adic

OPERATOR GUIDE

HACC/VM 1.4.1

HOST
AML
COMMUNICATION
CONTROL

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OPERATOR GUIDE FOR HACC/VM 1.4.1

IMPRINT

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LITERATURE

Manual	Order number German	Order number English	Reference
System Reference Guide	HVM-1.4.1-01D-01	-	G
Operator Guide	HVM-1.4.1-02D-01	-	G
Installation and Customization	HVM-1.4.1-03D-01	-	G
Message Guide	HVM-1.4.1-04D-01	-	G

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CONTENTS

USER INTERFACE

The HACC/VM system is normally served and monitored by a HACC/VM Monitor machine. The following Figure shows an overview of the components involved in controlling the robot systems:

Figure 1: System components

Calling the HACMON program, stored on the HACC/VM Product minidisk enables the HACC/VM user interface.

The HACC/VM Monitor standard screen is split into the following areas:

- Header segment
Status information and message line

- Scroll area
All HACC/VM messages for the monitor machine (according to the definitions of the HACC/VM parameter files S01$ROCC and S02$OUSR)

- Command line
Input area for commands

- Trailer segment
Explanation of PF-key allocation

- Drive display (optional)
Status information on the robot drives serviced by HACC/VM. Selectable per PF-key. The scroll area is reduced depending on the number of drives displayed. (Section *Drive display on the HACC/VM Monitor screen* from Page 10 contains a detailed description of the drive display).

```
HACC/VM V131L05  - Monitor for HACSVR running on OBISAMAM -   08/11/95 12:00:29
Lcmd:<EMU OBISVSE M V=651000 J=TSIDINIT>
******************************************************************************
06A2 MUMVSEP(0070)  06A3 HACSVR           06AA CPFREE         06AB VSP(0060)
06A2 VSRPRDNR  NPSL 06A3 TSIDINIT          . DYNAMCMS         06AB SRT.MD2V  NPSL
 SPC BU..../ 650881  SPC MO#3645 651000  RSV FR..../ ......   SCR BU..../ 650807

.........+ 078:::R/W:.::¬:$OV=SCRTCH:$OU=ANY:$S2=SCR:$SR=*,3
HACADM991I REQ_01:3644:MO:1:1:D08:650807
---------> RESE ANY F DYNAMCMS FREE in progress
HACADM513I Command from User OBISAMAM accepted: RESERVE ANY FOR DYNAMCMS FREE
HACRSV062I RESERVE ANY for DYNAMCMS by/as FREE CP has been queued.
HACRSV056I CP DETACH 06AA FROM HACSVR UNLOAD executed TAPE 06AA DETACHED FROM
.........+ HACSVR (Reason: Reserve for DYNAMCMS)
HACRSV064I RESERVE 06AA for/from DYNAMCMS has been done.
HACADM512I ADP=HACADP: RSP_01:3644:P::MO:1:1:D08:650807::01290908:00000801
HACADM056I CP GIVE 06AB TO VSP AS 06AB RETURN UNLOAD executed Tape 06AB given
.........+ to VSP 06AB
---------> EMU OBISVSE M V=651000 J=TSIDINIT in progress
HACADM513I Command from User OBISAMAM accepted: EMUSUBSY OBISVSE M V=651000 J=
.........+ TSIDINIT
HACADM250I Request  OBISVSE MO::651000:TSIDINIT:"::::::R/W:.::¬:$OV=651000:$OU
.........+ =:$S2=SPC:$SR=1,1 stored in MLOG
HACADM991I REQ_01:3645:MO:1:1:D06:651000
HACADM512I SSY=VSP: U V=650807 U=6AB ID=N/A J=SRT.MD2V O= P=0060 D=HD.TX.ARCHI
.........+ V.TRAN94
HACADM512I SSY=VSP: U V=650807 U=6AB ID=N/A J= O= P=0060 D=
------------------------------------------------------------------AUTO--
.........+ :$SR=$SR stored in MLOG
HACADM512I SSY=EWVSEP: K V= U=ALL ID=N/A J=RERUE-L1 O= P=0010 D=
HACADM250I Request  EWVSEP KE:ALL::RERUE-L1:":0010::N/A:::::::¬:$OV=:$OU=ALL:$S
.........+ 2=$S2:$SR=$SR stored in MLOG
HACADM690I Runfiles have been saved. Reason: Checkpoint reached at 11:57:08
HACADM512I SSY=MUMVSET: K V= U=ALL ID=N/A J=YS31JOB O= P=0010 D=
HACADM250I Request  MUMVSET KE:ALL::YS31JOB:":0010::N/A:::::::¬:$OV=:$OU=ALL:$S
.........+ 2=$S2:$SR=$SR stored in MLOG
HACADM512I SSY=VSP: M V=SCRTCH U=ANY ID=1078 J=SRT.MD2V O= P=0060 D=HD.TX.ARCH
.........+ IV.TRAN94
HACADM250I Request  VSP MO:ANY:<SCRATCH>:SRT.MD2V:":0060:HD.TX.ARCHIV.TRAN94:1
_____
PF: 1=Help  2=Retrieve  3=QQuit  4=RDevice  5=Redisplay  6=SCIF  9=Scroll
 ====>
```

Figure 2: HACC/VM Monitor screen

This interface serves to input HACC/VM commands and monitor messages from the HACC/VM system. The virtual machines that the HACC/VM Monitor function can execute as well as the command authorizations are defined in the S02$OUSR parameter file. Message type selection for the respective HACC/VM Monitor machine is controlled by allocation of a corresponding *RoutingClass* from the S01$ROCC parameter file.

Significant details of the monitor layout are defined in the HACC/VM parameter file M01$SETU.

Various functions can be called up on the HACC/VM Monitor screen using PF-keys (*PF-keys of the HACC/VM Monitor*, Page 8) and monitor (*Monitor commands*, from Page 4) and HACC/VM commands input (*HACC/VM commands*, from Page 1).

MONITOR COMMANDS

The user interface can be manipulated with the following monitor commands as well as certain PF-keys (refer to Section *PF-keys of the HACC/VM Monitor* from Page 8.

CMS

Calls the CMS-Subset to input CMS and CP commands in the virtual machines used by the HACC/VM Monitor function.

Command	Operands (Position 1-n)	
CMS	**[*command*]**	

The CMS command RETURN (or an appropriately set PF-key) can be used to exit back from the CMS subset. The Monitor session is then reactivated.

HC (**H**ARD**C**OPY PHYSICAL SCREEN)

Writes a copy (hardcopy) of the current HACC/VM Monitor in the CMS file HACMON HC*hhmmss* A. A new CMS file is created for each call.

hhmmss   Timestamp

Command	Operands (Position 1-n)	
HC		

QQUIT

Terminates the monitor function. The SMSG communication path to the Server is disabled at the same time. The function is normally performed with the PF3 function key.

