you want to back up.

   The corresponding tree expands to display a list of databases on the selected Lotus Domino server. In addition, if the Lotus Domino transaction logging option is enabled and the archived transaction logging option is selected, an icon for transaction logs will also be included (alphabetically) in the expanded Lotus Domino tree.
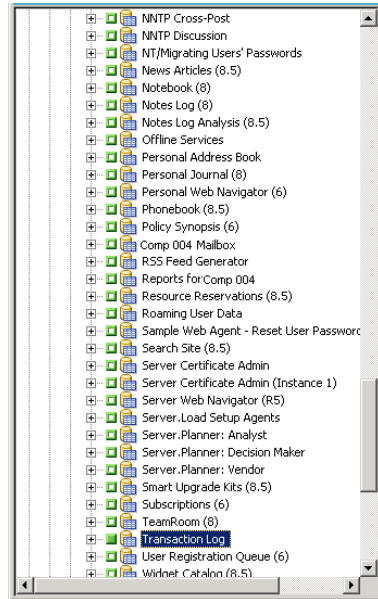
4. Select the Lotus Domino database by clicking the corresponding marker until it is solid green (full backup).

   You can select the full Lotus Domino server or the individual objects within that server (databases and transaction logs).

5. (Optional) Right-click the Lotus Domino server, and select Filter.

   The Filter dialog opens.

6. Select the filtering options and click OK.

   Note: Arcserve Backup Agent for Lotus Domino only supports File Pattern Filters and Directory Pattern Filters. With these filters you can specify whether to include or exclude files or directories from a job based upon a particular file name or file pattern, or upon a particular directory name or directory pattern. (The File Date Filters are not available for this agent). For more information about filter options, see the *Administration Guide*.

7. Click the Schedule tab to display the schedule and backup method options.

8. For the schedule option, select Custom Schedule or Use Rotation Scheme:

   a. The Custom Schedule option lets you run a backup job once, or on a specified, repeating basis.

      ■ From the Repeat Method drop-down list, select Once or any repeat method (Every, Day of Week, Week of Month, Day of Month, or Custom).

      ■ Select the Backup Method (Full, Incremental, or Differential).

        If the archived transaction logging option is enabled, the incremental backup option will only back up the transaction log files and any files with a new DBIID assigned since the last full or incremental backup. If the archived transaction logging option is disabled, the incremental backup option will only back up the database files that changed since the last full or incremental backup.

      Note: For more information about these options, see the *Administration Guide.*

   b. The Rotation Scheme option lets you to run a backup job on a customized five to seven day cycle using a combination of backup methods.

      ■ Select one of the following scheme options:

        Scheme Name—Specifies the type of rotation job being submitted.

        Start Date—Specifies the date when the backup starts.

        Execution Time—Specifies the time when the backup starts.

        Enable GFS—Specifies the predefined Grandfather-Father-Son (GFS) rotation schemes.

      ■ Select the Backup Method (Full, Incremental, or Differential).

      Note: For more information about these options, see the *Administration Guide.*

9. Click the Destination tab to display the destination options, and then select the applicable Backup Group that you want to direct the backup data to and the corresponding media information.

10. Click Submit on the toolbar.

    The backup process is initiated after all the backup job attributes have been finalized. The Security and Agent Information dialog opens.

11. Provide the security information (user name and password) for the selected server host. For more information about the security options, see the *Administration Guide*.

    Important! The Security and Agent Information dialog is used to enter information only for remote Windows NT, Windows 2003, and Windows 2008 servers. Users must have a minimum of backup rights to proceed with the job. If you are backing up the Lotus Domino database on a local machine, you do not have to enter any information on this dialog.

12. Click OK.

The Submit Job dialog opens, displaying a summary of the job type, the source directory of the database files, and information about the destination. If necessary, enter a description of the job in the Job Description field.

13. Select the Job Execution Time, choosing either Run Now (to run the backup immediately) or Run On (to define the date and time for the backup) and click OK to submit the backup job.

