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StorageTek

Removable Media Library Software

Client System Component User's Guide

Version 1 Release 3.0

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Preface

SCOPE

This guide describes the Storage Technology Corporation (StorageTek) Removable Media Library Software/Client System Component (RMLS/CSC) for the AS/400® system. Throughout this guide, the software product is referred to as RMLS/CSC.

RMLS/CSC Version 1 Release 3.0 functions with the AS/400 and connects to StorageTek's Automated Cartridge System through Automated Cartridge System Library Software (ACSLS) installed on an AIX Operating System, or LibraryStation software installed on an MVS host, or connects directly to a 9710, 9714, or 9740 Library Storage Manager internal controller. This guide provides the information necessary to operate libraries in these environments.

INTENDED AUDIENCE

This guide is intended for, but not limited to, the following audience:

- Operators — involved with the daily operation tasks of RMLS/CSC and StorageTek Automated Cartridge System libraries.
- System Programmers — involved with installation of Removable Media Library Software, system and product operation, and library performance.
- Application Programmers — involved with developing customized applications interfacing with RMLS/CSC.
- Administrators — involved with planning library configurations, RMLS/CSC installation, data administration, and library management.

Users responsible for installation and maintenance of RMLS/CSC software should have strong technical skills and should be familiar with the following software topics:

- AS/400 and OS/400 concepts and operation
- Keyboard function keys
- Use of system menus and commands
- Online help facilities
- Interpreting messages
- Resolving software problems.

ORGANIZATION OF THIS GUIDE

The guide is divided into several major parts and several appendixes. A glossary of terms relevant to StorageTek's RMLS/CSC and an extensive index is also included. The parts of this guide include:

- **Part I. Introduction to RMLS/CSC and Tape Libraries** — contains a general introduction about the StorageTek Automated Cartridge System, RMLS/CSC functions, and descriptions of typical library configurations containing AS/400 systems.
- **Part II. Removable Media Library Software/CSC Installation and Configuration** — contains information that is primarily intended for operations personnel. It describes prerequisites for installation and points to the three appendixes that contain the detailed installation procedures.
- **Part III. General Information for Users** — contains general information valuable to all RMLS/CSC users. Basic and frequently used tasks are described with simple procedures for performing each operation.
- **Part IV. Administrative Information of RMLS/CSC Libraries** — describes those tasks normally performed by a library system administrator. Included is information about security, procedures about how to perform a library audit, start and end trace functions, display trace status, and how to configure your library. It describes how to define tape libraries and associated tape devices to RMLS/CSC. Procedures are also presented to enable you to display and work with the configuration descriptions.
- **Part V. Removable Media Library Software/CSC Operations** — describes operational tasks intended primarily for operations personnel. For example, basic library operation tasks are described with simple, easy-to-follow procedures. Included are procedures about how to enter or eject volumes from a library, how to mount and dismount volumes, and other basic operations that are used on a daily basis.
- **Part VI. Removable Media Library Software/CSC Reports** — describes the reporting functions that are available within RMLS/CSC. Each report function is fully described. Procedures for producing reports and examples of each report are provided.
- **Appendix A. Command Reference Summary** — contains RMLS/CSC command syntax conventions and syntax for all commands.
- **Appendix B. Message List** — contains a list of Removable Media Library Software/CSC messages resulting from conditions encountered during operation of the product.
- **Appendix C. Example of Code for Break Message Handler Automation** — contains an example of code that can be copied and used as the basis for implementing RMLS/CSC Break Message Handler functions.
- **Appendix D. Installation of RMLS/CSC in an ACSLS Environment.** — contains the procedures to install RMLS/CSC in an ACSLS environment.
- **Appendix E. Installation of RMLS/CSC in a LibraryStation Environment.** — contains the procedures to install RMLS/CSC in a LibraryStation environment.
- **Appendix F. LibraryStation Communication Configuration Questions.** – contains a series of questions that expedite the installation of RMLS/CSC with a LibraryStation server.

- **Glossary** — lists commonly used terms associated with the AS/400, RMLS/CSC, and StorageTek's Automated Cartridge Systems.
- **Index** — provides a comprehensive listing with page number cross-referencing for important terms and topics contained in this guide.

HOW TO USE THIS GUIDE

This guide may be read entirely; however, it is more important that you familiarize yourself with the overall organization and location of various information for reference purposes.

The guide is primarily comprised of task-oriented sections that describe how to perform operation tasks. Descriptions of techniques are also provided for handling certain operational situations and problems.

The first chapter provides overview information about RMLS/CSC for persons associated with StorageTek's Automated Cartridge Systems. You should read and understand this chapter.

The appendixes contain installation and reference information that may be used as needed.

PUBLICATIONS

The following documents are referenced in this guide. Additional information may be obtained about specific topics relating to the StorageTek Removable Media Library Software systems and Automated Cartridge Systems from these publications. "Related StorageTek Publications" and "Related IBM AS/400 Publications" list publications related to RMLS/CSC, library operation, and AS/400 operation.

Related StorageTek Publications

- *ACSLS AIX CSCI Installation and Configuration Guide*
- *ACSLS AIX Installation and Configuration Guide*
- *ACSLS Messages*
- *ACSLS AIX Product Information Bulletin*
- *ACSLS System Administration Guide*
- *Command Processor for LibraryStation Installation and Operations Guide*
- *Requesting Help from Software Support*
- *LibraryStation Configuration and Operation Guide*

Related IBM AS/400 Publications

- *Advanced Backup and Recovery Guide*
- *Advanced Peer-To-Peer Networking (APPN) Guide*
- *Application Development by Example*
- *OS/400 Communication Configuration Reference*
- *Control Language Programmer's Guide*
- *Device Configuration Guide*
- *Guide to Programming for Tape/Diskette*
- *Licensed Program Installation Guide*
- *New User's Guide*
- *Programming: Control Language Reference*
- *Programming Reference Summary*
- *Programming: Work Management Guide*
- *Security Reference*
- *System Concepts*
- *System Operator's Guide*
- *System Programmer's Interface Reference*

STORAGETEK PRODUCT SUPPORT

StorageTek Customer Services provide 24-hour assistance for questions or problems related to StorageTek products. Calls from our customers receive immediate attention from trained diagnostic specialists.

See the guide *Requesting Help from Software Support* for information about contacting StorageTek for technical support and for requesting changes to software products.

During problem resolution, Software Support may request one or more of the following diagnostic materials:

- Job dump(s)
- Job log
- RMLS/CSC trace
- RMLS/CSC configuration

Part I. Introduction to RMLS/CSC and Tape Libraries

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Chapter 1. System Overview

This part of the guide presents a brief overview of the Removable Media Library Software/Client System Component (RMLS/CSC) and how it functions in tape library environments. RMLS/CSC supports StorageTek's Automated Cartridge System (ACS).

TYPICAL RMLS/CSC CONFIGURATION

There are many ways in which to configure a tape library. This section contains examples of typical tape library configurations with Removable Media Library Software. These examples can be used to analyze how a configuration may be developed and implemented. Note how future expansion of a tape library is an important concept in the diagrams.

RMLS/CSC in MVS LibraryStation Configuration

A possible library configuration is an AS/400 connected to an MVS host running LibraryStation. Figure 1-1 shows a high-level concept of how the hardware and software interface to provide basic tape library functions with StorageTek's Automated Cartridge System.

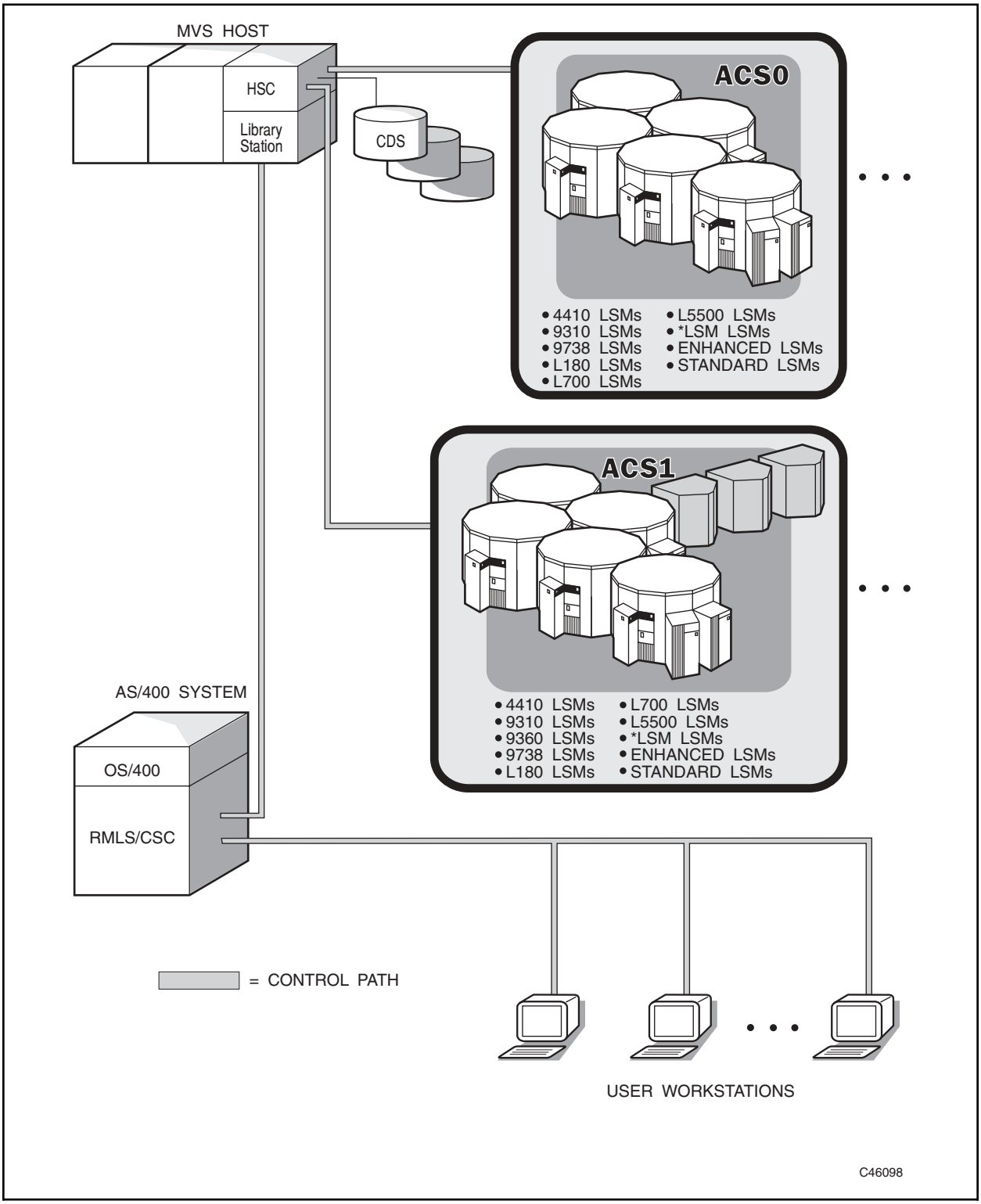

Figure 1-1. AS/400 Implementation in MVS LibraryStation Environment

The configuration contains both Standard (Model 4410) Library Storage Modules, WolfCreek (Model 9360-type), and PowderHorn (Model 9310) Library Storage Modules controlled by RMLS/CSC.

Figure 1-2 shows the relationship of the AS/400 system and RMLS/CSC software with LibraryStation software.

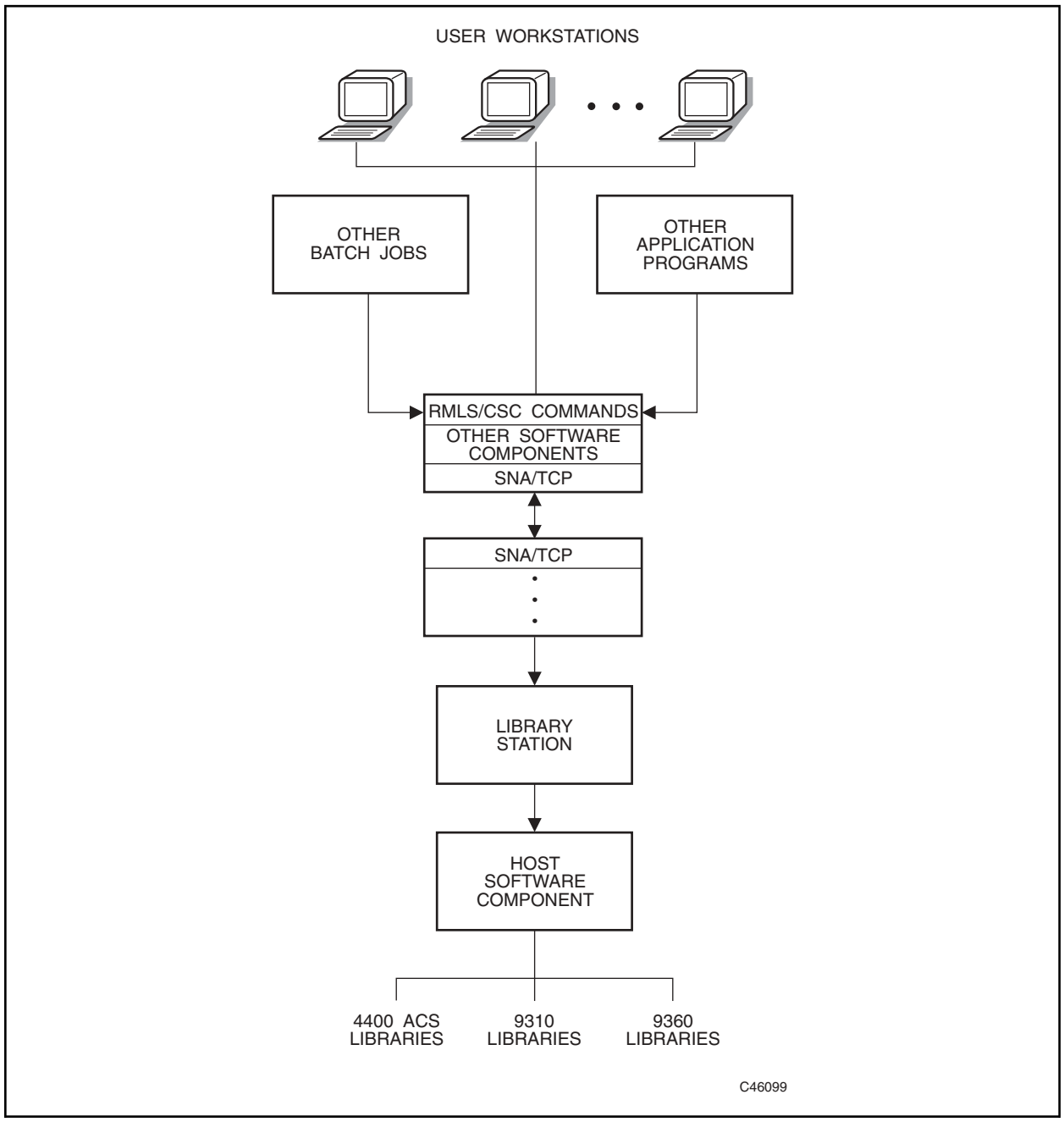

Figure 1-2. RMLS/CSC LibraryStation Interface.

RMLS/CSC in an AIX Automated Cartridge System Library Software Configuration

A possible library configuration is an AS/400 connected to an AIX Operating System running Automated Cartridge System Library Software (ACSLS). Figure 1-3 shows a high-level concept of how the hardware and software interface to provide basic tape library functions with StorageTek's Automated Cartridge System (ACS).

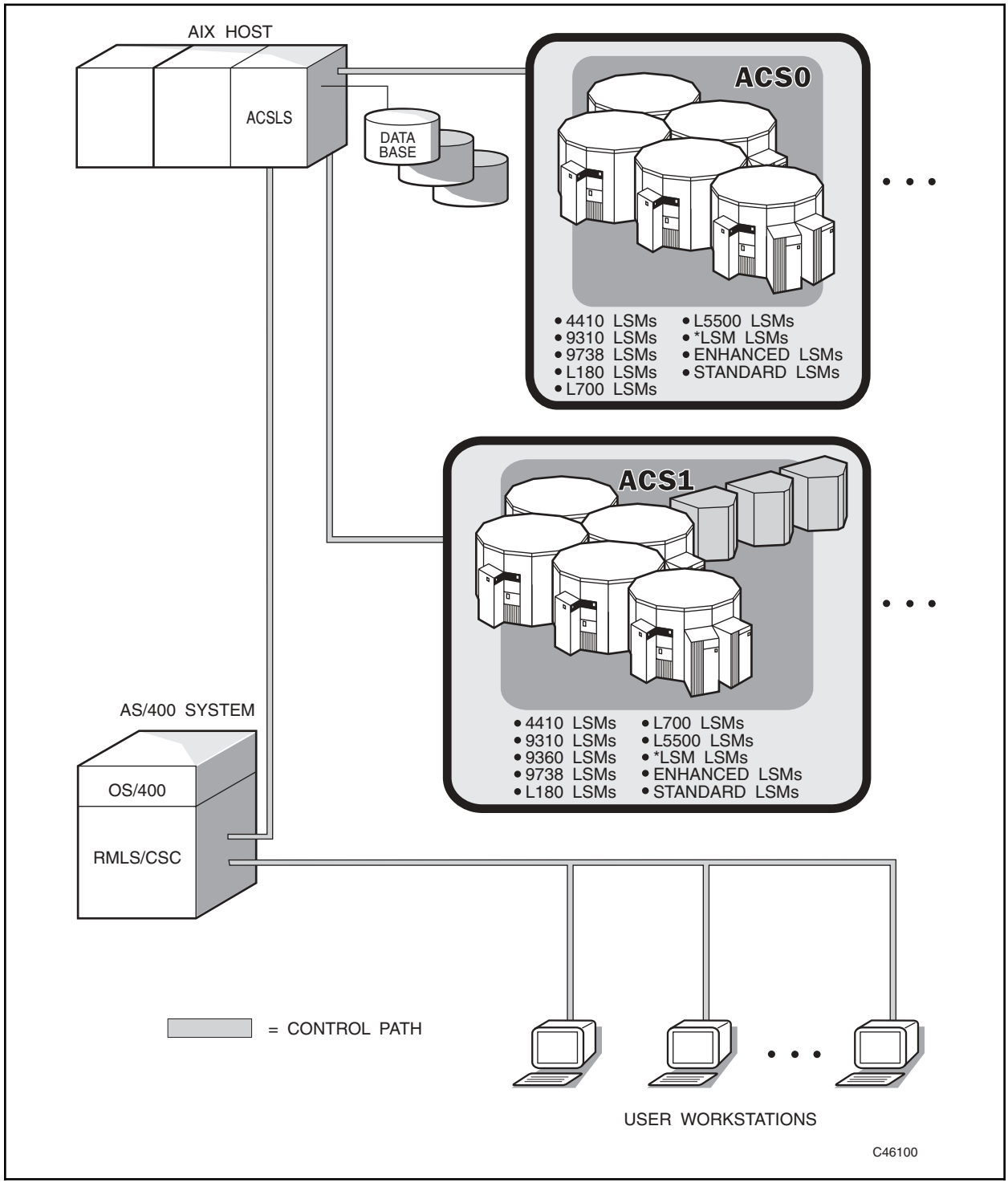

Figure 1-3. AS/400 Implementation in ACSLS Environment

The configuration contains both Standard (Model 4410) Library Storage Modules, WolfCreek (Model 9360-type), and PowderHorn (Model 9310) Library Storage Modules controlled by RMLS/CSC.

Figure 1-4 and Figure 1-5 show the relationship of the AS/400 system, the RMLS/CSC software, and the Automated Cartridge System Library Software using SNA LU6.2 and TCP/IP communication types on an AIX Operating System.

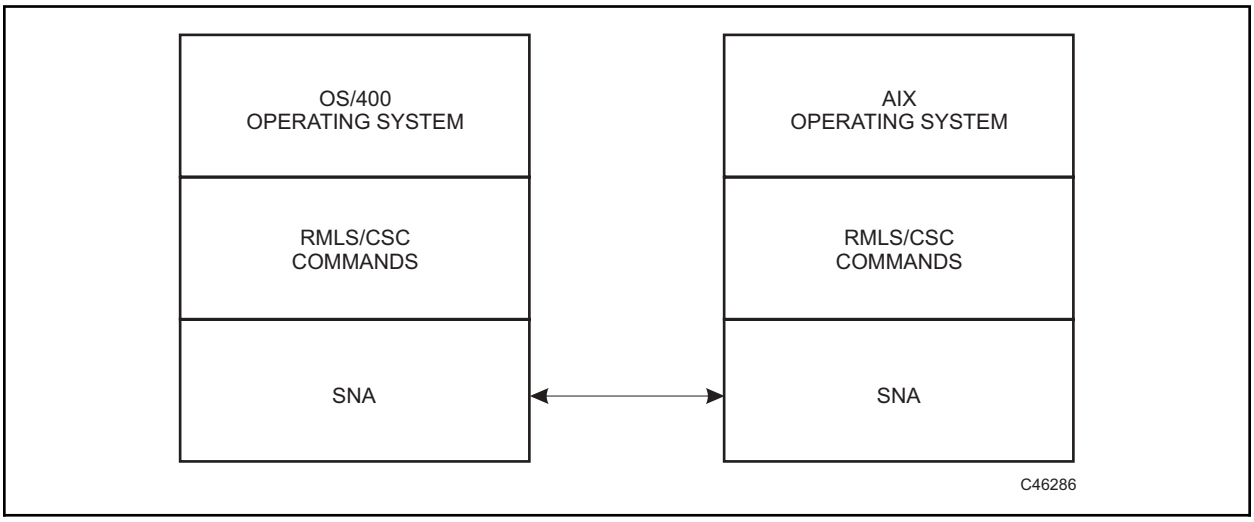

Figure 1-4. RMLS/CSC ACSLS Interface Using SNA LU6.2

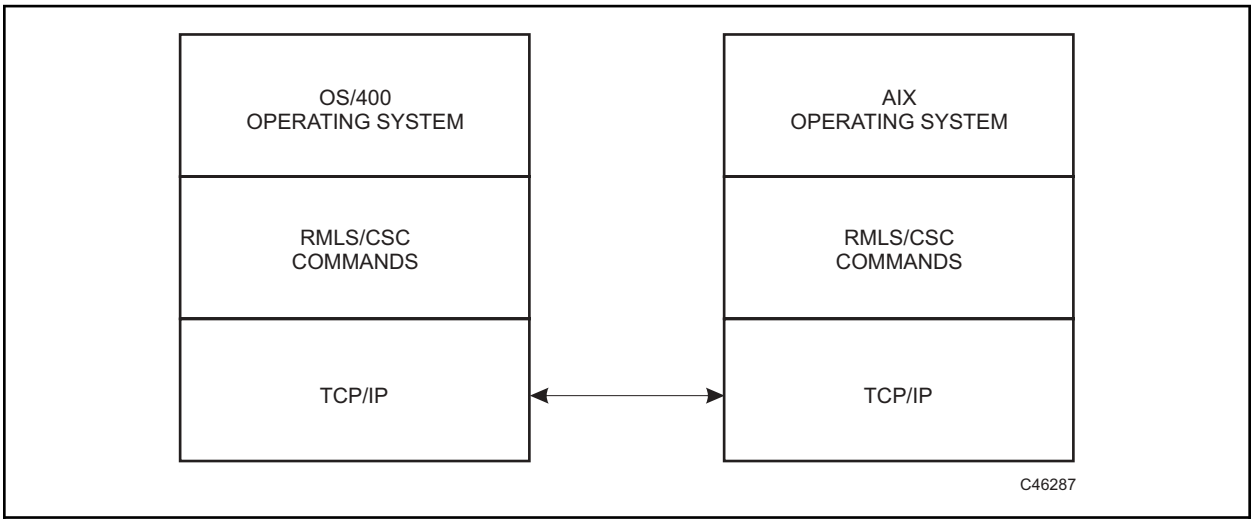

Figure 1-5. RMLS/CSC ACSLS Interface Using TCP/IP

RMLS/CSC in a Solaris ACSLS Configuration

A possible library configuration is an AS/400 connected to a Solaris Operating System running Automated Cartridge System Library Software (ACSLS). Figure 1-6 on page 1-7 shows the relationship of the AS/400 system, the RMLS/CSC software, and the Automated Cartridge System Library Software using a TCP/IP communication type or a Solaris Operating System.

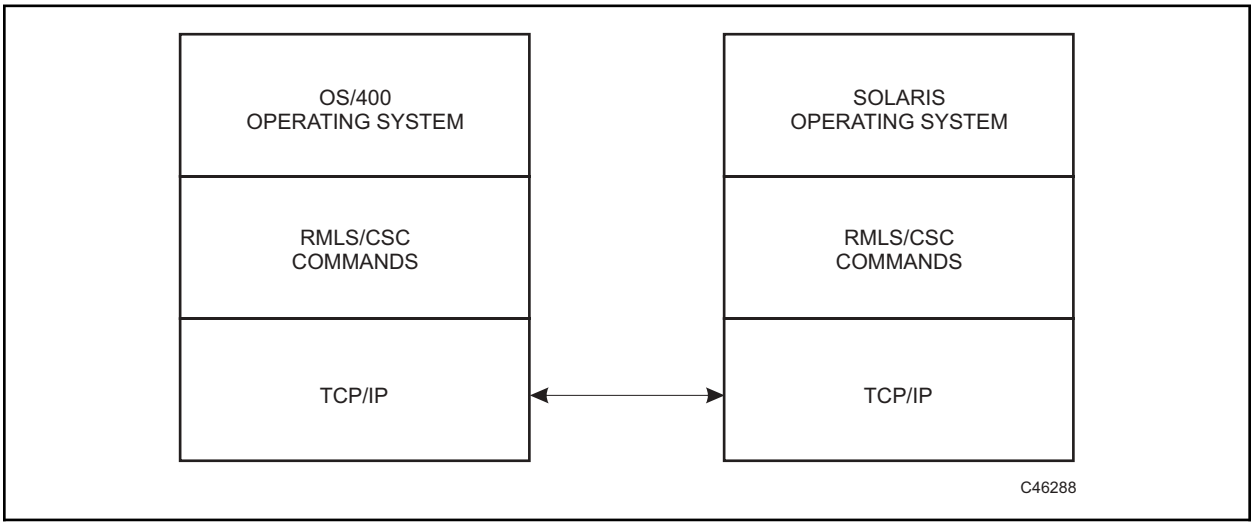

Figure 1-6. RMLS/CSC ACSLS Interface Using TCP/IP on Solaris

DESCRIPTION OF LIBRARY ENVIRONMENTS

Detailed descriptions of each of the library environments are presented in the following separate sections:

- "Automated Cartridge System Software" on page 1-7.
- "StorageTek Automated Cartridge System Hardware Overview" on page 1-10

AUTOMATED CARTRIDGE SYSTEM SOFTWARE

StorageTek software products related to operation of the tape library for the Removable Media Library Software include:

- RMLS/CSC installed on an AS/400.
- Automated Cartridge System Library Software (ACSLS)
- LibraryStation installed on an MVS host. If the library environment is a LibraryStation environment, then Host Software Component (HSC) must be installed on the MVS host that is executing LibraryStation.

ACSLS Software Interface with RMLS/CSC

As shown in Figure 1-7 and Figure 1-8 on page 1-8, and Figure 1-9 on page 1-9, RMLS/CSC subsystem functions as the interface between the AS/400 and the AIX operating system either using the SNA or TCP/IP communication protocol. The Automated Cartridge System Library Software functions as the software driving the tape library and interfacing the AIX operating system to the other software components involved.

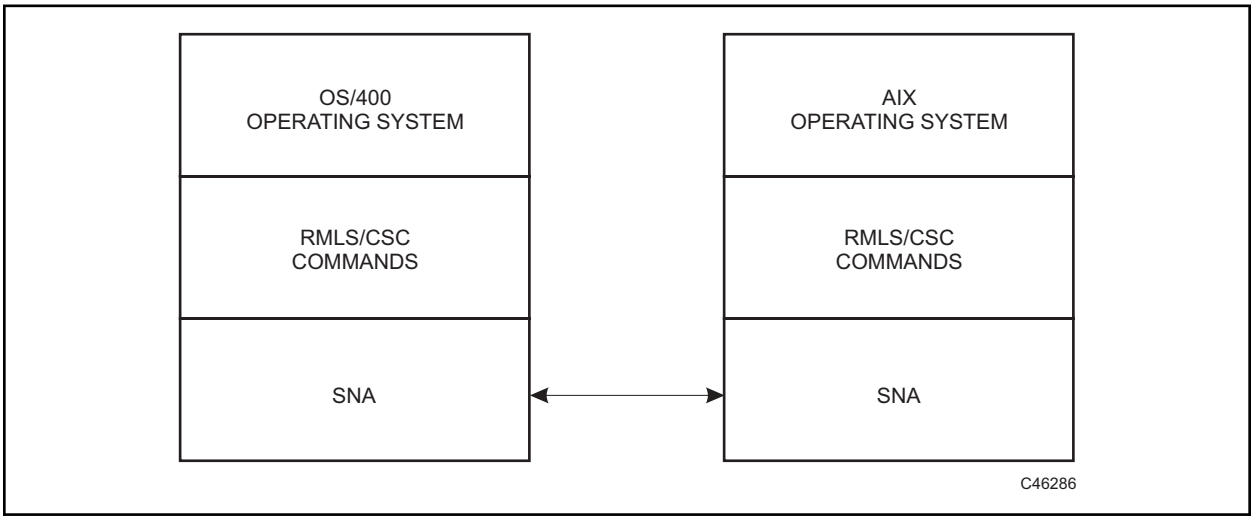

Figure 1-7. RMLS/CSC ACSLS Interface Using SNA LU6.2

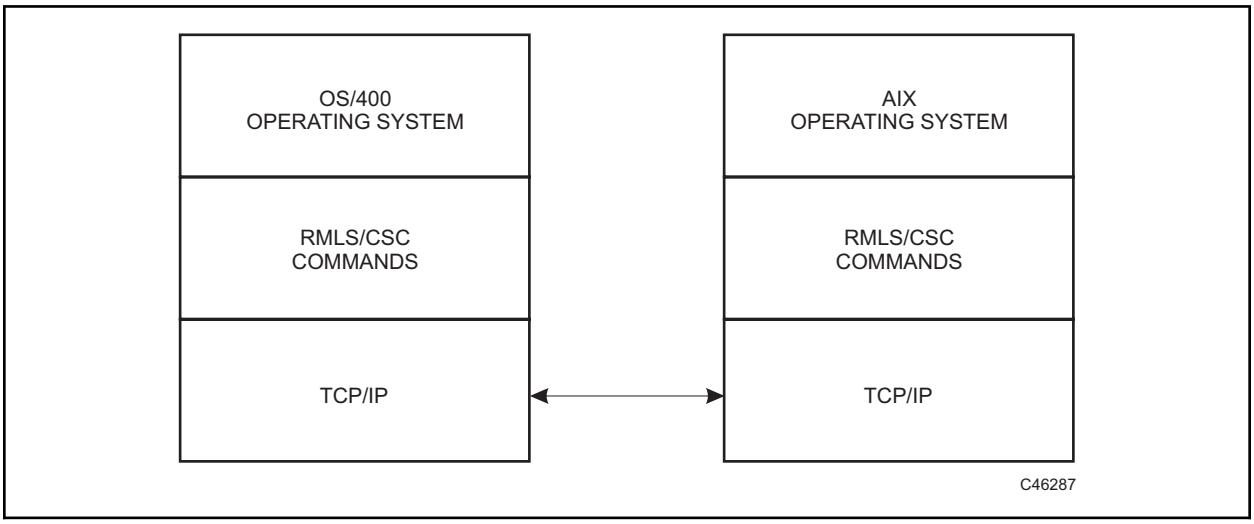

Figure 1-8. RMLS/CSC ACSLS Interface Using TCP/IP

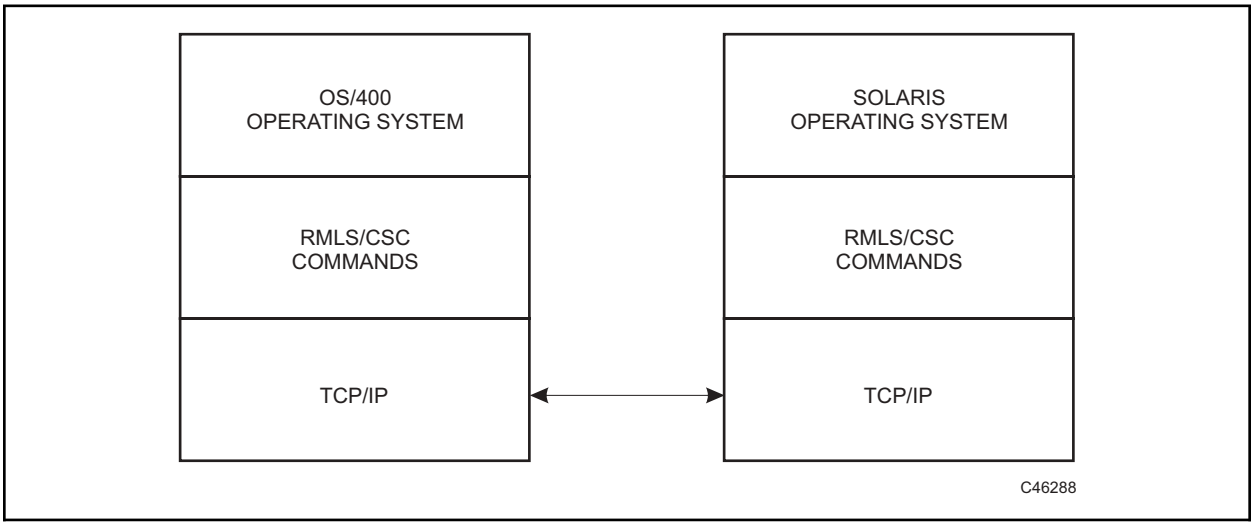

Figure 1-9. RMLS/CSC ACSLS Interface Using TCP/IP on Solaris

With this configuration, the functions of the Automated Cartridge System Library Software can be used to control mount, dismount, enter, eject, and other functions.

LibraryStation Software Interface with RMLS/CSC

As shown in Figure 1-10 and Figure 1-11, the RMLS/CSC subsystem functions as the interface between the AS/400 and the host containing LibraryStation software either using the SNA or TCP/IP communication protocol. The LibraryStation functions as the interface between RMLS/CSC and the Host Software Component. Host Software Component functions as the software driving the tape library and interfacing the host operating system to the other software components involved.

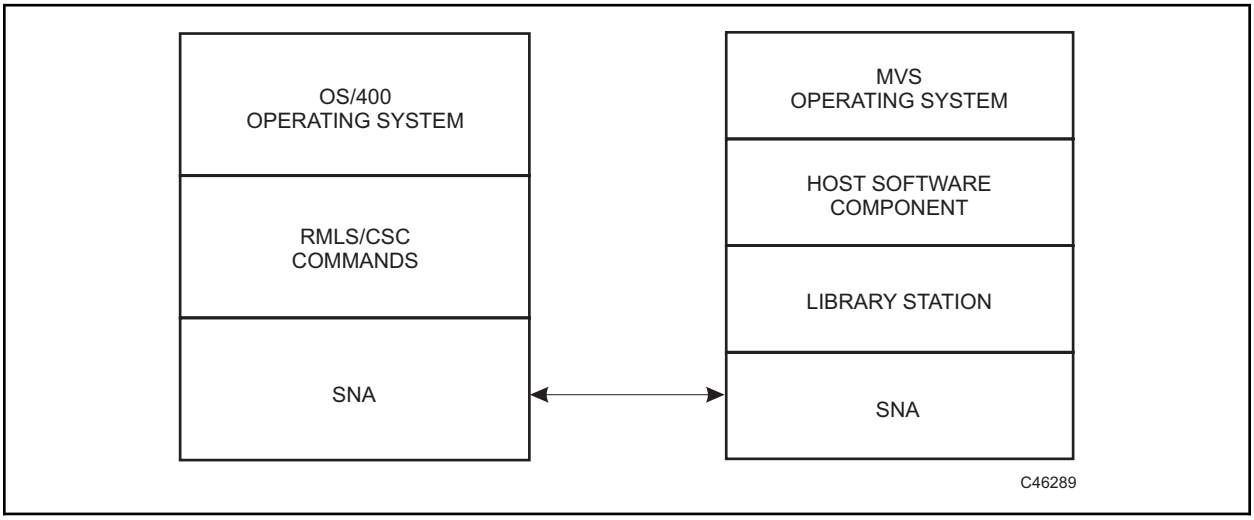

Figure 1-10. RMLS/CSC ACSLS Interface Using SNA LU6.2 on LibraryStation

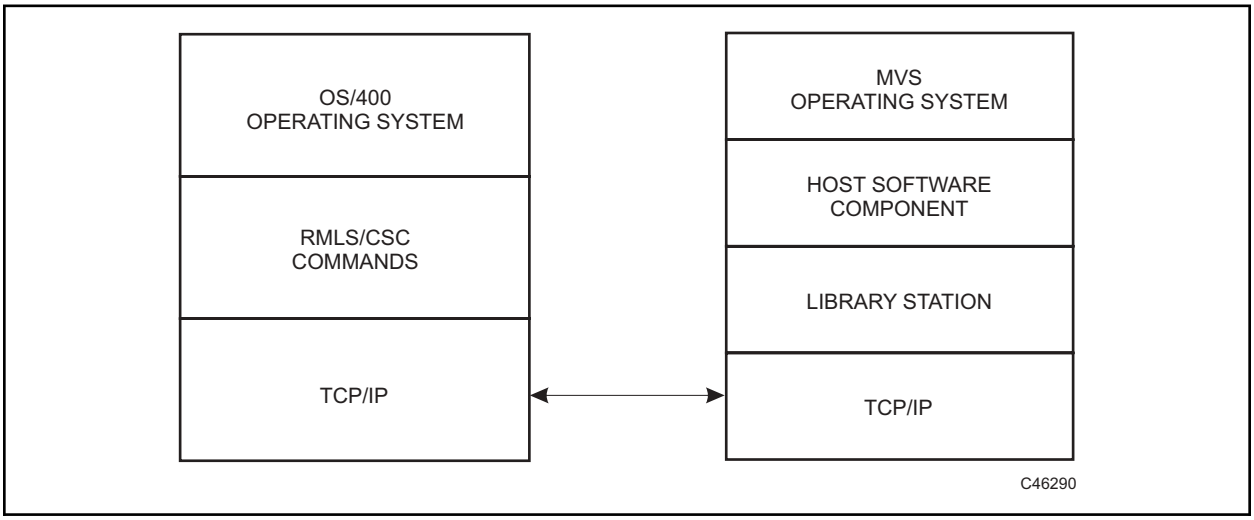

Figure 1-11. RMLS/CSC ACSLS Interface Using TCP/IP on LibraryStation

STORAGETEK AUTOMATED CARTRIDGE SYSTEM HARDWARE OVERVIEW

The StorageTek Automated Cartridge System (ACS) tape library is an automated storage and retrieval facility for tape cartridges. RMLS/CSC executes in conjunction with Automated Cartridge System Library Software or LibraryStation to accomplish automated mounting and dismounting of library-resident tape cartridges in StorageTek libraries.

ACS Hardware Components

A StorageTek Automated Cartridge System tape library consists of the following major hardware components and associated software:

- Library Storage Module (LSM)
- Library Control Unit (LCU)
- Cartridge Access Port (CAP)
- Library Management Unit (LMU)
- Tape Cartridge Subsystem.

Software is required to control tape library operation. A brief description is provided in the following sections for each of these components.

Removable Media Library

The Removable Media Library refers to the single point of control, such as a Library Management Unit or control unit, or any of a number of robotic library devices (LSMs). These robotic library devices currently include the original 4400, Powderhorn, Wolfcreek, L180, and L700. The term, Removable Media Library, is synonymous with Automated Cartridge System (ACS).

Library Storage Module

Each Library Storage Module contains storage cells for tape cartridges. The storage capacity of a Library Storage Module depends upon the model of Library Storage Module. Table 1-1 lists the available Library Storage Modules and their approximate tape cartridge storage capacity.

Table 1-1. ACS LSM Models and Cartridge Capacities

LSM Name	Model Number	Approximate Cartridge Capacity
Standard	4410	6000
PowderHorn	9310	6000
WolfCreek	9360-5, -7, -10	500, 750, or 1000
ExtendedStore		6000
9710		252, 420, or 588
9714		40 to 100 in 20s
9740		326 to 494 with expansion door
L180		150
L700		678 (single frame), 1344 (dual frame)
L5500		5500
*LSM		dependent on the new LSM opted for

The complete inventory of each Library Storage Module and the storage location for each cartridge is contained in the tape library control data sets maintained by the Host Software Component (HSC) and Automated Cartridge System Library Software (ACSLS).

Library Control Unit

A Library Control Unit (LCU) with associated electronics is attached to each Library Storage Module in the Automated Cartridge System to control the robot movement in the Library Storage Module.

Library Management Unit

The Library Management Unit (LMU) controls the Library Storage Modules in the Automated Cartridge System. The Library Management Unit interprets the commands from any host and relays the instructions to a Library Storage Module for execution. One Library Management Unit controls a maximum of 16 Library Storage Modules.

Tape Cartridge Subsystem

The tape cartridge subsystem is composed of the tape cartridge drives containing tape devices where tape cartridges are placed by the robot for read or write operations.

Chapter 2. RMLS/CSC Functional Overview

RMLS/CSC runs on the AS/400 system in conjunction with the Automated Cartridge System Library Software or LibraryStation running on an MVS host to enable tape library operation from jobs run on the AS/400 system. RMLS/CSC provides the following functions:

- determining if any requested cartridge is stored within a Library Storage Module
- directed allocation by volume or device location
- multiple client device sharing
- assisting the tape management system in device allocation
- processing mount and dismount requests
- providing for user control of a tape library through a set of basic commands usable through menus, command statements, or batch jobs
- determining, from the tape library control data set, the location of each tape library cartridge in the Library Storage Module.

RMLS/CSC does not track or verify the status of data in a volume.

RMLS/CSC USER INTERFACE

RMLS/CSC contains a user interface that directly enables user functions. The user interface component provides the command functions that enable you to access, monitor, and control the Removable Media Library (RML) functions through the AS/400. The interface supports processing of concurrent multiple requests.

Most RMLS/CSC functions are invoked through the user interface subsystem by:

- menus
- issuing RMLS/CSC commands at any AS/400 command line or submitting them to batch processing.
- issuing the commands in Control Language programs, high-level language (HLL) programs, or REXX procedures called from batch or interactive jobs.

RMLS/CSC provides you with the capability to:

- allocate and deallocate tape devices
- mount and dismount volumes
- enter and eject volumes through a Cartridge Access Port

- access RMLS/CSC online help
- query specific volume information
- scratch and unscratch volumes
- request reports, including:
  - Configuration Report display
  - Inventory Report
  - Scratch List Report
  - System Event Information Report
  - Trace Report.

To enable you to have easy access to functions, user tasks are categorized in the menu structure in the following areas:

- Operations
- Reports
- Administrative functions

The user interface also interacts with OS/400 and other RMLS/CSC subsystems to provide diagnostic and configuration information when requested.

Except where a difference is noted in the command description of a command, RMLS/CSC commands perform the same with Automated Cartridge System Library Software, and LibraryStation servers.

Menu Descriptions

The RMLS/CSC menus look like standard AS/400 menus. Each menu contains a list of options from which you select a function. Each option title listed on the menu is a simple one-phrase description of the function. When selected, the function is invoked, in most cases, through OS/400 Control Language (CL) commands. Once the function is invoked, RMLS/CSC displays a Prompt Display screen for the specified function. The Prompt Display screen prompts you for additional input information required to initiate and complete a task request. Positioning the cursor on any input field and pressing the **F4** key displays the Prompt Display screen for that field.

Some functions require additional prompt screens to collect information required to complete a request.

Menu selection provides an extremely simplified method for using RMLS/CSC. By menu selection, product operation is transparent to you and there is no need to know command names or the associated parameters required. Most parameter descriptions are intuitive.

Menu Flow Diagrams

RMLS/CSC menus support various functions used by different product users. From the RMLS/CSC Main menu, subfunctions can be selected that lead to subfunction menus and eventually to Prompt Display screens.

The RMLS/CSC Main Menu is shown in Figure 2-1. Menu flow for subfunction menus, Command Display screens, and Program screens are shown in Figure 2-2 through Figure 2-4.

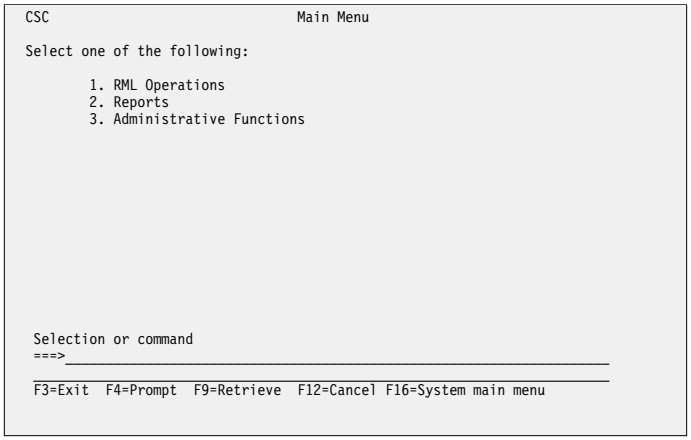

Figure 2-1. RMLS/CSC Main Menu

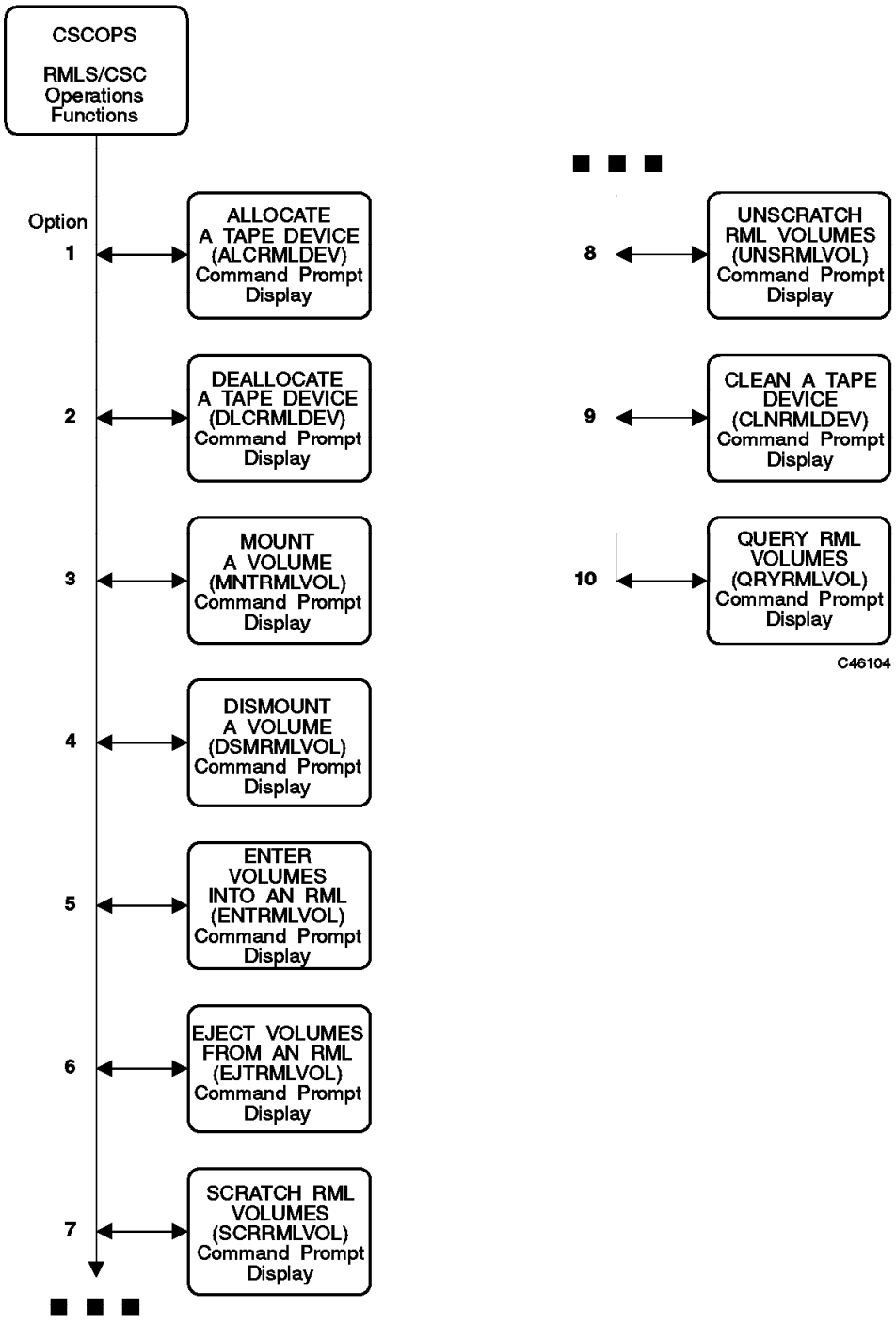

Figure 2-2. Operation Functions Menu Flow

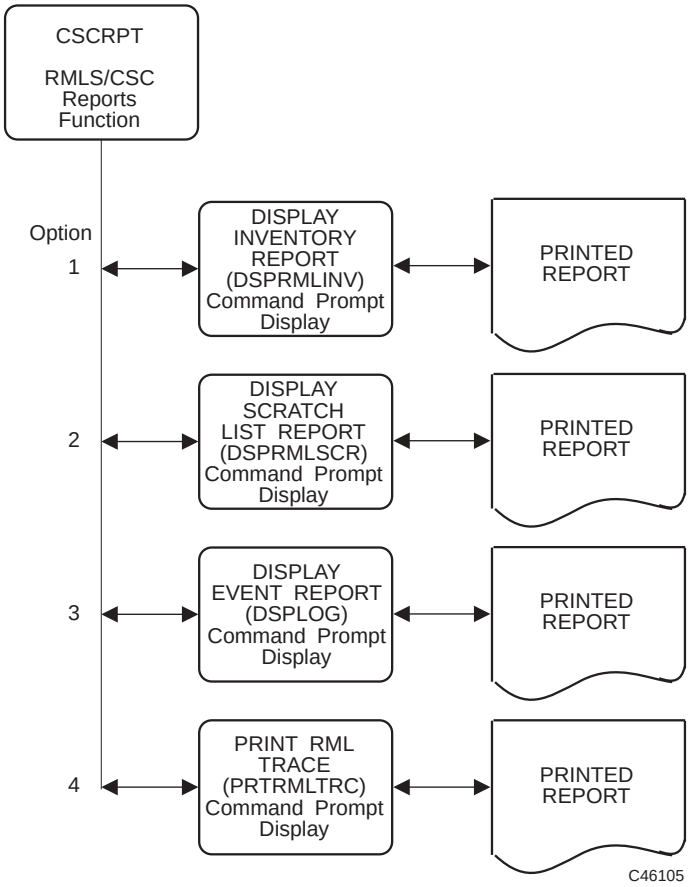

Figure 2-3. Report Functions Menu Flow

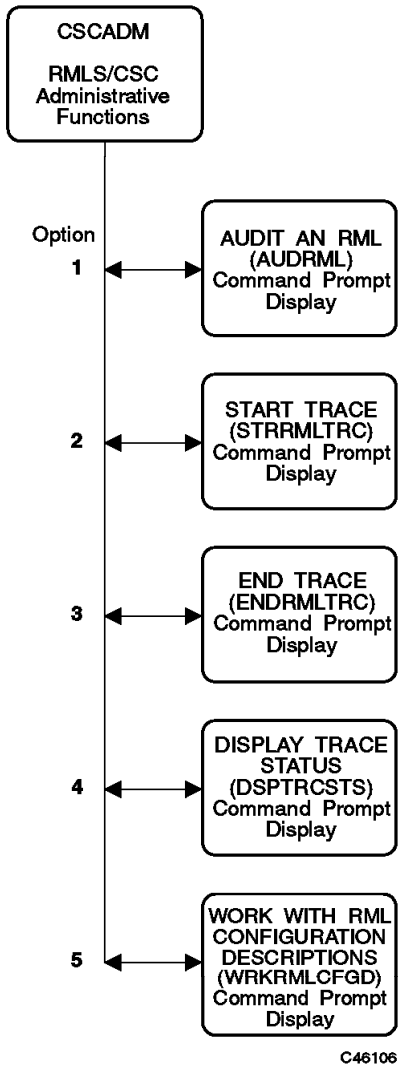

Figure 2-4. Administrative Functions Menu Flow

RMLS/CSC Command Naming Conventions

Where possible, RMLS/CSC functions are implemented using existing OS/400 control language (CL) commands. RMLS/CSC commands exist for functions that are not adequately available from existing OS/400 commands. Control language commands provide for specifying the performance of only one function. Consistent naming and syntax conventions apply to the commands. In general, the first three characters of a command apply to the function to be performed. In general, the next three characters of a command distinguish the RMLS/CSC commands from other similar commands. The next three characters of a command refer to the object of the action. If applicable, the last three characters provide an additional descriptor of the task to be performed.

For example: **DSMRMLVOL**.

DSM is action to be taken. That is, a dismount is to be performed. **RML** defines this command as a RMLS/CSC command. **VOL** defines the object of the action. A tape volume is to be dismounted.

