BrightStor® ARCserve® Backup for Windows

Serverless Backup Option Guide

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Chapter 1: Introducing the Option

Among the options BrightStor ARCserve Backup offers is the BrightStor ARCserve Backup Serverless Backup Option. This option solves many traditional backup related issues for system administrators and provides the following advantages:

- Allows you to perform backups with near-zero impact to the system CPU.
- Allows applications on servers to continue to run while the backup is in progress.
- Eliminates the need for a backup window, ensuring the highest possible backup and restore performance.
- Allows applications to continue to access the data while the backup is being performed.

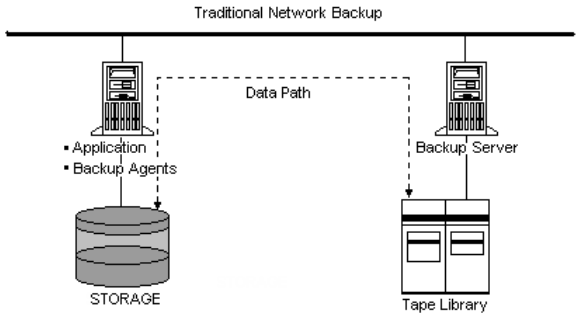
The BrightStor ARCserve Backup Serverless Backup Option is implemented using the industry standard extended copy command and currently supports Storage Area Network (SAN) environments with devices that support the extended copy command.

Backup Methods

The following sections describe different backup methods available in the BrightStor ARCserve Backup Serverless Backup Option.

Traditional Server-based Backups

In traditional backup operations, the backup application reads the data from the primary storage device to the system memory, does the necessary formatting, and sends it back to the media storage devices, requiring use of CPU, IO channels, and the system memory. The data path is illustrated in the following diagram:



Typically, when backup operations are in progress, application processing on servers is impacted. This is one of the reasons why system administrators prefer to perform backup operations at a time when the application load on the server is at a minimum.

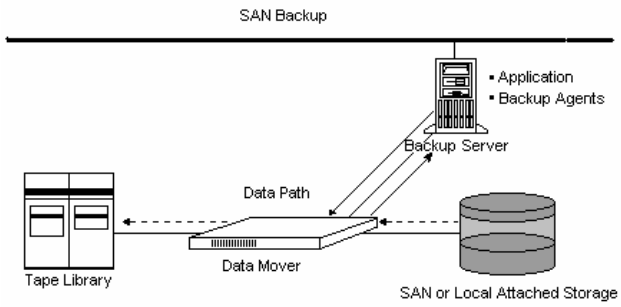
SAN Backups

SANs have improved system administration by addressing the potential limitations of traditional backups. In traditional backup operations, one network server is connected to a device and, as a result, is the only server to receive the benefits of high-speed backups. SANs allow several servers to directly link to a device, thus eliminating the LAN bottleneck and slower transmission.

Storage Area Networks improve backups by:

- Centralizing backup hardware and media
- Economizing by allowing servers to share multiple tape libraries
- Reducing processing time by eliminating the need for remote backups

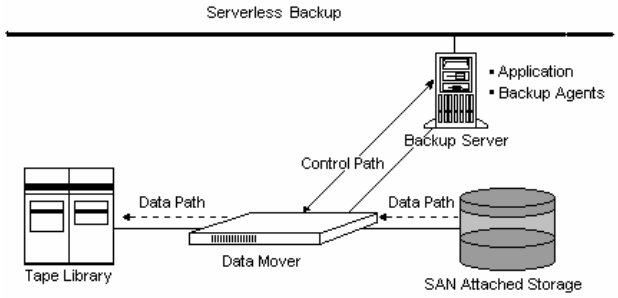
Basic SAN architecture is shown in the following diagram:



High Performance Serverless Backup

SANs incorporate various devices referred to as *data movers*. These devices support a feature called the extended copy (or sometimes third party copy) command. The BrightStor ARCserve Backup Serverless Backup Option uses these data movers to extend SAN technology by facilitating the fastest possible backup and restore speeds.

