

ACSLS Tape Library Support for EMC Disk Library

Applied Technology

Abstract

ACSLS is a storage resource management application used with StorageTek tape libraries. This white paper describes how to configure the EMC® Disk Library as an ACSLS client. As an ACSLS client the EDL can be configured to share the tape resources of one or more ACSLS managed tape libraries.

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Executive summary

ACSL S is a storage resource management application used with Sun, formerly StorageTek, tape libraries. These tape libraries are, in most cases, multimedia, meaning there is multiple tape technologies in the same library. A dedicated host runs the ACSLS Manager software that operates the library robotics and partitions media resources by media type. The library tape drives are configured to ACSLS clients and I/O passes between them directly over SCSI or FC. The ACSLS client operates the TLU robotics over IP with calls to the ACSLS Manager host. An ACSLS client can be any system platform including the EMC[®] Disk Library. This is a licensed feature. To obtain an ACSLS Client license for your EMC Disk Library, contact your EMC Service Representative.

Introduction

This white paper describes how to configure the EMC Disk Library to be an ACSLS client. As an ACSLS client the EDL can be configured to use the tape drive and tapes in one or more ACSLS managed tape libraries as direct access resources, allowing an EMC Disk Library user to make physical tape copies of virtual tape backup sets.

Audience

This paper targets EMC Technical Services personnel familiar with the EMC Disk Library, its management console, and SANs. This is also useful for a data center's designated ACSLS Manager to decide which and how many of the ACSLS tape drives will be made available for any ACSLS client.

What is ACSLS Manager software?

ACSL Manager™ is a software product from StorageTek that allows centralized tape library administration management. It allows sharing of tape library resources among multiple ACSLS clients, increasing resource utilization.

EMC Disk Library support as an ACSLS client

The EMC Disk Library has been enhanced to work with STK ACSLS managed libraries for import/export operations. One or more Disk Libraries configured as ACSLS clients can now share the same ACSLS managed tape library. The EDL is capable of supporting up to 64 tape drives in an STK ACSLS managed tape library.

Solaris ACSLS Manager host requirement

For EDL 2.0 to be configured as an ACSLS client, a vtacsls agent needs to be installed on the ACSLS Manager host. This is no longer required with 2.1 and later EMC Disk Library releases.

The EDL as an ACSLS client is supported only with a Solaris 8 or Solaris 9 ACSLS Manager host. The ACSLS Manager host must be an equivalent of a Sun Model 280R with 256 MB RAM with at least 2.1 GB of primary hard drive space and at least 1.0 GB of secondary disk space.