RMLS/CSC Command Descriptions

Syntax for the RMLS/CSC commands have syntax consistent with OS/400 control language commands. Syntax and validity checking of parameters is performed. RMLS/CSC commands are listed and described in Table 2-1.

Unless otherwise noted, all RMLS/CSC commands are entered and executed in programming environments listed in Table 2-6 on page 2-10. You may choose to be prompted for the command parameters instead of entering the entire command, by pressing **F4** after typing in the command name. Online help is displayed by pressing **F1**.

Table 2-1 (Page 1 of 2). RMLS/CSC CL Commands

Function	Command	Description
Allocate a tape device	**ALCRMLDEV**	Allocates a tape device to a specified user.
Audit an RML	**AUDRML**	Initiates a reconciliation between the actual contents of an RML's storage area and what the server's records list as the contents of that RML's storage area. The audit determines the tape volumes inventory contained in the tape library. **Note:** This function is not supported with a LibraryStation server.
Clean a device.	**CLNRMLDEV**	Locates a cleaning cartridge and mounts it in the specified tape drive. Initiates the cleaning operation on the specified tape drive. **Note:** This function is not supported with a LibraryStation server.
Deallocate a tape device	**DLCRMLDEV**	Deallocates a tape device from a specified user.
Dismount a volume	**DSMRMLVOL**	Removes a tape volume currently in a tape library drive and places it in a specified tape library.
Display an Inventory Report	**DSPRMLINV**	Displays, prints, or directs a volume Inventory Report to a database file for a specified tape library.
Display a Scratch List Report	**DSPRMLSCR**	Displays, prints, or directs a Scratch List Report to a database file for a specified tape library.
Display the status of the trace diagnostic	**DSPTRCSTS**	Displays the status of a specified trace currently in progress.

Table 2-1 (Page 2 of 2). RMLS/CSC CL Commands		
Function	**Command**	**Description**
Eject a volume	**EJTRMLVOL**	Moves specified tape volumes from a tape library to a CAP. A user can manually remove the tape volumes from the CAP.
End the trace diagnostic	**ENDRMLTRC**	Ends the trace diagnostic for RMLS/CSC software.
Enter a volume	**ENTRMLVOL**	Recognizes tape volumes in a CAP of a tape library and instructs the robot to move them to a cell in the tape library.
Mount a tape volume	**MNTRMLVOL**	Locates a specified volume under RMLS/CSC control and mounts it in a library tape drive.
Print a Trace Report	**PRTRMLTRC**	Prints a trace report.
Query RML volumes	**QRYRMLVOL**	Provides information from a list of volumes that are controlled by RMLS/CSC.
Designate an RML volume as scratch	**SCRRMLVOL**	Designates an RML volume as a scratch volume to the server.
Start the trace diagnostic	**STRRMLTRC**	Starts the trace diagnostic for RMLS/CSC software.
Unscratch an RML volume	**UNSRMLVOL**	Designates an RML volume as not a scratch volume to the server.
Work with RML configuration descriptions	**WRKRMLCFGD**	Manually creates, changes, displays, or deletes tape library configuration descriptions through an interactive terminal session.
Note: EJTRMLVOL, **ENTRMLVOL**, and **WRKRMLCFGD** should be issued from an interactive job, interactive program, or interactive REXX job.		

REPORT DESCRIPTIONS

Various RMLS/CSC reports can be requested to assist you. Chapter 9, “RMLS/CSC Reports” on page 9-1 contains a description of all reports and a table of how information in the reports can be used. A report is generated by making a selection on the Report menu, in a batch job, an interactive control language program, a REXX program, a HLL program, or by a RMLS/CSC command.

The following report options are available:

Table 2-2. RMLS/CSC Reports		
Function	**Report and Command**	**Description**
List physical location of volumes	**Inventory Report DSPRMLINV**	This report is a listing of the physical locations of volumes under RMLS/CSC control.
List of physical location of scratch volumes	**Scratch List Report DSPRMLSCR**	This report is a listing of the physical locations of the RMLS/CSC tape volumes marked as “scratch”.
Log of RMLS/CSC activities	**Event Information SD/400 DSPLOG**	This report is a log of RMLS/CSC activities, for example mounts and dismounts, for a given period of time.
Report of trace information	**Trace Report PRTRMLTRC**	This report contains the trace information contained in the trace log file.

EXECUTION ENVIRONMENTS

The following hardware and software is required for Removable Media Library Software/CSC to operate on the AS/400.

Required Hardware

StorageTek's Automated Cartridge System must be installed and operational. RMLS/CSC functions are supported with TCP/IP as the communication protocol on AS/400 Version 5 Release 2 and above. In order to support RMLS/CSC, the AS/400 must be equipped with:

- an Ethernet card or token ring card
- a SCSI or Fibre adapter card.

Required Software

Table 2-3 lists required software for successfully implementing tape library operation on an AS/400 with ACSLS as the server.

Table 2-3. Required Software for ACS Operation with AIX

Software Description	Version/Release
ACSLS	Release 6.1.1 or above and SPE0303A
RMLS/CSC	Release 1.3.0 or above
AIX	4.3.3 or above
OS/400	Version 5 Release 2 or above

Table 2-4 lists required software for successfully implementing tape library operation on an Solaris Operating System.

Table 2-4. Required Software for ACS Operation with a Solaris Operating System

Software Description	Version/Release
ACSLS	Release 6.1.1 or above and SPE0304S
RMLS/CSC	Release 1.3.0 or above
Solaris	4.8 or above
OS/400	Version 5 Release 2 or above

Table 2-5 lists required software for successfully implementing tape library operation on an AS/400 with LibraryStation as the server.

Table 2-5. Required Software for ACS Operation with RMLS/CSC and LibraryStation	
Software Description	**Version/Release**
MVS/ESA	Release 4.3 or higher
RMLS/CSC	Release 1.3.0 or above
VTAM	Version 3.4
Host Software Component	Version 1.2 or 2.0
LibraryStation	Version 5.0 or above
OS/400	Version 5 Release 2 or above

PROGRAMMING ENVIRONMENTS

Most RMLS/CSC commands are entered and executed in the programming environments listed in Table 2-6. In the description of each RMLS/CSC command, a table contains the Job Execution Environments in which the command executes.

Table 2-6. CL Commands Programming Environments	
Type of Job	**Description**
Batch Job	Entered from batch input stream (batch entry), external to compiled CL programs.
Interactive Job	Interactive entry, external to compiled CL programs.
Batch Program	As a part of a compiled CL program that is called from batch entry.
Interactive Program	As a part of a compiled CL program that is called from interactive entry.
Batch REXX Job	As a part of a REXX procedure that is called from batch entry.
Interactive REXX Job	As a part of a REXX procedure that is called from interactive entry.

RUN DIAGNOSTICS

The diagnostic commands are intended to be used in conjunction with StorageTek support personnel.

The RMLS/CSC trace function can be used to diagnose StorageTek libraries and RMLS/CSC software problems. Trace can be started for any RMLS/CSC subsystem. After trace is started, any RMLS/CSC command execution results in logged trace entries. Refer to “Start Trace (STRRMLTRC) Command” on page 7-37 for details about the Start Trace Command.

When the trace is executing, large amounts of data could be generated. This data is stored on DASD. Starting trace can significantly affect library operation and performance.

While trace is executing, the status of the trace can be displayed on a screen. This allows you to determine if the parameters chosen when trace was started are the correct ones to achieve the trace you wanted. The status of the trace can be displayed anytime trace is executing. Refer to "Display Trace Status (DSPTRCSTS) Command" on page 7-48 for details about the Display Trace command.

The trace function can be terminated at any time and the results of the trace are stored in a file named TRCFILE on the AS/400. The name specified when trace was started is used to create a member in TRCFILE. Trace entries are stored in this member. Refer to "End Trace (ENDRMLTRC) Command" on page 7-44 for details about the End Trace command.

The results of the trace can be printed anytime after the trace is terminated. Refer to "Print Trace Report (PRTRMLTRC) Command" on page 9-24 for details about the Print Trace command.

Part II. RMLS/CSC Installation, Configuration, and Maintenance

Part II. Contents

Chapter 3. Installation and Configuration **3-1**
Starting RMLS/CSC in a Multiple Client Environment 3-1
RMLS/CSC Product Maintenance 3-1

Chapter 3. Installation and Configuration

This section contains directions to information about how to install the RMLS/CSC product on your AS/400 system.

RMLS/CSC should not be restored to another AS/400. RMLS/CSC should only be installed using the proper procedures described in the appropriate installation appendixes. Otherwise unpredictable results may occur.

If you are planning to install RMLS/CSC using an AIX or Solaris operating system installing RMLS/CSC with an ACSLS server, refer to Appendix D, “Installing RMLS/CSC With an ACSLS Server” on page D-1 for the procedure.

If you are planning to install RMLS/CSC using an MVS system with LibraryStation as a server, refer to Appendix E, “Installing RMLS/CSC with a LibraryStation Server” on page E-1 for the procedure.

STARTING RMLS/CSC IN A MULTIPLE CLIENT ENVIRONMENT

If you are running RMLS/CSC in a multiple client environment where the tape devices are shared between clients, you should use the AS/400 CHGDEVTAP command to specify that the tape device is varied offline at IPL. This allows the tape device to be used by the other clients. You should also specify *YES for the ASSIGN parameter and *NO for the ONLINE parameter.

RMLS/CSC PRODUCT MAINTENANCE

RMLS/CSC product maintenance is distributed as PTFs that are in the same format used by IBM for PTFs. This allows you to use the same process used to install PTFs from IBM. This process is described in *Application System/400 System Operator's Guide*.

If you have questions about the installation of a PTF, refer to the guide *Requesting Help from Software Support* for instructions about how to obtain assistance from StorageTek support.

Part III. General Information for Users

Part III. Contents

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Interpreting and Responding to Messages . . . 4-1
Handling or Reporting System Problems . . . 4-2
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Chapter 4. Working with Removable Media Library Software/CSC Jobs

This part contains general information about Removable Media Library Software tasks that are of interest to a wide-range audience, including:

- Operators
- System programmers
- Application programmers
- System administrators.

When using RMLS/CSC, you interface with the product through CL commands. These commands, except where noted, can be issued from all valid OS/400 command entry environments.

INTERPRETING AND RESPONDING TO MESSAGES

To keep the AS/400 system running productively, it is important to interpret and respond to both AS/400 system messages and RMLS/CSC messages. Refer to *Application System/400 System Operator's Guide* for information about checking and cleaning up system messages generated by the system operator, resulting from jobs running, or resulting from printer output or system devices. Additional information is presented in *Application System/400 System Operator's Guide* about displaying messages, changing message queues, handling error messages, and printing messages.

RMLS/CSC messages may be handled much in the same manner as AS/400 system messages. However, most of the time, the RMLS/CSC messages have very specific meanings directly related to the operation of a library. This means that in most cases, the user must respond to messages to prevent delay in library operations. For example, the following kinds of messages require user action:

- messages relating to entering or ejecting cartridges
- messages relating to manual mount or dismount of cartridges
- allocation conflicts or problems.

Note: A communications disconnect message (RC - 17) is issued every time a communications session ends. This message is normal and does not indicate a communications problem. This message appears on the p-series screen.

RMLS/CSC message REDC807 and AS/400 messages CPA4262 and CPA6745 can be received in regards to an effort to write to a write-protected volume. The volume indicated in the forwarded message is write-protected. This write protection can be:

- the result of the physical setting of the thumbwheel or other protection device associated with the physical tape.
- the result of the mount command specifying read only (not applicable to RMLS/CSC but to mounts issued using a server)
- or the result of system security, such as RACF, imposing restrictions on the use of the volume.

Many other RMLS/CSC messages, relating only to job completion, may be cleaned up using the automatic cleanup techniques described in the *Application System/400 System Operator's Guide*.

RMLS/CSC messages have prefixes of either “RM”, “RE”, or “DMS”.

- messages with a prefix of “RM” are user program messages
- messages with a prefix of “RE” are event messages that are logged to the AS/400 system history log (QHST).

Refer to Appendix B, “Message List” on page B-1 for a list of these messages.

HANDLING OR REPORTING SYSTEM PROBLEMS

For detailed information about how to handle or report problems with the Removable Media Library Software subsystem, see the guide *Requesting Help from Software Support*

CHANGE DEFAULT SUPPORT CONTACT INFORMATION

For information about how to submit new product requirements or request changes to existing functions that do not meet your needs, see the guide *Requesting Help from Software Support*.

Chapter 5. Getting Started

To use the information in this chapter, RMLS/CSC must be installed and configured.

OVERVIEW

Accessing the RMLS/CSC Main Menu involves signing on to the AS/400 system and invoking an AS/400 Main Menu option or issuing a GO command that displays the menu. RMLS/CSC can be set up on your system as an AS/400 Main menu option. However, depending upon your system configuration and setup, accessing the RMLS/CSC Main Menu may not be available from the AS/400 Main menu. Check with your system administrator to ensure that you are aware of the access method and any special considerations. The procedure described in this guide presumes that the RMLS/CSC Main Menu is accessible as a selection from the AS/400 Main Menu.

Before attempting to access the RMLS/CSC main menu, ensure that you have performed the following:

- Familiarized yourself with the basic principles of the AS/400 system and the OS/400 operating system.
- Familiarized yourself with AS/400 system and Removable Media Library Software documentation.
- Obtained a “user name” and “password” from the system administrator.

  If your AS/400 system does not automatically create user names for new users, ensure that you have a “user name” and “password” before attempting to sign on.
- Reviewed the AS/400 sign on and sign off procedures provided in the *Application System/400 New User's Guide*.
- Added library RMLS to your library list.

Once you have accessed the RMLS/CSC Main Menu, you may perform other RMLS/CSC operations.

ACCESSING RMLS/CSC MENUS

To sign on to the AS/400 system and access the RMLS/CSC Main Menu, perform the following steps:

1. Follow AS/400 sign on instructions described in the *Application System/400 New User's Guide*. The AS/400 Main Menu is displayed with the cursor located at the command line.
2. At the command line, type **GO CSC** and press **Enter**. If RMLS/CSC is setup as an option on the AS/400 main menu, the RMLS/CSC menu could be selected from the AS/400 main menu as an option to typing **GO CSC**.

Note: You may type any RMLS/CSC menu identifier and immediately display the specified menu.

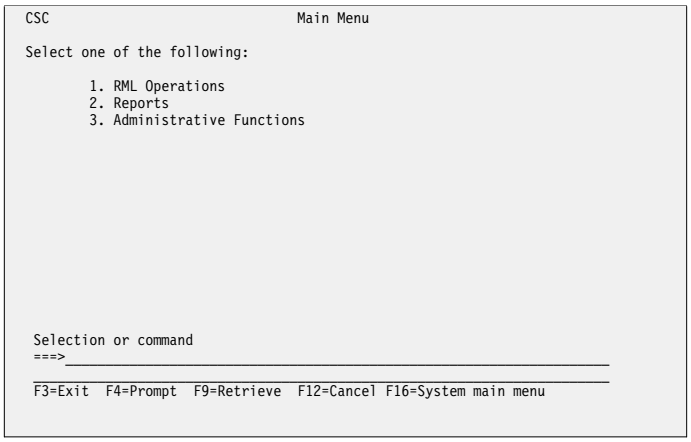
3. Select an option from the RMLS/CSC main menu.

ACCESS RMLS/CSC FUNCTIONS

Overview

The RMLS/CSC Main Menu is the primary selection screen for accessing RMLS/CSC functions. You can access and use all RMLS/CSC functions from this selection menu. Typing the selection number on the command line and pressing **Enter** displays the appropriate menu for the selection made.

RMLS/CSC Main Menu



Procedure to Access RMLS/CSC Menus

1. To select a RMLS/CSC function, type a selection number (for example; **1**, **2**, etc.) on the command line of the Main Menu and press **Enter**. The selected menu is displayed.

   For example, typing **3** at the command line and pressing **Enter** displays the Administrative Functions Menu.

2. You can also execute any RMLS/CSC command or control language command from the RMLS/CSC Main Menu by typing the command on the command line and pressing **Enter**. The command is executed.

All RMLS/CSC menus are initially displayed with the cursor positioned at the selection or command line.

Terminating jobs started from RMLS/CSC Menus

Any job or RMLS/CSC command started as a result of a menu selection can be ended by issuing the AS/400 ENDRQS or ENDJOB commands. If a job or command that has a device allocated to it is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

Note: If a job or command that has a CAP reserved to it is ended before the CAP is released (for example, volumes are in the CAP waiting for user intervention), the CAP may be unavailable to others on the system or other systems until there is user intervention.

Note that ACSLS requests initiated from RMLS/CSC and cancelled using ACSLS, may result in hanging the requesting RMLS/CSC job. A job hung in this manner must be ended using the AS/400 ENDJOB command with the option parameter set to *IMMED.

RMLS/CSC Function Menus

The following screens illustrate the major functions contained on the menus for RMLS/CSC.

RML Operations Menu

The RML Operations Menu contains selections that are used by most library users including system operators, programmers, system administrators, and data administrators. Refer to “Part V. RMLS/CSC Operations” on page 7-53 for a description of these selections.

```
CSCOPS                        RML Operations Menu

Select one of the following:

        1. Allocate a RML Device
        2. Deallocate a RML Device
        3. Mount a Volume
        4. Dismount a Volume
        5. Enter Volumes into an RML
        6. Eject Volumes from an RML
        7. Scratch RML Volumes
        8. Unscratch RML Volumes
        9. Clean a RML Device
       10. Query RML Volumes









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

Reports Menu

The Reports Menu contains selections that are used primarily by system programmers, programmers, and system administrators for controlling library cartridge inventory and resolving problems with library operations or user programs. Refer to “Part VI. RMLS/CSC Reports” on page 8-69 for a description of these selections.

```
CSCRPT                          Reports Menu

Select one of the following:

        1. Display Inventory Report
        2. Display Scratch List Report
        3. Display Event Report
        4. Print Trace Report









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

Administrative Functions Menu

The Administrative Functions Menu contains selections that are used primarily by system programmers or system administrators for controlling RMLS/CSC functions and diagnosing operational problems in user programs. Refer to “Part IV. Administration of RMLS/CSC Libraries” on page 5-5 for a description of these selections.

```
CSCADM                     Administrative Functions Menu

Select one of the following:

        1. Audit an RML
        2. Start a Trace
        3. End a Trace
        4. Display Trace Status
        5. Work with RML Configuration Descriptions









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
 F13=Information assistant  F16=AS/400 main menu
```

ONLINE HELP

In addition to the online help that is available for the AS/400 system, online help is available for RMLS/CSC. Online help for RMLS/CSC operates exactly as online help for the AS/400 system. For information about AS/400 online help, refer to the *Application System/400 New User's Guide*.

Part IV. Administration of RMLS/CSC Libraries

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Chapter 6. System Administrator Tasks

This section contains information about Removable Media Library Software tasks that are of primary interest to system administrators or system programmers. These tasks include:

- Determining the level of security needed for the Removable Media Library Software commands and assigning it.
- Describing the configuration descriptions of the physical Removable Media Library resources that are attached to the AS/400.
- Auditing the Removable Media Library and tracing the operations of the Removable Media Library Software.

RMLS/CSC SECURITY

RMLS/CSC security is based, at the object level, identical to AS/400 system security. RMLS/CSC, as shipped, has an object authority of *CHANGE assigned to all command objects.

A security administrator (*SECADM) or security officer (*SECOFR) is required to manage and reassign security levels to meet a data center's specific requirements.

When RMLS/CSC is installed, groups of RMLS/CSC commands are assigned to authorization lists by default.

The User Group is contained in the RMLUSRAUTL authorization list and consists of the following commands:

- ALCRMLDEV
- DLCRMLDEV
- DSMRMLVOL
- DSPRMLSCR
- MNTRMLVOL
- QRYRMLVOL

The Management Group is contained in the RMLMGTAUTL authorization list and consists of the following commands:

- EJTRMLVOL
- ENTRMLVOL
- SCRRMLVOL

- UNSRMLVOL

The Trace Group is contained in the RMLTRCAUTL authorization list and consists of the following commands:

- DSPTRCSTS
- ENDRMLTRC
- PRTRMLTRC
- STRRMLTRC

The Administrative Group is contained in the RMLADMAUTL authorization list and consists of the following commands:

- AUDRML
- CLNRMLDEV
- DSPRMLINV
- WRKRMLCFGD

Refer to Table 7-1 on page 7-1 for the functions and a description of each of these commands.

By default, the authorization lists:

1. provide *USE access for all users to the User and Management commands
2. provide all object authority to all the commands for the installing profile.

By default, the RMLS profile has all object authority to all RMLS/CSC commands. As a part of the installation process, the installer is given the options of accepting the defaults, rejecting the authorization lists, or editing the authorization lists. Refer to Chapter 3, "Installation and Configuration" on page 3-1 for the details of installation. For the details about assigning users to authorization lists, refer to *AS/400 Security Reference*.

Users Requiring RMLS/CSC Command Authorization

Should you require different security authorization, your security officer or security administrator can specify special authorities independent of any user class. Contact your security officer or administrator for additional information.

Administrator's Change of RMLS/CSC Command Security Levels

Refer to *Application System/400 Security Reference* for information about security issues and assigning or changing special authorities.

Chapter 7. RMLS/CSC Command Descriptions

RMLS/CSC commands are listed and described in Table 7-1. You may choose to be prompted for the command parameters by pressing **F4** after typing in the command name instead of entering the entire command.

Syntax for the RMLS/CSC commands have syntax consistent with OS/400 control language commands. Syntax and validity checking of parameters is performed. Refer to Appendix A, "Command Reference Summary" on page A-1 for the syntax for each RMLS/CSC command.

Any RMLS/CSC command can be ended by issuing the AS/400 ENDRQS or ENDJOB commands.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

Online help is displayed by pressing **F1**.

RMLS/CSC commands may be issued in an interactive terminal session through option selection on a RMLS/CSC menu, from a menu command line with a control language command, through a batch job, a REXX program, or a HLL program.

Table 7-1 (Page 1 of 2). RMLS/CSC CL Commands

Function	Command	Description
Allocate a tape device	**ALCRMLDEV**	Allocates a tape device to a specified user.
Audit an RML	**AUDRML**	Initiates a reconciliation between the actual contents of an RML's storage area and what the server's records list as the contents of that RML's storage area. The audit determines the tape volumes inventory contained in the tape library. **Note:** This function is not supported with a LibraryStation server.
Clean a device.	**CLNRMLDEV**	Locates a cleaning cartridge and mounts it in the specified tape drive. Initiates the cleaning operation on the specified tape drive. **Note:** This function is not supported with a LibraryStation server.
Deallocate a tape device	**DLCRMLDEV**	Deallocates a tape device from a specified user.
Dismount a volume	**DSMRMLVOL**	Removes a tape volume currently in a tape library drive and places it in a specified tape library.
Display an Inventory Report	**DSPRMLINV**	Displays, prints, or directs a volume Inventory Report to a database file for a specified tape library.

Table 7-1 (Page 2 of 2). RMLS/CSC CL Commands		
Function	**Command**	**Description**
Display a Scratch List Report	**DSPRMLSCR**	Displays, prints, or directs a Scratch List Report to a database file for a specified tape library.
Display the status of the trace diagnostic	**DSPTRCSTS**	Displays the status of a specified trace currently in progress.
Eject a volume	**EJTRMLVOL**	Moves specified tape volumes from a tape library to a CAP. A user can manually remove the tape volumes from the CAP.
End the trace diagnostic	**ENDRMLTRC**	Ends the trace diagnostic for RMLS/CSC software.
Enter a volume	**ENTRMLVOL**	Recognizes tape volumes in a CAP of a tape library and instructs the robot to move them to a cell in the tape library.
Mount a tape volume	**MNTRMLVOL**	Locates a specified volume under RMLS/CSC control and mounts it in a tape library drive.
Print a Trace Report	**PRTRMLTRC**	Prints a trace report.
Query RML volumes	**QRYRMLVOL**	Provides information from a list of volumes that are controlled by RMLS/CSC.
Designate an RML volume as scratch	**SCRRMLVOL**	Designates an RML volume as a scratch volume to the server.
Start the trace diagnostic	**STRRMLTRC**	Starts the trace diagnostic for RMLS/CSC software.
Unscratch an RML volume	**UNSRMLVOL**	Designates an RML volume as not a scratch volume to the server.
Work with RML configuration descriptions	**WRKRMLCFGD**	Manually creates, changes, displays, or deletes tape library configuration descriptions through an interactive terminal session.
Note: EJTRMLVOL, ENTRMLVOL, and WRKRMLCFGD should be issued from an interactive job, interactive program, or interactive REXX job.		

The rest of this section describes the Work With RML Configuration Descriptions, Audit, and Trace commands of Table 7-1. “Part V. RMLS/CSC Operations” on page 7-53 and “Part VI. RMLS/CSC Reports” on page 8-69 describe the rest of the commands.

WORK WITH RML CONFIGURATION DESCRIPTIONS (WRKRMLCFGD) COMMAND

Description

The WRKRMLCFGD command requests RMLS/CSC to allow you to create, change, delete, or display Removable Media Library configuration descriptions that are in the RMLS/CSC configuration file. Removable Media Library configuration descriptions are logical representations of physical Removable Media Library resources attached to the AS/400 through an AS/400 communication resource. These descriptions contain a name that can be used to refer to the Removable Media Library resource (from within RMLS/CSC), and a description of that resource. Working with configuration descriptions requires substantial user intervention.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch			
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, configuration descriptions are created, changed, deleted, or displayed only:

- by selecting **5. Work with RML Configuration Descriptions** on the Administrative Functions Menu.
- by issuing the WRKRMLCFGD command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Work with RML Configuration Descriptions

From the Work With RMLS/CSC Configuration screen, you can create, change, delete, and display the configuration descriptions if configuration descriptions exist. If no configuration descriptions exist, you can only create configuration descriptions from the Work With RMLS/CSC Configuration screen.

The options Change, Delete, and Display are selected from the Work With RMLS/CSC Configuration screen. The create option is selected using **F6** from any RMLS/CSC screen where **F6=Create** appears.

On screens associated with this command, the field name Class is used to specify a type of physical entity for which a configuration description is to be created, changed, deleted, or displayed. Examples of Class are *SRV for server, *RML for Removable Media Library, and *LSM for Library Storage Module.

If you use one of the options of Create, Change, Delete, or Display and one of the classes of *SRV, *RML, *LSM, *CAP, and *TAP, RMLS/CSC produces a screen that allows you to work with the selected configuration description.

Note: If a job or command, which has a device allocated to it, is ended before the device is deallocated, RMLS/CSC still marks the device as allocated. Changes or creates of descriptions are not allowed when devices are marked allocated.

During the process of creating or changing configuration descriptions, you have the opportunity to create or change the RML number, LSM number, CAP number, TAP panel number, or TAP drive number. The numbers specified in each of these configuration descriptions must be the same number used by the server for that same entity. For example, if ACSLS has a LSM defined as 0 and RMLS/CSC is building a configuration description for the same LSM, the LSM number must be 0 for RMLS also. If LibraryStation has an CAP defined as 0,0,1, RMLS/CSC must define the same CAP number as 1 when the configuration description is built.

In ACSLS, use the QUERY ACS ALL command to get the addresses of the components. In LibraryStation, use the HSC LIBGEN command to determine how the ACS components are addressed.

Configuration descriptions can only be created in the following sequence; *SRV, *RML, *LSM, *CAP, and *TAP.

- In order to create any configuration description, you must create a server (*SRV) or you must know the name of a server that already exists.
- In order to create the description of a Removable Media Library (*RML), a server that controls the Removable Media Library must have been created. The server name must be supplied.
- In order to create the description of a Library Storage Module (*LSM), the description of a Removable Media Library that contains the LSM must have been created. The Removable Media Library name must be supplied.
- In order to create the description of a Cartridge Access Port (*CAP), the description of a Library Storage Module that contains the CAP must have been created. The Library Storage Module name must be supplied.

- In order to create the description of a tape device (*TAP), the description of the Library Storage Module the tape device resides in must have been created. The Library Storage Module name must be supplied.

  When you create or change the description of a TAP, you must ensure that the RMLS/CSC control path, which you are creating or changing, and the existing OS/400 *DEVD device description parameter address the same physical tape device. Refer to *Communications: OS/400 Communications Configuration Reference* for information about the *DEVD parameter.

Figure 7-1 shows the connectivity between configuration descriptions.

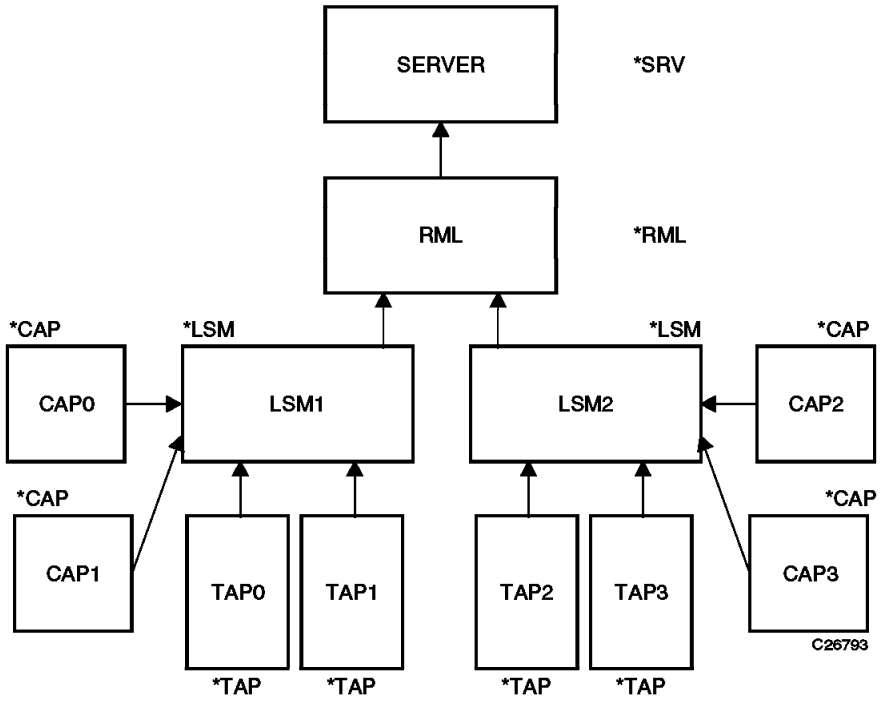


Figure 7-1. Configuration Description Connectivity

Configuration descriptions can be deleted in any sequence. However, if a configuration description is deleted and there are existing configuration descriptions that point to the deleted configuration description, a message is issued to alert you to the situation. For example, if the configuration description for a Removable Media Library is deleted and a Library Storage Module existed that pointed to the deleted Removable Media Library, you would receive a message alerting you to the situation. The Library Storage Module and any Cartridge Access Port, Tape Device, or cartridges that reside in the Library Storage Module cannot be accessed. In order to access the Library Storage Module and its subordinate devices, you must select the change option for the Library Storage Module and change the name of the Removable Media Library that contains the Library Storage Module from the deleted Removable Media Library to another Removable Media Library. Then the Library Storage Module and all its subordinate devices can be accessed.

Attachment Parameters

Table 7-2 through Table 7-3 on page 7-7 contain information about the attachment parameters that are used in the development and use of configuration descriptions. This information is also given in conjunction with each screen on which the attachment parameter is used.

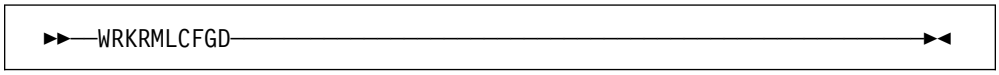
Table 7-2 (Page 1 of 2). General Server Attachment Parameters

Data Name	Data Type	Data Source	Description
Name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
Class	Character [10]	User	Specifies a category of RML physical entity. Valid values are: • *SRV for server function • *RML for Removable Media Library • *LSM for Library Storage Module • *CAP for Cartridge Access Port • *TAP for Tape Device.
Type	Character [10]	User	Explicitly defined names for supported types of RML resources. These names are used in conjunction with a CLASS to identify a particular type of RML resource. Valid values can be: • *ALS or *LS for the *SRV class • *ACS for the *RML class • *4410, *9310, *9360, *9710, *9738, L180, L700, *L5500, or *LSM for the *LSM class • *SCAP, *LCAP, *PCAP, LWLF, *SWLF, *9710, L700, *L5500, or *CAP for the *CAP class • *4480, *4490, *4890, *9840, *9940, or *TAP for the *TAP class.
RMLNUMBER	Character [3]	User	A character from 0 to 127 used to address a specific RML.
LSMNUMBER	Character [2]	User	A character from 0 through 15 used to address a specific LSM within a specific RML.
CAPNUMBER	Character	User	A character from 0 through 2 used to address a specific CAP within a specific LSM.
PNLNUMBER	Character [2]	User	A character from 0 to 10. This is used to address a specific panel within an LSM.
DRVNUMBER	Character	User	A character from 0 to 19 used to address a specific tape drive within a specific Panel of an LSM.
RUNTIME	Character [1]	RMLS/CSC	A character, either A or I (active or inactive), that specifies the state of an entity in the RMLS/CSC run-time configuration. An entry in the configuration hierarchy with the ACTIVE field set to N results in itself and all items lower in the hierarchy set to RUNTIME I. An item with RUNTIME set to I is ineligible for use.

Table 7-2 (Page 2 of 2). General Server Attachment Parameters			
Data Name	**Data Type**	**Data Source**	**Description**
Text	Character [32]	User	A description of the physical entity that has been configured.
ACTIVE	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. This does not mean the resource is actually active in the active run-time configuration, but is eligible to be active. For example, if an upstream resource is inactive or deleted from the RMLS/CSC configuration, this resource is removed from the run-time configuration. The valid values are: • Y - Yes • N - No
NETTYPE	character [5]	User	Specifies the type of network used to communicate with a *SRV class entity. *TCP and *LU62 are the only network types supported.
TRANSTYPE	Character [5]	User	Specifies the type of data translation used between the AS/400 and the server. *XDR (external data representation) is the only translation type supported.

Table 7-3. Specific Server Attachment Parameters			
Data Name	**Data Type**	**Data Source**	**Description**
RMTIPADDR	Character [15]	User	Specifies the IP address of the ACSLS or LibraryStation server.
RMTLUNAME	Character [8]	User	Specifies the logical-unit name of the server software.
RMTNETID	Character [8]	User	Specifies the name of the SNA network in which the server resides.
RMTPORTNUM	Numeric [5]	User	Specifies the port number of the ACSLS or LibraryStation server to use for CSCI communication. By default, the port number assigned is '60001'.
LOCALLOC	Character[8]	User	The local location name of the system on which RMLS/CSC is to run. This is the name by which the server identifies the RMLS/CSC client location.

Syntax



Required Parameters

There are no required parameters for this function.

Optional Parameters

There are no optional parameters for this function.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to create, change, delete, or display configuration descriptions through an interactive session.

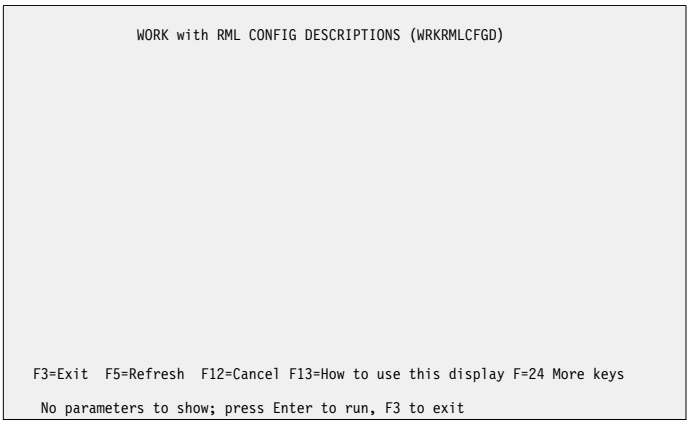
- "Procedure to Work with RML Configuration Descriptions Using Menus" on page 7-8
- "Procedure to Work with RML Configuration Descriptions Using the WRKRMLCFGD Command" on page 7-11.

Procedure to Work with RML Configuration Descriptions Using Menus

1. At the RMLS/CSC Main Menu, type **3** (Administrative Functions) on the command line and press **Enter**. The Administrative Functions Menu is displayed with the cursor positioned on the command line.

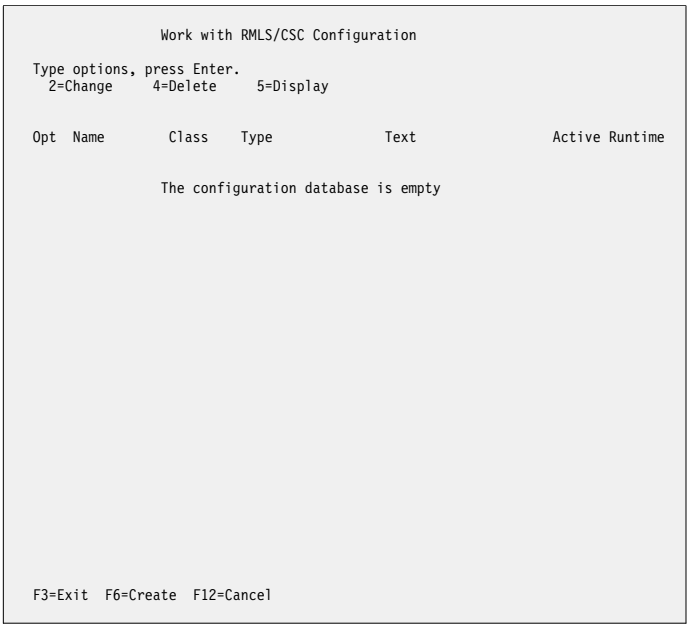
```
CSCADM                      Administrative Functions Menu

Select one of the following:

        1. Audit an RML
        2. Start a Trace
        3. End a Trace
        4. Display Trace Status
        5. Work with RML Configuration Descriptions









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
 F13=Information assistant  F16=AS/400 main menu
```

2. Type **5** (Work with RML Configuration Descriptions) and press **Enter**. The Command Prompt Display for Work with RML Configuration Descriptions is displayed.



There are no fields on this screen that require data entries.

3. Press **Enter** and one of two Work with RMLS/CSC Configuration screens is displayed. If you have not created any configuration descriptions, an empty Work with RMLS/CSC Configuration screen is displayed.



From this screen, you can press **F6** and the Create Configuration Description menu is displayed.

```
                    Create Configuration Description

Type choices, press Enter.

Configuration description name   __________   Name
Configuration description class  ___          *SRV, *RML, *LSM, *CAP, *TAP









F3=Exit   F12=Cancel
```

From this screen, you can only create configuration descriptions. The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing. When the fields of this screen are completed, the create menu for the class selected is displayed. See "Messages, Screens, and Reports" on page 7-14 for a description of the menus for each class.

- If you have created configuration descriptions, the Work with RMLS/CSC Configuration menu appears showing the configuration descriptions you have created.

```
                 Work with RMLS/CSC Configuration

Type options, press Enter.
  2=Change     4=Delete     5=Display


Opt  Name        Class    Type             Text                 Active Runtime
 _   SERVERONE   *SRV     *ALS    This is a Unix Library server    Y      A
 _   RML01       *RML     *ACS    This is an STK type LMU          Y      A
 _   LSM01       *LSM     *9310   This is an Powderhorn silo       Y      A
 _   LSM02       *LSM     *4410   This is a standard silo          Y      A
 _   CAP01       *CAP     *SCAP   This is a standard CAP           Y      A
 _   CAP02       *CAP     *LCAP   This is a large CAP              Y      A
 _   CAP03       *CAP     *LCAP                                    Y      A
 _   CAP04       *CAP     *PCAP   This is a priority CAP           Y      A
 _   TAP01       *TAP     *4490   36 Track                         Y      A
 _   TAP02       *TAP     *4490   36 Track                         Y      A
 _   TAP03       *TAP     *4490   36 Track                         Y      A
 _   TAP04       *TAP     *4490   36 Track                         Y      A
 _   TAP05       *TAP     *4490   36 Track                         Y      A
 _   TAP06       *TAP     *4490   36 Track                         Y      A
 _   TAP07       *TAP     *4490   36 Track                         Y      A
 _   TAP08       *TAP     *4490   36 Track                         Y      A









                                                                  Bottom
F3=Exit  F6=Create  F12=Cancel
```

The cursor is positioned at the Entry Field of the first configuration description.

- From this screen, you can create, change, delete, or display the configuration descriptions. Select any one of the four options Change, Create, Delete or Display to be used for any one of the classes of entries *SRV, *RML, *LSM, *CAP or *TAP. A message is displayed indicating successful completion of the request.

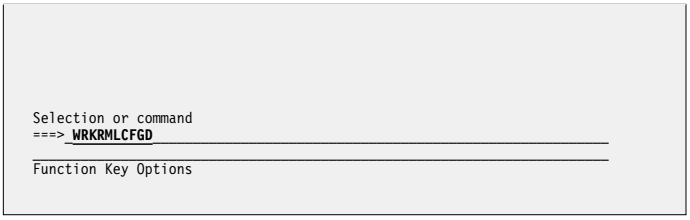
If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Procedure to Work with RML Configuration Descriptions Using the WRKRMLCFGD Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

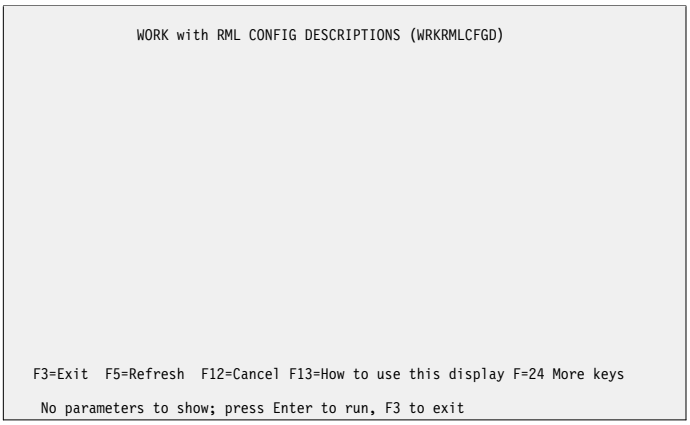
2. Type the WRKRMLCFGD command.

   An example is:



   The example instructs RMLS/CSC to display the Program Display screen.

   If you want to go directly to the Command Prompt Display for the Work with RML Configuration Descriptions function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



3. Press **Enter** and one of two screens appear:

   - If you have not created configuration descriptions, an empty Work with RMLS/CSC Configuration screen is displayed.

```
                Work with RMLS/CSC Configuration

Type options, press Enter.
  2=Change     4=Delete     5=Display

Opt  Name        Class    Type              Text                Active Runtime

                The configuration database is empty

F3=Exit  F6=Create  F12=Cancel
```

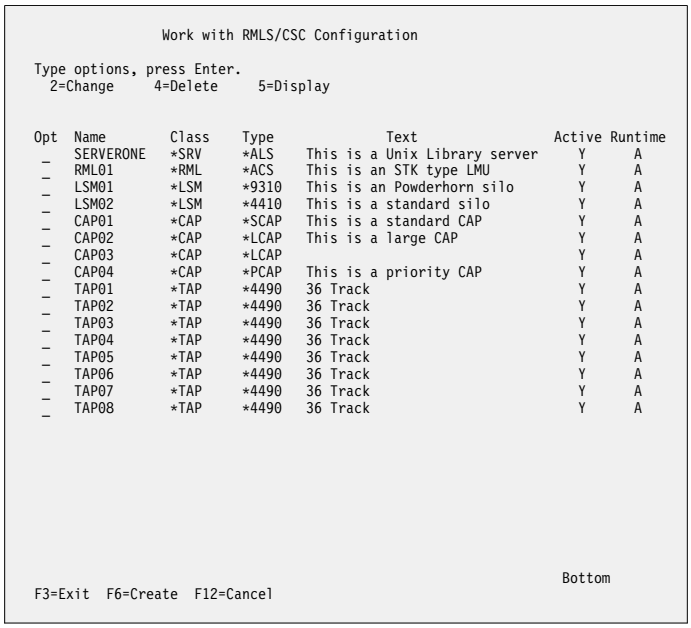
From this screen, you can create configuration descriptions by pressing **F6** and the Create Configuration Description menu is displayed.

```
                    Create Configuration Description

 Type choices, press Enter.

 Configuration description name   _________   Name
 Configuration description class  ___         *SRV, *RML, *LSM, *CAP, *TAP

 F3=Exit   F12=Cancel
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

When the fields of this screen are completed, the create menu is displayed for the class selected. See “Messages, Screens, and Reports” on page 7-14 for a description of the menus for each class.

- If you have created configuration descriptions, the Work with RMLS/CSC Configuration Descriptions menu appears showing the configuration descriptions you have created.



```
                Work with RMLS/CSC Configuration

Type options, press Enter.
  2=Change     4=Delete     5=Display


Opt  Name        Class    Type             Text                 Active Runtime
 _   SERVERONE   *SRV     *ALS    This is a Unix Library server    Y      A
 _   RML01       *RML     *ACS    This is an STK type LMU          Y      A
 _   LSM01       *LSM     *9310   This is an Powderhorn silo       Y      A
 _   LSM02       *LSM     *4410   This is a standard silo          Y      A
 _   CAP01       *CAP     *SCAP   This is a standard CAP           Y      A
 _   CAP02       *CAP     *LCAP   This is a large CAP              Y      A
 _   CAP03       *CAP     *LCAP                                    Y      A
 _   CAP04       *CAP     *PCAP   This is a priority CAP           Y      A
 _   TAP01       *TAP     *4490   36 Track                         Y      A
 _   TAP02       *TAP     *4490   36 Track                         Y      A
 _   TAP03       *TAP     *4490   36 Track                         Y      A
 _   TAP04       *TAP     *4490   36 Track                         Y      A
 _   TAP05       *TAP     *4490   36 Track                         Y      A
 _   TAP06       *TAP     *4490   36 Track                         Y      A
 _   TAP07       *TAP     *4490   36 Track                         Y      A
 _   TAP08       *TAP     *4490   36 Track                         Y      A









                                                                  Bottom
F3=Exit  F6=Create  F12=Cancel
```

The cursor is positioned at the Entry Field of the first configuration description in the list.

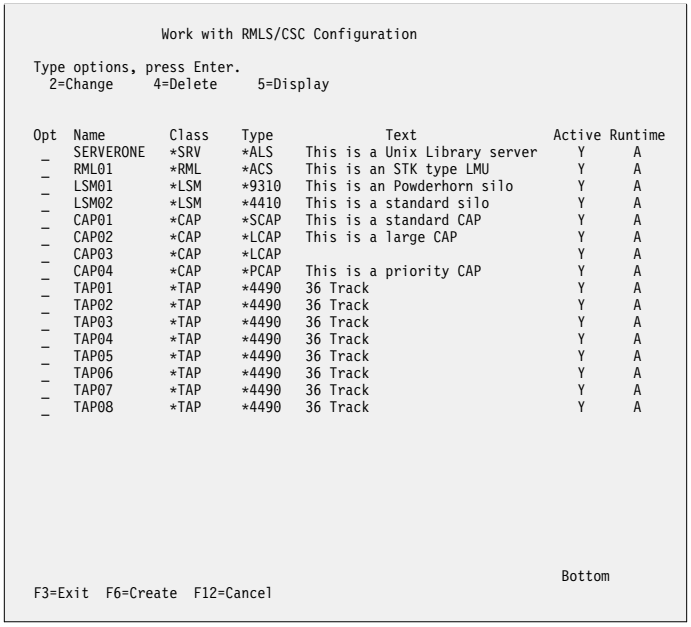
- From this screen, you can create, change, delete, or display the configuration descriptions. Select any one of the four options Change, Create, Delete or Display to be used for any one of the classes of entries *SRV, *RML, *LSM, *CAP, or *TAP. A message is displayed indicating successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Work with RML Configuration Description function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Work with RML Configuration Descriptions is displayed.
- The Work with RML Configuration Descriptions menu is displayed.



```
                Work with RMLS/CSC Configuration

Type options, press Enter.
  2=Change     4=Delete     5=Display


Opt  Name        Class    Type              Text                 Active Runtime
 _   SERVERONE   *SRV     *ALS    This is a Unix Library server     Y      A
 _   RML01       *RML     *ACS    This is an STK type LMU           Y      A
 _   LSM01       *LSM     *9310   This is an Powderhorn silo        Y      A
 _   LSM02       *LSM     *4410   This is a standard silo           Y      A
 _   CAP01       *CAP     *SCAP   This is a standard CAP            Y      A
 _   CAP02       *CAP     *LCAP   This is a large CAP               Y      A
 _   CAP03       *CAP     *LCAP                                     Y      A
 _   CAP04       *CAP     *PCAP   This is a priority CAP            Y      A
 _   TAP01       *TAP     *4490   36 Track                          Y      A
 _   TAP02       *TAP     *4490   36 Track                          Y      A
 _   TAP03       *TAP     *4490   36 Track                          Y      A
 _   TAP04       *TAP     *4490   36 Track                          Y      A
 _   TAP05       *TAP     *4490   36 Track                          Y      A
 _   TAP06       *TAP     *4490   36 Track                          Y      A
 _   TAP07       *TAP     *4490   36 Track                          Y      A
 _   TAP08       *TAP     *4490   36 Track                          Y      A









                                                                   Bottom
F3=Exit  F6=Create  F12=Cancel
```

Field Descriptions for Work with RMLS/CSC Configuration Descriptions Display

Table 7-4 (Page 1 of 2). Field Descriptions for Work with RMLS/CSC Configuration Descriptions Display

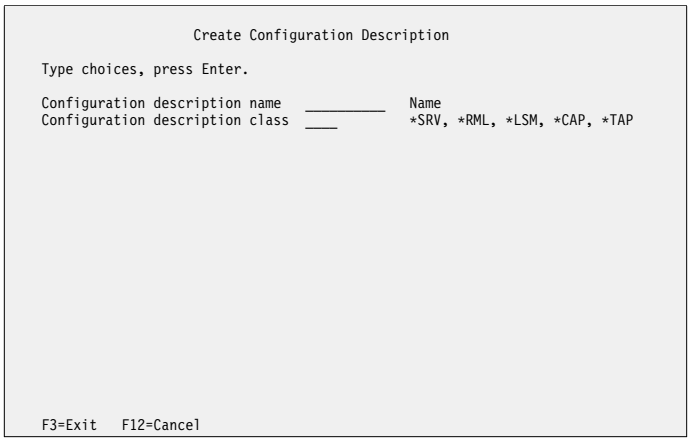
Field Name	Data Type	Source	Description
Opt (Option)	Character [1]	User	Specifies an option to be used for any one of the entries. Valid values are: • 2 = A Change Configuration Description menu is displayed. • 4 = A Delete Configuration Description menu is displayed. • 5 = A Display Configuration Description menu is displayed.
Name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
Class	Character [10]	User	Specifies a category of RML physical entity. Valid values are: • *SRV for server function • *RML for Removable Media Library • *LSM for Library Storage Module • *CAP for Cartridge Access Port • *TAP for Tape Device.
Type	Character [10]	User	Explicitly defined names for supported types of RML resources. These names are used in conjunction with a class to identify a particular type of RML resource. Valid values can be: • *ALS or *LS for the *SRV class • *ACS for the *RML class • *4410, *9310, *9360, *9710, *9714, *9738, *9740, L180, L700, *L5500 or *LSM for the *LSM class • *SCAP, *LCAP, *PCAP, *LWLF, *SWLF, *9710, *9740, *L180, L700 *L5500, or *CAP for the *CAP class • *4480, *4490, *4890, *9840, *9940, or *TAP for the *TAP class.
Text	Character [32]	User	A description of the physical entity that has been configured.

Table 7-4 (Page 2 of 2). Field Descriptions for Work with RMLS/CSC Configuration Descriptions Display

Field Name	Data Type	Source	Description
Active	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. This does not mean the resource is actually active in the active run-time configuration, but is eligible to be active. For example, if an upstream resource is inactive or deleted from the RMLS/CSC configuration, this resource is removed from the run-time configuration. The valid values are: • Y - Yes • N - No
Runtime	Character [1]	RMLS/CSC	Specifies the state of any entity in the RMLS/CSC run-time configuration. An entry in the configuration hierarchy with the ACTIVE field set to N results in itself and all items lower in the hierarchy set to RUNTIME I. An item with RUNTIME set to I is ineligible for use. The valid values are: • A - active • I - inactive

Working with the Create Configuration Description Menu

Whenever a configuration description is to be created, a menu with the following fields is displayed.



Field Descriptions for the Create Configuration Description Menu

Table 7-5. Field Descriptions for Create Configuration Description Menu

Field Name	Data Type	Source	Description
Name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
Class	Character [10]	User	Specifies a class of RML physical entity. Valid values are: • *SRV for server function • *RML for Removable Media Library • *LSM for Library Storage Module • *CAP for Cartridge Access Port • *TAP for Tape Device. When a class value is selected, the create menu for that class is displayed.

*Working with the *SRV Class*

If the options Delete or Display are selected for the class of *SRV, a menu with the following fields is displayed. The contents of the fields vary depending on the option selected.

