



COMMAND REFERENCE GUIDE

HCC/MVS 3.0

HOST

COMMUNICATION

CONTROL

8th edition

IMPRINT

8th Edition

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Command Reference Guide for HCC/MVS 3.0

1 COMMAND REFERENCE for HCC/MVS 3.0

LITERATURE

Manual	Order number	Reference
General Information Manual	600226-A	G
Installation/Customization Guide	600227-A	G
System Reference Guide	600233-A	G
Operators Guide	600231-A	G
Command Reference	600223-A	G
Conversion Notebook	600224-A	G
Installation/Customization Reference	600228-A	G
Messages and Codes	600230-A	G
ISPF User Guide	600229-A	G
Release Guide	600232-A	G

G This Manual is part of the standard HCC documentation. Further copies of the respective Manual can be obtained from the publisher.



Command Reference Guide for HCC/MVS 3.0

2 HCC COMMANDS

2.1 GENERAL INFORMATION

HCC is designed for fully automatic operation and manual control is normally not necessary.

Intervention is only required in special situations such as communication failure, robot malfunctions, inventory triggered, etc.

The majority of commands are provided for test and service purposes.

Commands can be entered:

- using the MVS **MODIFY** command on any MVS console (for example, /F HACC,CMD ...)
- under TSO with the **ABBASEND** command
- from a batch procedure using the **ABBASEND** program
- using the HCC/ISPF application/operator command interface

The intercommunication with HCC from every MVS address area also provides a fully automatic process flow for organizational demands within the computer center operation, for example, cartridge eject.

In accordance with the standards, BATCH and TSO only allow commands serving the process flow. All commands are allowed under TSO when **ABBASEND** is called with the **MONITOR** function (according to the TSO user authorization).

The full functional command scope applies to the HCC task of the primary system. The command set is restricted for the secondary system because this system has no direct access to the HOST-AML communication.



The ABBA-PC is referred to as AR (Archive computer) under ABBA/1 and as AMU (Archive Management Unit) under AML/2, AML/E or AML/J.

Refer to the following manuals for further information:

- System Reference Guide for HCC/MVS 3.0
- Installation/Customization Guide for HCC/MVS 3.0
- Installation/Customization Reference for HCC/MVS 3.0

2.2 COMMANDS CLASSIFIED IN GROUPS

2.2.1 ORGANIZATIONAL FUNCTIONS

Command	Description
CC Exx	Reset coordinates of next eject slot
EJ volser[,Enn]	Eject VOLSER
EJCONT [s][,Enn]	Resume eject
EJDSN dsname	Eject all VOLSERs for specific file names
EJSTOP [s][,Enn]	Stop eject
FREEVOL [ADD/REP][,RESET]	Start SCRATCH tape selection
VI [Inn[,s]]	Start insert
VI [Inn[,s]],DIR	Start insert directly
VI [Inn[,s]],HOLD	Suspend insert
VI [Inn[,s]],RELEASE	Resume insert
VI [Inn[,s]],STOP	Stop insert
VI [Inn[,s]]TC=coor	Start insert with target coordinates

2.2.2 CONTROLLING THE AML SYSTEM

Command	Description
ACOM [s]	Connection test HCC-AR/AMU-robot
AOFF [s]	Stop the AR/AMU program
AUTO [s,r]	Automatic operation
MAN [s,r]	Manual operation
BON [s,r]	Activate barcode reading
BOFF [s,r]	Deactivate barcode reading
END	Terminate HCC
DSD [s,r]	Double send messages to robot
SSD [s,r]	Single send messages to robot
ROSA [s,r]	Start robot
ROSO [s,r]	Stop robot
ROPO p[,s,r]	Position robot
HOLD [s,r]	Stop send process from HCC to AR/AMU
RELEASE [s,r]	Allow send process from HCC to AR/AMU

2.2.3 EXTERNAL MOUNTS ("FOREIGN MOUNTS")

Command	Description
FMA [sd,]nn,volser,[job][,G,I]	Add foreign mount entry
FMM [sd,]nn[,volser][,job][,G,I]	Modify foreign mount entry
FMD [sd,]nn	Delete foreign mount entry
FML [sd]	Display foreign mount entry

2.2.4 DISPLAY COMMANDS

Command	Description
COM [s,]D	Display HCC-AML communication status
DA	Display active functions
DAE	Display entries for influencing allocation
DC coord	Display coordinate status (with mask)
DCL	Display cleaning activity
DCSA	Display CSA information
DHR	Display release versions (ABBASEND)
DPMA	Display FPMA allocation
DISPLAY ACTIVITY	Display all robot actions
DISPLAY CSA	Display CSA data
DISPLAY FUNCTION	Display active functions
DISPLAY JB	Display jukebox
DISPLAY LABEL	Display all entries for Label function
DISPLAY LOCATION	Display archive geometry
DISPLAY MSG, NUM=nnn	Display HCC message number nnn
DISPLAY SESSION	Display all connections
DISPLAY STAT	Display first/last contact with Hx
DISPLAY USER	Display active ABS user
DRE [Nr rr]	Display error messages from AR/AMU and AML
DRQ [ALL]	Display wait queue [all entries]
DRQ E	Display wait queue error
DRQ L	Display wait queue (long list)
DRQ P	Display wait queue with priorities
DRT	Display robot function status for LCK/TLI
DSC [S=s,][nnn]	Display available SCRATCH media
DU [s,r]	Display unit activity
DV volser	Display VOLSER information
HELP [ALL]	Display [all] HCC commands

2.2.5 TAPE UNIT FUNCTIONS

Command	Description
ALLOC cuu	Reserve tape unit
FREE cuu[,FORCE]	Release tape unit
U[NLOAD] cuu	Unload tape unit
LCK fromvol-tovol	Header check
SLCK cuu	Start header check
PLCK cuu	Stop header check
TLI fromvol-tovol	Initialize tape label
TLIPW password	Password entry for TLI
STLI cuu	Start TLI
PTLI cuu	Stop TLI
DRT	Display LCK/TLI status

2.2.6 ABBASEND (TSO ONLY)

Command	Description
MONITOR	Start TSO monitor session
SOP	Start TSO operator session
POP	Stop TSO operator session
SPD	Start continuous display for HCC-AML activities
(PPD)	Stop continuous display for HCC-AML activities
ABSEND	Release an ABS output buffer
DCSA	Display CSA information



Refer to the System Reference Guide for HCC 3.0 for further information on these commands.

2.2.7 ARCHIVE MANAGEMENT

Command	Description
DLC [s,]coor1-coor2[,SKIP=..]	Start download for coordinate range
DLC [s,]COOR=coor[,SKIP=..]	Start download for generic coordinate range
DLC [s,]MASK=co**or**[,SKIP=..]	Start download for coordinate range with mask
DLC [s,]STOP	Stop download for coordinates
DLV [s,]fromvol-tovol	Start download for VOLSER range
DLV [s,]volser	Start download for one VOLSER
DLV [s,]STOP	Stop download for VOLSER
ULC [s,]coor1-coor2[,SKIP=..]	Start upload for coordinate range
ULC [s,]COOR=coor[,SKIP=..]	Start upload for generic coordinate range
ULC [s,]STOP	Stop upload for coordinates
ULV [s,]fromvol-tovol	Start upload for VOLSER range
ULV [s,]volser	Start upload for one VOLSER
ULV [s,]STOP	Stop upload for VOLSER
ACC [s,]coor1-coor2,D[,SKIP=..]	Compare status, VOLSER for coordinate range
ACC [s,]COOR=ccc...,D[,SKIP=..]	Display status, VOLSER for generic coord. range
ACV [s,]STOP	Stop archive comparison for coordinates
ACV [s,]fromvol-tovol,D	Display status, coordinate for VOLSER range
ACV [s,]volser,D	Display status, coordinate for one VOLSER
ACV [s,]STOP	Stop archive comparison for VOLSER
INC [s,r,]coo1-coo2[,UPD] [,SKIP=..]	Start inventory for coordinate range [update]
INC [s,r,]COOR=cc[,UPD] [,SKIP=..]	Start inventory for generic coord. range [update]
INC [s,r,]STOP	Stop inventory for coordinate range
INV [s,r,]volser [,UPD]	Inventory for specific VOLSER [update]
UPV volser,lp	Update status for VOLSER/HCC/AML Archive
UPC [s,]coord,lp	Update status for coord./HCC/AML Archive
[,SKIP=..] = [,SKIP= <u>NO/YES</u>]	

2.2.8 GENERAL SERVICES

Command	Description
COM [s,]ACT,cuu	Activate communication path
COM [s,]INACT,cuu	Deactivate communication path
COM [s,]SWITCH	Switch communication path
COM [s,]D[XSB]	Display communication path (and send queue)
SYSLOG ON/OFF/ONLY	SYSTEM LOG HCC-AML communication
TRON [ALL]	Start trace
TROFF	Stop trace
LOGSTART	Start HCC logging
LOGSTOP	Stop HCC logging
LOGSW	Switch HCC logging to next log file
WTL text	Write text in log file
DELQ sqnr[,FORCE]	Delete entry in HCC send wait queue
DELQ EJALL	Delete all eject tasks in wait queue
REP sqnr	Repeat task send HCC to AML
PCL	Stop automatic tape unit cleaning
SCL	Start automatic tape unit cleaning
DCL	Display cleaning tape activity
CL cuu	Start cleaning for a specific tape unit
SET MSG	Switch message suppression on/off
SET SSI, ENA	Start the SSI functions
SET SVCDUMP	SVCDUMP support
SETUP cuu,CLEAR,ALL	Clear status information for a specific tape unit
SETUP cuu,volser,job	Add status information for a specific tape unit
SETUP AR, cuu, CLEAR	Release occupied tape unit on AR/AMU
SETUP ACC,ldv,R=	Change robot access to Archive unit
SWITCH	Switch the communication path (LU 6.2)
MOVEH [s,]coor1,coor2 [s,]volser,coor2	Move cartridge to new home position
MOVET [s,]coor1,coor2 [s,]volser,coor2	Move cartridge to new temporary position
	Move cartridge to new temporary position

Command	Description
CC cuu CC ALL	Reset statistic counter for tape unit in UNIT-LOG Reset statistic counters for all tape units in UNIT-LOG
M cuu,volser K cuu[,volser]	MOUNT VOLSER on a specific tape unit KEEP on a specific tape unit [VOLSER]
FLIP UNIT=cuu LJB NAME=jbn,VOL=vol UJB NAME=jbn,VOL=vol	Turn optical disk over Load jukebox Unload jukebox
VARY ACT,APPC VARY INACT,APPC VARY ACT, HID=Hx VARY INACT, HID=Hx	Activate APPC subtask Terminate APPC subtask Activate conversation Terminate conversation
UCBO [YES/NO]	Conditional tape mount after file OPEN [YES/NO]
FORCE END	Stop HCC independent of pending tasks

2.2.9 OPTICAL DISK FUNCTIONS

Command	Description
CANCEL LABEL,VOL=volser	Delete inactive entries
FLIP UNIT=cuu	Turn optical disk over
LJB NAME=jbname,VOL=volser	Load jukebox
START LABEL,VOL=volser,PARM=p	Initiate label process
UJB NAME=jbname,VOL=volser	Unload jukebox

2.2.10 PRIORITY CONTROL

Command	Description
SET PRTY,EJ=nn[,ALL]	Set priority nn (00-80) for function: EJECT
SET PRTY,KE=nn[,ALL]	KEEP
SET PRTY,MO=nn[,ALL]	MOUNT
SET PRTY,MV=nn[,ALL]	MOVE
SET PRTY,SCH=nn[,ALL]	SEARCH
SET PRTY,VI=nn[,ALL]	VOLUME INSERT
SET PRTY,sqnr=nn	Sequence number
SET PRTY,J=job,I=ii	Create entry for specific job name MOUNT/KEEP
SET PRTY,J=job,I=ii,G	Create entry for generic job names
SET PRTY,J=job,D	Delete entry for specific job name
SET PRTY,L	Display basic priority values and entries job table

[ALL=all tasks in wait queue]

2.2.11 FPMA CONTROL

Command	Description
FPMA [s,r,]SMK	Control FPMA usage: Start MOUNT from FPMA or KEEP in FPMA
FPMA [s,r,]PMK	Stop MOUNT from FPMA or KEEP in FPMA
FPMA [s,r,]SLU	Start load/unload process
FPMA [s,r,]PLU	Stop load/unload process
FPMA [s,r,]SL	Start load process
FPMA [s,r,]PL	Stop load process
FPMA [s,r,]JUNL	Unload complete FPMA
FPMA [s,r,]JUNL,NSCR	Unload non-SCRATCH tapes
FPMA [s,r,]JUNL,STOP	Stop unload process
FPMA [s,r,]SVI	Start VI directly in FPMA
FPMA [s,r,]PVI	Stop VI directly in FPMA
FPMA [s,r,]LCO	Resume load process (internal)
FPMA [s,r,]UCO	Resume unload process (internal)

2.2.12 HOST INTERCOMMUNICATION (LOOSELY COUPLED SYSTEMS)

Command	Description
CY CMD[,Sx],command	Send command to system x (Default = all systems)
CY MSG[,Sx],message	Send message to system x (Default = all systems)
CY ECHO[,Sx]	ECHO from system x (Default = all systems)
CY SHUTDOWN,Sx ALL	Terminate HCC on system x or all systems

2.2.13 HOST COMPLEX INTERCOMMUNICATION (LU 6.2)

Command	Description
VARY ACT, HID=Hx	Start a conversation with Hx
VARY INACT, HID=Hx	Terminate a conversation with Hx
VARY ACT, APPC	Start APPC subtask and all possible conversations
VARY INACT, APPC	Terminate APPC subtask and all possible conversations
CX GETMAJOR	Get name of current MAJOR
CX SETMAJOR	Set complex as MAJOR
CX SETMINOR	Set complex as MINOR
CX CMD,Hx,Command	Send HCC command to complex Hx (x=1-9)
CX MSG,Hx,Message	Send message to complex Hx (x=1-9)

2.3 COMMANDS IN ALPHABETIC SEQUENCE

Command	Description	Page
ABSEND	Release ABS output buffer	2-14
ACC	Archive comparison using coordinates	2-15
ACOM	Test communication	2-17
ACV	Archive comparison using Volser	2-18
ALLOC	Reserve tape unit	2-20
AOFF	Stop AR/AMU	2-21
AUTO	Automatic operation	2-22
BOFF	Deactivate barcode reading	2-23
BON	Activate barcode reading	2-24
CANCEL LABEL	Delete inactive entries	2-25
CC	Reset statistic counters	2-26
CL	Individual cleaning	2-26
COM	Communication path HCC - AML	2-28
CX CMD	LU 6.2 Intercommunication	2-32
CX GETMAJOR	LU 6.2 Major Complex	2-33
CX MSG	LU 6.2 Send message	2-34
CX SETMAJOR	LU 6.2 Set Major	2-35
CX SETMINOR	LU 6.2 Set Minor	2-36
CY CMD	SECSYS Command intercommunication	2-37
CY ECHO	SECSYS Test ready for operation	2-37
CY MSG	SECSYS Message intercommunication	2-37
CY SHUTDOWN	SECSYS Terminate HCC	2-37

Command	Description	Page
DA	Display active functions	2-38
DAE	Display entries for influencing allocation	2-39
DC	Display coordinates	2-40
DCL	Display cleaning activity	2-42
DCSA	Display CSA information	System Reference
DELQ	Delete from send wait queue	2-43
DHR	Display HCC/AML/MVS release	2-44
DISPLAY	Display functions	2-45
DLC	Download Archive using coordinates	2-42
DLV	Download Archive using volser	2-57
DPMA	Display FPMA allocation	2-58
DRE	Display robot error	2-59
DRQ	Display send wait queue	2-60
DRT	Display active robot functions	2-62
DSC	Display scratch media	2-63
DSD	Double send messages to robot	2-65
DU	Display unit activity	2-69
DV	Display volser information	2-69
EJ	Eject cartridge	2-75
EJCONT	Resume eject	2-77
EJDSN	Eject cartridge using Dsn	2-78
EJSTOP	Interrupt eject	2-80
END	Terminate HCC	2-81
FLIP	Turnover optical disk	2-82
FMA	Add foreign mount cartridge entry	2-83
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INV	Inventory using volser	2-101
K	Individual KEEP	2-102
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LJB	Load jukebox	2-105
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LOGSW	Switch HCC log	2-108

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2.3.1 DESCRIPTION

2.3.1.1 ABSEND - RELEASE ABS OUTPUT BUFFER

ABSEND

ABSEND releases an ABS output buffer previously allocated to a USER/JOB.

Example:

ABSEND

2.3.1.2 ACC - ARCHIVE COMPARISON USING COORDINATES

```
ACC [s,] coor1-coor2[,D][,SKIP=NO/YES]
ACC [s,] COOR=coor..[,D][,SKIP=NO/YES]
ACC [s,] STOP
```

s	= AML System	Default: s = 1
D	= Display information	Default: only for deviations
COOR=coor	= Generic coordinate 1 - 8 characters	
coor1-coor2	= Coordinate range	
SKIP	= Coordinate increment	
YES	= Process every 2 nd coordinate For cartridges, process only every 2 nd medium. For optical disks, generate 1 command for each medium.	
NO	= Process all coordinates (Default) For cartridges, generate 1 command for each medium. For optical disks, generate 2 commands for each medium.	
STOP	= Stop Archive comparison	Default: end of specified range

Archive information such as volser, status and coordinates are maintained on both the HOST and AML level.

This information can be compared with both the ACC and ACV functions and differences displayed.

It is recommended to start the HCC message log (refer to LOGSTART) when comparing larger archive ranges.



Inconsistencies can be displayed when drive coordinates are used (drive in use) and therefore this command should not be used with drive coordinates.

Any necessary corrections can be made with the **UPC** or **UPV** commands.

Example:

```
ACC COOR=01010101
```

Compare status and volsers of all coordinates in tower 02.

```
HAC000I =====
HAC036I COMMAND=ULC SQNR=2506
HAC036I ===== VOLSER SYS HOMECOOR TEMPCOOR STATUS
HAC036I ABBA: 001001 1 01010101 M,E,-
HAC036I HACC: 001001 1 01010101 M,B,N
HAC036I DIFF: *
HAC000I =====
HAC231I ARCHIVE COMPARE ENDED, LAST VOLSER/COORD=01010101
HAC232F NO.OF COMPARED VOLSER/COORDS=00001,NO.OF DIFF=00001
```

Volume status:

Position 1: 0 = Special status (AR/AMU)

C = Cleaning cartridge

M = Data cartridge

O = Optical disk

Position 2: B = In Archive

E = Ejected

J = Optical disk in the jukebox (phys. status = O)

L = Initial (phys. status = 0)

M = Loaded

O = ‘Other side’ of the optical disk loaded (phys. status = O)

Position 3: N = Marked as non-scratch (catalogued)

S = Marked as scratch

Position 4: I = Volume in send wait queue

Position 5: D = Volume in use (for example, loaded on unit)

2.3.1.3 ACOM - TEST COMMUNICATION

ACOM [s]

s = AML System

Default: s = 1

The **ACOM** command tests the connection between the AR or AMU and HCC and checks operational readiness of the AR or AMU. This command can be entered at any time.

ACOM also transfers the software version number of the AR/AMU computer and the robot IC (when robot ready for operation).

The version numbers can also be retrieved with the **DHR** command.