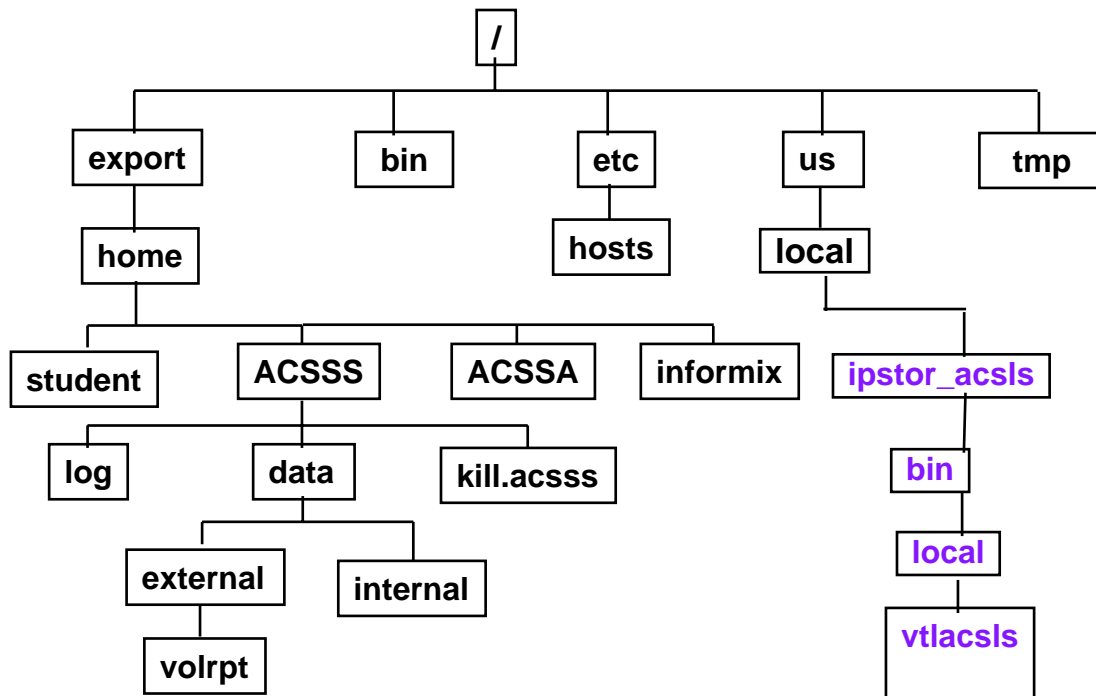


Figure 1. ACSLS Manager directory hierarchy

Site requirements from ACSLS Manager

ACSL S 7.1 Manager host minimum hardware requirements

The minimum hardware requirement is a Solaris 8 or 9 host equivalent to a SPARC 280R with 256 MB RAM, 2.1 GB of primary hard drive space, and 1 GB of secondary disk space. The tape library medium changer should be already attached and configured to the ACSLS Manager host. Sun recommends the ACSLS Manager host be dedicated to manage tape inventory and library robotic functions so in most cases, none of the tape drives in the tape library will be configured to this host.

ACSL S 7.1 Manager administration

Where there is an ACSLS managed tape library there will be an ACSLS Manager Administrator for that site. There are four reference categories of these allocated resources needed from the ACSLS Manager Administrator for the ACSLS client configuration of an EDL:

- The IP address for the ACSLS Manager host
- An ACS ID. This is the ACSLS managed tape library ID the EDL will be configured to use.
- A Pool ID. This is the identifier for the pool of tapes in the ACSLS managed tape library the administrator assigned in preparing for a new client.
- ACSLS Drive IDs with their serial numbers. See the section “Best practice: Make a chart!” on page 11 for more information.

Requirements for EDL ACSLS client configuration

- The EDL ACSLS Client License Enabler
- The EMC-provided proxy agent (Disk Library 2.0 only, not needed in subsequent releases)
- The four reference category items from the ACSLS Administrator: ACSLS Manager Host IP Address, ACS ID, Pool ID, and the ACSLS Drive IDs with their serial numbers

Configuring the EDL ACSLS client

The following is step-by-step instructions to configure the EMC Disk Library ACSLS client:

1. If you have not already done so, zone the tape drives in the ACSLS managed tape library you were assigned to the EDL. It is recommended to note the drive serial numbers attached to each EDL client and write this down with their ACSLS associated identifier in a log.
2. Check with the administrator and make sure ACSLS Manager Service is started
Note: Steps 3 and 4 apply to EDL 2.0 only. Skip to step 5 for EDL 2.1 and later.
3. Install the VTL ACSLS Proxy Agent on the ACSLS Manager Host with pkgadd. Note: VTL ACSLS proxy agent is no longer needed as of EDL 2.1.
4. (For EDL 2.0 only) Start the ACSLS Proxy Service with these instructions:

```
/usr/local/ipstor_acsls/bin ./vtlacsls start  
  
VTL ACSLS Service Option v3.10(Build 1070)  
Copyright 2001-2005 by FalconStor. All Rights Reserved.
```

```

VTL ACSLS service option started.
Monkey: pwd
/usr/local/ipstor_acsls/bin
Solar9: Sun Microsystems Inc.   SunOS 5.9       Generic May 2007
Sun Microsystems Inc.   SunOS 5.9       Generic May 2007
Sun Microsystems Inc.   SunOS 5.9       Generic May 2007

```

5. On the EDL Console, click on the EDL Hostname and add the ACSLS Client License Enabler.
6. Scan for a new device from <Physical Resource>.
7. In the EDL Console search under Physical Resources. Make sure EDL discovered all the ACSLS tape devices that have been attached.
8. Right-click on **Physical Tape Libraries** in the console and choose **Add ACSLS Library**.
9. A window will pop up where you will add the IP Address of the ACSLS Manager Host, the ASC ID of the physical library, and the Pool ID from the ACSLS Manager Administrator. Click **OK**, and the ACSLS library will appear under Physical Tape Libraries in the console.
10. Right-click on the ACSLS Library in the console. Choose **assign**, and a screen to launch the wizard for tape drive configuration like the one in Figure 2 appears.