The Job Status window appears, displaying the Job Queue and Job Detail. You can view more detailed Job Properties information by right-clicking the server name and selecting Properties. The Job Monitor window appears, displaying details and status of the backup process.
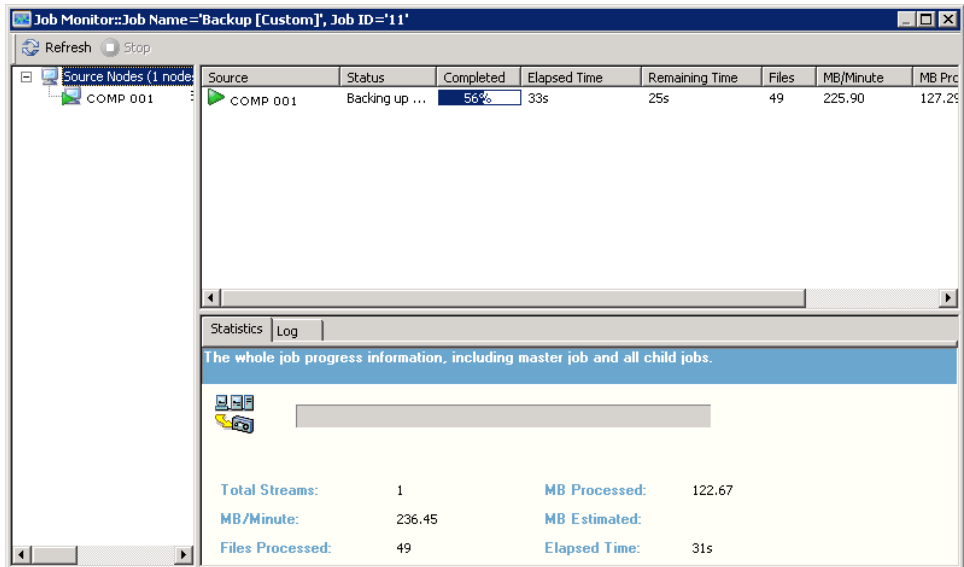
When the backup job is complete, a status window appears, indicating the final status (successful of failed) of the backup job.

14. Click OK.

The status window closes.
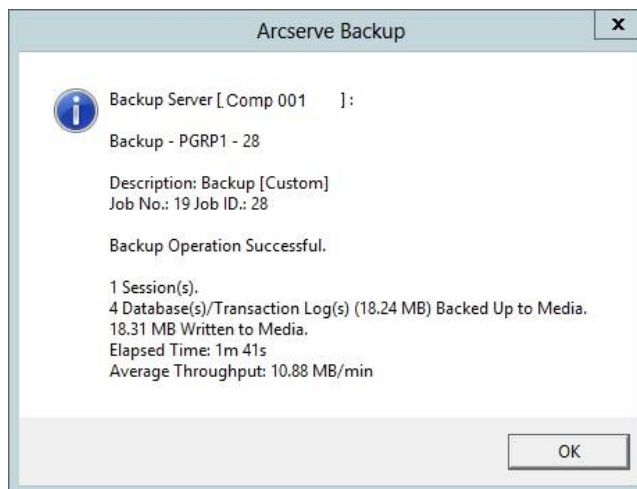
Lotus DAOS Objects

When you select a Lotus Domino server to back up data, you will not see the DAOS objects in the Source tab. However, Arcserve Backup backs up the referenced DAOS objects with the databases that contain the corresponding references.

Data Restore

Using Arcserve Backup Agent for Lotus Domino and the Restore Manager, you can configure and submit a restore job. You can restore a complete Lotus Domino database or individual objects (database files and transaction log files) within the database.

Prepare for a Restore

To recover from media failure, use Arcserve Backup Agent for Lotus Domino to first restore the archived log files (if the archived log files do not already exist), and then restore the databases. Restore all the transaction logs starting from the last full backup and ending at the point of failure.

If any transaction log files are no longer valid (deleted or corrupted) and you select the Perform Recover option, you must restore any transaction log files that were archived between the time of the last database backup and the time of this restore job prior to restoring the database.

