StorageTek™ ACSLS

AUTOMATED CARTRIDGE SYSTEM LIBRARY SOFTWARE

PRODUCT INFORMATION

312572209

Version: 7.2

Automated Cartridge System Library Software

Product Information

Version 7.2

312572209

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Summary of Changes

EC released document table

EC	Date	Edition	Revision	Description
132885	May 2007	Eighth	H	ACSLS 7.2 utilizes the PostgreSQL database engine which is fully integrated on Solaris 10 - update 3 or greater. The following **will not** be supported in this release: • AIX • ACSLS HA • Second disk support
132835	October 2007	Ninth	J	This edition supports ACSLS 7.2 with AIX 5.3 Technology Level 6 and PUT0702.

7.2 CRC update document table

Date	Edition	Description
June 15, 2007	CRC Update	ACSLS HA is now supported for ACSLS 7.2 by downloading the latest ACSLS HA PTF from the CRC.

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. You can find additional information about customer support on the Customer Resource Center (CRC) Web site at:

http://www.support.storagetek.com

Customer-initiated Maintenance

Customer-initiated maintenance begins with a telephone call from you to Sun Microsystems 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 Microsystems StorageTek Support about a problem:

1. Use the telephone and call:

   ☎ **800.525.0369** (inside the United States)

   ☎ **303.673.4056** (outside the United States)

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 much easier:

Account name	
Site location number	
Contact name	
Telephone number	
Equipment model number	
Device address	
Device serial number (if known)	

Urgency of problem

Fault Symptom Code (FSC)

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/

Contents

Summary of Changes v

Customer Contacts vii
Customer Support vii
Customer-initiated Maintenance vii
Sun's Worldwide Offices viii

Contents ix

Preface xi
About this Book xi
Audience xi
Conventions for Reader Usability xi
Related Documentation xii
ACSLS Documentation xii
ACSLS Information on the Sun StorageTek CRC xii

1: Overview 1
Software Requirements 1
Features and Enhancements 1
Co-hosting on the ACSLS Server 2
LSMs Supported 2
Tape Drives Supported 3
Tape Media Supported 6
Transport and Media Compatibility Supported 9
Solaris Requirements 12
AIX Requirements 13

Preface

About this Book

This ACSLS Product Information book provides information about ACSLS 7.2.

Audience

This information is provided for system programmers, system administrators, and operators who need general requirements for ACSLS 7.2.

Conventions for Reader Usability

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

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 filenames, command names, and literal output by the computer.
- `Letter Gothic Bold` is used to indicate literal input to the computer by you.
- *`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 user name or system name must be entered.

  `Logon` *`username`*`|`*`systemname`*
- Brackets [ ] are used to indicate that a command parameter is optional.

Related Documentation

ACSLS Documentation

The following publications provide more information about ACSLS. They are provided in PDF format on a documentation CD-ROM, and also appear on the Sun StorageTek Customer Resource Center (CRC).

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

- *ACSLS Product Information*
- *ACSLS Installation, Configuration, and Administration Guide*
- *ACSLS Quick Reference*
- *ACSLS Messages*
- *ACSLS Release Notes*

ACSLS Information on the Sun StorageTek CRC

In addition to the PDF collection on the *ACSLS Information CD-ROM*, the StorageTek CRC provides a PDF collection for ACSLS. Use the following procedure to access this collection on the Sun StorageTek CRC.

To access ACSLS PDF collections on the Sun StorageTek CRC:

1. **Using an Internet browser such as Netscape or Internet Explorer, go to the Sun StorageTek CRC. The URL is:**

   `http://www.support.storagetek.com/`

2. **Click the** `login` **link.**

If this is the first time you have used the CRC, click `Request a CRC Password` and fill in the requested information. You should receive your account information within two business days.

3. **From the upper left bar, click** `Product Information` **and** `Current Products` **from the dropdown links.**
4. **Select** `Software` **from the Product Family dropdown menu and click** `Next`**.**
5. **Click the** `ACSLS` **link from the Product Categories and navigate to the documents you want to view.**

Note: The Customer Resource Center also lets you download ACSLS PTFs and software support for product enhancements such as new drive or library types.

Overview

1

Automated Cartridge System Library Software (ACSLS) is Sun StorageTek's server software that controls a StorageTek Automated Cartridge System (ACS). ACSLS 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.

ACSLS 7.2.0 uses the relational database PostgreSQL 8.1.4. 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 7.2.0, 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 CRC for any maintenance releases.

Note: ACSLS HA is supported by downloading the latest ACSLS HA PTF from the CRC.

