

# StorageTek Automated Cartridge System Library Software

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Release Notes

Version 8.2



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# ACSL 8.2 Release Notes

ACSL 8.2 includes several product enhancements and multiple fixes to bugs reported in Release 8.1 and earlier.

Download ACSL 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.

ACSL 8.2 No Longer Supports the ADI OSLAN Interface for ACSAPI communication from client applications. The ADI OSLAN interface was used by ICL (International Computers Limited) mainframes.

## Requirements

### Software Requirements

The software requirements include:

- ACSL 8.2 has been fully tested and verified on Oracle's Sun SPARC and X86 platforms running Solaris-10 Updates 8, 9, and 10. Other operating systems, including AIX and virtual environments, are not tested or supported.
- ACSL 8.2 is bundled with WebLogic 10.3.5.
- Because of special device driver requirements to enable virtual libraries, ACSL 8.2 cannot run in a Solaris Zoned environment. ACSL 8.2 can run in a logical domain on a Oracle VM server for SPARC. ACSL 8.2 HA systems must be installed on their own dedicated platform pair.
- The graphical user interface and SMCE service in ACSL 8.2 requires Java 1.6 U14 or later. You cannot install ACSL unless this requirement is met.

To verify the version, enter the command: `java -version`.

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

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

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`

Please check the website for any maintenance releases.

## System Requirements

The system requirements are:

- Memory: 2GB minimum

To show system memory:

```
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)
```