Note: Only restore the transaction logs that have been deleted from the server. If the archived logs are still present in the log directory, there is no need to restore them from tape. The restore of transaction logs only applies to Lotus Domino servers with the archived transaction logging option enabled.

To restore shared mail, you must first shut down the Lotus Domino server.

To shut down the Lotus Domino server

1. Start the Lotus Domino server.

2. Take the shared mail offline.

3. Shut down the Lotus Domino server.

Restore Manager Overview

The Restore Manager provides detailed information about your Arcserve Backup job and lets you easily select the objects that you want to restore and the location where you want them restored to. The Restore Manager also lets you customize your restore jobs using options and scheduling. For more information about the Restore Manager, see the *Administration Guide*.

Restore Manager Tabs

Each restore job requires a specified source (media and session) and destination. The Restore Manager window provides three tabs to customize the restore job:

Source Tab

Displays a list of Lotus Domino objects that were previously backed up.

Destination Tab

Displays a list of locations that the backed up objects can be restored to.

Schedule Tab

Lets you configure the schedule and method for the restore process.

Restore Methods

You can display the restore methods for Arcserve Backup Agent for Lotus Domino from a drop-down list available in the Source tab of the Restore Manager. When you select a Lotus Domino server for restore, the following methods are available:

Restore By Tree Method

Lets you select objects for restore jobs based on the source machine from which the data was backed up. If you select this method, you cannot restore the entire contents of the server as a whole but instead must select all subordinate objects individually. Use this method when you do not know which media contains the data you need but you have a general idea of what you need to restore and which machine it came from. It is the default method for the Restore Manager.

Restore By Session Method

Displays a list of all media used in backups and the files contained on them. You can select objects for restore jobs based on backup sessions.

Restore By Query Method

The agent does not support this method.

Restore By Image Method

The agent does not support this method.

Restore By Backup Media Method

The agent does not support this method.

Note: The default for all methods is to restore data to the original database.

Lotus Domino Restore Options

The restore options for Arcserve Backup Agent for Lotus Domino are displayed in the Agent for Lotus Domino Restore Options dialog. To access this dialog, select the Lotus Domino server, right click, and select Agent Options.

Note: Arcserve Backup can restore using these options only if you have enabled transaction logging on the selected Lotus Domino database

The available options are:

Overwrite Existing DAOS Objects with Objects from the Selected Backup Session

Overwrites the DAOS object with the object in the selected backup session.

Note: If you do not select this option, Arcserve Backup skips restoring the DAOS object.

Perform Recovery

Recovers the database up to the current date and time (latest recovery).

Point-in-Time Recovery

Recovers the database up to the specified point in time (date and time).

Note: Recovery is the process of applying database changes that occurred after the database was backed up. The recovery process returns the database to a more recent state. Point-in-time recovery gives you further flexibility by allowing you to bring the state of the database to a particular point in time.

Perform a Restore

A restore job must have a data source from which backup files are extracted and a destination into which the files are restored. To restore data from Lotus Domino, you must configure and submit a restore job using the Restore Manager.

To restore backed-up data

1. From the Arcserve Backup home page, click the Restore Manager icon.

    The Restore Manager main window opens.

    Important! If you select the Restore by Tree method, you cannot restore the entire contents of the Lotus Domino server as a whole, but instead must select all subordinate objects individually. (The corresponding server marker is gray or disabled.) If you select the Restore by Session method, you can then restore the entire contents of the Lotus Domino server as a whole, without selecting all subordinate objects individually. (The corresponding server marker is green or enabled.)