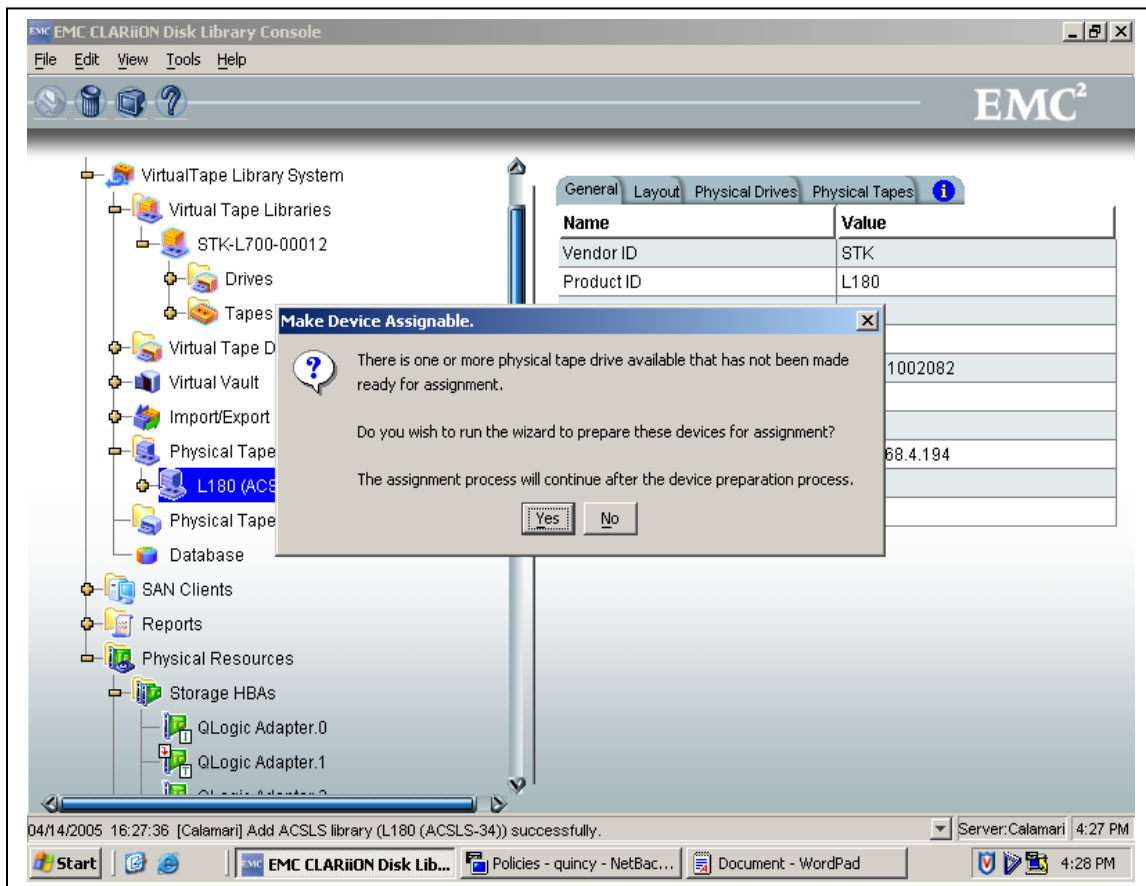


Figure 2. Make Device Assignable dialog box

11. Select **Yes**. A screen appears so you can select the physical tape drives you will be using. Select the ones that apply, then click **Next**.

