File and Volume Management

Bull DPS 7000

User's Guide

Cartridge Tape Library UNIX Server

47 A2 63UU Rev05

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Bull DPS 7000

User's Guide

Cartridge Tape Library UNIX Server

Subject: Cartridge Tape Library (CTL) UNIX server is an automated storage and retrieval system for magnetic tape cartridges.

Special Instructions: This Revision 05 cancels and replaces Revision 04.

Software Supported: GCOS 7 HPS/EXMS Releases V7, V8, V9 and V10

Software/Hardware required: OPEN7 on native DPS7000, V7000 on DPS7000-XTA

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Your suggestions and criticisms concerning the form, contents and presentation of this manual are invited.
A form is provided at the end of this manual for this purpose.

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Preface

Scope and Objectives

The *Cartridge Tape Library UNIX Server User's Guide* provides necessary information to DPS 7000 users using cartridge tape libraries connected to the DPS 7000 through a UNIX® server. It describes the hardware and software components of the Cartridge Tape Library (CTL), including the Library Storage Module (LSM), ACS Library Manager (LM), the library server (DPX/20 or ESTRELLA running the ACSLS) and the CLX (DPS 7000 software responsible for the interface with the library server). It gives information on how to install and configure the CLX on the DPS 7000. It gives advice on efficient use of the library, and the correct responses to error conditions and messages.

XTA case

This document is available for native DPS7000 (ARTEMIS, AURIGA, VEGA) and for the new DPS7000-XTA architecture. The new specifications for the XTA DPS7000 architecture are mention by "XTA case" notes.

Intended Readers

The *Cartridge Tape Library UNIX Server User's Guide* is intended for developers, operators, software support personnel, and System Administrators using the Cartridge Tape Library connected to the DPS 7000 through a UNIX server. It is assumed that the reader has knowledge of the ACSLS library server and GCOS 7.

Structure

Section 1	provides an overview of the Cartridge Tape Library service.
Section 2	explains how to set up the cartridge tape library. It provides information about installation, configuration of the CLX, ACSLS and GCOS 7 configuration.
Section 3	describes how to start the software including initializing and starting up the ACSLS and CLX.
Section 4	describes how to label the cartridges and how to enter cartridges in the library.
Section 5	describes operation procedures for the CTL.
Section 6	describes the CLX commands available to an operator through an IOF terminal.
Section 7	provides information on sharing the library among several systems.

Section 8	discusses error conditions, including system reaction and recommended user action, and lists the messages associated with these errors.
Section 9	discusses error detection and recovery.
Section 10	describes the operator messages.
Section 11	provides information about Return status.

This document is completed by five appendices, a glossary and an index.

Appendix A presents CLX command syntax. Appendix B describes what to supply to Bull in problem situations. Appendix C describes the CLX.SLLIB library content. Appendix D lists the GCOS 7 messages not already described. Appendix E discusses the PREPARE_TAPESET utility.

Bibliography

Bull Documents

CNS7 A2 NGL Reference Manual *39 A2 32DN*
CNS7 System Generation CNS A1 ..... *39 A2 40DM*
DNS System Generation DNS C1 ..... *39 A2 84DM*
DNS V4 System Generation *39 A2 22DN*
Data Management Utilities User's Guide *47 A2 26UF*
Full Screen Editor User's Guide *47 A2 06UP*
GCOS 7 System Installation Configuration and Updating Guide V8 ..... *47 A2 19US*
GCOS 7 System Installation Configuration and Updating Guide V9 ..... *47 A2 23US*
JCL User's Guide *47 A2 12UJ*
Library Maintenance Reference Manual *47 A2 01UP*
Library Maintenance User's Guide *47 A2 02UP*
Console Messages Directory *47 A2 61UU*
System Operator's Guide V8and V9 ..... *47 A2 53US*
Text Editor User's Guide *47 A2 05UP*
Operator's Guide CTS, ACS, TCU *77 A1 92UU*
UFT User's Guide *47 A2 13UC*
Interoperability Software Installation 7 Administrator's Guide *47 A2 56UU*

XTA case **Interop7 users Guide ..... 47 A2 91 US**

StorageTek 4400 Automated Cartridge System Documents

ACSLS AIX6000 Configuration Guide
ACSLS AIX6000 Library Control System Installation Guide
ACSLS System Administrator's Guide
ACSLS Programmer's Guide

These documents are delivered with the DPX/20 or ESTRELLA server and the ACSLS software package.

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1. Overview

The Cartridge Tape Library (CTL) is an automated storage and retrieval system for magnetic tape cartridges that are in libraries connected to a DPS 7000 via a UNIX server. Libraries handled by the CTL system include:

- StorageTek ACS 4400,
- PowderHorn™,
- Wolfcreek™,
- TimberWolf™.

The CTL system performs automated mounting and dismounting of the tape cartridges in response to the host application or library user requests. It controls the movement and location of the cartridges within the silo, identifying them by the external bar-coded label also called the optical label.

A cartridge tape library is made up of one or several silos (also called library storage modules). Each silo contains a robot arm with a bar code reader, cartridge drives and control units. A silo is a cylindrical device, which houses the cartridges. The robot arm is a mechanical arm, which moves around inside the silo, retrieves cartridges, mounts and dismounts them. The cartridges are mounted into a cartridge drive, where information is read from/written to the magnetic tape.

The libraries are connected to DPS 7000 hosts through two separate paths--the control path used for library control and the data path used for data transfer between the host and the cartridges.

The hardware components of the Cartridge Tape Library (CTL) system are shown in Figure 1-1.

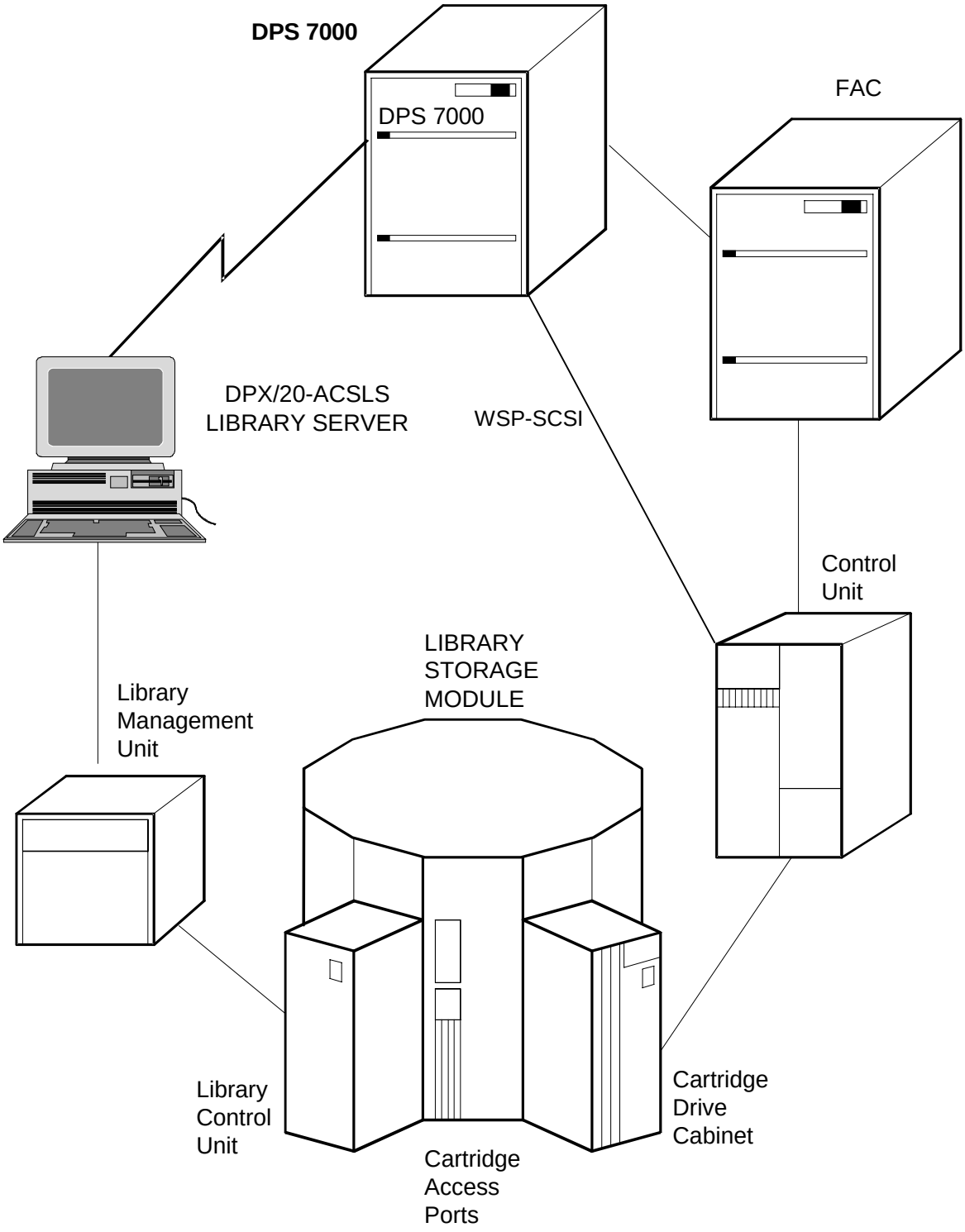


Figure 1-1. Hardware Components of the Cartridge Tape Library System

1.1 The Control Path Components

The Control Path allows the DPS 7000 to pass commands to the library robot(s). It is composed of the following components (shown in Figure 1-2):

- One or several Library Storage Modules **(LSM)**, also called storage silos. Each LSM contains a robot, storage cells and connections for cartridge drives. The robot automatically mounts/dismounts cartridges in drives: it retrieves any cartridge in the LSM, delivers it to a transport, then replaces the cartridge in its storage cell.

  Each LSM has a door in the outer wall allowing access to the interior. The access door in the wall contains one or more CAPs (Cartridge Access Ports). An operator can introduce cartridges to or remove cartridges from the LSM using CAP(s).

  LSMs are linked together by PTP (Pass-Thru Ports), and cartridges are passed from LSM to LSM using a PTP (see also Figure 1-3).

- A Library Control Unit **(LCU)**, a microprocessor that controls the robot movements. There is one LCU per LSM. The LCU translates gross movement requests received from the LMU into the discrete servo commands required to control the robot.

- One Library Management Unit **(LMU)**, which manages a set of LSMs (up to 24). The LMU receives cartridge movement requests from the Library Server, translates them into robot movement instructions, and relays these instructions to the correct Library Control Unit (LCU). The LMU communicates with the LSMs across a Local Area Network (LAN). The set of silos (LSMs) controlled by an LMU is called an ACS (Automated Control System).

- The UNIX Library Server (Bull ESCALA or ESTRELLA), which houses the library server software called Automated Cartridge System Library Software **(ACSLS)**. This library server is the interface between client systems and the library. The library server communicates with the LMU through an RS 423 interface. Two redundant serial connections are provided between the server and the LMU.

- Bull DPS 7000 running **GCOS 7** and in particular the **CLX** (Cartridge Library Client through UNIX Server) job. The DPS 7000-to-Library Server telecommunications link is based on RPC, Ethernet, and TCP/IP services. The Ethernet network adapter acts as a buffered communications controller to move messages between the server and the DPS 7000.

Library control commands are passed to the library robots as follows:

1. Mount and dismount messages are issued on the DPS 7000 operator console when cartridges need to be mounted/dismounted to run applications or commands (i.e. LIST_VOLUME). These messages specify on which drives the cartridges must be mounted or dismounted. When the "device class" specifies that the cartridge is located in a given cartridge tape library, **GCOS 7** mount and dismount requests are passed to the Library Server running the **ACSLS** software.
2. The **ACSLS** then passes the request to the **LMU**.
3. The **LMU** selects the correct **LSM** for the request and sends it to the **LCU** of that **LSM**.
4. The **LCU** instructs the robot to select the cartridge according to the optical cartridge label and to mount the cartridge on the selected drive.
5. The **LMU** then returns a report status to **GCOS 7** via the **ACSLS**.
6. The robot (and the library server) identify the cartridges by their external bar-coded label. Once the robot selects a cartridge, the cartridge is loaded into the cartridge drive transport to be read from and/or written to. The transport is connected to the Data path on to which data are transferred.

1.2 The Data Path Components

The Data Path is used for the transfer of data between **GCOS 7** and a given tape cartridge. StorageTek ACS 4400, PowderHorn, and Wolfcreek cartridge tape libraries include the following hardware components (shown in Figure 1-2):

- one or more FIPS Adapter Cabinets (**FACs**). Each FAC contains up to four General Purpose Adapters (**GPAs**), and these GPAs are in turn connected to the Control Units **(CUs)**.

  A GPA performs PSI/FIPS conversion: The GPA receives and interprets PSI channel commands, generates status and sense information for the channel, formats the data that will be written on the cartridge, converts the read data into data bytes for the channel, and performs error checking.

- The CUs are connected to the Cartridge Drive (CD) cabinets in the LSM. A CD cabinet may have two or four cartridge transports. The maximum number of Cartridge Drive cabinets contained in a LSM depends on the LSM type. A PowderHorn™ LSM can contain from one to four cartridge drive cabinets, that is, from two to sixteen transports.

In TimberWolf cartridge tape libraries, the DPS 7000 is connected to the CUs via a WSP/SCSI interface, which controls the data flow; the FAC and GPA components are not needed. CUs are connected to the new mono-transport STK CTS 4890 cartridge drives (CDs). A TimberWolf LSM can contain up to 6 CTS 4890 Cartridge Drive (CD) cabinets. A Timber Wolf 9740 LSM can contain 2 or 4 CTS 9740 Cartridges drives.

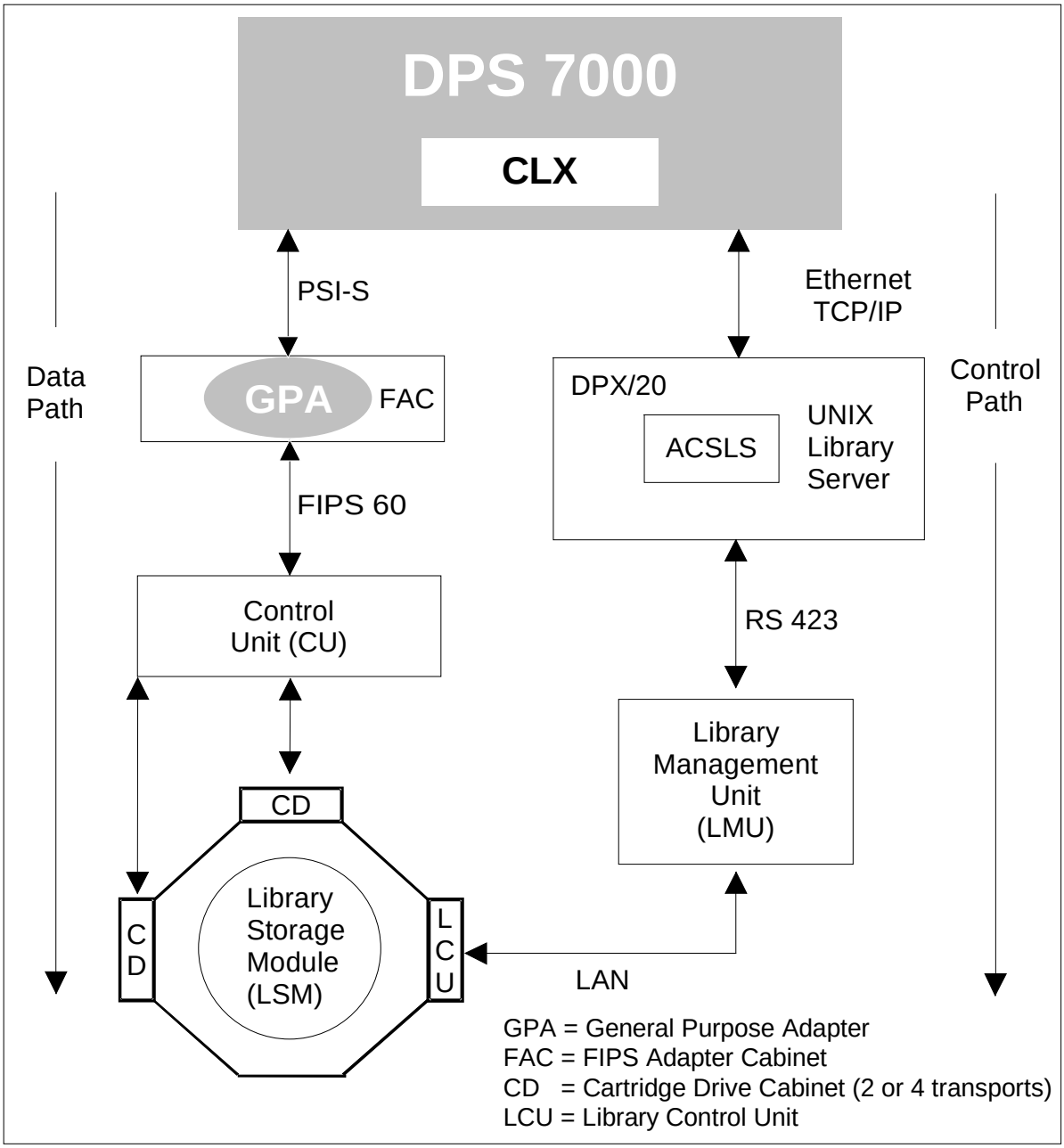


Figure 1-2. Data Path and Control Path in the Cartridge Tape Library System

1.3 The Cartridge Tape Libraries

All Wolfcreek, PowderHorn, and ACS 4400 Cartridge Tape Libraries that can be used in the CTL system use the industry-standard 3480, 18-track, 1/2 inch magnetic tape cartridges and 18-track drives. 36-track drives can also be connected. There is no restriction: you can connect 18-track and 36-track drives to the same library. Drives are fully compatible with all manually and automatically operated systems using those types of cartridges.

With the TimberWolf Cartridge Tape Library, only 36-track (CTS 4890 or CTS 9490) drives using 36-track tapes can be connected.

Any cartridge tape library can be shared statically by several DPS 7000 systems in a multi-host environment.

1.3.1 StorageTek Cartridge Tape Library

The StorageTek Cartridge Tape Library (or CTL) is offered in different models. The different models are offered to provide a range of capacity and performance.

Wolfcreek™ Cartridge Tape Library

The Wolfcreek™ CTL is offered in a range of models which can house between 500 and 950 cartridges which are loaded in the drives by a robot arm with a choice of 3 speeds (90, 190 and 350 exchanges/hour). Storage cells are distributed into 5 panels at the most, numbered from 0 to 4. The Wolfcreek™ CTL can contain up to 3 Cartridge Access Ports **(CAPs)** (1, 20, 30 cartridges) and up to 8 transports. In case of Control Units equipped with IDRC, each 18-track cartridge can contain up to 600 Megabytes, and each 36-track cartridge can contain up to 1.2 Gigabytes in standard length, or up to 2.4 Gigabytes with a long tape (E-tape).

PowderHorn and ACS 4400 Cartridge Tape Libraries

PowderHorn and ACS 4400 Cartridge Tape Libraries are 12-sided cylindrical structures designed to house between 2000 and 6000 cartridges. In case of Control Units equipped with IDRC (Improved Data Recording Capacity), each 18-track cartridge can contain up to 600 Megabytes, or 1.2 Gigabytes with 36-track standard length, or 2.4 Gigabytes with long tape (E-tape).

There is no restriction: Storage cells are distributed in up to 20 panels numbered from 0 to 19. These Cartridge Tape Libraries can contain up to 3 Cartridge Access Ports **(CAPs)**
(1, 40, 40 cartridges) and up to 16 transports. The difference between ACS 4400 and PowderHorn™ lies mainly in the robot speed.

Figure 1-3 shows two PowderHorn LSMs connected with a Pass-Thru Port (PTP).

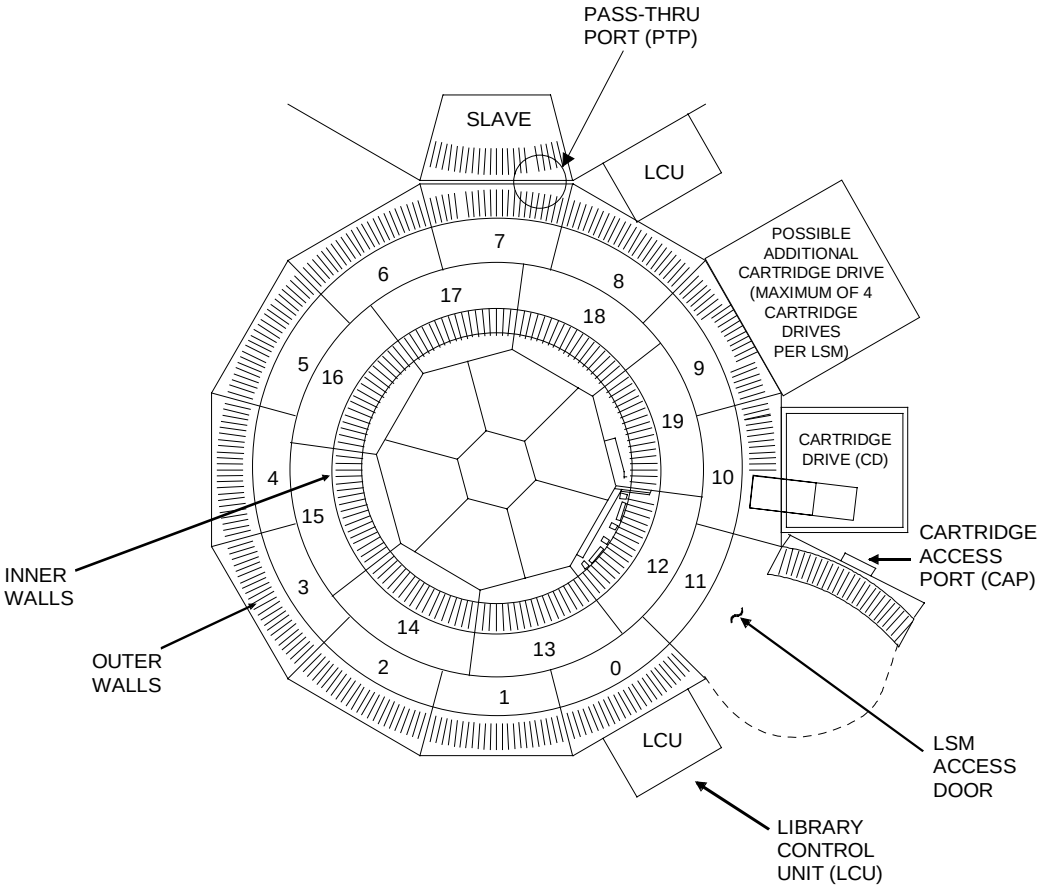


Figure 1-3. PowderHorn Library Storage Module Wall Divisions

TimberWolf™ Cartridge Tape Library

The STK TimberWolf™ 9710 Cartridge Tape Library is composed of:

- the Library Storage Module (LSM)
- the robotic mechanism
- 14 Cartridge Access Ports (CAPs) and 1 Priority Access Port (PCAP)
- CTS 4890 controller(s) and drive(s)

The TimberWolf CTL enables 36-track, mono-transport CTS 4890 drives (also known as Twin Peaks drives) to be used with the DPS 7000, at low cost, without the need of a GPA/FAC to perform the PSI/FIPS conversion. Instead, data conversion is performed via the WSP/SCSI interface, which connects Control Unit(s) to the DPS 7000.

The TimberWolf CTL can support up to 6 STK CTS 4890 drives, which can handle both standard-length (CST) and extended-length (ECCST) media.

The TimberWolf CTL has storage cells for 238 to 602 tape cartridges. The TimberWolf robot is based on the same mechanism as the Wolfcreek robot and can perform up to 180 exchanges per hour.

The STK Timber Wolf 9740 tape library is composed of:

- One to six LSMs that cab be attached toge ther, a CEM (cartridge Exchange Mechanism) makes the cartridge transfer between contiguous LSMs.
- A Cartridge Access Port (CAP).
- CTS 9490 (Timberline) controllers and drives cabinet attached to each LSM. This 9490 cabinet can have 2 or 4 drives inside (M42 oe M44).

Library capacity can vary from 326 cartridges with standard door to 494 cartridges with expansion door, per LSM, to a maximum of 1916 cartriges with 6 LSMs.

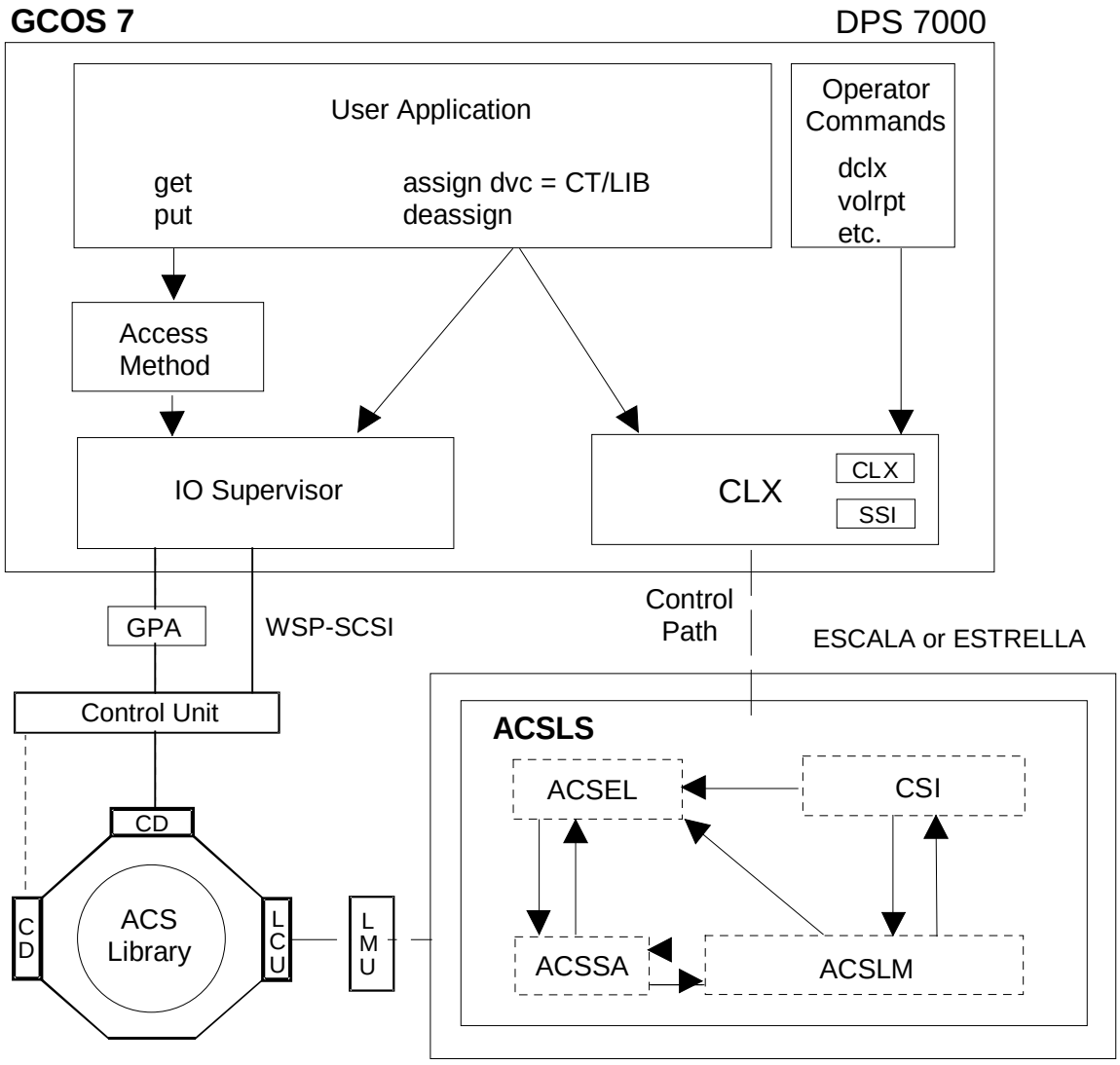
The CTS 9490 Units are connected directly to the DPS 7000 system throught SCSI interface driven by WSP controller.

Drive Units quantity will vary from 2 with one LSM up to 24 with six LSMs.

CTS 9490 handle both standard, lengh (CST) and extended lengh (CECCST) media.

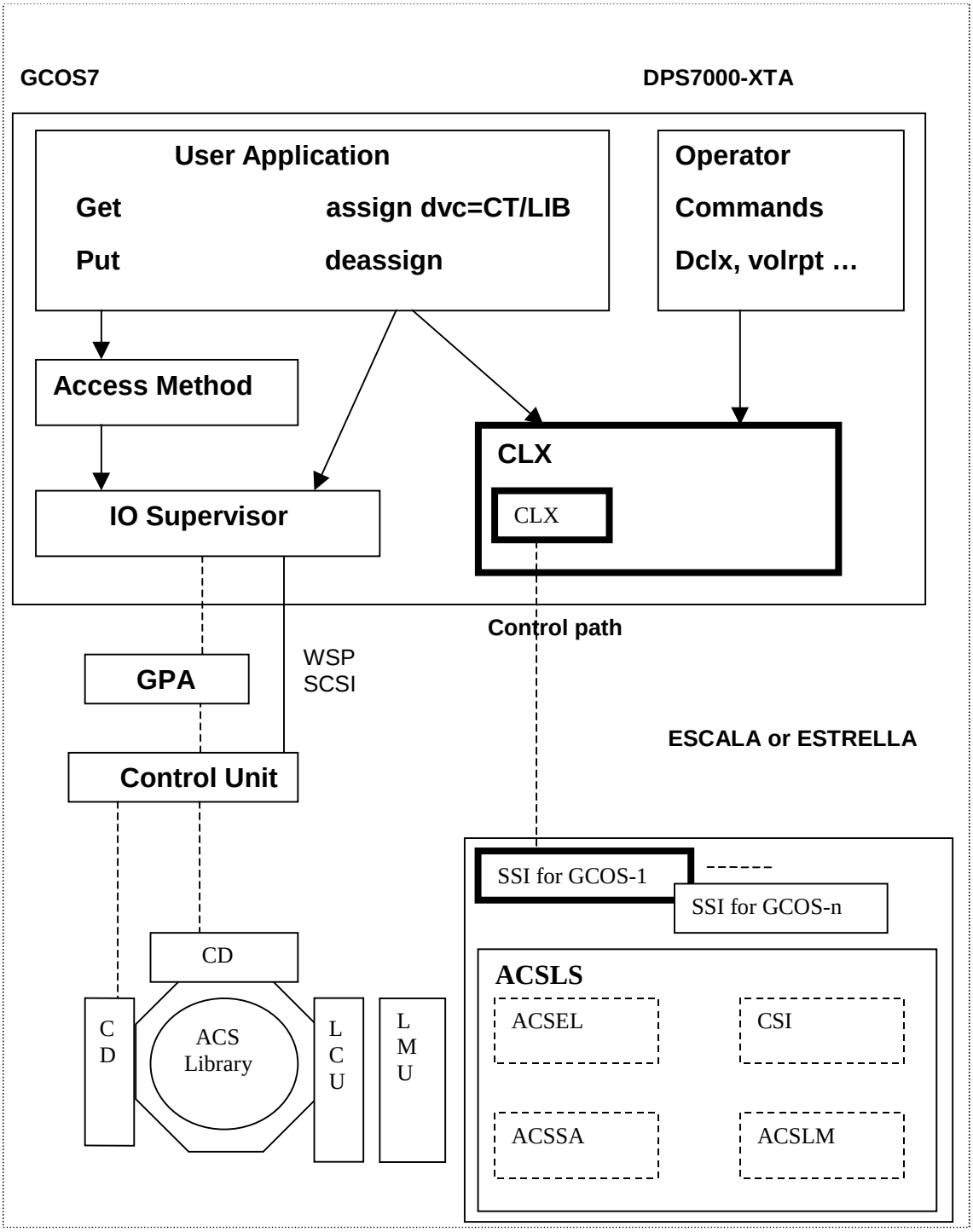
1.4 The Library Server

ACSLS (Automated Cartridge System Library Software) is a software package running on a ESCALA or ESTRELLA UNIX server that is used as a cartridge tape library server. ACSLS interfaces with the Library Management Unit (LMU) to control the library robot.
Components of ACSLS (as well as relevant software components on the DPS 7000) are shown in Figure 1-4.



Native case

Figure 1-4. GCOS 7 and the ACSLS (ESCALA or ESTRELLA) Software Components for the native DPS7000



XTA case **Figure 1-5 GCOS 7 and the ACSLS (ESCALA or ESTRELLA) Software Components for DPS7000-XTA**

The five components of ACSLS are described below:

1. NI (Network Interface), which handles the communication with the DPS 7000. It interacts with the DPS 7000 interface to control the flow of requests and responses and to perform error recovery if necessary.
2. CSI (Client System Interface), which is the interface between the ACS Library Manager (ACSLM; see 3 below) and the SSI of the DPS 7000. CSI presents a control path format to client applications independent of the host and network. CSI communicates through the NI and re-establishes communications paths if failures occur between the ACSLM and the CSI or between the CSI and the NI. CSI also routes error messages to the Event Logger (see 4).
3. ACSLM (ACS Library Manager), which controls the library. ACSLM processes library requests from client applications (through the CSI) or from library users (through ACS System Administration (ACSSA); see 5). ACSLM validates the requests and passes accepted requests to the LMU. When responses are returned, ACSLM routes them to the appropriate requester (ACSSA or CSI). ACSLM monitors error messages from ACSLM to the Event Logger and passes significant messages to ACSSA.
4. ACSEL (Event Logger), which records library error messages and software errors not normally tracked by the operating system. ACSLM and CSI independently send messages to ACSEL, which writes these messages to the Event Log. These messages can be used later for analysis.
5. ACSSA (ACS System Administration), which provides a screen interface allowing library operators and users to monitor and control library server operations. The screen interface is referred to as the Command Processor.

Native case *Generally, the native DPS 7000 systems run OPEN7 subsystem(s) including SSI software package for interface with ACSLS.*

XTA case **Since OPEN7 no longer exists on DPS 7000-XTA, it is necessary to activate on the UNIX library server one SSI for each DPS 7000-XTA connected to ACSLS.**

ACSSA commands can be entered from a local or remote UNIX terminal connected to the ESCALA or ESTRELLA library server. A subset of the ACSSA commands (called **CLX library commands**) can be entered from an IOF terminal connected to the DPS 7000 and sent to the library server. (See Chapter 6, "Operator Commands," for details about both types of commands.)

Once a Cartridge Tape Library has been installed, the UNIX terminal is usually used to:

- audit the whole library or a part of the library,
- enter and eject cartridges,
- define volume work pools (called scratch pools),
- get a volume list of the library,
- get the state of the library components.

The UNIX terminal also needs to be used to backup/restore ACSLS when necessary.

ACSLS uses a database to manage the library and the contents of the library. ACSLS must be backed up periodically to empty the database journals. Refer to "ACSSA Utilities" in Chapter 6 for more information.

Native case *A single ACSLS may simultaneously serve the native DPS 7000 systems running SSI on (one of their) OPEN7 subsystem(s)*

XTA case **A single ACSLS may simultaneously serve DPS 7000-XTA systems with dedicated SSI software package instantiations running for each of them on the UNIX library server.**

1.5 The Host System

The Cartridge Tape Library is supported by the following Bull systems:

- DPS 7000/4xx
- DPS 7000/MTxx
- DPS 7000/TAxx
- DPS 7000/8xx
- DPS 7000-XTA

When DPS 7000 applications use a cartridge tape library, the following components must be operational on the DPS 7000:

XTA case
- **INTEROP7**

Native case
- *OPEN7 on other native DPS 7000 systems*
- CLX, which includes:
  - CLX on the GCOS 7 (several load modules only one permanent job being CLX)

Native case
  - *SSI on an OPEN7 subsystem*

XTA case
  - **SSI on the ACSLS server**
- the GPA(s) (General Purpose Adapter)
- Control Unit(s)

Native case
- *Communication Controller(s) (TNS or OCS)*

The OPEN7 startup and the CLX startup can be included in the system startup. Control units are automatically initialized when they are switched on.

The GPA is automatically initialized:

Native case
- *by SIP,*

XTA case
- **by V7000 installation/update,**

- or by a MDHW IN command. This command can be included in the system startup.

Native Case
The SSI can be started automatically when OPEN7 is activated, and should be started before the CLX (this is not mandatory), and (TNS or OCS) must be active during the OPEN7 activation step..

ACSLS must be operational on the UNIX server. ACSLS can be started automatically when the UNIX server is switched on or rebooted.

1.5.1 GCOS 7 and the CLX Software

Whenever a user program or a GCOS 7 utility program references a volume in the cartridge library, the following DPS 7000 actions are performed:

- GCOS 7 assigns the files and volumes required for execution of the program.
- GCOS 7 allocates the devices required to mount the volumes assigned to the program. It also supervises the mounting and dismounting of volumes on the devices.
- CLX ensures the interface between the GCOS 7 and the ACSLS (see Figure 1-4).
- CLX receives MOUNT / DISMOUNT requests for cartridge devices attached to the library, maps each request to one or more ACSLM commands, and sends them to the ACSLM on the UNIX server. CLX manages the exchanges with ACSLM and manages the communication link with the library server using the RPC facilities

Native case

- *Between the local ssi on OPEN7 and the remote ACSLS server*

XTA case

- **On the remote server between the ssi and the ACSLS**

- The Access Method ensures access to the data in the files. It transforms the reading, writing, positioning, etc. into input/output/rewind/load/unload operations, while always accounting for the specific requirements of the device.
- The I/O Supervisor executes (on the PSI channel) the channel programs defined by the Access Method. The I/O Supervisor is responsible for error recovery procedures for the cartridge transport, the control unit, and the GPA.

The principal functions of CLX are to:

- synchronize the databases containing device statuses of the library server and of GCOS 7:
  – at startup,
  – after an ACSLS failure,
  – after an LSM failure.
- ensure the automatic mount/dismount operations requested by the Device Manager,
- handle specific operations concerning work volumes,
- ensure that all requests that cannot be executed immediately are placed on a wait queue and are restarted when the necessary resource--device and (or) cartridge--becomes available,
- disable the automatic processing as long as ACSLM is not operational and (or) LSMs are not on-line,

- abort jobs and commands by performing a 'CANCEL REQUEST' command for mount/dismount requests which cannot be processed automatically (for example, when the protect selector is in the wrong position on the tape),
- offer a GCL operator interface that permits effective monitoring and control of library usage. CLX offers **CLX commands** to start, terminate and trace the automatic mounting/dismounting processing and **library commands** (most of the ACSSA commands available on the library server, such as QUERY and AUDIT). CLX also offers **CLX utilities** to generate a history report of cartridge usage and to transfer SSI and ACSLS log files into a GCOS 7 file.

CLX is initialized in the following manner:

Native case

1. It waits until the SSI is active
   - on the OPEN7,
   - in the proper directory on the UNIX library server.

XTA case

2. It waits until ACSLM is active on the UNIX server.
3. It resynchronizes the status of the devices between GCOS 7 and ACSLM.

Then, CLX is ready to process mount/dismount requests issued by GCOS 7.
The waiting times can be limited to the time specified in the CLX configuration.

1.6 Configurations Supported

This section describes the Cartridge Tape Library configurations that are supported, with some recommendations about performance. Examples of basic configurations are given.

1.6.1 ACS Mono-LSM Configuration

The basic configuration supported is an ACS mono-LSM system:

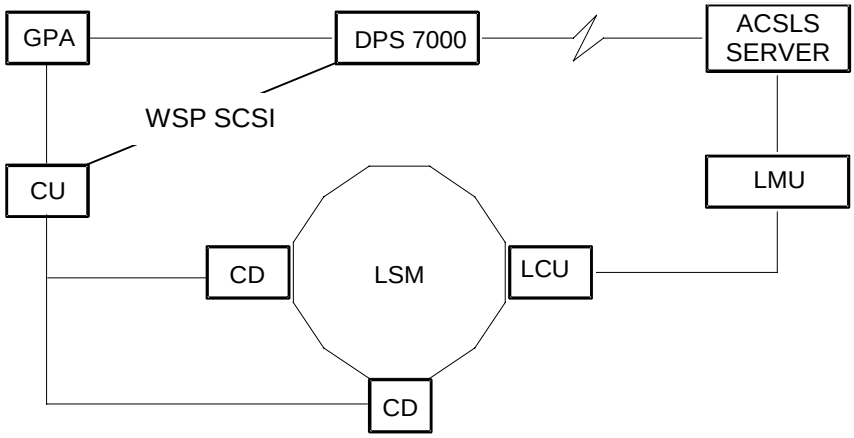


Figure 1-6. ACS Mono-LSM Configuration

Another Control Unit (CU) is necessary in a configuration containing 3 or 4 cartridge drive cabinets.

1.6.2 Mono-ACS Multi-LSM Configuration

A mono-ACS multi-LSM configuration consists of two or more silos (LSMs and LCUs) linked together through Pass-Thru Ports (PTPs), where silos are controlled by the same LMU and the same library server. Each silo can contain its own group of cartridge transports.

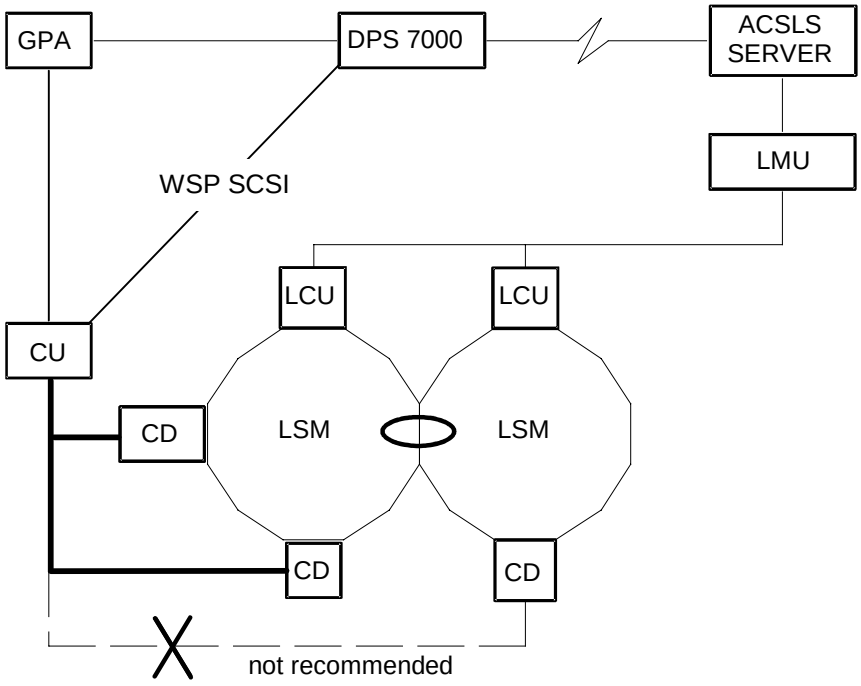


Figure 1-7. Mono-ACS Multi-LSM Configuration

When the host system issues a mount request, it specifies a volume and a device. This request is optimized if the transport is connected to the silo where the requested volume is stored.
During the mounting of a volume, GCOS 7 selects an available transport before it knows in which silo the volume is stored. If the volume is not stored in the silo of the selected drive, the server moves the volume, via the Pass-Thru Port, from its silo to the silo containing the drive. Since this process takes time, the following recommendations should be followed in a mono-ACS multi-LSM configuration:

- A GCOS 7 system should have all of its transports connected to the same silo.
- This silo should contain the most important volumes required by the connected system.

If Cartridge Drive (CD) cabinets are connected to several silos, in case of failure of one LSM, the whole set of silos becomes unavailable until the failure is fixed.

NOTE:
The multi-ACS configuration is **not** supported.

1.6.3 Mono-ACS Multi-Host Configuration

Multiple GCOS 7 systems can be connected to an ACS system through the ACSLS server:

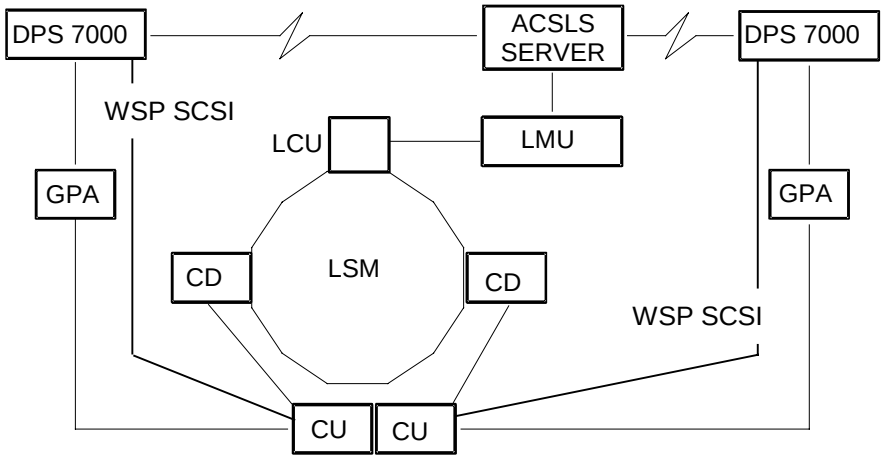


Figure 1-8. Mono-ACS Multi-Host Configuration

DPS 7000 systems can share Control Units (CUs).

Static sharing of cartridges and transports is supported. This is described in more detail in Chapter 7, "Static Sharing."

2. Setting Up Your CTL on the DPS 7000

2.1 Prerequisites

ISI7 (Interoperability Standard Installation on GCOS7) must be used to install CLX on GCOS7 as well as other interoperability components.

Native case *Before you can set up your CTL, the following software components must be present or installed :*

- *OPEN7,*
- *NFS,*
- *TCP-IP,*
- *TNS or OCS.*

The CLX software to be installed on GCOS 7 has two separate Marketing Identifiers (MIs), one for the ACS4400 and PowderHorn library, and one for the Wolfcreek and TimberWolf library. It is available from the following technical status number:

Native case
- *GCOS 7-TS 7560,*
- *OPEN7-4.5.*

XTA case
- **INTEROP7 ID143 and follow.**
- **GCOS7 V10**

CLX requires less than 12 Megabytes of system disk. The system must have at least 64 Megabytes for central memory. It is delivered on a single tape or cartridge.

Native case *OPEN7 must be installed first. A reinstallation of OPEN7 or INTEROP7 does not require a reinstallation of CLX.*

CLX 3.2 requires OPEN7 V4 and is delivered on ISI 7 tape.

XTA case **A reinstallation of V7000 does not require a reinstallation of CLX.**

2.2 Installation of CLX

For the installation of CLX 4.1, refer to

Native case - *Interoperability Software Installation 7 - Administrator's Guide*. (56UU)

XTA case **- Interoperability 7 software – user's Guide (91 US)**

The installation of CLX on the DPS 7000 requires the following three phases:

1. Installation of CLX on GCOS 7,
2. Installation/configuration of SSI

Native case *- on OPEN7,*

XTA case **- on UNIX library server**

3. Manual configuration of CLX on GCOS 7.

2.2.1 Installation of CLX on GCOS 7

The installation of CLX is executed within ISI7 job launched on GCOS7 from ISI7 self-loading tape or cartridge (or thanks to an ISI7 compact-disc if OPEN7 or INTEROP7 is already available on the DPS 7000). See ISI7 manual 47A2 56UU.

CLX installation performs the following tasks on GCOS7:

- creates the project CLX unless it already exists,
- creates a user CLX with password CLX,
- creates the directory CLX unless it already exists,
- creates the private catalog CLX.CATALOG unless it already exists,
- deletes the old CLX files unless otherwise stated,
- (creates and) loads the private system CLX.SYSTEM,
- (creates and) loads the libraries: CLX.SLLIB, CLX.LMLIB and CLX.BIN,
- stores CLX help in the file SITE.HELP,
- stores H_CLX_CAT0 message catalog in the SYS.HBINLIB library,

NOTE:

The GIUF function UPDATE_GCOS delete members of the SYS.HBINLIB library, and thus the subfile H_CLX_CAT0. Without this subfile, all CLX commands will abort with a message like: ERROR IN CATALOG OPEN RC=4E901008 -> QL 16,SFNUNKN To avoid this situation, it is necessary to save the subfile H_CLX_CATO of the SYS.HBINLIB library before an UPDATE_GCOS.
(it can be saved in the CLX.BIN library with the copy command of the LIBMAINT processor).

After the UPDATE_GCOS, restore the H_CLX_CAT0 in the SYS.HBINLIB.

Native case

- *creates the file OPEN7.CLX which is changed into an OPEN7 file by the script OPEN7_INIT_CLX.*

The job INSTALL_CLX is stored in the CLX.SLLIB library.

2.2.2 Installation/Configuration of SSI

Native case *This is performed by the script OPEN7_INIT_CLX. The script:*

- *creates the partition /dev/clx,*
- *executes the script /clx/install/load which:*
  - *checks the OPEN7 version,*
  - *deletes the old SSI files,*
  - *creates the group clx and the user clx,*
  - *creates the SSI directories,*
  - *updates the permission bits for the SSI files,*
  - *processes the script /clx/install/config_clx which performs the SSI configuration.*

XTA case **This is performed by the script install_ssi on AIX The script:**

- **creates the group clx and the user clx,**
- **creates the SSI directories,**
- **updates the AIX startup**
- **starts the installed SSI**

2.3 Installation Procedure

Native case *See ISI7 manual 47A2 56UU.*

XTA case **See INTEROP7 manual 47 A2 91 US**

2.3.1 Installation Procedure of CLX

2.3.1.1 Prerequisites

CLX is installed only if the corresponding MI is validated.

These following media must be installed:

Native case *- the ID143 CLX tape installation through the **INSTAL** ISI7command.*

XTA case **- the ID143_CD CD installation through the INSTALLSHIELD command.**

Only users declared in the **SYSADMIN** project of GCOS 7 can use the ISI7 installation facility.

For systems with the SECUR'ACCESS product, only the user **SECADMIN** is allowed to run the INSTAL or LOAD_PRODUCT_FILES commands.

2.3.1.2 Impact on the environment

CLX can be installed in any environment in the CLX directory. The latest installation overlaps the previous one.

COUPLED environment

Not possible.

Site securized by SECUR'ACCESS

The installation of CLX on a securized site is taken in account.

2.3.1.3 Automatic Actions to Reach LOADED State

If you run the INSTAL_PRODUCTS command when CLX is already present, ISI 7 proceeds as follows. It:

Native case

- *stops the CLX daemon,*
- *removes the partition* `<open7dir>.clx`,
- loads CLX components on GCOS 7.

2.3.1.4 Automatic Actions to Reach CONGURED State

Native state

CLX installation aborts in the LOADED state if OPEN 7 is not in the CONFIGured state.
If OK, ISI 7:

- *creates and mounts the partition* `<open7dir>clx`,
- *starts the CLX daemon.*
-

2.3.1.5 Reinstallation of CLX

Native case

ISI7 procedure for CLX (re)installation stops the CLX daemon and removes the /clx partition before CLX reinstallation.

Before running CLX reinstallation, the main operator must not have attached the library CLX.BIN in his/her startup. If this library is attached (this may be checked by the DP LIBS command), you must remove this attachment from the statrtup file, log off the operator, and login to run the installation.

Customer's private file: (CLX_CONFIG, ...) stored in CLX.SLLIB library are kept end left unchanged after CLX re-installation. After CLX re-installation, it may be necessary to update CLX_CONFIG file with new parameters. A model is provided in CLX_CONFIG_REF.

2.3.1.6 Displaying the CLX and OPEN7 Versions

The CLX version is included in each TU message displayed by CLX and in the outputs of the DISPLAY_CLX GCL command.

Native case

- the CLX version is also stored on OPEN7 in the file:

```
/install/ident/clx/vers
```

- the OPEN7 version is stored in the file:

`/install/ident/open7/vers`

-To read these files, log in to OPEN7 as the root user and use a UNIX print command.

EXAMPLE: `more /install/ident/clx/vers`

2.3.1.7 CLX Configuration File Parameters **on Native DPS7000**

Load parameters

`CLX_VOLUME`	Disk volume name for CLX, for example: `BFU706:MS/B10`
`OPEN7_NAME`	Main directory name of the OPEN 7 catalog

Configuration parameters

`REMOTE_IP_NAME`	The ACSLS remote IP name. This name will be automatically set or updated in `/etc/hosts`.
`REMOTE_IP_ADRESS`	The ACSLS remote IP server address.
`GATEWAY_NAME`	This optional parameter is the name of the remote UNIX server (an IP_NAME) on the local OPEN 7 subnetwork whichsubnetwork, which is to be used as the gateway to access REMOTE_IP_NAME when the remote server is on a subnetwork other than OPEN 7. This name is inserted in the corresponding routing.
`GATEWAY_IP_ADDRESS`	The internet address of GATEWAY_NAME. It must have the format: AAA.BBB.CCC.DDD where AAA, BBB, CCC, and DDD are numbers in the range 0 TO 255.

2.3.2 Installation procedure of CLX for DPS 7000-XTA

2.3.2.1 CLX on GCOS7 installation

- SI7 tool installation

This is the very first step of the installation procedure to be carried out. It consists in downloading the SI7 tool from the INTEROP7 MEDIAS. Following this step, the SI7 command processor that provides the automatic installation facilities can be activated.

To download the SI7 tool, proceed as follows:

```
S: EJ INFILE=SI7INS:ID143:CT/LIB [VL=(DIR=INTEROP_STD)]
08.42 X9544 IN SI7INS USER=SYSADMIN CLASS=P SPR=7
STATION=ASSE
29/ X9544 *** Input tape device type [default MT/T9] ***
S: REP 29 CT/LIB
30/ X9544 *** Disk media name where SI7 libraries locates ***
S: REP 30 SYSG7
31/ X9544 *** Disk device type (D500 B10 FSA) ? ***
S: REP 31 FSA
08.43 X9544     STARTED SI7INS  SYSADMIN P

      FROM SYSADMIN X9544: >>> INSTALL for SI7 version =
1.5.0 <<<
      FROM SYSADMIN X9544: >>> Environment: installation
(directory=INTEROP_STD)<<<

      FROM SYSADMIN X9544: >>> Installation of SI7 tools OK
(directory=INTEROP_STD)<<<

08.43 X9544     COMPLETED SI7INS SYSADMIN P
```

- Setting Filters

This is the second step of the installation procedure, where you select the products to be configured then installed through ISI7. The **APPLY_FILTER** command is systematically and automatically called each time you enter the SI7 command monitor. This is to avoid unnecessary rejection in the CONFIG_PRODUCT procedure because of an omission to set the product filters. The filters you set are memorised only for the duration of an SI7 session.

Below is an example of setting product filters, where CLX are selected. Only CLX is involved in the following examples:

Connect as IOF SYSADMIN

```
S: MWINLIB BIN INTEROP_STD.BINLIB
S: SI7 ID143:CT/LIB;
>>>16:21 SI7  1.4
      >>>>>>>>        WARNING      <<<<<<<<
        NEW Filter Visibility!
              Filter Now mandatory!
         NOW, Choose your products from the list below!

 toggle    product name   choice   site_version   status     tape_version
  ------------------------------------------------------------------------
  |  1 | INTEROP_BASIC     | -   |                |          | 1.5      0    |
  |  2 | FTP7              | -   | 3.1      2     | CONFIG   | 1.5      0    |
  |  3 | OPENGTW           | -   |                |          | 1.3      0    |
  |  4 | CLX               | -   |                |          | 4.2      1    |
  |  5 | DA7NGEN           | -   | 6.0      3     | CONFIG   | 8.0      0    |
  |  6 | ESP7NGEN          | -   | 6.1      0b    | CONFIG   | 7.2      0    |
  ------------------------------------------------------------------------

             c: clear selection
             i: select all products
       <number>: select a product (toggle switch)
   <number list>: select a list of products
             l: list selection
       q (or /): apply and quit this selection
  Command or ?:
I: 1, 4, 16    (select the products you want to install)

                  NOW, choose your products from the list below!

 toggle    product name   choice   site_version   status     tape_version
  ------------------------------------------------------------------------
  |  1 | INTEROP_BASIC     | -   |                |          | 1.5      0    |
  |  2 | FTP7              | -   | 3.1      2     | CONFIG   | 1.5      0    |
  |  3 | OPENGTW           | -   |                |          | 1.3      0    |
  |  4 | CLX               | -   |                |          | 4.2      1    |
  |  5 | DA7NGEN           | -   | 6.0      3     | CONFIG   | 8.0      0    |
  |  6 | ESP7NGEN          | -   | 6.1      0b    | CONFIG   | 7.2      0    |
  ------------------------------------------------------------------------

c: clear selection
             i: select all products
       <number>: select a product (toggle switch)
   <number list>: select a list of products
             l: list selection
       q (or /): apply and quit this selection
  Command or ?:
I: q
C:
```

- Configuration set up

This is the third step of the installation. The SI7 **CONFIG_PRODUCTS (CONFPROD)** command allows you to describe a configuration file for all the products the ISI7 media deliver. This has to be done once, at the installation time, then this configuration will be re-used each time a product will be updated or re-installed.

The following example applies for a complete installation, i.e., when INTEROP_BASIC and CLX have to be installed. When INTEROP_BASIC is already installed and up to date, use the previous configuration file and only supply the parameters for CLX.

```
C: confprod

 ------------------------------------------------------------------------
1/1                        CONFIG_PRODUCTS                          -->:
                         Configuration of products
 OUTPUT_CONF                      + The output configuration file: CLX_CONFIG
 if no INPUT_CONF, SITE configuration is taken
 INPUT_CONF                     The input configuration file:(transmit if none)
------------------------------------------------------------------------

C: CONFIG_PRODUCTS CLX_CONFIG;

------------------------------------------------------------------------
1/1                         MODIFY_load_clx                         -->:
                          Modify clx parameters

CLX_VOLUME                 + Disk volume name for CLX product: SYSG7:MS/FSA
REMOTE_IP_NAME             + The ACSLS IP name  : resnais
SSI_PORT_NUM               + The SSI server port number :51001
 ------------------------------------------------------------------------
```

Warning:

as UNIX is case sensitive, protect from lower cases translation (if any) with quotes (line mode only).

- INSTALLATION

This is the fourth and final step of the installation. Running the INSTAL_PRODUCTS command triggers the automatic installation and configuration of the previously selected products.

```
C: instal
 ------------------------------------------------------------------------
1/1                       INSTAL_PRODUCTS                          (+) -->:
                      Instal. of Iterop. Soft. products
 CONFIG_FILE                      + Configuration file: CLX_CONFIG
 Start from beginning or current state
 FROM                             + BEGIN or CURRENT:      BEGIN
 SILENT                           + Silent mode ?: 0
------------------------------------------------------------------------

C: INSTAL_PRODUCTS CLX_CONFIG;

-------------------------------------------------------------------------
|                          CURRENT   |      ON TAPE    |       |       |
| PRODUCT           RELEASE   CORR  | RELEASE   CORR  |ACTIONS| TAPE  |
|-----------------------------------------------------------------------|
| CLX                                | 4.1       1     |  3  I |ID143  |
|-----------------------------------------------------------------------|

   These actions will be executed.
   (Actions: I for Instal, N for No instal)
   Do you agree ? (Y, N or a product number)

I: y

09.43 X9590 IN   INSTAL USER=SYSADMIN CLASS=P SPR=7 STATION=DPS7
09.43 X9590     STARTED INSTAL  SYSADMIN P
   SI7:INIT    : writing in SI7.SLLIB..LOG file

               Wait for the complete installation process where finally the
               selected products must reach the LOADED status:

SI7:-------------------------------------------------------------------
SI7:     PRODUCT           RELEASE     CORR        STATUS
SI7:-------------------------------------------------------------------
SI7:         CLX           3.2         6           LOADED
SI7:-------------------------------------------------------------------
SI7:END   :     10:43:42    February 25,      2000

10.43 X9590     COMPLETED INSTAL  SYSADMIN P
10.19 X781  IN   CLXINS USER=GCOS7 CLASS=P  SPR=7 STATION=DPS7
10.19 X781     STARTED   CLXINS   GCOS7 P
10.23 X781.46   COMPLETED CLXINS   GCOS7 P
10.23 X780.1    COMPLETED INSTAL   GCOS7 P
```

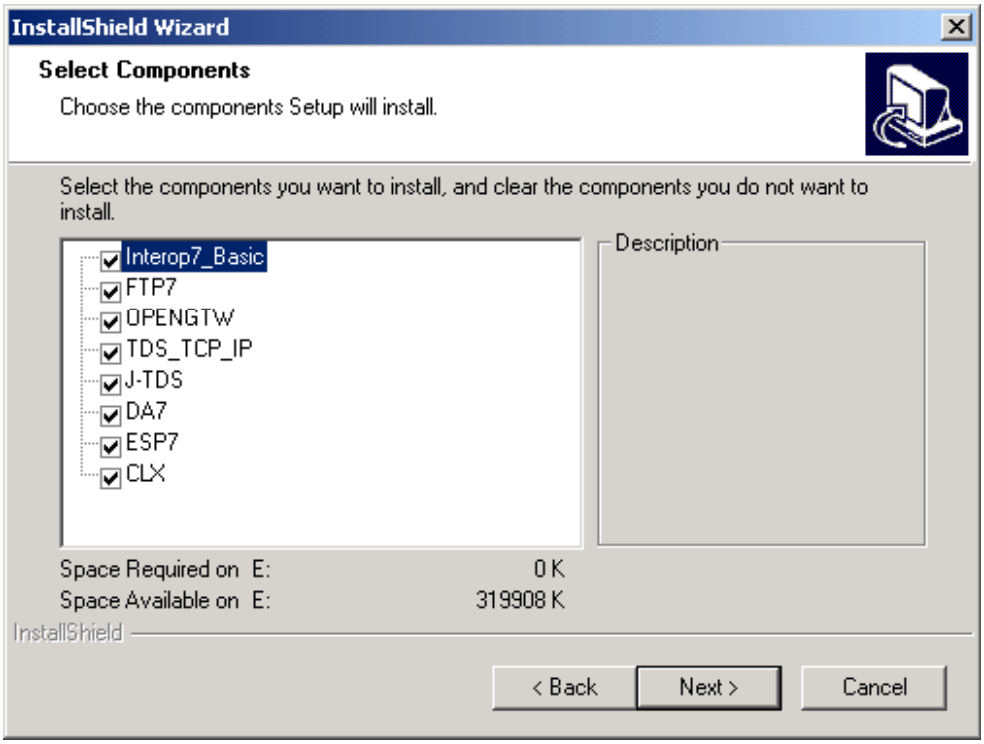
The LOG installation is:

```
<<<10:25
-->10.19 X780  IN   INSTAL USER=GCOS7 CLASS=P  SPR=7 STATION=DPS7
-->10.19 X780     STARTED   INSTAL   GCOS7 P
--> SI7:INIT    : rename LOG to LOG_OLD in INTEROP_STD.SLLIB
--> SI7:INIT    : writing in INTEROP_STD.SLLIB..LOG file
--> SI7:>>> INIT    : Product = CLX (or CLX ), Status = LOADED
--> SI7:>>> INIT    : LIST of PRODUCTS to be installed :
--> SI7:>>> INIT     : - CLX (or CLX )
--> SI7:>>> CLX     : ---------- INSTALLATION STARTED ------------
--> SI7:>>> CLX     : LOADED --> DELIV in progress ...
--> SI7:>>> CLX     : DELIV done.
--> SI7:>>> CLX     : DELIV --> LOADED in progress ...
--> SI7:>>>>>>>>>
>>>>>>> CLX     : LOAD from tape = ID143
>>>>>>>> Verify that this tape is premounted
--> SI7: Launching job from INTEROP_STD.sllib SUBFILE = CLXINS
--> SI7: WAITING -> TIMER set :             15 MINUTES
--> SI7:>>> CLX     : LOADED done.
--> SI7:>>> CLX     : ---------- INSTALLATION COMPLETED ---------
```

2.3.2.2 CLX on W2000 installation

Use the ID143_CD media and use the start\settings\control Panel and add/remove program to start INTEROP7 installation

The automatic instalshield starts. You must verify if the CLX options are selected



The clx_ssi.tar components are loaded on <INTEROPDIRECTORY>\CLX\web

2.3.2.3 CLX on remote ACSLS installation

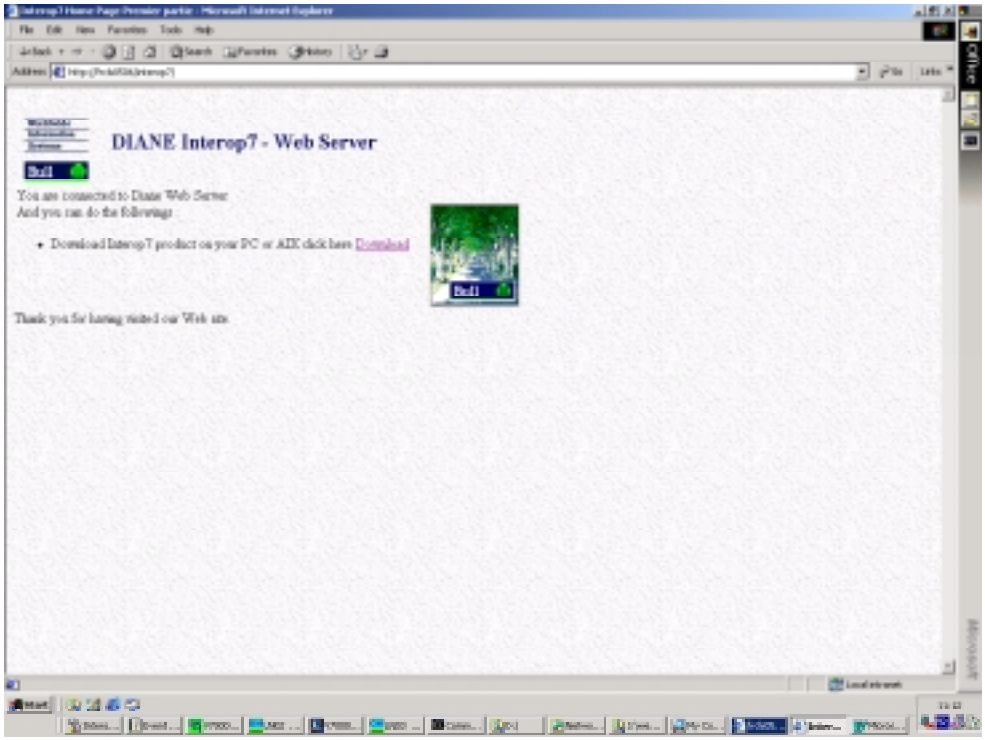
Remote components can be downloaded on the ACSLS server :

with a web browser
or with FTP

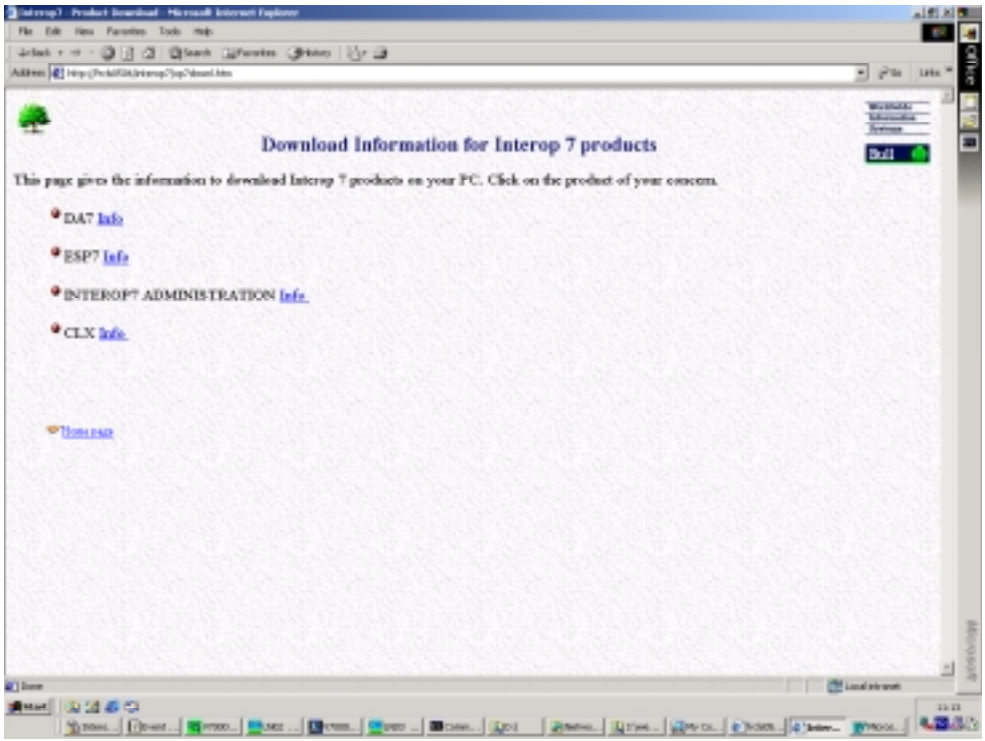
- with a web BROWSER

Start on the ACSLS server the Netscape browser and type
http:/<XTA_ip_name>

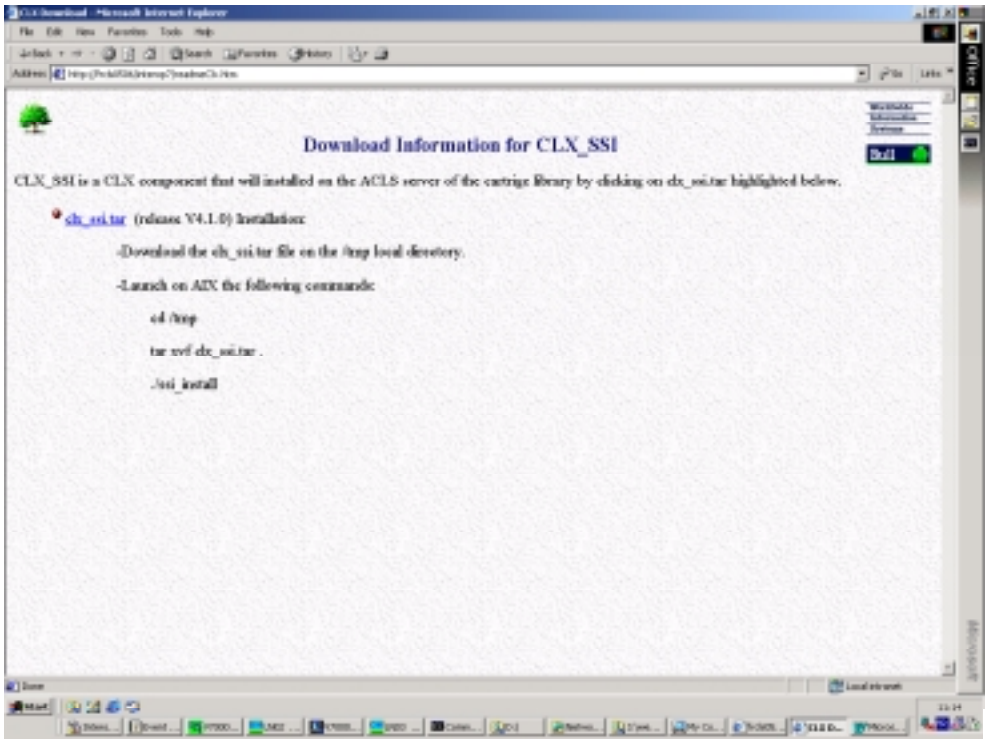
The following screen are displayed:



Click on the Download field, the following screen is displayed:



Then click on the CLX info field:



- **with FTP :**

On the local XTA server type the following commands:

```
$ ftp <ACSLS_ip_name>
ftp> cd /tmp
ftp> bin
ftp> put <INTEROP_DIRECTORY>\CLX\web\clx_ssi.tar
ftp> quit
```

Then on the ACSLS server log as root user and type the commands:

```
$ cd /tmp
$ tar xvf clx_ssi.tar .
$ ./ssi_install
```

The installation starts: One Acsls server can receive one different ssi daemon per GCOS7 on XTA, if you have many XTA platforms to be managed. GCOS7 with OPEN7 can always use this server.

```
CLX installation on your system is being started
-------------------------------------------------
-->  GCOS name of the XTA server (4 chars) ? :
BC06
```

(type the DSA name of the GCOS7 which is on XTA platform)

```
--> Port number of this ssi server? ; advice : 5100x
51001
```

(Each SSI server must have a specific port number for the XTA plateform that it wants to manage)

```
-->  IP address of the XTA server (aaa.bbb.ccc.ddd)?
:
129.197.182.23
++++++++++++++++++++++++++++++++++
WARNING 129.197.182.23 is unknown in /etc/hosts
++++++++++++++++++++++++++++++++++
-->  Would you update the /etc/hosts file ? :
no
```

(depend on your network management with DNS or..You have this question only if this IP address is not in your /etc/hosts)

```
Automatic startup of SSI at UNIX reboot (yes/no)?
Yes
```

(If yes a reboot AIX will automatically restart ssi daemon)

```
CLX installation on your system is terminated
----------------------------------------------
```

NOTE:

If the user clx does not exist before the installation, a clx entry is created in the /etc/passwd file then enter manually the password for clx user. Try manually one connection with the user and password clx.

