



StorageTek™ ACSL

AUTOMATED CARTRIDGE SYSTEM LIBRARY SOFTWARE

PRODUCT INFORMATION

316120301
Version: 7.3

Automated Cartridge System Library Software

Product Information

Version 7.3

316120301

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Summary of Changes

EC released document table.

EC	Date	Edition	Revision	Description
EC000249	March 2008	First	A	ACSLS 7.3 provides support for the SL3000.

Summary of Changes

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

■ 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/>

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Preface

■ About this Book

Automated Cartridge System Library Software (ACSL) 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. ACSL 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 ACSL. 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 ACSL 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>

Overview

1

Automated Cartridge System Library Software (ACSL) is Sun StorageTek's server software that controls a StorageTek Automated Cartridge System (ACS). ACSL accesses and manages information stored in an ACS through command processing across a network. The software includes a system administration component and interfaces to client system applications, and library management facilities.

ACSL 7.3 uses the relational database PostgreSQL 8.1.4. The change to use PostgreSQL only changes the internal database used by ACSL. It has no impact on the ACSL 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 ACSL 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 ACSL minimum which is 256MB and 512MB of swap.

■ Software Requirements

- Solaris 10 Update 4 is the supported OS level for SPARC and X86 platforms. The latest Solaris patch cluster is recommended. The patch update is *required* if you are using Solaris zones.

PostgreSQL 8.1.4 comes bundled with Solaris 10 Update 4.

- AIX 5.3 Technology Level 6

PostgreSQL 8.1.4 is not bundled with AIX 5.3, but is included on the ACSL CD. It must be installed separately.

■ Features and Enhancements

ACSL 7.3 provides the following features and enhancements:

- Support for the Sun StorageTek SL3000 Library
 - ACSL 7.3 includes support for new LSM and panel types and panel maps for the SL3000 Library
 - The SL3000 supports up to eight (8) partitions.

- A new maximum numbers of CAPs (12), drives per panel (32), and cell rows (52) for the SL3000
- ACSLS 7.3 supports the ability to dedicate a CAP to a partition within the SL3000.
- CAPS are dedicated to a partition via SLConsole. The library reports dedicated CAPs to ACSLS.
- SL3000 CAP Aliasing

The SL3000 has 12 CAPs, but some backup applications currently only support a maximum of 3 CAPs per LSM. CAP aliasing lets you alias CAPs 3-10 as CAPs 0, 1, or 2.

Note: New behavior for SL3000 requires an initial audit.

After reconfiguring or repartitioning an SL3000, or after changing your licensed capacity, you must audit the library before using it or before entering volumes. Any change in the partitioning scheme will re-define which storage cells are accessible to ACSLS. Consequently, an audit is necessary in order for ACSLS to discover the accessible cells.

- New drive and volume status information

ACSLs 7.3 receives additional drive and cartridge status information from recent tape drives. It saves this in the drive and volume records in the database. The “display drive” and “display volume” commands were enhanced to display this new information.

Note: This new information is only reported from new drive and library models.

- Alphanumeric volume ranges

As a user-selectable option, ACSLS 7.3 supports alphanumeric vol_id ranges in ACSLS commands such as eject, set owner, set scratch, set clean and volrpt.

- Drive load balancing

“query mount” returns drives within the same pass-thru distance from a volume in least-recently-used order. The drive with the oldest dismount time is considered the least-recently-used drive. This allows users to both optimize library pass-thru performance and balance the use of their tape drives.

- Move to specific cell

ACSLs 7.3 lets you move cartridges to a specified cell location.

The SL3000 can partition down to the drive and cell level. If cells are reassigned from one partition to a different partition, cartridges in those

cells will be orphaned, and they will no longer be accessible by the partition that they were in before. To avoid this, before re-partitioning an SL3000, move cartridges to cells that will remain in your partition.

- Desired state retention

When a user varies an ACS or port online or offline, the “desired state” records their wishes. If the ACS is inoperative or the port connection drops, the actual state shows this. As soon as the ACS or port connection is available again, it is brought online if the desired state is online. The command “query lmu” shows the desired state for ACSs and ports.