Using the extended copy command, the option completely eliminates the server from the data transfer path and achieves direct disk-to-media or media-to-disk data transfer. Initiating the data transfer is the only activity that occurs at the server level; the actual data transfer occurs at the level of the data mover on the SAN. Serverless operation is illustrated in the following diagram:



The BrightStor ARCserve Backup Serverless Backup Option uses data movers to transfer data between media. This eliminates the need for bringing the data all the way to the server and achieves the shortest data path. The use of data movers enhances the backup performance considerably, and yields the highest possible backup and restore speeds.

The option also arranges for the backup to be frozen at a consistent point in time (like a snapshot), but still allows applications to continue to access volumes while the backup is in progress. This functionality eliminates the need to schedule backups during periods when the application load on the server is at a minimum, and allows systems administrators to perform backups at any time.

Features

The BrightStor ARCserve Backup Serverless Backup Option provides:

- Volume-based backup in serverless mode
- File mode restore for individual file and/or directory
- Volume-based restore in serverless mode
- Snapshot capability
- Highest possible performance
- Automatic detection of serverless backup/restore feasibility
- Concurrent serverless backup/restore jobs

Operational Considerations

The BrightStor ARCserve Backup Serverless Backup Option allows you to carry out serverless backups and restores of hard drives in a SAN environment, with the following considerations:

- The option does not support restores using the Restore by Media method.
- The option supports full volume backups in serverless mode.
- The option supports full volume restores using the Restore by Image/Serverless method.

  Note: Because the serverless backup is a full volume backup, you will overwrite the target volume if you use the Restore by Image/Serverless from the Restore Manager. You must make sure that the target drive you have selected is the one you really want to restore.
- The BrightStor ARCserve Backup Serverless Backup Option supports selected file restores using the Restore by Session method and Restore by Tree method.
- The option always overwrites existing files during restore, regardless of the restore operation options used.
- The option supports cluster sizes up to 16 KB for NTFS partitions.

Features Not Available with the Option

The following BrightStor ARCserve Backup features are **not** available when using the option:

- The BrightStor® ARCserve® Backup Tape RAID Option
- The BrightStor® ARCserve® Backup Disk Staging Option
- Filters for backup
- Multiplexing
- Virus scan
- Encryption

Global Option Restrictions

The following section lists the BrightStor ARCserve Backup global options that are **not** supported by the BrightStor ARCserve Backup Serverless Backup Option:

- Global backup options:
  - **Methods**—Keep Archive Bit, Clear Archive Bit, Incremental, and Differential
  - **Operation—**Delete Files After Backup, Disable File Estimate, Calculate and Store CRC Value on Backup Media, and Back Up BrightStor ARCserve Backup Database files
  - **Virus—**Enable Virus Scanning, Skip, Rename, Delete, and Cure
  - **Other options—**Microsoft Volume Shadow Support Service and Traverse Directory Functions
- Global restore options:
  - **Destination—**Directory Structure and File Conflict Resolution
  - **Virus—**Enable Virus Scanning, Skip, Rename, Delete, and Cure

Chapter 2: Installing the Option

This chapter explains how to install the BrightStor ARCserve Backup Serverless Backup Option. It also describes the steps for uninstalling the option.

Installation Prerequisites

Before installing the BrightStor ARCserve Backup Serverless Backup Option, verify that the following applications are installed and working properly:

- BrightStor ARCserve Backup
- BrightStor® ARCserve® Backup Tape Library Option
- BrightStor® ARCserve® Backup SAN Option

Important! *You must install the BrightStor ARCserve Backup Serverless Backup Option and BrightStor ARCserve Backup on the same machine. This machine can be either a local machine or a remote machine.*

If these applications are not already installed, you must install them when you install the BrightStor ARCserve Backup Serverless Backup Option.