```
                    Display a Server Description (CFG050CD)

Type choices, press enter

Server name . . . . . .Name
Server type . . . . . .*ALS
Network type  . . . . . .*LU62
Remote LU name  . . . . . .TSTLU1
Translation type  . . . . . .*XDR
Active record?  . . . . . .Y
Text description. . . . . .ACSLS server description









                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

```
                    Display a Server Description (CFG050CD)

Type choices, press enter

Server name . . . . . .Name
Server type . . . . . .*ALS
Network type  . . . . . .*TCP
Remote IP address . . . . . 111.111.111.111
Remote port number  . . . . . 60001
Translation type  . . . . . .*XDR
Active record?  . . . . . .Y
Text 'description'. . . . . .ACSLS server description









                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

If the option Change is selected for the class of *SRV, one of the following menus is displayed depending on the communication type used for configuring RMLS/CSC.

```
                      Change a Server Description (CFG050CD)

   Type choices, press enter

   Server name . . . . . . . . . . .__________   Name
   Server type . . . . . . . . . . .*SAME_____   *SAME, *ALS, *LS
   Network type  . . . . . . . . . .*LU62        *TCP, *LU62
   Remote Logical Unit name. . . .*______        Name
   Remote network identifier . . .*NETATR       Name, *NETATR
   Remotely known local location .*LOC          Name, *LOC
   Translation type  . . . . . . .*SAME         *SAME, *XDR
   Active record?  . . . . . . . .*             *, Y, N
   Text description. . . . . . . .*SAME____________________________




                                                                      Bottom
   F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
   F24=More keys
```

```
                      Change a Server Description (CFG050CD)

   Type choices, press enter

   Server name . . . . . . . . . . .__________   Name
   Server type . . . . . . . . . . .*SAME_____   *SAME, *ALS, *LS
   Network type  . . . . . . . . . .*TCP         *TCP, *LU62
   Remote IP address . . . . . . .60001         Value
   Remote port number. . . . . . .________
   Translation type  . . . . . . .*SAME         *SAME, *XDR
   Active record?  . . . . . . . .*             *, Y, N
   Text description. . . . . . . .*SAME____________________________




                                                                      Bottom
   F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
   F24=More keys
```

If the option Create is selected for the class of *SRV, a menu with the following fields is displayed.

```
                      Create a Server Description (CFG040CD)

   Type choices, press enter

   Server name . . . . . . . . . >__________   Name
   Server type . . . . . . . . . >__________   *ALS, *LS






                                                                      Bottom
   F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
   F24=More keys
```

When the choices are filled and Enter is pressed, a menu with the following fields is displayed.

```
                    Create a Server Description (CFG040CD)

Type choices, press enter

Server name . . . . . .__________   Name
Server type . . . . . .__________   *ALS, *LS
Network type  . . . . . .*TCP       *TCP, *LU62

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

If *TCP is selected in the previous screen, a menu is displayed containing fields relevant to TCP configuration.

```
                    Create a Server Description (CFG040CD)

Type choices, press enter

Server name . . . . . .Name______   Name
Server type . . . . . .*ALS______   *ALS, *LS
Network type  . . . . . .*TCP       *TCP, *LU62
Remote IP address . . . . . .____________________
Remote port number. . . . . .60001      Value
Translation type. . . . . .*XDR         *XDR
Active record?. . . . . .Y              Y, N
Text description. . . . . .____________________________________

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

If *LU62 is selected in the first Create a Server Description screen, a menu is displayed containing fields relevant to SNA configuration.

```
                    Create a Server Description (CFG040CD)

Type choices, press enter

Server name . . . . . .Name______   Name
Server type . . . . . .*ALS______   *ALS, *LS
Network type  . . . . . .*LU62      *TCP, *LU62
Remote logical unit name. . . . .__________   Name
Remote network identifier . . . .*NETATR    Name, *NETATR
Remotely known location location.*LOC       Name, *LOC
Translation type. . . . . .*XDR         *XDR
Active record?. . . . . .Y              Y, N
Text description. . . . . .____________________________________

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

After the creation of the *SRV entry in the RMLS/CSC configuration list, the information supplied for the Remote LU Name (RMTLUNAME), Remote Network Identifier (RMTNETID), and Remotely Known Local Location (LOCALLOC) fields is used to place an entry into the QAPPNRMT configuration list. Use the AS/400 Work With Configuration Lists (WRKCFGL) command to select the QAPPNRMT entry (type=*APPNRMT), selecting option 5, for additional information and to view the entries.

When a server is created, the communications related parameters are used to create AS/400 related objects. For an SNA (LU6.2) attached server, the Remote LU name, Remote Network Identifier, and Remotely known local location are used to create a Communication Side Information (CSI) object. This object can be accessed by specifying the AS/400 WRKCSI command using the Remote LU name specified with the WRKRMLCFGD command as the CSI object name.

Field Descriptions for Class of RML Server Description

Table 7-6 (Page 1 of 2). Field Descriptions for Class of RML Server Descriptions

Field Name	Data Type	Source	Description
Server name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
Server type	Character [10]	User	Specifies a type of server. Valid values are: • *ALS - ACSLS • *LS - LibraryStation • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Remote Network Identifier	Character [32]	User	Specifies the Network Identifier of the Server. The valid values are: • A name of from 1 to 8 hexadecimal characters • *NETADR - The network identifier specified in the Network Attribute on the AS/400.
Remotely known local location	Character [32]	User	Specifies the local location name of the AS/400 as known by the remote server (VTAM). The valid values are: • A name of from 1 to 8 hexadecimal characters • *LOC - The location name is determined by the AS/400.
Network type	Character [32]	User	Specifies the type of network used to communicate with the Server. The valid values are: • *LU62 - LU 6.2 SNA Network • *TCP - TCP/IP network • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Remote IP Address	Character [15]	User	Specifies the IP address of the server.
Remote Port Number	Numeric [5]	User	Specifies the port number of the ACSLS or LibraryStation server to use for CSCI communication. By default, the port number assigned is '60001'.
Remote LU name	Character [32]	User	Specifies the logical unit name of the server software. The name consists of from 1 through 8 characters.

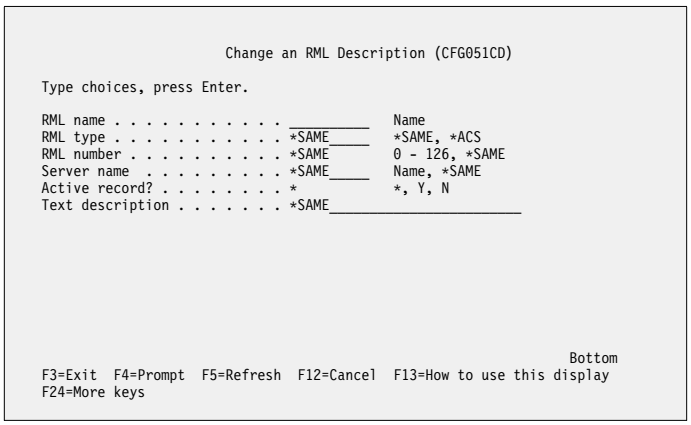
Table 7-6 (Page 2 of 2). Field Descriptions for Class of RML Server Descriptions

Field Name	Data Type	Source	Description
Translation type	Character [32]	User	Specifies the type of data translation used between the AS/400 and the Server. The valid values are: • *XDR - External Data Representation • *SAME - The current value does not change **Note:** The value *SAME is only valid when the Change option is selected.
Active record?	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. The valid values are: • Y - Yes • N - No • * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
Text	Character [32]	User	A description of the server that has been configured. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

*Working with the *RML Class*

The Removable Media Library refers to the single point of control, such as a Library Management Unit or control unit, of any of a number of robotic library devices (LSMs). These robotic library devices currently include the original 4400, Powderhorn, and Wolfcreek. The term, Removable Media Library, is synonymous with Automated Cartridge System (ACS).

If any option (Change, Create, Delete, or Display) is selected for the class of *RML, a menu with the following fields is displayed. The choices on each menu vary depending on the option selected.



*Field Descriptions for Class of *RML Description*

Table 7-7 (Page 1 of 2). Field Descriptions for Class of *RML Descriptions

Field Name	Data Type	Source	Description
RML name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
RML type	Character [10]	User	Explicitly defined names for supported types of RML resources. These names are used in conjunction with a class to identify a particular type of RML resource. Valid values are: • *ACS - StorageTek's Automated Cartridge System. • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

Table 7-7 (Page 2 of 2). Field Descriptions for Class of *RML Descriptions

Field Name	Data Type	Source	Description
RML number	Character [3]	User	Specifies a specific RML. The number specified must be the same as the number specified for the RML by the server. The valid values are: • A character from 0 through 126 that specifies a specific RML. • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Server name	Character [10]	User	The name of the server that controls the RML. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Active record	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. The valid values are: • Y - Yes • N - No • * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
Text	Character [32]	User	A description of the RML that has been configured. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

*Working with the *LSM Class*

If any option (Change, Create, Delete, or Display) is selected for the class of *LSM, a menu with the following fields is displayed. The choices on each menu vary depending on the option selected.

```
                    Change an LSM Description (CFG042CD)

Type Choices, press enter

LSM name  . . . . . . . . . . _____________   Name
LSM type  . . . . . . . . . . *SAME_____   *SAME, *4410, *9310, *9360, *9710
LSM number  . . . . . . . . . *SAME        *SAME, 0 - 15
RML name  . . . . . . . . . . *SAME_____   Name, *SAME
Active record?  . . . . . . . *            *, Y, N
Text description  . . . . . . *SAME_____________________________




                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

*Field Descriptions for Class of *LSM Description*

Table 7-8 (Page 1 of 2). Field Descriptions for Class of *LSM Descriptions

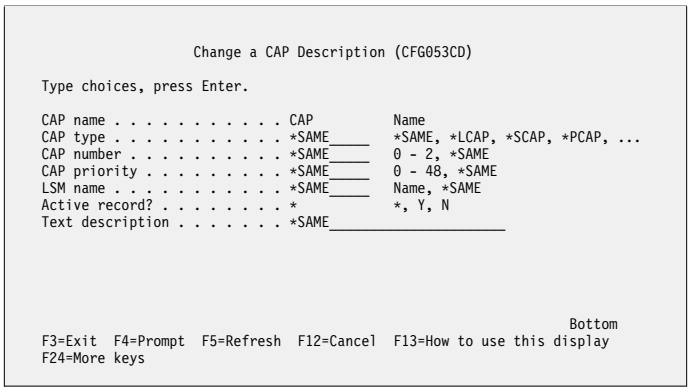
Field Name	Data Type	Source	Description
LSM name	Character [10]	User	A logical name for any RML physical entity. This name is used within RMLS/CSC interchangeably to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
LSM type	Character [10]	User	Explicitly defined names for supported types of RML resources. These names are used in conjunction with a class to identify a particular type of RML resource. Valid values are: • *4410 - StorageTek's Model 4410 LSM • *9310 - StorageTek's Model 4420 LSM • *9360 - StorageTek's WOLFCREEK LSM • *9710 - StorageTek's Model 9710 LSM • *9714 - StorageTek's Model 9714 (TimberWolf) LSM • *9740 - StorageTek's Model 9740 (TimberWolf) LSM • *9738 - StorageTek's Model 9738 LSM • *L180 - StorageTek's Model L180 LSM • *L700 - StorageTek's Model L700 LSM • *L5500 - StorageTek's Model L5500 LSM • *LSM - StorageTek, any other LSM model • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

Table 7-8 (Page 2 of 2). Field Descriptions for Class of *LSM Descriptions

Field Name	Data Type	Source	Description
LSM number	Character [2]	User	A character from 0 through 15 used to address a specific LSM within a specific RML. The number specified must be the same as the number specified for the LSM by the server. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
RML name	Character [10]	User	The name of the RML that controls the LSM. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Active record	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. The valid values are: • Y - Yes • N - No • * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
Text	Character [32]	User	A description of the LSM that has been configured. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

*Working with the *CAP Class*

If any option (Change, Create, Delete, or Display) is selected for the class of *CAP, a menu with the following fields is displayed. The choices on each menu vary depending on the option selected.



*Field Descriptions for Class of *CAP Description*

Table 7-9 (Page 1 of 2). Field Descriptions for Class of *CAP Descriptions

Field Name	Data Type	Source	Description
CAP name	Character [10]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 10 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).
CAP type	Character [10]	User	Explicitly defined names for supported types of RML resources. These names are used in conjunction with a class to identify a particular type of RML resource. Valid values are: • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected. • *LCAP - Large 40-cartridge CAP with cells arranged in four removable magazines of ten cells each. • *SCAP - Standard 21-cartridge CAP with fixed cells arranged in a 3 row by 7 column matrix. • *PCAP - Priority single cartridge CAP. • *SWLF - Standard 20-cartridge WolfCreek CAP. • *LWLF - Large 30-cartridge WolfCreek CAP. • *9710 - Standard 14-cartridge 9710 CAP. • *9740 - 14-cell cartridge 9740 CAP. • *L180 - L180 10-cartridge CAP. • *L700 - 20-cell cartridge L700 CAP. • *L5500 - 80-cell cartridge L5500 CAP. • *CAP - Any other CAP.

Table 7-9 (Page 2 of 2). Field Descriptions for Class of *CAP Descriptions

Field Name	Data Type	Source	Description
CAP number	Character [1]	User	A character from 0 through 2 used to address a specific CAP within a specific LSM or RML depending on which type of RML is accessed. The number specified must be the same as the number specified for the CAP by the server. * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
CAP priority	Character [2]	User	Any value from 0 to 48. This value assigns the usage preference to a CAP. A value of 0 is defined as NOPRIORITY and a value of 48 is defined as MAXPRIORITY. NOPRIORITY indicates that the CAP will not be assigned unless it is specifically requested. *SAME indicates the current values do not change.
LSM name	Character [10]	User	The name of the LSM that contains the CAP. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Active record	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. The valid values are: • Y - Yes • N - No • * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
Text	Character [32]	User	A description of the CAP that has been configured. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.

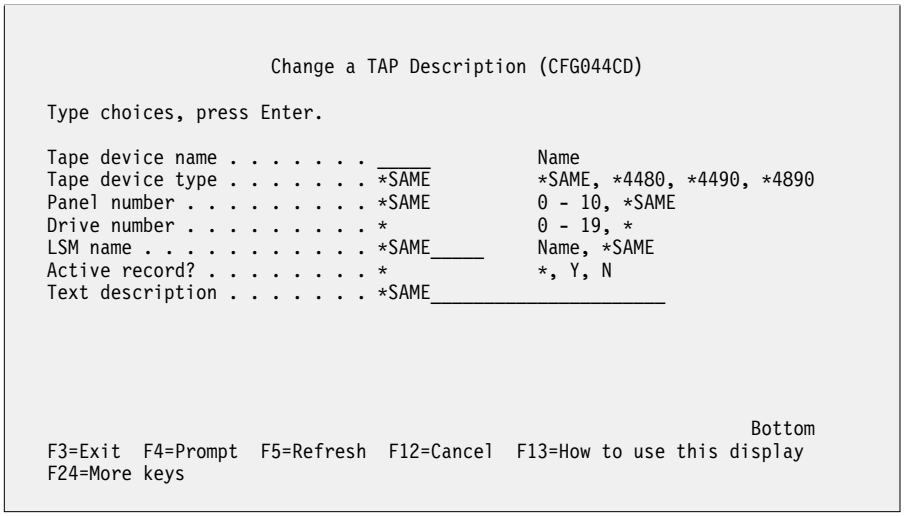
*Working with the *TAP Class*

If any option (Change, Delete, Create, or Display) is selected for the class of *TAP, a menu with the following fields is displayed.

When you create or change the description of a TAP, you must ensure that the RMLS/CSC control path, which you are creating or changing, and the existing OS/400 *DEVD device description parameter address the same physical tape device. Refer to *Communications: OS/400 Communications Configuration Reference* for information about the *DEVD parameter.

Note: Any tape device known to RMLS/CSC is always varied offline when not in use.

The choices on each menu vary depending on the option selected.



*Field Descriptions for Class of *TAP Description*

Table 7-10 (Page 1 of 2). Field Descriptions for Class of *TAP Descriptions

Field Name	Data Type	Source	Description
Tape device name	Character [5]	User	A logical name for any RML physical entity. This name is used, within RMLS/CSC, interchangeably, to refer to the RML resource and the configuration description of that resource. This name can have a maximum of 5 characters and follows the same conventions as those defined in the *Application System/400™ Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Table 7-10 (Page 2 of 2). Field Descriptions for Class of *TAP Descriptions

Field Name	Data Type	Source	Description
Tape device type	Character [10]	User	Explicitly defines names for supported types of RML resources. These names are used in conjunction with a class to identify a particular type of RML resource. Valid values are: • *4480 - StorageTek's Model 4480 tape device • *4490 - StorageTek's Model 4490 tape device • *4890 - StorageTek's Model 4890 tape device • *9840 - StorageTek's Model 9840 tape device • *9940 - StorageTek's Model 9940 tape device • *TAP - StorageTek Model for any other tape device • *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Panel number	Character [2]	User	A character from 0 through 10. This character is used to address a specific panel within an LSM. The number specified must be the same as the number specified for the panel by the server. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Drive number	Character [1]	User	A character from 0 through 19 used to address a specific tape drive within a specific Panel of an LSM. The number specified must be the same as the number specified for the tape drive by the server. * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
LSM name	Character [10]	User	The name of the LSM that contains the TAP. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Active record	Character [1]	User	Determines whether a specific record is eligible to be part of the run-time configuration or if it is disabled. The valid values are: • Y - Yes • N - No • * - The current value does not change. **Note:** The value * is only valid when the Change option is selected.
Text	Character [32]	User	A description of the TAP that has been configured. *SAME - The current value does not change. **Note:** The value *SAME is only valid when the Change option is selected.
Note: Specifying the incorrect panel numbers and drive numbers for a logical drive name is an easy mistake that leads to confusing results.			

AUDIT AN RML (AUDRML) COMMAND

Description

Note: This function is not supported with a LibraryStation server.

The AUDRML command requests RMLS/CSC to perform an audit of a Removable Media Library. The audit is used to initiate a reconciliation between the actual contents of an RML's storage area and what the server's records list as the contents of that RML's storage area for older ACS models. Newer model ACSs maintain an internal inventory and reconciliation of the data bases is done using this internal data base. The audit function instructs the robot(s) to physically check every cell location within a Removable Media Library to determine the physical inventory of the Removable Media Library. Audit does not check the contents of tape devices or Cartridge Access Ports.

Only one audit per RML can be performed at a time.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, an audit of a Removable Media Library is initiated:

- by selecting **1. Audit an RML** on the Administrative Functions Menu.
- by issuing the AUDRML command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command. However, before the Cartridge Access Port can be used, it must be available.

Usage Notes for Audit an RML

Any cartridges with duplicate external labels or unreadable external labels that have not been assigned virtual labels are ejected through the specified Cartridge Access Port. If a Cartridge Access Port is not specified, the default value *ANY is used. The *ANY value allows RMLS/CSC to select a Cartridge Access Port automatically based on Cartridge Access Port priority and availability. An audit does not reserve the specified Cartridge Access Port until it becomes necessary to eject a volume that has a conflict (for example, duplicate label with another volume). If the specified Cartridge Access Port is unavailable at that time, the command fails. The Removable Media Library area to audit is specified with the RML parameter. A value must be supplied for RML.

Note: An audit can be performed at any time without interrupting normal library operations. However, you must be aware that an audit can potentially be a very long running job and can significantly affect library operation and performance.

Any RMLS/CSC command can be ended by issuing the AS/400 ENDRQS or ENDJOB commands. If a job or command that has a CAP reserved to it is ended before the CAP is released (for example, volumes are in the CAP waiting for user intervention), the CAP may be unavailable to others on the system or other systems until user intervention.

Every time you open a door to an LSM, it is recommended that you do an audit of the RML associated with that LSM.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

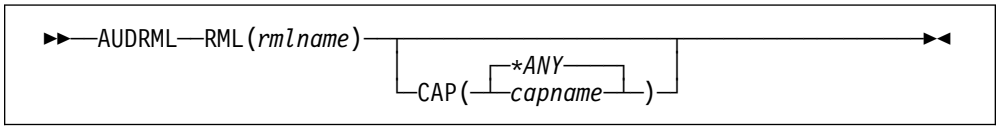
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

RML must be issued with this command.

RML
Specifies that an audit is to be performed on a Removable Media Library. The possible value is:

rmlname Identifies a logical name for any Removable Media Library attached to a server. This name can be a maximum of 10 characters in length and must conform to the conventions defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

CAP
Specifies the Cartridge Access Port through which volumes with duplicate external labels or unreadable external labels (not having virtual labels) are ejected. The possible values are:

***ANY** Specifies that RMLS/CSC automatically select the highest priority, available Cartridge Access Port under RMLS/CSC control.

capname Identifies a logical name for any Cartridge Access Port attached to a server. This name can be a maximum of 10 characters in length and must conform to the conventions defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

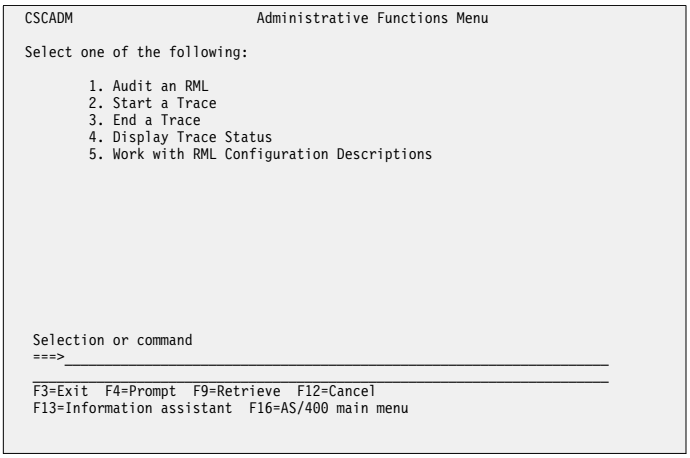
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to audit an RML through an interactive session.

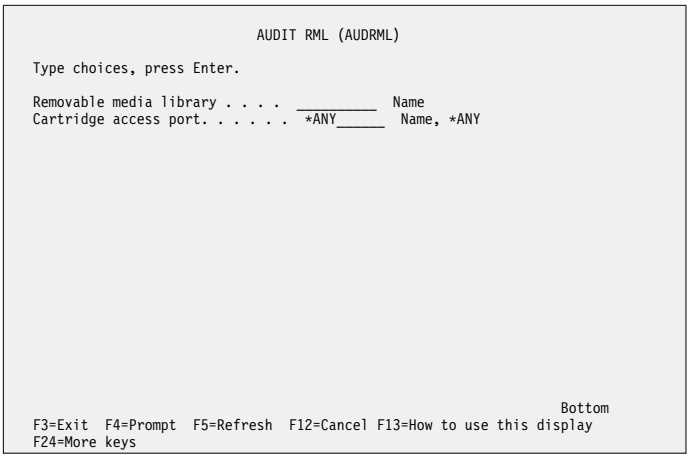
- "Procedure to Audit an RML Using Menus" on page 7-33.
- "Procedure to Audit an RML Using the AUDRML Command" on page 7-34.

Procedure to Audit an RML Using Menus

1. At the RMLS/CSC Main Menu, type **3** (Administrative Functions) on the command line and press **Enter**. The Administrative Functions Menu is displayed with the cursor positioned on the command line.



2. Type **1** (Audit an RML) and press **Enter**. The Command Prompt Display for Audit an RML is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to "Required Parameters" on page 7-33 and "Optional Parameters" on page 7-33 for screen field descriptions and data types.

4. Press **Enter** and the audit request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Audit an RML Using the AUDRML Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the audit function that you want to accomplish.

3. Type the AUDRML command with accompanying parameters. Refer to "Required Parameters" on page 7-33 and "Optional Parameters" on page 7-33 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> AUDRML RML(RML01)
Function Key Options
```

   The example requests RMLS/CSC to audit Removable Media Library RML01.

   If you did not enter the required parameters, the Command Prompt Display for Audit an RML is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display for the Audit an RML function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                          AUDIT RML (AUDRML)

Type choices, press Enter.

Removable media library . . . .  __________  Name
Cartridge access port. . . . . *ANY_____  Name, *ANY

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

5. Press **Enter** and the audit is processed. A message is displayed to indicate successful completion of the request. The Audit report is displayed on the terminal screen.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Audit an RML function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Audit an RML is displayed.
- No reports are produced.

START TRACE (STRRMLTRC) COMMAND

Description

The STRRMLTRC command requests RMLS/CSC to invoke trace for any RMLS/CSC function or executing program calling RMLS/CSC functions. Trace can be used to diagnose library or software problems.

You can selectively turn trace on for trace entries, trace points, trace exits in the RMLS/CSC functions or RMLS subsystem components.

Note: This command is intended to be used with StorageTek service personnel.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, the trace diagnostic function is started:

- by selecting **2. Start Trace** on the Administrative Functions Menu.
- by issuing the STRRMLTRC command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Start Trace

Only one trace can be running at a time.

Use the “End Trace (ENDRMLTRC) Command” on page 7-44 to end a trace, the “Display Trace Status (DSPTRCSTS) Command” on page 7-48 to display the status of a trace, and the “Print Trace Report (PRTRMLTRC) Command” on page 9-24 to print a trace.

Notes:

1. A trace can be started at any time without interrupting normal library operations. However, you must be aware that starting a trace can significantly affect library operation and performance.
2. RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

   When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

   However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

   If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

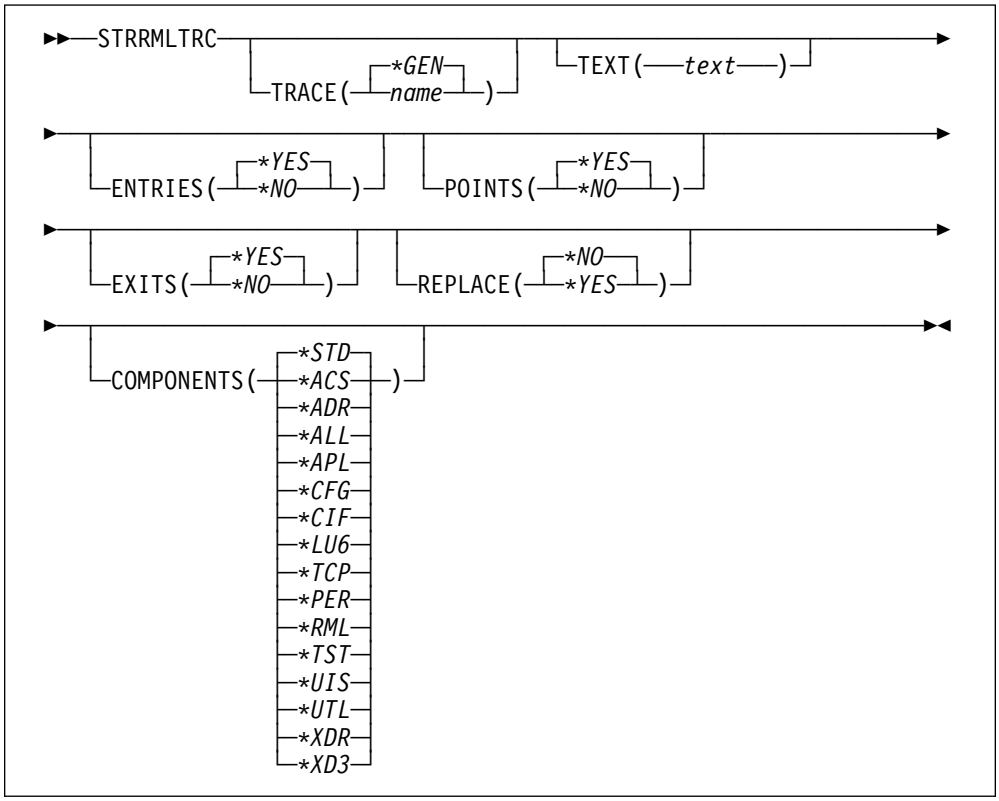
   - a request has been entered to bring down the system to restricted state

     or

   - TCP/IP services are being brought up manually.

   If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



REQUIRED PARAMETERS

There are no required parameters for the start trace function.

OPTIONAL PARAMETERS

TRACE
Specifies the name of the trace to be started. The possible values are:

***GEN** Identifies a system-generated trace name.

name Identifies a user-defined trace name.

TEXT
Specifies the trace description. The value is:

text Specifies that a user-defined description is to be used.

ENTRIES
Specifies whether the module entry points are to be traced. The possible values are:

***YES** Indicates that module entry points are to be traced.

***NO** Indicates that module entry points are **not** to be traced.

POINTS
Specifies whether the inner module points are to be traced. The possible values are:

***YES** Indicates that inner module points are to be traced.

***NO** Indicates that inner module points are **not** to be traced.

EXITS
Specifies whether the module exit points are to be traced. The possible values are:

***YES** Indicates that exit points are to be traced.

***NO** Indicates that exit points are **not** to be traced.

REPLACE
Specifies whether to replace the existing trace of the same name. The possible values are:

***YES** Indicates that the existing trace of the same name is to be replaced.

***NO** Indicates that the existing trace of the same name is **not** to be replaced.

COMPONENTS
Specifies which internal subsystem of RMLS/CSC to trace. The possible values are:

***ACS** Indicates to turn tracing on for the ACSAPI component.

***ADR** Indicates to turn tracing on for the ACSLS driver component.

***ALL** Indicates to turn tracing on for all of the components.

***APL** Indicates to turn tracing on for the ACSAPI to PER link.

***CFG** Indicates to turn tracing on for the Configuration component.

***CIF** Indicates to turn tracing on for the PER to Configuration Interface.

***LU6** Indicates to turn tracing on for the LU6.2 component.

***TCP** Indicates to turn tracing on for the TCP component.

***PER** Indicates to turn tracing on for the PER component.

***RML** Indicates to turn tracing on for the RMLAPI component.

***STD** Indicates to turn tracing on for the following list of components:

***ACS**

***ADR**

***CFG**

***RML**

***UIS**

***UTL**

***P97** Tracing for the direct attach driver component. The *P97 component cannot be separately traced.

***TST** Indicates to turn on tracing for the TEST component.

***UIS** Indicates to turn on tracing for the User Interface component.

***UTL** Indicates to turn on tracing for the Utility component.

***XDR** Indicates to turn on tracing for the XDR component.

***XD3** Indicates to turn on tracing for the XD3 component.

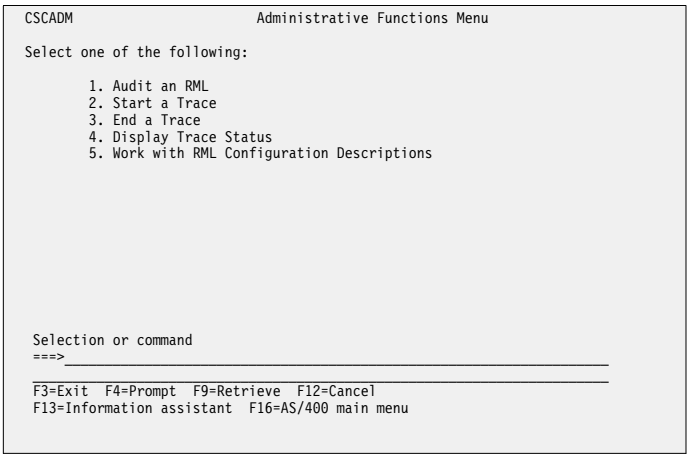
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to start trace through an interactive session.

- "Procedure to Start Trace Using Menus" on page 7-41.
- "Procedure to Start Trace Using the STRRMLTRC Command" on page 7-42.

Procedure to Start Trace Using Menus

1. At the RMLS/CSC Main Menu, type **4** (Administrative Functions) on the command line and press **Enter**. The Administrative Functions Menu is displayed with the cursor positioned on the command line.



2. Type **2** (Start Trace) and press **Enter**. The Command Prompt Display for Start Trace is displayed.

```
                        START TRACE RML (STRTRCRML)

Type choices, press Enter.

Trace name . . . . . .  *GEN__    *Gen, Name
Trace description  . . . . . .  *BLANK_____________________________________
Trace entries  . . . . . .  *YES_     *YES, *NO
Trace points . . . . . .  *YES_     *YES, *NO
Trace exits  . . . . . .  *YES_     *YES, *NO
Replace trace  . . . . . .  *NO__     *NO, *YES
Software Components  . . . . . .  *STD     *ACS, *ADR, *ALL, *APL...
               + for more values  ___









                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the optional parameters on the Command Prompt Display. Refer to "Optional Parameters" on page 7-39 for screen field descriptions and data types.

4. Press **Enter** and the Start Trace request is processed. A message is displayed indicating successful initialization of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Start Trace Using the STRRMLTRC Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the type of trace that you want to accomplish.

3. Type the STRRMLTRC command with accompanying parameters. Refer to "Optional Parameters" on page 7-39 for parameter descriptions and data types.

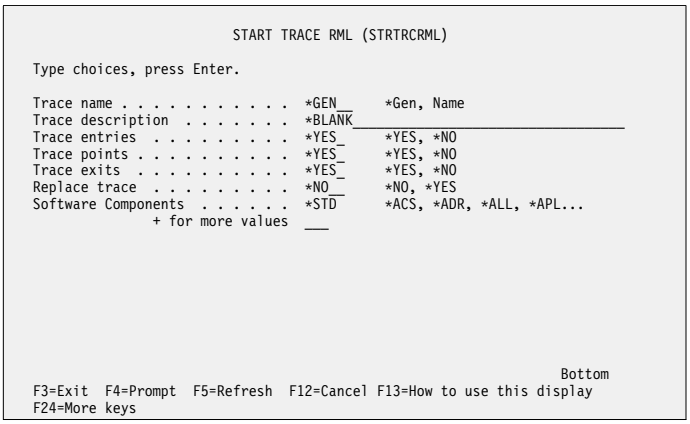
   An example is:

```
Selection or command
===>_STRRMLTRC TRACE(MONDAY) REPLACE(*YES)_____________________
_____________________________________________________________________________
Function Key Options
```

The example requests that the trace facility be on for all trace points, all components listed under the *STD parameter, and replaces any existing trace named MONDAY.

If you did not enter parameters, the Command Prompt Display for Start Trace is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Start Trace function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the optional parameters on the Command Prompt Display.

5. Press **Enter** and the Start Trace request is initiated. A message is displayed to indicate successful initialization of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Start Trace function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Start Trace is displayed.
- No reports are produced.

END TRACE (ENDRMLTRC) COMMAND

Description

The ENDRMLTRC command requests RMLS/CSC to terminate the trace function.

Note: This command is intended to be used with StorageTek service personnel.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, the trace diagnostic function is ended:

- by selecting **3. End Trace** on the Administrative Functions Menu.
- by issuing the ENDRMLTRC command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Usage Notes for End Trace

There are no special considerations for the use of this function. However, a trace must be started before it can be ended.

Use the "Display Trace Status (DSPTRCSTS) Command" on page 7-48 to display the status of a trace and and the "Print Trace Report (PRTRMLTRC) Command" on page 9-24 to print a trace.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP

services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

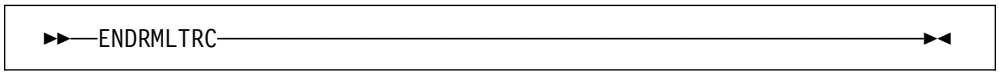
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

There are no required parameters for this command.

Optional Parameters

There are no optional parameters for this command.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to end the trace function:

- “Procedure to End Trace Using Menus” on page 7-45.
- “Procedure to End Trace Using the ENDRMLTRC Command” on page 7-46.

Procedure to End Trace Using Menus

1. At the RMLS/CSC Main Menu, type **3** (Administrative Function) on the command line and press **Enter**. The Administrative Functions Menu is displayed with the cursor positioned on the command line.

```
CSCADM                      Administrative Functions Menu

Select one of the following:

        1. Audit an RML
        2. Start a Trace
        3. End a Trace
        4. Display Trace Status
        5. Work with RML Configuration Descriptions









 Selection or command
 ===>_____________________________________________________________________
 ________________________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
 F13=Information assistant  F16=AS/400 main menu
```

2. Type **3** (End a Trace) and press **Enter**.

3. Press **Enter** after making the End Trace selection on the menu to execute the End Trace request. A message is displayed indicating successful termination of the trace function.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Procedure to End Trace Using the ENDRMLTRC Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Type the ENDRMLTRC command and press **Enter**.

   Note: If you press **F4** before pressing **Enter**, the Command Prompt Display for End Trace is displayed. There are no required or optional parameters for the ENDRMLTRC command. The Command Prompt Display serves only to remind you that there are no parameters for this command.

   An example is:

```
 Selection or command
 ===> ENDRMLTRC_____________________________________________________________
 ________________________________________________________________________________
 Function Key Options
```

   The example requests that the RMLS/CSC trace facility be terminated.

3. Press **Enter** immediately after entering the command to execute the End Trace function. A message is displayed to indicate successful initialization of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the End Trace function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- No reports are produced.

DISPLAY TRACE STATUS (DSPTRCSTS) COMMAND

Description

The DSPTRCSTS command requests RMLS/CSC to display the trace status (i.e., on or off). The display output shows the status set by the STRRMLTRC command.

Note: This command is intended to be used with StorageTek service personnel.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, the display trace function is started:

- by selecting **4. Display Trace Status** on the Administration Functions Menu.
- by issuing the DSPTRCSTS command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Display Trace Status

There are no special considerations for the use of this function.

Use the "End Trace (ENDRMLTRC) Command" on page 7-44 to end a trace, and the "Print Trace Report (PRTRMLTRC) Command" on page 9-24 to print a trace.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

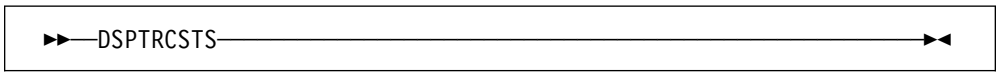
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating "Communication failure."

Syntax



Required Parameters

There are no required parameters for this command.

Optional Parameters

There are no optional parameters for this command.

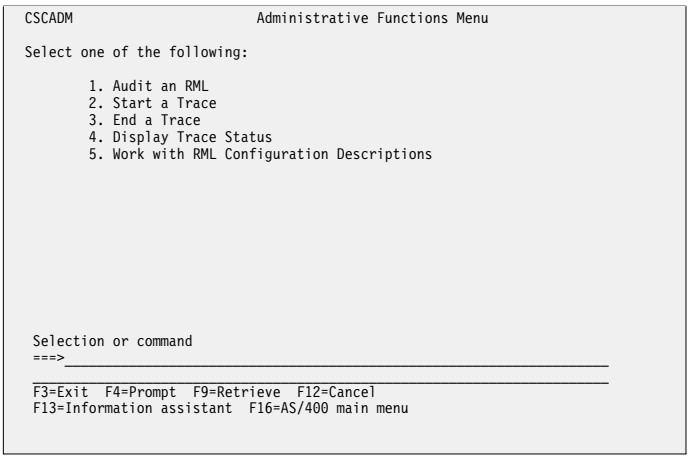
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to display trace status through an interactive session:

- "Procedure to Display Trace Status Using Menus" on page 7-50.
- "Procedure to Display Trace Status Using the DSPTRCSTS Command" on page 7-50.

Procedure to Display Trace Status Using Menus

1. At the RMLS/CSC Main Menu, type **3** (Administrative Functions) on the command line and press **Enter**. The Administrative Functions Menu is displayed with the cursor positioned on the command line.



2. Type **4** (Display Trace Status) and press **Enter**.

3. Press **Enter** immediately after making the Display Trace Status Selection on the menu to execute the Display Trace Status request. A message is displayed indicating successful completion of the Display Trace Status request. The Display Trace Status Report is displayed on the terminal screen.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

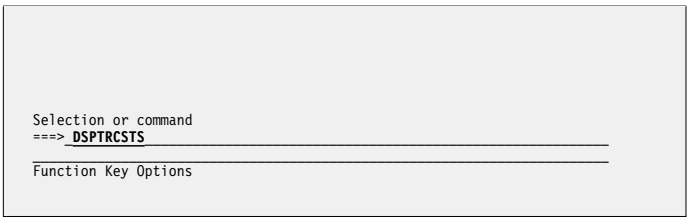
Procedure to Display Trace Status Using the DSPTRCSTS Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Type the DSPTRCSTS command and press **Enter**.

   Note: If you press **F4** before pressing **Enter**, the Command Prompt Display for Display Trace Status is displayed. There are no required or optional parameters for the DSPTRCSTS command. The Command Prompt Display for Display Trace Status serves to remind you that there are no parameters for this command.

   An example is:



   The example requests that RMLS/CSC display the status of the trace function for the Removable Media Library.

3. Press **Enter** immediately after entering the command to initiate the Display Trace Status function. A message is displayed to indicate successful initialization of the request.

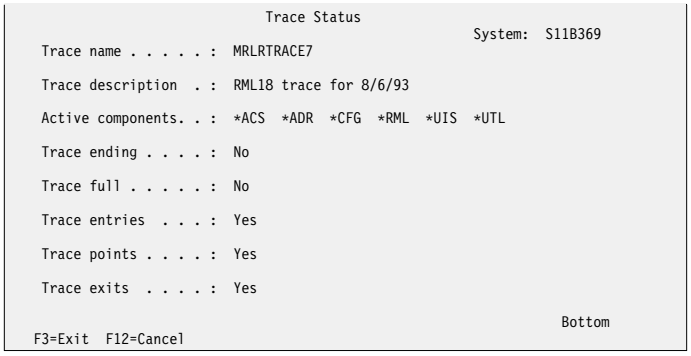
If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Display Trace Status function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Display Trace Status Report is produced.

Display Trace Status Report



Field Descriptions for the Display Trace Status Report

Table 7-11. Field Descriptions for the Display Trace Status Report

Field Name	Data Type	Source	Description
Trace name	Character [10]	User	The name of the trace is determined by the user when the trace was started.
Trace description	Character [50]	User	The description of the trace is determined by the user when the trace was started.
Active components	Character [4]	RMLS/CSC	RMLS/CSC lists the components of the trace that are active. Refer to "Start Trace (STRRMLTRC) Command" on page 7-37 for a description of the components.
Trace ending	Character [3]	RMLS/CSC	RMLS/CSC determines if the trace is near completion and sets this field to Yes or No.
Trace full	Character [3]	RMLS/CSC	RMLS/CSC determines if the trace area is full and sets this field accordingly. If the trace area is full, you must stop the trace to empty the trace area and start trace again if the trace is not complete.
Trace entries	Character [3]	User	This field reflects the settings of the user who started the trace. If this field is Yes, module entry points are to be traced.
Trace points	Character [3]	User	This field reflects the settings of the user who started the trace. If this field is Yes, the inner module points are to be traced.
Trace exits	Character [3]	User	This field reflects the settings of the user who started the trace. If this field is Yes, the exit points of the module are to be traced.

Part V. RMLS/CSC Operations

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Chapter 8. Removable Media Library Operations

INTRODUCTION

This section contains information about Removable Media Library Software that is of primary interest to system operators.

USING AS/400 TAPE COMMANDS WITH REMOVABLE MEDIA LIBRARY SOFTWARE

You can use all the AS/400 tape commands with the StorageTek Automated Cartridge System through Removable Media Library Software. The Removable Media Library Software allows you to use the StorageTek Automated Cartridge System to:

- Save and restore
- Copy to and from a tape volume
- Create a file on a tape volume
- Dump, display, and duplicate a tape volume
- Initialize a tape volume
- Check a tape volume.

When using AS/400 tape commands and RMLS/CSC commands, you must monitor the messages that are sent to you. AS/400 tape management parameters may not work as they have in the past with various hardware.

When an AS/400 tape command exercises an unload parameter, it unloads the volume from the tape device but does not remove it from the tape device and place it back in the library. You must issue a dismount command for that volume, a mount command for the device containing the volume, or a deallocate command for the tape device to remove the volume from the tape device and put it back in the library.

All the tape volumes in the StorageTek Automated Cartridge System must be initialized by the AS/400 before they are used. The AS/400 INZTAP Command and the general procedure can be used to initialize the tape volumes. A tape device can be allocated and used to mount and dismount volumes until all volumes have been initialized. Then the tape device can be deallocated.

General Procedures

Two general procedures can be used to use AS/400 commands with RMLS/CSC. One procedure issues explicit mounts and dismounts and the other procedure uses the RMLS/CSC Break Message Handler. You can also bypass RMLS/CSC Break Message Handler when it is necessary.

Procedure Using Explicit RMLS/CSC Mount and Dismount Commands

The general procedure for using the AS/400 commands with Removable Media Library Software is:

1. Allocate a tape device (ALCRMLDEV Command).
2. Mount a volume (MNTRMLVOL Command).
3. Issue any AS/400 tape command or tape command sequence.
4. Dismount the volume (DSMRMLVOL Command).
5. Deallocate the tape device (DLCRMLDEV Command).

An example of a general procedure to use the AS/400 duplicate tape (DUPTAP Command) is:

1. Allocate a tape device (ALCRMLDEV Command) as the “from device”.
2. Allocate a tape device (ALCRMLDEV Command) as the “to device”.
3. Mount the “from volume” (MNTRMLVOL Command) on the “from device”.
4. Mount the “to volume” (MNTRMLVOL Command) on the “to device”.
5. Issue the AS/400 DUPTAP Command using the names of the allocated devices and mounted volumes in the parameters along with any other parameters that are applicable.

   When the duplication is complete:

6. Dismount the “to and from” volumes (DSMRMLVOL Command).
7. Deallocate the “to and from” tape devices (DLCRMLDEV Command).

The AS/400 tape usage commands are defined in *Application System/400 Control Language Reference*.

Example of Restoring an Object from a Library

The following example illustrates a method of restoring an object from a library using explicit mount and dismount commands. In this example, the object was successfully restored.

```
/* Other code  . . . . . .                                          */

/* IF MEMBER WAS SAVED TO TAPE WITH STORAGE FREED, ALLOCATE A DEVICE */
            ALCRMLDEV DEV(*VOL) FORCE(*NO) VOL(&VOL)

            RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                         MSGDTA(&MSGDTA) MSGID(&MSGID)

            IF         COND(&MSGID *NE RM000FF) THEN(GOTO +
                         CMDLBL(ABEND))

            CHGVAR     VAR(&DEV) VALUE(%SST(&MSGDTA 17 10))


/* IF SUCCESSFULL ALLOCATION THEN MOUNT THE VOLUME ON THE ALLOCATED DEVICE*/
            MNTRMLVOL DEV(&DEV) VOL(&VOL)

            RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                         MSGDTA(&MSGDTA) MSGID(&MSGID)

            IF         COND(&MSGID *NE RM002FF) THEN(GOTO +
                         CMDLBL(ABEND))

            CHGVAR     VAR(&VOL) VALUE(%SST(&MSGDTA 11 6))


/* IF MOUNT WAS SUCCESSFULL THEN RESTORE THE OBJECT FROM TAPE        */
            RSTOBJ     OBJ(&FILENAME) SAVLIB(&LIBNAME) DEV(&DEV) +
                         VOL(&VOL)

/* IF RSTOBJ WAS SUCCESSFULL THEN DISPLAY THE PHYSICAL FILE MEMBER   */
            DSPPFM     FILE(&LIBNAME/&FILENAME) MBR(&MBRNAME)
            RCVMSG     MSGQ(*PGMQ) WAIT(*MAX) RMV(*YES) MSGID(&MSGID)


/* IF THE MBR WAS DISPLAYED SUCCESSFULLY THEN DISMOUNT THE DEVICE    */
            DSMRMLVOL VOL(*DEV) DEV(&DEV) FORCE(*YES)

            RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                         MSGDTA(&MSGDTA) MSGID(&MSGID)

            IF         COND(&MSGID *NE RM003FF) THEN(GOTO +
                         CMDLBL(ABEND))

/* DEALLOCATE THE DEVICE                                             */
            DLCRMLDEV DEV(&DEV)

            RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                         MSGDTA(&MSGDTA) MSGID(&MSGID)

            IF         COND(&MSGID *NE RM001FF) THEN(GOTO +
                         CMDLBL(ABEND))

/* Other code  . . . . . .                                       */
```

Procedure Using the RMLS/CSC Break Message Handler

The Break Message Handler automates the mounting and dismounting of volumes for AS/400 tape commands in specific circumstances. The Break Message Handler does not take the place of a Tape Management System. The functionality of the Break Message Handler is extremely limited when compared to a Tape Management System.

The Break Message Handler is enabled when a device is allocated using the RMLS/CSC ALCRMLDEV command and a message for a mount is issued. The Break Message Handler message queue name in the device description is assigned to the device each time the device is allocated by RMLS/CSC. The RMLS/CSC message queue name in the device description may be replaced by another message queue name with which a break message handling program is associated. The break message handling program **must** be capable of servicing mount requests from the operating system. An example of a break message handling program is given in Appendix C, "Example of Code for Break Message Handler Automation" on page C-1. Refer to *AS/400 CL Programmer's Guide* for additional information about break-handling programs and setting up message queues.

Note: The RMLS/CSC Break Message Handler does not handle the AS/400 SAVSTG (Save Storage) command.

The RMLS/CSC Break Message Handler does not handle multiple volumes on multiple device operations (known as **ping ponging**).

For scratch mounts that are automated by the Break Message Handler, the tape volume identifiers of the volumes that were used for the mounts must be retrieved from the job log. The volume identifiers may be found in messages associated with OS/400 commands or in RMLS/CSC mount messages.

If a scratch volume is required as the first volume in a list of volumes to be mounted by Break Message Handler, the first scratch volume must be mounted explicitly. For example, if an AS/400 SAVLIB (save library) command is issued with *MOUNTED specified as the volume identifier, a scratch tape must be mounted prior to executing the command.

Prior to using RMLS/CSC Break Message Handler to automatically mount scratch volumes as a command executes, the number of volumes required to complete the command must be in the scratch pool. If the scratch pool empties prior to the completion of the command, the command is cancelled.

In any situation where the volumes needed for the running of a command on a single device exceeds the volumes specified by the command, Break Message Handler assumes a save is in progress. Scratch tapes (if any are available) are loaded to complete the command. This assumption could result in a scratch tape being loaded for a restore operation if an incomplete set of volumes is specified.

The general procedure when using the RMLS/CSC Break Message Handler is:

1. Allocate a tape device (ALCRMLDEV Command).
2. Issue any AS/400 tape command or tape command sequence.
3. The Break Message Handler implicitly mounts the tape.
4. Deallocate the tape device (DLCRMLDEV Command).
5. The RMLS/CSC implicitly dismounts the tape.

Messages the RMLS/CSC Break Message Handler Responds To

The following table contains a description of the messages the RMLS/CSC Break Message Handler responds to.

Table 8-1. Messages RMLS/CSC Break Message Handler Responds To

Message ID	Meaning	RMLS/CSC Response	RMLS/CSC Reply
CPA40A0	Load volume &1 on &2. (C G INZ)	Load volume &1 on device &2.	G
CPA40A1	Load volume &1 on &2. (C G)	Load volume &1 on device &2.	G
CPA4059	Found &5; expected &6 on device &4. (C I INZ R)	Load volume &6 on device &4.	R
CPA4088	Load next tape volume on device &4. (C G)	Load scratch volume on device &4.	G
CPA4089	Load volume &5 on device &4. (C G)	Load volume &5 on device &4.	G
CPA4124	Found &5; expected &6 on device &4. (C R)	Load volume &6 on device &4.	R
CPA4263	Volume &5 not loaded or device &4 not ready.	Load volume &5 on device &4; determine if device problem exists; attempt recovery.	R
CPA4264	Found &5; expected &6 on device &4. (C I R)	Load volume &6 on device &4.	R
CPA4268	Wrong continuation volume loaded on device &4.	Load volume &6 on device &4.	R
CPA4278	Active file found on this volume. (C I R)	Load scratch volume on device &4; determine if device problem exists; attempt recovery.	R
CPA5230	End of VOL list for file &2 in &3. (C I)	Load scratch volume on device &4.	I
CPA6748	End of VOL list for device &4. (C I)	Load scratch volume on device &4.	I

Note: The description of the symbols used in this table are:

- C = cancel
- G = go
- I = ignore
- INZ = initialize
- R = retry

Example of Restoring an Object Using the RMLS/CSC Break Message Handler

The following example illustrates a method of restoring an object from a library using the RMLS/CSC Break Message Handler. Notice that no explicit mount or dismount commands are issued by the user.

```
/* Other code  . . . . . .                                          */

/* IF MEMBER WAS SAVED TO TAPE WITH STORAGE FREED, ALLOCATE A DEVICE */
             ALCRMLDEV DEV(*VOL) FORCE(*NO) VOL(&VOL)

             RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                          MSGDTA(&MSGDTA) MSGID(&MSGID)

             IF         COND(&MSGID *NE RM000FF) THEN(GOTO +
                          CMDLBL(ABEND))

             CHGVAR     VAR(&DEV) VALUE(%SST(&MSGDTA 17 10))


/* IF ALLOCATION WAS SUCCESSFULL THEN RESTORE THE OBJECT FROM TAPE   */
             RSTOBJ     OBJ(&FILENAME) SAVLIB(&LIBNAME) DEV(&DEV) +
                          VOL(&VOL)

/* IF RSTOBJ WAS SUCCESSFULL THEN DISPLAY THE PHYSICAL FILE MEMBER   */
             DSPPFM     FILE(&LIBNAME/&FILENAME) MBR(&MBRNAME)
             RCVMSG     MSGQ(*PGMQ) WAIT(*MAX) RMV(*YES) MSGID(&MSGID)


/* IF THE MBR WAS DISPLAYED SUCCESSFULLY THEN DEALLOCATE THE DEVICE  */
             DLCRMLDEV DEV(&DEV)

             RCVMSG     MSGQ(*PGMQ) WAIT(0) RMV(*NO) +
                          MSGDTA(&MSGDTA) MSGID(&MSGID)

             IF         COND(&MSGID *NE RM001FF) THEN(GOTO +
                          CMDLBL(ABEND))

/* Other code  . . . . . .                                          */
```

Procedure to Bypass the RMLS/CSC Break Message Handler

There are conditions when it is necessary to bypass the RMLS/CSC Break Message Handler program and send mount messages to the QSYSOPR message queue. These conditions might include when you load cumulative PTF tapes, software, or other items consisting of more than one volume identification. This procedure changes the device description of one tape device and allows messages from that device to bypass Break Message Handler processing. This change to the device description only lasts until the tape device is deallocated.

1. Use the RMLS/CSC ALCRMLDEV command to allocate a tape device. To simplify the description of this procedure, assume that TAP04 was the tape device that was allocated.

2. Change the tape device description in the AS/400 by following these steps:

   a. Enter the AS/400 WRKCFGSTS command for TAP04 on any command line and press **Enter**.

      ```
      WRKCFGSTS *DEV TAP04
      ```

      The Work with Configuration Status screen is displayed.