All AIX ssi software is installed in /clx/<GCOS_NAME> directory.

2.3.2.4 5.2.3 Customization phase

- First installation of CLX

Create and initialize the CLX configuration (CLX_CONFIG file) by following the model stored in the subfile CLX_CONFIG_REF in the library <CLX>.SLLIB, and comply with the rules described below. § 2.4.1

2.3.2.5 Reinstallation of CLX

Customer's private files (CLX_CONFIG,...) stored in the CLX_SLLIB library are kept and left unchanged after the CLX reinstallation.

2.4 Configuration

You must configure:

- UNIX library server ACSLS on ESCALA or ESTRELLA,
- GCOS 7:
  - CLX on GCOS 7,
  - GCOS 7 system,
- SSI:
  - *on OPEN7*,
  - **on UNIX library server.**

Native case
XTA case

The GCOS 7 configuration includes:

- the system configuration file which gives the list of hardware resources as seen by the DPS 7000,
- the CLX configuration which specifies the network timeout parameters, the silos containing transports, the addresses of transports as seen by the library server, the identifier of scratch pool from which work volumes must be taken and optionally, the list of volumes allowed for the local system.

The CLX configuration file must be modified when:

- transports are physically added to/removed from the library,
- a silo containing one or more transports is added/removed,
- the list of authorized volumes is modified,
- the scratch pool identifier is changed,
- a new CLX version with new functions is installed.

Modifications of CLX configuration take effect after a CLX restart.

2.4.1 UNIX Library Server Configuration

ACSSS configuration on UNIX library server

Once the library server is successfully installed and configured following the instructions in the ACSLS Installation Guide, you must declare in the /export/home/ACSSS/.rhosts file on the UNIX server

Native case - *the IP network name of the local OPEN7,*

XTA case: - **the IP network name of the DPS 7000-XTA itself,**

under the format:
<IP name of the local OPEN7 or DPS 7000-XTA> clx
The permission bits on the /export/home/ACSSS/.rhosts must be – r w – r - - r - -.
If they need to be changed, enter on UNIX library server:
chmod 644 /export/home/ACSSS/.rhosts

This enables you to transfer files from the UNIX server to the DPS 7000, using the GET_CLX_FILE command.

2.4.2 System Configuration

All devices attached to the library **must** be declared in the system resource table.

The Cartridge Tape library transports and the GPAs (including the control units) must be declared in the SRST. The device names are:

- **TCnn:** control units and GPAs, with TC-STK as model name or WSP-C (SCSI),
- **CTnn:** transports, with CT-STK as model name or CT-3 [LIB] (SCSI),
- **CT/LIB:** device/class which designates the library cartridge transport. It is
  CT/LIB/M5 for 18-track devices
  CT/LIB/36T for 36-track devices
- **TC/M7:** designates the GPA and channel of the associated control units.

CONFIG must be run to validate the modified SRST.

2.4.2.1 Ressource management

Connect the load module H_CLX to the ARM system dimension (SYS). By default, the CLX job is executed in the default class for batch jobs. Depending on the load of your installation, you may wish to specify a CLASS in the $JOB statement of the JCL that starts the CLX, then modify the subfile CLX in the CLX.SLLIB library.

Save the modified subfile so it can be restored in case of any re-installation of CLX.

2.4.2.2 Configuration of the System Startup

CLX can be activated by the command START_CLX (SCLX), submitted by the GCOS 7 operator. However, you are advised to start CLX within the system startup sequence by adding the following command to :

Native case *the member SYSTEM of the library SITE.STARTUP:*

```
EJR CLX LIB=CLX.SLLIB WHEN=+xm;
```

This command must be placed after the startup of OPEN 7 and the value x of the WHEN parameter must be sufficient to let OPEN 7 start and be ready when the CLX will start.

EXAMPLE:

```
EJR CLX LIB=CLX.SLLIB WHEN=+5M;
```

The CLX will start 5 minutes after the execution of the SYSTEM member of the SITE.STARTUP library.

XTA case **The startup file of CLX is automatically set by the CLX installation in the INTEROP_STD.SLLIB..STARTUP subfile with :**

```
EJR PROC=START_CLX CLX.BIN WHEN=+3M HOLDOUT  NAME=CLX;

Above line can be modified by the administartor if necessary.
```

2.4.3 CLX Configuration on GCOS 7

A default configuration is delivered with CLX in the subfile CLX_CONFIG_REF in the library CLX.SLLIB. Using the CLX_CONFIG_REF, your System Administrator must create or update the CLX_CONFIG file to your specific site requirements.

The name of the configuration file can be provided by the operator when CLX is started. The library name and the subfile name can be supplied as parameters of the SCLX command. By default, the CLX_CONFIG file in CLX.SLLIB is used.

The System Administrator can perform the configuration in one of two ways:

- modify the CLX_CONFIG file. This file is saved before any further installation of CLX. Then, no parameter needs to be specified for the SCLX command.
- store the configuration in a subfile of a private Iibrary. Then, the library and subfile names must be specified for the SCLX command.

Description of Configuration Parameters

The following rules apply to the parameters in the configuration file:

- Each parameter must be on a separate line.
- Keywords can be in any order, except for CTnn and LSMID.
- There can be either no blank characters or several blank characters between the keyword and the '=' sign.
- There can be either no blank characters or several blank characters between the '=' sign and the <value>.

EXAMPLE: `KEYWORD = <value>`

The available keywords are described below:

TOACSLM

Definition: timeout value for watching ACSLM.
Value: 3 mn to 30 mn (expressed in ms).
Default: 5 mn.

This parameter is used by CLX in its process to check that ACSLM is operational. Periodically CLX sends a "query server" command. TOACSLM gives the time delay between 2 "query server" commands. The timer is triggered as soon as CLX is operational and remains operational as long as CLX is active. If the library server does not answer a "query server" command, the request "query server" is retried until the maximum number of retries is reached (see MAXTOACSLM parameter).

The default value is set if this keyword is not specified in the CLX_CONFIG file. CLX displays an error and stops if an incorrect value is specified.

This parameter should not be modified by the operator unless requested by Bull support.

TOSSI

Definition: timeout value for watching SSI.
Value: 3 mn to 30 mn (expressed in ms).
Default: 5 mn.

This parameter is used when CLX detects a SSI failure for a library request. It gives the time delay after which the library request is retried by CLX. The library

request is retried until the SSI failure disappears unless the maximum number of retries is reached (see MAXTOSSI parameter).

The default value is set if this keyword is not specified in the CLX_CONFIG file. CLX displays an error and stops if an incorrect value is specified.

This parameter should not be modified by the operator unless requested by Bull support.

TOLSM

Definition: timeout value for watching the LSMs (silos).
Value: 3 mn to 30 mn (expressed in ms).
Default: 5 mn.

This parameter is used when CLX detects that at least one LSM is not operational. It gives the time delay after which CLX asks for the LSMs state by using the request "query LSM". The timer is triggered after an abnormal status is returned to the CLX on a library request, which says that an LSM is offline. Every TOLSM, CLX performs a "query LSM" request until all LSMs are online.

The default value is set if this keyword is not specified in the CLX_CONFIG file. CLX displays an error and stops if an incorrect value is specified.

This parameter should not be modified by the operator unless requested by Bull support.

TORPRQ

Definition: timeout value for watching a response to a library request.
Value: 2 mn to 5 mn (expressed in ms).
Default: 2 mn.

It specifies time delay between 2 repetitions of a request sent to the server.

A timer is triggered by CLX each time it sends a request to the library server. When this timer times out, the request is repeated unless a response to the request has been received and the maximum number of repetitions is reached:

- If the library request is MOUNT, DISMOUNT, LOCK or UNLOCK, the library request is repeated 2 or 3 times depending on whether the request has been acknowledged or not. If, despite the repetitions, there is no answer, the CLX asks for the status of the ACSLM (refer to the TOACSLM parameter).
- If the library request is **not** MOUNT, DISMOUNT, LOCK or UNLOCK, the request is repeated up to 10 times. If, despite the repetitions, there is no answer, the step H_CLX of the CLX job issues error messages and then aborts setting the severity 4 status 23000 and the job CLX stops unless the CLX.SLLIB..CLX subfile has been modified by the System Administrator.

The default value is set if this keyword is not specified in the CLX_CONFIG file. CLX displays an error and stops if an incorrect value is specified.

This parameter should not be modified by the operator unless requested by Bull support.

TORPREAD

Definition: delay between "get response" requests. These requests are used by CLX to receive messages coming from the library server.
Value: 30ms to 5s (expressed in ms).
Default: 2s.

This is used to specify the time delay between ACSLS pooling.

The default value is set if this keyword is not specified in the CLX_CONFIG file. CLX displays an error and stops if an incorrect value is specified.

This parameter should not be modified by the operator unless requested by Bull support.

MAXTOACSLM

Definition: number of retries in case of library failure.
Value: any numeric value, 0 means no limit.
Default: 0 (no limit).

This parameter is used in case of library failure, i.e. when the server does not answer to GCOS requests. This keyword defines the maximum number of time "query server" request is sent to the library server expecting it returns a "run" state.

Indirectly, it gives the maximum time the CLX waits for a restart of ACSLS.

When MAXTOACSLM tries have been reached, the H_CLX step of the CLX job issues error messages and then stops with the severity 4 status 2300. CLX stops unless the CLX.SLLIB..CLX subfile has been modified by the System Administrator.

MAXTOSSI

Definition: number of retries for getting response from SSI.
Value: any numeric value, 0 means no limit.
Default: 0 (no limit).

This is used when a SSI failure is detected. It gives the maximum number of repetitions of a request sent to the library server. When MAXTOSSI tries have been reached, the H_CLX step of the CLX job issues error messages and then aborts setting the severity 4 status 24000. CLX stops unless the CLX.SLLIB..CLX file has been modified by the System Administrator.

If an incorrect value is specified, CLX issues a message and stops.

POOLID_18T

Definition: scratch pool identifier for 18-track cartridges.
Value: numeric value from 0 to 65534.
Default: 0.

This parameter specifies the scratch pool where 18-track work volumes are to be taken from. The specified scratch pool must have been nested in the ACSLS by the "DEFINE POOL" ACSSA command.

The value 0 designates the common pool. This value must not be used in case of 18 tracks and 36-track transports are connected to the library.

POOLID_36T

Definition: scratch pool identifier for 36-track cartridges.
Value: numeric value from 0 to 65534.
Default: 0.

This parameter specifies the scratch pool where 36-track work volumes are to be taken from. The specified scratch pool must have been nested in the ACSLS by the "DEFINE POOL" ACSSA command.

The value 0 designates the common pool. This value must not be used in case of 18-track and 36-track transports are connected to the library.

LSMID

Definition: LSM (silo) identifier.
Syntax: <acs>,<lsm> where <acs> must contain 0.
Default: None.

This is the LSM identifier as defined by StorageTek. Only LSM with drives attached must be declared. This parameter **must be declared before** the CTnn statements defining the devices (transports) installed in the silo. For multi-LSM configurations, the list of LSMs and devices must be given as follows:

```
LSMID = <acs>,<lsm>
CTnn = <acs>,<lsm>,<panel>,<driveid>
CTnn = <acs>,<lsm>,<panel>,<driveid>
CTnn = <acs>,<lsm>,<panel>,<driveid>
CTnn = <acs>,<lsm>,<panel>,<driveid>
LSMID =<acs>,<lsm>
CTnn etc.
```

CLX issues a message and stops if an incorrect LSMID is supplied.

CTnn

Definition: gives the drive identifier of the device CTnn. CTnn is the DPS 7000 device name. The drive identifier stands for the library server identifier of the drive, it is the physical address of the transport as defined by the hardware configuration.

Syntax: <device name> = <driveid>.

nn value: from 00 to ZZ (only capital letters). The drive identifier is composed of 4 numbers separated by commas:
<acs-number> (0), <lsm-number> (0 to 23),<panel-number> (0-19), <drive-number> (0-4).

CTnn parameters defining the transports connected to a LSM must follow the LSMID parameter declaring this LSM.

The CTnn declared in the CLX configuration must be declared in the GCOS 7 configuration file otherwise the following message is displayed by CLX and the device is ignored:

```
TU50 <clx version> CLX CONFIGURATION FILE ERROR : <device> IS
                                          NOT IN SYSTEM CONFIGURATION
```

If a CTnn is declared in the GCOS 7 configuration but is not declared in the CLX configuration, MOUNT messages specifying this device are not processed by the CLX.

CLX does not check the driveid value. If the driveid is not an address of a transport, an error is reported by CLX on mount requests for the CTnn. If the driveid is an address of another CTnn, abnormal behavior appears on mount requests (refer to "CLX Configuration Errors" in Chapter 8).

The job CLX issues a message and stops if there is a syntax error or if the lsmid is not declared by a previous LSM parameter.

VSN

Definition: it gives the range(s) of volumes authorized for the DPS 7000 application. Only mount requests are controlled (not enter and eject).
Syntax: VSN = xxxxxx
Value: 1 to 6 characters.
Default: all volumes are allowed.

This parameter is optional.

Up to 40 VSN ranges can be specified. A VSN (Volume Serial Number) range is a volume name of 1 to 6 characters. The characters may be replaced by asterisks (*) or periods (.). An asterisk or period designates any alphanumeric character. In addition, asterisks or periods at the end of the name can signify a space ( ).

EXAMPLES:

`VSN = A*****`	means all VSNs of 1 to 6 characters beginning with "A".
`VSN = A**`	means all VSNs of 1 to 3 characters beginning with "A".
`VSN = A****0`	means all VSNs of 6 characters beginning with "A" and ending with "0".
`VSN = *B****`	means all VSNs of 2 to 6 characters whose second character is "B".

❑

If no VSN range is specified, the default range is VSN = ******.

LOG

Definition: is used to activate the logging of Volume Serial Number of volumes which are selected as work volumes but they cannot be used because either they have not the WORK attribute or they are protected by the file protector switch.
Parameters must be associated with LOG to specify which kind of incident must be logged: scratch non work volumes or write protected work volumes or both.

Parameter list:

SCRATCH_NWORK: logging in the CLX.SLLIB..SCRATCH_NONWORK file the Volume Serial Number of scratch volumes without the WORK attribute.

WORK_PROTECT: logging in the CLX.SLLIB..WORK_PROTECT file the Volume Serial Number of WORK volumes write protected by the file selector switch.

Syntax: LOG = [SCRATCH_NWORK], [WORK_PROTECT]
each parameter must be separated by a comma.

Default: If the LOG parameter is not specified, or if a parameter is missing, in the CLX configuration no logging is performed.
In this case such a volume is removed from the SCRATCH list (it will never be selected as a WORK volume). It is to the system administrator responsibility to reintroduce these volumes in the SCRATCH pool or reset the file protect selector.

This parameter is optional.

If the WORK_PROTECT option is selected in the CLX configuration file, Work volumes in write protect state are registered in the CLX.SLLIBWORK_PROTECTED file else, the logging is not performed.

If the SCRATCH_NWORK option is selected in the configuration file, SCRATCH volume without the WORK attribute are registered in the CLX.SLLIBSCRATCH_NONWORK file else, the logging is not performed.

For more details about this facility, see "CLX Log Files" later in this chapter.

NO_AUTOCR

Definition: is used to select the processing mode in case of incident during a mount volume operation.

Parameter list:

VOL_ABS: no automatic CANCEL_REQUEST for a mount request which requires a volume not present in the library.
If this option is selected in the CLX configuration file, jobs requesting a volume not in the library waits until the volume is inserted or until a CANCEL_REQUEST command is issued by the operator.

VOL_BUSY: no automatic "CANCEL_REQUEST" for a job which requires a volume used by another job (this situation may happen only is case of a library shared by different system).

Syntax: NO_AUTOCR = [VOL_ABS], [VOL_BUSY]
each parameter must be separated by a comma.

Default: If the NO_AUTOCR keyword is not specified, or if a parameter is missing in the CLX configuration, an automatic "CANCEL_REQUEST" is performed according to the NO_AUTOCR specification.

This parameter is optional.

If that option is selected in the CLX configuration file, jobs requesting a volume not present in the library or volume busy (used by another job of another system accessing the library) waits until the volume is inserted in the library by the operator or released by the other job. The MOUNT request can be canceled by a "CANCEL_REQUEST" command performed by the operator.

For more detail about this functionality, see "Errors in Mount Processing."

Configuration Timers: see table below.

Table 2-1. CLX Configuration Timers

Parameter	Minimum Value	Maximum Value	Default Value
TORPREAD	30 milliseconds	5 seconds	2 seconds
TORPRQ	2 minutes	5 minutes	2 minutes
TOSSI	3 minutes	30 minutes	5 minutes
TOACSLM	3 minutes	30 minutes	5 minutes
TOLSM	3 minutes	30 minutes	5 minutes

XTA case

SSIHOST

Definition: is used to specify the DSA network name of the UNIX library server where SSI software package is installed for the service of CLX running on a DPS 7000-XTA.

Syntax: **SSIHOST=<network name>**

This parameter is necessary if CLX is to run on a DPS 7000-XTA, and should not be specified if CLX is to run on a DPS 7000 non-XTA (or may be specified with no value from OPEN7 I5430).
On DPS 7000-XTA, a wrong network name specification will lead to failures in CLX initial communications with UNIX library server.

SSIPORT

Definition: is used to specify the port on which SSI server is to run on the UNIX library server for a DPS 7000-XTA.

Syntax: **SSIPORT=1001 to 65535 (not checked)**

Default: **50001**

This parameter is necessary if CLX is to run on a DPS 7000-XTA if its default value is not convenient (for example if several SSI instances must run to serve several DPS 7000, each on a different port). A wrong SSIPORT value may lead to CLX initialization failure. It is not checked that different SSI instances launched on UNIX library server work each with a different port number, and 2 CLX clients using the same SSIPORT value from 2 different DPS 7000 will have unpredictable troubles.

The following are configuration examples:

EXAMPLE 1: One silo with 4 transports.

Content of CLX configuration file:	TOACSLM = 180000 TOSSI = 180000 TOLSM = 180000 TORPRQ = 120000 TORPREAD = 3000 MAXTOACSLM =300 POOLID_18T = 3 POOLID_36T = 6 MAXTOSSI = 100 LSMID = 0,0 CT15 = 0,0,1,0 CT16 = 0,0,1,1 CT17 = 0,0,1,2 CT18 = 0,0,1,3 VSN = 00186* VSN = 0019** VSN = A*****
Timeout values:	TOACSLM = 3mn TOSSI = 3mn TOLSM = 3mn TORPRQ = 2mn TORPREAD = 3 sec
Authorized volumes:	00186<followed by at most one character> 0019<followed by one or 2 alphanumeric characters> A<followed by one to 5 alphanumeric characters>
Selected scratch pool:	Scratch pool 3 for 18-track formatted devices. Scratch pool 6 for 36-track formatted devices.
Logging:	No logging performed for scratch no-Work volume and work volume in write protect state.
Automatic Cancel Request:	Automatic Cancel will be performed by CLX in case of volume not in library or volume busy (used by another job on another system).

When a SSI failure occurs, the step H_CLX of the CLX job repeats failed requests up to 100 times before aborting.

EXAMPLE 2: One ACS4400 silo with 4 transports.

Content of CLX configuration file:

```
POOLID_18T =10
POOLID_36T =15
MAXTOSSI = 0
LSMID = 0,0
CT15 = 0,0,10,0
CT16 = 0,0,10,1
CT17 = 0,0,10,2
CT18 = 0,0,10,3
LOG = SCRATCH_NWORK, WORK_PROTECT
NO_AUTOCR = VOL_BUSY, VOL_ABS
```

Timeout values: Not specified. Default CLX values apply.

When a SSI failure occurs, the step H_CLX of the CLX job waits until the SSI becomes operational.

When a library failure occurs, the step H_CLX of the CLX job waits until ACSLS becomes operational.

Authorized volumes: All volumes are authorized.

Selected scratch pool: Scratch pool 10 for 18-track formatted devices.
Scratch pool 15 for 36-track formatted devices.

Logging: Scratch volumes detected non-work will be registered in the CLX.SLLIB..SCRATCH_NONWORK file. Work volumes detected write protected by the file protect switch are registered in the CLX.SLLIB..WORK_PROTECTED file.

Automatic Cancel Request:
In case of "Volume not in the library" or "Volume Busy" (Volume used by another system) an operator intervention will be required, no automatic "CANCEL_REQUEST" will be performed by CLX.

2.4.4 SSI Configuration under OPEN7

The SSI is automatically configured on OPEN7 during the installation of CLX, however this configuration can be modified later by the System Administrator.

2.4.4.1 Description of the Configuration Parameters

CSI_HOSTNAME

Definition: This is the UNIX server name. This is the name you give to connect to the server from a remote UNIX terminal by using rlogin or telnet commands.

Value: alpha-numeric character string.

You **must** declare this name in the /etc/hosts file of the local OPEN7 (refer to Step 7 in "Installation Procedure" earlier in this chapter).

EVENT_FILE_NUMBER

Definition: Number of archive event log files to be retained.

Value: 1 to 10.

When the current log file has reached 32 Kbytes, the data is transferred to the file event0.log. The next time the log file reaches 32 Kbytes, the event0.log data is transferred to event1.log, and the event log data is moved to event0.log. This cycle continues until the specified number of retained files is reached, data is discarded from the oldest file.

AUTO_STARTUP

Definition: This parameter specifies whether the SSI is to be started automatically at OPEN7 startup.

Value: Yes (automatic startup) or No (manual startup).

If set to No, SSI must be started by the System Operator using the START_SSI command from an IOF terminal. The SSI must be started after the OPEN7 startup is completed.

If set to Yes, SSI starts automatically at OPEN7 startup.

In both cases, if SSI aborts, it can be restarted by the System Operator using the START_SSI command.

The configuration parameters CSI_HOSTNAME and EVENT_FILE_NUMBER are registered on OPEN7 in the script file /clx/t_ssi.sh.

2.4.4.2 Configuration at Installation

When SSI is being installed you are prompted to enter information regarding SSI on OPEN7. The configuration parameters are initialized as follows:

`Name of the UNIX server [default value: svrx] ?`

CSI_HOSTNAME is initialized with this UNIX server name.

`Number of log files to retain ?`

EVENT_FILE_NUMBER is initialized with this number of log files to retain.

`Automatic startup of SSI at OPEN7 reboot (yes/no)?`

OPEN7 system files are modified for automatic startup if you enter 'Yes'

2.4.4.3 Reconfiguration of SSI

You can start a configuration of SSI by:

4. Stopping SSI and CLX from the GCOS 7 operator terminal:
   Enter TCLX and TSSI.
5. Logging in to OPEN7 with the user name root and re-running the script `/clx/install/clx_config`,
6. Restarting SSI and CLX from the GCOS 7 operator terminal:
   Enter SSSI then SCLX

If you only want to modify CSI_HOSTNAME (UNIX server name) or EVENT_FILE_NUMBER (number of archive log files), you can do this by updating the environment variables in the CLX script file by:

7. Stopping SSI and CLX (you may keep CLX running and ignore the error messages displayed on the operator terminal) from the GCOS 7 operator terminal:
   Enter (TCLX and) TSSI.
8. Logging in with the user name root or clx and updating the `CSI_HOSTNAME` value or the `EVENT_FILE_NUMBER` in the script file: `/clx/t_ssi.sh`.

Restarting SSI (and CLX if necessary) from the GCOS 7 operator terminal:
Enter SSSI (and SCLX).

2.4.5 SSI Configuration on UNIX library server for DPS 7000-XTA

When SSI is being installed you are prompted to enter information regarding SSI on OPEN7. The configuration parameters are initialized as follows:

`Name of the XTA server  ?`

This name is used to install each ssi daemon for each GCOS7 in a different directory.

When SSI is being installed you are prompted to enter information regarding SSI on OPEN7. The configuration parameters are initialized as follows:

Port number of this ssi server ?

Each ssi server on AIX must have a different port number. You can choose any port number not used yet. Acsls uses 50xxx ports. You can use 510xx for ssi

IP address of XTA server ?

Give the XTA address only if you want to introduce it in the AIX /etc/hosts file. Else give a false address and answer no for updating the /etc/hosts file.

`Number of log files to retain ?`

In XTA version, this question is not asked. But if you want to modify the EVENT_FILE_NUMBER, edit the ssi_start file with a new value. The default value is 3.

`Automatic startup of SSI at AIX reboot (yes/no`

AIX system files are modified for automatic startup if you enter 'Yes'

The SSI is automatically configured on OPEN7 during the installation of CLX, however this configuration can be modified later by the System Administrator.

2.5 Errors in Mount Processing

2.5.1 Volumes Not in the Library

This incident happens when a mount request is issued for a volume not located in the library.

If the option NO_AUTOCR = VOL_ABS is selected in the CLX configuration, periodically and until the cartridge is inserted in the library or until a CANCEL_REQUEST command is issued by the operator, a message requesting user intervention is displayed on the operator console:

```
TU66 <clx version> VOLUME <volume> NOT IN LIBRARY : OPERATOR
INTERVENTION REQUIRED.
```

NOTE:
The device selected by the DPS7 for the volume remains allocated to the step.

Without the option NO_AUTOCR = VOL_ABS, a "CANCEL_REQUEST" is automatically performed by CLX, the step which requires the volume is aborted.

2.5.2 Volumes in Busy State

This incident can happen in case of volumes shared by GCOS7 systems. It can happen when a mount request is issued for a specific volume already mounted for a job of another system, the volume being assigned to the current step or not.

If the option NO_AUTOCR = VOL_BUSY is selected in the CLX configuration, when job requests a volume used by another job periodically and until the cartridge is released (and the volume dismounted) or until a CANCEL_REQUEST command is issued by the operator, a message requesting an operator intervention is displayed on the operator console:

```
TU67 <clx version> VOLUME <volume> IN USE : JOB PENDING.
```

NOTE:
The device selected by the DPS7 for the volume remains allocated to the step.

Without the option NO_AUTOCR = VOL_BUSY, a "CANCEL_REQUEST" is automatically performed by CLX, the step which requires the volume is aborted.

In case of volumes shared by heterogeneous systems the processing is very likely to be identical, nevertheless the result cannot be guaranteed.

NOTE:

If the option is selected, jobs can stay waiting forever if the other job never dismounts the volume (for example step without UNLOAD option, such as LSV command). No specific processing allows to limit the time a job waits for a volume but the command CANCEL_REQUEST.

2.5.3 Write Protected Work Volumes

The following processing is performed on a mount work request when the selected volume is protected by the file protector switch:

- the following message is displayed on the operator console:

  ```
  TU66 <clx version> WORK VOLUME <volume> WRITE PROTECTED :
  EJECTION REQUIRED
  ```

- the cartridge is automatically and immediately dismounted
- the volume is removed from the scratch pool so that it cannot be selected for another mount work request.
- the incident is logged if the option LOG = WORK_PROTECT is selected in the CLX configuration.
- another work volume is mounted

Note that this incident does not happen if work volumes have been assigned the work attribute by means of the PREPARE_TAPESET utility after they have been inserted in the library.

2.5.4 Scratch Non-Work Volumes

The following processing is performed on the mount work request when the selected volume is not a work volume:

- the following message is displayed on the operator console:

  ```
  TU66 <clx version> VOLUME <volume> SCRATCH NO WORK : EJECTION OR
  PREPARE_TAPE REQUIRED.
  ```

- the cartridge is automatically and immediately dismounted
- the volume is removed from the scratch pool so that it cannot be selected for another mount work request
- the incident is logged if the option LOG = WORK_NWORK is selected in the CLX configuration
- another work volume is mounted.

This incident may happen for example if non-work volumes have been inserted in the library by the ENTER_VOLUMES SCRATCH command (this command is described later in this section). It may also happen if a set scratch ACSSA command was performed for a non-work cartridge.

Note that this incident does not happen if work volumes have been assigned the work attribute by means of the PREPARE_TAPESET utility after they have been inserted in the library.

2.5.5 CLX Log Files

The following logs are stored in the CLX.SLLIB library if the LOG keyword is specified in the CLX configuration file.

- subfile SCRATCH_NONWORK :

  It contains volume serial numbers of scratch non-work volumes, which have been selected to satisfy a WORK mount request. For more details, refer to the LOG keyword in the section dealing with the CLX configuration.

- subfile WORK_PROTECTED :

  It contains volume serial numbers of WORK volumes write protected by the file protect selector switch which have been selected to satisfy a WORK mount request.

The content of the logs can be read and cleaned by the EXTRACT_CLX_ERROR (abbr. EXTERR) command.

The site operator must use the EXTRACT_CLX_ERROR command from time to time so that the logs do not fill the CLX.SLLIB library up.

However, when it happens that the CLX.SLLIB library is full, no other events are logged, warning messages are displayed on the GCOS7 operator console, the logging function resumes as soon as space is available.

These subfiles are not modified at the CLX installation.

IMPORTANT:
The name and record format of these logs can be modified in next CLX releases.

2.5.6 Volume Access Rights

GCOS 7 does not keep in its database the list and location of cartridge volumes contained in the library, this is done by the library server.

The library volumes authorized to GCOS 7 users can be specified in the CLX configuration file. The System Administrator designates range(s) of authorized volumes using the VSN keyword. When a job requests a cartridge mount, the name of the volume requested is compared to specified range(s). If the name is not in the range(s), the request is canceled and an error message is sent to the JOR or to the IOF console.

During its initialization sequence, the CLX reads the configuration file and constructs the table of authorized volumes. When the link with the library server becomes operational, this table becomes accessible to the device manager and the control becomes effective.

If an unauthorized mount request is submitted during operation, it is canceled by the device manager with the following message sent to the JOR or to the IOF console:

```
DV53.ILLEGAL ACCESS TO THE VOLUME <volume> OF DEVICE CLASS CT/LIB
```

If an unauthorized mount request is submitted before the link with the cartridge library is operational, it is rejected by the CLX at the moment the link becomes active with the operator message:

```
TU32. V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF <volume> ON
<device>: ILLEGAL ACCESS TO VOLUME
```

Also, the following message is written to the JOR or to the IOF console:

```
DV02.MEDIA <volnm> HAS BEEN DECLARED UNAVAILABLE BY THE OPERATOR
```

This control mechanism does not apply to requests for work volumes. To monitor the use of work volumes, define the default Scratch Pool during configuration of the library server.

2.5.7 Mixed Media / Mixed Format Support

Two kinds of devices, with their associated mode of recording, can be connected to the same Wolfcreek, PowderHorn, or ACS 4400 library, to the same silo and can be used by the same DPS 7000 system:

- 18-track devices (CTS 4780)
- 36-track devices (CTS 9490) - Timberline

With CTS 9490, standard length tapes and enhanced length tapes (E-tape) can be used. Standard-length tapes are used also with STK CTS 4780. E-tape cannot be used with STK CTS 4780.

New device classes are supported by the DPS 7000 which allow jobs and utility to select either a CTS4780 or a CTS9490 device.

- CT/LIB/M5 : CTS 4780
- CT/LIB/36T : CTS 9490 or CTS 4490 or CTS 4890

When a single type of device attached to the library is connected to a DPS 7000, the device class CT/LIB can be used.

2.5.7.1 Recording Format of Devices

1. CTS 4780 :

   They write (or prepare) standard tapes using 18-track format.
   They can read 18-track format recorded standard tapes.
   They can neither read nor write E-tapes.

   A tape (cartridge) prepared using a CTS 4780 is said to be 18-track tape (cartridge).

2. CTS 9490 or CTS 4490 or CTS 4890:

   They write (or prepare) standard tapes and E-tapes using 36-track format.
   They can read 36-track format recorded standard tapes and E-tapes.
   They can read 18-track format recorded standard tapes.

   A tape (cartridge) prepared using a CTS 9490 is said to be 36-track tape (cartridge).

2.5.7.2 Media Type

- 3480 Standard tape
- 3490E E_tape.

2.5.7.3 Error Cases

36-track standard length tapes mounted on CTS 4780

They can only be prepared, and then become 18-track cartridges. To write on them, volume preparation must be performed first. Volume preparation must be performed using PREPARE_TAPESET (PREPARE_TAPE cannot be used).

A 36-track standard length tape mounted on a CTS4780 is considered as a NSTD tape, no message is sent to the operator, the cartridge is automatically dismounted and the step aborted. The following message is registered in the JOR of the job requesting the volume:

```
DV25. USE OF <volume> 36-TRACK CARTRIDGE NOT ALLOWED ON
<device-class> DEVICE.
```

CAUTION:
When both CTS4780 and CTS9490 are connected to the library, care must be taken not to erase 36-track recorded tapes by preparing them on CTS4780.

For more details, refer to the *JCL Reference Manual*, *Data Management Utilities User's Guide* and *IOF Terminal User's Reference Manual*.

E-tapes mounted on CTS 4780

If an attempt is done to mount an E-tape on a CTS4780, the tape is automatically dismounted. No message is sent to the operator. The following message is registered in the JOR of the job requesting the volume.

```
DV24. USE OF <volume> E-TAPE NOT ALLOWED ON <device-class> DEVICE.
```

For more details, refer to the JCL Reference Manual, Data Management Utilities User's Guide and IOF Terminal User's Reference Manual.

18-track standard length mounted on a CTS9490

They can be prepared, read and written only. If they are used in update mode, an I/O error is generated, an error message is displayed in the JOR:

```
TS47 : IFN : <internal-file-name> APPEND ON 18-TRACK CARTRIDGE NOT
ALLOWED ON 36T DEVICE.
```

3. Starting the Software

3.1 Starting The CLX Service

This section describes how to start the software required to run the CTL service and how to configure for automatic restarts.

You must start the following components in this order:

On the ESCALA or ESTRELLA:	On the DPS 7000:
• ACSLS, • **SSI for DPS 7000-XTA**	• *TNS and OPEN7 if they are not active,* • *SSI on OPEN7 on native DPS 7000* • CLX.

If you happen to start these components in the wrong order, warning messages may be displayed on the operator console until all the components are started.

3.1.1 ACSLS Initialization and Startup

The ACSLS is started by the command **`<rc.acsss>`**, which is entered by the acsss user connected to the UNIX server. The ACSLS is operational when the following processes are running:

- acsss_daemon,
- acssa: System Administrator,
- acslh: library handler,
- acslm: library manager activity scheduler,
- acsmt: mount/dismount activity processor,
- acsel: event logger,
- acslock: lock manager,

- acscm: cap manager,
- acssv: scratch volume selection manager,
- csi: client system interface.

These processes are run for the user <acsss>.

The ACSLS can be started automatically when the UNIX server is (re)booted. The automatic startup can be specified during ACSLS configuration.

For more information about ACSLS Initialization and Startup, refer to the *ACSLS Installation* and *Administrator's Guides*.

3.1.2 Starting OPEN7

OPEN7 can be started automatically at GCOS 7 startup otherwise it must be started by the OPEN7 user with the OPEN7 START command (the OPEN7 user's name is identical to your OPEN7 system name).

For more details, refer to the *OPEN7 Administrator's Guide*.(sockg7 server on W2000) will be automatically started by the V7000 startup

3.1.3 Starting SSI

The SSI can be started manually by the command **`START_SSI(or SSSI)`**. This command is delivered in the CLX.BIN library. This library must be declared in your search path using the MWINLIB BIN command.

This command can be submitted from an IOF terminal working under a project with MAIN attribute.

XTA case

STARTSSI and other SSI and ACS commands must address the UNIX library server. The SET_CLX_SSI (or SCLXSSI) command, delivered in CLX.BIN library, reads CLX.SLLIB..CLX_CONFIG (or any user-specified library member) and sets G_CLX_SSI global variable with
-UNIX library server network name (found after SSIHOST=)
-/port number to be used by SSI package (found after SSIPORT=).

Any other valid method may be used to modify G_CLX_SSI global variable value for easier use of SSI and ACS commands on GCOS7 DPS 7000-XTA.

The command DISPLAY_SSI (or DSSI) allows the GCOS7 operator (or any other interactive user) to know whether the SSI is operational.

START_SSI(SSSI) starts the following process on the UNIX library server.

Native case - *OPEN7*

XTA case **- ACSLS server**

is (re)started. This option must be specified during SSI configuration.

`START_SSI (SSSI)` starts the following process on the local system: ssi: storage server interface manager

The ssi process manages the communication with the library server, via the CSI of ACSLS.

This process always run for the account of the user <clx> (group=clx) **EXAMPLE:**

```
S: MWINLIB BIN, CLX.BIN
S: SET_CLX_SSI
S: START_SSI
 11.16 X550 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 11.16 X550 STARTED CLX_SSI OPERATOR P
 JB08 X550.1 STEP H_CLX_CMDSSI XPR=8 PGID=22
 TU70 V4.0 SSI STARTED
 11.16 X550.1 COMPLETED CLX_SSI OPERATOR P
```

3.1.4 Starting CLX

CLX can be started manually by the command **`START_CLX`** `(SCLX)`. This starts the job CLX on the GCOS 7 system. This job controls the step H_CLX.

`START_CLX` must be submitted from an IOF terminal working under a project with the MAIN attribute.

This command is delivered in the CLX.BIN library. This library must be declared in your search path using the MWINLIB BIN, CLX.BIN command.

Parameters for this command allow you to indicate the name and location of the CLX configuration file. By default, the CLX_CONFIG subfile in the library CLX.SLLIB is used.

The command **`DISPLAY_CLX`** allows the GCOS 7 operator to know whether the CLX job has started.

3.1.5 CLX Initialization

The following example illustrates the CLX initialization sequence:

```
S: START_CLX
14.47 X1987 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
14.47 X1987 STARTED CLX OPERATOR P
JB08 X1987.1 STEP H_CLX XPR=8 PGID=19
TU01 V3.0 CLX INITIALIZATION IN PROGRESS
TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
TU09 V3.0 ACSLM IS RUNNING
TU06 V3.0 CLX RECOVERY IN PROGRESS
TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX
                                                          SESSION
TU03 V3.0 CLX IS RUNNING
TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY
```

The TUxx messages are sent to the terminal from which the START_CLX command was entered and to every operator. The following activities take place:

The TU01 message is displayed at the beginning of the initialization stage.

The TU02 message is displayed at the end of the initialization stage.

The CLX waits for the ACSLM to be running, as indicated in the TU02 message.

The CLX sends a query server request to the ACSLS.

If the communication link is operational and all components are running, the library server acknowledges the request and returns the ACSLS state.

If ACSLM is active, the message TU09 is displayed and the CLX enters the recovery stage (also called resynchronization stage) which matches device status between the GCOS 7 and the library server (ACSLS).

The first TU06 message is displayed at the beginning of the recovery stage. This step can last 2 or 3 minutes.

The second TU06 message is displayed at the end of the recovery stage. The CLX then starts cleaning locks on volumes set by previous CLX jobs. This consists of unlocking volumes which could not be released by the previous CLX job.

The TU03 message appears when the CLX has cleaned all locks on the volumes.

When the message TU26 is issued, the CLX service is operational.

NOTE:

Locks on devices and volumes are cleaned during the recovery stage. This process is described in Section 9, "CLX Error Conditions and Messages". The user identifier value supplied by the CLX for the interface with ACSLS is the DPS 7000 local system name. When CLX starts, it asks ACSLS to release all locks set for this user identifier.

3.2 Configuring Automatic Restarts

The step H_CLX can detect errors, such as:

- a UNIX server failure,
- an ACSLM or ACSLS failure,
- an SSI failure,
- a telecommunication failure,
- a system error.

When errors are detected, the step H_CLX aborts, setting a severity and a status value. These can be checked in the JCL which controls the step H_CLX. The JCL is delivered in the subfile CLX of the CLX.SLLIB library. Comments are included in this subfile, they give the list of severity status values and the failure for each value.

The delivered CLX subfile requests an automatic restart if CLX aborts following a recoverable error (severity 3). You can modify the JCL to request automatic restarts in other cases. Refer to Section 9, "CLX Error Conditions and Messages" for more information.

You can also use the CLX configuration parameters to prevent CLX from aborting if there is a SSI failure. This is described in "CLX Configuration on GCOS 7" in Chapter 2.

CLX does not abort in case of robot or LSM failure; it only suspends automatic processing until all LSMs are operational.

You can launch the CLX from the SITE.STARTUP after launching OPEN 7. To do this, include the following in SITE startup:

```
ejr clx lib = clx.sllib when = +xm
```

When = enqueing time (after the complete starting of OPEN or of INTEROP7).

For more detailed information about the **when** parameter, see the *UFT User's Guide*.

3.3 Messages Issued at ISL System Load

At ISL system load, the Device Manager may issue the message:

```
DV17 <<device>> PREMOUNTED <volume>
```

followed by:

```
DW10 <<device>> DISMOUNT < volume> <type>
```

This sequence occurs because the initial AVRs detect the presence of cartridges that have not been unloaded during the previous GCOS 7 session. You should ignore these messages, as the CLX will resolve the problem as soon as it starts.

4. How to Enter a Cartridge

4.1 Labeling the Cartridges

For the robot, the library cartridges must have an OCR/bar code optical label which contains the VOLSER of the volume.

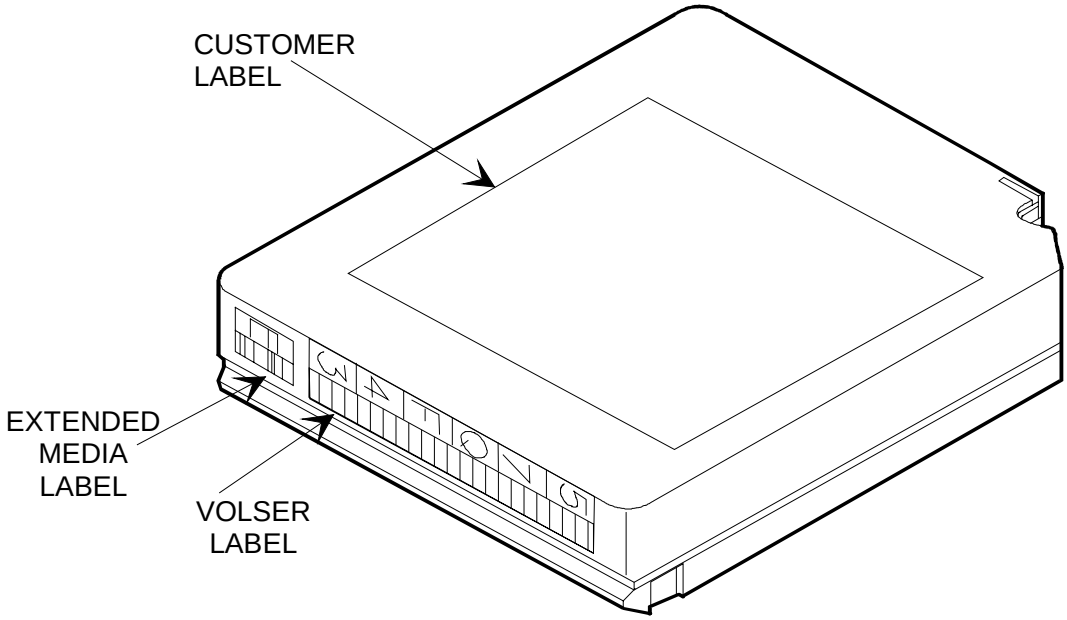


Figure 4-1. Cartridge Labels

For GCOS 7, library cartridges must have a magnetic label. This label is registered in the first block of the tape and contains the VOLSER of the volume.

The extended media label is used for extended length (ECCST) media, i.e., 3490E cartridges.

A VOLSER is composed of 1 to 6 alphanumeric characters. Valid characters are hyphen, underscore, A-Z (only capital letters are allowed), 0-9, blank characters but with no leading blanks. Embedded blanks are used only for test cartridges. On the magnetic label, this name is left-justified and, if necessary, completed with blanks. A cartridge with a correct magnetic label is called a standard (STD) volume, a cartridge without magnetic label or with a non-standard label is called a non-standard (NSTD) volume. The VOLSER in the magnetic label and the VOLSER in the optical label must be identical.

Cartridges without an optical label can be introduced into the library. In this case, the server asks the library operator to specify the VOLSER of the cartridge when it is loaded into the Cartridge Access Port (CAP). The library operator must use the specific venter command to introduce the cartridge.

4.2 Label Consistency

Before using a cartridge for data storage, you must ensure that the VOLSER on the optical label is identical to the VOLSER recorded on the magnetic label volume.

A cartridge without magnetic label or a cartridge with a non-standard magnetic label is considered by GCOS 7 as non-standard cartridge. This is the case for new cartridges. Such cartridges must be "prepared" using the PREPARE_TAPESET or PREPARE_TAPE utility before data can be written on the tape.

Once you have stuck the optical label and entered the cartridge into the library, use the PREPARE_TAPESET/PRPTPST or PREPARE_TAPE/PRPTP utility.

After PREPARE_TAPESET or PREPARE_TAPE is completed, cartridges are standard cartridges, their magnetic label is identical to the optical label.

You can prepare again this cartridge any time supplying the same parameter values if you want to erase its content or you want to set or remove the work attribute.

If for any reason you need to change the optical label of a cartridge, proceed as follows:

- if necessary save the content of the cartridge onto another cartridge
- eject the cartridge from the silo
- change the optical label
- reenter the cartridge into the silo
- prepare the cartridge using PREPARE_TAPESET. This reestablishes the VOLSER of the magnetic label to the value of the VOLSER of the optical label. (PREPARE_TAPE is not allowed in this case.)

GCOS 7 checks the consistency of labels when a cartridge is just mounted in a device. When it detects an inconsistency, the following messages are issued and the cartridge is automatically dismounted.

TU27 V3.0	**conflict between optical and magnetic labels of the cartridge on <device>**
TU21 V3.0	**ACSLM STATUS OF <device> : <optical label> mounted**
TU23 V3.0	**DVMGT STATUS OF <device> : <magnetic label> mounted**

You can reestablish consistency of labels by conserving the optical label: use PREPARE_TAPESET/PRPTPST.

For further information on PREPARE_TAPESET, refer to Appendix E, "The PREPARE_TAPESET Utility."

4.3 Write Protection

To protect a cartridge against unwanted write operation, either use the File Protect Selector switch of the cartridge or use "electronic" write protection (ACS Virtual Thumbwheel) through JCL/GCL assign parameters (NVOLWR).

When accessing cartridges (whether writing is permitted or not), you must ensure the compatibility between:

- your GCL/JCL and the position of the protect selector switch of the cartridge,
- the types of access required by the different steps of your job for the same cartridge.

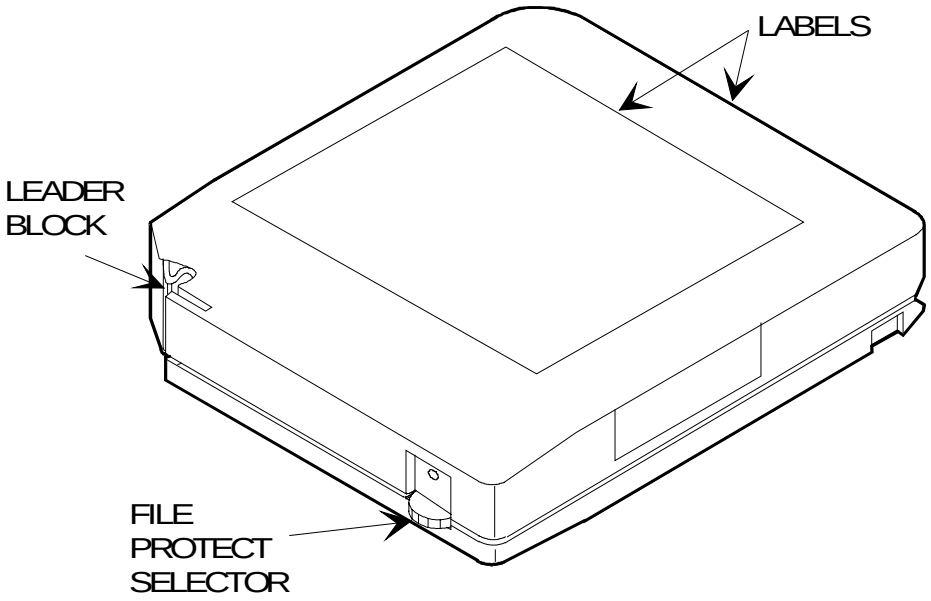


Figure 4-2. Cartridge File Protect Selector

If a request for write protection is included in the mount request (message DW11), the write protection request is transmitted to the CLX, which ensures that the cartridge is mounted while providing it with "electronic" write protection. The following requests: "SWITCH TO PERMIT" and "SWITCH TO PROTECT" are not supported for cartridge library devices if the selected volume is not a WORK volume. These requests provoke a CANCEL_REQUEST on the part of the CLX and a premature end of the step that issued the request. If your job runs successive stops with different access rights, use the option UNLOAD to force the cartridge unloading and dismounting between steps.

4.4 Entering Cartridges into the Library

Cartridges can be entered manually or automatically. Before being entered, all cartridges must have an optical label attached.

4.4.1 Automatic Entry

Cartridges are entered through the Cartridge Access Port(s). If a CAP is set in automatic mode, it is unlocked, allowing an operator to enter cartridges at any time.

If a CAP is set in manual mode, the CAP is locked. To enter cartridges through the CAP, the System Operator do the following:

- use the ACSSA "enter" command from the library server, this unlocks the CAP,
- enter the cartridges: open the CAP, put cartridges into the CAP, close the CAP and repeat these operations until all cartridges have been entered,
- enter control-C onto the ACSSA window to stop the enter mode.

You can use the ACSSA command "set cap" to change the CAP mode. Refer to the relevant storage library documentation for more details.

4.4.2 Manual Entry

Manual entry of cartridges can be convenient to enter a large number of cartridges which may be the case in the initial loading of the silo. In this mode, the operator does not use the CAP; the operator places the cartridges directly in their home cells.

To enter cartridges manually:

- put the silo offline using the ACSSA command "vary lsm",
- enter in the LSM and place the cartridges in the storage cells,
- exit of the LSM, and close the door,
- put the LSM on line using the ACSSA command "vary lsm",
- perform a full or partial audit to update the library server database using the ACSSA command audit. This audit is necessary to let the ACSLS know of the new cartridges just entered.

If you are using a Wolfcreek library, the LMU runs a physical audit of the silo when you close the door. This does not update the ACSLS database, which is updated only if you run an ACSSA command audit from the UNIX server.

5. Operating Your CTL

This section describes how to operate your Cartridge Tape Library (CTL) and shows what happens during normal operation.

5.1 Cleaning Cartridges

The cartridge cleaning operation is performed automatically if specified so at ACSLS installation (AUTOCLEAN set to TRUE in the ACSLS file .acsss_env). If not, the operator must mount cleaning cartridges using the ACSSA commands "mount" and "dismount."

A cartridge is a cleaning cartridge if the ACSSA command "set clean" has been performed for this cartridge. The ACSSA command "query clean all" allows you to get the list of all cleaning cartridges in the library.

The number of cleaning cartridges in the silo must be equal to or greater than the number of devices attached to the silo. If no cleaning cartridge is available, messages are issued in the ACSLS log file.

5.2 User Application Information

5.2.1 Referring to Cartridge Library Volumes

When you declare a cartridge tape library in the site configuration, ensure that the references to cartridge volumes clearly indicate the complete device class (device type and device attribute). You must modify all JCLs which specify only CT for the device class, for example:

- CT/36T refers to CTS 9490 or CTS4490 or CTS4890 devices not connected to the library.
- CT/M5 refers to CTS4780 devices not connected to the library.
- CT/LIB/M5 refers to CTS4780 devices connected to the library (18-track formatted devices).
- CT/LIB/36T refers to CTS9490 or CTS4490 or CTS4890 devices connected to the library (36-track formatted devices).

The use of CT is not allowed; it will cause a step abort and the following message in the JOR:

```
DV52.INCOMPLETE DEVICE ATTRIBUTES FOR CT DEVICE
```

Therefore, if you want to refer to a volume in the cartridge library, you must specify the device class CT/LIB/M5 or CT/LIB/36T:

- in the GCL and JCL file assign commands,
- in the file and volume definitions used by utilities,
- when cataloguing files.

For example, to refer to file FIC1 on the multi-file library cartridge C192 18-track formatted volume:

- In GCL:

  ```
  FIC1:C192:CT/LIB/M5$MFT
  ```

- In JCL:

  ```
  (FIC1,MEDIA=C192,DEVCLASS=CT/LIB/M5,FSN=ANY)
  ```

  ```
  VOLSAVE    INVOL=(MD=DISK1,DVC=MS/B10),
             OUTFILE=(DISK1,DVC=CT/LIB/M5,
             MD=(001700,001701,001702,001703)),
             FAST;
  PREALLOC   DBSAV.DB1*G+1,
             UFAS=(SEQ=(BLKSIZE=1400,RECSZ=200)),
             DVC=CT/LIB/M5,GBL=(MD=001780),CATNOW;
  ```

The assigning of the type "any media" is not supported for library cartridge volumes. An "MD=*, DVC=CT/LIB" type reference causes a step abort and the following message in the JOR:

```
DV51.ANY MEDIA OPTION NOT ALLOWED FOR CT/LIB
```

When working with filesets (INSET/OUTSET), specify the REQDEV parameter. For further information about this resource-reservation parameter, refer to the *Data Management Utilities User's Guide*.

5.2.2 Mounting Library Volumes

The following criteria determine when volumes are mounted:

- When a file is assigned statically (JCL command ASSIGN), the first 'n' volumes of the file ('n' specified by the parameter MOUNT=n, 1 by default) are mounted:
  - at the beginning of the Step,
  - at file Open, if option DEFER has been specified.
- Subsequent volumes of the file are mounted as soon as they are referenced by the application.
- When a file is assigned dynamically, the first 'n' volumes of the file (parameter MOUNT=n) are mounted at file Open. Subsequent volumes of the file are mounted as soon as they are referenced by the application.
- Multi-file volumes: reference to a file beginning on the nth volume of a media list (use of the option FSN= or $MFT) can require the mounting of the first n-1 volumes of the media list.

5.2.3 Dismounting Library Volumes

5.2.3.1 General Dismounting Criteria

The following criteria determine when volumes are dismounted:

- While a job is running, the dismounting of volumes is the responsibility of the user via the END=UNLOAD, ABEND=UNLOAD, or ENDVOL=UNLOAD option.
- Volume preparation utilities, VOLDUPLI and VOLCOMP force dismounting at the end of execution.
- WORK volumes are dismounted by the system when they are no longer used.
- After a file is deassigned, a volume can remain premounted, but the device is no longer assigned to the job. If the device is the only device available and another job is waiting for a device, the volume is dismounted and the device is assigned to the waiting job.

5.2.3.2 Dismounting at End of a Job

The end of a job forces the dismounting of all volumes that were used by the job and that have remained premounted.

5.2.3.3 Dismounting After an IOF Command

Starting with GCOS 7 TS7458

Dismounting of library volumes can also be managed using a new system configuration option in the FILEOPT command (parameter CTUNLOAD=YES), as described here:

- When the system is configured using CTUNLOAD=YES, the end of each IOF command forces the dismounting of all volumes that were used by the command and that have remained premounted, except if the END=LEAVE, ABEND=LEAVE, or ENDVOL=LEAVE option has been requested implicitly or explicitly in the command, or if the END=PASS or ABEND=PASS option has been specified in this or a previous command.
- When the system is configured using CTUNLOAD=NO (the default value), the system behaves as in versions prior to GCOS 7 TS7458. However, a volume can be dismounted using LIST_VOLUME, since the END=UNLOAD option was introduced in this command in version TS7458.

5.2.4 END, ABEND, and ENDVOL Parameters

When dismounting has not been forced (see the preceding subsection, "Dismounting Library Volumes"), the END, ABEND, and ENDVOL parameters remain unchanged and operate as defined for non-CTL tapes and manual transports. In particular:

- When a file is deassigned, the volume can remain in its current position (END=LEAVE, ABEND=LEAVE, or ENDVOL=LEAVE) or be rewound.
- If END=PASS or ABEND=PASS is specified for a temporary file, the file is retained for use by a subsequent step in the same job. It is retained until the job is finished or until a subsequent step assigns the file without the PASS option. If END=PASS or ABEND=PASS is not specified for a temporary file, the file is deleted at step end. If the file is permanent, the volume and device identification associated with the file is retained.
- When there is no ENDVOL parameter, the END parameter also applies when volumes of a multi-volume file are changed. If the END=UNLOAD option is specified, the current volume is dismounted when the application references the next volume in the list of volumes associated with the file.

Although these parameter options have no impact on file management, they can influence the execution time of certain jobs.

5.2.5 Data Compaction

The Improved Data Recording Capability (IDRC) feature is implemented in the controller. It compacts user data (labels are not compacted) so that, depending on the nature of the data, an average of **three** times more data can be recorded on a cartridge.

On CTS 4780: 600 MB can be recorded, instead of 200 MB, on a 165 meter cartridge.

On CTS 9490 or CTS 4490, 1200 MB can be recorded instead of 400 MB on a standard tape or 2400 MB instead of 800 MB on an E-tape.

This average figure is sometimes less, but often greater (up to five times as much data).

If IDRC is present on one library controller, it must be present on **all** controllers attached to the library. IDRC increases controller throughput to up to 4.5 MB/s, and PSI-S throughput to up to 4.5 MB/s.

Cartridges containing non compacted data can be read via controller equipped with IDRC.

Cartridges containing compacted data must be read via any type of controller equipped with IDRC.

IDRC has the following software visibility:

- a specific device attribute: CT/LIB/M5/C to create a compacted 18-track formatted file or CT/LIB/36T/C to create a compacted 36-track formatted file. The attribute "C" is mandatory in the device attribute.
- if you wish to create several compacted files on a cartridge, all of the files must have the attribute "C" in their device attribute. A check is made at OPEN time.
- the first file on a cartridge gives the IDRC/non-IDRC status of the cartridge; the following files must have the same attribute. If they do not, there is an abort at OPEN time with the return code INVUSE.
- for a multi-volume file: if the attribute "C" is declared, the file is compacted on all volumes.
- if the processing of a file needs IDRC hardware compaction and the drive does not provide it, the abnormal return code INVUSE is given at the file opening.

Note that bit 17 of the SITEOPT CONFIG statement may affect data compaction. See the System Installation, Configuration, and Updating Guide for details.

5.3 Volume Preparation

5.3.1 How to Prepare a New Volume

Use the PREPARE_TAPESET (PRPTPST) or PREPARE_TAPE (PRPTP) utility to change non-standard volumes to standard volumes.

With PREPARE_TAPESET, the INFILE parameter specifies the file to be used as input. You can specify a member in a SL library or a UFAS sequential file. You can also use the "::TN" facility to interactively enter the tape descriptions. The following example shows the preparation of cartridges within a cartridge library:

```
PREPARE_TAPESET INFILE=UTIL.MJ.SLLIB..EX1 DVC=CT/LIB/M5
```

The equivalent JCL is:

```
TAPEPREP INFILE=UTIL.MJ.SLLIB..EX1 DEVCLASS=CT/LIB/M5
```

where member EX1 of library UTIL.MJ.SLLIB is to be used as input. For further information on the PREPARE_TAPESET utility, see Appendix E, "The PREPARE_TAPESET Utility."

For more information about libraries with both 18-track and 36-track devices, refer to "Mixed Media/Mixed Format Support" in Chapter 2 and to the *Data Management Utilities User's Guide*.

Prior to GCOS 7 TS7458, the use of PREPARE-TAPE was not allowed for non-standard volumes.

5.3.2 How to Prepare a Work Volume

Work volumes must be prepared as WORK by using the PREPARE_TAPESET or PREPARE_TAPE utility.

EXAMPLE 1:

A standard volume.(18-track formatted)

```
PREPARE_TAPESET INFILE=UTIL.MJ.SLLIB..EX2 DVC=CT/LIB/M5 WORK
```

EXAMPLE 2:

A non-standard volume.(36-track formatted)

```
PREPARE_TAPESET INFILE=UTIL.MJ.SLLIB..EX3 DVC=CT/LIB/36T$NSTD WORK
```

or with the JCL:

```
TAPEPREP INFILE=UTIL.MJ.SLLIB..EX2 DEVCLASS=CT/LIB/36T$NSTD WORK
```

where members `EX2` and `EX3` of library UTIL.MJ.SLLIB are to be used as input.

❑

5.3.3 Re-establishing Consistency of Labels

The PREPARE_TAPESET utility is also used to reestablish consistency between the magnetic label and the OCR/bar code optical label. This is explained in "Label Consistency" in Section 4.

5.3.4 How to Prepare a Large Number of Volumes

If you need to prepare all volumes or a large number of volumes in the LSM, use the EXEC_CLX_VOLRPT and GET_CLX_FILE command to get a list of the volumes. Use this list to perform the PREPARE_TAPESET utility.

5.4 DPS 7000 Response to Preparing a Work Volume

The WORK attribute is conferred by the PREPARE_TAPESET (GCL), TAPEPREP (JCL), PREPARE_TAPE (GCL), VOLPREP (JCL) utilities, with the parameter WORK. For example, to prepare a 36-track formatted work volume:

```
$JOB PREPARE;
VOLPREP OLD=(MD=001862 DVC=CT/LIB/36T) NEW =(MD=001862 DVC=CT/LIB/36T) WORK;
$ENDJOB;
```

This transforms the volume 001862 into a 36-track formatted work volume.

```
13.47 X1845 IN PREPARE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
13.47 X1845 STARTED PREPARE OPERATOR P
* 13.47 CT17 MOUNT 001862 LIB FOR X1845
 JB08 X1845.1 STEP H_VOLPREPARE XPR=8 PGID=27
 TU11 V3.0 CT17 IN LIBRARY : 001862 MOUNTED
 13.48 X1845.1 COMPLETED PREPARE OPERATOR P
 13.48 CT17 PREMOUNTED 001862 <WORK> LIB
* DW10 CT17 DISMOUNT 001862 W
 TU12 V3.0 CT17 IN LIBRARY : 001862 DISMOUNTED
```

The DW10 dismount message denotes that the volume has become a Work volume. The CLX sends a set scratch request to the server so that it includes the volume in the list of scratch volumes of the scratch pool.

5.5 What Happens When a Job Assigns / Deassigns a Standard Volume

Mount/dismount requests are processed as in the following example:

```
14. 04 X1849 IN FILESAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
14. 04 X1849 STARTED FILESAVE OPERATOR P
*  14. 04 CT17 MOUNT 001863 LIB FOR X1849
JB08 X1849.1 STEP H_UTILITY XPR=8 PGID=22
TU11 V3.0 CT17 IN LIBRARY : 001863 MOUNTED
*  DW10 CT17 DISMOUNT 001863 S
14. 05 X1849.1 COMPLETED FILESAVE OPERATOR P
TU12 V3.0 CT17 IN LIBRARY  :  001863 DISMOUNTED
```

1. The mount message contains what follows:
   - identification of the device,
   - name of the volume (if a specific volume is concerned),
   - type of protection requested (PROTECT or blank).
2. The CLX sends a mount request to the ACSLS.
3. The message TU11 is issued by CLX when the mounting is completed. This message indicates that the CLX has received acknowledgement of the mount request. In parallel, GCOS 7 receives an attention READY through the data channel, which triggers the AVR mechanism.
4. At the end of the step or job, the system generates an Unload channel program through the data channel. It then displays a non-repetitive DW10 dismount message, which is transmitted to the ACSLS. The message contains:
   - identification of the device,
   - name of the volume,
   - type of volume (Standard).
5. The message TU12 is issued by CLX when the dismounting is completed. This message indicates that the dismount message has been handled. If other mount requests for the device or volume are waiting for execution, they are automatically restarted by the CLX. Requests that cannot be processed immediately (because the device or volume is being used) are placed in wait (PENDING status) by the CLX. The CLX ignores repetitive mount requests once they have been assigned PENDING status.

NOTE:

Under IOF, it may appear that the cartridges are not unloaded. This occurs because an IOF session is a **job**. Refer to "Dismounting Library Volumes" earlier in this chapter.

5.6 Use of a Non-Standard Volume

Using a non-standard volume has not been restricted to PREPARE_TAPESET since GCOS 7 TS7458. When a job assigns a non-standard volume, the user must specify the volume by the **optical label** of the cartridge. Once the requested cartridge is mounted by CLX, the job automatically restarts without any operator intervention.

When a job deassigns a non-standard cartridge, the cartridge is dismounted using a DW10 message:

```
DW10 DISMOUNT <volume> N
```

where:

<volume> is the optical label of the volume
N stands for non-standard label

If CLX is not running, once the volume is mounted, the following message is issued:

```
DV71 ISSUE NV COMMAND TO CONFIRM VOLUME NAME <volume> FOR <ron>
```

An NV command performed by the operator is necessary, except if CLX restarts, in which case the job automatically restarts.

5.7 Use of Work Volumes

If your site operations involve the use of work volumes, you must respect the following rules:

1. **the scratch pool (POOLID_18T and POOLID_36T) specified in the CLX configuration must have been defined in the ACSLS by using the ACSSA command "define pool." One pool must be declared for each class of devices connected to the library (18-track devices and 36-track devices).**
2. **the scratch pools must contain a sufficient number of scratch volumes and all scratch volumes must have the attribute WORK.**

   To set the attributes scratch and work to a volume, use the volume preparation utilities with the parameter WORK.

Creation of pools on the library server:

Use the ACSSA command "define pool" to define the scratch pools on the library server. You must specify a low_water_mark value, a high_water_mark value and an overflow option. The low_water_mark is the point at which warning messages are issued on the UNIX and GCOS 7 consoles as the scratch pool becomes depleted. The high_water_mark is the point at which warning messages are issued as the size of the pool grows.

The common pool (scratch pool number 0) is created automatically, with low_water_mark at 0 and high_water_mark at 65534, when ACSLS is configured. In case the library is shared by several systems, select a different pool for each system. This allows to allocate to each system a different set of work volumes and to manage each set separately.

Use the ACSSA command "query" to display the UNIX server scratch pool configuration.

In the following example, the pool 1 was selected in the CLX configuration.

The "query pool" and "query scratch" commands display the attributes of the pool, and the list and current location of the scratch volumes included in this pool.

EXAMPLE:

```
ACSSA>query pool 1
12-21-93 13:44:22             Pool Status
Identifier  Volume Count  Low Water Mark  High Water Mark  Attributes
 1               3              1             10
ACSSA> query scratch 1
12-21-93 13:45:41                          Scratch Status
 Scratch Pool   Identifier          Home Location             Status
 1              001860              0, 0, 1,35, 1             home
 1              001861              0, 0, 2, 1, 0             home
 1              001862              0, 0, 3, 3, 0             home
ACSSA>
```

Identifier gives the list of scratch volumes in the pool.
The 'Home Location' gives the cell in which the cartridge is stored.

❑

NOTE:

Do not modify the pool selected in the CLX configuration file, when CLX is running.

5.8 What Happens When a Job Assigns a Work Volume

When a job requests a work volume mount, this leads to a mount message in which the keyword WORK replaces the name of the volume.

EXAMPLE:

```
13.56 X1846 STARTED FILSAVE OPERATOR P
 JB08 X1846.1 STEP H_UTILITY XPR=8 PGID=27
* 13.56 CT17 MOUNT <WORK> LIB VOLWR FOR X1846
 TU11 V3.0 CT17 IN LIBRARY : 001860 MOUNTED
* FP01 CT X1846.1 TAG 001860 FOR EFN T
* DW10 CT17 DISMOUNT 001860 S
 13.57 X1846.1 COMPLETED FILSAVE OPERATOR P
 TU12 V3.0 CT17 IN LIBRARY : 001860 DISMOUNTED
```

❑

CLX sends the request "mount scratch" to the ACSLS, specifying the pool selected in the CLX configuration. ACSLS takes a cartridge among those belonging to the specified scratch pool.

In the example above, the ACSLS has selected the cartridge 001860.

The dismount message issued on the operator console gives the type of volume being dismounted.

In the example above, the message FP01 was issued when the cartridge passed from status work to status non-work. The dismount message shows that the cartridge is a standard (S) type.

When a cartridge is prepared as a work volume, the DISMOUNT message indicates the type W (work). Then, the CLX sends a set scratch request to the library server selecting the pool declared in the CLX configuration. As a result, the volume becomes a scratch volume and belongs to this scratch pool.

5.9 Canceling a Request During Mounting

The command CANCEL_REQUEST (CR) on the command CANCEL_JOB (CJ) applied to a job that has active mount requests cancels the mount requests managed by the device manager and suppress the repetitive DW11 mount messages.

If the mount message has already been accepted by the CLX, the mount operation will be performed in spite of any CJ or CR commands. However, at the end of the AVR, the GCOS 7 immediately forces unloading and issues a dismount request.

6. Operator Commands

6.1 Command Summary

The following types of commands are needed in performing Cartridge Tape Library operations. (Commands of each type are listed below the table. Utilities are listed in "CLX Utilities" and "ACSSA Utilities" later in this chapter.)

Type of Commands	Where To Enter Commands	Purpose of Commands
CLX commands	IOF terminal (GCOS 7)	Start, terminate, and trace the CLX processing
ACSSA commands	Remote or local terminal for the ESCALA or ESTRELLA library server	Control and monitor operations related to the cartridge tape library and the library robot (e.g. enter and eject cartridges, mount and dismount cartridges, and define volume work pools)
CLX library commands	IOF terminal (GCOS 7)	Enter a subset of ACSSA commands from an IOF (GCOS 7) terminal
Directives	IOF terminal (GCOS 7)	Obtain status information related to CLX devices
CLX utilities	IOF terminal (GCOS 7)	Generate a volume report history and transfer log files from the library server to a GCOS 7 file
ACSSA utilities	Remote or local terminal for the ESCALA or ESTRELLA library server	Generate a volume report history and perform database backup, recovery, import, and export.

6.1.1 Summary of CLX Commands

These CLX commands are available to the System Operator via an IOF terminal (GCOS 7):

XTA case	• **SET_CLX_SSI**	**sets G_CLX_SSI global variable addressing SSI package (This commande is automatically made by the START_CLX command)**
	• SSSI / SCLX	starts the CLX service
	• TSSI / TCLX	terminates the CLX service,
	• DSSI / DCLX	gives the status of the CLX service,
	• MDCLX	activates/deactivates the CLX trace.
	• RESET_CLX	resetsCLX tables

6.1.2 Summary of ACSSA Commands

The following ACSSA commands are available to a user connected to the ESCALA or ESTRELLA (UNIX) library server by means of a remote or local UNIX terminal.