Example:

ACOM 2

The following message appears after successful completion of the test:

HAC210I SYS 2: COMMUNICATION IS READY

2.3.1.4 ACV - ARCHIVE COMPARISON USING VOLSER

ACV [s,]	fromvol-tovol[,D]
ACV [s,]	volser[,D]
ACV [s,]	STOP

s	= AML System	Default: s = 1
D	= Display information	Default: only for deviations
volser	= Volser 6 characters	
fromvol-tovol	= Volser range	
STOP	= Stop Archive comparison	Default: end of specified range

A **ULV without UPDATE** is generated from the ACV command.

Example:

```
ACV 001001,D
```

Status and coordinate of volser 001001 are compared and displayed.

```
HAC000I =====
HAC036I COMMAND=ULV SQNR=2606
HAC036I ===== VOLSER SYS HOMECOOR TEMPCOOR STATUS
HAC036I ABBA: 001001 1 01010101      M,E,-
HAC036I HACC: 001001 1 01010101      M,B,N
HAC036I DIFF:                                *
HAC000I =====
```

Volume status:

Position 1: 0 = Special status (AR/AMU)
 C = Cleaning cartridge
 M = Data cartridge
 O = Optical disk

Position 2: B = In Archive
 E = Ejected
 J = Optical disk in the jukebox (phys. status = O)
 L = Initial (phys. status = 0)
 M = Loaded
 O = ‘Other side’ of the optical disk loaded (phys. status = O)

Position 3: N = Marked as non-scratch (cataloged)
 S = Marked as scratch

Position 4: I = Volume in send wait queue

Position 5: D = Volume in use (for example, loaded on unit)

2.3.1.5 ALLOC - RESERVING TAPE UNITS

```
ALLOC cuu
```

cuu = MVS unit address (3 or 4 digits)

The **ALLOC** command permanently reserves the tape unit specified under cuu for a HCC subtask. Up to 4 units can be assigned in parallel.

The **ALLOC** command is precondition for the following functions:

- Header check (refer to the corresponding commands **LCK**, **SLCK**, **PLCK**, **DRT**)
- Header initialization (refer to the corresponding commands **TLI**, **STLI**, **PTLI**, **TLIPW**)

Restriction: Only one of these functions can be active at any one time.

The **FREE** command releases a tape unit previously reserved with the **ALLOC** command and the corresponding subtask is deleted.



This command is not allowed for optical disks, and incorrect use can cause processing errors.

Example:

```
ALLOC 481  
ALLOC 0481
```

2.3.1.6 AOFF - STOP AR/AMU

```
AOFF [s]
```

s = AML System

Default: s = 1

AOFF prompts the AR or the AMU to correctly close the AML Archive mirror.

The connections to revolving towers and robots are deactivated and the archive program terminated.



The **AOFF** command should only be entered with a planned shutdown of the AML unit (refer to the [STOP PROCEDURES Section](#)).

Example:

```
AOFF 2  
  
HAC302A ARCHIVE COMPUTER SYS 2 IS DEACTIVATED !
```

2.3.1.7 AUTO - AUTOMATIC OPERATION

```
AUTO [s,r]
```

s	= AML System	Default: s=1
r	= Robot Number	Default: r=1

The **AUTO** command sets the AML System into automatic mode.

The following modes of operation are possible:

- automatic mode
- semi-automatic mode
- manual mode

Automatic mode is the standard status (default).

Semi-automatic mode is when the robot system is only serviced by the AR or AMU, that is, completely without host components.

Manual operation is when HCC and the AR or AMU are in communication but the robots are inactive (refer to the **MAN** command).

Example:

```
AUTO 1,2
```

```
HAC209I SYS 1, ROB 2: IN AUTOMATIC OPERATION
```

2.3.1.8 BOFF - DEACTIVATE BARCODE READING

```
BOFF [s,r]
```

s	= AML System	Default: s=1
r	= Robot Number	Default: r=1

The robot barcode reading can be controlled. The **BOFF** command deactivates the barcode reader.

It is recommended to activate barcode reading during initial setup of the archive or after manual operation (default).

Example:

```
BOFF 1,2  
  
HAC188I SYS 1, ROB 2:BARCODE READING DEACTIVATED
```

2.3.1.9 BON - ACTIVATE BARCODE READING

```
BON [s,r]
```

s = AML System
r = Robot Number

Default: s=1
Default: r=1

The robot barcode reading can be controlled. The **BON** command activates the barcode reader.

It is recommended to activate barcode reading during initial setup of the archive or after manual operation (default).

Example:

```
BON 1,2  
HAC187I SYS 1, ROB 2:BARCODE READING ACTIVATED
```

2.3.1.10 CANCEL LABEL - DELETING INACTIVE ENTRIES

```
C[ANCEL] LABEL, VOL=volser[,I]
```

volser = A-volser of the process to be deleted
I = Immediate

This command removes inactive entries and terminates the corresponding function. Active processes can only be terminated when the 1st CBR4438D message has not been answered. The **CANCEL** command is ignored when this message has already been answered.

Option I (Immediate) supports immediate termination of active label processing.

VOL= must be the A-volser of the respective medium.



This command is only allowed for optical disks (OD), and incorrect use can cause processing errors.

Example:

```
CANCEL LABEL VOL=OD002A
```



Refer also to the **START LABEL** and **DISPLAY LABEL** commands

2.3.1.11 CC - RESET STATISTIC COUNTERS

```
CC cuu
CC ALL
CC Exx
CC CL,cuu
```

cuu = MVS unit address (3 or 4 digits)
ALL = All UNIT log statistic counters are reset to zero.
Exx = Eject unit E (xx = 01-nn)
CL = Cleaning

Counters such as average response time or number of mounts are incremented per unit in the unit statistic log (refer to the **DU** command).

The **CC** command resets these counters to zero.

CC Exx resets the pointer to the next eject slot in the eject unit Exx to the initial position.

The command CC CL,cuu can delete a clean task pending on a drive (for example when hardware problems occur on a drive). The cleaning mount can then be deleted with the operator command **DELQ SQNR**.

Example:

```
CC 0483
CC E01
```

2.3.1.12 CL - INDIVIDUAL TAPE UNIT CLEANING

```
CL cuu
CL USE=nnn
```

cuu = MVS unit address (3 or 4 digits)
nnn = Counter (002 to 060)

This command serves to trigger an individual tape unit cleaning process.

Automatic cleaning supported by HCC normally makes this command unnecessary.

CL can be used for additional cleaning when the recommended cleaning interval is too long for bad tape material (refer to the HACPARM1 CLEAN parameter).

When the counter is used (USE count), individual cleaning is triggered for tape units when their counter has already been reached or exceeded.



This command is not allowed for optical disks, and incorrect use can cause processing errors.

Example:

```
CL 481
CL 0481
CL USE=020
```

2.3.1.13 COM - COMMUNICATION HCC-AML (VTAM LU 2)

```
COM [s,] ACT,luname
COM [s,] INACT,luname,I
COM [s,] SWITCH
COM [s,] D[,XSB]
```

s = AML System Default: s = 1
 luname = VTAM LU name
 D = Display connection status
 I = The corresponding COMTASK is terminated immediately
 XSB = Display the send buffer contents (diagnostic purposes)
 SWITCH = Switch to alternate connection path

The **COM** statement activates and deactivates VTAM LU2 connections.

Deactivating only leads to a logical break in the communication when only one line is defined and HCC continues data swapping when the connection is activated again.

HCC automatically activates the connections to the AML System defined in HACPARM1 (COMDEFn statement) during a start. The **COM** statement can be used to start a defined connection which could not be established directly (for example, due to hardware problems, power OFF situations, etc.).

Examples:

```
COM D
HAC036I ABBA COMMUNICATION SYS1: RZKGPL08 ACTIVE(PRIMARY)
HAC036I                                     RZKGPL09 ACTIVE(ALTERNATE)
HAC431I ***** End of function *****

COM SWITCH
HAC036I COMTASK SWITCHED: OLD=RZKGPL08 NEW=RZKGPL09
HAC041I REQUEST OK
HAC431I ***** End of function *****

COM 2,D
HAC036I ABBA COMMUNICATION SYS2: RZKGPL06 INACTIVE(PRIMARY)
HAC431I ***** End of function *****

COM 1,D
HAC036I ABBA COMMUNICATION SYS1: RZKGPL08 ACTIVE(PRIMARY)
HAC036I                                     RZKGPL09 ACTIVE(ALTERNATE)
HAC431I ***** End of function *****
```

2.3.1.14 COM - COMMUNICATION HCC-AML (EXCP)

```

COM [s,] ACT,cuu
COM [s,] INACT,cuu,I
COM [s,] SWITCH
COM [s,] D[,XSB]

```

s	= AML System	Default: s = 1
cuu	= MVS unit address	
D	= Display connection status	
I	= The corresponding COMTASK is terminated immediately	
SWITCH	= Switch to alternate connection path	
XSB	= Display the send buffer contents (diagnostic purposes)	

COM activates and deactivates EXCP connections.

Deactivating only leads to a logical break in the communication when only one line is defined and HCC continues data swapping when the connection is activated again.

HCC automatically activates the connections to the AML System defined in HACPARM1 (COMDEFn statement) during a start. The **COM** statement can be used to start a defined connection which could not be established directly (for example, due to hardware problems, power OFF situations, etc.).

Example: **COM ACT,03C4**
COM INACT,02A4

Activate alternate EXCP connection
Deactivate primary EXCP connection

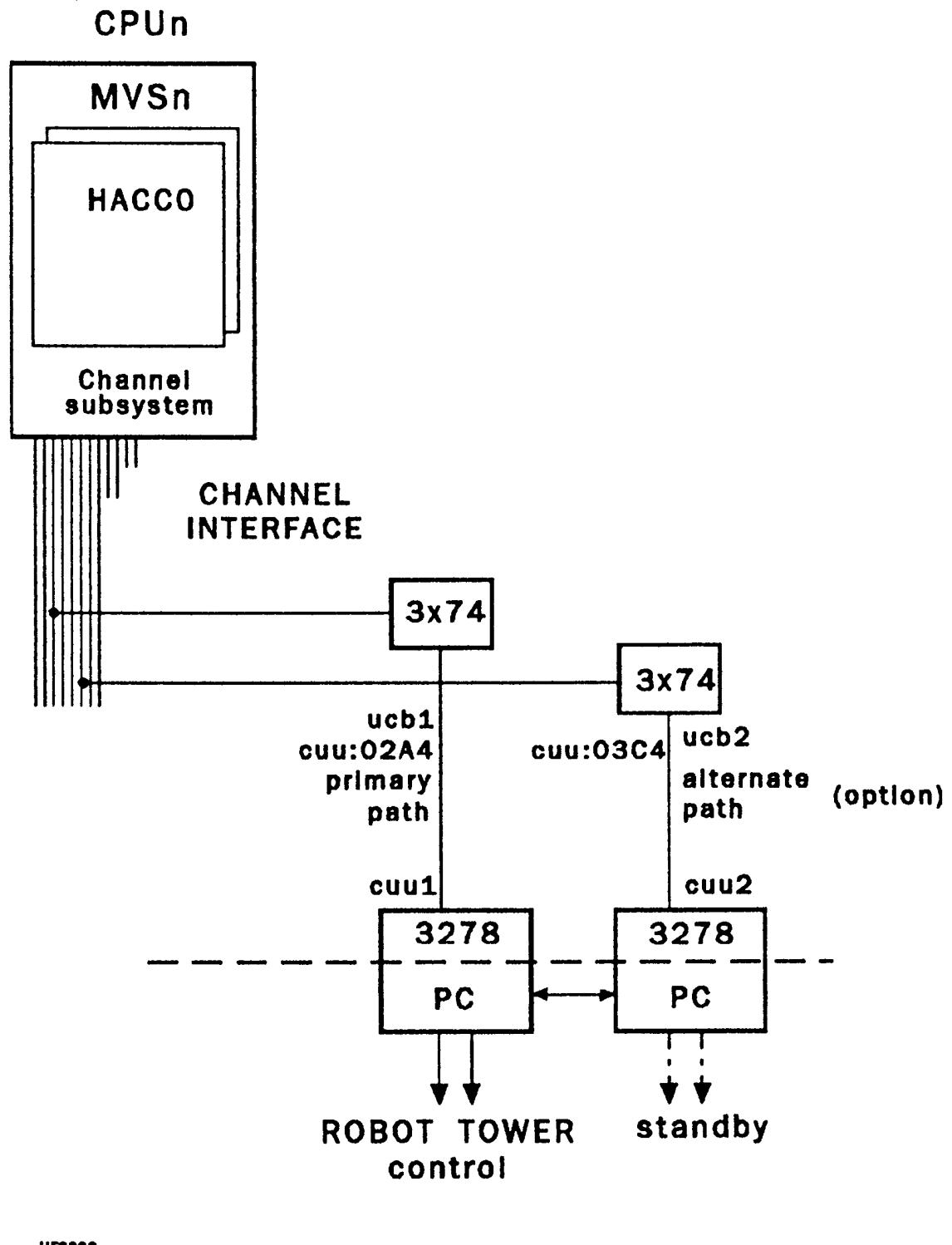


Fig. 1: HCC-AML communication



HCC Commands

HCC switches automatically to the parallel path when two lines are defined. (This function cannot be used at the present time because a standby archive computer has not yet been realized).

--> Manual switching (refer to the AML Manual)

2.3.1.15 CX CMD - LU 6.2 INTERCOMMUNICATION

```
CX CMD,Hx,command
```

Hx = HACC0 ID (x=1-9)
command = Any valid (HCC) command

The **CX CMD** command sends HCC commands through an existing conversation to another complex where they are executed.

Example:

```
CX CMD,H2,VI
```

Complex H2 is tasked with a **VOLUME INSERT** from any one of the other complexes.



MVS commands can be transferred through an existing conversation.

Entering the following command (for example):

```
CX CMD,H2,OS S TASK1
```

triggers an attempt to start the Started Task "TASK1" on another complex.

2.3.1.16 CX GETMAJOR - LU 6.2 MAJOR COMPLEX

```
CX GETMAJOR
```

The **CX GETMAJOR** command uses a HCC table to determine the MAJOR complex defined there.

This command should be used before switching a HOST complex to the MAJOR function (refer to **CX SETMAJOR**); it can also be used to retrieve information at any time, independent of switching.

Example:

```
CX GETMAJOR
```

The following message appears:

```
HAC349I HACCID Hx IS MAJOR COMPLEX
```

2.3.1.17 CX MSG - LU 6.2 SEND MESSAGE

```
CX MSG,Hx,text
```

Hx = HACC0 ID (x=1-9)
text = Text

The **CX MSG** command sends any optional information to another complex through an existing conversation.

The information then appears on the (master) console of the addressed HACC0 complex as follows:

```
HAC036I Hx: MESSAGE TEXT,
```

where Hx (x=1-9) is the sender.

Example:

```
CX MSG,H2,PLEASE INSERT CARTRIDGES
```

Information is sent to the H2 complex from any other complex.

2.3.1.18 CX SETMAJOR - LU 6.2 SET MAJOR)

```
CX SETMAJOR[ ,FORCE ]
```

FORCE = Skip the **CX GETMAJOR** and **CX SETMINOR** commands.

The **CX GETMAJOR** command must be performed before switching a HOST complex to the MAJOR function in order to use a HCC table to determine the previous, possibly still active, MAJOR complex (Hy).

After successful completion of the **GETMAJOR** command, the **CX SETMAJOR** command triggers the following:

1. The new MAJOR ID is noted in a HCC table and the assignment to the previous MAJOR deleted.
2. The new MAJOR Hx sends **CX SETMINOR** to the previous MAJOR Hy.
3. The new MAJOR Hx passes information on the switch to all partners. This information is stored in a HCC table on each MINOR.

Example:

```
CX GETMAJOR  
CX SETMAJOR
```

The following messages appear:

```
HAC349I HACCID Hy IS MAJOR COMPLEX          (y=1-9)  
HAC351I Hy IS NOW COMPLEX MAJOR             (y=1-9)
```

2.3.1.19 CX SETMINOR - LU 6.2 SET MINOR

CX SETMINOR

The **CX SETMINOR** command switches an active MAJOR complex to MINOR.

This command is only provided for exceptional situations, for example, when the **SETMINOR** command issued automatically during a **CX SETMAJOR** command did not arrive at the receiver.



This command should be used with utmost care because execution deletes all wait queue information received from MINOR systems.

Example:

CX SETMINOR

The following message appears:

HAC351I Hx IS NOW COMPLEX MINOR

(x=1-9)

2.3.1.20 CY - REMOTE HCC FUNCTION EXECUTION

```
CY CMD,[Sx,]command  
CY ECHO,[Sx,]  
CY MSG,[Sx,]message  
CY SHUTDOWN,Sx|ALL
```

Sx	= SECSYS-Id (x=0-F, 0=PRISYS) the request is sent to all HCC systems when a system number is omitted.
command	= Valid HCC command
message	= Message
ALL	= All HCC systems

CY uses the Exchange log to send HCC functions to another HCC system within a loosely coupled CPU group (SHARED DASD). The **CX** command refers to several independent HOST complexes whereas **CY** only communicates within one complex.

Example 1:

```
CY ECHO,S2
```

Test whether HCC System 2 is ready.

Example 2:

```
CY CMD,H2,OS S RMF
```

The command **S RMF** is issued on the MVS system on which the HCC H2 is active.

2.3.1.21 DA - DISPLAY ACTIVE FUNCTIONS

```
DA
```

DA displays information on HCC and AML functions.

Example:

```
DA
```

Messages such as the following are displayed:

```
HAC000I =====
HAC278I CSA RECOVERY ACTIVE
HAC046I MESSAGE TRACE ON
HAC022I MESSAGE LOG ACTIVE, DSN=dsname
HAC324I MOUNT AFTER OPEN = YES
HAC309A EJECT DEVICE E01 FULL ON SYSTEM 1
HAC224I SYS 1,ROB 1: IN MANUAL MODE
HAC118I SYS 1,ROB 1: BARCODE READING OFF
HAC000I =====
```

2.3.1.22 DAE - DISPLAY ENTRIES FOR INFLUENCING ALLOCATION

DAE

DAE displays the VOLTAB or POOLGR entries for influencing allocation and whether the ZHC026DU exit is active.

Example:

DAE

Messages such as the following are displayed for POOLGR entries:

```
HAC000I =====
HAC036I EXIT ZHC026DU IS [NOT] ACTIVE
HAC000I =====
HAC036I LOWVOL HIGVOL ESOTERIC LOOKUP UCB-TYPE
HAC036I 000001 000100 CASSNC 00098000 78008080
HAC036I 000101 099999 CASS 00088000 78008081
HAC036I 100000 999999 3480 78008080 --NONE--
HAC000I =====
```

and the following for VOLTAB entries:

```
HAC000I =====
HAC036I EXIT ZHC026DU IS [NOT] ACTIVE
HAC000I =====
HAC036I LOWVOL HIGVOL ESOTERIC LOOKUP UCB-TYPE
HAC036I 001001 3480 78008080 --NONE--
HAC036I 001002 CASS 00088000 78008081
HAC036I 00100% CASSNC 00098000 78008081
HAC036I 001012 3480 78008080 78008080
HAC036I 0010% NOCOMP 000A8000 --NONE--
HAC036I 001100 3400-9 33008003 --NONE--
HAC036I 001%% 3480 78008080 --NONE--
HAC036I SYS3480R 000C8000 --NONE--
HAC000I =====
```

2.3.1.23 DC - DISPLAY COORDINATES

```
DC [s,]coor
DC [s,]co**or**[,nnnn][,SKIP=NO/YES]
```

coor	= Valid coordinate (8 byte expression)
co**or**	= Coordinate "under mask", * = wild character
nnnn	= Number of records to be displayed
s	= AML System number
SKIP	= Coordinate increment
YES	= Process every 2 nd coordinate For cartridges, process only every 2 nd medium. For optical disks, generate 1 command for each medium.
NO	= Process all coordinates For cartridges, generate 1 command for each medium. For optical disks, generate 2 commands for each medium.

