CA ARCserve® Backup for Windows

Enterprise Option for StorageTek ACSLS Guide

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ca.

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
- CA ARCserve® Backup Client Agent for Windows
- CA ARCserve® Backup Enterprise Option for AS/400
- CA ARCserve® Backup Enterprise Option for Open VMS
- CA ARCserve® Backup for Windows
- CA ARCserve® Backup for Windows Agent for IBM Informix
- CA ARCserve® Backup for Windows Agent for Lotus Domino
- CA ARCserve® Backup for Windows Agent for Microsoft Data Protection Manager
- CA ARCserve® Backup for Windows Agent for Microsoft Exchange
- CA ARCserve® Backup for Windows Agent for Microsoft SharePoint

- CA ARCserve® Backup for Windows Agent for Microsoft SQL Server
- CA ARCserve® Backup for Windows Agent for Oracle
- CA ARCserve® Backup for Windows Agent for Sybase
- CA ARCserve® Backup for Windows Agent for VMware
- CA ARCserve® Backup for Windows Disaster Recovery Option
- 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®

Contact Technical Support

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Technical Support at http://ca.com/support.

Contents

Chapter 1: Introducing the Option

This section contains the following topics:

Introduction

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

Among the options CA ARCserve Backup offers is the CA ARCserve Backup Enterprise Option for StorageTek ACSLS. This option allows you to use the full capabilities of CA ARCserve Backup with tape libraries controlled by StorageTek Automated Cartridge System Library Software (ACSLS) Manager software.

With this option, the CA ARCserve Backup server can interface with the StorageTek ACSLS libraries to manage backup and restore operations, tape volume movement, and tape volume organization.

Note: This guide refers to StorageTek Automated Cartridge System Library Software (ACSLS) software as StorageTek ACSLS. This guide refers to tape libraries managed by StorageTek Automated Cartridge System Library Software (ACSLS) Manager software as StorageTek ACSLS tape libraries.

The CA ARCserve Backup Enterprise Option for StorageTek ACSLS lets several CA ARCserve Backup servers share a network-connected StorageTek ACSLS tape library. StorageTek ACSLS functions as a central service provider for StorageTek ACSLS library operations in heterogeneous environments. This configuration lets you manage different application-dedicated libraries using one centralized library or string of libraries.

You can use the CA ARCserve Backup Enterprise Option for StorageTek ACSLS to divide large, complex backup requirements into manageable subsets and maximize backup and restore efficiency. Backup and restore jobs run simultaneously on all CA ARCserve Backup servers with complete storage data integrity.

Using this option, the CA ARCserve Backup server can assign tape volumes in the StorageTek ACSLS tape library to the logical library on the CA ARCserve Backup server. This virtual library configuration lets you use the features of CA ARCserve Backup to control the remote StorageTek ACSLS tape library as if it were connected locally.

Note: Each CA ARCserve Backup server can manage one logical library configuration for the StorageTek ACSLS tape library. Each CA ARCserve Backup server can physically connect to multiple tape drives of the same type.

This option also provides services that let CA ARCserve Backup perform backup, restore, and device management operations on the StorageTek ACSLS tape volumes. Each CA ARCserve Backup server performs these operations as if it were controlling its own separate library. In addition, the CA ARCserve Backup server interprets the assigned tape volumes on the StorageTek ACSLS tape library as local tape volumes; however, the StorageTek ACSLS manages the physical movement of tape volumes.

Note: The tape volumes in the StorageTek ACSLS tape library must have bar codes to use the CA ARCserve Backup Enterprise Option for StorageTek ACSLS.

Library Control Software

The StorageTek ACSLS tape library control software consists of the ACSLS Manager and the ACSLS Client applications.

Note: In addition to supporting communication interfaces with StorageTek ACSLS tape libraries managed by the StorageTek ACSLS tape library control software, the Enterprise Option for StorageTek ACSLS also supports communication with StorageTek tape libraries managed by StorageTek Library Station control software.

Communication Interfaces

The StorageTek ACSLS communication interfaces between the StorageTek ACSLS server and the CA ARCserve Backup server, where the StorageTek ACSLS Library Attach software is installed, include the StorageTek ACSLS components, the Ethernet LAN control path, and the data path. The StorageTek ACSLS components that support communication between the StorageTek ACSLS server and the StorageTek ACSLS client are comprised of the following components:

- Client System Interface
- StorageTek ACSLS Storage Server Interface
- StorageTek ACSLS Network Interface

StorageTek ACSLS Components

Before installing the Enterprise Option for StorageTek ACSLS, verify that the following pre-installation tasks related to the StorageTek ACSLS components are complete:

- Version 1.4.2 of the StorageTek Library Attach software is installed and configured on the computer where you will install the Enterprise Option for StorageTek ACSLS.
- The StorageTek ACSLS tape library and the StorageTek ACSLS server are correctly configured.
- Communication between the CA ARCserve Backup server and the StorageTek ACSLS server is established and configured.
- The StorageTek ACSLS tape drives that are connected to the computer running CA ARCserve Backup server (or the SAN) are empty.
- You developed a tape volume configuration plan to identify which tape volumes on the StorageTek ACSLS will be assigned to the CA ARCserve Backup server.

  Note: For mutually exclusive volume configurations, you must ensure mutually exclusive tape volume assignments for each CA ARCserve Backup server. For shared volume configurations in a SAN, you must define the tape volume configuration for the primary SAN server; this tape volume configuration will be shared among all backup servers in the SAN.

Control Path

The StorageTek ACSLS Library Attach software on the CA ARCserve Backup server is connected to the StorageTek ACSLS library through an Ethernet LAN control path. The StorageTek Library Attach software sends library requests over the Ethernet LAN control path directly to the ACSLS Manager software on the StorageTek ACSLS server.

Data Path

Each CA ARCserve Backup server is independently connected to one or more tape drives in the StorageTek ACSLS tape library through SCSI or fibre channel data paths. The CA ARCserve Backup server reads and writes data on tape volumes in the tape library managed by StorageTek ACSLS by interacting directly with tape drives through the SCSI or fibre channel data path. In SAN configurations, the CA ARCserve Backup servers are connected to the SAN that is connected to the StorageTek ACSLS tape drives.

Fibre attached tape drives are supported in the following configurations:

- The fibre attached tape drive is directly connected to the CA ARCserve Backup server

- The StorageTek ACSLS tape library is not shared by other CA ARCserve Backup servers

- In a SAN, where the CA ARCserve Backup SAN Option is installed on the primary SAN server

Each backup server communicates directly and independently with the StorageTek ACSLS. Although multiple backup servers may exist on the same network, CA ARCserve Backup servers do not communicate with other backup servers unless they are in a SAN. For more information about using CA ARCserve Backup in a SAN, see the *Storage Area Network (SAN) Option Guide*.