Command	Operands (Position 1-n)
QQuit	

STARTUP

Calls the startup procedure HACCSTRT that restarts the HACC/VM Server machine. In certain situations, a CP FORCE with following XAUTOLOG are performed. Precondition is the appropriate CP authorization. The HACC/VM Server machine then normally automatically starts the other HACC/VM system components (Adapter, Router etc.).

Command	Operands (Position 1-n)	
	1	
STARTup	**SVR**	

SVR   Keyword

Beispiel

START SVR

Restarts the HACC/VM Server:

    (1) Force   *hacsvr*

    (2) XAutolog *hacsvr*

VMCMD

Allows direct execution of CP/CMS commands within the respective HACC/VM Monitor machine.

Command	Operand (Position 1-n)	
	1	
VMCMD	***command***	

command   CMS or CP command to be executed

> **Beispiel**

VMCMD FL

Executes the CMS File list command.

The Monitor function remains interrupted until the relative command has been executed.

PF-KEYS OF THE HACC/VM MONITOR

STANDARD SCREEN

PF1   Help   Short overview of the HACC/VM commands

PF2   Retrieve   This command retrieves the last 16 commands input for selection, modification, insertion in the command line and execution. The leading * (asterisk) must be overwritten for command execution.

PF3   QQuit   Corresponds to the Monitor command QQUIT (Page 6)

PF4   Rdevice   Toggles the drive display

PF5   ReDisplay   Switches to the display of the Monitor message buffer (Message Redisplay). The PF-keys applicable during this display are described under *Monitor Buffer* on Page 9.

PF6   SCIF   Switches to the display of the SCIF message buffer. All messages apart from SMSG (SCIF, MSG, WNG etc.) are collected in this buffer. The PF-keys applicable during this display are described under *SCIF Buffer* on Page 9.

MONITOR MESSAGE BUFFER (MESSAGE REDISPLAY USING PF-KEY PF5)

PF2   Curline   The display of the current message is positioned to the centre of the screen.

PF3   Return   Return to Monitor standard screen

PF7   Backward   Scroll backwards in the message buffer

PF8   Forward   Scroll forwards in the message buffer

PF9   Top   Display the first screen page of the message buffer

PF10   Bottom   Display the last screen page of the message buffer

PF11   Left   Shift the current screen display of the message buffer 20 columns to the left

PF12   Right   Shift the current screen display of the message buffer 20 columns to the right

SCIF MESSAGE BUFFER (USING PF-KEY PF6)

CLEAR ClearScreen Clear the message buffer

PF3   Return   Return to HACC/VM Monitor standard screen

PF7   Backward   Scroll backwards in the message buffer

PF8   Forward   Scroll forwards in the message buffer

DRIVE DISPLAY ON THE HACC/VM MONITOR SCREEN

PF-key PF4 enables the drive display on the HACC/VM Monitor screen.

An information block with the following format is shown for each drive of the AML robot system:

```
radr   owner<(partid)>
vadr   jobid |(vmuser) <stat1>
stat2 stat3           volser
```

The individual fields have the following significance:

radr   Real address of the displayed drive

owner   *vmuser*   The drive is ATTACHed to the virtual machine with the Userid vmuser

            CPFREE   The drive was reserved for a virtual machine with the HACC/VM command RESERVE but has not been ATTACHed or is defined with the default owner $SHARED$ in the HACC/VM parameter file S06$UNIT.

            [SYSTEM]   The drive is being used by the VM operating system (i.e. SPTAPE, DUMP, TRSAVE)

            OFFLINE   The drive has been set to status 'offline' with the CP command VARY OFFLINE or the HACC/VM command OFFLINE

            BOXED   The drive is not available for VM

            BOX/ATTC   The drive is not available for VM

(*partid*) For VSE guest systems, the relative Partition-Id is displayed when a cartridge mounted by a robot is opened (OPEN) by a VSE application. The following assignment applies for a VSE machine with 12 static partitions:

$$
\begin{array}{lll}
\text{partid} & 0010 & \rightarrow & BG \\
& 0020 & \rightarrow & FB \\
& 0030 & \rightarrow & FA \\
& ..... & & \\
& 0090 & \rightarrow & F4 \\
& 00A0 & \rightarrow & F3 \\
& 00B0 & \rightarrow & F2 \\
& 00C0 & \rightarrow & F1 \\
\end{array}
$$

vadr   Virtual drive address or '.' for drives with status CP FREE.

(*vmuser*) Userid of the virtual machine for which a mount or keep task is being performed. The ATTACH has not been executed yet. The field is set to '........' after a successful mount. The field *jobid* is displayed here when the mounted cartridge is opened by an application (OPEN).

jobid On VSE machines, this is the job name of the job which opened the mounted cartridge (OPEN).

stat1 · This status field has the following significance after a successful mount task:

    pclc (**p**rotect **c**heck, **l**abel **c**heck) - a write-protection check as well as a label check are performed for the mounted cartridge before the drive is assigned to the requesting client (subsystem). The result of these checks is shown here.

        pc The first two characters show the result of the write-protection check:

            ?P Write-protection check is not active (refer to HACC/VM parameter file S08$SERV in the HACC/VM Installation & Customization Guide)

            FP Mounted cartridge is write-protected

            NP Mounted cartridge is <u>not</u> write-protected

            empty

                Write-protection check could not be executed because the drive is already assigned to a client (subsystem).

        pc The first two characters show the result of the label check:

            ?L Label check is not active (refer to HACC/VM parameter file S08$SERV in the HACC/VM Installation & Customization Guide)

            SL Mounted cartridge has a **s**tandard **l**abel; the label matches the barcode label (only for enabled barcode check by the robot system)

            WL Mounted cartridge has a standard label; the label does not match the barcode label (**W**rong **L**abel)

            NL Mounted cartridge has a non-standard **la**bel (**N**o **L**abel)

            empty

Label check not possible because the drive is already assigned to a client (subsystem).

· The appropriate AML error code is displayed when a mount or keep task could not be successfully performed:

Nxxx   An error occurred during a mount or keep task. The possible error codes can be found in the Section *AML ERROR CODES* from Page 1.

stat2   Status field 2

NON	No activity
RSV	**ReSerVed** - the drive is reserved; no activity
SCR	**SCRatch** - a scratch cartridge is being processed
SPC	**SPeCific** - a specifically requested cartridge is still being processed
CLE	**CLEaning** - drive is being cleaned
FOR	**FOReign** - foreign mount processing

stat3   Status field 3 (drive activities)

FR.....*i*   FRee - no activity

     i   Modification identifier

         I   Initial; the drive has not been used since the HACC/VM system start

         S   The drive display has been manipulated with the HACC/VM command SETRDT

         R   The drive display has been updated as the result of a ROBCOMM command

         /   The display was cleared after a successful keep

         ''   (empty) Whilst a mount or keep task is executing

BU......   BUsy - Cartridge mounted successfully

MO#nnnn   MOunting - a mount task with the task number (TaskId) nnnn is being executed.