Default = 10
Default = 1

(Default)

The **DC** command provides information on COORDINATE-VOLSER assignments for various types of coordinate definitions, pointers and status between coordinates and Archive mirror tables.

Example 1:

```
DC 01020304
DC 4*****09,50
DC **02**09,100,SKIP=YES
DC 01*****
```

Example 2: Cartridge area display

```

HAC036I KEY P HOMECOOR TEMPCOOR VOLSER ST DEV ROB SYS TYPE COMMENT
HAC036I 01010101 Y 01010101 00000000 001001 MB T/R 1 2 1 ---- O.K.
HAC036I 01010102 Y 01010102 00000000 001002 MB T/R 1 2 1 ---- O.K.
HAC036I 01010103 Y 01010103 00000000 001003 ME T/R 1 2 1 ---- O.K.
HAC036I 01010104 Y 01010104 00010104 001004 MB T/R 1 2 1 ---- O.K.
...
HAC036I 01010109 Y 01010109 04010606 001009 MB T/R 1 2 1 FPMA O.K.
HAC036I 01010110 Y 01010110 04010607 001010 MB T/R 1 2 1 FPMA O.K.

```

Example 3: Display coordinates on areas on optical disk

```

HAC036I DC 010201**
HAC360I KEY P HOMECOOR TEMPCOOR VOLSER ST DEV ROB SYS TYPE COMMENT
HAC036I 01020101 Y 01020101 A-SIDE OD001A OM T/R 1 1 ---- O.K.
HAC036I 01020102 Y B-SIDE OD001B T/R 1 1 ---- O.K.
HAC036I 01020103 Y 01020103 A-SIDE OD002A OJ T/R 1 1 ---- O.K.
HAC036I 01020104 Y B-SIDE OD002B T/R 1 1 ---- O.K.
HAC036I 01020105 Y 01020105 A-SIDE OD003A OJ T/R 1 1 ---- O.K.
HAC036I 01020106 Y B-SIDE OD003B T/R 1 1 ---- O.K.
HAC036I 01020107 Y 01020107 A-SIDE OD004A OJ T/R 1 1 ---- O.K.
HAC036I 01020108 Y B-SIDE OD004B T/R 1 1 ---- O.K.
HAC036I 01020109 Y 01020109 A-SIDE OD005A OJ T/R 1 1 ---- O.K.
HAC036I 01020110 Y B-SIDE OD005B T/R 1 1 ---- O.K.
HAC361I NUMBER OF DISPLAYED COORDINATES: 0010

```

Field description:

KEY: Coordinate or text "NO PTR" when no pointer to the Archive mirror is available

P: Y = Valid pointer
 N = Invalid pointer

DEV: T/R = Tower/rack
 I = Insert area
 E = Eject area
 F = Foreign mount
 D = Tape unit (device)

TYPE: FPMA = Fixed Preferred Mount Area
 HWS = HCC Work Storage
 DYN = Dynamic area

COMMENT: o.K. = Valid
 DIFF = Invalid

2.3.1.24 DCL - DISPLAY CLEANING ACTIVITIES

DCL

DCL displays detailed information on cleaning cartridges.



This command is only allowed for cartridges, and incorrect use can cause processing errors.

Example:

```
DCL

HAC000I=====
HAC036I SYS ROB CLTAPE CLCT STATUS   (STA STA1 FLG TID)
HAC036I 1   1 100000 FFFF SCL,USED    C1  00 08 11
HAC036I 1   2 100004 231 SCL,FREE    C1  00 08 11
HAC036I 2   1 CL0001   27 SCL,FREE    C1  00 08 11
HAC000I=====
```

(Trace data)

Status:
USED = Currently in use
SCL = Ready
PCL = Stopped

CLCT:
Number of cleaning processes for CLTAPE
FFFF = maximum number of cleanings reached, CLTAPE is automatically ejected.

2.3.1.25 DELQ - DELETE FROM SEND WAIT QUEUE

```
DELQ sqnr[,FORCE]
DELQ EJALL[,s]
```

sqnr = 4 byte sequence number
FORCE = Delete the entry after send to AR or AMU
EJALL = Delete all EJECTs in the wait queue
s = AML System number

DELQ deletes a send process from the wait queue. This function is only planned to clear error situations (refer also to the **DRQ** command).

Example:

```
DELQ 0052
```

2.3.1.26 DHR - DISPLAY HCC/AML/MVS RELEASE

DHR

DHR displays the release information of installed operating system components.

Example 1: **DHR** command under MVS 5.2.2

```
DHR
HAC000I =====
HAC036I HACC: .....: V2R04M00 / ZY00107 / 12.12.96
HAC036I ARCHIV PC SYS 1: ...
HAC036I SYS 1/ROB 1: .....
HAC036I SYS 1/ROB 2: .....
HAC000I =====
HAC036I MVS SP-LEVEL .....: SP5.2.2
HAC036I PRODUCT FMID .....: JBB5522
HAC036I UCB SERVICES .....: INSTALLED
HAC036I LINKAGE - BRANCH ...: SUPPORTED
```

Example 2: **DHR** command under OS/390 R1.

```
DHR
HAC000I =====
HAC036I HACC: .....: V2R04M00 / ZY00107 / 12.12.96
HAC036I ARCHIV PC SYS 1: ...
HAC036I SYS 1/ROB 1: .....
HAC036I SYS 1/ROB 2: .....
HAC036I ARCHIV PC SYS 2: ...
HAC036I SYS 2/ROB 1: .....
HAC036I SYS 2/ROB 2: .....
HAC000I =====
HAC036I PRODUCT NAME .....: OS/390          01.01.00
HAC036I PRODUCT FMID .....: HBB6601
HAC036I UCB SERVICES .....: INSTALLED
HAC036I LINKAGE - BRANCH ...: SUPPORTED
```

Significance: UCB SERVICES INSTALLED

Shows whether the operating system provides extended UCB services.

LINKAGE - BRANCH SUPPORTED

Shows whether the functionality from MVS 4.2.0, MVS 4.2.2 or MVS 4.3.0 is available.



Refer also to the IBM Literature MVS/ESA Data Areas, Volume 1, CVT Map.

2.3.1.27 DISPLAY - DISPLAY FUNCTIONS

```

D[ISPLAY]
D[ISPLAY] ACTIVITY
D[ISPLAY] COM[,PATH=pppp][,STATUS=sssss][,HID=hh]
D[ISPLAY] CSA
D[ISPLAY] FUNCTION
D[ISPLAY] JB[,NAME[=jbname]][,DET=Y/N]
D[ISPLAY] LABEL
D[ISPLAY] LOC[ATION] [,SYS=n]
D[ISPLAY] MSG,NUM=nnn/nn*/n*
D[ISPLAY] SESSION
D[ISPLAY] STAT
D[ISPLAY] STORGRP[,NAME=stgname][,DET=Y/N][,NUM=nnn]
D[ISPLAY] USER

```

ACTIVITY	= Display the number of all robot actions and the time required
COM	= Display the connections
CSA	= Display the CSA data
FUNCTION	= Display all active functions
JB	= Display all relevant information on jukeboxes
LABEL	= Display all entries in the ZHCLAB
LOCATION	= Display the current location of all robots together with the values and coordinate ranges defined in the LDEV/UNIT statements.
MSG	= Display the HCC message number nnn (generic n* or nn*)
SESSION	= Display the connection status of all communication partners
STAT	= Display the time of the first and last contact and the last message received per communication partner (default)
STORGRP	= Display all defined Storage groups
USER	= Display all active ABS users

The **DISPLAY** command displays information according to the parameters specified.

'STAT' is assumed as parameter when no parameter follows the command word (default).



The parameters 'LABEL' and 'JB' are only valid for optical disks (OD), and can lead to erroneous processing when used otherwise.

DISPLAY command examples are shown on the following pages.

Example 1:

Display robot functions

```
D ACTIVITY
HAC450I *----- ACTIVITY DISPLAY -----
HAC447I HOUR    SYS1/ROB1      SYS1/ROB2      SYS2/ROB1      SYS2/ROB2
HAC447I      ACT. TIME      ACT. TIME      ACT. TIME      ACT. TIME
HAC405I   00      2 00:17      0 00:00      0 00:00      0 00:00
HAC405I   01      4 00:35      0 00:00      0 00:00      0 00:00
.
.
.
HAC405I *=====
HAC405I *SUM ACT. 39          0            0            0
HAC405I *SUM TIME 00:10:20    00:00:00    00:00:00    00:00:00
HAC405I *=====
HAC451I *----- END OF DISPLAY -----*
```

HOUR

= Start time, hour interval

ACT

= Number of robot activities

TIME

= Time the robot was last active in minutes and seconds

Example 2:

Display COM connections

```

- D COM

HAC450I *----- Commun. Display -----
HACnnnI APPC Section
HAC453I State of ZHC05400 : Active
HAC454I * Hid Mid Typ Status LU name Sendcnv Recvcnv Sen...
HAC405I H1 M1 Lcl A5OB6200
HAC405I H2 00 Rem Pri Used A5OB6201 xxxxxxxx xxxxxxxx xxx...
HAC405I H3 00 Rem Pri Used A5OB6202
HAC405I A1 00 Rem Pri Used TOBLI24 nnnnnnnn nnnnnnnn nnn...
HAC405I A1 00 Rem Alt TOBLI24 mmmmmmmm mmmmmmmm mmm...
HAC405I No APPC Communications defined
HACnnnI DASD Section
HACnnnI * Hid Status Dsname ...Reads Writes
HAC405I S1 active OBI1WD1.EXCLOG1 ...00000000 00000000
HAC405I S4 active OBI1WD1.EXCLOG4 ...00000000 00000000
HAC405I S5 active OBI1WD1.EXCLOG5 ...00000000 00000000
HAC405I SB inact OBI1WD1.EXCLOGB ...00000000 00000000
HAC405I No EXCLOG Communications defined
HACnnnI LU2 Section
HACnnnI * Hid ACB name Luname Status
HAC405I A1 A5OBL200 TOBLI24 Pri Act Used
HAC405I A1 A5OBL201 TOBLI25 Pri Act Unused
HAC405I No 3270 Communications defined
HACnnnI EXCP Section
HACnnnI * Hid CUU-Addr Status
HAC405I A2 01CA Pri Act Used
HAC405I A2 01CB Pri Act Unused
HAC405I No 3270 Communications defined
HAC451I *----- End of Display -----

```

Syntax:

D[ISPLAY] COM[,PATH=pppp][,STATUS=sssss][,HID=hh]

PATH=APPC	to display connections through LU 6.2.
PATH=3270	to display connections through LU2 / EXCP.
PATH=DASD	to display connections through shared DASD.
PATH=ALL	to display ALL defined connections (default).
STATUS=ACT	to display all active connections.
STATUS=INACT	to display all inactive connections.
STATUS=ALL	to display all defined connections (default).
HID=An	to display the connection to a special AR/AMU. (n=1-9/A-Z)
HID=Hn	to display the connection to a special MVS-PRIMARY-HCC (n = 1-9/A-Z).
HID=Sn	to display the connection to a special MVS-SECONDARY-HCC (n = 1-9/A-F).
HID=ALL	to display all defined partners (default)

Example 3:

Display CSA data

```

D CSA
HAC450I *----- CSA DISPLAY -----
HAC488I HACCVT ENTRY ADDRESS ..: 00B36160 SSI-NAME.....: HAC0
HAC489I CSA-SIZE (BYTES HEX/DEC): E4000D64/03428 SUBPOOL-NUMBER: 228
HAC490I SSCVT ADDRESS ...: 00B980A0 SFM EP-ADDRESS.....: 00B36340
HAC491I HACC SYSTEM ....: PRIMARY HACC ASCB-ADDRESS...: 00F7C200
HAC492I WSECB: 809DF081 WSSYNC: 00000000
HAC493I ERROR COMPCODE: 00000000 PSW-ADDRESS: 00000000 OFFSET: 00000000
HAC494I SFM WAITCOUNT: 00000 TOTAL EVENTS: 0000004 STATUS: READY
HAC495I BUFNO SYNC-FLD JOBNAME MESSAGE
HAC405I    1 00000000 OBI1US1A IEC502E K 92B,000300
HAC405I    2 00000000 OBI1US1A IEC501A M 92B,000300,SL,,TEST02,STEP02,O
HAC405I    3 00000000 OBI1US1A IEC502E K 92A,000100
HAC405I    4 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I    5 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I    6 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I    7 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I    8 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I    9 00000000 OBI1US1A IEF233A M 92A,000100
HAC405I   10 00000000 OBI1US1A IEF233A M 92A,000100
HAC496I RECOVERY AREA CONTENTS / LOCATION: 00B36CB0
HAC497I UNIT HC-SQ M/K-SQ JOBNAME MESSAGE
HAC405I 092A    2      1 OBI1US1A IEF233A M 92A,000100
HAC405I 092A    2      2 OBI1US1A IEC502E K 92A,000100
HAC405I 092B    3      3 OBI1US1A IEC501A M 92B,000300,SL,,TEST02,STEP0
HAC405I 092B    3      4 OBI1US1A IEC502E K 92B,000300
HAC405I 092C    0      0
HAC405I 092C    0      0
HAC451I *----- END OF DISPLAY -----

```

D CSA displays the 10 latest buffers in the queue filled by the SFM module ZHC01200.

Example 4:

Display active Functions

```
D FUNCTION
HAC450I *----- FUNCTION DISPLAY -----
HAC456I   FUNCTION TYPE      USERID   ORIGIN   STATUS PRIORITY
HAC405I     DEFAULT          HAC23101  CONSOLE   RUNNING  020
HAC405I   D FUNCTI COMMAND  Y6003_RE ABBASEND RUNNING  000
HAC451I *----- END OF DISPLAY -----*
```

FUNCTION	= Command, which initiated the function
TYPE	= DEFAULT (Default function entry for this TCB)
	COMMAND (Function initiated by a command)
USERID	= User initiating the function may be a BATCH JOB, TSO, or a HACCTASK
ORIGIN	= Origin of the initiating command. Is used for directing the output. May be CONSOLE or ABBASEND
STATUS	= Status of the function (running/waiting)
PRIORITY	= Dispatching priority of the originating command

Example 5:

Display jukebox information (only for OD)

```
D JB
HAC450I *----- JUKEBOX DISPLAY -----
HAC500I   JB name  Dev-Num Capacity curr.used Sys Rob Status
HAC405I   ODLIB1    D05      144        4     1    2   OK
HAC451I *----- END OF DISPLAY -----*
```

```
D JB,NAME=ODLIB1,DET=Y
HAC450I *----- JUKEBOX DISPLAY -----
HAC500I   JB name  Dev-Num Capacity curr.used Sys Rob Status
HAC405I   ODLIB1    D05      144        4     1    2   OK
HAC503I   VOL-A    VOL-B    VOL-A    VOL-B    VOL-A    VOL-B    VOL-A    VOL-B
HAC405I   10076A   10076B   10077A  10077B   10078A  10078B   10080A  10080B
HAC405I   10081A   10081B   10082A  10082B   10083A  10083B   10084A  10084B
HAC405I   --       --       --       --       --       --       --       --
HAC405I   --       --       --       --       --       --       --       --
.
.
.
HAC405I   --       --       --       --       --       --       --       --
HAC405I   --       --       --       --       --       --       --       --

HAC451I *----- END OF DISPLAY -----*
```

Example 6:

Display all entries in ZHCLAB (only for OD)

```
D LABEL
HAC450I *----- LABEL DISPLAY -----
HAC532I A-VOLS B-VOLS STORGRP HOMECOOR L-TYPE DRVNAME STATUS
HAC405I OD001A OD001B STG001 01030101 3995WORM ODDRV5 MOUNT SEN
HAC405I OD002A OD002B STG001 01030103 3995-133 INITIAL
HAC405I OD003A OD003B STG001 01030105 3995REWR INITIAL
.
.
.
HAC451I *----- END OF DISPLAY -----*
```

D LABEL displays all entries in the ZHCLAB. The status of the process currently active is displayed. All inactive processes have status 'INITIAL'. **D LABEL** is only allowed for ODs.

Example 7:

Display robot location / coordinate ranges

```
D LOC
HAC450I *----- LOCATION DISPLAY -----
HAC460I DIFFERENCE BETWEEN HIGHEST AND LOWEST LOCATION IS 45
HAC462I Robot 1 from System 1 is at location 30
HAC461I ABBA-Unit Startcoor Endcoor Location
HAC405I T01 01010101 01321810 5
HAC405I T02 02010101 02321810 15
.
.
.
HAC451I *----- END OF DISPLAY -----*
```

Example 8:

Display HCC message

```
D MSG,NUM=401
HAC450I *----- MESSAGE DISPLAY -----
HAC477I   Message Status Text
HAC405I   HAC401I DISA   Invalid continuation in Statement:
HAC451I *----- END OF DISPLAY -----*
```

```
D MSG,NUM=40*
H30450I *----- Message Display -----
H30477I   Message Status Text
H30405I   H30040I ENA   SCRATCH-TAPE UPDATE COMPLETED
H30405I   H30400I ENA   There is no output buffer available for User:
H30405I   H30401I ENA   Invalid continuation in Statement:
H30405I   H30402I ENA   Statement:
H30405I   H30403I ENA   Continuation must start in Col.16
H30405I   H30404I ENA   Statement is too long
H30405I   H30405I ENA
H30405I   H30406I ENA   Receiver is not defined in HACPARM1 CMD:
H30405I   H30407I ENA   There is no SEND conversation for xx and CMD:
H30405I   H30408I ENA   Attach of SEND Subtask for xx failed
H30405I   H30409I ENA   Open of ACB xxxxxxxx failed. RC is xxxx
H30451I *----- End of Display -----*
```

D MSG displays the status (refer to the **SET MSG** command) and message text (here 401 or 40 and 400-409).