- Specify ACS numbers

ACSLs allows users to skip ACS numbers when configuring libraries. Both `acsss_config` and Dynamic Config support specifying and skipping ACS numbers.

For example: After migrating from an ACS 0 of 9310s to an ACS 1 of SL8500s, you can remove ACS 0 without renumbering the drive and volume IDs in the remaining SL8500 ACS 1.

- Fast audit

A new field in the celltable tracks that last time the status of the cell changed.

Audit only rechecks cells whose status changed after we started auditing their panel.

- Check for prior release compatibility

ACSLs 7.3 will not allow library configurations that are not supported in earlier ACSLS releases to be exported to those releases. (For example, you cannot export an SL8500 to ACSLS 6.1.)

- Enhanced Eject behavior.

Ejects from `cmd_proc` receive intermediate eject responses when a CAP is full.

A new dynamic variable, `EJECT_RESPONSE_ON_CAP_FULL` determines whether ACSAPI clients receive an intermediate eject responses when `MAX_ID` volumes have been moved to the CAP or when a full CAP of volumes has been ejected.

■ Co-hosting on the ACSLS Server

We do not test, certify, or support co-hosting of other applications on ACSLS servers unless you are running in a Zone (container) environment. This applies to this release and prior releases. ACSLS must be the only application running in a Zone.

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

■ LSMs Supported

- 4410 LSMs
- 9310 LSMs
- 9360 LSMs
- 9740 SCSI-Attached LSMs
- 9740 HLI-Attached LSMs
- 9710 LSMs
- 9714 LSMs
- 9730 LSMs
- 9738 LSMs
- L20, L40, L80 LSMs
- L180 LSMs
- L700 LSMs
- L700e PTP
- SL500 LSMs
- L5500 LSMs
- SL3000 LSM
- SL8500 LSMs

■ Tape Drives Supported

The following table is used to translate drive types between applications. The Drive Type Name represents the drive type in `cmd_proc` and event log messages. The ACSAPI Drive Type Number is used in ACSLS software operations and ACSAPI client communications.

Notes:

The boxes in **yellow** are drives and media that will be supported in the future. Within the Drive and Media Compatibility table, existing SDLT drives now support additional compatible data and cleaning cartridges.

The last column in the Tape Drives table identifies when ACSLS support for that tape drive and its associated media was added (only after ACSLS 7.0).

Table 1. Tape Drives Supported.

ACSAPI Drive Type Number	Drive Domain (hex and character, if applicable)	Drive Type Reported by Library (decimal)	Drive Type Name	Tape Drive Description	ACSLs Support if after 7.0
0	00h	64	4480	StorageTek 18-track	
1	00h	08	4490	StorageTek Silverton 36-track	
2	00h	32	9490	StorageTek TimberLine 36-track high performance	
3	00h	16	SD3	StorageTek Redwood Helical	
4	00h	04	4890	StorageTek Twin Peaks 36-track	
5	01h	01 (65)*	DLT2000	Quantum DLT2000	
6	01h	02 (66)*	DLT2000XT	Quantum DLT2000XT	
7	01h	03 (67)*	DLT4000	Quantum DLT4000	
8	01h	04 (68)*	DLT7000	Quantum DLT7000	
9	00h	02	9840	StorageTek T9840A	
10	00h	33	9491	StorageTek TimberLine EE 36-track	
11	01h	07 (71)*	DLT8000	Quantum DLT8000	
12	00h	03	9840-3590	T9840A with IBM 3590 emulation	
13	00h	05	T9940A	T9940A with SCSI/ Fibre or VSM3490	
14	00h	06	9940--3590	T9940A with 3590 emulation	
15	01h	20 (84)*	SDLT	Super DLT 220	
16	00h	01	T9840B	High Performance 9840 with SCSI/ Fibre or VSM3490	