KE#nnnn   KEeping - a keep task with the task number (TaskId) nnnn is being executed.

volser   The volser of the mounted (or to be mounted) cartridge

Beispiel

```
030A   HACSVR
030A   (VSE6)       N302
SPC    MO#0132  006065
```

The virtual machine VSE6 issued a specific (SPC) mount task for the cartridge with volser 006065. HACC/VM manages the task with TaskId 0132.

The task was not successful (N302) because the cartridge is either not currently in the robot system (ejected ?) or already mounted on another drive.

HACC/VM COMMANDS

The following commands of the HACC/VM system can be executed from either the user interface as described in Section ***Fehler! Verweisquelle konnte nicht gefunden werden.*** on Page **Fehler! Textmarke nicht definiert.** or directly from an authorized CMS machine (HACC/VM Operator) per CP SMSG command.

Each HACC/VM command is assigned to a so-called command class. A command class is the logical title for a certain group of single commands.

The structure of the command classes was defined according to functional criteria. The following table gives an overview of the standard command classes (the definition of these command classes can be modified within the HACC/VM parameter file S17$CAUT):

Command class	Code	Function/Description
*ADM	A	Administration
	A10	Message_Control (Routing)
	A11	Resource_Control (Set System_Value(s))
	A12	Modify System_Resource(s)
	A13	Modify System_Table(s)
*SOP	B	Standard_Operation
	B10	Task_Control (TLOG)
	B11	Message_Control (MLOG)
	B15	Query_Function(s)
*EOP	C	Extended_Operation
	C10	Emulate SubSys_Function(s)
	C20	Robot_Command_Execution
	C30	Real_Device_Control
*T/A	D	Technical support/Assistance
	D10	Server_Control_Facility
*SYS	E	System_Establishment
	E10	StartUp_Control
	E11	Shutdown_Control
*HAA	H	Archive

Command class	Code	Function/Description
	H10	Archive_Control

<div align="right">Table 1: Command classes</div>

CANCEL

Clears/removes a task from the TLOG of the HACC/VM Server machine. This means that the relative task will be unconditionally and immediately removed from the task queue (TLOG), when present. Compare also with REMOVE to remove entries from the message queue (MLOG).

Tasks with status WAITADP have already been passed on to a HACC/VM Adapter for asynchronous execution. The CANCEL command does **not** terminate the corresponding process in the affected AML system (Adapter-AMU).

This command should be used carefully because cancelling a task can lead to inconsistent conditions.

Command class: *SOP

Authorization: B10

Command	Operands (Position 1-n)	
	1	**2**
CANcel	*tasknr*	**[CLEAR]**

tasknr   Task number of the HACC/VM task to be deleted

CLEAR   Releases the drive of the robot system assigned to the task after an erroneous mount task. The CLEAR option is equivalent to the HACC/VM command SETRDT *rcuu* FR CLEAR (refer to *SETRDT (Set Real-Device-Table)* on Page 78).

Monitor and Adapter tasks cannot be removed from the HACC/VM system with the CANCEL command.

Beispiel

The AML system could not satisfy a mount demand (TaskId 4711) (AMU-Rc = N301 'Volser not known in system'; the task is set to status WAITOPR). The result is that the drive selected by HACC/VM is marked as in use and is not available for further mount requests. The following command can clear this situation:

CAN 4711 CLEAR

This command removes the HACC/VM task 4711 and resets the status of a drive possibly linked to the task.

The CANCEL command without the CLEAR option would not release the drive in this case. The SETRDT command must be used in such a situation.

CLEANTAB

The CLEANTAB command is part of the HACC/VM resource management and serves to manage the cleaning cartridges required by HACC/VM.

The definitions required for cleaning must be stored in the S05$VOLS parameter file during the HACC/VM installation. This information is used during the first HACC/VM system start to generate the CMS file HACCLEAN NAMES.

The HACCLEAN NAMES file contains control information on the cleaning cartridges used by HACC/VM. The corresponding entry is removed from the file after the service life of a cleaning cartridge expires and set in the HACCLEAN CLEANEX file.

HACC/VM automatically ejects the cartridge.

Rejected cleaning cartridges must be replaced by inserting the new cleaning cartridge and giving HACC/VM the required information.

Command class: *ADM

Authorization: A13

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
CLeantab	Add	*owner*	*volser*	*clean_capacity*
	DELete	*owner*	*volser*	**{Noeject|Eject}**
	INIt			
	Query	*owner*	*[volser...]*	

owner   Owner of the cleaning cartridge {*adapter* | *sys*,*rob*} This defines for which SYstem and which RObot the cartridge is planned.

volser   Volser of the cleaning cartridge.

clean_capacity Cleaning capacity - number of cleaning tasks still available

Format 1:   ADD

Adds a cleaning cartridge to the HACCLEAN NAMES file.

Beispiel

CL A HACADP CLEAN1 500

Makes the cleaning cartridge with the volser CLEAN1 and 500 cleaning processes available to the HACC/VM Adapter machine HACADP.

Format 2: DELETE

Removes a cleaning cartridge from the HACCLEAN NAMES file and adds it to the HACCLEAN CLEANEX audit file.

NOEJECT   Cleaning cartridge is not ejected.

EJECT   Cleaning cartage is ejected.

Beispiel

CL DEL HACADP CLEAN1 EJECT

Marks the cleaning cartridge with the volser CLEAN1 as being no longer available for the relative AML robot system and the EJECT option physically ejects the cartridge.

Format 3: INIT

Creates the CMS file HACCLEAN NAMES from the HACC/VM parameter file S05$VOLS.

To avoid inconsistencies, the correspondence between the definitions in the HACC/VM parameter file S05$VOLS and the actual statuses (Clean Capacity) must be checked before executing this command.

Beispiel

CL INIT

Initializes the CMS file HACCLEAN NAMES with the definitions of the HACC/VM parameter file S05$VOLS. The initialization is automatically executed when the HACCLEAN NAMES file is not found during the HACC/VM Server machine start (i.e. initial installation). (Refer to remark above).

Format 4: QUERY

Inquires status on cleaning cartridges in the CMS file HACCLEAN NAMES.

Beispiel

CL QUERY HACADP

Displays the status of all cleaning cartridges of the HACC/VM Adapter machine HACADP.

Beispiel

CL QUERY HACADP CLEAN1 CLEAN2

Displays the status of the cleaning cartridges CLEAN1 and CLEAN2 of the HACC/VM Adapter machine HACADP.

Display:

owner: volser1 capacity1 volser2 capacity2 ...

The command format for CLEANTAB QUERY corresponds to the QUERY CLEANTAB command (Page 39)

DROP RESERVE

Cancels all reservation requests pending for drives in one or all subsystems.