Example 9:

Display connection status

```
D SESSION
HAC450I *----- SESSION DISPLAY -----
HAC453I * STATE OF ZHC05400 : ACTIVE *
HAC454I * HID MID TYP LUNAME SENDCNV RECVCNV SENDMODE SENDSESS RECVSESS *
HAC405I * H2 00 REM OBAPPC03 *
HAC451I *----- END OF DISPLAY -----*
```

STATE OF ZHC05400:	= Status of the APPC MAINTASK (ACTIVE / INACTIVE)
HID	= HCC ID
MID	= 00 or ID of the Major complex (M1)
TYP	= LCL / REM Remote or local HCC
LUNAME	= Name defined in VTAM (APPL statement)
SEDCNV	= Conversation ID of the SEND conversation or empty
REVCNV	= Conversation ID of the RECEIVE conversation
SENDMODE	= Mode name for the SEND SESSION
SENDSESS	= Session ID for Send SESSION
RECVSESS	= Session ID for Receive SESSION

Example 10:

Display first and last contact

```
D STAT
HAC450I *----- SOL      DISPLAY -----
HAC452I HID MID FIRST-CONTACT LAST-CONTACT MESSAGE HEADER
HAC405I H1  M1  ----- -----
HAC405I H2  00  ----- -----
HAC451I *----- END OF DISPLAY -----*
```

HID	= HCC identifier
MID	= Major identifier
FIRST/LAST-CONT.	= First/last contact with HID
MESSAGE HEADER	= Last message from HID

Example 11:

Display Storage group

```
D STORGRP
H30450I *----- Storgrp Display -----
H30527I SG name   Mask
H30405I STGGRP01  1007%%
H30405I STGGRP02  OD001A OD001B OD002A OD002B
H30405I STGGRP03  OD00%A OD00%B
H30405I STGGRP04  OD01*
H30405I STGGRP05  *
H30451I *----- End of Display -----*

D STORGRP,NAME=STGGRP01
H30450I *----- Storgrp Display -----
H30527I SG name   Mask
H30405I STGGRP01  1007%%
H30451I *----- End of Display -----*

D STORGRP,NAME=STGGRP01,DET=Y
H30450I *----- Storgrp Display -----
H30527I SG name   Mask
H30405I STGGRP01  1007%%
H30405I 10075A 10075B 10076A 10076B 10077A 10077B 10078A 10078B
H30405I 10079A 10079B
H30451I *----- End of Display -----*

D STORGRP,NAME=STGGRP01,DET=Y,NUM=1
H30450I *----- Storgrp Display -----
H30527I SG name   Mask
H30405I STGGRP01  1007%%
H30405I 10075A 10075B
H30451I *----- End of Display -----*
```

Example 12:

Display active ABS users

```
D USER
HAC450I *----- USER      DISPLAY -----
HAC458I   USER      STARTADDR TEXT
HAC405I   OPERATOR  02929FB4  HAC430I No communication path active for M1.
HAC405I   Y6003$RE  0292FA78  D USER
HAC451I *----- END OF DISPLAY -----*
```

USER	= Userid/Jobname from ABBASEND
STARTADDR	= Start address of the ABS output buffer header
TEXT	= Data from the first entry in the ABS output buffer

2.3.1.28 DLC - DOWNLOAD ARCHIVE USING COORDINATES

```
DLC [s,] coor1-coor2[,ST=E/B][,DAY=yyddd]
DLC [s,] coor1-coor2                                     [,SKIP=NO/YES]
DLC [s,] COOR=coor..                                     [,SKIP=NO/YES]
DLC [s,] MASK=mm**nn**
DLC [s,] STOP
```

s	= AML System	Default: s = 1
COOR=coor	= Generic coordinate 1 - 8 bytes	
coor1-coor2	= Coordinate range	
ST	= Status: ejected(E) or occupied (B)	
DAY	= Date for E or B	
yyddd	= Date	
MASK	= Selection "under mask"	
mm,nn	= Selected value	
**	= Wildcard	
SKIP	= Coordinate increment	
YES	= Process every 2 nd coordinate For cartridges, process only every 2 nd medium. For optical disks, generate 1 command for each medium.	
NO	= Process all coordinates (Default) For cartridges, generate 1 command for each medium. For optical disks, generate 2 commands for each medium.	
STOP	= Stop download	Default: end of specified range

DLC transfers data such as volser, status and coordinates of the HCC Archive mirror to the Archive mirror of the AR or AMU.

When coor1-coor2 is specified, the download can be restricted with the ST=E/B and DAY=yyddd parameters. The restrictions are processed as follows:

- | | |
|-----------------|---|
| ST=B | Download all occupied coordinates. |
| ST=E | Download all empty (ejected) coordinates, all free coordinates in the dynamic area. |
| ST=B, DAY=yyddd | Download all occupied coordinates where an INSERT was made as from the date specified. |
| ST=E, DAY=yyddd | Download all empty (ejected) coordinates where an EJECT was made as from the date specified.

Exception: All free coordinates in the dynamic area are copied to the AR/AMU Archive irrespective of the date. |
| DAY=yyddd | Download all occupied coordinates where a movement, INSERT or EJECT , was made as from the date specified. Empty coordinates in the dynamic area are ignored. |

The restricting parameters are ignored when coor1-coor2 are the same.

The run time must be considered when transferring the complete Archive.

Examples:

```
DLC COOR=0003
```

This command transfers coordinate information on all foreign mount slots to the Archive computer.

```
DLC MASK=01**05**
```

This command transfers information on all segments (**) and all positions (**) in row 05 on tower 01 to the Archive computer (horizontal storage).

Only one **DLC** command should be active at any one time, unexpected results can occur when several **DLC** commands are active simultaneously.



2.3.1.29 DLV - DOWNLOAD ARCHIVE USING VOLSER

DLV [s,]	fromvol-tovol
DLV [s,]	volser
DLV [s,]	STOP

s	= AML System	Default: s = 1
volser	= VOLSER 6 bytes	
fromvol-tovol	= VOLSER range	
STOP	= Stop download	Default: end of specified range

DLV transfers data such as volser, status and coordinates of the HCC Archive mirror to the Archive mirror of the AR or AMU.

The run time must be considered when transferring the complete Archive.

This command has been extended and now supports using optical disks.

Example:

DLV 010001-011000

2.3.1.30 DPMA - DISPLAY FPMA ALLOCATION

DPMA

DPMA displays the FPMA allocation and information on further statistical values.

Example:

```
DPMA

HAC000I=====
HAC036I CUU X*Y USED SCRT TOT.MO SCR-MO PMA-MO PMA% PMA-TME(S)
HAC036I 530 75 28 0 280 260 231 88 19
HAC036I 531 75 28 0 294 284 260 91 19
HAC036I 532 75 16 0 291 283 266 93 19
HAC036I 533 75 16 0 325 310 283 91 19
HAC036I 534 75 16 0 268 255 233 91 19
HAC036I . . . . . . . .
HAC036I . . . . . . . .
HAC036I . . . . . . . .
HAC036I 53F 75 16 0 303 294 266 90 19
HAC000I=====
HAC036I 9546 5610 5378 90 19
HAC000I=====
```

2.3.1.31 DRE - DISPLAY ROBOT ERROR

```
DRE [nnnn]
```

nnnn = Error code

Default: all error texts

DRE displays short error texts for the error codes issued by AR or AMU.

These error codes are returned in the error field of the conversation protocol by negative acknowledgments (refer to the **DRQ** command).

Example:

```
DRE N304
```

The following message appears:

```
HAC036I N304 VOLUME LABEL NOT READABLE
```

2.3.1.32 DRQ - DISPLAY SEND WAIT QUEUE

```
DRQ
DRQ ALL
DRQ E
DRQ P
DRQ L
```

- E = Existing errors
- P = Current priorities
- ALL = Includes all **EJECT** and **VICC** requests in the wait queue
- L = Long form

DRQ provides information on the contents of the various wait queues.

Example for DRQ:

```

DRQ ALL

HAC000I =====
HAC221I COMMANDS TRANSMITTED BUT NOT ACKNOWLEDGED
HAC036I 26/10.13.11      <A1H1A00,0111,MO , , ,1,1,D01,
HAC000I =====
HAC036I ID SQNR CMD   S,R, AUU VOLSER CUU      JOBNAME HH.MM FLAGS
HAC036I H1 0111 MO    1,1  D01 100555 092A      OBI1WS1B 10.13  S
HAC036I H1 0112 MO    1,1  D02 100016 092B      JK11079A 10.14
HAC036I H1 0113 MO    1,1  D03 100017 092C      JK11079A 10.14
HAC036I H1 0114 KE    1,2  D10 10078A ODDRV5    ADVRR89X 10.15
HAC036I H1 0115 LJB   1,2  D11 10079A ODLIB1    OD1SZZ9 10.15
HAC000I =====

```

Flag significance:

CL	= Cleaning request
*	= Request has errors
S	= Request sent
I	= Tape in use

2.3.1.33 DRT - DISPLAY ACTIVE ROBOT FUNCTIONS

DRT

DRT displays the active subtasks and the selected robot service functions.

These functions are:

- Tape label check (refer to **LCK, SLCK, PLCK**)
- Tape label initialization (refer to **TLI, STLI, PTLI**)

Example:

DRT

```
HAC000I =====
HAC036I UNIT      FUNCTION     STATUS    VOLSER
HAC036I 04A0      LABELCHECK   BUSY      001005
HAC036I 04A1      LABELCHECK   BUSY      001004
HAC036I 04A7          IDLE      000000
HAC036I LABELCHECK  STARTVOL=001001,CURVOL=001005,ENDVOL=001100
HAC000I =====
```

A header check is active on units 04A0 and 04A1 whereas 04A7 is reserved by HCC but has no active tasks.

2.3.1.34 DSC - DISPLAY SCRATCH DATA MEDIA

```
DSC [ SYS=s , ][ nnn ][ ,TYPE=CAR ]
DSC           1      ,TYPE=OPT
```

s	= AML System number	Default: 1
nnn	= Number of volser numbers to be displayed, display the Scratch pool when 1 and TYPE=CAR	Default: 10
CAR	= Display scratch tapes	Default
OPT	= Display optical disk with FREESPACE	

DSC serves to display current lists of scratch data media.

Example 1:

Display scratch tape information

```
DSC

HAC000I =====
HAC036I 001011
HAC036I 001103
HAC036I 001106
HAC036I 001201 INQ
HAC036I ...
HAC036I 002016
HAC036I 003049
HAC247I AVAILABLE SCRATCH TAPES 00657
HAC000I =====
```

Default(s): - SYS=1
 - 10 (count)
 - TYPE=CAR

Example 2:

Display pool information for tapes

```
DSC 1

HAC000I =====
HAC036I 001011
HAC247I AVAILABLE SCRATCH TAPES 00657
HAC192I NOSCR=000020    000000-004999      ( SCRTCH )
HAC192I NOSCR=000020    000000-004999      ( PRIVAT )
HAC192I NOSCR=000010    010000-011999      ( YELLOW )
HAC192I NOSCR=000010    012000-012999      ( RED   )
HAC192I NOSCR=000030    020001-024000      ( GREEN )
HAC000I =====
```

Default(s): - SYS=1
 - TYPE=CAR

Example 3:

Display pool information for optical disks

```
DSC 2 ,TYPE=OPT

HAC000I =====
HAC036I W0001A 1
HAC036I W0002A 1
HAC247I AVAILABLE SCRATCH OPTS 000002
HAC041I REQUEST OK
```

Default(s): - SYS=1

2.3.1.35 DSD - DOUBLE SEND MESSAGES TO ROBOT

DSD [s,r]

s = AML System Number
r = Robot Number

This command activates the method for sending messages to the robot. HCC attempts to send two messages simultaneously to the robot in this case, for example **MOUNT/KEEP/EJ**, etc. This can increase the robot performance because the robot can already interpret the next command whilst executing another command. Refer to the **SSD** command for single sends.



This performance improvement is especially recommended for Minor systems within a Major/Minor complex.

2.3.1.36 DU - DISPLAY UNIT ACTIVITY

DU [s,r]
DU cuu/drve[,DET=Y/N]

s	= AML System number	Default: s=1
r	= Robot number	Default: r=1
cuu/drve	= MVS unit address	
DET=Y	= Detail display	
DET=N	= Standard display	Default

DU provides information on usage of tape units managed by AML. The DET=Y/N option is only allowed in combination with a MVS unit address.

Example:

```
HAC036I DU
HAC000I =====
HAC036I CUU/ODN AU CPU  JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I 092A   01                0      -
HAC036I 092B   02 S500 *HACCO* AP0002 0002     1      1      6 MOMI
HAC036I          AP0002 0003          KEKT
HAC036I          *HACCO* AP0003          PM
HAC036I 092C   03                0      -
HAC036I 092D   04                0      -
HAC036I 092E   05                0      -
HAC036I 092F   06                0      -
HAC036I ODLIB1  07 IOS device (use DISPLAY JUKEBOX command)
HAC036I ODDRV5  08                0      -
HAC000I =====
HAC036I TOTALS:           1      6
HAC000I =====
```

HCC Commands

Further examples:

```
HAC036I DU 92B
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I 092B 02 S500 *HACCO* AP0002 0002 1 1 6 MOMI
HAC036I AP0002 0003 KEKT
HAC036I *HACCO* AP0003 PM
HAC000I =====
```

```
HAC036I DU 92B,DET=YES
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I 092B 02 S500 *HACCO* AP0003 0004 1 1 45 MOS
HAC000I =====
HAC036I MMSG=1 MTDB=1 MRQE=1 MTOU=0 MASE=1 MAP=0 MCLA=0 MAN=0
HAC036I UNLI=0 UNLT=0 NHAC=0 MIND=0 UCBI=0 FM=0 JES3=0
HAC036I MSRQ=0 MSCR=0 LSCR=0 MVUA=0
HAC036I KMSG=0 KTBD=0 KRQE=0 KASE=0 KAP=0 KAN=0
HAC036I PMSG=0 PTBD=0 PNHAC=0 PFM=0
HAC000I =====
```

```
HAC036I DU ODDRV5
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I ODDRV5 08 AP0002 0 MOM
HAC000I =====
```

Further examples:

```
HAC036I DU ODDRV5,DET=YES
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I ODDRV5 08 AP0002 0 MOM
HAC000I =====
HAC036I MMSG=0 MTDB=0 MRQE=0 MTOU=1 MASE=0 MAP=0 MCLA=0 MAN=0
HAC036I UNLI=0 UNLT=0 NHAC=0 MIND=0 UCBI=0 FM=0 JES3=0
HAC036I MSRQ=0 MSCR=0 LSCR=0 MVUA=0
HAC036I KMSG=0 KTBD=0 KRQE=0 KASE=0 KAP=0 KAN=0
HAC036I PMSG=0 PTBD=0 PNHAC=0 PFM=0
HAC000I =====
```

```
HAC036I DU ODLIB1
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I ODLIB1 07 IOS device (use DISPLAY JUKEBOX command)
HAC000I =====
```

```
HAC036I DU ODLIB1,DET=YES
HAC000I =====
HAC036I CUU/ODN AU CPU JOBNAME VOLSER SQNR MOUNTS CLMO SECS STATE
HAC036I ODLIB1 07 IOS device (use DISPLAY JUKEBOX command)
HAC000I =====
HAC036I MMSG=0 MTDB=0 MRQE=0 MTOU=0 MASE=0 MAP=0 MCLA=0 MAN=0
HAC036I UNLI=0 UNLT=0 NHAC=0 MIND=0 UCBI=0 FM=0 JES3=0
HAC036I MSRQ=0 MSCR=0 LSCR=0 MVUA=0
HAC036I KMSG=0 KTBD=0 KRQE=0 KASE=0 KAP=0 KAN=0
HAC036I PMSG=0 PTBD=0 PNHAC=0 PFM=0
HAC000I =====
```

MOUNTS: Number of mounts since the last CC command

CLMO: Number of mounts since the last unit cleaning

SECS: Average AML response time

STATE: Bytes 1+2 MO Mount entry

KE Keep entry

PM Pending Mount entry

Byte 3 Q Queued

S Sent

M Tape on unit

K Keep ready

Byte 3+4 KT Keep to be done

Byte 4 I Individual mount

F Foreign mount

U Unload issued

Byte 4+5 UT Unload to be done

Byte 5 L Lack of scratch tapes

V Volume not accessible

2.3.1.37 DV - DISPLAY VOLSER INFORMATION

DV volser

volser = Valid VOLSER from the AML library
additional display of the 2nd volser

DV displays significant information concerning a data medium from the HCC Archive.

Example 1: Display cartridge

DV 004711

```
=====
VOLSER=004711, HOME=02291401, TEMP=10020311, RECV=02201401
SYS=1 ROB=1           LAST-UNIT=092B           LAST-JOB=RZ17A001
STATUS=MB, HOME-POS      SCRATCH
LAST MOUNT/KEEP DATE: 94098/16:22
LAST EJECT DATE . . . : 94103/17:40
INSERT DATE . . . . . : 94105/06:14
SWAP COUNT OF TAPE . . : 00000
TOTAL USE COUNT . . . : 00061  (DISP=OLD USECOUNT: 00000)
=====
CLT=0  INA=1  EJD=0  SCR=1  OD=0       IDEV=0  FPMA=0  HOME=1
VIR=0  MVD=0  MVH=0  ALI=0  MP=0       HWS=0  INIT=0  INV=0
INQ=0  IUS=0  ART=0  FKES=0  CLC=0     PML=0  PMU=0  CVUP=0
HOLD=0 SEND=0 VUA=0
```

Status byte significance - cartridges:

CLT	0	Medium is data cartridge	1	Medium is cleaning cartridge
INA	0	Ejected	1	In robot archive
EJD	0	Not significant	1	Medium should be ejected
SCR	0	Not significant	1	Volser has scratch status
OD	0	Medium is cartridge	1	Not allowed
IDEV	0	Not significant	1	Medium located in insert area
FPMA	0	Not significant	1	Medium located in FPMA; temporary coordinate is present
HOME	0	Volser without home coordinate	1	Volser has a home coordinate
<hr/>				
VIR	0	Not significant	1	Volser is a virtual volume
MVD	0	Not significant	1	MOVE to be executed Target coordinate set
MVH	0	Not significant	1	MOVE to home coordinate to be executed
ALI	0	Not significant	1	Not allowed
MP	0	Not significant	1	Medium in manual pool
HWS	0	Not significant	1	Medium in HWS
INIT	0	Not significant	1	Initial Status (unassigned volume)
INV	0	Not significant	1	Invalid coordinate
<hr/>				
INQ	0	Not significant	1	Volser in robot wait queue
IUS	0	Not significant	1	Volser in use
ART	0	Not significant	1	Volser allocated for robot test
FKES	0	Not significant	1	Not allowed
CLC	0	Not significant	1	Cleaning cartridge in use
PML	0	Not significant	1	Medium to be loaded in FPMA
PMU	0	Not significant	1	Medium to be removed from FPMA
CVUP	0	Not significant	1	Home coordinate to be changed
<hr/>				
HOLD	0	Not significant	1	Request for volser in error wait queue
SEND	0	Not significant	1	Request for volser sent to AML
VUA	0	Volume available	1	Volume not available

Example 2: Display optical disk

- Volser of an A side
- Status=OB - at home position

DV OD020A

```
HAC000I =====
HAC036I VOLSER=OD020A, HOME=01020209, TEMP= , RECV=00000000
HAC036I SYS=1, ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OB, HOME-POS
HAC036I OTHER SIDE VOLSER=OD020B STORAGE GROUP=STG001
HAC036I SWAP COUNT OF TAPE .: 00000
HAC036I TOTAL USE COUNT ....: 00000
HAC000I =====
HAC036I MOU=0 INA=1 EJD=0 SCR=0 OD=1 IDEV=0 JB=0 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=0 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=0 IUS=0 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Example 3: Display optical disk

- Volser of an A side
- Status=OE - ejected

DV OD001A

```
HAC000I =====
HAC036I VOLSER=OD001A, HOME=01020101, TEMP= , RECV=00000000
HAC036I SYS=1 ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OE, HOME-POS SIDE=A
HAC036I OTHER SIDE VOLSER=OD001B STORAGE GROUP=STG001
HAC036I LAST EJECT DATE ....: 94223/20:25
HAC036I SWAP COUNT OF TAPE .: 00000
HAC036I TOTAL USE COUNT ....: 00000 (DISP=OLD USECOUNT: 00000)
HAC000I =====
HAC036I MOU=0 INA=0 EJD=0 SCR=0 OD=1 IDEV=0 JB=0 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=0 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=0 IUS=0 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Example 4: Display optical disk

