StorageTek™
ACSLS

AUTOMATED CARTRIDGE SYSTEM LIBRARY SOFTWARE

INSTALLATION GUIDE

Part Number: 316120702
Version: 7.3

Automated Cartridge System Library Software

Installation Guide

Version: 7.3

We welcome your feedback. Please contact the Sun Learning Services Feedback System at:

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Please include the publication name, part number, and edition number in your correspondence if they are available. This expedites our response.

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Summary of Changes

EC released document table.

EC	Date	Edition	Revision	Description
EC000249	April 2008	First	A	ACSLS 7.3 provides support for the SL3000.
EC000758	November 2008	Second	BA	Supports ACSLS 7.3 PUT0801.

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Preface

■ About this Book

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

Audience

This Installation Guide is for the individual responsible for installing 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

About the Software

This guide supports ACSLS 7.3.

Conventions for Reader Usability

Conventions are used to shorten and clarify explanations and examples within this book.

Typographic

The following typographical conventions are used in this book:

- **Bold** is used to introduce new or unfamiliar terminology, or it's used in steps to indicate either an action or a decision the user has to make.

- `Letter Gothic` is used to indicate command names, filenames, and literal output by the computer.

- `Letter Gothic Bold` is used to indicate literal input to the computer.

- *`Letter Gothic Italic`* is used to indicate that you must substitute the actual value for a command parameter. In the following example, you would substitute your name for the "username" parameter.

    `Logon username`

- A bar (|) is used to separate alternative parameter values. In the example shown below either username or system name must be entered.

    `Logon` *`username`*|*`systemname`*

- Brackets [ ] are used to indicate that a command parameter is optional.

- Ellipses (...) are used to indicate that a command may be repeated multiple times.

- This guide shows all ACSLS commands in lowercase. You can, however, enter these commands in all lowercase, all uppercase, or any combination of uppercase and lowercase. Single underlines show minimum command abbreviations. For example, aud and au are valid forms of the audit command.

Keys

Single keystrokes are represented by double brackets [[ ]] surrounding the key name. For example, press [[ESC]] indicates that you should press only the escape key.

Combined keystrokes use double brackets and the plus sign (+). The double brackets surround the key name and the plus sign is used to add the second keystroke. For example, press [[ALT]]+C indicates that you should press the alternate key and the C key simultaneously.

Enter Command

The instruction to "press the <Enter> key" is omitted from most examples, definitions, and explanations in this book.

For example, if the instructions asked you to "enter" `Logon pat`, you would type in `Logon pat` *and* press <Enter>.

However, if the instructions asked you to "type" `Logon pat`, you would type in `Logon pat` and you would *not* press <Enter>.

Symbols

The following symbols are used to highlight text in this book.

> **WARNING:** **Information necessary to keep you from damaging your hardware or software.**

> **CAUTION:** **Information necessary to keep you from corrupting your data.**

Hint: Information that can be used to shorten or simplify your task or they may simply be used as a reminder.

Note: Information that may be of special interest to you. Notes are also used to point out exceptions to rules or procedures.

Related Documentation

ACSLS Documentation

The *ACSLS Documentation CD-ROM*, is automatically shipped with the product package and is provided in PDF format. These documents are:

- *ACSLS 7.3 Product Information*

- *ACSLS 7.3 Administrator's Guide*

- *ACSLS 7.3 Messages*

- *ACSLS 7.3 Installation Guide*

ACSLS Information on the Sun Website

In addition to the PDF collections on the *ACSLS Information CD-ROM*, the Sun website provides PDF collections for ACSLS. The URL is:

http://docs.sun.com

Preface

Customer Contacts

■ Customer Support

Customer support is available 24 hours a day, seven days a week, to customers with Sun or StorageTek maintenance contracts and to Sun employees.

■ Customer-initiated Maintenance

Customer-initiated maintenance begins with a telephone call from you to Sun StorageTek Support. You receive immediate attention from qualified Sun personnel, who record problem information and respond with the appropriate level of support.

To contact Sun StorageTek Support about a problem:

1. Call:

   1-800-872-4786

   (1-800-USA-4SUN)

2. Describe the problem to the call taker. The call taker will ask several questions and will either route your call to or dispatch a support representative.

If you have the following information when you place a service call, the process will be easier:

Account name	
Site location number/Sun contract number	
Contact name	
Telephone number	
Version of ACSLS	
OS platform	
Libraries	

Problem description

■ Accessing Software Updates

The latest software updates for Solaris and ACSLS are always available on SunSolve.