Drive reservations can be requested with the RESERVE command (Page 69). Pending reservation requests can be displayed with the QUERY RESERVE command (Page 48).

Active reservations can be cancelled with the RELEASE command (Page 66).

Command class: *ADM

Authorization: A11

Command	Operands (Position 1-n)		
	1	**2**	**3**
DRop	**Reserve**	**FOR** **ALL**	**userid**

ALL   Cancels all reservation requests for all users. No further operands may follow ALL.

userid   Userid for which all reservation requests are to be cancelled.

Beispiel

DROP RESERVE FOR VSEP

Cancels all reservation requests pending for the subsystem for Userid VSEP.

ECHO

Tests the communication within the HACC/VM complex (sign of life). The partner to be tested replies to the ECHO request and confirms its readiness for operation.

Command class: *MON

Authorization: F10

Command	Operands (Position 1-n)	
	1	**2**
ECho	**SVR**	
	ADP	***{adapterid | sys,rob}***

SVR   Tests the communication with the HACC/VM Server machine

ADP   Tests the communication with the HACC/VM Adapter machine

adapterid   Must be the Userid of the relative Adapter when ADP is specified

sys,rob   Specifies the HACC/VM Adapter machine for system *sys* robot *rob*

Beispiel

        ECHO SVR

Communication test with the HACC/VM Server machine. The ECHO command receives a positive acknowledgement when the communication is active.

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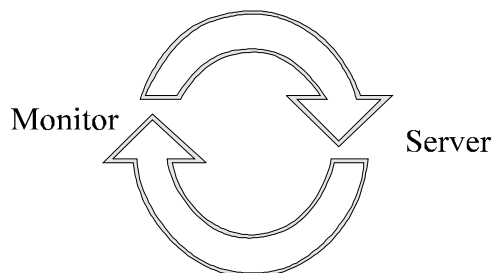
E C H O   A D P   H A C A D P

Communication test with the HACC/VM Adapter machine HACADP. The ECHO command receives a positive acknowledgement when the communication is active.

The execution of this test function is more time-intensive than for the Server machine and the reply can take several seconds depending on the system load.

The following communication paths are tested:
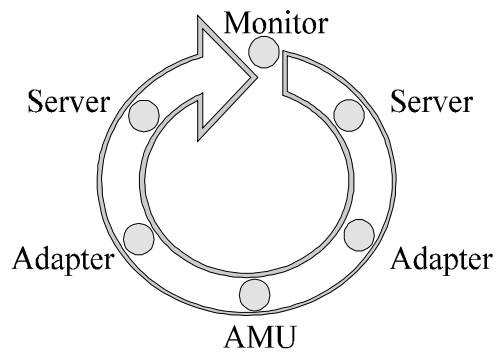
EMUSUBSY (EMULATE SUBSYSTEM)

Emulates the mount, keep and update functions that are normally initiated by a subsystem.

This command supports the emulation of HACC/VM tasks for a certain subsystem. HACC/VM processes the task as if the defined subsystem had issued the task itself.

This command can be used to realize the various methods of connecting subsystems. When a new subsystem with a robot connection is to be connected with a different message format, the subsystem connection to HACC/VM can be tested by creating an appropriate filter program.

This command is used internally when a subsystem is connected using the HACC/VM Router function.

Command class: *EOP

Authorization: C10

Command	Operands (Position 1-n)	
	1	**2**
EMUsubsy	***subsys***	***order***

subsys   Identifies the subsystem (defined in S04$SUBS PARM) for which the command is to be emulated

order   Command in the syntax defined for the respective subsystem.

The syntax valid for the respective subsystem is defined in the S04$SUBS PARM parameter file (3rd value) with a synonym. The synonym refers to a so-called filter program (HACC$*syn* EXEC) which converts the task received into an internal HACC/VM format.

HACC/VM includes the following standard filter programs:

Synonym	Syntax	
STD	*function*	U=*unit* V=*volser* [J=*jobid*] [O=*owner*] [P=*partition*] [D=*datasetname*] [ID=*id*] [USER=*userid*] [A=*attachmode*] [N=*notify*] [M=*mode*] [SOPT=*option*]
DYN	*function*	U=*unit* V=*volser* [J=*jobid*] [O=*owner*] [P=*partition*] [D=*datasetname*] [ID=*id*] [USER=*userid*] [M=*mode*]
BVS	MOUNT	*volser* ON UNIT *unit* [FOR *jobid*]
	DEMOUNT	*unit*

function	**M**	**M**ount (request to HACC/VM to mount a cartridge)
	K	**K**eep (request to unload a mounted cartridge)
	U	**U**pdate (serves to transfer additional information on an application to HACC/VM).
MOUNT		Request to HACC/VM to mount a cartridge
DEMOUNT		Request to unload a mounted cartridge
unit	ANY	Any unit within the unit range defined for the subsystem (virtual or real)
	ALL	Only for KEEP requests. Unloads all units used by the application program (i.e. VSE JOB).
	addr	A real or virtual unit within the subsystem unit range (dependent on the 4th value, address mode = {V|R} in S04$SUBS PARM)
volser		Specific cartridge or the cartridge identified by POOL names to which the request message refers
jobid		Name of the application (VSE Jobname) for which the request is to be executed
ownerid		OwnerId of the tape management system for which a scratch mount request is to be executed
partition		Partition for requests from VSE subsystems. Serves to identify and resolve KEEP U=ALL requests.
datasetname		Dataset name for which the respective tape management system creates a request

id	Unique number that can be issued by a subsystem for each MOUNT request to ensure the correct assignment for subsequent KEEP requests
userid	VM Userid for which a request is to be executed by a subsystem
attachmode	Access mode (R/W, R/O) for the unit
notify	[*at*],[*via*],[*user*],[*text*]

 at   [A][K][M]

    A   notify by ATTACH / GIVE

    K   notify by KEEP

    M   notify by MOUNT

 via   [S][M]

    S   notify using SMSG

    M   notify using MSG

 user Userid of a virtual machine to be informed

 text Message text to be suffixed to the notification message. Blanks in the message text must be represented by x'04'.

option	KEEPImmed	Option only valid for KEEP requests. The cartridge is unloaded and the unit-dependent KEEP wait time ignored.

Beispiel

> E M U   V S E 1   M   V = S C R T C H   U = 5 9 3   J = B A C K U P   O = 5 x

Creates a mount request (in DYNAM/T format) for a scratch cartridge on the cartridge unit with the address 593 for the subsystem VSE1.

HACC/VM processes this task just as if it had been generated by the subsystem in question.

MODIFY

MODIFY ADPCNTRL (Adapter Control)

Controls the communication between either the HACC/VM Server and Adapter machines (Server/Adapter) or between the HACC/VM Adapter machine and the AML system (Adapter/AMU).