- Volser of a B side
- Status=OE - ejected

DV OD001B

```
HAC000I =====
HAC036I VOLSER=OD001B, HOME=01020102, TEMP= ,RECV=00000000
HAC036I SYS=1 ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OE, HOME-POS SIDE=B
HAC036I OTHER SIDE VOLSER=OD001A STORAGE GROUP=STG001
HAC000I =====
HAC036I MOU=0 INA=0 EJD=0 SCR=0 OD=1 IDEV=0 JB=0 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=1 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=0 IUS=0 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Example 5: Display optical disk

- Volser of an A side
- Status=OJ - in jukebox

DV OD003A

```
HAC000I =====
HAC036I VOLSER=OD003A, HOME=01020105, TEMP= ,RECV=00000000
HAC036I SYS=1 ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OJ, IN JUKEBOX SIDE=A
HAC036I OTHER SIDE VOLSER=OD003B STORAGE GROUP=STG001
HAC036I SWAP COUNT OF TAPE .: 00000
HAC036I TOTAL USE COUNT ....: 00000 (DISP=OLD USECOUNT: 00000)
HAC000I =====
HAC036I MOU=0 INA=1 EJD=0 SCR=0 OD=1 IDEV=0 JB=1 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=0 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=0 IUS=0 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Example 6: Display optical disk

- Volser of a B side
- Status=OJ - in jukebox

DV OD003B

```
HAC000I =====
HAC036I VOLSER=OD003B, HOME=01020106, TEMP= ,RECV=00000000
HAC036I SYS=1 ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OJ, IN JUKEBOX SIDE=B
HAC036I OTHER SIDE VOLSER=OD003A STORAGE GROUP=STG001
HAC000I =====
HAC036I MOU=0 INA=1 EJD=0 SCR=0 OD=1 IDEV=0 JB=1 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=1 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=0 IUS=0 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Example 7: Display optical disk

- Volser of an A side
- Status=OM - mounted on OAD

DV OD001A

```
HAC000I =====
HAC036I VOLSER=OD001A, HOME=01020101, TEMP= ,RECV=00000000
HAC036I SYS=1 ROB=1 LAST-UNIT=D08 LAST-JOB=*HACC0*
HAC036I STATUS=OM, ON UNIT ODDRV5 SIDE=A
HAC036I OTHER SIDE VOLSER=OD001B STORAGE GROUP=STG001
HAC036I LAST MOUNT/KEEP DATE: 94265/11:50
HAC036I INSERT DATE .....: 94257/17:05
HAC036I SWAP COUNT OF TAPE ..: 00000
HAC036I TOTAL USE COUNT ....: 00010 (DISP=OLD USECOUNT: 00010)
HAC000I =====
HAC036I MOU=1 INA=1 EJD=0 SCR=0 OD=1 IDEV=0 JB=0 HOME=1
HAC036I VIR=0 MVD=0 MVH=0 ALI=0 MP=0 HWS=0 INIT=0 INV=0
HAC036I INQ=1 IUS=1 ART=0 FKES=0 CLC=0 PML=0 PMU=0
HAC036I HOLD=0 SEND=0 VUA=0
HAC000I =====
```

Status byte significance - optical disk:

MOU	0	Not significant	1	Medium is mounted on OAD
INA	0	Medium is ejected	1	In robot archive
EJD	0	Not significant	1	Medium should be ejected
SCR	0	Not significant	1	Volser has scratch status
OD	0	Not allowed	1	Medium is optical disk
IDEV	0	Not significant	1	Medium located in insert area
JB	0	Not significant	1	Medium located in jukebox
HOME	0	Not allowed	1	Volser has a home coordinate
<hr/>				
VIR	0	Not significant	1	Not allowed
MVD	0	Not significant	1	MOVE to be executed Target coordinate is set
MVH	0	Not significant	1	MOVE to home coordinate to be executed
ALI	0	B side of an optical disk	1	B side of an optical disk
MP	0	Not significant	1	Not allowed
HWS	0	Not significant	1	Not allowed
INIT	0	Not significant	1	Initial status (unassigned volume)
INV	0	Not significant	1	Invalid coordinate
<hr/>				
INQ	0	Not significant	1	Volser in robot wait queue
IUS	0	Not significant	1	Volser in use
ART	0	Not significant	1	Not allowed
FKES	0	Not significant	1	Not allowed
CLC	0	Not significant	1	Not allowed
PML	0	Not significant	1	Not allowed
PMU	0	Not significant	1	Not allowed
CVUP	0	Not significant	1	Not allowed
<hr/>				
HOLD	0	Not significant	1	Request for volser in error wait queue
SEND	0	Not significant	1	Request for volser sent to AML
VUA	0	Volume available	1	Volume not available

2.3.1.38 EJ - EJECT MEDIUM

EJ volser[,Enn][,MANPOOL/NOMANPOOL][WAIT]

volser	= VOLSER number	
Enn	= Eject unit	Default: E01 or E00 ¹⁾
WAIT	= Wait option (refer to SYS.REF.GUIDE)	
MANPOOL	= Eject to a manual pool	Default: NOMANPOOL

EJ initiates medium eject. The Archive mirror is checked to see whether the medium is actually in the Archive, and then marked in the Archive mirror as "planned for ejection". This ensures that this information is not lost should the HCC task abort.

The **EJECT** statement is then entered in the wait queue for execution. The command is then passed on when no further tasks are pending or when the cartridge is no longer in use.

When the "MANPOOL" option is specified, the xRXMP flag in the Archive mirror is set after successful eject. This flag can be checked by products used to control allocation (for example, MAPS from COMPAREX). This option is only allowed for cartridges.



When this command is entered before a **KEEP**, the **KEEP** is made directly to the eject slot according to the following rules:

For **EJ** with eject area (for example, E02)

- when the robot is the same, in the eject area specified,
- when the robot is different, back to the tower.

The **EJECT** is then generated as an independent request.

For **EJ** without eject area, in the default eject area of the respective robot.



When an eject unit is not specified for twin-robot systems, the eject slot to be used is first determined, for performance reasons, when the eject command is actually generated. The following rules are applied in this case:

- towers 01/03 ... are assigned to robot 01
- towers 02/04 ... are assigned to robot 02

whilst considering whether one of the robots is active. The default value E02 is applicable for all other systems. In the case of optical disks, the first eject unit valid for optical disks is selected.

Examples:

```
EJ 014567  
EJ 004711,E11,MANPOOL
```

The following message confirms successful eject:

```
HAC124I VOLUME 014567 IS EJECTED  
HAC124I VOLUME 004711 IST EJECTED-MANPOOL
```



Refer to the System Reference Guide, Appendix, Section BATCH examples

2.3.1.39 EJCONT - RESUME EJECT

EJCONT [s][,Enn]

s	= AML System Number	Default: s=1
Enn	= Eject unit number	Default: E01

The **EJCONT** command re-activates an eject unit stopped with the **EJSTOP** command.

Pending eject tasks for this unit are continued to the next available slot.

An eject unit can be set inactive by

- entering the **EJSTOP** command
- eject unit overflow (message code N503).



The **EJCONT** can be used to resume eject as from the first slot of the unit when required.

Example:

EJCONT E02

The **DA** command displays exceptional conditions in the eject unit.

Example:

```
HAC000I =====
HAC278I CSA RECOVERY ACTIVE
HAC022I MESSAGE LOG ACTIVE, DSN=dsname
HAC309A EJECT DEVICE E01 SYSTEM 1 OVERFLOW
HAC306I EJECT DEVICE E02 SYSTEM 1 STOPPED BY OPERATOR
HAC307A EJECT DEVICE E01 SYSTEM 2 DOOR OPEN
HAC000I =====
```

2.3.1.40 EJDSN - EJECT CARTRIDGE USING DSNAME

```
EJDSN dsname [,MANPOOL|,NOMANPOOL][WAIT]
```

dsname = Cataloged file name

WAIT = Wait option

MANPOOL = Eject in a manual pool (Default: NOMANPOOL)

EJDSN searches for the specified file name using the standard catalog search sequence. An **EJ** command is generated for each volser found and placed in the send wait queue.

When the "MANPOOL" option is specified, the xRXMP flag in the Archive mirror is set after successful eject. This flag can be inquired by products used for allocation control (for example, MAPS from Comparex).



When this command is entered before a **KEEP**, the **KEEP** is made directly to the eject slot according to the following rules:

For **EJ**, **EJDSN** or **EJVOL** with eject area (for example, E01)

- when the robot is the same, in the eject area specified,
- when the robot is different, back to the tower.

The **EJECT** is then generated as a separate request.

For **EJ**, **EJDSN** or **EJVOL** without eject area, in the default eject area of the corresponding robot.

Examples:

```
EJDSN DSN.XYZ WAIT
EJDSN DSN.XYZ,MANPOOL
```

Job flow example:

```
/*-----*
/*          MULTIVOLUME DATA BACKUP
/*-----*
//ST030    EXEC PGM=utility
//TAPEOUT DD   DSN=DSNAME(+1),DISP=(,CATLG,DELETE),
//                  UNIT=ROB1,VOL=(,,15)
/*-----*
/*          TRANSFER TO HACC
/*-----*
//ST040    EXEC PGM=ABBASEND,PARM='EJDSN DSNAME(0) WAIT'
//
```



The file dsname is cataloged after ST040 completes and must be requested with +0.

2.3.1.41 EJSTOP - INTERRUPT EJECT

```
EJSTOP [s][,ENN]
```

s	= AML System Number	Default: s=1
ENN	= Eject unit Number	Default: E01

The **EJSTOP** command deactivates the specified eject unit.

An executing eject can be interrupted at any time - the acknowledgment for an **EJ** command already sent is waited for.

Refer to the **EJCONT** command for activating again.

Example:

```
EJSTOP E02
```

The eject in the E02 area is interrupted.

Message:

```
HAC306I EJECT DEVICE E02 SYSTEM 1 STOPPED BY OPERATOR
```

2.3.1.42 END - TERMINATE HCC

END

END triggers a normal termination of the HCC task. The primary HCC task is first terminated when no further send processes to AML are pending and not completed. (Cleaning actions must be completed).

The following message appears when functions are still open:

HAC049A STOP PENDING END OF COMMUNICATION

The **DRQ** command should be used in this case to determine which actions have not been completed.

When the following message appears for an open cleaning action,

HAC220A * CLEANING ACTION NOT COMPLETED

the automatic **KEEP** should be waited for. HCC then terminates on its own accord.

When the following message appears,

HAC107I OUSTANDING ERROR FOUND,

the error situation should be cleared first (refer to **DRQ**).

The **END** command is normally only necessary before the operating system is terminated. (Refer to **CY SHUTDOWN**).

2.3.1.43 FLIP - TURNOVER OPTICAL DISK

```
FLIP UNIT=drv
```

drv = Drive name of the Operator Accessible Drive (OAD)

FLIP tasks the AML system to turn the optical disk (OD) on the specified unit (OAD) over.

The OD is turned over without the AMU checking the volser.

Example:

```
FLIP UNIT=ODDRV5
```



This command is only provided for exceptional circumstances and can lead to processing errors when used incorrectly.

2.3.1.44 FMA - ADD FOREIGN MOUNT CARTRIDGE ENTRY

FMA [sd,]nn,volser[,jobname][,G,I]

sd	= System s designator and the foreign mount unit d= last character of the foreign mount unit F0d
nn	= Position number in the foreign mount area (*11001 - *sdnnn)
volser	= Actual VOLSER of the MVS mount (6 characters)
jobname	= Job name that requests real VOLSERs
G	= Generic job name (1-8 characters per job name)
I	= Deactivate the entry after cartridge processing

FMA assigns the "volser,jobname" combination to the foreign mount slot position. The operator should set the corresponding "volser" to any free position "nn" in the foreign mount area before the selected "job" starts.

As soon as the "volser,jobname" combination matches during a **MOUNT** process, AML loads the cartridge positioned in slot "nn" without checking the barcode label and returns it to the same position after **KEEP**.



The HAC182I message appears when the "VOLSER,JOBNAME" combination is already defined for another foreign mount slot position.

This message also appears when the foreign mount slot position is already in use.

Example:

FMA 12,01,004711,UZ4333

Message:

HAC041I REQUEST OK


This command is only valid for cartridges, and incorrect use can cause processing errors.

Another possibility is to wait for the message

```
HAC332A VOLSER volser FOR JOB jobname NOT FOUND IN HACC ARCHIVE
```

and then position the respective cartridge in a free slot. The following **FMA** command then continues the foreign mount process from the external slot.

The same procedure can be used when an error occurs during definition of the external slot (nn, volser or jobname). The foreign mount process continues after the erroneous data have been corrected.

2.3.1.45 FMD - DELETE FOREIGN MOUNT ENTRY

```
FMD [sd,]nn
```

sd = System *s* designator and the foreign mount unit
d= last character of the foreign mount unit F0d
nn = Position number in the foreign mount area (*11001 - *sdnnn)

FMD deletes the entry for the slot nn generated by **FMA**.

Example:

```
FMD 12
```

Message:

```
HAC036I FM-ENTRY *11002,004711,Y6011A DELETED
```



This command is only valid for cartridges, and incorrect use can cause processing errors.

2.3.1.46 FML - DISPLAY FOREIGN MOUNT ENTRIES

FML [sd]

sd = System *s* designator and the foreign mount unit
d= last character of the foreign mount unit F0d

FML lists all foreign mount entries.

Default: **FML 11**

Example: **FML 12**

Message:

```
HAC000I=====
HAC036I DEV POSVOL VOLSER JOBNAME DATE TIME COUNT STATUS
HAC036I F02 *12001 TEST01      92209/16:50    1 A USED
HAC036I F02 *12002 HUGO01 Y6011A 92248/11:46    A
HAC036I F02 *12003 HUGO03      92211/15:44    A
HAC036I F02 *12004 004711 D     92236/17:13    1 GI USED
HAC036I F02 *12005
HAC036I F02 *12006
HAC036I F02 *12007
HAC036I F02 *12008
HAC036I F02 *12009
HAC036I                               F02          *12010
HAC000I=====
```

POSVOL: Position 1 (P) = Internal identification
Position 2 (O) = AML System
Position 3 (S) = Foreign mount area
Position 4-6 (VOL) = Position number

COUNT: Number of mount processes

STATUS: A = Active entry
G = Generic job name
I = Automatically deactivated
USED = Volser was loaded

2.3.1.47 FMM - MODIFY FOREIGN MOUNT ENTRY

```
FMM [sd,]nnn[,volser][,jobname][,G][,I,ACT]
```

sd	= System <i>s</i> designator and the foreign mount unit (external) d= last character of the foreign mount unit F0d
nn	= Position number in the foreign mount area (*11001 - *sdnnn)
volser	= Actual VOLSER of the MVS mount (6 characters)
jobname	= Job name that requests real VOLSERs
G	= Generic job name (1-8 characters per job name)
I	= Deactivate the entry after cartridge processing, for example, all status entries are cleared
ACT	= Activate the Archive entry /status display "A"

FMM modifies an existing **FMA** entry.

Example:

```
FMM 12,001,002506,UZ4333  
HAC036I XXXXXXXXXXXXXXXXXX
```



The HAC182I message appears when the "VOLSER,JOBNAME" combination is already defined for another foreign mount slot position.

Another possibility is to wait for the message

HAC332A VOLSER volser FOR JOB jobname NOT IN HACC ARCHIVE

and then position the cartridge in a free slot. A following **FMA** command then continues the foreign mount process from the foreign mount area.

The same procedure can be used when an error occurs during definition of the external slot (nn, volser or jobname). The foreign mount process continues after correction of the erroneous data.



The appropriate entry is automatically set to inactive when the IEC510D message appears in connection with the foreign mount processing (file protect switch on). This entry can be reactivated with the **FMM-ACT** command.

2.3.1.48 FORCE END - FORCE HCC TERMINATION

FORCE END

FORCE END or **P A** can be entered when HCC does not terminate.



DRQ should always be issued before **ROSA** when restarting HCC. This serves to recognize error situations which may be erroneously recreated from the UNIT log.

Possible pending error situations are not reported after a HCC cold start (PARM='HOT=N').

Example:

F A,END
F A,FORCE END
P A

Normal termination

FORCE termination

FORCE termination using the MVS Stop command

2.3.1.49 FPMA - CONTROL FPMA

FPMA [s,r,]	SLU
FPMA [s,r,]	PLU
FPMA [s,r,]	SL
FPMA [s,r,]	PL
FPMA [s,r,]	UNL
FPMA [s,r,]	UNL,NSCR
FPMA [s,r,]	UNL,STOP
FPMA [s,r,]	SMK
FPMA [s,r,]	PMK
FPMA [s,r,]	SVI
FPMA [s,r,]	PVI

s AML System Default: s = 1
r Robot Number Default: r = 1

- SLU** Start the FPMA LOAD with scratch cartridges whereby non-scratch cartridges are returned to their home positions (for example, revolving towers) at the same rate (UNLOAD). SLU is the normal case. The FPMA can be loaded in two ways: sequentially or according to a rotation scheme. This is defined in the FPMALOAD parameter (refer to FPMALOAD in HACPARM1, INSTALLATION/CUSTOMIZATION).
- PLU** Stop the SLU process, which means that no more scratch cartridges are positioned in the FPMA (exception: refer to **SVI**) and no more non-scratch cartridges are returned from the FPMA to their home positions.
- SL** Start the FPMA LOAD with scratch cartridges and leave non-scratch cartridges in the FPMA. Non-scratch cartridges can be unloaded with the **FPMA UNL,NSCR** command.
- PL** Stop LOAD SL (FPMA UNL,NSCR can still be used).
- SMK** Start **MOUNT** with scratch cartridges from the FPMA and **KEEP** cartridges in the FPMA or direct to home positions. The FPMAKEC statement controls the **KEEP** process (refer to FPMAKEC, HACPARM1 in INSTALLATION / CUSTOMIZATION).
- PMK** Stop **MOUNTs** for scratch cartridges from the FPMA. Scratch cartridges are retrieved from their home positions.
- SVI** Scratch cartridges identified in insert slots are moved directly to the FPMA when a **VOLUME INSERT** is active.
- PVI** Scratch cartridges in insert slots are moved to their home positions by **VI**.

- UNL Complete unload of the FPMA. The statuses PLU/PL and PVI must be present.
- UNL,NSCR Unload non-scratch cartridges from the FPMA. The status PLU/PL or PVI must be present.
- UNL,STOP Interrupts the FPMA unload.

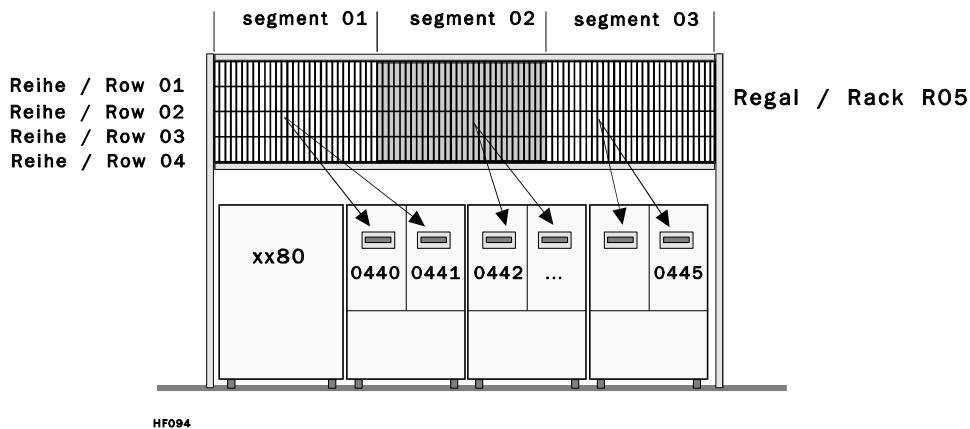
Recommendation: FPMA SLU as AUTOCMD in HACPARM1.
 FPMA PMK for periods with lower **MOUNT/KEEP** activity
 FPMA SMK for periods with higher **MOUNT/KEEP** activity

Example: Standard FPMA usage (with FPMAKEC=YES)

FPMA 1,2,SLU Permanent "clearing"
FPMA 1,2,SVI Scratch cartridge insert by **VI**
FPMA 1,2,SMK Scratch MOUNTs from FPMA

FPMA control

FPMA [s,r,]	[SLU PLU UNL SMK PMK]	Start LOAD/UNLOAD STOP UNLOAD all Start MOUNT/KEEP Stop
-------------	-------------------------------------	---



HACPARM1 definitions (example)

