# StorageTek Automated Cartridge System Library Software

## Installation

Version 8.1

Part Number: E25011-02
April 2012

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# Revision History

| Date | Revision | Description |
|---|---|---|
| December 2011 | E25011-01 | This release supports:<br>• Fast Load for SCSI clients<br>• WebLogic GUI interface<br>• New security features<br>• CAP fixes<br>• Request optimization |
| April 2012 | E25011-02 | Update to the “System Requirements”, “Co-Hosting”, “Installing Solaris” and “Removing any previous version” sections. |

# Table of Contents

# Preface

StorageTek Automated Cartridge System Library Software (ACSLS) 8.0.2 is Oracle's StorageTek's UNIX server software that controls a StorageTek Automated Cartridge System (ACS). The StorageTek ACS family of products consists of fully automated, tape cartridge-based data storage and retrieval systems. StorageTek ACSLS supports network access to different client systems that can range from workstations to mainframes to supercomputers running on a variety of operating systems.

This guide is for the individual responsible for administering StorageTek ACSLS. It is expected that you already have a working knowledge of the following:

- UNIX file and directory structure
- How to use UNIX commands and utilities for your platform
- UNIX system files
- How to do typical UNIX system administrator tasks, such as logging on as root and setting up user accesses to a UNIX application

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# 1

# Overview

Automated Cartridge System Library Software (ACSLS) is Oracle's StorageTek server software that controls StorageTek tape libraries. An Automated Cartridge System (ACS) is a group of tape libraries connected through pass-thru-ports (PTPs). ACSLS accesses and manages information stored in one or more ACSs through command processing across a network. The software includes a system administration component and interfaces to client system applications, and library management facilities.

ACSLS 8.1 uses the relational database PostgreSQL which is included in your Solaris 10 distribution.

Please check the website for any maintenance releases.

## Software Requirements

- ACSLS 8.1 has been fully tested and verified on Oracle's Sun SPARC and X86 platforms running Solaris-10 Updates 7, 8, and 9. Other operating systems, including AIX and virtual environments, are not tested or supported.
- Because of special device driver requirements to enable virtual libraries, ACSLS 8.1 cannot run in a Solaris Zoned environment. However, ACSLS 8.1 can run in a logical domain on a SPARC system with Chip Multithreading (CMT) technology. ACSLS 8.1 HA systems must be installed on their own dedicated platform pair.
- The graphical user interface and SMCE service in ACSLS 8.1 requires Java 1.6 U14 or later. You cannot install ACSLS unless this requirement is met.

  The latest update for JDK 6 is available from the Oracle technetwork download site.

  http://www.oracle.com/technetwork/java/javase/downloads/index.html

  Please note that:

  - Should you choose to install Java in a different directory, a soft link must be provided that points to the java binaries located in: `/usr/java/bin/java`
  - To verify the version, enter the command: `java -version`.
- If you have an IPv4-based edge firewall, it should be configured to drop all outbound IPv4 protocol 41 packets and UDP port 3544 packets to prevent Internet hosts from using any IPv6-over-IPv4 tunnelled traffic to reach internal hosts.

Please check the website for any maintenance releases.

# System Requirements

- Memory: 2GB minimum

  To show system memory:

  ```
  prtconf | grep Mem
  ```

- Swap: A minimum of 2GB swap is required. For systems configured with more than 6GB of memory, the rule of thumb for swap is approximately 30% of physical memory.

  To show swap space with `vmstat`:

  `swap -l` (shows 512 byte blocks)

  a. Take the number of blocks and divide by 2.

  b. Now, divide this number by 1024.

  c. This gives you the swap space in MBs.

- File systems:

  Installation fails if the following filesystems do not exist as separate filesystems.

  - `/export/home` - 5GB or greater
  - `/export/backup` - 5GB or greater

  To show filesystem sizes:

  ```
  df -h
  ```

- Optional Fibre card

  A fibre HBA is required if you intend to make use of the 'Logical Library' target feature in ACSLS 8.x.

  - To operate in target-mode, this HBA must be a contemporary QLogic fibre card (4GB or higher).
  - If you intend to operate a fibre-connected library such as the SL500, you can use any standard 2GB or higher fibre HBA.

