

CA ARCserve® Backup for Windows

Serverless Backup Option Guide

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CA Product References

This documentation set references the following CA products:

- Advantage™ Ingres®
- BrightStor® ARCserve® Backup for Laptops and Desktops
- BrightStor® CA-1® Tape Management
- BrightStor® CA-Dynam®/B Backup for VM
- BrightStor® CA-Dynam®/TLMS Tape Management
- BrightStor® CA-Vtape™ Virtual Tape System
- BrightStor® Enterprise Backup
- BrightStor® High Availability
- BrightStor® Storage Resource Manager
- BrightStor® VM:Tape®
- CA ARCserve® Backup Agent for Novell Open Enterprise Server for Linux
- CA ARCserve® Backup Agent for Open Files on NetWare
- CA ARCserve® Backup Agent for Open Files on Windows
- CA ARCserve® Backup Client Agent for FreeBSD
- CA ARCserve® Backup Client Agent for Linux
- CA ARCserve® Backup Client Agent for Mainframe Linux
- CA ARCserve® Backup Client Agent for NetWare
- CA ARCserve® Backup Client Agent for UNIX
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- CA ARCserve® Backup for Windows Agent for VMware
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- CA ARCserve® Backup for Windows Disk to Disk to Tape Option
- CA ARCserve® Backup for Windows Enterprise Module
- CA ARCserve® Backup for Windows Enterprise Option for IBM 3494
- CA ARCserve® Backup for Windows Enterprise Option for SAP R/3 for Oracle
- CA ARCserve® Backup for Windows Enterprise Option for StorageTek ACSLS
- CA ARCserve® Backup for Windows Image Option
- CA ARCserve® Backup for Windows Microsoft Volume Shadow Copy Service
- CA ARCserve® Backup for Windows NDMP NAS Option
- CA ARCserve® Backup for Windows Serverless Backup Option
- CA ARCserve® Backup for Windows Storage Area Network (SAN) Option
- CA ARCserve® Backup for Windows Tape Library Option
- CA XOsoft™ Assured Recovery™
- CA XOsoft™
- Common Services™
- eTrust® Antivirus
- eTrust® Firewall
- Unicenter® Network and Systems Management
- Unicenter® Software Delivery
- Unicenter® VM: Operator®

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Chapter 1: Introducing the Option

Among the options CA ARCserve Backup offers is the CA 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 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.

This section contains the following topics:

[Backup Methods](#) (see page 7)

[Features](#) (see page 10)

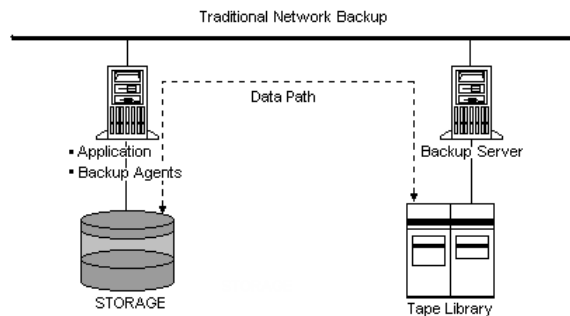
[Operational Considerations](#) (see page 10)

Backup Methods

The following sections describe different backup methods available in the 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.

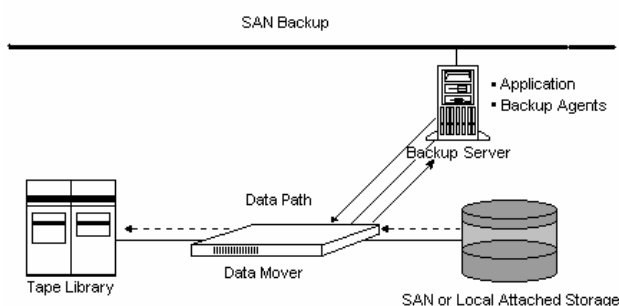
SAN Backups

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

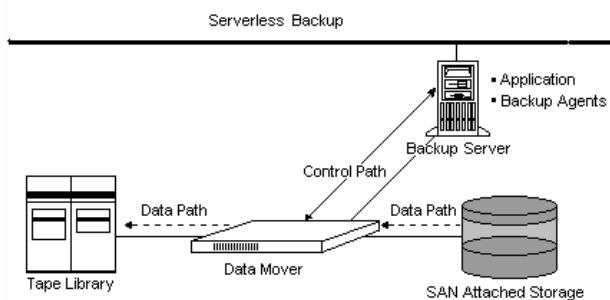
Basic SAN architecture is shown in the following diagram:



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 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 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 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 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 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 CA ARCserve Backup features are **not** available when using the option:

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

Global Option Restrictions

The following section lists the CA ARCserve Backup global options that are **not** supported by the 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 CA 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 lists the installation prerequisites for the option and explains how to install the option.