```

LDEV=R05,05,01-03,01-04,01-25,S=1,FPMA      (phys.coordinates)
FPMADef=05010101-05030425,S=1,PRIVAT       (subareas & groups)

UNIT=0440,01,1,1,FPMALOC=05010101-05010425 (unit assignments)
UNIT=0441,02,1,1,FPMALOC=05010101-05010425
UNIT=0442,03,1,1,FPMALOC=05020101-05020425
...

```

HF094.CDR
Fig. 2: Standard FPMA usage

This initiates scratch tape loading parallel to PMA loading/unloading.

Depending on the priority control, this causes only a negligible delay for **MOUNT/KEEP** tasks.

FPMA SLU can be set for periods with higher **MOUNT/KEEP** activity.

2.3.1.50 FREE - RELEASE TAPE UNITS

```
FREE cuu[,FORCE]
```

cuu = MVS unit address
FORCE = Execute independent of pending requests

FREE releases the tape unit reserved with the **ALLOC** command and deletes the corresponding subtask.

FORCE can be necessary when, for example, the subtask demands a tape during a label check (refer to the LCK function) and the tape is not in the Archive. The pending **OPEN** command can only be overcome by using **FORCE** for the unconditional removal of the subtask in question.



This command is only valid for tape units, and incorrect use can cause processing errors.

Example:

```
FREE 0481
```

2.3.1.51 FREEVOL - DETERMINE SCRATCH DATA MEDIA

FREEVOL	ADD	[,RESET][,TYPE=CAR]
FREEVOL	REP	[,RESET][,TYPE=CAR]
FREEVOL	REP	,TYPE=OPT

ADD	= Add new SCRATCH information; existing information is retained. Only valid for TYPE=CAR	(Default)
REP	= Replace existing SCRATCH information Only valid for TYPE=CAR and TYPE=OPT	
RESET	= Reset to the first SCRATCH data medium available Only valid for TYPE=CAR	
CAR	= Selection of SCRATCH tapes	(Default)
OPT	= Selection of optical disks with FREESPACE	

FREEVOL serves to inform HCC on new SCRATCH data media.

Working with tapes

HCC substitutes non-specific **MOUNT** requests for tape stations (SCRTCH, PRIVAT, ...) with the next available free cartridge marked as such in the Archive mirror.

A pointer to the next scratch tape is maintained. This pointer is not normally reset by a **FREEVOL** command which supports an even load across a Scratch pool.

RESET can reset the pointer. The table is recreated during a HCC start and the pointer is then set to the first available data medium.

The following message appears when the scratch warning level is underflowed:

HAC058A SCRATCH TAPE WARNING LEVEL ...

The following message appears when no more free cartridges are available in the Archive mirror:

HAC028A WARNING: NO MORE SCRATCH TAPES AVAILABLE FOR POOL pppppp

Pending non-specific **MOUNT** requests for the pool involved can no longer be processed.

Pending requests continue automatically after successful execution of a **FREEVOL** command.

A "**FREEVOL REP**" is automatically executed when the initialization parameter **AUTOFREEVOL=YES** is set and the scratch warning level is then reached and the last available scratch cartridge has been used.

Another method of automating this process is to issue the **FREEVOL** command through **ABBASEND** during the daily job run by the tape management system.

Working with optical disks

Non-specific requests for optical disks are serviced with the next available optical disk matching the requested Storage group.

Example 1:

Replace scratch tape information

```
FREEVOL REP
```

Default(s): - TYPE=CAR

```
HAC029I SCRATCH-TAPE ARCHIVE UPDATE IN PROGRESS
HAC148I NO.OF PASSED SCRATCH-TAPES BY TMS-EXIT = 000144
HAC149I NO.OF EJECTED SCRATCH-TAPES          = 000011
HAC150I NO.OF CLEAN-CARTRIDGES                 = 000000
HAC151I NO.OF UNKNOWN CARTRIDGES                = 000000
HAC030I TOTAL NO. OF AVAILABLE SCRATCH TAPES   = 000144
HAC249I ARCHIVE UPDATE FOR SCRATCH TAPES STARTED
HAC250I ARCHIVE UPDATE FOR SCRATCH TAPES SUCCESSFULLY COMPLETED
HAC215I SCRATCH-GROUPS:
HAC192I NOSCR=000133 001001-010000 (SCRTCH)
HAC192I NOSCR=000133 001001-010000 (PRIVAT)
HAC040I SCRATCH-TAPE UPDATE COMPLETED
```

Example 2:

Replace free space information for optical disks

```
FREEVOL REP,TAPE=OPT
```

```
HAC230I FREEVOL FOR OPT IN PROGRESS
HAC234I FREEVOL FOR OPT FOUND TOTAL VOLSERs : 00108
HAC234I FREEVOL FOR OPT FOUND A-VOLSERs    : 00102
HAC234I FREEVOL FOR OPT FOUND B-VOLSERs    : 00001
HAC234I FREEVOL FOR OPT FOUND UNKNOWN VOLSERs: 00005
HAC234I FREEVOL FOR OPT FOUND NON-OD VOLSERs : 00000
HAC234I FREEVOL FOR OPT FOUND EJECTED VOLSERs: 00000
HAC234I FREEVOL FOR OPT FOUND IN JB VOLSERs  : 00000
HAC249I ARCHIVE UPDATE FOR SCRATCH OPTS. STARTED
HAC284I FREEVOL PROCESSING FOR OPT COMPLETED SUCCESSFULLY
HAC250I ARCHIVE UPDATE FOR SCRATCH OPTS. SUCCESSFULLY COMPLETED
```

2.3.1.52 HELP - DISPLAY COMMAND OVERVIEW

```
HELP ALL  
HELP generic cmd
```

ALL = Displays all operator commands
generic cmd = HCC command as 1 - 8 byte generic character string

HELP displays available operator commands.

Example:

```
HELP D
```

Display all HCC commands starting with 'D':

```
HAC000I ======  
HAC036I DA          DISPLAY ACTIVE FUNCTIONS  
HAC036I DU          DISPLAY UNITS  
HAC036I DRQ         DISPLAY SEND QUEUE  
HAC036I DSC (NNN)   DISPLAY SCRATCH VOLSERs  
HAC036I DRE (N*** ) DISPLAY ROBOT ERROR TEXT  
HAC036I DHR         DISPLAY HACC-RELEASE  
HAC036I DRT         DISPLAY ROBTEST/LABELCHK/-INIT  
HAC036I DCSA        DISPLAY CSA-INFORMATIONS  
HAC036I ...          cont.  
HAC036I ======
```

2.3.1.53 HOLD - SUSPEND COMMUNICATION

```
HOLD [s,r]
```

s = AML System Number Default: s=1
r = Robot Number

HOLD serves to temporarily suspend communication.

HCC stops sending tasks to the AR or AMU. Any tasks arriving are held in the wait queue. AML executes commands issued before **HOLD**.

The **RELEASE** command resumes communication without information or status changes.

Example:

```
HOLD 1,2
```

2.3.1.54 INC - INVENTORY USING COORDINATES

```
INC [s,r,] coor1-coor2[,UPD][,SKIP=NO/YES]
INC [s,r,] COOR=coor..[,UPD][,SKIP=NO/YES]
INC [s,r,] STOP
```

s	= AML System	Default: s = 1
r	= Robot number	Default: r = 1
UPD	= Update the HCC Archive with recognized status and VOLSER	
COOR=coor	= Generic coordinate 1 - 8 bytes	
coor1-coor2	= Coordinate range	
SKIP	= Coordinate increment	
YES	= Process every 2 nd coordinate For cartridges, process only every 2 nd medium. For optical disks, generate 1 command for each medium.	
NO	= Process all coordinates For cartridges, generate 1 command for each medium. For optical disks, generate 2 commands for each medium.	(Default)
STOP	= Stop download	Default: end of specified range

INC triggers an inventory for the specified coordinate range.

The robot reads the barcode labels of all cartridges in slots and checks empty slots. The inventory results are compared with the AML Archive mirror and the HCC Archive mirror and the following messages appear when differences are detected:

```
HAC295I SYS s,ROB r: INVENTORY DIFFERENCES AT:
HAC296I ABBA: VOLSER=volser,STATUS=ss,COORD=coord
HAC297I HACC: VOLSER=volser,STATUS=ss,COORD=coord
```



It is recommended to start the HCC Message log to record possible inventory errors (refer to **LOGSTART**).

Example:

```
INC 2,1,01010101-01011510
```



Only 1 **INC** command may be active for a robot at any one time. Several simultaneous **INC** commands for one robot can lead to unexpected actions.

The **UPD** parameter restricts the changes to the HCC Archive mirror (the corresponding AML system is **not** updated). A **DL** command must be executed afterwards to update the AML Archive mirror (update the AMU or AR Archive).

2.3.1.55 INV - INVENTORY USING VOLSER

```
INV [s,]volser[,UPD]
```

s	= AML System	Default: s = 1
UPD	= Update the HCC Archive with recognized status and VOLSER	
volser	= Library VOLSER	

INV triggers an inventory for the specified volsers.

The robot reads the barcode labels of all cartridges in slots and checks empty slots. The inventory results are compared with the AML Archive mirror and the HCC Archive mirror. The following messages appear when differences are detected:

```
HAC295I SYS s,ROB r: INVENTORY DIFFERENCES AT:  
HAC296I ABBA: VOLSER=volser,STATUS=ss,COORD=coord  
HAC297I HACC: VOLSER=volser,STATUS=ss,COORD=coord
```



It is recommended to start the HCC Message log to record possible inventory errors (refer to **LOGSTART**.)

Examples:

```
INV 004711  
INV 2,001001,UPD
```

2.3.1.56 K - INDIVIDUAL KEEP

```
K cuu[,volser]  
K drv[,volser]
```

cuu = MVS unit address (3 or 4 digits)
drv = Drive name of the OAD¹
volser = VOLSER of the AML library (including the foreign mount area)

When the **K** command is entered, the HOST tasks the AML system to remove the specified cartridge from the desired unit (**KEEP**).



This command is only provided for exceptional circumstances and can lead to processing errors when used incorrectly.

¹ Operator Accessible Drive

KEEP command example:

Example 1:

```
K 0482,004711
```

KEEP from a tape unit.

Example 2:

```
K 0483
```

KEEP from a tape unit without specifying the volser number.

Example 3:

```
K 0481,*11003
```

KEEP from a tape unit to move a cartridge from unit 0481 to the foreign mount position 003.

Example 4:

```
K ODDRV5
```

KEEP from an OAD¹ without specifying a volser number.

¹ Operator Accessible Drive

2.3.1.57 LCK - DEFINE LABEL CHECK

```
LCK fromvol-tovol
```

fromvol = Start VOLSER
tovol = End VOLSER

LCK selects a cartridge number range for an automatic header check.

HCC includes an internal header check function as a service function. This function is useful when it is suspected that the barcode label of a tape no longer matches the VOL1 label.



This command is only provided for cartridges, and incorrect use can cause processing errors.

Example:

```
LCK 002506-002511
```

2.3.1.58 LJB - LOAD JUKEBOX

```
LJB NAME=jbname, VOL=volser
```

jbname = Jukebox name
volser = Volser of the side facing upwards

LJB serves to load the jukebox, for example, ODs are moved from the home coordinate to I/O-S.

The AMU does not maintain an Archive on the jukebox. The home coordinate is switched to status "In jukebox" after execution.

An optical disk (OD) moved to the jukebox is marked in the HCC Archive with status "OJ" (OD in jukebox).

An optical disk has the logical status "O".

Example:

```
LJB NAME=ODLIB1, VOL=04711A
```

2.3.1.59 LOGSTART - START HCC LOG

```
LOGSTART
```

LOGSTART activates the HCC log and records all transactions.

HCC supports an independent Message log. When several log files are defined (max. 4), HCC selects the log file least used.

The second oldest log (and so on) is used when the current log overflows.

No further support is provided to evaluate HCC logs. The ISPF BROWSE function is a simple method to view log files, including the current log whereby the last block has not yet been physically written due to the blocking method.

Refer to the Installation and Customization Guide, Section Message Log, for further information on backing up HCC Message log files.

The format of the HCC Message log record is described in the Appendix of the System Reference Guide.

Example:

```
LOGSTART
HAC032I SUBTASK ZHC06000 IS STARTING
HAC243I MESSAGE LOG IS ACTIVE, DSN=HACC.LOG3
```

2.3.1.60 LOGSTOP - STOP HCC LOG

```
LOGSTOP
```

LOGSTOP stops the log recording.

All data in the main memory buffer before the **LOGSTOP** command was entered are written to the log.

Example:

```
LOGSTOP
HAC031I MODULE ZHC06000 IS TERMINATING
HAC244I MESSAGE LOG ENDED, DSN=HACC.LOG4
```

2.3.1.61 LOGSW - SWITCH HCC LOG

```
LOGSW
```

LOGSW switches to the next HCC Message log file.

The current log is released (for example for evaluations) and the next, least used log selected.

Refer to the Installation and Customization Guide, Section Message Log, for further information on backing up HCC Message log files.

Example:

```
LOGSW
HAC316I MESSAGE LOG SWITCHED, OLD DSN=HACC.LOG3
HAC317I MESSAGE LOG SWITCHED, NEW DSN=HACC.LOG4
```

2.3.1.62 M - INDIVIDUAL MOUNT

```
M cuu,volser
M drv,volser
```

cuu = MVS unit address (3 or 4 digits)
drv = Drive name of the Operator Accessible Drives (OAD)
volser = VOLSER of the AML library
 (including foreign mount area and pool names)

The **M** command tasks the AML system to load the specified medium on the desired unit.



This command is only provided for exceptional circumstances and can lead to processing errors when used incorrectly.

MOUNT command examples:

Example 1:

```
M 0482,004711
```

Individual cartridge **MOUNT** on a tape unit.

Example 2:

```
M 0483,SCRTCH
```

MOUNT the next available SCRATCH tape from the SCRTCH pool. Refer to the **FREEVOL** command and **VOLGR** statement (INSTALLATION/CUSTOMIZATION Manual for HCC/MVS 3.0).

Example 3:

```
M 0481,*11003
```

Individual **MOUNT** from foreign mount slot 003.

Example 4:

```
M ODDRV5,OD001A
```

Individual **MOUNT** of an OD onto an OAD¹.

¹ Operator Accessible Drive

2.3.1.63 MAN - MANUAL OPERATION

```
MAN [s,r]
```

s = AML System
r = Robot Number

In manual mode, the AR or AMU do not pass the tasks on to the robot, but simulate "positive completion from robot" for all tasks instead. The communication between HCC and the Archive computer is maintained. The operator now receives the commands instead of the robot. Manual **MOUNT/KEEP** operation is normally only necessary when the AML robots are out of operation over a longer period of time.

During unplanned manual operation, status changes for slot coordinates are not updated in HCC or the AML Archive mirror, and therefore both archive mirrors can be wrong in this case. This can only be corrected by running an inventory afterwards, which can lead to very long run times.

The operator must have information on SCRATCH tapes during this period in order to perform non-specific **MOUNT** requests (a list for example).

It is important in manual mode that the operator maintains the task sequence as specified by HCC on the MVS console or on the TSO monitor under ABBASEND MONITOR. The message format is:

```
HAC036I MANUAL: cmd cuu,au,volser,jobname,sqnr,s/r
```

cmd = Command (**MO, KE, EJ**)
cuu = MVS unit address
au = AML unit
sqnr = Sequence number
s = AML System
r = Robot number

Manual cartridge insert can only be synchronized in the archive mirrors with the UPC, UPV command.

The **HOLD** command should be entered after clearance of the robot malfunction. After completion of pending **MANUAL** statements, automatic operation can then be resumed with the **AUTO** and **ROSA** commands without any further measures.

Example:

```
MAN 1,2
```



When the unit has a FPMA, all tasks to the FPMA must be completed or the FPMA stopped before the **MAN** command is entered.

2.3.1.64 MOVEH - MOVE TO HOME COORDINATE

```
MOVEH [s,] coor1,coor2
MOVEH [s,] vols1,coor2
```

s = AML System Default: s = 1
coor1 = Home coordinate
vols1 = VOLSER of the home coordinate
coor2 = Target coordinate

MOVEH generates a **MOVE** command to the home.

MOVE moves media from any position to another.

Two cases must be considered: movement to a new HOME coordinate (**MOVEH**) and movement to a TEMPORARY coordinate (**MOVET**). The HOME coordinate is the fixed Archive slot for the cartridge as defined during installation and, for example, automatically searched for during insert.

In hierarchical archives, movement to a new HOME coordinate is a step towards random archives, and therefore a **MOVE** to a new HOME position should only be used to clear an error situation.

Example:

```
MOVEH 01021015,02010101
MOVEH 2,004711,04010102
```

2.3.1.65 MOVET - MOVE TO TEMPORARY COORDINATE

```
MOVET [s,] coor1,coor2  
MOVET [s,] vols1,coor2
```

s = AML System Default: s = 1
coor1 = Home coordinate
vols1 = VOLSER of the home coordinate
coor2 = Target coordinate

MOVET generates a **MOVE** command to a temporary coordinate.

MOVE moves media from any position to another.

Two cases must be considered: movement to a new HOME coordinate (**MOVEH**) and movement to a TEMPORARY coordinate (**MOVET**). The HOME coordinate is the fixed Archive slot for the cartridge as defined during installation and, for example, automatically searched for during insert.

In hierarchical archives, movement to a new HOME coordinate is a step towards random archives, and therefore a **MOVE** to a new HOME position should only be used to clear an error situation

Moving a cartridge to a TEMPORARY address is done for performance reasons. When FPMA is installed on the system, HCC uses temporary **MOVE**s to or from this intermediate storage without losing the HOME position. The user can also use the **MOVET** command but, apart from the possibility for manual corrections, this has no further significance for the installation.



This command is not allowed for optical disks, and incorrect use can cause processing errors.

Example:

```
MOVET 01021014,02010101  
MOVET 2,004711,04010102
```

2.3.1.66 PCL - STOP AUTOMATIC TAPE UNIT CLEANING

PCL [s][,r]

s	= AML System number	Default = 1
r	= Robot number	Default = 1

PCL inhibits all cleaning processes for the specified system and robot.



This command is only allowed for tape units, and incorrect use can cause processing errors.

Example:

PCL 2,1

2.3.1.67 PLCK - STOP LABEL CHECK

PLCK cuu

cuu = MVS unit address (3 or 4 digits) reserved with an **ALLOC** command

PLCK stops an automatic header check prematurely.



This command is only allowed for tape units, and incorrect use can cause processing errors.

Example:

```
ALLOC 0483
LCK 000001-001000
SLCK 0483
PLCK 0483
```

2.3.1.68 PTLI - STOP TAPE LABEL INITIALIZATION

```
PTLI cuu
```

cuu = MVS unit address (3 or 4 digits) reserved with an **ALLOC** command

PLCK stops an active tape label initialization prematurely.



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Example:

```
PTLI 04B3
```

2.3.1.69 REFRESH - REFRESH MODULE

```
REFRESH    E  
REFRESH    G
```

E = All messages in English
G = All messages in German

This command switches HCC messages from English to German and vice versa.

Example:

```
REFRESH G
```

2.3.1.70 RELEASE - RESUME COMMUNICATION

RELEASE [s][,r]

s = AML System
r = Robot Number

Default: s=1
Default: s=1

RELEASE cancels a temporary communication hold to AR or AMU (refer to the **HOLD** command).



Communication is resumed to the AMU or AR and all defined robots when a robot is not specified in this command.

Example:

RELEASE 1,2

2.3.1.71 REP - REPEAT PENDING COMMAND

REP sqnr

sqnr = 4 digit command sequence number

REP repeats a send process from the wait queue. This function should only be used in error situations.

In the following example, a **MOUNT** could not be performed due to a barcode read error (error code N304 by sequence number 0111).

The following appears when the **DRQ** command is used:

```
HAC000I =====
HAC221I COMMANDS TRANSMITTED BUT NOT ACKNOWLEDGED
HAC036I 26/10.13.11 <A1H1A00,0111,MO , , ,1,1,D01,
HAC036I 26/10.13.11 N304 <0111,MO ,N,N304,1,1,D01,100555
HAC000I =====
HAC036I ID SQNR CMD S,R, AUU VOLSER CUU JOBNAME HH.MM FLAGS
HAC036I H1 0111 MO 1,1 D01 100555 092A OBI1WS1B 10.13 IS*
HAC036I H1 0112 MO 1,1 D02 100016 092B JK11079A 10.14 IS
HAC036I H1 0113 MO 1,1 D03 100017 092C JK11079A 10.14 IS
HAC036I H1 0114 KE 1,2 D10 10078A ODDRV5 ADVRR89X 10.15
HAC036I H1 0115 LJB 1,2 D11 10079A ODLIB1 OD1SZZ9 10.15
HAC000I =====
```

Example:

REP 0111

This input repeats the erroneous **MOUNT** (0111).



Task which have not yet been sent to AML (for example, sequence number 0114, KE) cannot be repeated with **REP**.

The **REP** commands should be entered between adequate pauses when several tasks must be repeated.

It is best to wait until the individual **REP** commands are acknowledged (positive or negative) before entering the next **REP** command.

2.3.1.72 ROPO - ROBOT IN POSITION

```
ROPO p[,s,r]
```

s	= AML System
r	= Robot Number
p	= Position (0,1,2,coord.)
	0 = Track start
	1 = Home position
	2 = Track end
	coord. = Valid 8 byte coordinate

The **ROPO** command moves a robot in an AML system to a specific position.

The robot then remains in the target position reached until the next task.

The **ROPO** command serves to test various functions and has no significance for the current application.

Examples:

```
ROPO 01020102,2,2
ROPO 1
```

2.3.1.73 ROSA - START ROBOT

ROSA [s,r]

s = AML System
r = Robot Number

The **ROSA** command starts a specific robot in an AML system.

When the robot is not switched off, an acknowledgment is issued immediately after the check by the IC program previously loaded.

When the robot is switched off, the **ROSA** command causes the AR or AMU to initiate an initial program load for the robot IC.

The following message appears when the robot is ready for operation:

HAC211I SYS s,ROB r: READY

The current barcode read status is returned with the positive acknowledgment for the **ROSA** command and it can be displayed with the **DA** command.

The AR or AMU sends an appropriate error message when the robot is not ready for operation. A **REP** command should be issued for the pending **ROSA** command after the robot malfunction has been cleared (refer to the **DRQ** command).

Example:

ROSA 1,2

2.3.1.74 ROSO - STOP ROBOT

ROSO [s,r]

s = AML System
r = Robot Number

ROSO stops a robot in an AML system.

ROSO causes the selected robot to return to its home position and to move the grab arm to the NULL position.

Example:

ROSO 1,2

2.3.1.75 SCL - START AUTOM. TAPE UNIT CLEANING

```
SCL [s][,r]
```

s = AML System Number
r = Robot Number

Default = 1
Default = 1

SCL releases all tape unit cleaning processes for the specified system and robot.



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Example:

```
SCL 2,1
```

2.3.1.76 SET MSG - SET MESSAGE SUPPRESSION

```
SET MSG,ON,NUM=nnn  
SET MSG,OFF,NUM=nnn
```

ON = Enables display of message Number nnn
OFF = Suppresses display of message Number nnn
Nnn = Message number

SET MSG can suppress unwanted messages.

Example:

```
SET MSG,OFF,NUM=401
```



This command completely suppresses a message (401 here). This message is then not displayed anywhere.

Exception: HACCLOG. Suppressed messages are recorded qualified with 'SUP' (SUPPRESSED).

2.3.1.77 SET PRTY - SET BASIC PRIORITY

	De
SET P[RTY] ,MO=nn[,ALL]	MOUNT command 35
SET P[RTY] ,KE=nn[,ALL]	KEEP command 30
SET P[RTY] ,VI=nn[,ALL]	VOLUME INSERT command 20
SET P[RTY] ,EJ=nn[,ALL]	EJECT command 20
SET P[RTY] ,MV=nn[,ALL]	MOVE command 10
SET P[RTY] ,SCH=nn	SEARCH command
SET P[RTY] ,sqnr=nn	Priority for existing sequence number
SET P[RTY] ,JOB=jobname,INCR=ii	Relative priority for MO/KE
SET P[RTY] ,J=jobname,I=ii	Relative priority for MO/KE for generic job names
SET P[RTY] ,J=jobname,I=ii[,G]	Delete job name from table
SET P[RTY] ,JOB=jobname,DEL	Delete generic job name from table
SET P[RTY] ,J=jobname,D	
SET P[RTY] ,JOB=jobname,DEL[,G]	
SET P[RTY] ,J=jobname,D[,G]	
SET P[RTY] ,LIST	Display priorities
SET P[RTY] ,L	

nn	= New priority value	(00-80)
ALL	= Set all pending request to the new priority	
Sqnr	= HCC sequence number	(refer to the DRQ command)
jobname	= Valid job name	(1 to 8 chars.)
ii	= Change the existing priority by ii	
G	= Generic	

The De column shows the default values for the corresponding **SET PRTY** command.

SET PRTY supports individual priority control of the AML system.

Normally, **MOUNT/KEEP** tasks should have execution preference over **EJECT/VOLUME INSERT**. **MOVE** commands are generated by HCC, for example, to load/unload the FPMA.

Changing the PRTY values can influence the sequence to match operational requirements during the life cycle of a HCC. The priority default value nn can be defined in the HACPARM1 member and can deviate from the HCC default values.



SET P,MO=nn also changes the priority value for the **LJB**, **UJB** and **FLIP** commands.

HCC priority control:

The priority of the first pending task within the groups, starting at the defined basic priority, is incremented by a specific value during each cycle of the dispatching algorithm . This has the effect that, for example, **EJECT** requests pending in an **EJECT** wait queue are not completely pushed back during high **MO/KE** activities in the AML system.

Priority values 81-99 are used internally by HCC, for example for priority insert of cartridges with pending **MOUNT** request.



JOB priority modifications are lost after HCC termination. Fixed JOB priorities should therefore be defined in the HACPARM1 member (refer to the INSTALLATION/CUSTOMIZATION GUIDE, HACPARM1, PRTY statement).

The current respective priority can be displayed with the **DRQ P** or **SET P,L** commands.

Examples:

```
SET PRTY,VI=22,ALL
SET P,EJ=18
SET P,J=HSM,I=+10
SET P,J=JOBA,I=+15,G
SET P,J=TESTJOB,I=-10
SET P,J=TEST123,DEL
SET P,L
```

(VI before EJ)

(Job HSM has priority)

(Jobs JOBA* have priority)

(TESTJOB with lower priority)

(Remove job from priority list)

(Display current priorities)

Display:

```
HAC036I =====
HAC036I CMD PRTY:MO=35,KE=30,EJ=18,VI=22,MV=10,SCH=25
HAC036I =====
HAC036I JOBNAMES AND RELATIVE MO/KE-PRIORITIES
HAC036I W0273001 7 TESTJOB 10-
HAC036I OBS04711 25 JOB11111 5
HAC036I HSM 10 JOB00001 1
HAC036I JOB00002 2 JOB00003 3
HAC036I JOBA* 15
HAC036I =====
```

2.3.1.78 SET SSI - SSI FUNCTIONS

```
SET SSI,ENA  
DISA
```

- ENA = Start the SSI functions
DISA = Stop the SSI functions

SET SSI starts or stops the SSI functions. HCC deactivates the SSI functions at termination or when certain problems occur.

SET SSI, ENA can be used to restart SSI when the problem was only temporary.

Example 1:

```
SET SSI,ENA
```

Message:

```
HAC440I WTOEXIT function enabled by SET,ENA command
```

Example 2:

```
SET SSI,DISA
```

Message:

```
HAC440I WTOEXIT function disabled by SET,DISA command
```

2.3.1.79 SET SVCDUMP - SVCDUMP SUPPORT

```
SET SVCDUMP,ENA  
SET SVCDUMP,DISA
```

- | | |
|------|---|
| ENA | = An SVC dump should be created when an error occurs. |
| DISA | = No SVC dump should be created when an error occurs. |

SET SVCDUMP controls whether an SVC dump should be created when errors occur. The alternative is to use a JCL statement to create a SYSUDUMP/SYSDUMP.

Example:

```
SET SVCDUMP,ENA
```

2.3.1.80 SETUP - CORRECT THE UNIT LOG

```
SETUP cuu,CLEAR[,ALL]
  cuu,volser,jobname
  drv,CLEAR[,ALL]
  drv,volser,jobname
```

cuu = MVS unit address (3 or 4 digits)
drv = Name of the OAD (Operator Accessible Drive)
ALL = Optional operand
CLEAR = Mandatory operand
volser = Valid VOLSER
jobname = Job name

SETUP serves to clear error situations. The ALL operand also deletes all pending mounts.

The interrelation of the MVS, application job, HCC, AR or AMU and robot components can lead to situations where automatic recovery is no longer possible.

The AML control retrieves information from the UNIT log which can be corrected with the **SETUP** command.



The **DU** command can be used to display the Unit log information.

Example:

```
SETUP 0487,CLEAR
```

A tape was manually removed from tape station 0487 after a robot malfunction. The next mount for this unit is already in the wait queue (refer to **DRQ**) and is not sent by HCC because the AR or AMU has not yet acknowledged the previous **KEEP**.

SETUP deletes the pending **KEEP** from the UNIT log and the following mount is sent.

2.3.1.81 SETUP ACC - CHANGE ROBOT ACCESS TO ARCHIVE UNIT

```
SETUP ACC,ldv,R=n[,n][,s=n]
```

ldv = Archive unit (LDEV in HACCPARM)

R = Robot

S = AML System (Default=1)

SETUP changes the robot access to the Archive unit. The change can be checked afterwards with the **DC** command.



This change is not stored. The assignments in HACCPARM are effective again after a HCC start.

Example:

```
SETUP ACC,TO1,R=1
SETUP ACC,TO1,R=1,S=2
SETUP ACC,I01,R=2
```

2.3.1.82 SETUP AR - CORRECT UNIT AR/AMU

```
SETUP AR,cuu/drve/libname,CLEAR  
SETUP AR,cuu/drve/libname,VOLSER
```

MVS unit identification:

- cuu = MVS unit address for cartridge unit
- drv = OAD drive - name for optical disk
- libname = Library name for optical disk

CLEAR = Mandatory operand to clear unit information (AR/AMU)
VOLSER = Valid VOLSER to update unit information (AR/AMU)

SETUP serves to clear an error situation.

This command can be used to clear error N202 issued by the AR/AMU when the unit is definitely not occupied, for example, when a medium was manually removed from the unit. The message acknowledged negatively with N202 should then be sent to the AR/AMU again with the **REP** command.

Examples:

```
SETUP AR,0487,CLEAR
```

```
SETUP AR,ODDRV5,OD001B
```

```
SETUP AR,ODLIB1,CLEAR
```

AR/AMU = Archive computer (ABBA/1) or Archive Management Unit (AML/2, AML/E, AML/J)

2.3.1.83 SETUP CL - ASSIGN CLEANING TAPE

```
SETUP CL[ ,s,r]
```

s = AML System Number
r = Robot Number

SETUP CL assigns a new cleaning cartridge. This command is only allowed for tape units, and erroneous processing can occur when other units are used.

Refer to the Operator Guide for HCC/MVS 3.0, Section HCC Access to next cleaning cartridge, for further information.

Examples:

```
SETUP CL
```

2.3.1.84 SLCK - START LABEL CHECK

```
SLCK cuu
```

cuu = An MVS unit address (3 or 4 digits) reserved with an **ALLOC** command.

SLCK starts an automatic header check for cartridges.

At least one tape unit must first be reserved with an **ALLOC** command. After the number range has been determined with **LCK**, **SLCK** can be used to start the automatic header check and stopped prematurely with **PLCK** when necessary.

Up to 4 label checks can run parallel.

The following message appears when differences are detected between the barcode label and the VOL1 header:

```
HAC163A LABEL DISCREPANCIES IN BARCODE/HEADER=volser/volser
```

It is recommended to start the HCC Message log to record errors.

The **LCK**, **PLCK** and **ALLOC** commands are related to the **SLCK** command.



This command is only allowed for tape units, and incorrect use can cause processing errors.

Example:

```
SLCK 04B0
```

2.3.1.85 SSD - SINGLE SEND MESSAGES TO ROBOT

```
SSD [s,r]
```

s = AML System Number
r = Robot Number

This command activates the method for sending messages to the robot. HCC sends one message to the robot in this case, for example **MOUNT/KEEP**. The next message is first sent after positive acknowledgment from the robot. This is the default communication method for HCC. Refer to the **DSD** command for double sends.

2.3.1.86 START LABEL - START OPTICAL DISK LABEL PROCESS

```
S[TART] LABEL,VOL=volser,PARM=p
```

volser = A-volser of the medium to be labeled
p = Label type to be started. The following values are possible:
W for F OAM,LABEL, **3995WORM** (Default)
R for F OAM,LABEL, **3995REWR**
A for F OAM,LABEL, **3995-133**

START starts a labeling process for an optical disk on an IBM 3995-13x. An **F OAM,LABEL,labtyp** command is issued.

Preconditions:

- the A side of the medium **must** be entered as volser,
- the volser **must** be assigned to a Storage group,
- automatic message handling for OAM messages must be active.



This command is only allowed for optical disks (OD), and incorrect use can cause processing errors.

Example:

```
START LABEL VOL=OD002A,PARM=A
```



Refer also to the **CANCEL LABEL** and **DISPLAY LABEL** commands

2.3.1.87 STLI - START TAPE LABEL INITIALIZATION

STLI cuu

cuu = MVS unit address (3 or 4 digits) reserved with an ALLOC command

STLI starts an automatic tape initialization.

At least one tape unit must first be reserved with an **ALLOC** command. After the number range has been determined with **TLI**, **STLI** can be used to start the automatic initialization and stopped prematurely with **PTLI** when necessary.

A password is sometimes necessary for the **STLI** command (depending on the HACPARM parameter TLIPW).

It must be ensured that the MVS function MONITOR DSNAME is active before issuing the **SRT** command. This is because the full DSNAME only appears in the MOUNT message when DSNAME monitoring is active, otherwise only the MOUNT message appears:

An **STLI** command can be issued for each assigned tape station, and up to 4 tape label initialization functions can run parallel, however only for 1 range (TLI fromvol-tovol).



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Example:

```
ALLOC 0483
TLI 001000-001009
MN DSNAME
TLIPW OBIS
STLI 0483
```

2.3.1.88 SWITCH - SWITCH COMMUNICATION PATH (LU 6.2)

SWITCH COM,HID=Ax

Ax = Name of the AMU
x = 1 or 2

SWITCH switches the communication from one path to another. The name of the AMU for which the communication is to be switched must be entered as a parameter.

Example:

SWITCH COM,HID=A1

The communication is switched even when the other path does not exist or no conversation is open to the other path.

2.3.1.89 SWITCH PRIMARY - DYNAMIC SWITCHING

```
SWI[TCH] PRIMARY,TARGET=Sx[,FORCE]
```

Sx = Name of the secondary HCC to takeover the primary function.
FORCE = The switch must be made.

SWITCH switches the **PRIMARY** function from the current primary HCC to an active secondary HCC.

When the command is issued on the current primary, the shared Dasd connection to the new primary HCC **must** be active. The command will be rejected otherwise.

A connection to the current primary is not necessary when the command is issued on the secondary selected to become the primary. The **FORCE** parameter is needed in such cases to force an unconditional switch.

FORCE is ignored when the command is issued on the current primary HCC.

Example 1: The current secondary HCC S1 should become the primary HCC. The connection between both is active. The following command is issued on the current primary:

```
SWI PRIMARY,TARGET=S1
```

Reaction on primary:

```
HAC586I HACC will be terminated due to a "SWITCH PRIMARY" request  
HAC587I HACC will be restarted immediately
```

Reaction on secondary:

```
HAC585I SWITCH PRIMARY request received from *HACC0*  
HAC586I HACC will be terminated due to a "SWITCH PRIMARY" request  
HAC587I HACC will be restarted immediately
```

Example 2: The current secondary HCC S1 should become the primary HCC. The connection between both is not active. The following command is issued on the current secondary S1:

```
SWI PRIMARY,TARGET=S1
```

Reaction on primary:

```
HAC559I SWITCH ERROR: SECONDARY HACC Sx IS NOT DEFINED OR NOT ACTIVE
```

Example 3: The current secondary HCC S1 should become the primary HCC. The connection between both is not active. The following command is issued on the current secondary S1:

```
SWI PRIMARY,TARGET=S1
```

Reaction on secondary S1:

```
HAC563I SWITCH ERROR: PRIMARY HACC IS NOT ACTIVE,SPECIFY FORCE
```

Example 4: The current secondary HCC S1 should become the primary HCC. The connection between both is not active. The following command is issued on the current secondary S2:

```
SWI PRIMARY,TARGET=S1
```

Reaction on secondary S2:

```
HAC560I SWITCH ERROR:SWITCH PRIMARY,TARGET=S1 MUST NOT BE ISSUED ON S2
```

2.3.1.90 SYSLOG - SYSLOG CONTROL

```
SYSLOG ON  
SYSLOG OFF  
SYSLOG ONLY
```

- | | |
|------|---|
| ON | = Writes all HCC-AML communication activities to the MVS SYSLOG |
| OFF | = Suppresses entries in the MVS SYSLOG |
| ONLY | = Only writes to the MVS SYSLOG when the HACC LOG is not active. (Default: SYSLOG ONLY) |

SYSLOG controls log record writing to the MVS SYSLOG.

SYSLOG can be used to record HCC-AML communication commands in the standard SYSTEMLOG or to ignore them as required.

It is recommended to define the required activities under AUTOCMD in the HACPARM1 member.

Example:

```
SYSLOG ON
```

2.3.1.91 TLI - DEFINE TAPE LABEL INIT

```
TLI fromvol-tovol
```

fromvol = Start VOLSER
tovol = End VOLSER

HCC includes a service function for tape header initialization.
The standard tape header records VOL1, HDR1, HDR2, TAPE MARK are created.

TLI serves to select a range of cartridges for automatic initialization.

Example:

```
TLI 000001-001000
```



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Also refer to **ALLOC**, **STLI**, **PTLI**, **TLIPW**.



The range that can be specified with **TLI** must be unique within a HCC complex.

Multiple inputs overwrite previous ranges.

2.3.1.92 TLIPW - PASSWORD FOR TAPE LABEL INIT

TLIPW password

password = Installation-dependent password

TLIPW enables label initialization (refer to **STLI**).

The password can be defined during installation.
(Refer to **TLIPW** in INSTALLATION/CUSTOMIZATION GUIDE)



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Example:

TLIPW OBIS

2.3.1.93 TROFF - TRACE OFF

TROFF

TROFF terminates an internal trace.

The internal trace function should normally be inactive and only activated to document errors.

TRON outputs additional messages at significant points within the HCC logic.

Example:

TROFF

2.3.1.94 TRON - TRACE ON

```
TRON
TRON ALL
TRON MOD
```

TRON Starts an internal trace.

TRON ALL Records additional conversation information at the EXCP level between HCC-AML (CCW, CSW, DATA transfer, SENSE etc.).

TRON MOD Creates a module trace with display of registers 0, 1, 14, 15.

All conversation protocols from SSI exit as well as HCC-AML are output on the console and written to the system log using routing code 11. An existing ABBASEND MONITOR session under TSO which executed the **SOP** command also receives all the additional information.

The trace serves to search for errors during HCC malfunctions. Additional messages are output at significant points within the HCC logic.

Example:

```
TRON ALL
```

2.3.1.95 UCBO - CONTROL TAPE MOUNT USING UCB STATUS

UCBO YES | NO

YES

= **MOUNT** is executed after the UCB signals a pending **OPEN**.

NO

= **MOUNT** is executed immediately after receipt of the **MOUNT** message
(Default)

MOUNT messages are occasionally created without the requested tape actually being read or written. This can be caused by, for example, unnecessary **DD** statements or job crashes.

UCBO YES can be used to avoid unnecessary **MOUNT** requests. In this case, HCC first sends the **MOUNT** to AML when an actual **OPEN** has been made for the tape.



This command is only allowed within JES2 environments. Problems can occur with MVS SWAP commands as from MVS/ESA SP.3.

Some products work with **DYNALLOC** (for example, DF/HSM, DF/DSS). The **MOUNT** is not executed when the mount request is only triggered by a **DYNALLOC** (without **OPEN**).

Recommendation: **UCBO NO** should be used. Unnecessary **MOUNTs** should be minimized through JCL optimization („DEFER) and organizational measures.

Example:

UCBO NO

2.3.1.96 UJB - UNLOAD JUKEBOX

```
UJB NAME=jbname, VOL=volser
```

jbname = Jukebox name up to 8 characters
volser = Volser of the side facing upwards

UJB serves to unload the jukebox, for example, ODs are removed from the I/O-S¹ and returned to their home coordinate.

The volser sent identifies whether the A or B side of the OD is face upwards I/O-S.

Vision-System cannot read the barcode of the disk during removal because the OD is removed horizontally.

Example:

```
UJB NAME=ODLIB1, VOL=04711A
```

¹ Input-Output Station

2.3.1.97 ULC - UPLOAD ARCHIVE USING COORDINATES

```
ULC [s,] coor1-coor2 [,SKIP=NO/YES]
ULC [s,] COOR=coor.. [,SKIP=NO/YES]
ULC [s,] STOP
```

s	= AML System	Default: s = 1
COOR=coor	= Generic coordinate 1 - 8 bytes	
coor1-coor2	= Coordinate range	
SKIP	= Coordinate increment	
YES	= Process every 2 nd coordinate For cartridges, process only every 2 nd medium. For optical disks, generate 1 command for each medium.	
NO	= Process all coordinates For cartridges, generate 1 command for each medium. For optical disks, generate 2 commands for each medium.	(Default)
STOP	= Stop download	Default: end of specified range

ULC transfers data such as volser, status and coordinates (but **not** the AML system in question) of the AR or AMU Archive mirror to the HCC Archive mirror.

The run time must be considered when transferring the complete Archive or large sections of the Archive.

Example:

```
ULC COOR=03
```

This transfers all the coordinates of tower 03 to the HCC Archive mirror.

```
HAC000I =====
HAC036I COMMAND=ULC SQNR=2506
HAC036I ===== VOLSER SYS HOMEKOOR TEMPCOOR STATUS
HAC036I ABBA: FREI00 1 03010101 0,L,-
HAC036I HACC: 001001 1 03010101 M,B,N
HAC036I DIFF: *****
HAC000I =====
```

Volume status:

Position 1: 0 = Special status (AR/AMU)
 C = Cleaning cartridge
 M = Data cartridge
 O = Optical disk

Position 2: B = In Archive
 E = Ejected
 J = Optical disk in the jukebox (phys. status = O)
 L = Initial (phys. status = 0)
 M = Loaded
 O = 'Other side' of the optical disk loaded (phys. status = O)

Position 3: N = Marked as non-scratch (catalogued)
 S = Marked as scratch

Position 4: I = Volume in send wait queue

Position 5: D = Volume in use (for example, loaded on unit)

2.3.1.98 ULV - UPLOAD ARCHIVE USING VOLSER

```
ULV [s,] fromvol-tovol  
ULV [s,] volser  
ULV [s,] STOP
```

s	= AML System	Default: s = 1
volser	= VOLSER 6 bytes	
fromvol-tovol	= VOLSER range	
STOP	= Stop upload	Default: end of specified range

ULV transfers data such as volser, status and coordinates (but **not** the AML system in question) of the AR or AMU Archive mirror to the HCC Archive mirror..

The run time must be considered when transferring the complete Archive or large sections of the Archive.

Example:

ULV 010001-011000

```

HAC000I =====
HAC036I COMMAND=ULV SQNR=2606
HAC036I ===== VOLSER SYS HOMECOOR TEMPCOOR STATUS
HAC036I ABBA: 001001 1 01010101      M,E,-
HAC036I HACC: 001001 1 01010101      M,B,N
HAC036I DIFF:                                *
HAC000I =====

```

Volume status:

Position 1: 0 = Special status (AR/AMU)

 C = Cleaning cartridge

 M = Data cartridge

 O = Optical disk

Position 2: B = In Archive

 E = Ejected

 J = Optical disk in the jukebox (phys. status = O)

 L = Initial (phys. status = 0)

 M = Loaded

 O = 'Other side' of the optical disk loaded (phys. status = O)

Position 3: N = Marked as non-scratch (catalogued)

 S = Marked as scratch

Position 4: I = Volume in send wait queue

Position 5: D = Volume in use (for example, loaded on unit)

2.3.1.99 UNLOAD - UNLOAD UNIT

```
U[NLOAD] cuu
```

cuu = MVS unit address of the 3480/3490 unit (3 or 4 digits)

UNLOAD serves to physically unload the cartridge unit (3480/3490). **No** MVS Unload command is generated (U cuu). The robot is triggered to activate the Unload button.



This command is only allowed for tape units (3480/3490), and incorrect use can cause processing errors.

Example:

```
U 0441
```

2.3.1.100 UPC - UPDATE ARCHIVE USING COORDINATES

```
UPC [s,]coord,lp
```

s = AML System Default: s=1

coord = 8 byte coordinate

l = Logical status

M = Normal tape

C = Cleaning tape

O = Optical disk

p = Physical status

B = Tape in library

E = Tape ejected

M = Medium loaded (on OAD for optical disk)

O = Other side loaded (only when 1st position = 'O')

J = Optical disk in jukebox

UPC serves to correct the volser status; both Archive mirrors (HCC and AML) are corrected.

UPC can be used to adjust the Archive mirror when inventory errors are reported, as well to eject cartridges in manual operation.

Example:

```
UPC 01020102,ME
```



Status corrections for optical disks from 'OJ' to a different status or vice versa are not allowed (refer to the **UPV** command)

2.3.1.101 UPV - UPDATE ARCHIVE USING VOLSER

UPV volser,lp [NAME=lib]

volser = VOLSER from the library

l = Logical status
M= Normal tape
C= Cleaning tape
O= Optical diskp = Physical status
B= Tape in library
E= Tape ejected
M= Medium loaded (on OAD for optical disk)
O= Other side loaded (only when 1st position = 'O')
J= Optical disk in jukebox

NAME = IOS name, only required for status OJ

UPV serves to correct the volser status; both Archive mirrors (HCC and AML) are corrected.**UPV** can be used to adjust the Archive mirror when inventory errors are reported, as well to eject cartridges in manual operation.

Example:

UPV 000001,CE

Cleaning cartridge 000001 is marked as ejected.

2.3.1.102 VARY - CONTROL COMMUNICATION

```
VARY ACT,HID=Hx|Ax|Sx[ ,TYPE=PRI|ALT][ ,PATH=APPC|DASD]
VARY IN ACT,HID=Hx|Ax|Sx[ ,TYPE=PRI|ALT][ ,PATH=APPC|DASD],I
```

ACT	= Activate connections
INACT	= Deactivate connections
HID=Hx	= HACC0 ID of the partner primary HCC (currently only when PATH=APPC) x = 1-9 and A-Z
HID=Ax	= AMU ID of the partner-AMU (currently only when PATH=APPC) x = 1-9 and A-Z
HID=Sx	= Partner secondary-HCC (only when PATH=DASD) x = 1-9 and A-F
PRI	= Connection to primary AR/AMU (default)
ALT	= Connection to alternative AR/AMU (only when PATH=APPC and Ax)
APPC	= Start/terminate a LU 6.2 connection (default)
DASD	= Start/terminate an EXCLOG connection
I	= The APPC main task (HAC23054) is terminated immediately

VARY ACT, HID=Hx/Ax establishes a single conversation to Hx/Ax. **VARY INACT, HID=Hx/Ax** terminates this conversation again.

VARY INACT, APPC terminates all active conversations as well as the APPC subtask. **VARY ACT, APPC** starts the APPC subtask and attempts to establish conversations with all possible partners.

VARY INACT,HID=Hx/Ax,I immediately terminates the conversation pair and the corresponding subtasks in the following manner:

Terminate the RECEIVE conversation:
APPCCMD CONTROL=REJECT,QUALIFY=CONV,...

Terminate the SEND conversation:
APPCCMD CONTROL=DEALLOC,QUALIFY=FLUSH,...

Terminate the SUBTASKs with DETACH.

Example:

```
VARY ACT,PATH=APPC
```

2.3.1.103 VI - START INSERT

```
VI
VI Inn
VI Inn,s
```

In	= Insert area nn	Default: nn=01
s	= AML System	Default: s=1

VI starts inserts. The data media can be positioned to the corresponding insert racks *Inn* in any sequence (random).

VI tasks AML to identify the medium with the Vision system / barcode reader. Data media with home coordinates are returned to this position.

HCC assigns a home position in the dynamic area to virtual cartridges without home positions.



Optical disks (OD) cannot be managed in the dynamic area.

Each insert is acknowledged with the message:

```
HAC144I CARTRIDGE volser INSERTED  
or  
HAC144I OPTICAL DISK volser A INSERTED
```



Media with illegible barcodes (BLANK-VOLSER) are moved to the Problem box.

Example:

```
VI  
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE
```

Start insert; default unit I01, system 1

```
VI I93,2  
HAC399I INSERT DEVICE I93 SYSTEM 2 ACTIVE
```

Start insert; default unit I93, system 2

```
DA  
HAC000I =====  
...  
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE  
HAC399I INSERT DEVICE I93 SYSTEM 2 ACTIVE  
...  
HAC000I =====
```

The **DA** command can be used to check the insert status.

2.3.1.104 VI DIR - START INSERT, DIRECT

```
VI DIR
VI Inn,DIR
VI Inn,s,DIR
```

Inn	= Insert area nn	Default: nn=01
s	= AML System	Default: s=1

VI DIR starts insert under robot control. The cartridges can be positioned to the corresponding insert racks *Inn* in any sequence (random). The **VI** statement tasks AML to return the cartridges to the appropriate archive home position.

Virtual cartridges cannot be processed.

The cartridge is then identified in all cases by the barcode reader independent of the barcode read status set.



The **VI DIR** command is only applicable in ABBA/1 systems. Optical disks (OD) cannot be managed in the dynamic area.

Each insert is acknowledged by the message:

```
HAC144I CATRIDGE volser INSERTED
```



Cartridges with illegible barcode (BLANK-VOLSER) are positioned in the problem box (cartridge pocket).

Example:

```
VI DIR  
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE
```

Start insert; default unit I01, system 1

```
VI I02,DIR  
HAC399I INSERT DEVICE I02 SYSTEM 1 ACTIVE
```

Start insert; default unit I02, system 1

```
DA  
HAC000I =====  
...  
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE  
HAC399I INSERT DEVICE I02 SYSTEM 1 ACTIVE  
...  
HAC000I =====
```

The **DA** command can be used to check the insert status.

2.3.1.105 VI HOLD - SUSPEND INSERT

```
VI HOLD
VI Inn,HOLD
VI Inn,s,HOLD
```

Inn	= Insert area nn	Default: nn=01
s	= AML System	Default: s=1

VI HOLD suspends inserts.

This command prevents **further** search commands (**SCH**) and insert commands (**VICC**) being sent to the AR or AMU.

ABBA/1 systems send error message N501 to HCC when the door to the I/O unit is opened. This error message is handled in the same manner as a **HOLD** command.

Example:

```
VI HOLD  
HAC395I INSERT DEVICE I01 SYSTEM 1 HELD BY COMMAND
```

Suspend insert; default unit I01, system 1

```
VI I12,HOLD  
HAC395I INSERT DEVICE I12 SYSTEM 1 HELD BY COMMAND
```

Suspend insert; default unit I12, system 1

```
VI I93,2,HOLD  
HAC395I INSERT DEVICE I93 SYSTEM 2 HELD BY COMMAND
```

Suspend insert; default unit I93, system 2.

```
DA  
HAC000I =====  
...  
HAC395I INSERT DEVICE I01 SYSTEM 1 HELD BY COMMAND  
HAC395I INSERT DEVICE I12 SYSTEM 1 HELD BY COMMAND  
HAC391I INSERT DEVICE I13 SYSTEM 2 DOOR OPEN  
HAC395I INSERT DEVICE I93 SYSTEM 2 HELD BY COMMAND  
...  
HAC000I =====
```

The **DA** command can be used to check the insert status.

2.3.1.106 VI RELEASE - RESUME INSERT

```
VI RELEASE
VI Inn,RELEASE
VI Inn,s,RELEASE
```

Inn	= Insert area nn	Default: nn=01
s	= AML System	Default: s=1

VI RELEASE continues suspended inserts.

This command allows further search commands (**SCH**) and insert commands (**VICC**) to be sent to the AR or AMU.

Example:

```
VI RELEASE
HAC393I INSERT DEVICE I01 SYSTEM 1 RELEASE ACCEPTED
```

Resume insert; default unit I01, system 1.

```
VI I12,RELEASE
HAC393I INSERT DEVICE I12 SYSTEM 1 RELEASE ACCEPTED
```

Resume insert; default unit I12, system 1

```
VI I93,2,RELEASE
HAC393I INSERT DEVICE I93 SYSTEM 2 RELEASE ACCEPTED
```

Resume insert; default unit I93, system 2

```
DA
HAC000I =====
...
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE
HAC399I INSERT DEVICE I12 SYSTEM 1 ACTIVE
HAC399I INSERT DEVICE I93 SYSTEM 2 ACTIVE
...
HAC000I =====
```

The **DA** command can be used to check the insert status.

2.3.1.107 VI STOP - STOP INSERT

```
VI STOP
VI Inn,STOP
VI Inn,s,STOP
```

Inn	= Insert area nn	Default: nn=01
s	= AML System	Default: s=1

VI STOP terminates insert.

This command prevents **further** search commands (**SCH**) being sent to the AR or AMU.

Already generated insert commands (**VICC**) are neither stopped nor deleted from the send wait queue (**DRQ ALL**).

Example:

```
VI STOP  
HAC390I INSERT DEVICE I01 SYSTEM 1 STOPPED BY COMMAND
```

Stop insert; default unit I01, system 1

```
VI I12,STOP  
HAC390I INSERT DEVICE I12 SYSTEM 1 STOPPED BY COMMAND
```

Stop insert; default unit I12, system 1

```
VI I93,2,STOP  
HAC390I INSERT DEVICE I93 SYSTEM 2 STOPPED BY COMMAND
```

Stop insert; default unit I93, system 2

```
DA  
HAC000I =====  
...  
...  
HAC000I =====
```

Status control with the **DA** command does not show **any** active inserts.

2.3.1.108 VI TC - START INSERT WITH TARGET COORDINATES

```

VI  TC=nnssrrpp[ ,CONT[ INUE]=A[ SCENDING ] ]
                =D[ ESCENDING ] ]

VI  Inn,TC=nnssrrpp[ ,CONT[ INUE]=A[ SCENDING ] ]
                =D[ ESCENDING ] ]

VI  Inn,s,TC=nnssrrpp[ ,CONT[ INUE]=A[ SCENDING ] ]
                =D[ ESCENDING ] ]

```

Inn = Insert area nn Default: nn=01
s = AML System Default: s=1

nn	= Tower/rack number	or **
ss	= Segment number	or **
rr	= Row number	or **
pp	= Position number	or **

CONT[INUE]=A[SCENDING] When insert started with TC= does not find any more free slots in this TC= area, an attempt is made to resume insert in the same area on the next higher tower/rack.

CONT[INUE]=D[ESCENDING] When insert started with TC= does not find any more free slots in this TC= area, an attempt is made to resume insert in the same area on the next lower tower/rack.

VI TC starts inserts with target coordinates. This command serves to insert virtual cartridges in defined slots in the dynamic area.

Using this command supports an even load spread in dynamic archives with several towers.



This command is only allowed for cartridges, and incorrect use can cause processing errors.

Example:

```
VI TC=02****01
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE
```

Start insert; default unit I01, system 1

Target coordinate: tower 02, all segments, all rows, position 01.

```
VI I12,TC=01**01
HAC399I INSERT DEVICE I12 SYSTEM 1 ACTIVE
```

Start insert; default unit I12, system 1

Target coordinate: tower 01, all segments, row 01, all positions.

```
VI I93,2,TC=03
HAC399I INSERT DEVICE I93 SYSTEM 2 ACTIVE
```

Start insert; default unit I93, system 2

Target coordinate: tower 03, all segments, all rows, all positions.

```
DA
HAC000I =====
...
HAC399I INSERT DEVICE I01 SYSTEM 1 ACTIVE
HAC399I INSERT DEVICE I12 SYSTEM 1 ACTIVE
HAC399I INSERT DEVICE I93 SYSTEM 2 ACTIVE
...
HAC000I =====
```

The **DA** command can be used to check the insert status.

2.3.1.109 WTL - COMMENTS IN THE HCC LOG

```
WTL any text
```

WTL writes any optional text to the HACCLOG.

Example:

```
WTL Start daily ejection run
```



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