```
                      Work with Configuration Status
                                                                  SYSTEM
                                                            MM/DD/YY  HH:MM:SS
Position to . . . . . .___________   Starting characters

Type options, press Enter.
  1=Vary on   2=Vary off   5=Work with job   8=Work with description
  9=display mode status ...

Opt   Description      Status              -------------Job-------------
__    TAPCTL01         ACTIVE
8_      TAP04          VARIED ON           JOBNAME     USER       000000

                                                                      Bottom
Parameters or command
===>_____________________________________________________________________
F3=Exit   F4=Prompt   F12=Cancel   F23=More options   F24=More keys
```

b. Select Option 8=Work with descriptions and press **Enter**. The Work with Device Descriptions screen is displayed.

```
                      Work with Device Descriptions
                                                     System:    SYSTEM
Position to . . . . . .___________   Starting characters

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   6=Print   7=Rename
  8=Work with status   9=Retrieve source

Opt   Device       Type       Text                                   --
2     TAP04        3480       CREATED BY AUTO-CONFIGURATION

                                                                      Bottom
Parameters or command
===>_____________________________________________________________________
F3=Exit   F4=Prompt   F5=Refresh   F6=Create   F9=Retrieve   F12=Cancel
F14=Work with status
```

c. Select 2=Change and press **Enter**. The Change Device Description screen is displayed.

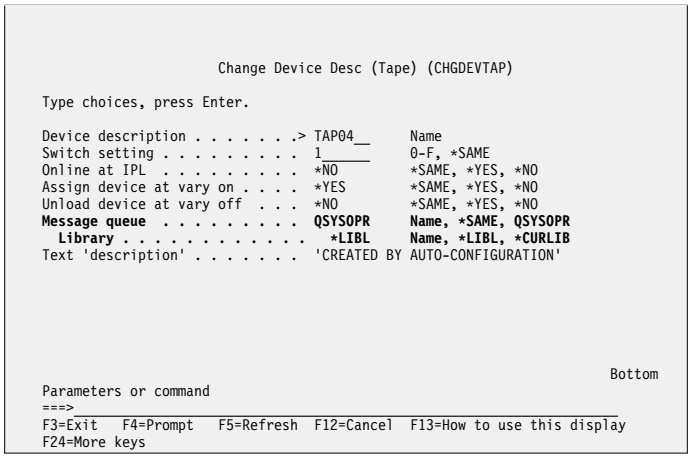
```
                      Change Device Desc (Tape) (CHGDEVTAP)

Type choices, press Enter.

Device description . . . . . . .> TAP04__     Name
Switch setting . . . . . . . . .  1_____     0-F, *SAME
Online at IPL  . . . . . . . . .  *NO        *SAME, *YES, *NO
Assign device at vary on . . . .  *YES       *SAME, *YES, *NO
Unload device at vary off  . . .  *NO        *SAME, *YES, *NO
Message queue  . . . . . . . . .  Z15447     Name, *SAME, QSYSOPR
  Library . . . . . . . . . . . .   RMLS     Name, *LIBL, *CURLIB
Text 'description' . . . . . . .  'CREATED BY AUTO-CONFIGURATION'

                                                                      Bottom
Parameters or command
===>_____________________________________________________________________
F3=Exit   F4=Prompt   F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

d. Replace the value for **Message queue** with QSYSOPR. Replace the value for **Library** with *LIBL. Message queue and Library are highlighted just for this description.



e. Now the tape drive forwards messages to the QSYSOPR message queue rather than to the message queue created by RMLS/CSC. Inquire messages, for example, CPA4088 (Mount next volume on device TAPxx), will be in the QSYSOPR message queue.

You can still use the MNTRMLVOL command to order a specific volume identification to be mounted on the changed tape device.

The change to the tape device description will only last until the tape device is deallocated.

MONITOR TAPE VOLUME ACTIVITY

There are four reports that can be used to monitor tape volume activity in the StorageTek Automated Cartridge System.

- The Inventory Report (DSPRMLINV Command) generates a listing of the physical location of volumes under Removable Media Library Software control. This report is useful for manual mode operations. This function is not supported with a LibraryStation server.

- The Scratch List Report (DSPRMLSCR Command) generates a listing of the physical locations of scratch volumes under Removable Media Library Software control. An insufficient number of scratch volumes can cause some Removable Media Library Software commands to fail.

- The System Event Information Report uses the AS/400 DSPLOG Command to produce a list of the Removable Media Library Software event information in the AS/400 system history log. All event information, such as volume mounts, dismounts, enters, ejects or other operations of Removable Media Library Software are displayed. This information is valuable in analyzing the performance of the library.

- The Print Trace Report (PRTRMLTRC Command) prints a report containing the information obtained from running the Start Trace (STRRMLTRC) command. The name of the output from the Start Trace command is used as input to the Print Trace Report command. The information in this report is valuable in analyzing problems.

The Print Trace Report command and the Start Trace command are intended to be used with StorageTek Support personnel.

ALLOCATE A TAPE DEVICE (ALCRMLDEV) COMMAND

Description

The ALCRMLDEV command requests RMLS/CSC to allocate a tape device for your use. Allocating a device is the process of reserving a tape drive.

If a program requests that data be input from a tape or output to a tape and a tape drive has not been allocated, the program can not successfully complete execution. A tape device can be allocated at any time provided that an appropriate device is available.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to “Programming Environments” on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a tape device is allocated in a Removable Media Library:

- by selecting **1. Allocate a Tape Device** on the RML Operations Menu.
- by issuing the ALCRMLDEV command with associated parameters at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Allocating a Tape Device

The tape device to be allocated is specified by designating a preferred tape device name with the DEV parameter.

Note: If *NO is specified for the FORCE parameter, any tape device from a list determined by RMLS/CSC based on preferred tape device location and type may be allocated to satisfy the request. However, only the specified tape device is allocated if *YES is supplied with the FORCE parameter.

Alternately, a library tape device may be allocated by supplying a volume identifier with the VOL parameter. A list of appropriate tape devices from which to satisfy the allocation request is determined by RMLS/CSC based upon the location of the tape volume. With this alternate approach, the value *VOL must be supplied for the DEV parameter and the FORCE parameters must be *NO.

However, with either approach, if a tape device has been successfully allocated to satisfy this request, you are notified with a message containing the device name of the allocated tape device. If all appropriate tape devices are unavailable, then you are notified with a message and the command terminates without allocating a tape device.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job or command resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

You cannot create, change, or delete any RMLS/CSC device description until the device is deallocated.

Warning: A potential data integrity problem could exist if a device that has been allocated is varied off instead of deallocated.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

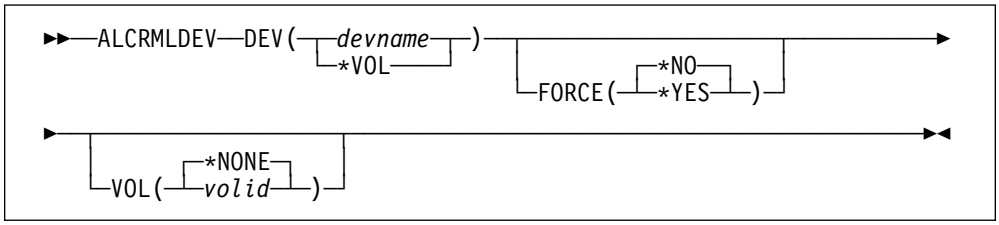
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

DEV
Specifies that a device is to be allocated.

devname Identifies the name for a tape device. The name can be a maximum of 10 characters in length and must conform to the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

***VOL** Allocate a tape device based on the location of the tape volume identifier specified on the VOL parameter.

Optional Parameters

FORCE may only be issued in conjunction with the DEV parameter.

FORCE
Specifies that device allocation is to be forced. The possible values are:

***NO** Indicates that the attempted device allocation is **not** to be forced to only the specified device. *NO is the default value.

***YES** Indicates that the attempted device allocation is to be forced to only the specified device.

VOL
Specifies that a volume is to be allocated.

***NONE** Specifies that there is no volume identification specified. The system should use the preferred tape device specified on the DEV parameter. *NONE is the default value.

volid Specifies a volume serial number used to identify a physical tape volume. Volume identifiers consist of a maximum of six alphanumeric characters with no embedded or leading blanks.

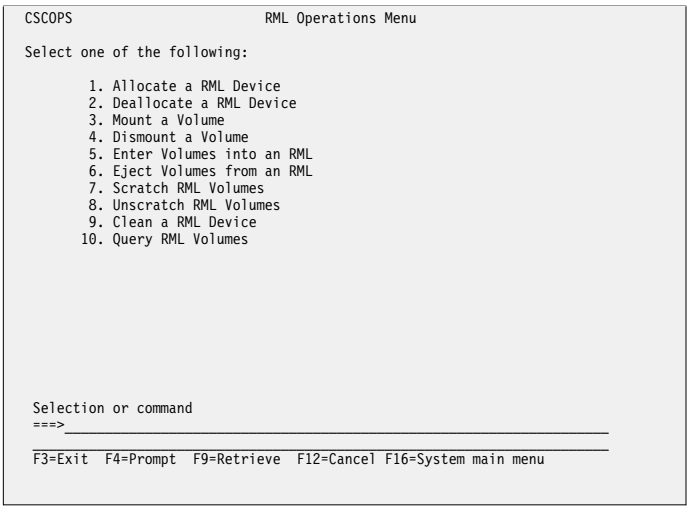
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to allocate a device through an interactive session:

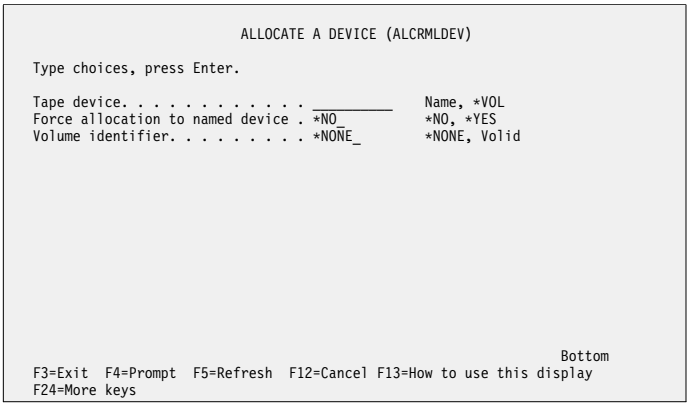
- "Procedure to Allocate a Tape Device Using Menus" on page 8-13.
- "Procedure to Allocate a Tape Device Using the ALCRMLDEV Command" on page 8-14.

Procedure to Allocate a Tape Device Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **1** (Allocate a Tape Device) and press **Enter**. The Command Prompt Display for Allocate a Tape Device is displayed.



   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to “Required Parameters” on page 8-12 and “Optional Parameters” on page 8-12 for screen field descriptions and data types.

4. Press **Enter** and the Allocate a Tape Device request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

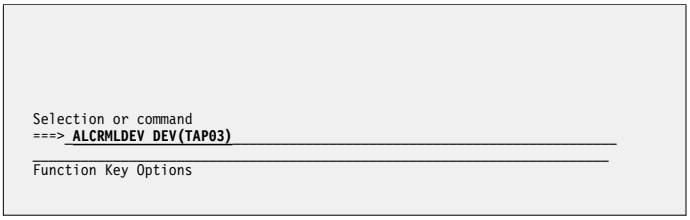
Procedure to Allocate a Tape Device Using the ALCRMLDEV Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the device allocation that you want to accomplish.

3. Type the ALCRMLDEV command with accompanying parameters. Refer to "Required Parameters" on page 8-12 and "Optional Parameters" on page 8-12 for parameter descriptions and data types.

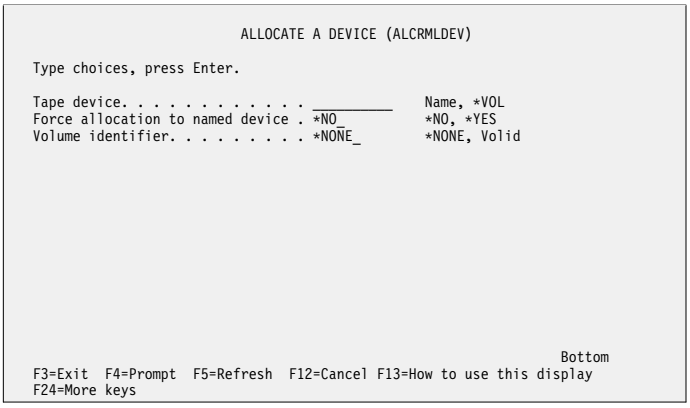
   An example is:



   The example requests that tape device TAP03 or a similar device be allocated to the requesting user.

   If you did not enter the required parameters, the Command Prompt Display for Allocate a Tape Device is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display for the Allocate a Tape Device function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

5. Press **Enter** and the Allocate a Tape Device request is processed. A message is displayed to indicate successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Allocate a Tape Device function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Allocate a Tape Device is displayed.
- No reports are produced.

DEALLOCATE A TAPE DEVICE (DLCRMLDEV) COMMAND

Description

The DLCRMLDEV command requests RMLS/CSC to deallocate a library tape device previously allocated for your use.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a tape device is deallocated:

- by selecting **2. Deallocate a Tape Device** on the RML Operations Menu.
- by issuing the DLCRMLDEV command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no operational prerequisites for executing this command. However, the tape device must have been allocated to you before you can deallocate it.

Usage Notes for Deallocating a Tape Device

The tape device to be deallocated is specified by supplying the tape device name with the DEV parameter.

If the tape device specified was not previously allocated to you, then you are notified with a message and the command terminates without deallocating the tape device.

If the tape device to be deallocated is allocated to you and has a volume mounted when the deallocate command is executed, the volume is implicitly dismounted and the tape device deallocated.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job or command resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

You cannot create, change, or delete any RMLS/CSC device description until the device is deallocated.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

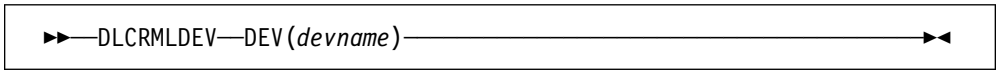
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

DEV
Specifies that a tape device is to be deallocated.

devname Identifies the name for a tape device. The name can be a maximum of 10 characters in length and must conform to the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

There are no optional parameters for this command.

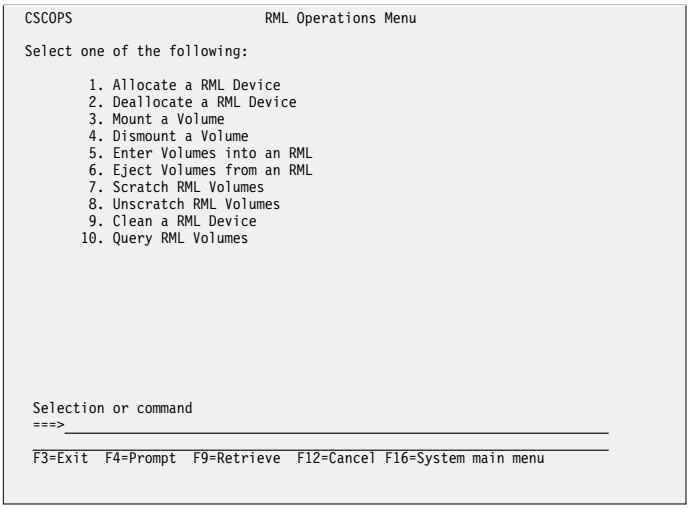
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to deallocate a device through an interactive session:

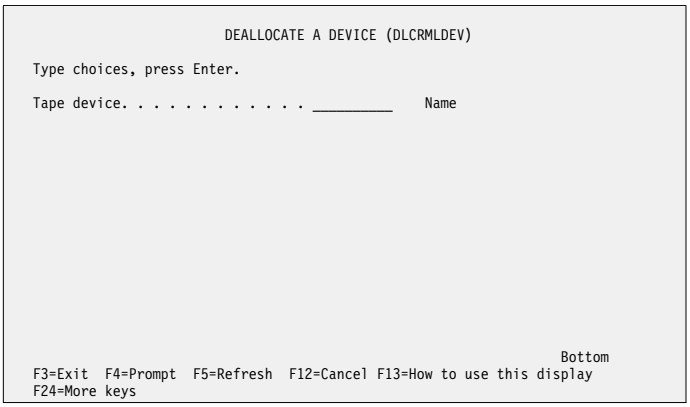
- "Procedure to Deallocate a Tape Device Using Menus" on page 8-18.
- "Procedure to Deallocate a Tape Device Using the DLCRMLDEV Command" on page 8-19.

Procedure to Deallocate a Tape Device Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **2** (Deallocate a Tape Device) and press **Enter**. The Command Prompt Display for Deallocate a Tape Device is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required parameter on the Command Prompt Display for Deallocate a Tape Device. Refer to "Required Parameters" on page 8-18 for field descriptions and data types.

4. Press **Enter** and the device deallocation request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

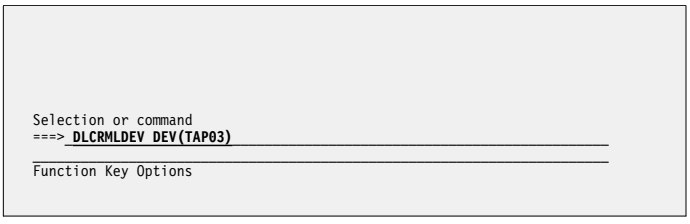
Procedure to Deallocate a Tape Device Using the DLCRMLDEV Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen:

2. Identify the appropriate parameters for the deallocation that you want to accomplish.

3. Type the DLCRMLDEV command with accompanying parameters. Refer to "Required Parameters" on page 8-18 and "Optional Parameters" on page 8-18 for parameter descriptions and data types.

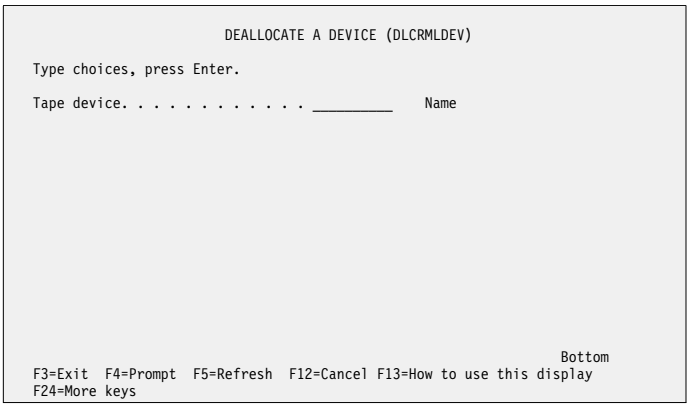
   An example is :



The example requests that tape device TAP03 be deallocated.

If you did not enter the required parameters, the Command Prompt Display for Deallocate a Tape Device is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Deallocate a Tape Device function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required parameter on the Command Prompt Display.

5. Press **Enter** and the Deallocate a Tape Device request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Deallocate a Tape Device function is issued:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Deallocate a Tape Device is displayed.
- No reports are produced.

MOUNT A VOLUME (MNTRMLVOL) COMMAND

Description

Note: The use of the *SCRATCH parameter or *READONLY parameter is not supported with a 9710, 9714, or 9740 Library Storage Manager direct library attachment.

The MNTRMLVOL command requests RMLS/CSC to locate a tape volume under its control and mount it in a specific tape device that you previously allocated for your use (see "Allocate a Tape Device (ALCRMLDEV) Command" on page 8-10).

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a library volume is mounted:

- by selecting **3. Mount a Volume** on the Administrative Functions menu.
- by issuing the MNTRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

Before a tape volume can be mounted, a tape drive must be allocated using the ALCRMLDEV command. After the volume is processed, the tape drive must be deallocated using the DLCRMLDEV command.

Usage Notes for Mounting a Volume

The previously allocated RML tape device is specified with the required parameter DEV.

If the tape device specified has not been previously allocated for your use, you are notified with a message and the command terminates without mounting the tape volume.

The volume to mount is specified with the VOL parameter. If the specified tape volume is unavailable for any reason, you are notified with a message and the command terminates without mounting the tape volume. However, the tape device remains allocated to you until you explicitly deallocate the device or until the job ends.

The default value *SCRATCH supplied with the VOL parameter results in a nonspecific (scratch) tape volume being mounted in the specified tape device. You are notified with a message noting the *volid* of the assigned scratch tape volume.

If there are no scratch tape volumes available to satisfy the request, you are notified with a message and the command terminates without mounting a scratch tape. However, the tape device remains allocated to you until you explicitly deallocate the device or until the job ends.

If *volid* is specified, the tape volume with that volume identifier is mounted in the tape device.

If a volume is mounted in the tape device, that volume is dismounted and the specified volume is mounted.

The tape volume may be mounted as “write-protected” by supplying the value YES with the READONLY parameter. If you mount the volume as write-protected or read only and you try to write to it, you will get an error. A scratch volume can only be mounted with the value *NO on the READONLY parameter.

If LibraryStation is the server, and this command is issued for a volume that is not in the expected location or another volume is in the expected location, a message appears on the MVS console. The job that initiated the command hangs until the operator responds to the message.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job or command resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

You cannot create, change, or delete any RMLS/CSC device description until the device is deallocated.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

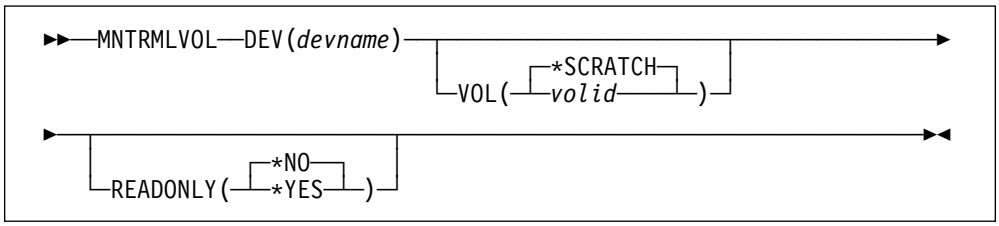
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating "Communication failure."

Syntax



Required Parameters

.

DEV
Specifies the device for mounting a volume.

devname Identifies the name for a tape device. The name can be a maximum of 10 characters in length and must conform to the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

.

VOL
Specifies a volume is to be mounted. The possible values are:

***SCRATCH** This value indicates that a volume designated as scratch is to be mounted in the specified tape device. *SCRATCH is the default.

volid Specifies a volume serial number used to identify a physical tape volume. Volume identifiers consist of a maximum of six alphanumeric characters with no embedded or leading blanks.

.

READONLY
Specifies if the volume is to be read only. The possible values are:

***NO** Indicates that tape volume is to be mounted as a "read and write" (**not** write-protected) volume. *NO is the default value.

***YES** Indicates that tape volume **is** to be mounted as a "read only" (write-protected) volume.

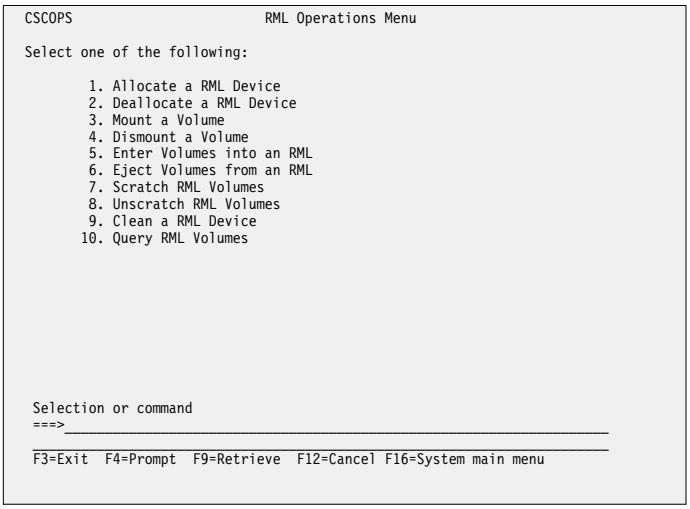
Procedures for Interactive Execution

Either of the procedures described in this section may be followed to mount a volume through an interactive session:

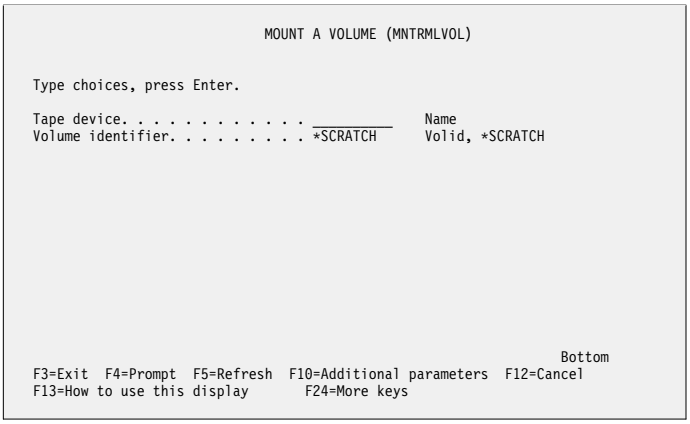
- "Procedure to Mount a Volume Using Menus" on page 8-24.
- "Procedure to Mount a Volume Using the MNTRMLVOL Command" on page 8-25.

Procedure to Mount a Volume Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **3** (Mount a Volume) and press **Enter**. The Command Prompt Display screen is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. If you want to mount the volume as READONLY, press **F10** and that additional parameter is displayed on the screen.

```
                              MOUNT A VOLUME (MNTRMLVOL)

Type choices, press Enter.

Tape device. . . . . . . . . . . _________    Name
Volume identifier. . . . . . . . *SCRATCH     Volid, *SCRATCH

                             Additional Parameters

Mount the volume read only . . . . *NO          *NO, *YES









                                                                       Bottom
F3=Exit  F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen. Refer to "Required Parameters" on page 8-23 and "Optional Parameters" on page 8-23 for screen field descriptions and data types.

5. Press **Enter** and the Mount a Volume request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Mount a Volume Using the MNTRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen:

2. Identify the appropriate parameters for the Mount a Volume command that you want to use.

3. Type the MNTRMLVOL command with accompanying parameters and press **Enter**.

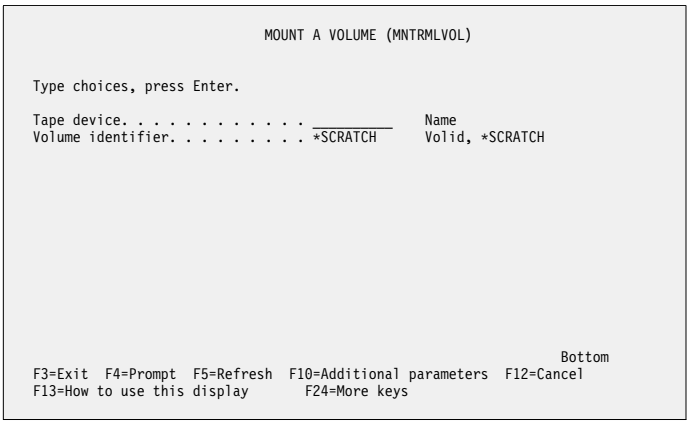
   An example is:

```
Selection or command
===> MNTRMLVOL DEV(TAP03) VOL(BASE01)
_____________________________________________________________________________
Function Key Options
```

   The example requests that volume BASE01 be mounted on tape device TAP03.

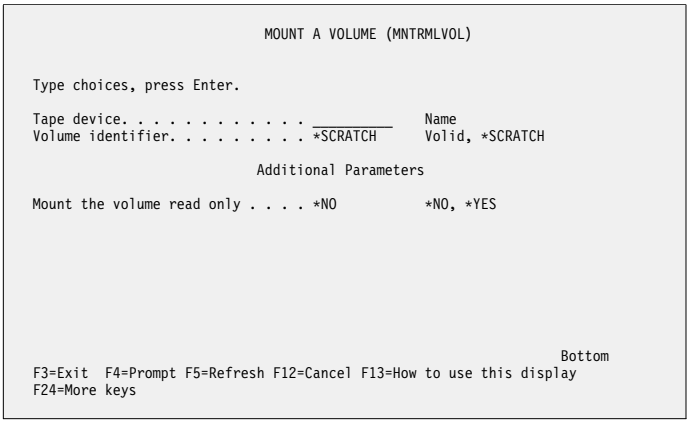
   If you did not enter the required parameters, the Command Prompt Display screen is displayed.

   If you want to go directly to the Command Prompt Display for the Mount a Volume function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. If you want to mount the volume as READONLY, press **F10** and that additional parameter is displayed on the screen.



5. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen.

6. Press **Enter** and the Mount a Volume request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Mount a Volume function is issued:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display screen for Mount a Volume is displayed.
- No reports are produced.

DISMOUNT A VOLUME (DSMRMLVOL) COMMAND

Description

The DSMRMLVOL command requests RMLS/CSC to instruct the robot to remove a tape volume currently in a tape device allocated to you, and move it to an empty storage location in an RML.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a volume is dismounted:

- by selecting **4. Dismount a Volume** on the RML Operations Menu.
- by issuing the DSMRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

Before a volume can be dismounted, it must have been previously mounted on a tape device that was allocated to you.

Usage Notes for Dismount a Volume

Although there are no required parameters for this command, you must enter either a valid volume identifier or a valid device name.

The tape volume to be dismounted is specified with the VOL parameter.

An alternate way of dismounting a tape volume is to specify the VOL parameter with the system value *DEV and specify a tape device with the DEV parameter. When the *DEV system value is specified, it means to dismount the tape volume from the tape device specified by *devname* on the DEV parameter.

With either method, if the volume to be dismounted is in a tape device that has not been previously allocated to you, then you are notified with a message and the command terminates without dismounting the tape volume.

If ACSLS is the server and if the FORCE=*NO parameter is specified and if the tape volume is not rewound and in the unloaded position within the tape device, you are notified with a message and the command terminates without dismounting the tape volume.

The FORCE=*YES parameter is made available to force the dismount of a tape volume from a tape device allocated to you even if the tape volume is not unloaded.

If LibraryStation is the server, and this command is issued with FORCE=*NO specified for a volume that is not unloaded, a message appears on the MVS console. The job that initiated the command hangs until the operator responds to the message.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job or command resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

You cannot create, change, or delete any RMLS/CSC device description until the device is deallocated.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

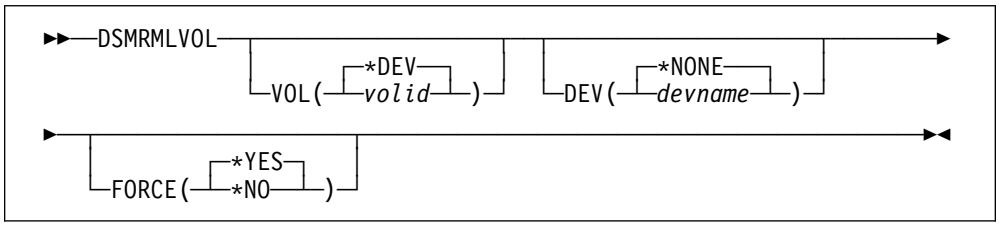
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

Although there are no required parameters, you must enter either a valid volume identifier or a valid device name.

Optional Parameters

VOL
Specifies the tape volume to be dismounted. The possible values are:

volid Any valid volume serial number. Volume serial numbers consist of one to six National characters with no embedded or leading blanks.

***DEV** Dismount the tape volume that is in the tape device specified with the DEV parameter.

DEV
Specifies the device from which the volume is to be dismounted. The possible values are:

devname A logical name for any tape device attached to an RML. This name consists of 1 to 10 National characters with no embedded or leading blanks.

***NONE** No tape device is specified, use the VOL parameter. *NONE is the default value.

FORCE
Specifies whether the dismount is to be forced. Changing FORCE to *NO has no effect. The possible values are:

***YES** Indicates that the dismount is to be forced to rewind and unload the volume from the tape device. *YES is the default value.

***NO** Indicates that the dismount is **not** to be forced to rewind and unload the volume from the tape device.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to dismount a volume through an interactive session:

- "Procedure to Dismount a Volume Using Menus" on page 8-30.
- "Procedure to Dismount a Volume Using the DSMRMLVOL Command" on page 8-31.

Procedure to Dismount a Volume Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.

```
CSCOPS                        RML Operations Menu

Select one of the following:

        1. Allocate a RML Device
        2. Deallocate a RML Device
        3. Mount a Volume
        4. Dismount a Volume
        5. Enter Volumes into an RML
        6. Eject Volumes from an RML
        7. Scratch RML Volumes
        8. Unscratch RML Volumes
        9. Clean a RML Device
       10. Query RML Volumes









Selection or command
===>_____________________________________________________________________
_____________________________________________________________________
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **4** (Dismount a Volume) and press **Enter**. The Command Prompt Display screen for Dismount a Volume is displayed.

```
                          DISMOUNT VOLUME (DSMRMLVOL)

Type choices, press Enter.

Volume identifier. . . . . . . . . *DEV__        Volid, *DEV
Tape device. . . . . . . . . . . . *NONE_____    Name, *NONE
Force the dismount . . . . . . . . *YES          *YES, *NO

                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen. Refer to "Required Parameters" on

page 8-29 and "Optional Parameters" on page 8-29 for screen field descriptions and data types.

4. Press **Enter** and the Dismount a Volume request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Dismount a Volume Using the DSMRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the Dismount a Volume function that you want to accomplish.

3. Type the DSMRMLVOL command with accompanying parameters. Refer to "Required Parameters" on page 8-29 and "Optional Parameters" on page 8-29 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> DSMRMLVOL DEV(TAP01) FORCE(*YES)
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
```

   The example requests RMLS/CSC to instruct the robot to dismount whichever volume is mounted on device TAP01 regardless of whether the tape volume is rewound or unloaded.

   If you did not enter the required parameters, the Command Prompt Display screen for Dismount a Volume is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display screen for the Dismount a Volume function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                        DISMOUNT VOLUME (DSMRMLVOL)

Type choices, press Enter.

Volume identifier. . . . . *DEV_        Volid, *DEV
Tape device. . . . . *NONE____    Name, *NONE
Force the dismount . . . . . *YES         *YES, *NO

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen for Dismount a Volume.

5. Press **Enter** and the Dismount a Volume request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Dismount a Volume function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Dismount a Volume is displayed.
- No reports are produced.

ENTER VOLUMES INTO AN RML (ENTRMLVOL) COMMAND

Description

The ENTRMLVOL command requests RMLS/CSC to instruct a library robot to move tape volumes from a cartridge access port to a Removable Media Library.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified Server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch			
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

Entering volumes into an Removable Media Library requires substantial manual intervention by an operator. The enter volumes request is made only:

- through an interactive terminal session by selecting **5. Enter Volumes into an RML** on the RML Operations Menu.
- by issuing the ENTRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

The volume to be entered must have a label that is readable by the RML. The Cartridge Access Port should not be in automatic mode or otherwise unavailable. This command does not support clipper door CAP operation.

Usage Notes for Enter Volumes into an RML

The CAP parameter is used to specify the Cartridge Access Port to be used to enter the tape volume. If the specified Cartridge Access Port is in automatic mode or otherwise unavailable, you are notified with a message and the command terminates without entering any volumes.

If you are using the Automated Cartridge System Library Software server and you are entering a volume that has a missing label or an unreadable label, you should use the Automated Cartridge System Library Software ENTER command. This command is described in the *Automated Cartridge System Library Software System Administrator's Guide*.

If you are using the LibraryStation server and you are entering a volume that has a missing label or an unreadable label, you should use the Host Software Component (HSC) ENTER command. This command is described in the *Host Software Component Operator's Guide*.

If you are entering cartridges into one RML of a dual RML installation or one side of a single RML that is divided between two hosts, do not fill all the available storage locations in the RML. If a cartridge from the one RML is being used in the tape device of the other RML, when the cartridge is dismounted and all the storage locations are full in the original RML, the cartridge cannot be returned to the original RML. The cartridge is placed in a CAP and the CAP is unlocked. A message is sent to the operator to remove the cartridge from the CAP.

While it is recommended that the ENTRMLVOL command is executed in an interactive environment, you can use the AS/400 CHGCMD command and the ALLOW parameter to allow ENTRMLVOL to be processed in a batch environment.

Any RMLS/CSC command can be ended by issuing the AS/400 ENDRQS or ENDJOB commands. If a job or command that has a CAP reserved to it is ended before the CAP is released (for example, volumes are in the CAP waiting for user intervention), the CAP may be unavailable to others on the system or other systems until user intervention.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

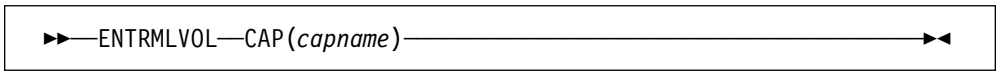
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

There are no required parameters for the enter volumes into an RML function.

Optional Parameters

CAP
Specifies the Cartridge Access Port to be loaded with the volume(s). The possible value is:

capname Indicates a logical name for the Cartridge Access Port. This name can be a maximum of 10 characters and follows the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

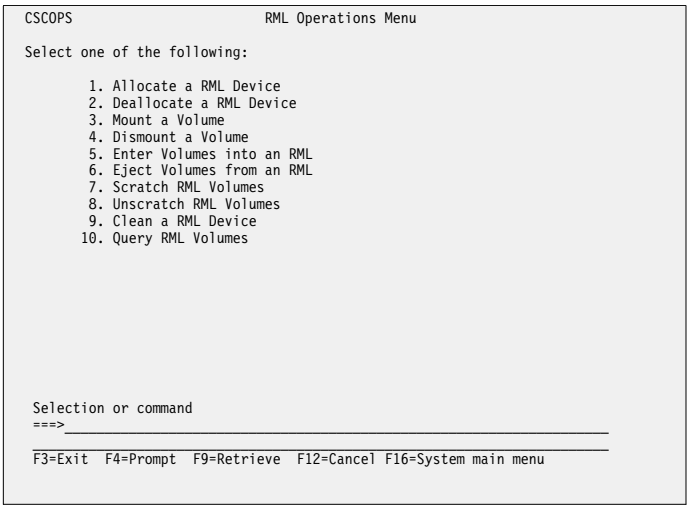
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to enter volumes into a Removable Media Library:

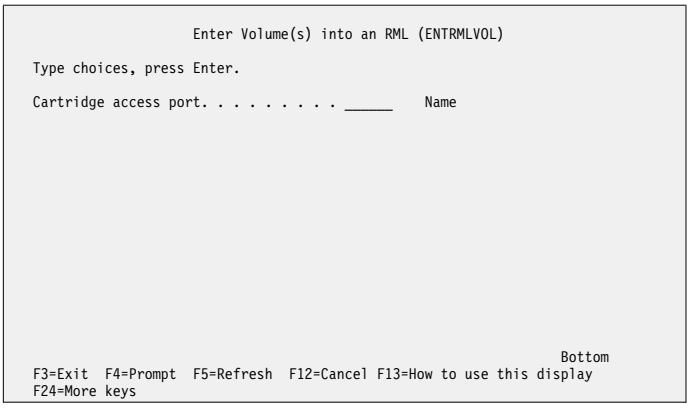
- “Procedure for Entering Volumes into an RML Using Menus” on page 8-35.
- “Procedure for Entering Volumes into an RML Using the ENTRMLVOL Command” on page 8-37.

Procedure for Entering Volumes into an RML Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **5** (Enter Volumes into an RML) and press **Enter**. The Command Prompt Display for Enter Volumes into an RML is displayed.



   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required parameter on the Command Prompt Display for Enter Volumes into an RML. Refer to "Required Parameters" on page 8-35 for screen field descriptions and data types.

4. Press **Enter** and the Enter Volumes into an RML request is processed.

5. Proceed to the Cartridge Access Port specified in your request or identified by a message displayed on the terminal screen, open the Cartridge Access Port door, and load the volumes into the Cartridge Access Port. A message is displayed indicating successful completion of the request.

   Note: Since there are various Cartridge Access Port configurations, you must follow the loading requirements for the Cartridge Access Port being loaded.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

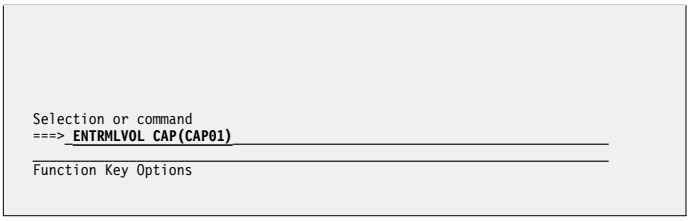
Procedure for Entering Volumes into an RML Using the ENTRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameter for the Enter Volumes into an RML function that you want to accomplish.

3. Type the ENTRMLVOL command with accompanying parameter and press **Enter**.

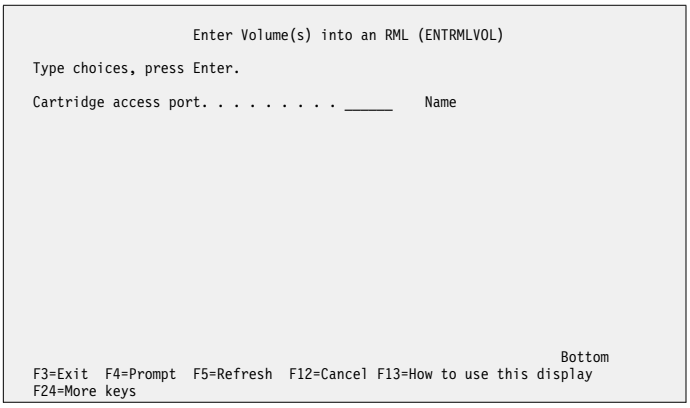
   An example is:



   This example requests that tape volumes be entered through CAP01.

   If you did not enter the required parameter with the command, the Command Prompt Display screen for Enter Volumes into an RML is displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display screen for the Enter Volumes into an RML function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



   The cursor is positioned at the Entry Field of the first parameter that is missing.

4. Complete the request by entering information for the required parameter on the Command Display Prompt screen.

5. Press **Enter** and the Enter Volumes into an RML request is processed.

6. Proceed to the Cartridge Access Port specified in your request or identified by a message displayed on the terminal screen, open the Cartridge Access Port door, and load the volumes into the Cartridge Access Port cells. A message is displayed, indicating successful completion of the request.

   Note: Because there are various Cartridge Access Port configurations, you must follow the loading requirements for the Cartridge Access Port being loaded.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Enter Volumes into an RML function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Enter Volumes into an RML is displayed when entering volumes using RMLS/CSC menus if parameters are not entered with the ENTRMLVOL command.
- No reports are produced.

EJECT VOLUMES FROM AN RML (EJTRMLVOL) COMMAND

Description

The EJTRMLVOL command requests RMLS/CSC to instruct a library robot to move a specified tape volume from a Removable Media Library to a Cartridge Access Port. Once the volume is moved by the robot to the Cartridge Access Port, you must remove the volume from the Removable Media Library.

This command does not support the clipper door CAP operation.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch			
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, ejecting a volume from a Removable Media Library is accomplished:

- by selecting **6. Eject Volumes from an RML** on the RML Operations Menu menu.
- by issuing the EJTRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

Before a volume can be ejected from a Removable Media Library, it must reside within a Removable Media Library. Before a Cartridge Access Port can be used, it must be available.

Usage Notes for Eject Volumes from an RML

The volume to be ejected is specified with the VOL parameter. A nonexistent *volid* is ignored.

The CAP parameter is used to specify a Cartridge Access Port from which the specified volume is to be ejected. If the specified Cartridge Access Port is unavailable, you are notified with a message and the command terminates without ejecting any volumes.

Clipper door CAP operations are not supported.

Note: When issuing this command, you should be aware that execution of the command produces ejected volumes in a Cartridge Access Port. These ejected volumes must be removed from the Cartridge Access Port to ensure continued library operation. Because this command requires substantial user intervention and interaction, it should only be executed from an interactive Job, an interactive Program, or an interactive REXX job. However, using the AS/400 CHGCMD command and the ALLOW parameter you can allow EJTRMLVOL to be processed in a batch environment.

If LibraryStation is the server, and this command is issued for a volume that is not in the expected location or another volume is in the expected location, a message appears on the MVS console. The job that initiated the command hangs until the operator responds to the message.

Any RMLS/CSC command can be ended by issuing the AS/400 ENDRQS or ENDJOB commands. If a job or command that has a CAP reserved to it is ended before the CAP is released (for example, volumes are in the CAP waiting for user intervention), the CAP may be unavailable to others on the system or other systems until user intervention.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

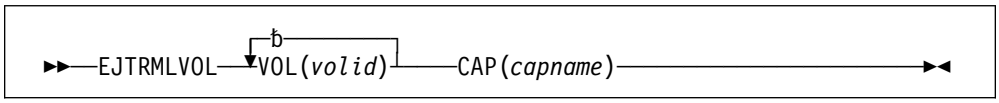
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

VOL
Specifies that a volume is to be ejected. The possible value is:

volid Identifies any valid volume serial number. A valid volume serial number consist of a string of one to six National characters with no embedded or leading blanks. Up to 42 volume serial numbers can be entered, separated by blank spaces and the whole string is enclosed in parentheses.

CAP
Specifies the Cartridge Access Port from which the volume is to be ejected. The possible value is:

capname Indicates a logical name for the Cartridge Access Port. This name can be a maximum of 10 characters and follows the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

There are no optional parameters for this function.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to eject a volume from a Removable Media Library through an interactive session:

- “Procedure to Eject A Volume from an RML Using Menus” on page 8-41.
- “Procedure to Eject a Volume from an RML Using the EJTRMLVOL Command” on page 8-43.

Procedure to Eject A Volume from an RML Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.

```
CSCOPS                        RML Operations Menu

Select one of the following:

        1. Allocate a RML Device
        2. Deallocate a RML Device
        3. Mount a Volume
        4. Dismount a Volume
        5. Enter Volumes into an RML
        6. Eject Volumes from an RML
        7. Scratch RML Volumes
        8. Unscratch RML Volumes
        9. Clean a RML Device
       10. Query RML Volumes









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **6** (Eject Volumes from an RML) and press **Enter**. The Command Prompt Display for Eject Volumes From an RML is displayed.

```
                    Eject Volume(s) from an RML (EJTRMLVOL)

 Type choices, press Enter.

 Volume identifier. . . . . .  ______        Volid
               + for more values  ______

 Cartridge access port. . . . .  ______       Name









                                                                    Bottom
 F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
 F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to “Required Parameters” on page 8-41 for screen field descriptions and data types.

4. Press **Enter** and the Eject Volumes From an RML request is processed. A message is displayed indicating successful completion of the request. Additional information may be in the Joblog of the job executing this command.

5. Proceed to the Cartridge Access Port identified by a message displayed on the terminal screen, open the Cartridge Access Port door, and remove the volume or volumes from the Cartridge Access Port.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Procedure to Eject a Volume from an RML Using the EJTRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the Eject Volumes From an RML function that you want to accomplish.

3. Type the EJTRMLVOL command with accompanying parameters. Refer to "Required Parameters" on page 8-41 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> EJTRMLVOL VOL(BASE02) CAP(CAP01)
Function Key Options
```

   The example requests that volume BASE02 is ejected through CAP01 Cartridge Access Port door.

   If you did not enter the required parameters, the Command Prompt Display for Eject Volumes From an RML is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display for the Eject Volumes From an RML function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                  Eject Volume(s) from an RML (EJTRMLVOL)

Type choices, press Enter.

Volume identifier. . . . . .  _____        Volid
              + for more values  _____

Cartridge access port. . . . .  _____      Name

                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

5. Press **Enter** and the Eject Volumes From an RML request is processed. A message is displayed to indicate successful completion of the request. Additional information may be in the Joblog of the job executing this command.

6. Proceed to the Cartridge Access Port identified by a message displayed on the terminal screen, open the Cartridge Access Port door, and remove the ejected volume or volumes.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Eject Volumes From an RML function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Eject Volumes From an RML is displayed.
- No reports are produced.

DESIGNATING SCRATCH RML VOLUMES (SCRRMLVOL COMMAND)

Description

The SCRRMLVOL command requests RMLS/CSC to designate a range of volumes as scratch volumes. Scratch is an attribute of a volume that indicates the volume is blank or contains no useful data. A volume designated as scratch is used for volume requests by applications that do not specify specific external volume labels.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, designating a range of volumes as scratch volumes is accomplished:

- by selecting **7. Scratch RML Volumes** on the RML Operations Menu menu.
- by issuing the SCRRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

All volumes specified with this command must reside in the same Removable Media Library.

Usage Notes for Designate Scratch Volumes

Note: RMLS/CSC does not initiate volumes or verify that data that has not expired exists on a volume.

The volumes to be designated as scratch volumes are specified with the VOLRANGE parameter. A nonexistent volume serial number is ignored. Two volume serial numbers are entered for this parameter. The volume serial numbers must be separated by at least one blank, and the whole string must be enclosed in parentheses. The first volume serial number is the lower limit of the range of volumes to be designated as scratch, and the second volume serial number is the upper limit. The second volume serial number must be greater than or equal to the first volume serial number. The set of volumes selected have volume serial numbers between, and including, the limits.

The POOLNAME parameter is used to specify the pool of scratch volumes into which the volumes designated as scratch are to be placed. The common scratch pool 0 is the only pool supported by RMLS/CSC.

Only the right-most numeric portion of the volume serial numbers is used to determine the volumes in the range. All the other characters must be identical.

The requestor is notified by a message specifying the volume serial number of each volume that is successfully designated as a scratch volume.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

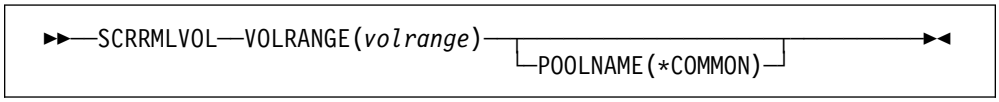
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

VOLRANGE
Specifies the range of RML volumes to be designated as scratch volumes. The possible value is:

volrange Specifies a set of volumes to be designated as scratch volumes. The volume serial numbers between, and including, the limits are designated as scratch volumes. Only the right-most numeric portions of volume serial numbers are acknowledged and used by RMLS/CSC. All other characters in the volume serial numbers must be identical. The second volume serial number must be greater than or equal to the first. A valid volume serial number must consist of a string of one to six National characters with no embedded or leading blanks. At least one blank space is used as the separator between volume serial numbers and the combination of volume serial numbers and separator blanks is enclosed in parentheses.

Examples are:

VOLRANGE(TEST07 TEST07) is a valid range

VOLRANGE(TEST01 TEST32) is a valid range

VOLRANGE(TEST01 TST092) is **not** a valid range

VOLRANGE(BASE02 BASER9) is **not** a valid range

VOLRANGE(TEST09 TEST03) is **not** a valid range

Optional Parameters

POOLNAME
Specifies the pool of scratch cartridges into which the volumes designated as scratch are to be placed. The possible value is:

**COMMON* Specifies the scratch pool in which to place the scratch volumes. The only value accepted is the common scratch pool *0*.

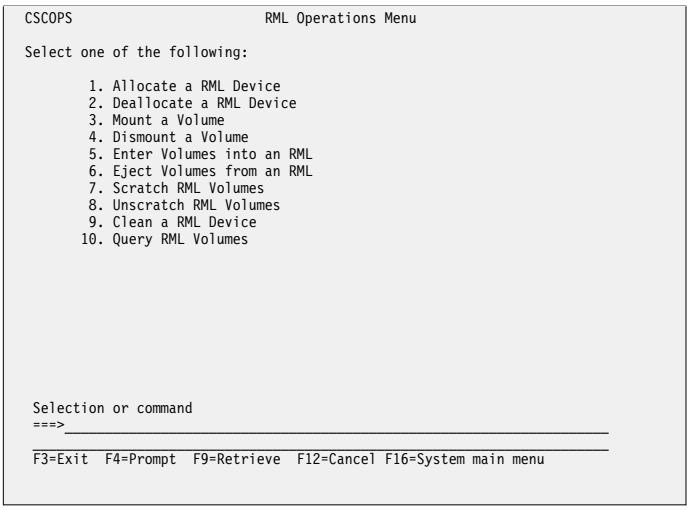
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to designate a range of volumes as scratch volumes through an interactive session:

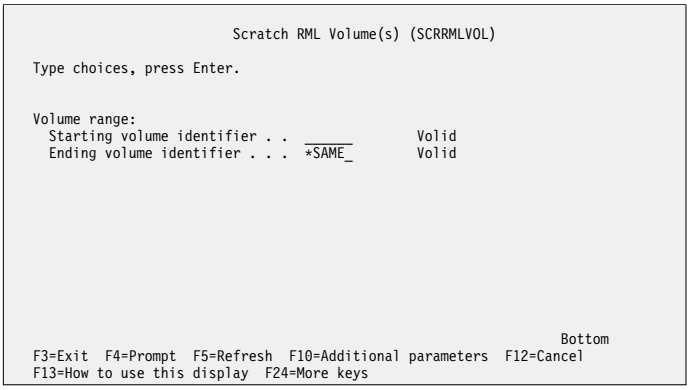
- "Procedure to Designate Scratch RML Volumes Using Menus" on page 8-48.
- "Procedure to Designate Scratch RML Volumes using the SCRRMLVOL Command" on page 8-49.

Procedure to Designate Scratch RML Volumes Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **7** (Scratch RML Volumes) and press **Enter**. The Command Prompt Display for Scratch RML Volumes is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. If you want to specify the scratch pool in which to place the scratch volumes, press **F10** and that additional parameter is displayed on the screen.