2. From the Source tab drop-down list, select the restore method.

    The options displayed in the corresponding source tree depend upon whether you select the Restore by Tree method or the Restore by Session method.
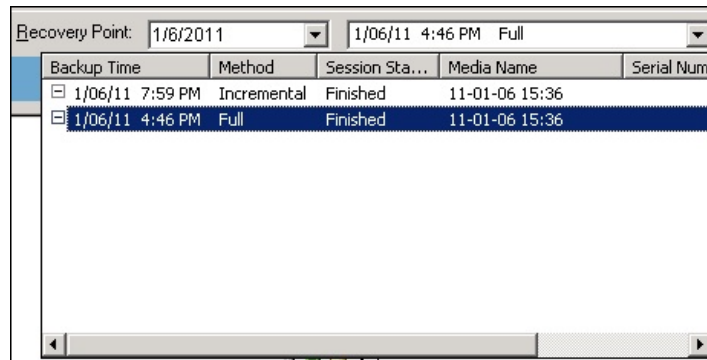
With the Restore by Tree method selected, the tree will only display the last completed backup job.

Note:

■ Arcserve Backup Agent for Lotus Domino only supports the Restore by Tree and Restore by Session methods.

■ If the session contains DAOS repository and Transaction Log, and if you select both the items, the physical path will not be displayed.

■ If you upgraded to this release of the agent, and you have sessions that were created in the previous release, the physical path will not display.

3. To restore a different backup job other than the most recent, click the server name, and then click the first Recovery Point drop-down control and select a recovery point day.

4. Click the second Recovery Point drop-down control to view all available sessions and select the appropriate session.

Recovery Point: 1/6/2011 ▼	1/06/11 4:46 PM Full	▼

Backup Time	Method	Session Sta...	Media Name	Serial Numb
⊟ 1/06/11 7:59 PM	Incremental	Finished	11-01-06 15:36	
⊟ 1/06/11 4:46 PM	Full	Finished	11-01-06 15:36	

5. In the Source tab, locate the Lotus Domino database that you want to restore.

Note: If the Lotus Domino archived transaction logging option was enabled during the backup, the Transaction Log icon will be the first object displayed on the expanded Lotus Domino server tree. However, if no log files were previously archived, the Transaction Log icon will not be displayed at all.

6. Select the object to be restored by clicking the corresponding marker until it is solid green (full restore).

If the Restore By Session method was selected, the entire Lotus Domino server can be restored as a whole by clicking the corresponding marker next to the server name until it is green. To restore individual database files or transaction log files, you must select them individually by clicking the corresponding marker until it is green.

7. Right-click the Lotus Domino server whose objects you want to restore and select Agent Options.

The Agent for Lotus Domino Restore Options dialog opens.

8. From the Agent for Lotus Domino Restore Options dialog, select the Restore Option (Overwrite Existing DAOS Objects with Objects from the Selected Backup Session, Perform Recovery, or Point-In-Time Recovery) and click OK.

   Note: To select Point-in-Time recovery, you must select both the Perform Recovery option and the Point-in-Time Recovery option. To select full recovery, you can select only the Perform Recovery option.

9. Click the Destination tab after you have finished selecting the restore method and objects.

   Note: Arcserve Backup Agent for Lotus Domino provides two destination options--restore data to its original locations (default option) and restore data to different locations. You can restore data from a Lotus Domino server either to its original location or to a different location, but not to another Lotus Domino server.

   Important! Do not change the name of the Lotus Domino server after performing a backup job. Any restore job will always try to use the settings of the same Lotus Domino server that was backed up. If you change the name of the Lotus Domino server, you must manually set the registry key PreviousInstanceName to restore.

   Note: If the length of your Lotus Domino server name is more than the maximum number of allowed characters, Arcserve Backup will automatically truncate the additional characters and replace the last two remaining characters of the string with 01. If there is another Lotus Domino server with the same name, Arcserve Backup again truncates the name down to the maximum number of characters and replaces the last two characters of the string with 02.

   For Arcserve Backup r12, the maximum length of the server name is 30 characters. For Arcserve Backup r12.1 and later, the maximum length of the server name is 79 characters.