Before starting the installation of the BrightStor ARCserve Backup Serverless Backup Option:

- Ensure you must have administrator rights or the proper authority to install software where you will be installing the product or its components.
- Verify that your system requirements meet the minimum requirements for installing the BrightStor ARCserve Backup Serverless Backup Option. For a list of requirements, see the readme file.

Installation Procedure

The BrightStor ARCserve Backup Serverless Backup Option follows the standard installation procedure for the system components, agents, and options of BrightStor ARCserve Backup. For the detailed steps in this procedure, see the *Getting Started*.

After you complete the installation procedure, be sure to restart your computer when prompted.

Uninstall the Option

To uninstall the BrightStor ARCserve Backup Serverless Backup Option, use the following steps:

1. Open the Control Panel and select Add/Remove Programs icon.
2. Select CA BrightStor ARCserve Backup Serverless Backup Option.
3. Click the Remove button. The Add or Remove Programs dialog opens asking whether you want to remove CA BrightStor ARCserve Backup Serverless Backup Option.

Chapter 3: Using the Option

The BrightStor ARCserve Backup Serverless Backup Option adds serverless backup and restore capability to BrightStor ARCserve Backup. This chapter provides information on functionality that is specific to the BrightStor ARCserve Backup Serverless Backup Option. For a list of BrightStor ARCserve Backup functionality that is not available with the option, see Operational Considerations in the chapter, “Introducing the Option.”

Backup Option

There are two ways to back up with the BrightStor ARCserve Backup Serverless Backup Option. You can initiate backups:

- From the Image/Serverless Backup Wizard
- From the BrightStor ARCserve Backup Manager

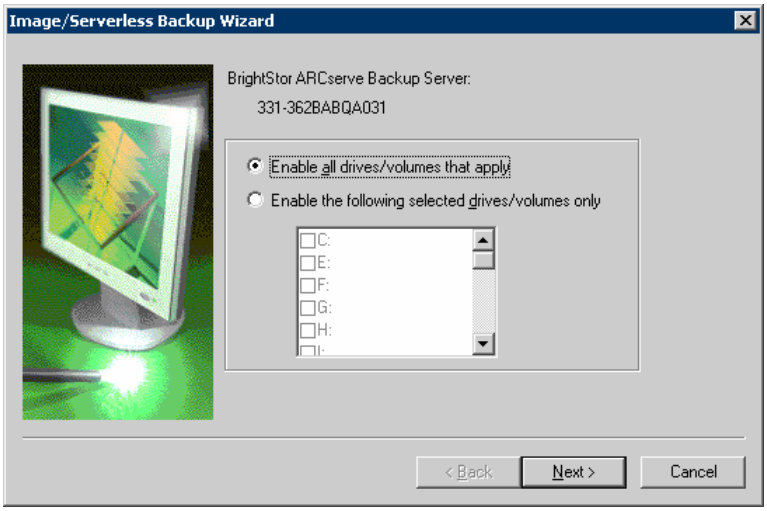
Both procedures are described in the following sections.

Define Backup Jobs Using the Image/Serverless Backup Wizard

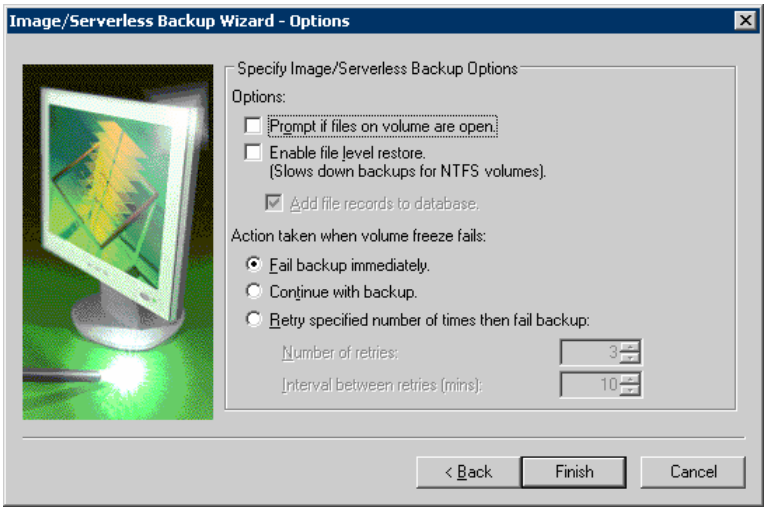
The Image/Serverless Backup Wizard simplifies your backups. To initiate a backup with the Image/Serverless Backup Wizard, follow these steps:

1. Click the Image/Serverless Backup Wizard button on the BrightStor ARCserve Backup toolbar:

   The Image/Serverless Backup Wizard dialog appears:



2. Select the drives you want to back up and click Next. The Image/Serverless Backup Wizard - Options dialog appears:



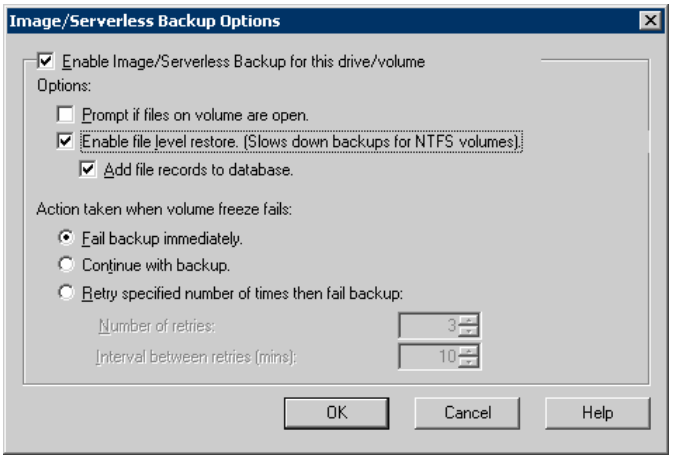
3. Select the options you want to apply to the backup operation.
4. Click Finish.
5. Click Start to submit the job.

Define Backup Jobs Using the Backup Manager

To back up with the Backup Manager, follow these steps:

1. In the Backup Manager window, click the Source Tab. The available systems and servers are displayed:
2. Select the drive on the computer that you want to back up.

   Note: You must select the drive name for serverless backup.
3. Right-click the drive.
4. Choose Use Image/Serverless Backup Option from the pop-up menu. The Image/Serverless Backup Options dialog appears.



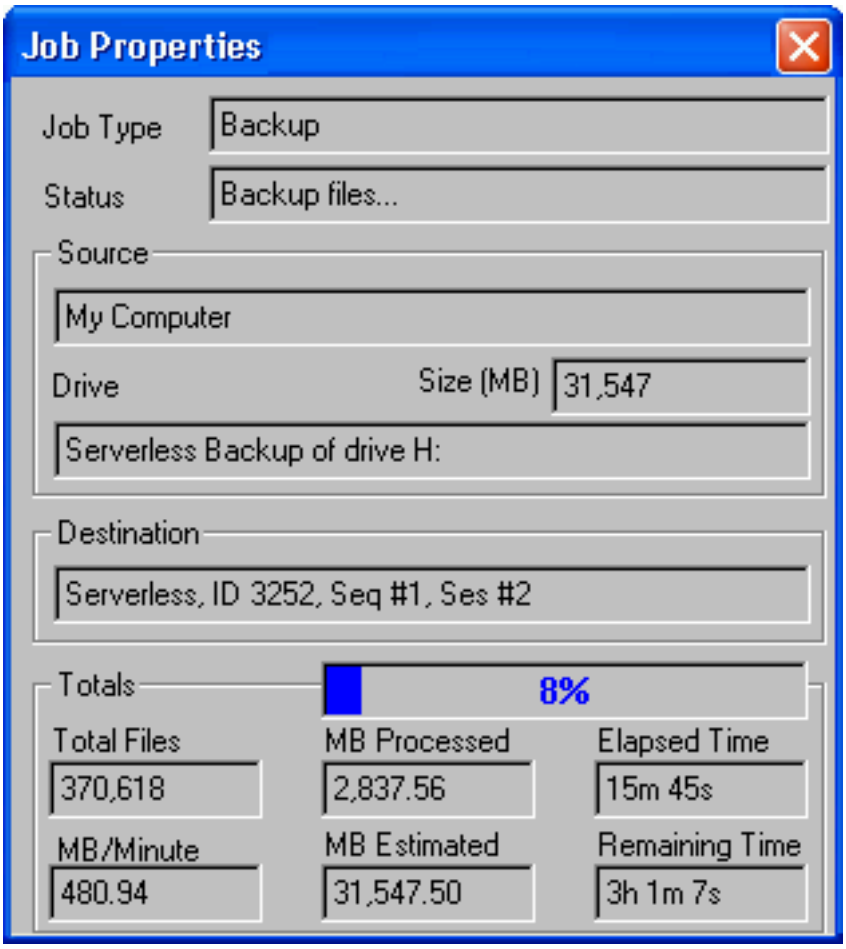
5. Select the options you want to apply to the backup operation and click OK.
6. In the Destination tab, specify the destination.
7. Click Start to submit the job.