• audit	physical inventory of the tape cartridges in the library, LSM, panel or subpanel.
• cancel	cancels a current request (not all requests can be cancelled).
• clear	removes all locks on library drives or tape cartridges.
• define	creates or modifies scratch pools.
• delete	deletes empty scratch pools.
• dismount	dismounts a tape cartridge from a library drive.
• eject	ejects one or more cartridges from the ACS.
• enter	enters one or more cartridges into the ACS by using a CAP.
• idle	stops the ACSLM request processing.
• lock	places a lock on tape volumes or library drives.
• mount	mounts a tape cartridge onto a specified library drive.

• query	displays status information about the ACS, CAP, cleaning cartridges, library drives, the ACSLS, LSMs, ports, requests, scratch pools, or tape cartridges, as shown below:
query volume	gives the ACSLM status of volumes.
query drive	gives the ACSLM status of drives.
query mount	gives the drives available for mounting.
query lock drive	gives the current locks on drives.
query lock volume	gives the current locks on volumes.
query request	gives the pending or current ACSLM requests.
query pool	gives the scratch pool defined in the ACSLS.
query scratch	gives volumes belonging to scratch pools.
query server	gives the status of the ACSLS.
query cap	gives the status of the cap(s).
query lsm	gives the status of the silo(s).
query clean	gives the list of cleaning cartridges.
• set	sets or clears the tape cartridge scratch attribute, sets or clears the tape cartridge cleaning attribute, sets the resource lock identifier to a different value, sets CAP attributes, sets ownership for a volume or range of volumes.
• show	displays the value of the specified stored identifier (requestor's lock identifier-requestor's user identifier).
• start	initiates ACSLM request processing.
• unlock	removes active locks on tape cartridges and library drives.
• vary	changes the state of an ACS, LSM, CAP, library drive, or port.
• venter	enters one or more tape cartridges with missing or unreadable optic labels into the ACS.

6.1.3 Summary of CLX Library Commands

XTA case

The command SET_CLX_SSI (or SCLXSSI) sets global variable G_CLX_SSI = <ssi-host-name>/>ssi-port> according to what is found in CLX.SLLIB..CLX_CONFIG (or any other user-specified library member) for SSIHOST= … & SSIPORT= … (see 2.6.3 CLX configuration on GCOS7).

The use of this command, or any other way to give a valid value to G_CLX_SSI global variable, avoids to specify SERVER=<ssi-host-name>/>ssi-port> in subsequent SSI commands or ACS commands entered during an IOF session

The following CLX library commands (a subset of the ACSSA commands listed above, but with a slightly different command format) are available to the System Operator connected to an IOF terminal (GCOS 7):

- AUDIT_CARTRIDGE_LIBRARY audits an object,
- CANCEL_LIB_REQUEST cancels library request,
- DEFINE_SCRATCH_POOL defines a scratch pool,
- DELETE_SCRATCH_POOL deletes a scratch pool,
- EJECT_LIB_VOLUMES ejects volumes,
- ENTER_LIB_VOLUMES enters labeled volumes,
- ENTER_UNLAB_VOLUMES enters unlabelled volumes,
- EXTRACT_CLX_ERROR * extracts log files,
- QUERY_CARTRIDGE_LIBRARY gives the status of an object
- SET_CLX_SSI sets SSI addressing on UNIX

- SET_CAP_ATTRIBUTES sets attributes of a CAP,
- SET_CLEAN_ATTRIBUTE sets attribute of cleaning,
- SET_SCRATCH_ATTRIBUTE sets volumes in scratch status.

* Not available as an ACSSA command

6.1.4 Summary of Relevant Directives

The following directives related to cartridge tape libraries are available to the System Operator connected to an IOF terminal (GCOS 7):

- DC CT/LIB — gives the device status known to the Device Manager device of all devices (18-track and 36-track) connected to the library
- DC CT/LIB/M5 — gives the device status of 18-track devices connected to the library
- DC CT/LIB/36T — gives the device status of 36-track devices connected to the library
- DR — gives the pending requests from GCOS 7

6.2 Operability Considerations

When an application assigns a file on a cartridge tape library (by using the device class CT/LIB/M5 or CT/LIB/36T), the operator visibility of the cartridge tape operations is as follows:

- the Device Manager issues the message MOUNT when a cartridge must be mounted.
- the Device Manager issues the message DW10 DISMOUNT when a cartridge must be dismounted. In some situations, this message is followed by a message PREMOUNTED.

The operator must ignore these messages. The CLX ensures the transmission of mount/dismount requests from GCOS 7 to the cartridge library server. Except in exceptional circumstances, operators will not need to intervene manually at the library terminal or enter the storage module.

The operator must also ignore MOUNT and DISMOUNT messages issued by GCOS 7 between GCOS 7 startup and CLX startup. MOUNT messages are repetitive, the CLX will receive and respond to them as soon as it is activated. The CLX drops duplicate messages. DISMOUNT messages are not repeated but the volume will be dismounted during initialization of CLX (more precisely, when CLX resynchronizes GCOS 7 and the cartridge library server).

When CLX is active, unsolicited messages (TUnn) are sent to every operator.

While mounting/dismounting operations are being processed, messages prefixed by the 4 characters 'TUnn' are sent to the operator console. All major events and warning messages are logged by SSI and the ACSLS. A CLX trace can also be activated/deactivated by the System Operator.

CLX does not accept the operator commands HOLD_JOB and CANCEL_JOB.

To stop the CLX, use the GCL command TERMINATE_CLX.

The PREPARE_TAPESET utility is used to prepare new cartridges. The optical OCR/bar code must be affixed before the cartridge is introduced into the library.

The library server manages the 'cleaning' of devices. The System Operator must ensure that there are sufficient cleaning cartridges in the library. For more information, refer to the relevant library documentation.

When CLX receives a negative response to a mount request, or when manual intervention on the cartridge is necessary, CLX may issues a CANCEL_REQUEST which causes the termination of the step requiring the cartridge if NO_AUTOCR option is selected.

If there is a fault in the cartridge processing, the operator can use GCL commands to determine its cause.

6.3 CLX Commands

The CLX commands control CLX automatic mounting/dismounting operations and display useful information concerning the tape cartridge library.

The CLX commands are delivered in the CLX.BIN library. This library must be declared in your search path using the MWINLIB BIN, CLX.BIN command.

Helps are installed in the SITE.HELP.

All CLX commands are accessible through IOF connected under project OPERATOR; some CLX commands are also accessible through IOF connected under project SYSADMIN. Commands DISPLAY_CLX, DISPLAY_SSI, and QUERY_CARTRIDGE_LIB are accessible to any users connected through IOF.

Availability of CLX Commands:

Command	Operator	SYSADMIN	Other IOF Users
DISPLAY_CLX (DCLX)	yes	yes	yes
DISPLAY_SSI (DSSI)	yes	yes	yes
MODIFY_CLX (MDCLX)	yes	yes	
DISPLAY_SSI (DSSI)	yes	yes	yes
START_CLX (SCLX)	yes		
START_SSI (SSSI)	yes		
TERMINATE_CLX (TCLX)	yes		
TERMINATE_SSI (TSSI)	yes		

6.3.1 Addressing SSI for a DPS 7000-XTA

This command gives the G_CLX_SSI global variable according to SSIHOST and SSIPORT values found in CLX.SLLIB..CLX_CONFIG (or in any user-specified library member). The use of this command avoids the specification of SERVER=<ssi-host-name>/<ssi-port> in subsequent SSI/ACS commands. It can be abbreviated to SCLXSSI:

```
SET_CLX_SSI  [LIBRARY=<library-name> {SUBFILE=<subfile-name}]
```

LIBRARY = name of the GCOS 7 source library containing the CLX configuration file. The default value is CLX.SLLIB.

SUBFILE = name of the subfile containing the CLX configuration file. The default value is CLX_CONFIG.

EXAMPLE:

```
S: SET_CLX_SSI
G_CLX_SSI=pcc5/51004
```

6.3.2 Starting SSI (SSSI)

This command activates the CLX process (ssi). It can be abbreviated to SSSI:

```
START_SSI    [SERVER=<ssi-host-name>/<ssi-port>]
```

Native case - *OPEN7 must be active.*

XTA case, **- G_CLX_SSI global variable must be set if SERVER=… is not given, -**
- INTEROP7_basic must be active.

EXAMPLE:

```
S: START_SSI
 11.16 X550 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 11.16 X550 STARTED CLX_SSI OPERATOR P
 JB08 X550.1 STEP H_CLX_CMDSSI XPR=8 PGID=22
 TU70 V3.0 SSI STARTED
 11.16 X550.1 COMPLETED CLX_SSI OPERATOR P
```

This command is also described in Chapter 3, "Starting the Software."

6.3.3 Starting CLX (SCLX)

This command activates the CLX service. It can be abbreviated to SCLX:

```
START_CLX     LIBRARY = <library name>   SUBFILE = <subfile name>
```

LIBRARY = name of the GCOS 7 source library containing the CLX configuration file. The default value is CLX.SLLIB.

SUBFILE = name of the subfile containing the CLX configuration file. The default value is CLX_CONFIG.

EXAMPLE:

```
S: START_CLX
14.47 X1987 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
14.47 X1987 STARTED CLX OPERATOR P
JB08 X1987.1 STEP H_CLX XPR=8 PGID=19
TU01 V3.0 CLX INITIALIZATION IN PROGRESS
TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
TU09 V3.0 ACSLM IS RUNNING
TU06 V3.0 CLX RECOVERY IN PROGRESS
TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUME SET BY PREVIOUS
          CLX SESSION
TU03 V3.0 CLX IS RUNNING
TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY
```

The **TUxx** messages are sent to the terminal from which the START_CLX command was entered and to every operator.

This command is also described in "Starting CLX" in Chapter 3.

6.3.4 Displaying Devices (DCLX)

This command displays the status of a device or group of devices integrated within the cartridge tape library:

```
DISPLAY_CLX     [DEVICE = <device> ]
```

or

```
DCLX     [DEVICE = <device> ]
```

where, **<device>** is the name of the device (ex CT15).

If <device> is not specified, the status of all devices in the cartridge library are displayed.

The status displayed represents the device status as seen by the CLX.

When mounting or dismounting operations are in progress, the information displayed by DC and DCLX commands may not be identical: some actions can be considered completed by Device Manager whereas they are in progress to CLX.

The messages giving the devices status are displayed on the operator screen in the following formats:

<driveid> stands for device physical address
<dvchar> stands for device characteristic
<poolid> stands for scratch pool identifier
<device> stands for device name
<volume> stands for volume name
<acsls_command> stands for library request name sent to the library server
<ron> stands for the Run Occurrence Number of a job

Format 1: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: <acsls_command> <volume> FOR <ron> IN PROGRESS

EXAMPLE:

```
TU15 V3.0 CT15  M5    POOLID =     3  (0,0,1,0)  STATUS:  DISMOUNT
001863  FOR X1980 IN PROGRESS
```

❑

Format 2: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: <volume> MOUNTED FOR <ron>

EXAMPLE:

```
TU15 V3.0 CT16  M5    POOLID =     3  (0,0,1,1)  STATUS:  001860
MOUNTED  FOR X1980
```

❑

Format 3: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: <acsls_command> <volume> FOR <ron> PENDING

EXAMPLE:

```
TU15 V3.0 CT17  36T    POOLID =     6  (0,0,1,2)  STATUS:  MOUNT
001864 FOR X1981 PENDING
```

❑

Format 4: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: <acsls_command> <volume> FOR <ron> TIMEOUT

EXAMPLE:

```
TU15 V3.0 CT18  36T    POOLID =     6  (0,0,1,3)  STATUS:
DISMOUNT 001899 FOR X1985 TIMEOUT
```

❑

Format 5: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: STANDBY

EXAMPLE:

```
TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS: STANDBY
```

❑

Format 6: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: STANDBY (ACTION TO UNLOCK RESOURCE IN PROGRESS);

EXAMPLE:

```
TU15 V3.0 CT17  36T    POOLID =     6  (0,0,1,2)  STATUS:  STANDBY
(ACTION TO UNLOCK RESOURCE IN PROGRESS)
```

❑

Format 7: TU15 <clx version> <device> <dvchar> POOLID = <poolid> <driveid> STATUS: <volume> DISMOUNT UNSUCCESSFUL

EXAMPLE:

```
TU15 V3.0 CT18  36T    POOLID =     6  ( 0,0,1,2) STATUS: 001860
DISMOUNT UNSUCCESSFUL
```

❑

EXAMPLE 1:

The first DCLX command is performed on a system with 4 drives and 2 volumes mounted.

CT15 and CT16 are 18-track devices (CT/LIB/M5). The pool identifier 3 is associated to CT/LIB/M5 devices (18-track formatted WORK volumes).

CT17 and CT18 are 36-track devices (CT/LIB/36T). The pool identifier 6 is associated to CT/LIB/36T (36-track formatted WORK volumes).

The volume 001863 is dismounted, then mounted again. The 2nd DCLX command is processed while the dismounting is in progress and the last mount request is pending.

```
S: DCLX
 14.12 TU15 V3.0 CT15  M5    POOLID =     3 (0,0,1,0) STATUS : 001863 MOUNTED
 FOR X1981
 TU15 V3.0 CT16  M5    POOLID =    3 (0,0,1,1) STATUS : STANDBY
 TU15 V3.0 CT17  36T   POOLID =    6 (0,0,1,2) STATUS : 001864 MOUNTED FOR X1980
 TU15 V3.0 CT18  36T   POOLID =    6 (0,0,1,3) STATUS : STANDBY
TU14 CLX_DISPLAY COMMAND COMPLETED
* DW10 CT15 DISMOUNT 001863 S
* 14.13 CT15 MOUNT 001863 LIB FOR X1981
S: DCLX
 14.13 TU15 V3.0 CT15  M5    POOLID =     3 (0,0,1,0) STATUS : DISMOUNT 001863
 FOR X1981 IN PROGRESS
 TU15 V3.0 CT16  M5    POOLID =    3 (0,0,1,1) STATUS : STANDBY
 TU15 V3.0 CT17  36T   POOLID =    6 (0,0,1,2) STATUS : 001864 MOUNTED FOR X1980
 TU15 V3.0 CT18  36T   POOLID =    6 (0,0,1,3) STATUS : STANDBY
 TU15 V3.0 CT15  M5    POOLID =    3 (0,0,1,0) STATUS : MOUNT 001863
 FOR X1981 PENDING
 TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
```

EXAMPLE 2:

Successive DCLX commands are performed while a volume is being mounted, and then while the same volume is being dismounted.

```
S: DCLX CT17
 15.35 V3.0 TU15 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : STANDBY
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
S: EJ FILSAVE LIB=LCIU.CLX.JCLLIB VL=001863
 15.36 X1887 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.36 X1887 STARTED FILSAVE OPERATOR P
* 15.36 CT17 MOUNT 001863 LIB FOR X1887
S: DCLX CT17
 15.36 TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : MOUNT 001863
 FOR X1887 IN PROGRESS
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
 TU11 V3.0 CT17 IN LIBRARY : 001863 MOUNTED
```

```
 JB08 X1887.1 STEP H_UTILITY XPR=8 PGID=22
S: DCLX CT17
 15.38 TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : 001863 MOUNTED
 FOR X1887
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
* DW10 CT17 DISMOUNT 001863 S
 15.39 X1887.1 COMPLETED FILSAVE OPERATOR P
S: DCLX CT17
 15.39 TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : DISMOUNT 001863
FOR X1887 IN PROGRESS
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
 TU12 V3.0 CT17 IN LIBRARY : 001863 DISMOUNTED
S: DCLX CT17
 15.39 TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : STANDBY
 (ACTION TO UNLOCK RESOURCE IN PROGRESS)
TU14 CLX_DISPLAY COMMAND COMPLETED
S: DCLX CT17
 15.40 TU15 V3.0 CT17  36T    POOLID =     6 (0,0,1,2) STATUS : STANDBY
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
```

❑

Error messages

DCLX is rejected when:

1. The CLX job is not running:
   - CLX initialization is in progress,
   - CLX is terminating,
   - CLX waits for the availability of ACSLM (ACSLM is not online),
   - CLX waits for the availability of the LSM(s) (LSM(s) is not online).

   The following message is displayed on the operator screen:

```
TU60 <clx version> DISPLAY_CLX COMMAND REJECTED: CLX NOT RUNNING.
```

2. The specified drive does not exist in the configuration file. The following message is displayed on the operator screen:

```
TU60 <clx version> DISPLAY_CLX COMMAND REJECTED: <device-name>
     NOT IN LIBRARY.
```

EXAMPLES:

```
S: SCLX
 14.47 X1987 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.47 X1987 STARTED CLX OPERATOR P
 JB08 X1987.1 STEP H_CLX XPR=8 PGID=19
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
S: DCLX
```

```
 14.47 TU60 V3.0 CLX_DISPLAY COMMAND REJECTED : CLX NOT RUNNING
S: DCLX CT15
 14.48 TU60 V3.0 CLX_DISPLAY COMMAND REJECTED : CLX NOT RUNNING
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION
 TU03 V3.0 CLX IS RUNNING
 TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY
S: DCLX
 14.49 TU15 V3.0 CT15  M5    POOLID =     3 (0,0,1,0) STATUS : STANDBY
TU15 V3.0 CT16  M5    POOLID =     3 (0,0,1,1) STATUS : STANDBY
TU15 V3.0 CT17  36T   POOLID =     6 (0,0,1,2) STATUS : STANDBY
TU15 V3.0 CT18  36T   POOLID =     6 (0,0,1,3) STATUS : STANDBY
TU14 V3.0 CLX_DISPLAY COMMAND COMPLETED
S: DCLX CT57
 14.50 TU60 V3.0 CLX_DISPLAY COMMAND REJECTED : CT57 NOT IN LIBRARY
```

❑

6.3.5 Displaying the SSI Status (DSSI)

This command displays the status of the SSI. It indicates whether the SSI process on the local OPEN7 sub-system is active or not.

This command can be submitted from an IOF terminal working under a project with the MAIN attribute.

XTA case **The global variable G_CLX_SSI must have a valid value, generally established by a previously valid SET_CLX_SSI (or SCLXSI) command.**

EXAMPLE 1: DSSI is entered while SSI is inactive

```
S: DSSI
 11.15 X549 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 11.15 X549 STARTED CLX_SSI OPERATOR P
 JB08 X549.1 STEP H_CLX_CMDSSI XPR=8 PGID=22
 TU70 V3.0 SSI NO MORE RUNNING
 11.15 X549.1 COMPLETED CLX_SSI OPERATOR P
```

EXAMPLE 2: DSSI is entered while SSI is active

```
S: DSSI
 11.17 X551 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 11.17 X551 STARTED CLX_SSI OPERATOR P
 JB08 X551.1 STEP H_CLX_CMDSSI XPR=8 PGID=22
 TU70 V3.0 SSI IS RUNNING
 11.17 X551.1 COMPLETED CLX_SSI NA_OP P
```

❑

6.3.6 Starting / Stopping the CLX Trace (MDCLX)

This command turns the CLX trace on or off. When the CLX trace is active, all messages exchanged between the CLX and the ACSLS are displayed on the operator terminal from which CLX was started.

The trace displays requests sent to the ACSLS by CLX, it also displays the acknowledgments and responses returned by the ACSLS.

Syntax:

MODIFY_CLX TRACE = 1 | 0 or
MDCLX TRACE = 1 | 0

Where TRACE =1 starts the CLX trace mode, TRACE = 0 stops the CLX trace mode.

MDCLX TRACE starts the CLX trace mode.

MDCLX commands are always accepted by the CLX.

The command MDCLX TRACE can be used to verify that everything is functioning correctly during the installation phase, in order to determine the cause of a mount/dismount problem or a to understand a problem related to the exchange protocol between the CLX and the ACSLM.

Format of outputs on the screen:

Format of requests: <request type> <list of parameters > <immediate status>

Request type is one out of the following:

MOUNT	LOCK VOLUME	QUERY LOCK DRIVE
MOUNT SCRATCH	UNLOCK DRIVE	QUERY LOCK VOLUME
SET SCRATCH	UNLOCK VOLUME	QUERY SERVER
DISMOUNT	QUERY DRIVE	QUERY LSM
LOCK DRIVE	QUERY VOLUME	

Parameters are displayed in the format <keyword> = <value>. Keywords and their values depend on the request. They are described in the *Common Library Services User's Guide*.

Format of acknowledg-ments:

The format of the output depends on the request type.

Format 1: the request is a "query server" or a "query lsm"

<request type> SEQ_NO = <sequence number > REP_TYPE = ACK REQID =<request identifier>

Format 2: other requests

--- SEQ_NO=<sequence number> REQ_TYPE = ACK REQID=<request identifier>

Parameters are displayed in the format <keyword> = <value>. Keywords and their values depend on the request. They are described in the *Common Library Services User's Guide*.

Format of responses:

<request type> SEQ_NO=<sequence number> REP_TYPE=<response type> STATUS = <value> <list of parameters>

Response type is either INTER for an intermediate response or FINAL for a final response.

Parameters are displayed in the format <keyword> = <value>. Keywords and their values depend on the request type. They are described in the *Common Library Services User's Guide*.

EXAMPLE 1:

Trace of a FILSAVE utility. It begins with a request to mount the volume 001863 on the device CT17 and terminates with the request to dismount this volume.

```
S: MDCLX TRACE
 14.38 V3.0 TU14 CLX COMMAND IN PROGRESS
 14.39 X1865 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.39 X1865 STARTED FILSAVE OPERATOR P
* 14.39 CT17 MOUNT 001863 LIB FOR X1865
 LOCK DRIVE SEQ_NO= 76 LOCKID= 0 USERID=BCA9 DRIVEID=0,0,1,2  WAIT=0
 COUNT= 1 STATUS= 0
 LOCK DRIVE SEQ_NO= 76 REP_TYPE=FINAL STATUS= 0 LOCKID=12136  DRIVEID=0,0,1,2
 STATUS_2= 0 TYPE=17 IDENT=
 LOCK VOLUME SEQ_NO= 77 LOCKID=12136 USERID=BCA9 VOLID=001863  WAIT=0 COUNT= 1
 STATUS= 0
 LOCK VOLUME SEQ_NO= 77 REP_TYPE=FINAL STATUS= 0 LOCKID=12136  VOLID=001863
 STATUS_2= 0 TYPE=17 IDENT=
 MOUNT SEQ_NO= 78 LOCKID=12136 VOLID=001863 DRIVEID=0,0,1,2 READONLY=0 STATUS= 0
 --- SEQ_NO= 78 REP_TYPE=ACK REQID= 9002
 JB08 X1865.1 STEP H_UTILITY XPR=8 PGID=22
 MOUNT SEQ_NO= 78 REP_TYPE=FINAL STATUS= 0 VOLID=001863 DRIVEID=0,0,1,2
 TU11 V3.0 CT17 IN LIBRARY : 001863 MOUNTED
* DW10 CT17 DISMOUNT 001863 S
 DISMOUNT SEQ_NO= 79 LOCKID=12136 VOLID=001863 DRIVEID=0,0,1,2 FORCE=0 STATUS= 0
 14.40 X1865.1 COMPLETED FILSAVE OPERATOR P
 --- SEQ_NO= 79 REP_TYPE=ACK REQID= 9004
 DISMOUNT SEQ_NO= 79 REP_TYPE=FINAL STATUS= 0 VOLID=001863 DRIVEID=0,0,1,2
TU12 V3.0 CT17 IN LIBRARY : 001863 DISMOUNTED
```

```
 UNLOCK VOLUME SEQ_NO= 80 LOCKID=12136 VOLID=001863 COUNT= 1 STATUS= 0 UNLOCK
 VOLUME SEQ_NO= 80 REP_TYPE=FINAL STATUS= 0 COUNT= 1 VOLID=001863 STATUS_2= 0
 TYPE=17 IDENT=
 UNLOCK DRIVE SEQ_NO= 81 LOCKID=12136 DRIVEID=0012 COUNT= 1 STATUS= 0
 UNLOCK DRIVE SEQ_NO= 81 REP_TYPE=FINAL STATUS= 0 COUNT= 1 DRIVEID=0,0,1,2
 STATUS_2= 0 TYPE=17 IDENT=
--- SEQ_NO= 81 REP_TYPE=ACK REQID= 9006
```

The GCOS 7 mount request causes the following ACSLS requests:

- lock drive,
- lock volume,
- mount.

The GCOS 7 dismount request causes the following ACSLS requests:

- dismount,
- unlock volume,
- unlock drive.

The request <lock drive> is sent with the parameter LOCKID set to 0, where 0 means no LOCKID, this ask ACSLS for a LOCKID in return. The returned LOCKID value is used by the CLX for the commands <lock volume>, <mount>, <dismount>, <unlock drive> and <unlock volume>.

EXAMPLE 2:

Trace of mounting a work volume. It begins with a request "mount scratch" and terminates with a standard dismount request. Notice also the request "query server" which occurred by chance while the mounting of the scratch volume was in progress. The query server request is performed periodically by CLX to watch ACSLS.

```
S: MDCLX TRACE
 14.32 TU14 V3.0 CLX COMMAND IN PROGRESS
 14.33 X1862 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.33 X1862 STARTED FILSAVE OPERATOR P
 JB08 X1862.1 STEP H_UTILITY XPR=8 PGID=22
* 14.33 CT17 MOUNT <WORK> LIB VOLWR FOR X1862
 LOCK DRIVE SEQ_NO= 72 LOCKID= 0 USERID=BCA9 DRIVEID=0,0,1,2 WAIT=0 COUNT= 1
 STATUS= 0
 LOCK DRIVE SEQ_NO= 72 REP_TYPE=FINAL STATUS= 0 LOCKID=11992 DRIVEID=0,0,1,2
 STATUS_2= 0 TYPE=17 IDENT=
 MOUNT SCRATCH SEQ_NO= 73 LOCKID=11992 POOL= 1 DRIVEID=0,0,1,2 STATUS= 0
 --- SEQ_NO= 73 REP_TYPE=ACK REQID= 8992
 QUERY SERVER SEQ_NO= 1 STATUS= 0
 QUERY SERVER SEQ_NO= 1 REP_TYPE=FINAL STATUS= 0 COUNT= 1 STATE= 9 FREECE
 LLS= 812 REQUEST= 0 0 1 0 0 0 0 0 0 0
 QUERY SERVER SEQ_NO= 1 REP_TYPE=ACK REQID= 8993
```

```
 MOUNT SCRATCH SEQ_NO= 73 REP_TYPE=FINAL STATUS= 0 VOLID=001860 POOL= 1
 DRIVEID=0,0,1,2
 TU11 V3.0 CT17 IN LIBRARY : 001860 MOUNTED
* FP01 CT X1862.1 TAG 001860 FOR EFN T
* DW10 CT17 DISMOUNT 001860 S
 DISMOUNT SEQ_NO= 74 LOCKID=11992 VOLID=001860 DRIVEID=0,0,1,2 FORCE=0 STATUS= 0
 14.34 X1862.1 COMPLETED FILSAVE OPERATOR P
 --- SEQ_NO= 74 REP_TYPE=ACK REQID= 8994
 DISMOUNT SEQ_NO= 74 REP_TYPE=FINAL STATUS= 0 VOLID=001860 DRIVEID=0,0,1,2
 TU12 V3.0 CT17 IN LIBRARY : 001860 DISMOUNTED
 UNLOCK DRIVE SEQ_NO= 75 LOCKID=11992 DRIVEID=0,0,1,2 COUNT= 1 STATUS= 0
 UNLOCK DRIVE SEQ_NO= 75 REP_TYPE=FINAL STATUS= 0 COUNT= 1 DRIVEID=0,0,1,2
 STATUS_2= 0 TYPE=17 IDENT=
 --- SEQ_NO= 75 REP_TYPE=ACK REQID= 8995
```

The GCOS 7 mount request causes the following ACSLS requests:

- lock drive,
- mount scratch.

The GCOS 7 dismount request causes the following ACSLS requests.

- dismount,
- unlock drive.

The main difference between example 1 and example 2 is the mount request.

In the second example, the scratch parameter is set, and CLX does not send a request to lock the volume because CLX does not unlock volume in the scratch pool selected by the UNIX server.

EXAMPLE 3:

If you activate the CLX trace mode for the preparation of a work volume, you can see that the GCOS 7 mount request causes the following ACSLS requests:

- lock drive,
- lock volume,
- mount scratch.

The GCOS 7 dismount request causes the following ACSLS requests:

- dismount,
- set scratch poolid,
- unlock volume,
- unlock drive.

EXAMPLE 4:

The following example shows traces of a <query server> requests while CLX is processing a mount operation and then, a dismount operation.

```
S: MDCLX TRACE
-> MOUNT SEQ_NO= 21 LOCKID=12986 VOLID=001862 DRIVEID=0,0,1,1 READONLY=0 STATUS= 0
-> --- SEQ_NO= 21 REP_TYPE=ACK REQID= 1769
-> QUERY SERVER SEQ_NO= 1 STATUS= 0
-> QUERY SERVER SEQ_NO= 1 REP_TYPE=ACK REQID= 1770
-> QUERY SERVER SEQ_NO= 1 REP_TYPE=FINAL STATUS= 0 COUNT= 1 STATE= 9
   FREECELLS= 818 REQUEST= 0 0 1 0 0 0 0 0 0 0
-> MOUNT SEQ_NO= 21 REP_TYPE=FINAL STATUS= 0 VOLID=001862 DRIVEID=0,0,1,1
-> TU11 V3.0 CT16 IN LIBRARY : 001862 MOUNTED
-> DISMOUNT SEQ_NO= 22 LOCKID=12986 VOLID=001862 DRIVEID=0,0,1,1 FORCE=0 STATUS= 0
-> --- SEQ_NO= 22 REP_TYPE=ACK REQID= 1771
-> QUERY SERVER SEQ_NO= 1 STATUS= 0
-> QUERY SERVER SEQ_NO= 1 REP_TYPE=ACK REQID= 1772
-> QUERY SERVER SEQ_NO= 1 REP_TYPE=FINAL STATUS= 0 COUNT= 1 STATE= 9
   FREECELLS= 818 REQUEST= 0 0 0 0 1 0 0 0 0 0
-> DISMOUNT SEQ_NO= 22 REP_TYPE=FINAL STATUS= 0 VOLID=001862 DRIVEID=0,0,1,1

-> TU12 V3.0 CT16 IN LIBRARY : 001862 DISMOUNTED
-> UNLOCK VOLUME SEQ_NO= 23 LOCKID=12986 VOLID=001862 COUNT= 1 STATUS= 0
-> --- SEQ_NO= 23 REP_TYPE=ACK REQID= 1773
-> UNLOCK VOLUME SEQ_NO= 23 REP_TYPE=FINAL STATUS= 0 COUNT= 1 VOLID=001862
   STATUS_2= 0 TYPE=17 IDENT=
-> UNLOCK DRIVE SEQ_NO= 24 LOCKID=12986 DRIVEID=0,0,1,1 COUNT= 1 STATUS= 0
-> --- SEQ_NO= 24 REP_TYPE=ACK REQID= 1774
-> UNLOCK DRIVE SEQ_NO= 24 REP_TYPE=FINAL STATUS= 0 COUNT= 1 DRIVEID=0,0,1,1
   STATUS_2= 0 TYPE=17 IDENT=
-> LOCK DRIVE SEQ_NO= 25 LOCKID= 0 USERID=BCA9 DRIVEID=0,0,1,1 WAIT=0 COUNT= 1
   STATUS= 0
```

6.3.7 Terminating CLX (TCLX)

The following command shuts down the CLX on GCOS 7, either non-urgently or urgently:

TERMINATE_CLX [STRONG [DUMP]]

Where STRONG requests an urgent shutdown, and where the DUMP option allows you to request a dump in SYS.SPDUMP

This command can be submitted from an IOF terminal working under a project with the MAIN attribute. Messages are displayed to the user's terminal who started CLX.

Case 1: the STRONG option is not specified

If there are no mount/dismount operations in progress and no cartridge is mounted, CLX accepts the request and ignores incoming mount requests.

If mount/dismount operations are in progress or cartridges are mounted, CLX rejects the request and issues the message:

```
TU61 <clx version> TERMINATE_CLX COMMAND REJECTED: DEVICES IN USE
```

Case 2: the STRONG option is specified

CLX drops queued mount/dismount requests, ignores incoming mount/dismount requests and stops without completing the operations in progress.

CLX issues a message for each dropped or interrupted request. CLX displays messages saying at which point the current operations are interrupted before it stopped. If necessary, the current mount/dismount operations must be completed by the system operator either manually or by using the UNIX server terminal. This is necessary when resources (volume or drive) remain locked by CLX. To know how to re-establish a clean state, you need to know which requests CLX has executed for each mount/dismount message. For more information, refer to "Starting / Stopping the CLX Trace (MDCLX)" earlier in this chapter and to "Semi-Automatic Mode" in Chapter 9.

After TCLX is entered, the mount/dismount messages must be processed by the operator in manual mode or semi-automatic mode. Refer to "Operation in Degraded Mode" in Chapter 9.

NOTE:

Manual and semi-automatic modes should be used with caution and only in serious failure situations.

6.3.7.1 TERMINATE_CLX

Case 1: TERMINATE_CLX is entered while no drives are mounted.

The CLX displays the following messages and then stops:

```
TU07 <clx version> CLX SHUTDOWN IN PROGRESS
TU08 <clx version> CLX IMMEDIATE SHUTDOWN
```

CLX ignores next mount/dismount messages issued by the Device Manager.

EXAMPLE:

```
S: START_CLX
 14.49 X1870 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.49 X1870 STARTED CLX OPERATOR P
 JB08 X1870.1 STEP H_CLX XPR=8 PGID=20
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION
 TU03 V3.0 CLX IS RUNNING
 TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY
S: TCLX
 14.51 TU14 V3.0 CLX COMMAND IN PROGRESS
 TU07 V3.0 CLX SHUTDOWN IN PROGRESS
 TU08 V3.0 CLX IMMEDIATE SHUTDOWN
 14.52 X1870.1 COMPLETED CLX OPERATOR P
```

❑

Case 2: TERMINATE_CLX is entered while drives are being used.

The CLX displays the following message:

```
TU61 <clx version> TERMINATE_CLX COMMAND REJECTED: DEVICES IN USE
```

Case 3: TERMINATE_CLX is entered while CLX is not operational.

The CLX displays the following message:

```
TU61 <clx version> TERMINATE_CLX COMMAND REJECTED: CLX NOT RUNNING
```

EXAMPLE:

```
S: START_CLX
 14.49 X1870 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.49 X1870 STARTED CLX OPERATOR P
 JB08 X1870.1 STEP H_CLX XPR=8 PGID=20
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
```

```
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
S: TCLX
 14.49 TU61 V3.0 CLX_TERMINATE COMMAND REJECTED : CLX NOT RUNNING
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION
 TU03 V3.0 CLX IS RUNNING
 TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY

S: TCLX
 14.51 TU14 V3.0 CLX COMMAND IN PROGRESS
 TU07 V3.0 CLX SHUTDOWN IN PROGRESS
 TU08 V3.0 CLX IMMEDIATE SHUTDOWN
 14.52 X1870.1 COMPLETED CLX OPERATOR P
```

❑

6.3.7.2 TERMINATE_CLX STRONG [DUMP]

If TERMINATE_CLX STRONG is entered, CLX displays the message:

TU08 <clx version> CLX IMMEDIATE SHUTDOWN

The CLX then displays all interrupted requests in the following message format:

TU39 <clx version> DVMGT OUTSTANDING REQUESTS:
<request> <dev><vol><type><job> <msg-stat>-<cmd> IS <cmd-stat>

The CLX then issues the following message for all queued requests:

TU38 <clx version> DVMGT PENDING REQUESTS:
<request> <dev><vol><type><job> <msg-stat>-<cmd> IS <cmd-stat>

Where:

<request> is MOUNT or DISMOUNT.
<dev> is the device name.
<vol> is the volume name.
<type> is one value among: PROTECT FOR - WORK - W(ork) - S(tandard) - U(nknown) - P(rotect) - E(ject) - N(on standard) - blank characters.
<job> is the job ron number.
<msg-stat> is one value among: IN PROGRESS-CANCEL-TIMEOUT.
<cmd> is one value among: LOCK VOLUME-LOCK DRIVE- MOUNT-DISMOUNT- SET SCRATCH- MOUNT SCRATCH- UNLOCK DRIVE- UNLOCK VOLUME.
<cmd-stat> is one value among: NOT SENT- SENT - ACKNOWLEDGED-SUCCESSFUL- UNSUCCESSFUL- AUDIT INPG - TIMEOUT.
AUDIT INPG stands for AUDIT IN PROGRESS.

S stands for Standard,
W stands for WORK,
U stands for unknown volume,
E stands for scratch non WORK volume,
P stands for scratch write protected by file selector scratch volume,
N stands for non-standard.

That gives the following list of messages:

```
MOUNT <dev><vol> PROTECT FOR <job>-   LOCK_VOLUME  IS  NOTSENT
                 WORK                 LOCK_DRIVE       SENT
                 S                    MOUNT            ACKNOWLEDGED
                                      MOUNT SCRATCH    SUCCESSFUL
                                      DISMOUNT         UNSUCCESSFUL
                                      SET SCRATCH      AUDIT INPG
                                      UNLOCK DRIVE     TIMEOUT
                                      UNLOCK VOLUME

DISMOUNT <dev><vol> S                 LOCK_VOLUME  IS  NOTSENT
                    W                 LOCK_DRIVE       SENT
                    U                 MOUNT            ACKNOWLEDGED
                                      MOUNT SCRATCH    SUCCESSFUL
                    E                 DISMOUNT         UNSUCCESSFUL
                                      SET SCRATCH      AUDIT INPG
                    P                 UNLOCK DRIVE     TIMEOUT
                                      UNLOCK VOLUME
                    N
```

Next, the step H_CLX terminates with severity 1 and the job CLX stops unless the DUMP option is specified, in which case the step aborts and a dump is sent to SYS.SPDUMP.

6.3.7.3 Scenario showing TCLX and TCLX STRONG

The following scenario shows the difference between TCLX and TCLX STRONG:

TCLX is requested while 2 mount requests are processing, it is followed by these commands in order:

- TCLX STRONG, then
- SCLX, and finally
- TCLX.

EXAMPLE:

```
 15.46 CT17 MOUNT 001864 LIB FOR X1990
* 15.46 CT15 MOUNT 001863 LIB FOR X1991
S: TCLX
 15.46 TU61 V3.0 TERMINATE_CLX REQUEST REJECTED : DEVICES
       IN USE
```

The first TCLX is rejected because cartridges are mounted.

```
S: TCLX STRONG
 15.46 TU14 CLX COMMAND IN PROGRESS
 TU08 V3.0 CLX IMMEDIATE SHUTDOWN
 TU39 V3.0 DVMGT OUTSTANDING REQUEST :
 MOUNT CT15 001863 FOR X1991 : IN PROGRESS LOCK_VOLUM IS SENT
 TU39 V3.0 DVMGT OUTSTANDING REQUEST :
 MOUNT CT17 001864 FOR X1990 : IN PROGRESS LOCK_VOLUM IS
 ACKNOWLEDGED
 15.46 X1987.1 COMPLETED CLX OPERATOR P
```

TCLX STRONG has interrupted the processing of the current mount operations. TU39 messages display at what stage the current requests have been interrupted.

CLX is restarted (SCLX).

```
* 15.56 CT17 MOUNT 001864 LIB FOR X1993
* 15.56 CT15 MOUNT 001863 LIB FOR X1994
```

Mount messages that have not yet been processed are repeated by Device Manager and the CLX starts to process these messages.

The current jobs using the volumes run to completion and then terminate.

```
 JB08 X1994.1 STEP H_UTILITY XPR=8 PGID=27
 TU11 V3.0 CT15 IN LIBRARY : 001863 MOUNTED
 TU11 V3.0 CT17 IN LIBRARY : 001864 MOUNTED
 TU08 V3.0 CLX IMMEDIATE SHUTDOWN
 15.56 X1992.1 COMPLETED CLX OPERATOR P
 JB08 X1993.1 STEP H_UTILITY XPR=8 PGID=25
* DW10 CT15 DISMOUNT 001863 S
 15.58 X1994.1 COMPLETED FILSAVE LCIU2 P
* DW10 CT17 DISMOUNT 001864 S
 15.58 X1993.1 COMPLETED FILSAVE LCIU2 P
```

6.3.8 Terminating SSI (TSSI)

The command TERMINATE_SSI (TSSI) terminates the SSI on the local OPEN7 or on the UNIX library server.

This command can be submitted from an IOF terminal working under a project with the MAIN attribute.

XTA case

- either G_CLX_SSI global variable must have previously been set with a valid value (generally by a valid SET_CLX_SSI command),

- or TERMINATE_SSI (TSSI) SERVER=<ssi-host-name>/<ssi-port> must be specified.

The SSI process is halted. This breaks the connection between the local GCOS 7 and the cartridge library server. The STRONG parameter forces an immediate termination of the ssi process (kill -9). You should avoid this option.

In normal use, the TERMINATE_SSI command is necessary if the SSI configuration needs to be modified.

You can either terminate CLX before terminating SSI or keep CLX running. However, terminating SSI can cause a termination of CLX (refer to the chapter, "Setting Up Your CTL on the DPS 7000").

EXAMPLE:

```
S: DSSI
 15.09 X320 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.09 X320 STARTED CLX_SSI OPERATOR P
 JB08 X320.1 STEP H_CLX_CMDSSI XPR=8 PGID=25
 TU70 V3.0 SSI IS RUNNING
 15.09 X320.1 COMPLETED CLX_SSI OPERATOR P

S: TSSI
 15.10 X321 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.10 X321 STARTED CLX_SSI OPERATOR P
 JB08 X321.1 STEP H_CLX_CMDSSI XPR=8 PGID=25
 TU70 V3.0 SSI IS STOPPED
 15.10 X321.1 COMPLETED CLX_SSI OPERATOR P

S: DSSI
 15.11 X322 IN CLX_SSI USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.11 X322 STARTED CLX_SSI OPERATOR P
 JB08 X322.1 STEP H_CLX_CMDSSI XPR=8 PGID=25
 TU70 V3.0 SSI NO MORE RUNNING
 15.11 X322.1 COMPLETED CLX_SSI OPERATOR P
```

If the SSI is terminated while CLX is running, warning messages are issued by CLX until SSI is restarted.

- if there are any outstanding requests, the CLX will repeat the requests n times every m interval of time. n is defined in the CLX configuration parameter MAXTOSSI, m is defined in the CLX configuration parameter TOSSI,

- if SSI is restarted before the maximum number of repetitions is reached, the repeated requests will be processed; if SSI is not restarted, the step H_CLX terminates (severity 4, status 24000) and the job CLX terminates unless the JCL supplied at the CLX installation has been modified by the System Administrator,
- if MAXTOSSI equals 0, the CLX repeats the requests until SSI restarts,
- at each repetition the following message is issued:

```
TU54 <clx version> CLX CANNOT SEND REQUEST
(VERIFY THAT SSI HSL/TNS ARE ACTIVE)
```

6.3.9 Resetting CLX Tables

The following command resets all the internal CLX tables relating to a particular device:

```
RESET_CLX DEVICE=<device>
```

Where:

<device> is the name of the device (e.g., CT15).

The <device> parameter is mandatory.

CAUTION:
This command must be used very carefully and only in order to recover from an abnormal situation. The use of this command can provoke an abnormal reaction of CLX if it is used when it is not necessary.

Resetting internal CLX tables for a device means:

- set the device status to STANDBY (no cartridge mounted, device not locked)
- delete all waiting requests (if any)

The use of this command modifies only CLX tables. No request is sent to the UNIX library server. It is the operator's responsibility to put the device in the *available* state by using commands of the ACSLS command processor (cmd_proc). Any cartridge must be dismounted and the drive must be unlocked if necessary.

Error messages

RESET_CLX is rejected if:

1. The CLX job is not running:
   - CLX initialization is in progress
   - CLX is terminating
   - CLX is waiting for the availability of ACSLM (ACSLM is not online)
   - CLX is waiting for the availability of LSM (LSM(s) is not online)

The following message is displayed on the operator screen:

```
TU60 <clx version> RESET_CLX COMMAND REJECTED: CLX NOT RUNNING
```

2. The specified drive does not exist in the configuration file. The following message is displayed on the operator screen:

```
TU60 <clx version> RESET_CLX COMMAND REJECTED : <device name>
NOT IN LIBRARY
```

EXAMPLES:

```
S: DCLX
    TU15 X892.2    V3.1  CT01 36T POOLID=6 (0,0,2,1)
    STATUS : 001870 MOUNTED FOR X916
         V3.1  CT02 36T POOLID=6 (0,0,2,2) STATUS : STANDBY
    TU14 V3.1  DISPLAY_CLX COMMAND COMPLETED
```

after action on the UNIX library server in order to put the device in the *available* state and to unlock it if necessary :

```
S: RESET_CLX CT01
    TU14 X892.2    V3.1  RESET_CLX COMMAND COMPLETED
S: DCLX
    TU15 X892.2    V3.1  CT01 36T POOLID=6 (0,0,2,1)
    STATUS : STANDBY
         V3.1  CT02 36T POOLID=6 (0,0,2,2) STATUS : STANDBY
    TU14 V3.1  DISPLAY_CLX COMMAND COMPLETED

S: RESET_CLX CT57
    TU60 X892.2    V3.1  RESET_CLX COMMAND REJECTED : CT57 NOT
    IN LIBRARY
```

6.4 CLX Utilities

Availability of CLX Utilities:

Command	Operator	SYSADMIN	Other IOF Users
EXEC_CLX_VOLRPT	yes	yes	
GET_CLX_FILE	yes	yes	

6.4.1 Volume Report Utility (EXEC_CLX_VOLRPT - VOLRPT)

The EXEC_CLX_VOLRPT (VOLRPT) command activates the volrpt (volume report) utility on the UNIX server. The volrpt utility gives the list of volumes and the physical location of volumes in the library. It also provides history and usage statistics on these volumes.

The report can be stored in a file or it can be displayed on the terminal screen. If the report is stored in a file, the report is stored in the /export/home/ACSSS/log/volrpt.log file of the ESCALA or ESTRELLA. This file can be transferred to a local GCOS 7 file, using the GET_CLX_FILE command.

Options enable the user to control the sort order of the report and its presentation (page breaks, header), or they enable to create a customized volrpt. For a complete discussion of the volrpt utility on the UNIX server, refer to the *Storage Tek Administrator's Guide*.

This command can be submitted from an IOF terminal working under project MAIN or SYSADMIN.

The following conditions must be satisfied:

1. the system network name on which the ssi process runs is declared in the /export/home/ACSSS/.rhosts file in the library server. It must contain the following line in which the system name must be in small characters:

   <system name><1 blank character> clx

2. permission bits on the file /export/home/ACSSS/.rhosts must be -rw-r--r-

These conditions must have been fulfilled at the installation of CLX (refer to the chapter "Setting Up Your CTL on the DPS 7000").

If these conditions are not satisfied, the message `PERMISSION DENIED` is issued.

EXAMPLE 1:

```
VOLRPT          RPTFILE=1
                SERVER='wolf'
```

Messages displayed on the screen:

```
S:EXEC_CLX_VOLRPT 'wolf' RPTFILE=1;
 10.24 X399 IN CLX_STAT USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 10.24 X399 STARTED CLX_STAT OPERATOR P
 JB08 X399.1 STEP H_CLX_CMDSTAT XPR=8 PGID=24
TU70 V3.0 THE RESULT OF VOLRPT IS ON THE UNIX SERVER IN THE FILE
 /export/home/ACSSS/log/volrpt.log => LAUNCH GET_FILE_CLX TO
 TRANSFER IT ON GCOS 7
 10.25 X399.1 COMPLETED CLX_STAT OPERATOR P
 10.25 X399 OUTPUT COMPLETED CLX_STAT OPERATOR
S:
```

The volume report is stored in the following UNIX server file: /export/home/ACSSS/log/volrpt.log.

Content of the file:

```
VOLUME REPORT UTILITY

Mon Jan 17 15:58:15 1994

TOTAL VOLUMES: 50         SEQUENCE: sort by volume identifier

Volume  Home Label       Volume Times       |--Entered--|        |--Last Used--|
Label     Location     Type   Type Mounted   Date      Time       Date      Time

001820    0,0,4,1,1    Ext.   D     0       12/16/93  11:34      12/16/93  11:34
001821    0,0,2,0,4    Ext.   D    27       12/15/93  16:30      01/17/94  13:07
001822    0,0,4,1,4    Ext.   D    17       12/20/93  11:05      01/17/94  13:07
001823    0,0,3,3,2    Ext.   D    12       12/20/93  11:05      01/17/94  13:14
001824    0,0,2,1,2    Ext.   D    10       12/20/93  11:05      01/17/94  13:14
CLN600    0,0,4,1,0    Ext.   C     3       01/03/94  15:15      01/04/94  11:43
CLN601    0,0,4,1,3    Ext.   C     1       01/03/94  15:16      01/04/94  08:52
CLN602    0,0,2,1,0    Ext.   C     0       01/03/94  15:15      01/03/94  15:15
CLN603    0,0,3,0,0    Ext.   C     0       01/03/94  15:15      01/03/94  15:15
NOLAB1    0,0,2,0,1   Virt.   D     0       01/03/94  16:10      01/03/94  16:10
```

This report indicates that there are five standard volumes, four cleaning volumes and an unlabelled volume in the library. For each of these volumes, it indicates:

- how many times the volume was mounted,
- at what time it was entered,
- at what time it was used for the last time.

The operator can use the GTCLXF command to obtain the report file on the local GCOS 7 file.

Error messages:

If the command is unsuccessful, a message is issued on the terminal.

EXAMPLE 2:

The system network name on which the ssi process is not declared in the /export/home/ACSSS/.rhosts file of the library server or it is declared for another user. The message `PERMISSION DENIED` is issued.

```
S:EXEC_CLX_VOLRPT 'wolf' RPTFILE=1;
 10.34 X400 IN CLX_STAT USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 10.34 X400 STARTED CLX_STAT OPERATOR P
 JB08 X400.1 STEP H_CLX_CMDSTAT XPR=8 PGID=24
 TU70 V3.0 PERMISSION DENIED
 10.35 X400.1 COMPLETED CLX_STAT OPERATOR P
 10.35 X400 OUTPUT COMPLETED CLX_STAT OPERATOR
```

6.4.2 File Transfer (GET_CLX_FILE - GTCLXF)

The GET_CLX_FILE (abbreviation GTCLXF) command transfers a UNIX file to the local GCOS 7 file. The UNIX file can be located on the ESCALA or ESTRELLA server or on the local OPEN7 subsystem.

For example, this command is used to transfer SSI or ACSLS log files onto GCOS 7.

This command can be submitted from an IOF terminal working under project MAIN or SYSADMIN.

- Only files readable by the user <clx> can be transferred: permission bits must be set for the user <clx>.

  UNIX server files can be transferred if the following condition is satisfied:

- The system network name (with ssi) is declared in the /export/home/ACSSS/.rhosts file in the library server (refer to installation).

This condition must have been fulfilled at the installation of CLX (refer to Chapter 2, "Setting Up Your CTL on the DPS 7000").

EXAMPLE:

The content of the /export/home/ACSSS/log/volrpt.log file of the library server <wolf> is transferred into the subfile es_volrpt_wolf in the GCOS 7 library lciu.cmd.sllib.

Command:

```
GTCLXF              GCOS_LIB= lciu.cmd.sllib

                    GCOS_SUBFILE=es_volrpt_wolf

                    REMOTE_FILE=
                    '/export/home/ACSSS/log/volrpt.log'

                    SERVER='wolf'
```

Messages displayed on the screen:

```
S:GET_CLX_FILE lciu.cmd.sllib
es_volrpt_wolf
'/export/home/ACSSS/log/volrpt.log'
SERVER='wolf';
 10.32 X400 IN CLX_FT USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 10.32 X400 STARTED CLX_FT OPERATOR P
 JB08 X400.1 STEP H_CLX_CMDFT XPR=8 PGID=7
TU70 V3.0 THE FILE TRANSFER OF /export/home/ACSSS/log/volrpt.log
 FROM wolf TO GCOS 7 IS COMPLETED
 10.32 X400.1 COMPLETED CLX_FT OPERATOR P
 10.32 X400 OUTPUT COMPLETED CLX_FT OPERATOR
```

6.5 ACSSA Commands

ACSSA commands can be entered in a command processor window on the library server main console or on a remote UNIX terminal connected to the library server. Enter "`cmd_proc -l`" or connect as user ACSSA. You get an ACSSA window prompted with ACSSA>. Then you can enter the following commands:

- audit = physical inventory of the tape cartridges in the library, LSM, panel or subpanel.
- cancel = cancels a current request (not all requests can be canceled).
- clear = removes all locks on library drives or tape cartridges.
- define = creates or modifies scratch pools.
- delete = deletes empty scratch pools.
- dismount = dismounts a tape cartridge from a library drive.

- eject = ejects one or more cartridges from the ACS.
- enter = enters one or more cartridges into the ACS by using a CAP.
- idle = stops the ACSLM request processing.
- lock = places a lock on tape volumes or library drives.
- mount = mounts a tape cartridge onto a specified library drive.
- query = displays status information about the ACS, CAP, cleaning cartridges, library drives, the ACSLS, LSMs, ports, requests, scratch pools, or tape cartridges.
- set =
  sets or clears the tape cartridge scratch attribute
  sets or clears the tape cartridge cleaning attribute
  sets the resource lock identifier to a different value
  sets CAP attributes
  sets ownership for a volume or range of volumes
- show = displays the value of the specified stored identifier (requestor's lock identifier-requestor's user identifier).
- start = initiates ACSLM request processing.
- unlock = removes active locks on tape cartridges and library drives.
- vary = changes the state of an ACS, LSM, CAP, library drive, or port.
- venter = enters one or more tape cartridges with missing or unreadable optic labels into the ACS.

IMPORTANT:

When CLX is active, the following commands must not be used:

mount	clear	idle
dismount	delete pool	vary
lock	cancel	set lock
unlock	audit	

If you do use these operations or commands, the GCOS 7 device tables can become unstable. If this happens, you can recover by stopping the CLX (command TCLX) and then restarting it (command SCLX).

Set scratch must also be used with a lot of precautions.

For a complete discussion of these commands, refer to *ACSLS Administrator's Guide*.

A subset of these commands is accessible from GCOS 7 through IOF terminal connected under project OPERATOR or SYSADMIN; refer to "CLX Commands" earlier in this chapter.

6.5.1 Audit

Syntax:

```
aud[it]   * |cap_id type  [identifier ...]
```

The possible audit requests are:

```
audit * |cap_id ser[ver]
audit * |cap_id ac[s] acs_id ...
audit * |cap_id ls[m] lsm_id ...
audit * |cap_id pa[nel] panel_id ...
audit * |cap_id su[bpanel] subpanel_id ...
```

The `audit` request performs a physical inventory of the entire library, or of one or more specified ACSs, LSMs, LSM panels, or LSM subpanels. It can be used to resolve inconsistencies between the database and the physical contents of the library. These inconsistencies may be the result of a person physically entering the LSM and manually adding, removing, or moving cartridges in the storage cells.

NOTE:
`audit` does not audit the contents of tape drives or CAPs.

6.5.2 Cancel

Syntax:

```
can[cel]  request_id
```

The `cancel` request terminates current or pending `audit`, `define`, `delete`, `eject`, `enter`, `lock`, `query`, `set`, or `venter` activity. A cancellation function is provided for these requests because they can take an extended period of time to complete. This command must be issued from a different Command Processor than the one that issued the initial command.

The request_id is the request to be canceled. The entry must be the ID of an `audit`, `define`, `delete`, `eject`, `enter`, `lock`, `query`, `set`, or `venter` command. request_id format is:

```
request_id          numeric (0-65535)
```

The canceled request may continue to run while it releases allocated resources. Activity is terminated before the next LMU command is issued. Current LMU commands are processed to completion. No attempt is made to undo any activity that was completed before the `cancel` request was received by the ACSLM.

You must know the request ID of the request to cancel. You can determine the request ID by issuing a `query request` all request, which displays a list of all current and pending requests.

6.5.3 Clear

Syntax:

```
clear loc[k] type identifier ...
```

The possible clear requests are:

```
clear loc[k] dr[ive]  drive_id ...
clear loc[k] vo[lume]  vol_id ...
```

The `clear` request removes all locks and pending locks on one or more library drives or tape cartridges. The lock identifier to be cleared is the ACSSA stored lock ID.

Only one type can be specified in a `clear` request. Within that type, from one to 21 identifiers can be specified in each request. Valid types for this command are:

`dr[ive]`	One or more specific drive(s) within an ACS; requires a drive_id.
`vo[lume]`	One or more specific tape cartridge(s) within the library; requires a vol_id.

The drive_id is the library drive that has an active or pending lock. drive_id format is:

drive_id	acs(`0`), lsm(`0-23`), panel(`0-19`), drive(`0-3`)

The vol_id is the external label of the tape cartridge that has an active or pending lock. vol_id format is:

vol_id	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (`''`) or double quotes (`""`).

Upon receipt of a `clear` request, the ACSLM verifies that each identifier exists in the database, and is currently locked or has a lock pending.

When the `clear` completes successfully, a response message is displayed in the Command Area for each identifier specified. In each message, the status indicates that either the locks were cleared, or the resource was not locked. Also, a response is returned to each pending lock request that was successfully cleared.

If, for any reason, a `clear` request is unsuccessful, an error message is displayed in the Command Area.

6.5.4 Define

Syntax:

```
def[ine] poo[l] low_water_mark high_water_mark pool_id ... [ov[erflow]]
```

The `define` request creates or modifies scratch pools.

The low_water_mark and high_water_mark identifiers deal with the number of volumes in a scratch pool. The low_water_mark is the point at which warning messages are issued as the scratch pool becomes depleted. The format of low_water_mark is:

low_water_mark numeric(`0` through $2^{31}-1$)

The high_water_mark is the point at which warning messages are issued as the size of the pool grows. The format of high_water_mark is:

high_water_mark numeric(`0` through $2^{31}-1$)

NOTE:
The high_water_mark must be greater than the low_water_mark.

6.5.5 Delete

Syntax:

```
del[ete] poo[l] pool-id ... |al[l]
```

The `delete` request deletes one or more empty scratch pools.

The pool_id is a number that uniquely identifies a group of scratch volumes. From one to 21 pool_ids can be specified in a request. The format of pool_id is:

pool_id	numeric(`1-65534`)

NOTE:
A pool_id of 0 (the common scratch pool) is invalid for this request: the common scratch pool can not be deleted.

The `all` option can be used to delete all empty scratch pools. If `all` is specified, pool_id is not allowed.

6.5.6 Dismount

Syntax:

```
dis[mount] vol_id drive_id [f[orce]]
```

The `dismount` request dismounts a tape cartridge from a library drive.

The vol_id is either the external label or the virtual label of the tape cartridge to be dismounted. vol_id format is:

vol_id	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (`''`) or double quotes (`""`).

The drive_id is the library drive from which the cartridge is to be dismounted. drive_id format is:

drive_id	acs(`0`), lsm(`0-23`), panel(`0-19`), drive(`0-3`)

The optional parameter `force` is used to automatically dismount the tape cartridge from the specified library drive, even if the specified vol_id does not match that in the drive, and even if the drive is not unloaded.

Upon receipt of a `dismount` request, the ACSLM verifies the drive_id and vol_id in the database, and the LSM robot does the following:

1. Moves to the specified drive
2. Dismounts the tape cartridge from the drive
3. Returns the tape cartridge to an available storage cell in the library

Once the dismount is completed, the database is updated with the new location of the cartridge, and a success message is displayed in the Command Area.

6.5.7 Eject

Syntax:

```
ej[ect] * | cap_id vol_id volrange_id ...
```

The `eject` request ejects tape cartridges from the library, removing them from library control. The `eject` request continues to eject cartridges until all specified cartridges have been ejected.

cap_id is the CAP reserved for ejecting cartridges; one CAP is required. An asterisk may be specified to allow the ACSLM to select the highest priority available CAP in each ACS containing a cartridge designated for ejection. cap_id format is:

cap_id acs(`0`), lsm(`0-23`), cap(`0-2`)

- If an asterisk appears in the CAP portion of the cap_id (`acs, lsm, *`), the highest priority available CAP in the LSM is selected.
- If an asterisk appears in place of the CAP and LSM portions of the cap_id (`acs, *`), the highest priority available CAP in the ACS is selected.
- If an asterisk appears as the cap_id (`*`), the highest priority available CAP in each ACS containing a cartridge designated for ejection is selected.
- If an LSM identifier is specified as the cap_id, all available manual enter mode CAPs with a non-zero priority are selected in the LSM.

The vol_id identifies a single tape cartridge. A list of vol_ids may consist of up to `MAX_ID` vol_ids.

The volrange_id specifies the external labels, or the virtual labels, of the tape cartridges to eject. volrange_id format is:

volrange_id	identifies a set of tape cartridges; two vol_ids separated by a dash. Only the right-most numeric portions of the vol_ids is acted on; all other characters must be identical. The second vol_id must be greater than the first. Nonexistent vol_ids are ignored. A vol_ids is a six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (') or double quotes ("").

Upon receipt of an `eject` request, the robot retrieves the specified cartridges from the cell locations indicated in the database, and places them in the designated CAP. When all specified cartridges have been moved to the CAP, the cell locations of the ejected cartridges are deassigned, and the cartridges are removed from the database. The CAP is unlocked, and the Command Processor displays an unsolicited message in the Display Area informing site personnel to remove the cartridges from the CAP.

6.5.8 Enter

Syntax:

```
en[ter] cap_id
```

The `enter` request enters tape cartridges into the ACS, placing them under library control. The `enter` request continues to enter cartridges until a `^c` (`control-c`) or a `cancel` request is issued, or when no more cell locations are available.

The cap-id is the CAP through which the cartridges are to be entered. cap_id format is:

cap_id	acs(`0`), lsm(`0-23`), cap-(`0-2`)

- If an asterisk appears in the CAP portion of the cap_id (`acs, lsm, *`), the highest priority available CAP in the LSM is selected.
- If an asterisk appears in place of the CAP and LSM portions of the cap_id (`acs, *`), the highest priority available CAP in the ACS is selected.
- If an asterisk appears as the cap_id (`*`), a CAP in the ACS with the most empty storage cells is selected.
- If an LSM identifier is specified as the cap_id, all available manual enter mode CAPs with a non-zero priority are selected in the LSM.

Upon receiving an enter request, the CAP is unlocked, and an unsolicited message is displayed, instructing site personnel to place the cartridges in the CAP.

6.5.9 Idle

Syntax:

```
i[dle] [f[orce]]
```

The `idle` request is used to place the Library Server in a quiescent state prior to maintenance activity or Library Server termination. The Library Server will remain in that state until it receives a `start` request.

The ACSLM can be in one of the four following states: run, idle, idle-pending, or recovery.

6.5.9.1 Idle

Upon receipt of an unforced `idle` request, the ACSLM is immediately placed in the idle-pending state. While the ACSLM is in this state, new requests involving library operations are rejected, and current and pending requests are processed to completion. The ACSLM is not placed in the idle state until all current and pending requests have been completed.

NOTE:
Pending `lock` requests are canceled.

6.5.9.2 Idle force

An `idle` request with the `force` option abruptly puts the ACSLM in the idle state. Current and pending requests are aborted, rather than being processed to completion. New requests are rejected. Because current requests are not processed to completion, this option may leave the database in an inconsistent state.

6.5.10 Lock

Syntax:

```
loc[k] type identifier ... [wait]
```

The possible `lock` requests are:

```
loc[k] vo[lume] vol_id ... [wait]
loc[k] dr[ive] drive_id ... [wait]
```

The `lock` request places a lock on tape volumes or library drives.

Only one type can be specified in a lock request. Within that type, from one to 21 identifiers can be specified in each request. Valid types for this command are:

`dr[ive]`	One or more specific drive(s) within an ACS; requires a drive_id.
`vo[lume]`	One or more specific tape cartridge(s) within the library; requires a vol_id.

The drive_id is the library drive that is to be locked. drive_id format is:

drive_id	acs(`0`), lsm(`0-23`), panel(`0-19`), drive(`0-3`)

The vol_id is the external label of the tape cartridge that is to be locked. vol_id format is:

vol_id	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (`''`) or double quotes (`""`).

Upon receipt of a `lock` request, the ACSLM verifies that each identifier exists in the database, and determines whether or not it is available. A resource is not available when it is locked or in use.

The `wait` option can be specified to allow the `lock` request to be kept pending until the specified resource is available.

When the `lock` request completes successfully, a response message is displayed in the Command Area for each identifier specified. In each message, the status indicates the lock identifier assigned to the resource.

If, for any reason, a specified resource cannot be locked, an error message is displayed in the Command Area.

6.5.11 Logoff

Syntax:

```
Log[off]
```

`logoff` is used to exit from the current Command Processor. The `logoff` command has no options.

If the `logoff` is successful, the Command Processor from which the request was entered is terminated. If the `logoff` is unsuccessful, an undesired event occurred.

6.5.12 Mount

Syntax:

```
m[ount] vol_id | * drive_id ... [rea[donly] | pool_id]
```

The possible `mount` requests are:

```
m[ount] vol_id drive_id ... [rea[donly]]
m[ount] * drive_id ... [pool_id]
```

The mount request mounts a tape cartridge on a specified library drive. The cartridge can be either a specific vol_id or a scratch tape.

NOTE:
You may mount to a single driveid per request.

Upon receipt of a `mount` request, the ACSLM verifies the existence and availability status of the cartridge and drive in the library. The LSM robot does the following:

1. Moves to the appropriate cell location and retrieves the tape cartridge
2. Mounts the tape cartridge on the specified drive

Once the cartridge is successfully mounted, the database is updated with the status of the drive and the current location of the cartridge. A response message is also displayed in the Command Area.

If for any reason the mount cannot be completed, the tape cartridge is returned to its original location, if possible, or to another available storage cell.

All of the following conditions must be met for a successful mount:

- Both the cartridge and the drive must be in the same ACS
- The library drive must be online to ACSLM control and available
- The cartridge must be available

6.5.13 Query

Syntax:

```
q[uery] type [subtype | * ] identifier ... | al[l]
```

The possible `query` requests are:

```
query ac[s] acs_id ... | al[l]
query cap cap_id ... | al[l]
query clean vol_id ... | al[l]
query dr[ive] drive_id ... | al[l]
query loc[k] dr[ive] drive_id ... | al[l]
query loc[k] vo[lume] vol_id ... | al[l]
query ls[m] lsm_id ... | al[l]
query m[ount] vol_id ...
query m[ount] * pool_id ... [media media_type | *]
query poo[l] pool-id ... | al[l]
query port[t] port_id ... | al[l]
query req[uest] request_id ... |al[l]
query sc[ratch] pool_id ... | al[l]
query ser[ver]
query vo[lume] vol_id ... | al[l]
```

type is the type of device or object being queried. There can be only one type per query request. Possible types for this command are:

`ac[s]`	One or more specific ACS(s) within the library; requires an acs_id.
`cap`	One or more specific CAP(s) within an ACS requires a cap_id; cap_ids containing only asterisks (*) or only the LSM identifier are not allowed.
`clean`	A cleaning cartridge under library control; requires a vol_id.
`dr[ive]`	One or more specific drive(s) within an ACS; requires a drive_id.
`loc[k]`	One or more locked resources within the library; requires a subtype of either drive or mount.
`ls[m]`	One or more specific LSM(s) within an ACS; requires an lsm_id.

`m[ount]`	Displays the drives available for mounting one or more specific tape cartridge(s); requires a vol_id.
`m[ount] *`	Displays the drives available for mounting one or more scratch tape cartridge(s); requires a pool_id. If a specific media type is designated, only that media type is used in determining compatible drives. If a media type is not specified, all media types in the pool are used.
`poo[l]`	One or more scratch pools within the library; requires a pool_id.
`port[t]`	One or more specific port(s) for an ACS; requires a port_id.
`req[uest]`	One or more pending or current requests; requires a request_id.
`sc[ratch]`	One or more scratch tape cartridge(s) within the library; requires a pool_id.
`ser[ver]`	The entire library; does not have an identifier.
`vo[lume]`	One or more specific tape cartridge(s) within the library; requires a vol_id.

subtype is valid only when the type is `lock`. There can be only one subtype per lock request: either `drive` or `mount`. An asterisk is valid only when the type is `mount`; in this instance, an asterisk indicates a scratch volume.

identifier is the specific ID for the type. With the exception of the `server`, `mount`, and `mount *` types, the all option can be used to display all identifiers of a given type. identifier formats are:

`acs_id`	acs(`0`)
`cap_id`	acs(`0`), lsm(`0-23`), cap(`0-2`)
`drive_id`	acs(`0`), lsm(`0-23`), panel(`0-19`), drive(`0-3`)
`lsm_id`	acs(`0`), lsm(`0-23`)
`pool_id`	numeric(`0-65534`)
`port_id`	acs(`0`), port(`0-23`)
`request_id`	numeric(`0-65535`)
`vol_id`	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (’) or double quotes (`""`).

You can specify more than one identifier in a single request, as long as they all have the same type. For example, a single request can specify two ACSs, but not an ACS and a library drive. The maximum number of identifiers that can be specified in a single request is 21.

NOTE:
A cap_id containing asterisks is not allowed.

The system displays as many responses as needed to provide all the requested information. For example, the command, `query request all`, will result in a display consisting of one response for each request being processed.

6.5.14 Set

Syntax:

```
set type [of[f]] [*] identifier [...] [identifier ...]
```

The possible `set` requests are:

```
set cap priority cap_priority cap_id ...
set cap mode cap_mode cap_id ...
set clean count_id volrange_id ...
set clean of[f] volrange_id ...
set loc[k] lock_id
set owner "owner_id" VOLUME <vol_id \ volrange_id>
set sc[ratch] pool_id volrange_id ...
set sc[ratch] of[f] pool_id volrange_id ...
set sc[ratch] * volrange_id ...
set sc[ratch] of[f] * volrange_id ...
```

Only one type can be specified in a `set` request. Possible types for this command are:

`cap priority`	One or more specific CAP(s) within an ACS; requires a cap_priority and a cap_id
`cap mode`	One or more specific CAP(s) within an ACS; requires a cap_mode and a cap_id
`clean`	The tape cartridge cleaning attribute; requires a count_id and a vol_id
`loc[k]`	The value of a resource lock identifier; requires a lock_id
`sc[ratch]`	The tape cartridge scratch attribute; requires a pool_id and a vol_id

identifier is the specific ID for the type, identifier formats are:

`cap_id`	acs(`0`), lsm(`0-23`), cap(`0-2`)
`cap_mode`	manual (`man[ual]`) or automatic (`aut[omatic]`)
`cap_priority`	numeric(`0-16`)
`count_id`	numeric(`0-32767`)

drive_id	acs(0), lsm(0-23), panel(0-19), drive(0-3)
lock_id	numeric(0-32767)
pool_id	numeric(0-65534)
vol_id	six-character cartridge identifier; can be any combination of numbers (0-9), letters (A-Z), and spaces ( ); IDs with embedded spaces must be enclosed in single (') or double ("") quotes.
volrange_id	identifies a set of tape cartridges; two vol_ids separated by a dash. Only the right-most numeric portions of the vol_ids is acted on; all other characters must be identical. The second vol_id must be greater than the first. Nonexistent vol_ids are ignored.

The off option clears the attributes of the specified type identifiers.

The * is only valid for type scratch. It indicates the scratch pool the tape cartridge is currently assigned to.

