StorageTek Automated Cartridge System Library Software

Installation

Version 8.0.2

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Revision History

Date	Revision	Description
March 2011	E21610-01	This release supports: • Redundant Electronics • Logical Libraries • Graphical User Interface • T10000C • IPv6 network connections to the SL3000 library. Beginning with ACSLS 7.3.1, enforcement of the right-to-use license is no longer employed in ACSLS, and no longer checks for a valid license key.
July 2011	E21610-02	This release supports: • IPv6 network connections to both the SL3000 and SL8500 libraries.
December 2011	E21610-03	Updated the Solaris chapter.

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

Please check the website for any maintenance releases.

ACSLS software you download from the Oracle e-delivery website or is ordered and delivered on a CD comes in a zipped ISO image. Refer to the `Download_ISO.txt file for` instructions for upzipping and downloading the ACSLS software.

> **Note –** ACSLS 8.0.1 must be installed before you apply ACSLS 8.0.2 maintenance.
>
> Refer to the instructions provided in the ACSLS_README.txt file included in
> 143793-01 or 143783-01 for installing and uninstalling ACSLS 8.0.2.

Software Requirements

- ACSLS 8.0.2 has been fully tested and verified on Oracle's Sun SPARC and X86 platforms running Solaris-10 (U6 10/2008, U7 05/2009, U8 10/2009, or U9 9/10). Other operating systems, including AIX and virtual environments, are not tested or supported.
- Because of special device driver requirements to enable virtual libraries, ACSLS 8.0.2 cannot run in a Solaris Zoned environment. However, ACSLS 8.0.2 can run in a logical domain on a SPARC system with Chip Multithreading (CMT) technology. ACSLS 8.0.2 HA systems must be installed on their own dedicated platform pair.
- The graphical user interface and SMCE service in ACSLS 8.0.2 requires Java 1.6 U14 and is included on the ACSLS CD for easy installation. You cannot install ACSLS unless this requirement is met. 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`.

  The system should reply with "java version 1.6.0_14"

System Requirements

- Memory: 2GB minimum
- Swap: Configure swap to be no less than the configured amount of physical memory.
- File systems:

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

  - `/export/home` - 5GB or greater
  - `/export/backup` - 5GB or greater
- Optional Fibre card.

  A Fibre card is optional. However, a contemporary QLogic Fibre HBA (4GB or higher) is required if:

  - A dedicated Fibre port is required to operate in target mode for client communication to logical libraries.
  - Another port is required to act as an initiator for communication with SCSI-attached libraries, such as the SL500 or SL700.

  Note: If neither of these is required, you do not need a Fibre card. However, during normal GUI operations a critical error icon shows up in the Web Console. Ignore this error.

Browser Requirements:

`ACSLS` 8.0.2 has been tested and fully verified on the following browsers:

- Internet Explorer 8.x
- FireFox 2.x, 3.0.x
- Chrome 4.x

There are known issues with the following browsers:

- Internet Explorer 7.x mis-interprets line breaks in drop-down menus as legitimate selections.
- Firefox 3.5.x and 3.6.x are unable to auto refresh the ACSLS Tree menu (left frame). The frame can be manually refreshed as follows: Right-click in the left frame, select This-Frame -> Reload Frame.

  This issue can be resolved by installing the FireBug Add-on to FireFox.

Co-Hosting

Co-hosting other applications with ACSLS 8.0.2 is supported on machines that support logical domains (LDOMs). Because ACSLS drivers are attached to hardware devices, ACSLS must be installed in the primary domain. Co-hosting is otherwise not supported with ACSLS.

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Installing ACSLS on Solaris

ACSLS 8.0.2 is comprised of both the ACSLS 8.0.1 Base software, as well as the ACSLS 8.0.2 Update.

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.

What's in this Chapter

This chapter describes procedures for installing ACSLS 8.0.1. This chapter discusses:

ACSLS 8.0.1 Installation Tasks

The following table provides a summary of the steps you perform for installing ACSLS 8.0.1:

TABLE 2-1 Installation Tasks

Task	Page
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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 8.0.2 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. We cannot provide a full list of required services.

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

- Two separate file systems must exist and be mounted: `/export/home` and `/export/backup`.
- `/export/home` and `/export/backup` must be mounted to allow SETUID
- Client services must enabled.
- The Java Web Console packages must be installed. They are installed in a standard Solaris install. These packages must be installed:
  - SUNWmcon
  - SUNWmconr
  - SUNWmcos
  - SUNWmcosx
  - SUNWmctag
- `umask` must be 022.