For more information about how to back up, see the online help.

View Job Status

To check the status of your submitted serverless backup job from the Job Status window, follow these steps:

1. On the Job Queue tab, select the job.
2. Right-click and choose Properties from the pop-up menu.
3. The Job Properties dialog appears:



If the job was submitted with the BrightStor ARCserve Backup Serverless Backup Option, the Drive field contains the following text: Serverless Backup of drive *X* (where *X* is the drive designator).

Restore Methods

You can use the following methods to restore data backed up by the BrightStor ARCserve Backup Serverless Backup Option:

- **Restore by Image/Serverless**—This method restores the entire drive in serverless mode. To be successful, the serverless restore must be completed from beginning to end. Canceling a job that is in progress leaves the drive inaccessible.
- **Restore by Session**—This method restores individual files and directories in file mode. Canceling a job that is in progress can leave many incomplete restored files on the drive.

Important! *Using the Restore by Image/Serverless Backup option completely overwrites your drive. Be sure that this is exactly what you want to do.*

Restore a Drive

To restore a drive, follow these steps:

1. On the Source tab in the Restore Manager, select the Restore by Image/Serverless view from the drop-down list:
2. In the tree view, select the source containing the Image/Serverless backup.
3. On the Destination tab, select the destination drive.
4. Click Start to submit the job. BrightStor ARCserve Backup restores the entire drive backed up by the Image/Serverless Backup option.

Restore Individual Files and Directories

When you choose to restore individual files and directories, the restore operation is performed in the traditional file mode, not in serverless mode.

To restore individual files or directories, follow these steps:

1. On the Source tab in the Restore Manager, select the Restore by Tree or Restore by Session view from the drop down list:
2. In the tree view, select the source drive that contains the backup made using the Image/Serverless Backup option. If your intent is to restore individual files, expand the drive and select the files that you want to restore.
3. In the Destination tab, select the destination drive.
4. Click Start to submit the job. BrightStor ARCserve Backup restores the files backed up by the Image/Serverless Backup option.

Troubleshooting Tips

The following sections provide suggestions for solving problems you may encounter during serverless backup and restore operations.

Drive Locking Problems

During a serverless backup or restore operation, the BrightStor ARCserve Backup Serverless Backup Option attempts to lock the drive before the backup or restore process begins. Under the following circumstances, the drive lock fails and therefore the backup or restore job also fails:

- Windows Explorer has this drive expanded.
- An MS-DOS command prompt dialog is opened with this drive letter.
- Any application has opened a file on the drive.

General Problems

Like any distributed procedure, serverless backup and restore operations are subject to job failures and errors resulting from a large number of potential causes.When investigating any problems that may occur, select the Activity Log tab in the Job Status Manager.

The activity log contains time-stamped events with applicable error descriptions. Error incidents have the prefix E followed by a number (for example, E11018).

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