When the set request completes successfully, a response message is displayed in the Command Area for each identifier specified.

If, for any reason, a set request is unsuccessful, an error message is displayed in the Command Area.

6.5.15 Show

Syntax:

```
sh[ow] type
```

The possible show requests are:

```
sh[ow] loc[k]
sh[ow] us[er]
```

The show request displays the value of the specified stored identifier in the command area.

Only one type can be specified in a show request. No identifiers are allowed for this request. Possible types for this command are:

loc[k]	The resource lock identifier associated with the requestor's user identifier
us[er]	The requestor's user identifier

6.5.16 Start

Syntax:

```
st[art]
```

The `start` request places the ACSLM in the run state, enabling processing of Library Server requests. The `start` command has no options.

If the `start` is successful, the ACSLM becomes ready to receive requests.

If the `start` is unsuccessful, the ACSLM does not become ready to receive requests.

6.5.17 Unlock

Syntax:

```
un[lock] type identifier ... | al[l]
```

The possible `unlock` requests are:

```
un[lock] dr[ive] drive_id ... | al[l]
un[lock] vo[lume] vol_id ... | al[l]
```

The `unlock` request removes active locks on tape cartridges and library drives. The requestor can unlock either specific resources, or all resources locked under a particular lock identifier.

Only one type can be specified in an `unlock` request. Within that type, from one to 21 identifiers can be specified in each request. Valid types for this command are:

`dr[ive]`	One or more specific drive(s) within an ACS; requires a drive_id
`vo[lume]`	One or more specific tape cartridge(s) within the library; requires a vol_id

The drive_id is the library drive that is to be unlocked. drive_id format is:

`drive_id`	acs(`0`), lsm(`0-23`), panel(`0-19`), drive(`0-3`)

The vol_id is the external label of the tape cartridge that is to be unlocked.vol_id format is:

`vol_id`	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (') or double quotes ("").

The `all` option can be specified to remove all locks for the specified type.

Upon receipt of an `unlock` request, the ACSLM verifies that each identifier exists in the database, and that the resource is locked.

When the `unlock` request completes successfully, a response message is displayed in the Command Area for each identifier specified.

If, for any reason, a specified resource cannot be unlocked, an error message is displayed in the Command Area.

6.5.18 Vary

Syntax:

```
va[ry] type identifier ... state [f[orce]]
```

The possible `vary` requests are:

```
vary ac[s] acs_id ... state [f[orce]]
vary ls[m] lsm_id ... state [f[orce]]
vary cap cap_id ... state [f[orce]]
vary dr[ive] drive_id ... state [f[orce]]
vary por[t] port_id ... state [f[orce]]
```

The `vary` request changes the state of an ACS, LSM, CAP, library drive, or port. A device can be in one of the following five states: online, offline, offline-pending, recovery, or diagnostic.

type is the type of device to be varied. Only one device type at a time can be varied. Within that type, up to 21 different devices can be specified in each request. Valid types for this command are:

`ac[s]`	A specific ACS within the library; requires an acs_id
`ls[m]`	A specific LSM within an ACS; requires an lsm_id
`cap`	A specific CAP within an ACS; requires a cap_id
`dr[ive]`	A specific drive within a library; requires a drive_id
`por[t]`	A specific port within a library; requires a port_id

The identifier is the specific device ID. Valid identifiers are:

`acs_id`	The device ID for the ACS
`lsm_id`	The device ID for the LSM
`cap_id`	The device ID for the CAP
`drive_id`	The device ID for the drive
`port_id`	The device ID for the port

The state can be `of[fline], on[line]`, or `dia[gnostic]`. `dia[gnostic]` is not valid when the type is `port`.

The option `force` changes the state of the device abruptly, bypassing the offline-pending state. `force` is valid only when the state is `of[fline]` and the device is an ACS or an LSM.

NOTE:
The `force` option does not take effect instantaneously.

An ACS, LSM, CAP, or library drive can be changed to online, offline, or diagnostic. A port can be changed to online or offline.

6.5.19 Venter

Syntax:

```
ve[nter] cap_id vol_id...
```

The `venter` request enters tape cartridges with missing or unreadable labels into the ACS, assigns a virtual label to each cartridge, and places them under library control. From one to `MAX_ID` cartridges can be entered at a time.

The cap_id is the CAP through which the cartridges are to be entered. cap_id format is:

`cap_id`	acs(`0`), lsm(`0-23`), cap(`0-2`)

- If an asterisk appears in the CAP portion of the cap_id (`acs, lsm, *`), the highest priority available CAP in the LSM is selected.
- If an asterisk appears in place of the CAP and LSM portions of the cap_id (`acs, *`), the highest priority available CAP in the ACS is selected.
- If an asterisk appears as the cap_id (`*`), the highest priority available CAP in each ACS containing a cartridge designated for introduction is selected.
- An LSM identifier appearing as the cap_id is not allowed.

The vol_id is the virtual label to be assigned to the tape cartridge. vol_id format is:

`vol_id`	six-character cartridge identifier; can be any combination of numbers (`0-9`), letters (`A-Z`), and spaces ( ). IDs with embedded spaces must be enclosed in single quotes (’) or double quotes (`""`).

Upon receiving an `venter` request, the CAP is unlocked, and an unsolicited message is displayed instructing you to place the cartridges in the CAP.

6.6 LIBRARY Commands

CLX library commands are used to send a subset of ACSSA commands from a GCOS 7 terminal to the library server. (Certain ACSSA commands such as DISMOUNT, MOUNT, IDLE, VARY, and START are not delivered in the current release of CLX library commands.)

All CLX library commands are accessible through IOF connected under project OPERATOR. Some commands are also accessible through IOF connected under project SYSADMIN. The QUERY command is accessible by any user connected through IOF.

Table 6-1. Availability of CLX Library Commands:

CLX Library Command *	Associated ACSSA Command	Library Commands Available to:	
		OPERATOR SYSADMIN	OTHERS
AUDIT_CARTRIDGE_LIBRARY (AUDLIB)	audit	yes	
CANCEL_LIB_REQUEST (CLIBR)	cancel	yes	
DEFINE_SCRATCH_POOL (DFPOOL)	define	yes	
DELETE_SCRATCH_POOL (DLPOOL)	delete	yes	
EJECT_LIB_VOLUMES (EJVOL)	eject	yes	
ENTER_LIB_VOLUMES (ENVOL)	enter	yes	
ENTER_UNLAB_VOLUMES (ENUVOL)	venter	yes	
EXTRACT_CLX_ERROR (EXTERR)	**	yes	
QUERY_CARTRIDGE_LIBRARY (QLIB)	query	yes	yes
SET_CAP_ATTRIBUTES (SETCAP)	set cap	yes	
SET_CLEAN_ATTRIBUTE (SETCLN)	set clean	yes	
SET_SCRATCH_ATTRIBUTE (SETSCR)	set scratch	yes	

* A CLX library command has a somewhat different format from the associated ACSSA command.

** Not available as an ACSSA command.

The CLX commands are delivered in the CLX.BIN library. This library must be declared in your search path using the MWINLIB BIN, CLX.BIN command. Helps are installed in the SITE.HELP.

All of the above commands can be used if CLX has been activated at least once since the last GCOS 7 system restart. They can be used when CLX is stopped but SSI must be running.

When a library command is activated by a user connected under project OPERATOR, a job called CLXACSSA is started. In the other cases, the command is processed by a step IOF.

It is not recommended to kill the job CLXACSSA. Also, it is not recommended to abort the step IOF using the break key (or $*$BRK). Breaking the command or canceling the job does not cancel the current request if it has already been transmitted to the Library server. To cancel a command, use the command CANCEL_LIB_REQUEST.

XTA case **The use of above commands on an interactive terminal will be easier (no need to specify SERVER=…) if SET_CLX_SSI (SCLXSSI) command has been previously an validly used to give a valid value to G_CLX_SSI global variable for UNIX library server addressing (<ssi-host-name>/<ssi-port>).**

6.6.1 AUDIT_CARTRIDGE_LIBRARY (abbr. AUDLIB)

This command:

Performs a physical inventory of cartridges in an ACS, a silo, a panel or a subpanel.

Syntax:

```
{ AUDIT_CARTRIDGE_LIBRARY }
{ AUDLIB }

              { OBJECT }
              {        } = { ACS|AC|LSM|LS|PANEL|PA|SUBPANEL|SU }
              { OBJ    }

              { ACSID = <acsid> }

              { LSMID = <lsmid> }

              { { PANELID }             }
              { {         } = <panelid> }
              { { PAID    }             }

              { { SUBPANELID }                }
              { {            } = <subpanelid> }
              { { SUID       }                }

              [ { CAPID }                ]
              [ {       } = <capid>  | * ]
              [ { CAP   }                ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

OBJECT =	designates the type of the device for the inventory. Possible values: ACS abbrev. AC , LSM abbrev. LS , PANEL abbrev. PA , SUBPANEL abbrev. SU .
ACSID =	identifier of the Automatic Cartridge Subsystem to be audited. It must be supplied if the specified object type is AC (or ACS). It is a decimal number (one or two digits "dec2")
LSMID =	identifier of the Library Storage Module (silo) to be audited. It must be supplied if the specified object type is LSM (or LS). Format: (acs,lsm). Each field is a decimal number (one or two digits: "dec2, dec2").
PANELID =	specifies the identifier of the panel to be audited. It must be supplied if the specified object type is PANEL (or PA). Format: (acs,lsm,panel). Each field is a decimal number (one or two digits: "dec2, dec2, dec2").
SUBPANELID =	specifies the identifier of the subpanel to be audited. It must be supplied if the specified object type is SUBPANEL (or SU). Format: (acs,lsm,panel,startrow,startcolumn,endrow, endcolumn). Each field is a decimal number (one or two digits: "dec2, dec2, dec2, dec2, dec2, dec2, dec2").
CAPID =	identifier of the CAP (Cartridge Access Port) used for ejection of cartridges with duplicate labels, or with unreadable labels and no virtual labels found during the inventory. Format: (acs,lsm,cap: "dec2, dec2, dec2"). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank. Default value: (*, ,).

XTA case **SERVER =** **specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI)**

Comments:

This command can be used to resolve inconsistencies between the Library Server Database and the physical content of the library. These inconsistencies may be the result of a person physically entering the LSM and manually adding, removing or moving cartridges in the storage cells. AUDLIB does not audit the contents of tape drives or CAPs.

Only one device type at a time can be audited.

Once an AUDLIB command is submitted, additional AUDIT commands on that LSM will be rejected.

It is recommended that the database be backed up after the completion of an audit (refer to *ACSLS System Administrator's Guide*).

The specified CAP is reserved for the entire audit. The audit process does not begin ejecting cartridges until after it has made all necessary database updates. A record of the audit is written in the UNIX Server log.

The result of this command is identical to the result of the ACSSA audit command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Inventory of the ACS 0 using the CAP 1 of the LSM 0 of ACS 0.

   ```
   S: AUDLIB ACS ACSID=0 CAPID=(0,0,1)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 AUDIT ACS ACCEPTED - REQUEST NUMBER : 10
   TU71 V3.0 AUDIT ACS COMPLETED
   ```

2. Inventory of the LSM 0 using the highest priority available CAP.

   ```
   S: AUDLIB LSM LSMID=(0,0)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 AUDIT LSM ACCEPTED - REQUEST NUMBER :11
   TU71 V3.0 AUDIT LSM COMPLETED
   ```

3. Inventory of the panel (0,0,10) using the CAP (0,0,1) for ejection of cartridges. In this case, one unlabelled cartridge is found in the panel.

   ```
   S: AUDLIB PA PAID=(0,0,10) CAPID=(0,0,1)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 AUDIT PANEL ACCEPTED - REQUEST NUMBER : 12
   TU71 V3.0 AUDIT PANEL- AUDIT ACTIVITY
   TU71 V3.0 AUDIT PANEL- UNREADABLE LABEL - VOL =
   TU71 V3.0 REMOVE CARTRIDGES FROM CAP 0 ,0 ,1
   ```

   After removing the cartridge from the CAP 0,0,1:

   ```
   TU71 V3.0 AUDIT PANEL COMPLETED
   ```

4. Inventory of the subpanel composed of 2 cells (acs=lsm=0, panel 10, startrow=1, startcolumn=0,endrow=1 encolumn=1) using the highest priority available CAP. In this example, one unlabelled cartridge is found in one cell by the audit .

   ```
   S: AUDLIB SU SUID=(0,0,10,1,0,1,1)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 AUDIT SUBPANEL- AUDIT ACTIVITY
   TU71 V3.0 AUDIT SUBPANEL- UNREADABLE LABEL -VOL=
   TU71 V3.0 REMOVE CARTRIDGES FROM CAP *
   ```

   After removing the cartridge from the highest priority available CAP:

   ```
   TU71 V3.0 AUDIT SUBPANEL COMPLETED
   ```

CANCEL_LIB_REQUEST (abbr. CLIBR)

This command:

Terminates a current or pending library request.

Syntax:

```
{ CANCEL_LIB_REQUEST }
{ CLIBR }
              REQID = <requid>
```

XTA case

```
             [SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters:

REQID =	request identifier of the request to be canceled. The request identifier may be obtained by the QLIB REQUEST command. Format: dec5
XTA case **SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI);**

Comments:

The following GCL commands AUDLIB, DFPOOL, DLPOOL, EJVOL, ENVOL, ENUVOL, QLIB, SETCAP, SETCLN, SETSCR or the following ACSSA equivalent commands audit, define_pool, delete_pool, eject, enter, lock, query, set or venter can be canceled.

Any activity completed prior to the CLIBR command is not reversed.

The result of this command is identical to the result of the ACSSA cancel command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

This command can be used when CLX is stopped.

EXAMPLES:

Canceling a current enter command.

```
S: QLIB REQUEST
```

The following messages are displayed:

```
TU71 V3.0 QUERY REQUEST ACCEPTED - REQUEST NUMBER : 14
TU71 V3.0 REQ=2145 PENDING QUERY
TU71 V3.0 REQ=2144 CURRENT AUDIT
TU71 V3.0 REQ=2141 CURRENT EJECT
TU71 V3.0 REQ=2143 CURRENT ENTER
TU71 V3.0 QUERY REQUEST COMPLETED

S: CLIBR 2143
```

The following messages are displayed:

```
TU71 V3.0 CANCEL LIB REQUEST ACCEPTED - REQUEST NUMBER : 15
TU71 V3.0 REQUEST NUMBER 2143 CANCELED
TU71 V3.0 CANCEL LIB REQUEST COMPLETED
```

The following messages are displayed in the ACSSA window of the server's terminal:

```
Enter: Enter failed, Request canceled.
Enter: Enter complete, 0 cartridges entered.
```

6.6.2 DEFINE_SCRATCH_POOL (abbr. DFPOOL)

This command:

Creates or modifies scratch pool(s).

Syntax:

```
{ DEFINE_SCRATCH_POOL }
{ DFPOOL }
              { POOL_LIST }
              {           }= <pool list>
              { POOLLS    }

            [ { LOW_MARK }             ]
            [ {          }= <low mark> ]
            [ { LWM      }             ]

            [ { HIGH_MARK }              ]
            [ {           }= <high mark> ]
            [ { HWM       }              ]

            [ { OVERFLOW }          ]
            [ {          }= { 1|0 } ]
            [ { OV       }          ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

	POOL_LIST =	List of up to ten pool identifiers specifying pools to create or modify. Each pool identifier identifies uniquely a group of scratch (WORK) volumes. It is a 5 decimal digits. Valid values: 0 to 65534. 0 designates the common scratch pool which already exists.
	LOW_MARK =	Low water mark. It deals with the number of volumes in the scratch pool. The low water mark is the point at which warning messages are issued as the scratch pool becomes depleted. It is of a 10 decimal digits. Valid values: 0 to 2147483646.
	HIGH_MARK =	High water mark. It deals with the number of volumes in the scratch pool. The high water mark is the point at which warning messages are issued as the size of the scratch pool grows. The high water mark value must be greater than the low water mark value. It is of a 10 decimal digits. Valid values: 1 to 2147483647 (2^{31}-1).
	OVERFLOW =	It specifies the overflow attribute for the specified scratch pool(s). If it is set to 1, scratch volumes are selected from the common scratch pool (pool 0) if mount scratch (MOUNT WORK) requests cannot be satisfied with a volume from the pool(s).
XTA case	**SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI);**

Comments:

By default, the common scratch pool low water mark is 0 and its high water mark is 2147483647 (2^{31}-1).

Before using this command, It is recommended to use the QLIB command to know whether the pool exists.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

The result of this command is identical to the result of the ACSSA define pool command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

EXAMPLES:

1. modifies the scratch pool 555 containing 3 scratch volumes. Default characteristics values are applied.

   ```
   S: QLIB POOL POOLLS=555
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 QUERY POOL ACCEPTED - REQUEST NUMBER : 16
   TU71 V3.0 POOL=555 - CNT=3 LWM=2 HWM=4
   TU71 V3.0 QUERY POOL COMPLETED

   S: DFPOOL 555
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 DEFINE POOL ACCEPTED - REQUEST NUMBER : 17
   TU71 V3.0 POOL=555 - -LWM=0 HWM=2147483647 OVERFLOW
   TU71 V3.0 DEFINE POOL COMPLETED
   ```

2. creates the scratch pool 456. Default characteristics values are applied. The message returned on the DFPOOL command indicates that the pool is empty - the low water mark is reached.

   ```
   S: QLIB POOL POOLLS=456
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 QUERY POOL ACCEPTED - REQUEST NUMBER : 18
   TU71 V3.0 POOL=456 POOL NOT FOUND
   TU71 V3.0 QUERY POOL COMPLETED

   S: DFPOOL 456 HWM=9 OV=0
   ```

The following messages are displayed:

```
TU71 V3.0 DEFINE POOL ACCEPTED - REQUEST NUMBER : 19
TU71 V3.0 POOL=456 -LOW WATER MARK -LWM=0 HWM=9
TU71 V3.0 DEFINE POOL COMPLETED
```

3. modifies (or creates) 3 scratch pools setting the low water mark to 0 and the high water mark to 100 and no overflow option. The message returned for the first pool indicates that this pool already exists and that when the new characteristics values are applied, the first pool reaches the high water mark limit. The message returned for the third pool indicates that this pool already exists and is empty - the low water mark is reached. The operator does not know whether the 2nd pool already existed.

   ```
   S: DFPOOL (3,41,60009) HWM=100 OV=0
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 DEFINE POOL ACCEPTED - REQUEST NUMBER : 20
   TU71 V3.0 POOL=3 - HIGH WATER MARK -LWM=0 HWM=100
   TU71 V3.0 POOL=41 - -LWM=0 HWM=100
   TU71 V3.0 POOL=60009- LOW WATER MARK -LWM=0 HWM=100
   TU71 V3.0 DEFINE POOL COMPLETED
   ```

6.6.3 DELETE_SCRATCH_POOL (abbr. DLPOOL)

This command:

Deletes empty scratch pool(s).

Syntax:

```
{ DELETE_SCRATCH_POOL }
{ DLPOOL }
              { POOL_LIST }
              {           } = <pool list>
              { POOLLS    }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

POOL_LIST= List of up to ten pool identifiers specifying empty pools to delete. Each pool identifier identifies uniquely a group of scratch (WORK) volumes. It is a 5 decimal digits. Valid values: 1 to 65534.

XTA case **SERVER =** **specifies the SSI host name and the SSI port for a DPS 7000-XTA, when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI); not needed on DPS 7000 non-XTA for which SSI runs on local OPEN7.**

Comments:

Only empty pools can be deleted. The common pool (pool 0) cannot be deleted.

The result of this command is identical to the result of the ACSSA delete pool command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Deletion of 2 empty scratch pools.

   ```
   S: DLPOOL (600,609)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 DELETE POOL ACCEPTED - REQUEST NUMBER : 21
   TU71 V3.0 POOL=600 POOL DELETED
   TU71 V3.0 POOL=609 POOL DELETED
   TU71 V3.0 DELETE POOL COMPLETED
   ```

2. Attempt to delete a not empty pool.

   ```
   S: DLPOOL 123
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 DELETE POOL ACCEPTED - REQUEST NUMBER : 22
   TU71 V3.0 POOL=123 POOL NOT EMPTY
   TU71 V3.0 DELETE POOL UNSUCCESSFUL
   ```

6.6.4 EJECT_LIB_VOLUMES (abbr. EJECT_VOLUMES, EJVOL)

This command:

Ejects one or several cartridges from the cartridge library.

The volume serial number (volser- OCR labels - external labels) of the cartridges to be ejected are supplied in one of the following way:

- list specified in a source library subfile (SSF or SARF records).
- list of up to 10 volsers.
- a range of volsers (first volser , last volser).

Syntax:

```
{ EJECT_LIB_VOLUMES }
{ EJECT_VOLUMES }
{ EJVOL }
             { CAPID }
             {       } = {<capid> | * }
             { CAP   }

                                {INSUBFILE}
             { INLIB =<library name> {         } =<subfile name> }
                                {INSF     }

             { { VOLUME_LIST }                 }
             { {             } = <volume list> }
             { { VOLLS       }                 }

             { { VOLUME_RANGE }                  }
             { {              } = <volume range> }
             { { VOLRNG       }                  }
             [SERVER=<ssi-host-name>/<ssi-port>]
```

XTA case

Parameters:

CAPID =	identifier of the CAP (Cartridge Access Port) used to eject the cartridges. It is of the following format : (acs,lsm,cap "dec2, dec2, dec2"). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank. If a character * is specified in the CAP field and the ACS and LSM field are used, all available CAPs may be used for ejection of cartridges which volsers are in VOLUME_RANGE. Default value: (*, ,).
INLIB =	name of a source cataloged library. Format : pathname[$CATi]. The implicit working directory convention is supported. This parameter is exclusive with VOLUME_LIST and VOLUME_RANGE. If this parameter is supplied, the parameter INSUBFILE must be supplied. The library must be cataloged.
INSUBFILE =	name of the subfile-inside the specified library - containing the list of volsers. The specified subfile must contain at least one volser, it can contain an unlimited list of volsers. Volume range is not supported in the subfile. Blank or empty lines are ignored. Each volser: – must be on a separate line – must be of at most six characters – must be left justified (no leading blank characters). – must not contain embedded blanks. – ending blank characters must not be protected by double quotes. – if less than 6 characters are supplied, it is padded with blanks.
VOLUME_LIST =	list of 1 to 10 volsers. This parameter is exclusive with INLIB and VOLUME_RANGE.
VOLUME_RANGE =	contains 2 values first volser and last volser specifying a range of volume. This parameter is exclusive with VOLUME_LIST and INLIB. Last volser must be greater than or equal to first volser. If the last volser is not supplied, only one volume is ejected.

XTA case **SERVER =** **specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI).**

Comments:

There is no limit for the list of volumes specified in a subfile. If the number of cartridges is greater than the capacity of the CAP, several operator operations are required to complete the ejection. Cartridges are ejected by group of 42 regardless of the real capacity of the CAP. For each group, a message `TU71 V3.0 REMOVE CARTRIDGES FROM CAP...` is sent to the operator. A CAP is partially filled in does not mean the end of the ejection operation. Ejection is completed when the message `TU71 V3.0 EJECT VOLUMES COMPLETED` is issued.

If an input subfile is supplied, neither the subfile nor its contents are modified. The subfile is assigned in the following mode: share=dir, access=read.

Several EJECT_VOLUMES commands can be requested at the same time by different operators on condition that they specify different caps and different input subfiles.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

The result of this command is identical to the result of the ACSSA eject command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

EXAMPLES:

1. Ejection through the CAP 0,0,1 of cartridges whose OCR labels are 001860, 001863, 001865.

   ```
   S: EJVOL CAP=(0,0,1) VOLLS = (001860,001863,001865)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 EJECT VOLUMES ACCEPTED - REQUEST NUMBER : 23
   TU71 V3.0 REMOVE CARTRIDGES FROM CAP 0,0,1 IF NO ERROR FOLLOWS
   ```

   After removing cartridges from the CAP.

   ```
   TU71 V3.0 VOLUME 001860 EJECTED FROM CAP 0,0,1
   TU71 V3.0 VOLUME 001863 NOT IN LIBRARY
   TU71 V3.0 VOLUME 001865 EJECTED FROM CAP 0,0,1
   TU71 V3.0 NUMBER OF VOLUMES NOT EJECTED = 1
   TU71 V3.0 NUMBER OF VOLUMES EJECTED = 2
   TU71 V3.0 EJECT VOLUMES COMPLETED
   ```

2. Ejection through the highest priority available CAP of all cartridges whose volser is in the range 001860 001869 (in this example 10 cartridges are ejected at the most).

```
EJVOL VOLRNG = (001860 001869)
```

The following messages are displayed:

```
TU71 V3.0 EJECT VOLUMES ACCEPTED - REQUEST NUMBER : 24
TU71 V3.0 REMOVE CARTRIDGES FROM CAP * IF NO ERROR FOLLOWS
```

After removing cartridges from the CAP.

```
TU71 V3.0 VOLUME 001860 EJECTED FROM CAP 0,0,0
TU71 V3.0 VOLUME 001861 EJECTED FROM CAP 0,0,0
TU71 V3.0 VOLUME 001862 EJECTED FROM CAP 0,0,0
TU71 V3.0 VOLUME 001864 EJECTED FROM CAP 0,0,0
TU71 V3.0 VOLUME 001866 EJECTED FROM CAP 0,0,0
TU71 V3.0 VOLUME 001869 EJECTED FROM CAP 0,0,0
TU71 V3.0 NUMBER OF VOLUMES EJECTED = 6
TU71 V3.0 EJECT VOLUMES COMPLETED
```

When VOLUME_RANGE is used, no message appears for cartridges not in the library.

3. Ejection of all cartridges whose OCR label is specified in the file EJECT_LIBRARY..EJECT_SUBFILE

```
EJVOL CAP=(0,0,1) INLIB=EJECT_LIBRARY INSUBFILE=EJECT_SUBFILE
```

subfile content:

```
001860
001861
001863
001866
001870
```

The following messages are displayed:

```
TU71 V3.0 EJECT VOLUMES ACCEPTED - REQUEST NUMBER :25
TU71 V3.0 REMOVE CARTRIDGES FROM CAP (0,0,1) IF NO ERROR
          FOLLOWS
```

After removing cartridges from the CAP.

```
TU71 V3.0 VOLUME 001860 EJECTED FROM CAP 0,0,1
TU71 V3.0 VOLUME 001861 IN USE
TU71 V3.0 VOLUME 001863 EJECTED FROM CAP 0,0,1
TU71 V3.0 VOLUME 001866 EJECTED FROM CAP 0,0,1
TU71 V3.0 VOLUME 001870 EJECTED FROM CAP 0,0,1
TU71 V3.0 NUMBER OF VOLUMES NOT EJECTED = 1
TU71 V3.0 NUMBER OF VOLUMES EJECTED = 4
TU71 V3.0 EJECT VOLUMES COMPLETED
```

Cartridges are ejected by sets of 42, Therefore when the operator is required by the LMU panel to remove cartridges, it may happen that the CAP is not full. This does not mean that the ejection is completed, another message can appear on the GCOS 7 terminal and on the LMU panel which requires the operator to remove more cartridges.

6.6.5 ENTER_LIB_VOLUMES (abbr. ENTER_VOLUMES, ENVOL)

This command:

Inserts one or more cartridges in the cartridge library through a CAP (Cartridge Access Port) and optionally includes them in a scratch pool (pool of WORK volumes).

Syntax:

```
{ ENTER_LIB_VOLUMES }
{ ENTER_VOLUMES }
{ ENVOL }
             { CAPID }
             {       } = <capid> | *
             { CAP   }

            [ { SCRATCH }                                  ]
            [ {         } = { 0 | 1 }   POOLID = <poolid>  ]
            [ { SCR     }                                  ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

CAPID = identifier of the CAP used to insert the cartridges. It is of the following format: (acs,lsm,cap "dec2, dec2, dec2").
If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank.
Default value: (*, ,).

SCRATCH = says whether or not the inserted cartridges must be placed in a scratch pool.
If set to 1, all volumes are assigned the scratch attribute in the library server data base, they become eligible to be used as WORK volumes, the POOLID keyword must be filled in also.
If set to 0, cartridges are not placed in a scratch pool, they are handled as non-WORK volumes.
This keyword is hidden, it does not appear on the menu unless requested.

	POOLID =	specifies the scratch pool into which the cartridges must be placed. Must contain a numeric value from 0 to 65534. It must be specified when SCRATCH is set to 1 otherwise it must be left blank. Cartridges to be entered will be selected as WORK volumes for the local DPS7 only if the POOLID value specified in this command and the POOLID value in the CLX configuration file of the local DPS7 are identical. This keyword is hidden, it does not appear on the menu unless requested.
XTA case	**SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI).**

Comments:

The valid format of volsers is described in "Labeling the Cartridges" in Chapter 4.

The selected CAP must be in manual enter mode. You can check and modify the CAP mode by using the SETCAP commands.

Upon receiving an ENTER_LIB_VOLUMES command, the specified CAP is unlocked and a message is displayed instructing you to place the cartridges in the CAP.

Up to a CAP full of volumes can be inserted by one command.

Several ENTER_VOLUMES commands can be requested at a time by different operators on condition that they specify different CAPs.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

The result of this command is identical to the result of the following ACSSA commands entered from the library server window:

- case 1 - scratch keyword not set: enter,
- case 2 - scratch keyword set: enter and set scratch.

Refer to the *ACSLS System Administrator's Guide* for more details about these commands.

Using the SCRATCH keyword:

The use of the SCRATCH keyword is strongly not recommended. Instead, it is advised to use the PREPARE_TAPESET WORK utility which ensures:

- the coherence between the SCRATCH and WORK attributes,
- that the cartridge is not write-protected,
- that the cartridge is inserted in the right scratch pool.

To enter a cartridge in the library which must be used as a work cartridge by your DPS 7000 you are advised to proceed as it follows: use the ENTER_LIB_VOLUMES command without using the scratch keyword then use the PREPARE_TAPESET WORK utility. The SCRATCH keyword is used on specific situation where you decide not to use the PREPARE_TAPESET utility, then it is the operator responsibility to ensure the coherence between the SCRATCH and WORK attributes, and to select the correct POOL identifier.

If the SCRATCH keyword is set to 1, volumes are placed in the scratch pool selected in the POOLID keyword. If volumes are bound to be selected as WORK volumes for the local DPS 7000, you must specify in the POOLID keyword the value which has been specified either in POOLID_18T or in POOLID_36T keyword in the CLX configuration. However, you can select another POOL identifier in order to insert the cartridge in a scratch pool used by another DPS 7000 or another system. Using the SCRATCH keyword does not modify the WORK attribute value of the cartridge.

The ENTER_VOLUMES command does not check whether the inserted tapes are WORK or not.

1. If Non WORK volumes are entered using a command ENTER_VOLUMES SCRATCH=1:

   The incoherence between the WORK attribute and the SCRATCH attribute is detected when the cartridge is selected for a MOUNT WORK request. Refer to "Errors in Mount Processing" in Chapter 2 for more details.

2. If WORK volumes are entered using a command ENTER_VOLUMES SCRATCH=0:

   These volumes are not be used as WORK volumes until they are prepared as WORK volumes using PREPARE_TAPESET or until a SET_SCRATCH command is performed. For all reasons already described, PREPARE_TAPESET must be preferred.

   If WORK volumes are inserted without the SCRATCH attribute, they must be prepared again as WORK to become eligible for being used as WORK volumes by the local DPS 7000.

The ENTER_VOLUMES SCRATCH command does not check that the inserted tapes are not write-protected. The protection is detected when the cartridge is selected for a MOUNT WORK request. Refer to "Errors in Mount Processing" in Chapter 2 for more details.

EXAMPLES:

1. Introduction of 2 cartridges by using the CAP 0,0,1

   ```
   S: ENVOL CAP=(0,0,1)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 ENTER VOLUMES ACCEPTED - REQUEST NUMBER : 26
   TU71 V3.0 PLACE LABELED CARTRIDGES IN CAP 0,0,1 IF NO ERROR
   FOLLOWS
   ```

   After placing the two cartridges labeled 001700 and 001701 in the CAP 0,0,1:

   ```
   TU71 V3.0 VOLUME 001700 ENTERED
   TU71 V3.0 VOLUME 001701 ENTERED
   TU71 V3.0 ENTER VOLUMES COMPLETED
   ```

2. Introduction of two volumes and inserting of these cartridges in the scratch pool 1

   ```
   S: ENVOL SCR=1 POOLID=1
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 ENTER VOLUMES ACCEPTED - REQUEST NUMBER : 27
   TU71 V3.0 PLACE LABELED CARTRIDGES IN CAP* IF NO ERROR FOLLOWS
   ```

   After placing the two cartridges labeled 001700 and 001701 in the unlocked CAP:

   ```
   TU71 V3.0 VOLUME 001700 ENTERED
   TU71 V3.0 VOLUME 001701 ENTERED
   TU71 V3.0 VOL=001700 SCRATCH ATTRIB SET
   TU71 V3.0 VOL=001700 SCRATCH ATTRIB SET
   TU71 V3.0 ENTER VOLUMES COMPLETED
   ```

6.6.6 ENTER_UNLAB_VOLUMES (abbr. ENUVOL)

This command:

Inserts one or several tape cartridges with missing or unreadable OCR labels into the cartridge library through a CAP (Cartridge Access Port).

Syntax:

```
{ ENTER_UNLAB_VOLUMES }
{ ENUVOL }
              { CAPID }
              {       } = <capid> | *
              { CAP   }

              { VOLUME_LIST }
              {             } = <volume list>
              { VOLLS       }
XTA case      [SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters:

CAPID = identifier of the CAP used to insert the cartridges. It is of the following format: (acs,lsm,cap "dec2, dec2, dec2").
If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank.
Default value: (*, ,).

VOLUME_LIST = list of 1 to 10 virtual labels to be assigned to the cartridges. The virtual label are considered as being volsers, their format follows the same rules (char 6).

XTA case

SERVER = specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI).

Comments:

The valid format of volsers is described in "Labeling the Cartridges" in Chapter 4.

The selected CAP must be in manual enter mode. You can check and modify the CAP mode by using the SETCAP command.

Upon receiving an ENTER_UNLAB_VOLUMES command, the specified CAP is unlocked, and a message is displayed instructing you to place the cartridges in the CAP.

If WORK volumes are inserted, they must be prepared again as WORK to become eligible for being used as WORK volumes by the local DPS 7000.

Several ENTER_UNLAB_VOLUMES commands can be requested at a time by different operators on condition that they specify different CAPs.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

The result of this command is identical to the result of the ACSSA venter command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

EXAMPLES:

1. introduction of 2 cartridges with a missing label by using the CAP 0,0,1

   ```
   S: ENUVOL CAP=(0,0,1) (VOL001,VOL002)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 ENTER UNLAB VOLUMES ACCEPTED - REQUEST NUMBER : 28
   TU71 V3.0 PLACE 2 UNLABELED CARTRIDGE(S) IN CAP 0 ,0 ,1 IF NO
   ERROR FOLLOWS
   ```

   After placing two unlabeled cartridges in the CAP 0,0,1:

   ```
   TU71 V3.0 VOLUME VOL001 ENTERED
   TU71 V3.0 VOLUME VOL002 ENTERED
   TU71 V3.0 ENTER UNLAB VOLUMES COMPLETED
   ```

2. error case: introduction of 2 cartridges with a missing label is required while a single cartridge is placed in the CAP.

   ```
   S: ENUVOL VOLLS=(VOL001,VOL002)
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 ENTER UNLAB VOLUMES ACCEPTED - REQUEST NUMBER : 29
   TU71 V3.0 PLACE 2 UNLABELED CARTRIDGE(S) IN CAP *IF NO ERROR
   FOLLOWS
   ```

After placing one unlabeled cartridge in the unlocked CAP:

```
TU71 V3.0 ENTER UNLAB VOLUMES- VOLUME NOT FOUND - VOL= VOL002
TU71 V3.0 VOLUME VOL001 ENTERED
TU71 V3.0 ENTER UNLAB VOLUMES PARTIALLY PROCESSED
```

6.6.7 EXTRACT_CLX_ERROR (abbr. EXTERR)

This command:

Retrieves from the CLX logs the list of volumes for which a specific incident has happened since the last EXTRACT_CLX_ERROR operation, stores volsers of these volumes into the specified output library subfile and deletes references of them in the CLX logs.

Syntax:

```
{ EXTRACT_CLX_ERROR }
{ EXTERR }
          { ERROR_TYPE }
          {            } = {WORK_PROTECTED|WP|SCRATCH_NONWORK|SNW}
          { ERR        }

                                { SUBFILE }
          { LIB } = <library name> {         } = <subfile name>
                                { SF      }

         [ { REPLACE } ]
         [ {         } = { 0|1 } ]
         [ { RPL     } ]
```

XTA case

```
        [SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters:

ERROR_TYPE = type of the incident. Valid values:
WORK_PROTECTED (abbr. WP) = WORK volume protected by the File Protect Selector switch.
The volume had the Protect Switch set when it was selected for a MOUNT WORK request.
SCRATCH_NONWORK (abbr. SNW) = volume with the scratch attribute but without the WORK attribute.
The volume did not have the WORK attribute but did have the SCRATCH attribute when it was selected for a MOUNT WORK request.

	LIB =	output source library. The library must be cataloged.
	SUBFILE =	output subfile.
	REPLACE =	specifies what to do if the output subfile already exists. if set to 1, the current content of the subfile is overwritten. if set to 0, the command is rejected.
XTA case	**SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI);**

Comments:

Erroneous volumes are detected and registered in the CLX logs when they are selected for a WORK MOUNT request.

Scratch attribute have been removed automatically for the volumes when they were registered in the CLX logs so that they could not be selected for another MOUNT WORK request.

New records in the output subfile are created in SSF format.

At the command completion, traces of the extracted incidents are removed from the CLX logs, therefore the extracted volumes will not be returned on the next EXTRACT_CLX_ERROR command.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Stores labels of work-protected volumes in the subfile EXTRACT.SLLIB..VOLWP

   ```
   S: EXTERR ERR=WP LIB=EXTRACT.SLLIB SF=VOLWP
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 NUMBER OF VOLSERS EXTRACTED FROM THE CLX LOG = 3
   TU71 V3.0 EXTRACT_CLX_ERROR COMPLETED
   ```

2. stores the labels of scratch non-work volumes in the subfile EXTRACT.SLLIB..VOLSNW

   ```
   S: EXTERR ERR=SNW LIB=EXTRACT.SLLIB SF=VOLSNW
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 NUMBER OF VOLSERS EXTRACTED FROM THE CLX LOG = 10
   TU71 V3.0 EXTRACT_CLX_ERROR COMPLETED
   ```

❑

6.6.8 QUERY_CARTRIDGE_LIBRARY (abbr. QLIB)

This command:

Displays information about an ACS, one or several silo(s), one or several CAP(s), cleaning cartridge(s), library drive(s), the Library Server, LSM(s), port(s), library request(s), scratch cartridge(s), scratch pool(s), or tape cartridge(s).

Syntax:

```
{ QUERY_CARTRIDGE_LIBRARY }
{ QLIB }

     { OBJECT }   { ACS | CAP | CLEAN | DRIVE | LOCK_DRIVE |
     {        } = LOCK_VOLUME |LSM | MOUNT | MOUNT_SCRATCH |
     { OBJ    }   POOL | PORT | REQUEST |SCRATCH |SERVER |
                  VOLUME }

     { [ { VOLUME_LIST }                 ] }
     { [ {             } = <volume_list> ] }
     { [ { VOLLS       }                 ] }

     { [ { DRIVEID }             ] }
     { [ {         } = <driveid> ] }
     { [ { DRID    }             ] }

     { [ CAPID = <capid> ] }

     { [ { POOL_LIST   }               ] }
     { [ {             } = <pool list> ] }
     { [ { POOLLS      }               ] }

     { [ LSMID  = <lsmid>  ] }
     { [ PORTID = <portid> ] }

     { [ { REQUEST_LIST }                   ] }
     { [ {              } = <request list> ] }
     { [ { REQLS        }                   ] }

     { [ ACSID  = <acsid>  ] }
     { [ LOCKID = <lockid> ] }

     { [ { MEDIA_TYPE }                ] }
     { [ {            } = <media_type> ] }
     { [ { MEDIA      }                ] }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Input Parameters:

OBJECT = designates the type of the device to get information about.

Possible values:

ACS (abbrev. AC).
CAP: Cartridge Access Cap.
CLEAN (abbrev. CLN): cleaning cartridges.
DRIVE (abbrev. DR): transports.
LOCK_DRIVE (abbrev. LCKD): lock(s) on drives.
LOCK_VOLUME (abbrev. LCKV): lock(s) on volumes).
LSM (abbrev. LS): silo.
MOUNT (abbrev. M): available drives for mounting specific cartridges.
MOUNT_SCRATCH (abbrev. MSC): available drives for mounting scratch tapes.
POOL: scratch pool(s).
PORT: port(s) linking the server and the library.
REQUEST (abbrev. REQ):pending and current library requests.
SCRATCH (abbrev. SCR): scratch cartridge(s).
SERVER (abbrev. SVR).
VOLUME (abbrev. VOL): cartridges within the library.

One or several object identifiers can be supplied according to the specified type.

Object type	Object identifier
ACS	ACSID
CAP	CAPID
CLEAN	VOLUME_LIST
DRIVE	DRIVEID
LOCK_DRIVE	DRIVEID [, LOCKID]
LOCK_VOLUME	VOLUME_LIST [, LOCKID]
LSM	LSMID
MOUNT	VOLUME_LIST
MOUNT_SCRATCH	POOL_LIST [, MEDIA_TYPE]
POOL	POOL_LIST
PORT	PORTID
REQUEST	REQUEST_LIST
SCRATCH	POOL_LIST
SERVER	none
VOLUME	VOLUME_LIST

If no object identifier is supplied, all objects of the specified type are displayed.

VOLUME_LIST =	list of up to ten volume serial numbers (volsers). It can be supplied if the specified object type is one among the following list: VOLUME, CLEAN, LOCK_VOLUME, MOUNT.
DRIVEID =	identifier of a drive attached to the cartridge library. It can be supplied if the specified object type is DRIVE or LOCK_DRIVE. Format: (acs,lsm,panel,drive: "dec2, dec2, dec2, dec2").
CAPID =	identifier of the CAP (Cartridge Access Port). It can be supplied if the specified object type is CAP. Format: (acs,lsm,cap: "dec2, dec2, dec2").
POOL_LIST =	list of up to ten scratch pool identifiers. It can be supplied if the specified object type is POOL, MOUNT_SCRATCH or SCRATCH. Format: decimal. Valid value: 0 to 65534.
LSMID =	identifier of a Library Storage Module. It can be supplied if the specified object type is LSM. Format: (acs,lsm: "dec2, dec2").
PORTID =	identifier of a port used for the connection of the cartridge library to the library server. It can be supplied if the selected object type is PORT. Format: (acs,port: "dec2, dec2").
REQUEST_LIST =	list of up to ten current and (or) pending library request identifiers. It can be supplied if the specified object type is REQUEST. Format: 1 to 10 digits.
ACSID =	identifier of the Automatic Cartridge Subsystem. It is a decimal number (one or two digits: "dec2").
LOCKID =	lock identifier. It can be supplied if the specified object type is LOCK_VOLUME or LOCK_DRIVE. It is a decimal number (one to 10 digits: "dec10").
MEDIA_TYPE	media type. Type of the media: 3480 (standard tape) or 3490E (E_tape).

XTA case	**SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI)**

Outputs:

The returned information depends on the selected object type.

Object type	label	sub - label	returned information ordered as mentioned in this list
ACS	ACS		ACS identifier
	-		ACS current state
	FREECELLS		number of free cells
	REQ. C/P	Au	number of current / number of pending AUDIT request
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
CAP	CAP		CAP identifier
	-		CAP current status (activity) of the CAP or status error
	PR		priority assigned to the CAP
	SZ		numbr of cells in the CAP
	-		mode: MANU for manuel, AUTO for automatic
	-		current state of the CAP
CLEAN	VOL		external label of the cleaning cartridge
	CELL		home location of the cleaning cartridge in the ACS library
	MAX USE		maximum number of times the cleaning cartridge can be mounted.
	CUR USE		number of times the cleaning cartridge has been mounted
	MEDIA TYPE		volume type
DRIVE	DR		library drive identifier
	-		current activity status of the drive or status error.
	-		current state of the drive.
	VOL		volume identifier mounted in the library drive - if no volume is in the drive, this field is left blank.
	TYPE		drive type

Object type	label	sub - label	returned information ordered as mentioned in this list
LOCK_DRIVE	DR		library drive (transport) identifier
	-		current activity state of the drive or status error.
	LCK		lock identifier associated with the drive
	LCK-DURATION		amount of time, in seconds, that the lock has been active
	LCK-PENDING		number of lock requests that are waiting for the drive.
	USR		user identifier locking the drive. Only the first 15 characters are displaying.
LOCK_VOLUME	VOL		volume identifier
	-		current activity state of the volume or status error.
	LCK		lock identifier associated with the volume
	LCK-DURATION		amount of time, in seconds, that the lock has been active
	LCK-PENDING		number of lock requests that are waiting for the volume.
	USR		user identifier locking the volume. Only the first 15 characters are displaying.
LSM	LSM		LSM identifier
	-		current robot activity.
	-		current state of the LSM.
	FREECELLS		number of unused cells in the LSM
	REQ. C/P	Au	number of current / number of pending AUDIT requests
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
MOUNT			
per volume : first message	VOL		external tape cartridge label
			current state of the volume

Object type	label	sub - label	returned information ordered as mentioned in this list
next message(s): one per drive ordered by proximity to the volumr	DR		drive identifier
	-		activity state of the drive or status error.
	-		current state of the drive
	VOL		the volume identifier in the library drive. If no volume is in the drive, this field is left blank.
	TYPE		drive type
MOUNT_SCRATCH			
per pool : first message	POOL		scratch pool identifier
	-		current state of the pool
next message(s) : one per drive ordered by proximity to the volume	DR		drive identifier
	-		activity state of the drive or status error.
	-		current state of the drive
	VOL		the volume identifier in the library drive. If no volume is in the drive, this field is left blank.
	TYPE		drive type
POOL	POOL		scratch pool identifier
	-		current state of the pool
	CNT		number of volumes currently assigned to the scratch pool
	LWM		the point at which warning messages are sent as the pool becomes depleted.
	HWM		the point at which warning messages are sent as the size of the pool grows.
	-		the pool attributes : OVERFLOW or left to blank.
PORT	PORT		Identifier of the port
	-		current state of the port
REQUEST	REQ		request identifier
	-		type of the request
SCRATCH	POOL		scratch pool identifier
	-		current state of the volume
	VOL		volume identifier
	CELL		home cell
	MEDIA TYPE		volume type.

Object type	label	sub - label	returned information ordered as mentioned in this list
SERVER	SERVER		-
	-		current state of the Library Server service.
	FREECELLS		number of unused cells in the LSM
	REQ. C/P	Au	number of current / number of pending AUDIT requests
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
VOLUME	VOL		Identifier of the volume
	-		type of the current location of the volume
	LOC		current location address (drive address or home cell)
	MEDIA TYPE		volume type

Comments:

Only one type of device (object) can be queried at a time.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Query the installed ACS while a cartridge is being dismounted, 2 enter operations are being processed.

   ```
   S: QLIB ACS
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 QUERY ACS ACCEPTED - REQUEST NUMBER : 30
   TU71 V3.0 ACS=0 -ONLINE- FREECELLS = 5367
   REQ.C/P: Au=0/0 Mo=0/0 Di=1/0 En=2/0 Ej=0/0
   TU71 V3.0 QUERY ACS COMPLETED
   ```

2. Query all CAPs.

   ```
   S: QLIB CAP
   ```

The following messages are displayed:

```
TU71 V3.0 QUERY CAP ACCEPTED - REQUEST NUMBER : 31
TU71 V3.0 CAP=0 ,0 ,0 ENTER ACTIVITY - PR=5 SZ=40 MANU -
ONLINE -
TU71 V3.0 CAP=0 ,0 ,1 EJECT ACTIVITY - PR=4 SZ=40 MANU -
ONLINE -
TU71 V3.0 CAP=0 ,0 ,2 CAP AVAILABLE - PR=4 SZ=1 AUTO -
ONLINE -
TU71 V3.0 QUERY CAP COMPLETED
```

3. Query all clean volumes

```
S: QLIB CLEAN
```

The following messages are displayed:

```
TU71 V3.0 QUERY CLEAN ACCEPTED - REQUEST NUMBER : 2653
TU71 V3.0 VOL=CLN820 VOLUME HOME - MEDIA_TYPE=3480 CELL=0 ,
0 ,8 ,0 ,0 MAX USE=100 CUR USE=0
TU71 V3.0 VOL=CLN821 VOLUME HOME - MEDIA_TYPE=3480 CELL=0 ,
0 ,8 ,0 ,0 MAX USE=100 CUR USE=0
TU71 V3.0 QUERY CLEAN COMPLETED
```

4. Query all drives: there are 4 drives, the first displayed drive is in use with one volume mounted, the 2nd one is online, the 3rd one is in diagnostic, the last drive is offline.

```
S: QLIB DRIVE
```

The following messages are displayed:

```
TU71 V3.0 QUERY DRIVE ACCEPTED - REQUEST NUMBER : 33
TU71 V3.0 DR=0 ,0 ,9 ,0 DRIVE IN USE - ONLINE - TYPE = 4780
VOL=001700
TU71 V3.0 DR=0 ,0 ,9 ,2 DRIVE AVAILABLE - ONLINE - TYPE = 4490
TU71 V3.0 DR=0 ,0 ,10,0 DRIVE AVAILABLE - IN DIAG -
TYPE = 4780
TU71 V3.0 DR=0 ,0 ,10,2 DRIVE AVAILABLE - OFFLINE -
TYPE = 4490
TU71 V3.0 QUERY DRIVE COMPLETED
```

5. Query lock information about all drives.

```
S: QLIB LCKD
```

The following messages are displayed (some lines are split):

```
TU71 V3.0 QUERY LOCK DRIVE ACCEPTED - REQUEST NUMBER : 34
TU71 V3.0 DR=0, 0, 9, 0 DRIVE IN USE - LCK=7436 LCK-DURATION=
133 LCK-PENDING=0 USR=acsss.........
TU71 V3.0 DR=0, 0, 9, 2 DRIVE IN USE - LCK=7436 LCK-DURATION=
133 LCK-PENDING=0 USR=acsss.........
TU71 V3.0 QUERY LOCK DRIVE COMPLETED
```

6. Query lock information about volumes

```
S: QLIB LCKV
```

The following messages are displayed:

```
TU71 V3.0 QUERY LOCK DRIVE ACCEPTED - REQUEST NUMBER : 35
TU71 V3.0 VOL=001700 VOLUME IN USE LCK=31047 LCK-DURATION=
180 LCK-PENDING=0 USR=acsss..............
TU71 V3.0 VOL=001701 VOLUME IN USE LCK=31047 LCK-DURATION=
180 LCK-PENDING=0 USR=acsss..............
TU71 V3.0 VOL=001702 VOLUME IN USE LCK=31048 LCK-DURATION=
180 LCK-PENDING=0 USR=acsss..............
TU71 V3.0 QUERY LOCK VOLUME COMPLETED
```

7. Query information about the LSM (0,0) - This LSM is offline.

```
S: QLIB LS LSMID=(0,0)
```

```
TU71 V3.0 QUERY LSM ACCEPTED - REQUEST NUMBER : 36
TU71 V3.0 LSM=0,0 - OFFLINE - CAP AVAILABLE - FREECELLS=5458
REQ.C/P: Au=1/0 Mo=1/0 Di=1/0 En=2/0 Ej=1/0
TU71 V3.0 QUERY LSM COMPLETED
```

8. Query mount information about 3 volumes: One volume is mounted in a drive, one volume is in its home cell and one volume is not in the library.

```
S: QLIB M VOLLS=(001700,001701,001600)
```

The following messages are displayed:

```
TU71 V3.0 QUERY MOUNT ACCEPTED - REQUEST NUMBER : 37
TU71 V3.0 VOL=001700 VOLUME IN DRIVE
TU71 V3.0 DR=0, 0, 9, 0 DRIVE IN USE - ONLINE - TYPE = 4780
VOL=001700
TU71 V3.0 DR=0 ,0 ,9 ,2 DRIVE AVAILABLE - ONLINE - TYPE = 4490
TU71 V3.0 DR=0 ,0 ,10,0 DRIVE AVAILABLE - OFFLINE -
TYPE = 4780
TU71 V3.0 DR=0 ,0 ,10,2 DRIVE AVAILABLE - OFFLINE -
TYPE = 4490
TU71 V3.0 VOL=001701 VOLUME HOME
TU71 V3.0 DR=0 ,0 ,9 ,0 DRIVE IN USE- ONLINE - TYPE = 4780
VOL=001700
TU71 V3.0 DR=0 ,0 ,9 ,2 DRIVE AVAILABLE - ONLINE - TYPE = 4490
TU71 V3.0 DR=0 ,0 ,10,0 DRIVE AVAILABLE - OFFLINE -
TYPE = 4780
TU71 V3.0 DR=0 ,0 ,10,2 DRIVE AVAILABLE - OFFLINE -
TYPE = 4490
TU71 V3.0 VOL=001600 VOLUME NOT IN LIBRARY
TU71 V3.0 QUERY MOUNT COMPLETED
```

9. Query information about available drives for mounting scratch tapes. In this example, the number of scratch volumes in the specified pool is smaller than the low water mark value assigned to the pool.

   ```
   S: QLIB MOUNT_SCRATCH POOLLS=112
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 QUERY MOUNT_SCRATCH ACCEPTED - REQUEST NUMBER : 38
   TU71 V3.0 POOL = 112 LOW WATER MARK
   TU71 V3.0 DR=0 ,0 ,9 ,0 - DRIVE AVAILABLE - ONLINE -
   TYPE = 4780
   TU71 V3.0 DR=0 ,0 ,9 ,2 - DRIVE AVAILABLE - ONLINE -
   TYPE = 4490
   TU71 V3.0 DR=0 ,0 ,10,0 - DRIVE AVAILABLE - OFFLINE -
   TYPE = 4780
   TU71 V3.0 DR=0 ,0 ,10,2 - DRIVE AVAILABLE - OFFLINE -
   TYPE = 4490
   TU71 V3.0 QUERY MOUNT_SCRATCH COMPLETED
   ```

10. Query information about 3 pools. The pool 1 does not contain scratch volumes, the pool 456 has not been defined, the pool 111 contains scratch volumes number of which is greater than the low-water-mark assigned to the pool.

    ```
    S: QLIB MSC POOLLS=(1,111,456)
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY MOUNT_SCRATCH ACCEPTED - REQUEST NUMBER : 39
    TU71 V3.0 POOL = 1 LOW WATER MARK
    TU71 V3.0 POOL = 111
    TU71 V3.0 DR=0 ,0 ,9 ,0 DRIVE IN USE - ONLINE - TYPE = 4780
    VOL=001700
    TU71 V3.0 DR=0 ,0 ,9 ,2 DRIVE AVAILABLE - ONLINE - TYPE = 4490
    TU71 V3.0 DR=0 ,0 ,10,0 DRIVE AVAILABLE - OFFLINE -
    TYPE = 4780
    TU71 V3.0 DR=0 ,0 ,10,2 DRIVE AVAILABLE - OFFLINE -
    TYPE = 4490
    TU71 V3.0 POOL=456 POOL NOT FOUND
    TU71 V3.0 QUERY MOUNT_SCRATCH COMPLETED
    ```

11. Query all pools defined in the library server

    ```
    S: QLIB POOL
    ```

    The following messages are displayed (some lines are split):

    ```
    TU71 V3.0 QUERY POOL ACCEPTED - REQUEST NUMBER : 40
    TU71 V3.0 POOL=0 LOW WATER MARK- CNT=0 LWM=0 HWM=21
    47483647
    TU71 V3.0 POOL=1 LOW WATER MARK- CNT=0 LWM=0 HWM=10
    00
    TU71 V3.0 POOL=112 CNT=3 LWM=2 HWM=4
    TU71 V3.0 POOL=123 HIGH WATER MARK - CNT=1 LWM=0 HWM=1
    ```

```
OVERFLOW
TU71 V3.0 QUERY POOL COMPLETED
```

12. Query all ports.

    ```
    S: QLIB PORT
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY PORT ACCEPTED - REQUEST NUMBER : 41
    TU71 V3.0 PORT=0 ,0 - ONLINE -
    TU71 V3.0 QUERY PORT COMPLETED
    ```

13. Query all current and pending requests.

    ```
    S: QLIB REQ
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY REQUEST ACCEPTED - REQUEST NUMBER : 42
    TU71 V3.0 REQ= 31 PENDING QUERY
    TU71 V3.0 REQ= 10 CURRENT AUDIT
    TU71 V3.0 REQ= 25 CURRENT EJECT
    TU71 V3.0 REQ= 26 CURRENT ENTER
    TU71 V3.0 QUERY REQUEST COMPLETED
    ```

14. Query information about 2 specified requests. One request is unknown (i.e. it has completed).

    ```
    S: QLIB REQ REQLS=(123,1)
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY REQUEST ACCEPTED - REQUEST NUMBER : 43
    TU71 V3.0 REQ=1 MESSAGE NOT FOUND
    TU71 V3.0 REQ=123 CURRENT ENTER
    TU71 V3.0 QUERY REQUEST COMPLETED
    ```

15. Query information about scratch volumes. 2 specified pools are specified, one pool is not defined, the other pool contains 2 volumes. No message is returned for unknown or empty scratch pools.

    ```
    S: QLIB SC POOLLS=(0,112)
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY SCRATCH ACCEPTED - REQUEST NUMBER : 44
    TU71 V3.0 POOL=112 VOL= 001702 - VOLUME HOME -
    MEDIA TYPE= 3480 CELL= 0, 0, 7,10, 2
    TU71 V3.0 POOL=112 VOL= 001703 - VOLUME HOME -
    MEDIA TYPE= 3480 CELL= 0, 0, 8,10, 1
    TU71 V3.0 QUERY SCRATCH COMPLETED
    ```

16. Query information about scratch volumes. A single pool is specified. No volume is found

    ```
    S: QLIB SC POOLLS=(99)
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY SCRATCH ACCEPTED - REQUEST NUMBER : 45
    TU71 V3.0 POOL(S) NOT FOUND OR EMPTY
    TU71 V3.0 QUERY SCRATCH COMPLETED
    ```

17. Query information about the Library Server. The server is in run state.

    ```
    S: QLIB SVR
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY SERVER ACCEPTED - REQUEST NUMBER : 46
    TU71 V3.0 SERVER - RUN - FREECELLS=5013
    REQ.C/P: Au=1/0 Mo=1/0 Di=1/0 En=2/0 Ej=1/0
    TU71 V3.0 QUERY SERVER COMPLETED
    ```

18. Query information about 3 volumes.

    ```
    S: QLIB VOL (001700,001701,001710)
    ```

    The following messages are displayed:

    ```
    TU71 V3.0 QUERY VOLUME ACCEPTED - REQUEST NUMBER : 47
    TU71 V3.0 VOL=001700 VOLUME IN DRIVE-MEDIA_TYPE= 3480
    LOC= 0 ,0 ,9 ,0,
    TU71 V3.0 VOL=001701 VOLUME HOME - MEDIA TYPE= 3480
    LOC=0 ,0 ,10,0 ,3
    TU71 V3.0 VOL=001710 VOLUME NOT IN LIBRARY
    TU71 V3.0 QUERY VOLUME COMPLETED
    ```

❑

6.6.9 SET_CAP_ATTRIBUTES (abbr. SETCAP)

This command:

Modifies the mode and (or) the priority for the specified Cartridge Access Port.

Syntax:

```
{ SET_CAP_ATTRIBUTES }
{ SETCAP }
              { CAPID }
              {       } = <capid>
              { CAP   }

            [ MODE = { A | M } ]

            [ {PRIORITY }              ]
            [ {         } = <priority> ]
            [ {PRTY     }              ]
```

XTA case

```
           [SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters:

CAPID =	identifier of the CAP . It is of the following format: (acs,lsm,cap: "dec2, dec2, dec2").
MODE =	Valid values : A for automatic mode, M for manual mode. If the field is left blank, the mode of the CAP is not modified.
PRIORITY =	Decimal value : 0 to 16. If the field is left blank, the priority of the CAP is not modified.
XTA case **SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI);**

Comments:

The CAP priority is a value that is used for selecting CAPs automatically. It is used when the character * is specified for the CAPID for a command, then the highest priority CAP is selected. The higher the priority value is, the more priority the CAP is. A CAP with priority of 0 is never selected unless specified in the command.

The result of this command is identical to the result of the ACSSA setcap command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Set the CAP (0,0,2) in manual mode

   ```
   S: SETCAP (0,0,2) M
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET CAP ACCEPTED - REQUEST NUMBER : 48
   TU71 V3.0 CAP=0 ,0 ,2 MODE: MANU
   TU71 V3.0 SET CAP COMPLETED
   ```

2. Set the priority 5 for the CAP (0,0,1)

   ```
   S: SETCAP (0,0,1) PRTY=5
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET CAP ACCEPTED - REQUEST NUMBER : 49
   TU71 V3.0 CAP=0 ,0 ,1 PRTY=5
   TU71 V3.0 SET CAP COMPLETED
   ```

3. Set the CAP (0,0,2) in automatic mode and set its priority to 15

   ```
   S: SETCAP (0,0,1) A 15
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET CAP ACCEPTED - REQUEST NUMBER : 50
   TU71 V3.0 CAP=0 ,0 ,1 PRTY=15 MODE:AUTO
   TU71 V3.0 SET CAP COMPLETED
   ```

❑

6.6.10 SET_CLEAN_ATTRIBUTE (abbr. SETCLN)

This command:

Sets or resets the cleaning attribute for one or more tape cartridge(s) (volumes).

Syntax:

```
{ SET_CLEAN_ATTRIBUTE }
{ SETCLN }
                { VOLUME_LIST }
                {             } = (char6 [,char6 [...]])
                { VOLLS       }

              [ ON  = { 1 | 0 } ]

              [ { MAXUSE_NB }        ]
              [ {           } = dec5 ]
              [ { MAXNB     }        ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

VOLUME_LIST = a list of up to 10 volume serial numbers specifying a list of volumes.

ON = If set to 1, the cleaning attribute is set for the volume(s), then a value must be supplied for MAXUSE_NB. The volume is used as a cleaning cartridge.
If set to 0, the cleaning attribute is reset for the cartridge. The cartridge is no longer selected to satisfy subsequent cleaning requests. The volume is used as a data cartridge.
Default value: 1.

MAXUSE_NB = number of times the cleaning cartridge can be used before it is no longer selected to satisfy cleaning requests. Must be filled in if ON is set to 1.

XTA case SERVER = specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI)

Comments:

The result of this command is identical to the result of the ACSSA SET CLEAN command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

This command can be used if CLX has been activated at least once since the last GCOS 7 system restart. This command can be used when CLX is stopped.

EXAMPLES:

1. Sets the clean attribute and the maximum usage number to 600 for 2 volumes.

   ```
   S: SETCLN (001709,001712) MAXNB=600
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET CLEAN ACCEPTED - REQUEST NUMBER :51
   TU71 V3.0 VOL=001709 MAXIMUM USAGE NUMBER= 600
   TU71 V3.0 VOL=001712 MAXIMUM USAGE NUMBER= 600
   TU71 V3.0 SET CLEAN COMPLETED
   ```

2. resets the cleaning attribute for one volume.

   ```
   S: SETCLN 001701 ON=0
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET CLEAN ACCEPTED - REQUEST NUMBER : 52
   TU71 V3.0 VOL=001701 CLEAN ATTRIB RESET
   TU71 V3.0 SET CLEAN COMPLETED
   ```

❑

6.6.11 SET_SCRATCH_ATTRIBUTE (abbr. SETSCR)

This command:

Sets or resets the scratch attribute for one of more tape cartridge(s) (volumes).

Syntax:

```
{ SET_SCRATCH_ATTRIBUTE }
{ SETSCR }
              { VOLUME_LIST }
              {             } = <volume list>
              { VOLLS       }

            [ ON = { 1|0 } ]

            [ POOLID = <poolid> ]
```

XTA case

```
            [SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters:

VOLUME_LIST =	a list of up to 10 volume serial numbers specifying a list of volumes.
ON =	If set to 1, the scratch attribute is set for the volume, then a value must be supplied for POOLID. The volume becomes eligible to be used for satisfying a next MOUNT WORK tape cartridge request. It set to 0, the cleaning attribute is reset for the cartridge. The cartridge is no longer selected to satisfy a subsequent mount WORK volume request. Default value: 1.
POOLID =	Pool identifier to which the volume(s) must be assigned to. Must contain a numeric value from 0 to 65534.
XTA case **SERVER =**	**specifies the SSI host name and the SSI port when G_CLX_SSI global variable value (default value) is not set (see SET_CLX_SSI);**

Comments:

A volume can belong to only one pool at a time.

A scratch volume is eligible to be used for a MOUNT WORK request issued by a DPS7 if this volume is attached to a pool selected in the CLX configuration of this DPS7 (refer to the POOLID_18T and POOLID_36T keywords) .

The scratch attribute must be set for WORK volumes only. If however, the scratch attribute is set for non-WORK volumes, the scratch attribute will be reset automatically when the volume is selected for a MOUNT WORK volume and another volume is selected.

The scratch attribute is automatically set for a volume when the volume is prepared by a PREPARE_TAPESET WORK command. The scratch attribute is automatically reset when the volume is prepared by a PREPARE_TAPESET command when the WORK option is not set.

In normal situation, this command should be avoided. The PREPARE_TAPESET command must be preferred to assure the coherence between the WORK and SCRATCH attributes.

The scratch attributes and the cleaning attributes cannot be set for the same volume.

The result of this command is identical to the result of the ACSSA set scratch command entered from the library server window. Refer to the *ACSLS System Administrator's Guide* for more details about this command.

EXAMPLES:

1. set the scratch attribute for one volume and attach the volume to the pool 123.

   ```
   S: SETSCR 001701 POOLID=123
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET SCRATCH ACCEPTED - REQUEST NUMBER : 53
   TU71 V3.0 SET SCRATCH- HIGH WATER MARK
   TU71 V3.0 VOL=001701 POOL IDENTIFIER = 123
   TU71 V3.0 SET SCRATCH COMPLETED
   ```

2. change the pool to which the volume is attached.

   ```
   S: SETSCR 001701 ON=1 POOLID=10
   ```

   The following messages are displayed:

   ```
   TU71 V3.0 SET SCRATCH ACCEPTED - REQUEST NUMBER : 54
   TU71 V3.0 VOL=001701 POOL IDENTIFIER = 10
   TU71 V3.0 SET SCRATCH COMPLETED
   ```

3. reset the scratch attribute.

   ```
   S: SETSCR 001701 ON=0 POOLID=10
   ```

The following messages are displayed:

```
TU71 V3.0 SET SCRATCH ACCEPTED - REQUEST NUMBER : 55
TU71 V3.0 VOL=001701 SCRATCH ATTRIB RESET
TU71 V3.0 SET SCRATCH COMPLETED
```

❑

6.7 ACSSA Utilities

The ACSSA cartridge library utilities available from the UNIX terminal are as follows:

volrpt: ACSLS volume report.

bdb.acsss: ACSLS database backup. It performs a database checkpoint (snapshot of the data) and optimizations for the ACSLS database system. The checkpoint is written to a ESCALA or ESTRELLA tape device on the library server platform and the previous, now outdated journal records are removed from the disk. This utility must be run from time to time to clean the disk space consumed by the ORACLE database journals. It is written to a device. This utility must be run online (with the -o option) or offline (without the -o option) at least once a month to ensure optimum database performance. When at least 200 to 300 cartridges have either been entered or ejected from the LSM, this utility must be run offline.

rdb.acsss: ACSLS database recovery. This uses the checkpoint tape creates by bdb.acsss as well as the database system journal records. If a problem occurs with the journal, records, the database is recovered up to the point of the last checkpoint.

db_export.sh: ACSLS database export. Copies the current data from the database to a target file in an ASCII format.

db_import.sh: ACSLS database import.

For a complete description of these utilities, refer to the *ACSLS System Administrator's Guide*.

The CLX cartridge library utilities available to the GCOS 7 operator from an IOF terminal are as follows (for more information, see "CLX Utilities" earlier in this chapter):

volrpt: ACSLS volume report (same utility as for the UNIX terminal).

get_clx_file: transfer of ACSLS file to GCOS7,
also transfer of OPEN7 file to GCOS 7
for DPS 7000 non-XTA.

6.8 Determining the Status of a Device

6.8.1 How to Get a Device Current Status

The directive DC CT/LIB or DC CTnn displays the status of library devices, as they are known to the device manager.

The directive DC CT/LIB/M5 displays the status of the 18-track library devices.

The directive DC CT/LIB/36T displays the status of the 36-track library devices.

The CLX command DCLX displays the status of devices as known to CLX.

The directive DR displays the requests waiting for a response that were issued by GCOS 7.

The ACSSA command `query request` displays the status of current requests, as known to the ACSLS.

The ACSSA commands `query drive all`, `query volume all`, `query lsm all` display the status of the devices, the volumes and silos present in the configuration.

The ACSSA commands `query lock drive` and `query lock volume` display the status of the locks as known to the ACSLS.

Information returned by these ACSSA commands can be retrieved by a QUERY_CARTRIDGE_LIBRARY command (see "Library Commands" earlier in this chapter).

The correspondence between the GCOS 7 device names and the ACSLS device addresses is declared in the CLX configuration file and is displayed by the DCLX command.

6.8.2 Device Isolation

If a cartridge is mounted on a device, the isolation command MDHW CTnn OUT forces the dismounting of the cartridge. The system does not wait for the end of the dismount operation to isolate the device. However, if a device can be used by different systems (at different times), it is necessary to wait until the end of the physical dismount operation to assign the device to another system (see Chapter 7, "Static Sharing").

A mount request can be in transit between the Device Manager and the CLX, and corresponds to a job which has been canceled (by CR or CJ). At present, such an occurrence is taken into account by the command MDHW CTnn OUT. Use the command DISPLAY_CLX CTnn to verify that a volume is not mounted on a device you intend to isolate, or that a device is not in queue.

An isolation command is deferred as long as there are new requests for allocation of the device.

6.8.3 Reintroducing a Device

If a device is sharable between systems, you must isolate the device on the other systems before reintroducing it on the chosen system. Refer to Chapter 7, "Static Sharing" for more information.

There is no restriction on the commands MDHW CTnn IN and MDHW CTnn OUT. If a device is (re)activated, by an MDHW CTnn IN command, mount requests for this device are processed automatically if the device was declared in the CLX configuration when the job CLX was activated.

6.9 Halting the Library Server (ACSLS)

The ACSLS can be stopped with the command "kill.acsss". This command is available to the acsss user connected to the UNIX server from a UNIX terminal.

If the ACSLS is terminated while CLX is running, the CLX suspends the automatic processing of mount/dismount operations and stops unless the ACSLS is restarted within a certain interval of time:

- the CLX waits for a while so that the ACSLS be reactivated. If the ACSLS is reactivated within a certain interval of time, CLX performs a resynchronisation between the GCOS 7 and the library server before processing new mount/dismount operations. The interval of time is determined by MAXTOACSLM parameter,
- if the ACSLS is not reactivated, the step H_CLX aborts when MAXTOACSLM is reached (severity 4, status 23000). The job CLX terminates unless the JCL supplied at the CLX installation is modified by the System Administrator, H_CLX will never aborts if MAXTOACSLM = 0 (means no limit),
- the minimum waiting time is 10 times the TORPRQ configuration value. TORPRQ is specified during CLX configuration.

In normal circumstances, you do not need to stop the ACSLS.

7. Static Sharing

7.1 Sharing the Library Among Several Systems

7.1.1 Sharing of Cartridge Transports

When the controller (or pair of controllers for a cross-call configuration) has several channels linked to different systems, the group of transports connected to the controller is potentially accessible by these different systems.

For GCOS 7 systems, library transport sharing is static. This means:

- the transports are declared in the configuration of each system,
- a transport can only be used by one system (status IN) at a time. It must be isolated on the other systems (status OUT).

The command MDHW IN gives an exclusive access to a transport for the local system. If the MDHW command is submitted while the named transport is assigned to another system, it is rejected and the following message appears:

```
MDHW CTnn UNSUCCESSFUL, DEVICE MAY BE SEIZED BY ANOTHER SYSTEM.
```

The library operator is responsible for:

- assigning the transports to the various systems on the basis of need,
- monitoring the correct sequencing of operations when the transport assignments are modified.

The library can be shared between DPS 7000 systems and non-DPS 7000 systems if each system uses its own set of transports at a given time.

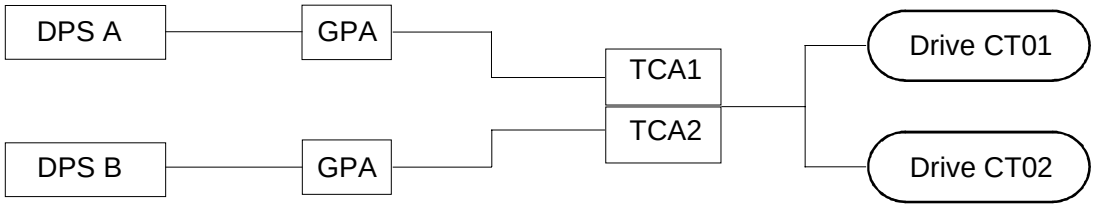


Figure 7-1. Example of Static Sharing

The following are examples of assigning transports:

EXAMPLE 1:

To switch a transport from DPS A to DPS B, the sequence of operations is:

- Isolate (exclude) the transport on DPS A

```
MDHW CT01 OUT          on the DPS A console
```

- Then introduce the transport on DPS B

```
MDHW CT01 IN           on the DPS B console
```

You **must** wait until the isolation operation on DPS A has been completed before you introduce the transport on DPS B.

When the isolation operation is over, you will receive the message:

```
MDHW CT01 SUCCESSFUL

CT01 OUT (BY OPERATOR)
```

You must verify that any cartridge mounted on the transport has been dismounted. On DPS A, the command DCLX CT01 should show that transport CT01 is STANDBY.

EXAMPLE 2:

To assign the entire cluster of transports from DPS A to DPS B.