To calculate: Take the number of blocks and divide by 2. Now, divide this number by 1024. 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
```

- Fibre card (optional): a suitable HBA is required for Fibre Channel operations.

For target mode operation, supporting the Logical Library feature, this HBA must be a contemporary QLogic fibre card (4Gb or higher).

For initiator mode operation, supporting a fibre-connected library such as the SL500 or SL150, ACSLS 8.2 is fully tested and certified with QLogic HBAs. Testing of Emulex HBAs in initiator mode is in progress.

## Browser Requirements:

ACSL 8.2 has been tested and fully verified on the following browsers:

- Internet Explorer 8 and 9
- FireFox 7, 8, and 9
- Chrome 15 and 19

## 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.

ACSL 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, "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 Guide*.

## What's New

This section discusses enhancements and fixes to ACSLS 8.2.

### Enhancements

ACSLS 8.2 provides support for the following:

- SL150

The SL150 can be configured, managed and operated by ACSLS as a single LSM, SCSI-attached library. The SL150 control path connection is established only through a bridged drive – there is no dedicated FC interface. ACSLS automatically detects an SL150 library and builds an mchanger entry when you run either the **install.sh** or the **install\_scsi\_sol.sh** utilities.

- Automatic volume assignment to a logical library using **watch\_vols**

The **watch\_vols** utility allows you to specify policies for individual volumes or volume ranges as those volumes are entered or otherwise discovered in a physical library. A new field, *assign to library*, has been added to the **watch\_vols** policy table, **vol\_attr.dat**. If you specify a logical library ID in that field, the volumes identified in the corresponding record are automatically assigned to the logical library as they are entered into the physical library.

- New command-line interface for logical library administration: **lib\_cmd**

This is a quick and versatile interface for:

creating logical libraries.

mapping logical libraries to client applications.

assigning or un-assigning drives and volumes to logical libraries.

controlling the online/offline state of logical libraries and drives.

displaying the current state and condition of logical resources.

displaying the current state and condition of physical resources.

You can run **lib\_cmd** in interactive mode with ample help supports, or in batch mode, enlisting all of the advantages of shell history and scripting capabilities.

- Multiple initiator support for logical libraries

A logical library can now be assigned to more than one FC client (more accurately, it can be assigned to more than one initiator port). The purpose is to support redundancy on the client side, not to allow simultaneous operation of a logical library by multiple clients. Only one client system should operate a logical library at a given time.

Allowing multiple initiators means that a single client system can access their assigned logical library over multiple FC HBAs or ports. It also means that if the client environment supports a fail-over capability, the logical library is immediately accessible to the new active client system.

Without support for multiple initiators, a manual re-configuration using the ACSLS GUI was required in the event of a client fail-over or an HBA failure.

The change can be seen when creating or editing a logical library using the ACSLS GUI. Multiple initiator ports can now be selected, where before only a single initiator could be chosen. No other change to logical library configuration procedures is required.

Any Unit Attention or Check Condition raised for a logical library is presented on each connection that has been configured.

- This release introduces the terminology of “accessible” vs. “inaccessible” when describing and counting logical volumes. This change is reflected in the Logical Library detailed status page.

Accessible volumes are assigned, and generally available for use by the FC client

Inaccessible volumes are assigned, but not currently available for use by the client

Previously, inaccessible volumes were referred to as “outside the library” which was slightly inaccurate. A logical volume is inaccessible if one (or more) of the following is true:

the volume has been marked for eject by the FC client.

the volume has been physically ejected (whether marked for eject by the client or not).

the volume has been marked as absent (ACSLs could not find it in any known location).

the volume has been placed into the wrong physical ACS (for its logical library).

Only accessible volumes count against the defined capacity of a logical library.

- GUI minor changes:

Library Component Detailed Status page

The descriptions of some items on the detailed status pages for logical and physical libraries were updated to be more clear and consistent across pages.

The breakdown of volume counts by media type in a logical library now includes only accessible volumes (previously, this included inaccessible volumes as well).

The redundant prefix “Number of” was removed from the descriptions of items that are obviously displaying counts. This includes items providing counts of various library components including ACSs, LSMs, CAPs, Volumes and Drives (including the breakdowns by type for volumes and drives).

System Events page now includes system-boot events and HA fail-over events.

- New utility, `showDrives.sh`, displays all drives in the library sorted by drive type. A verbose (`-v`) option displays significant details about each drive, including physical address, logical address, drive state, drive status, and volume id (if mounted).

- Enhanced HA fail-over logic now includes support for fibre-attached libraries as well as tcp-ip attached libraries. If library communication is lost on one node, the HA agent confirms good communication on the adjacent node before failing over.
- You can now register for automatic email notification of significant events including system boot events and HA Cluster fail-over events.
- Added new messages: 2173-2175 and 2380-2387

## Fixes

This release contains fixes to the following bugs reported in ACSLS 8.1 and earlier.

## Installation

Installation fixes include:

- **pkgadd**: Add 'root' to 'acsls' group without affecting other 'root' groups.
- **pkgadd**: Change parsing method in `/etc/release` to recognize discrete Solaris patch levels.
- **install.sh**: Change permissions in `/var/tmp` to allow user 'acssa' start `cmd_proc` automatically upon login.
- **install.sh**: Avert client communication errors: Check `set rpc/bind` 'local-only' property during install.
- **install\_scsi\_sol.sh**: Set acsss:acsls file ownership to mchanger-related files after installation.
- **install\_scsi\_sol.sh**: Add 'target=0' to `/usr/kernel/drv/mchanger.conf` (now required by Solaris-10 Update-10).
- **wlinstall.sh**: Extend 'acsls' group ownership throughout AcslsDomain file system to enable access to AdminServer logs.
- FC clients cannot see logical library with backing ACS-ID above 9.

## Configuration

Configuration fixes include:

- **acsss\_config**: Set newly configured ports offline by default to allow auto-test.
- **acsss\_config**: Allow **acsls\_config** to re-configure when all libraries combined have more than 500 tape drives.
- **testports**: Regard unknown port types as tcp/ip by default.
- static variable: Add warning to not use port 50003 as the **CSI\_INET\_PORT**.

## Startup/Shutdown

Startup/shutdown fixes include:

- **acsls.startup**: Touch mchanger device nodes after reboot so that Solaris-10 Update-10 sees them as character devices.



## Utilities

Utility fixes include:

- **rdb.acsss**: Allow use of automated backups in manual restore operations.
- **rdb.acsss**: Avoid fatal error response when acsls services are enabled. Prompt user to disable them before proceeding.
- **ejecting.sh**: Temporarily change CAPs in automatic enter mode to manual to avoid conflicts with eject requests.
- **ejecting.sh**: Allow CAP selection to include CAP-IDs greater than 9
- **userAdmin.sh**: Fix WebLogic restart method in option-5 to avoid hang.
- **greplog**: Change log record parsing method to recognize `rpTrail.log` and other generic logs in addition to `acsss_event.log`.
- **showDevs.sh**: Fix environmentals so 'root' can execute.

## Commands

Command fixes include:

- **audit**: Correct status error message for 'audit \* server' with no priority CAPs from **STATUS\_CAP\_IN\_USE** to **STATUS\_CAP\_NOT\_SELECTED**.
- **automatic enter**: Prevent CAPs from hanging during an automatic enter.
- **query scratch**: Support Access Control user IDs longer than 32 characters in query scratch.

## Graphical User Interface

GUI fixes include:

- Don't count ejected volumes against assigned cell capacity for logical libraries.
- Provide separate volume counts (accessible and inaccessible) in Logical Library display.
- Fix 'LSMs needing attention' filter on LSMs page.
- Reduce status polling frequency in masthead dashboard to five-second intervals.
- Clear the Active Operations Table when shutting down ACSLS.

## ACSLs-HA

ACSLs-HA fixes include:

- Automatically resolves temporary SMF maintenance-mode conditions after fail-over
- Add intelligent fail-over logic for fibre-attached libraries.