Command class: *ADM

Authorization: A12

Command	Operands (Position 1-n)		
	1	**2**	**3**
Modify	**ADPCntrl**	*{adp|sys,rob}*	**STArt**
			STOp
			ENAble
			ACcess

adp   UserId of the relative HACC/VM Adapter machine

         or

sys,rob   system and robot IDs separated by a comma.

STOP   Suspends the communication between HACC/VM and the AML system (Adapter/AMU).

START   Starts the communication between HACC/VM and the AML system (Adapter/AMU).

              The Adapter/AMU communication is automatically set to 'STOP' until the AMU-Robot communication is ready for operation.

ENABLE   Enables the communication between the HACC/VM Server and Adapter machines.

ACCESS   Accesses the HACC/VM Server MDISK 191 again.

Beispiel

M A D P C 1 , 1 STA

Enables the communication between the HACC/VM system and robot 1 on AML system 1.

The Adapter task in the HACC/VM system is set to 'enabled' as soon as the relative HACC/VM Adapter machine was able to enable the communication to the AML system.

MODIFY AORDER (ADAPTER ORDER)

Manipulates tasks in the Adapter task queue. (The QUERY AORDER command can be used to display the respective Adapter tasks).

Command class: *ADM

Authorization: A12

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
Modify	**AOrder**	***{adp|sys,rob}***	***tasknr***	**DELete**

adp   Userid of the relative HACC/VM Adapter machine

              or

sys,rob   system and robot IDs separated by a comma.

tasknr   nnnn   HACC/VM TaskId as used by the HACC/VM Server in the Message (MLOG) and Task queues (TLOG)

             Aaaa   Tasks internally generated by the HACC/VM Adapter (i.e. ROSA, ACOM)

DELETE   Deletes the task specified from the Adapter task queue.

Modifications to the task queue of a HACC/VM Adapter machine have no effect on the corresponding tasks (TaskId=*nnnn*) in the task queue (TLOG) of the HACC/VM Server machine.

Beispiel

M AO 1,1 2045 DEL

Deletes the Adapter task with task number 2045 from the task queue of the HACC/VM Adapter machine that controls the communication with AML system 1.

MODIFY BATCH

The MODIFY BATCH command

- · dynamically controls the authorization for the so-called Batch_Command_Facility (refer to *HACC/VM* System Reference Guide)
- · controls (manipulates) active batch processes.

Command class: *ADM

Authorization: A12

MODIFY BATCH Facility

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
Modify	**Batch**	**{ENAble|DISable}**	*{subsys|*}*	**{*|CMD|REC}**
		CLOse	*ctltaskid*	
		FORCE	*ctltaskid*	
		PRint	*ctltaskid*	
		{STop|RESume}	*ctltaskid*	

Format 1:   {ENABLE|DISABLE}

This MODIFY command only modifies the HACC/VM system temporarily. A subsequent HACC/VM system restart enables the parameter defined in the HACC/VM parameter file S04$SUBS PARM again.

Operand 2:

ENABLE   Enables the Batch_Command_Facility or the Batch_Command_Reception for one or all subsystems

DISABLE   Disables the Batch_Command_Facility or the Batch_Command_Reception for one or all subsystems

Operand 3:

subsys	Identifies a defined subsystem (S04$SUBS PARM).
*	Identifies all defined subsystems.

Operand 4:

CMD	Enables/disables the Batch_Command_Facility for the specified subsystem.
	Modifies field 7A of the S04$SUBS PARM parameter file.
REC	Enables/disables Batch_Command_Reception (reply procedure) for the specified subsystem.
	Modifies field 7B of the S04$SUBS PARM parameter file.

🛈 This function should not be enabled for VSE subsystems because otherwise the reply spool files sent by HACC/VM could land in the VSE/POWER Reader in certain circumstances.

*	Enables/disables both the Batch_Command_Facility and Batch_Command_Reception (reply procedure) for the specified subsystem.
	Modifies both fields 7A and 7B of the S04$SUBS PARM parameter file.

Beispiel

MODIFY BATCH DISABLE VSE1 CMD

Cancels the authorization for the VSE1 subsystem to use the Batch_Command_Facility. Processes still running will be allowed to complete.

Format 2:   CLOSE

Operand 2:

CLOSE	Closes a Batch_Command_File. All commands in the Batch_Command_File not yet processed are transferred to the respective Receipt_File. The Batch_Receipt_File is transferred to the requesting subsystem after all com-

mands pending in the Batch_Command_File have been fully processed.

> When the batch task cannot be terminated by this command because tasks pending in the Batch_Command_File cannot be processed by the corresponding robot system, an attempt can be made to terminate the task with the MODIFY BATCH FORCE command.

Operand 3:

ctltaskid   Control TaskId under which a Batch_Command_File is managed.

Beispiel

MODIFY BATCH CLOSE 12001

Terminates the batch task with Control TaskId 12001.

Format 3:   FORCE

Operand 2:

FORCE   Closes a Batch_Command_File. All commands in the Batch_Command_File not yet processed are transferred to the corresponding Receipt_File. All other tasks pending in the Batch_Command_File are ignored. The Batch_Receipt_File is transferred to the requesting subsystem.

Operand 3:

ctltaskid   Control TaskId under which a Batch_Command_File is managed.

MODIFY BATCH FORCE 12001

Terminates the batch task with Control TaskId 12001.

Format 4:   PRINT

Operand 2:

PRINT   Transfers the Batch_Receipt_File created up to this point in time to the Userid that executed the MODIFY BATCH PRINT *ctltaskid* command. This does not interrupt the processing of the relative Batch_Command_File and the Batch_Receipt_File is no longer written to.

Operand 3:

ctltaskid   Control TaskId under which a Batch_Command_File is managed.

Beispiel

MODIFY BATCH PRINT 12001

Transfers the Batch_Receipt_File.

Format 5:   {STOP|RESUME}

Operand 2:

STOP   Temporary suspension of a batch process; the process can be resumed with RESUME.

RESUME   Resumes a batch process suspended by MODIFY BATCH STOP or AMU response (i.e. when no storage locations are available in the ejection area for an ejection triggered by the Batch_Command_Facility - AMU-Rc N503).

Operand 3:

ctltaskid   Control TaskId under which a Batch_Command_File is managed.

Beispiel

MODIFY BATCH RESUME 12001

The ejection for the batch process with Control TaskId 12001 continues after the ejection area has been cleared (after an AMU-Rc N503).

MODIFY FMSD (FOREIGN MOUNT SOURCE DEVICE)

Assigns a logical volser to a slot in the foreign mount area. This command only effects a temporary allocation.

Precondition for this command is that the parameter FMNT=ON is defined in the HACC/VM parameter file S08$SERV.

Command class: *ADM

Authorization: A12

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
Modify	**FMSD**	*slot*	**{CONNV|DISCV}**	*volser*

slot   Slot number in the foreign mount area.