# Browser Requirements:

ACSLS 8.1 has been tested and fully verified on the following browsers:

- Internet Explorer 8 and 9
- FireFox 7 and 8
- Chrome 15

# Co-Hosting

To ensure uninterrupted library service and to avoid unanticipated problems due to resource contention, it is generally recommended that ACSLS run in a stand-alone environment on a dedicated server. However, some systems are specifically designed to allow multiple applications to run in co-hosted fashion as though they are completely isolated from one another. Specifically, Solaris Containers and Oracle Solaris VM Server for SPARC enable conditional co-hosting possibilities for use with ACSLS.

The following details the conditions and limitations associated with the various co-hosting options for an ACSLS application.

- Solaris Containers (zones)

  Solaris Containers (or zones) enable a system administrator to partition a standard, low cost server into four independent Solaris systems, each with its own isolated file system, and its own instance of Solaris. You can assign network resources to each container and you can reboot any local (non-global) zone without affecting applications in other zones on the same platform.

  However, the ability to share kernel resources (such as device drivers) across multiple zones is tenuous at best. Ideally, an application that requires kernel drivers would reside in the global zone. However, it is generally not good practice to install an application in the global zone since any fatal condition with the application could impact all other applications running in the other zones.

  ACSLS 8.x can reside in a Solaris container only if it does not require drivers beyond the network interface. If you intend to use the target-mode fibre-channel driver (*qlt*) which is required for logical libraries, then your application should not be installed in a Solaris container. Or, if you intend to make use of a fibre-attached library which requires the *mchanger* driver, the application should not be installed in a Solaris container.

  > **Note –** There are no versions of ACSLS-HA that are supported for use in Solaris Containers.

- Oracle VM Server for SPARC

  Oracle VM Server for SPARC (formerly Logical Domains or LDOMs) is technology available on SPARC T-series servers with Chip Multithreading (CMT) technology. This technology offers significant advantages over Solaris Containers to the extent that each domain is in control of its own Solaris kernel.

  A Solaris administrator can partition hardware resources across the system, assigning a specific resource to a specific domain. Network resources on this virtual machine can easily be shared across any of up to 128 'guest domains' on the server. But applications that require access to I/O devices through the PCIe bus must be installed in special 'I/O domains'. The number of I/O domains that you can create on the VM Server depends on the number of discrete PCIe busses on the SPARC platform. On a system with a single PCIe bus, you can have two I/O domains, and one of these must be the control domain.

  Any ACSLS application that relies solely on network connectivity to the library and for client applications can be installed in a guest domain on this server. The virtual network set-up procedure is described in the document, *Oracle VM Server for SPARC 2.1 Administration Guide* in the section, entitled "Using Virtual Networks".

If your ACSLS 8.x application is intended for use with logical libraries, or if you intend to connect to a fibre-channel library such as the SL500 or L700, then ACSLS must be installed in an I/O domain. Refer to the section "Setting up I/O Domains" in the *Oracle VM Server for SPARC 2.1 Administration Guide*.

Solaris Cluster Software is supported on the Oracle VM Server for SPARC and this platform can be employed in an ACSLS-HA application. Refer to the *Oracle Solaris Cluster Data Service for Oracle VM Server for SPARC Guid*e.

# 2

# Installing ACSLS on Solaris

ACSLS 8.1 includes several product enhancements and multiple fixes to bugs reported in Release 8.0.2.

Download ACSLS from the Oracle Software Delivery Cloud website. Typical installations download the package to the `/opt` directory and extracts it from there. A separate zip file is created for Solaris SPARC and Solaris x86. If you need both platforms, you must download both zip files.

## Legal Notice

In addition to the Oracle Right to Use License for ACSLS, this product contains numerous third-party software components, each with its own license criteria. Please read the THIRDPARTYLICENSEREADME.txt agreement located in the `export/home/acsls_thirdPartySoftware` directory. This directory also contains the source files for the following: jcommon - 1.0.12);
freechart - 1.0.9; psqloadbc - 08.02.0200; unixODBC - 2.2.11; and xerces-c0src1_5_2.