```
                        Scratch RML Volume(s) (SCRRMLVOL)

Type choices, press Enter.


Volume range:
  Starting volume identifier . .  ______          Volid
  Ending volume identifier . . .  *SAME_          Volid


                           Additional Parameters


Pool name . . . . . . . . . . . . *COMMON_______




                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

4. Complete the request by entering information for the required parameters on the Command Prompt Display. Refer to "Required Parameters" on page 8-47 and "Optional Parameters" on page 8-47 for screen field descriptions and data types.

5. Press **Enter** and the designate Scratch RML Volumes request is processed. A message is displayed indicating successful completion of the request. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Designate Scratch RML Volumes using the SCRRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the designate Scratch RML Volumes function that you want to accomplish.

3. Type the SCRRMLVOL command with accompanying parameters. Refer to "Required Parameters" on page 8-47 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> SCRRMLVOL VOLRANGE (TEST01 TEST08)
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
Function Key Options
```

   The example requests that volumes TEST01 through TEST08 are designated as scratch volumes.

   If you did not enter the required parameters, the Command Prompt Display for designate Scratch RML Volumes is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display for the designate Scratch RML Volumes function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                        Scratch RML Volume(s) (SCRRMLVOL)

Type choices, press Enter.


Volume range:
  Starting volume identifier . .  ______         Volid
  Ending volume identifier . . .  *SAME_         Volid









                                                                    Bottom
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. If you want to specify the scratch pool in which to place the scratch volumes, press **F10** and that additional parameter is displayed on the screen.

```
                        Scratch RML Volume(s) (SCRRMLVOL)

Type choices, press Enter.


Volume range:
  Starting volume identifier . .  ______         Volid
  Ending volume identifier . . .  *SAME_         Volid

                          Additional Parameters

Pool name . . . . . . . . . . . . *COMMON_______









                                                                    Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

5. Complete the request by entering information for the required parameters on the Command Prompt Display.

6. Press **Enter** and the designate Scratch RML Volumes request is processed. A message is displayed to indicate successful completion of the request. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the designate Scratch RML Volumes function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for designate Scratch RML Volumes is displayed.
- No reports are produced.

UNSCRATCHING RML VOLUMES (UNSRMLVOL COMMAND)

Description

The UNSRMLVOL command requests RMLS/CSC to unscratch a range of RML volumes. Unscratching removes the volume from the list of volumes designated as scratch volumes and the volumes are no longer scratch volumes. When the volumes are removed from the list of scratch volumes, the only method of addressing the volumes is through the use of the volume identification.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, designating a range of volumes to be unscratched or not scratch volumes is accomplished:

- by selecting **8. Unscratch RML Volumes** on the RML Operations Menu menu.
- by issuing the UNSRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

All volumes specified with this command must reside in the same Removable Media Library.

Usage Notes for Unscratching Volumes

The volumes to be unscratched are specified with the VOLRANGE parameter. The volumes specified must be scratch volumes. A nonexistent volume serial number is ignored. Two volume serial numbers are entered for this parameter. The volume serial numbers must be separated by at least one blank, and the whole string must be enclosed in parentheses. The first volume serial number is the lower limit of the range of volumes to be unscratched, and the second volume serial number is the upper limit. The second volume serial number must be greater than or equal to the first volume serial number. The set of volumes selected have volume serial numbers between, and including, the limits.

The requestor is notified by a message specifying the volume serial number of each volume that is successfully designated as an unscratch volume.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

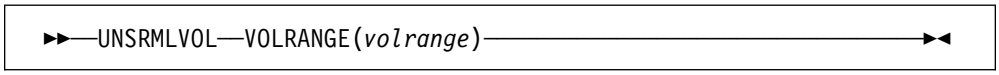
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

VOLRANGE
Specifies the range of RML volumes to be designated as unscratch volumes. The possible value is:

volrange Specifies a set of volumes that will no longer be designated as scratch volumes. The volume serial numbers between, and including, the limits are unscratch volumes. These volumes can only be specified by their volume serial numbers. Only the right-most numeric portions of volume serial numbers are acknowledged and used by RMLS/CSC. All other characters in the volume serial numbers must be identical. The second volume serial number must be greater than or equal to the first. A valid volume serial number must consist of a string of one to six National characters with no embedded or leading blanks. At least one blank space is used as the separator between volume serial numbers, and the combination of volume serial numbers and separator blanks is enclosed in parentheses.

Examples are:

VOLRANGE(TEST07 TEST07) is a valid range

VOLRANGE(TEST01 TEST32) is a valid range

VOLRANGE(TEST01 TST092) is **not** a valid range

VOLRANGE(BASE02 BASER9) is **not** a valid range

VOLRANGE(TEST09 TEST03) is **not** a valid range

Optional Parameters

There are no optional parameters for this command.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to designate a range of volumes as unscratch volumes through an interactive session:

- "Procedure to Unscratch RML Volumes Using Menus" on page 8-53.
- "Procedure to Unscratch RML Volumes using the UNSRMLVOL Command" on page 8-54.

Procedure to Unscratch RML Volumes Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.

```
CSCOPS                        RML Operations Menu

Select one of the following:

        1. Allocate a RML Device
        2. Deallocate a RML Device
        3. Mount a Volume
        4. Dismount a Volume
        5. Enter Volumes into an RML
        6. Eject Volumes from an RML
        7. Scratch RML Volumes
        8. Unscratch RML Volumes
        9. Clean a RML Device
       10. Query RML Volumes









Selection or command
===>_____________________________________________________________________
_____________________________________________________________________
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **8** (Unscratch RML Volumes) and press **Enter**. The Command Prompt Display for Unscratch RML Volumes is displayed.

```
                       UNSCRATCH RML VOLUME(S) (UNSRMLVOL)

Type choices, press Enter.


Volume range:
Starting volume identifier . . .  ______         Volid
Ending volume identifier . . . .  *SAME_        Volid, *SAME









                                                                    Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required parameters on the Command Prompt Display. Refer to “Required Parameters” on page 8-53 for screen field descriptions and data types.

4. Press **Enter** and the Unscratch RML Volumes request is processed. A message is displayed indicating successful completion of the request. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Procedure to Unscratch RML Volumes using the UNSRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the Unscratch RML Volumes function that you want to accomplish.

3. Type the UNSRMLVOL command with accompanying parameters. Refer to "Required Parameters" on page 8-53 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> UNSRMLVOL VOLRANGE (TEST01 TEST08)
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
Function Key Options
```

   The example requests that volumes TEST01 through TEST08 are no longer designated as scratch volumes.

   If you did not enter the required parameters, the Command Prompt Display for Unscratch RML Volumes is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display for the Unscratch RML Volumes function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                    UNSCRATCH RML VOLUME(S) (UNSRMLVOL)

Type choices, press Enter.


Volume range:
Starting volume identifier . . .  _____        Volid
Ending volume identifier . . . .  *SAME_       Volid, *SAME









                                                                  Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required parameters on the Command Prompt Display.

5. Press **Enter** and the Unscratch RML Volumes request is processed. A message is displayed to indicate successful completion of the request. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Unscratch RML Volumes function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Unscratch RML Volumes is displayed.
- No reports are produced.

CLEAN A TAPE DEVICE (CLNRMLDEV) COMMAND

Description

The CLNRMLDEV command requests RMLS/CSC to mount a cleaning cartridge in a specific tape device and perform a cleaning operation. The tape device is allocated to you with the ALCRMLDEV command. A message is displayed upon completion of the cleaning operation. The tape device should be deallocated with the DLCRMLDEV command after the cleaning operation is complete.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to “Programming Environments” on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a tape device is cleaned:

- by selecting **9. Clean a Tape Device** on the RML Operations Menu.
- by issuing the CLNRMLDEV command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

The tape device being cleaned must be previously allocated with the ALCRMLDEV command before it can be cleaned. There must also be cleaning cartridges available within the Removable Media Library in which the tape device resides.

Usage Notes for Cleaning a Device

The tape device is specified with the DEV parameter. This command fails if the specified device is unavailable or if there are no cleaning cartridges in the Removable Media Library. The tape device should be deallocated with the DLCRMLDEV command after the cleaning operation is complete.

If there are no cleaning cartridges available to be used by this command, go to the ACSLS console and enter cleaning cartridges into the Removable Media Library. Use the ACSLS SET_CLEAN command to set the cleaning attributes for the cartridges. Refer to *ACSLS Programmer's Guide* for a description of this process.

If a job or command, which has a device allocated to it, is ended before the device is deallocated, the device may be unavailable to other users on the system or other systems until a recovery routine is run from the system where the allocating job or command resided. This recovery routine is run automatically each time the RMLS/CSC ALCRMLDEV or DLCRMLDEV command is executed.

You cannot create, change, or delete any RMLS/CSC device description until the device is deallocated.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

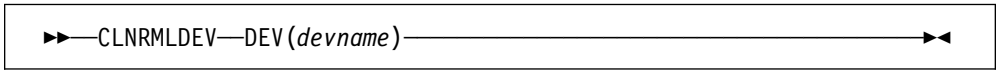
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

DEV
Specifies that a device is to be cleaned. The possible value is:

devname Identifies the name for a tape device. The name can be a maximum of 10 characters in length and must conform to the conventions defined in *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

There are no optional parameters for this function.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to clean a tape device through an interactive session:

- "Procedure to Clean a Tape Device Using Menus" on page 8-59.
- "Procedure to Clean a Tape Device Using the CLNRMLDEV Command" on page 8-60.

Procedure to Clean a Tape Device Using Menus

Note: Before attempting to clean a tape device, you must allocate the device. Follow either of the procedures described in "Allocate a Tape Device (ALCRMLDEV) Command" on page 8-10 to allocate a tape device.

1. At the RMLS/CSC Main Menu, type **1** (RMLS Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.

```
CSCOPS                        RML Operations Menu

Select one of the following:

       1. Allocate a RML Device
       2. Deallocate a RML Device
       3. Mount a Volume
       4. Dismount a Volume
       5. Enter Volumes into an RML
       6. Eject Volumes from an RML
       7. Scratch RML Volumes
       8. Unscratch RML Volumes
       9. Clean a RML Device
      10. Query RML Volumes









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **9** (Clean a RML Device) and press **Enter**. The Command Prompt Display for Clean a Device is displayed.

```
                        CLEAN A DEVICE (CLNRMLDEV)

Type choices, press Enter.

Tape device. . . . . . . . . . . _________    Name

                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required parameter on the Command Prompt Display. Refer to "Required Parameters" on page 8-59 for screen field descriptions and data types.

4. Press **Enter** and the Clean a Tape Device request is processed. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Note: After completing the cleaning operation, you must deallocate the tape device. Follow either of the procedures described in "Deallocate a Tape Device (DLCRMLDEV) Command" on page 8-16 to deallocate a tape device.

Procedure to Clean a Tape Device Using the CLNRMLDEV Command

Note: Before attempting to clean a tape device, you must allocate the device. Follow either of the procedures described in "Allocate a Tape Device (ALCRMLDEV) Command" on page 8-10 to allocate a tape device.

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the device name for the tape device that you want cleaned.

3. Type the CLNRMLDEV command with accompanying parameters and device name on the command line. Refer to "Required Parameters" on page 8-59 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> CLNRMLDEV DEV(TAP03)
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
Function Key Options
```

The example requests that tape device TAP03 be cleaned.

If you did not enter the required parameters, the Command Prompt Display for Clean a Tape Device is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Clean a Tape Device function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                        CLEAN A DEVICE (CLNRMLDEV)

Type choices, press Enter.

Tape device. . . . . . . . . . . _________    Name

                                                                      Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required parameter on the Command Prompt Display.

5. Press **Enter** and the Clean a Tape Device request is processed. A message is displayed to indicate successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Note: After completing the cleaning operation, you must deallocate the tape device. Follow either of the procedures described in "Deallocate a Tape Device (DLCRMLDEV) Command" on page 8-16 to deallocate a tape device.

Messages, Screens, and Reports

The following output occurs when the Clean a Tape Device function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Clean a Tape Device is displayed.
- No reports are produced.

QUERY RML VOLUMES (QRYRMLVOL) COMMAND

Description

The QRYRMLVOL command requests RMLS/CSC to obtain information from the server about the specified volumes.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, obtaining information from the server for the specified volumes is accomplished:

- by selecting **10. Query RML Volumes** on the RML Operations Menu menu.
- by issuing the QRYRMLVOL command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

Before information can be obtained from the server about a volume, the volume must be known to the server.

Usage Notes for Query RML Volumes

The volumes to be queried are specified with the VOL parameter. A list of from 1 to 42 volume identifiers can be entered. The volume identifiers must be separated by blank spaces and the list must be enclosed by parentheses. A nonexistent volume identifier is ignored.

You are notified of each volume that is successfully queried by a message that specifies the volume identifier, the physical location of the volume and the logical address (HOME for a tape volume).

Note: When the logical address is a tape drive and is a RMLS/CSC configured tape device or a CAP, the logical name of the tape device (for example TAP04) will show up as the logical address. Otherwise, if the physical location is a tape device that is unknown to RMLS/CSC configuration, the logical address will show up as UNKNOWN DRIVE. An inactive tape drive in the RMLS/CSC configuration is handled the same as if the drive was not in the RMLS/CSC configuration. ACSLS and LibraryStation do not track a volume located in a CAP.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

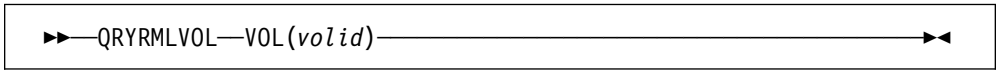
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

VOL
Specifies the volumes to be queried. The possible value is:

volid Identifies a valid volume serial number that is used to identify a physical volume. A valid volume serial number consist of a string of one to six National characters with no embedded or leading blanks. A list of from 1 through 42 volume identifiers can be entered, separated by blank spaces and the whole string is enclosed in parentheses.

Optional Parameters

There are no optional parameters for this function.

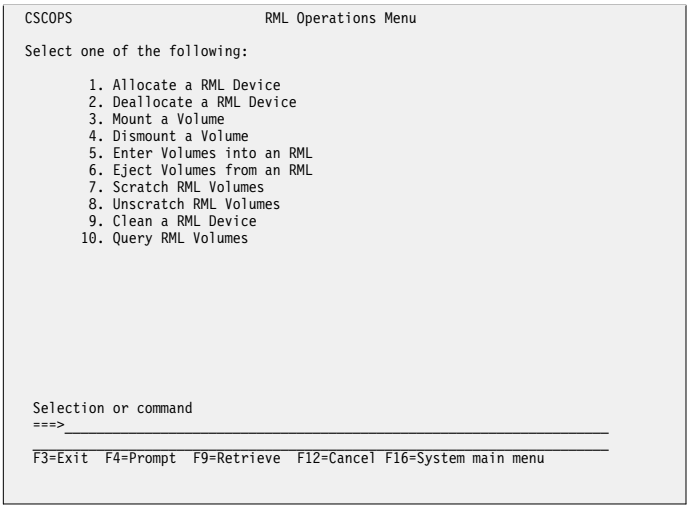
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to query information about the specified volumes from the server through an interactive session:

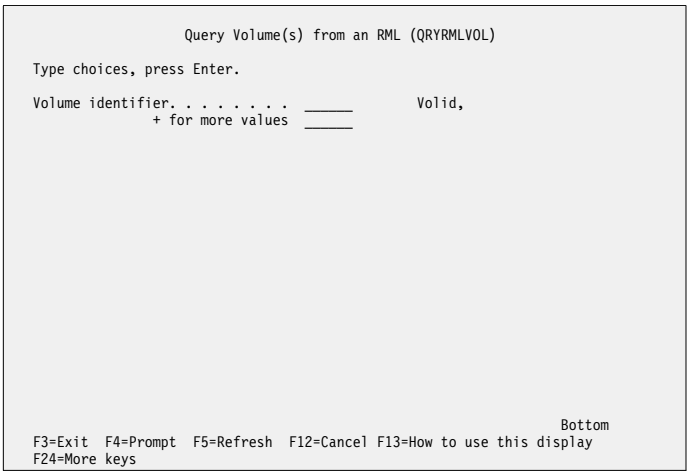
- "Procedure to Query RML Volumes Using Menus" on page 8-64.
- "Query RML Volumes Using the QRYRMLVOL Command" on page 8-65.

Procedure to Query RML Volumes Using Menus

1. At the RMLS/CSC Main Menu, type **1** (RML Operations) on the command line and press **Enter**. The RML Operations Menu is displayed with the cursor positioned on the command line.



2. Type **10** (Query RML Volumes) and press **Enter**. The Command Prompt Display for Query RML Volumes is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to "Required Parameters" on page 8-64 for screen field descriptions and data types.

4. Press **Enter** and the Query RML Volumes request is processed. A message is displayed containing information about each volume that was successfully queried. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

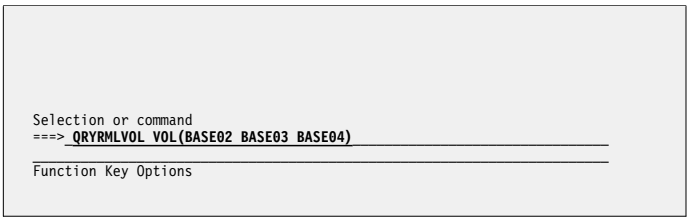
Query RML Volumes Using the QRYRMLVOL Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the Query RML Volumes functions that you want to accomplish.

3. Type the QRYRMLVOL command with accompanying parameters. Refer to "Required Parameters" on page 8-64 for parameter descriptions and data types.

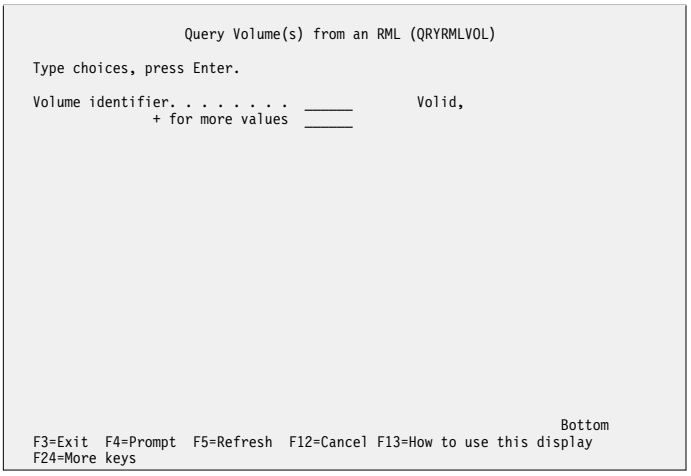
   An example is:



The example requests that information about volumes BASE02, BASE03, and BASE04 is obtained from the server and returned to the user.

If you did not enter the required parameters, the Command Prompt Display for Query RML Volumes is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Query RML Volumes function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required parameters on the Command Prompt Display.

5. Press **Enter** and the Query RML Volumes request is processed. A message is displayed containing information about each volume that is successfully queried. Additional information may be in the Joblog of the job executing this command.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Query RML Volumes function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Query RML Volumes is displayed.
- No reports are produced.

RECOVER FROM FAILURES

The RMLS/CSC requires nothing special to recover from failures on the AS/400. Device recovery is run during the ALCRMLDEV and DLCRMLDEV comands. However, you may have to manually clear RMLS/CSC resources from the ACSLS server console. From the server or MVS operations console, tape devices and CAPS may have to have locks cleared and volumes dismounted or removed to restore normal operation. CAPS may require user intervention to clear them.

Reporting Unrecoverable Failures

To report an unrecoverable failure, follow the instructions in the guide *Requesting Help from Software Support*.

Part VI. RMLS/CSC Reports

Part VI. Contents

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Chapter 9. RMLS/CSC Reports

This section contains descriptions of the commands that generate reports about the operation of RMLS/CSC.

Producing system informational reports is a function used by almost anyone associated with a RMLS/CSC library. Various reports can be produced for special purposes. Table 9-1 lists RMLS/CSC reports and suggested uses for each.

Table 9-1. RMLS/CSC Reports

Report	Use
Inventory Report	Inventory analysis
Scratch List Report	Inventory analysis of scratch cartridges
System Event Information Report	Performance evaluation
Trace Report	Problem analysis

Each of the reports is described in detail in the following sections. Step-by-step procedures for creating the reports are also presented.

DISPLAY AN INVENTORY REPORT (DSPRMLINV) COMMAND

Description

The DSPRMLINV command requests RMLS/CSC to generate a listing of the physical locations of volumes under RMLS/CSC control.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, an Inventory Report is produced:

- by selecting **1. Display Inventory Report** on the Reports Menu.
- by issuing the DSPRMLINV command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites required for executing this command.

Usage Notes for Displaying an Inventory Report

Note: You should be aware that executing this function can potentially affect library productivity. An extensive amount of time may be required in a large library complex for generating the report information.

The area in a Removable Media Library for which a report is to be generated is specified with the RML parameter. An inventory report covering an entire Removable Media Library may be produced. The inventory report may be displayed on the terminal screen, printed, or sent to a database file.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

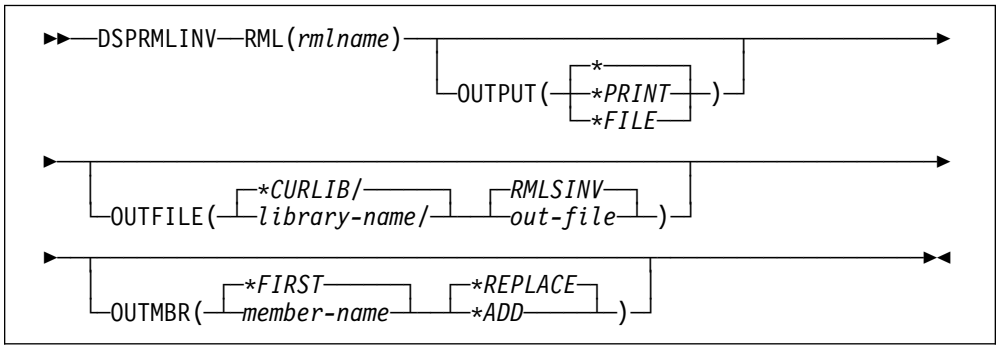
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

RML
Specifies that an inventory report is to be generated for a Removable Media Library. The possible value is:

rmlname Identifies a logical name for a Removable Media Library attached to a server. This name can be a maximum of 10 characters in length and must conform to the conventions defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

OUTPUT
Specifies the type of output to be generated (terminal display, printed report, or output to a database file).

***** Indicates that the formatted report is to be directed to the terminal display if the command is executed from an interactive job, interactive program, or interactive REXX procedure. The formatted report is to be printed with the spooled output from the job if the command is executed from a batch job, batch program, or batch REXX procedure. * is the default value.

***PRINT** Indicates that the formatted report is to be directed to a printer.

***FILE** Indicates that the formatted report is to be directed to a database file. This value is valid only if a value is specified for the OUTFILE parameter.

OUTFILE
Specifies the qualified name of the database output file into which to direct the report.

***CURLIB** Indicates that the "current" library is to be searched for the file. *CURLIB is the default value.

library-name Indicates the name of the library in which the file is to reside.

RMLSINV Is the default name of the database file into which the output will be placed.

out-file Indicates the name of the database file into which the report is to be placed.

OUTMBR
Specifies the name of the member in the output file into which the report is to be directed.

***FIRST** Indicates the default name of the database file member into which the output will be placed. *FIRST is the default value.

member-name Indicates the file member into which the report is to be directed. If the member does not exist, a member is created.

***REPLACE** Indicates that the generated report is to replace the contents of the file member. *REPLACE is the default value.

***ADD** Indicates that the report is to be appended to the contents of the file member.

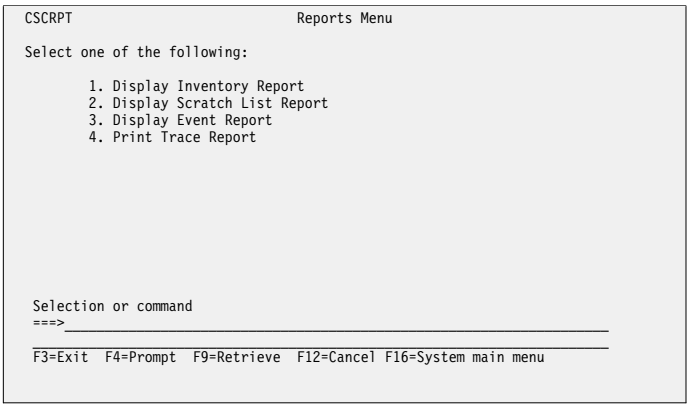
Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to generate an inventory report through an interactive session:

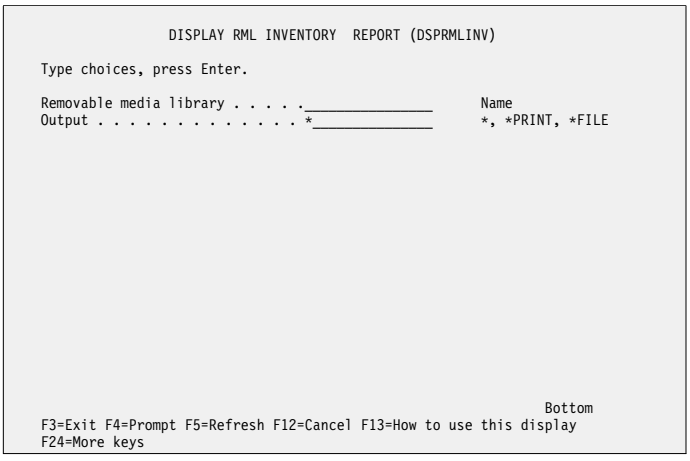
- "Procedure to Produce an Inventory Report Using Menus" on page 9-5.
- "Procedure to Produce an Inventory Report Using the DSPRMLINV Command" on page 9-6.

Procedure to Produce an Inventory Report Using Menus

1. At the RMLS/CSC Main Menu, type **2** (Reports) on the command line and press **Enter**. The Reports Menu is displayed with the cursor positioned on the command line.



2. Type **1** (Display Inventory Report) and press **Enter**. The Command Prompt Display for Display Inventory Report is displayed.



When the OUTPUT parameter is specified as **FILE*, the following additional parameters are displayed.

```
                DISPLAY RML INVENTORY  REPORT (DSPRMLINV)

Type choices, press Enter.

Removable media library . . . . .________________      Name
Output . . . . . . . . . . . . . *FILE___________      *, *PRINT, *FILE
Outfile  . . . . . . . . . . . . RMLSINV_________      Name
  Library. . . . . . . . . . . . *CURLIB________       Name, *CURLIB
Member . . . . . . . . . . . . . *FIRST__________      Name,
Replace or add records . . . . . *REPLACE            *REPLACE, *ADD

                                                                  Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to "Required Parameters" on page 9-4 and "Optional Parameters" on page 9-4 for screen field descriptions and data types.

4. Press **Enter** and the Display Inventory Report request is processed. The report is either displayed on the terminal screen, printed, or directed to a database file, depending upon the parameters specified in your request. A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Produce an Inventory Report Using the DSPRMLINV Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the report that you want to generate.

3. Type the DSPRMLINV command with accompanying parameters. Refer to "Required Parameters" on page 9-4 and "Optional Parameters" on page 9-4 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> DSPRMLINV RML(RML02) OUTPUT(*PRINT)_____________________________
_____________________________________________________________________
Function Key Options
```

The example requests that an inventory report be produced identifying all volumes contained in RML RML02. The report output listing is to be printed.

If you did not enter the required parameters, the Command Prompt Display for Display Inventory Report is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Display Inventory Report function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                DISPLAY RML INVENTORY  REPORT (DSPRMLINV)

Type choices, press Enter.

Removable media library . . . . .______________      Name
Output . . . . . . . . . . . . . *______________      *, *PRINT, *FILE

                                                                  Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

When the OUTPUT parameter is specified as **FILE*, the following additional parameters are displayed.

```
                DISPLAY RML INVENTORY  REPORT (DSPRMLINV)

Type choices, press Enter.

Removable media library . . . . .______________      Name
Output . . . . . . . . . . . . . *FILE_____________  *, *PRINT, *FILE
Outfile  . . . . . . . . . . . . RMLSINV__________   Name
  Library. . . . . . . . . . . . *CURLIB_________    Name, *CURLIB
Member . . . . . . . . . . . . . *FIRST___________   Name,
Replace or add records . . . . . *REPLACE            *REPLACE, *ADD

                                                                  Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

5. Press **Enter** and the Display Inventory Report request is processed. The report is either displayed on the terminal screen, printed, or directed to a database file, depending upon the parameters specified in your request. A message is displayed to indicate successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Display Inventory Report function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Display Inventory Report is displayed.
- The Inventory Report, listing the physical location of the volumes under RMLS/CSC control, is produced.

```
RMLS/CSC                    Inventory Report
STKLIB07                    Date 09/23/94


   Volume                  Current Location                Unit
                         RML:LSM:PNL:ROW:COL
                                  or
                         RML:LSM:PNL:DRV

  AAK019                   001:01:03:01                    TAP01
  AAZ450                   001:01:01:04:09                 HOME
  ABC678                   001:01:05:05:03                 HOME
  ABC779                   001:01:05:03:03                 HOME
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
    .                            .                           .
  ZZZ999                   001:01:03:02                    TAP02
```

Field Descriptions for the Inventory Report

Table 9-2. Field Descriptions for Inventory Report

Field Name	Data Type	Source	Description
Volume	Character string	RML	Identifies the tape cartridge by volume id.
Current Location	Character string	RML	Identifies RML, LSM, panel, row, and column location of the tape cartridge or RML, LSM, panel, and drive that contains the tape cartridge.
Unit	Character string	Current RML configuration information	Identifies HOME or TRANSIT (in transit) or UNKNOWN DRIVE (not in configuration) or logical tape device or CAP name. ACSLS does not trace volumes located in a CAP.

*Field Descriptions for Output Option *FILE (DSPRMLINV)*

Table 9-3. Field Descriptions for Output Option *FILE Record Format=VOLINV

Field Name	Data Type	Length	Description
VOLID	Character	6	Identifies the tape cartridge by volume id.
LOC	Character	20	Identifies RML, LSM, panel, row, and column location of the tape cartridge or RML, LSM, panel, and drive that contains the tape cartridge.
Unit	Character	15	Identifies HOME or TRANSIT (in transit) or UNKNOWN DRIVE (not in configuration) or logical tape device or CAP name. ACSLS does not trace volumes located in a CAP.

DISPLAY SCRATCH LIST REPORT (DSPRMLSCR) COMMAND

Description

The DSPRMLSCR command requests RMLS/CSC to produce a listing of the physical locations of the RMLS/CSC tape volumes identified as “scratch” in the library.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to “Programming Environments” on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a scratch list report is requested by:

- selecting **2. Scratch List Report** on the Reports Menu.
- issuing the DSPRMLSCR command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There must be available scratch volumes residing in a Removable Media Library for this command to produce a valid output. If no scratch cartridges are available, a message is displayed and a report is produced or displayed that contains only headings.

Usage Notes for Displaying a Scratch List Report

The RML for which a report is to be generated is specified with the RML parameter. This information may be displayed on the terminal screen, printed, or sent to a database file.

Notes:

1. You should be aware that executing this function can potentially affect library productivity. An extensive amount of time may be required in a large library complex for generating the report information.
2. RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

   When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

   However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

   If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

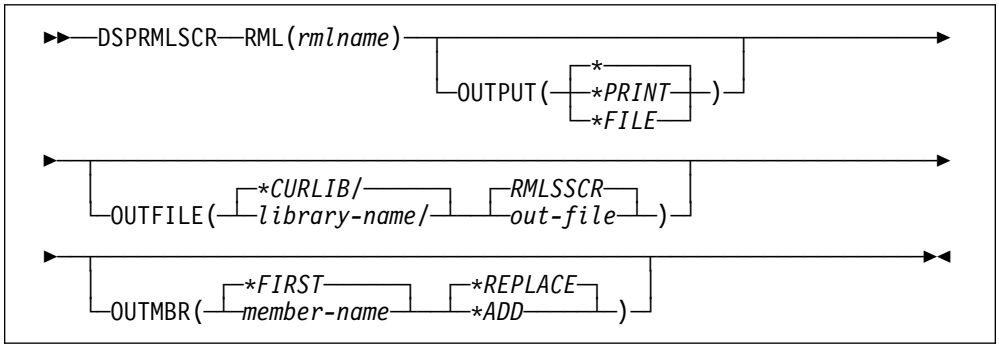
   - a request has been entered to bring down the system to restricted state

     or

   - TCP/IP services are being brought up manually.

   If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax



Required Parameters

RML
Specifies that a scratch list report for a Removable Media Library is to be produced. The possible value is:

rmlname Indicates the name of the Removable Media Library. This name can be a maximum of 10 characters in length and must conform to the conventions defined in the *Application System/400 Programming: Control Language Reference Common CL Information* for a Basic Name (*NAME).

Optional Parameters

OUTPUT
Specifies the type of output to be generated (terminal display, printed report, or output to a database file).

***** Indicates that the output is to be directed to the terminal display if the command is executed from an interactive job, interactive program, or interactive REXX procedure. The output is printed with the spooled output from the job if the command is executed from a batch job, batch program, or batch REXX procedure. ***** is the default value.

***PRINT** Indicates that the formatted report is to be directed to a printer.

***FILE** Indicates that the formatted report is to be directed to a database file. This value is valid only if a value is specified for the OUTFILE parameter.

OUTFILE
Specifies the qualified name of the database output file into which to direct the report.

***CURLIB** Indicates that the "current" library is to be searched for the file. *CURLIB is the default value.

library-name Indicates the name of the library in which the file is to reside.

RMLSSCR Indicates the default name of the database file into which the output is to be placed.

out-file Indicates the name of the database file into which the report is to be placed.

OUTMBR
Specifies the name of the member in the output file into which the report is to be directed.

***FIRST** Is the default name of the database file member into which the output is to be placed. If the file has no members, a member is created. *FIRST is the default value.

member-name Indicates the file member into which the report is to be directed. If the member does not exist, a member is created.

***REPLACE** Indicates that the generated report is to replace the contents of the file member. *REPLACE is the default value.

***ADD** Indicates that the report is to be appended to the contents of the file member.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to display a scratch list report through an interactive session:

- "Procedure to Display a Scratch List Report Using Menus" on page 9-13.
- "Procedure to Display a Scratch List Report Using the DSPRMLSCR Command" on page 9-14.

Procedure to Display a Scratch List Report Using Menus

1. At the RMLS/CSC Main Menu, type **2** (Reports Menu) on the command line and press **Enter**. The Reports Menu is displayed with the cursor positioned on the command line.

```
CSCRPT                          Reports Menu

Select one of the following:

       1. Display Inventory Report
       2. Display Scratch List Report
       3. Display Event Report
       4. Print Trace Report









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **2** (Display Scratch List Report) and press **Enter**. The Command Prompt Display for Display Scratch List Report is displayed.

```
              DISPLAY RML SCRATCH LIST REPORT (DSPRMLSCR)

 Type choices, press Enter.

 Removable media library . . . .  _______________      Name
 Output . . . . . . . . . . . . . *_______________      *, *PRINT, *FILE

                                                                  Bottom
 F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
 F24=More keys
```

When the OUTPUT parameter is specified as *FILE, the following additional parameters are displayed.

```
                DISPLAY RML SCRATCH LIST REPORT (DSPRMLSCR)

   Type choices, press Enter.

   Removable media library . . . .  ______________      Name
   Output . . . . . . . . . . . . . *FILE__________      *, *PRINT, *FILE
   Outfile  . . . . . . . . . . . . RMLSSCR________      Name
     Library. . . . . . . . . . . .   *CURLIB________   Name, *CURLIB
   Member . . . . . . . . . . . . . *FIRST_________      Name
   Replace or add records . . . . . *REPLACE             *REPLACE, *ADD

                                                                  Bottom
   F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
   F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to “Required Parameters” on page 9-12 and “Optional Parameters” on page 9-12 for screen field descriptions and data types.

4. Press **Enter** and the Display Scratch List Report request is processed. A report is produced and displayed on the terminal, printed, or directed to a specified output file depending on the parameters that you specified in your request. Refer to “Messages, Screens, and Reports” on page 9-16 for an example of a report.

   A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Procedure to Display a Scratch List Report Using the DSPRMLSCR Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the type of Display Scratch List Report and output that you want.

3. Type the DSPRMLSCR command with accompanying parameters. Refer to “Required Parameters” on page 9-12 and “Optional Parameters” on page 9-12 for parameter descriptions and data types.

   An example is:

```
   Selection or command
   ===> DSPRMLSCR RML(RML02) OUTPUT(*)_____________________   ___________
   ____________________________________________________________________________
   Function Key Options
```

The example requests RMLS/CSC to produce a scratch list report listing the locations of all scratch volumes contained in RML02. The report is displayed on the terminal screen.

If you did not enter the required parameters, the Command Prompt Display for Display Scratch List Report is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Display Scratch List Report function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
              DISPLAY RML SCRATCH LIST REPORT (DSPRMLSCR)

Type choices, press Enter.

Removable media library . . . .  _______________      Name
Output . . . . . . . . . . . . . *_______________      *, *PRINT, *FILE

                                                                  Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

When the OUTPUT parameter is specified as *FILE, the following additional parameters are displayed.

```
              DISPLAY RML SCRATCH LIST REPORT (DSPRMLSCR)

Type choices, press Enter.

Removable media library . . . .  _______________      Name
Output . . . . . . . . . . . . . *FILE_____________    *, *PRINT, *FILE
Outfile  . . . . . . . . . . . . RMLSSCR___________    Name
  Library. . . . . . . . . . . .   *CURLIB________     Name, *CURLIB
Member . . . . . . . . . . . . . *FIRST____________    Name
Replace or add records . . . . . *REPLACE            *REPLACE, *ADD

                                                                  Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

5. Press **Enter** and the Display Scratch List Report request is processed. A message is displayed to indicate successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Display Scratch List Report function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Display Scratch List Report is displayed.
- A Scratch List Report is produced and directed to the terminal screen, a printer, or a database file. The Scratch List Report is a listing of the volumes controlled by RMLS/CSC and designated as "scratch" volumes.

```
RMLS/CSC                Scratch List Report
RML01                   Date 07/23/94


  Volume              Home Location          Pool Number
                    RML:LSM:PNL:ROW:COL

  AAK019              001:00:03:01:03            0
  AAZ450              001:00:01:04:01            0
  ABC678              001:00:05:05:00            0
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
    .                      .                     .
  ZZZ999              000:00:02:03:01            0
```

Field Descriptions for the Scratch List Report

Table 9-4. Field Descriptions for the Scratch List Report

Field Name	Data Type	Source	Description
Volume	Character string	RML	Volume id identifying tape cartridges in an RML.
Home Location	Character string	RML	Location of tape cartridges identified by RML, LSM, Panel, Row, and Column.
Pool Number	Integer	RML	Identifies the scratch pool ID in which the tape cartridge is assigned.

*Field Descriptions for Output Option *FILE (DSPRMLSCR)*

Table 9-5. Field Descriptions for Output Option *FILE Record Format=VOLINV

Field Name	Data Type	Length	Description
VOLID	Character	6	Volume id identifying tape cartridges in an RML.
LOC	Character	20	Location of tape cartridges identified by RML, LSM, Panel, Row, and Column.
UNIT	Character	15	Identifies the scratch pool ID in which the tape cartridge is assigned.

DISPLAY EVENT INFORMATION REPORT (DSPLOG) COMMAND

Description

The DSPLOG command requests RMLS/CSC to produce a listing of the information in the AS/400 system history log. The history log contains a high-level trace of system activities such as system, subsystem, and job information, device status, and system operator messages.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, an event report is requested by:

- selecting **3. Display Event Report** on the Reports Menu.
- issuing the DSPLOG command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Displaying an Event Information Report

To display Removable Media Library Software event information, enter RE00000 for the MSGID parameter of the DSPLOG command. All the RMLS/CSC event information contained in the AS/400 system history log is displayed.

Additionally, you can filter out all events except for RMLS/CSC tape mounts by entering RE002FF for the MSGID parameter of the DSPLOG command. All the RMLS/CSC event information about RMLS/CSC tape mounts contained in the AS/400 system history log is displayed.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating “Communication failure.”

Syntax

Refer to *Application System/400 Programming: Control Language Reference* for information about the syntax of this command.

Required Parameters

Refer to *Application System/400 Programming: Control Language Reference* for information about the required parameters for this command.

Optional Parameters

Refer to *Application System/400 Programming: Control Language Reference* for information about the optional parameters for this command.

Procedures for Interactive Execution

Either of the following procedures described in this section may be followed to display an event information report through an interactive session:

- "Procedure to Display an Event Report Using Menus" on page 9-20.
- "Procedure to Display an Event Report Using the DSPLOG Command" on page 9-21.

Procedure to Display an Event Report Using Menus

1. At the RMLS/CSC Main Menu, type **2** (Reports Menu) on the command line and press **Enter**. The Reports Menu is displayed with the cursor positioned on the command line.

```
CSCRPT                          Reports Menu

Select one of the following:

        1. Display Inventory Report
        2. Display Scratch List Report
        3. Display Event Report
        4. Print Trace Report









 Selection or command
 ===>_____________________________________________________________________
 _____________________________________________________________________
 F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel F16=System main menu
```

2. Type **3** (Display Event Report) and press **Enter**. The Command Prompt Display for Display Event Information Report is displayed.

```
                           DISPLAY LOG (DSPLOG)

 TYPE CHOICES, PRESS ENTER.

 LOG . . . . . .  QHST                  QHST
 TIME PERIOD FOR LOG OUTPUT:
    START TIME AND DATE:
    BEGINNING TIME . . . . . .  *AVAIL              TIME, *AVAIL
    BEGINNING DATE . . . . . .  *CURRENT            DATE, *CURRENT, *BEGIN
    END TIME AND DATE:
    ENDING TIME  . . . . . .  *AVAIL              TIME, *AVAIL
    ENDING DATE  . . . . . .  *CURRENT            DATE, *CURRENT, *END
 OUTPUT  . . . . . .  *                  *, *PRINT









                                                                More...
 F3=EXIT  F4=PROMPT  F5=REFRESH  F12=CANCEL  F13=HOW TO USE THIS DISPLAY
 F24=MORE KEYS
```

The second screen of the Command Prompt Display is available with additional parameters.

```
                              DISPLAY LOG (DSPLOG)

TYPE CHOICES, PRESS ENTER.



                              ADDITIONAL PARAMETERS

JOBS TO DISPLAY  . . . . . . . . *NONE                NAME, *NONE
   USER  . . . . . . . . . . . . _________            NAME
   NUMBER  . . . . . . . . . . . _____               000000-999999
               + FOR MORE VALUES

MESSAGE IDENTIFIER . . . . . . .  *ALL                 NAME, *ALL
               + FOR MORE VALUES









                                                                      Bottom
F3=EXIT  F4=PROMPT  F5=REFRESH  F12=CANCEL  F13=HOW TO USE THIS DISPLAY
f24=MORE KEYS
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display. Refer to "Required Parameters" on page 9-19 and "Optional Parameters" on page 9-19 for screen field descriptions and data types.

4. Press **Enter** and the Display Event Information Report request is processed. A report is produced and displayed on the terminal or printed, depending on the parameters that you specified in your request. Refer to "Messages, Screens, and Reports" on page 9-23 for an example of a report.

   A message is displayed indicating successful completion of the request.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Procedure to Display an Event Report Using the DSPLOG Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters for the type of Display Event Information Report and output that you want.

3. Type the DSPLOG command with accompanying parameters. Refer to "Required Parameters" on page 9-19 and "Optional Parameters" on page 9-19 for parameter descriptions and data types.

   An example is:

```
Selection or command
===> DSPLOG LOG(QHST)
Function Key Options
```

The example requests RMLS/CSC to produce a Display Event Information Report listing all the logged messages (and their associated data) that are available in the history log for the current date. The report is displayed on the terminal screen.

If you did not enter the required parameters, the Command Prompt Display for Display Even Information Report is automatically displayed after you press **Enter**.

If you want to go directly to the Command Prompt Display for the Display Event Information Report function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.

```
                          DISPLAY LOG (DSPLOG)

TYPE CHOICES, PRESS ENTER.

LOG . . . . . .  QHST                  QHST
TIME PERIOD FOR LOG OUTPUT:
   START TIME AND DATE:
   BEGINNING TIME . . . . . .  *AVAIL              TIME, *AVAIL
   BEGINNING DATE . . . . . .  *CURRENT            DATE, *CURRENT, *BEGIN
   END TIME AND DATE:
   ENDING TIME  . . . . . .  *AVAIL              TIME, *AVAIL
   ENDING DATE  . . . . . .  *CURRENT            DATE, *CURRENT, *END
OUTPUT  . . . . . .  *                  *, *PRINT









                                                                  More...
F3=EXIT  F4=PROMPT  F5=REFRESH  F12=CANCEL  F13=HOW TO USE THIS DISPLAY
F24=MORE KEYS
```

The second screen of the Command Prompt Display is available with additional parameters.

```
                          DISPLAY LOG (DSPLOG)

TYPE CHOICES, PRESS ENTER.



                          ADDITIONAL PARAMETERS

JOBS TO DISPLAY  . . . . . *NONE                NAME, *NONE
   USER  . . . . . _________            NAME
   NUMBER  . . . . . _____              000000-999999
             + FOR MORE VALUES

MESSAGE IDENTIFIER . . . . . .  *ALL                 NAME, *ALL
             + FOR MORE VALUES









                                                                  Bottom
F3=EXIT  F4=PROMPT  F5=REFRESH  F12=CANCEL  F13=HOW TO USE THIS DISPLAY
f24=MORE KEYS
```

The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display.

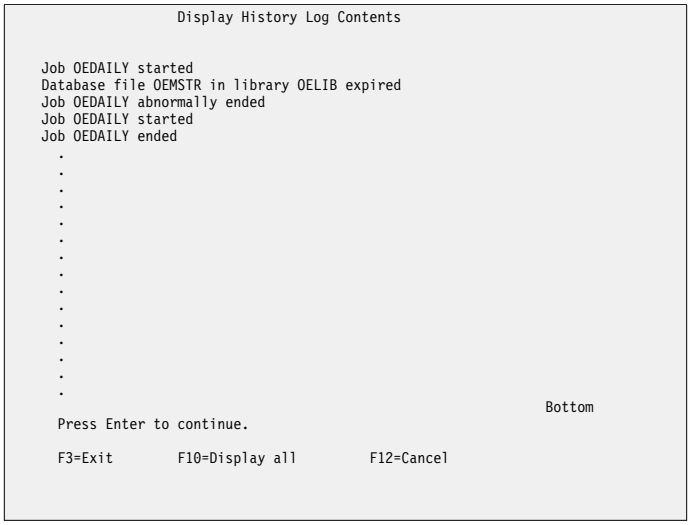
5. Press **Enter** and the Display Event Information Report request is processed. A message is displayed to indicate successful completion of the request.

If an error condition occurs at anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that might be encountered.

Messages, Screens, and Reports

The following output occurs when the Display Event Information Report function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display for Display Event Information Report is displayed.
- An Event Information Report is produced and directed to the terminal screen or a printer. The Event Information Report is a listing of the information about the operation of the AS/400 and the current status of the system.



Field Descriptions for the Event Information Report

Refer to *Application System/400 Programming: Work Management Guide* for a complete description of all the fields in the Display Event Information Report.

PRINT TRACE REPORT (PRTRMLTRC) COMMAND

Description

Executing the PRTRMLTRC command requests RMLS/CSC to print the trace report to a spooled file.

This command is intended to be used with StorageTek service personnel.

Supported Server Environments

Server Environment	
Automated Cartridge System Library Software	**LibraryStation**
●	●

Note:

1. ● indicates that the command executes in the specified server environment.

Job Execution Environments

This command may be executed in any of the following job environments:

	Execution Environments		
Job Type	**Job**	**Program**	**REXX**
Batch	●	●	●
Interactive	●	●	●

Note:

1. ● indicates that the command executes in the specified job execution environment.
2. Refer to "Programming Environments" on page 2-10 for detailed explanations of job execution environments.

In an interactive session, a print trace report is requested by:

- selecting **4. Print Trace Report** on the Report Menu.
- issuing the PRTRMLTRC command at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

Prerequisites

There are no prerequisites for executing this command.

Usage Notes for Print Trace Report

There are no special considerations required before executing the PRTRMLTRC command.

Note: RMLS/CSC V1.3.0 extends support to RMLS/CSC operations when the AS/400 is put in restricted state, which means that all interactive sessions, including TCP/IP services, are ended. Only the OS/400 console is available to perform different operations on the AS/400.

When you invoke any RMLS/CSC operations during restricted state, RMLS/CSC automatically initializes TCP/IP services and the associated interfaces to complete the request sent to the ACSLS server.

However, when AS/400 is in normal state and TCP/IP services are ended, the scenario is different. In this case, if you invoke any RMLS/CSC operations, the system checks every two seconds to see whether any user is bringing up TCP/IP services. If you bring up TCP/IP services manually, your request will be processed.

If you do not bring up the TCP/IP services on AS/400, the system checks for ten minutes to see if either:

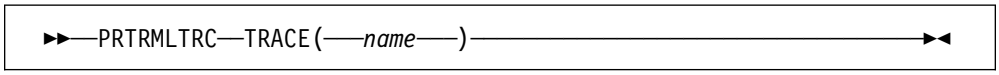
- a request has been entered to bring down the system to restricted state

  or

- TCP/IP services are being brought up manually.

If the TCP/IP is not brought up manually, you receive an informational message indicating "Communication failure."

Syntax



Required Parameters

TRACE
Specifies the name of the trace. The possible value is:

name Indicates the user-defined name for the trace

Optional Parameters

There are no optional parameters.

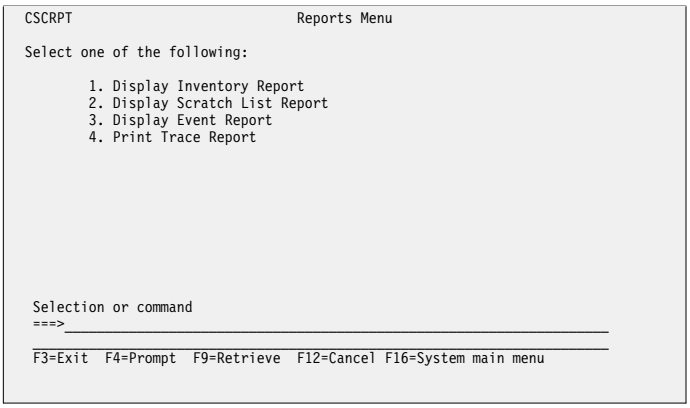
Procedure for Interactive Execution

Either of the following procedures described in this section may be followed to a print trace report through an interactive session:

- "Procedure to Print Trace Status Using Menus" on page 9-26.
- "Procedure to Print Trace Report Using the PRTRMLTRC Command" on page 9-27.

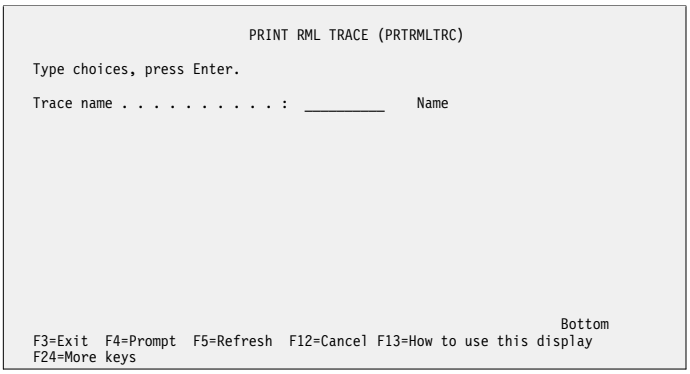
Procedure to Print Trace Status Using Menus

1. At the RMLS/CSC Main Menu, type **2** (Reports) on the command line and press **Enter**. The Reports Menu is displayed with the cursor positioned on the command line.



2. Type **4** (Print Trace Report) and press **Enter**.

   Note: If you press **F4** before pressing **Enter**, the Command Prompt Display screen for Print Trace Report is displayed.



   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

3. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen. Refer to “Required Parameters” on page 9-25 for screen field descriptions and data types.

4. Press **Enter** and the Print Trace Report request is processed. A message is displayed indicating successful completion of the request. The Trace Report is produced and printed to a spooled file.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, “Message List” on page B-1 for a list of messages that may be encountered.

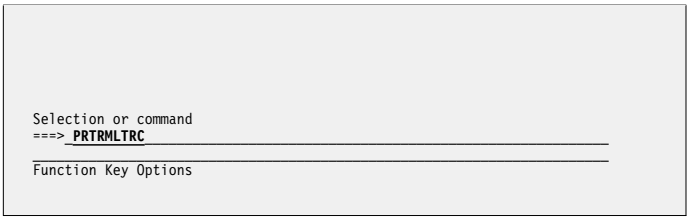
Procedure to Print Trace Report Using the PRTRMLTRC Command

1. Ensure that the cursor is positioned at the command line of any AS/400 menu or screen or RMLS/CSC menu or screen.

2. Identify the appropriate parameters to identify the trace report that you want printed.

3. Type the PRTRMLTRC command with accompanying parameters. Refer to "Required Parameters" on page 9-25 for parameter descriptions and data types.

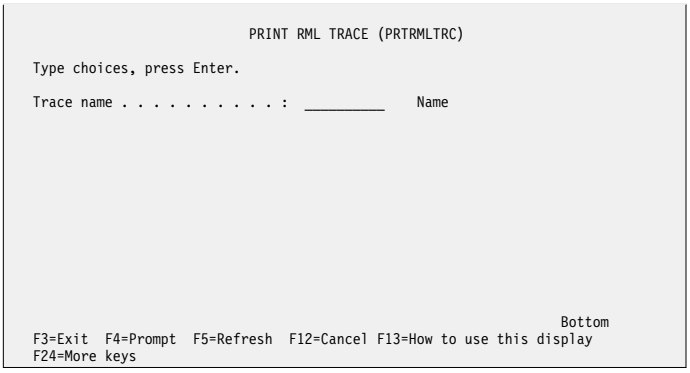
   An example is:



   The example requests that RMLS/CSC produce the Trace Report and spool it to a print file.

   If you did not enter the required parameters, the Command Prompt Display for Print Trace Report is automatically displayed after you press **Enter**.

   If you want to go directly to the Command Prompt Display screen for the Print Trace Report function, type the command name and press **F4** anytime on any screen or menu where **F4=Prompt** is displayed.



   The cursor is positioned at the Entry Field of the first parameter or first required parameter that is missing.

4. Complete the request by entering information for the required or optional parameters on the Command Prompt Display screen. Refer to "Required Parameters" on page 9-25 for parameter descriptions and data types.

5. Press **Enter** and the Print Trace Report request is processed. A message is displayed indicating successful completion of the request. The Trace Report is produced and printed to a spooled file.

If an error condition occurs anytime during the procedure, an error message is displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.

Messages, Screens, and Reports

The following output occurs when the Print Trace Report function is executed:

- Appropriate messages relating to the request are displayed. Refer to Appendix B, "Message List" on page B-1 for a list of messages that may be encountered.
- The Command Prompt Display screen for Print Trace Report is displayed.
- The Trace Report is produced and printed to a spooled file:

```
03/11/94   15:57:00
RMLS/CSC                                Trace Report



Trace   Line   Variable   Date/Time     Job      User      Job
Type             Type                                    Number
Function Name                          File Name
Variable Name                                  Short Variable Value
Variable value

 ENT      51      4       940202112747  JOBXYZ   COOL_JOE  123456
                trctest                  TESTABC/TRC/TRCTEST
                                         teststr   This is a test  ...