Option Architecture

The Enterprise Option for StorageTek ACSLS is a separate software component installed on a Windows server running CA ARCserve Backup.

Several CA ARCserve Backup servers can share one StorageTek ACSLS tape library. The CA ARCserve Backup server virtual library essentially partitions a large StorageTek ACSLS tape library into independent user-defined logical libraries.

The virtual library is configured and defined by tape volume assignments for the CA ARCserve Backup server. The virtual library configuration is defined with mutually exclusive sets of tape volumes or with a shared set of tape volumes, depending on whether the CA ARCserve Backup server is in a SAN.

Mutually Exclusive Tape Volumes

In configurations where the CA ARCserve Backup server is not in a SAN, each CA ARCserve Backup server is directly connected to at least one tape drive in the StorageTek ACSLS tape library using independent SCSI data paths.

In configurations with multiple CA ARCserve Backup servers, each backup server is configured to control a mutually exclusive set of tape volumes in the StorageTek ACSLS tape library. Mutually exclusive tape volumes cannot be used or accessed by other backup servers attached to the network. As a result, each CA ARCserve Backup server manages a user-defined subset of tape volumes on the StorageTek ACSLS tape library that are unique to that CA ARCserve Backup server.

Mutually Exclusive Tape Volume Architecture

The following illustration shows the architecture of the Enterprise Option for StorageTek ACSLS and the communication interfaces to the StorageTek ACSLS tape library:
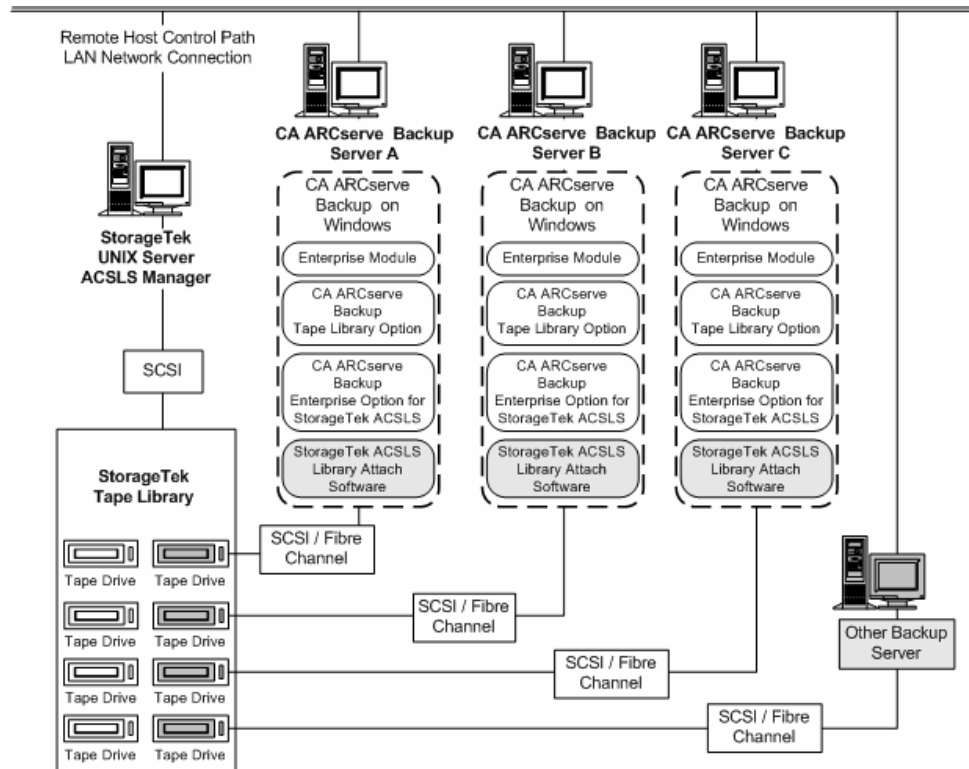
Since multiple backup servers share the StorageTek ACSLS tape library, you must ensure that each tape volume is assigned to only one backup server. The tape volumes assigned to each backup server must be mutually exclusive.

Important! If your CA ARCserve Backup servers are not in a SAN, tape volumes must be mutually exclusive to each backup server or you could lose important backup data.

Assigning mutually exclusive tape volumes requires careful planning. To assist you in your planning effort, you should document the tape volume assignment for each backup server that will share the StorageTek ACSLS tape library.

Note: Screen shots of the Volume Configuration dialog provide a convenient visual record of the tape volume assignments for each CA ARCserve Backup server.

Mutually Exclusive Tape Volume Configuration

The tape volume assignments determine the volume configuration for the user-defined logical library on each CA ARCserve Backup server. In the following illustration, a unique set of tape volumes defines the logical library for each CA ARCserve Backup server:
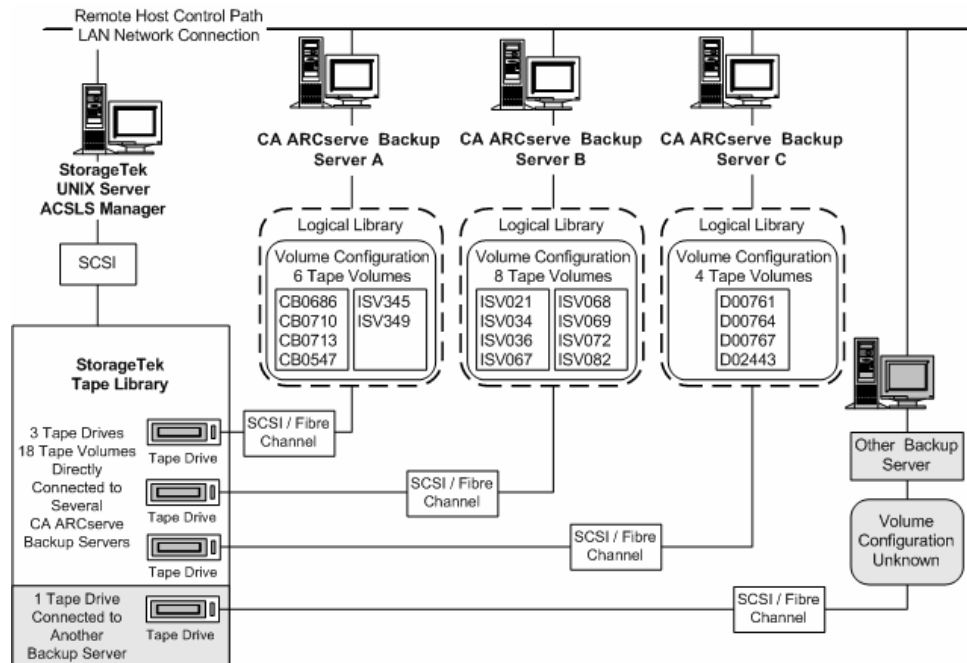
The example shows that the StorageTek ACSLS tape library has four tape drives directly attached to several backup servers on the network. The unique tape volume assignments for each CA ARCserve Backup server are:

- Server A has six assigned tape volumes: CB0686, CB0710, CB0713, CB0547, SV345, and ISV349

- Server B has eight assigned tape volumes: ISV021, ISV034, ISV036, ISV067, ISV068, ISV069, ISV072, and ISV082

- Server C has four assigned tape volumes: D00761, D00764, D00767, and D02443

Another backup server on the network that is not running CA ARCserve Backup may have a different configuration.

Multiple Server Connections to Tape Drive Configuration

The tape drives on the StorageTek ACSLS library can be distributed among several CA ARCserve Backup servers to maximize backup and restore efficiency, as shown in the following illustration:
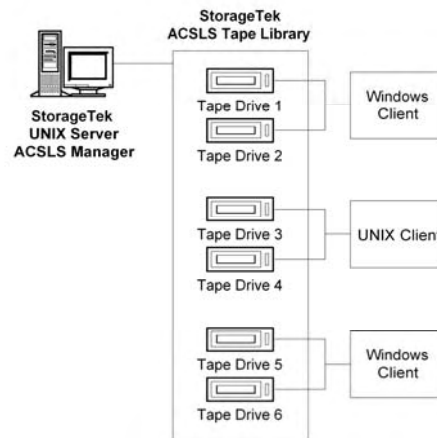
Note: In configurations where more than one tape drive is connected to a CA ARCserve Backup server, both tape drives must use media of the same type.

Shared Tape Volumes in a SAN

In a SAN, each CA ARCserve Backup server connects directly to a SAN, which, in turn, connects to at least one tape drive in the StorageTek ACSLS tape library. In configurations with multiple CA ARCserve Backup servers in a SAN, each backup server is configured to control and share the same set of tape drives and tape volumes in the StorageTek ACSLS tape library. As a result, each CA ARCserve Backup server in the SAN shares the same user-defined subset of tape volumes on the StorageTek ACSLS tape library.

In a SAN, the CA ARCserve Backup servers have the same virtual library configuration, the same tape volume configuration, and the same tape drive configuration.

The Enterprise Option for StorageTek ACSLS must reside on each CA ARCserve Backup server in the SAN. The following illustration shows the option architecture in a SAN and the SAN communication interface to the StorageTek ACSLS tape library:
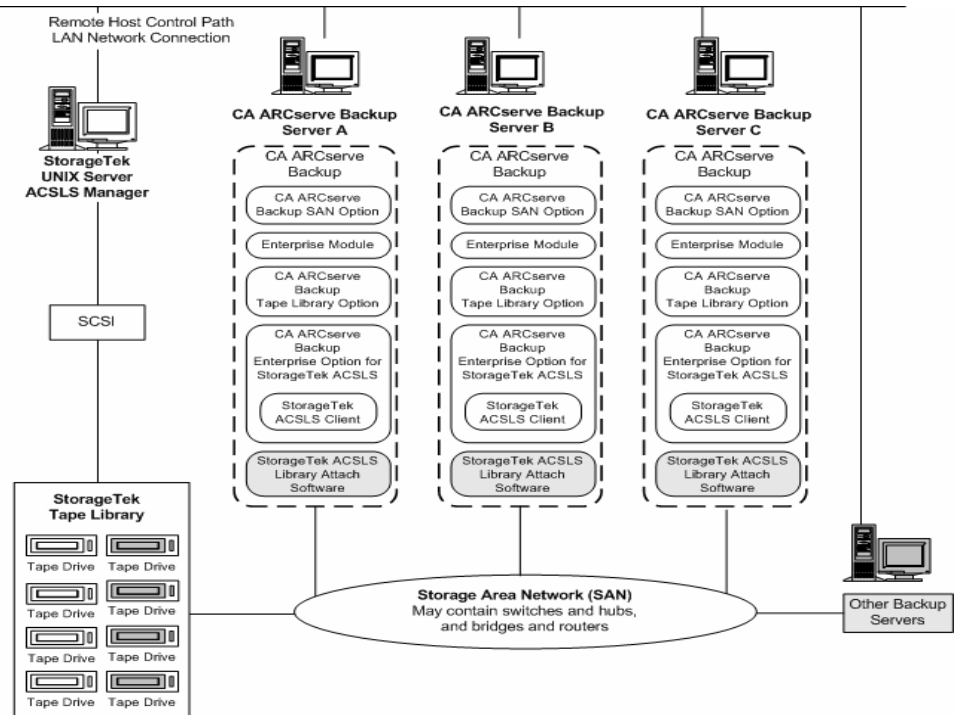
Shared Tape Volume Architecture