Solaris Updates

To access the latest Solaris Patch cluster, navigate to http://sunsolve.sun.com.

1. Select *patches and updates.*

2. Select *recommended patch clulsters*.

3. Select *Solaris-10 recommended patch cluster.*

4. Login and follow the instructions for downloading the software.

ACSLS Updates

To access the latest PUTs or PTFs for ACSLS, navigate to http://sunsolve.sun.com.

1. Select *patches and updates*.

2. Select *Sun StorageTek products*.

3. Under 'Software/Library Control', select *ACSLS/ACSLS HA*.

4. Under 'ACSLS 7.3', select your particular platform.

5. Navigate to your specific desired Software Update.

■ Sun's Worldwide Offices

You may contact any of Sun's worldwide offices to discuss complete storage, service, and support solutions for your organization. You can find address and telephone number information on Sun's external Web site at:

http://www.sun.com/worldwide/

Overview

<div style="text-align:right">**1**</div>

Automated Cartridge System Library Software (ACSLS) is Sun StorageTek's server software that controls a Sun StorageTek tape library. 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 7.3 with PUT0801 uses the relational database PostgreSQL. The change to use PostgreSQL only changes the internal database used by ACSLS. It has no impact on the ACSLS API client interface or cmd_proc. The porting to use this new database includes basic database functions, back and restore utilities, as well as the import/export utility.

With ACSLS 7.3, we specify a minimum memory requirement of 512MB and a swap requirement of 1GB (on disk). This is a change from the current ACSLS minimum which is 256MB and 512MB of swap.

Please check the Sun website for any maintenance releases.

Software Requirements

- The minumum supported Solaris version is Solaris-10, Update-4 (08/07). A supported version of PostgreSQL is included as part of the standard Solaris installation and no special installation procedures are necessary for PostgreSQL. If you are running in Solaris Zones, be sure to apply the latest Solaris patch cluster.

- AIX 5.3 Technology Level (TL) 6 and AIX 6.1 with PostgreSQL 8.1.4

  PostgreSQL 8.1.4 is not bundled with AIX, but is included with the ACSLS 7.3 CD. It must be installed separately.

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Installing ACSLS on Solaris

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This chapter describes the installation procedure for ACSLS 7.3 and provides pointers for applying the current maintenance level update, PUT0801. If you have already installed ACSLS 7.3, then you can go directly to the instructions for installing PUT0801.   These instructions can be found in the README.txt file on the PUT0801 CD-ROM. You can also access PUT0801 and its associated installation instructions from SunSolve. For instructions, refer to "Accessing Software Updates" on page 2. The remainder of this chapter offers step-by-step instructions for installing ACSLS 7.3.

This chapter describes procedures for installing ACSLS 7.3.

Note: ACSLS supports ONLY the Common Desktop Environment (CDE).

This chapter discusses:

■ Installing ACSLS 7.3

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

Table 1. Installation Tasks

Task	Page
1. Have all your license key information ready	Refer to the License Key chapter in the *ACSLS 7.3 Administrator's Guide*.
2. Export the database if you are upgrading from a previous version of ACSLS This lets you migrate the database and control files to the new version of ACSLS.	5
3. Install the Solaris operating system. The latest Solaris patch cluster is recommended. The patch update is *required* if you are using Solaris zones.	5
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■ Exporting the Database

If you are upgrading from a prior release, you need to export the database and control files. If you have customized your dynamic or static variables, you need to also export them.

For more information and procedures, refer to Exporting the Database in the "Database Administration" chapter of the *ACSLS 7.3 Administrator's Guide*

■ Installing Solaris

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

Note: ACSLS requires that there be a minimum memory requirement of 512MB as well as following be created:

- `swap` - 1GB (minimum)
- `/export/home` - 2 GB (minimum)
- `/export/backup` - 3 GB (minimum)

If you are using:

- UNIX File System (UFS), this is usually slices 5 and 6
- ZFS - two zfs files must be mounted: `/export/home` and `/export/backup`

Preparing for ACSLS 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 Sun StorageTek libraries, such as Cimmaron, Powerhorn, and the L5500 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 a SL8500 library or a 9310 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`, will fail unless all LMUs and LSMs are fully configured, powered on, and ready.