Preparing for ACSLS 8.0.1 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 8.0.2 Administrator's Guide*.
9. 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.
10. 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`	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
```

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

1. Is this a new installation?
   - YES - go to "Using pkgadd" on page 19
   - 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. 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`
	`d /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)

4. 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
   ```

5. 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

Solaris 10 includes a file called `/etc/release` and the ACSLS installation uses this file to determine if the OS level is current enough to support ACSLS 8.* (a minimum of Solaris 10 - U6 is supported). The update level is checked on Solaris SPARC during the "checkinstall" routine which is performed as part of the `pkgadd` portion of the ACSLS installation. The old format of the first line looked like this (for X86).

```
Solaris 10 5/09 s10x_u7wos_08 X86
```

ACSLS looks for the first line and then the fourth field to determine the update level (in the above example it is update 7).

Solaris 10 - update 9 added the brand identifier, "Oracle", to this string which changed the field number for which it searches. This causes the installation of ACSLS to fail on update 9 or above. This is the new format (for X86).

```
Oracle Solaris 10 9/10 s10x_u9wos_14a X86
```

If you want to install ACSLS 8.0.1/8.0.2 on Solaris 10 - U9 and do not want to wait until the next version of ACSLS is released (fixing this problem), use the following workaround.

> **Note –** This is only needed for Solaris 10 - U9 on SPARC since ACSLS 8.0.1/8.0.2 Solaris X86 installation does not perform this check.

1. Prior to running `pkadd`, edit `/etc/release`.
2. Remove the word "Oracle" from the first line.
3. Perform the `pkgadd` on ACSLS.
4. Edit `/etc/release` and add the word "Oracle" at the beginning of the first line.

Installing pkgadd

1. Log in as `root`.
2. 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.

3. If you do not have the required Java version, you need to:

   a. Type:

   ```
   cd java
   ./setup.sh
   ```

b. Enter `y` at the Java 6 prompt.

c. The java setup script installs Java 1.6.xx automatically on your server in the `/usr` directory.

d. Type `cd /cdrom/cdrom0`.

e. Re-install ACSLS using `pkgadd`.

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

   ACSLS is installed in `/export/home/`.

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

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

7. 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.

8. Type `cd /`.

9. You must continue installation using `install.sh` as described below.

Installing the 8.0.2 Update

Refer to the Readme instructions for installing the ACSLS 8.0.2 Update.

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.

If this is an update only, skip this procedure.

1. Change your working directory to the ACSSS/install directory.

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

2. Execute the installation script:

```
./install.sh
```

3. Select `/export/backup`.

   The progress of the installation displays

4. Enter the HBA port you intend to use for Target-Mode operation for your StorageTek SCSI-attached front-end (logical) libraries.

   A contemporary QLogic Fibre HBA (4GB or higher) is required.

   In order to implement the logical library feature, it is necessary to define one or more fibre ports on the Solaris machine for use as a target-mode device. Normally an HBA is used in initiator mode in order to initiate SCSI transactions with a remote target device such as a disk drive, tape drive, or media changer device.

   Once you have an HBA installed, you receive the following prompt:

   ```
   Please select a desired action:

   1. Keep the HBA port configuration as it is.
   2. Configure an additional target-mode port.
   3. Restore a target port to initiator mode.
   ```

   Option 2 lists the ports that are currently operating in initiator mode. When a port shows "Connected to a remote HBA", it's means there is an initiator at the other end, making the local port a potential candidate to become an ACSLS target port. When a port shows "Connected to a target device", there is probably a tape library or disk attached, so that port would be a bad choice for target mode operations.

   An example of option 2 is:

   ```
   Please select which local HBA port is to be changed to
   Target mode:

   Select from the following list:
   ```

   1. HBA Port WWN 2100001b32055d85 Not connected.
   2. HBA Port WWN 2101001b32255d85 Connected to a remote HBA.
   3. HBA Port WWN 2102001b32055d85 Connected to a target device.
   4. None of these.

      Note – If you have no intention of using the logical library feature select "none of these".

5. Optional Step: If you have a SCSI or fibre-attached library.

   Respond `y` to the prompt for installing a SCSI device driver for SCSI-attached libraries.

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

   If you answered `y`, refer to the following Example of Installing a SCSI Mchanger for the prompts you need to answer.

   This is for SCSI-attached back-end StorageTek libraries.

Note – 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 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.

Note – Unless multi-pathing hardware has been deliberately configured for the SL500 library, it is important to disable multi-path I/O for any parent device driver such as the "fp" driver that is used in the library connection path. If you have difficulty making a successful connection to the SL500, you should confirm that multi-path I/O has been disabled in your <driver>.conf file, typically `/kernel/drv/fp.conf`.

mpxio-disable="yes"

Example of Installing a SCSI Mchanger

```
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.

Note – You are now ready to set passwords for each user ID.

Setting the ACSLS User Passwords

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 passwords 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 8.0.2 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 8.0.2 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 8.0.2 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.

Uninstalling ACSLS 8.0.1 (and ACSLS 8.0.2)

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 ACSSA acsdb`
   - `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
   ```

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