This section contains the following topics:

[Installation Prerequisites](#) (see page 13)

[Licensing](#) (see page 13)

[Installation Procedure](#) (see page 14)

Installation Prerequisites

Before installing the option, verify the following prerequisites:

- You have the following applications installed and working properly:
 - CA ARCserve Backup
 - CA ARCserve Backup Enterprise Module
 - CA ARCserve Backup Tape Library Option
 - CA ARCserve Backup SAN Option

Important! You must install the Serverless Backup Option (which is installed as part of the CA ARCserve Backup Enterprise Module) and CA ARCserve Backup on the same machine. This machine can be either a local machine or a remote machine.

- Your system configuration meets the minimum requirements needed to install the option.

For a list of requirements, see the *readme file*.

- You have administrator privileges on the computers on which you want to install the option.

Licensing

The Enterprise Module is enhanced to include the Serverless Backup Option. Ensure that the CA ARCserve Backup Enterprise module is properly licensed to use the Serverless Backup Option.

For more information about licensing, see the *Implementation Guide*.

Installation Procedure

The Serverless Backup Option image is installed locally when you install the Enterprise Module. You can use one of the following methods to install the option:

- Install the option using the Enterprise Module Configuration utility (EMConfig.exe) during the post-installation process.
- Run the EMConfig.exe utility located in the ARCserve home directory to install the Serverless Backup Option after you install the Enterprise Module.

Note: You can also access the EMConfig.exe utility from the Windows Start menu (Start, All Programs, CA, ARCserve Backup, Enterprise Module Configuration).

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

Chapter 3: Using the Option

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

This section contains the following topics:

[Backup Option](#) (see page 15)

[Define Backup Jobs Using the Backup Manager](#) (see page 16)

[Restore Methods](#) (see page 17)

Backup Option

You can back up with the Serverless Backup Option, using the CA ARCserve Backup Manager.

Define Backup Jobs Using the Backup Manager

You can back up using the Backup Manager using the following procedure:

To back up with the Backup Manager

1. In the Backup Manager window, click the Source Tab.

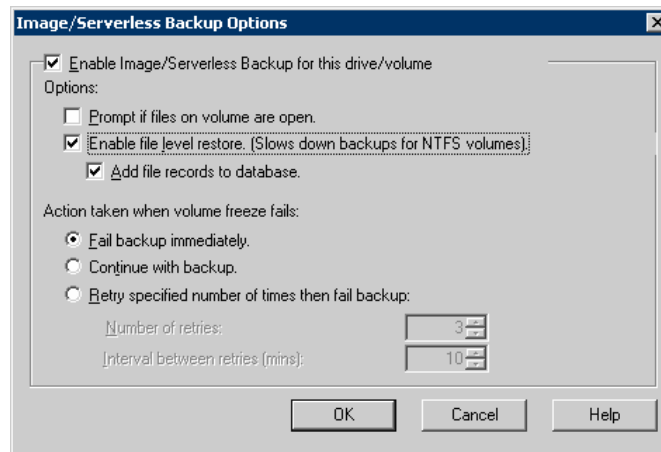
The available systems and servers are displayed.

2. Select and right-click the drive on the computer that you want to back up.

Note: You must select the drive name for serverless backup.

3. Choose Use Image/Serverless Backup Option from the pop-up menu.

The Image/Serverless Backup Options dialog appears.



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

The backup job is initiated.

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

Restore Methods

You can use the following methods to restore data backed up by the 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. Ensure that this is exactly what you want to do.

Restore a Drive

Using the Restore by Image/Serverless method you can restore the entire drive in serverless mode.

To restore a drive in the serverless mode

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. CA 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

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. CA ARCserve Backup restores the files backed up by the Image/Serverless Backup option.

Appendix A: Troubleshooting Tips

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

This section contains the following topics:

[Drive Locking Problems](#) (see page 19)

[General Problems](#) (see page 19)

Drive Locking Problems

During a serverless backup or restore operation, the 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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