7. If you have any communication problems refer to "Troubleshooting" chapter in the *ACSLS Administrator's Guide.*

8. If you intend to use removable media for database backup, have a blank cartridge available for your backup tape device to complete the configuration process.

9. ACSLS requires specific user IDs. If these user IDs are not defined before ACSLS installation, ACSLS creates them. 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	staff
acssa	staff
acsdb	acsdb

   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 staff -s /bin/ksh -c "ACSLS Control Login" acsss
```

The account information is:

```
acsss   -d /export/home/ACSSS-g staff-c "ACSLS Control Login"-s /bin/ksh
acssa   -d /export/home/ACSSA-g staff-c "ACSLS SA Login"-s /bin/ksh
acsdb   -d /export/home/acsdb-g acsdb-c "ACSLS Database Owner" -s /sbin/sh
```

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/ascbd ascbd
```

Removing any previous version

1. Have your license key available.

2. Is this a new installation?

YES	Go to "Using pkgadd" on page 9.
NO	Make sure you exported the database by using the db_export.sh utility command.

3. Shut down ACSLS:

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

   a. Enter the following:

      `idle` (from a cmd_proc)

      `kill.acsss` (from a command prompt)

   b. Enter the following:

      • If you are upgrading from ACSLS 6.0 and later:

        db_command stop

4. Login as `root` and remove ACSLS, backup and other files:

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

5. 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 and later enter:

rm -rf informix misc

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

■ **Using pkgadd**

1. Log in as `root`.

2. Insert the ACSLS 7.3 CD.

3. In a terminal window or at the command prompt, enter

   cd /cdrom/cdrom0

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.

5. When prompted to select a package, select STKacsls and press [[Return]].

6. Enter `y` or `n` at the prompt to install ACSLS in the default directory `/export/home/`

   Use the default directory `/export/home` or enter the directory where you want ACSLS installed.

7. Type `y` to at the prompt to install setuid/setgid files.

8. Select to continue at the super-user permission prompt.

9. Type `y` to 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. These passwords must be maintained or set to never expire.

10. Eject the CD.

    eject

> **Note:** If you want to manage Sun StorageTek SCSI libraries within Solaris Zones you must also install the STKchanger driver package in the global zone. See "Running ACSLS within Solaris Zones" on page 15.

Installing ACSLS Software via install.sh

1. Change directories:

   `cd /export/home/ACSSS/install`

2. To initiate the installation shell script, enter

   `./install.sh`

   If shared memory settings have ***not*** been defined, you are prompted to allow the script to set shared memory and reboot the server:

   `This server is not set with shared memory required for ACSLS and the Database.`

   `Set shared memory and reboot the server to take effect at kernel level? (y or n):`

   Respond *y* to the prompt.

   The server reboots.

   When the server comes back, log in as `root`, cd to /export/home/ACSSS/install (if you are not already in it), and restart install.sh.

3. Enter the database backup directory.

   By default, this is `/export/backup.`

4. Respond *y* to the prompt for automatic startup on reboot.

   > **Note:** By selecting "yes" to allow ACSLS to automatically start at system boot time, you also allow ACSLS to automatically shutdown prior to a system shutdown or reboot. This is recommended and will prevent database errors from being written to the `acsss_event.log` when the system is rebooted.I

Option: If you have a SCSI or fibre-attached library continue with step 5.

5. Respond (*y* or *n*) to the prompt for installing a SCSI device driver for SCSI libraries.

   `Do you want to install the scsi device driver for SCSI libraries? (y or n):`

YES	Refer to the following example for the prompts you need to answer.

   > **Note:**

Sun StorageTek libraries attached behind supported Fibre host-bus adapters (HBAs) can be auto-sensed by ACSLS using the capabilities included in supported HBA software. Supported HBAs currently include all contemporary Emulex, Qlogic, and Sun-branded HBAs. The ACSLS SCSI driver installation utility, *install_scsi_sol.sh* can configure multiple mchanger devices easily without the need for explicit user interaction. Libraries behind non-supported HBAs continue to function in the traditional manner where you declare the target and LUN address for each attached library. The installation utility then displays each library for which an mchanger instance has been created.