ACSAPI Drive Type Number	Drive Domain (hex and character, if applicable)	Drive Type Reported by Library (decimal)	Drive Type Name	Tape Drive Description	ACSL S Support if after 7.0
17	00h	07	T9840B35	T9840B with 3590 emulation	
18	4Ch ("L")	48	HP-LTO	HP LTO Generation 1	
19	4Ch ("L")	49	IBM-LTO	IBM LTO Generation 1	
20	4Ch ("L")	50	CER-LTO	Certance LTO Generation 1	
21	00h	09	T9940B	T9940B with SCSI/ Fibre or VSM3490	
22	00h	10	T9940B35	T9940B with 3590 emulation	
23				<i>reserved</i>	
24	01h	21 (85)*	SDLT-320	Super DLT 320	
25	00h	11	T9840C	T9840C with Fibre or VSM3490	
26	00h	12	T9840C35	T9840C with 3590 emulation	
27	4Ch ("L")	51	HP-LTO-2	HP LTO Generation 2	
28	4Ch ("L")	52	IBM-LTO-2	IBM LTO Generation 2	
29	4Ch ("L")	53	CER-LTO-2	Certance LTO Generation 2	
30	01h	23 (87)*	SDLT-600	Super DLT 600	ACSL S 7.1
31	54h ("T")	13	T1A	T10000A with Fibre or VSM3490	ACSL S 7.1 with PUT0501
32	54h ("T")	14	T1A35	T10000A with IBM 3592 emulation	ACSL S 7.1 with PUT0501
33	4Ch ("L")	54	HP-LTO-3	HP LTO Generation 3	ACSL S 7.1 with PUT0501

ACSAPI Drive Type Number	Drive Domain (hex and character, if applicable)	Drive Type Reported by Library (decimal)	Drive Type Name	Tape Drive Description	ACSL S Support if after 7.0
34	4Ch ("L")	55	IBM-LTO-3	IBM LTO Generation 3	ACSL S 7.1 with PUT0501
35	4Ch ("L")	56	CER-LTO-3	Certance LTO Generation 3	ACSL S 7.1 with PUT0501
36				<i>reserved</i>	
37				<i>reserved</i>	
38	54h ("T")	25	T1AE35	T10000A - IBM 3592 emulation with encryption enabled	ACSL S 7.1 with PUT0602
39				<i>reserved</i>	
40				<i>reserved</i>	
41	00h	18	T9840D	T9840D, fibre or VSM3490	ACSL S 7.1 with PUT0602
42	00h	19	T9840D35	T9840D - 3590 emulation (MVS attach)	ACSL S 7.1 with PUT0602
43				<i>reserved</i>	
44				<i>reserved</i>	
45	01h	24 (88)*	DLT-S4	Quantum DLT-S4	ACSL S 7.1 with PUT0602
46	4Ch ("L")	57	HP-LTO4	HP LTO Generation 4	ACSL S 7.1 with PUT0701
47	4Ch ("L")	58	IBM-LTO4	IBM LTO Generation 4	ACSL S 7.1 with PUT0701
48				<i>reserved</i>	
49				<i>reserved</i>	
50				<i>reserved</i>	
51				<i>reserved</i>	

ACSAPI Drive Type Number	Drive Domain (hex and character, if applicable)	Drive Type Reported by Library (decimal)	Drive Type Name	Tape Drive Description	ACSL Support if after 7.0
52				<i>reserved</i>	

■ Tape Media Supported

The following table lists the compatible tape media supported for each transport type.

Note:

- * Legacy StorageTek media do not have a media domain on the label. They are reported as media domain **0** (zero).
- ** 3480 cartridges do not have a media type label. They are reported as media type **1**.
- *** DLT cartridges do not have a media domain on the label. They are reported as media domain **1**. SDLT cartridges with 7 character barcodes are also reported as media domain **1**.
- **** When a media type is reported as cleaning cartridge “maybe”, both data or cleaning cartridges can have this media type.

Table 2. Tape Media Supported

ACSAPI Media Type Number	Media Type Name	Media Description	Media Domain (on label)	Media Type (on label)	Cleaning Cartridge ****
0	3480	3480 18 or 6-track	0*	1**	maybe
1	3490E	3490E 36-track	0*	E	no
2	DD3A	StorageTek Redwood (Helical) 10GB	0*	A	no
3	DD3B	StorageTek Redwood (Helical) 25GB	0*	B	no
4	DD3C	StorageTek Redwood (Helical) 40GB	0*	C	no
5	DD3D	StorageTek Redwood Cleaning Cartridge	0*	D	yes