 PT       54      1       940202112748  JOBXYZ   COOL_JOE  123456
                trctest                  TESTABC/TRC/TRCTEST
                                         testint               49


 PT       59      5       940202112749  JOBXYZ    SUE_JOE  123456
                trctest                  TESTABC/TRC/TRCTEST
                                         testint               54

    .
    .
    .
```

Field Descriptions for the Trace Report

Table 9-6. Trace Report Field Descriptions

Element Name	Data Type	Source	Description
Trace type	Character array	Trace log	The trace type (ENT = entry, PT = point, EXT = exit).
Line	Character array	Trace log	The line number of the trace point.
Variable Type	Character array	Trace log	The variable type (0 = None, 1 = Integer, 2 = Unsigned Integer, 3 = Character, 4 = String, 5 = Boolean, 6 = Long Integer, 7 = Unsigned Long Integer, 8 = Pointer).
Date/Time	Character array	Trace log	The date and time the entry was entered in the log.
Job	Character array	Trace log	The name of the job.
User name	Character array	Trace log	The user name.
Job number	Character array	Trace log	The job number.
Function name	Character array	Trace log	The function name.
File name	Character array	Trace log	The file name in the format (Library/File/Member).
Variable Name	Character array	Trace log	The name of the variable.
Short Variable Value	Character array	Trace log	The variable value truncated for a partial look on 80 column screens.
Variable Value	Character array	Trace log	The variable value.

Appendix A. Command Reference Summary

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SCOPE

This appendix contains the syntax for each RMLS/CSC command.

Before attempting to use any command shown in this section, ensure that you are familiar with the following syntax flow explanation.

Syntax Flow Diagrams

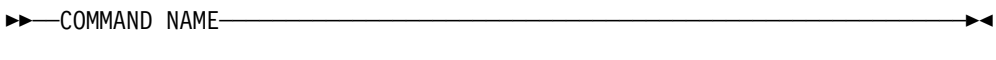
Syntax is illustrated using flow diagrams. These can include the following elements:

- Syntax - the diagram itself.
- Items - individual elements inside the diagram. Items can be keywords, variables, delimiters, operators, fragment references, and separators.
- Groups - a collection of items or other groups.

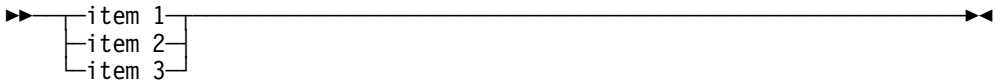
The following sections describe syntax flow diagram features and includes some generic examples.

Flow Lines

Syntax diagrams consist of horizontal and vertical lines and the text of a command, control statement, macro, or utility.

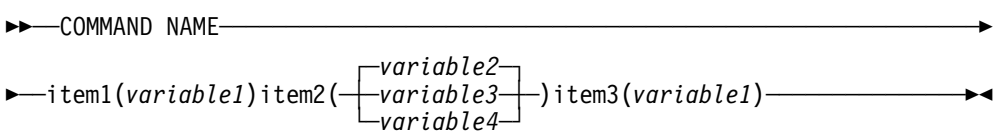


or



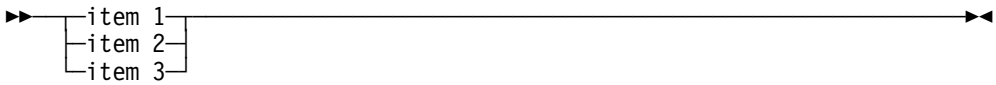
Diagrams are read left to right and top to bottom. Arrows show flow and direction.

- a statement begins with ►►
- a statement ends with ►◄
- diagrams continuing to the next line begin with ►
- fragments begin and end with |



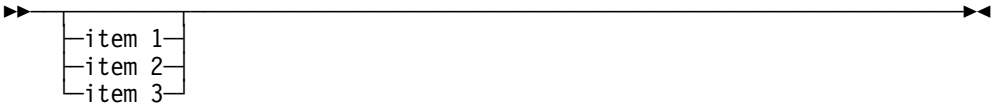
Single Required Choice

Branch lines, without repeat arrows, indicate that a **single** choice must be made. If one of the items from which a choice is being made is on the base line of the diagram, a single choice is required.



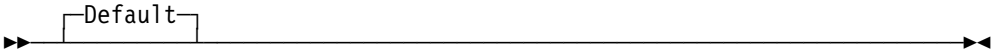
Single Optional Choice

If the first item is on the line below the base line, a single choice of items in the stack is optional.



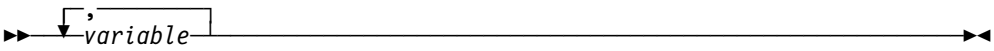
Defaults

Default values and parameters appear above the syntax diagram line.



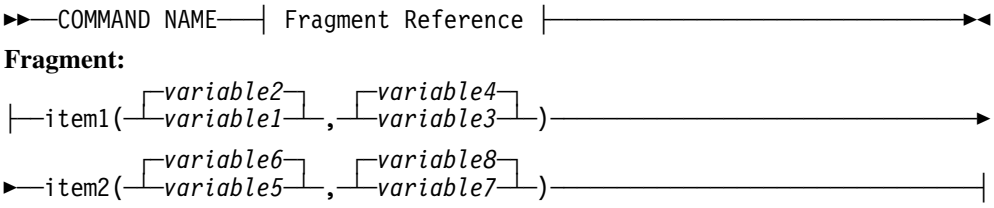
Repeat Symbol

A repeat symbol indicates that more than one choice can be made or that a single choice can be made more than once. The repeat symbol shown in this example indicates that a comma is required as the repeat separator.



Syntax Continuation (Fragments)

Fragment references direct you to parts (fragments) of the syntax that contain more detail than can be shown in the main syntax diagram.



Keywords

All command keywords are shown in all uppercase or in mixed case. Mixed case implies that the lowercase letters may be omitted to form an abbreviation.

Variables

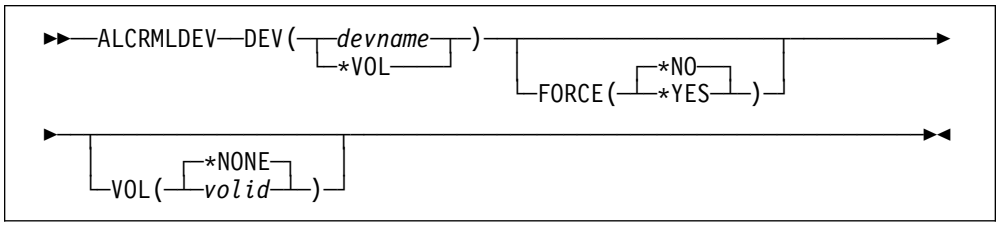
Variables are italicized.

Delimiters

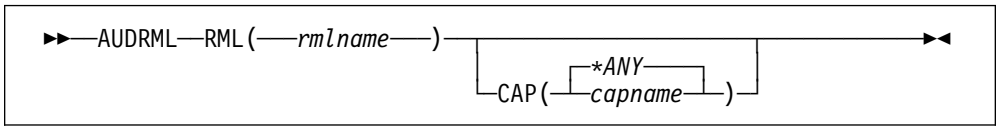
If a comma(,), a semicolon(;), or other delimiter is shown with an element of the syntax diagram, it must be entered as part of the statement or command.

RMLS/CSC COMMAND SYNTAX REFERENCE

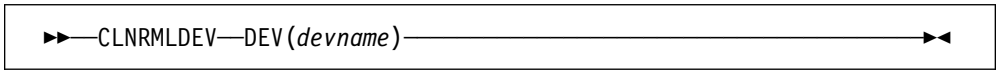
Allocate Device (ALCRMLDEV) Command



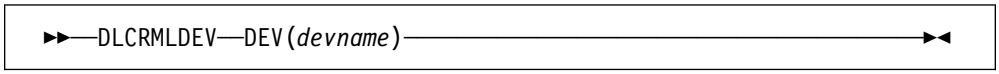
Audit RML (AUDRML) Command



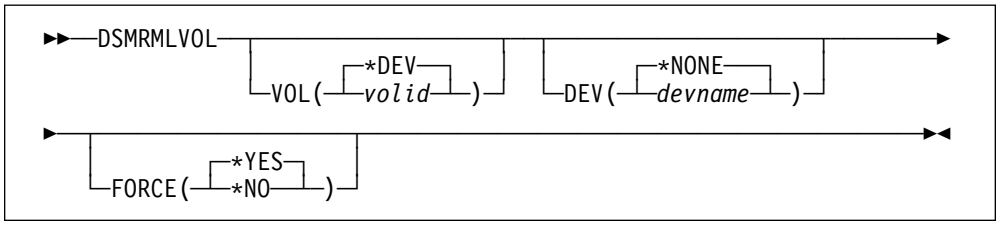
Clean Device (CLNRMLDEV) Command



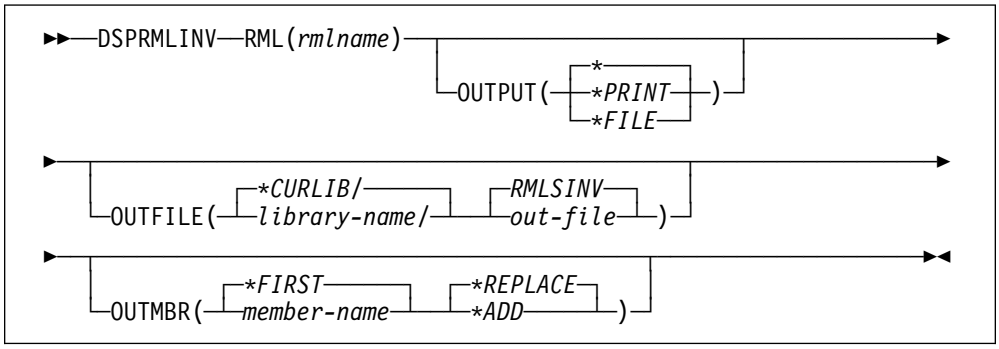
Deallocate Device (DLCRMLDEV) Command



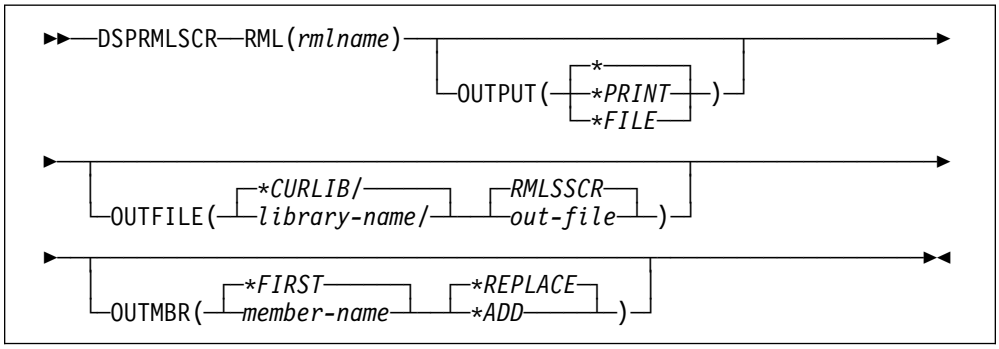
Dismount Volume (DSMRMLVOL) Command



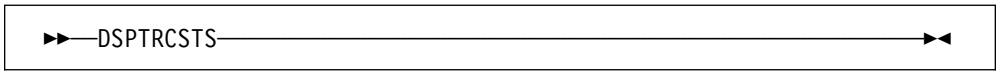
Display RML Inventory Report (DSPRMLINV) Command



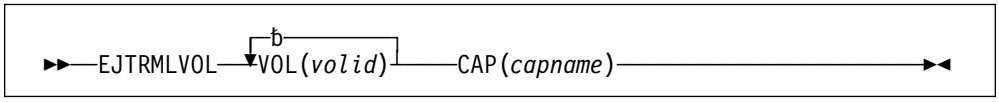
Display RML Scratch List Report (DSPRMLSCR) Command



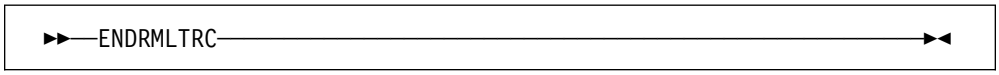
Display Trace Status (DSPTRCSTS) Command



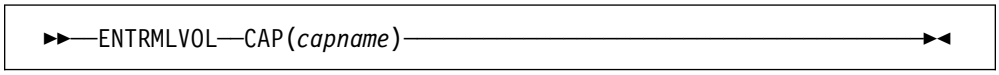
Eject Volume (EJTRMLVOL) Command



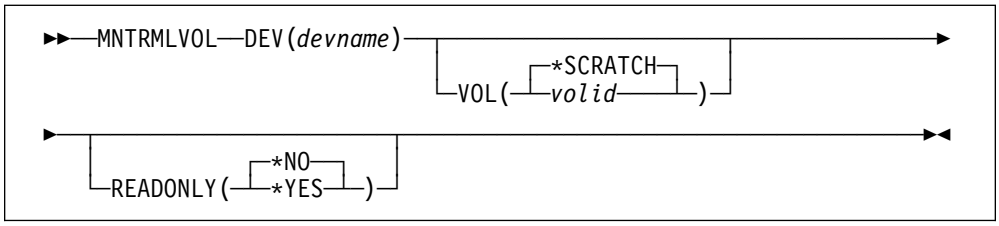
End RML Trace (ENDRMLTRC) Command



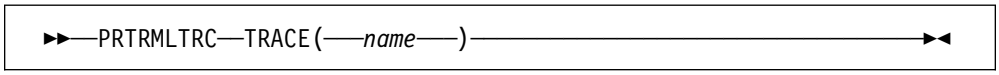
Enter Volume (ENTRMLVOL) Command



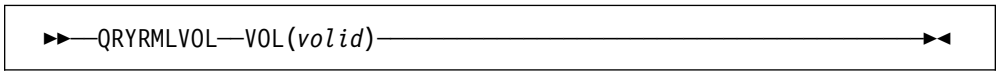
Mount Volume (MNTRMLVOL) Command



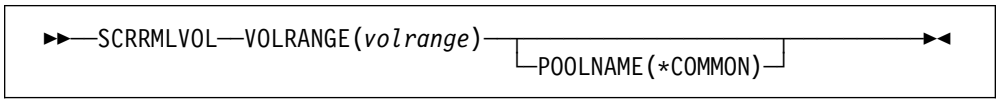
Print Trace (PRTRMLTRC) Command



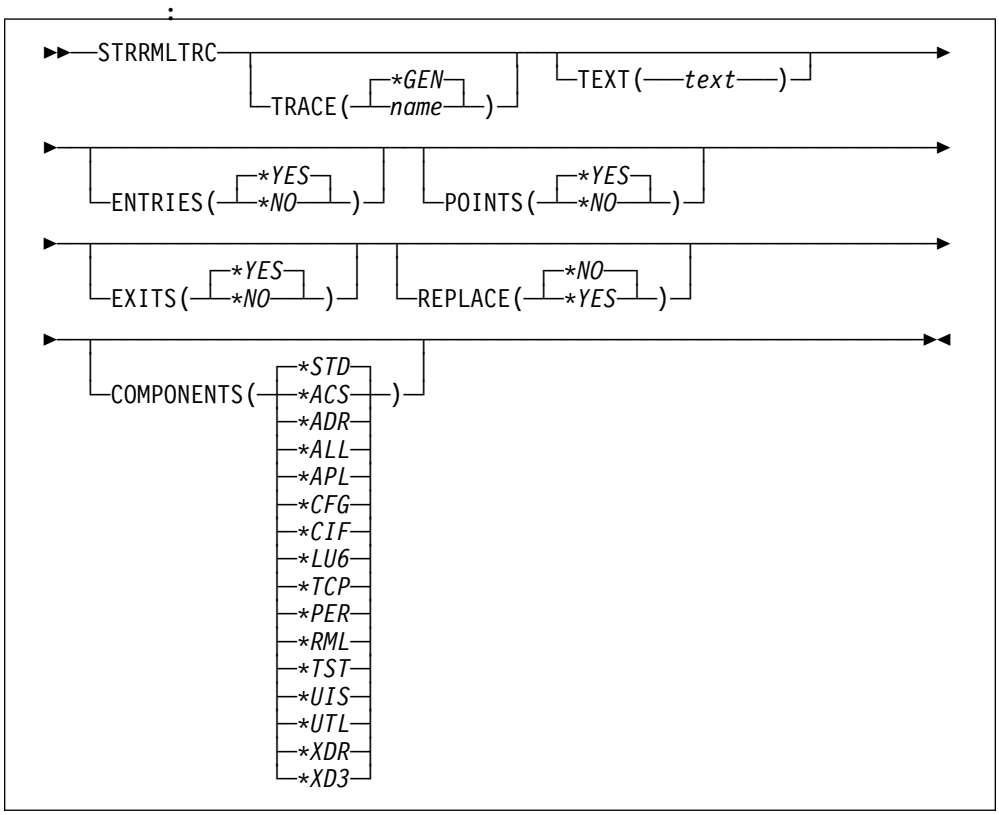
Query RML Volumes (QRYRMLVOL) Command



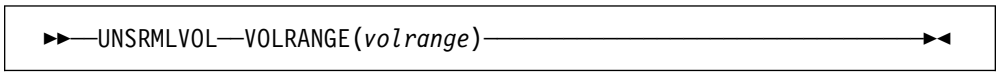
Designate Scratch Volumes (SCRRMLVOL) Command



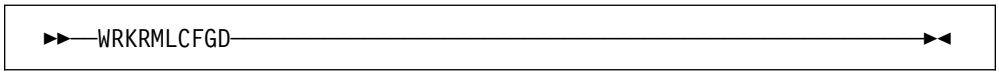
Start Trace (STRRMLTRC) Command



Unscratch Scratch Volumes (UNSRMLVOL) Command



Work with RML Configuration Descriptions (WRKRMLCFGD) Command



Appendix B. Message List

Table B-2 contains RMLS/CSC messages resulting from conditions encountered during product operation. Refer to online help for additional details about messages, explanations, user actions, and system responses. For any additional messages that may appear, refer to message files RMLPMTMSG and RMLSMSG that are contained in the RMLS/CSC library.

RMLS/CSC MESSAGES

Severity codes are assigned to each message. The higher the severity code the more serious the message. A severity code of 0 indicates the message is information only. A severity code of 40 indicates the abnormal end of a program or function.

Message identifiers follow the conventions of the OS/400. RMLS/CSC messages have prefixes of either "RM" or "RE". Messages having a prefix of "RM" are user program messages; messages having a prefix of "RE" are logged event messages and non-program messages that are logged to the AS/400 system history log (QHST).

Message identifiers use the following conventions, **R***tsmmcc* where:

Table B-1. RMLS/CSC Message Identifier Explanations

Identifier	Explanation
R	This is the standard RMLS/CSC prefix.
t	Indicates the type of message. Where: • M - program message issued to caller • E - event message logged to QHST
s	Indicates the subsystem issuing the message. Where: • 0 - User Interface • 2 - ACS Driver • 4 - ACS API • 5 - IPC • 6 - CSCI • 8 - P97 Driver (9710, 9714, or 9740 Direct Attachment) • B - Trace • D - System • X - Configuration Subsystem • Z - Utility Subsystem
mm	Identifies the issuing module's identification number in hex.
cc	Identifies (in hex) the return or event code associated with the message.

Table B-2 (Page 1 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RE00001	40	The requested allocation of tape device *device identifier* has failed.
RE000FF	40	The requested allocation of device *device identifier* was completed successfully.
RE00102	40	The requested deallocation of tape device *device identifier* has failed. Tape device *device identifier* has been left allocated.
RE00103	40	Tape device *device identifier* has been left allocated.
RE001FF	40	The requested deallocation of device *device identifier* has completed successfully.
RE00203	40	The requested mount of tape volume *volume identifier* on tape device *device identifier* has failed.
RE002FF	40	The requested mount of volume *volume identifier* on device *device identifier* has completed successfully.
RE00304	40	The requested dismount of tape volume *volume identifier* in tape device *device identifier* has failed. Tape volume *volume identifier* has been left mounted on tape device *device identifier*.
RE003FF	40	The requested dismount of volume *volume identifier* on device *device identifier* has completed successfully.
RE00405	40	The enter into CAP *CAP identifier* was not successful.
RE0041C	40	No volumes have been entered from CAP *CAP identifier*.
RE0041D	40	Some of the volumes in CAP *CAP identifier* were not entered.
RE004FF	40	The enter into CAP *CAP identifier* was successful.
RE00506	40	The eject from CAP *CAP identifier* was not successful.
RE0051A	40	No volumes have been ejected from CAP *CAP identifier*.
RE0051B	0	Some tape volume(s) have not been ejected from CAP *CAP identifier*.
RE005FF	40	The eject from CAP *CAP identifier* was successful.
RE00607	40	The requested audit has failed.
RE006FF	0	The audit was successful for RML *RML identifier*.
RE00708	40	The requested vary of RML *RML identifier* has failed.
RE00809	40	The requested vary of tape device *device identifier* has failed.
RE0090A	40	The requested cleaning of tape device *device identifier* has failed.
RE009FF	40	The requested cleaning of device *device identifier* has completed successfully.
RE00A0B	40	The display RML Inventory request has failed for RML *RML identifier*.
RE00AFF	0	The display RML Inventory has successfully executed for RML *RML identifier*.
RE00B0C	40	The display RML scratch list request has failed for RML *RML identifier*.
RE00BFF	0	The display RML scratch list has successfully executed for RML *RML identifier*.

Table B-2 (Page 2 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RE00D0E	40	The work with RML configuration descriptions request has failed.
RE00DFF	40	Work with RML configuration descriptions has been completed successfully.
RE00F10	40	The start RML trace request has failed.
RE00FFF	0	Trace *trace name* has been successfully started.
RE01011	40	The end RML trace request has failed.
RE010FF	0	Trace *trace name* has successfully ended.
RE01112	40	The display trace status request has failed.
RE011FF	0	Trace status has successfully been displayed.
RE01213	40	The print RML trace request has failed.
RE012FF	0	Trace *trace name* has successfully been printed.
RE0130C	40	The requested scratch of volume range: *volume identifier 1 - volume identifier 2* was not successful.
RE01316	40	No volumes in range: *volume identifier 1 - volume identifier 2* have been scratched.
RE01317	40	Some of the volumes in range: *volume identifier 1 - volume identifier 2* were not scratched.
RE013FF	0	The requested scratch of volume range; *volume identifier 1 - volume identifier 2* was successful.
RE013FF	0	The requested scratch of volume range: *volume identifier 1 - volume identifier 2* was unsuccessful. Please refer to the previously listed messages in the job log.
RE01414	40	The requested unscratch of volume range: *volume identifier 1 - volume identifier 2* was not successful.
RE01418	40	No volumes in range *volume identifier 1 - volume identifier 2* has been unscratched.
RE01419	40	Some of the volumes in range: *volume identifier 1 - volume identifier 2* were not unscratched.
RE014FF	0	The requested unscratch of volume range: *volume identifier 1 - volume identifier 2* was successful.
RE01515	40	The query RML volumes command was not successful.
RE0151E	40	No volume(s) have been queried.
RE0151F	40	Some volume(s) have not been queried.
RE015FF	40	The query RML volumes command was successful.
RE02900	40	Tape volume *volume identifier* has been successfully unlocked.
RE02902	40	Tape volume *volume identifier* was left locked.
REB0003	0	An error occurred while accessing the trace file. The message ID returned from the system was *message ID*.
REB0205	0	An error occurred while displaying the trace status. The message ID returned from the system was *message ID*.

Table B-2 (Page 3 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
REB0401	0	Trace user space not created. The message ID returned from the system was *message ID*.
REB0404	0	An error occurred while printing the trace. The message ID returned from the system was *message ID*.
REB0501	0	Trace user space not created. The message ID returned from the system was *message ID*.
REB0502	0	Trace user space not set. The message ID returned from the system was *message ID*.
REB0602	0	Trace user space not set. The message ID returned from the system was *message ID*.
REB1802	0	Trace user space not set. The message ID returned from the system was *message ID*
REB1902	0	Trace user space not set. The message ID returned from the system was *message ID*
REB1A04	0	Trace user space not retrieved. The message ID returned from the system was *message ID*.
REB1B04	0	Trace user space not retrieved. The message ID returned from the system was *message ID*
REB1C04	0	Trace user space not retrieved. The message ID returned from the system was *message ID*
REDC801	20	Unexpected reply message received by device queue *queue identifier* in library *library identifier*. Either: 1. the Break Message Handler associated with the device queue failed while processing an inquiry message 2. an old reply message existed on the queue when it was placed into break mode 3. or messages arrived on the device queue while the break message program was suspended due to a software error condition.
REDC802	20	Unexpected message found in device queue *queue identifier* in library *Library identifier*. The unexpected message follows this message.
REDC803	40	A device error occurred (*device identifier*). Automatic processing for *device identifier* is ended. Automatic processing for device *device identifier* ended due to a device error. Refer to the following message.
REDC804	20	Unexpected event. Bad return code associated with message *message identifier*.
REDC805	40	An unexpected exception or End Request occurred during the break message automatic tape processing for *message identifier*.
REDC806	20	Message identifier *message identifier* was automatically processed for device *device identifier*. Automated library services software processed message identifier *message identifier* that was issued by device *device identifier*.
REDC807	40	Refer to the RMLS/CSC User's Guide regarding the forwarded message.

Table B-2 (Page 4 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
REDC808	20	The RMLS/CSC Break Message Handler detected a looping condition. Processing is terminated for the associated device. A message consisting of the same device and volume identifiers was issued two consecutive times. This situation will result in an endless lop if processing is not terminated. Check previous messages for the cause of the looping condition. Mismatched internal and external volume labels and failing devices can cause this condition to occur.
RM00001	40	Tape volume *volume identifier* has been entered incorrectly.
RM00001	40	An invalid character has been specified for volume *volume identifier*. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.
RM00002	40	Volume *volume identifier* was not located by RMLS/CSC
RM0000A	40	Device *device identifier* is configured improperly. Inspect the configuration description associated with this device to ensure a correct address.
RM0000B	40	Device *device identifier* is not in the active RMLS/CSC configuration. Please select an active device and reenter. An active device must be active itself and pointing to active upstream descriptions, up to and including a server. For example, an active *TAP description must be pointing to an active *LSM description that must be pointing to an active*RML description that must be pointing to an active *SRV description. If a description is deactivated, all of the downstream descriptions that point to it are removed from the RMLS/CSC run-time configuration.
RM0000C	40	There are no devices available at this time.
RM0000E	40	Device *device identifier* is in use.
RM00011	40	Device *device identifier* is offline to the server. Please go to the server console and vary device *device identifier* online.
RM0001D	40	The RML containing device *device identifier* is unavailable. Please refer to the previously listed messages in the job log.
RM00029	40	The ALCRMLDEV command failed because an active server does not exist. Please correct the RMLS/CSC configuration (WRKRMLCFGD) and reissue the command.
RM0002C	40	RMLS/CSC internal diagnostics and utilities failure. Please refer to the previously listed messages in the job log.
RM0002E	40	The requested allocation of device *device identifier* was unsuccessful. Please refer to the previously listed messages in the job log.
RM00050	40	You do not have the proper authority to execute the ALCRMLDEV command. Please refer to the previously listed messages in the job log.
RM0005B	40	A communication or ACSAPI failure has occurred.
RM0005E	40	One or more of the following characters: @ # $ has been specified in the volume identifier. These characters are invalid with this type and version of server. Please reissue the command with a valid volume identifier.
RM00060	40	Device *device identifier* is already allocated to you.

Table B-2 (Page 5 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00061	40	The ALCRMLDEV command has failed due to a server error. Please determine the status of the server and its resources and correct any problems before issuing ALCRMLDEV again.
RM00064	40	You do not have the proper authority to access volume *volume identifier*. Access is denied to volume *volume identifier* at the server.
RM0007D	40	Number of users at the server has exceeded the maximum limit.
RM000E1	40	Do not enter *YES for the FORCE parameter if a tape device has not been specified. Reissue the command and specify a device or issue *NO for the FORCE parameter.
RM000E2	40	Enter either a tape device name or a tape volume identifier, but not both.
RM000E2	40	You must enter a volume identifier if the device name is *VOL. Reissue the command and specify a volume identifier.
RM000E3	40	Enter either a tape device name or a tape volume identifier, but not both. Reissue the command and specify a device or a volume identifier.
RM000FF	0	Device *device description* has been successfully allocated.
RM0010A	40	Device *device identifier* is configured improperly. Inspect the configuration description associated with this device to ensure a correct address.
RM0010B	40	Device *device identifier* is not in the active RMLS/CSC configuration. Please select an active device and reenter. An active device must be active itself and pointing to active upstream descriptions, up to and including a server. For example, an active upstream *TAP description must be pointing to an active *LSM description that must be pointing to an active *RML description that must be pointing to an active *SRV description. If a description is deactivated, all of the downstream descriptions that point to it are removed from the RMLS/CSC run-time configuration.
RM0010D	40	Device *device identifier* is not allocated to you.
RM0010E	40	Device *device identifier* is in use.
RM0011D	40	The RML that contains device *device identifier* is unavailable at this time.
RM0012C	40	RMLS/CSC internal diagnostics and utilities failure. Please refer to the previously listed messages in the job log.
RM0012E	40	The requested deallocation of device *device identifier* was unsuccessful. Please refer to the previously listed messages in the job log.
RM00150	40	You do not have the proper authority to execute the DLCRMLDEV command. Please refer to the previously listed messages in the job log.
RM0015B	40	A communication or ACSSPI failure has occurred.
RM0015C	40	RMLS/CSC was unable to unlock device *device identifier* on the server. Go to the server console and issue a clear lock drive for the appropriate drive.
RM00161	40	The DLCRMLDEV command has failed due to a server error. Please determine the status of the server and it's resources and correct any problem before issuing DLCRMLDEV again.

Table B-2 (Page 6 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00164	40	You do not have the proper authority to dismount the volume that is in the device.
RM0017D	40	Number of users at the server has exceeded the maximum limit.
RM001FF	0	Device *device identifier* has been successfully deallocated.
RM00201	40	Tape volume *volume identifier* has been entered incorrectly. An invalid character has been entered or the maximum length has been exceeded.
RM00201	40	Volume *volume identifier* has an invalid character or the maximum length has been exceeded. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading blanks or embedded spaces or lower case letters.
RM00202	40	Volume *volume identifier* was not located by RMLS/CSC
RM00202	40	Tape volume *volume identifier* was not located in the library.
RM00203	40	Tape volume *volume identifier* is in use.
RM00205	40	Volume *volume identifier* is unavailable.
RM00206	40	Volume *volume identifier* is not in its home cell location. Volume *volume identifier* was not found in the RML, but was found in the server database. It is recommended to audit the RML (AUDRML) to resynchronize the server database.
RM00206	40	Tape volume *volume identifier* has been misplaced. A library audit is recommended.
RM00207	40	Volume *volume identifier* has an unreadable label.
RM00209	40	There are no scratch volumes available at this time.
RM0020A	40	Tape device *device identifier* is invalid.
RM0020C	40	There are no tape devices available at this time.
RM0020E	40	Tape device *device identifier* is in use.
RM00211	40	Device *device identifier* is offline with respect to the server. Deallocate the device from the AS/400 and then vary it online from the server.
RM00214	40	Volume *volume identifier* is not in the same RML as device *device identifier*.
RM0021D	40	The RML that contains device *device identifier* is unavailable at this time.
RM00229	40	Unable to communicate with a server.
RM0022A	40	Unable to communicate with the SSI subsystem.
RM0022C	40	RMLS/CSC internal diagnostics and utilities failure. Please refer to the previously listed messages in the job log.
RM0022E	40	Cause of the error is unknown. The attempted mount is unsuccessful.
RM0022E	40	The requested mount of volume *volume identifier* on device *device identifier* was unsuccessful. Please refer to the previously listed messages in the job log.

Table B-2 (Page 7 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00250	40	You do not have the proper authority to execute the MNTRMLVOL command. Please refer to the previously listed messages in the job log.
RM00255	40	Volume *volume identifier* is already mounted on device *device identifier*.
RM0025A	40	There is no volume mounted on device *device identifier*.
RM0025B	40	A communication or ACSAPI failure has occurred.
RM0025C	40	RMLS/CSC was unable to accomplish the mount because of an incorrect lock ID. If the job is an interactive job, then issue the DLCRMLDEV command from the failing job. If DLCRMLDEV fails or the job is a batch job, end the failing job and issue DLCRMLDEV from an interactive job.
RM0025D	40	You have specified an invalid pool. Please reissue the command with a valid pool specified.
RM0025E	40	One or more of the following characters: @ # $ have been specified in the volume identifier. These characters are invalid with this type and version of server. Please reissue the command with a valid volume identifier.
RM00261	40	The MNTRMLVOL command has failed due to a server error. Please determine the status of the server and its resources and correct any problems before issuing MNTRMLVOL again.
RM00264	40	You do not have the proper authority to access volume *volume identifier*. Access is denied to volume *volume identifier* at the server.
RM0027D	40	Number of users at the server has exceeded the maximum limit.
RM002E0	40	The request of a non-specific tape volume can not be mounted write protected.
RM00301	40	An invalid character has been specified for volume *volume identifier*. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.
RM00302	40	Volume *volume identifier* was not located by RMLS/CSC.
RM00304	40	Volume *volume identifier* is not mounted.
RM00306	40	Volume *volume identifier* has been misplaced.
RM00307	40	volume *volume identifier* has a unreadable label.
RM0030A	40	Device *device identifier* is configured improperly. Inspect the configuration description associated with this device to ensure a correct address.
RM0030B	40	Device *device identifier* is not in the active RMLS/CSC configuration. Please select an active device and reenter.
RM0030D	40	Device *device identifier* is not allocated to you.
RM0030E	40	Device *device identifier* is in use.
RM00311	40	Device *device identifier* is offline with respect to the server. Deallocate the device from the AS/400 and then vary it online from the server console.

Table B-2 (Page 8 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00312	40	The RML, which contains device *device identifier*, is full at this time. There is no available storage location in which to place the dismounted volume. Please issue the EJTRMLVOL command to eject any unused volumes and then retry the DSMRMLVOL.
RM00314	40	Volume *volume identifier* is not in the same RML as device *device identifier*.
RM0031D	40	The RML, which contains device *device identifier*, is unavailable at this time.
RM0032C	40	RMLS/CSC internal diagnostics and utilities failure. Please refer to the previously listed messages in the job log.
RM0032E	40	The requested dismount of volume *volume identifier* was unsuccessful. Please refer to the previously listed messages in the job log.
RM00350	40	You do not have the proper authority to execute the DSMRMLVOL command. Please refer to the previously listed messages in the job log.
RM0035A	40	There is no volume mounted on device *device identifier*.
RM0035B	40	A communication or ACSAPI failure has occurred.
RM0035C	40	RMLS/CSC was unable to accomplish the dismount because of a incorrect lock ID. If the job is an interactive job, then issue the DLCRMLDEV command from the failing job. If DLCRMLDEV fails or the job is a batch job, end the failing job and issue DLCRMLDEV from an interactive job.
RM0035E	40	The volume identifier contains a special character that is not supported by the server. Specific characters, such as: # @ $ may not be supported by all server types. Please reissue the command with a valid volume identifier.
RM00361	40	The DSMRMLVOL command has failed due to a server error. Please determine the status of the server and its resources and correct any problems before issuing DSMRMLVOL again.
RM00364	40	You do not have the proper authority to access volume *volume identifier*. Access is denied to volume *volume identifier* at the server.
RM0037D	40	Number of users at the server has exceeded the maximum limit.
RM003E2	40	Enter either a tape volume identifier or a tape device name, but not both.
RM003E3	40	Enter either a device name or a volume identifier, but not both. Reissue the command and specify a device or a volume identifier.
RM003FF	0	Volume *volume identifier* has been successfully dismounted from device *device identifier*.
RM0040C	40	You issued an enter to CAP *CAP identifier* that specifies an RML that does not exist. Please contact the system administrator to update the RMLS/CSC configuration (WRKRMLCFGD) and issue the command again.
RM00414	40	Enter into CAP *CAP identifier* was not successful due to invalid configuration. Please refer to the previously listed messages in the job log.
RM00416	40	CAP *CAP identifier* is not a valid CAP ID. Please refer to the previously listed messages in the job log.
RM00417	40	CAP *CAP identifier* is in use. Please refer to the previously listed messages in the job log.

Table B-2 (Page 9 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM0041D	40	The RML containing CAP *CAP identifier* is unavailable. Please refer to the previously listed messages in the job log.
RM0042D	40	Enter into CAP *CAP identifier* has been cancelled. Please refer to the previously listed messages in the job log.
RM0042E	40	The enter into CAP *CAP identifier* was unsuccessful. Please refer to the previous listed messages in the job log.
RM00447	40	Internal error. Please report to StorageTek support.
RM0044C	40	CAP *CAP identifier* is not in the active RMLS/CSC configuration. Add CAP *CAP identifier* in the active configuration (WRKRMLCFGD) and reissue the command.
RM00450	40	You do not have the authority to use the command. Please refer to the previously listed messages in the job log.
RM00451	40	Enter is not supported for this type of RML.
RM00458	40	A signal was received to terminate processing of ENTRMLVOL. Please refer to the previously listed messages in the job log.
RM00459	40	Some of the volumes in CAP *CAP identifier* were not entered. Please refer to the previously listed messages in the job log.
RM0045B	40	A communication or ACSAPI failure has occurred. Please refer to the previously listed messages in the job log.
RM00461	40	The enter into CAP *CAP identifier* failed. Please refer to the previously listed messages in the job log.
RM00465	40	Enter unsuccessful for unsupported volume type. Please refer to the previously listed messages in the job log.
RM00467	40	CAP *CAP identifier* is not online. Please refer to the previously listed messages in the job log.
RM00468	40	CAP *CAP identifier* is in the incorrect mode to enter. Please refer to the previously listed messages in the job log.
RM00469	40	Enter into CAP *CAP identifier* was not successful due to invalid configuration. Please refer to the previously listed messages in the job log.
RM0046A	40	Enter into CAP *CAP identifier* was not successful due to invalid configuration. Please refer to the previously listed messages in the job log.
RM0046B	40	Enter failed with RML server error for CAP *CAP identifier*. Please refer to the previously listed messages in the job log.
RM0046C	40	The LSM is offline. Please refer to the previously listed messages in the job log.
RM00474	40	No volumes have been entered from CAP *CAP identifier*. Please specify a volume or volume range that is in the RML and issue the command again.
RM0047D	40	Number of users at the server has exceeded the maximum limit.
RM004FF	0	The enter of RML volumes in CAP *CAP identifier* was successful. Please refer to the previously listed messages in the job log.
RM00501	40	Volume *volume identifier* has an invalid character. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.

Table B-2 (Page 10 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00514	40	The volume(s) requested to be ejected are not in the same RML as the CAP specified. Please refer to the previously listed messages in the job log.
RM00516	40	CAP *CAP identifier* is not valid. Please refer to the previously listed messages in the job log.
RM00517	40	CAP *CAP identifier* is in use. Please refer to the previously listed messages in the job log.
RM0051D	40	The RML containing CAP *CAP identifier* is unavailable. Please refer to the previously listed messages in the job log.
RM00525	40	Command failed due to database error. A file error was reported from the configuration database. Please contact StorageTek support.
RM0052D	40	Eject from CAP *CAP identifier* has been cancelled. Please refer to the previously listed messages in the job log.
RM0052E	40	The requested eject to CAP *CAP identifier* was unsuccessful. Please refer to the previously listed messages in the job log.
RM00547	40	Internal error. Please report to StorageTek support.
RM0054C	40	CAP *CAP identifier* is not in the active RMLS/CSC configuration. Please contact the RMLS/CSC system administrator to correct the problem and issue the command again.
RM00550	40	You do not have the authority to the eject command. please refer to the previously listed messages in the job log.
RM00551	40	Volume ranges are not supported with this type of RML. Please refer to the previously listed messages in the job log.
RM00552	0	Some tape volumes(s) have not been ejected from CAP *CAP identifier*. See lower level messages for more details.
RM00558	40	A signal was received to terminate processing of EJTRMLVOL. Please refer to the previously listed messages in the job log.
RM0055B	40	A communication or ACSAPI failure has occurred. Please refer to the previously listed messages in the job log.
RM00561	40	The eject from CAP *CAP identifier* failed. Please refer to the previously listed messages in the job log.
RM00567	40	CAP *CAP identifier* is not online. Please refer to the previously listed messages in the job log.
RM00569	40	Eject from CAP *CAP identifier* was not successful due to invalid configuration. Please refer to the previously listed messages in the job log.
RM0056A	40	Eject from CAP *CAP identifier* was not successful do to invalid configuration. Please refer to the previously listed messages in the job log.
RM0056B	40	The eject failed with an RML server error for CAP *CAP identifier*. Please refer to the previously listed messages in the job log.
RM0056C	40	The LSM is offline. Please refer to the previously listed messages in the job log.
RM00575	40	No volumes have been ejected from CAP *CAP identifier*. Please specify a volume or volume range that is in the RML and issue the command again.
RM0057D	40	Number of users at the server has exceeded the maximum limit.

Table B-2 (Page 11 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM005E3	40	Enter a value(s) for either the VOL parameter or the RANGE parameter. Please reissue the command.
RM005E4	40	Enter a value(s) for either the VOL parameter of the RANGE parameter. Please reissue the command.
RM005FF	0	All tape volumes requested for eject have been ejected into CAP *CAP identifier*. Please refer to the previously listed messages in the job log.
RM00614	40	CAP *CAP identifier* is not in the RML *RML identifier*. Specify a CAP located within the RML *RML identifier* and reissue the command.
RM00616	40	CAP *CAP identifier* is invalid. Audit using CAP *CAP identifier* was not successful because the CAP is invalid. Select a valid CAP and reissue the command.
RM00617	40	CAP *CAP identifier* is in use. Audit, using CAP *CAP identifier*, was not successful because the CAP is in use. Select another CAP and reissue the command.
RM00619	40	No active CAPs are available for RML *RML identifier*. Check your configuration using WRKRMLCFGD and issue the request again.
RM0061D	40	The RML *RML identifier* is unavailable at this time. Please try your request at a later time.
RM00625	40	Command failed due to data base error. A file error was reported from the configuration data base. Please contact StorageTek support.
RM0062D	40	The audit an RML request has been cancelled. Please reissue the command.
RM0062E	40	The requested Audit was unsuccessful. Please refer to the previously listed messages in the job log.
RM00647	40	Internal error. Please report to StorageTek support.
RM0064B	40	RML *RML identifier* is not in the active RMLS/CSC configuration. Please select an active RML and reissue the command.
RM0064C	40	CAP *CAP identifier* is not in the active RMLS/CSC configuration. Please select an active CAP and reissue the command.
RM00650	40	You are not authorized to complete the Audit an RML request. Please refer to the previously listed messages in the job log.
RM00651	40	AUDRML is not supported for the requested server. Please contact your system administrator to perform audits.
RM00658	40	A signal was received to terminate processing of AUDRML. Please refer to the previously listed messages in the job log.
RM0065B	40	A communication or ACSAPI failure has occurred. Verify the product is installed correctly and issue the request again.
RM00661	40	The audit RML command failed. The Audit RML command failed due to a server error.
RM00667	40	CAP *CAP identifier* is offline. Audit using CAP *CAP identifier* was not successful because the CAP is offline. Select another CAP and reissue the command.
RM00669	40	RML *RML identifier* is not in the active RMLS/CSC configuration. Please select an active RML and reissue the command.
RM0066B	40	The audit failed for RML *RML identifier* due to an RML failure. Correct the problems with RML *RML identifier* and reissue the command.

Table B-2 (Page 12 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM0066C	40	The LSM is offline. Audit using the LSM was not successful because the LSM is offline.
RM0066D	40	A discrepancy was found during the audit. Some tapes could have been ejected. Please refer to the previously listed messages in the job log.
RM00678	40	Audit is already running. Only one Audit RML at a time can be running.
RM0067D	40	Number of users at the server has exceeded the maximum limit.
RM006FF	0	RML *RML identifier* has been successfully audited.
RM00903	0	The cleaning cartridges are in use. Please wait until a cleaning cartridge becomes available and reissue the command.
RM0090A	40	Device *device identifier* is configured improperly. Inspect the configuration associated with this device to endure a correct address.
RM0090B	40	Device *device identifier* is not in the active RMLS/CSC configuration. Please select an active device and reenter.
RM0090D	40	Device *device identifier* is not allocated to you.
RM0090E	40	Device *device identifier* is in use.
RM0090F	40	Device *device identifier* has a volume in it that is not responding to a forced dismount. Please issue the DSMRMLVOL command with the value *YES for the FORCE parameter.
RM00911	40	Device *device identifier* is offline with respect to the server. Deallocate the device from the AS/400 and then vary it online from the server console.
RM00913	40	Thee are no cleaning cartridges available at this time. Either there are not cleaning cartridges in the RML or all the cleaning cartridges are in use.
RM0091D	40	The RML, which contains device *device identifier*, is unavailable at this time.
RM0092C	40	RMLS/CSC internal diagnostics and utilities failure. Please refer to the previously listed messages in the job log.
RM0092E	40	The requested cleaning of device *device identifier* was unsuccessful. Please refer to the previously listed messages in the job log.
RM00950	40	You do not have the proper authority to execute the CLNRMLDEV command. Please refer to the previously listed messages in the job log.
RM00951	40	CLNRMLDEV is not supported for the requested server. Please contact your system administrator to have your devices cleaned.
RM0095B	40	A communication or ACSAPI failure has occurred.
RM0095C	40	RMLS/CSC was unable to accomplish the mount because of an incorrect lock ID. Go to the server console and issue a "clear lock drive" for the appropriate drive and then issue the DLCRMLDEV command.
RM00961	40	The CLNRMLDEV command has failed due to a server error. Please determine the status of the server and it's resources and correct any problem before issuing CLNRMLDEV again.
RM00964	40	You do not have the proper authority to access cleaning cartridges. Access is denied to cleaning cartridges at the server.

Table B-2 (Page 13 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM0097D	40	Number of users at the server has exceeded the maximum limit.
RM009FF	0	Device *device identifier* has been successfully cleaned.
RM00A0B	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM00A1D	40	The RML *RML identifier* is unavailable at this time. Please try your request at a later time.
RM00A25	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM00A25	40	An error occurred while opening the file. Please refer to the previously listed messages in the job log.
RM00A2D	40	The display RML Inventory request has been cancelled. Please reissue the command.
RM00A2E	40	The requested Display RML Inventory was unsuccessful. Please refer to the previously listed messages in the job log.
RM00A47	40	Internal error. Please report to StorageTek support.
RM00A4B	40	RML *RML identifier* is not in the active RMLS/CSC configuration. Please select an active RML and reissue the command.
RM00A50	40	You are not authorized to complete the Display RML Inventory request. Please refer to the previously listed messages in the job log.
RM00A58	40	A signal was received to terminate processing of DSPRMLINV. Please refer to the previously listed messages in the job log.
RM00A5B	40	A communication or ACSAPI failure has occurred. Verify the product is installed correctly and try the request again.
RM00A61	40	The Display RML Inventory command failed. The Display RML Inventory command failed due to a server error.
RM00A62	40	An error occurred while running the query to print or display the inventory. Please refer to the previously listed messages in the job log.
RM00A6E	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM00A73	40	The library *library identifier* was not found. Choose an existing library or create the library *library identifier* and reissue the command.
RM00A7D	40	Number of users at the server has exceeded the maximum limit.
RM00AE5	40	You must specify an output file. Reissue the command.
RM00AE6	40	The OUTFILE parameter is not allowed when the OUTPUT parameter is set to * or *PRINT. Please reissue the command, but do not specify the OUTFILE parameter.
RM00AE7	40	The OUTMBR parameter is not allowed when the OUTPUT parameter is set to * or *PRINT. Please reissue the command, but do not specify the OUTMBR parameter.
RM00B1D	40	The RML *RML identifier* is unavailable at this time. Please try your request at a later time.
RM00B25	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM00B2D	40	The display RML scratch list request has been cancelled. Please reissue the command.

Table B-2 (Page 14 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM00B2E	40	Display RML inventory was unsuccessful. Please refer to the previously listed messages in the job log.
RM00B47	40	Internal error. Please report to StorageTek support.
RM00B4B	40	RML *RML identifier* is not in the active RMLS/CSC configuration. Please select an active RML and reissue the command.
RM00B50	40	You are not authorized to complete the display RML scratch list request. Please refer to the previously listed messages in the job log.
RM00B58	40	A signal was received to terminate processing of DSPRMLSCR. Please refer to the previously listed messages in the job log.
RM00B5B	40	A communication or ACSAPI failure has occurred. Verify the product is installed correctly and try the request again.
RM00B61	40	The display RML scratch list command failed. The display RML scratch list command failed due to a server error.
RM00B62	40	An error occurred while running the query to print or display the scratch list. Please refer to the previously listed messages in the job log.
RM00B6E	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM00B73	40	The library *library identifier* was not found. Choose an existing library or create the library *library identifier* and reissue the command.
RM00B7D	40	Number of users at the server has exceeded the maximum limit.
RM00BE6	40	The OUTFILE parameter should not be specified with OUTPUT type * or *PRINT. Please reissue the command, but do not specify the OUTFILE parameter.
RM00BE7	40	The OUTMBR parameter should not be specified with OUTPUT type * or *PRINT. Please reissue the command, but do not specify the OUTMBR parameter.
RM00BFF	0	Display RML scratch list has successfully executed for RML *RML identifier*.
RM00D25	0	An inline file is missing from the RMLS/CSC configuration data base. Please delete library RMLS and all of the objects contained in it and reinstall RMLS/CSC.
RM00D2D	0	Display of work with RML configuration descriptions ended when user pressed F12.
RM00D57	0	Display of work with RML configuration descriptions ended when user pressed F3.
RM00D58	0	An exception has occurred that caused a signal to be raised. Please refer to the previously listed messages in the job log.
RM00DFF	0	Work with RML configuration descriptions has successfully completed.
RM00F2E	40	The requested Start RML Trace was unsuccessful. Please refer to the previously listed messages in the job log.
RM00F30	40	Unable to set/retrieve trace internal objects. Refer to QHST for detailed messages.
RM00F31	40	Unable to create trace internal objects. Refer to QHST for detailed messages.

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Message ID	**Severity**	**Message Text**
RM00F39	40	Unable to create trace internal objects. Refer to QHST for detailed messages.
RM00F44	40	Trace *trace name* already exists and replace *NO was specified.
RM00F45	40	Trace already running.
RM00F58	40	A signal was received to terminate processing of STRRMLTRC. Please refer to the previously listed messages in the job log.
RM00FE0	40	You must specify *YES for one of the following parameters: Entries, Points, or Exits. Reissue the command.
RM00FFF	0	Trace *trace name* has successfully started.
RM0102E	40	The requested End RML Trace was unsuccessful. Please refer to the previously listed messages in the job log.
RM01030	40	Unable to set/retrieve trace internal objects. Refer to QHST for detailed messages.
RM01032	40	The trace was not active. There is no need to end trace, since it is not active.
RM01058	40	A signal was received to terminate processing of ENDRMLTRC. Please refer to the previously listed messages in the job log.
RM010FF	0	Trace *trace name* has successfully ended.
RM0112E	40	The requested Display Trace Status was unsuccessful. Please refer to the previously listed messages in the job log.
RM01130	40	Unable to set/retrieve trace internal objects. Refer to QHST for detailed messages.
RM01154	40	Error displaying the trace. Refer to QHST for detailed messages.
RM01158	40	A signal was received to terminate processing of DSPTRCSTS. Please refer to the previously listed messages in the job log.
RM011FF	0	Trace status has successfully been displayed.
RM0122E	40	The requested Print RML Trace was unsuccessful. Please refer to the previously listed messages in the job log.
RM0123A	40	Trace *trace name* was not found.
RM01242	40	An error occurred while printing the trace. Refer to QHST for detailed messages.
RM01258	40	A signal was received to terminate processing of PRTRMLTRC. Please refer to the previously listed messages in the job log.
RM012FF	0	Trace *trace name* has successfully been printed.
RM01301	40	An invalid character has been specified for volume *volume identifier*. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.
RM0131D	40	The RML containing volume range: *volume identifier 1* - *volume identifier 2* is unavailable. Please refer to the previously listed messages in the job log.

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Message ID	**Severity**	**Message Text**
RM01321	40	The volume identifier range of: *volume identifier 1* - *volume identifier 2* is invalid. Valid volume ranges must follow the following rules. • *volume identifier 1* must be less than or equal to *volume identifier 2* • *volume identifier 1* must be the same length as *volume identifier 2*. • The nonincremental characters of the *volume identifier 1* must be identical to those nonincremental characters of *volume identifier 2* • If a VOLSER range contains more than one decimal position, only the right-most portion is valid as the incremental range. That is, A00B00 - A99B00 is not valid.
RM01329	40	You issued a scratch volume range: *volume identifier 1* - *volume identifier 2* to an RML that does not exist. Correct the RML configuration (WRKRMLCFGD) and reissue the command.
RM0132D	40	Scratch of volume range: *volume identifier 1* - *volume identifier 2* has been cancelled. Please refer to the previously listed messages in the job log.
RM0132E	40	The scratch volume of range: *volume identifier 1* - *volume identifier 2* was unsuccessful. Please refer to the previously listed messages in the job log.
RM01347	40	RMLS/CSC internal error. Please report to StorageTek support.
RM01350	40	You do not have the authority to execute the scratch command. Please refer to the previously listed messages in the job log.
RM01351	40	RMLS/CSC internal error. Please report to StorageTek support.
RM01358	40	A signal was received to terminate processing the scratch of volume range: *volume identifier 1* - *volume identifier 2* . Please refer to the previously listed messages in the job log.
RM0135B	40	A communication or ACSAPI failure has occurred. Please refer to the previously listed messages in the job log.
RM01361	40	The scratch volume or range: *volume identifier 1* - failed. Please refer to the previously listed messages in the job log.
RM01363	40	You have specified a scratch pool that does not exist. Please refer to the previously listed messages in the job log.
RM01364	40	You do not have authority to access the range of volumes: *volume identifier 1* - *volume identifier 2*. Please refer to the previously listed messages in the job log.
RM01365	40	You specified a scratch volume range: *volume identifier 1* - *volume identifier 2* on invalid volume media type. Please refer to the previously listed messages in the job log.
RM01366	40	Some of the volumes in range: *volume identifier 1* - *volume identifier 2* were not scratched. Please refer to the previously listed messages in the job log.
RM0136F	40	Scratch command failed because an active server does not exist. Please correct the RMLS/CSC configuration (WRKRMLCFGD) and reissue the command.

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Message ID	**Severity**	**Message Text**
RM01370	40	No volumes in range: *volume identifier 1 - volume identifier 2* have been scratched. Please specify a volume or volume range that is in the RML and issue the command again.
RM0137D	40	Number of users at the server has exceeded the maximum limit.
RM013FF	0	The scratch volume of range: *volume identifier 1 - volume identifier 2* was successful. Please refer to the previously listed messages in the job log.
RM01401	40	An invalid character has been specified for volume *volume identifier*. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.
RM0141D	40	The RML containing volume range: *volume identifier 1 - volume identifier 2* is unavailable. Please refer to the previously listed messages in the job log.
RM01421	40	The volume identifier range of: *volume identifier 1 - volume identifier 2* is invalid. Valid volume ranges must follow the following rules: • *volume identifier 1* must be less than or equal to *volume identifier 2* • *volume identifier 1* must be the same length as *volume identifier 2*. • The nonincremental characters of the *volume identifier 1* must be identical to those nonincremental characters of *volume identifier 2* • If a VOLSER range contains more than one decimal position, only the right-most portion is valid as the incremental range. That is, A00B00 - A99B00 is not valid.
RM01429	40	You issued an unscratch of volume range: *volume identifier 1 - volume identifier 2* to an RML that does not exist. Correct the RML configuration (WRKRMLCFGD) and reissue the command.
RM0142D	40	Unscratch of volume range *volume identifier 1 - volume identifier 2* has been cancelled. Please refer to the previously listed messages in the job log.
RM0142E	40	The unscratch of volume range: *volume identifier 1 - volume identifier 2* was unsuccessful. Please refer to the previously listed messages in the job log.
RM01447	40	RMLS/CSC internal error. Please report to StorageTek support.
RM01450	40	You do not have the authority to execute the unscratch command. Please refer to the previously listed messages in the job log.
RM01451	40	RMLS/CSC internal error. Please report to StorageTek support.
RM01458	40	A signal was received to terminate processing the unscratch of volume range: *volume identifier 1 - volume identifier 2*. Please refer to the previously listed messages in the job log.
RM0145B	40	A communication or ACSAPI failure has occurred. Please refer to the previously listed messages in the job log.
RM01461	40	The unscratch of volume range: *volume identifier 1 - volume identifier 2* failed. Please refer to the previously listed messages in the job log.
RM01463	40	You have specified a scratch pool that does not exist. Refer to the previously listed messages in the job log.

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Message ID	**Severity**	**Message Text**
RM01464	40	You do not have authority to access the range of volumes: *volume identifier 1 - volume identifier 2*. Please refer to the previously listed messages in the job log.
RM01465	40	You specified an unscratch of volume range *volume identifier 1 - volume identifier 2* on invalid volume media type. Please refer to the previously listed messages in the job log.
RM0146F	40	Unscratch command failed because an active server does not exist. Please correct the RMLS/CSC configuration (WRLRMLCFGD) and reissue the command.
RM01471	40	No volumes in range *volume identifier 1 - volume identifier 2* have been unscratched. Please specify a volume or volume range that is in the RML and issue the command again.
RM01472	40	Some of the volumes in range: *Volume identifier 1 - volume identifier 2* were not unscratched. Please refer to the previously listed messages in the job log.
RM0147D	40	Number of users at the server has exceeded the maximum limit.
RM014FF		The unscratch of volume range *volume identifier 1 - volume identifier 2* was successful. Please refer to the previously listed messages in the job log.
RM01501	40	An invalid character has been specified for volume *volume identifier*. Please reissue the command with a valid volume identifier. A valid volume identifier can not contain leading or embedded spaces or lower case letters.
RM0150B	40	An internal error occurred. Please refer to the previously listed messages in the job log.
RM0151D	40	The RML is unavailable at this time. Please try your request at a later time.
RM0152D	40	The query RML volumes command has been cancelled. The query RML volumes command has been cancelled at the server.
RM0152E	40	The requested query was unsuccessful. Please refer to the previously listed messages in the job log.
RM01547	40	Internal error. Please report to StorageTek support.
RM01550	40	You do not have the authority to the query command. Please refer to the previously listed messages in the job log.
RM01558	40	A signal was received to terminate processing of QRYRMLVOL. Please refer to the previously listed messages in the job log.
RM0155B	40	A communication or ACSAPI failure has occurred. Verify the product is installed correctly and try the request again.
RM01561	40	The query RML volumes command failed. The query RML volumes command failed due to a server error.
RM0156F	40	A query RML volumes command failed because an active server does not exist. Please correct the RMLS/CSC configuration (WRKRMLCFGD) and reissue the command.
RM01576	40	No volume(s) have been queried. Please specify a volume or volume list that is in the RML and issue the command again.
RM01577	40	Some volume(s) have not been queried. See lower level messages for more details.
RM0157D	40	Number of users at the server has exceeded the maximum limit.

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Message ID	**Severity**	**Message Text**
RM015FF	0	All tape volume(s) queried have been found. Please refer to the previously listed messages in the job log.
RM1046F	40	Unscratch command failed because an active server does not exist. Please correct the RMLS/CSC configuration (WRKRMLCFGD) and reissue the command.
RM20921	0	Low water mark of scratch volumes has been reached.
RM20A0C	40	Volume *volume identifier* has not been scratched. Volume *volume identifier* was an incorrect media attribute.
RM20A0D	40	Volume *volume identifier* has not been scratched, volume is in use. Please free the volume and reissue the command.
RM20A17	40	The pool name was not found on the RML server. Please specify a pool name that exists on the RML server and issue the command again.
RM20A18	40	Volume *volume identifier* has not been scratched. Volume *volume identifier* was not found within the specified pool.
RM20A20	0	High water mark of scratch volumes has been reached.
RM20A21	0	Low water mark of scratch volumes has been reached.
RM20A25	40	One or more of the following characters: @ # $ has been specified in the volume range identifiers. These characters are invalid with this type and version of server. Please reissue the command with valid volume range identifiers.
RM20A28	40	Not authorized to the range of volumes on the RML server. Please contact the system administrator to obtain authority to the range of volumes on the RML server and issue the command again.
RM20A2A	40	RML server failed. Please contact the system administrator to correct the server and issue the command again.
RM20A31	40	RML server is unavailable. Please contact the system administrator to vary the RML server online and issue the command again.
RM20A50	40	Volume *volume identifier* has not been scratched. A communication or ACSAPI failure has occurred. Please verify the product is installed correctly and issue the request again.
RM20A51	40	Command has been cancelled on the RML server. Issue the command again.
RM20A53	40	Not authorized to the set scratch command on the RML server. Please contact the system administrator to obtain authority to the set scratch command on the RML server and issue the command again.
RM20AFF	40	Volume *volume identifier* has been scratched.
RM20B0C	40	Volume *volume identifier* has not been unscratched. Volume *volume identifier* has an incorrect media attribute.
RM20B0D	40	Volume *volume identifier* has not been unscratched, volume is in use. Please free the volume and reissue the command.
RM20B17	40	The pool name was not found on the RML server. Please specify a pool name that exists on the RML server and issue the command again.
RM20B18	40	Volume *volume identifier* has not been unscratched. Volume *volume identifier* was not found within the specified pool.
RM20B20	0	High water mark of scratch volumes has been reached.

Table B-2 (Page 20 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM20B21	0	Low water mark of scratch volumes has been reached.
RM20B25	40	One or more of the following characters: @ # $ has been specified in the volume range identifiers. These characters are invalid with this type and version of server. Please reissue the command with valid volume range identifiers.
RM20B28	40	Not authorized to the range of volumes on the RML server. Please contact the system administrator to obtain authority to the range of volumes on the RML server and issue the command again.
RM20B2A	40	RML server failed. Please contact the system administrator to correct the server and issue the command again.
RM20B31	40	RML server is unavailable. Please contact the system administrator to vary the RML server online and issue the command again.
RM20B50	40	Volume *volume identifier* has not been unscratched. A communication or ACSAPI failure has occurred. Please verify the product is installed correctly and issue the request again.
RM20B51	40	Command has been cancelled on the RML server. Issue the command again.
RM20B53	40	Not authorized to the set_scratch command on the RML server. Please contact the system administrator to obtain authority to the set_scratch command on the RML server and issue the command again.
RM20BFF	40	Volume *volume identifier* has been unscratched.
RM20F0C	40	Volumes entered do not have correct media attribute. Please enter volumes with the correct media attribute and issue the command again.
RM20F12	40	Volume *volume identifier* was not successfully entered. Volume *volume identifier* was not successfully entered because a volume with the same VOLID already exists within the RML. Change the VOLID and enter the volume again.
RM20F13	40	VOLID is unreadable, volume was not successfully entered. Volume was not successfully entered because the VOLID is unreadable. Relabel the VOLID and enter the volume again.
RM20F27	40	An invalid character has been specified for volume *volume identifier*. Volume *volume identifier* was not ejected because one or more of the following characters: @ # $ has been specified in the volume identifier. Correct the volume identifier and issue the command again.
RM20F28	40	Not authorized to the specified volume(s) on the RML server. Please contact the RML server system administrator to obtain authorization to the volumes and issue the command again.
RM20F2A	40	RML server failed. Please contact the RML server system administrator to correct the problem and issue the command again.
RM20F2C	40	The wrong RML was specified in the CAP description from the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM20F2E	40	Volume *volume identifier* was not successfully entered. Volume *volume identifier* was not successfully entered because the RML is busy. Wait until the RML is available and enter the volume again.
RM20F2E	40	RML is busy. Please wait until RML is no longer busy and issue the command again.

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Message ID	**Severity**	**Message Text**
RM20F2F	40	The RML is having technical failures. Please contact the RML server system administrator to correct the problem and issue the command again.
RM20F30	40	Volume *volume identifier* was not successfully entered. Volume *volume identifier* was not successfully entered because the RML is full. Remove unnecessary volumes from the RML and enter the volume again.
RM20F31	40	The RML is not available. Please contact the RML server system administrator to make the RML available and issue the command again.
RM20F32	40	An invalid LSM was specified in the CAP description for the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM20F34	40	The LSM is offline. Please contact the RML server system administrator to turn the LSM online and issue the command again.
RM20F36	40	Incorrect CAP mode on the RML server. Please contact the RML server system administrator to correct the CAP mode on the RML server and issue the command again.
RM20F37	40	The CAP specified is invalid on the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM20F39	40	Not authorized to enter the command on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM20F39	40	CAP is not online at the RML server. Please select another active CAP and issue the command again,
RM20F3A	40	CAP is in use on the RML server. Please select another CAP and issue the command again.
RM20F4E	40	The wrong RML was specified in the CAP description. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM20F4F	40	Volume *volume identifier* was not successfully entered. Volume *volume identifier* was not successfully entered because an RML audit is in progress. Wait until the audit is complete and enter the volume again.
RM20F50	40	Enter was not successful. A communication or ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and issue the request again.
RM20F51	40	Command has been cancelled on the RML server. Please issue the command again.
RM20F53	40	CAP is not online at the RML server. Please select another active CAP and issue the command again.
RM20F53	40	Not authorized to the enter command on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM20FFF	40	Volume *volume identifier* has been successfully entered.
RM2100D	0	Volume *volume identifier* is in use. Free volume and try eject (EJTRMLVOL) request again. See library server manuals for more detail on volumes in use.

Table B-2 (Page 22 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM2100E	0	Volume *volume identifier* is not found. Volume *volume identifier* was not ejected because the volume was not found. The volume will be removed from the RML server database.
RM21011	0	Volume *volume identifier* is not in its home cell location. Volume *volume identifier* was not found in the RML, but was found in the server database. It is recommended to audit the RML (AUDRML) to resynchronize the server database.
RM21022	0	Volume *volume identifier* is not in the same RML as the specified CAP. Specify a CAP from the RML where the volume *volume identifier* resides and issue the command again.
RM21027	40	An invalid character has been specified for volume *volume identifier*. Volume *volume identifier* was not ejected because one or more of the following characters: @ # & has been specified in the volume identifier. Correct the volume identifier and issue the command again.
RM21028	40	Not authorized to the specified volume(s) on the RML server. Please contact the RML server system administrator to obtain authority to the volume(s) and issue the command again.
RM2102A	40	RML server failed. Please contact the RML server system administrator to correct the problem and issue the command again.
RM2102C	40	The wrong RML was specified in the CAP description for the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM2102D	0	RML is busy. Wait until the RML is no longer busy and issue the command again.
RM2102E	40	RML is busy. Please wait until RML is no longer busy and issue the command again.
RM2102F	40	The RML is having technical failures. Please contact the RML server system administrator to correct the problem and issue the command again.
RM21031	40	The RML is not available. Please contact the RML server system administrator to make the RML available and issue the command again.
RM21032	40	An invalid LSM was specified in the CAP description for the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM21034	40	The LSM is offline. Please contact the RML server system administrator to turn the LSM online and issue the command again.
RM21037	40	CAP is invalid on the RML server. Please contact the system administrator to correct the RMLS/CSC active CAP configuration and issue the command again.
RM21037	40	The CAP specified is invalid on the RML server. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM21039	40	CAP is not online at the RML server. Please select another active CAP and issue the command again.
RM2103A	40	CAP is in use on the RML server. Please select another CAP and issue the command again.
RM21044	0	Volume *volume identifier* is mounted in a tape drive. Dismount (DSMRMLVOL) volume and try the eject (EJTRMLVOL) again. See library server manuals for more detail on volumes in a device.

Table B-2 (Page 23 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM2104E	40	The wrong RML was specified in the CAP description. Please contact the system administrator to correct the RMLS/CSC active configuration and issue the command again.
RM2104F	0	Audit RML in progress, volume *volume identifier* not ejected. Wait until the audit RML has completed and try to elect (EJTRMLVOL) the tape volume again.
RM21050	40	Eject was not successful. A communication or ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and try the request again.
RM21051	40	Command has been cancelled on the RML server. Please issue the command again.
RM21053	40	Not authorized to the eject command on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM210FF	0	Volume *volume identifier* ejected successfully.
RM2140E	40	Volume *volume identifier* found in the server data base, but not found in the RML. The volume *volume identifier* has been removed from the server data base.
RM21412	40	Duplicate labeled volume *volume identifier* encountered. Volume *volume identifier* has a duplicate volume ID with another volume within the RML. The volume has been ejected in CAP *CAP identifier*. Change the VOLID and enter the volume again.
RM21413	40	Unreadable label encountered. An unreadable label on a volume was encountered within the RML. The volume has been ejected in CAP *CAP identifier*.
RM2141A	40	Volume *volume identifier* found in the RML and added to the server data base.
RM21450	40	Audit RML was not successful. A communication or ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and issue the request again.
RM21453	40	Not authorized to the Audit command on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM21529	40	The server was not found. Please check the configuration (WRKRMLCFGD) and reissue the command.
RM2153D	40	The volume *volume identifier* was found in a drive, but the drive is not in the RMLS configuration. Configure the drives for the RML using the WRKRMLCFGD command.
RM21550	40	Display RML Inventory was not successful. A communication ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and try the request again.
RM21553	40	Not authorized to the query volumes on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM21559	40	An error occurred while writing a record to member *member identifier* in file *file identifier* in library *library identifier*. Please refer to the previously listed messages in the job log.
RM21650	40	Display RML inventory was not successful. A communication or ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and try the request again.

Table B-2 (Page 24 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RM21653	40	Not authorized to query scratch volumes on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM21659	40	An error occurred while writing a record to member *member identifier* in file *file name* in library *library identifier*. Please refer to the previously listed messages in the job log.
RM21A27	40	One or more of the following characters: @ # $ has been specified in volume *volume identifier*. These characters are invalid with this type and version of server. Please reissue the command with a valid volume identifier.
RM21A28	40	You do not have the authority to query volume *volume identifier*. Access is denied to query volume *volume identifier* at the server.
RM21A29	40	The server was not found. Please check the configuration (WRKRMLCFGD) and reissue the command.
RM21A50	40	Query RML volumes was not successful. A communication or ACSAPI failure has occurred. Please contact the system administrator to verify the product is installed correctly and try the request again.
RM21A53	40	Not authorized to the query command on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM21AFF	0	Volume *volume identifier* found in physical location *cell location* with logical address *logical address*
RM2DC2A	40	RML server failed. Please contact the RML server system administrator to correct the problem and issue the command again.
RM2DC39	40	Not authorized to clear locked drives on the RML server. Please contact the RML server system administrator to obtain authority to the command and issue the command again.
RM61102	0	Write failed for connection: *connection identifier*. See detail messages for more information.
RM61103	0	Read failed for connection: *connection identifier* See detailed messages for more information.
RM61104	0	Translate failed for connection: *connection identifier*. See detail messages for more information.
RM61105	0	Open failed for connection: *connection identifier*. See detailed messages for more information.
RM61106	0	Open failed for connection: *connection identifier*. See detailed messages for more information.
RM61107	0	Close failed for connection: *connection identifier*. See detailed messages for more information.
RM6C863	0	LU 6.2 communications failure. Following information corresponds to the CPI communications verb executed. Verb: *verb identifier*, Return Code: *return code*, Error: *error number*.
RMDC809	20	Waiting for a response to a message on the QSYSOPR message queue.
RMX0211	40	You have entered an invalid option. Please retry with a valid option.
RMX1E01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all of the objects contained in it and reinstall RMLS/CSC.
RMX1E07	0	The specified resource that *resource identifier* is subordinate to is invalid. Please check the validity of this superordinate resource.

Table B-2 (Page 25 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX1E0A	0	Create configuration descriptions ended when user pressed F3.
RMX1E0B	0	Create configuration descriptions ended when user pressed F12.
RMX1E0E	0	An error occurred while writing to the configuration data base.
RMX1E18	40	The specified RML number has already been configured for the specified server.
RMX1E19	40	The specified LSM number has already been configured for the specified RML.
RMX1E1A	40	The specified CAP number has already been configured for the specified LSM.
RMX1E1B	40	The specified drive/panel number has already been configured for the specified LSM.
RMX1E1F	40	Only one *SERV class record may be active at a time.
RMX1E20	0	If the network type is *LU62, then the network address must be 8 characters or fewer.
RMX1E21	0	The communication side information object was not created. Please refer to the previously listed messages in the job log.
RMX1E23	0	A server description already exists with the same remote LU name or you have specified a remote LU name that is currently being used. Specify a unique remote LU name and create the server description again or delete the *CSI object that has the same name as the remote LU name you are trying to use. **Warning:** If you delete the existing *CSI object, you will disable communication to the remote LU that it was pointing to.
RMX1E25	0	You have specified an incorrect media type for the tape description. Dissimilar media types within the same RML are not supported at this time. Please choose the same media type, for this tape device, that has already been used for previously configured tape devices within the specified LSM.
RMX1E26	0	The upstream LSM and/or RML that *resource identifier* is subordinate to does not exist or is not active in the RMLS/CSC configuration database. Please check for the existence of these superordinate resources and ensure that they are active.
RMX1E2F	40	Maximum length for IP address exceeded.
RMX1E30	40	Maximum length for Port number exceeded.
RMX1E31	40	Invalid IP address.
RMX1E32	40	Port number has an invalid character.
RMX1EFF	0	You have successfully created the configuration for script
RMX1F01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX1F07	0	The specified resource that *resource identifier* is subordinate to is invalid. Please check the validity of this superordinate resource.
RMX1F0A	0	Change configuration descriptions ended when the user pressed F3.
RMX1F0B	0	Change configuration descriptions ended when the user pressed F12.

Table B-2 (Page 26 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX1F0E	0	An error occurred while writing to the configuration data base.
RMX1F18	40	The specified RML number has already been configured for the specified server.
RMX1F19	40	The specified LSM number has already been configured for the specified RML.
RMX1F1A	40	The specified CAP number has already been configured for the specified LSM.
RMX1F1B	40	The specified drive/panel number has already been configured for the specified LSM.
RMX1F1C	0	Configuration descriptions may not be changed while devices are allocated.
RMX1F1F	40	Only one *SRV class record may be active at a time.
RMX1F20	0	If the network type is *LU62, then the network address must be 8 characters or fewer.
RMX1F21	0	The communications side information object was not created. Please refer to the previously listed messages in the job log.
RMX1F22	0	The communication side information object was not deleted. Please refer to the previously listed messages in the job log.
RMX1F23	0	A server description already exists with the same remote LU name. Specify a unique remote LU name and create the server description again.
RMX1F24	0	The specified resource may not be changed because downstream tape device descriptions still exist.
RMX1F25	0	You have specified an incorrect media type for the tape description. Dissimilar media types within the same RML are not supported at this time. Please choose the same media type, for this tape device, that has already been used for previously configured tape devices within the specified LSM.
RMX1F26	0	The upstream LSM and/or RML that *resource identifier* is subordinate to does not exist or is inactive in the RMLS/CSC run-time configuration. Please check for the existence of these superordinate resources and ensure that they are active.
RMX1F27	0	You are not authorized to change certain underlying objects. Please refer to the job log for more detailed messages. In all likelihood, you do not have sufficient authority to change the *CSI object that is associated with the server description that you were trying to change. Obtain sufficient authority and try the change operation again.
RMX1F2F	40	Maximum length for IP address exceeded.
RMX1F30	40	Maximum length for Port number exceeded.
RMX1F31	40	Invalid IP address.
RMX1F32	40	Port number has an invalid character.
RMX1FFF	0	You have successfully created the configuration for script
RMX2001	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete the library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX200A	0	Display configuration descriptions ended when the user pressed F3.

Table B-2 (Page 27 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX200B	0	Display configuration descriptions ended when the user pressed F12.
RMX20FF	0	You have successfully displayed the configuration description for *configuration description identifier*.
RMX2A01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all of the objects contained in it and reinstall RMLS/CSC.
RMX2A07	0	The upstream resource *configuration description identifier* specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX2101	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX210A	0	Delete configuration descriptions ended when the user pressed F3.
RMX210B	0	Delete configuration descriptions ended when the user pressed F12.
RMX210E	0	An error occurred while writing to the configuration data base.
RMX211C	0	Configuration descriptions may not be deleted while devices are allocated.
RMX2122	0	The communication side information object was not deleted. Please refer to the previously listed messages in the job log.
RMX2124	0	The specified resource may not be deleted because downstream tape device descriptions still exist.
RMX21FF	0	You have successfully deleted the configuration description for *configuration description identifier*. If the *configuration description identifier* was of *SRV, *RML, or *LSM class, then you have removed all of the downstream descriptions that had *configuration description identifier* in their path from the active run-time configuration.
RMX2801	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX280E	0	An error occurred while writing to the configuration data base.
RMX2901	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX2907	0	The upstream resource, *configuration description identifier*, specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX290E	0	An error occurred while writing to the configuration data base.
RMX2918	40	The specified RML number has already been configured for server *server identifier*.
RMX2A0E	0	An error occurred while writing to the configuration data base.
RMX2A19	40	The specified LSM number has already been configured for RML *RML identifier*.
RMX2B01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.

Table B-2 (Page 28 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX2B07	0	The upstream resource *configuration description identifier* specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX2B0E	0	An error occurred while writing to the configuration data base.
RMX2B1A	40	The specified CAP number has already been configured for LSM *LSM identifier*.
RMX2C0E	0	An error occurred while writing to the configuration data base.
RMX2C01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX2C07	0	The upstream resource, *configuration description identifier*, which was specified for *configuration description identifier*, is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX2C1B	40	The specified drive/panel number has already been configured for LSM *LSM identifier*.
RMX2C25	0	You have specified an incorrect media type for tape description *tape identifier*. Dissimilar media types within the same RML are not supported at this time. Please choose the same media type, for this tape device, that has already been used for previously configured tape devices within the specified LSM.
RMX2C26	0	The upstream LSM and/or RML that *device identifier* is subordinate to does not exist or is not active in the RMLS/CSC configuration database. Please check for the existence of these superordinate resources and ensure that they are active.
RMX3201	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX320E	0	An error occurred while writing to the configuration data base.
RMX3301	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3307	0	The upstream resource, *configuration description identifier*, specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX330E	0	An error occurred while writing to the configuration data base.
RMX3318	40	The specified RML number has already been configured for server *server identifier*.
RMX3401	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3407	0	The upstream resource, *configuration description identifier*, specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX3419	40	The specified LSM number has already been configured for RML *RML identifier*.
RMX3424	0	LSM *LSM identifier* can not be changed because downstream tape device descriptions still exist. All of the downstream tape descriptions associated with the LSM *LSM identifier* must be deleted or changed to another LSM before *LSM identifer* can be changed.

Table B-2 (Page 29 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX340E	0	An error occurred while writing to the configuration data base.
RMX3501	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3507	0	The upstream resource, *configuration description identifier*, specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX350E	0	An error occurred while writing to the configuration data base.
RMX351A	40	The specified CAP number has already been configured for LSM *LSM identifier*.
RMX3601	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3607	0	The upstream resource, *configuration description identifier*, specified for *configuration description identifier* is either nonexistent or of the wrong class. Please specify a valid superordinate resource.
RMX360E	0	An error occurred while writing to the configuration data base.
RMX361B	40	The specified drive/panel number has already been configured for LSM *LSM identifier*.
RMX3625	0	You have specified an incorrect media type for tape description *tape identifier*. Dissimilar media types within the same RML are not supported at this time. Please choose the same media type, for this tape device, that has already been used for previously configured tape devices within the specified LSM.
RMX3626	0	The upstream LSM and/or RML that *configuration description identifier* is subordinate to does not exist or is inactive in the RMLS/CSC run-time configuration. Please check for the existence of these superordinate resources and ensure that they are active.
RMX3C01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3D01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3E01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX3F01	0	An inline file is missing from the RMLS/CSC configuration. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX4001	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX4601	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX460E	0	An error occurred while writing to the configuration data base.
RMX4701	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.

Table B-2 (Page 30 of 30). RMLS/CSC Message List		
Message ID	**Severity**	**Message Text**
RMX4724	0	RML *RML identifier* can not be deleted because downstream tape device descriptions still exist. All of the downstream tape descriptions associated with RML *RML identifier* must be deleted or changed to another RML before *RML identifier* can be deleted.
RMX470E	0	An error occurred while writing to the configuration data base.
RMX4801	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX4824	0	LSM *LSM identifier* can not be deleted because downstream tape device descriptions still exist. Tape descriptions associated with the RML that is upstream from LSM *LSM identifier* must be deleted or changed to another LSM before *LSM identifier* can be deleted. These descriptions may be assigned to an LSM other than *LSM identifier* but are downstream from the common RML.
RMX480E	0	An error occurred while writing to the configuration data base.
RMX4901	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX490E	0	An error occurred while writing to the configuration data base.
RMX4A01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX4A0E	0	An error occurred while writing to the configuration data base.
RMX6601	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX6901	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX6B01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX6C01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX6D01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.
RMX6E01	0	An inline file is missing from the RMLS/CSC configuration data base. Please exit WRKRMLCFGD and delete library RMLS and all objects contained in it and reinstall RMLS/CSC.

Appendix C. Example of Code for Break Message Handler Automation

The code in this appendix is an example of the code that can be used to enable the RMLS/CSC Break Message Handler. This code is presented only as an example. The sources of OSI200, OSI202, and OSI203 are contained in the srcpf RMLS/RMLSTOOLS.

The source code in the file RMLSTOOLS that is on the RMLS/CSC Version 1.2.2 installation tape is only for illustrative purposes. The source code in the file RMLSTOOLS works as coded. StorageTek has not fully tested the code. **The code is offered "AS IS", and all warranties, either expressed or implied, including, but not limited to, the implied warranties if merchantability and fitness for a particular purpose, are expressly disclaimed**. StorageTek is not liable for any damages, including, but not limited to, consequential, incidental, special, or indirect damages from the source code in the file RMLSTOOLS.