Example

```
Installing 64-bit mchanger
Probing for fibre-attached libraries...

One library found:
  STK L180 V-0310   Target 0 LUN 0

Are there additional libraries attached? (y or n): y

Enter the target:LUN pair corresponding to each library.
Separate target:LUN pairs with a space.
example: 4:0 5:0 5:1 5:2

==> 1:0 1:1

Use target 1 LUN 0
Use target 1 LUN 1

Is this correct? (y or n): y

Instances of 'mchanger' in /dev will be
built sequentially starting with mchanger 0.

Building an mchanger instance for each library...
Successfully built the following...
        /dev/mchanger0: STK L180 174-cells 4-drives
        /dev/mchanger1: STK L700 384-cells 8-drives
        /dev/mchanger2: STK SL500 65-cells 2-drives
```

Library driver installation is complete. You are now ready to set passwords for each user ID.

Setting the ACSLS User Password

These passwords must be maintained or set to never expire. You need to set the following password to prevent a security exposure: `acsss`, `acssa`, and `acsdb`.

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.

The following commands modify the above 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/ascbd ascbd
```

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 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 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 7.3 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 *ACSLS 7.3 Administrator's Guide*.

Entering your License Key Information

You must enter a license key to activate ACSLS. To avoid unnecessary delays obtain your license key before you begin the ACSLS installation.

Refer to the chapter "ACSLS License Key" in the *ACSLS 7.3 Administrator's Guide* for procedures.

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 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*

   Hint: 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 Sun 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.

*   If you are adding new libraries to an existing configuration.

■ Uninstalling ACSLS 7.3

To uninstall ACSLS:

1. Log in as acsss.

2. Shut down ACSLS.

    ```
    kill.acsss
    ```

3. Shut down the ascbd database:

    ```
    db_command stop
    ```

4. Remove pkgadd:

    *   Log in as root.

    *   Enter pkgrm STKacsls

5. Perform a file cleanup for the disk:

    ```
    cd /export/home
    ```

    If you installed ACSLS in another directory other than /export/home, cd to that directory.

    *   rm -rf ACSSS ACSSA acsdb

- `cd /export/backup`
- rm -rf * (this removes all contents of the backup directory)

6. Reboot.

■ Running ACSLS within Solaris Zones

Management of Sun StorageTek SCSI libraries within Solaris zones is supported by ACSLS when you install the STKchanger driver package in the global zone.

Zone technology is ideal for environments that consolidate a number of applications on a single server, thus allowing you to create multiple virtual environments on a single system so applications can safely run without endangering each other. Zone partitioning allows you to isolate these software applications and services by setting up boundaries between zones so that you can dynamically control application and resource priorities.

There are two types of zones:

- Global zone

  A global zone is the default zone for the system and is used for system-wide administrative control. It is from this zone, that non-global zones can be configured.

  Do **not** install ACSLS in the global zone.

  The STKchanger resides in the global zone.

- Non-global zone (container)

  Non-global zones partitioning allows you to create multiple private execution environments and to dynamically control applications and resources. This isolation prevents processes that are running in one zone from monitoring or affecting processes that are running in other zones. Even a process running with superuser credentials cannot view or affect activity in other zones.

  The ACSLS server resides in the non-global zone(s).

  Note: One instance of ACSLS is supported for each non-global zone. ACSLS **must be** the only application running in that particular container.

  Refer to the Sun *System Administration Guide: Solaris Containers-Resource Management and Solaris Zones* for information on configuring and managing Solaris zones (containers).

To support a container environment, the STK SCSI Media Changer drivers and utilities now reside in a standalone package. This is due to the fact that devices for any container environment are installed and controlled at the

global zone level. Prior to Solaris 10, the mchanger device drivers were included within the ACSLS application only. Since Solaris 10 includes the ability to create several different server instances on one hardware platform, and in order to make mchanger devices available on non-global containers, the mchanger devices must first be created within the global zone and then made available to the container. Since only the mchanger package is required within the global zone, a new package, STKchanger, has been created. This allows mchanger to be installed in the global zone without having to install ACSLS.

To do this you need to:

• Install STKchanger in the global zone.

• Make it available to the proper container.

• Install ACSLS within the non-global container.

• Use the mchanger device that is available within the non-global zone.

Installing the STKchanger

STKchanger is installed using the `pkgadd` commands and requires that it be installed as the user root.

1. Log in as `root` to the Global Zone.

2. Insert the ACSLS CD

3. In a terminal window or at the system prompt, enter

        cd /cdrom/cdrom0

4. Install using pkgadd:

        pkgadd -G -d .

    Note: A space and a period must be entered after the command.

5. When prompted to select a package, select STKchanger and press [[Return]].

    The STKchanger package is then installed in `/opt/STKchanger`.

6. Close and reopen the window.

7. Eject the CD.

Connecting to a library

1. Log in as `root` to the Global Zone.

2. Change to the STKchanger installation directory

        cd /opt/STKchanger/bin

3. Run install.sh

```
./install.sh
```

Example:

```
Installing 64-bit mchanger
Probing for fibre-attached libraries...