CONNV   Defines a logical *volser* for the specified foreign mount slot

DISCV   Cancels the volser/foreign mount slot assignment

volser   The logical *volser* to be defined

🛈 The assignment of logical volsers to storage locations in the foreign mount area are lost after a HACC/VM Server machine restart.

Beispiel

        M FMSD 5 CONNV PTF01

Allocates volser PTF01 to slot 5 of the foreign mount area and allows subsequent subsystem requests with this logical volser.

MODIFY LOG

Modifies the status of a HACC/VM log file.

Command class: *ADM

Authorization: A12

Command	Operands (Position 1-n)		
	1	**2**	**3**
Modify	**Log**	**{ALL|LOG1|LOG2}**	**{CLose|PRint}**

LOG1   Identifies the SERVRLOG LOG1, "incoming messages"

LOG2   Identifies the SERVRLOG LOG2, "outgoing messages"

ALL   Combines LOG1 and LOG2

CLOSE   Closes, prints and deletes the log file.

PRINT   Prints the log file without deletion.

Beispiel

    M L ALL PRINT

Sends the data from both log files (LOG1 and LOG2) existing at command execution time to the virtual printer of the HACC/VM Server machine.

MODIFY ROUTECLASS

Controls the message selection for the HACC/VM Monitor machines assigned to a certain *RouteClass.*

A *RouteClass* in HACC/VM is a group of different *RouteCodes.* Each HACC/VM message is assigned to one or more *RouteCodes.* The HACC/VM Server uses this relationship between *RouteCodes* and *RouteClasses* to distribute messages to the HACC/VM Monitor machines connected with the messages.

The MODIFY command only affects the HACC/VM system temporarily. A subsequent HACC/VM system restart enables the parameters defined in the S01$ROCC parameter file.

Command class: *ADM

Authorization: A10

Command	Operands (Position 1-n)			
	1	2	3	4
MODIFY	**ROUTEclass**	*routeclass*	**{Add|DELete|Replace}**	*routecode..*

routeclass	*RouteClass* to be modified
ADD	Adds new *RouteCodes* to the specified *RouteClass*
DELETE	Deletes *RouteCodes* from the specified *RouteClass*
REPLACE	Replaces *RouteCodes* in the specified *RouteClass*
routecode...	One or more *RouteCodes* to be added, deleted or replaced. (*RouteCodes* can also be specified in generic form). The actual assignment between the HACC/VM messages and the Route-Codes is described in the S01$ROCC PARM parameter file.

> **Beispiel**

RouteCodes 01, 02 and 03 are assigned to *RouteClass* VMP.

MODIFY ROUTECLASS VMP A 04 1*

Assigns *RouteCodes* 01- 04 and 10-19 to the *RouteClass* VMP.

All HACC/VM Monitor machines (HACC/VM Operator) with *RouteClass* (VMP) receive all messages sent with *RouteCodes* 1 to 4 and 10 to 19 after this MODROUTE command.

MODIFY SUBSYSTEM

Temporarily modifies subsystem definitions in the HACC/VM parameter file S04$SUBS.

Command class: *ADM

Authorization: A10

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
MODIFY	**SUBsystem**	*subname*	**BATCH**	*{ENABLE|DISABLE}*

routeclass	*RouteClass* to be modified
ADD	Adds new *RouteCodes* to the specified *RouteClass*
DELETE	Deletes *RouteCodes* from the specified *RouteClass*
REPLACE	Replaces *RouteCodes* in the specified *RouteClass*
routecode...	One or more *RouteCodes* to be added, deleted or replaced. (*RouteCodes* can also be specified in generic form). The assignment between the HACC/VM messages and the Route-Codes is described in the S01$ROCC PARM parameter file.

Beispiel

RouteCodes 01, 02 and 03 are assigned to *RouteClass* VMP.

MODIFY ROUTECLASS VMP A 04 1*

Assigns *RouteCodes* 01- 04 and 10-19 to the *RouteClass* VMP.

All HACC/VM Monitor machines (HACC/VM Operator) with *RouteClass* (VMP) receive all messages sent with *RouteCodes* 1 to 4 and 10 to 19 after this MODROUTE command.

OFFLINE

Sets the status of a cartridge unit controlled by HACC/VM to OFFLINE. This means that the both the HACC/VM internal and the VM-side unit statuses are set to OFFLINE. A unit disabled by the HACC/VM command OFFLINE can only be enabled again with the HACC/VM command ONLINE (Page 31).

The CP command VARY ONLINE only resets the OFFLINE status until the next dispatch cycle of the Server; HACC/VM then automatically resets the status to CP OFFLINE.

A dedicated allocation of the relative unit (Attach/Give) is correctly cancelled.

The OFFLINE command has no effect on reservations (RESERVE command) and default ownerships (S03$AUSR).

Command class: *T/A
Authorization: D10

Command	Operands (Position 1-n)	
	1	**2**
OFFLine	*rdev*	**[(Immed[)]]**

rdev   Address of a cartridge unit controlled by HACC/VM

IMMED   Unit is set unconditionally to status OFFLINE.

The relative unit is set to 'OFFLINE QUEUED' status when the unit is allocated to a subsystem (attached/given) and the IMMED operand is not specified. This means that HACC/VM waits until the unit is released by the subsystem.

The IMMED option forces the Server to return the drive (with CP DETACH). Any active tape processing of the subsystem could well be terminated.

Beispiel

OFFL 590

The drive with the address 590 is set to status OFFLINE as soon as the drive is no longer assigned to a subsystem (ATTACHed).

ONLINE

Resets a cartridge unit set inactive by the HACC/VM command OFFLINE (Page 29) to status 'ONLINE' (for both the CP and HACC/VM).

Existing reservations and default ownerships are effective again after execution of the ONLINE command.

Command class: *T/A

Authorization: D10

Command	Operands (Position 1-n)
	1
ONLine	***rdev***

rdev   Address of a cartridge unit controlled by HACC/VM

> **Beispiel**

        ONL 590

Sets the drive with address 590 to ONLINE and returns the drive to HACC/VM control.

adic

QUERY

QUERY ADAPTER

Displays information on all HACC/VM Adapter machines.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	
Query	**Adapter**	

```
Beispiel
```

Q A

HACADM111I Adapter   System   Init at   Update at   State
HACADM111I OBISHADP   (1,1)   06/03/96 18:27   06/03/96 18:27   MAN

QUERY ADPCNTRL (ADAPTER CONTROL)

Displays the current runtime mode of a particular Adapter.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)		
	1	**2**	
Query	**ADPCntrl**	*{adp|sys,rob}*	

adp   Name of the relative HACC/VM Adapter machine

                        or

sys,rob   system and robot IDs separated by a comma.