## What's in this Chapter

This chapter describes procedures for installing ACSLS 8.1. This chapter discusses:

# ACSLS 8.1 Installation Tasks

The following table provides a summary of the steps you perform for installing ACSLS 8.1:

**TABLE 2-1** Installation Tasks

| Task | Page |
|---|---|
| 1. Export the database if you are upgrading from a previous version of ACSLS<br><br>This lets you migrate the database and control files to the new version of ACSLS. | 14 |
| 2. Install the Solaris operating system. The latest Solaris patch cluster is recommended. | 14 |
| 3. Prepare for ACSLS Installation | 15 |
| 4. Remove any previous version of ACSLS | 18 |
| 5. Install the ACSLS package through pkgadd | 20 |
| 6. Initiate the installation shell script | 21 |
| 7. Set the user passwords | 23 |
| 8. Add users of the ACSLS GUI | 23 |
| 9. Install and configure your library hardware | 24 |
| 10. Import the database if it was exported. | 24 |
| 11. Verify your installation | 24 |
| 12. Audit your libraries | 25 |

# Exporting the Database

If you are upgrading from a prior release, you need to export the database and control files.

For more information and procedures, refer to Exporting the Database in the "Database Administration" chapter of the *ACSLS 8.1 Administrator's Guide*.

# Installing Solaris

For installation procedures, please refer to the Solaris Installation instructions.

**Note –** For our ACSLS development and testing, we installed Solaris selecting the “Entire Distribution” option. This is the recommended installation environment, however, you may prefer a custom installation of Solaris and this may omit some of the packages that ACSLS requires. Since you can create a custom installation and included packages can differ based on the level of Solaris being installed, we cannot provide a list of required packages for ACSLS.

**Note –** More restrictive Solaris security may result in certain services not being enabled by default. When installing Solaris, choosing the option to "Enable Remote Services" ensures that all services are available. For example, there are services such as NFS and RPC that need to be enabled so the backup software (such as Netbackup) can communicate properly with ACSLS. ACSLS requires several different OS provided services and this could change based on the level of Solaris and ACSLS.

If you had chosen the Solaris "Secure by Default" installation option, then in order to communicate with ACSAPI clients, you need to alter a network configuration property for rpc-bind.

a. First check the setting for the local_only property:

```
# svcprop network/rpc/bind:default | grep local_only
```

b. If `local_only` is NOT set to false, run the following command sequence:

```
# svccfg
  svc:> select network/rpc/bind
  svc:/network/rpc/bind> setprop config/local_only=false
  svc:/network/rpc/bind> quit
  # svcadm refresh network/rpc/bind:default
```

ACSLS requires that the following be met; otherwise the installation fails or ACSLS does not operate properly:

- `/export/home` and `/export/backup` must be mounted to allow SETUID so the `acsss` user can run as `root`. `root` access is required to stop and start the ACSLS related services and collect diagnostic information.
- Network services must be enabled to allow client communication, specifically network`/rpc/bind` must be enabled.
- The `acsss` `umask` is set to 027 during installation

# Preparing for ACSLS 8.1 Installation

Before you install ACSLS, complete the following steps:

1. Verify that the server system hardware is properly configured, connected, powered on, and ready.
2. Connect the LMU to a valid serial or TCP/IP port.

   Most contemporary libraries are TCP/IP or SCSI-attached. Legacy StorageTek libraries, such as the SL5500 can be Serial-Attached.

If more than one serial port is available on your server, configure two ports to the LMU. An alternate LMU connection provides higher throughput and greater robustness.

3. Multiple serial port connects are necessary if you are configuring the server to a Dual Serial-Attached LMU installation. You can provide redundant connections to each LMU using a multi-port adapter.
4. If your installation includes an SL8500 library or an SL9310 library and TCP/IP LMU(s), connect the TCP/IP LMU(s) to the network used for LMU communication.
5. For SCSI-connected libraries, you should use a differential connection where possible. If a single-ended SCSI controller is used, you should limit the cable distance to three meters between the server and the library. With low-voltage differential (LVD), the cable should be no more than 10 meters. High-voltage differential (HVD) SCSI cables can extend up to 20 meters.
6. Make sure that each attached LMU and LSM is fully configured, powered on, and ready.

   **Note –** The configuration utility, `acsss_config`, fails unless all LMUs and LSMs are fully configured, powered on, and ready.

7. If you are using logical libraries to support SCSI clients over Fibre Channel, set up the FC connections between any client HBA ports and suitable HBA ports on the ACSLS server.
8. If you have any communication problems refer to the “Troubleshooting” chapter in the *ACSLS 8.1 Administrator’s Guide*.
9. ACSLS requires specific user IDs. If these user IDs are not defined before ACSLS installation, ACSLS creates them.