One library found:
  STK L180 V-0310   Target 0 LUN 0

Are there additional libraries attached? (y or n): y

Enter the target:LUN pair corresponding to each library.
Separate target:LUN pairs with a space.
example: 4:0 5:0 5:1 5:2

==> 1:0 1:1

Use target 1 LUN 0
Use target 1 LUN 1

Is this correct? (y or n): y

Instances of 'mchanger' in /dev will be
built sequentially starting with mchanger 0.

Building an mchanger instance for each library...
Successfully built the following...
        /dev/mchanger0: STK L180 174-cells 4-drives
        /dev/mchanger1: STK L700 384-cells 8-drives
        /dev/mchanger2: STK SL500 65-cells 2-drives
```

In this example, you have three available mchanger devices. You can now assign them to specific non-global zones (containers) using the zonecfg command.

Note: When adding or removing library connections (mchangers) from the Global Zone, the corresponding non-global zone (container) that is affected must be rebooted to realize the change that was made. If you do not do this, the mchanger in the container can be corrupted with invalid information.

Refer to the Sun *System Administration Guide: Solaris Containers-Resource Management and Solaris Zones* for information on the zonecfg command.

The following utilities included within the STKchanger package are:

• showDevs.sh

• probeFibre.sh

Refer to the "Utility" chapter in the *ACSLS Administrator's Guide.*for more information about these utilities.

Uninstalling the STKchanger and any SCSI Media Changer Drivers

1. Login as `root` to the global zone

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 the STKchanger package.

   `#pkgrm STKchanger`

6. Remove package directories.

   `#rm -rf /opt/STKchanger`

Installing ACSLS on AIX

3

This chapter describes the procedures for installing ACSLS on AIX. ACSLS provides Dynamic Logical Partitioning (LPAR). ACSLS must be the only application running in any LPAR.

> **Note:** To apply PUT0801A
>
> To apply PUT0801A after installing ACSLS 7.3, refer to the README.txt file. This document is included with the CD-ROM, as well as with the maintenance tar file on the Sun website.

This chapter discusses the steps for installing ACSLS 7.3 and AIX, as well as removing them:

■ Exporting the Database

If you are upgrading from a prior release, you need to export the database and control files. If you have customized your dynamic or static variables, you need to also export them.

For more information and procedures, refer to Exporting the Database in the "Database Administration" chapter of the *ACSLS 7.3 Administrator's Guide.*

■ Installing AIX

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

Note: ACSLS requires that there be a minimum memory requirement of 512MB as well as following be created:

- `swap` - 1GB (minimum)

- `/export/home` - 2 GB (minimum)

- `/export/backup` - 3 GB (minimum)

Preparing for ACSLS 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 port.

   Most contemporary libraries are TCP/IP or SCSI/Fibre library-attached. Legacy Sun StorageTek libraries, such as Cimmaron, Powerhorn, and the L5500 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 a SL8500 library or a 9310 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`, will fail unless all LMUs and LSMs are fully configured, powered on, and ready.

7. If you have any communication problems refer to the Troubleshooting chapter in the *ACSLS Administrator's Guide*..

8. If you intend to use removable media for your ACSLS database backup, have a blank cartridge available for your backup tape device to complete the configuration process.

9. ACSLS requires specific user IDs. If these user IDs are not defined before ACSLS installation, ACSLS creates them. 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	staff
acssa	staff
acsdb	acsdb

   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 be 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 AIX. (You must be logged in as `root`.)

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

The account information is:

```
acsss   -d /export/home/ACSSS-g staff-c "ACSLS Control Login"-s /bin/ksh
acssa   -d /export/home/ACSSA-g staff-c "ACSLS SA Login"-s /bin/ksh
acsdb   -d /export/home/acsdb-g acsdb-c "ACSLS Database Owner"-s /sbin/sh
```

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/acsdb acsdb
```

Removing any previous version

1. Have your license key available.

2. Is this a new installation?

YES	Go to "Installing ACSLS and PostgreSQL Packages" on page 24.
NO	Make sure you exported the database by using the db_export.sh utility command.