The following illustration shows the architecture of CA ARCserve Backup servers in a SAN and the SAN communication interface to the StorageTek ACSLS tape library:
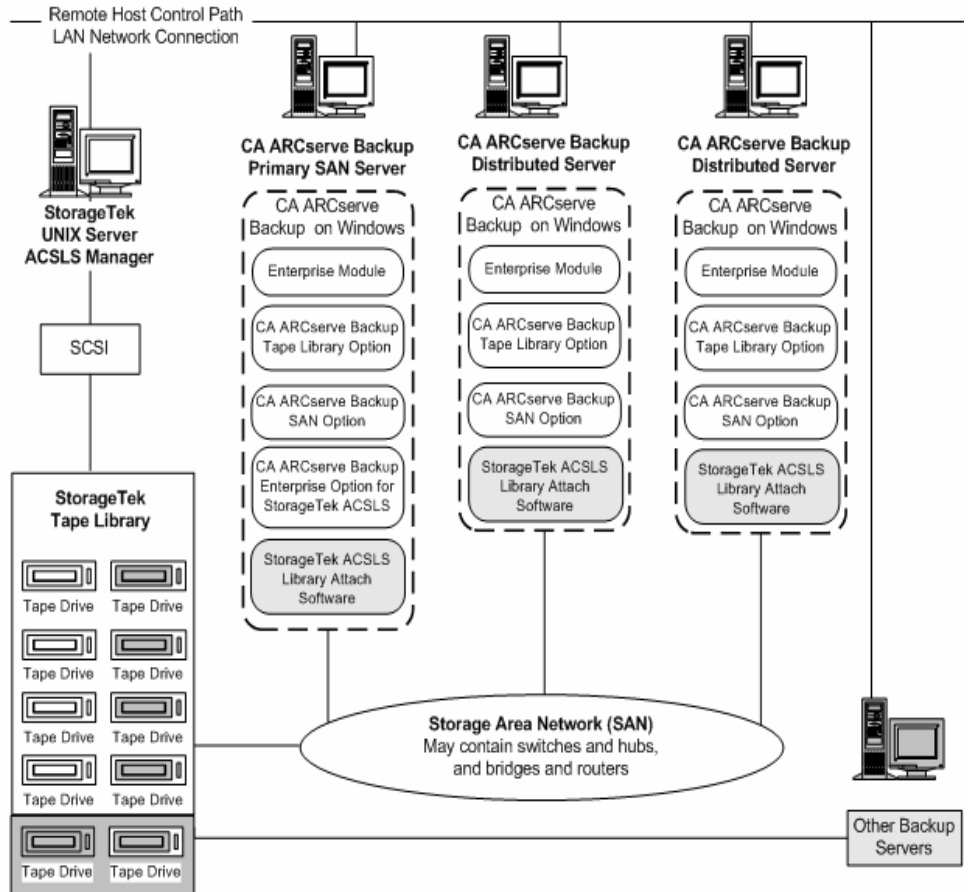
Shared Tape Volume Configuration in a SAN

The tape volume assignments determine the user-defined logical library shared by all CA ARCserve Backup servers in the SAN. In the following illustration, a single set of tape volumes defines the logical library for the SAN:
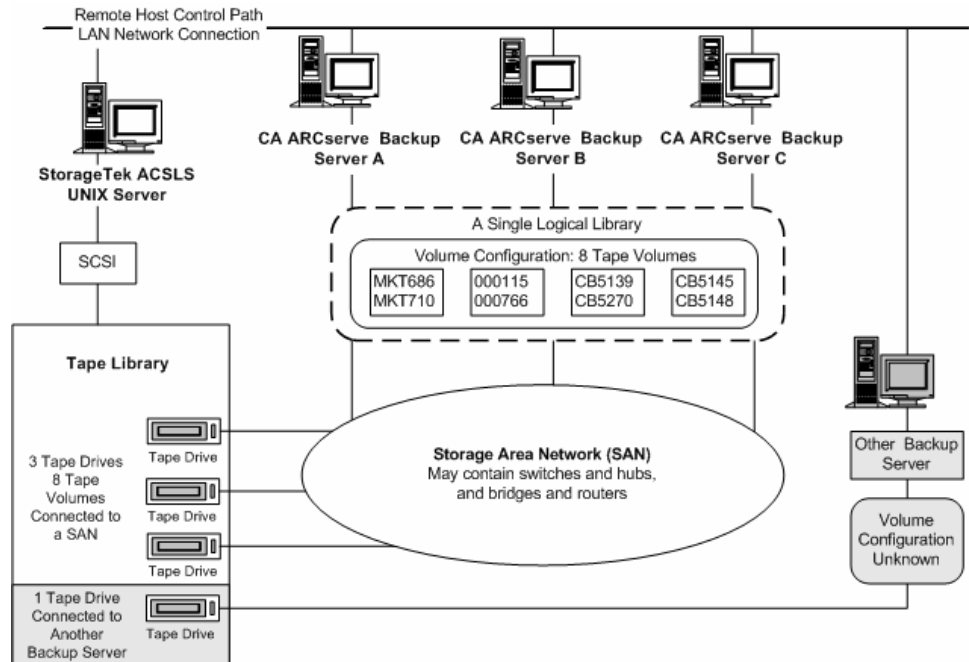
The illustration shows that the StorageTek ACSLS tape library has three tape drives directly attached to a SAN. The tape volume assignments are the same for each CA ARCserve Backup server in the SAN. Another backup server on the network that is not running CA ARCserve Backup may have a different configuration.

SAN Server Connection to Tape Drive Configuration

The tape drives on the StorageTek ACSLS library can be connected to a SAN, which in turn is connected to several CA ARCserve Backup servers, as shown in the following illustration:
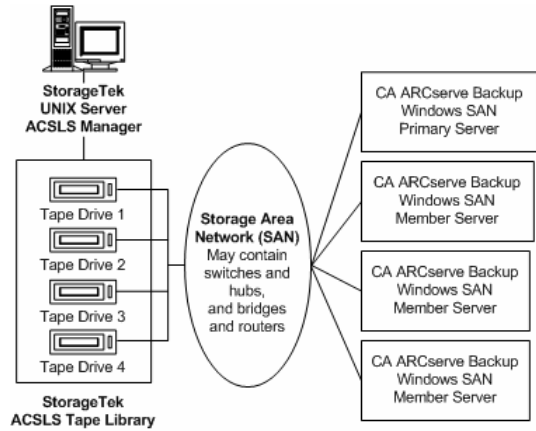

Note: In configurations where more than one tape drive is connected to a CA ARCserve Backup server, both tape drives must use media of the same type.

Library Request Flow

The CA ARCserve Backup server initiates requests for library operations, which are then transmitted by the StorageTek Library Attached software on the CA ARCserve Backup server to the ACSLS Manager on the StorageTek ACSLS server. When the ACSLS Manager receives and interprets a library request, the requested operation is performed on the StorageTek ACSLS library. The ACSLS Manager forms and returns a response to the CA ARCserve Backup server.

The StorageTek ACSLS library request flow is shown in the following illustration:
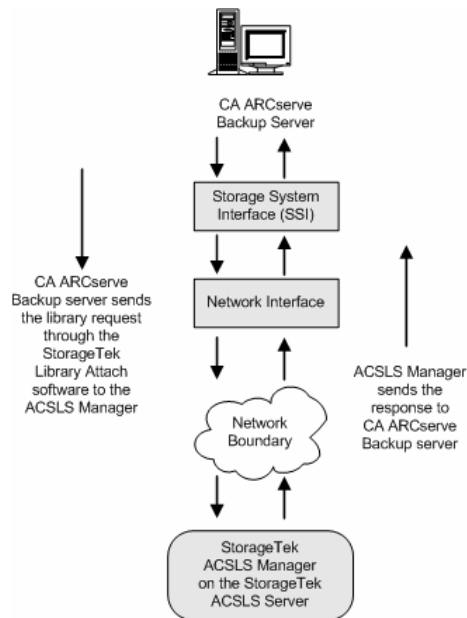
Chapter 2: Installing the Option

This chapter provides the information you need to install and configure the Enterprise Option for StorageTek ACSLS. The information in this chapter assumes you are familiar with:

- The characteristics and requirements of UNIX operating systems in general

- Administrator responsibilities with UNIX operating systems in particular

- The text-based vi editor

- StorageTek ACSLS

This section contains the following topics:

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

    - StorageTek ACSLS Library Attach software

    Important! You must install the Enterprise Option for StorageTek ACSLS (which is installed as part of the CA ARCserve Backup Enterprise Module) and CA ARCserve Backup on the same machine. You must also establish communication between the StorageTek ACSLS server and the CA ARCserve Backup server before installing the option.