```
MDHW TCA1 OUT       on DPS A
MDHW TCA2 IN........on DPS B
MDHW CT01 IN........on DPS B
MDHW CT02 IN........on DPS B
```

NOTE:

The above commands, used to isolate or introduce a controller, wait for the end of input/output operations on the transports connected to the controller. Therefore, the response to either command may be delayed (by several seconds) when lengthy I/O operations (such as rewinding or positioning) are being performed.

If the isolation operation and dismount have not finished on DPS A, your jobs on DPS B that reference the transport can abort or be blocked.

Mount and dismount operations lock and unlock the transport.

7.1.2 Sharing of Cartridge Volumes

Cartridge volumes can be accessed by all systems attached to the library.

The use of different scratch pools for each system allows each system to use separate groups of work volumes.

When a GCOS 7 system performs a mount operation, the cartridge volume is reserved by the GCOS 7 by a lock operation unless the volume is a work volume. The lock is released when the volume is dismounted.

If different systems are working on separate groups of volumes, there is no conflict.

If the groups of volumes overlap the different systems, simultaneous reference to a volume by two or more systems can occur.

Once the conflict is detected by CLX, two situations may arise:

- the option <**NO_AUTOCR = VOL_BUSY**> is not selected in the configuration file:
  CLX issues a CANCEL_REQUEST (or CR) for the request of the system that is trying to use a volume already used by another job on another system. The step is aborted.
- the option <**NO_AUTOCR = VOL_BUSY**> is selected in the configuration file:
  Periodically until the cartridge becomes available (released and dismounted by the other job) or until a CANCEL_REQUEST (or CR) command is issued by the operator, the following message is displayed:

  ```
  TU62 <CLX version> VOLUME <volume> IN USE : JOB PENDING
  ```

In case of multi volume file, the system could simultaneously access the same file without simultaneously accessing the same volume. In this case, the access conflict is not detected and the consequences are unpredictable.

NOTE:

It is the responsibility of the user or administrator to monitor usage and avoid accessing the same files or volumes from several systems simultaneously.

For simultaneous access to a file or volume on the same GCOS 7 system, the mechanisms normally used to detect conflict and place requests in the WAIT state are operational.

8. CLX Error Conditions

8.1 Introduction

This section describes the CLX error conditions and gives the error messages relevant to each error condition. The error conditions are grouped by types of errors, such as 'Initialization Errors'. This section also contains examples of JCL and screen output for specific error conditions.

Errors can occur during initialization of CLX while:

- system resources are being acquired,
- the device status is being resynchronized.

Errors can occur during mount/dismount operations:

- the ACSLS cannot process the request
- the link between the GCOS 7 and the robot is not operational

In general, error conditions are signaled by specific messages.

8.2 Errors During Initialization

8.2.1 Installation Errors

- The Marketing Identifier is not installed.

  `TU00 <clx version> CLX FACILITY IS NOT AVAILABLE ON YOUR SITE`

- CLX.SYSTEM not installed or not loaded (it should be loaded automatically by the JCL starting CLX).

  `TU18 <clx version> H_CLX CANNOT ACCESS THE SHARABLE MODULE : H_CTLIB`

8.2.2 CLX Configuration Errors

8.2.2.1 Error in trying to read CLX configuration file

`TU50 <clx version> CLX CONFIGURATION FILE ERROR <error>`

8.2.2.2 Incorrect driveid declared for a device.

Case 1: The driveid does not correspond to a drive attached to the library.

The error is detected by CLX at the resynchronization. The following message is issued:

`TU58 <clx version> UNSUCCESSFUL REQUEST QUERY_DRIVE <device> (<driveid>): DRIVE NOT IN LIBRARY.`

CLX aborts (severity 4).

Case 2: The driveid corresponds to a valid library drive but this is related to another CT.

CLX does not detect the error when it executes the configuration.
Volumes are mounted on wrong devices.
The System Operator can detect the abnormal behavior, seeing what follows:

- The Device Manager repeats the MOUNT message although the volume is mounted, and requests a Dismounting of the volume for the device on which it is mounted.

- CLX ignores the dismounting requested by device manager and put the new (repeated) mount messages in its queue.
- To recover, you must cancel the request by using the CANCEL_REQUEST command and hold the device by using the MDHW command until you modify the CLX configuration and restart CLX.

8.2.3 Error in CLX Job Submission

8.2.3.1 CLX startup under an incorrect project (does not have the attribute MAIN)

```
TU52 <clx version> FILTERS CANNOT BE CREATED : ACCESS RIGHTS
VIOLATION.
```

8.2.3.2 A CLC job or another CLX job already active

```
TU00 <clx version> CLX CONFLICT WITH ANOTHER CARTRIDGE LIBRARY
COMPONENT (CLX OR CLC).
```

8.2.3.3 The command CLX already created by another product

```
TU53 <clx version> OPERATOR COMMAND CANNOT BE CREATED : DUPNAME.
```

8.2.3.4 System abnormal behavior

```
TU50 <clx version> CLX INITIALIZATION FAILED : < ERRNB = error-
number, system-return-code >
```

8.2.4 GCOS 7 Environment Errors

8.2.4.1 Error at opening of DOF 7-PO session

```
TU51 <clx version> DOF 7-PO SESSION CANNOT BE OPENED
```

8.2.4.2 Error at creation of filters

```
TU52 <clx version> FILTERS NOT CREATED - CLX STOPS
```

8.2.4.3 Error at creation of the CLX command

```
TU53 <clx version> CLX OPERATOR COMMAND CANNOT BE CREATED :
<return-code>
```

8.2.5 Device Status Resynchronization Errors

Refer to "CLX Resynchronization and Recovery" in Chapter 9.

8.3 Errors During Operation

8.3.1 GCOS 7 Environment Errors

8.3.1.1 Abnormal response from the ACSLS

```
TU64 <clx version> ACSLM OR CLX INTERNAL ERROR
```

8.3.1.2 Abnormal behavior of CLX

```
TU65 <clx version> EMERGENCY SHUTDOWN : CLX ERROR < proc_name,
ERRNB = error_number, return-code>.
```

8.3.2 Robot (LSM) Errors

8.3.2.1 One or several LSMs is (are) not online.

```
TU04 <clx version> CLX WAITING FOR LSM TO BE ONLINE
TU25 <clx version> NOW MOUNT & DISMOUNT REQUESTS ARE NO MORE
HANDLED BY CLX
TU05 <clx version> LSM xxx STATE : xxx
```

If one or more LSMs are not operational, CLX stops filtering the messages issued by the Device Manager and waits until all LSMs are online.

When all LSMs are online, CLX automatically carries out a resynchronization and resumes filtering the messages issued by the Device Manager.

As long as LSMs are not operational, cartridge library can be used in manual mode (refer to "Robot Failure" and "Operation in Degraded Mode." in Chapter 9.

8.3.3 Server or Telecommunication Failure

If the link with the ACSLS is broken or there is no response from the library server, the step H_CLX stops filtering the messages issued by the Device Manager, waits for a given time, and then aborts if the link is not re-established. The step is not restarted automatically unless the JCL of the job CLX is modified by the System Administrator. The operator can mount/dismount the cartridges, either manually or from the library server console, until the link is repaired. Refer to "Communication Link Failure" or "Operation in Degraded Mode" in Chapter 9.

If the link with the ACSLM is re-established before CLX stops, CLX performs a re-synchronization to ensure the stability of the device status.

8.3.3.1 The ACSLM is idle or CLX does not receive responses for the ACSLS requests

```
TU62 <clx version> TIMEOUT ON ACSLM REQUEST : <request> xxx NOT
ACKNOWLEDGED
TU62 <clx version> TIMEOUT ON ACSLM REQUEST : NO RESPONSE TO
<request> <xxxx>
TU35 <clx version> WAITING FOR RESPONSE TO REQUEST : <request> xxx
TU35 <clx version> CLX REPEATS REQUEST : <request> xxx
TU09 <clx version> ACSLM : STATE xxx
TU64 <clx version> ACSLM OR CLX INTERNAL ERROR
TU65 <clx version> CLX EMERGENCY SHUTDOWN : ACSLM DOWN
```

Refer to "ACSLS Not Operational" in Chapter 9.

8.3.3.2 SSI Errors

SSI is not active

```
TU54 <clx version> CLX CANNOT SEND REQUEST TO SSI (VERIFY THAT
SSI/HSL/TNS ARE ACTIVE)
TU65 <clx version> CLX EMERGENCY SHUTDOWN: SSI FAILURE
```

CLX cannot receive messages from SSI

```
TU55 <clx version> SSI FAILURE
```

Refer to "Communication Link Failure" and "Operation in Degraded Mode" in Chapter 9.

8.3.4 Errors During Preparation of WORK Volumes

The following error and warning messages can occur when preparing WORK cartridges:

Case 1: A work volume is prepared whereas the scratch pool selected in the CLX configuration file is not defined on the ACSLS.

The following message is issued:

```
TU58 <clx version> UNSUCCESSFUL REQUEST 'SET SCRATCH <volume>'
POOLID = <poolid> :POOL NOT FOUND
```

As a result, the volume is in a WORK status for GCOS 7 but doesn't have the scratch attribute for the UNIX server, the volume will never be selected as a work volume.

Check the pool identifier in the CLX configuration file and check that the pool has been defined in the ACSLS (using the query pool command). You may either modify the pool identifier in the configuration file and restart CLX, or define the pool, include the volume in the pool using the ACSSA command "define pool" and run the volume preparation again.

EXAMPLE:

Pool number 3 selected in the CLX configuration is not defined in the ACSLS.

```
ACSSA> q pool all
02-25-94 09:40:47 Pool Status
 Identifier Volume Count Low Water Mark High Water Mark Attributes
 0             0          0                - 2147483647
 1             0          0                - 4
 2             0          0                - 5
 10            0          1                - 3
ACSSA>
```

Configuration file:

```
TOSSI = 300000
TOACSLM = 300000
TOLSM = 300000
TORPRQ = 120000
TORPREAD = 2000
POOLID_18T = 3
POOLID_36T = 6
MAXTOSSI = 10
LSMID = 0,0
```

```
CT15 = 0,0,1,0
CT16 = 0,0,1,1
CT17 = 0,0,1,2
CT18 = 0,0,1,3
VSN = 00182*
VSN = 00183*
VSN = 00184*
VSN = 00186*
VSN = 00187*
VSN = 00188*
VSN = 007518
VSN = 007519
S: SCLX
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY
 PREVIOUS CLX SESSION
 TU03 V3.0 CLX IS RUNNING
 TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED
 AUTOMATICALLY
 JB08 X1390.3 STEP H_PRTP XPR=2 PGID=18
*  09.49 CT16 MOUNT 001877 LIB FOR X1390
 DV04 X1390 WAITS FOR VOLUME 001877
 TU11 V3.0  CT16 IN LIBRARY : 001877 MOUNTED
 09.50 CT16 PREMOUNTED 001877 WORK LIB
*  DW10 CT16 DISMOUNT 001877 W
 TU12 V3.0  CT16 IN LIBRARY : 001877 DISMOUNTED
 TU58 V3.0  UNSUCCESSFUL REQUEST 'SET_SCRATCH 001877' POOLID =   3
                                                  : POOL NOT FOUND
```

How to reestablish a correct situation:

At first, define the pool with, for example low_water_mark set to 1 and high_water_mark set to 100.

```
ACSSA > define pool 1 100 3
```

Then, include the volume into the pool:

```
ACSSA > set scratch 3 001877
```

Case 2: The number of cartridges in the scratch pool has just reached or had already reached the maximum number (high water mark) specified when the pool was defined (refer to the ACSSA command DEFINE POOL).

The following message is issued:

```
TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL <dvchar>
POOLID = <poolid> AT HIGH WATER MARK
```

This message is a warning message.

8.3.5 Volume Mounting Errors

CLX or ACSLS can detect errors during the mounting of a volume. CLX sends messages to the operator and, when the error cannot be solved automatically, CLX issues a CANCEL REQUEST. This cancels the step for which the volume mounting was necessary. Sometimes CLX removes the selected device from the configuration.

One of the following messages is issued:

```
TU58 <clx version> UNSUCCESSFUL REQUEST LOCK DRIVE <device>
                                    (<driveid>) : <status response>
TU58 <clx version> UNSUCCESSFUL REQUEST LOCK VOLUME <volume> :
                                                  <status response>
TU57 <clx version> UNSUCCESSFUL REQUEST MOUNT <volume> ON <device>
                                    (<driveid>) : <status response>
```

<volume> stands for volume name (volser).
<device> stands for the device name.
<driveid> stands for physical address of the device.
<status response> stands for status returned by the ACSLS for the response.

The <status response> might be:

```
STATUS_UNREADABLE_LABEL (1- 2)
STATUS_MISPLACED_TAPE (1- 2)
STATUS_VOLUME_IN_USE (1)
STATUS_VOLUME_IN_DRIVE (1- 2)
STATUS_VOLUME_NOT_IN_LIBRARY (1)
STATUS_SCRATCH_NOT_AVAILABLE
STATUS_DRIVE_OFFLINE (1- 2)
STATUS_DRIVE_IN_USE (1 - 2)
STATUS_DRIVE_NOT_IN_LIBRARY (1 - 2)
```

For the status marked with a (1), CLX generates a CANCEL_REQUEST automatically and issues the following message:

```
TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF
<volume> ON <device>.
```

For the status marked with a (2), all requests waiting for the failed drive or the failed cartridge are rejected, i.e. CLX removes the requests from its queue and issues a message for each of them:

```
TU37 <clx version> CLX REJECTS REQUEST MOUNT <volume> ON
<device> : <request status>.
```

For the status STATUS_DRIVE_OFFLINE, CLX tries to isolate the failed drive with the command MDHW CTnn OUT. The following message is issued:

```
TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF
CONFIGURATION
```

For the status STATUS_MISPLACED_TAPE, the following message is issued:

```
TU59 <clx version> ACSLM CANNOT FIND CARTRIDGE <volume> - AN AUDIT
IS REQUIRED
```

User Action:

This depends on the status displayed in the messages:

- **STATUS_MISPLACED_TAPE**: run an audit ACSSA command from the UNIX terminal.
- **STATUS_UNREADABLE_LABEL**: eject the cartridge manually, replace the optical label.
- **STATUS_SCRATCH_NOT_AVAILABLE**: you must restock some scratch volumes by using the PREPARE_TAPESET with the WORK option.
- **STATUS_DRIVE_OFFLINE**: you must put the drive online using the "vary" command.
- other cases: see the examples listed below.

8.3.5.1 Reference to a volume that does not belong to the library.

EXAMPLE:

```
15.33 X111 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.33 X111 STARTED FILSAVE OPERATOR P
* 15.33 CT17 MOUNT 001888 LIB FOR X111
 TU58 V3.0 UNSUCCESSFUL REQUEST "LOCK_VOLUME 001888" : VOLUME NOT IN LIBRARY
 TU32 V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF 001888 ON CT17
 DV36 CT17 CANCEL REQUEST APPLIED TO X111
 15.33 X111.1 ABORTED FILSAVE OPERATOR P SEV3
```

The problem may have been caused by a user error.

8.3.5.2 A work volume is requested whereas the scratch pool is empty.

This case may happen in the following situations:

1. the scratch pool, specified in CLX configuration, is empty and the option overflow was not specified for the scratch pool,
2. the option overflow is specified, the scratch pool declared in the CLX and the common pool are empty.

CLX rejects the WORK mount request and cancels the request which aborts the step. The following messages are displayed:

```
TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF
<volume> ON <device-name>.
TU57 <clx version> UNSUCCESSFUL REQUEST 'MOUNT WORK ON
<device-name> <driveid>' POOLID = <poolid> :SCRATCH NOT AVAILABLE
```

You must fill the pool by using the PREPARE_TAPESET utility.

EXAMPLE:

```
ACSSA> q pool 1
02-25-94 09:55:35 Pool Status
 Identifier Volume Count Low Water Mark High Water Mark Attributes
 1            0           0               -4

 15.49 X116 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.49 X116 STARTED FILSAVE OPERATOR P
 JB08 X116.1 STEP H_UTILITY XPR=8 PGID=26
* 15.49 CT16 MOUNT <<WORK>> LIB VOLWR FOR X116
 TU57 V3.0 UNSUCCESSFUL REQUEST "MOUNT WORK ON CT16 (0,0,1,1)" POOLID =   3:
 SCRATCH NOT AVAILABLE
 TU32 V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF ON CT16
 15.50 X116.1 ABORTED FILSAVE OPERATOR P SEV4
```

You must restock volumes in the scratch pool. Refer to "Use of Work Volumes" in Chapter 5.

8.3.5.3 A work volume is requested when the scratch pool has not been defined.

CLX rejects the WORK mount request and cancels the request. The following messages are displayed:

```
TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF
<volume> ON <device-name>
TU57 <clx version> UNSUCCESSFUL REQUEST 'MOUNT WORK ON
<device-name> <driveid>' POOLID = <poolid> :POOL NOT FOUND.
```

You must define the pool by using the ACSSA command "define pool" and then introduce cartridges in this pool using PREPARE_TAPESET utility.

EXAMPLE:

Content of CLX.SLLIB..CLX_CONFIG

```
TOSSI = 180000
TOACSLM = 180000
TOLSM = 180000
TORPRQ =120000
TORPREAD = 5000
POOLID_18T = 5
MAXTOSSI = 10
LSMID = 0,0
CT15 = 0,0,1,0
CT16 = 0,0,1,1
CT17 = 0,0,1,2
CT18 = 0,0,1,3
VSN = ******
```

Commands on ESCALA or ESTRELLA

```
ACSSA>q pool all
04-20-94 15:47:05 Pool Status
 Identifier Volume Count Low Water Mark High Water Mark Attributes
 0            0              0-           2147483647
 1            1              1-           10
 2            3              1-           10
ACSSA>
```

Messages issued on the GCOS 7 operator terminal when a step requests a WORK volume

```
 14.42 X741 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 14.42 X741 STARTED FILSAVE OPERATOR P
 JB08 X741.1 STEP H_UTILITY XPR=8 PGID=22
* 14.42 CT16 MOUNT <<WORK>> LIB VOLWR FOR X741
 TU57 V3.0 UNSUCCESSFUL REQUEST "MOUNT WORK ON CT16 (0,0,1,1)" POOLID =   3
 : POOL NOT FOUND
 TU32 V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF WORK ON CT16
 14.42 X741.1 ABORTED FILSAVE OPERATOR P SEV4
```

8.3.5.4 Another system has already mounted the volume on another device.

- with NO_AUTOCR = VOL_BUSY

```
11.30 X1400 IN FILSAVE USER=CLX CLASS=P SPR=6 STATION=BCA9
 11.30 X1400 STARTED FILSAVE CLX P
```

```
 * 11.36 CT16 MOUNT 001879 LIB FOR X1400
  TU58 V3.0 UNSUCCESSFUL REQUEST "LOCK_VOLUME 001879" : VOLUME IN USE
  TU61 V3.0 VOLUME 001879 IN USE : JOB PENDING
```

The step is put in waiting state until the volume is released or until a CANCEL_REQUEST command is entered.

- without NO_AUTOCR = VOL_BUSY

```
 11.36 X1407 IN FILSAVE USER=CLX CLASS=P SPR=6 STATION=BCA9
  11.36 X1407 STARTED FILSAVE CLX P
 * 11.36 CT16 MOUNT 001879 LIB FOR X1407
  TU58 V3.0 UNSUCCESSFUL REQUEST "LOCK_VOLUME 001879" : VOLUME IN USE
  TU32 V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF 001879 ON CT16
  DV36 CT16 CANCEL REQUEST APPLIED TO X1407
  11.36 X1407.1 ABORTED FILSAVE CLX P SEV3
```

A CANCEL_REQUEST has been generated by CLX.

The situation occurs when more than one system attempts to use the same volume simultaneously.

8.3.5.5 The device remains locked by another system.

EXAMPLE :

```
15.45 X114 IN FILSAVE USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 15.45 X114 STARTED FILSAVE OPERATOR P
* 15.45 CT16 MOUNT 001865 LIB FOR X114
 TU58 V3.0 UNSUCCESSFUL REQUEST "LOCK_DRIVE CT16 (0,0,1,1)" : DRIVE IN USE
 TU32 V3.0 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF 001865 ON CT16
 DV36 CT16 CANCEL REQUEST APPLIED TO X114
 15.45 X114.1 ABORTED FILSAVE OPERATOR P SEV3
```

If the device is not used by another system, you must suppress the lock by using the ACSSA command "clean lock".

8.3.5.6 The volume is not authorized to the DPS 7000 applications.

```
TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF
<volume> ON <device>: ILLEGAL ACCESS TO VOLUME
```

If the volume must be authorized, modify CLX configuration file, stop and restart CLX.

8.3.5.7 The device is not declared in the CLX configuration file.

```
TU37 <clx version> CLX REJECTS REQUEST 'MOUNT <volume> ON
<device>': UNKNOWN DEVICE
```

If the device must be authorized, modify CLX configuration file, stop and restart CLX.

8.3.5.8 The ACSLS does not answer a mount request issued by CLX.

The following messages are issued at regular intervals.

```
TU16 <clx version> CLX REQUEST TIMEOUT <device> MOUNT <volume> FOR
<ron>
TU17 <clx version> VERIFY DEVICE <device> STATUS
```

8.3.5.9 The selected device is offline

```
TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF
CONFIGURATION
```

8.3.5.10 The selected device has been held since the mount request was issued by the Device Manager

```
TU37 <clx version> CLX REJECTS REQUEST 'MOUNT <volume> ON
<device>': DEVICE HELD
```

8.3.5.11 Errors reported after the volume has been mounted

EXAMPLE 1:

The volume mounted is a standard volume, but the volser of the magnetic label is different from the volser of the optical label (label inconsistency).

```
 JB08 X1416.2 STEP H_PRTP XPR=2 PGID=24
* 14.08 CT16 MOUNT 001861 LIB FOR X1416
 DV04 X1416 WAITS FOR VOLUME 001861
 TU11 V3.0 CT16 IN LIBRARY : 001861 MOUNTED
 14.09 CT16 PREMOUNTED 123456 LIB
* DW10 CT16 DISMOUNT 123456 S
 TU27 V3.0 CONFLICT BETWEEN OPTICAL AND MAGNETIC LABELS OF CARTRIDGE ON CT16
 TU21 V3.0 ACSLM STATUS OF CT16 (0,0,1,1) : 001861 MOUNTED
 TU23 V3.0 DVMGT STATUS OF CT16 : 123456 MOUNTED
 TU12 V3.0 CT16 IN LIBRARY : 001861 DISMOUNTED
```

EXAMPLE 2:

The write protection selector of the volume does not match with the protection requested. CLX generates a CANCEL_REQUEST (CR).

```
 11.30 X1406 IN FILSAVE USER=CLX CLASS=P SPR=6 STATION=BCA9
 11.30 X1406 STARTED FILSAVE CLX P
* 11.30 CT16 MOUNT 001878 LIB FOR X1406
 JB08 X1406.1 STEP H_UTILITY XPR=8 PGID=24
* DW07 CT16 SWITCH 001878 FOR X1406 TO PERMIT
 TU30 V3.0 DVMGT REQUEST REJECTED :
 CT16 SWITCH 001878 FOR X1406 TO PERMIT
 DV36 CANCEL REQUEST APPLIED TO X1406
 TU11 V3.0 CT16 IN LIBRARY : 001878 MOUNTED
* DW10 CT16 DISMOUNT 001878 S
 11.30 X1406.1 ABORTED FILSAVE CLX P SEV4
 TU12 V3.0 CT16 IN LIBRARY : 001878 DISMOUNTED
```

NOTE:

The volume 001878 is not a WORK volume; otherwise, another WORK volume is requested.

8.3.5.12 Errors During volume dismounting

CLX or the ACSLS can detect errors during the dismounting of a volume. CLX sends messages to the operator for those errors that it cannot resolve automatically.

If a dismount request error occurs, the following message is issued:

```
TU57 <clx version> UNSUCCESSFUL REQUEST DISMOUNT <volume> ON
<device> (<driveid>): <status response>
```

<volume> stands for volume name (volser).
<device> stands for the device name.
<driveid> stands for physical address of the device.
<status response> stands for status returned by the ACSLS for the response.

The <status response> might be:

```
STATUS_ACS_FULL
STATUS_DRIVE_OFFLINE
STATUS_DRIVE_AVAILABLE
STATUS_DRIVE_IN_USE
STATUS_MISPLACED_TAPE
STATUS_UNREADABLE_LABEL
STATUS_VOLUME_NOT_IN_DRIVE
STATUS_AUDIT_IN_PROGRESS
```

others.

Depending on the status value, one of the following messages is also issued:

1. **STATUS_DRIVE_OFFLINE**

   TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF CONFIGURATION

   CLX rejects all other pending requests waiting for the device.

   TU37 <clx version> CLX REJECTS REQUEST 'MOUNT <volume> ON <device>': <reason>

   The status ACS_FULL can occur for a site with multi silos. You should eject at least one cartridge, try to dismount the volume again by using the ACSSA command <dismount> and release the device on which it was mounted.

2. **STATUS_MISPLACED_TAPE**

   TU22 <clx version> ACSLM STATUS OF <volume>: MOUNTED ON <driveid> - AN AUDIT IS REQUIRED

   TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON <device> BY FORCE

   Then, stop CLX and run an audit and restart CLX.

3. **DRIVE_IN_USE or STATUS_VOLUME_NOT_IN_DRIVE**

   TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON <device> BY FORCE

   TU59 <clx version> ACSLM CANNOT FIND CARTRIDGE <volume> - AN AUDIT IS REQUIRED

   Then, stop CLX and run an audit and restart CLX.

4. **STATUS_DRIVE_AVAILABLE**

   The message is an informative message only. The processing continues.

5. **STATUS_UNREADABLE_LABEL**

   TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON <device> BY FORCE

   CLX rejects all other pending requests waiting for the volume.

   TU37 <clx version> CLX REJECTS REQUEST 'MOUNT <volume> ON <device>': STATUS_UNREADABLE_LABEL

6. **STATUS_AUDIT_IN_PROGRESS**

   TU35 <clx version> CLX REPEATS REQUEST: <request> <volume> <device>(<driveid>)

8.3.6 Work Volume Dismounting Errors

NOTE:
All errors mentioned in the previous section are valid for this section.

If CLX does not succeed in setting the scratch attribute to the volume, the following message is issued:

```
TU58 <clx version> UNSUCCESSFUL REQUEST 'SET SCRATCH <volume>'
POOLID = <poolid> : <status response>.
```

The <status response> might be:

```
STATUS_CANCELLED
STATUS_VOLUME_IN_USE
STATUS_POOL_NOT_FOUND
```

8.3.7 Volume Mounting/Dismounting Warning Messages

The following messages are issued when low and high water marks declared for the pool are reached. These messages are warning messages.

1. **STATUS_POOL_LOW_WATER**

   ```
   TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL
   <dvchar> (POOLID = <poolid>) AT LOW WATER MARK
   ```

2. **STATUS_POOL_HIGH_WATER**

   ```
   TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL
   <dvchar> (POOLID = <poolid>) AT HIGH WATER MARK
   ```

EXAMPLE 1:

The number of cartridges in the scratch pool has just reached or had already reached the minimum number (low water mark) specified when the pool was defined.

The following message is issued:

```
TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL <dvchar>
(POOLID = <poolid>) AT LOW WATER MARK
```

You can choose between the 3 following solutions:

1. add some cartridges from the scratch pool by using the PREPARE_TAPESET utility,
2. ignore the message,

3. modify the low water mark attribute for the pool by using the ACSSA command DEFINE POOL.

EXAMPLE 2:

If a cartridge has a WORK attribute, but does not have the scratch attribute, or if it has the scratch attribute but does not belong to the scratch pool selected in the CLX configuration, the cartridge will never be selected as a scratch volume by the ACSLS for the local GCOS 7. The first case can occur when the cartridge is prepared as a WORK volume before being entered in the silo, or when the cartridge is prepared while CLX is not running. The second case can occur if the CLX configuration has been changed after the preparation of work volumes.

To know the cause of the anomaly:

Log on to the ESCALA or ESTRELLA server and use the ACSSA commands `query pool`, `query scratch` and `query volume` or logged on to GCOS 7, use the QUERY_CARTRIDGE_LIBRARY command. If the pool selected in the configuration is correct, reprepare all work volumes by using the PREPARE_TAPESET utility. In the other case, modify the poolid parameter (POOLID_18T or POOLID_36T) in the CLX configuration file and then stop and restart CLX.

8.3.8 Errors Produced by System Limits

When the CLX internal tables are full, one of the following messages:

```
TU56 <clx version> CLX INTERNAL ERROR: TABLE OF RESOURCE <table
name> OVERFLOW
```

```
TU20 <clx version> CLX TABLE OF MESSAGES OVERFLOW
```

reports a risk that device manager messages (volume mount requests) might be lost.

The loss of a mount request is compensated for by the fact that such a message is repetitive.

If these messages are issued, contact your support.

9. How to Detect and Recover from Failures

9.1 GCOS 7 Crash

To have an automatic restart of CLX service after a crash, include the SCLX command in the system startup. In this case, you must also specify at CLX installation the automatic startup of SSI at OPEN7 startup.

Some messages can appear if CLX is started before SSI.

9.2 CLX Abort

System Behavior:

The step H_CLX can abort due to the following causes:

- GCOS 7 system error,
- CLX configuration error (ex. wrong server's name in SSI configuration),
- SSI has aborted / is inactive (*),
- ACSLS is not running (*),
- Failure on telecommunication link between GCOS 7 and the library server (*),
- CLX internal error,
- Another CLX or CLC component is active.

For errors marked with an (*) in the list above, the step H_CLX stops after a given time, during which CLX examines whether the error has been corrected.

Severity and status are set when the step aborts.

INCIDENT	SEVERITY	STATUS
Recoverable System or CLX Internal error	3	
Conflict with another CLX or another CLC	4	21000
Unrecoverable System or CLX internal error. Error in the CLX configuration file	4	22000
No response from the Library Server	4	23000
SSI not running - abnormal behavior of SSI	4	24000
Command TCLX STRONG [DUMP]	1	
CLX.SYSTEM not loaded	4	26000
Marketing Identifier not installed	4	27000
Job canceled	5	
Crash	6	61000

Automatic restart of the step H_CLX is not provided unless the step aborts for a recoverable system or a CLX internal error (severity 3).

The System Administrator can request an automatic restart by modifying the JCL which handles the step H_CLX. This JCL is stored in the CLX subfile of the library CLX.SLLIB.

According to the type of the failure, one or several messages are displayed on the operator screen, giving the cause of the abort. A binary dump is saved in SYS.SPDUMP.

The following message is displayed on the operator screen:

```
TU65 <clx version> CLX EMERGENCY SHUTDOWN: <reason>
```

The following messages might also be displayed on the operator screen:

```
TU38 <clx version> DVMGT PENDING REQUEST : <request>
TU39 <clx version> DVMGT OUTSTANDING REQUEST : <request>
```

TU39 gives mount/dismount requests interrupted by the abort.
TU38 gives pending mount/dismount requests not processed yet and dropped by CLX.

User Action: You may choose to:

- have the failure fixed, wait for the automatic startup of CLX or restart CLX if it has stopped,
- terminate CLX if it is running, using the TCLX command. Then, according to the incident, use the manual mode or the semi-automatic mode. The manual mode consists of handling the cartridges manually from the inside of the silo. The semi-automatic mode consists of transmitting the mount/dismount requests by using the UNIX server terminal. Manual and semi-automatic modes are described in "Operation in Degraded Mode" later in this chapter.

The System Administrator can disable or enable the automatic restart by modifying the JCL managing the H_CLX step. Modifications of the JCL are effective for the next CLX session.

9.3 CANCEL_JOB CLX

The CANCEL_JOB is ineffective for CLX until the step is running. To terminate CLX, you must use the command TCLX. The CANCEL_JOB can help terminate the job if it keeps aborting and restarting.

9.4 ACSLS Not Operational

The ACSLS is not operational in the following cases:

1. it has not been started on the ESCALA or ESTRELLA server
2. it is in the idle state due to an ACSSA "idle" command
3. one of its processes is in bad condition

System Behavior:

CLX watches the server state by using the request "query server." The interval of time between 2 query server requests is defined by the TOACSLM parameter in the CLX configuration.

CLX supposes that ACSLS is not operational when CLX gets no response from the library server either on processing a mount/dismount request or on watching the library server availability.

Case 1: The failure is detected in the process of watching the ACSLM:

If the automatic processing is running, CLX suspends it. It gives up all requests it was processing and it drops all requests which are in its queue waiting for a resource (volume or device). For each of these requests, CLX issues a message:

```
TU38 <clx version> DVMGT PENDING REQUEST : <request>
TU39 <clx version> DVMGT OUTSTANDING REQUEST : <request>
```

TU38 gives pending mount/dismount requests not yet processed and dropped by CLX.
TU39 gives mount/dismount requests interrupted by the abort.

CLX waits for a given time and then repeatedly checks the ACSLM again until the server sends a response. The waiting time is defined in the CLX configuration by the TORPRQ parameter.

If, after ten tries, the server is still idle or it does not answer the requests, CLX aborts and the following messages are displayed:

```
TU62 <clx version> TIMEOUT ON ACSLM REQUEST: NO RESPONSE TO QUERY
     SERVER
TU65 <clx version> CLX EMERGENCY SHUTDOWN : ACSLM DOWN.
```

What happens next is described in the earlier subsection called "CLX Abort."

However, if CLX gets a response from the server, CLX carries out a resynchronization and resumes filtering messages issued by Device Manager.

Case 2: The failure is detected during a mount/dismount operation:

If CLX does not get response to a request such as: lock - unlock - mount - dismount - set scratch, CLX repeats the request to the server. It repeats the request once if the request has been acknowledged by the server, otherwise it repeats the request twice. The interval of time between 2 repetitions is declared in the CLX configuration parameter TORPRQ.

One or several of the following messages are displayed on the operator screen:

```
TU62 <clx version> TIMEOUT ON ACSLM REQUEST : <request> <volume>
     ON <device> (<driveid>) NOT ACKNOWLEDGED
TU62 <clx version> TIMEOUT ON ACSLM REQUEST : NO RESPONSE TO
     <request> <volume> ON <device> (<driveid>)
TU35 <clx version> WAITING FOR RESPONSE TO REQUEST : <request>
     <volume> ON <device> (<driveid>)
TU35 <clx version> CLX REPEATS REQUEST : <request> <volume> ON
     <device> (<driveid>)
```

If, despite these repetitions, CLX does not get any response, it goes into its process of watching the server as described in the first case, unless CLX was processing a resynchronization or was in its process of termination, in which case the step H_CLX aborts (severity 4, status 23000). CLX stops unless the JCL supplied at CLX installation has been modified by the System Administrator.

User Action: The following sequence of operations can be performed:

- if there is a core file in the /export/home/ACSSS directory, save it on a tape (this will help your Bull support with the analysis of the incident)
- try to stop the ACSLS and restart it:
  - login acsss (enter the correct password)
  - kill.acsss
  - rc.acsss.

  This can also be done by rebooting the ESCALA or ESTRELLA if you specified an automatic startup of ACSLS in the ACSLS configuration.

If the problem persists, run bdb.acsss to create a backup tape, stop and restart the ACSLS.

If the problem still persists, try to:

- run an ACSLS configuration:
- login acsss (enter the correct password)
- kill.acsss
- cd config
- acsss_config etc...(Refer to the *STK ACSLS Installation Guide*)
- restart the ACSLS:
  - rc.acsss
- and run an audit of the library:
  - login as acssa
  - ACSSA> audit acs ...

If the operations listed above do not restart the ACSLS, you can employ manual mode.

NOTE:

To avoid problems with the ACSLS, you are advised to run a backup (bdb.acsss) at regular intervals (refer to "ACSSA Utilities" in Chapter 6).

9.5 Communication Link Failure (SSI - TNS - OPEN7 - HSL)

System Behavior: CLX detects the failure during a mount/dismount operation or in the process of watching the availability of the ACSLM. If CLX detects the failure on the process of sending a request to the server, it displays the message:

```
TU54 <clx version> CLX CANNOT SEND REQUEST (VERIFY THAT
     SSI/HSL/TNS ARE ACTIVE).
```

CLX waits for a while and retries the request again. If the failure persists, another TU54 message is displayed. The waiting time between two retries is defined at CLX configuration with the TOSSI parameter unless CLX is in the process of watching the server or the LSMs- in which case the waiting time is given by TOACSLM or TOLSM respectively.

The maximum number of retries is defined at CLX configuration with the MAXTOSSI parameter. If MAXTOSSI equals 0, the CLX waits until the incident disappears.

After MAXTOSSI repetitions, the step H_CLX issues the following message and aborts (severity 4 status 24000). The job CLX stops unless the JCL supplied at the CLX installation is modified by the System Administrator:

```
TU65 <clx version> CLX EMERGENCY SHUTDOWN: SSI FAILURE
```

User Action: Look at the SSI log files for the cause of the failure.

Native case: – */clx/*event*.log on OPEN7*

XTA case – **/clx/<GCO7_NAME>/*event*.log on ACSLS server**

If the message <Undefined hostname> appears in the SSI log file:

1. Check that the UNIX server is declared in the telecommunication configuration on the ssi server (/etc/hosts).
2. Check parameters

Native case *Check the CSI_HOSTNAME value (ESCALA or ESTRELLA server name) in the /clx/ t_ssi.sh script file in the OPEN7. This file is updated at CLX installation according to information supplied by the operator. If CSI_HOSTNAME is incorrect, modify the file or rerun an SSI configuration, then stop and restart SSI using the TSSI and SSSI commands. Restart CLX if it has terminated.*

XTA case **Don't CSI_HOSTNAME. This value is dynamically updated. Check SSIHOST and SSIPORT values in CLX.SLLIB..CLX_CONFIG (or in any other library member to by used with START_CLX command) on GCOS7. If you modify them, then stop CLX and SSI (TCLX, TSSI) and restart them (SSSI, SCLX) after having checked G_CLX_SSI global variable value (SCLXSSI).**

3. If the cause of the failure does not appear in the log file, try to detect the component which fails by doing what follows:

   a. SSI failure

      Use the GCL command DSSI to find out if SSI is running. If it is not running, start it using the command SSSI. If this command does not work or if the command says that SSI is active, log on to the ssi system to verify that the SSI processes are active:

      Log on to the system and enter "ps -ef |grep clx". You must get something which looks like the following:

```
   304 280 0 15:41:56 ttyp0 0:00 grep clx
clx 188 1 0 10:39:19 ? 3:35 /clx/[<GCOS_NAME>]bin/ssi 186 50004 23
```

      If this process is missing, enter: TSSI then SSSI.

XTA case

S: LET # %G_CLX_SSI or SET_CLX_SSI (or SCLXSSI) will display the value of G_CLX_SSI global variable. If it is not correct, modify CLX.SLLIB..CLX_CONFIG (LIBMAINT PROCESSOR, …), issue SCLXSSI command again, then issue DSSI GCL command.
If this command shows that SSI is not running, start it, using the SSSI command.
If this command does not work or says that SSI is active, log onto UNIX library server to verify that the suitable SSI process is active, with UNIX command "ps –ef |grep clx\/<GCOS_NAME>".
If the desired process is missing, enter TSSI and SSSI.

   b. Communication failure

Native case

OPEN7/HSL/TNS failure

Connect to GCOS 7 and enter the command DJ EX to check that the following jobs are running:

X181.1 EX TNS	*OPERATOR S SYS H_TNS*
X498.5 EX OPEN7	*OPEN7 P BATCH H_SPIX*
X502.2 EX HSL_SERV	*OPEN7 P BATCH H_HSL_SV*
X503.1 EX OPEN7R	*OPEN7 P BATCH H_SPIXR*
X504.1 EX OPEN7P	*OPEN7 P BATCH H_SPIXP*
[X505.1 EX OPEN7P	*OPEN7 P BATCH H_SPIXP] (optional)*

If you cannot see the OPEN7, OPEN7R and OPEN7P jobs, enter: OPEN7 STOP and then OPEN7 START to restart OPEN7.

If HSL_SERV does not appear, this means that HSL is not running. Connect to OPEN7 and use the <open7adm command >, then select the function sysadm, then select the function restart _hsl or use the GCOS 7 command to restart OPEN7 as explained above (the first solution avoids an OPEN7 termination)

If the TNS job is not running, enter STSVR TNS to restart it. Notice that TNS is used only at the OPEN7 startup. CLX can work without it unless OPEN7 needs to be restarted.

Connect to OPEN7 and enter "ps -ef | grep root", the following processes must be active:

```
root 113 1 0 09:53:27 ? 0:00 /etc/inetd
root 123 1 0 09:53:54 ? 0:22 /etc/socket_serv
root 119 1 0 09:53:53 ? 0:00 /etc/portmap
root 134 132 0 09:53:58 ? 0:00 /etc/subux -l 6
root 128 123 0 09:53:56 ? 0:00 /etc/socket_serv
root 132 1 0 09:53:58 ? 0:01 /etc/subux -l 6
```

If one process is not present, restart OPEN7.

After restarting OPEN7 or HSL, restart CLX if it has terminated.

XTA case

INTEROP7/SOCKET failure : Start the interop7 administration snap-in and click on the interop_basic. Verify that sockg7 server is running (green light after refresh function). Else restart sockg7 server

c. Other failures

If the SSI process is not working correctly, try to recover it by stopping and restarting SSI (TSSI, then SSSI).

If the failure persists, log on to the ssi system, save the file into another file (cp /clx/[<GCOS_NAME>]*event*.lo <new file name>, print it and give the listing to your Bull support.

Use the semi-automatic mode (refer to "Operation in Degraded Mode" later in this chapter) and contact your Bull support.

9.6 Robot Failure

System Behavior:

CLX detects the failure of a mount or dismount operation. It suspends the automatic processing of the mounting/dismounting operations until all LSMs are operational.

The messages TU04 and TU25 are issued:

```
TU04 <clx version> CLX WAITING FOR LSMs TO BE ONLINE.
TU25 <clx version> NOW MOUNT & DISMOUNT REQUESTS ARE NO MORE
     HANDLED BY CLX
```

CLX gives up all the requests it was processing and drops all requests which are in its queue waiting for a resource (volume or device). For each of these requests, CLX issues one of the 2 following messages:

```
TU38 <clx version> DVMGT PENDING REQUEST : <request>
TU39 <clx version> DVMGT OUTSTANDING REQUEST : <request>
```

TU38 gives pending mount/dismount requests not yet processed and dropped by CLX.
TU39 gives mount/dismount requests operation interrupted by the abort.

CLX checks the LSMs state at regular intervals, until all LSMs are online. The waiting time between two checks is defined in the CLX configuration with the TOLSM parameter.

At each check, CLX displays the state of the LSMs through a TU05 message:

```
TU05 <clx version> LSM <acs> <lsm> : STATE OFFLINE
TU05 <clx version> LSMs <acs> <lsm> : STATE OFFLINE PENDING
TU05 <clx version> LSMs <acs> <lsm> : STATE DIAGNOSTIC
TU05 <clx version> LSMs <acs> <lsm> : STATE RECOVERY
```

As soon as all LSMs are online, the following message is issued, and CLX carries out a resynchronization and restarts the automatic processing of mount/dismount operations:

```
TU05 <clx version> LSMs ARE ONLINE
```

User Action:

Try to put the LSMs in the online state by using ACSSA command "vary on" from the UNIX terminal or by using the LSM panel.

If the LSMs robot cannot be put online, the manual mode can be used until the robot is repaired (refer to "Operation in Degraded Mode" later in this chapter).

9.7 CICC or PSI Failure

If the CICC or PSI fails, GCOS 7 tries to recover. If the recovery procedure fails, the path is isolated. Note that:

- if there is only one path, the applications are aborted,
- if there are several paths available, the recovery is performed automatically. Some active I/Os may have abnormal terminations,
- non-repeatable jobs must be reactivated.

9.8 Transport or Cartridge Failure

System Behavior:

If an I/O error occurs, the GCOS 7 access method attempts a recovery. If the recovery fails and the job is repeatable, the job is restarted; otherwise, it is aborted and the operator will have to restart it.

If a ready event is not communicated to GCOS 7, although the cartridge is physically mounted, the problem is primarily a data-path problem. GCOS 7 repeats the mount message on the Main terminal. The system remains in deadlock for the transport. To resolve the problem, stop CLX, dismount the cartridge by using the ACSSA commands "dismount" and "unlock" as specified in semi-automatic mode (refer to "Semi-Automatic Mode" later in this chapter). Then, restart CLX. If the problem persists, place the transport out of configuration, cancel jobs which wait for the availability of the device.

If a mount request error occurs, one the following messages is issued:

```
TU58 <clx version> UNSUCCESSFUL REQUEST 'LOCK DRIVE <device>
     (<driveid>)' : <status response>
TU58 <clx version> UNSUCCESSFUL REQUEST 'LOCK VOLUME <volume>' :
     <status response>
TU58 <clx version> UNSUCCESSFUL REQUEST 'SET SCRATCH <volume>' :
     POOLID = <poolid> : <status response>
TU57 <clx version> UNSUCCESSFUL REQUEST 'MOUNT <volume> ON
     <device> (<driveid>)' : <status response>
TU57 <clx version> UNSUCCESSFUL REQUEST 'MOUNT WORK ON <device>
     (<driveid>)' POOLID = <poolid> : <status response>
```

<driveid> stands for physical address of the device

<poolid> stands for scratch pool identifier

Depending on the case, one of the following messages might also be issued:

```
TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF
     <volume> ON <device>.
TU37 <clx version> CLX REJECTS REQUEST 'MOUNT <volume> ON
     <device>' : <request status>.
TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF
     CONFIGURATION.
TU59 <clx version> ACSLM CANNOT FIND CARTRIDGE <volume> - AN AUDIT
     IS REQUIRED.
```

For further information, refer to "Volume Mounting Errors" in Chapter 8.

9.9 Operation In Degraded Mode

This includes the manual mode and the semi-automatic mode. With the manual mode, cartridges are mounted/dismounted on the devices by the operator. With the semi-automatic mode, cartridges are mounted/dismounted by the robot according to the ACSSA commands entered from the ESCALA or ESTRELLA server. Both modes should be avoided as much as possible, and used in case of unrecoverable failure.

9.9.1 Manual Mode

If the server or the library fails, the robot is no longer being controlled.

Operations are done entirely in manual mode, without the assistance of the library server.

Operate as follows:

- You must terminate CLX. If the robot is online, place it offline by using the LSM panel.
- When you see a MOUNT and DISMOUNT message on the DPS 7000 Main terminal, you have to search for the cartridge within the LSM and mount it on or dismount it from the designated transport.
- Do not premount a volume. Wait for the mount request to be issued.
- Mount the volume on the device designated by GCOS 7 in the mount request. Dynamic reconfiguration is not authorized for cartridge library devices.
- You keep a hard copy of the Main console in order not to miss DISMOUNT messages as these messages are not repetitive, unlike the MOUNT messages. If you miss dismount requests, some jobs may stay waiting for a long time.
- Let GCOS 7 unload the volume, and wait for the dismount request before dismounting the volume manually.
- Do not use the device push-buttons (Ready, Rewind, Unload).
- After the cartridge has been used, you replace it in the correct storage cell, that is, in the cell it was stored in before it was mounted on the drive.
- Before you return to automatic mode, remove every cartridge entered manually in the silo.

If the last two points are not followed, you will have to run an ACSSA command "audit" before you return to automatic mode. Then, restart CLX. A resynchronization between CLX and ACSLS takes place automatically when CLX restarts.

9.9.1.1 Use of Work Volumes

You need to keep a list of scratch volumes either by using the volume report utility or by using the ACSSA command "query scratch." Select a volume on the basis of the volume scratch list.

The following user actions are necessary when the library server and robot becomes operational:

- If a volume has passed from status 'work' to status 'non-work' during the manual mode, you must use the ACSSA command "set scratch off" to update the library server database. If you forget to do so, the volume might be selected as a work volume for an automatically processed "mount work" request. However, in this case, GCOS 7 detects the anomaly: it dismounts the volume, removes its scratch attribute and another volume is mounted.
- If a volume has passed from status non-work to status work during the manual mode, you must either use the ACSSA command "set scratch" or prepare the volume with option WORK again. If you forget to do so, the volume will never be selected by the library server for a "mount work" request.

  These operations must be performed before CLX be restarted.

9.9.1.2 Returning the automatic mode

For a Wolfcreek library, when the LSMs are put online after manual operations, an automatic audit is performed by the LMU but this does not update the library server database. The database is updated only by running the ACSSA command "audit."

For this reason, if there is a difference in the content of the silo or the locations of the cartridges between the time the manual mode was used and after the automatic mode was restarted, you should run the ACSSA command "audit." If you don't do so, error messages appear on mount/dismount requests. To save time, you can perform a partial audit, assuming that you have noted which cells do not have the same state.

9.9.2 Semi-Automatic Mode

If CLX, SSI or OPEN7 aborts, or if there is a communication failure between GCOS 7 and the library server, the relaying of requests between the system and the library server is no longer ensured. It is possible to operate in semi-automatic mode, by using the ACSSA commands from the UNIX server terminal.

Semi-automatic mode can be used when:

- CLX no longer receives orders issued by the system,
- CLX has aborted and the restart fails,
- SSI has aborted and its restart fails,
- SSI keeps trying to establish connections with the library server.

The relaying of messages can be ensured by the Main Operator, who sees the mount/dismount messages on the DPS 7000 Main console and re-enters them on the UNIX server terminal. Dismounting is made difficult by the fact that DW10 DISMOUNT messages are not repetitive.

The Main operator needs a listing giving the mapping between the GCOS 7 device name (CTnn) and the library server drive identifier (driveid). The device address mapping is defined in the CLX configuration file. You can also get the device-driveid mapping using the DCLX command.

Before using the semi-automatic mode, you must terminate CLX.

Preliminary checks on locks

Before mounting a non-work volume, CLX locks the drive first, and then it locks the volume. Conversely, before dismounting a volume, CLX unlocks the volume first, and then the drive. The lock identifiers selected are identical for the device and the volume. The owner of the locks is the local DPS 7000 host name. The current locked resources, their lock identifiers and the owner identifier can be displayed through the ACSSA command "query lock."

Some locks chosen by CLX may remain after the job CLX aborts. You must release these locks in order to be able to handle locked volumes or drives, in the semi-automatic mode. Use the ACSSA commands "query lock" and "unlock" if necessary.

Use of work volumes

If work volumes are used, the operator must know which pool is declared in the CLX configuration (parameter POOLID_18T or POOLID_36T or both).

When a MOUNT WORK message is issued on the GCOS 7 operator console, the operator must enter an ACSSA command "mount * <poolid>." This command asks the ACSLS to mount a volume from the specified scratch pool. Automatically, the selected volume loses its scratch attribute.

A DISMOUNT W message is issued on the GCOS 7 operator console when a PREPARE_TAPESET with the option WORK is completed. The operator must enter the ACSSA command "set scratch <poolid> <volume>" to give the volume the scratch attribute.

In case of 18-track formatted WORK volumes and 36-track formatted WORK volumes two distinct scratch pool must be created: one for 18-track volumes, one for 36-track volumes. E-tapes can only belong to 36-track scratch pool, they cannot be used on 18-track device.

9.9.2.1 Library connected to and used by only one DPS 7000

The following are examples of GCOS 7 messages and associated ACSSA commands that the operator must enter:

1. **Mounting a standard volume**

   ```
   hh.mm CTnn MOUNT <volume> [PROTECT] FOR Xnnnn
   ```
   ACSSA> mount <volume> <driveid> [readonly]

2. **Mounting a WORK volume**

   ```
   hh.mm CTnn MOUNT <WORK>VOLWR FOR Xnnnn
   ```
   ACSSA>mount * <driveid> <poolid>

NOTE:
The character '*' stands for scratch. It has nothing to do with the star convention used by GCOS 7.

3. **Dismounting a non-work volume**

   ```
   DW10 CTnn DISMOUNT <volume> S
   or:
   DW10 CTnn DISMOUNT U
   or:
   DW10 CTnn DISMOUNT <volume> E
   or:
   DW10 CTnn DISMOUNT <volume> P
   or:
   DW10 CTnn DISMOUNT <volume> N
   ```
   ACSSA>dismount <volume> <drive>

4. **Dismounting a WORK volume**

   `DW10 CTnn DISMOUNT <volume> W`
   ACSSA>dismount <volume><driveid>
   ACSSA>set scratch <pool> <volume>

5. **Dismounting a standard volume**

   ACSSA>dismount <volume> <driveid>

   In case the <driveid> you supplied is correct but the optical label and the magnetic label are different, you get the status MISPLACED TAPE on the dismount command:

   Get the volume optical label through a query command and dismount the cartridge using this label:

   – ACSSA>query drive <driveid>
   – ACSSA>dismount <volume> <driveid>

   You get the status IN USE when the volume has not been unloaded by the DPS 7000, then use the force option on the dismount request:

   ACSSA>dismount <volume> <driveid> force

6. **Dismounting a non-standard volume**

   `DW10 CTnn DISMOUNT <volume> N`
   – <volume> stands for the optical label of the cartridge.

7. **Mounting a non-standard volume**

   `hh.mm CTnn MOUNT <volume> NSTD FOR Xnnnn`

9.9.2.2 Library shared between several hosts

If each system uses its own set of volumes and devices, you can handle the robot as in the first case.

If volumes are shared between different systems, use the lock mechanism to protect against conflicts.

If the library is shared between DPS 7000 systems, conflicts on devices must be managed by the MDHW command as in automatic mode (refer to Chapter 7, "Static Sharing").

If the library is shared between heterogeneous systems, use the lock mechanism to protect against conflicts on devices.

Use of Lock Mechanism

1. **Locks on devices**

   Before mounting volumes in a device, lock the device using the ACSSA command "lock drive." You can choose between the two following methods:

Method No. 1:	Lock all devices used by your local system and keep the locks until the automatic mode is restarted on this system. This method is very simple. You just need not to forget to release the lock before restarting CLX.
Method No. 2:	Lock the device before mounting a volume and release the device after dismounting the volume.

2. **Locks on volumes**

   Before mounting a specific volume in a device, lock the volume using the ACSSA command "lock volume." After dismounting the volume, release the volume using the ACSSA command "unlock volume."
   Before mounting a work volume in a device, no lock can be taken since the volume is selected by the ACSLS.
   Therefore, no lock needs to be released when the volume is dismounted.
   A conflict may happen on a selected work volume in the particular case where another step would require this volume specifying its volser.

The following are examples of ACSSA commands that the operator must enter:

1. **Locking a device**

   ACSSA> lock drive <driveid>
   If you get the status DRIVE IN USE, wait until the drive is available and retry the command.

2. **Unlocking a device**

   ACSSA> unlock drive <driveid>

3. **Locking and mounting a non-work volume**

   ACSSA> lock volume <volume>
   If you get the status VOLUME IN USE and wait until the volume is available. Retry the command:

   ACSSA> mount <volume> <driveid>

4. **Mounting a Work volume**

   ACSSA> mount * <driveid> <poolid>

NOTE:
The character '*' stands for scratch. It has nothing to do with the star convention used by GCOS 7. Remember that as you have not locked the volume, you will not have to unlock it at dismounting time.

5. Dismounting a non-work volume

ACSSA> dismount <volume> <driveid>
[ACSSA> unlock volume <volume>]

If you have not locked the volume before mounting it, you do not have to unlock it.

6. Dismounting a Work volume

ACSSA> dismount <volume> <driveid>
ACSSA> set scratch <poolid> <volume>
[ACSSA> unlock volume <volume>]

If you have not locked the volume before mounting it, you do not have to unlock it.

9.9.2.3 Return to normal mode

If you use ACSSA commands to lock volumes of devices, locks are taken for the acsss user and not for the DPS 7000 system. As a consequence these locks will not be released when CLX restarts. Therefore, do not forget to release all locks before restarting the automatic processing. Use the ACSSA command "clear lock." If you do not, locks remain active and prevent other DPS7 systems from accessing resources (unless these other systems are not using the automatic mode).

9.9.3 Device Status Inconsistency Between CLX Tables, GCOS 7, and ACSLS

System Behavior

Device status returned by DCLX (DISPLAY_CLX) command does not match device status returned by QLIB DR command (QUERY_LIBRARY) or query drive ACSLS command.

CLX rejects a MOUNT request on a drive although the drive is available and not locked.

DCLX command shows a cartridge mounted for a job which is OUT for a long time and no dismount request are pending.

This inconsistency may be the result of

- abnormal behavior of the CLX,
- mount or dismount request issued from the UNIX library server
- manual intervention in the library in order to solve a dismount problem.

Operator Action

The operator must put the drive of the library for which the problem occured in the following state:

- no cartridge mounted
- drive not locked

If a volume was mounted in the drive, the operator must unlock this volume.

It may be possible to dismount the cartridge using the ***dismount*** command of the ACSLS command processor (cmd_proc) on the UNIX library server, otherwise manual intervention may be necessary.

The ***force*** option of the ***dismount*** command can be used if the cartridge has not been unloaded.

The drive will be unlocked using the ***unlock*** command of the ACSLS command processor (cmd_proc) on the UNIX library server

The ***set lock*** command must be used before the ***unlock*** command in order to change the lock identifier.

Once the drive is in available state and unlocked, the RESET_CLX command can be issued on GCOS 7.

EXAMPLE:

```
S: dclx
    TU15 X972.2    V3.1  CT01 36T POOLID=6 (0,0,2,1) STATUS : STANDBY
         V3.1  CT02 36T POOLID=6 (0,0,2,2) STATUS : 001870 MOUNTED FOR X975
    TU14 V3.1  DISPLAY_CLX COMMAND COMPLETED

S: DS X975
    SH09 DJ    UNSUCCESSFUL : UNKNOWN JOB X975
S:
S: qlib req
   14.30 X978  IN   CLXACSSA USER=OPERATOR1 CLASS=P  SPR=6 STATION=BC01
   14.30 X978     STARTED   CLXACSSA OPERATOR1 P
    JB08 X978.1    STEP H_CLX_ECMDACSSA XPR=8 PGID=140
    TU71 V3.1        QUERY REQUEST ACCEPTED - REQUEST NUMBER :4150
    TU71 V3.1  REQ= 4150 PENDING QUERY
    TU71 V3.1        QUERY REQUEST COMPLETED
    14.30 X978.1    COMPLETED CLXACSSA OPERATOR1 P
    14.30 X978     OUTPUT COMPLETED CLXACSSA OPERATOR1
```

In the CLX tables, cartridge 001870 is mounted in device CT02 for job X975.
Job X975 no longer exists, and no requests are pending.
Cartridge 001870 must be dismounted using the ACSLS command processor.

On the UNIX library server:

```
$ cmd_proc -l
----------------------------------ACSLS 5.1.1----------------------------------
                          (c) Copyright (1988-1995)
                        Storage Technology Corporation
                              All Rights Reserved

        This material is confidential and proprietary to StorageTek and
        may be licensed only under a valid StorageTek license. Do not
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        or disclosure by the Government is subject to restrictions as
        set forth in subparagraph (c)(1)(ii) of the Rights in Technical
        Data and Computer Software clause at DFARS 252.7-7013.

ACSSA> query server
03-28-97 14:36:41               Server Status
 Identifier   State            Free Cell  Audit  Mount  Dismount  Enter  Eject
                               Count      C/P    C/P    C/P       C/P    C/P
              run              602        0/0    0/0    0/0       0/0    0/0
ACSSA> q dr al
03-28-97 14:36:44                  Drive Status
 Identifier   State           Status      Volume     Type
   0, 0, 2, 0 online          available              4890
   0, 0, 2, 1 online          available              4890
   0, 0, 2, 2 online          in use      001870     4890
   0, 0, 2, 3 online          available              4890
ACSSA> q lock dr al
03-28-97 14:37:04                  Lock Status
 Identifier    Lock     Lock      Pending   Status         User Identifier
               Id       Duration
   0, 0, 2, 2  27283    361       0         in use         BC01
ACSSA> q lock vol al
03-28-97 14:37:16                  Lock Status
 Identifier    Lock     Lock      Pending   Status         User Identifier
               Id       Duration
 001870        27283    370       0         in use         BC01
ACSSA> set lock 27283
Set: Changed lock identifier from 0 to 27283
ACSSA> dismount
       Volume identifier(volume label): 001870
       Drive identifier(acs,lsm,panel,drive): 0,0,2,2
       Option(force/<return>): force
Dismount: Forced dismount of 001870 from   0, 0, 2, 2
ACSSA> unlock
       Type(drive/volume): dr
       Drive identifier(acs,lsm,panel,drive): 0,0,2,2
       Drive identifier(acs,lsm,panel,drive):
Unlock: drive   0, 0, 2, 2 unlocked
```

```
Unlock: Unlock completed, Success.
ACSSA> unlock
       Type(drive/volume): vol
       Volume identifier(volume label): 001870
       Volume identifier(volume label):
Unlock: volume 001870 unlocked
Unlock: Unlock completed, Success.
Unlock: Changed lock identifier from 27283 to 0.
ACSSA> q lock dr al
03-28-97 14:39:11                Lock Status
 Identifier    Lock     Lock      Pending   Status         User Identifier
               Id       Duration
ACSSA> q lock vol al
03-28-97 14:39:16                Lock Status
 Identifier    Lock     Lock      Pending   Status         User Identifier
               Id       Duration
ACSSA>
```

Once these commands have been issued on the UNIX library server, use the RESET_CLX command on GCOS 7 :

```
S: reset_clx ct02
    TU14 X972.2    V3.1  RESET_CLX COMMAND COMPLETED
S: DCLX
    TU15 X972.2    V3.1  CT01 36T POOLID=6 (0,0,2,1) STATUS : STANDBY
         V3.1  CT02 36T POOLID=6 (0,0,2,2) STATUS : STANDBY
    TU14 V3.1  DISPLAY_CLX COMMAND COMPLETED
S:
```

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9.10 CLX Resynchronization and Recovery

The resynchronization occurs in the following cases:

- restart of the step H_CLX,
- restart of ACSLM: after a failure, when the library server answers the CLX requests again.
- a silo changes from "off" state to "on" state.

The purpose of resynchronization is:

- to put the device status of the different components of the data link back in phase (the Device Manager, the CLX and ACSLS),
- to ensure the dismounting of cartridges that have been unloaded but not dismounted (the unload operation having occurred when the library server was not operational).

The CLX interrogates the Device Manager and the ACSLS about the state of all devices declared in the GCOS 7 configuration. In cases of mismatch, the CLX sends ACSLS requests or GCOS 7 commands to re-establish stability. If necessary, the status of locks is modified during this stage, so that the following rules are respected:

- When a standard volume is mounted, the volume and the device are locked.
- When a work volume is mounted, the device is locked.
- When a volume is dismounted, the locks on device and on volumes are released.

Also, the following actions are requested by the CLX:

- All devices seen by ACSLS in a non-operational state are put out of the GCOS 7 configuration and into a "held" state.
- All devices locked by another host system are put out of the GCOS 7 configuration and are put into a "held" state.
- All cartridges still mounted for the account of the local DPS7 are dismounted if they should not be mounted according to the GCOS 7 database.

Operator messages are issued for all dismounts and device removals from the configuration. No operator messages are issued for actions on locks.

Locks abnormally taken by CLX on devices and cartridges are released.

The following message is issued at the beginning of the recovery stage:

```
TU06 <clx version> CLX RECOVERY IN PROGRESS
```

The following message is issued at the end of the recovery stage:

```
TU06 <clx version> CLX IS CLEANING LOCKS ON VOLUMES SET BY
     PREVIOUS CLX SESSION
```

EXAMPLE 1:

Devices CT16 (0,0,1,1) and CT17 (0,0,1,2) are put out of the GCOS 7 configuration because they are seen offline by the ACSLS. Please note the messages TU23, TU21 and TU34.

```
S: DC     CT/LIB
10.36     CT18 HELD
   CT17 STANDBY
   CT16 STANDBY
   CT15 STANDBY

ACSSA> q drive all
12-23-93 10:31:49          Drive     Status
 Identifier       State   Status    Volume
 0, 0, 1, 0       online  available
 0, 0, 1, 1       offline available
 0, 0, 1, 2       offline available
 0, 0, 1, 3       online  available


S: SCLX
 10.40 X2025 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 10.40 X2025 STARTED CLX OPERATOR P
 JB08 X2025.1 STEP H_CLX XPR=8 PGID=18
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
 TU21 V3.0 ACSLM STATUS OF CT17 (0,0,1,2) : OFFLINE
 TU34 V3.0 CLX ATTEMPTS TO TAKE CT17 OUT OF CONFIGURATION
 AW01 MDHW CT17 SUCCESSFUL
 10.41 CT17 OUT (BY OPERATOR)
 TU21 V3.0 ACSLM STATUS OF CT16  (0,0,1,1): OFFLINE
 TU34 V3.0 CLX ATTEMPTS TO TAKE CT16 OUT OF CONFIGURATION
 AW01 MDHW CT16 SUCCESSFUL
 10.41 CT16 OUT (BY OPERATOR)
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION


S: DC     CT/LIB
10.43     CT18 HELD
   CT17 HELD
   CT16 HELD
   CT15 STANDBY
```

EXAMPLE 2:

Volumes 001863 and 001864 are dismounted from the drives CT17(0,0,1,2) and CT16 (0,0,1,1) respectively, because they are considered by ACSLS to be mounted on devices which are seen as STANDBY by GCOS 7.

In the ACSLS database, before the resynchronization, the drive CT17 is locked by the local CLX and there is no lock on drive CT16.

Please note the messages TU23, TU21 and TU33. Also, note that CT18 (0,0,1,3) is locked by the server as the System Administrator has entered the ACSSA command "lock drive" for this drive.

Nothing is done for the drive CT18, which is mounted on a device HELD by GCOS 7 and locked by acsss.