3. Shut down ACSLS:

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

   a. Enter the following:

   `idle` (from a cmd_proc)

   `kill.acsss` (from a command prompt)

   b. Enter the following:

   • If you are upgrading from ACSLS 6.0 and later:

   db_command stop

   crontab -r (removes crontab entries)

4. Login as `root` and remove ACSLS, PostgreSQL (if appropriate) backup and other files.

   • If your previous installation of ACSLS is release 6.1 through 7.1, remove the ACSLS package using `SMIT`.

   • If your previous installation of ACSLS is release 7.2 or greater, remove the ACSLS and PostgreSQL packages using `SMIT`.

ACSLS Version	Procedure
ACSLS 6.0 or 6.0.1	• cd /export/home • rm -rf ACSSS informix • cd /export/backup • rm -rf informix misc
If the server_to_server directory exists	• rm -rf informix misc server_to_server • cd / • rm -rf INFORMIXTMP nsr • Remove acsls.rte using SMIT
ACSLS 6.1 to 7.1	• cd /export/home • rm -rf ACSSS ACSSA informix • cd /export/backup • rm -rf informix misc server_to_server • cd / • rm -rf INFORMIXTMP • rm -rf /nsr • cd /var/tmp • rm -rf acsls • Remove acsls.rte using SMIT
ACSLS 7.2 or higher	• cd /export/home • rm -rf ACSSS ACSSA acsdb • cd /export/backup • rm -rf * (this removes all contents of the backup directory) • Remove acsls.rte using SMIT • Remove PostgreSQL using SMIT

5. 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 to 7.1 enter:

rm -rf informix misc

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

■ Installing ACSLS and PostgreSQL Packages

ACSLS 7.3 and PostgreSQL 8.1.4 must be installed separately. You must install PostgreSQL 8.1.4 before you install ACSLS 7.3. If you are running a prior version, you must uninstall the prior version of PostgreSQL and install PostgreSQL 8.1.4 before you can install ACSLS. PostgreSQL 8.1.4 is included with the ACSLS 7.3 CD.

Installing PostgreSQL 8.1.4 via SMIT

1. Log in as `root`.

2. Insert the ACSLS CD into the CDROM drive.

   `mount -v cdrfs -o ro /dev/cd0 /cdrom`

3. Install the PostgreSQL 8.1.4 using SMIT:

   a. At the prompt, enter:

      `smitty`

      This brings up the System Management menu.

   b. Select `Software Installation and Maintenance -> Install and Update Software -> Install Software`.

      The "Install Software" screen displays.

   c. In the "INPUT device directory for software" field, enter

      `/cdrom`

   d. Press Enter

      The screen refreshes, asking for "SOFTWARE to Install." Press [[F4]].

   e. Arrow down to the "Software to Install" field and enter `postgresql.rte` and press [[F7]].

   f. Press <Enter> three times.

   g. Wait for the OK prompt at the top of the screen, then press [[F10]] to exit.

      You receive a successful installation message. You are now ready to install ACSLS 7.3.

Installing ACSLS 7.3 via SMIT

1. At the prompt, enter:

   ```
   smitty
   ```

   This brings up the System Management menu.

2. Select `Software Installation and Maintenance -> Install and Update Software -> Install Software.`

   The "Install Software" screen displays.

3. In the "INPUT device directory for software" field, enter

   ```
   /cdrom
   ```

4. Press Enter

   The screen refreshes, asking for "SOFTWARE to Install." Press [[F4]].

5. Arrow down to the "Software to Install" field and enter `acsls.rte` and press [[F7]].

6. Arrow down to the "AUTOMATICALLY install requisite software" field and select **no**.

7. Press <Enter> three times.

8. Wait for the OK prompt at the top of the screen, then press [[F10]] to exit.

   You receive a successful installation message.

Installing ACSLS Software via install.sh

1. Change directories:

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

2. To initiate the installation shell script, enter

   ```
   ./install.sh
   ```

   If shared memory settings have **not** been defined, you are prompted to allow the script to set shared memory and reboot the server:

   ```
   This server is not set with shared memory required for
   ACSLS and the Database.
   ```

   ```
   Set shared memory and reboot the server to take effect
   at kernel level? (y or n):
   ```

   Respond `y` to the prompt.

   The server reboots.

When the server comes back, log in as `root`, cd to `/export/home/ACSSS/`install (if you are not already in it), and restart install.sh.