- 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.

- You have installed and configured Version 1.4.2 of the StorageTek Library Attach software on the CA ARCserve Backup server.

- You have communication between the StorageTek ACSLS server and the StorageTek Library Attach software.

- The StorageTek ACSLS tape library and StorageTek ACSLS server are correctly configured.

- You have planned your tape volume configuration.

- You have selected your library configuration method and gathered the required information to configure your library using the selected method.

Note: Contact your CA ARCserve Backup administrator to obtain the proper privileges if you do not have them.

StorageTek ACSLS Components

The following StorageTek ACSLS communication interface software components are installed on the same computer as the Enterprise Option for StorageTek ACSLS:

- The Library Attach software translates and routes messages between the ACSLS Manager and the CA ARCserve Backup server.

- The Storage Server Interface (SSI) requests the movement of the tape volumes by sending the requests to the Network Interface. The SSI service translates the library requests from the CA ARCserve Backup server into a format that can be interpreted by the ACSLS Manager software on the StorageTek ACSLS server.

- The Network Interface handles the task of creating message packets for transfer across the network. The message packets consist of an address header, the actual data, and parity information. The parity information in the packet can be used for error correction.

The communication interfaces between the StorageTek ACSLS tape library and the CA ARCserve Backup server consist of an Ethernet LAN control path and a (SCSI) Small Computer System Interface or fibre channel data path. The control path and the data path are two different paths.

Licensing

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

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

Option Installation and Library Configuration

Make sure you have confirmed the installation prerequisites and performed the required pre-installation tasks. When you have completed these tasks and gathered all of the required information, you are ready to start the installation process.

The highlights of the Enterprise Option for StorageTek ACSLS installation include:

- Perform the pre-installation tasks
- Install the option
- Configure the library during installation by:
    - Choosing a library configuration setup method (Manual or Automatic)
    - Confirming the library configuration parameters
    - Assigning the tape volumes
    - Confirming the library configuration
- Use the Device Manager to perform a Quick Inventory.

    Note: For information about using the Device Manager, see the *Administration Guide.*

Installation Procedure

The Enterprise Option for StorageTek ACSLS image is installed locally when you install the Enterprise Module. You can use one of the following methods to install and configure the option:

- Install and configure 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 and configure the Enterprise Option for StorageTek ACSLS 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 and configuration procedure, ensure to restart your computer when prompted.

For detailed information about installing CA ARCserve Backup, see the *Implementation Guide*. For detailed information about installing and configuring the Tape Library Option, see the *Tape Library Option Guide.*

Important! The tape drive configuration occurs during the Tape Library Option installation. You must install the Tape Library Option before you install the Enterprise Option for StorageTek ACSLS or during the same installation session.

Library Configuration

Configuring your library is an important step in the Enterprise Option for StorageTek ACSLS installation. The Tape Library Option is required to perform the library configuration. You can install the Tape Library Option installation before or during installation of the Enterprise Option for StorageTek ACSLS.

The Tape Library Option installation process detects the tape drives that are attached to the CA ARCserve Backup server. The Tape Library Option assigns these tape drives to the CA ARCserve Backup server.

The library configuration process reads and initializes all the tape volumes in the StorageTek ACSLS library. Before you configure your library, you must remove all tape volumes from the tape drives in the StorageTek ACSLS library.

After you assign the tape drives to the server and remove the tape volumes from the tape drives, configure the library by choosing one of the following library configuration methods:

- Manual
- Automatic

Library Configuration Tasks

Configuring the logical library is an integral and important part of the option installation process. Configure the library for the Enterprise Option for StorageTek ACSLS by completing the following library configuration tasks:

- Configuring the tape drives, manually or automatically
- Assigning tape volumes to the CA ARCserve Backup server to configure the logical library
- Performing a Quick Inventory using the Device Manager

Manual Library Configuration

The manual library configuration method lets you manually enter tape drive parameters. Use the manual library configuration method if the tape drives in the StorageTek ACSLS library use a mixture of different types of tape volumes or if the StorageTek ACSLS library is shared with other backup servers.

The process of entering tape drive parameters assigns the tape drive to the logical library on the CA ARCserve Backup server. A green tick mark next to the tape drive in the Manual Configuration dialog indicates that you have entered the tape drive parameters.

Tape Drive Parameters

You can obtain the tape drive parameters by querying the status of the tape drives on the StorageTek ACSLS library. For more information about querying the status of the tape drives, see StorageTek ACSLS Tape Library Queries in the chapter "Using the Option."

Enter the following parameters for each tape drive:

- Automated Cartridge System (ACS)
- Logical Silo Module (LSM)
- Panel number (Panel)
- Drive ID number (ID)

Configure Your Library Tape Drives Manually

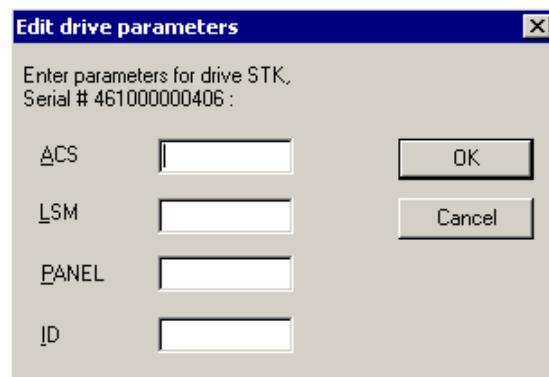**To use the manual library configuration method**

1. Select the manual library configuration method.

2. Click Next.

   The Manual Configuration dialog displays a list of the tape drives that are attached to the CA ARCserve Backup server.

   Note: For detailed information about the manual library configuration method, see Manual Library Configuration in this chapter.

3. Select a tape drive to be configured.

4. Click Configure to enter the parameters of the selected tape drive.

   The Edit drive parameters dialog opens.