   For example, for Arcserve Backup r12:

   - If the Lotus Domino server name is

     "User12233344445555566666667777777" (32 characters)

   - Arcserve Backup will truncate the name to 30 and modify the last 2 remaining characters as follows:

     "User122333444455555566666677701" (30 characters)

   - If you create another Lotus Domino server with the same name as the previous one, then Arcserve Backup will modify the name as follows:

     "User122333444455555566666677702" (30 characters)

For Example for Arcserve Backup r12.1 and later:

■ If the Lotus Domino server name is

"User1111111111222222222233333333334444444444555555555566666666 6677777777778888888" (81 characters)

■ Arcserve Backup will truncate the name to 79 and modify the last 2 remaining characters as follows:

"User1111111111222222222233333333334444444444555555555566666666 66777777777788801" (79 characters)

■ If you create another Lotus Domino server with the same name as the previous one, then Arcserve Backup will modify the name as follows:

"User1111111111222222222233333333334444444444555555555566666666 66777777777788802" (79 characters)

10. Select a destination for the restored data.

You can restore data either to its original location or to a different location.

a. To restore database files to their original locations, select Restore files to their original location(s).

The destination window displays a Restore files to their original location entry.

b. To use the destination object tree to restore database files to different locations, clear the Restore files to their original location(s) check box, and select the destination that you want to restore the data to.

11. Click the Schedule tab, and from the Repeat Method drop-down list, select Once or any repeat method (Every, Day of Week, Week of Month, Day of Month, or Custom).

12. After you have finalized all the restore job attributes, click Submit on the toolbar.

The restore process is initiated. A Session User Name and Password dialog opens for the host from which you are trying to run the restore.

**Note:** A session password is required only if it was specified during the backup process.

13. Provide the necessary security access information (user name and password) for the selected server host and backup session (if applicable). For more information about session options, see the *Administration Guide*. For a local restore job, the security information is not required.

14. Click OK.

The Submit Job dialog opens, displaying a summary of the job type and the destination directory. If necessary, enter a description of the job in the Job Description field.

15. Select the Job Execution Time, submit the restore job by choosing either Run Now (to run the restore immediately) or Run On (to define the date and time for the restore) and then clicking OK.

    The Job Status window appears, displaying the Job Queue and Job Detail. You can also view more detailed Job Properties information by right-clicking the server name and selecting Properties. The Job Monitor window appears, displaying details and status of the restore process.
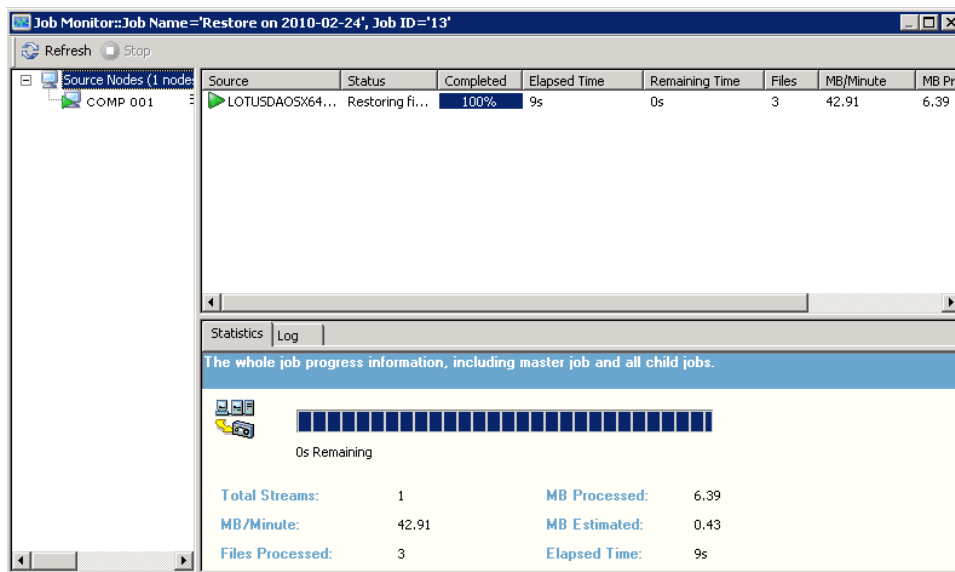
    When the restore job is complete, a status window appears, indicating the final status (successful of failed) of the restore job.