3. Enter the database backup directory.

   By default, this is `/export/backup.`

4. Respond `y` to the prompt for automatic startup on reboot.

   Note: By selecting "yes" to allow ACSLS to automatically start at system boot time, you also allow ACSLS to automatically shutdown prior to a system shutdown or reboot. This is recommended and will prevent database errors from being written to the `acsss_event.log` when the system is rebooted.I

Option: If you have a SCSI or fibre-attached library continue with step 5.

5. Respond (`y` or `n`) to the prompt for installing a SCSI device driver for SCSI libraries.

   ```
   Do you want to install the scsi device driver for SCSI
   libraries? (y or n):
   ```

   If you select **y**, continue answering the prompts.

   Note:

   Sun StorageTek libraries attached behind supported Fibre host-bus adapters (HBAs) can be auto-sensed by ACSLS using the capabilities included in supported HBA software. Supported HBAs currently include all contemporary Emulex and IBM-branded HBAs. The ACSLS SCSI driver installation utility, *install_scsi_aix.sh* can configure multiple mchanger devices easily without the need for explicit user interaction. Libraries behind non-supported HBAs continue to function in the traditional manner where you declare the target and LUN address for each attached library. The installation utility then displays each library for which an mchanger instance has been created.

   Installation is complete.

   Exit out. You are now ready to set passwords for each user ID.

Setting the ACSLS User Password

These passwords must be maintained or set to never expire. You need to set the following password to prevent a security exposure: `acsss`, `acssa`, and `acsdb`.

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.

The following commands modify the above 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/acsdb acsdb
```

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 to configure your libraries if:

• this is a new installation,

• you are adding library hardware

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

Importing the Database

In the following cases, you need to import the data from a previous ACSLS release. They are:

• If you are migrating from a previous release.

• If you are re-installing ACSLS.

If you are migrating to ACSLS 7.3 from a previous release and have customized your dynamic or static variables, you need to import them.

Entering your License Key Information

You must enter a license key to activate ACSLS. To avoid unnecessary delays obtain your license key before you begin the ACSLS installation.

Refer to the "ACSLS License Key" chapter in the *ACSLS Administrator's Guide* for procedures.

Verifying Your 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 recovery 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`*

   Hint: 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 "Command References" 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 Sun 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.

- If you are adding new libraries to an existing configuration.

■ Uninstalling ACSLS 7.3 and PostgreSQL 8.1.4

When you remove ACSLS 7.3, you must also remove PostgreSQL 8.1.4.

Uninstalling ACSLS 7.3

To remove ACSLS 7.3:

1. Log in as `acsss`.

2. Shut down ACSLS.

   `kill.acsss`

3. Shut down the acsdb database:

   `db_command stop`

4. Remove ACSLS 7.3 using the Package Manager:

   - Log in as `root`.

   - Enter the System Management Interface Tool (SMIT):

     `smitty`

   This brings up the `System Management` menu.

   - Select `Software Installation and Maintenance->Software Maintenance and Utilities->Remove Installed Software`.

   - Enter the `SOFTWARE name`:

     `acsls.rte`

   - Press <Enter>.

   - Press <Enter> again to confirm.

A series of messages showing the progress of the removal of ACSLS appear.

5. Perform a file cleanup for the primary disk:

`cd /export/home`

If you installed ACSLS in another directory other than /export/home, cd to that directory.

- `rm -rf ACSSS ACSSA acsdb`
- `cd /export/backup`
- `rm -rf * (this removes all contents of the backup directory)`

Uninstalling PostgreSQL 8.1.4

To remove PostgreSQL:

1. Log in as `root`.

2. Enter the System Management Interface Tool (SMIT):

   `smitty`

   This brings up the `System Management` menu.

3. Select `Software Installation and Maintenance->Software Maintenance and Utilities->Remove Installed Software.`

4. Enter the `SOFTWARE name:`

   `postgresql.rte`

5. Press <Enter>.

6. Press <Enter> again to confirm.

   A series of messages showing the progress of the removal of PostgreSQL 8.1.4 appear.

7. Perform a file cleanup for the primary disk:

   `cd /export/home`

   If you installed ACSLS in another directory other than /export/home, cd to that directory.

   - `rm -rf ACSSS ACSSA acsdb`
   - `cd /export/backup`
   - rm -rf * (this removes all contents of the backup directory)

8. Exit and reboot.

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