5. Enter the ACS, LSM, Panel, and ID of the tape drive in the Edit drive parameters dialog.

6. Click OK to close the Edit drive parameters dialog.

   A green tick mark appears for each configured tape drive.

7. Repeat the manual configuration for each tape drive.

8. Click Next to verify the configuration information and to initialize the tape drives.

   The Volume Configuration dialog opens showing a list of unassigned tape volumes.

Automatic Library Configuration

The automatic library configuration determines which tape drives in the StorageTek ACSLS library are connected to the CA ARCserve Backup server. Use this library configuration method if all tape drives in the StorageTek ACSLS library are the same type.

The CA ARCserve Backup server performs the following device detection and verification tasks during automatic library configuration:

- Unloads all the tape drives in the StorageTek ACSLS library

- Loads the first tape drive

- Verifies the loaded tape drive

- Receives tape drive connection verification

- Unloads the first tape drive

- Repeats this verification process for each tape drive

- Reports the tape drive information on the Drive Configuration dialog

Note: The automatic library configuration method does not support a mixture of different types of tape volumes.

Configure your Library Tape Drives Automatically

To use the automatic library configuration method

1. Select the library automatic configuration method.

2. Click Next to initiate the automatic library configuration process to determine which tape drives in the StorageTek ACSLS library are connected to the CA ARCserve Backup server.

    Note: For detailed information about the automatic library configuration method, see Automatic Library Configuration in this chapter.

3. Click Next to confirm the tape drive configuration.

    The Volume Configuration dialog opens showing a list of unassigned tape volumes.

How You Configure Library Tape Volumes

The process of configuring your tape volumes consists of assigning tape volumes to create the logical library on the CA ARCserve Backup server. Review your tape volume assignment plan before you assign the tape volumes.

Note: For details about the option architecture and planning your tape volume configuration, see Option Architecture in the chapter "Introducing the Option."

After you configure the tape drives, all tape volumes in the StorageTek ACSLS library are shown in the Volume Configuration dialog. Initially, the tape volumes are not assigned to the CA ARCserve Backup server. The unassigned status is indicated by a red slash through the tape volume icon.

Configure the Logical Library

To configure your logical library by assigning tape volumes to the CA ARCserve Backup server

1. Select one or more tape volumes.

   Note: Press and hold the Ctrl key to select multiple tape volumes.

2. Right-click the selected tape volumes, and then select Assign.

   The selected tape volumes are assigned to the CA ARCserve Backup server, as indicated by the tape volume icon (no red slash):
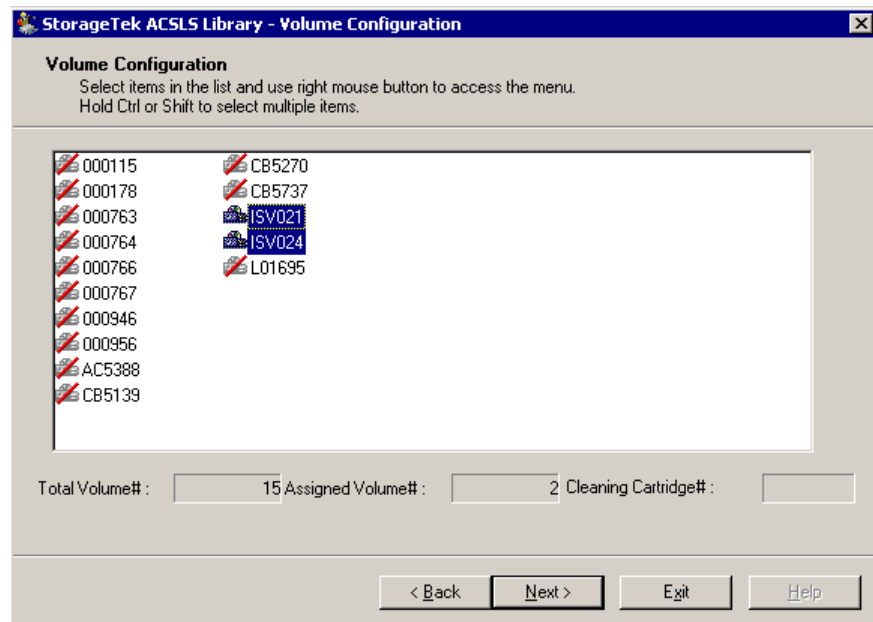
3. Click Next.

   A message dialog reminds you to do a Quick Inventory on the StorageTek ACSLS library.

4. Click OK to close the message dialog.

   A summary dialog opens to show the library tape drive configuration.

5. Click Finish to complete your library configuration.

   A device configuration completed dialog opens to confirm your successful library configuration.

6. Click Exit.

   The Install Summary dialog opens.

Configure the Cleaning Volume

To configure the cleaning tape volume

1. Open the ACSLS Volume Configuration dialog, browse to the ACSLS library and select one tape volume.

2. Right-click the tape volume and select Mark/Unmark Cleaning Cartridge from the pop-up menu.

   The selected tape volume is marked as the cleaning cartridge.

To configure more cleaning tape volumes

1. Ensure that the ACSLS library is properly configured and is initialized.

2. Open the Device Manager window.

   Browse to and right-click the ACSLS library. Select Library Properties from the pop-up menu.

   The Library Properties dialog opens.

3. Select the Cleaning tab.

4. Select the desired cleaning tapes and click OK.

   The Library Properties dialog closes. You have successfully configured the cleaning tape volumes.

Perform a Quick Inventory

To enable CA ARCserve Backup to recognize changes in tape volume assignments, perform a quick inventory for slots in the StorageTek ACSLS affected by tape volume assignment changes.

To perform a quick inventory

1. Logon to CA ARCserve Backup on the computer running the Enterprise Option for StorageTek ACSLS.

2. Start CA ARCserve Backup.

3. From the CA ARCserve Backup home page, select Device.

4. Select the logical StorageTek ACSLS library.

   Note: The name of the logical StorageTek ACSLS library is usually CA NLO-ACSLS.

5. Right-click the selected logical StorageTek ACSLS library, and then select Inventory/Offline Slots.

   The Inventory/Offline Slots dialog opens to show the tape volumes in the StorageTek ACSLS tape library.

6. Click to select the slots in the StorageTek ACSLS affected by tape volume assignment changes.

7. Click Quick Inventory.

8. Click OK.

   The inventory complete message dialog opens.

9. Click OK.

Post-Installation Procedures

Post-installation tasks consist of verifying the pre-installation tasks you performed before installing the Enterprise Option for StorageTek ACSLS and making changes to the library configuration. For more information about the pre-installation tasks, see Installation Prerequisites in this chapter.