ACSAPI Media Type Number	Media Type Name	Media Description	Media Domain (on label)	Media Type (on label)	Cleaning Cartridge ****
6	DLTIII	Quantum DLT III -10GB	1***	C	maybe
7	DLTIV	Quantum DLT IV - 20GB or 35GB	1***	D	no
8	DLTIIIXT	Quantum DLT IIIxt - 15GB	1***	E	no
9	STK1R	T9840A, T9840B, T9840C or T9840D data cartridge	0*	R	no
10	STK1U	T9840A, T9840B, 9840C cleaning cartridge	0*	U	yes
11	EECART	9490EE 36-track	0*	Z	no
12		<i>reserved</i>			
13	STK2P	9940 data cartridge	0*	P	no
14	STK2W	9940 cleaning cartridge	0*	W	yes
15		<i>reserved</i>			
16	LTO-100G	LTO Generation 1 data cartridge	L	1	no
17	LTO-50GB	LTO Generation 1 data cartridge	L	A	no
18	LTO-35GB	LTO Generation 1 data cartridge	L	B	no
19	LTO-10GB	LTO Generation 1 data cartridge	L	C	no
20	LTO-CLN2	IBM cleaning cartridge	C	2	yes
21	LTO-CLN3	Certance cleaning cartridge	C	3	yes
22	LTO-CLN1	HP cleaning cartridge	C	1	yes
23	SDLT	Super DLT Generation I cartridge	1***	S***	maybe
24		<i>reserved</i>			
25	LTO-CLNU	LTO universal cleaning cartridge	C	U	yes
26	LTO-200G	LTO Generation 2 data cartridge	L	2	no
27	SDLT-2	Super DLT Generation II data cartridge	1***	2***	no

ACSAPI Media Type Number	Media Type Name	Media Description	Media Domain (on label)	Media Type (on label)	Cleaning Cartridge ****
28	T10000T1	T10000 data cartridge	T	1	no
29	T10000TS	T10000 "sport" data cartridge	T	S	no
30	T10000CT	T10000 cleaning cartridge	C	T	yes
31	LTO-400G	LTO Generation 3 data cartridge	L	3	no
32	LTO-400W	LTO Generation 3 WORM data cartridge	L	T	no
33		<i>reserved</i>			
34	SDLT-S1	Super DLT Generation I data cartridge	S	1	maybe
35	SDLT-S2	Super DLT Generation I data cartridge in SDLT-320 format	S	2	no
36	SDLT-S3	Super DLT Generation II data cartridge	S	3	no
37	SDLT-S4	Super DLT Generation 4 data cartridge	S	4	no
38	SDLT-4	Super DLT Generation 4 data cartridge	1***	4***	no
39	STK1Y	T9840D cleaning cartridge	0*	Y	yes
40	LTO-800G	LTO Generation 4 data cartridge	L	4	no
41	LTO-800W	LTO Generation 4 WORM data cartridge	L	U	no

■ Transport and Media Compatibility Supported

The following table lists the compatible media for each transport type. Use these values as input to the `media media_type` and `drive drive_type` parameters on ACSLS commands.

Table 3. Transport and Media Compatibility

Transport Type (<i>drive_type</i>)	Compatible Media (<i>media_type</i>)	
	Data Cartridge	Cleaning Cartridge
4480	3480,	3480

Transport Type (<i>drive_type</i>)	Compatible Media (<i>media_type</i>)	
	Data Cartridge	Cleaning Cartridge
4490	3480, 3490E	3480
4890	3480, 3490E	3480
9490	3480, 3490E	3480
9490EE	3480 (read only), 3490E, EECART	3480
SD3	DD3A, DD3B, DD3C	DD3D
9840	STK1R	STK1U
9840-3590	STK1R	STK1U
T9840B	STK1R	STK1U
T9840B35	STK1R	STK1U
T9840C	STK1R	STK1U
T9840C35	STK1R	STK1U
T9840D	STK1R	STK1Y
T9840D35	STK1R	STK1Y
T9940A	STK2P	STK2W
9940A-3590	STK2P	STK2W
T9940B	STK2P	STK2W
T9940B35	STK2P	STK2W
DLT2000	DLTIII	DLTIII
DLT2000XT	DLTIII, DLTIIIXT	DLTIII
DLT4000	DLTIII, DLTIIIXT, DLTIV	DLTIII
DLT7000	DLTIII, DLTIIIXT, DLTIV	DLTIII
DLT8000	DLTIII, DLTIIIXT, DLTIV	DLTIII
SDLT	SDLT, SDLT-S1, DLTIV	SDLT, SDLT-S1
SDLT-320	SDLT, SDLT-S1, SDLT-S2, DLTIV	SDLT, SDLT-S1
SDLT-600	SDLT, SDLT-2, SDLT-S1, SDLT-S2, SDLT-S3	SDLT, SDLT-S1
DLT-S4	SDLT-2, SDLT-4, SDLT-S2, SDLT-S3, SDLT-S4	SDLT,
HP-LTO	LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN1, LTO-CLNU