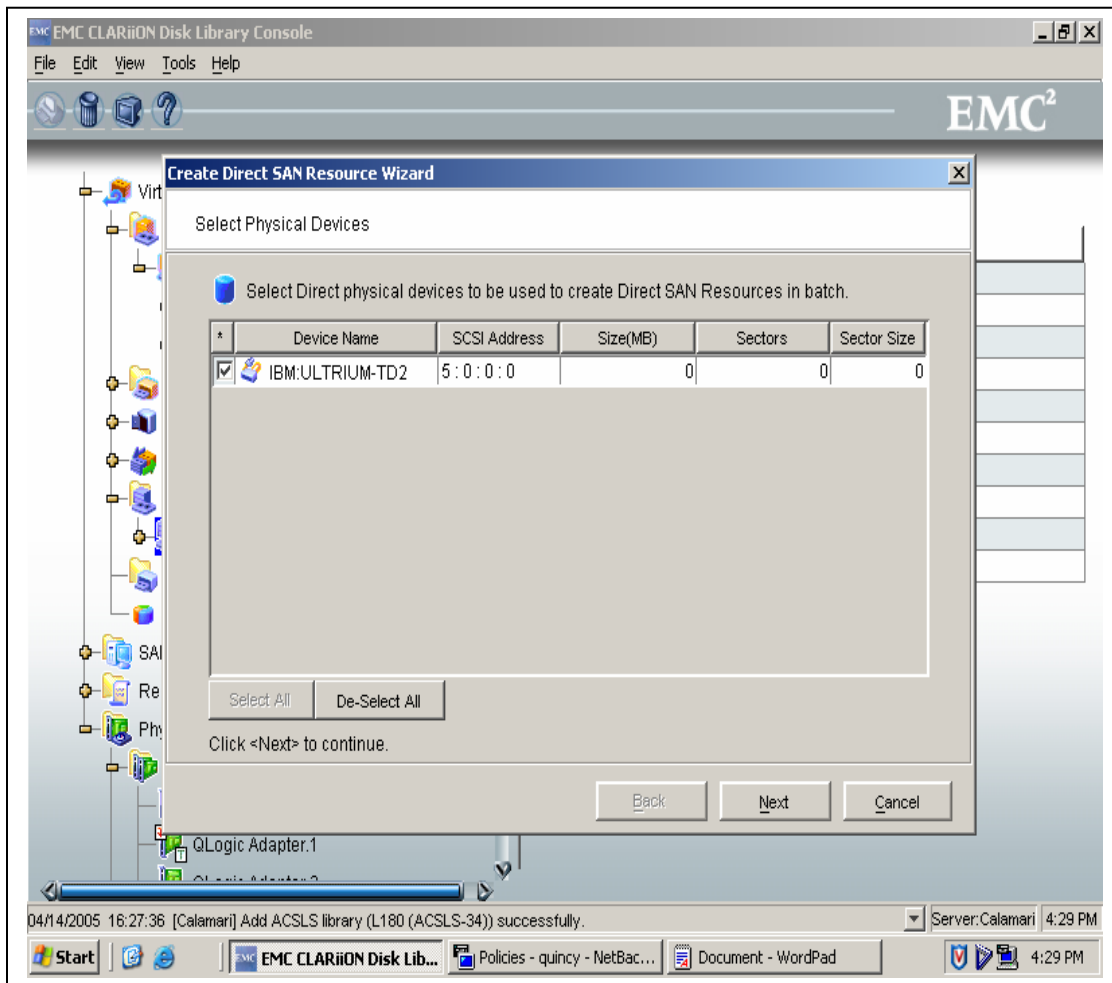


Figure 3. Select Physical Devices window

12. Click **Finish** in the next screen that follows.
13. You should see a pop-up announcing “Direct SAN Resource Created”. If this is the case, click **OK**.
14. Another window will appear so you can select the tape drives for defining their assignment to the ACSLS tape library. Locate that list of ACSLS Drive IDs from the ACSLS Administrator.
15. Make the appropriate selections entering all associated ACSLS Drive IDs, then click **Next**.