Library Configuration Update

The StorageTek ACSLS library configuration consists of tape drive configuration and tape volume assignments. Any time you add or remove tape drives or change your tape volume assignments on the StorageTek ACSLS tape library, you must update the library configuration with these changes.

Important! You must stop the tape engine service to update the library configuration with tape drive and tape volume changes.

Update Your Device Configuration

You can update the library configuration with changes to tape drives by using the Enterprise Module Configuration Wizard on the CA ARCserve Backup server. The device configuration process reads and initializes all the tape volumes in the StorageTek ACSLS library. Before you reconfigure your library, you must remove all tape volumes from the tape drives in the StorageTek ACSLS library.

To update the library configuration with StorageTek ACSLS tape drive changes

1. Log on with administrator privileges to CA ARCserve Backup on the computer running the Enterprise Option for StorageTek ACSLS.

2. From the Start menu, choose Programs, CA, ARCserve Backup, Enterprise Module Configuration.

   The Enterprise Module Configuration dialog appears.
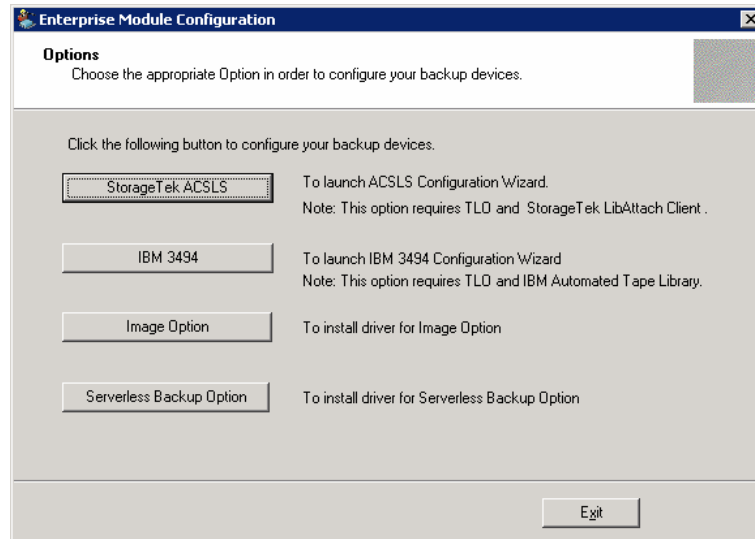
3. Select StorageTek ACSLS.

   A message dialog opens reminding you to remove all tape volumes from the StorageTek ACSLS tape library.

4. If you have not done so already, remove all tape volumes from the StorageTek ACSLS tape library.

5. Click Yes to continue.

   The StorageTek ACSLS Library Configuration dialog appears.
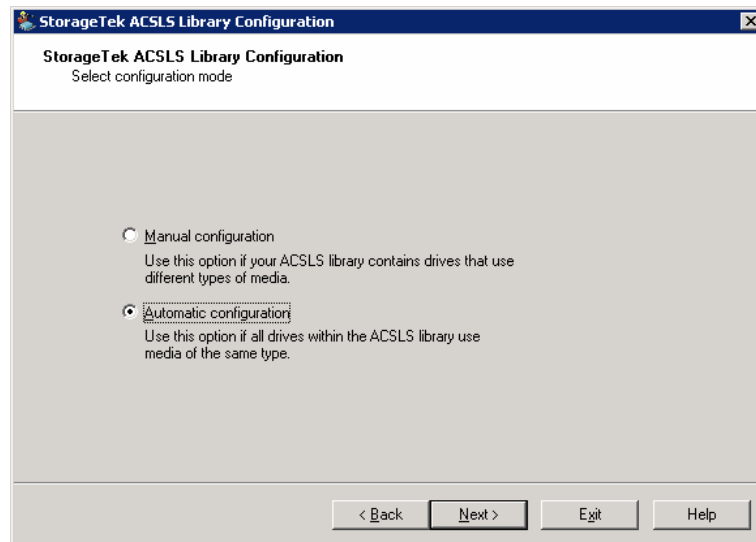
6. Select the manual or automatic library configuration method and configure your library.

   Note: For details on configuring your library, see Library Configuration Tasks in this chapter.

7. Click Next.

   The Drive Configuration dialog appears.

8. Click Next to proceed to Volume Configuration.

Update Your Volume Configuration

You can update your volume configuration with changes to tape volumes on the StorageTek ACSLS library. After any changes to the tape volumes on the StorageTek ACSLS library, use the StorageTek ACSLS Volume Configuration program to change your tape volume configuration, and then use CA ARCserve Backup to perform a quick inventory.

Note: The import and export of tape volumes using the Enterprise Option for StorageTek ACSLS is not supported. For more details on recognizing tape volume configuration changes in the StorageTek ACSLS library, see Recognize Tape Volume Changes in the chapter "Using the Option."

To update your tape volume configuration

1. Log on with administrator privileges to CA ARCserve Backup on the computer running the Enterprise Option for StorageTek ACSLS.

2. Start the StorageTek ACSLS Volume Configuration program by choosing Start, Programs, CA, ARCserve Backup, StorageTek ACSLS Volume Configuration.

3. When the Volume Configuration welcome dialog opens, click Next.

   Note: The Tape Engine will be stopped before you can continue.

4. Click Next to continue the volume configuration.

   The Volume Configuration dialog opens to show the current tape volume configuration and lets you make changes to the tape volume configuration.

5. Select any tape volumes you want to change.

6. Right-click and select the appropriate choice to change the tape volume assignment.

7. Click Next.

   A message dialog opens to remind you to perform a quick inventory for slots in the StorageTek ACSLS affected by tape volume assignment changes.

8. Click OK to close the message dialog.

   The Volume Configuration Completed dialog opens.

9. Click Exit to exit the StorageTek ACSLS Volume Configuration program.

10. Click Yes to confirm the exit.

    Note: For details about configuring tape volumes, see Configure your Library Tape Volumes in this chapter.

11. Start the Tape Engine manually.

12. Use CA ARCserve Backup to perform a quick inventory.

    Note: For details about performing a quick inventory, see Perform a Quick Inventory in this chapter.

Configure ACSLS with File System Devices

Use this procedure if you already have file system devices configured on the server and you have not configured the ACSLS yet.