   **Note –** If Solaris has been installed with more restrictive security, these accounts may be locked by default. You can check to see if an account is locked by using the "passwd" command:

   ```
   # passwd -s acsss
   acsss   LK
   ```

   If you see "LK" in the output you need to unlock the account. To unlock the account:

   ```
   # passwd -u acsss
   passwd: password information changed for acsss
   ```

   Please check all three accounts, `acsss`, `acssa`, and `acsdb`.

When ACSLS installation creates the user IDs, the system assigns the user ID numbers and group ID numbers. To assign specific user ID and group ID numbers, you must define the following groups and users before installing ACSLS:

| User | Group |
|---|---|
| acsss | acsls |
| acssa | acsls |
| acsdb | acsls |

When these user IDs are defined before ACSLS installation, they can either be defined locally (on the ACSLS server) or via remote authentication methods (e.g., NIS or Kerberos). These user IDs must be defined with the following properties:

- The default shell for acsss and acssa is "ksh". The default shell for acsdb is "sh".
- The home directories for the acsss, acssa, and acsdb user IDs must reside under the ACSLS installation directory. The default installation directory for acsss is /export/home/ACSSS (referred to as $ACS_Home). The home directories for the ACSLS user IDs are:

  ```
  acsss   /export/home/ACSSS
  acssa   /export/home/ACSSA
  acsdb   /export/home/acsdb
  ```

  If the home directories for the ACSLS user IDs do not match their required locations, please either modify the home directories for these users or delete the user IDs so they are added correctly during the ACSLS installation process.

The following command creates the acsss user on Solaris. You must be logged in as root.

```
useradd -d /export/home/ACSSS -g acsls -s /bin/ksh -c "ACSLS Control Login" acsss
```

The account information for acssa and acsdb:

```
useradd -d /export/home/ACSSA -g acsls -s /bin/ksh -c "ACSLS Operator Login" acsss
useradd -d /export/home/acsdb -g acsls -s /bin/sh -c "ACSLS Database owner" acsdb
```

The following commands modify the acsss, acssa, and acsdb users' home directories. You must be logged in as root.

```
usermod -d /export/home/ACSSS acsss
usermod -d /export/home/ACSSA acssa
usermod -d /export/home/ascdb ascdb
```

**Note –** If the /etc/cron.d/cron.allow file exits, verify that the ACSLS acsss and acsdb user IDs exist within the file. If they don't, add them to the /etc/cron.d/cron.allow file; otherwise the cron jobs fail. Also, if the /etc/cron.d/cron.deny file exists, verify that the acsss and acsdb user IDs are not in it. See "man crontab" for more details.

# Removing any previous version

A change has been introduced in ACSLS 8.1 that affects the group association for users 'acsss', 'acsdb', and 'acssa'. Before installing the STKacsls package for 8.1, you should remove these user accounts as explained in the steps below. These accounts are re-created when you install the new STKacsls package for ACSLS 8.1.

1. Is this a new installation?
   - YES - go to "Using pkgadd" on page 20
   - NO - make sure you exported the database by using the db_export.sh utility command.
2. Shut down ACSLS:

   You need to be logged in as acsss to do this.

   ```
   acsss disable
   ```

   Remove any acsss crontab entries:

   ```
   crontab -r acsss
   ```
3. Remove these user accounts.

   ```
   # userdel acsss
   # userdel acsdb
   # userdel acssa
   ```
4. su to root and perform the following:

   ```
   cd /var/tmp
   rm -rf acsls
   cd /var/mail
   rm -f acsss acsdb acssa
   ```
5. Remove ACSLS, backup and other files:

| ACSLS Version | Procedure |
|---|---|
| ACSLS 6.0 or 6.0.1 | `cd /export/home`<br>`rm -rf ACSSS informix`<br>`cd /export/backup`<br>`rm -rf informix misc` |
| If the server_to_server directory exists | `rm -rf informix misc server_to_server`<br>`cd /`<br>`rm -rf INFORMIXTMP nsr` |
| ACSLS 6.1 to 7.1 | `cd /export/home`<br>`pkgrm STKacsls`<br>`cd /export/backup`<br>`rm -rf informix misc server_to_server`<br>`cd /`<br>`rm -rf INFORMIXTMP`<br>`rm -rf /nsr`<br>`d /var/tmp`<br>`rm -rf acsls` |
| ACSLS 7.2 or higher | `cd /export/home`<br>`pkgrm STKacsls`<br>`rm -rf ACSSS ACSSA acsdb`<br>`cd /export/backup`<br>`rm -rf *` (this removes all contents of the backup directory) |
| ACSLS 8.0.x or higher | `cd /export/home`<br>`pkgrm STKacsls`<br>`rm -rf ACSSS  ACSSA acsdb SSLM`<br>`cd /export/backup`<br>`rm -rf *` |