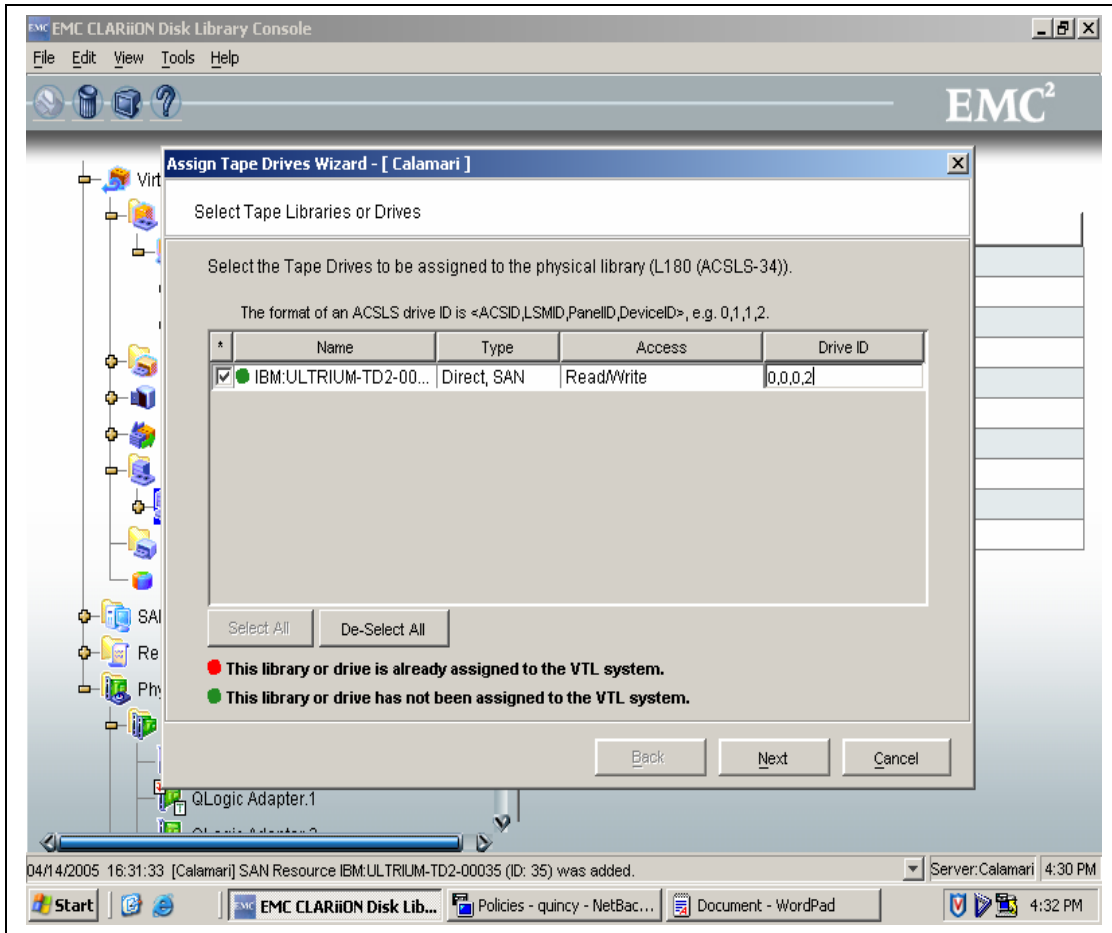


Figure 4. Select Tape Libraries or Drives window

16. Select **Finish** in the screen that follows. The EDL Console will show the ACSLS Tape Library with the EDL assigned tape drives under it. If adding multiple ACSLS drives to an EMC Disk Library client, assignment problems may occur. To prevent this from happening, follow the advice in the “Best practice: Make a chart!” section on page 11.