Beispiel

Q ADPC 1,1

Displays the runtime mode of the HACC/VM Adapter machine for AML system 1.

adic

QUERY AORDER (ADAPTER ORDER)

Displays the status of active Adapter tasks. These are tasks managed by a HACC/VM Adapter machine for communication with the robot system.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)		
	1	**2**	**3**
Query	**AOrder**	*{adp|sys,rob}*	**{ALL|***tasknr***}**

adp   Name of the relative HACC/VM Adapter machine

         or

sys,rob   system and robot IDs separated by a comma.

ALL   Displays all Adapter tasks

tasknr   Displays only the *tasknr* task

Beispiel

    Q AO HACADP ALL

Displays the status of all tasks of Adapter machines active in the system.

Beispiel

    Q AO 1,1 4711

Displays the status of Adapter task 4711 of the Adapter controlled by AML system 1.

QUERY BATCH

The QUERY BATCH command

- inquires authorizations for the Batch_Command_Facility

- inquires active batch processes and displays their status or contents respectively.

Command class: *SOP

Authorization: B15

QUERY BATCH Facility

Com.	Operands (Position 1-n)			
	1	**2**	**3**	**4**
Query	**Batch**	**Facility**	*{subsys/*}*	**{*|CMD|REC}**
	Content	*subsys*	*batchftype*	
	Listfile	*{subsys/*}*	**{*|*CMD|*REC|*batchftype*}**	

Format 1:   FACILITY

Operand 3:

subsys   Identifies a defined HACC/VM Subsystem (refer to HACC/VM parameter file S04$SUBS).

*   All subsystems.

Operand 4

CMD   Displays whether the Batch_Command_Facility is active for the specified subsystem.

REC   Displays whether the reply procedure (Batch_Command_Reception) is active for the specified subsystem.

*   Displays whether the Batch_Command_Facility and/or the reply procedure (Batch_Command_Reception) is active for the specified subsystem.

Beispiel

QUERY BATCH FACILITY VSE1 CMD

Displays whether the Batch_Command_Facility is active for subsystem VSE1 - enabled/disabled (Y/N).

Format 2: CONTENT

Displays the contents of a Batch_Command_Facility or Batch_Command_Reception files. The file name and file type must be fully qualified with *subsys* and *batchftype*.

Operand 3:

subsys   Identifies a defined subsystem (S04$SUBS PARM) and specifies the CMS file names under which the batch process is managed in the HACC/VM system.

Operand 4:

batchftype   Specifies the CMS file type under which the batch process is managed in the HACC/VM system. It comprises the SpoolId sssss (at the time of receipt in the HACC/VM system) of the Batch_Command_File and the suffix CMD (sssssCMD) or REC (sssssREC).

> **Beispiel**

QUERY BATCH CONTENT VSE1 4711REC

Displays the contents of the Batch_Command_Reception file with file type 4711REC of the subsystem VSE1.

Format 3:   LISTFILE

Displays the file names of the Batch_Command_Files or the Batch_Receipt_Files respectively. Partial qualifications are allowed.

Operand 3:

subsys   Identifies a defined subsystem (refer also to HACC/VM parameter file S04$SUBS) and specifies the CMS file names under which the batch process is managed in the HACC/VM system.

*   All defined HACC/VM subsystems

Operand 4:

batchftype   Specifies the CMS file type under which the batch process is managed in the HACC/VM system. It comprises the SpoolId sssss (at the time of receipt in the HACC/VM system) of the Batch_Command_File and the suffix CMD (sssssCMD) or REC (sssssREC).

*CMD   Displays all Batch_Command_Files.

*REC   Displays all Batch_Receipt_Files.

*   Displays all Batch_Command_Files and Batch_Receipt_Files.

> **Beispiel**

QUERY BATCH LISTFILE * *

Displays all Batch_Command_Files and Batch_Receipt_Files currently being processed by HACC/VM.

QUERY CLEANTAB

Corresponds to the CLEANTAB QUERY command (Page 5) and serves to inquire the status of cleaning cartridges in the CMS file HACCLEAN NAMES.

The only difference between the commands is the authorization.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)		
	1	**2**	**3**
Query	**CLEantab**	*owner*	*[volser...]*

owner   Owner of the cleaning cartridges (*adpid* or *sys*,*rob*). This specifies for which SYstem and which RObot the cartridge is planned.

volser   Volser of the cleaning cartridge.

Beispiel

Q CLE HACADP

Displays the status of all cleaning cartridges for the HACC/VM Adapter machine HACADP.

Beispiel

Q CLE HACADP CLEAN1 CLEAN2 ....

Displays the status of the cleaning cartridges CLEAN1 and CLEAN2 for the HACC/VM Adapter machine HACADP.

Display:

owner: volser1 capacity1 volser2 capacity2 ...

QUERY DEVICES

Displays HACC/VM status information on the drives controlled by HACC/VM. This information is managed in the internal CMS file SYSTAB06 RUNFILE (device table).

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	**2**
Query	**DEVices**	**[ALL|PENDing]**

empty	The first 9 columns of the internal device table are displayed when the 2nd operand is not specified.
ALL	Displays all values of the internal device table.
PENDING	Displays all units with status 'MO' (MOunting) or 'KE' (KEeping).

Beispiel

    Q DEV ALL
    Q DEV PEND

The Query SYSTAB 6 command can selectively display the internal HACC/VM device table (SYSTAB06 RUNFILE).

QUERY DISK

Displays the current storage allocation of a HACC/VM Server minidisk.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	**2**
Query	**DIsk**	**[A|*filemode*]**

empty   Executes the CMS command Query DIsk A.

A   Executes the CMS command Query DIsk A.

filemode   Valid CMS file mode A .. Z

| Beispiel |

Q DI

Displays the allocation for Server-MDISK A (191).

QUERY FMSD (FOREIGN MOUNT SOURCE DEVICE)

Displays the logical allocation of the so-called foreign mount source device (foreign mount area of the E/I/F unit). The HACC/VM command MODIFY FMSD (Section *MODIFY FMSD (Foreign Mount Source Device)*, Page 24) assigns a *logical* volser to a slot in the foreign mount area.

Command class: *SOP

Authorization: B15

Command	Operand (Position 1-n)	
	1	**2**
Query	**FMSD**	**[ALL|PENDing]**

ALL   Displays information on all foreign mount slots

empty   As for ALL

PENDING   Displays all foreign mount slots assigned to an active HACC/VM task.

Beispiel

QUERY FMSD PEND

QUERY LOG

Displays the status of a HACC/VM log file.