6. For ACSLS releases before 7.2, remove files under second disk (if installed).

   ```
   cd /second_disk
   ```

   If you installed the second disk in another directory other than `/second_disk`, cd to that directory.

   ```
   rm -rf data
   cd /second_disk/backup
   ```

   If you installed the second disk in another directory other than `/second_disk/backup`, `cd` to that directory.

For ACSLS 6.0 - 7.1, enter:

```
rm -rf informix misc
```

7. Verify that no database processes are running before you begin the install. If in doubt, reboot.

   **Note –** If you are removing ACSLS (and not installing a new version), remove the ACSLS user IDs from `/etc/cron.d/cron.allow`.

# Using pkgadd

## Installing with pkgadd

1. Make sure you are logged in as `root`.
2. If Java version 6 is not installed on your system, download it from the Oracle Technetwork site:

   `http://www.oracle.com/technetwork/java/javase/downloads`

   Download the JDK version 6 for the your Solaris (SPARC or X86) platform following the installation instructions provided.
3. Download the package(s) for ACSLS and, optionally, the SNMP Agent to the `/opt` directory.
   - Download the `STKacsls.zip` file and, optionally, the `STKsnmp.zip` file.
   - `cd` to the `/opt` directory.
   - unzip the package(s).
4. Install using pkgadd:

   ```
   pkgadd -d .
   ```

   **Note –** Make sure you enter a space and a period after `-d`

   `pkgadd` asks what package you want installed. There are two packages and they must be installed in the following order:

   a. `STKacsls`

   b. `STKsnmp` (optional)

   **Note –** ACSLS checks for the required Java version. See "Software Requirements" on page 9.
5. When prompted to select a package, select `STKacsls` and press [[Return]].

   ACSLS is installed in `/export/home/.`
6. Type `y` at the prompt to install setuid/setgid files.
7. Select to continue at the super-user permission prompt.
8. Type `y` at the prompt to install `STKacsls`.

User and group IDs are created (unless they already exist). Files being installed are displayed.

If the `acsss`, `acssa`, or `acsdb` user IDs are not defined with their home directories matching the ACSLS installation directory, the installation script displays a warning, for example:

```
***WARNING*** User acsss already exists, but its home
directory does not match the ACSLS installation directory.
Please change the acsss home directory to
/export/home/ACSSS after the installation.
```

If the `acsss`, `acssa`, or `acsdb` user IDs are created during installation, a default password is not created. You need to go into the admintool to create a password. Follow your sites security policy on setting passwords. These passwords must be maintained. ACSLS will not function if you allow your password to expire.

9. When the package installation is complete, continue the ACSLS installation with `install.sh`.

# Using install.sh

> **Note –** If the `/etc/cron.d/cron.allow` file exits, verify that the ACSLS acsss and acsdb user IDs exist within the file. If they don't, add them to the `/etc/cron.d/cron.allow` file; otherwise the cron jobs fail. Also, if the `/etc/cron.d/cron.deny` file exists, verify that the acsss and acsdb user IDs are not in it. See "man crontab" for more details.

1. Make sure you are logged in as `root`.
2. Change your working directory to the ACSSS/install directory.

   ```
   cd /export/home/ACSSS/install
   ```

3. Execute the installation script:

   ```
   ./install.sh
   ```

4. The script prompts, "Which file system will be used to store database backups: [/export/backup]"

   Press return to accept the default `/export/backup`, or specify an alternate file system.

5. The script prompts, "Do you want to install the ACSLS Graphical User Interface? (y/n)"

   - If you select "n":

     If you select "n", then only non-java services are installed. This limits ACSLS operation to the legacy `cmd_proc` interface and there is no support for SCSI logical library emulation (SMCE).