Transport Type (<i>drive_type</i>)	Compatible Media (<i>media_type</i>)	
	Data Cartridge	Cleaning Cartridge
IBM-LTO	LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN2, LTO-CLNU
CER-LTO	LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN3, LTO-CLNU
HP-LTO-2	LTO-200G, LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN1, LTO-CLNU
IBM-LTO-2	LTO-200G, LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN2, LTO-CLNU
CER-LTO-2	LTO-200G, LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN3, LTO-CLNU
HP-LTO-3	LTO-400G, LTO-400W, LTO-200G, LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN1, LTO-CLNU
HP-LTO4	LTO-800G, LTO-800W, LTO-400G, LTO-400W, LTO-200G	LTO-CLNU
IBM-LTO-3	LTO-400G, LTO-400W, LTO-200G, LTO-100G, LTO-50GB, LTO-35GB, LTO-10GB	LTO-CLN2, LTO-CLNU
CER-LTO-3	LTO-400G, LTO-400W, LTO-200G, LTO-100G, LTO-50G, LTO-35GB, LTO-10G	LTO-CLN3, LTO-CLNU
IBM-LTO4	LTO-800G, LTO-800W, LTO-400G, LTO-400W, LTO-200G	LTO-CLNU
T1A	T10000T1, T10000TS	T10000CT
T1A35	T10000T1, T10000TS	T10000CT
T1AE35	T10000T1, T10000TS	T10000CT

Note: For information about transport media, go to:
http://www.storagetek.com/products/tape_storage.html

■ Solaris Requirements

The following tables provides an overview of the software requirements for the Solaris platform.

Table 4. Solaris Requirements

Requirement	Description
Operation systems	Solaris 10 Update 4 is the supported OS level for SPARC and X86 platforms. The latest Solaris patch cluster is recommended. The patch update is <i>required</i> if you are using Solaris zones..
ACSAPI Clients must support ACSAPI packet version 3 or higher	<p>ACSLs supports these ACSAPI packet versions:</p> <ul style="list-style-type: none"> • Packet version 3 (minimum) • Packet version 4 (recommended) <p>The CSC Developer's Toolkit is used to create ACSAPI clients.</p> <p>Note: The CSC Developer's Toolkit and ACSLS have supported packet version 3 since 1993.</p> <p>Support for versions 1 and 2 ended May 1, 2002.</p>
memory	512 MB minimum
file systems	swap - 1 GB minimum /export/home - 2 GB minimum /export/backup - 3 GB minimum

■ AIX Requirements

The following tables provides an overview of the software requirements for the AIX platform.

Table 5. Solaris Requirements

Requirement	Description
Operation systems	AIX 5.3 Technology Level 6
ACSAPI Clients must support ACSAPI packet version 3 or higher	<p>ACSLs supports these ACSAPI packet versions:</p> <ul style="list-style-type: none"> • Packet version 3 (minimum) • Packet version 4 (recommended) <p>The CSC Developer's Toolkit is used to create ACSAPI clients.</p> <p>Note: The CSC Developer's Toolkit and ACSLS have supported packet version 3 since 1993.</p> <p>Support for versions 1 and 2 ended May 1, 2002.</p>
memory	512 MB minimum
file systems	<p>swap - 1 GB minimum</p> <p>/export/home - 2 GB minimum</p> <p>/export/backup - 3 GB minimum</p>