16. Click OK.

    The status window closes.

Restore Data with an Incremental Backup

You can perform a restore job from a full backup with incremental backup sessions.

To restore from a full backup with incremental backup sessions

1. Restore all transaction logs from the full backup session.

2. Restore the transaction logs from all subsequent incremental backup sessions up to the specified time.

3. Restore all database files (do not include transaction logs) from the full backup session.

4. Restore all database files (do not include transaction logs) from all subsequent incremental backup sessions up to the specified time.

   Note: The incremental backup session may be empty if no archived log files exist and if no new DBIID has been assigned for a Lotus Domino server with the archived transaction logging option enabled.

Restore Data with a Differential Backup

You can restore data from a full backup with differential backup sessions.

To restore from a full backup with differential backup sessions

1. Restore all transaction logs from the full backup session.

2. Restore the transaction logs from the last differential backup session.

3. Restore all database files (do not include transaction logs) from the full backup session.

4. Restore all database files (do not include transaction logs) from the last differential backup session.

Lotus DAOS Objects

This section describes the restore scenarios for Lotus DAOS objects and how you can restore Lotus DAOS objects.

Restore Scenarios

The following restore scenarios are possible for Lotus DAOS objects:

Restore the entire session

Restores all the database files (NSF, NTF) and the referenced DAOS object (Notes Logical Object [NLO] is the file type of DAOS object) files.

Restore selected databases

Restores the selected databases (NSF, NTF) and the referenced DAOS object (NLO) files.

Restore the DAOS folder without restoring any database

Restores all the DAOS objects backed up in the session; does not process the database files.

Restore Lotus DAOS Objects

If you have a DAOS folder on a separate disk from the main Lotus Notes database, you can select only that folder and restore it.

To restore DAOS objects

1. Click Quick Start and select Restore.

    The Restore Manager opens.

2. Click the Source tab and locate the Lotus Domino database that you want to restore.

    If the database refers to a DAOS object, all the Notes Logical Object (NLO) files are hidden. Only a top level folder for DAOS objects and the transaction log of the database are displayed.

3. Select the DAOS object that you want to restore.

    Note: You cannot expand the DAOS objects folder, because, when there is a large number of NLO files, expanding the folder to view all of the files affects the performance of Arcserve Backup. You cannot restore a specific NLO file, because, the NLO file name is just an ID, which does not help you know the contents of the file.

4. Click the Destination tab and select where you want to restore.

5. Click the Schedule tab and select when you want to restore.

6. Click Submit.

    The restore job starts or is saved to be executed at the scheduled time.

Perform a Disaster Recovery

The most important thing you can do to minimize the risk of losing data after a disaster is to maintain current backups of all of your servers and workstations. If you do not maintain regular backups, Arcserve Backup Agent for Lotus Domino is limited in its ability to recover your Lotus Domino data after a disaster, such as a hard disk failure. Be sure to create a media rotation schedule to frequently update and maintain current full backups. If disaster does occur, Arcserve Backup Agent for Lotus Domino provides you with the ability to recover your Lotus Domino server quickly and efficiently. For information about disaster recovery of a Windows system, see the *Disaster Recovery Option Guide.*

The method of using the agent to perform a disaster recovery varies depending on how the Lotus Domino server was configured.

Perform a Disaster Recovery with Archived Transaction Logging Enabled

If a disaster occurs and the Lotus Domino archived transaction logging option was enabled, you can recover your Lotus Domino server databases by performing the following steps.

To recover a Lotus Domino server database with archived transaction logging enabled

1. Restore or reinstall your Lotus Domino server program directory.

   You may need to reboot the server.

   Important! Depending on the extent of the data loss, it may be necessary to install and configure a new Lotus Domino server. Make sure the new installation is configured in the same way as the damaged server, with the same directory structure, location, and log directory path, but do not launch the new server at this time.

2. Restore the latest notes.ini, cert.id, and server.id files that you had saved before the data loss.

   You may need to reboot the server.