     If you select "n"initially, but later decide to install the GUI and SMCE, you can run `install.sh` at a later date to include these features. (Be sure to export your database before doing so.)

If you select "n", but the GUI and SMCE had been installed earlier, you are prompted whether to remove them. If you do not want GUI and SMCE operation, then you should respond "y" to remove them. Otherwise these modules remain in tact and the GUI and SMCE operate normally.

If you select "n", proceed to step-7.

- If you select "y":

  If you select “y”, and a prior instance of the ACSLS GUI exists on the system, you are prompted whether to remove it. If this an update to the prior release, you should answer “y” to that prompt to include any updates to the GUI or the SMCE. If you answer “n” to that prompt, then your existing GUI and SMCE software remains in place without any updates. In this case, proceed to step-7.

  If you select “y”, and no prior instance of the ACSLS GUI exists, then the install script proceeds to install the WebLogic Java application server, the ACSLS GUI, and the SMCE.

  If you select “y”, proceed to step-5.

6. The install script now extracts the WebLogic package. Once extracted, it prompts you to assign a password for the `acsls_admin` user. The password you assign must have a minimum of eight characters including alpha and numeric and/or special characters.
7. The script continues by creating the AcslsDomain and boot properties. It starts the WebLogic server, then deploys the ACSLS GUI application, and creates the Acsls administrative group for subsequent users of the GUI.
8. The installation script goes on to create services to be controlled under the Solaris Service Management Facility. It then disables these new services until library configuration has been completed and ACSLS is started.
9. The script proceeds to install any driver associated with the SMCE. If you encounter a “failed to attach” message, this is normally resolved during the next system reboot.
10. The install script asks you to select an HBA to be used as a target port. This operation applies only if you intend to present one or more logical libraries to SCSI (fc) client applications.

    If logical library operation is not your intention, then select "None of these" and proceed to step-10.

    If you intend to configure one or more logical libraries for SCSI direct attach clients, then select the HBA that should be converted from initiator mode to target mode. Ideally, the HBA that you select is connected to the fabric and have visibility to the remote HBA intended as the SCSI client initiator.

    Once the target-mode change has been set for the given HBA, a later reboot is necessary in order to complete the HBA conversion.

11. The install script now checks for any desired SCSI library drivers. It prompts, "Do you want to install the SCSI device driver for SCSI libraries? (y/n):

    This prompt refers to one or more physical libraries that are to be controlled by ACSLS over a fibre or SCSI connection.

    If you answer "n", go to step-11.

If you answer "y", the routine probes each installed fibre HBA, looking for responses from one or more Oracle StorageTek fibre-attached libraries. The script reports all of the libraries that it found.

You are then prompted to declare whether any additional libraries are attached. If there are one or more SCSI-attached libraries not yet discovered by the software, you are asked to specify the target and lun for each one. Associate each LUN to each target with a colon, separating target:LUN pairs with a space.

example: 4:0 5:0 5:1 5:2

Having declared the additional libraries, the script prompts you to verify the list. Make sure that each library is connected and is online. Once complete, an *mchanger* driver instance is created for each attached library.

12. The installation is complete.

    You are reminded to reboot if any new drivers have been installed. You are reminded to import your ACSLS database or to create a new database with `acsss_config`, and to add any new ACSLS GUI users with the `userAdmin.sh` utility.

## Adding Users of the ACSLS GUI

When you completed step-5 above (Using install.sh), you created the `acsls_admin` user. That user can now create accounts and assign passwords for other users of the ACSLS Web-based GUI application. To add a user, follow this procedure:

1. As `root`, go to the `/export/home/ACSSS/install` directory.
2. Run `./userAdmin.sh`
3. Enter the `acsls_admin` password that you assigned in step-5 above (Using install.sh).
4. From the menu, select (1) to add a new user.
5. Enter the ID of the user you wish to add.
6. Assign a password for that user.

   Passwords must contain eight characters with a combination of alpha and numeric or special characters.

   You can use the `userAdmin.sh` utility over time to add users, delete users or to change passwords for all ACSLS GUI users. See `userAdmin.sh` in the Utilities chapter of the *StorageTek ACSLS 8.1 Administrator's Guide*.

## Setting the ACSLS User Passwords

Apart from the GUI, ACSLS uses three passwords to allow access and protect the library management resources. Follow your sites security policy on setting passwords. These passwords must be maintained. ACSLS does not function if you allow your password to expire.