```
S: DC     CT/LIB
11.09     CT18 HELD
   CT17 STANDBY
   CT16 STANDBY
   CT15 STANDBY

ACSSA> q drive all
12-23-93 11:01:14         Drive Status
 Identifier       State  Status   Volume
 0, 0, 1, 0       online  available
 0, 0, 1, 1       online  in use  001864
 0, 0, 1, 2       online  in use  001863
 0, 0, 1, 3       online  available
ACSSA>
ACSSA> q lock drive
 Drive identifier(acs,lsm,panel,drive): 0,0,1,0
 Drive identifier(acs,lsm,panel,drive): 0,0,1,1
 Drive identifier(acs,lsm,panel,drive): 0,0,1,2
 Drive identifier(acs,lsm,panel,drive): 0,0,1,3
 Drive identifier(acs,lsm,panel,drive):
12-23-93 11:04:07           Lock Status
 Identifier   Lock   Lock      Pending  Status     User Identifier
              Id     Duration
 0, 0, 1, 0   0      0         0        available
 0, 0, 1, 1   0      0         0        available
 0, 0, 1, 2   9768   1085      0        in use     BCA9
 0, 0, 1, 3   25531  469       0        in use     acsss
ACSSA>

S: SCLX
 11.13 X2029 IN CLX USER=OPERATOR CLASS=P SPR=6 STATION=BCA9
 11.13 X2029 STARTED CLX OPERATOR P
 JB08 X2029.1 STEP H_CLX XPR=8 PGID=18
 TU01 V3.0 CLX INITIALIZATION IN PROGRESS
```

```
 TU02 V3.0 CLX WAITING FOR ACSLM TO BE RUNNING
 TU09 V3.0 ACSLM IS RUNNING
 TU06 V3.0 CLX RECOVERY IN PROGRESS
 TU23 V3.0 DVMGT STATUS OF CT16 : STANDBY
 TU21 V3.0 ACSLM STATUS OF CT16 (0,0,1,1): 001864 MOUNTED
 TU33 V3.0 CLX ATTEMPTS TO DISMOUNT 001864 ON CT16
 TU23 V3.0 DVMGT STATUS OF CT17 : STANDBY
 TU21 V3.0 ACSLM STATUS OF CT17 (0,0,1,2): 001863 MOUNTED
 TU33 V3.0 CLX ATTEMPTS TO DISMOUNT 001863 ON CT17
 TU06 V3.0 CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION

ACSSA> q drive all
12-23-93 11:12:10                  Drive Status
 Identifier         State          Status         Volume
 0, 0, 1, 0         online         available
 0, 0, 1, 1         online         available
 0, 0, 1, 2         online         available
 0, 0, 1, 3         online         available
ACSSA>
ACSSA> q lock drive
 Drive identifier(acs,lsm,panel,drive): 0,0,1,0
 Drive identifier(acs,lsm,panel,drive): 0,0,1,1
 Drive identifier(acs,lsm,panel,drive): 0,0,1,2
 Drive identifier(acs,lsm,panel,drive): 0,0,1,3
 Drive identifier(acs,lsm,panel,drive):
12-23-93 11:13:21                    Lock Status
 Identifier   Lock   Lock      Pending  Status     User Identifier
              Id     Duration
 0, 0, 1, 0   0      0         0        available
 0, 0, 1, 1   0      0         0        available
 0, 0, 1, 2   0      0         0        available
 0, 0, 1, 3   25531  1024      0        in use     acsss
ACSSA>

S: DC     CT/LIB
11.21     CT18 HELD
   CT17 STANDBY
   CT16 STANDBY
   CT15 STANDBY
```

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NOTE:

The message TU57 is issued if a cartridge cannot be dismounted:

```
TU57 <clx version> UNSUCCESSFUL REQUEST 'DISMOUNT <volume> ON
     <device> (<driveid>)': <request-status>
```

It is followed by one of the following messages:

```
TU35 <clx version> CLX REPEATS REQUEST ‘dismount <volume> ON
     <device> (<driveid>)’
TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON
     <device> BY FORCE
TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF
     CONFIGURATION
```

10. CLX Operator Messages

TU messages appear on the terminal of the operator who started CLX and on all main operator consoles. If the CLX starts with the system startup, the messages appear on all main operator consoles.

10.1 TU00

10.1.1 TU00 <clx version> CLX FACILITY IS NOT AVAILABLE ON YOUR SITE

Description:

Marketing Identifier necessary to run CLX is not installed.

System Reaction:

CLX is terminated (step aborted severity 4).

User Action:

Contact the Bull supplier.

10.1.2 TU00 <clx version> CLX CONFLICT WITH ANOTHER CARTRIDGE LIBRARY COMPONENT (CLX OR CLC)

Description:

1. Another CLX job or a CLC job is already active.
2. A step H_CLX_ECMDACSSA is running or is the last step launched by an IOF.

System Reaction:

CLX is terminated (step aborted severity 4).

User Action:

1. If necessary, stops the CLX job. If no CLX job is running, restarts GCOS 7.
2. Wait for the step termination.

   If it has been launched by an IOF, the IOF user has to launch any other step except H_CLX_ECMDACSSA (launch an LSF command on any file for example), or to terminate his IOF.

   Else, restart GCOS 7.

10.2 TU01

10.2.1 TU01 <clx version> CLX INITIALIZATION IN PROGRESS

Description:

CLX initialization is starting.

System Reaction:

This message appears once for a CLX job lifetime.

10.3 TU02

10.3.1 TU02 <clx version> CLX WAITING FOR ACSLM TO BE RUNNING

Description:

CLX is starting a resynchronization between the GCOS 7 and the library server.

System Reaction:

This message appears in the following cases:

- After a SCLX command. It appears at the end of the initialization of CLX after the message TU01.
- After a server failure or after a ACSLM failure. It appears after a message giving the error (ex = TU35).

User Action:

If you have entered an SCLX command, wait for the next messages. Otherwise, consider the error message already issued.

10.4 TU03

10.4.1 TU03 <clx version> CLX IS RUNNING

Description:

This appears at the end of the initialization stage when CLX becomes operational. It follows the message TU06 and is followed by the message TU26.

System Reaction:

Normal situation after a SCLX command.

User Action:

Wait for the next message TU26.

10.5 TU04

10.5.1 TU04 <clx version> CLX WAITING FOR LSM TO BE ONLINE

Description:

One or several LSM is (are) not online. CLX detects the failure on a mount/dismount request. It is followed by the TU25 message and one of the following TU05 messages giving the LSM states.

System Reaction:

CLX suspends the automatic mounting/dismounting operations until the failed LSM is fixed. In the meantime, CLX checks the LSM states periodically until the failure disappears. The interval of time is specified in the TOLSM value in the CLX configuration.

User Action:

To know the reason for the failure, either wait for the next TU05 message giving the LSM identifier and state, or enter a ACSSA command "query lsm" from the UNIX terminal, or look at the LSM panel. Then refer to TU05 messages according to the kind of failure.

10.6 TU05

10.6.1 TU05 <clx version> LSMs ARE ONLINE

Description:

It appears after a failure on one or several LSMs. All LSMs are operational again.

System Reaction:

CLX will enter the resynchronization stage. A message TU06 should follow.

User Action:

Wait for the next TU messages.

10.6.2 TU05 <clx version> LSM <acs> <lsm> STATE: OFFLINE

Description:

This message appears after the TU04 message. A failure has been detected for the LSM mentioned in the error message.

System Reaction:

CLX checks the LSMs state periodically until the failure is fixed. The interval of time between two checks is specified by the TOLSM value in the CLX configuration. CLX suspends the automatic mounting/dismounting operations as long as the failure persists.

User Action:

Try to put the LSMs online either by entering the ACSSA command "vary lsm on" at the UNIX terminal or from the LSM panel. If the command succeeds, the LSM goes into the recovery state then goes into the online state. If the command fails, you can use the manual mode.

10.6.3 TU05 <clx version> LSMs <acs> <lsm> STATE: OFFLINE PENDING

Description:

The LSM mentioned in the error message is in the process of going offline.

System Reaction:

CLX suspends the automatic mounting/dismounting operations. CLX checks the LSMs states periodically until the failure is fixed. The interval of time between 2 checks is specified in the TOLSM value in the CLX configuration.

User Action:

Try to put the LSMs online either by entering the ACSSA command "vary lsm on" at the UNIX terminal or from the LSM panel. If the failure persists, you can use the manual mode.

10.6.4 TU05 <clx version> LSMs <acs> <lsm> STATE: DIAGNOSTIC

Description:

The LSM mentioned in the error message has been put in the diagnostic state by means of a "vary lsm" command. The LSM can be accessed through ACSSA commands only. Current and pending requests to the device are processed to completion. New requests from the DPS 7 000 are rejected.

System Reaction:

CLX suspends the automatic mounting/dismounting operations. CLX checks the LSMs states periodically until all LSMs are in the online state. The interval of time between 2 checks is specified in the TOLSM value in the CLX configuration.

User Action:

Try to put the LSMs online by entering the ACSSA command "vary Ism on" at the UNIX terminal or from the LSM panel. If the command succeeds, the LSM goes into the recovery state, then goes into the online state. If the command fails, you can use the manual mode.

10.6.5 TU05 <clx version> LSMs <acs> <lsm> STATE: RECOVERY

Description:

The LSM mentioned in the error message is in the process of going online.

System Reaction:

The automatic mounting/dismounting operations are suspended until all LSMs are in the online state.

User Action:

Wait and see the next messages.

10.7 TU06

10.7.1 TU06 <clx version> CLX RECOVERY IN PROGRESS

Description:

CLX is entering a resynchronization stage.

System Reaction:

This message appears either after an SCLX command, or after a failure with the library server or after a failure with the LSM(s). After the resynchronization operations, CLX should be operational.

User Action:

Waits and see the next messages.

10.7.2 TU06 <clx version> CLX IS CLEANING LOCKS ON VOLUMES SET BY PREVIOUS CLX SESSION

Description:

This message appears at the end of the resynchronization stage.

System Reaction:

CLX is about to remove all locks on volumes which could not have been reset by a previous step H_CLX. This is necessary when the previous CLX has aborted or was terminated by a TCLX STRONG command. This message also appears after a server or LSM failure.

User Action:

Wait and see the next message which should be TU03.

10.8 TU07

10.8.1 TU07 <clx version> CLX SHUTDOWN IN PROGRESS

Description:

CLX is starting the process of normal termination following a TCLX command.

System Reaction:

CLX goes on processing mount/dismount operations in progress. However CLX processes neither new mount/dismount requests nor queued mount/dismount requests. A TU39 message is displayed for each of the queued requests.

User Action:

Wait for next messages.

10.9 TU08

10.9.1 TU08 <clx version> IMMEDIATE SHUTDOWN

Description:

CLX is terminating following a TCLX or TCLX STRONG command.

System Reaction:

CLX terminates after having displayed a TU39 message for each mount/dismount request it cannot process.

User Action:

All mount requests must be processed manually or canceled by a CANCEL_REQUEST command. All dismount requests must be processed manually. Check following messages.

10.10 TU09

10.10.1 TU09 <clx version> ACSLM IS RUNNING

Description:

The library server is operational. This message appears after a SCLX command or after a server failure.

System Reaction:

CLX is about to perform a resynchronization.

User Action:

Wait for next messages until a TU26 message says that mount/dismount requests are processed automatically.

10.10.2 TU09 <clx version> ACSLM STATE: IDLE

Description:

The ACSLM is idle and is therefore not processing any requests involving library operations.

System Reaction:

CLX does not process mount/dismount requests until the ACSLM returns to the run state. CLX checks the ACSLM state at the interval of time specified at CLX configuration through the TOACSLM parameter. It checks the state by means of "query server" requests and displays the library server response by using another TU09 message. After ten commands CLX terminates.

User Action:

Enters the ACSSA "start" command from the UNIX terminal. If the failure persists, refer to "ACSLS Not Operational" in Chapter 9.

10.10.3 TU09 <clx version> ACSLM STATE: IDLE PENDING

Description:

The ACSLM is in the process of going idle.

System Reaction:

Same as above.

User Action:

Enter the ACSSA "start" command from the DPX/20 or ESTRELLA terminal. If the failure persists, refer to "ACSLS Not Operational" in Chapter 9.

10.10.4 TU09 <clx version> ACSLM STATE: RECOVERY

Description:

The ACSLM is in the process of coming out of an idle state and going to the run state (normal operating state).

System Reaction:

Same as above.

User Action:

Wait a while. If the ACSLM remains in this state, enter the IDLE then START command again. If the failure persists, refer to the section describing what to do in case of ACSLM failure.

10.11 TU11

10.11.1 TU11 <clx version> <device> IN LIBRARY: <volume> MOUNTED

Description:

The cartridge <volume> is mounted on the drive <device>.

System Reaction:

The mount request has been processed successfully.

User Action:

None.

10.12 TU12

10.12.1 TU12 <clx version> <device> IN LIBRARY: <volume> DISMOUNTED

Description:

The cartridge <volume> has just been dismounted from the drive <device>.

System Reaction:

The dismount request has been processed successfully.

User Action:

None.

10.13 TU13

10.13.1 TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL <dvchar> (POOLID = <poolid>) AT LOW WATER MARK

Description:

This message warns that the number of cartridges in the scratch pool has reached the minimum number (low water mark) specified when the pool was defined. This message can appear after mounting a WORK volume or dismounting a WORK volume.

System Reaction:

None.

User Action:

Restock some cartridges in the scratch pool by using the PREPARE_TAPESET utility. Refer to "Use of Work Volumes" in Chapter 9.

10.13.2 TU13 <clx version> NUMBER OF CARTRIDGES IN SCRATCH POOL <dvchar> (POOLID = <poolid>) AT HIGH WATER MARK

Description:

This message warns that the number of cartridges in the scratch pool has reached the maximum number (high water mark) specified when the pool was defined. This message can appear after mounting a WORK volume or dismounting a WORK volume.

System Reaction:

None.

User Action:

Remove some cartridges from the scratch pool by using the ACSSA command "eject" or by using the PREPARE_TAPESET. Refer to "Use of Work Volumes" in Chapter 9.

10.14 TU14

10.14.1 TU14 <clx version> DISPLAY_CLX COMMAND COMPLETED

Description:

All information following a DCLX command has been displayed.

System Reaction:

It is ready for another command.

User Action:

None.

10.14.2 TU14 <clx version> CLX COMMAND IN PROGRESS

Description:

CLX is starting the processing of an MDCLX or TCLX command.

System Reaction:

Normal.

User Action:

Wait for the next message. Check that the other messages appear on the terminal of the operator who started CLX. If CLX starts with the system startup, the messages appear on the main operator terminal.

10.15 TU15

All TU15 messages display the results of a DCLX command. Refer to "Displaying Devices (DCLX)" in Chapter 6.

10.16 TU16

10.16.1 TU16 <clx version> CLX TIMEOUT ON REQUEST <device> MOUNT <volume> FOR <ron>

Description:

This message appears when a message DW11 MOUNT has been repeated twice for a given volume.

System Reaction:

Gives more information through a TU17 message. If nothing changes, these messages are repeated every three DW11 MOUNT messages.

User Action:

If no other messages are issued, look for the job or the system which uses the device and (or) the volume. If no jobs are using them, verify through ACSSA commands that volume and device are not locked.

10.17 TU17

10.17.1 TU17 <clx version> VERIFY DEVICE <device> STATUS

Description:

This message follows a TU16 message. CLX has sent the mount request to the library server but it does not receive a response.

System Reaction:

This message is repeated every three DW11 MOUNT messages. If the failure persists, CLX inquires about the ACSLM state. See "ACSLS Not Operational" in Chapter 9.

User Action:

Follow the instructions given in the message.

10.17.2 TU17 <clx version> VERIFY JOB <ron> WHICH USES <device>

Description:

The mount request cannot be processed because the device is being used by the job whose 'ron' is specified in the message. This message follows the message TU16 and can be followed by a TU17 message.

System Reaction:

The message is repeated every three DW11 MOUNT messages until the mount request is completed.

User Action:

Follow the instructions given in the message. It may happen that the device is not used but CLX could not release the locks. You can use the DCLX and DC CT/LIB commands to detect this case, then use the ACSSA command to release the locks and restart CLX.

10.17.3 TU17 <clx version> VERIFY JOB <ron> WHICH USES <volume>

Description:

This message follows the TU16 message. The mount request cannot be satisfied because the volume is being used by the job whose ron is specified in the message.

System Reaction:

Repeat this message every three DW11 MOUNT requests.

User Action:

Follow the instructions given in the message. The operator can either terminate the job which is using the volume, or use the CANCEL_REQUEST command to cancel the mount request repetition.

If the operator chooses the second solution, the pending job terminates and the operator must restart it. However the mount request will remain in CLX queues and be processed when the device is released, creating a DISMOUNT message from the Device Manager. This DISMOUNT message is processed by CLX as another message, and only then can the operator restart the job he has canceled.

10.18 TU18

10.18.1 TU18 <clx version> H_CLX CANNOT ACCESS THE SHARABLE MODULE: H_CTLIB

Description:

CLX cannot use the procedures stored into the H_CTLIB Sharable Module.

System Reaction:

CLX aborts (severity 4).

User Action:

Verify that the SM is loaded. If it is loaded, verify the jcl in the CLX.SLLIB..CLX subfile referring to Appendix C.

10.19 TU20

10.19.1 TU20 <clx version> CLX TABLE OF MESSAGES OVERFLOW

Description:

The maximum number of queued plus current MOUNT requests has just been reached.

System Reaction:

CLX keeps running but ignores new MOUNT request until there is space in its table again. This brings about repetitions of DW11 requests until CLX can process them.

User Action:

Contact your support.

10.20 TU21

10.20.1 TU21 <clx version> ACSLM STATUS OF <device>(<driveid>): OFFLINE

Description:

The status DRIVE_OFFLINE was returned by the library server to CLX when CLX inquired about the device's state during a resynchronization.

System Reaction:

CLX uses the MDHW command to place the device out of configuration (in the state HELD).

User Action:

Check and have the device fixed if necessary.

10.20.2 TU21 <clx version> ACSLM STATUS OF <device>(<driveid>): AVAILABLE

Description:

There is a conflict between the device state as seen by the GCOS 7 Device Manager, and the device state as seen by the library server. From the GCOS 7 point of view, the device is in the READY state, whilst from the library server point of view the device is free. This message comes with TU23 and TU36 messages. This inconsistency is detected during a resynchronization.

System Reaction:

CLX uses the MDHW command to place the device out of configuration (in the state HELD).

User Action:

Check the device and the library server. An audit may be necessary.

10.20.3 TU21 <clx version> ACSLM STATUS OF <device>(<driveid>): LOCKED BY ANOTHER SYSTEM <system>

Description:

This inconsistency can be detected during a resynchronization.

System Reaction:

CLX uses the MDHW command to place the device out of configuration (in the state HELD).

User Action:

Try to know whether this is a normal situation.

10.20.4 TU21 <clx version> ACSLM STATUS OF <device>(<driveid>): <volume> MOUNTED

Description:

This message gives the device state from the library server. This message is issued in several situations, including:

- during a resynchronization, when CLX notices an inconsistency. A volume is mounted on the device from the point of view of the library server, but it should be free according to the GCOS 7,
- when inconsistencies exist between the optical label and the magnetic label.

System Reaction:

In the first case, CLX dismounts the volume from the device.

User Action:

Use ACSSA commands to investigate.

10.20.5 TU21 <clx version> ACSLM STATUS OF <device>(<driveid>): LOCKED BY HOST SYSTEM <system>

Description:

This message gives the device state from the library server. This message is issued during a resynchronization when the following inconsistency is detected between the device state, as seen by the GCOS 7 Device Manager, and the device state as seen by the library server. To GCOS 7, the device is in the READY state; to the library server, the device is locked by another system and is busy with a volume, This is followed by another message giving the conflict (refer to "TU22" later in this chapter).

System Reaction:

CLX uses the MDHW command to place the device out of configuration (in the state HELD).

User Action:

None.

10.21 TU22

10.21.1 TU22 <clx version> ACSLM STATUS OF <volume> - LOCKED BY ANOTHER SYSTEM <system>

Description:

This is issued after a TU21 message or after a TU23 message. It is issued if the library server considers the volume is locked by another system.

Refer to the previous message.

10.21.2 TU22 <clx version> ACSLM STATUS OF <volume>: MOUNTED ON <driveid> - AN AUDIT IS REQUIRED

Description:

A dismounting operation fails. The status returned by the library server is MISPLACED_TAPE. The library server notices that the volume in the device is different from the one it expected, according to its data base. This might happen after the operator manually dismounts a volume from a device, places it into a cell different from its original cell and mounts another volume onto the device. The TU57 message giving the status MISPLACED_TAPE should have been issued.

System Reaction:

CLX forces the dismounting. The server updates the information about this volume in the database.

User Action:

An audit is advised but can be avoided as long as the library server retrieves volumes to mount.

10.22 TU23

10.22.1 TU23 <clx version> DVMGT STATUS OF <device>: HELD

Description:

This message displays the status of a device stored in the GCOS 7 database. It is issued during a resynchronization for information when CLX notices the following situation:

- to GCOS 7, the device is in the HELD state,
- but to the library server a volume is mounted on the device and the device has been locked by the local system.

The TU21 message giving the status of the device for the ACSLS database should also have been issued.

System Reaction:

CLX attempts to dismount the volume. CLX unlocks device and volume if necessary.

User Action:

None.

10.22.2 TU23 <clx version> DVMGT STATUS OF <device>: STANDBY.

Description:

This message is issued during a resynchronization for information when CLX notices one of the following situations:

Case 1:

To GCOS 7, the device is in the STANDBY state but to the library server, the device is locked by another system.

Case 2:

To GCOS 7, the device is in the STANDBY state but to the library server, a volume is mounted on the drive.

System Reaction:

Case 1:

CLX uses the MDHW command to place the device out of the configuration (in the state HELD).

Case 2:

CLX attempts to dismount the volume and releases the locks if necessary.

User Action:

None.

10.22.3 TU23 <clx version> DVMGT STATUS OF <device>: READY WITH <volume> MOUNTED

Description:

This message is issued during a resynchronization for information when CLX notices one of the following cases:

Case 1:

To GCOS 7, the device is in the READY state but to the library server the device is locked by another system.

Case 2:

To GCOS 7, the device is in the READY state but to the library server no volume is mounted onto the device.

Case 3:

To GCOS 7, the device is in the READY state but to the library server a different volume is mounted onto the device, or

Case 4:

To GCOS 7, the device is in the READY state but to the library server the volume is locked by another system and the device is locked by the local system or it is not locked.

System Reaction:

Case 1:

CLX uses the MDHW command to place the device out of configuration (in the state HELD).

Case 2:

CLX uses the MDHW command to place the device out of configuration (in the state HELD). Messages TU21 and TU36 are also issued after this message.

Case 3:

The messages TU21 and TU36 are also issued. No specific action. The label inconsistencies will be detected at the dismounting. The message TU23 is issued for information.

Case 4:

CLX releases the lock on the volume if necessary. Messages TU21 and TU22 are also issued.

User Action:

None.

10.22.4 TU23 <clx version> DVMGT STATUS OF <device>: <volume> MOUNTED

Description:

Issued for information. CLX is processing a DISMOUNT request where the optical label and magnetic label are different. The message TU27 is also issued. Refer to the message TU27.

10.23 TU24

10.23.1 TU24 <clx version> CLX STATUS OF <driveid>: <volume> MOUNTED

Description:

A MOUNT request has failed with the status VOLUME_IN_DRIVE returned by the ACSLS. It follows a TU57 message.

System Reaction:

The error is ignored if the volume mounted is identical to the volume to mount. Otherwise, CLX performs a CANCEL_REQUEST command.

User Action:

None.

10.24 TU25

10.24.1 TU25 <clx version> NOW MOUNT & DISMOUNT REQUESTS ARE NO MORE HANDLED BY CLX.

Description:

Automatic processing is suspended due to a robot failure.

System Reaction:

CLX suspends the mount/dismount automatic processing until all LSMs are operational. A TU38 message is issued for each request being processed and a TU39 message is issued for each request queued. CLX stops processing and will not process these requests. CLX ignores new mount/dismount requests. LSMs states will be displayed from time to time through TU05 messages. MOUNT requests will be repeated.

User Action:

Verify the LSMs state by using the ACSSA command "query lsm", and try to put the LSMs online, either by entering the ACSSA command "vary lsm online" at the UNIX terminal or from the LSM panel. You can also use the manual mode.

If you succeed in putting the LSMs online, CLX performs a resynchronization before resuming the mount/dismount processing. As part of this resynchronization, all unloaded volumes are dismounted by CLX. Pending mount requests will be processed on the next repetition of the message from the Device Manager.

10.25 TU26

10.25.1 TU26 <clx version> NOW MOUNT & DISMOUNT REQUESTS ARE HANDLED AUTOMATICALLY

Description:

CLX is ready to process mount/dismount requests.

System Reaction:

Normal processing.

User Action:

None

10.26 TU27

10.26.1 TU27 <clx version> CONFLICT BETWEEN OPTICAL AND MAGNETIC LABELS OF CARTRIDGE ON <device>

Description:

Issued about a DISMOUNT request when optical label and magnetic labels are different. The messages TU21 and TU23 should follow:

```
TU21 <clx version> ACSLM STATUS OF <device> (<driveid>) : <optical
     label> MOUNTED
TU23 <clx version> DVMGT STATUS OF <device name> : <magnetic
     label> MOUNTED
```

System Reaction:

CLX dismounts the volume using the optical label.

User Action:

Eject the volume and change the optical label or change the magnetic label by using PREPARE_TAPESET. Refer to "Re-establishing Consistency of Labels" in Chapter 5.

10.27 TU30

10.27.1 TU30 <clx version> DVMGT REQUEST REJECTED

Description:

Several cases according to the state of CLX:

Case 1:

CLX is operational.

CLX has canceled the request for manual intervention issued for a cartridge library device. The step requesting manual intervention is aborted. The rejected request is displayed immediately after:

```
DW06 <device> SWITCH <volume> FOR <ron> TO PROTECT
DW07 <device>SWITCH <volume> FOR <ron> TO PERMIT
DW12 hh.mn <device> RECOVER <volume> FOR <ron>
```

Case 2:

CLX does not process a request because the library server or one LSM is not operational or because it is terminating. The step is aborted.

The rejected request is displayed immediately after:

```
DW06 <device> SWITCH <volume> FOR <ron> TO PROTECT
DW07 <device>SWITCH <volume> FOR <ron> TO PERMIT
DW10 <device> DISMOUNT <volume> <type>
DW11 MOUNT <volume>ON <device>FOR <ron>
DW12 hh.mn <device> RECOVER <volume> FOR <ron>
```

System Reaction:

Case 1:

CLX cancels the request for manual intervention by issuing the command CANCEL_REQUEST <device>.

Case 2:

CLX ignores the request.

User Action:

Case 1:

The rejected request is displayed immediately after:

- `DW06 <device> SWITCH <volume> FOR <ron> TO PROTECT`

  This situation occurs when the volume has already been mounted without request for protection for a previous step of the job. This step has terminated without the option END=UNLOAD.

  You must force the dismounting of the volume:

  either you modify the JCL of your job by adding the option END=UNLOAD to the previous step and then start the job again,

  or you force the dismounting of the volume by the command "MDHW <device> out" and then restart the step.

- `DW07 <device>SWITCH <volume> FOR <ron> TO PERMIT`

  This situation occurs when the attempt is made to write on a cartridge protected physically by the file protect selector. Then modify the file protect selector and restart the job.

  This situation may also occur when the cartridge is not physically write-protected, if the volume was previously mounted for a step requiring the write protection; you must modify the JCL by adding the option END=UNLOAD to the previous step and then start the job again. You also can force the dismounting of the volume by using the command "MDHW <device> out" and then, start the step again.

- `DW12 hh.mn <device> RECOVER <volume> FOR <ron>`

  Display the status of the device by the command DC CT/LIB and by the ACSSA command "query drive." Obtain the contents of the error log for peripheral devices (PRLOG) and deliver this information to the Bull support.

Case 2:

The request must be processed manually.

10.28 TU31

10.28.1 TU31 <clx version> CLX ATTEMPTS TO UNLOCK <volume>

Description:

This message can be issued during a resynchronization. A volume is mounted on a device and is locked by another system whereas the device is locked by the local system.

System Reaction:

As specified in the message.

User Action:

None.

10.29 TU32

10.29.1 TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF <volume> ON <device>

Description:

An abnormal event occurred while a MOUNT request was being processed. A TU58 message will also be displayed if the failure occurred during the 'lock' action. A TU75 message will also be displayed if the failure occurred during the action to mount the volume.

System Reaction:

The mount request is canceled. The mount request may be repeated before the cancel request is processed by the system. The repetition may bring about the same behavior.

User Action:

Examine the forthcoming messages TU57 or TU58 according to the case.

10.29.2 TU32 <clx version> CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF <volume> ON <device>: ILLEGAL ACCESS TO VOLUME

Description:

There is an attempt to mount a volume not authorized to the local system.

System Reaction:

The mount request is canceled.

User Action:

Verify the VSN list in the CLX configuration file. If necessary, modify it and restart CLX. Otherwise, do not use the volume.

10.30 TU33

10.30.1 TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON <device>

Description:

This message can be issued during a resynchronization. A volume is mounted on a device locked by the local system, but the device is considered by the local system in the HELD or STANDBY state.

System Reaction:

Tries to dismount the volume.

User Action:

None.

10.30.2 TU33 <clx version> CLX ATTEMPTS TO DISMOUNT <volume> ON <device>: BY FORCE

Description:

A volume cannot be dismounted. The reason is one of the following ones and it is displayed through a TU57 message:

- UNREADABLE LABEL
- MISPLACED TAPE
- DRIVE IN USE: may also occur during a resynchronization
- VOLUME NOT IN DRIVE

System Reaction:

Tries to dismount the volume with the force option.

User Action:

None, if the dismounting is successful; otherwise try to manually dismount the volume or by using the ACSSA "dismount" command from the UNIX server terminal.

10.31 TU34

10.31.1 TU34 <clx version> CLX ATTEMPTS TO TAKE <device> OUT OF CONFIGURATION

Description:

Case 1:

The message is issued during a resynchronization if:

- the device is offline,
- the device is locked by another system,
- the device is without volume for the library server but READY for the DPS 7000,
- the volume cannot be dismounted (reason=ACS FULL).

Case 2:

The message is issued while the automatic processing is running if:

- the device is offline,
- the volume cannot dismounted (reason=ACS FULL).

System Reaction:

The device is put out of the configuration. It will never be selected. The command MDHW CTnn IN is ineffective.

User Action:

If the device has been carried offline by the ACSSA command "vary", put it online by the command "vary online." If the device is powered off, switch it on or have it repaired, then stop and restart CLX.

10.32 TU35

10.32.1 TU35 <clx version> CLX REPEATS REQUEST "<acslm_command_code> <volume> ON <device> (<driveid>)"

Description:

The server does not answer the request or returns the status AUDIT IN PROGRESS. This message can be issued for the following requests: MOUNT, MOUNT WORK, DISMOUNT.

System Reaction:

The request is sent to the library server again. After a maximum of two attempts, by a time interval defined by the TORPRQ configuration parameter, CLX tries to check whether the library server is operational using the "query server" command. The message TU35 is sent at each repetition.

User Action:

Wait for further messages.

10.32.2 TU35 <clx version> CLX REPEATS REQUEST "<acslm_command_code> <device> (<driveid>)"

Description:

The server does not answer the request. This message can be issued for the following requests: QUERY DRIVE, QUERY LOCK DRIVE, LOCK DRIVE, UNLOCK DRIVE.

System Reaction:

Same as the first TU35 message.

User Action:

Wait for further messages.

10.32.3 TU35 <clx version> CLX REPEATS REQUEST "<acslm_command_code> <volume>"

Description:

The server does not answer the request. This message can be issued for the following requests: QUERY LOCK VOLUME, LOCK VOLUME, UNLOCK VOLUME, SET SCRATCH.

System Reaction:

Same as the first TU35 message.

User Action:

Wait for further messages.

10.32.4 TU35 <clx version> CLX WAITING FOR RESPONSE TO REQUEST "<acslm_command_code> <volume> ON <device> (<driveid>)"

Description:

The server has acknowledged the request but has not sent any response. This message can be issued for the following requests: MOUNT, MOUNT SCRATCH, DISMOUNT. This message is issued only once for a given request.

System Reaction:

CLX waits for the interval of time defined in the configuration in the TORPRQ parameter.

User Action:

Wait for further messages.

10.32.5 TU35 <clx version> CLX WAITING FOR RESPONSE TO REQUEST "<acslm_command_code> <device> (<driveid>)"

Description:

The server has acknowledged the request but has not sent any response. This message can be issued for the following requests: QUERY DRIVE, QUERY LOCK DRIVE, LOCK DRIVE, UNLOCK DRIVE. This message is issued only once for a given request.

System Reaction:

CLX waits for the interval of time defined in the configuration in the TORPRQ parameter.

User Action:

Wait for further messages.

10.32.6 TU35 <clx version> CLX WAITING FOR RESPONSE TO REQUEST "<acslm_command_code> <volume>"

Description:

The server has acknowledged the request but has not sent any response. This message can be issued for the following requests: QUERY LOCK VOLUME, LOCK VOLUME, UNLOCK VOLUME, SET SCRATCH. This message is issued only once for a given request.

System Reaction:

CLX waits for the interval of time defined in the configuration in the TORPRQ parameter.

User Action:

Wait for further messages.

10.33 TU36

10.33.1 TU36 <clx version> CLX CANNOT DETERMINE THE STATUS OF <device>

Description:

This message can be issued during a resynchronization. CLX has noticed an inconsistency. The following cases are examples.

Case 1:

To the DPS 7000, the device is in none of the following states: READY - HELD - STANDBY. A message TU36 DVMGT STATUS OF <device>: UNSTABLE STATE has just been issued for the same device.

Case 2:

To the DPS 7000, the device is READY, but the library server says that there is no volume mounted on the device.

System Reaction:

CLX attempts to put the device out of the configuration.

User Action:

None.

10.33.2 TU36 <clx version> DVMGT STATUS OF <device>: UNSTABLE STATE

Description:

Refer to the previous message.

10.34 TU37

10.34.1 TU37 <clx version> CLX REJECTS REQUEST "MOUNT <volume> ON <device>": DEVICE HELD

Description:

CLX does not process the request because the device is in a held state. This can happen if a device is held after the Device Manager sent the mount request.

System Reaction:

CLX drops the request.

User Action:

None.

10.34.2 TU37 <clx version> CLX REJECTS REQUEST "MOUNT <volume> ON <device>": <acslm_response_status>

Description:

CLX rejects a MOUNT request which was queued waiting for the device and (or) the volume. The following cases are examples:

Case 1:

Another MOUNT request involving the same device and (or) volume has just been rejected by the library server, giving one of the following reasons. A message TU32 CLX ATTEMPTS TO CANCEL MOUNT REQUEST OF <volume> ON <device> was issued immediately before.

Case 2:

The device has just been put out of the configuration. the message TU34 CLX ATTEMPTS TO TAKE <device> OUT OF CONFIGURATION has been issued immediately before.

Case 3:

A DISMOUNT request involving the same volume has just been rejected by the library server giving the status UNREADABLE LABEL.

System Reaction:

Case 1:

CLX cancels the request for which the library server gave the abnormal status, then it drops the request for which the message is issued. If the mount request is repeated, CLX will try to process it.

Case 2:

No other mount requests should be issued for the device.

Case 3:

CLX drops the MOUNT request. If the mount request is repeated, CLX will try to process it.

User Action:

Consider the reason and the other messages issued by CLX.

10.34.3 TU37 <clx version> CLX REJECTS REQUEST "MOUNT <volume> ON <device>": UNKNOWN DEVICE

Description:

The MOUNT message requests a device which is not declared in the CLX configuration file. The following message should have been issued when CLX was started:

```
TU50 <clx version> CONFIGURATION FILE ERROR <device> IS NOT
     DECLARED IN CLX CONFIGURATION FILE
```

System Reaction:

CLX drops the request. The MOUNT message is repeated until canceled by the operator.

User Action:

Cancel the request. Modify the CLX configuration file and restart CLX or put the device out of the configuration using the MDHW command. Do not use the ACSLS command to mount the volume on the device.

10.34.4 TU37 <clx version> CLX REJECTS REQUEST "DISMOUNT <volume> ON <device>": DEVICE AVAILABLE

Description:

The dismount request cannot be completed since no volume is mounted on the device.

System Reaction:

CLX drops the dismount request.

User Action:

None.

10.35 TU38

10.35.1 TU38 <clx version> DVMGT PENDING REQUEST

Description:

This message is issued for each pending mount request that CLX cannot process, either because it is terminating or because the library server (or the LSM) is not operational. This message is split into two lines. The second line specifies the pending MOUNT request.

System Reaction:

The request is not processed by CLX. The MOUNT message will be repeated until CLX restarts the automatic processing.

User Action:

The operator may choose:

- to cancel the mount request by the command CANCEL_REQUEST,
- to wait for the restart of the automatic processing,
- to use semiautomatic mode, or
- to use the manual mode.

10.36 TU39

10.36.1 TU39 <clx version> DVMGT OUTSTANDING REQUEST

Description:

This message is issued for each dismount / mount request that CLX has stopped processing, either because of a TCLX STRONG command, or because the library server (or the LSM) is not operational. This message is split into two lines. The second line specifies the request.

System Reaction:

If the aborted request is LOCK DRIVE, LOCK VOLUME, MOUNT or MOUNT SCRATCH, the message processed was a MOUNT request. In this case, the MOUNT message will be repeated until CLX restarts the automatic processing.

User Action:

The operator may choose to:

- cancel the mount request by the command CANCEL_REQUEST,
- wait for the restart of the automatic processing,
- use semi-automatic mode, or
- use the manual mode.

10.37 TU50

10.37.1 TU50 <clx version> CLX INITIALIZATION FAILED: < ERRNB = error_number, return-code >

Description:

System failure during the initialization of CLX.

System Reaction:

A message including the error number and the system returned code is stored in the JOR of the CLX job. CLX aborts (severity 4).

User Action:

Save the message and the JOR, then call your Bull Support.

10.37.2 TU50 <clx version> CLX CONFIGURATION FILE ERROR: < ERRNB = error_number, return-code >

Description:

CLX cannot read the configuration file.

System Reaction:

The error number and the system return code are dumped in the JOR of CLX. CLX aborts (severity 4).

User Action:

Verify the rights to access the Configuration file: the operator must be allowed to read it.

10.37.3 TU50 <clx version> CLX CONFIGURATION FILE ERROR: VSN TABLE OVERFLOW

Description:

More than 40 VSN parameters are declared in the configuration file.

System Reaction:

Only the first 40 VSN are taken into account.

User Action:

If necessary, reorganize your VSN ranges so that the VSN list is smaller, stop and restart CLX.

10.37.4 TU50 <clx version> CLX CONFIGURATION FILE ERROR - WRONG VSN: <volume range>

Description:

In the CLX configuration file, a VSN range parameter is not correct.

System Reaction:

The parameter is ignored.

User Action:

If necessary, rectify the CLX configuration file, then stop and restart CLX. The <volume range> value must be of 1 to 6 characters. The characters can be replaced by asterisks (*) or periods (.).

For a complete description of the allowed values, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.5 TU50 <clx version> CLX CONFIGURATION FILE ERROR: INVALID TO<xxx> < value>

Description:

TO<xxx> can be:

- TOSSI,
- TORPRQ,
- TORPREAD,
- TOLSM,
- TOACSLM.

The TO<xxx> parameter in the CLX configuration file is not correct.

<value> stands for the value specified in the configuration file.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the <value> value in the CLX configuration file: It should be between the maximum value and the minimum value, as described in "CLX Configuration on GCOS 7" in Chapter 2.

10.37.6 TU50 <clx version> CLX CONFIGURATION FILE ERROR: NO VALUE FOR TO<xxx> - DEFAULT VALUE IS ASSUMED

Description:

The TO<xxx> parameter in the CLX configuration file is not declared.

TO<xxx> can be:

- TOSSI
- TORPRQ
- TORPREAD
- TOLSM,
- TOACSLM.

System Reaction:

Default value is assumed.

User Action:

Ignore the message.

10.37.7 TU50 <clx version> CLX CONFIGURATION FILE ERROR - WRONG DEVICE NAME: <device>

Description:

A CTnn keyword is syntactically incorrect.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the keyword in the configuration file and restart CLX: nn should be an alphanumeric value between 00 and ZZ. Limit values are allowed. Use the command DC CT/LIB to have the list of devices known to the Device Manager.

For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.8 TU50 <clx version> CLX CONFIGURATION FILE ERROR - WRONG DRIVE_ID: <driveid>

Description:

The driveid specified for a CTnn parameter is not correct.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file and restart CLX: the drive identifier must be composed of 4 numbers separated by a comma: <acs-number> (0), <lsm-number> (0 to 23),
<panel-number> (0-19), <drive-number> (0-4).

The ACSSA command "query drive all" allows you to get the list of all devices installed in the library. If you need to know the driveid related to each device (CTnn), contact the person responsible for the data path(s).

10.37.9 TU50 <clx version> CLX CONFIGURATION FILE ERROR: NO LSMID DEFINED

Description:

A CT parameter is declared but it is not attached to a LSMID parameter. There is no LSMID parameter defined in the CLX configuration file.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file and restart CLX. The configuration file must contain, in the order specified, the LSM declaration followed by the declaration of its devices:

- LSMID = aa
- CTnn =
- CTnn =
- etc..
- LSMID = xx
- CTnn
- etc...

Use ACSSA commands "query lsm all" and "query drive all" to check the library configuration.

For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.10 TU50 <clx version> CLX CONFIGURATION FILE ERROR: NO DEVICE DEFINED

Description:

There is no correct device in the CLX configuration file. This may be the consequence of the combination of the following errors:

- no CTnn parameter declared,
- no LSMID parameter declared,
- CTnn parameter are syntactically correct but the driveid(s) is (are) unknown to the ACSLS,
- CTnn(s) are syntactically correct but are unknown to the GCOS 7 system configuration.

The message `TU50 CLX CONFIGURATION FILE ERROR : NO LSMID DEFINED` may have appeared before.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the CLX configuration file or the GCOS 7 system configuration.

Use the ACSSA commands "query lsm all" and "query drive all" to know the library configuration.

Verify the library server configuration and reconfigure it if necessary.

For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.11 TU50 <clx version> CLX CONFIGURATION FILE ERROR - DUPLICATE DRIVE_ID: <driveid>

Description:

The same drive identifier value is declared for at least two different CTnn parameters.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file, then restart CLX.

10.37.12 TU50 <clx version> CLX CONFIGURATION FILE ERROR - DUPLICATE DEVICE NAME: <device>

Description:

The CTnn parameter is declared twice in the configuration file.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file, then restart CLX .

10.37.13 TU50 <clx version> CLX CONFIGURATION FILE ERROR - UNKNOWN LSMID IN DRIVE_ID: <driveid>

Description:

The lsm-number specified in the driveid does not match the LSMID parameter value declared in the configuration file.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file, then restart CLX. Use ACSSA commands "query lsm all" and "query drive all" to check the configuration of your library. If you need to know the driveid related to each device (CTnn), contact the person responsible for the data path(s).

For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.14 TU50 <clx version> CLX CONFIGURATION FILE ERROR - FILE NOT FOUND

Description:

CLX cannot find the configuration file specified at CLX startup.

System Reaction:

CLX stops (severity 4).

User Action:

Check the parameter you supplied when you entered the command SCLX. The default value is: subfile CLX_CONFIG in the library CLX.SLLIB. If this is correct, check the JCL starting CLX, keeping in mind what follows:

- SCLX activates the job CLX whose JCL is stored in the subfile CLX in the library CLX.SLLIB.
- The CLX configuration file is assigned in this JCL.

10.37.15 TU50 <clx version> CLX CONFIGURATION FILE ERROR - INVALID LSMID: <lsmid>

Description:

The value specified for the LSM keyword is incorrect.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the configuration file, then restart CLX. The lsm identifier must be composed of two numbers separated by a comma: <acs-number> (0), <lsm-number> (0 to 23).

Use the ACSSA command "query lsm all" to know the configuration of your library.

For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.16 TU50 <clx version> CLX CONFIGURATION FILE ERROR - INVALID POOLID: <poolid>

Description:

The poolid value specified for the POOLID parameter is incorrect.

System Reaction:

CLX stops (severity 4).

User Action:

Rectify the CLX configuration file. The minimum value is 0, and the maximum value is 65535. Limit values are allowed.

CAUTION:
When CLX processes the configuration, it does not check whether the pool is declared on the library server, or that there are scratch volumes in the pool.

If POOLID_18T or POOLID_36T is missing, the common-pool (POOLID 0) is selected.

10.37.17 TU50 <clx version> CLX CONFIGURATION FILE ERROR - UNKNOWN PARAMETER: <value>

Description:

There is an invalid keyword in the configuration file. Valid keywords are:

- CTnn
- VSN
- LSMID
- TOACSLM
- TOLSM
- MAXTOSSI
- TOSSI
- TORPRQ
- TORPREAD

- MAXTOACSLM
- POOLID_18T
- POOLID_36T
- LOG
- NO_AUTOCR

<**value**> stands for the first 11 characters of the incorrect keyword.

System Reaction:

The keyword is ignored.

User Action:

If necessary, rectify the keyword, and stop and restart CLX. For a complete description of the configuration parameters, refer to "CLX Configuration on GCOS 7" in Chapter 2.

10.37.18 TU50 <clx version> CLX CONFIGURATION FILE ERROR: <device> IS NOT IN SYSTEM CONFIGURATION

Description:

The device is not in the GCOS 7 system configuration.

System Reaction:

The device is ignored. CLX stops (severity 4) if there is no valid device in the CLX configuration file.

User Action:

If all devices included in the system configuration have been declared correctly in the CLX configuration, you may keep CLX running. Otherwise, you should:

- either put the missing device(s) out of configuration, or
- rectify the configuration file, then stop and restart CLX.

10.37.19 TU50 <clx version> CLX CONFIGURATION FILE ERROR: <device> IS NOT DECLARED IN CLX CONFIGURATION FILE

Description:

The device is not declared in the CLX configuration file whereas it is declared as a library drive in the system configuration.

System Reaction:

The device is ignored. CLX stops (severity 4) if there is no valid device in the CLX configuration file.

User Action:

You should either put the missing device(s) out of configuration or rectify the configuration file, then stop and restart CLX, otherwise CLX will reject MOUNT messages from which the Device Manager selects the device.

10.37.20 TU50 <clx version> CLX CONFIGURATION FILE ERROR - DUPLICATE VSN MODELE: <volume>

Description:

The VSN is declared twice in the VSN list.

System Reaction:

The second VSN parameter is ignored.

User Action:

If a volume range is missing in the list, rectify the configuration file, stop and restart CLX.

10.37.21 TU50 <clx version> CLX CONFIGURATION FILE ERROR: INVALID NO_AUTOCR PARAMETER - NO_ AUTOCR OPTION IGNORED

Description:

A parameter specified with NO_AUTOCR in the CLX configuration file is not valid. This parameter is ignored.

System Reaction:

CLX is not stopped.

User Action:

If necessary modify the CLX configuration file and restart CLX.

10.37.22 TU50 <clx version> CLX CONFIGURATION FILE ERROR: INVALID VSN MODEL <vsn>

Description:

A VSN value containing more than 6 characters has been supplied in the CLX configuration file. Only the first 6 characters are displayed in the message.

System Reaction:

CLX aborts (severity 4, status 22000).

User Action:

Modify the CLX configuration file and restart CLX.

10.37.23 TU50 <clx version> CLX CONFIGURATION FILE ERROR: INVALID LOG OPTION <param>

Description:

A parameter (<param>) specified with LOG parameter in the CLX configuration file is not valid.

System Reaction:

CLX is aborted (severity 4, status 22000).

User Action:

Modify the LOG parameter in the CLX configuration file and restart CLX.

10.37.24 TU50 < version> CLX CONFIGURATION FILE ERROR: NO VALUE FOR MAXTOACSLM - DEFAULT VALUE IS ASSUMED

Description:

The CLX configuration file is defined without MAXTOACSLM parameter. The default value (0, means no limit) is assumed.

System Reaction:

CLX is not stopped.

User Action:

If you want to modify the default value, update the CLX configuration file stop and restart CLX to take into account the specified value. Otherwise, ignore the message.

10.37.25 TU50 <clx version> KEYWORD POOLID NO MORE SUPPORTED - USE POOLID_18T AND (OR) POOLID_36T

Description:

The POOLID keyword is found in the CLX configuration file. This keyword associated to the preceding versions is no longer supported since CLX V2.1 version.

System Reaction:

CLX is aborted (severity 4, status 22000).

User Action:

Update the CLX configuration file and restart CLX.

The POOLID keyword must be deleted. The POOLID_18T and (or) POOLID_36T keywords must be declared. The POOLID_18T keyword must be specified if 18-track formatted WORK cartridges are used on the site. The POOLID_36T keyword must be specified if 36-track formatted WORK cartridges are used on the site.

10.37.26 TU50 <clx version> CLX CONFIGURATION FILE ERROR: INVALID MAXTOACSLM <param>

Description:

The parameter <param> specified with the MAXTOACSLM keyword in the CLX configuration file is not valid.

System Reaction:

CLX is aborted (sev 4, status 22000).

User Action:

Modify the value of the MAXTOACSLM parameter in the CLX configuration file and restart CLX.

10.38 TU51

10.38.1 TU51 <clx version> DOF7-PO SESSION CANNOT BE OPENED

Description:

Problem during the opening of the DOF 7-PO session that ensures the interface between the Device Manager and CLX. This prevents CLX from getting the DW messages.

The following message is also issued:

TU65 <clx version> EMERGENCY SHUTDOWN : CLX ERROR < proc_name , ERRNB = error_number, DOF 7-PO return-code>.

DOF 7-PO return-code possible values:

ENTRYOV:	No entries available in the system tables; there are already 16 requesters connected with the attribute MAIN.
NOINIT:	The DOF 7-PO nucleus is not operational.
SHUTDOWN:	GCOS 7 is shutting down; new DOF 7-PO connections are refused.

System Reaction:

The system error is dumped in the JOR of CLX:

H_CLX_EMNPHS <ERROR NUMBER: xxxx> return-code.

The step H_CLX stops with severity 4. The job CLX stops unless the JCL supplied for CLX installation has been modified by the System Administrator.

User Action:

Depends on the return-code:

ENTRYOV:	Contact your System Administrator.
NOINIT:	Restart CLX later.
SHUTDOWN:	No action unless restarting GCOS 7.

10.39 TU52

10.39.1 TU52 <clx version> FILTERS CANNOT BE CREATED: ACCESS RIGHTS VIOLATION

Description:

The DOF 7-PO filters for DWnn messages cannot be created. CLX is not executing under project MAIN.

System Reaction:

The system error is dumped in the JOR of CLX.

The following message is also issued:

```
TU65 <clx version> EMERGENCY SHUTDOWN :- CLX ERROR
     <error_proc_name, ERRNB = error_number, DOF 7-PO return-code>
```

The step H_CLX stops with severity 4. The job CLX stops unless the JCL supplied for CLX installation has been modified by the System Administrator.

User Action:

Modify the JCL starting CLX so that the job executes under a project that has the attribute MAIN in the system catalogue. Submit the job from the MAIN Console, or include the SCLX command in the system startup.

10.39.2 TU52 <clx version> FILTERS NOT CREATED - CLX STOPS

Description:

The DOF 7-PO filters for DWnn messages cannot be created. CLX cannot get DWxx messages.

System Reaction:

The following message is also issued:

```
TU65 <clx version> EMERGENCY SHUTDOWN :- CLX ERROR
     <error_proc_name , ERRNB = error_number, ABORT OF CLX >
```

The step H_CLX stops with severity 4. The job CLX stops unless the JCL supplied for CLX installation has been modified by the System Administrator.

User Action:

Contact your Bull Support.

10.40 TU53

10.40.1 TU53 <clx version> OPERATOR COMMAND CANNOT BE CREATED: < return-code >

Description:

The command CLX cannot be created. Possible values for return codes are:

ILLSEM	Illegal semaphore (system or CLX internal error)
DUPNAME	The command has already been created by another product
NOINIT	The DOF 7-PO nucleus is not operational
TABOV	Overflow in PMOS dynamic commands table. The maximum number of entries of the dynamic commands table is 255.

System Reaction:

The system or CLX error is dumped in the JOR of CLX:

<H_CLX_EMNPHS <ERROR NUMBER xx > : <return-code>

CLX stops (severity 4).

User Action:

Depends on the return-code value:

ILLSEM:	Contact your Bull support.
DUPNAME:	Contact your System administrator.
NOINIT:	Restart CLX later.
TABOV, OPQOVLD	Contact your System administrator, check the system's global load.

10.41 TU54

10.41.1 TU54 <clx version> CLX CANNOT SEND REQUEST TO ACSLS (VERIFY THAT COMMUNICATION LINK ARE ACTIVE)

Description:

CLX cannot send the current request to the library server. A component of the link is not operational:

- SSI is not running or is not operational on the ssi system

Native case

- *OPEN7 or HSL failure, or they are not started (OPEN7 needs TNS or OCS to start),*

XTA case

- **SSI may have fallen on UNIX library server**
  - either by itself,
  - or because of INTEROP7_BASIC failled.
- Ethernet failure.

System Reaction:

At regular intervals, CLX retries to send the request to the SSI. It retries as many times as it can, according to the TOMAXSSI parameter of the CLX configuration file. The time interval between two retries depends on the current request: it is defined by the TOACSLM parameter value, or by the TOLSM parameter if the request is a <query server> or a <query lsm>, otherwise it is defined by the TOSSI parameter value (both parameters are specified in the CLX configuration file).

When TOMAXSSI is reached, the step H_CLX stops (severity 4, status 24000). CLX is not restarted automatically by the JCL unless modified by the System Administrator.

User Action:

Refer to "Communication Link Failure (SSI -TNS - OPEN7 – HSL, OR INTEROP7_BASIC)" in Chapter 9.

10.42 TU55

10.42.1 TU55 <clx version> SSI FAILURE

Description:

Problem receiving messages from SSI - internal error in SSI.

System Reaction:

The step H_CLX stops (severity 4, status 24000). The job CLX stops unless the JCL supplied at the CLX installation has been modified by the System Administrator.

User Action:

Use the command DSSI to find out the state of SSI. If necessary, (re)start it by using the command SSSI. If CLX keeps sending TU54 messages, terminate SSI using the command TSSI and restart it. If CLX aborts, restarts CLX. If the problem persists, refer to "Communication Link Failure (SSI - TNS - OPEN7 – HSL or INTEROP7_BASIC)" in Chapter 9.

10.42.2 TU55 <clx version> HSL IS NOT ACTIVE

Description:

CLX cannot process mount/dismount request because HSL is not running on the DPS 7000. This message is obsolete.

System Reaction:

The step H_CLX stops with severity 4 status 22000, the job CLX stops unless the JCL has been modified by the System Administrator.

User Action:

Native case *Restart OPEN7 or HSL.*

3. Restart HSL and CLX:

- *connect to OPEN7 as the root user,*
- *enter <open7adm>,*
- *select the function sysadm,*
- *select the function hsl_restart,*
- *connect to GCOS 7 as operator,*
- *enter SCLX.*

4. *Restart OPEN7 and CLX:*

   – *connect to GCOS 7 as operator,*
   – *enter OPEN7 STOP,*
   – *enter OPEN7 START,*
   – *when OPEN7 is running enter SCLX.*

XTA case **Restart INTEROP7_BASIC if necessary**

10.42.3 TU55 <clx version> SOCKET SERVER IS NOT ACTIVE

Description:

CLX cannot process mount/dismount request because the socket server is not running on the DPS 7000. This message is obsolete.

System Reaction:

The step H_CLX aborts with severity 4 status 22000, the job CLX stops unless the JCL has been modified by the System Administrator.

User Action:

Native case

5. *Restart HSL and CLX:*

   – *connect to OPEN7 as the root user,*
   – *enter <open7adm>,*
   – *select the function sysadm,*
   – *select the function hsl_restart,*
   – *connect to GCOS 7 as operator,*
   – *enter SCLX.*

6. *Restart OPEN7 and CLX:*

   – *connect to GCOS 7 as operator,*
   – *enter OPEN7 STOP,*
   – *enter OPEN7 START,*
   – *when OPEN7 is running enter SCLX.*

XTA case **Restart INTEROP7_BASIC if necessary**

10.43 TU56

10.43.1 TU56 <clx version> CLX INTERNAL ERROR: TABLE OF RESOURCE <table> OVERFLOW

Description:

The limit of a CLX table has been reached. The table can be TRSV (table of volumes) or TRSA (table of devices). This can happen when a new MOUNT message is issued, or when a MOUNT message is de-queued because waiting resources are available.

System Reaction:

TCLX drops the MOUNT request. The MOUNT message will be repeated until CLX can process it, i.e. as soon as the overflow disappears.

User Action:

Investigate to find out why so many MOUNT requests are issued.

10.44 TU57

10.44.1 TU57 <clx version> UNSUCCESSFUL REQUEST "<acslm_command_code> <volume> ON <device> (<driveid>)": acslm_response_status

Description:

A mount, mount work or dismount request has failed. A MOUNT, MOUNT SCRATCH or DISMOUNT request sent to the library server has been answered with a status different from SUCCESS.

System Reaction:

Depends on the request, on the status value and on the CLX state (operational or processing a resynchronization):

Statuses for the MOUNT request:

NOT IN SAME ACS:	CLX attempts to cancel the mount request.
AUDIT IN PROGRESS:	CLX waits and sends the request to the library server again as long as this status is returned.
UNREADABLE LABEL:	CLX attempts to cancel the mount request.
VOLUME IN DRIVE:	CLX attempts to cancel the mount request if the volume in device is different otherwise the status is ignored.
MISPLACED TAPE:	CLX attempts to cancel the mount request.
DRIVE IN USE:	Because of the checking performed by CLX beforehand, this status should never be returned. This is considered as a CLX internal error. CLX stops with severity 3.
DRIVE NOT IN LIBRARY:	idem.
VOLUME IN USE:	CLX attempts to cancel the mount request if NO_AUTOCR = VOL_BUSY is missing; otherwise, CLX waits until the volume is released by the other system or until a CANCEL_REQUEST operator command.
VOLUME NOT IN LIBRARY:	CLX attempts to cancel the mount request if NO_AUTOCR = VOL_ABS is missing; otherwise CLX waits until the volume is entered in the library by the operator or until a CANCEL_REQUEST operator command.
DRIVE OFF LINE:	The device has been "varied off." CLX attempts to cancel the mount request and to put the device out of configuration.

Statuses for the MOUNT SCRATCH request:

DRIVE IN USE:	Because of the checking performed by CLX beforehand, this status should never be returned. This is considered as a CLX internal error. The step H_CLX stops with severity 3. It is restarted automatically.
VOLUME NOT IN LIBRARY:	idem.
SCRATCH NOT AVAILABLE:	CLX attempts to cancel the mount request.
POOL NOT FOUND:	CLX attempts to cancel the mount request.
DRIVE OFF LINE:	The device has been "varied off." CLX attempts to cancel the mount request and to put the device out of configuration.

Statuses for the DISMOUNT request:

ACS FULL:	CLX attempts to put the drive out of configuration.
DRIVE AVAILABLE:	Means <no volume mounted on the device>. The status is ignored by CLX.
DRIVE IN USE	Means <wrong lock identifier supplied by CLX> or <device still loaded>. No specific action by CLX.
VOLUME NOT IN DRIVE:	CLX attempts to force the dismounting.
MISPLACED TAPE:	CLX attempts to force the dismounting.
UNREADABLE LABEL:	CLX attempts to force the dismounting.
AUDIT IN PROGRESS:	CLX waits and sends the request to the library server again.
DRIVE OFF LINE:	The device has been "varied off." CLX attempts to put the device out of configuration.
VOLUME NOT IN LIBRARY:	Because of the checking performed by CLX beforehand, this status should never be returned. This is considered as a CLX internal error. The step H_CLX stops with severity 3. It is restarted automatically.

Other statuses (any commands):

LIBRARY NOT AVAILABLE:	CLX suspends the automatic mode until the ACSLS becomes available (refer to the paragraph describing CLX behavior in case of a server failure).
LSM OFFLINE	CLX suspends the automatic mode until all LSMs becomes available (refer to the paragraph describing CLX behavior in case of a LSM failure).

The following statuses reveal a problem with the ACSLS which stops the step H_CLX with severity 4. CLX stops unless the JCL supplied at CLX installation has been modified by the System Administrator:

DATABASE ERROR
LIBRARY BUSY
LIBRARY FAILURE
PROCESS FAILURE

The following statuses reveal a problem with CLX which stops the H_CLX with severity 3. The step is restarted by the JCL unless modified by the System Administrator:

COUNT TOO LARGE
COUNT TOO SMALL
INVALID ACS
INVALID DRIVE
INVALID LSM
INVALID OPTION
INVALID POOL
INVALID VOLUME
INVALID VERSION
MESSAGE TOO LARGE
MESSAGE TOO SMALL
MISSING OPTION
UNSUPPORTED OPTION

The following statuses reveal a problem with the configuration which causes the step H_CLX to stop with severity 3. The step is restarted by the JCL unless modified by the System Administrator:

ACS NOT IN LIBRARY
LSM NOT IN LIBRARY
DRIVE NOT IN LIBRARY
LOCKID NOT FOUND

User Action:

Only if the failure persists. Depending on the status value, examine the configuration, hold the device, use the semi-automatic mode or contact you Bull support.

10.45 TU58

10.45.1 TU58 <clx version> UNSUCCESSFUL REQUEST "<acslm_command_code> <device> (<driveid>)": <acslm_response_status>

Description:

This message is issued when the following requests get an abnormal status from the library server: LOCK DRIVE, UNLOCK DRIVE, QUERY DRIVE, QUERY LOCK DRIVE.

System Reaction:

Depends on the request and on the status value.

Status for the LOCK request:

DRIVE IN USE:	CLX attempts to cancel the DW11 MOUNT request.
DRIVE NOT IN LIBRARY:	CLX attempts to cancel the DW11 MOUNT request.
DRIVE OFF LINE:	The device has been "varied off." CLX attempts to cancel the DW11 MOUNT request and to put the device out of configuration.

Status for the UNLOCK DRIVE:

DRIVE AVAILABLE:	CLX ignores the status.
DRIVE NOT IN LIBRARY:	Because of the checking performed by CLX beforehand, this status should never be returned. This is considered as a CLX internal error. The step H_CLX stops with severity 3. It is restarted automatically.
DRIVE OFF LINE:	The device has been "varied off." CLX attempts to put the device out of configuration.
Other status (other commands):	Because of the checking performed by CLX beforehand, this status should never be returned. This is considered as a CLX internal error. The step H_CLX stops with severity 3. It is restarted automatically.

User Action:

Depending on the situation, if the failure persists put the device out of configuration (command MDHW), cancel the job, use the semi-automatic mode or contact your Bull support.

10.45.2 TU58 <clx version> UNSUCCESSFUL REQUEST "<acslm_command_code> <volume>": <acslm_response_status>

Description:

This message is issued when the following requests get an abnormal status from the library server: LOCK VOLUME, UNLOCK VOLUME, QUERY LOCK VOLUME, SET SCRATCH.

System Reaction:

Depends on the acslm_command_code displayed in the message:

LOCK:	CLX attempts to cancel the MOUNT request.
UNLOCK:	Because of the checking performed by CLX beforehand, this case should never be returned. This is considered as a CLX internal error. CLX stops with severity 3. It is restarted by the JCL unless modified by the System Administrator.
SET SCRATCH:	No actions.

User Action:

If the failure persists, according to the acslm_command_code value, modify the configuration, or define the scratch pool, or add scratch volume, or use the semi-automatic mode, or contact your Bull support.

10.45.3 TU58 UNSUCCESSFUL REQUEST "<acslm_command_code>": acslm_response_status

Description:

This message is issued when the following requests get an abnormal status from the library server: QUERY SERVER , QUERY LSM.

System Reaction:

If the returned status is LIBRARY NOT AVAILABLE, CLX suspends the automatic processing until ACSLS becomes operational again.

For any other status, the step H_CLX stops with severity 3. It is restarted by the JCL.

User Action:

Refer to "ACSLS Not Operational" in Chapter 9.

10.46 TU59

10.46.1 TU59 <clx version> ACSLM CANNOT FIND CARTRIDGE <volume> - AN AUDIT IS REQUIRED

Description:

Inconsistency between the request and the content of the library server data base.

System Reaction:

Depends on the request:

1. The status MISPLACED TAPE was returned by the ACSLS for a MOUNT request:
   CLX attempts to cancel the mount request.
2. The status VOLUME NOT IN DRIVE was returned by the ACSLS for a DISMOUNT request:
   CLX attempts to force the dismounting.
3. The status VOLUME NOT IN LIBRARY was returned by the ACSLS for an Unlock volume request (CLX is processing a DISMOUNT request).
   CLX stops with severity 3. It is restarted by the JCL unless modified by the System Administrator.

User Action:

Performs an AUDIT of the ACS by using the ACSSA "audit" command.

10.47 TU60

10.47.1 TU60 <clx version> DISPLAY_CLX COMMAND REJECTED: <device> NOT IN LIBRARY

Description:

The device mentioned by the operator in the DISPLAY_CLX command does not exist.

System Reaction:

Ignores the command.

10.47.2 TU60 <clx version> DISPLAY_CLX COMMAND REJECTED: CLX NOT RUNNING

Description:

The command DISPLAY_CLX cannot be satisfied because CLX is not operational: either CLX is terminating or it is waiting for the ACSLS/ACLSM to be running.

System Reaction:

Ignores the command.

10.48 TU61

10.48.1 TU61 <clx version> TERMINATE_CLX COMMAND REJECTED: CLX NOT RUNNING

Description:

The command TERMINATE_CLX cannot be processed because CLX is not operational. CLX is initializing, terminating or waiting for the ACSLS/ACLSM to be running.

System Reaction:

Ignores the command.

User Action:

If you want to terminate CLX immediately, use the TERMINATE_CLX STRONG [DUMP] command.

10.48.2 TU61 <clx version> OPERATOR COMMAND REJECTED: INVALID SYNTAX

Description:

This message is never issued if the CLX GCL commands are used. It is issued when the operator enters the command PMSESC CLX.

Correct syntax:

PMSESC CLX STATUS [DRIVE]
PMSESC CLX TRACE
PMSESC CLX NTRACE
PMSESC STOP

System Reaction: The command is ignored.

User Action:

Use the GCL commands.

10.48.3 TU61 <clx version> TERMINATE_CLX REJECTED: DEVICES IN USE

Description:

The TCLX command is rejected before cartridges are mounted.

System Reaction:

The command is ignored.

User Action:

Wait for the end of jobs using volumes or terminate these jobs or enter TCLX STRONG.

10.49 TU62

10.49.1 TU62 <clx version> TIMEOUT ON ACSLM REQUEST "<acslm_command_code> <volume> ON <drive> (<driveid>)": NOT ACKNOWLEDGED

Description:

When CLX sends a request to the library server, it triggers a timer for the value specified in the TORPRQ parameter of the CLX configuration.

This message is issued if the time-limit is reached before the request is acknowledged.

<acslm_command_code> can be : MOUNT - DISMOUNT - MOUNT SCRATCH.

System Reaction:

4. This happens during a resynchronization. The message `TU06 V3.0 CLX RECOVERY IN PROGRESS` has just been issued:
   After trying three times the request, the step H_CLX aborts (severity 4).

5. This happens while CLX is operational. The message `TU26 V3.0 NOW MOUNT & DISMOUNT REQUESTS ARE PROCESSED AUTOMATICALLY` has been issued:
   After trying three times the request, CLX sends a query server request to know the ACSLM state. If the ACSLM is not operational, refer to "ACSLS Not Operational" in Chapter 9.
6. CLX is terminating. The message `TU07 CLX SHUTDOWN IN PROGRESS` has just been issued.
   After trying three times the request, the step H_CLX aborts (severity 4).

User Action:

Wait for other issued messages.

10.49.2 TU62 <clx version> TIMEOUT ON ACSLM REQUEST "<acslm_command_code> <drive> (<driveid>)": NOT ACKNOWLEDGED

Description:

Identical to the previous message with the only difference that the acslm_command_code can be: LOCK DRIVE - UNLOCK DRIVE - QUERY DRIVE - QUERY LOCK DRIVE.

System Reaction:

Identical to first message TU62.

User Action:

Wait for following messages.

10.49.3 TU62 <clx version> TIMEOUT ON ACSLM REQUEST "<acslm_command_code> <volume>": NOT ACKNOWLEDGED

Description:

Identical to the previous message except that the<acslm_command_code> can be: LOCK VOLUME - UNLOCK VOLUME - SET SCRATCH.

System Reaction:

Identical to the first message TU62.

User Action:

Wait for following messages.

10.49.4 TU62 <clx version> TIMEOUT ON ACSLM REQUEST: NO RESPONSE TO "<acslm_command_code> <volume> ON <device> (<driveid>)"

Description:

When CLX sends a request to the library server, it triggers a timer for the value specified in the TORPRQ parameter of the CLX configuration.

This message is issued if the time-limit is reached before the entire response is received from the library server.

<acslm_command_code> can be : MOUNT - DISMOUNT - MOUNT SCRATCH.

System Reaction:

Identical to the first message TU62.

User Action:

Wait for following messages.

10.49.5 TU62 <clx version> TIMEOUT ON ACSLM REQUEST: NO RESPONSE TO "<acslm_command_code> <device> (<driveid>)"

Description:

Identical to the previous message except that the <acslm_command_code> can be: LOCK DRIVE, UNLOCK DRIVE, QUERY DRIVE, QUERY LOCK DRIVE.

System Reaction:

Identical to the first message TU62.

User Action:

Wait for following messages.

10.49.6 TU62 <clx version> TIMEOUT ON ACSLM REQUEST: NO RESPONSE TO "<acslm_command_code> <volume>"

Description:

Identical to the previous message with the only difference that the <acslm_command_code> can be: LOCK VOLUME , UNLOCK VOLUME , SET SCRATCH.

System Reaction:

Identical to the first message TU62.

User Action:

Wait for following messages.

10.49.7 TU62 <clx version> TIMEOUT ON ACSLM REQUEST: NO RESPONSE TO "<acslm_command_code>"

Description:

Identical to the previous message except that the <acslm_command_code> can be: QUERY SERVER, QUERY LSM, QUERY LOCK VOLUME (ALL).

System Reaction:

After trying ten times the request, the step H_CLX aborts (severity 4).

User Action:

Refer to "ACSLS Not Operational" in Chapter 9.

10.50 TU64

10.50.1 TU64 <clx version> ACSLM OR CLX INTERNAL ERROR

Description:

A request coming from CLX is rejected by the ACSLS whereas to CLX the request should have been processed normally by the library server. This is due either to abnormal behavior of the library server or to abnormal behavior of CLX.

System Reaction:

Unless the request was SET SCRATCH, the step H_CLX aborts (severity 3):

If the request is SET SCRATCH (as detailed before by a message TU58 issued previously, when CLX was processing a DW10 DISMOUNT WORK message), CLX ignores the abnormal behavior. In this case, the volume has the 'work' attribute but is not a scratch volume. This means that the volume will never be selected by the library server when a mount scratch request is sent by CLX.

(Remember that CLX sends a mount scratch request to get a work volume mounted).

User Action:

If the request was a SET SCRATCH, the operator should verify that the pool declared in the CLX configuration file exists by using the ACSSA command "query pool." If necessary, create the pool by using the ACSSA command "define pool."

Next, set the scratch attribute for the volume either by using the ACSSA command "set scratch" from a UNIX terminal or by using the command PREPARE_TAPESET to prepare the volume one more time.

10.50.2 TU64 <clx version> ACSLM ERROR: <device> STATUS = IN_USE, NOT LOCKED, NO VOLUME

Description:

This message is issued during a resynchronization. CLX cannot know whether the device is locked or not due to incoherent responses from the library server.

System Reaction:

CLX attempts to put the device out of the configuration.

User Action:

None.

10.50.3 TU64 <clx version> ACSLM ERROR: <device> STATUS = AVAILABLE WITH <volume> MOUNTED

Description:

This message is issued during a resynchronization. CLX cannot know whether the device is locked or not due to incoherent responses from the library server.

System Reaction:

CLX attempts to put the device out of the configuration.

User Action:

None.

10.51 TU65

10.51.1 TU65 <clx version> CLX EMERGENCY SHUTDOWN: CLX ERROR < proc_name >, ERRNB = error_number, return-code >

Description:

Serious abnormal behavior of CLX.

<proc_name> gives the procedure which detected the failure.

<error_number> identifies the error inside the procedure.

System Reaction:

A history about the failure is stored in CLX JOR. The step H_CLX aborts with severity 3. It is automatically restarted.

User Action:

Keep the JOR and give it to your Bull support.

10.51.2 TU65 <clx version> CLX EMERGENCY SHUTDOWN: SSI FAILURE

Description:

CLX has tried TOMAXSSI times to get responses from the library server for a request. On each try, CLX received an abnormal status from SSI.

System Reaction:

The step H_CLX aborts (severity 4, status 24000).

User Action:

Try to stop and restart SSI using the commands STOP_SSI and START_SSI, then restart CLX by using the command START_CLX. If the failure persists, refer to "Communication Link Failure" in Chapter 9.

10.51.3 TU65 <clx version> CLX EMERGENCY SHUTDOWN: ACSLM DOWN

Description:

CLX detects a failure with the ACSLM. At least one of the components, the ACSLS or the ACSLM, is not operational. This may happen in the following situations:

7. CLX has sent a command "query server" or "query lsm" to the library server ten times but has received no response.
8. During a resynchronization, CLX has sent a request to the library server a number of time specify in the MAXTOACSLM parameter but has received no response.
9. CLX receives one of the following abnormal statuses from the library server:
   - DATABASE ERROR
   - LIBRARY BUSY
   - LIBRARY FAILURE
   - PROCESS FAILURE

System Reaction:

The step H_CLX aborts (severity 4, status 23000). CLX stops unless JCL supplies at CLX installation has been modified by the System Administrator.

User Action:

Examine the library server and refer to "ACSLS Not Operational" in Chapter 9.

10.52 TU66

10.52.1 TU66 <clx version> VOLUME <volume> NOT IN LIBRARY: OPERATOR INTERVENTION REQUIRED

A mount message has been issued for the volume. The volume is not in the library.

User Action:

Insert the volume in the library or cancel the mount request.

10.52.2 TU66 <clx version> WORK VOLUME <volume> WRITE PROTECTED: EJECTION REQUIRED

A mount message has been issued for a work volume. The selected volume is protected by the protect switch.

User Action:

Get the volume serial number by using the EXTRACT_CLX_ERROR, then eject the cartridge by using the CLX command EJECT_VOLUMES.

10.52.3 TU66 <clx version> VOLUME <volume> SCRATCH NO WORK: EJECTION OR PREPARE_TAPE REQUIRED

A mount message has been issued for a work volume. The selected volume has not the work attribute. The volume serial number of the cartridge is logged, it will be returned on the next EXTRACT_CLX_ERROR command.

User Action:

If the cartridge does not have to be a work cartridge, ignore the message otherwise prepare the volume by using the PREPARE_TAPESET command with the WORK parameter.

Also you can ignore the message and retrieve later the volume serial number with the EXTRACT_CLX_ERROR command. Note that EXTRACT_CLX_ERROR must be done from time to time to empty the CLX log.

10.52.4 TU66 <clx version> VOLUME <volume> ERROR ON LOCKING CLX LOG FILE <rc>

A Mount Work message is being processed. CLX has just detected that the selected volume is not a work volume , or the volume is work volume in a write protect mode. CLX tried to register the volume serial number of the cartridge in its log file. The logging action has failed due to a conflict on the log file. An EXTRACT_CLX_ERROR command is probably active. CLX goes on processing. The volume will be not logged.

User Action:

Investigate to know what is using the CLX.SLLIB library, an EXTRACT_CLX_ERROR command may be abnormally pending.

If you cannot find the reason for the problem, give Bull support the following components:

- PRLOGC or the hard copy of the main console,
- JCL of the job CLX (CLX.SLLIB..CLX),
- the report of the LSF CLX.SLLIB ALL command.

10.52.5 TU66 <clx version> VOLUME <volume> ERROR ON OPENING CLX LOG FILE <rc>

A Mount Work message is being processed. CLX has just detected that the selected volume is not a work volume, or the volume is a work volume in a write protect mode. CLX tried to register the volume serial number of the cartridge in its log file. An abnormal status occurred during the open operation on the log file. CLX goes on processing. The volume will be not logged.

User Action:

Investigate to know what is using the CLX.SLLIB library, an EXTRACT_CLX_ERROR command may be abnormally pending.

If you cannot find the reason for the problem, give Bull support the following components:

- PRLOGC or the hard copy of the main console,
- JCL of the job CLX (CLX.SLLIB..CLX),
- the report of the LSF CLX.SLLIB ALL command.

10.52.6 TU66 <clx version> VOLUME <volume> ERROR ON WRITING CLX LOG FILE <rc>

A Mount Work message is being processed. CLX has just detected that the selected volume is not a work volume, or the volume is a work volume in a write protect mode. CLX tried to register the volume serial number of the cartridge in its log file. An abnormal status occurred during the write operation on the log file. CLX goes on processing. The volume will be not logged.

User Action:

If the return code is EXHAUST, you must empty the CLX log file by using the EXTRACT_CLX_ERROR command with the keyword ERR=WP then with ERR = SNW.

In the other case, refer to the user action described for the message in 10.1.52.4

10.52.7 TU66 <clx version> ERROR ON CLOSING CLX LOG FILE <rc>

A Mount Work message is being processed. CLX has just detected that the selected volume is not a work volume, or the volume is a work volume in a write protect mode. CLX registered the volume serial number of the cartridge in its log file. An abnormal status occurred during the closing of the log file. CLX goes on processing.

User Action:

Refer to the user action described for the message in 10.1.52.4

10.52.8 TU66 <clx version> ERROR ON ACCESSING CLX LOG FILE < rc>

Same as message in 10.1.52.3

10.53 TU70

These messages are issued when the following CLX commands and CLX utilities are entered:

- SSSI (see "CLX Commands" in Chapter 6)
- TSSI (see "CLX Commands" in Chapter 6)
- DSSI (see "CLX Commands" in Chapter 6)
- GTCLXF (see "CLX Utilities" in Chapter 6)
- VOLRPT (see "CLX Utilities" in Chapter 6)

10.53.1 TU70 <clx version> SSI IS RUNNING

Description:

This message is display in response to a DSSI command when SSI is running.

System Reaction:

None, if CLX is waiting for SSI, it will be automatically restarted. The command path is operational.

User Action:

None, start CLX if necessary.

10.53.2 TU70 <clx version> SSI IS STOPPED

Description:

This message is displayed in response to a TSSI command successfully completed.

System Reaction:

The communication between CLX and the library server is down. No command can be supplied to the server. If CLX is running a TU54 message will be displayed.

User Action:

None, it is not recommended to stop SSI. When CLX is running, messages can be lost.

10.53.3 TU70 <clx version> SSI STARTED

Description:

This message is displayed in response to a SSSI command successfully completed.

System Reaction:

The communication between CLX and the library server is operational. ACSLS commands can be supply to the server.

User Action:

None.

10.53.4 TU70 <clx version> SSI ALREADY ACTIVE

Description:

This message is displayed in response to a SSSI command if the SSI process is already active.

System Reaction:

None.

User Action:

Before using SSSI command, the user must verify on ssi system if the SSI process is already active using the DSSI command.

10.53.5 TU70 <clx version> YOU ARE NOT ALLOWED TO RUN CLX PRODUCT

Description:

Marketing identifier necessary to run CLX is not installed on your site. The command is abnormally terminated. No library command can be activated.

System Reaction:

The command is aborted, CLX cannot be running.

User Action:

Contact Bull support center.

10.53.6 TU70 <clx version> SSI IS NO MORE RUNNING

Description:

This message is displayed in response to a DSSI command when the SSI process is not running.

System Reaction:

None, if CLX is running a TU54 message is displayed:

```
TU54 CLX CANNOT SEND REQUEST TO SSI (VERIFY THAT SSI/HSL/TNS ARE
     ACTIVE).
```

No command can be transmitted by GCOS to the library.

User Action:

Start SSI (SSSI) to reactivate the communication link between CLX and the library server.

10.53.7 TU70 <clx version> SSI CANNOT BE STARTED

Description:

This message is displayed in response to a SSSI command if the SSI process cannot be activated.

System Reaction:

None, if CLX is running a TU54 message is displayed:

```
TU54 <clx version> CLX CANNOT SEND REQUEST TO SSI (VERIFY THAT
SSI/HSL/TNS ARE ACTIVE).
```

User Action:

The communication between GCOS and the library cannot be established.

Native case — *Check that HSL, (TNS or OCS) are active, if not, restart them if none is active.*

XTA case — **Check that INTEROP7_BASIC are active, if not, restart them.**
On UNIX server, check if communications are operational.

10.53.8 TU70 <clx version> ERROR ON SUBMITTING UNIX COMMAND RETURN CODE = <Return Code>

Description:

This message is displayed when a command (SSSI, DSSI, TSSI) is submitted while UNIX is not running.

System Reaction:

None, the submitted command is rejected.

User Action:

Native case — *Check if SUBUX, daemon is running, if not restart SUBUX using /etc/subux command.*

XTA case — **Check the following on UNIX library server:**
. exec tcp service is available,
. network name of the DPS 7000-XTA is known in /etc/hosts or in your DNS server,
and check the following on the DPS 7000-XTA:
. INTEROP7_BASIC active,

10.53.9 TU70 <clx version> ERROR ON GETTING UNIX RESPONSE RETURN CODE = <Return Code>

Description:

This message is displayed when after a command (SSSI, TSSI, DSSI) submitted, the response cannot be retrieved by GCOS 7.

System Reaction:

None.

User Action:

Native case — *Check if GCOS 7 HSL server and/or subux daemon are active. If not, start HSL and or subux daemon using HSL RESTART or etc/subux command and restart the command. Stop and Restart OPEN 7 if necessary.*

XTA case — **check the following on UNIX library server:**
. exec tcp service is available,
. network name of the DPS 7000-XTA is known in /etc/hosts or on your DNS server,
and check the following on the DPS 7000-XTA:
. INTEROP7_BASIC active,

10.53.10 TU70 <clx version> SSI CANNOT BE STOPPED

Description:

This message is displayed when a command TSSI is submitted but SSI is still running under UNIX system.

System Reaction:

None, SSI process still running.

User Action:

This situation happens if the SSI process has been started without using a standard SSI command.

If a user wants to stop the SSI process, he/she must be logged on the ssi server and should use the UNIX command "kill."

10.53.11 TU70 <clx version> SSI CANNOT BE STARTED

Description:

This message is displayed when the SSI command is submitted but the SSI process is not running.

System Reaction:

None.

User Action:

If the ssi system is still running, check if the SSI process is running. If so, terminate SSI (TSSI) and restart it using the SSSI command.

If the ssi system is no longer running, or if UNIX library server is no longer running, restart the system, the SSSI command, or the UNIX library

10.53.12 TU70 <clx version> THE FILE TRANSFER OF <unix file> FROM OPEN 7 TO GCOS 7 HAS FAILED/ UNKNOWN FILE OR ACCESS RIGHTS FORBIDDEN

<unix file> name of the UNIX file to transfer

Description:

This message is displayed in response to GTCLXF command involving file under the ssi system if no character is transferred.

System Reaction:

None, the command is terminated.

User Action:

Either the file does not exist on UNIX server or CLX user is not created or access rights are not correct:

- on the ssi system, check the name of the file to transfer,
- on GCOS system, check the access rights of user CLX (USER=CLX, PASSWORD=CLX project = CLX).

Restart the command if the file is available and access rights are correct.

10.53.13 TU70 <clx version> THE FILE TRANSFER OF <unix file> FROM “SSI SYSTEM” TO GCOS 7 IS COMPLETED

<unix file> name of UNIX file to transfer

Description:

This message is displayed in response to a GTCLXF command requesting transfer that is successfully completed from the ssi system

System Reaction:

None.

User Action:

The UNIX file is available in the specified library on GCOS 7 system.

10.53.14 TU70 <clx version> THE FILE TRANSFER OF <unix file> FROM <unix server> TO GCOS 7 HAS FAILED: UNKNOWN FILE OR ACCESS RIGHTS FORBIDDEN

<unix file> name of UNIX file to transfer
<unix server> name of UNIX server where resides the file

Description:

This command is displayed in response to a GTCLXF command involving file on a remote server, when no character is transferred.

System Reaction:

None, the command is terminated.

User Action:

Either the file does not exists, or CLX user is not created or access rights are not correct.

- on UNIX server, check the name of the file to transfer,
- on GCOS system, check the access rights of user CLX (user = CLX, project = CLX, password = CLX) restart the command if the file is available and access rights are correct.

10.53.15 TU70 <clx version> THE FILE TRANSFER OF <unix file> FROM <unix server> TO GCOS 7 IS COMPLETED

<unix file> name of UNIX file to transfer
<unix server> name of UNIX server where resides to file to transfer

Description:

This message is displayed in response to a GTCLXF, command involving file on a remote server, successfully completed.

System Reaction:

None.

User Action:

The UNIX file is available in the specify library on GCOS 7 system.

10.53.16 TU70 <clx version> THE RESULT OF VOLRPT IS ON THE UNIX SERVER IN THE FILE /export/home/ACSSS/log/volrpt.log -> LAUNCH GET_CLX_FILE TO TRANSFER IT ON GCOS 7

Description:

This message is displayed in response to a VOLRPT command successfully completed.

System Reaction:

None, the file is available on the server under the specified directory.

User Action:

The UNIX file can be transferred on GCOS using a GTCLXF.

10.53.17 TU70 <clx version> THE VOLUME REPORT HAS FAILED, UNIX FAILURE MESSAGE IS BEFORE THIS MESSAGE

Description:

This message is displayed in response to a VOLRPT command abnormally terminated. Usually a UNIX error message (unknown host,...) is displayed before this message...

System Reaction:

None, the command is abnormally terminated.

User Action:

Take account of the UNIX error message displayed, and restart the command.

10.54 TU71

Generalities

These messages are issued when library commands are entered from an operator console connected through terminal connected either under MAIN or SYSADMIN project.

All messages prefixed by TU71 are displayed when a library command is used.

For a complete description of status, see Chapter 11, "Return Status Information".

10.54.1 TU71 <clx version> <command> ACCEPTED - REQUEST NUMBER: < request identifier>

Description:

This message is displayed when the specified ACSSA command is accepted to be processed by the library server.

<Command>: identifier of the ACSSA command

Command values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

Request identifier:

Identifier of the request.

System Reaction:

None

User Action:

None, eventually cancel the request using the CANCEL_LIB_REQUEST command.

10.54.2 TU71 <clx version> <command> <command state>

Description:

This message is displayed when the processing of the ACSSA command is completed. It gives the result of the command.

<command> : identifier of the ACSSA command

Command values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

<command state>: status of the command

Command state values:

- COMPLETED
- UNSUCCESSFUL
- PARTIALLY PROCESSED

System Reaction:

None

User Action:

None.

10.54.3 TU71 <clx version> ACS= <ACS identifier> -<state>- FREECELLS= <free cells number> REQ.C/P: AU= <au_c> / <au_p> MO= <mo_c> / <mo_p> DI= <di_c> / <di_p> EN= <en_c> / <en_p> EJ= <ej_c> / <ej_p>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (ACS) command successfully completed.

Parameters description:

<ACS identifier> identifier of the ACS

<state> State of the ACS

State values:

- IN DIAGnostic
- OFFLINE
- OFFline PENDing
- ONLINE
- RECOVERY

<free cells number> number of free cells

REQ.C/P = request current/pending number for each following command:
AU = AUDIT_CARTRIDGE_LIBRARY command
MO = MOUNT VOLUME command
DI = DISMOUNT VOLUME command
EN = ENTER_LIB_VOLUMES or ENTER_UNLAB_VOLUMES command
EJ = EJECT_LIB_VOLUMES command

<au_c>: number of current AUDIT command

<au_p>: number of pending AUDIT command

<mo_c>: number of current MOUNT command

<mo_p>: number of pending MOUNT command

<di_c>: number of current DISMOUNT command

<di_p>: number of pending DISMOUNT command

<en_c>: number of current ENTER command

<en_p>: number of pending ENTER command

<ej_c>: number of current EJECT command

<ej_p>: number of pending EJECT command

System Reaction:

The command is successfully completed.

10.54.4 TU71 <clx version> CAP= <CAP identifier> <status> -PR= <priority> SZ= <size> <mode> -<state>-

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (CAP) command successfully completed.

Parameters Description:

<CAP identifier>: identifier of the CAP

<status>: status of the CAP

Status values:

- ACS NOT IN LIBRARY
- CAP NOT IN LIBRARY
- DATABASE ERROR
- EJECT_ACTIVITY
- ENTER_ACTIVITY
- INVALID ACS
- INVALID CAP
- INVALID LSM
- LSM NOT IN LIBRARY
- PROCESS FAILURE

<priority>: priority of the CAP
<size>: number of cell of the CAP
<mode>: mode of the CAP

Mode values:

- AUTOmatic
- MANUal

<state>: state of the CAP

State values:

- IN DIAGnostic
- OFFLINE
- OFFline PENDing
- ONLINE
- RECOVERY

System Reaction:

The command is successfully completed.

10.54.5 TU71 <clx version> CAP= <CAP identifier> <status> [PRTY= <priority>] [MODE: <mode>]

Description:

This message is displayed in response to a SET_CAP_ATTRIBUTES command successfully completed.

Parameters Description:

<CAP identifier>: identifier of the cap

<status>: status of the CAP

Status values:

- ACS NOT IN LIBRARY
- CAP NOT IN LIBRARY
- CAP OFFLINE
- INVALID ACS
- INVALID CAP
- INVALID LSM
- LSM NOT IN LIBRARY

<priority>: priority of the CAP

<mode>: mode of the CAP

Mode values:

- AUTOmatic
- MANUal

System Reaction:

The command is successfully completed.

10.54.6 TU71 <clx version> DR= <drive identifier> <status> -<state>- TYPE=<drive_type> [VOL= <volume identifier>]

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (DRIVE), QUERY_CARTRIDGE_LIBRARY (MOUNT) or QUERY_CARTRIDGE_LIBRARY (MOUNT_SCRATCH) command successfully completed.

Parameters Description:

<drive identifier>: identifier of the drive

<status> status of the drive

Status values:

- ACS NOT IN LIBRARY
- DATABASE ERROR
- DRIVE AVAILABLE
- DRIVE IN USE
- DRIVE NOT IN LIBRARY
- INVALID ACS
- INVALID DRIVE
- INVALID LSM
- LSM NOT IN LIBRARY
- PROCESS FAILURE

<state> state of the drive

State values:

- IN DIAGnostic
- OFFLINE
- ONLINE

<drive_type>: type of drive

Drive_type values:

- 4780
- 4490
- 9490

<volume identifier> volume serial number

System Reaction:

The command is successfully completed.

10.54.7 TU71 <clx version> DR= <drive identifier> <status> -LCK= <lock identifier> LCK-DURATION= <lock duration> LCK-PENDING= <lock_pending number> USR= <user identifier>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LOCK_DRIVE) command that is successfully completed.

Parameters Description:

<drive identifier>: drive identifier

<status>: status of the drive

Status values:

- ACS NOT IN LIBRARY
- DRIVE AVAILABLE
- DRIVE IN USE
- DRIVE NOT IN LIBRARY
- INVALID ACS
- INVALID DRIVE
- INVALID LSM
- LSM NOT IN LIBRARY

<lock identifier> identifier of the lock drive

<lock duration>: duration of the lock drive in seconds

<lock_pending number>: number of lock drive pending

<user identifier>: identifier of the user

System Reaction:

The command is successfully completed.

10.54.8 TU71 <clx version> LSM= <LSM identifier> <status>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LSM) command that is successfully completed.

Parameters Description:

<LSM identifier> identifier of the LSM

<status> status of the LSM

Status values:

- ACS NOT IN LIBRARY
- DATABASE ERROR
- INVALID ACS
- INVALID LSM
- LSM NOT IN LIBRARY
- PROCESS FAILURE

System Reaction:

The command is successfully completed.

10.54.9 TU71 <clx version> LSM=<LSM identifier>-<state>-<status>-FREECELLS=<free cells number> REQ.C/P: AU=<au_c>/<au_p> MO=<mo_c>/<mo_p> DI=<di_c>/<di_p> EN=<en_c>/<en_p> EJ=<ej_c>/<ej_p>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LSM) command successfully completed.

Parameters Description:

<LSM identifier>: identifier of the LSM

<state> state of the LSM

State values:

- IN DIAGnostic
- OFFLINE
- OFFline PENDing
- ONLINE
- RECOVERY

<status>: status of the LSM

Status values:

- AUDIT ACTIVITY
- CAP AVAILABLE
- EJECT ACTIVITY
- ENTER ACTIVITY

<free cells number>: number of free cells in the LSM

REQ.C/P = request current/pending number
AU = AUDIT_CARTRIDGE_LIBRARY command

MO = MOUNT VOLUME command
DI = DISMOUNT VOLUME command
EN = ENTER_LIB_VOLUMES or ENTER_UNLAB_VOLUMES command
EJ = EJECT_LIB_VOLUMES command

<au_c>: number of current AUDIT commands

<au_p>: number of pending AUDIT commands

<mo_c>: number of current MOUNT commands

<mo_p>: number of current MOUNT commands

<di_c>: number of current DISMOUNT commands

<di_p>: number of pending DISMOUNT commands

<en_c>: number of current ENTER commands

<en_p>: number of pending ENTER commands

<ej_c>: number of current EJECT commands

<ej_p>: number of pending EJECT commands

System Reaction:

The command is successfully completed.

10.54.10 TU71 <clx version> NO LOCKED DRIVE

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LOCK_DRIVE) command if there is no locked drive in the cartridges library.

System Reaction:

The command is successfully completed.

10.54.11 TU71 <clx version> NO LOCKED VOLUME

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LOCK_VOLUME) command if there is no locked volume in the cartridges library.

System Reaction:

The command is successfully completed.

10.54.12 TU71 <clx version> NUMBER OF VOLSERS EXTRACTED FROM CLX LOG = <number of volsers>

Description:

This message is displayed in response to an EXTRACT_CLX_ERROR command to indicate the number of volume serial numbers stored in the specified subfile.

<number of volsers> number of volume serial number extracted

System Reaction:

The command is completed.

10.54.13 TU71 <clx version> NUMBER OF VOLUMES EJECTED <number of volumes>

Description:

This message is displayed in response to an EJECT_LIB_VOLUMES command to indicate the number of volumes ejected in the specified CAP.

<number of volumes> number of volumes ejected

System Reaction:

The command is completed.

10.54.14 TU71 <clx version> NUMBER OF VOLUMES NOT EJECTED <number of volumes>

Description:

This message is displayed in response to an EJECT_LIB_VOLUMES command to indicate the number of volumes not ejected.

<number of volumes> number of volumes not ejected (if not in library or in use)

System Reaction: The command is completed.

10.54.15 TU71 <clx version> PLACE LABELED CARTRIDGES IN CAP <CAP identifier> IF NO ERROR FOLLOWS

Description:

This message is displayed to in response to an ENTER_LIB_VOLUMES command to inform the operator to place labeled cartridge in the CAP if no error has been detected.

If an error is detected, the erroneous status is displayed.

<cap identifier> identifier of the CAP

System Reaction:

The command is still running.

User Action:

Place labeled cartridge in CAP.

10.54.16 TU71 <clx version> PLACE <number of volumes> UNLABELED CARTRIDGE(S) IN CAP <CAP identifier> IF NO ERROR FOLLOWS

Description:

This message is displayed in response to an ENTER_UNLAB_VOLUMES command to inform the operator to place unlabeled cartridge(s) in the CAP if no error has been detected.

If an error is detected, the erroneous status is displayed.

<number of volumes>: number of volumes to place in the CAP

<CAP identifier>: identifier of the CAP where cartridges must be inserted

System Reaction:

The command is still running.

User Action:

Place labeled cartridge in CAP.

10.54.17 TU71 <clx version> POOL= <scratch pool identifier> - <status> -LWM= <low water mark> HWM= <high water mark> [<attribute>]

Description:

This message is displayed in response to a DEFINE_SCRATCH_POOL command successfully completed.

Parameters Description:

<scratch_pool_identifier>: identifier of the scratch pool

<status>: status of the pool

Status values:

- HIGH WATER MARK
- INVALID POOL
- LOW WATER MARK

<low water mark>: Point at which warning message are sent as the pool becomes depleted

<high water mark>: point at which warning message are sent as volumes are added to the pool

<attribute>: attribute of the pool

Attribute value:

OVERFLOW

System Reaction:

The command is successfully completed.

10.54.18 TU71 <clx version> POOL= < scratch pool identifier> <status>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (MOUNT_SCRATCH), DEFINE_SCRATCH_POOL or a DELETE_SCRATCH_POOL command successfully completed.

<scratch pool identifier > identifier of the pool

<status> status of the pool

Status values:

- DATABASE ERROR
- HIGH WATER MARK
- INVALID POOL
- LOW WATER MARK
- POOL EMPTY
- POOL NOT FOUND
- PROCESS FAILURE

System Reaction:

The command is successfully completed.

10.54.19 TU71 <clx version> POOL= <scratch pool identifier> <status> -CNT= <count> LWM= <low water mark> HWM= <high water mark> [<attribute>]

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (POOL) command successfully completed.

Parameters Description:

<scratch pool identifier>: identifier of the scratch pool

<status>: status of the pool

Status values:

- DATABASE ERROR
- HIGH WATER MARK
- INVALID POOL
- LOW WATER MARK
- POOL NOT FOUND
- PROCESS FAILURE

<count>: number of scratch volume

<low water mark>: Point at which warning message are sent as the scratch pool becomes depleted

<high water mark>: point at which warning message are sent as volumes are added to the scratch pool

<attribute>: attribute of the pool

Attribute value:

OVERFLOW

System Reaction:

The command is successfully completed.

10.54.20 TU71 <clx version> POOL= <scratch pool identifier> VOL= <volume identifier> <status> -MEDIA_TYPE= <media_type> CELL= <cell identifier>

Description:

This message is displayed in response to QUERY_CARTRIDGE_LIBRARY (SCRATCH) command successfully completed.

Parameters Description:

<scratch pool identifier>: identifier of the scratch pool

<volume identifier>: volume serial number of the scratch volume

<status> status of the pool

Status values:

- DATABASE ERROR
- PROCESS FAILURE
- VOLUME HOME
- VOLUME IN TRANSIT

<media_type>: type of media

Media_type values:

- 3480
- 3490E

<cell identifier> identifier of the cell format : ACS,LSM,panel,row,column if volume in home position

System Reaction:

The command is successfully completed.

10.54.21 TU71 <clx_version> POOL(S) NOT FOUND OR EMPTY

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (SCRATCH) if the specified scratch pool is unknown or empty.

System Reaction:

The command is successfully completed.

10.54.22 TU71 <clx_version> PORT = <port identifier> [<status>] [-<state>-]

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (PORT) command successfully completed.

Parameters Description:

<port identifier> identifier of the port

<status> status of the port if erroneous

Status values:

- ACS NOT IN LIBRARY
- DATABASE ERROR
- INVALID ACS
- INVALID PORT
- PORT NOT IN LIBRARY
- PROCESS FAILURE

<state> state of the port if no erroneous status

State values:

- OFFLINE
- ONLINE

System Reaction:

The command is successfully completed.

10.54.23 TU71 <clx_version> REMOVE <volume identifier> FROM CAP <CAP identifier> IF NO ERROR FOLLOWS

Description:

This message is displayed in response to EJECT_LIB_VOLUMES in order to inform the operator to remove cartridges from the specified CAP if no error is detected on the server. If an error is detected, the error status is displayed.

System Reaction:

The command is still running.

User Action:

Remove cartridges from the CAP when unlocked.

10.54.24 TU71 <clx version> REQ= <request identifier> <status> <command>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (REQUEST) command successfully completed, which launches an ACSSA command on the library server.

Parameters Description:

<request identifier>: request identifier of the command

<status>: status of the command

Status values:

- CURRENT
- INVALID MESSAGE
- MESSAGE NOT FOUND
- PENDING

<command> : name of the ACSSA command in progress

Command values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

System Reaction:

The command is successfully completed.

10.54.25 TU71 <clx version> REQUEST NUMBER <request identifier> CANCELLED

Description:

This message is displayed in response to a CANCEL_LIB_REQUEST command that is successfully completed.

Parameters Description:

<request identifier>: request identifier of the canceled command

System Reaction:

The command is successfully completed.

10.54.26 TU71 <clx version> SERVER -<state>- FREECELLS= <free cells number> REQ.C/P: AU= <au_c> / <au_p> MO= <mo_c> / <mo_p> DI= <di_c> / <di_p> EN= <en_c> / <en_p> EJ= <ej_c> / <ej_p>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (SERVER) command successfully completed.

Parameters Description:

<state>: state of the server

State values:

- IDLE
- IDLE PENDing
- RECOVERY
- RUN

<free cells number>: number of free cells

REQ.C/P = request current/pending number for the following command
AU = AUDIT_CARTRIDGE_LIBRARY command
MO = MOUNT VOLUME command
DI = DISMOUNT VOLUME command
EN = ENTER_LIB_VOLUMES or ENTER_UNLAB_VOLUMES command
EJ = EJECT_LIB_VOLUMES command

<au_c>: number of current AUDIT command
<au_p>: number of pending AUDIT command
<mo_c>: number of current MOUNT command
<mo_p>: number of pending MOUNT command
<di_c>: number of current DISMOUNT command
<di_p>: number of pending DISMOUNT command
<en_c>: number of current ENTER command
<en_p>: number of pending ENTER command
<ej_c>: number of current EJECT command
<ej_p>: number of pending EJECT command

10.54.27 TU71 <clx version> VOL= <volume identifier> <status>

Description:

This message is displayed in response to the:

EJECT_LIB_VOLUMES
ENTER_LIB_VOLUMES
ENTER_UNLAB_VOLUMES
QUERY_CARTRIDGE_LIBRARY(CLEAN)
QUERY_CARTRIDGE_LIBRARY(LOCK_VOLUME)
QUERY_CARTRIDGE_LIBRARY(VOLUME) or
QUERY_CARTRIDGE_LIBRARY (MOUNT)

commands successfully completed.

Parameters Description:

<volume identifier> volume serial number

<status>: status of the volume

Status values:

- ACS FULL
- AUDIT IN PROGRESS
- DATABASE ERROR
- DUPLICATE LABEL
- ENTERED
- INCORRECT ATTRIBUTE
- INVALID VOLUME
- LIBRARY BUSY
- LSM OFFLINE
- MISPLACED TAPE
- NOT IN SAME ACS
- PROCESS FAILURE
- READABLE LABEL
- SCRATCH SET
- UNREADABLE LABEL
- VOLUME HOME
- VOLUME IN DRIVE
- VOLUME IN TRANSIT
- VOLUME IN USE
- VOLUME NOT FOUND
- VOLUME NOT IN LIBRARY

System Reaction:

The command is completed.

10.54.28 TU71 <clx version> VOL= <volume identifier> <status> -MEDIA_TYPE= <media_type> CELL= <cell identifier> MAX USE= <max usage number> CUR USE= <current usage number>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (CLEAN) command successfully completed.

Parameters Description:

<volume identifier> volume serial number of the cleaning volume

<media_type>: type of media

Media_type values:

- 3480
- 3490E

<cell identifier> identifier of the cell associated to the cleaning volume (ACS, LSM, panel, row, column)

<max usage number> maximum usage number of the cleaning volume

<current usage number> current usage number of the cleaning volume

System Reaction:

The command is successfully completed.

10.54.29 TU71 <clx version> VOL= <volume identifier> <status> -LCK= <lock identifier> LCK-DURATION= <lock duration> LCK-PENDING= <lock_pending number> USR=<user identifier>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (LOCK_VOLUME) command successfully completed.

Parameters Description:

<volume identifier>: volume serial number

<status> status of the volume.

Status values:

- INVALID VOLUME
- PROCESS FAILURE
- VOLUME AVAILABLE
- VOLUME IN USE
- VOLUME NOT IN LIBRARY

<lock identifier>: identifier of the lock

<lock duration>: duration of the lock in seconds

<lock_pending number>: number of lock pending

<user identifier>: identifier of the user associated to the lock

System Reaction: The command is successfully completed.

10.54.30 TU71 <clx version> VOL= <volume identifier> <status> -MEDIA_TYPE= <media_type> LOC= <location>

Description:

This message is displayed in response to a QUERY_CARTRIDGE_LIBRARY (VOLUME) command successfully completed.

Parameters Description:

<volume identifier>: volume serial number
<status>: status of the volume

Status values:

- DATABASE ERROR
- INVALID VOLUME
- PROCESS FAILURE
- VOLUME HOME
- VOLUME IN DRIVE
- VOLUME IN TRANSIT
- VOLUME NOT IN LIBRARY

<media_type>: type of media

Media_type values:

- 3480
- 3490E

<loc> : location of the volume ,location format:
- if volume home: ACS,LSM,panel,row,column
- if volume in drive: ACS,LSM,panel,drive

10.54.31 TU71 <clx version> VOL= <volume identifier> <status> <result> [<max usage number>]

Description:

This message is displayed in response to a SET_CLEAN_ATTRIBUTE command successfully completed.

Parameters Description:

<volume identifier> volume serial number

<status>: status of the volume

Status values:

- DATABASE ERROR
- INCORRECT ATTRIBUTE
- INVALID VOLUME
- VOLUME IN USE
- VOLUME NOT IN LIBRARY

<result>: result of the command

Result values:

- CLEAN ATTRIBute RESET
- MAX USAGE NUMBER

<max usage number>: max usage number of the cleaning volume

System Reaction:

The command is completed.

10.54.32 TU71 <clx version> VOL= <volume identifier> <status> <result> [<pool identifier>]

Description:

This message is displayed in response to a SET_SCRATCH_ATTRIBUTE command successfully completed.

Parameters Description:

<volume identifier>: volume serial number

<status>: status of the command

Status values:

- INCORRECT ATTRIBUTE
- INVALID POOL
- VOLUME IN USE
- VOLUME NOT IN LIBRARY

<result>: result of the command

Result values:

SCRATCH ATTRIBute RESET

<pool identifier>: identifier of the scratch pool

System Reaction:

The command is completed.

10.54.33 TU71 <clx version> VOL= <volume identifier> EJECTED FROM CAP <cap identifier>

Description:

This message is displayed in response to an EJECT_LIB_VOLUMES command.

Parameters Description:

<volume identifier>: volume serial number

<cap identifier>: identifier of the used CAP

System Reaction:

The command is in progress.

10.55 TU72

10.55.1 TU72 <clx version> <command> <status> [- <object> = <object identifier>]

Description:

This message is displayed when a given ACSSA command concerning a given object is abnormally terminated.

<command>: identifier of the ACSSA command

Command values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

<status>: status of the command

Status values:

- ACS FULL
- ACS NOT IN LIBRARY
- ACS OFFLINE
- AUDIT ACTIVITY
- AUDIT FAILED
- AUDIT IN PROGRESS
- CANCELLED
- CAP IN USE OR AUTOmatic
- CAP NOT IN LIBRARY
- CAP OFFLINE
- COMMAND ACCESS DENIED
- CONFIGURATION ERROR
- COUNT TOO SMALL
- COUNT TOO LARGE
- DATABASE ERROR
- DRIVE IN USE
- DRIVE NOT IN LIBRARY
- DRIVE OFFLINE
- DUPLICATE LABEL
- FUNCTion NOT AVAILABLE
- INCOMPATIBLE_MEDIA_TYPE
- INCORRECT ATTRIBUTE
- INCORRECT CAP MODE
- INVALID ACS
- INVALID CAP
- INVALID COLUMN
- INVALID COMMAND
- INVALID DRIVE
- INVALID_DRIVE_TYPE
- INVALID LSM
- INVALID_MEDIA_TYPE
- INVALID MESSAGE
- INVALID OPTION
- INVALID PANEL
- INVALID POOL
- INVALID PORT
- INVALID RANGE
- INVALID ROW
- INVALID SUBPANEL
- INVALID VOLUME
- IPC FAILURE (communication failure)
- LIBRARY BUSY
- LIBRARY FAILURE
- LIBRARY NOT AVAILABLE

- LOCKID NOT FOUND
- LSM NOT IN LIBRARY
- LSM OFFLINE
- MESSAGE NOT FOUND
- MESSAGE TOO LARGE
- MESSAGE TOO SMALL
- MISPLACED TAPE
- MULTI ACS AUDIT
- NOT IN SAME ACS
- POOL NOT EMPTY
- POOL NOT FOUND
- PORT NOT IN LIBRARY
- READABLE LABEL
- UNREADABLE LABEL
- UNSUPPORTED COMMAND
- UNSUPPORTED OPTION
- UNSUPPORTED STATE
- UNSUPPORTED TYPE
- VALUE UNCHANGED
- VOLUME ACCESS DENIED
- VOLUME AVAILABLE
- VOLUME FOUND
- VOLUME HOME
- VOLUME IN DRIVE
- VOLUME IN TRANSIT
- VOLUME IN USE
- VOLUME NOT IN LIBRARY

<object>: object of the command.

Object values:

- ACS
- CAP
- CLeaN
- DRiVe
- LSM
- MouNT
- Mount_SCratch
- POOL
- PORT
- REQuest
- SERVER
- VOLume

<object identifier> identifier of the object

User Action:

None, the reason for the termination is displayed in the status message.

If other status, contact your Bull Support Center.

10.55.2 TU72 <clx version> <command> - SUBCOMMAND: <subcommand> <return code>

Description:

The function requested is abnormally terminated; the subcommand indicates the rejected command.

It may be issued after any command.

<command>: name of the ACSSA command

Command values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

<subcommand>: name of the ACSSA subcommand

Subcommand values:

- AUDIT ACS
- AUDIT PANEL
- AUDIT SERVER
- AUDIT SUBPANEL
- CANCEL LIB REQUEST
- DEFINE POOL
- DELETE POOL
- EJECT LIB VOLUMES
- ENTER LIB VOLUMES
- ENTER UNLAB VOLUMES
- QUERY ACS
- QUERY CAP
- QUERY CLEAN
- QUERY DRIVE
- QUERY LOCK DRIVE
- QUERY LOCK VOLUME
- QUERY LSM
- QUERY MOUNT
- QUERY MOUNT SCRATCH
- QUERY POOL
- QUERY REQUEST
- QUERY SCRATCH
- QUERY SERVER
- QUERY VOLUME
- SET CAP
- SET CLEAN
- SET SCRATCH

<return code> return code of the command

User Action:

Using an ACSSA command, try to identify the reason for the abort, modify the command and restart it; otherwise contact your Bull Support Center.

10.55.3 TU72 <clx version> ABNORMAL MESSAGE CATALOG

Description:

Serious abnormal behavior of CLXACSSA.

System Reaction:

A history about the failure is stored in CLX JOR. The step H_CLX_ECMDACSSA aborts with severity 4. It is automatically restarted.

User Action:

Keep the JOR and give it to your Bull Support Center.

10.55.4 TU72 <clx version> ACSLS ERROR N.<error_number>

Description:

Serious abnormal behavior of ACSLS

<error_number> identifies the error inside the procedure H_CLX_ECMDACSSA.

System Reaction:

The command is abnormally terminated.

User Action:

Keep the JOR and give it to your Bull Support Center.

10.55.5 TU72 <clx version> CHECK THAT CLX HAS BEEN ACTIVATED

Description:

The requested command cannot be submitted because the internal structure of CLX are not completely initialized.

It may be displayed by any command.

System Reaction:

The command is abnormally terminated.

User Action:

If CLX has not been activated, start CLX and restart the command; otherwise, contact your Bull Support Center.

10.55.6 TU72 <clx version> CHECK THAT SSI/SYSTEM IS ACTIVE

Description:

The requested command cannot be submitted because the command link between GCOS 7 and the server is not active.

It may be displayed by any command.

System Reaction:

The command is abnormally terminated.

User Action

Native case — *Check TNS is active , if not start TNS.*
If OPEN 7 is not active, start OPEN 7, SSI and CLX.

XTA case — **Check that INTEROP7_BASIC are active, and restart them if needed.**

Use the command DSSI to find out the state of SSI. If necessary, (re)start it by using the command SSSI and restart CLX using the command SCLX.

10.55.7 TU72 <clx version> CLX FACILITY IS NOT AVAILABLE

Description:

The Marketing Identifier necessary to run CLX is not installed on your site.

System Reaction:

The command is abnormally terminated. No library command can be activated.

It may be displayed by any command.

User Action:

Contact your Bull Support Center.

10.55.8 TU72 <clx version> CLX HAS NOT BEEN ACTIVATED

Description:

The requested command cannot be submitted because internal structure of CLX are not initialized, CLX has not been activated.

It may be displayed by any command.

System Reaction:

The command is abnormally terminated.

User Action:

Start CLX and restart the command.

10.55.9 TU72 <clx version> ERRONEOUS CAP IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous CAP identifier has been introduced in the list of CAP.

It may be displayed by the commands QUERY_CARTRIDGE_LIBRARY (CAP) and SET_CAP_ATTRIBUTES.

<position in the list> : gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated

User Action:

Modify or delete the erroneous CAP identifier and restart the command.

10.55.10 TU72 <clx version> ERRONEOUS CATALOGED MESSAGE, KEY=<key>

Description:

Serious abnormal behavior of CLXACSSA.

<key> identifies the key of the erroneous message.

System Reaction:

The command is abnormally terminated.

User Action:

Keep the JOR and give it to your Bull Support Center.

10.55.11 TU72 <clx version> ERRONEOUS DRIVE IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous drive identifier has been introduced in the list of drive.

It may be displayed by the commands QUERY_CARTRIDGE_LIBRARY (DRIVE) and QUERY_CARTRIDGE_LIBRARY (LOCK_DRIVE).

<position in the list> : gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous drive identifier and restart the command.

10.55.12 TU72 <clx version> ERRONEOUS LSM IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous LSM identifier has been introduced in the list of LSM.

It may be displayed by commands AUDIT_CARTRIDGE_LIBRARY (LSM) and QUERY_CARTRIDGE_LIBRARY (LSM).

<position in the list> : gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous LSM identifier and restart the command.

10.55.13 TU72 <clx version> ERRONEOUS PANEL IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous panel identifier has been introduced in the list of panel.

It may be displayed by the command AUDIT_CARTRIDGE_LIBRARY (PANEL).

<position in the list> : gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous panel identifier and restart the command.

10.55.14 TU72 <clx version> ERRONEOUS POOL IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous pool identifier has been introduced in the list of pool.

It may be displayed by commands DEFINE_SCRATCH_POOL, DELETE_SCRATCH_POOL and QUERY_CARTRIDGE_LIBRARY.

<position in the list>: gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous pool identifier and restart the command.

10.55.15 TU72 <clx version> ERRONEOUS PORT IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous port identifier has been introduced in the list of port.

It may be displayed by the command QUERY_CARTRIDGE_LIBRARY (PORT).

<position in the list>: gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous port identifier and restart the command.

10.55.16 TU72 <clx version> ERRONEOUS REQUEST IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous request identifier has been introduced in the list of request.

It may be displayed by the command QUERY_CARTRIDGE_LIBRARY (REQUEST).

<position in the list>: gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous request identifier and restart the command.

10.55.17 TU72 <clx version> ERRONEOUS SUBPANEL IDENTIFIER AT POSITION <position in the list>

Description:

An erroneous subpanel identifier has been introduced in the list of subpanel.

It may be displayed by the command AUDIT_CARTRIDGE_LIBRARY (SUBPANEL).

<position in the list>: gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous subpanel identifier and restart the command.

10.55.18 TU72 <clx version> ERRONEOUS VOLUME SERIAL NUMBER AT POSITION <position in the list>

Description:

An erroneous volume serial number has been introduced in the list of volume serial number.

It may be displayed by commands EJECT_LIB_VOLUMES, ENTER_UNLAB_VOLUMES, QUERY_CARTRIDGE_LIBRARY, SET_CLEAN_ATTRIBUTE, SET_SCRATCH_ATTRIBUTE.

<position in the list>: gives the identifier of the erroneous line

System Reaction:

The command is abnormally terminated.

User Action:

Modify or delete the erroneous volume serial number and restart the command.

10.55.19 TU72 <clx version> ERRONEOUS VERSION: GCL=<GCL version> HPL=<HPL version>

Description:

A mismatching between HPL and GCL procedures is detected. No library commands are available.

It may be displayed by any command

<GCL version>: GCL version used

<HPL version>: HPL version used

System Reaction:

The command is abnormally terminated.

User Action:

Contact your Bull Support Center.

10.55.20 TU72 <clx version> ERROR AT LIBRARY ASSIGNMENT: <return code>

Description:

Assignment to the CLX.SLLIB library is refused.

It may be displayed by the command EXTRACT_CLX_ERROR.

<return code>: reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check the access to the library CLX.SLLIB, and restart the command if the CLX.SLLIB library is free.

10.55.21 TU72 <clx version> ERROR AT LIBRARY AND SUBFILE ASSIGNMENT <return code>

Description:

Assignment to the input file is refused.

It may be displayed by the commands EJECT_LIB_VOLUMES and EXTRACT_CLX_ERROR.

System Reaction:

The command is abnormally terminated.

User Action:

Check the library and subfile access and restart the command if the library and the subfile are free.

10.55.22 TU72 <clx version> ERROR DURING CLOSING FILE <return code>

Description:

An error occurs during closing the input file specified in the EXTRACT_CLX_ERROR command.

It may be displayed by the command EXTRACT_CLX_ERROR.

<return code>: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check the CLX.SLLIB library and subfile access, restart the command when they are free.

10.55.23 TU72 <clx version> ERROR DURING LOCKING <file name> <return code>

Description:

An error occurs during locking the specified file. Input file and output file are not modified.

It may be displayed by the command EXTRACT_CLX_ERROR.

<file name>: name of the file to lock

<return code>: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check the file access, and restart the command when the specified file is free.

10.55.24 TU72 <clx version> ERROR DURING OPENING <subfile name> <return code>

Description:

An error occurs during opening the specified subfile. Input file and output file are not modified.

It may be displayed by commands EJECT_LIB_VOLUMES and EXTRACT_CLX_ERROR.

<subfile name>: name of the subfile to open

<return code>: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check the subfile access and restart the command if the subfile is free.

10.55.25 TU72 <clx version> ERROR DURING UNLOCKING <file name> <return code>

Description:

An error occurs during unlocking the specified subfile. The output file may be created.

It may be displayed by the command EXTRACT_CLX_ERROR.

<file name>: name of the file to unlock

<return code>: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check the file access, unlock the file if it is locked, and contact your Bull Support Center.

10.55.26 TU72 <clx version> ERROR DURING UPDATING <subfile name> <return code>

Description:

An error occurs during updating the specified subfile. Input and output files may have been modified.

It may be displayed by the command EXTRACT_CLX_ERROR.

<subfile name>: name of the subfile to update

<return code>: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Contact your Bull Support Center.

10.55.27 TU72 <clx version> ERROR WHILE READING THE CLX LOG <subfile name> <return code>

Description:

An error occurs during reading the specified log subfile. The LOG file is not modified.

It may be displayed by the command EXTRACT_CLX_ERROR.

<subfile name>: name of the subfile

< return code >: gives the reason for the error

System Reaction:

The command is abnormally terminated.

User Action:

Check file access, if possible move the file and restart the command.

10.55.28 TU72 <clx version> ERROR WHILE READING THE FILE <return code>

Description:

An error occurs during reading the file containing the volumes to eject.

It may be displayed by the command EJECT_LIB_VOLUMES from a subfile enclosing a list of volume serial number.

System Reaction:

No volume is ejected. The command is abnormally terminated.

User Action:

If return code=WALIM modify the records length (lower than 80 characters) and restart the command; otherwise, check the file access move the file if possible and restart the command.

10.55.29 TU72 <clx version> ERROR WHILE WRITING IN THE SUBFILE <subfile name> <return code>

Description:

An error occurs during writing in the specified subfile containing the list of volumes to eject.

It may be displayed by the command EXTRACT_CLX_ERROR.

<subfile name>: name of the subfile in error.

<return code>: gives the reason for the error.

System Reaction:

No records are extracted. The command is abnormally terminated.

User Action:

Contact your Bull Support Center.

10.55.30 TU72 <clx version> INTERNAL ERROR N.<error_number>

Description:

Serious abnormal behavior of CLXACSSA.

<error_number>: identifies the error inside the procedure H_CLX_ECMDACSSA.

System Reaction:

The command is abnormally terminated.

User Action:

Keep the JOR and give it to your Bull Support Center.

10.55.31 TU72 <clx version> LOOK AT LMU OR SERVER TO KNOW IF ACTION IS REQUIRED

Description:

This message happens when the library server did no answered to a command sent by GCOS. It is preceded by the «`TU72 <clx version> NO RESPONSE FROM THE LIBRARY SERVER`» message.

It may be displayed by any command.

System Reaction:

The command is still running.

User Action:

Check on the server console if an operator action is requested (i.e.: remove cartridge from CAP,...) and performed the action.

If the server is not running, restart the server cancel the command (CLIBR); and restart the command.

10.55.32 TU72 <clx version> NO RESPONSE FROM THE LIBRARY SERVER

Description:

This message occurs when the library server did not answer to GCOS after 10 minutes. This message can happen because an action is required on the library server, so the following message «`TU72 <clx version> LOOK AT LMU OR SERVER TO KNOW IF ACTION IS REQUIRED`» is displayed.

It may be displayed by any command.

System Reaction:

The command is still running.

User Action:

Check if the server is running and restart the command.

10.55.33 TU72 <clx version> NO VOLUME ENTERED

Description:

This message is displayed in response to an ENTER_LIB_VOLUMES or ENTER_UNLAB_VOLUMES if no volume has been entered in the cartridges library.

System Reaction:

The command is completed.

User Action:

If one volume to enter into the cartridges library have no optical label or the label is unreadable, use the ENTER_UNLAB_VOLUMES command.

If one volume to enter into the cartridges library is correctly labeled, use the command ENTER_LIB_VOLUMES.

10.55.34 TU72 <clx version> NO VOLUME TO EXTRACT

Description:

This message is displayed by the command EXTRACT_CLX_ERROR command, if no volume serial number is in the specified CLX log subfile.

System Reaction:

The command is completed.

10.55.35 TU72 <clx version> SCRATCH ATTRIBUTE SET ON NONE VOLUME

Description:

This message is displayed in response to an ENTER_LIB_VOLUMES command if none of the entered volume has been introduced in the specified scratch pool, or in response to a SET_SCRATCH_ATTRIBUTE if the specified pool is not found.

System Reaction:

The command is completed.

User Action:

Check the reason for the rejection and restart the command.

10.55.36 TU72 <clx version> STATUS OUT OF RANGE: <status>

Description:

This message occurs when an unknown error message is received from the library server.

It may be displayed by any command.

System Reaction:

The command is abnormally terminated.

User Action:

Save log file, clxacssa message, and contact your Bull Support Center.

10.55.37 TU72 <clx version> SUBFILE <subfile name> ALREADY EXISTS

Description:

This message occurs when an EXTRACT_CLX_ERROR command is requested using an output file already created with REPLACE=0.

It may be displayed by the command EXTRACT_CLX_ERROR.

<subfile name>: name of the subfile to create

System Reaction:

The command is abnormally terminated.

User Action:

Restart the command EXTRACT_CLX_ERROR with REPLACE=1 for subfile overriding; otherwise, delete the file and restart the command.

10.55.38 TU72 <clx version> SUBFILE <subfile name> ALREADY OPEN

Description:

This message is displayed when opening the file is rejected because the file is already open by another job.

It may be displayed by the commands EJECT_LIB_VOLUMES and EXTRACT_CLX_ERROR.

<subfile name>: name of the file already open

System Reaction:

The command is abnormally terminated.

User Action:

Wait the job using the file is completed and restart the command.

10.55.39 TU72 <clx version> TOO LONG RECORD <record> ... IN SUBFILE <subfile-name> (MAX LENGTH=6)

Description:

An error occurs during getting the specified subfile.

It may be displayed by commands EJECT_LIB_VOLUMES

<record>: the first six characters of the erroneous record.

<subfile name>: name of the file to get.

System reaction:

The command is abnormally terminated.

User action:

Correct the too long record: it must be a volume identifier.

10.55.40 TU72 <clx version> UNKNOWN LIBRARY: <library name>

Description:

The specified library does not exist.

It may be displayed by the commands EJECT_LIB_VOLUMES and EXTRACT_CLX_ERROR.

<library name>: name of the library specified in the command

System Reaction:

The command is abnormally terminated.

User Action:

Create the specified library or modify the library name and restart the command.

10.55.41 TU72 <clx version> UNKNOWN SUBFILE: <subfile name>

Description:

The specified subfile does not exist.

It may be displayed by the commands EJECT_LIB_VOLUMES and EXTRACT_CLX_ERROR.

<subfile name>: name of the file specified in the command

System Reaction:

The command is abnormally terminated.

User Action:

Create the specified subfile or modify the subfile name and restart the command.

10.55.42 TU72 <clx version> VOLUME(S) NOT IN LIBRARY

Description:

This message is displayed when the specified volume in the command does not exist in the library.

It may be displayed by the commands SET_CLEAN_ATTRIBUTE and SET_SCRATCH_ATTRIBUTE.

System Reaction:

The command is abnormally terminated.

User Action:

Use the command ENTER_LIB_VOLUMES or ENTER_UNLAB_VOLUMES, place the volume(s) in the CAP, and restart the command.

10.55.43 TU72 <clx version> WRONG VOLUME ID IN SUBFILE AT LINE NUMBER <line number>

Description:

This message is displayed when a wrong volume serial number has been introduced in the list of volume to eject.

It may be displayed by the command EJECT_LIB_VOLUMES from a subfile enclosing a list of volume serial numbers.

System Reaction:

No volume is ejected. The command is abnormally terminated.

User Action:

Modify or suppress the volume serial number at the specified line, and restart the command.

11. Return Status Information

11.1 Status code descriptions

The following is a description of all <status> values that can appear in the messages described in Chapter 10. The list is alphabetized in order to help the reader find a particular status value.

Please note that some of the requests (such as DISMOUNT, MOUNT, IDLE, VARY, and START) mentioned in this section are not delivered in the current release of CLX library commands.

ACS_FULL

On a DISMOUNT request an available cell location cannot be found in the database to dismount the cartridge into.

On an ENTER request, if ANY_ACS is specified in the CAP identifier and all ACSs are full, the request will fail. No cartridges are entered.

On an ENTER request, if no cell is available in the ACS library for the tape cartridge(s), the tape cartridge(s) are not entered and remain in the CAP.

This return status is specific to DISMOUNT and ENTER request functions.

ACS_NOT_IN_LIBRARY

The acs_id specified in the request is syntactically valid, but is not in the current configuration.
This return status is common to all library commands.

ACS_OFFLINE

This is an unsolicited message which is sent when the ACS is varied offline. This unsolicited message is specific to IDLE and VARY request functions.

AUDIT_ACTIVITY

Whenever an AUDIT request function returns an intermediate response, an eject_enter response is returned to the request originator with this message_status value filled in and the audit_int_status field filled in with the appropriate status.

On a QUERY request, an LSM is being audited.

On a QUERY request, a CAP is being audited.

This return status is specific to AUDIT and QUERY request functions.

AUDIT_FAILED

Whenever an AUDIT request function fails or terminates due to some error condition, an intermediate response is returned to the request originator with this message_status value filled in and the audit_int_status field filled in with the appropriate status.

This return status is specific to AUDIT request functions.

AUDIT_IN_PROGRESS

A request attempted to access a cell locked by a current AUDIT request. When an AUDIT request is in progress, cell locations being actively audited are temporarily unavailable for access by other request processes.

On an ENTER request, if no cell is available in the ACS library for the tape cartridge and an AUDIT is in progress (which may be denying access to available cells), the tape cartridges are not entered and remain in the CAP.

This return status is specific to all library commands.

CANCELLED

A request was CANCELLED by the CANCEL request procedure. The current process is halted.

On an ENTER request, the continuous mode of operation terminates when a CANCEL request is received. If a CANCEL request is issued against a pending ENTER request, that request is aborted. If a CANCEL request is issued against a current ENTER request, enter processing is halted for that request, and the count value reflects the number of volume identifiers acted upon in the final response. Entered cartridges are not ejected. If any cartridges are left in the CAP, the ACSLM issues a STATUS_REMOVE_CARTRIDGES unsolicited message to the ACSSA and waits for the operator to remove the cartridges before returning the final response.

On a LOCK request, no resources are locked. Component status is set to STATUS_VALID. When a LOCK request is waiting for a tape cartridge or library drive resource to be become available and the pending lock is cleared by a clear_lock request, the ACSLS issues a final response as if the pending lock request had been CANCELLED (return status is set to STATUS_CANCELLED). However, the cleared resource has its component status set to STATUS_CANCELLED.

If a CANCEL request is issued against a current QUERY request, query processing is halted for that request. If the QUERY request is current (not pending) the count represents the number of identifiers processed prior to receipt of the CANCEL request.

If a CANCEL request is issued against a current SET_CAP request, the ACSLS stops setting CAP attributes and sets count to the number of CAP identifiers acted upon prior to the cancel request.

If a CANCEL request is issued against a current SET_CLEAN request, set_clean processing is halted for that request; count reflects the number of volume identifiers acted upon. Tape cartridges that have been set to clean are not reset.

This status is common to all request functions which are able to be CANCELLED.

CAP_AVAILABLE

On a QUERY request, an LSM is available for use.
On a QUERY request, a CAP is available for use.
This return status is specific to QUERY request functions.

CAP_IN_USE OR AUTO

On an AUDIT operation, ANY_CAP was specified in *cap_id* and the LSM specified in *cap_id* had no CAPs with a non-zero priority.

On an AUDIT operation, ANY_ACS or ANY_LSM was specified in *cap_id* and the *acs_id* specified had no CAPs with a non-zero priority.

On an AUDIT, ENTER, or another EJECT operation, an explicitly specified CAP identifier is being used by another request or in automatic mode. No cartridges are ejected or entered.

On an EJECT or ENTER request, if ANY_CAP is specified in *cap_id* and the LSM specified in *cap_id* has no available non-zero priority CAPs or no CAPs in manual mode, the request is rejected. No cartridges are ejected.

On an EJECT or ENTER request, if ANY_LSM is specified in *cap_id* and the ACS specified in *cap_id* has no available CAPs with a non-zero priority, the request is rejected. No cartridges are ejected.

On an EJECT or ENTER request, if ANY_ACS is specified in *cap_id* and an ACS containing cartridges designated for ejection does not have any available CAPs with a non-zero priority, the request is rejected. No cartridges are ejected.

On an EJECT or ENTER request, if ALL_CAP is specified in *cap_id* and no available non-zero priority CAPs exist in the LSM, the request is rejected. No cartridges are ejected.

This return status is specific to AUDIT, EJECT, and ENTER request functions.

CAP_NOT_IN_LIBRARY

The *cap_id* specified in the request is syntactically valid, but is not in the current configuration.

This status is common to all library commands.

CAP_OFFLINE

The request cannot be completed because a specified component is contained in an offline or offline-pending CAP or the specified CAP is in an OFFLINE or OFFLINE-PENDING state.

On a SET_CAP request, if the CAP state is STATE_DIAGNOSTIC, a SET_CAP request from the CSI cannot alter the enter processing mode of the CAP. If SET_CAP attempts to change the processing mode of a CAP in the diagnostic state, the mode is not altered and this status is returned in the component status for that CAP.

This status is common to all library commands.

COMMAND_ACCESS_DENIED

The user is not allowed to perform this command.
This return status is the result of an attempt to invoke a command when command access has been denied.

CONFIGURATION_ERROR

The ACSLS detected a inconsistency between the *database* and the physical library configuration.

This status is common to all library commands.

COUNT_TOO_LARGE

The count field in the message_header is greater than the largest count expected for this particular request.

No acknowledge response is returned.

This status is common to all library commands

COUNT_TOO_SMALL

The count field in the message_header is less than the smallest count expected for this particular request.

No acknowledge response is returned.

This status is common to all library commands.

DATABASE_ERROR

The ACSLS detected a database consistency error while processing a request.

This status is common to all library commands.

DRIVE_AVAILABLE

On a DISMOUNT request, an attempt was made to dismount a tape from a library drive which didn't contain a tape cartridge.

On a QUERY request, a specified drive does not contain a tape cartridge or is released after a dismount.

On a QUERY_LOCK request, the specified drive is not locked.

On an UNLOCK request, an attempt was made to release the lock on a *drive_id* which was not locked.

This return status is specific to the CLEAR_LOCK, DISMOUNT, QUERY and UNLOCK request functions.

DRIVE_IN_USE

The cartridge was not unloaded on the library drive.

An attempt was made to dismount a locked tape cartridge without including the correct lock identifier of that tape cartridge and the message_options FORCE was not used.

An attempt was made to dismount a tape cartridge from a locked library drive without including the correct lock identifier.

On a MOUNT request, when a library drive contains a tape cartridge, subsequent mount requests for that library drive are rejected.

On a MOUNT request, when a mount request attempts to mount a locked library drive without including the lock identifier of that library drive, the request is rejected.

On a MOUNT_SCRATCH request, if the specified drive is locked with a lock_id different from the one specified in the MOUNT_SCRATCH request, the MOUNT_SCRATCH request is rejected.

On a QUERY request, a drive contains a tape cartridge or is reserved for a mount.

On a QUERY_LOCK request, the request was issued on a component which is locked.

A VARY OFFLINE request, with or without the FORCE option, specified a library drive which is currently in use.

This return status is specific to DISMOUNT, MOUNT, MOUNT_SCRATCH, QUERY and VARY request functions.

DRIVE_OFFLINE

The request cannot be completed because the specified *drive_id* is either in an OFFLINE or OFFLINE-PENDING state.

This status is common to all library commands involving a drive.

DUPLICATE_LABEL

On an ENTER request, if duplicate tape cartridge labels are found in the CAP, the tape cartridges with the duplicate labels remain in the CAP and are not entered into the ACS library.

On an ENTER (or VENTER) request, if a tape cartridge in the CAP has a tape cartridge label which has been recorded by the ACSLM, the tape cartridge remains in the CAP and is not entered into the ACS library. No duplicate or unreadable labels are allowed in the ACS library.

On VENTER requests, if duplicate volume identifiers are specified in the request, the tape cartridges with the duplicate labels remain in the CAP and are not entered into the ACS library.

This return status is specific to ENTER and VENTER request functions.

EJECT_ACTIVITY

On a QUERY request, cartridges are being ejected from the LSM.

On a QUERY request, cartridges are being ejected from the CAP.

This return status is specific to QUERY request functions.

ENTER_ACTIVITY

On a QUERY request, cartridges are being entered into the LSM.

On a QUERY request, cartridges are being entered into the CAP.

This return status is specific to QUERY request functions.

INCOMPATIBLE_MEDIA_TYPE

This status code is returned under the following circumstances:

On MOUNT requests, when the media type of the given volume is incompatible with the given drive.

On MOUNT_SCRATCH requests, when the given media type in the request is always a cleaning cartridge.

On SET_CLEAN requests, when the cartridge is never a cleaning cartridge and an attempt is made to set the tape attribute to a cleaning cartridge, or when the cartridge is always a cleaning cartridge and an attempt is made to remove the cleaning attribute.

On SET_SCRATCH requests, when the cartridge is always a cleaning cartridge and an attempt is made to set the cartridge to a scratch cartridge or to reset it from scratch.

INCORRECT_ATTRIBUTE

On DEFINE_POOL requests, pool attributes other than OVERFLOW were specified; or the high_water_mark is not greater than the low_water_mark in the request.

On a QUERY (type clean) request, the tape cartridge specified is not a cleaning cartridge.

On a SET_CAP request, if the CAP priority is not set to a value within the range of NO_PRIORITY and MAX_ PRIORITY, the request is rejected. No attributes are set.

On a SET_CAP request, if CAP mode is not MODE_SAME, MODE_AUTOMATIC, or MODE_MANUAL, the request is rejected. No attributes are set.

On a set_clean request, when set_clean attempts to change the scratch attribute or to set the cleaning attribute of a 3490E media, the request is rejected and this status is returned.

On a SET_SCRATCH request, when a requested volume is marked as being a cleaning cartridge, SET_SCRATCH requests for that volume are rejected. This event does not impact the SET_SCRATCH operation for other volumes specified in the request.

This return status is specific to DEFINE_POOL, QUERY, SET_CAP, SET_CLEAN and SET_SCRATCH request functions.

INCORRECT_CAP_MODE

If an explicit ENTER request (standard, continuous or virtual label modes) specifies a CAP identifier that is assigned the automatic enter mode, the request is rejected. No cartridges are entered.

This return status is specific to ENTER request functions.

INVALID_ACS

The *acs_id* specified in the request is syntactically incorrect.
On a VARY request function, ANY_ACS is specified in *cap_id*.

This status is common to all library commands.

INVALID_CAP

The CAP number portion of the *cap_id* specified in the request is out of range (it must be between a and MAX_CAP); or ANY_CAP is used in the wrong context; or ALL_CAP is used in the wrong context.

On an EJECT operation, if ALL_CAP is specified in *cap_id* and ANY_ACS or ANY_LSM is also specified, the request is rejected. No cartridges are ejected.

On an ENTER request, if ALL_CAP is specified in *cap_id* with ANY_ACS or ANY_LSM is also specified, the request is rejected.

On an ENTER request, if ALL_CAP is specified in *cap_id* and CONTINUOUS is not specified in extended_options the request is rejected. No cartridges are entered.

On a VARY request function, ANY_CAP or ALL_CAP is specified in the CAP identifier.

This status is common to all library commands.

INVALID_COLUMN

The COLUMN value in a *subpanel_id* or a *panel_id* specified in the request is out of range.

It must be between MIN_COLUMN and MAX_COLUMN.

This status is common to all library commands.

INVALID_COMMAND

The COMMAND field in the message_header is not a valid command.

No acknowledge response is returned.
This status is common to all CTLAPI request functions.

If it is seen, please notify customer support.

INVALID_DRIVE

The *drive_id* specified in the request is syntactically incorrect.
This status is common to all library commands.

INVALID_DRIVE_TYPE

This status code is returned by the vary request when the drive type that is unknown to the system is discovered. This drive type is marked as UNKNOWN_DRIVE_TYPE in the database, and the drive state is set to OFFLINE for the drive.

INVALID_LSM

The *Ism_id* specified in the request is syntactically incorrect.

On a VARY request function, ANY_LSM is specified in the CAP identifier.

This status is common to all library commands.

INVALID_MEDIA_TYPE

This status code is returned by the MOUNT_SCRATCH request when a media type that is unknown to the system is given in the request, and is returned by the QUERY_MOUNT_SCRATCH request when ANY_MEDIA_TYPE or a media type that is unknown to the system is given in the request.

INVALID_MESSAGE

The *message_id* specified in the request is out of range. It must be between MIN_MESSAGE and MAX_MESSAGE.

This status is common to all library commands.

If it is seen, please notify customer support.

INVALID_OPTION

The message_options field in the message_header is not one of the following valid options:

ACKNOWLEDGE, EXTENDED, FORCE, INTERMEDIATE, or READONLY or the extended_options field in the message_header is not one of the following valid extended_options: CONTINUOUS, RANGE, RESET, VIRTUAL, or WAIT.

On an ENTER request, if both CONTINUOUS and VIRTUAL are specified as extended_option parameters, the request is rejected. No cartridges are entered. The continuous and virtual label modes of operation are mutually exclusive.

No acknowledge response is returned.
This status is common to all library commands.

INVALID_PANEL

The *panel_id* specified in the request is syntactically incorrect.

This status is common to all library commands.

INVALID_POOL

pool_id of SAME_POOL was specified in the DEFINE_POOL request.

pool_id of COMMON_POOL or SAME_POOL was specified to the DELETE_POOL request.

On a MOUNT_SCRATCH request, if the pool identifier SAME_POOL is specified, the MOUNT_SCRATCH request is rejected.

If RESET is specified in a SET_SCRATCH request and the pool identifier specified in the request (other than SAME_POOL) does not match the pool identifier of the requested volume, the request is rejected.

This return status is specific to the DEFINE_POOL, DELETE_POOL, MOUNT_SCRATCH and SET_SCRATCH request functions.

INVALID_PORT

The *port_id* specified in the request is syntactically incorrect.
This status is common to all library commands.

INVALID_RANGE

The volume range identifier specified in the request is syntactically incorrect. It contains invalid characters, or the fixed portions of the starting and ending *vol_ids* do not match, or the rightmost numeric field of the ending *vol_id* is less than the rightmost numeric field of the starting *vol_id*.

On an EJECT request, if an invalid vol-range identifier is detected, the request is rejected. No cartridges are ejected.

On SET_CLEAN and SET_SCRATCH requests, if an invalid volume range is specified, the request is rejected and no volume attributes are modified.

This status is common to all library commands.

INVALID_ROW

The ROW value in a *subpanel_id* or a *panel_id* specified in the request is out of range.

It must be between MIN_ROW and MAX_ROW.

This status is common to all library commands.

INVALID_VOLUME

The *vol_id* specified in the request is syntactically incorrect.

On a venter request, if the request contains invalid volume identifiers, the tape cartridges that would have otherwise been assigned these labels remain in the CAP and are not entered into the ACS library.

This status is common to all library commands.

IPC_FAILURE

There was a fatal communications failure to the LMU for some reason; for example, the cable was disconnected.

This status is common to all library commands.

LIBRARY_BUSY

The ACSLM was unable to communicate with the ACS library after the allotted retries and timeouts (set in config) expired for a particular request.

This status is common to all library commands.

LIBRARY_FAILURE

A request requiring ACS library resources failed due to the failure of the ACS library component.

If EJECT detects that a CAP door is open or inoperative before it starts ejecting cartridges from that CAP, a STATUS_CAP_DOOR_OPEN or STATUS_CAP_INOPERATIVE unsolicited message is issued to the ACSSA as appropriate. No additional cartridges are ejected.

More than one library failure may cause eject or enter processing to terminate. All library failures encountered are reported in the event log, but only one failure is returned in the message status.

On a VARY request, if a library failure occurs while a VARY OFFLINE request is trying to vary specified devices offline, the devices' states are changed to OFFLINE in the database and this component status is returned for that device.

This status is common to all library commands.

LIBRARY_NOT_AVAILABLE

A request other than query_server is received by the ACSLM while it is in STATE_RECOVERY, or a request requiring ACS library resources arrived at the ACSLM while the ACSLM is in STATE_IDLE or STATE_IDLE_PENDING.

On an idle request, when issued without the FORCE option, all current and pending requests are completed, with the exception of pending lock requests. Pending lock requests are rejected. New requests, except for cancel, idle, query, query_lock, start, and vary are rejected. The ACSLM is put in the IDLE state. Current and pending requests are aborted.

This status is common to all library commands.

LOCKID_NOT_FOUND

The *lock_id* specified has no resources currently assigned to it.

This status is common to all library commands.

LSM_NOT_IN_LIBRARY

The *Ism_id* specified in the request is syntactically valid, but is not in the current configuration.

This status is common to all library commands.

LSM_OFFLINE

The request cannot be completed because a specified component is contained in an offline or offline-pending LSM, or the specified LSM is in an `OFFLINE` or `OFFLINE-PENDING` state.

This status is common to all library commands.

MESSAGE_NOT_FOUND

The *message_id* specified in the request is valid, but not found to be associated with a current or pending request in the ACSLM.

This status is common to all library commands.

MESSAGE_TOO_LARGE

The request packet which the ACSLM received is larger than the calculated message size internally to the ACSLM. If this is seen, please check the actual request packet for errors.

MESSAGE_TOO_SMALL

The request packet which the ACSLM received is smaller than the calculated message size internally to the ACSLM. If this is seen, please check the actual request packet for errors.

MISPLACED_TAPE

On a `DISMOUNT` request, the ACSLM compares the external tape cartridge label of the tape cartridge in the library drive with the *vol_id* of the tape cartridge in the request. If the labels are not identical, the dismount request is rejected. The *vol id* of the tape cartridge in the library drive is not the same as the *vol_id* recorded in the database. The database is updated with the *vol_id* of the tape cartridge in the library drive.

On an `EJECT` operation, if a different tape cartridge is in the location specified by the ACSLM database, the database is updated with the external tape cartridge label of the tape cartridge found in the storage location.

On a MOUNT request, using the volume identifier of the request, the ACSLM locates the tape cartridge in the ACS library. The ACSLM compares the external tape cartridge label of the tape cartridge found in the library with the volume identifier of the request. If the labels are not identical, the mount request is rejected.

This return status is specific to DISMOUNT, EJECT and MOUNT request functions.

MULTI_ACS_AUDIT

The identifier list specified more than one ACS, and *cap_id* was not set to ANY_ACS.

This return status is specific to audit request functions.

NOT_IN_SAME_ACS

On an AUDIT request, an explicitly-specified CAP identifier and a second identifier in the same audit request function do not specify the same ACS.

On an EJECT request, an explicitly specified CAP identifier and a volume identifier are not in the same ACS. The cartridge is not ejected.

On an EJECT request, if the ACS explicitly specified in the CAP identifier and a volume identifier are not in the same ACS, the command is rejected and the cartridge is not ejected.

On a MOUNT request, when the tape cartridge and the library drive are not in the same ACS, the MOUNT request is rejected.

This return status is specific to AUDIT, EJECT and MOUNT request functions.

POOL_HIGH_WATER

On a DEFINE_POOL request, an existing scratch pool's characteristics are modified such that the number of volumes in the scratch pool is greater than or equal to the high_water_mark.

On a MOUNT_SCRATCH request, if, after a scratch volume has been selected, the number of volumes remaining in the scratch pool is greater than or equal to the high_water_mark for the pool. The selected volume is mounted on the specified library drive.

On a SET_SCRATCH request, if, after the set_scratch request has been processed, the number of scratch volumes in the specified pool is greater than or equal to the high_water_mark specified by the define_pool request.

This return status is specific to DEFINE_POOL, MOUNT_SCRATCH, QUERY and SET_SCRATCH request functions.

POOL_LOW_WATER

On a DEFINE_POOL request, an existing scratch pool's characteristics are modified such that the number of volumes in the scratch pool is less than or equal to the low_water_mark.

On a MOUNT_SCRATCH request, if, after a scratch volume has been selected, the number of volumes remaining in the scratch pool is less than or equal to the low_water_mark for the pool. The selected volume is mounted on the specified library drive.

On a SET_SCRATCH request, if, after the set_scratch request has been processed, the number of scratch volumes in the specified pool is less than or equal to the low_water_mark specified by the define_pool request.

This return status is specific to define_pool, mount_scratch, query and set_scratch request functions.

POOL_NOT_EMPTY

The specified scratch pool is not empty.

This return status is specific to DELETE_POOL request functions.

POOL_NOT_FOUND

The specified scratch pool does not exist.

This return status is specific to DELETE_POOL, DEFINE_POOL, MOUNT_SCRATCH and SET_SCRATCH request functions.

PORT_NOT_IN_LIBRARY

The *port_id* specified in the request is syntactically valid, but is not in the current configuration.

This status is common to all library commands.

PROCESS_FAILURE

The ACSLM was not able to spawn the request or the ACSLM received a process failure from a spawned process.

This status is common to all library commands.

READABLE_LABEL

On a VENTER request, if any of the external labels are readable, the cartridges with readable labels remain in the CAP and are not entered into the ACS library. The component volume identifier contains the volume identifier of the external label.

This return status is specific to VENTER request functions.

UNREADABLE_LABEL

On an AUDIT request, if a cartridge in a storage cell has a missing or unreadable label and has not been assigned a virtual label. This cartridge is ejected from the library, and this status is placed in the vol_status portion of the intermediate response sent back to the audit request originator.

On an DISMOUNT request, if a cartridge's external label is unreadable, and the cartridge has not been assigned a virtual label, the request is rejected.

On an ENTER request, if the external tape cartridge labels are unreadable and a virtual enter was not specified, the tape cartridges with the unreadable labels remain in the CAP and are not entered into the ACS library.

On a MOUNT request, if the tape cartridge label is unreadable, and the cartridge has not been assigned a virtual label, the mount request is rejected.

On a VENTER request, if the request contains fewer volume identifiers than there are unreadable cartridges in the CAP, the unreadable tape cartridges that cannot be assigned labels remain in the CAP and are not entered into the ACS library. This component status is set for each volume not found. If any readable cartridges were also present in the CAP, they remain in the CAP and are not entered into the ACS library.

This return status is specific to the AUDIT, DISMOUNT, ENTER, MOUNT and VENTER request functions.

UNSUPPORTED_COMMAND

The command field in the message_header is valid, but not supported for this particular version.

No acknowledge response is returned.

This status is common to all library commands.

UNSUPPORTED_TYPE

The type field in the message_header is valid, but not supported for this particular request

No acknowledge response is returned.

This status is common to all library commands.

VALUE_UNCHANGED

On a SET request, the value specified is the same as the actual value.

This return status is specific to all SET request functions.

VOLUME_AVAILABLE

On a QUERY_LOCK request, the specified volume is not locked.

On CLEAR_LOCK and UNLOCK requests, an attempt was made to release the lock on a *vol_id* which was not locked.

This return status is specific to CLEAR_LOCK, QUERY and UNLOCK request functions.

VOLUME_FOUND

On an EJECT operation, if the tape cartridge is being moved, the tape cartridge is in transit. The cartridge is not ejected.

On a VENTER request, If the request contains more volume identifiers than there are cartridges in the CAP, this component status is set for each extra label specified.

This return status is specific to EJECT and VENTER request functions.

VOLUME_HOME

On a QUERY request, a specified tape cartridge is in a storage cell.

This return status is specific to QUERY request functions.

VOLUME_IN_DRIVE

On an EJECT operation, if the tape cartridge is in a library drive, the tape cartridge is not ejected.

On a MOUNT request, after a tape cartridge is mounted, subsequent requests to mount that cartridge on any library drive are rejected. The returned drive identifier is the library drive which has the volume.

On a QUERY request, a specified tape cartridge is in a library drive.

This return status is specific to EJECT, MOUNT and QUERY request functions.

VOLUME_IN_TRANSIT

On a QUERY request, a specified tape cartridge is in transit (in-between a home location and a tape drive (or pass-thru port)).

This return status is specific to QUERY request functions.

VOLUME_IN_USE

If an EJECT request attempts to eject a locked tape cartridge without including the lock identifier of that tape cartridge, the cartridge is not ejected.

On a MOUNT request, when the tape cartridge is marked in transit in the database and a mount request is issued against it, it is rejected with this status.

When a MOUNT request attempts to mount a locked tape cartridge without including the lock identifier of that tape cartridge, the request is rejected.

On a QUERY request, a specified tape cartridge is in a library drive or locked.

On a query_lock request, the request was issued on a component which is locked.

On a SET_CLEAN request, this status is returned when SET_CLEAN attempts to change a tape cartridge's attributes, but the tape cartridge is locked by another process, or the tape cartridge is in use.
On a SET_SCRATCH request, when a requested volume is marked as in use, SET_SCRATCH requests for that volume are rejected. This event does not impact the SET_SCRATCH operation for other volumes specified in the request.

On a SET_SCRATCH request, when a requested volume is locked by another client, SET_SCRATCH requests not specifying the correct lock identifier for the volume are rejected. This event does not impact the SET_SCRATCH operation for other volumes specified in the request.

This return status is specific to EJECT, MOUNT, QUERY, SET_CLEAN and SET_SCRATCH request functions.

VOLUME_NOT_IN_LIBRARY

The *vol_id* specified in the request is syntactically valid, but is not found in the database.

During an ENTER operation, if the list of volume identifiers contains one or more duplicates, the first instance of the volume identifier causes the ACSLM to eject the tape cartridge with that volume identifier from the ACS library. Other instances of the volume identifier return this status.

During an ENTER operation, if no tape cartridge is in the location specified by the database and the volume is not in transit or in a library drive, the database entry is removed.

During a LOCK request, if pending for a tape cartridge resource to become available and the tape cartridge is removed from the system by either an EJECT or AUDIT request, the lock request will fail with this status. The component status is set to STATUS_VOLUME_ NOT_IN_LIBRARY for the failed identifiers and component status is set to STATUS_VALID for the valid identifiers.

This status is common to all library commands.

A. Syntax of Commands

CLX GCL commands are stored in the CLX.BIN library. All the commands are accessible through IOF connected under project OPERATOR; some CLX commands are also accessible through IOF connected under project SYSADMIN.

The operator must enter MWINLIB BIN, CLX.BIN before using these commands. He is advised to put this statement inside its startup.

This appendix gives a summary of CLX commands, CLX library commands, and CLX utilities.

XTA case: **The difference between the Native DPS7000 and the DPS7-XTA is the two new following parameters: “SERVER name” and “PORT number” for the SSI server. These parameters must updated in the CLX_CONFIG file, then the SET_CLX_SSI command updates all commands. The START_SSI command runs this SET_CLX_SSI for you. So in this context, the SERVER and PORT parameters must not necessary be set in the following commands.**

A.1 CLX COMMANDS

For details on CLX commands, see "CLX Commands" in Chapter 6.

A.1.1 SET_CLX_SSI (SCLXSSI) (new command for XTA)

Function: Address UNIX library server for a DPS 7000-XTA. This command is automatically started bye the START_SSI COMMAND.

Abbreviation: SCLXSSI

Syntax:

```
SET_CLX_SSI
    [LIBRARY=<library-name>
    {SUBFILE=<subfile-name>}]
```

Parameters:	LIBRARY = Name of the GCOS 7 source catalogued library containing the CLX configuration file. Default value: CLX.SLLIB. SUBFILE = Name of the subfile in the library (first parameter) containing the CLX configuration file. Default value: CLX_CONFIG.
Comment:	The library holding the subfile to be read by this command must at least have READ permission by the project under which the user is connected.
Availability:	OPERATOR, SYSADMIN, other IOF users

A.1.2 START_SSI (SSSI)

Function:	Activates the SSI process on OPEN7 or on UNIX library server.
Abbreviation:	SSSI
Syntax:	`START_SSI`
XTA case	**`[SERVER=<ssi-host-name>/<ssi-port>]`**
Parameters:	**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
Comment:	On a native DPS 7000 , OPEN7 must be active. On a DPS 7000-XTA, G_CLX_SSI global variable must have a valid value or SERVER=… must be given.
Availability:	OPERATOR

A.1.3 TERMINATE_SSI (TSSI)

	Function:	Terminates the SSI process on OPEN7.
	Abbreviation:	TSSI
	Syntax:	`TERMINATE_SSI [STRONG]`
XTA case		**`[SERVER=<ssi-host-name>/<ssi-port>]`**
	Parameters:	STRONG = 1: the ssi process on OPEN7 is killed. 0: the ssi process on OPEN7 is terminated. Default value: 0
XTA CASE		**SERVER. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
	Availability:	OPERATOR
	Comment:	If CLX on GCOS 7 is running, some TU54 messages may appear once SSI is terminated (refer to TERMINATE_CLX). SSI process is terminated automatically if OPEN7 is stopped. On a native DPS 7000, OPEN7 must be active. On a DPS 7000-XTA, G_CLX_SSI global variable must have a valid value or SERVER=… must be given.

A.1.4 DISPLAY_SSI (DSSI)

Function: Displays the state of the SSI process on OPEN7.

Abbreviation: DSSI

Syntax: `DISPLAY_SSI`

XTA case **`[SERVER=<ssi-host-name>/<ssi-port>]`**

Parameters: **SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**

Comment: On a native DPS 7000, OPEN7 must be active.
On a DPS 7000-XTA, G_CLX_SSI global variable must have a valid value or SERVER=… must be given.

Availability: OPERATOR, SYSADMIN, other IOF users.

A.1.5 START_CLX (SCLX)

Function: Activates the CLX service.

XTA case **Note: This command runs automatically SET_CLX_SSI, to set SERVER and PORT in the global environment.**

Abbreviation: SCLX

Syntax:
```
START_CLX   LIBRARY = <library name>
             SUBFILE = <subfile name>
```

Parameters: LIBRARY = Name of the GCOS 7 source catalogued library containing the CLX configuration file. Default value: CLX.SLLIB.

SUBFILE = Name of the subfile in the library (first parameter) containing the CLX configuration file. Default value: CLX_CONFIG.

Availability: OPERATOR

A.1.6 TERMINATE_CLX (TCLX)

Function:	Deactivates the CLX service on GCOS 7.
Abbreviation:	TCLX

Syntax:	`TERMINATE_CLX [STRONG] [DUMP]`
	or
	`TERMINATE_CLX STRONG = 0 | 1 DUMP = 0 | 1`

Parameters:	STRONG = 1 CLX is deactivated immediately, 0 CLX is deactivated after the mount/dismount requests in progress are completed. Default value = 0. DUMP = 1 a dump is stored in the SYS.SPDUMP. Can be set if STRONG is also set to 1. 0 (default value) no dump.
Availability:	OPERATOR
Comment:	the step H_CLX terminates with severity 1.

A.1.7 DISPLAY_CLX (DCLX)

Function:	Displays the CLX version, displays the status of devices connected to the cartridge library.
Abbreviation:	DCLX
Syntax:	`DISPLAY_CLX [DEVICE = xxxx | DV= xxxx | xxxx]`
Parameters:	DEVICE (abbrev.DV): device name ex. CT12
Availability:	OPERATOR, SYSADMIN, other IOF users.

A.1.8 MODIFY_CLX (MDCLX)

Function:	Activates or stops the CLX trace. CLX keeps the trace of the messages exchanged between the CLX and the ACSLS. The trace is displayed on the main console. It is also stored in SYS.LOGC and can be displayed by the job prlogc (sys.hsllib).
Abbreviation:	MDCLX
Syntax:	`MODIFY_CLX [TRACE = 0 | 1]`
Parameters:	TRACE = 1 enters the trace mode. 0 (default value) exits the trace mode.
Availability:	OPERATOR, SYSADMIN

A.1.9 RESET_CLX

Function:	Reset all the internal CLX tables relating to a particular device.
Syntax:	`RESET_CLX DEVICE = xxxx`
Parameters:	DEVICE (abbrev.DV): device name ex. CT12
Availability:	OPERATOR

A.2 LIBRARY COMMANDS

These commands can be used if CLX has been activated at least once since the last GCOS 7 system restart. They can be used if CLX is stopped. For details, see "Library Commands" in Chapter 6.

A.2.1 AUDIT_CARTRIDGE_LIBRARY (AUDLIB)

Function: Performs a physical inventory of cartridges in an ACS, a silo, a panel or a subpanel.

Abbreviation: AUDLIB

Syntax:

```
AUDIT_CARTRIDGE_LIBRARY
  { OBJECT }
  {        } = { ACS | AC | LSM | LS |
  {        }    PANEL |PA | SUBPANEL | SU }
  { OBJ    }

  { ACSID = <acsid> }

  { LSMID = <lsmid> }

  { { PANELID }              }
  { {         } = (<panelid> }
  { { PAID    }              }

  { { SUBPANELID }                }
  { {            } = <subpanelid> }
  { { SUID       }                }

  { CAPID }
  {       } = <capid> | *  ]
  { CAP  }
```

XTA case

[SERVER=<ssi-host-name>/<ssi-port>]

	Parameters:	OBJECT = designates the type of the device for the inventory. Possible values : ACS abbrev. AC , LSM abbrev. LS , PANEL abbrev. PA , SUBPANEL abbrev. SU .
		ACSID = identifier of the Automatic Cartridge Subsystem to be audited. It is a decimal number (one or two digits)
		LSMID = identifier of the Library Storage Module (silo) to be audited. Format : (acs,lsm). Each field is a decimal number (one or two digits).
		PANELID = specifies the identifier of the panel to be audited. Format : (acs,lsm,panel). Each field is a decimal number (one or two digits).
		SUBPANELID = specifies the identifier of the subpanel to be audited. Format:(acs,lsm,panel,startrow,startcolumn,endrow,endcolumn). Each field is a decimal number (one or two digits).
		CAPID = identifier of the CAP (Cartridge Access Port) used for ejection of cartridges with duplicate labels, or with unreadable labels and no virtual labels found during the inventory. Format : (acs,lsm,cap). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank. Default value : (*, ,).
XTA CASE		**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
	Comments:	This command can be used to resolve inconsistencies between the Library Server Database and the physical content of the library.
	ACSSA equivalent:	AUDIT command.
	Availability:	SYSADMIN, OPERATOR

A.2.2 CANCEL_LIB_REQUEST (CLIBR)

	Function:	Terminates a current or pending library request.
	Abbreviation:	CLIBR
	Syntax:	`CANCEL_LIB_REQUEST` `REQID = <Reqid>`
`XTA case`		**`[SERVER=<ssi-host-name>/<ssi-port>]`**
	Parameters:	REQID = request identifier of the request to be canceled. The request identifier may be obtained by the QLIB REQUEST command, it is a 5 decimal digits.
XTA CASE		**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
	Comments:	Any activity completed prior to the CLIBR command is not reversed.
	ACSSA equivalent:	CANCEL command.
	Availability:	OPERATOR, SYSADMIN.

A.2.3 DEFINE_SCRATCH_POOL (DFPOOL)

Function: Creates or modifies scratch pool(s).

Abbreviation: DFPOOL

Syntax:

```
DEFINE_SCRATCH_POOL
       { POOL_LIST }
       {           } = <poollist>
       { POOLLS    }

      [ { LOW_MARK }              ]
      [ {          } = <low_mark> ]
      [ { LWM      }              ]

      [ { HIGH_MARK }               ]
      [ {           } = <high_mark> ]
      [ { HWM       }               ]

      [ { OVERFLOW }            ]
      [ {          } = { 0 |1 } ]
      [ { OV       }            ]
```

XTA case

[SERVER=<ssi-host-name>/<ssi-port>]

Parameters:

POOL_LIST = List of up to ten pool identifiers specifying pools to create or modify. Each pool identifier identifies uniquely a group of scratch (WORK) volumes. It is a 5 decimal digits. Valid values : 0 to 65534. 0 designates the common scratch pool which already exists.

LOW_MARK = Low water mark. It deals with the number of volumes in the scratch pool. The low water mark is the point at which warning messages are issued as the scratch pool becomes depleted. It is of a 10 decimal digits. Valid values : 0 to 2147483646.

HIGH_MARK = High water mark. It deals with the number of volumes in the scratch pool. The high water mark is the point at which warning messages are issued as the size of the scratch pool grows. The high water mark value must be greater than the low water mark value. It is of a 10 decimal digits. Valid values :1 to 2147483647 (2^{31}-1).

OVERFLOW = It specifies the overflow attribute for the specified scratch pool(s). If it is set to 1, scratch volumes are selected from the common scratch pool (pool 0) if mount scratch (MOUNT WORK) requests cannot be satisfied with a volume from the pool(s). Default value 1.

XTA CASE **SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**

Comments: By default, the common scratch pool low water mark is 0 and its high water mark is 2147483647 (2^{31}-1).

ACSSA equivalent: DEFINE POOL command.

Availability: SYSADMIN, OPERATOR

A.2.4 DELETE_SCRATCH_POOL (DLPOOL)

Function: Deletes empty scratch pool(s).

Abbreviation: DLPOOL

Syntax:

```
DELETE_SCRATCH_POOL

      { POOL_LIST }
      {           } = <poollist>
      { POOLLS    }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters: POOL_LIST = List of up to ten pool identifiers specifying empty pools to delete. Each pool identifier identifies uniquely a group of scratch (WORK) volumes. It is a 5 decimal digits. Valid values :1 to 65534.

XTA CASE **SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**

Comments: Only empty pools can be deleted. The common pool (pool 0) cannot be deleted.

ACSSA equivalent: DELETE POOL command.

Availability: SYSADMIN, OPERATOR

A.2.5 EJECT_LIB_VOLUMES (EJECT_VOLUMES, EJVOL)

Function: Ejects one or several cartridges from the cartridge library.
The volume serial numbers (volsers - OCR labels - external labels) of the cartridges to be ejected are supplied in one of the following ways:
- list specified in a source library subfile (SSF or SARF -records).
- list of up to 10 volsers.
- a range of volsers (first volser, last volser).

Abbreviation: EJECT_VOLUMES
EJVOL

Syntax:

```
                    EJECT_LIB_VOLUMES

                    { CAPID }
                    {       } = { <capid> | * }
                    { CAP   }

{                          { INSUBFILE }                    }
{ INLIB= <library name>  ,{           } = <subfile name>    }
{                          { INSF      }                    }
{                                                           }
{                          { VOLUME_LIST }                  }
{                          {             } = <volume list>  }
{                          { VOLLS       }                  }
{                                                           }
{                          { VOLUME_RANGE }                 }
{                          {              } = <volume range>}
{                          { VOLRNG       }                 }

{                          { INSUBFILE }                    }
{ INLIB= <library name>  ,{           } = <subfile name>    }
{                          { INSF      }                    }
{                                                           }
{                          { VOLUME_LIST }                  }
{                          {             } = <volume list>  }
{                          { VOLLS       }                  }
{                                                           }
{                          { VOLUME_RANGE }                 }
{                          {              } = <volume range>}
{                          { VOLRNG       }                 }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

CAPID = identifier of the CAP (Cartridge Access Port) used to eject the cartridges. It is of the following format : (acs,lsm,cap). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank. Default value : (*, ,).

INLIB = name of a source cataloged library. Format : pathname[$CATi]. The implicit working directory convention is supported. This parameter is exclusive with VOLUME_LIST and VOLUME_RANGE. If this parameter is supplied, the parameter INSUBFILE must be supplied. The library must be cataloged.

INSUBFILE = name of the subfile-inside the specified library -containing the list of volsers. The specified subfile must contain at least one volser, it can contain an unlimited list of volsers. Volume range is not supported in the subfile. Blank or empty lines are ignored.
Each volser :
- must be on a separate line
- must be of at most six characters
- must be left justified (no leading blank characters).
- must not contain embedded blanks.
- ending blank characters must not be protected by double quotes.
- If less than 6 characters are supplied, it is padded with blanks.

VOLUME_LIST = list of 1 to 10 volsers. This parameter is exclusive with INLIB and VOLUME_RANGE.

VOLUME_RANGE = contains 2 values first volser and last volser specifying a range of volume. This parameter is exclusive with VOLUME_LIST and INLIB. Last volser must be greater than or equal to first volser. If the last volser is not supplied, only one volume is ejected.

XTA CASE

SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.

Comments: The operator must remove the cartridges when the message TU71 REMOVE CARTRIDGES FROM CAP... is sent ejection is completed when the message TU71 EJECT VOLUMES COMPLETED is issued.

ACSSA equivalent: EJECT command.

Availability: SYSADMIN, OPERATOR.

A.2.6 ENTER_LIB_VOLUMES (ENTER_VOLUMES, ENVOL)

Function: Inserts one or more cartridges in the cartridge library through a CAP (Cartridge Access Port) and optionally includes them in a scratch pool (pool of WORK volumes).

Abbreviation: ENTER_VOLUMES
ENVOL

Syntax:

```
{ ENTER_LIB_VOLUMES }
{ ENTER_VOLUMES }
{ ENVOL }

  { CAPID }
  {       } = { <capid> | * }
  { CAP   }

[ { SCRATCH }                                ]
[ {         } = {0 | 1} POOLID = <poolid>    ]
[ { SCR     }                                ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

CAPID = identifier of the CAP used to insert the cartridges. It is of the following format : (acs,lsm,cap). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank.
Default value : (*, ,).

SCRATCH = says whether or not the inserted cartridges must be placed in a scratch pool.
If set to 1, all volumes are assigned the scratch attribute in the library server data base, they become eligible to be used as WORK volumes, the POOLID keyword must be filled in also.
If set to 0, cartridges are not placed in a scratch pool, they are handled as non-WORK volumes.
This keyword is hidden, it does not appear on the menu unless requested.
Default value 0.

POOLID = specifies the scratch pool into which the cartridges must be placed.
Must contain a numeric value from 0 to 65534.
It must be specified when SCRATCH is set to 1 otherwise it must be left blank.
Cartridges to be entered will be selected as WORK volumes for the local DPS7 only if the POOLID value specified in this command and the POOLID value in the CLX configuration file of the local DPS7 are identical.
This keyword is "hidden", it does not appear on the menu unless requested.

XTA CASE

SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command

Comments: The selected CAP must be in manual enter mode. You can check and modify the CAP mode by using the SETCAP command.
Upon receiving an ENTER_LIB_VOLUMES command, the specified CAP is unlocked and a message is displayed instructing you to place the cartridges in the CAP. Insert the cartridge in the CAP. Up to a CAP full of volumes can be inserted by one command.

IMPORTANT:
The use of the SCRATCH keyword is strongly not recommended.

ACSSA equivalent: ENTER command if SCRATCH keyword not set, ENTER and SET_SCRATCH commands if SCRATCH keyword set.

Availability: SYSADMIN, OPERATOR.

A.2.7 ENTER_UNLAB_VOLUMES (ENUVOL)

Function: Inserts one or several tape cartridges with missing or unreadable OCR labels into the cartridge library through a CAP (Cartridge Access Port) .

Abbreviation: ENUVOL

Syntax:

```
{ENTER_UNLAB_VOLUMES}
{ENUVOL}

      { CAPID }
      {       } = {<Capid> | * }
      { CAP   }

      { VOLUME_LIST }
      {             } = <Volume list>
      { VOLLS       }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

	Parameters:	CAPID = identifier of the CAP used to insert the cartridges. It is of the following format : (acs,lsm,cap). If a character * is specified in the acs field, the highest priority available CAP in the ACS containing a cartridge designated for ejection is selected. If a character * is specified in the acs field, then the lsm and cap fields must be left blank. Default value : (*, ,). VOLUME_LIST = list of 1 to 10 virtual labels to be assigned to the cartridges. The virtual label are considered as being volsers, their format follows the same rules.
XTA CASE		**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
	Comments:	The selected CAP must be in manual enter mode. You can check and modify the CAP mode by using the SETCAP command. Upon receiving an ENTER_UNLAB_VOLUMES command, the specified CAP is unlocked and a message is displayed instructing you to place the cartridges in the CAP. Insert the cartridge with missing or unreadable OCR labels in the CAP. If WORK volumes are inserted, they must be prepared again as WORK to become eligible for being used as WORK volumes by the local DPS 7000.
	ACSSA equivalent:	VENTER command.
	Availability:	SYSADMIN, OPERATOR

A.2.8 EXTRACT_CLX_ERROR, (EXTERR)

Function : Retrieves from the CLX logs the list of volumes for which a specific incident has happened since the last EXTRACT_ CLX_ERROR operation, stores volsers of these volumes into the specified output library subfile and deletes references of them in the CLX logs.

Abbreviation: EXTERR

Syntax:

```
EXTRACT_CLX_ERROR
{ERROR_TYPE}
{          }={ WORK_PROTECTED |WP|SCRATCH_NONWORK| SNW }
{ERR       }

                                {SUBFILE}
{ LIB }= <Library name>,        {       } = <subfile name>
                                {SF     }

        [ { REPLACE }             ]
        [ {         } = { 0 | l } ]
        [ { RPL     }             ]
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Parameters:

ERROR_TYPE = type of the incident. Valid values :
WORK_PROTECTED (abbr. WP) = WORK volume protected by the File Protect Selector switch.
The volume had the Protect Switch set when it was selected for a MOUNT WORK request.

SCRATCH_NONWORK (abbr. SNW) = volume with the scratch attribute but without the WORK attribute.
The volume did not have the WORK attribute but did have the SCRATCH attribute when it was selected for a MOUNT WORK request.

LIB = output source library. The library must be cataloged.

SUBFILE = output subfile.

REPLACE = specifies what to do if the output subfile already exists.
if set to 1, the current content of the subfile is overridden.
if set to 0, the command is rejected.
Default value 0.

XTA CASE **SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**

Comments: Erroneous volumes are detected and registered in the CLX logs this command does not involve the library server.

Availability: SYSADMIN, OPERATOR

A.2.9 QUERY_CARTRIDGE_LIBRARY (QLIB)

Function: Displays information about an ACS, one or several silo(s), one or several CAP(s), cleaning cartridge(s), library drive(s), the Library Server, LSM(s), port(s), library request(s), scratch cartridge(s), scratch pool(s), or tape cartridge(s).

Abbreviation: QLIB

Syntax:

```
QUERY_CARTRIDGE_LIBRARY

{ OBJECT }  { ACS | CAP | CLEAN | DRIVE
{         }   | LOCK_DRIVE |LOCK_VOLUME |
{         } = LSM | MOUNT | MOUNT_SCRATCH
{         }   | POOL | PORT | REQUEST |
{ OBJ     }   SCRATCH |SERVER | VOLUME }

{ [ { VOLUME_LIST }                 ] }
{ [ {             } = <volume list> ] }
{ [ { VOLLS       }                 ] }

{ [ { DRIVEID }             ] }
{ [ {         } = <driveid> ] }
{ [ { DRID    }             ] }

{ [ CAPID = <capid> ] }

{ [ { POOL_LIST }              ] }
{ [ {           } = <poollist> ] }
{ [ { POOLLS    }              ] }

{ [ LSMID  = <lsmid>  ] }
{ [ PORTID = <portid> ] }

{ [ { REQUEST_LIST }                  ] }
{ [ {              } = <requestlist> ] }
{ [ { REQLS        }                  ] }
```

```
                                { [ ACSID  = <acsid>  ] }
                                { [ LOCKID = <lockid> ] }

                                { [ { MEDIA_TYPE }               ] }
                                { [ {            } =<media_type> ] }
                                { [ { MEDIA      }               ] }
```

XTA case **[SERVER=<ssi-host-name>/<ssi-port>]**

Input Parameters:

OBJECT = designates the type of the device to get information about.
Possible values :
ACS (abbrev. AC) .
CAP : Cartridge Access Cap
CLEAN (abbrev. CLN) : cleaning cartridges
DRIVE (abbrev. DR) transports
LOCK_DRIVE (abbrev. LCKD) : lock(s) on drives
LOCK_VOLUME (abbrev. LCKV): lock(s) on volumes)
LSM (abbrev. LS): silo
MOUNT (abbrev. M) : available drives for mounting specific cartridges.
MOUNT_SCRATCH (abbrev. MSC) : available drives for mounting scratch tapes
POOL : scratch pool(s)
PORT : port(s) linking the server and the library.
REQUEST (abbrev. REQ) :pending and current library requests.
SCRATCH (abbrev. SCR) : scratch cartridge(s).
SERVER (abbrev. SVR)
VOLUME (abbrev. VOL) : cartridges within the library.
One or several object identifiers can be supplied according to the specified type.

Object type	Object identifier
ACS	ACSID
CAP	CAPID
CLEAN	VOLUME_LIST
DRIVE	DRIVEID
LOCK_DRIVE	DRIVEID [, LOCKID]
LOCK_VOLUME	VOLUME_LIST [, LOCKID]
LSM	LSMID
MOUNT	VOLUME_LIST
MOUNT_SCRATCH	POOL_LIST [MEDIA TYPE]
POOL	POOL_LIST
PORT	PORTID
REQUEST	REQUEST_LIST
SCRATCH	POOL_LIST
SERVER	none
VOLUME	VOLUME_LIST

If no object identifier is supplied , all objects of the specified type are displayed.

VOLUME_LIST = list of up to ten volume serial numbers (volsers). It can be supplied if the specified object type is one among the following list: VOLUME, CLEAN,
LOCK_ VOLUME, MOUNT.

DRIVEID = identifier of a drive attached to the cartridge library. It can be supplied if the specified object type is DRIVE or LOCK_DRIVE. Format : (acs,lsm,panel,drive).

CAPID = identifier of the CAP (Cartridge Access Port) . It can be supplied if the specified object type is CAP.Format : (acs,lsm,cap).

POOL_LIST = list of up to ten scratch pool identifiers. It can be supplied if the specified object type is POOL, MOUNT_SCRATCH or SCRATCH . Format : decimal. Valid value : 0 to 65534.

LSMID = identifier of a Library Storage Module. It can be supplied if the specified object type is LSM. Format : (acs,lsm).

PORTID = identifier of a port used for the connection of the cartridge library to the library server. It can be supplied if the selected object type is PORT. Format : (acs,port)

REQUEST_LIST = list of up to ten current and (or) pending library request identifiers. It can be supplied if the specified object type is REQUEST. Format : 1 to 10 digits.

ACSID = identifier of the Automatic Cartridge Subsystem.

It must be supplied if the specified object type is ACS. It is a decimal number (one or two digits)

LOCKID = lock identifier.

It can be supplied if the specified object type is LOCK_VOLUME or LOCK_DRIVE It is a decimal number (one to 10 digits).

MEDIA_TYPE = volume type. Value 3480 or 3490E.

Outputs parameters: The returned information depends on the selected object type.

Object type	Label	Sub-label	Returned information ordered as mentioned in this list
ACS	ACS		ACS identifier
	-		ACS current state
	FREECELLS		number of free cells
	REQ. C/P	Au	number of current / number of pending AUDIT requests
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
CAP	CAP		CAP identifier
	-		CAP current status (activity) of the CAP or status error
	PR		priority assigned to the CAP
	SZ		number of cells in the CAP
	-		mode : MANU for manual , AUTO for automatic
	-		current state of the CAP
CLEAN	VOL		external label of the cleaning cartridge
	CELL		home location of the cleaning cartridge in the ACS library
	MAX USE		maximum number of times the cleaning cartridge can be mounted
	CUR USE		number of times the cleaning cartridge has been mounted
DRIVE	DR		library drive identifier
	-		current activity status of the drive or status error
	-		current state of the drive
	VOL		volume identifier mounted in the library drive - If no volume is in the drive, this field is left blank
LOCK_DRIVE	DR		library drive (transport) identifier
	-		current activity state of the drive or status error
	LCK		lock identifier associated with the drive
	LCK-DURATION		amount of time, in seconds, that the lock has been active
	LCK-PENDING		number of lock requests that are waiting for the drive
	USR		user identifier locking the drive. Only the first 15 characters are displaying

Object type	Label	Sub-label	Returned information ordered as mentioned in this list
LOCK_VOLUME	VOL		volume identifier
	-		current activity state of the volume or status error
	LCK		lock identifier associated with the volume
	LCK-DURATION		amount of time, in seconds, that the lock has been active
	LCK-PENDING		number of lock requests that are waiting for the volume
	USR		user identifier locking the volume. Only the first 15 characters are displaying
LSM	LSM		LSM identifier
	-		current robot activity
	-		current state of the LSM
	FREECELLS		number of unused cells in the LSM
	REQ. C/P	Au	number of current / number of pending AUDIT requests
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
MOUNT			
per volume: first message	VOL		external tape cartridge label
			current state of the volume
next message(s): one per drive ordered by proximity to the volume	DR		drive identifier
	-		activity state of the drive or status error
	-		current state of the drive
	VOL		the volume identifier in the library drive. If no volume is in the drive, this field is left blank
MOUNT_SCRATCH			
per pool: first message	POOL		scratch pool identifier
	-		current state of the pool

Object type	Label	Sub-label	Returned information ordered as mentioned in this list
next message(s): one per drive ordered by proximity to the volume	DR		drive identifier
	-		activity state of the drive or status error
	-		current state of the drive
	VOL		the volume identifier in the library drive. If no volume is in the drive, this field is left blank
POOL	POOL		scratch pool identifier
	-		current state of the pool
	CNT		number of volumes currently assigned to the scratch pool
	LWM		the point at which warning messages are sent as the pool becomes depleted
	HWM		the point at which warning messages are sent as the size of the pool grows
	-		the pool attributes: OVERFLOW or left to blank
PORT	PORT		Identifier of the port
	-		current state of the port
REQUEST	REQ		request identifier
	-		type of the request
SCRATCH	POOL		scratch pool identifier
	-		current state of the volume
	-		volume identifier
	CELL		home cell
SERVER	SERVER		-
	-		current state of the Library Server service
	FREECELLS		number of unused cells in the LSM
	REQ. C/P	Au	number of current / number of pending AUDIT requests
		Mo	number of current / number of pending MOUNT requests
		Di	number of current / number of pending DISMOUNT requests
		En	number of current / number of pending ENTER requests
		Ej	number of current / number of pending EJECT requests
VOLUME	VOL		Identifier of the volume
	-		type of the current location of the volume
	LOC		current location address (drive address or home cell)

XTA CASE SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command. This parameter is not needed on a DPS 7000 non-XTA, and must be specified on a DPS 7000-XTA if G_CLX_SSI global variable value is not valid.

Comments: Only one type of device (object) can be queried at a time.

ACSSA equivalent: QUERY command

Availability: SYSADMIN, OPERATOR, other IOF users.

A.2.10 SET_CAP_ATTRIBUTES (SETCAP)

Function: Modifies the mode and (or) the priority for the specified Cartridge Access Port.

Abbreviation: SETCAP

Syntax:

```
SET_CAP_ATTRIBUTES

 { CAPID }
 {       } = <capid>
 { CAP   }

[ MODE = { A | M} ]

[ { PRIORITY }             ]
[ {          } = <priority ]
[ { PRTY     }             ]

[SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters: CAPID = identifier of the CAP . It is of the following format : (acs,lsm,cap).

MODE = Valid values : A for automatic mode, M for manual mode. If the field is left blank, the mode of the CAP is not modified.
PRIORITY = Decimal value : 0 to 16. If the field is left blank, the priority of the CAP is not modified.

XTA CASE	**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
Comments:	The higher the priority value is, the more priority the CAP is. A CAP with priority of 0 is never selected unless specified in the command.
ACSSA equivalent:	SET CAP command.
Availability:	SYSADMIN, OPERATOR

A.2.11 SET_CLEAN_ATTRIBUTE (SETCLN)

Function: Sets or resets the cleaning attribute for one or more tape cartridge(s) (volumes).

Abbreviation: SETCLN

Syntax:

```
SET_CLEAN_ATTRIBUTE

  { VOLUME_LIST }
  {             } = <volume list>
  { VOLLS       }

[ ON = { 1 |0 } ]

[ { MAXUSE_NB }                 ]
[ {           } = <max use nb> ]
[ { MAXNB     }                 ]

[SERVER=<ssi-host-name>/<ssi-port>]
```

	Parameters :	VOLUME_LIST = a list of up to 10 volume serial numbers specifying a list of volumes. ON = If set to 1, the cleaning attribute is set for the volume(s), then a value must be supplied for MAXUSE_NB. The volume is used as a cleaning cartridge. If set to 0, the cleaning attribute is reset for the cartridge. The cartridge is no longer selected to satisfy subsequent cleaning requests. The volume is used as a data cartridge. Default value : 1. MAXUSE_NB = number of times the cleaning cartridge can be used before it is no longer selected to satisfy cleaning requests. Must be filled in if ON is set to 1.
XTA CASE		**SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.**
	ACSSA equivalent:	SET CLEAN command.
	Availability:	SYSADMIN, OPERATOR.

A.2.12 SET_SCRATCH_ATTRIBUTE (SETSCR)

Function: Sets or resets the scratch attribute for one of more tape cartridge(s) (volumes).

Abbreviation: SETSCR

Syntax:

```
SET_SCRATCH_ATTRIBUTE

  { VOLUME_LIST }
  {             } = <volume list>
  { VOLLS       }

[ ON = { 0 | 1 } ]

POOLID = <poolid>
```

Parameters:

VOLUME_LIST = a list of up to 10 volume serial numbers specifying a list of volumes.

ON = If set to 1, the scratch attribute is set for the volume, then a value must be supplied for POOLID. The volume becomes eligible to be used for satisfying a next MOUNT WORK tape cartridge request.
It set to 0, the cleaning attribute is reset for the cartridge. The cartridge is no longer selected to satisfy a subsequent mount WORK volume request.
Default value : 1.

POOLID = Pool identifier to which the volume(s) must be assigned to.

XTA CASE

SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.

Comments: In normal situation, this command should be avoided the PREPARE_TAPESET command must be preferred to assure the coherence between the WORK and SCRATCH attributes.

ACSSA equivalent: SET SCRATCH command.

Availability: SYSADMIN, OPERATOR

A.3 CLX UTILITIES

For details on CLX utilities, see "CLX Utilities" in Chapter 6.

A.3.1 GET_CLX_FILE (GTCLXF)

Function: Transfers the content of a ESCALA or ESTRELLA file or the content of a OPEN7 file onto a GCOS 7 subfile. Only files readable by the user clx can be transferred.

Abbreviation: GTCLXF

Syntax:

XTA CASE
Native case

```
GET_CLX_FILE
 SERVER = <ssi_server>[/<ssi-port>]
SERVER = <ACSLS_NAME>
 or  OPEN7 = 1
REMOTE_FILE = <ESCALA or OPEN7 file name>
GCOS_LIB = <gcos 7-library-name>
GCOS_SUBFILE = <gcos 7-subfile-name>
```

Parameters

SERVER = UNIX server name which contains the file to be transferred to a DPS 7000 non-XTA.
It is exclusive with the parameter OPEN7.

XTA CASE

SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.

OPEN7 = Must be set to 1 if the file to be transferred is a local OPEN7 file. If set to 1, the SERVER parameter must contain blank characters.

REMOTE_FILE= Name of the file to be transferred.

GCOS_LIB = Name of the GCOS 7 library into which the file is transferred.

GCOS_SUBFILE = Name of the GCOS 7 subfile into which the file is transferred.

Availability: OPERATOR, SYSADMIN

Comment: The permission bits set to the file to be transferred must be set so that the file can be read by the user clx (group: clx).

A.3.2 EXEC_CLX_VOLRPT (VOLRPT)

Function: Activates the volume report utility on the ESCALA or ESTRELLA library server.

Abbreviation: VOLRPT

Syntax:

```
VOLRPT
SERVER = <ESCALA or ESTRELLA server name>
RPTFILE = 1 | 0
OPTIONS = <options value>
[SERVER=<ssi-host-name>/<ssi-port>]
```

Parameters: SERVER = UNIX server name on which the report is to run.

RPTFILE = If set to 1, the report is stored in the file `/export/home/ACSSS/log/volrpt.log` on the UNIX server, if set to 0, the report is displayed on the console

OPTIONS = Refer to *ACSLS Administrator's Guide*.

XTA CASE

SERVER=…. Default value: the value of G_CLX_SSI global variable, generally set by a previous SET_CLX_SSI (SCLXSSI) command.

Availability: OPERATOR, SYSADMIN

Comment: The report can be transferred into a GCOS 7 file by using the command GTCLXF.

B. What to Supply to Bull in Case of a Problem

What you need to supply to your Bull support center in the event of a failure will depend on the nature of the failure. In general, it is better to supply too much information than too little.

CLX or SSI failure

JOR and DUMP of the jobs CLX, CLX_SSI, CLX_FT and CLX_STAT. Dumps exist only if the job has aborted.

Trace of CLX: if the problem can be reproduced, start the trace using the MDCLX TRACE=1 command and supply Bull with a hardcopy of the trace or the SYS.LOGC.

To include the CLX trace in the JOR of CLX, restart CLX using the following command:

ejr <name of the subfile containing the JCL of the job CLX> LIB=<name of the library containing the JCL> vl = (<name of the CLX configuration subfile>, , CLX.LMLIB , TRACEALL, <name of the library containing the CLX configuration subfile>, LOAD).

EXAMPLE:

```
ejr CLX,,CLX.SLLIB vl = (CLX_CONFIG, , CLX.LMLIB , TRACEALL, CLX.SLLIB,LOAD).
```

Supply the **SSI log files** `/clx/[<GCOS_NAME>]*event*.log`:

1. Connect as user root to the ssi server
2. Copy and print each log file using the following commands:

   cp <log file name> <saved log file>

   lp -d SYSOUT <saved log files> (refer to OPEN7 document for specific options), or
   lpr –P<printer> <saved log files>
   (on UNIX library server for DPS 7000-XTA).

or you can use the GTCLXF command to transfer the SSI log into a GCOS 7 file.

Supply also:

- the ESCALA or ESTRELLA ACSLS log:
  file `$ACSSS/log/access_event.log`
  file `$ACSSS/log/event.log`
  (Usually `$ACSSS` equals `/export/home/ACSSS`)
- You can transfer this log into a GCOS 7 file using the GTCLXF command.
- the SYS.SWLOG file (domain DVMGT and CLMGT)
- the system trace buffer `0.0.A.E7.44B00`
- the DVMGT journal segment `0.0.D.B.`
- your CLX configuration file
- subfiles delivered by Bull in CLX.SLLIB and CLX.JCLLIB.

- OPEN7 / HSL / TNS failure

Supply JOR and DUMPs of OPEN7, HSL and TNS.

- INTEROP7_BASIC failure on a DPS7000-XTA

Supply the INTEROP7 log files in
<V7000 directory>\interop7\<GCOS7_NAME>\STD\log

C. Subfiles Delivered in CLX.SLLIB

JCL monitoring the step H_CLX

This JCL is delivered in the subfile CLX of the library CLX.SLLIB:

```
$JOB CLX,HOLDOUT,JOR=NORMAL;
$COMM 'CONFIG-FILE , DEBUG, LM-LIB, TRACE-JOR, LIBRARY,LOAD-SM ' ;
VALUES CLX_CONFIG, NIL, CLX.LMLIB,NTRACE,CLX.SLLIB,LOAD;
JUMP &6;
LOAD:
SYSMAINT COMFILE=*IN;
$INPUT IN;
IS CLX.SYSTEM;
SM;
LOAD H_CTLIB IS REPLACE OLDVERS;
QUIT;
QUIT;
$ENDINPUT;
';
NLOAD:
JUMP &4;
NTRACE:
LET SW1 0;
LET SW2 0;
JUMP SCLX;
TRACEQ:
LET SW1 1;
LET SW2 0;
JUMP SCLX;
TRACESQ:
LET SW1 0;
LET SW2 1;
JUMP SCLX;
TRACEALL:
LET SW1 1;
LET SW2 1;
SCLX:
JOBLIB SM CLX.SYSTEM;
$STEP H_CLX,&3 &2 , DUMP=DATA;
$ASSIGN CONFIG , &5,SUBFILE=&1,SHARE=DIR;
$ENDSTEP;
```

```
$COMM ' TCLX COMMAND => SEV 0 ';
$COMM ' TCLX STRONG [DUMP]COMMAND     => SEV 1';
$COMM ' SYSTEM/CLX ERROR => SEV 3';
$COMM ' CONFLICT WITH OTHER CLX,CLC   => SEV 4- STATUS 21000 ';
$COMM ' ERROR IN CLX_CONFIG FILE      => SEV 4- STATUS 22000 ';
$COMM ' NOT RECOVERABLE SYS/CLX ERROR => SEV 4- STATUS 22000 '
$COMM ' NO RESPONSE FROM SERVER       => SEV 4- STATUS 23000 ';
$COMM ' SSI NOT RUNNING OR ABN. BEHAVIOUR => SEV 4- STATUS 24000 ';
$COMM ' SHARABLE MODULE NOT LOADED     => SEV 4- STATUS 26000 ';
$COMM ' MARKETING IDENTIFIER MISSING   => SEV 4- STATUS 27000 ';
$COMM ' CANCEL_JOB   => SEV 5';
$COMM ' ABORT DUE TO CRASH => STATUS 61000';
JUMP SCLX SEV EQ 3;
FIN:
$ENDJOB;
```

If you want an automatic restart of CLX in case of no response from the server add the following statement before the label FIN:

```
JUMP SCLX STATUS EQ 23000;
```

CLX configuration skeleton

A skeleton of configuration file is delivered in the subfile CLX_CONFIG_REF of the library CLX.SLLIB:

```
#
#  Version : CLX V2.1
#
# The configuration file must be adapted to the configuration site
# and moved into the CLX.SLLIB..CLX_CONFIG member.
#  -Parameters followed by "*" must be adapted to the
#   configuration site.
#  -Others parameters must not be modified unless requested
#   by Bull support.
#
# TOSSI     = MUST NOT BE MODIFIED
# TOACSLM    = MUST NOT BE MODIFIED
# TOLSM      = MUST NOT BE MODIFIED
# TORPRQ     = MUST NOT BE MODIFIED
# TORPREAD   = MUST NOT BE MODIFIED
# MAXTOACSLM "*":  Numeric value: number of retries waiting for a
#                  response from the server (recommended value: 0
#                  means no limit).
# MAXTOSSI "*"  :  Numeric value: number of retries waiting for
#                  a response from SSI (recommended value:
#                  0 means no limit).
# POOLID_18T "*":  [1,65534] id of pool used for 18-track
#                  formatted scratch volumes.
# POOLID_36T "*":  [1,65534] id of pool used for 18-track
```

```
#                   formatted scratch volumes.
# NO_AUTOCR "*":  [VOL_ABS] [VOL_BUSY] no automatic cancel
#                   request (step abort) if volume absent or busy.
#                      - Delete the line if auto cancel
#                        request is required.
# LOG "*"       :  [WORK_PROTECT] [SCRATCH_NWORK] : logging of
#                   VSN requested for WORK_PROTECT and/or
#                   SCRATCH_NWORK volume.
#                     - Delete the line if no logging is required.
#
# LSMID "*"     :  ACS number, LSM number : LSM identifier.
# CTxx "*"      :  Device name (gcos-name) =drive identifier
#                   (stk-name): Identification of the cartridge
#                   drive.
# VSN "*"       :  Range of volumes authorized for GCOS 7.
#                     - Delete the line if no checking is required.
# SEV3_SERVER_DOWN : Indicates to generate a severtiy 3 instead
#                     of severity 4 in the abort when the server
#                     no more responds.
#                     If used, This option allows an automatic
#                     restart of CLX.
#                     When used, this keyword must be the only one
#                     on the line.
```

XTA case

```
# SSIHOST        :  Network host name of ACSLS server
#                   if SSI is to run in INTEROP7 context
#                   or (as) out of OPEN7 context.
# SSIPORT        :  Port number on which SSI is to listen
#                   (Default : 50001)
#                   if SSI is to run in INTEROP7 context
#                   or (as) out of OPEN7 context.
#
#  A complete description of these parameters is provided in the
#  Cartridge Tape Library User's Guide.
#
TOSSI      = 300000
TOACSLM    = 300000
TOLSM      = 300000
TORPRQ     = 120000
TORPREAD   = 2000
POOLID_18T = x
POOLID_36T = y
MAXTOSSI   = z
MAXTOACSLM = x
NO_AUTOCR  = [VOL_ABS], [VOL_BUSY]
LOG        = [WORK_PROTECT], [SCRATCH_NWORK]
LSMID      = acs,lsm
CTaa       = acs,lsm,panel,transport
VSN        = ******
```

XTA case

```
#SSIHOST   =
#SSIPORT   =
```

D. Other GCOS 7 Messages

D.1 DW Messages

CLX automates error handling procedures for the library cartridge transports. To simplify message filtering, the DW message code has been created and is used for the messages:

```
DW06 SWITCH TO WRITE PROTECT
DW07 SWITCH TO WRITE PERMIT
DW11 MOUNT (DW11 does not appear on the server)
DW12 RECOVER
```

These messages replace messages DV06, DV07, DV11, and DV12 when the devices are connected to the cartridge library.

A dismount message has been created:

```
DW10 <device> DISMOUNT <volname> <type>
```

where,

<device> is the device name

<volname> is the volume name if the volume is standard and if the AVR reading of the volume label has terminated normally, or if the optic label has been obtained. Otherwise, (U case) <volname>="".

<type> is the type of volume:

- **S** standard volume
- **W** work volume
- **N** non-standard volume or for an abnormal AVR termination
- **E** scratch non-work volume
- **P** work volume write protected
- **U** unknown volume (this can happen for a non-standard volume after a canceled request and a CLX stop or a library failure)

Note that S is used in messages for a standard 36-track cartridge, even if the cartridge has been mounted on an 18-track device.

The DW10 message is non-repetitive.

D.2 DV Messages

The following messages are the DV messages for the cartridge library:

Reference to a non-standard volume, prior to GCOS 7 TS7458

```
DV50.ASSIGN NSTD VOLUME NOT ALLOWED FOR CT/LIB
```

Reference of type MD=* DVC=CT/LIB/36T:

```
DV51.ANY MEDIA OPTION NOT ALLOWED FOR <device-class>
```

Reference with attributes of device class not specified: (CT, or CT/LIB in the mixed-media case)

```
DV52.INCOMPLETE DEVICE ATTRIBUTES FOR CT DEVICE
```

Reference to an unauthorized volume:

```
DV53.ILLEGAL ACCESS TO THE VOLUME <volname> OF DEVCLASS CT/LIB
```

Use of a non-standard volume, while CLX is not running:

```
DV71 ISSUE NV COMMAND TO CONFIRM VOLUME NAME <volume> FOR <ron>
```

D.3 Avail Message

Isolation of a device while a dismount operation is active:

```
AW81 MDHW CTnn DEFERRED: DISMOUNT IN PROGRESS
```

D.4 Utilities Message

An attempt to use PREPARE_TAPE (PRPTP) with a modified volume name results in a step abort (Severity 3) and the following message:

```
MEDIA NAME MODIFICATION NOT AUTHORIZED FOR CT/LIB
```

This happens when the user has specified a different VSN from the old VSN for a library volume and did not use PREPARE_TAPESET (refer to "Label Consistency" in Chapter 4).

E. The PREPARE_TAPESET Utility

E.1 Introduction

PREPARE_TAPESET prepares one or several tapes in one session using the parameters submitted:

- in a pre-prepared input file containing the details of the tapes to be prepared and optionally completed with the command parameters,
- directly in interactive mode.

The PRPTPST command does the following:

- if all the parameters are given in the input file, it ignores those entered in the command.
- if parameters are missing from the input file, it uses those entered in the command.
- if a parameter which has no default is missing, it outputs a message to flag the error.

Parameters are stored and used for every tape unless otherwise specified in the input file. The input file can just identify tapes with the same global parameters or specify specific parameters for specific tapes.

Each volume described in the input file is prepared according to the parameters specified and the naming constraints for the cartridge library. Refer to the *Data Management Utilities User's Guide*.

NOTE:
PREPARE_TAPE can also be used to prepare new volumes, but PREPARE_TAPE cannot be used to adjust magnetic volser and optical volser (the supplied old name and new name must be identical).

E.2 GCL Syntax

```
{ PREPARE_TAPESET }
{                 }
{ PRPTPST         }
          INFILE = { <input_file_description> | ::TN }

          DVC = device-class

          [ NEWLABEL = { $NATIVE | $NONE } ]

          [ DENSITY = { S35 | S75 } ]

          [ NBDRIVE = { 1 | * | n } ]

          [ ADJUST = { 0 | bool } ]

          [ RENAME = { 0 | bool } ]

          [ IGNORE = { 0 | bool } ]

          [ BYPASS = { 0 | bool } ]

          [ WORK = { 0 | bool } ]

          [ FORCE = { 0 | bool } ]

          [ CTLACC = { ASIS | YES | NO } ]

          [ OWNER = { ASIS | * | project-name } ]

          [ UNLOAD = { 0 | bool } ]

          [ BRIEF = { 0 | bool } ]

          [ PRTFILE = { SYS.OUT | file44 } ]
```

Parameters:

INFILE	*INFILE*= <input_file_description> : name of the input file or an input enclosure. *INFILE=::TN* When the prompt IF: appears, enter parameters line by line. See "Preparing an Input File" later in this syntax description. To exit from PRPTPST and return to S: level, key in "/".
DVC	the global device class and the global old label type (default value NATIVE). See "Constraints" later in this syntax description.

NEWLABEL	The new label for the tape. *Default:* $NATIVE. ($NONE is not allowed for a cartridge library.)
NEWNAME	***this parameter does not appear in the menu and is specified as an entry in the input file or in interactive mode.*** A cartridge tape with identical physical and logical names may have its logical name changed by NEWNAME. RENAME must be set to 1. Since this results in inconsistencies in the library, the renamed volumes are listed. Bar code labels and names can be physically changed.

INTERVAL	***this parameter does not appear in the menu and is specified as an entry in the input file or in interactive mode.*** The range of files in the set from the start number (lower) to the end number (higher).
	
	EXAMPLE:
	The entry `CT:CT/LIB INTERVAL=(01,03)` creates the following set of files:
	`ct01:ct/lib`
	`ct02:ct/lib`
	`ct03:ct/lib`
	❑

DENSITY	***not applicable to library.***
NBDRIVE	The number of cartridge drives to be used simultaneously. If *, all available drives are used. Up to 5 drives can be specified. *Default:* 1
ADJUST	Not meaningful at present.
RENAME	***reserved for SYSADMIN and applicable only to cartridge libraries.*** If 1, the volume is renamed. Default: 0
IGNORE	Not meaningful at present.
BYPASS	If 1, the volume is prepared even if its files have not expired. No confirmation is requested from the operator. *Default:* 0
WORK	If 1, the volume is to be used as a work volume. *Default:* 0

FORCE	***reserved for SYSADMIN.*** If 1, catalogued files in the volume are deleted but the catalog is left unmodified. No confirmation is requested from the operator. *Default:* 0
CTLACC	***reserved for SYSADMIN.*** Defines the security for the volume: `ASIS` (default for a standard volume): the security is left unchanged `YES:` invokes security, only the owner of the volume and SYSADMIN can perform storage management tasks on the volume. `NO` (default for a non-standard volume): removes security flag.
OWNER	***reserved for SYSADMIN.*** Specifies the owner of the volume: `ASIS` (default for a standard volume): leaves the owner unchanged. *project-name:* allocates a new owner to the volume * means that there is no owner, the volume is available to any user.
UNLOAD	***not applicable to cartridge tapes in a cartridge library in which case tapes are unloaded after preparation.***
BRIEF	If 1, only the summary report is output.
PRTFILE	The name of a sequential file to which all the output reports are to be directed. If omitted, the output is sent to SYS.OUT (absentee mode) or the terminal (interactive mode).

Constraints

The global device class or the device class of the first tape of the input file defines the device class of the entire set of tapes to be prepared; subsequent tapes of different device classes will be ignored.

Preparing an Input File

The input file may be:
- a member of an SL library,
- a UFAS sequential file,
- an input enclosure.

Parameters are entered in the file through either the Line Editor or FSE. There is no limit to the size of the records.

The input file contains the descriptions of the tapes to be prepared. Each description may contain one or more lines. If a single description contains more than one line, each line must be terminated with a hyphen "-" to indicate that the description continues on the next line. Blank lines are allowed in the input file.

Each tape description is made up of the tape name followed by the parameters required. The parameters must be separated by blanks or commas.

If the tape name exists, the first field in the description must be:

- the name itself such as *tape1*, in which case the device description is taken from the *global* DVC,
- the name and its device description such as *tape1:ct/lib* or *tape2:mt/t9/d1600$ntsd*,
- the device description only such as:*ct/lib/$none*.

NOTE:
If the name does not exist, the DVC parameter must be supplied.

It is possible to prepare a complete series of tapes with the same name but with an ascending sequence of numeric identifiers.

EXAMPLE OF AN INPUT FILE:

```
PREPARE_TAPESET
  INFILE=util.mj.sllib..example
  DVC=ct/lib$nstd
  NBDRIVE=3;
```

The input file is the member called example, in the SL library `util.mj.sllib`. The global parameters specify that non-standard cartridge tapes in a cartridge library are to be prepared as standard cartridge tapes, and the number of drives to be used simultaneously is 3.

Example of Statements in the Input File:

```
ct1
ct2
ct3:ct/lib$NATIVE, WORK
ct4, NEWLABEL=$NONE
ct5, BYPASS=1
ct6:mt
ct7, NEWNAME=ctbis
ct8, NEWNAME=ctbis, RENAME=1
ct9, ADJUST
```

Tapes `ct1` and `ct2` will be processed normally.

Tape `ct3` (explicitly) has a $NATIVE label.

Tape `ct4` will be ignored since $NONE is not applicable.

Tape `ct5` will be processed normally: any valid files will be cleared (BYPASS is set).

Tape `ct6` will not be processed because it specifies a different DVC.

Tape `ct7` will not be processed because NEWNAME parameter is specified ***without*** RENAME.

Tape `ct8` will be processed and will be renamed `ctbis`.

Tape `ct9` will be processed, and the logical label will be adjusted to be the same as the physical label.

❑

Error Messages

Error messages may be output during:
- the checking of the global parameters,
- the checking of tape-specific parameters,
- the actual processing of each tape.

For further information, see *Data Management Utilities User's Guide*.

E.3 JCL Syntax

```
TAPEPREP
          INFILE = <input_file_description>
          [ DEVCLASS = device-class ]

          [            { NATIVE } ]
          [ OLDLABEL = { NSTD   } ]
          [            { NONE   } ]

          [            { NATIVE } ]
          [ NEWLABEL = {        } ]
          [            { NONE   } ]

          [           { S35 } ]
          [ DENSITY = {     } ]
          [           { S75 } ]

          [           {     1     } ]
          [ NBDRIVE = { integer-1 } ]
          [           {     *     } ]

          [ ADJUST = { 0 | 1 } ]

          [ RENAME = { 0 | 1 } ]

          [ IGNORE = { 0 | 1 } ]

          [ BYPASS = { 0 | 1 } ]

          [ WORK = { 0 | 1 } ]

          [ FORCE = { 0 | 1 } ]

          [          { ASIS } ]
          [ CTLACC = { YES  } ]
          [          { NO   } ]

          [         { ASIS         } ]
          [ OWNER = {  *           } ]
          [         { project-name } ]

          [ UNLOAD = { 0 | 1 } ]

          [ BRIEF = { 0 | 1 } ]

          [          { SYS.OUT } ]
          [ PRTFILE ={         } ]
          [          { file-78 } ]
```

Glossary

Symbol

4400 ACS
Storage Technology Corporation Cartridge Tape Library with a capacity of approximately 6000 cartridges.

A

ACS (Automated Cartridge System)
Cartridge Tape Library subsystem composed of a Library Management Unit (LMU) and at least one Library Storage Module (LSM) connected to the LMU.

ACS ID
A unique identifier for an ACS.

ACS Library
A library composed of one or more ACSs, attached tape cartridge drives and cartridges residing in the ACSs.

ACSEL (ACS Event Logger)
The software component that receives messages from the other ACSLS components and writes them to an Event Log.

ACSLM (ACS Library Manager)
The software component that validates and routes library requests and responses.

ACSLS (ACS Library Software)
Manages the ACS library contents and controls ACS library hardware to mount or dismount cartridges on ACS cartridge drives.

ACSLS Database Backup
Database checkpoint (a snapshot of the data) and optimization for the ACSLS database system. The database backup is used at the database recovery to recover from a disk failure. It is created by the bdb.acsss utility.

ACSLS Database Recovery
ACSLS database recovery from a checkpoint tape (created by the bdb.acsss) and the database systems journal records. If a problem occurs with the journal records, the database is recovered to what was present at the time of the last checkpoint. It is done by the rdb.acsss utility.

ACSSA (ACS System Administration)
The interface between the Command Processor and the rest of the system. The command processor is the screen interface. It performs basic syntax validations on user input.

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.

AVR (Automatic Volume Recognition)
The automatic reading by GCOS 7 of the magnetic labels of volumes whenever the volumes are mounted.

B

Bar Code
A code consisting of a series of bars of varying widths. This code appears on the external label attached to the spine of a cartridge and is equivalent to the volume serial number (volser). This code is read by the robot's machine vision system.

bpi
Bits per inch.

C

CAP (Cartridge Access Port)
Entry port located in the door of the Library Storage Module (LSM). The System Operator can introduce cartridges into and remove cartridges from the LSM through the CAP.

CAPid
A CAPid uniquely defines the location of a CAP by the LSM on which it resides. It consists of an ACS ID, a LSM number and a CAP number.

Cartridge
A plastic housing containing a length of data recording tape. The tape is threaded automatically when loaded in a drive. A plastic leader block is attached to the tape for automatic threading. The spine of the cartridge contains an OCR/bar code label listing the volser (volume serial number).

Cartridge Drive (CD) Cabinet
A cabinet containing two or four cartridge transports with associated power and pneumatic supplies. Each transport operates independently of other transports in the cartridge drive cabinet. (See also "Transport, Cartridge.")

Cartridge Storage Cells
A receptacle in the LSM in which a cartridge is stored.

Cartridge Transport
Refer to "Transport, Cartridge."

CICC
Refer to "GPA (General Purpose Adapter)."

CLC (Cartridge Library Client)
The job, executing on DPS 7000, that assures the interface between GCOS 7 and the Cartridge Tape Library IBM/VM server.

CLX (Cartridge Library Client Through UNIX Server)
The job, executing on the DPS 7000, that assures the interface between GCOS 7 and the Cartridge Tape Library UNIX server. This component is termed the Client System Component (CSC) by Storage Tek.

CSC (Client System Component)
Software components on hosts (DPS 7000, DPS 8, MVS, etc.) handling the library through the ACSLS. In the point of view of the ACSLS, it is composed of an NI (Network Interface), an SSI (Storage Server Interface) and client applications.

CSI (Client Software Interface)
The software component of the ACSLS that translates and routes messages between the ACS Library Manager and the Storage Server Interface.

Control Path (CP)
Allows client applications to gain access to tape cartridges by interacting with the ACSLS.

Control Unit (CU)
A microprocessor-based unit logically situated between a channel and up to sixteen cartridge transports. The CU translates channel commands into transport commands and sends transport status to the channel.

D

Data Path
Allows client applications to read and write data to a cartridge.

Device
Another term for Cartridge Transport.

Device Manager (DVMGT)
The device manager software package in the GCOS 7. One of its tasks is to select the device on which a volume must be mounted. It sends messages to the system operator when a manual operation is necessary.

Device Name
DPS 7000 identifier for the device. Example: CT01 to CT09.

Dismount (Cartridge)
The action of removing an unloaded cartridge from a cartridge transport and placing it in its storage cell.

DOF 7-PO (Distributed Operator Facility - Programmed Operator)
DOF 7-PO filters the requests concerning the Cartridge Tape Library and sends them to the CLX.

DPS 7000 native
"Native" DPS 7000 hardware, ARTEMIS, AURIGA, VEGA

DPS 7000-XTA
DPS 7000 in eXtended-Twin-Architecture.

Drive
Another term for Cartridge Transport.

Drive Identifier
Physical address of a drive. It consists of an ACS ID, a LSM number, a panel number and a drive number.

DW Messages
Messages issued by the Device Manager when an action is required for a device connected to a library. When the automatic mode is on, these messages are trapped and executed by the CLX.

E - K

Event Log
A file maintained by the ACSEL that contains messages describing library and ACSLS events.

FAC
FIPS Adapter Cabinet.

GPA (General Purpose Adapter)
A PSI/FIPS60 converter that assures the conversion between a PSI channel connected to a DPS 7000 and a FIPS channel connected to a control unit (CU) serving the cartridge library drives.

HSL (High Speed Link)
High Speed Link shared memory between GCOS 7 and OPEN7. Software Component allowing communication between GCOS 7 and OPEN7 .

INTEROP7_BASIC
GCOS7 and Windows2000 software packages replacing OPEN7 on DPS 7000-XTA, for communication on sockets. It provides also tools for INTEROP7 management.

ips
Inches per second.

IJournal
Sequential log of changes made to the database since the last checkpoint and since the last backup copy of the ACSLS database.

KB
Kilo Bytes, thousand bytes, or 1024 bytes.

L

Label, Magnetic
The first block of data on the cartridge (in the case of a standard volume), containing its identification (VOLSER). This block is read by the GCOS 7 Automatic Volume Recognition (AVR) as soon as the cartridge is mounted.

Label, Optical
A synonym for OCR label. A six character alphanumeric label (which may consist of uppercase letters A -Z and numerals 0-9, hyphens, underscores, and blanks) attached to the side of the cartridge case, which contains the VOLSER of the cartridge both in human-readable form and in OCR/bar code. The optical label is checked before each handling of the cartridge. See also "OCR Label."

Library
A library is composed of one or more ACSs (only one is supported with this release), attached cartridge drives, volumes in the ACSs, and the ACSLS software that controls and manages the ACSs.

Library Drive
A cartridge transport attached to an LSM that is connected to and controlled by a client system. Library drives interact with the LCU during automated tape cartridge mount and dismount operations. Library drives interact with a client application during tape data transfer operations. Library drives are individually addressable by the ACSLM and are individually accessible by the client applications. See "Transport, Cartridge."

Library Errors
Errors that occur because the library is offline (by the ACSSA command vary), has been powered off, has suffered hardware failure, is unavailable, etc.

Library Management Unit (LMU)
Hardware and software that coordinates the activities of one or several Library Storage Modules (LSMs), and provides the interface between the ACSLS and the LSMs.

Library Storage Module (LSM)
The portion of an ACS that provides the storage area for cartridges, cartridge drives, CAPs, and the robot necessary for moving them.

Load (Cartridge)
The loading procedure is performed automatically when the cartridge is introduced into the cartridge drive. The end of the tape is extracted from the cartridge case and wound onto the receiving reel. The end of the process is communicated to the host system, and an acknowledgment is returned by the library server if the mounting procedure has been automated.

Local Area Network (LAN)
A computer network in which any component in the network can access any other component. This is the type of interface between an LMU and attached LSMs.

LSM ID
A unique identifier for an LSM. It consists of the ACS ID and the LSM number.

M

Manual Mode
Action performed by an operator who enters the library and mounts or dismounts cartridges onto drives without the help of the robot.

MB
Megabytes, or million bytes.

Mount (Cartridge)
Procedure which consists of removing a cartridge from its storage cell and placing it onto a cartridge transport. In automatic or semi-automatic mode, the cartridge is removed from the cell and mounted on the transport by a robot under the control of the library server. In manual mode, the cartridge is mounted by the library operator.

N

Network Interface (NI)
An interface between the server system and the client systems that maintains network connections and controls the exchange of messages. The NI is resident on the server system and each client system.

O

OCR Label
Optical Character Recognition Label. The spine of a cartridge contains an OCR/bar code label listing the volser (volume serial number). See also "Label, Optical."

OPEN7
UNIX subsystem on DPS 7000 non-XTA (does not exist on DPS 7000-XTA)..

Operator, Library
The person responsible for mounting and dismounting cartridges manually on the transports of the cartridge tape library. The Library Operator may also be the Main Operator.

Operator, Main
The person responsible for monitoring and managing GCOS 7 system operations on the site, using the system console.

ORACLE
A relational database used by the ACSLS.

P

Pass-Thru Port (PTP)
In a multiple-LSM configuration, the assigned transport may not be attached to the LSM where the cartridge is stored. The PTP is a mechanism that allows cartridge transfers from one LSM to the next.

Pool
A collection of tape cartridges having one or more similar features or attributes, such as a pool of scratch tapes.

PowderHorn 9310 Library
A Storage Tek cartridge library with a capacity of approximately 6000 cartridges and with enhancements of the ACS 4400 for high performance.

Protocol
In data communication, the rules for transferring data.

PSI
Peripheral Subsystem Interface.

R

Robot
A mechanism within the LSM that picks up, moves, and delivers cartridges.

RPC
Remote Procedure Call.

S

Scratch (Scratch Cartridge)
The attribute of a cartridge that will be used by the ACSLS when a client system asks for a non-specific volume to be mounted. This attribute is recorded in the directory file of the cartridge library.

Scratch Pool
The group of volume names associated with a pool identifier. The scratch volume pool, specified during configuration of the CLX, defines the group of scratch volumes accessible by a GCOS 7 system. In the case of a cartridge library accessible by several systems, the use of different pools permits the systems to work with separate groups of work volumes.

SCSI
Small Computer System Interface. With the TimberWolf cartridge tape library, a SCSI interface and a Wide SCSI Processor (WSP) assure the conversion of data between a DPS 7000 and a control unit (CU) serving the cartridge library drives.

Semi-Automatic Mode
In this mode, cartridges are mounted/dismounted by the robot, directed by ACSSA commands submitted by the library operator from the DPX/20 server console.

Server, Cartridge Tape Library
The DPX/20 UNIX system and the ACSLS software required to use the cartridge library.

Silo
A commonly used term for an LSM. See "Library Storage Module (LSM)."

SRST (System Resources Status Table)
It contains the GCOS 7 configuration.

SSI (Storage Server Interface)
A software component, resident on an OPEN7 system, that translates and routes messages between client applications and the CSI.

T

TCP
Transmission Control Protocol.

TimberWolf Library
A Storage Tek cartridge library that uses CTS 4890 (36-track) cartridge drives, and where Control Unit(s) are connected to the DPS 7000 via SCSI connections. (FIPS Adapter Cabinets (FACs) and the associated General Purpose Adapters (GPAs) are not needed with the TimberWolf library.)

Transport, Cartridge
An electro-mechanical device capable of threading tape from a cartridge, moving the tape across a read/write head, and writing data to or reading data from the tape. A transport is distinct from the power and pneumatic sources that supply the electricity and air it needs to function. (Also see "Cartridge Drive (CD) Cabinet.")

U - W

Unload (Cartridge)
The cartridge transport rewinds the cartridge, replaces the end of the tape in the cartridge case, and puts the cartridge into a position where either manual or automated (robot) dismounting is authorized. Unload is triggered by a channel program submitted by the system.

Volume
A tape cartridge.

Volume Identifier
A 6 character string that uniquely identifies a tape cartridge to the ACSLS database.

Volume Serial Number, VOLSER
A synonym for volume identifier.

Wolfcreek
A Storage Tek cartridge library with a capacity of approximately 1000 cartridges.

Work Volume
In GCOS 7, the attribute Work is recorded in the volume label and indicates that the volume is available and can be referenced by the keyword WORK. (A standard volume that doesn't have the attribute Work must be referenced by its specific VOLSER name.) The library cartridges that are considered work for GCOS 7 must be given the attribute Scratch by the cartridge library server. This is ensured by the PREPARE_TAPESET Utility.

WSP
Wide SCSI Processor.

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