3. Prepare the log directory (logdir). Verify that the logdir defined in the notes.ini file exists and that it does not contain any old files. Remove any transaction log control files (nlogctrl.lfh) and log files (.txn) from a previous installation.

4. Restore the database files to the Lotus Domino data directory using Arcserve Backup Agent for Lotus Domino, but without transaction log. Do not select the Perform Recovery option.

   Note: Restore the database files under full session backup first, then restore database files under subsequent incremental session backups or restore from the last differential session backup. Ensure that the Perform Recovery option is not selected.

5. Restore the archived log events.

   You can recover the backup files to the last committed transaction in the most recently archived transaction log extent.

   Note: Restore the transaction log files under subsequent incremental session backups or restore from the last differential session backup. There is no need to restore log files under the full session backup.

6. Check the log directory (logdir).

   a. If the log directory is empty, be sure the following parameter in the notes.ini file is set and then go to step 11:

      TRANSLOG_Recreate_Logctrl = 0

   b. If the log directory is not empty, facilitate the creation of a new control file by setting the following parameter in the notes.ini file:

      TRANSLOG_Recreate_Logctrl = 1

7. Restart the Lotus Domino server, and then shut it down.

8. Disable the creation of a new control file by changing the parameter value in the notes.ini file as follows:

   TRANSLOG_Recreate_Logctrl = 0

   Note: Alternately, you can also disable the creation of a new control file by removing the following parameter from the notes.ini file:

   TRANSLOG_Recreate_Logctrl = 1

9. If you want to restore shared mail, perform the following steps before restoring the shared mail:

   a. Start the Lotus Domino server.

   b. Take the shared mail offline.

   c. Shut down the Lotus Domino server.

   Note: You must shut down the Lotus Domino server before restoring database files.

10. To recover the database files, restore the database files to the Lotus Domino database directory again using Arcserve Backup Agent for Lotus Domino but this time with the Perform Recovery option selected.

    Note: Recover the database files under full session backup first, then recover database files under subsequent incremental session backups only if there are archived log files backed up after that incremental session. There is no need to recover database files under the differential session backup.

11. Launch the new Lotus Domino server.

    When the disaster recovery process is complete, start the Lotus Domino server and execute server tasks and functions.

Perform a Disaster Recovery with Circular Transaction Logging Enabled

If a disaster occurs and the Lotus Domino circular transaction logging option was enabled, you can recover your Lotus Domino server databases by performing the following steps.

To recover a Lotus Domino server database with circular transaction logging enabled

1. Restore or reinstall your Lotus Domino server program directory.

   You may need to reboot the server.

   Important! Depending on the extent of the data loss, it may be necessary to install and configure a new Lotus Domino server. Make sure the new installation is configured in the same way as the damaged server, with the same directory structure, location, and log directory path, but do not launch the new server at this time.

2. Restore the latest notes.ini, cert.id, and server.id files that you had saved before the data loss.

   You may need to reboot the server.

3. Prepare the log directory (logdir). Remove any transaction log control files (nlogctrl.lfh) and log files (.txn) from a previous installation.

4. Facilitate the creation of a new control file by setting the following parameter in the notes.ini file:

   TRANSLOG_PATH = LOGDIR

5. Restore the database files to the Lotus Domino data directory using Arcserve Backup Agent for Lotus Domino. Do not select the Perform Recovery option.

6. Launch the new Lotus Domino server.

   When the disaster recovery process is complete, start the Lotus Domino server and execute server tasks and functions.

Perform a Disaster Recovery without Transaction Logging Enabled

If a disaster occurs and the Lotus Domino transaction logging option was not enabled, you can recover your Lotus Domino server databases by performing the following steps:

To recover a Lotus Domino database without transaction logging enabled

1. Restore or reinstall your Lotus Domino server program directory.

   You may need to reboot the server.

   Important! Depending on the extent of the data loss, it may be necessary to install and configure a new Lotus Domino server. Make sure the new installation is configured in the same way as the damaged server, with the same directory structure, location, and log directory path, but do not launch the new server at this time.