Software Requirements

- Solaris 10 Update 3 (11/06) for Solaris/SPARC and Solaris/x86

  PostgreSQL 8.1.4 comes bundled with Solaris 10 Update 3.

- AIX 5.3 Technology Level (TL) 6

  PostgreSQL 8.1.4 is not bundled with AIX 5.3, but is included on the ACSLS 7.2 CD. It must be installed separately.

Features and Enhancements

- Supports AIX 5.3 TL 6
- ACSLS 7.2 utilizes PostgreSQL 8.1.4 as its relational database.
- `bdb.acsss` provides two new options that allows you to restore:
  - only the ACSLS database data, but not the ACSLS control files.
  - only the ACSLS control files

- `db_command` now provides the following additional options:
  - status - displays if the database is running or not running.
  - log_normal - standard logging for ACSLS database activity. -
  - log_verbose - extended logging for ACSLS database activity.
  - log_level - displays the current database logging level. (normal or verbose) without looking at the postgresql.conf file
  - stop_force - does not wait for ACSLS to disconnect before it brings down the database. This should only be used when instructed by Sun Support when they are troubleshooting a problem with ACSLS.

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
- 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 Compatibili**y** 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 it's 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	

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
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	
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				*reserved*	
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	

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
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	ACSLS 7.1
31	54h (“T”)	13	T1A	T10000A with Fibre or VSM3490	ACSLS 7.1 with PUT0501
32	54h (“T”)	14	T1A35	T10000A with IBM 3592 emulation	ACSLS 7.1 with PUT0501
33	4Ch (“L”)	54	HP-LTO-3	HP LTO Generation 3	ACSLS 7.1 with PUT0501
34	4Ch (“L”)	55	IBM-LTO-3	IBM LTO Generation 3	ACSLS 7.1 with PUT0501
35	4Ch (“L”)	56	CER-LTO-3	Certance LTO Generation 3	ACSLS 7.1 with PUT0501
36				*reserved*	
37				*reserved*	
38	54h (“T”)	25	T1AE35	T10000A - IBM 3592 emulation with encryption enabled	ACSLS 7.1 with PUT0602
39				*reserved*	
40				*reserved*	
41				*reserved*	
42				*reserved*	
43				*reserved*	
44				*reserved*	
45	01h	24 (88)*	DLT-S4	Quantum DLT-S4	ACSLS 7.1 with PUT0602

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
46	4Ch (“L”)	57	HP-LTO4	HP LTO Generation 4	ACSLS 7.1 with PUT0701
47	4Ch (“L”)	58	IBM-LTO4	IBM LTO Generation 4	ACSLS 7.1 with PUT0701
48				*reserved*	
49				*reserved*	
50				*reserved*	
51				*reserved*	
52				*reserved*	

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
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		*reserved*			
13	STK2P	9940 data cartridge	0*	P	no
14	STK2W	9940 cleaning cartridge	0*	W	yes
15		*reserved*			
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

ACSAPI Media Type Number	Media Type Name	Media Description	Media Domain (on label)	Media Type (on label)	Cleaning Cartridge ****
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		*reserved*			
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
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		*reserved*			
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
		reserved			
40	LTO-800G	LTO Generation 4 data cartridge	L	4	no

ACSAPI Media Type Number	Media Type Name	Media Description	Media Domain (on label)	Media Type (on label)	Cleaning Cartridge ****
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 (*drive_type*)	Compatible Media (*media_type*)	
	Data Cartridge	Cleaning Cartridge
4480	3480,	3480
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
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

Transport Type (*drive_type*)	**Compatible Media (*media_type*)**	
	Data Cartridge	**Cleaning Cartridge**
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
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

Transport Type (*drive_type*)	**Compatible Media (*media_type*)**	
	Data Cartridge	**Cleaning Cartridge**
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 3 (11/06) or later is required for both the SPARC and x86 platforms.
ACSAPI Clients must support ACSAPI packet version 3 or higher	ACSLS supports these ACSAPI packet versions: • Packet version 3 (minimum) • Packet version 4 (recommended) The CSC Developer's Toolkit is used to create ACSAPI clients. **Note:** The CSC Developer's Toolkit and ACSLS have supported packet version 3 since 1993. Support for versions 1 and 2 ended May 1, 2002.
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	ACSLS supports these ACSAPI packet versions: • Packet version 3 (minimum) • Packet version 4 (recommended) The CSC Developer's Toolkit is used to create ACSAPI clients. **Note:** The CSC Developer's Toolkit and ACSLS have supported packet version 3 since 1993. Support for versions 1 and 2 ended May 1, 2002.
memory	512 MB minimum
file systems	swap - 1 GB minimum /export/home - 2 GB minimum /export/backup - 3 GB minimum