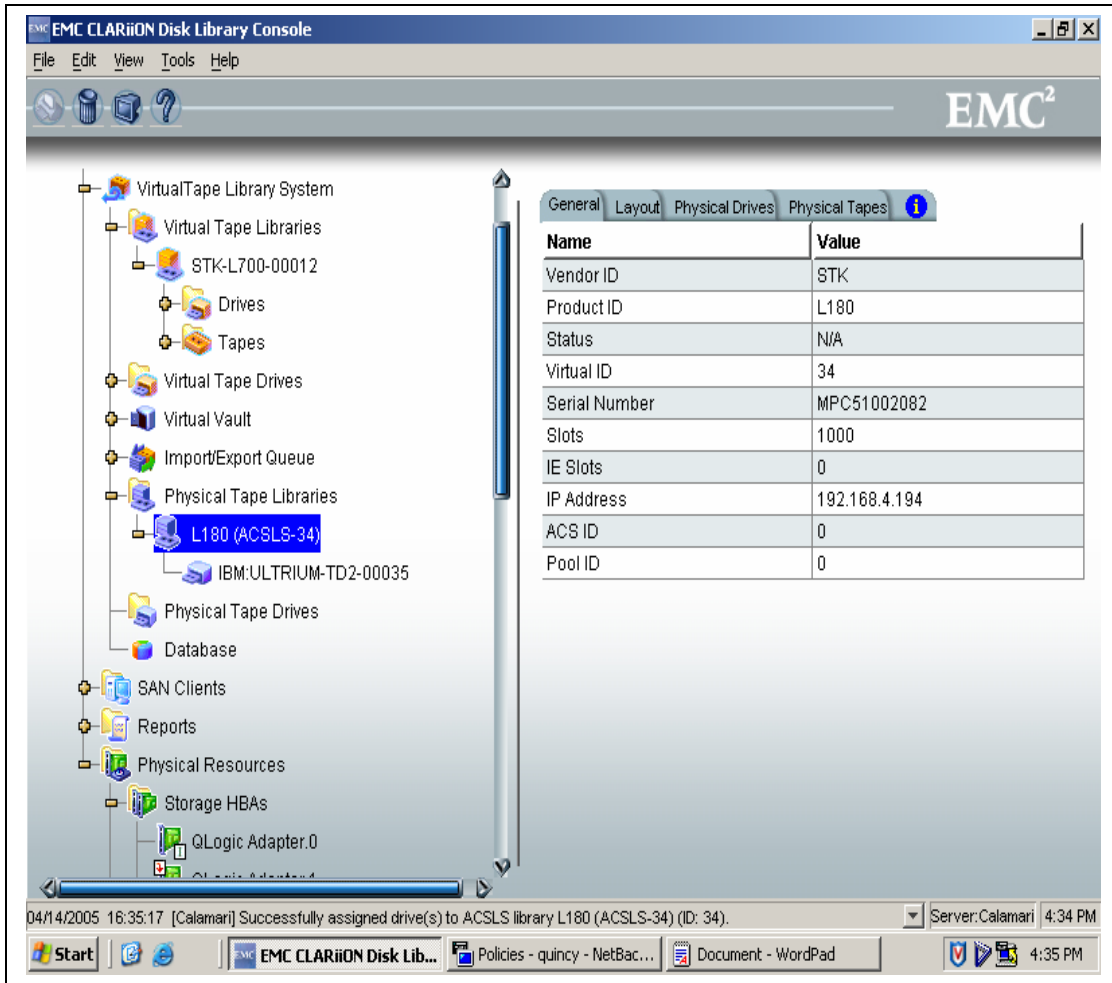


Figure 5. Inventory the Library

- Right-click on the ACSLS Tape Library and select **Inventory**. After it completes, under the Physical Tapes tab in the console you will see all the tapes in the pool the ACSLS Manager allocated for this EDL client. EDL Import/Export features will work with this ACSLS Managed Resource just like non-ACSLs Managed tape libraries would.

EDL ACSLS managed tape library operation

When an import or export is initiated by the EDL, commands that operate the medium changer to pick and load tapes in tape drives are sent over IP from the EDL ACSLS client to the ACSLS Manager host. The ACSLS Manager host serves these robotic function requests to the tape library medium changer configured to the ACSLS Manager host. Data transfer to/from the EDL to/from the tape drives in the ACSLS managed library is over Fibre Channel.

Best practice: Make a chart!

By using the drive serial number to associate the EDL assigned ID to the ACSLS ID, you can troubleshoot and correct any problem related with assigning ACSLS tape drives to an EMC Disk Library.

From ACSLS Manager		From EDL Console
ACSLs Drive ID	Drive Serial #	EDL Address ID
0,0,0,0	118002111	4.0.0.1
0,0,0,1	118002122	4..0.0.2

HINT: Chart the association of ACSLS Drive IDs, their serial numbers, and what the EDL would assign as the drives address like this one.

The ACSLS Manager can run the command **display drive * -f type serial number** and this will retrieve the ACSLS Drive IDs with associated serial numbers. Because the EMC Disk Library Console doesn't display a tape drive's serial number or the device address, use this simple procedure to help you complete the chart and solve any problem you may have assigning the ACSLS tape drives.

- Assign the discovered ACSLS tape drives to the EDL as standalone physical tape drives. The properties of the drives in the console will show the address the disk library gave them along with their serial number.
- Fill out the chart to match the information obtained from **display drive * -f type serial number** and the corresponding EDL address IDs the disk library just assigned to the tape drives.
- After the chart is made, use the console and unassign these tape drives. Do not skip this step.
- Assign the tape drives as an ACSLS tape drive (step 9 on page 7). When you get to the point of entering the ACSLS Drive IDs, refer to the chart you made to make the right ACSLS Drive ID entry that will correspond to the EDL Assigned ID.

Conclusion

By following the directions in this white paper, you can successfully configure an EMC Disk Library as an ACSLS client and configure tape library resources under ACSLS control as direct access resources.