2. Restore the latest notes.ini, cert.id, and server.id files that you had saved before the data loss.

   You may need to reboot the server.

3. Restart the Arcserve Backup Agent RPC server.

4. Shut down the Lotus Domino server.

5. Restore the database files to the Lotus Domino data directory using Arcserve Backup Agent for Lotus Domino.

6. Launch the new Lotus Domino server.

   When the disaster recovery process is complete, start the Lotus Domino server and execute server tasks and functions.

Appendix A: Troubleshooting

Arcserve Backup Agent for Lotus Domino includes an Activity log to list information about the status of each backup or restore job. For Windows NT and Windows 2003 platforms, the backup agent log file (dbanotes.log) is located in the Arcserve Backup Agent for Lotus Domino home directory. If any errors appear in the Arcserve Backup job logs, you must check this agent log for more specific information about the errors.

For the Agent for Lotus Domino error messages, see the Arcserve Backup Message Help.

This section contains the following topics:

Enable the Debug Option

You can configure the Arcserve Backup Agent for Lotus Domino to receive more debugging information. You can do it through the Registry Editor by enabling the debug option and setting the corresponding parameter value. When you enable the debug option, the program will generate trace files (in the corresponding working directory). The trace file name will be dbanotes@servername.trc, where server name is the actual name of the selected Lotus Domino server. For instance, the trace file generated for server213 will be dbanotes@server213.trc.

You can set the debug parameter to specify the debugging level or the extent of generated trace files. These trace files can include all notes, warnings, and errors that occur while running Arcserve Backup. These trace files contain useful troubleshooting information for Arcserve Technical Support.

To enable the debug option and set the parameter value

1. From the Registry Editor, open the dbanotes@servername directory for the applicable Lotus Domino server.

2. Double-click the debug:REG_DWORD option.

    The DWORD Editor dialog opens.
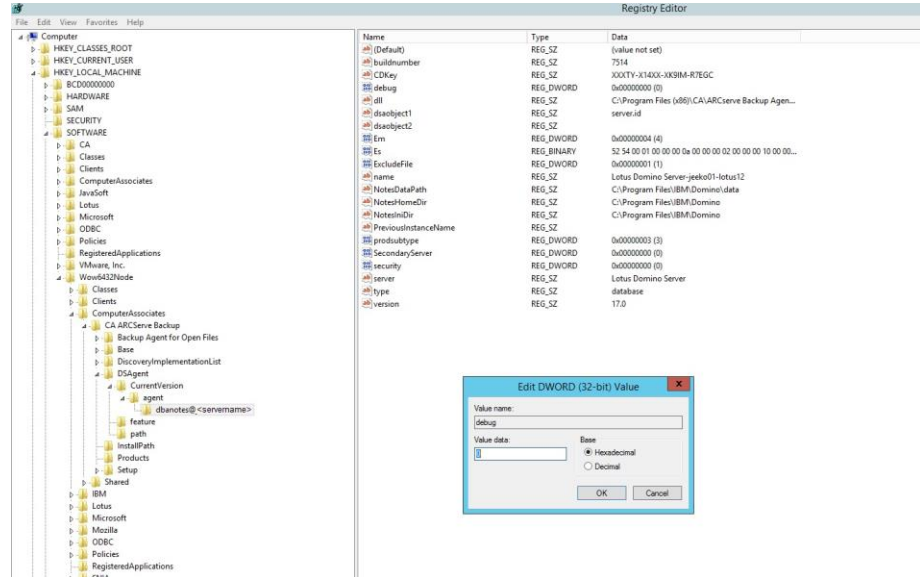
3. Set the debug parameter value to 2 to generate detailed trace files.

    Note: You can set the debug parameter value to 1 to generate trace files and to 0 to not generate trace files.

4. Click OK.

Glossary

DBIID

DBIID is the Database Instance Identifier assigned by Lotus Domino for each Lotus Domino database, when transaction logging is enabled.

transaction log

A *transaction log* is a listing of all the transactions that occurred on a database from a specific point in time.

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