```
/*********************************************************************/
/*                                                                   */
/*   Copyright (c) 1997 by Storage Technology Corporation             */
/*                                                                   */
/*   Name          : OSI Break Message Handler (BMH)                 */
/*                   (OsiBrkHdl - OSI200)                            */
/*                                                                   */
/*   Function      : This routine receives control when a message    */
/*                   arrives on a queue that is in break mode and    */
/*                   has this routine associated with it.  OsiBrkHdl */
/*                   will either pass the message to QSYSOPR without */
/*                   action or act on the message, then inform       */
/*                   QSYSOPR that action has been taken.             */
/*                                                                   */
/*   Parameters                                                      */
/*        Input    : &QUENAM - the name of the queue containing the  */
/*                      message to be processed.                     */
/*                   &QUELIB - the name of the library containing    */
/*                      the queue                                    */
/*                   &MSGKEY - the reference key to the message      */
/*                      to be processed                              */
/*       Output    : None                                            */
/*                                                                   */
/*   Return Codes  : None                                            */
/*                                                                   */
/*                                                                   */
/*   Algorithm     : Remove any outdated messages                    */
/*                   Assign an appropriate message send type         */
/*                   Respond to msgs requiring special processing    */
/*                   Forward messages to QSYSOPR                     */
/*                                                                   */
/*   Additional    : 1. Special processing may mean issuing          */
```

```
/*                     an information message in conjuction with    */
/*                     a message being sent to QSYSOPR, or it may   */
/*                     mean providing automated processing of       */
/*                     messages arriving on the message queue.      */
/*                                                                  */
/*                  2. When inquiry messages are forwarded,         */
/*                     BrkMsgHdl waits for the reply from           */
/*                     QSYSOPR and returns the reply to the         */
/*                     originating program.                         */
/*                                                                  */
/*     Assumptions:                                                 */
/*                  1. One message queue per automated device       */
/*                  2. QSYSOPR message queue used for non-automated */
/*                     devices under RMLS/CSC control               */
/*                  3. This pgm will handle all inquiry messages    */
/*                     associated with the device that require      */
/*                     automated RMLS/CSC action                    */
/*                  4. An external program will be provided to      */
/*                     switch between manual and automated operation*/
/*                     of the automated devices under RMLS/CSC      */
/*                     control                                      */
/*                  5. An external program will be provided to      */
/*                     associate the message queue with the         */
/*                     automated devices during RMLS/CSC            */
/*                     startup or operation                         */
/*                  6. The message queue will be cleared prior to   */
/*                     putting the queue into break mode if         */
/*                     messages previously on the queue are not     */
/*                     to be processed.                             */
/*                                                                  */
/*     Req processing:                                              */
/*                  Due to the nature of the environment in which   */
/*                  this program operates, there is no request      */
/*                  processing program associated with it.  There   */
/*                  is also no error handler available in at        */
/*                  least some environments.  Therefore, this       */
/*                  program must be a request processing program.   */
/*                                                                  */
/*     Loop detection                                                */
/*                  To avoid complex processing to determine if     */
/*                  the BMH is entering a looping condition, it     */
/*                  checks to see if the same identical message     */
/*                  is issued twice with the same device names      */
/*                  and volume names.  This is done by placing a    */
/*                  received message into a message queue created   */
/*                  at the time a device is allocated.  The queue   */
/*                  is removed when the device is deallocated.      */
/*                                                                  */
/*                                                                  */
/*------------------------------------------------------------      */
/*   Maintenance History:                                           */
/*                                                                  */
/*                                                                  */
/*                                                                  */
/*                                                                  */
```

```
/*                                                                   */
/*                                                                   */
/*********************************************************************/

            PGM        PARM(&QUENAM &QUELIB &MSGKEY)

/*          Input parameters                                         */
            DCL        VAR(&QUENAM) TYPE(*CHAR) LEN(10)
            DCL        VAR(&QUELIB) TYPE(*CHAR) LEN(10)
            DCL        VAR(&MSGKEY) TYPE(*CHAR) LEN(4)

/*          Copyright requirement                                    */
            DCL       VAR(&COPYRIGHT) TYPE(*CHAR) LEN(51) +
                        VALUE(' Copyright (c) 1996, Storage +
                        Technology Corporation ')

/*          Rcv msg variables                                        */
            DCL        VAR(&MSG) TYPE(*CHAR) LEN(128)
            DCL        VAR(&MSGLEN) TYPE(*DEC) LEN(5 0) VALUE(0)
            DCL        VAR(&MSGDTA) TYPE(*CHAR) LEN(128)
            DCL        VAR(&MSGDTALEN) TYPE(*DEC) LEN(5 0) VALUE(0)
            DCL        VAR(&MSGID) TYPE(*CHAR) LEN(7) VALUE('       ')
            DCL        VAR(&MSGSEV) TYPE(*DEC) LEN(2 0) VALUE(0)
            DCL        VAR(&MSGRTNTYPE) TYPE(*CHAR) LEN(2) VALUE('  ')
            DCL        VAR(&RPYDTA) TYPE(*CHAR) LEN(128) +
                         VALUE('XXXXX')
            DCL        VAR(&RPYDTALEN) TYPE(*DEC) LEN(5 0) VALUE(0)

            DCL        VAR(&OLDKEY) TYPE(*CHAR) LEN(4)
            DCL        VAR(&OLDMSG) TYPE(*CHAR) LEN(128)
            DCL        VAR(&OLDMSGLEN) TYPE(*DEC) LEN(5 0) VALUE(0)
            DCL        VAR(&OLDDTA) TYPE(*CHAR) LEN(128)
            DCL        VAR(&OLDDTALEN) TYPE(*DEC) LEN(5 0) VALUE(0)
            DCL        VAR(&OLDMSGID) TYPE(*CHAR) LEN(7) +
                         VALUE('       ')
            DCL        VAR(&OLDMSGSEV) TYPE(*DEC) LEN(2 0) VALUE(0)
            DCL        VAR(&OLDRTNTYPE) TYPE(*CHAR) LEN(2) VALUE('  ')

/*          Message file information                                 */
            DCL        VAR(&MSGFID) TYPE(*CHAR) LEN(10) +
                         VALUE('          ')
            DCL        VAR(&MSGFIDLIB) TYPE(*CHAR) LEN(10) +
                         VALUE('          ')

            DCL        VAR(&OLDFID) TYPE(*CHAR) LEN(10) +
                         VALUE('          ')
            DCL        VAR(&OLDFIDLIB) TYPE(*CHAR) LEN(10) +
                         VALUE('          ')

/*          Additional variables needed for SNDPGMMSG                */
            DCL        VAR(&MSGSNDTYPE) TYPE(*CHAR) LEN(7) +
                         VALUE('*INFO  ')
            DCL        VAR(&QSYSOPR) TYPE(*CHAR) LEN(10) +
                         VALUE('*SYSOPR   ')  /* *SYSOPR */
            DCL        VAR(&QHST) TYPE(*CHAR) LEN(10) +
```

```
                    VALUE('QHST      ')   /* QHST */
             DCL    VAR(&REQUESTER) TYPE(*CHAR) LEN(10) +
                    VALUE('*REQUESTER')   /* *REQUESTER */
             DCL    VAR(&OLDSNDTYPE) TYPE(*CHAR) LEN(7) +
                    VALUE('*INFO  ')      /* Constant value    */

/*           Misc variables                                        */
             /* Return Code */
             DCL    VAR(&RTNCD) TYPE(*CHAR) LEN(2) VALUE('  ')

             /* Device name */
             DCL    VAR(&DEVNAM) TYPE(*CHAR) LEN(10) +
                    VALUE('          ')
             /* Response value */
             DCL    VAR(&RSPVAL) TYPE(*CHAR) LEN(1) VALUE('C')

             /* Automatic action flag */
             DCL    VAR(&AUTACTFLG) TYPE(*CHAR) LEN(1) VALUE('0')

             /* Variables associated with stg que for loop detection */
             /* These messages are used to detect a looping condition*/
             DCL    VAR(&STGQUENAM) TYPE(*CHAR) LEN(10) +
                    VALUE('          ')
             DCL    VAR(&STGMSG) TYPE(*CHAR) LEN(521)
             DCL    VAR(&STGLEN) TYPE(*DEC) LEN(5 0) VALUE(0)

             /* Action flag for specific messages */
             DCL    VAR(&MSGRSPFLG) TYPE(*CHAR) LEN(1) +
                    VALUE('.')

/*========================== Start of Code ==========================*/

/*           Global message monitor                                */
             MONMSG     MSGID(CPF0000 UIS0000 PSE0000 RM00000) +
                          EXEC(GOTO CMDLBL(REQEXC))

/*           Establish this program as a request processing pgm    */
             SNDPGMMSG  MSG('Establish request processing') +
                          TOPGMQ(*SAME) MSGTYPE(*RQS)

             RCVMSG     PGMQ(*SAME) MSGTYPE(*RQS) RMV(*NO)

/*           Receive messages sequentially                         */
             RCVMSG     MSGQ(&QUELIB/&QUENAM) MSGKEY(&MSGKEY) +
                          RMV(*NO) MSG(&MSG) MSGLEN(&MSGLEN) +
                          MSGDTA(&MSGDTA) MSGDTALEN(&MSGDTALEN) +
                          MSGID(&MSGID) SEV(&MSGSEV) +
                          RTNTYPE(&MSGRTNTYPE) MSGF(&MSGFID) +
                          SNDMSGFLIB(&MSGFIDLIB)

/* --------- Remove any old messages                               */
 RMVOLD:  /* DO UNTIL loop, start point                            */
             RCVMSG     MSGQ(&QUELIB/&QUENAM) MSGTYPE(*PRV) +
                          MSGKEY(&MSGKEY) RMV(*YES) KEYVAR(&OLDKEY) +
                          MSG(&OLDMSG) MSGLEN(&OLDMSGLEN) +
```

```
                          MSGDTA(&OLDDTA) MSGDTALEN(&OLDDTALEN) +
                          MSGID(&OLDMSGID) SEV(&OLDMSGSEV) +
                          RTNTYPE(&OLDRTNTYPE) MSGF(&OLDFID) +
                          SNDMSGFLIB(&OLDFIDLIB)

/*           Log the old messages                                    */
             IF         COND(&OLDKEY *NE '    ') THEN(DO)

             SNDPGMMSG  MSGID(REDC802) MSGF(*LIBL/RMLSMSG) +
                          MSGDTA(&QUENAM *CAT &QUELIB) +
                          TOMSGQ(&QHST) MSGTYPE(&OLDSNDTYPE) +
                                              /* GEN MSGID? */

             ENDDO

/*           Special response required for messages with text        */
             IF         COND(  (&OLDMSGID *EQ '       ') +
                          *AND (&OLDKEY   *NE '    '   )) THEN(DO)
             SNDPGMMSG  MSG(&MSG) TOMSGQ(&QHST) MSGTYPE(&OLDSNDTYPE)
             ENDDO

/*           Response required for messages sent from message files  */
             IF         COND(  (&OLDMSGID *NE '       ') +
                          *AND (&OLDKEY   *NE '    '   )) THEN(DO)
             SNDPGMMSG  MSGID(&OLDMSGID) MSGF(&OLDFIDLIB/&OLDFID) +
                          MSGDTA(&OLDDTA) TOUSR(&QSYSOPR) +
                          MSGTYPE(&OLDSNDTYPE)
             ENDDO

/*           DO UNTIL loop, termination point                        */
             IF         COND(&OLDKEY *NE '    ') THEN(GOTO +
                          CMDLBL(RMVOLD))

/* --------- Assign the message type for the message to send         */
             IF         COND(&MSGRTNTYPE *EQ '01') THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) VALUE('*COMP'))
             ELSE       CMD( +
                          IF COND(&MSGRTNTYPE *EQ '02') THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) VALUE('*DIAG')))
             ELSE       CMD( +
                          IF COND(&MSGRTNTYPE *EQ '04') THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) VALUE('*INFO')))
             ELSE       CMD( +
                          IF COND(&MSGRTNTYPE *EQ '05') THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) VALUE('*INQ')))
             ELSE       CMD( +
                          IF COND((&MSGRTNTYPE *EQ '08') +
                             *OR (&MSGRTNTYPE *EQ '10')) THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) VALUE('*RQS')))
             ELSE       CMD( +
                          IF COND(&MSGRTNTYPE *EQ '14') THEN( +
                            CHGVAR VAR(&MSGSNDTYPE) +
                                    VALUE('*NOTIFY')))
             ELSE       CMD( +
                          IF COND(&MSGRTNTYPE *EQ '15') THEN( +
```

```
                              CHGVAR VAR(&MSGSNDTYPE) +
                                     VALUE('*ESCAPE')))

/* --------- Response to unexpected reply messages                   */
             ELSE       CMD( +
                           IF COND((&MSGRTNTYPE *EQ '21') +
                              *OR  (&MSGRTNTYPE *EQ '22') +
                              *OR  (&MSGRTNTYPE *EQ '23') +
                              *OR  (&MSGRTNTYPE *EQ '24') +
                              *OR  (&MSGRTNTYPE *EQ '25')) THEN(DO))
                             CHGVAR VAR(&MSGSNDTYPE) +
                                    VALUE('*INFO')
                             CHGVAR VAR(&MSGID) +
                                    VALUE('REDC801')  /* GEN MSGID? */
                             CHGVAR VAR(&MSGFID) +
                                    VALUE('RMLSMSG')
                             CHGVAR VAR(&MSGFIDLIB) +
                                    VALUE('*LIBL')
                             CHGVAR VAR(&MSGDTA) +
                                    VALUE(&QUENAM *CAT &QUELIB)
                           ENDDO

/* --------- Response to unexpected message type                     */
             ELSE       CMD( +
                           CHGVAR VAR(&MSGSNDTYPE) VALUE('*INFO'))

/* --------- Response to messages requiring ref to user's guide      */
             IF         COND( (&MSGID *EQ 'CPA4262') +
                           *OR (&MSGID *EQ 'CPA6745')) THEN(DO)

             SNDPGMMSG  MSGID(REDC807) MSGF(*LIBL/RMLSMSG) +
                           TOUSR(&REQUESTER) MSGTYPE(*INFO)
             ENDDO

/* --------- Recovery for looping described in header                */
             IF         COND( (&MSGID *EQ 'CPA40A0') +
                           *OR (&MSGID *EQ 'CPA40A1') +
                           *OR (&MSGID *EQ 'CPA4059') +
                           *OR (&MSGID *EQ 'CPA4089') +
                           *OR (&MSGID *EQ 'CPA4124') +
                           *OR (&MSGID *EQ 'CPA4264') +
                           *OR (&MSGID *EQ 'CPA4278') +
                           *OR (&MSGID *EQ 'CPA4268')) THEN(DO)

/*           Gen the name of the queue in which the old msg is stored*/
             CHGVAR     VAR(&STGQUENAM) VALUE(&QUENAM *TCAT 'Z')

/*           Retrieve the previous message                           */
             RCVMSG     MSGQ(&QUELIB/&STGQUENAM) MSGKEY(*NONE) +
                           RMV(*YES) MSG(&STGMSG) MSGLEN(&STGLEN)
             MONMSG     MSGID(CPF0000)

/*           Exception conditions may result in > 1 msg on the queue */
             CLRMSGQ    MSGQ(&QUELIB/&STGQUENAM)  /* Insure msg sync*/
             MONMSG     MSGID(CPF0000)
```

```
/*          Store the most recent message                            */
            SNDPGMMSG  MSG(&MSGDTA) TOMSGQ(&QUELIB/&STGQUENAM)
            MONMSG     MSGID(CPF0000)

/*          Condition chk within if stmnt to avoid two empty buffers*/
            IF         COND(&MSGDTA *EQ &STGMSG) THEN(DO)

            SNDPGMMSG  MSGID(&MSGID) MSGF(&MSGFIDLIB/&MSGFID) +
                         MSGDTA(&MSGDTA) TOUSR(&REQUESTER) +
                         MSGTYPE(*INFO)

            SNDPGMMSG  MSGID(REDC808) MSGF(*LIBL/RMLSMSG) +
                         TOUSR(&REQUESTER) MSGTYPE(*INFO)

/*          Terminate processing for the associated device           */
            CHGVAR     VAR(&RSPVAL) VALUE('C')

            SNDRPY     MSGKEY(&MSGKEY) MSGQ(&QUELIB/&QUENAM) +
                         RPY(&RSPVAL) RMV(*YES)
            MONMSG     MSGID(CPF0000)

            RETURN     /* No additional processing required */

            ENDDO

            ENDDO  /* For looping recovery */

/* --------- Response to messages requiring specific TMLS actions    */

            IF         COND( (&MSGRSPFLG *EQ 'C') ) THEN(DO)

            CHGVAR     VAR(&RSPVAL) VALUE('C')

            SNDRPY     MSGKEY(&MSGKEY) MSGQ(&QUELIB/&QUENAM) +
                         RPY(&RSPVAL) RMV(*YES)
            MONMSG     MSGID(CPF0000)

            SNDPGMMSG  MSGID(REDC806) MSGF(*LIBL/RMLSMSG) +
                         TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                         MSGDTA(&DEVNAM *CAT &MSGID)
            RETURN     /* No additional processing required */
            ENDDO

/* --------- Response to messages requiring automated action         */
            IF         COND( (&MSGID *EQ 'CPA40A0') +
                         *OR (&MSGID *EQ 'CPA40A1') +
                         *OR (&MSGID *EQ 'CPA4059') +
                         *OR (&MSGID *EQ 'CPA4088') +
                         *OR (&MSGID *EQ 'CPA4089') +
                         *OR (&MSGID *EQ 'CPA4124') +
                         *OR (&MSGID *EQ 'CPA4263') +
                         *OR (&MSGID *EQ 'CPA4264') +
                         *OR (&MSGID *EQ 'CPA6748') +
                         *OR (&MSGID *EQ 'CPA5230') +
```

```
                            *OR (&MSGID *EQ 'CPA4268') +
                            *OR (&MSGID *EQ 'CPA4278') +
                            *OR (&MSGRSPFLG *EQ 'M')) THEN(DO)

                  CHGVAR    VAR(&AUTACTFLG) VALUE('1')

                  CALL      PGM(*LIBL/OSI202) PARM(&RTNCD &RSPVAL +
                              &DEVNAM &MSGID &MSGDTA)

                  SNDRPY    MSGKEY(&MSGKEY) MSGQ(&QUELIB/&QUENAM) +
                              RPY(&RSPVAL) RMV(*YES)

/*                          Avoid problems if message accidentally sent   */
                  CHGVAR    VAR(&MSGSNDTYPE) VALUE('*INFO')
                  ENDDO

/*                Handle RMLS error                                       */
                  IF        COND(&RTNCD *EQ '03') THEN(DO)

                  SNDPGMMSG MSGID(&MSGID) MSGF(&MSGFIDLIB/&MSGFID) +
                              MSGDTA(&MSGDTA) TOUSR(&REQUESTER) +
                              MSGTYPE(*INFO)

                  SNDPGMMSG MSGID(REDC803) MSGF(*LIBL/RMLSMSG) +
                              TOUSR(&REQUESTER) MSGTYPE(*INFO) +
                              MSGDTA(&DEVNAM)
                                                /* GEN MSGID? */

                  RETURN    /* No additional processing required */

                  ENDDO

/*                Handle exception occurring in OSI202                     */
                  IF        COND(&RTNCD *EQ '04') THEN(DO)
                  GOTO      CMDLBL(REQEXC)
                  ENDDO


/*                Handle exception occurring in OSI203                     */
                  IF        COND(&RTNCD *EQ '05') THEN(DO)
                  GOTO      CMDLBL(REQEXC)
                  ENDDO

/*                Standard processing for SUCCESS return codes            */
                  ELSE      CMD(IF COND(&RTNCD *EQ 'FF') THEN(DO))

                  SNDPGMMSG MSGID(REDC806) MSGF(*LIBL/RMLSMSG) +
                              TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                              MSGDTA(&DEVNAM *CAT &MSGID)

                  RMVMSG    MSGQ(&QUELIB/&QUENAM) MSGKEY(&MSGKEY)
                  MONMSG    MSGID(CPF2410)
                                                /* GEN MSGID? */
                  RETURN    /* No additional processing required */
                  ENDDO
```

```
/*          Flag an error if the return code is not correctly set   */
            ELSE       CMD(IF COND(&AUTACTFLG *EQ '1') THEN(DO))

            SNDPGMMSG  MSGID(REDC806) MSGF(*LIBL/RMLSMSG) +
                         TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                         MSGDTA(&DEVNAM *CAT &MSGID)

            SNDPGMMSG  MSGID(REDC804) MSGF(*LIBL/RMLSMSG) +
                         TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                         MSGDTA(&MSGID)
                                        /* GEN MSGID? */

            RMVMSG     MSGQ(&QUELIB/&QUENAM) MSGKEY(&MSGKEY)
            MONMSG     MSGID(CPF2410)

            RETURN     /* No additional processing required */
            ENDDO


/* --------- Handle messages that were not automated                */
/*          Processing for inquiry messages                         */
            IF         COND(&MSGSNDTYPE *EQ '*INQ   ') THEN(DO)
            SNDPGMMSG  MSGID(&MSGID) MSGF(&MSGFIDLIB/&MSGFID) +
                         MSGDTA(&MSGDTA) TOUSR(&QSYSOPR) +
                         MSGTYPE(&MSGSNDTYPE) RPYMSGQ(*PGMQ)

            SNDUSRMSG  MSGID(RMDC809) MSGF(*LIBL/RMLSMSG) +
                         MSGDTA(&MSGID) MSGTYPE(*INFO) TOMSGQ(*EXT)
            MONMSG     MSGID(CPF0000)