To configure ACSLS with file system devices

1. Connect the tape drives to the system.

2. Start the Tape Engine.

3. Once you see the tape drives in the Device Manager, stop the Tape Engine.

4. Follow the steps starting with step 2 in the section titled "Update Your Device Configuration".

Chapter 3: Using the Option

This chapter contains information about using the Enterprise Option for StorageTek ACSLS. After you install and configure the Enterprise Option for StorageTek ACSLS on the CA ARCserve Backup server, you can use CA ARCserve Backup to perform the following tasks:

- Manage backup and restore operations on the StorageTek ACSLS
- Import and export tape volumes from the StorageTek ACSLS tape library
- Update the configuration of the virtual library on the CA ARCserve Backup server with device or tape volume changes on the StorageTek ACSLS tape library

This chapter also contains information about using the StorageTek ACSLS cmd_proc utility to query the status of the tape drives and tape volumes in the StorageTek ACSLS tape library.

This section contains the following topics:

Backup and Restore Operations

With the Enterprise Option for StorageTek ACSLS, you manage backup and restore operations as if you are controlling a local library. Use the Backup Manager and the Restore Manager to perform backup and restore operations on the CA ARCserve Backup server.

Use the Backup Manager to perform backup operations and the Restore Manager to perform restore operations. For complete details on managing backup and restore operations, see the *Administration Guide*.

Note: The tape volumes on the StorageTek ACSLS tape library appear as local tape volumes during backup and restore operations.

Recognize Tape Volume Changes

After the initial library configuration, you can add or remove tape volumes. Before you can use tape volumes in the StorageTek ACSLS tape library for a virtual library on the CA ARCserve Backup server, you must perform the following three tasks:

- Use the StorageTek ACSLS to add tape volumes to, and remove tape volumes from, the StorageTek ACSLS tape library.

- Update your tape volume configuration.

  Note: For detailed instructions on updating your tape volume configuration, see Update Your Volume Configuration in the chapter "Installing the Option."

- Notify the CA ARCserve Backup server of the changes to the tape volume configurations by performing a Quick Inventory.

  Note: For detailed instructions on performing a Quick Inventory, see Perform a Quick Inventory in the chapter "Installing the Option."

Import and export of tape volumes from CA ARCserve Backup is not supported with the Enterprise Option for StorageTek ACSLS. All physical import and export of tape volumes must be made using the StorageTek ACSLS.

StorageTek ACSLS Tape Library Queries

The StorageTek ACSLS query commands provide an alternate method for determining the status of the tape drives and the tape volumes in the StorageTek ACSLS tape library. Use the cmd_proc utility on the StorageTek ACSLS server to query the status of the tape drives and the tape volumes in the StorageTek ACSLS tape library.

Query the Status of Tape Drives

The command, *query drive all*, provides information about the tape volumes, the tape drives, their state, their status, and their type.

Query the status of the tape drives in the StorageTek ACSLS tape library

1. Start the cmd_proc utility.

2. Enter

   ```
   query drive all
   ```

The command displays the following information:

```
2004-03-18 12:51:31               Drive Status
 Identifier   State          Status      Volume     Type
   0, 0, 0, 0 online          available              SGT-LTO
   0, 0, 0, 1 online          available              SGT-LTO
   0, 0, 0, 2 online          available              SGT-LTO
   0, 0, 0, 3 online          available              SGT-LTO
```

The identifier consists of four digits, which represent the following:

- Automated Cartridge System (ACS)

- Logical Silo Module (LSM)

- Panel number (Panel)

- Drive ID number (ID)

In the preceding example, "0, 0, 0, 0" on the first line translates to ACS = 0, LSM = 0, Panel = 0, ID = 0 while "0, 0, 0, 3" on the fourth line translates to ACS = 0, LSM = 0, Panel = 0, Drive ID = 3.

Query the Status of the Tape Volumes

The command, *query volume all*, provides information about the tape volumes, their status, their current location, and their type.

Query the status of the tape volumes in the StorageTek ACSLS tape library

1. Start the cmd_proc utility.

2. Enter

    query volume all

The command displays the following information:

```
2004-03-18 13:05:04               Volume Status
 Identifier  Status         Current Location     Type
 000091      home            0, 0, 4, 0, 0       LTO-100G
 000092      home            0, 0, 2, 3, 0       LTO-100G
 000093      home            0, 0, 2, 1, 0       LTO-100G
 000094      home            0, 0, 3, 0, 0       LTO-100G
 000095      in drive        0, 0, 0, 0          LTO-100G
 000096      ejected         0,-1, 0, 0, 0       LTO-100G
 000097      ejected         0,-1, 0, 0, 0       LTO-100G
```

Appendix A: Troubleshooting

This appendix includes frequently asked questions to help you resolve issues that may arise when using the Enterprise Option for StorageTek ACSLS.

What is mixed media?

The term mixed media refers to a mixture of tape drives and tape volumes in the StorageTek ACSLS tape library. In configurations where more than one tape drive is connected to a CA ARCserve Backup server, both tape drives must use media of the same type.

What Library configuration method should I use to configure the logical library when StorageTek ACSLS tape library has mixed media?

Use the manual library configuration method.

How do I verify network connectivity between the CA ARCserve Backup server and the StorageTek ACSLS tape library?

Verify network connectivity by using the StorageTek Library Attach software on the CA ARCserve Backup server.

How do I change my library tape drive configuration?

To update the library configuration with StorageTek ACSLS tape drive changes, make the tape drives changes on the StorageTek ACSLS tape library, and then use the Device Configuration wizard to change your library configuration.

How do I change the tape volume configuration?

You can update your volume configuration with changes to tape volumes on the StorageTek ACSLS library. After you add tape volumes to, or remove tape volumes from, the StorageTek ACSLS library, use the StorageTek ACSLS Volume Configuration program to change your tape volume configuration, and then use CA ARCserve Backup to perform a quick inventory.

How do I start the StorageTek ACSLS Volume Configuration program?

Start the StorageTek ACSLS Volume Configuration program from the Start menu by choosing: Programs, then CA, then ARCserve Backup, and then StorageTek ACSLS Volume Configuration.

When are tape volume assignments the same for more than one CA ARCserve Backup server?

The tape volumes are shared between each CA ARCserve Backup server in a SAN. The tape volume configuration for the primary server in the SAN is shared among the other backup servers in the SAN.

Is the cleaning tape volume shared between backup servers?

Yes, the cleaning tape volume is shared between backup servers when the backup servers are in a SAN, just as they share the same volume configuration for non-cleaning tape volumes. If the backup servers are not in a SAN, then each backup server has an assigned cleaning volume.

Can I use the Enterprise Option for StorageTek ACSLS to run a disaster recovery?

Yes, disaster recovery is supported using the Enterprise Option for StorageTek ACSLS. For more information on Disaster Recovery, see the *Disaster Recovery Guide*.

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