- `acsss` - Provides system administration access to all commands and utilities.
- `acssa` - Provides operator access to the `cmd_proc` commands.

- `acsdb` - This is an internal ID that manages the ACSLS database.

You must set the passwords the first time you login to these IDs. To set the passwords:

1. Login to each of the user IDs.
2. Enter the password at the prompt.

If the `acsss`, `acssa`, or `acsdb` user IDs were not defined with their home directories matching the ACSLS installation directory, and the installation script displayed a warning, modify these user IDs so that their home directories are under the ACSLS base directory.

## Installing and Configuring your Library Hardware

**Caution –** If you imported data from a previous ACSLS release, you must start ACSLS and ensure all LSMs are online before configuring any new library hardware. This initializes the LSM types and protects your imported database information.

**Note –** You do not need to run `acsss_config` if you are importing your previous hardware configuration and are not changing your library hardware.

You must run `acsss_config` or `dynamic config` to configure your libraries if:

- this is a new installation
- you are adding library hardware

Refer to the "Installing and Configuring Your Library Hardware" chapter in the *ACSLS 8.1 Administrator's Guide*.

## Importing the Database

If you have exported the database and control files, you now need to import them.

If you are migrating to ACSLS 8.1 from a previous release and have customized your dynamic or static variables, you need to import them. For information on doing this, refer to Importing the Database in the "Database Administration" chapter of the *StorageTek ACSLS 8.1 Administrator's Guide*.

## Verifying ACSLS Installation

Use the following procedure to verify ACSLS. You should be logged in as `acsss`. This procedure mounts or dismounts a cartridge.

1. Query the server from the `cmd_proc` by entering

   ```
   query server
   ```

   If messages are displayed indicating that the server is in waiting mode, wait for a message indicating that the server is running.

2. Verify that the following are online. You must have at least one of each online. If not, bring them online with the vary command.

```
query port all
query acs all
query lsm all
query drive all
```

3. Do you have at least one cartridge in an LSM?
   - YES - continue with the procedure.
   - NO - Enter a cartridge into an LSM.
4. Mount a volume by entering:

   `mount vol_id drive_id`

   Use the query drive command to get the ID of an available drive and the query volume command to get the ID of a library cartridge. Refer to the "Installing and Configuring Your Library Hardware" chapter in the *ACSLS Administrator's Guide.*
5. Did you see a message indicating a successful mount?

   A successful mount message is:

   `Mount: vol_id mounted on drive_id`

   - YES - Procedure is complete.
   - NO - If an error message appears, run this verification procedure again, ensuring that you specified a valid, available drive and a library cartridge. If the mount/dismount still fails, call StorageTek for assistance.
6. Dismount the cartridge by entering:

   `dismount vol_id drive_id force`

   where `vol_id` is the volume and `drive_id` is the drive you specified in Step-4.

## Auditing the Library

The last step of your installation is auditing your libraries. You also need to audit your libraries if:

- This is a new installation.
- You are adding new libraries to an existing configuration.

Refer to "Auditing the Library" in the Library Management chapter of the *StorageTek ACSLS 8.1 Administrator's Guide*.

# Uninstalling ACSLS 8.1

> **Note –** Make sure you exported the database by using the `db_export.sh` utility command.

To uninstall ACSLS:

1. Log in as `acsss`.
2. Enter `acsss shutdown`.
3. Remove package:

- Log in as `root`.
- Enter `pkgrm STKacsls`

4. Perform a file cleanup for the disk:
   - `cd /export/home`
   - `rm -rf ACSSS SSLM acsdb wlinstall ACSSA Oracle`
   - `cd /export/backup`
   - `rm -rf *` (this removes all contents of the backup directory)
5. Reboot.

# Uninstalling any SCSI Media Changer Drivers

1. Login as `root`.
2. Remove the SCSI Media Changer (mchanger) drivers.

   ```
   #rem_drv mchanger
   ```
3. Remove mchanger.conf.

   ```
   #rm /usr/kernel/drv/mchanger.conf
   ```
4. Remove any mchanger device links.

   ```
   #rm /dev/mchanger*
   ```
5. Remove package directories.

   ```
   #rm -rf /opt/STKchanger
   ```

# Index