            RCVMSG     MSGQ(*PGMQ) MSGTYPE(*RPY) WAIT(*MAX) +
                         MSG(&RPYDTA) MSGLEN(&RPYDTALEN) +
                         MSGDTALEN(&MSGDTALEN) RTNTYPE(&MSGRTNTYPE)

            SNDRPY     MSGKEY(&MSGKEY) MSGQ(&QUELIB/&QUENAM) +
                         RPY(&RPYDTA) RMV(*YES)

            ENDDO

/*          For text messages                                       */
            ELSE       CMD(IF COND(&MSGID *EQ '       ') THEN(DO))
            SNDPGMMSG  MSG(&MSG) TOUSR(&QSYSOPR) MSGTYPE(&MSGSNDTYPE)
            ENDDO

/*          For messages with message identifiers                   */
            ELSE       DO
            SNDPGMMSG  MSGID(&MSGID) MSGF(&MSGFIDLIB/&MSGFID) +
                         MSGDTA(&MSGDTA) TOUSR(&QSYSOPR) +
                         MSGTYPE(&MSGSNDTYPE)
            ENDDO

/*          Remove the message that activated the break program     */
            RMVMSG     MSGQ(&QUELIB/&QUENAM) MSGKEY(&MSGKEY)
            MONMSG     MSGID(CPF2410)
```

```
/*           Program exit point                                      */
             GOTO PGMEXIT

/* ---------                                                         */
/*           Handle processing for exceptions and End Requests        *

REQEXC:      SNDPGMMSG  MSGID(REDC806) MSGF(*LIBL/RMLSMSG) +
                          TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                          MSGDTA(&DEVNAM *CAT &MSGID)
             MONMSG     MSGID(CPF0000)

             SNDPGMMSG  MSGID(REDC805) MSGF(*LIBL/RMLSMSG) +
                          TOUSR(&QSYSOPR) MSGTYPE(*INFO) +
                          MSGDTA(&MSGID)
             MONMSG     MSGID(CPF0000)
                                          /* GEN MSGID? */

             CHGVAR     VAR(&RSPVAL) VALUE('C')

             SNDRPY     MSGKEY(&MSGKEY) MSGQ(&QUELIB/&QUENAM) +
                          RPY(&RSPVAL) RMV(*YES)
             MONMSG     MSGID(CPF0000)

             RMVMSG     MSGQ(&QUELIB/&QUENAM) MSGKEY(&MSGKEY)
             MONMSG     MSGID(CPF0000)

             RMVMSG     MSGQ(&QUELIB/&QUENAM) CLEAR(*OLD)
             MONMSG     MSGID(CPF0000)

PGMEXIT:

             ENDPGM

/*****************************************************************/
/*                                                               */
/*   Copyright (c) 1997 by Storage Technology Corporation         */
/*                                                               */
/*   Name          : OSI Break Message Handler                   */
/*                   (OsiAtoRsp - OSI202)                        */
/*                                                               */
/*   Function      : This routine handles device messages that    */
/*                   require automated action by RMLS/CSC.       */
/*                                                               */
/*   Parameters                                                  */
/*        Input    : &MSGID - message identifier                 */
/*                   &MSGDTA - data fields associated with messages */
/*                      being processed                          */
/*       Output    : &RTNCD - return code                        */
/*                   &RSPVAL - response to a device inquiry      */
/*                      message                                  */
/*                   &DEVNAM - name of the device for which     */
/*                      automated action is required             */
/*                                                               */
```

```
/*   Return Codes  : OSI_DEV_PROBLEM (03) - this routine determined  */
/*                       that a device routine occurred from which it  */
/*                       cannot recover                                */
/*                                                                     */
/*                 : OSI_202_EXC (04) - An un-monitored exception    */
/*                       occured in this routine                       */
/*                                                                     */
/*                 : OSI_203_EXC (05) - An un-monitored exception    */
/*                       occured in OSI203                             */
/*                                                                     */
/*                   OSI_SUCCESS (FF) - the OSI operation was        */
/*                       successful                                    */
/*                                                                     */
/*   Algorithm     : None                                            */
/*                                                                     */
/*   Additional    : None                                            */
/*                                                                     */
/*---------------------------------------------------------------      */
/*   Maintenance History:                                              */
/*                                                                     */
/*                                                                     */
/*                                                                     */
/***********************************************************************/

             PGM        PARM(&RTNCD &RSPVAL +
                           &DEVNAM &MSGID &MSGDTA)

/*           Input parameters                                          */

             DCL        VAR(&RTNCD)  TYPE(*CHAR) LEN(2)
             DCL        VAR(&RSPVAL) TYPE(*CHAR) LEN(1)
             DCL        VAR(&DEVNAM) TYPE(*CHAR) LEN(10)
             DCL        VAR(&MSGID)  TYPE(*CHAR) LEN(7)
             DCL        VAR(&MSGDTA) TYPE(*CHAR) LEN(128)

/*           COPYRIGHT REQUIREMENT                                     */
             DCL       VAR(&COPYRIGHT) TYPE(*CHAR) LEN(51) +
                         VALUE(' COPYRIGHT (C) 1996, STORAGE +
                         TECHNOLOGY CORPORATION ')

/*           Other variables                                           */
             DCL        VAR(&VOLNAM) TYPE(*CHAR) LEN(8) VALUE(*SCRATCH)


/*========================== START OF CODE ==========================*/

/*           Global message monitor                                    */
             MONMSG     MSGID(CPF0000 UIS0000 PSE0000 RM00000) +
                          EXEC(GOTO CMDLBL(EXCPRC))

/* --------- Load volume script on device &2, Rsp: "G"                   */
             IF         COND( (&MSGID *EQ 'CPA40A0') +
                          *OR (&MSGID *EQ 'CPA40A1')) THEN(DO)

             CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 11 10))
```

```
             CHGVAR     VAR(&VOLNAM) VALUE(%SST(&MSGDTA  1 6))
             MNTRMLVOL  VOL(&VOLNAM) DEV(&DEVNAM)
             MONMSG     MSGID(RM0020F RM00262 RM0021D) EXEC(CALL +
                          PGM(OSI203) PARM(&RTNCD &RSPVAL &VOLNAM +
                          &DEVNAM)) /* Temp error?     */
             MONMSG     MSGID(RM002FF)
             IF         COND(&RTNCD *EQ '05') THEN(RETURN)
             CHGVAR     VAR(&RSPVAL) VALUE('G')
             CHGVAR     VAR(&RTNCD)  VALUE('FF')
             RETURN
             ENDDO

/* --------- Load volume 6 on device &4, Rsp: "R"                   */
             IF         COND( (&MSGID *EQ 'CPA4059') +
                          *OR (&MSGID *EQ 'CPA4124') +
                          *OR (&MSGID *EQ 'CPA4268') +
                          *OR (&MSGID *EQ 'CPA4264')) THEN(DO)

             CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
             CHGVAR     VAR(&VOLNAM) VALUE(%SST(&MSGDTA 47 52))
             MNTRMLVOL  VOL(&VOLNAM) DEV(&DEVNAM)
             MONMSG     MSGID(RM0020F RM00262 RM0021D) EXEC(CALL +
                          PGM(OSI203) PARM(&RTNCD &RSPVAL &VOLNAM +
                          &DEVNAM)) /* Temp error?     */
             MONMSG     MSGID(RM002FF)
             IF         COND(&RTNCD *EQ '05') THEN(RETURN)
             CHGVAR     VAR(&RSPVAL) VALUE('R')
             CHGVAR     VAR(&RTNCD)  VALUE('FF')
             RETURN
             ENDDO

/* --------- Load volume 5 on device &4, Rsp: "G"                   */
             IF         COND( (&MSGID *EQ 'CPA4089')) THEN(DO)

             CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
             CHGVAR     VAR(&VOLNAM) VALUE(%SST(&MSGDTA 41 46))
             MNTRMLVOL  VOL(&VOLNAM) DEV(&DEVNAM)
             MONMSG     MSGID(RM0020F RM00262 RM0021D) EXEC(CALL +
                          PGM(OSI203) PARM(&RTNCD &RSPVAL &VOLNAM +
                          &DEVNAM)) /* Temp error?     */
             MONMSG     MSGID(RM002FF)
             IF         COND(&RTNCD *EQ '05') THEN(RETURN)
             CHGVAR     VAR(&RSPVAL) VALUE('G')
             CHGVAR     VAR(&RTNCD)  VALUE('FF')
             RETURN
             ENDDO

/* --------- Load volume 5 on device &4, Rsp: "R"  (Dev not ready?)   *
             IF         COND( (&MSGID *EQ 'CPA4263')) THEN(DO)

             CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
             CHGVAR     VAR(&VOLNAM) VALUE(%SST(&MSGDTA 41 46))
             MNTRMLVOL  DEV(&DEVNAM) VOL(&VOLNAM)

/*           Did the MNTRMLVOL correctly load the requested tape?    */
```

```
            MONMSG     MSGID(RM002FF) EXEC(GOTO +
                         CMDLBL(MTDTAP))
            MONMSG     MSGID(RM00255)

/*          The load failed, either device prob or tape unloaded    */
/*          -> Do recovery for rewound and unloaded situation       */
            DSMRMLVOL  VOL(*DEV) DEV(&DEVNAM) FORCE(*YES)
            MONMSG     MSGID(RM003FF)      /* Prevent abend         */
            MNTRMLVOL  DEV(&DEVNAM) VOL(&VOLNAM)

/*          If volume load successful, allow continued processing   */
            MONMSG     MSGID(RM002FF) EXEC(GOTO MTDTAP)

/*          Otherwise, kill the processing due to an RMLS error     */
            CHGVAR     VAR(&RSPVAL) VALUE('C')
            CHGVAR     VAR(&RTNCD)  VALUE('03')
            RETURN
MTDTAP:
/*          The tape was not mounted and we mounted the correct vol */
            CHGVAR     VAR(&RSPVAL) VALUE('R')
            CHGVAR     VAR(&RTNCD)  VALUE('FF')
            RETURN
            ENDDO

/* --------- Load scratch volume on device &4, Rsp: "G"              */
            IF         COND( (&MSGID *EQ 'CPA4088')) THEN(DO)

            CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
            MNTRMLVOL  DEV(&DEVNAM)
            MONMSG     MSGID(RM0020F RM00262 RM0021D) EXEC(CALL +
                         PGM(OSI203) PARM(&RTNCD &RSPVAL &VOLNAM +
                         &DEVNAM)) /* Temp error?     */
            MONMSG     MSGID(RM002FF)
            IF         COND(&RTNCD *EQ '05') THEN(RETURN)
            CHGVAR     VAR(&RSPVAL) VALUE('G')
            CHGVAR     VAR(&RTNCD)  VALUE('FF')
            RETURN
            ENDDO

/* --------- Load scratch volume on device &4, Rsp: "I"              */
            IF         COND( (&MSGID *EQ 'CPA6748') +
                         *OR (&MSGID *EQ 'CPA5230')) THEN(DO)

            CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
            MNTRMLVOL  DEV(&DEVNAM)
            MONMSG     MSGID(RM0020F RM00262 RM0021D) EXEC(CALL +
                         PGM(OSI203) PARM(&RTNCD &RSPVAL &VOLNAM +
                         &DEVNAM)) /* Temp error?     */
            MONMSG     MSGID(RM002FF)
            IF         COND(&RTNCD *EQ '05') THEN(RETURN)
            CHGVAR     VAR(&RSPVAL) VALUE('I')
            CHGVAR     VAR(&RTNCD)  VALUE('FF')
            RETURN
            ENDDO
```

```
/* --------- Load scratch vol on device &4, Rsp: "R" (dev not ready?) */
             IF         COND( (&MSGID *EQ 'CPA4086') +
                          *OR (&MSGID *EQ 'CPA4278')) THEN(DO)

             CHGVAR     VAR(&DEVNAM) VALUE(%SST(&MSGDTA 31 40))
             MNTRMLVOL  DEV(&DEVNAM)

/*           Did the MNTRMLVOL correctly load the requested tape?    */
             MONMSG     MSGID(RM002FF) EXEC(GOTO +
                          CMDLBL(MTDTAP2))
             MONMSG     MSGID(RM00255)

/*           The load failed, either device prob or tape unloaded   */
/*           -> Do recovery for rewound and unloaded situation       */
             DSMRMLVOL  VOL(*DEV) DEV(&DEVNAM) FORCE(*YES)
             MONMSG     MSGID(RM003FF)      /* Prevent abend         */
             MNTRMLVOL  DEV(&DEVNAM)

/*           If volume load successful, allow continued processing   */
             MONMSG     MSGID(RM002FF) EXEC(GOTO MTDTAP2)

/*           Otherwise, kill the processing due to an RMLS error     */
             CHGVAR     VAR(&RSPVAL) VALUE('C')
             CHGVAR     VAR(&RTNCD)  VALUE('03')
             RETURN
MTDTAP2:
/*           The tape was not mounted and we mounted the correct vol */
             CHGVAR     VAR(&RSPVAL) VALUE('R')
             CHGVAR     VAR(&RTNCD)  VALUE('FF')
             RETURN
             ENDDO

/* ---------                                                         */
/*           Handle processing for exceptions                        */

EXCPRC:
             CHGVAR     VAR(&RSPVAL) VALUE('C')
             CHGVAR     VAR(&RTNCD)  VALUE('04')
             RETURN

             ENDPGM
/*****************************************************************/
/*                                                                */
/*   Copyright (c) 1997 by Storage Technology Corporation          */
/*                                                                */
/*   Name          : OSI Break Message Handler                     */
/*                   - Retry Implicit Dismount  (rsp to RM0020F)   */
/*                   (OsiRtyMnt - OSI203)                         */
/*                                                                */
/*   Function      : This routine handles failure of implicit      */
/*                   dismounts associated with the MNTRMLVOL cmd.  */
/*                                                                */
/*   Parameters                                                   */
/*       Input     : &VOLNAM - volume to be mounted                */
/*                   &DEVNAM - name of the device for which       */
```

```
/*                      automated action is required                */
/*       Output    : None                                           */
/*                                                                   */
/*   Return Codes  : OSI_203_EXC (05) - An un-monitored exception    */
/*                      occurred in this routine                      */
/*                                                                   */
/*   Algorithm     : None                                           */
/*                                                                   */
/*   Additional    : None                                           */
/*                                                                   */
/*-------------------------------------------------------------      */
/*   Maintenance History:                                            */
/*                                                                   */
/*                                                                   */
/*                                                                   */
/*********************************************************************/

             PGM        PARM(&RTNCD &RSPVAL &VOLNAM &DEVNAM)

/*           Input parameters                                        */

             DCL        VAR(&RTNCD)  TYPE(*CHAR) LEN(2)
             DCL        VAR(&RSPVAL) TYPE(*CHAR) LEN(1)
             DCL        VAR(&DEVNAM) TYPE(*CHAR) LEN(10)
             DCL        VAR(&VOLNAM) TYPE(*CHAR) LEN(8)

/*           COPYRIGHT REQUIREMENT                                   */
             DCL       VAR(&COPYRIGHT) TYPE(*CHAR) LEN(51) +
                         VALUE(' COPYRIGHT (C) 1996, STORAGE +
                         TECHNOLOGY COPORATION ')


/*========================== START OF CODE ==========================*/

/*           Global message monitor                                  */
             MONMSG     MSGID(CPF0000 UIS0000 PSE0000 RM00000) +
                          EXEC(GOTO CMDLBL(EXCPRC))

/* --------- Wait for network problems to recover                    */
             DLYJOB     DLY(60)
             MNTRMLVOL  DEV(&DEVNAM) VOL(&VOLNAM)
             MONMSG     MSGID(RM002FF) EXEC(RETURN)

/* ---------                                                         */
/*           Handle processing for exceptions                        */

EXCPRC:
             CHGVAR     VAR(&RSPVAL) VALUE('C')
             CHGVAR     VAR(&RTNCD)  VALUE('05')
             RETURN

             ENDPGM
```

Appendix D. Installing RMLS/CSC With an ACSLS Server

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  Determining Where to Begin with ACSLS D-3
  RMLS/CSC Installation Procedure with ACSLS D-3
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Supplying OS/400 Configuration Information with ACSLS for SNA LU6.2 . . . . D-5

PLANNING FOR INSTALLATION WITH ACSLS

Before attempting to install the RMLS/CSC product, ensure that you have reviewed the *Application System/400 Licensed Program Installation Guide*.

OS/400 Version 5 Release 2 and above is required to install RMLS 1.3.0. To accomplish the installation of RMLS/CSC, ACSLS and SNA LU6.2 or TCP/IP support must also be installed.

SNA LU6.2 SUPPORT CONFIGURATION AND SETUP FOR ACSLS

RMLS/CSC uses the SNA LU6.2 support to communicate with the library through ACSLS. If the SNA LU6.2 support is installed on ACSLS before RMLS/CSC is installed, when RMLS/CSC is started it will automatically configure the interface between RMLS/CSC and ACSLS.

To facilitate the automatic configuration, the AS/400 controller descriptions must be changed to MINSWTSTS(*VRYON). The AS/400 controller must be varied offline to change the controller descriptions, then varied online.

To install and configure the SNA LU6.2 support to ACSLS, refer to *ACSLS AIX 6.1.1 CSCI Installation and Configuration Guide* .

TCP/IP SUPPORT CONFIGURATION AND SETUP FOR ACSLS

If you are using ACSLS 6.1.1, the following SPEs must be installed:

- SPE0303A (for AIX)
- SPE0304S (for Solaris).

The default port number used for communicating with ACSLS is 60001. This can be modified anytime by changing the CSCI program in ACSLS. The port number used for TCP/IP communication is specified in the

```
csciTcpServer.sh
```

file in $ACSSS_HOME/bin. After making changes, reconfigure the server descriptions using the WRKRMLCFGD command on the AS/400 controller. You must update the *SRV descriptions with the new port number.

INSTALLATION OVERVIEW FOR RMLS/CSC WITH ACSLS

The instructions contained in this section are intended for the system programmer or operator responsible for installing licensed programs on the AS/400 system.

RMLS/CSC is installed as a licensed program on the AS/400. Because this is not an IBM product, you **cannot** use the GO LICPGM command to check the status of RMLS/CSC installation. However, after RMLS/CSC is installed on the AS/400, you can use the AS/400 DSPSFWRSC command to verify RMLS/CSC is installed.

The procedures to install RMLS/CSC are:

- Install RMLS/CSC
- For SNA LU6.2, add your token ring line or Ethernet line, p-series controller name, and p-series device to the AS/400 configuration
- For SNA LU6.2, associate these together using the AS/400 WRKCFGL command
- For SNA LU6.2, vary on the token ring components or the Ethernet line.

Determining Where to Begin with ACSLS

The instructions contained in this section assume that your AS/400 system hardware and software have been properly installed by your service representative and that the computer system is under your control. In order to complete these instructions, the Automated Cartridge System Library Software (ACSLS) and SNA LU6.2 or TCP/IP support must be installed and operational.

RMLS/CSC is installed from a CD-ROM drive.

Installing RMLS/CSC on your AS/400 is adding the RMLS/CSC licensed program to the system. The OS/400 Restore Licensed Program (RSTLICPGM) command is used to install RMLS/CSC. A description of the RSTLICPGM command is contained in the *AS/400 Control Language Reference*.

Before you begin to install RMLS/CSC, the system operator must determine the values of the following fields. The description of what is contained in these fields is contained in the installation chapter of *ACSLS CSCI Software Installation and Configuration Manual*. From the information in these fields, the communication descriptions can be created for the installation procedure.

Table D-1. SNA LU6.2 Preinstallation Fields for Controller and Device Descriptions

Field	Value	Description
Remote control point (RMTCPNAME)	*remotecp*	This field is the name of the control point of the ACSLS server.
Switched line list (SWTLINLST)	*trnline*	This field is the name of the line description of the AS/400 token ring card.
LAN remote adapter address (ADPTADR)	*rmtaddr*	This field is the address of the token ring card in the ACSLS server. (Data Link Device Name)

RMLS/CSC Installation Procedure with ACSLS

Make certain RMLS/CSC is not in any library list or otherwise locked before attempting to reinstall.

The following procedure can be used to add RMLS/CSC as a licensed program on your AS/400 system. Read through this procedure before you start to make certain you have all the information that is asked for.

Installing RMLS/CSC Using a CD-ROM

The Automated Cartridge System Library Software and SNA LU6.2 or TCP/IP support must already be installed.

1. Review the *AS/400 Licensed Programs Installation Guide* for information about installing licensed programs.

2. Define the users for each authorization list. See "RMLS/CSC Security" on page 6-1 for a definition of authorization lists and their contents.

3. Sign on to the AS/400 as user QSECOFR:

   ```
   signon ............
   ```

4. Use the WRKSYSVAL command to make certain the QSYS2 library is in the system library list.

   ```
   WRKSYSVAL QSYSLIBL
   ```

   Press **Enter**.

5. If QSYS2 is in the library list, continue with Step 8.

6. If QSYS2 is not in the library list, write down the names of the libraries displayed. For Example:

   ```
   QSYS  QHLPSYS  QUSRSYS
   ```

7. Use the CHGSYSVAL command to add QSYS2 to the library list.

   ```
   CHGSYSVAL QSYSLIBL VALUE(QSYS QSYS2 QHLPSYS QUSRSYS)
   ```

   Press **Enter**.

8. Load the RMLS 1.3.0 CD to the CD-ROM drive on the AS/400.

9. From the AS/400, vary the optical drive online:

   ```
   VRYCFG CFGOBJ(OPTxx) CFGTYPE(*DEV) STATUS(*ON)
   ```

10. RMLS/CSC will be installed into the AS/400 library object RMLS using the RMLS profile. Ensure there is no library object named RMLS on the AS/400, other than that associated with RMLS/CSC, or the results may be unpredictable. Also, insure that no RMLS user profile exists on the AS/400 other than that associated with RMLS/CSC.

    From the AS/400, restore the base product.

    a. Place the RMLS 1.3.0 CD in the CD-ROM drive. On the AS/400 command line, type:

       ```
       RSTOBJ OBJ(RMLS) SAVLIB(RMLS) DEV(OPTxx) VOL(RMLS) MBROPT(*ALL)
       ALWOBJDIF(*ALL) RSTLIB(QGPL)
       ```

    b. Restore the license program from the save file.

       ```
       RSTLICPGM LICPGM(0RMLCSC) DEV(*SAVF) SAVF(QGPL/RMLS)
       ```

    c. Delete the save file.

```
DLTF FILE(QGPL/RMLS)
```

11. Respond to the message to accept the defaults for the security authorization list or change the defaults to match your installation. Refer to Chapter 6, "System Administrator Tasks" on page 6-1 for the name of each authorization list, the commands contained in each, and the procedure to authorize users.

12. For SNA LU6.2 only, create the controller and device descriptions using the information gathered before you started the installation. Refer to Table D-1 on page D-3 for the information needed for these descriptions.

    Controller description:

    ```
    CRTCTLAPPC CTLD(remotecp) LINKTYPE(*LAN) SWTLINLST(trnline)
               RMTCPNAME(remotecp) ADPTADR(rmtaddr) MINSWTSTS(*VRYON)
               SWTDSC(*NO)
    ```

    Device description:

    ```
    CRTDEVAPPC DEVD(remotelu) RMTLOCNAME(remotelu) CTL(remotecp)
    ```

13. For SNA LU6.2 only, type in the AS/400 command *WRKCFGL*. Refer to "Supplying OS/400 Configuration Information with ACSLS for SNA LU6.2" for a description of the values to be used with this command.

14. RMLS/CSC is now installed. You should examine the Job Log to ensure that no errors occurred during the installation process.

15. From the AS/400, add the library RMLS to your library list:

    ```
    ADDLIBLE LIB(RMLS)
    ```

16. From the AS/400, type GO CSC to display the RMLS/CSC main menu. From the main menu, select **3 Administrative Functions**. When the Administrative Functions screen appears, select **5 Work with RML Configuration Descriptions** and create the RML configuration descriptions that are placed in the RMLS/CSC configuration file. It is necessary to configure the library, tape devices, and other descriptions before attempting to run any RMLS/CSC commands. See "Work with RML Configuration Descriptions (WRKRMLCFGD) Command" on page 7-3 for a description of the Work with RML Configuration command.

17. After successfully installing RMLS, you can delete the save file.

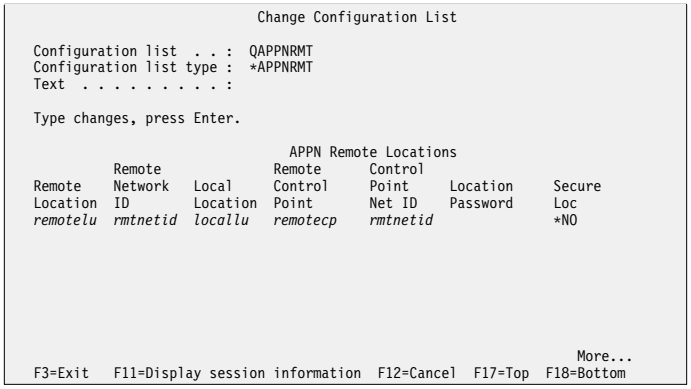
    ```
    DLTF FILE(QGPL/RMLS)
    ```

SUPPLYING OS/400 CONFIGURATION INFORMATION WITH ACSLS FOR SNA LU6.2

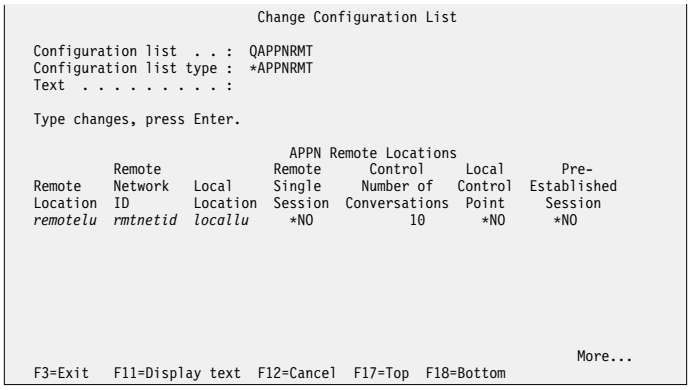
Information about the server's logical unit (the remote LU) must be supplied to the OS/400 configuration list. Before you begin to add to configuration list for OS/400, you must gather the following information. Refer to *ACSLS CSCI Software Installation and Configuration* manual for a cross-reference list between p-series installation option field names and AS/400 installation option field names.

Table D-2. Remote LU Configuration Information		
Field	**Value**	**Description**
Remote control point	*remotecp*	This field is the name of the control point of the ACSLS server.
Remote location	*remotelu (cscilu1)*	This field is the name of the logical unit on the ACSLS server.
Local location	*locallu*	This field is the name of the logical unit being used on the AS/400.
Remote network ID	*rmtnetid*	This field is the remote network identification being used between the two logical units.
Control point network ID	*rmtnetid*	This field is the control point network identification being used between the two logical units.

The AS/400 WRKCFGL command is used to select the QAPPNRMT configuration list. The new entry should look like the following:



After entering the information on the screen, press **PF11** to display the session information. The session information displayed should be the same information you entered.



Appendix E. Installing RMLS/CSC with a LibraryStation Server

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PLANNING FOR INSTALLATION WITH LIBRARYSTATION

Before attempting to install the RMLS/CSC product, ensure that you have reviewed the *Application System/400 Licensed Program Installation Guide*. You should also answer the questions in Appendix F, "LibraryStation Communication Configuration Questions" on page F-1 to assist the installation.

OS/400 Version 5 Release 2 and above is required to install RMLS 1.3.0. To accomplish the installation of RMLS/CSC, LibraryStation and SNA LU6.2 or TCP/IP support must also be installed.

SNA LU6.2 SUPPORT CONFIGURATION AND SETUP FOR LIBRARYSTATION

RMLS/CSC uses the SNA LU6.2 support to communicate with the library through LibraryStation. If the SNA LU6.2 support is installed on LibraryStation before RMLS/CSC is installed, when RMLS/CSC is started it will automatically configure the interface between RMLS/CSC and LibraryStation.

To facilitate the automatic configuration, the AS/400 controller descriptions must be changed to MINSWTSTS(*VRYON). The AS/400 must be varied offline to change the controller descriptions, then varied online.

To install the SNA LU6.2 support to LibraryStation, refer to *LibraryStation CSCI Configuration and Operation Guide*.

TCP/IP SUPPORT CONFIGURATION AND SETUP FOR LIBRARYSTATION

If you are running LibraryStation 5.0, PTF L1S102J must be installed. LibraryStation 5.1 requires PTF L1S102K.

The port number used for TCP/IP communication is specified in the LSINIT statement TCPPORT parameter. Valid values for this parameter are 1 through 65535. By default, the port number to be used appears as 60001.

To change LSINIT parameters, modify the LibraryStation start up data set member and recycle LibraryStation. For example,

```
LSINIT HOSTID(ECCY)               +
       COMMONSP(LMU12MDA)         +
       VOLAUTH(YES)               +
       NETHOST(ECCY)              +
       COMMTYPE(RPC TCPIP LU6)    +    <- RPC is TCPIP for CSI
       SYMDESTN(KINGTUT)          +    <- needed for LU6 connectivity
       TCPPORT(60005)             +    <- default is 60001 - acceptable
                                          values 1 to 65535
       PDF('EVT.AS400.PDF')       +    <- needed for lock of volsers
       PDFX('EVT.AS400.PDFPATH')  +    <- needed for lock of volsers
       POOLCHK(YES)               +
       LSDEF('EVT.AS400.LMU12.TEST(LSDEF)') +
       CREQLOG(YES)
```

For more information on the LSINIT parameters, refer to the *LibraryStation Operator and System Programmer's Guide* "Operator Commands" chapter.

INSTALLATION OVERVIEW FOR RMLS/CSC WITH LIBRARYSTATION

The instructions contained in this section are intended for the system programmer or operator responsible for installing licensed programs on the AS/400 system.

RMLS/CSC is installed as a licensed program on the AS/400. Because this is not an IBM product, you **can not** use the GO LICPGM command to check the status of RMLS/CSC installation. However, after RMLS/CSC is installed on the AS/400, you can use the AS/400 DSPSFWRSC command to verify RMLS/CSC is installed.

The procedures to install RMLS/CSC are:

- Install RMLS/CSC
- For SNA LU6.2, add your token ring line or Ethernet line and HSC configuration name to the AS/400's configuration.
- For SNA LU6.2, associate them together using the AS/400 WRKCFGL command
- For SNA LU6.2, vary on the token ring components.

If the Host Software Component configuration and the AS/400 configuration are connected and properly described, the Host Software Component will begin to respond to RMLS/CSC commands.

Determining Where to Begin with LibraryStation

The instructions contained in this section assume that your AS/400 system hardware and software have been properly installed by your service representative and that the computer system is under your control. In order to complete these instructions, the Host Software Component Software, the LibraryStation Software, and SNA LU6.2 or TCP/IP support must be installed and operational.

RMLS/CSC can be installed from a Removable Media Library or from an existing tape drive.

Installing RMLS/CSC on your AS/400 is adding the RMLS/CSC licensed program to the system. The OS/400 Restore Licensed Program (RSTLICPGM) command is used to install RMLS/CSC. A description of the RSTLICPGM command is contained in the *AS/400 Control Language Reference*.

Before you begin to install RMLS/CSC, the system operator must determine the values of the following fields. From the information in these fields, the communication descriptions can be created for the installation procedure.

Table E-1 (Page 1 of 2). SNA LU6.2 Preinstallation Fields for Controller, Device Descriptions, and Configuration Lists

Field	Value	Description
Remote control point (RMTCPNAME)	*remotecp*	This field is the name of the control point of the LibraryStation server.

Table E-1 (Page 2 of 2). SNA LU6.2 Preinstallation Fields for Controller, Device Descriptions, and Configuration Lists		
Field	**Value**	**Description**
Switched line list (SWTLINLST)	*trnline*	This field is the name of the line description of the AS/400 token ring card.
Remote adapter address (ADPTADR)	*rmtaddr*	This field is the address of the token ring card in the LibraryStation server.
Remote Network ID (RMTNETID)	*rmtnetid*	The network identifier of the LibraryStation server.
Remote Location (RMTLOCNAME)	*remotelu*	The logical unit name of the LibraryStation server.

RMLS/CSC Installation Procedure with LibraryStation

If you installed RMLS/CSC on your system before and are attempting to reinstall RMLS/CSC, make certain RMLS/CSC is not in any library list or otherwise locked.

The following procedure can be used to add RMLS/CSC as a licensed program on your AS/400 system. Read through this procedure before you start to make certain you have all the information that is asked for.

Installing RMLS/CSC Using a CD-ROM

The Host Software Component, LibraryStation Software, and SNA LU6.2 support must already be installed.

1. Review the *AS/400 Licensed Programs Installation Guide* for information about installing licensed programs.
2. Define the users for each authorization list. See "RMLS/CSC Security" on page 6-1 for a definition of authorization lists and their contents.
3. Sign on to the AS/400 as user QSECOFR:

   ```
   signon ............
   ```

4. Use the WRKSYSVAL command to make certain the QSYS2 library is in the system library list.

   ```
   WRKSYSVAL QSYSLIBL
   ```

   Press **Enter**.
5. If QSYS2 is in the library list, continue with Step 8 on page E-5.
6. If QSYS2 is not in the library list, write down the names of the libraries displayed. For Example:

   ```
   QSYS  QHLPSYS  QUSRSYS
   ```

7. Use the CHGSYSVAL command to add QSYS2 to the library list.

   ```
   CHGSYSVAL QSYSLIBL VALUE(QSYS QSYS2 QHLPSYS QUSRSYS)
   ```

Press **Enter**.

8. From the AS/400, vary the optical drive online:

   ```
   VRYCFG CFGOBJ(OPTxx) CFGTYPE(*DEV) STATUS(*ON)
   ```

9. Load the RMLS 1.3.0 CD to the CD-ROM drive on the AS/400.

   a. Place the RMLS 1.3.0 CD in the CD-ROM drive. On the AS/400 command line, type:

      ```
      RSTOBJ OBJ(RMLS) SAVLIB(RMLS) DEV(OPTxx) VOL(RMLS) MBROPT(*ALL)
      ALWOBJDIF(*ALL) RSTLIB(QGPL)
      ```

   b. Restore the license program from the save file.

      ```
      RSTLICPGM LICPGM(0RMLCSC) DEV(*SAVF) SAVF(QGPL/RMLS)
      ```

   c. Delete the save file.

      ```
      DLTF FILE(QGPL/RMLS)
      ```

10. Respond to the message to accept the defaults for the security authorization list or change the defaults to match your installation. Refer to Chapter 6, "System Administrator Tasks" on page 6-1 for the name of each authorization list, the commands contained in each, and the procedure to authorize users.

11. For SNA LU6.2 only, create the controller and device descriptions using the information gathered before you started the installation. Refer to Table E-1 on page E-3 for the information needed for these descriptions.

    Controller description:

    ```
    CRTCTLAPPC CTLD(remotecp) LINKTYPE(*LAN) SWTLINLST(trnline)
               RMTNETID(rmtnetid) RMTCPNAME(remotecp) ADPTADR(rmtaddr)
               NODETYPE(*CALC)
    ```

    or

    ```
    CRTCTLHOST CTLD(remotecp) LINKTYPE(*LAN) SWTLINLST(trnline)
               RMTNETID(rmtnetid) RMTCPNAME(remotecp) ADPTADR(rmtaddr)
               NODETYPE(*CALC)
    ```

    Device description:

    ```
    CRTDEVAPPC DEVD(remotelu) RMTLOCNAME(remotelu) ONLINE(*YES)
               RMTNETID(rmtnetid) CTL(remotecp)
    ```

12. For SNA LU6.2 only, type in the AS/400 command *WRKCFGL*. Refer to "Supplying OS/400 Configuration Information with LibraryStation for SNA LU6.2" on page E-6 for a description of the values to be used with this command.

13. RMLS/CSC is now installed. You should examine the Job Log to ensure that no errors occurred during the installation process.

14. From the AS/400, vary the optical drive off line:

    ```
    VRYCFG CFGOBJ(OPTxx) CFGTYPE(*DEV) STATUS(*OFF)
    ```

15. From the AS/400, add the library RMLS to your library list:

```
ADDLIBLE LIB(RMLS)
```

16. From the AS/400, type GO CSC to display the RMLS/CSC main menu. From the main menu, select **3 Administrative Functions**. When the Administrative Functions screen appears, select **5 Work with RML Configuration Descriptions** and create the RML configuration descriptions that are placed in the RMLS/CSC configuration file. It is necessary to configure the library, tape devices, and other descriptions before attempting to run any RMLS/CSC commands. See "Work with RML Configuration Descriptions (WRKRMLCFGD) Command" on page 7-3 for a description of the Work with RML Configuration command.

SUPPLYING OS/400 CONFIGURATION INFORMATION WITH LIBRARYSTATION FOR SNA LU6.2

Information about the server's logical unit (the remote LU) must be supplied to the OS/400 configuration list. Before you begin to add to configuration list for OS/400, you must gather the following information.

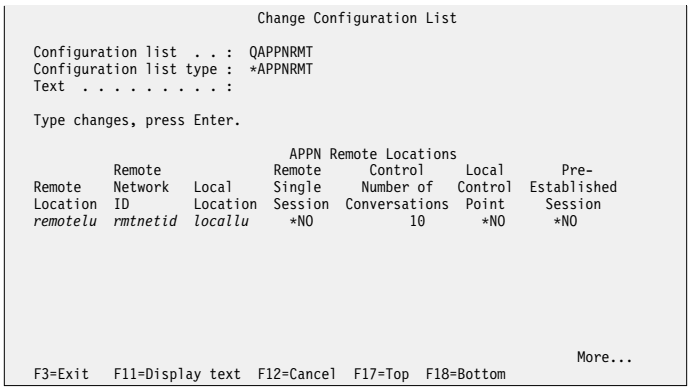
Table E-2. SNA LU6.2 Remote LU Configuration Information

Field	Value	Description
Remote control point	*remotecp*	This field is the name of the control point of the LibraryStation server.
Remote location	*remotelu (cscilu1)*	This field is the name of the logical unit on the LibraryStation server.
Local location	*locallu*	This field is the name of the logical unit being used on the AS/400.
Remote network ID	*rmtnetid*	This field is the remote network identification being used between the two logical units.
Control point network ID	*rmtnetid*	This field is the control point network identification being used between the two logical units.

The AS/400 WRKCFGL command is used to select the QAPPNRMT configuration list. The new entry should look like the following:

```
                          Change Configuration List

Configuration list  . . :  QAPPNRMT
Configuration list type :  *APPNRMT
Text  . . . . . . . . . :

Type changes, press Enter.

                              APPN Remote Locations
          Remote              Remote      Control
Remote    Network   Local     Control     Point     Location     Secure
Location  ID        Location  Point       Net ID    Password     Loc
remotelu  rmtnetid  locallu   remotecp    rmtnetid              *NO

                                                                  More...
F3=Exit   F11=Display session information  F12=Cancel  F17=Top  F18=Bottom
```

After entering the information on the screen, press **F11** to display the session information. The session information displayed should be the same information you entered.


Change Configuration List
Configuration list . . . : QAPPNRMT
Configuration list type : *APPNRMT
Text . . . . . :
Type changes, press Enter.
APPN Remote Locations
Remote Location
Remote Network ID
Local Location
Remote Single Session
Control Number of Conversations
Local Control Point
Pre-Established Session
remotelu rmtnetid locallu *NO 10 *NO *NO
More...
F3=Exit F11=Display text F12=Cancel F17=Top F18=Bottom

Appendix F. LibraryStation Communication Configuration Questions

During the installation of RMLS/CSC with a LibraryStation server, the answer to several questions are needed. The following list contains questions that should be asked by the AS/400 systems person and the MVS/VTAM systems person. Please take the time to determine the answers to these questions and expedite the installation of RMLS/CSC.

QUESTIONS FROM THE AS/400 SYSTEMS PERSON TO THE MVS/VTAM SYSTEFS PERSON

When the communication type is TCP/IP:

1. **What is the IP address of the MVS system used for CSCI TCP/IP communication?**

   Please contact the MVS system administrator.

2. **What is the port number on the MVS system used for CSCI TCP/IP communication?**

   The port number used for TCP/IP communication is specified in the LSINIT statement TCPPORT parameter. Valid values for this parameter are 1 through 65535. By default, the port number to be used appears as 60001.

When the communication type is LU6:

1. **What is the LAN address of the MVS token ring card?**

   This address could be in a 3725/3745, 3174, 3172, etc. The MVS LAN address is entered into the AS/400 APPC controller description as ADPTADR.

   Enter the 12 character LAN adapter address here:_____

2. **What is the logical unit name (LU name) of LibraryStation?**

   This is the name of the VTAM application minor node (specified with a VTAM APPL statement in the sites VTAMLST file) that was created by the MVS VTAM programmer when LibraryStation was installed. The LibraryStation LU name is specified in the AS/400 device description as RMTLOCNAME, and in the QAPPNRMT configuration list as RMTLOCNAME, and in the RMLS/CSC server description as RMTLUNAME.

   Enter the LU name of LibraryStation here:_____

3. **What is the VTAM network ID of the MVS system where the LibraryStation application resides?**

   The network ID is specified by the MVS VTAM programmer in the ACTSTRxx member of VTAMLST on the NETID= parameter. The network ID, if different than the AS/400 NETID, is specified in the AS/400 device description as RMTNETID, and in the controller description as RMTNETID, and in the QAPPNRMT

configuration list as RMTNETID, and in the RMLS/CSC server description as RMTNETID.

Enter the VTAM network ID of the MVS system here:_____

4. **What is the SSCPNAME of the MVS system where the LibraryStation application resides?**

   The SSCPNAME is specified by the MVS VTAM programmer in the ACTSTRxx member of VTAMLST on the SSCPNAME= parameter. The SSCPNAME is specified in the AS/400 QAPPNRMT configuration list as RMTCPNAME.

   Enter the SSCPNAME of the MVS system here:_____

5. **What is the LU name used by the MVS to define the LU6.2 connection to the AS/400?**

   This LU is defined by the MVS VTAM programmer under a switched major node definition in VTAMLST. The PU statement associated with this LU contains the LAN address of the AS/400 (see question 1 in "Questions from the MVS/VTAM Systems Person to the AS/400 Systems Person"). The name specified in the DSPNETA LCLLOCNAME (nnn) in the AS/400 should be used for this LU. If LU naming conventions on the MVS system prevents this name from being used, then an alias must be defined in the QAPPNLCL configuration list.

   Enter the LU name used by the MVS to define the LU6.2 cnn here:_____

6. **Is the mode name used by the LibraryStation LU different than APPCHOST?**

   The mode name is specified by the MVS VTAM programmer on the DLOGMOD= parameter of the APPL statement used to define the LibraryStation application LU. If the MVS VTAM programmer is not using APPCHOST, then the *CSI object(side info object) must be manually updated using the WRKCSI command to change the mode description to the new value. This implies that a new mode description would be created on the AS/400 side to match the MVS mode.

   Enter the mode name used by the LibraryStation LU here:_____ _____

QUESTIONS FROM THE MVS/VTAM SYSTEMS PERSON TO THE AS/400 SYSTEMS PERSON

1. **What is the LAN address of the token ring interface card on the AS/400?**

   The LAN address can be obtained by looking at the token ring line description on the AS/400 using the WRKCFGSTS command. If using a 37x5, the LAN address is coded in NCP on LINE macro using the LOCADD parameter. For a 3172 or 3174, the LAN address is defined on the DIALNO= parameter of a PATH statement associated with the PU statement that defines the link to the AS/400.

   Enter the AS/400 Token Ring LAN adapter address here:_____

2. **Is the network ID of the AS/400 different than the MVS network ID as described in question 3 of "Questions from the AS/400 Systems Person to the MVS/VTAM Systefs Person" on page F-1. If yes, XNETALS must be set to yes.**

   Enter the AS/400 Local Net ID here:_____

Glossary

This glossary contains terms and definitions pertaining to RMLS/CSC and other associated StorageTek software products. Terms and definitions not specifically used in this guide are provided for general information to users of library products.

A

ACS. Automated Cartridge System.

ACSid. A method used to identify an ACS. An ACSid is the result of defining the SLIALIST macro during the library generation (LIBGEN) process. The first ACS listed in this macro acquires a hexadecimal identifier of 00, the second ACS listed acquires a hexadecimal identifier of 01, etc. until all ACSs are identified.

APF. Authorized program facility.

Automated Cartridge System. The library subsystem consisting of one or two LMUs, and from 1 to 16 LSMs attached to that LMU.

Automated Library. *See* library.

automatic mode. A relationship between an LSM and all attached hosts. LSMs operating in automatic mode handle cartridges without operator intervention. This is the normal operating mode of an LSM that has been modified online.

B

beginning of tape. The location on a tape where written data begins.

BOT. Beginning of tape.

C

CAP. Cartridge Access Port.

CAPid. A CAPid uniquely defines the location of a CAP by the LSM on which it resides. A CAPid is of the form ‘aal’ where ‘aa’ is the acs-id and ‘l’ is the LSM number.

cartridge. Plastic housing around the tape. It is approximately 4 inches (100 mm) by 5 inches (125 mm) by 1 inch (25 mm). The tape is threaded automatically when loaded in a tape device. A plastic leader block is attached to the tape for automatic threading. The spine of the cartridge contains a Tri-Optic label listing the VOLSER.

Cartridge Access Port. An assembly that allows multiple cartridges to be loaded/unloaded by an operator. The CAP is located on the door of an LSM.

CD. Cartridge Drive or Compact Disc.

CDS. *See* control data set.

Cartridge Drive.. A device containing two or four cartridge tape drives with associated power and pneumatic supplies.

CL. Command language.

CSL. Cartridge Stacker Loader.

cell. A storage slot in the LSM that is used to store a tape cartridge.

channel. A device that connects the host and main storage with the input and output control units.

check. Detection of an error condition.

connected mode. A relationship between a host and an ACS. In this mode, the host and an ACS are capable of communicating (at least one station to this ACS is online).

control data set. The data set used by the host software to control the functions of the automated library. Also called Library Control Data set.

Control Unit (CU). A microprocessor-based unit situated logically between a host channel (or channels) and from two to sixteen tape transports. It functions to translate channel commands into tape transport commands, send transport status to the channel(s), and pass data between the channel(s) and transport(s).

cross host recovery. The ability of one host to perform recovery for another host that has failed.

CSCI. Client Server Communication Interface.

CSE. Customer Services Engineer.

CU. *See* Control Unit.

D

data streaming. A continuous stream of data being transmitted in character or binary-digit form, using a specified format.

demand allocation. A term meaning that a user has requested a specific unit.

device number. A four-digit hexadecimal number that uniquely identifies a device attached to a processor.

device separation. The function of directing allocation to an ACS or a set of manual tape drives depending on the allocation requiring either a library or nonlibrary volume.

Dialogs. Software program menu screens and other supporting programs that can be viewed by users.

directed allocation. The function of directing the allocation request to the set of tape drives attached to the LSM nearest to where the volume resides.

disconnected mode. A relationship between a host and an ACS. In this mode, the host and an ACS are not capable of communicating (there are no online stations to this ACS).

DOMed. Pertaining to a console message that was previously highlighted during execution, but is now at normal intensity.

E

EOF. End of file.

EOT. End of tape marker.

EPO. Emergency power off.

ERP. Error recovery procedures.

error recovery procedures. Procedures designed to help isolate and, where possible, to recover from errors in equipment.

F

FE. Field Engineer (StorageTek). Recently renamed to Customer Service Engineer.

FIFO. First-in first-out.

G

H

Host Software Component. The StorageTek Software portion of the Automated Cartridge System that executes on host systems attached to an automated library. This component acts as the interface between the operating system and the rest of the automated library.

HSC. Host Software Component

I

ID. Identifier or identification.

initial program load (IPL). A process that activates a machine reset and loads system programs to prepare a computer system for operation. Processors having diagnostic programs activate these programs at IPL execution. Devices running microcode reload the functional microcode usually from a floppy diskette at IPL execution.

inline diagnostics. Diagnostic routines that use subsystem components on a time-sharing basis with the functional microcode in the subsystem component.

intervention required. Manual action is needed.

IPL. *See* initial program load.

IPS. Inches per second.

J

JCL. Job Control Language.

JST. Job Summary Table

journal. The log associated with journaling. The log (stored in a data set) contains a record of completed work and changes to the control data set since the last backup was created.

journaling. A technique for recovery involving the creation of a backup control data set and maintaining a log of all changes (transactions) to that data set.

K

Kb. Kilobyte, thousand bytes, or 1024 bytes (10^3 bytes).

kb. kilobit, or thousand bits (10^3 bits).

L

LAN. Local area network.

LCU. *See* Library Control Unit.

LED. *See* light emitting diode.

Library Control Unit.. The portion of the LSM that controls the picking, mounting, dismounting, and replacing of cartridges.

LIBGEN. A process used within the HSC for defining the configuration of the automated library to the host software.

library. An installation of one or more ACSs, attached 4480 cartridge drives, volumes placed into the ACSs, host software that controls and manages the ACSs and associated volumes, and the library control data set that describes the state of the ACSs.

light emitting diode. An electronic device used mainly as an indicator on status panels.

local area network. A computer network in which devices within the network can access each other for data transmission purposes. The LMU and attached LSMs are connected with a local area network

LMU. Library Management Unit. The portion of the ACS that controls the LSM and communicates with the host CPU.

logical ejection. The process of removing a volume from the control data set without physically ejecting it from its LSM location.

LSM. Library Storage Module. Provides the storage area for cartridges plus the robot necessary for moving the cartridges.

LSMid. An LSMid is composed of the ACSid concatenated with the LSM number.

LSM number. A method used to identify an LSM.

LU6.2. SNA network port for communication between programs in a distributed processing environment.

M

machine initiated maintenance. A unique feature of the 4400 ACS in which an expert system monitors conditions and performance of subsystems and requests operator attention before a potential problem impacts operations. Customers can set maintenance threshold levels.

maintenance facility. Hardware contained in the CU and LMU that allows a Customer Service Engineer and the Remote Diagnostic Center to run diagnostics, retrieve status, and communicate with respective units through their control panels.

manual mode. A relationship between an LSM and all attached hosts. LSMs operating in manual mode have been modified offline, and require human assistance to perform cartridge operations.

MDS. Main device scheduler.

MIM. Machine initiated maintenance.

mixed configurations. Installations containing 4480 tape drives under ACS control and 4480 tape drives outside of library control. These configurations cause the Host Software Component to alter allocation to one or the other.

modem. Modulator/demodulator. An electronic device that converts computer digital data to analog data for transmission over a telecommunications line (telephone line). At the receiving end, the modem performs the inverse function.

monitor. A device that observes, records, and verifies selected system activities to determine significant departure from expected operation.

N

O

OCR. Optical character recognition.

OCR label. Optical character recognition label. An external label attached to the spine of a cartridge that is both human and machine readable.

operating system (OS). Software that controls the execution of programs that facilitate overall system operation.

OS/400. Operating system for the AS/400.

P

pass-thru port. Mechanism that allows a cartridge to be passed from one LSM to another in a multiple LSM ACS.

POST. Program for Online System Testing.

Program for Online System Testing. A program in a computer host that allows it to test an attached subsystem while the subsystem is online.

PTP. Pass-thru port on an LSM.

R

RACF. *See* Resource access control facility

RDC. *See* Remote Diagnostic Center

Remote Diagnostic Center. The Remote Diagnostic Center at StorageTek. RDC operators can access and test StorageTek systems and software via telecommunications lines to remote customer installations.

removable media library (RML). A data storage library containing tape cartridges, optical disks, or other storage media for storing data.

reports. Printed, displayed, or filed extracts of relevant information for use by users.

Resource access control facility. Security software controlling access to data sets.

restricted state. An AS/400 state in which all subsystems are ended, thus making the system available only to the OS/400 console operator.

S

scratch subpool. A range or list of ranges of scratch tape cartridge volumes (VOLSERs) of a designated label type.

serial data communication. A low-level communications protocol used for attaching the AS/400 with a Unix server.

shadow recording. A technique for recovery involving maintaining both a control data set and a copy (shadow) of the control data set.

System Control Program (SCP). The general term used to describe a program that controls access to system resources and allocates those resources among executing tasks. SCP provides a subset of MVS services to allow the HSC to run in a VM environment.

Storage Server Interface (SSI). A component of RMLS/CSC that enables interfacing the AS/400 and RMLS/CSC software with LibraryStation and ACSLS.

T

tape drive. An electromechanical device capable of threading tape from a cartridge, moving the tape across a read/write head, and writing data onto or reading data from the tape.

TLMS. Tape Library Management System

token ring. A LAN-type attachment between the AS/400 and a Unix server.

TP. Tape-to-print.

TT. Tape-to-tape.

transaction. In RMLS/CSC, a short series of actions with the control data set. These actions are usually related to a specific function (e.g., Mount, Entry).

U

utilities. Utility programs. The programs within StorageTek software products that allow an operator to manage the resources of the library and monitor overall library performance.

V

VOLSER. A six-character alphameric label used to identify a tape volume.

volume. A data carrier that is mounted or demounted as a unit. (*See* cartridge).

W

write tape mark. The operation performed to record a special magnetic mark on tape. The mark identifies a specific location on the tape.

WTM. *See* write tape mark.

WTO. Write-to-Operator.

WTOR. Write-to-Operator with reply.

X

Y

Z

Symbols

µ-software.

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