Command class: *SOP

Authorization: B15

Command	Operand (Position 1-n)	
	1	**2**
Query	**Log**	**[ALL | LOG1 | LOG2]**

LOG1   Displays the status of the log file SERVRLOG LOG1 (incoming messages)

LOG2   Displays the status of the log file SERVRLOG LOG2 (outgoing messages)

ALL   Displays the status of the log files SERVRLOG LOG1 and SERVRLOG LOG2

> **Beispiel**

QUERY LOG ALL

Display:

HACADM142I	Logfile	State	Threshold	Current#	Flags
HACADM142I	LOG1	ON	500	29	
HACADM142I	LOG2	ON	2000	40	SA

Column	Value	Explanation
State	ON	Recording in the respective protocol file is active.
	OFF	Recording in the respective protocol file is not active.
Threshold	*n*	Maximum number of records in the protocol file. When this limit is exceeded, the current file is closed and sent to the virtual printer and then a new file protocol file started.
Current	*n*	Actual number of entries in the protocol file
Flags	*flags*	M = Messages to the HACC/VM Monitor machines are recorded
		S = Messages to the HACC/VM subsystems are recorded
		A = Messages to the HACC/VM Adapter machines are recorded
		Any flag combination is allowed.

QUERY MLOG (MESSAGE LOG)

Displays the request wait queue of the HACC/VM system. All messages sent to the system for processing (*SMSG) are managed in this message queue (MLOG).

Command class: *SOP

Authorization: B15

Command	Operand (Position 1-n)		
	1	**2**	**3**
Query	**Mlog**	**[*|nnnn|subsys]**	**[([Mo][Ke][*Bat][*Rob] [)]]**

empty	As for *
*	Displays all MLOG entries.
subsys	Displays all MLOG entries for the specified *subsys* (subsystem).
nnnnn	Displays the MLOG entry numbered *nnnn*.
MO	Displays MLOG entries with task type MO (mount).
KE	Displays MLOG entries with task type KE (keep).
*Bat	Displays MLOG entries with task type *BAT (batch).
*Rob	Displays open tasks with task type *ROB (robot command).

> **Beispiel**

          QUERY M VSE1 (MO KE

Displays all pending MOunt/KEep requests from subsystem VSE1 as seen by HACC/VM.

The display can also include counters on unsuccessful attempts to continue processing a pending task:

```
---------> Q M in progress
 HACADM513I Command from User OBISAMAM accepted: QUERY MLOG
 HACQML109I 1298 OBISVSE MO::<SCRATCH>::"::::::R/W:.::¬:$OV=SCRTCH:$OU=:$S2=SCR
 .........+ :$SR=*,3  $ADP=OBISVSE $SC=11 $D=11
 HACQML109I 1299 OBISVSE MO:6A2:651418::"::::::R/W:.::¬:$OV=651418:$OU=6A2:$S2=
 .........+ SPC:$SR=1,1  $ADP=OBISVSE $UN=6 $D=6
 HACQML109I 1300 OBISVSE MO:ANY:650969::"::::::R/W:.::¬:$OV=650969:$OU=ANY:$S2=
 .........+ SPC:$SR=1,1  $ADP=OBISVSE $VL=2 $D=2
```

Task types: MO and KE

$D=n   n = Number of HACC/VM dispatch cycles in which the required resources could not be allocated.

Task type: MO

$SC=n   n = Number of dispatch cycles in which a scratch substitution could not be executed due to missing/empty scratch lists.

$VL=n   n = Number of attempts to mount a cartridge already mounted.

$UN=n   n= Number of dispatch cycles in which a suitable drive was not available.

$AT=n   n= Number of dispatch cycles during which a drive could not be assigned.

Task type: KE

$MO=n   Waiting for termination of an active but not yet completed MOUNT action ('mounting').

QUERY OPERATOR

Displays the defined HACC/VM Operator and Monitor machines respectively.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	
Query	**Operator**	

Beispiel

QUERY OPERATOR

```
HACQOP072I Operid   Enabled RDConn Init by  RoutClass
HACQOP072I OBISUSR1 1      0      INITSELF ALL
HACQOP072I OBISUSR  0      0      INITSELF VM1POPER
HACQOP072I OBISABRM 0      0      INITSELF ROUTER
HACQOP072I (*)      0      0      QUIESCE  (*)
```

Operid		Userid of the HACC/VM Operator (Monitor) machine
Enabled	0	HACC/VM Operator machine is not active
	1	HACC/VM Operator machine has an active session to HACC/VM
RDConn	0	The drive display of the HACC/VM Operator machine is switched off
	1	The drive display of the HACC/VM Operator machine is active
Init by	INITSELF	The connection to the HACC/VM system is being created by the HACC/VM Operator
	INITPOLL	HACC/VM is trying to automatically create a connection to the respective HACC/VM Operator machine

QUIESCE   No attempt is being made to create a con-
           nection between HACC/VM and the
           HACC/VM Operator machine

adic

QUERY RESERVE

Displays active reservations and pending reservation requests.

Drive reservations can be requested with the RESERVE command (Page 69).

Pending reservation requests for drives for one or more Userids can be cancelled with the DROP RESERVE command (Page 9).

Active reservations can be cancelled with the RELEASE command (Page 66).

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)		
	1	**2**	**3**
Query	**REServe**	**For**	*userid* **[(Sum]**
		ALL	

ALL   Displays active and pending reservations for all users. (No other operands may be specified).

userid   Displays all active and pending reservations for this Userid.

SUM   Option for the format QUERY RESERVE FOR *userid*. A condensed display of reservations for *userid* is output.

Beispiel

Displays all drives for which reservation requests for subsystem VSEP exist.

QUERY RESERVE FOR VSEP (SUM

Display:

HACRSV060Q VSEP 0480,1,0 0483,0,2 ANY,0,1

0480,1,0   Drive with address 480 is (1) reserved, no further reservation requests exist for this drive

0483,0,2	Drive with address 483 is not (0) reserved, 2 reservation requests that have not been serviced are pending.
ANY,0,2	2 reservation requests which have not been serviced exist for any drive controlled by HACC/VM. (This was caused by a reservation request with the HACC/VM command RESERVE ANY FOR VSEP).

Beispiel

QUERY RES ALL

Display:

HACRSV060I State	Userid	Rdev	Dedicate	As	Release	Detach
HACRSV060I Active	VSEP	048B	ATTACH	=	1	0
HACRSV060I Active	VSET	0482	ATTACH	580	0	0
HACRSV060I Active	VSEP	048A	FREE	CP	0	0
HACRSV060I Active	VSEP	0483	FREE	CP	0	0
HACRSV060I Queued	VSET	ANY	FREE	CP	0	0
HACRSV060I Queued	VSET	0483	ATTACH	581	0	0

Column	Value	Explanation
State	Active	Drive is currently reserved
	Queued	A reservation request for the drive has not been serviced (*rdev*)
Userid	*userid*	Name of the virtual machine for which a reservation request exists
Rdev	*rdev*	Drive address for which a reservation request exists
Dedicate	ATTACH	Drive (*rdev*) will be ATTACHed to the relative virtual machine (*userid*) during a reservation
	FREE	Drive (*rdev*) will be set to status CP FREE during a reservation
As	=	Virtual address with which the drive (*rdev*) will be ATTACHed to the virtual machine (*userid*) during a reservation corresponds to the real drive address
	vdev	Virtual address with which the drive (*rdev*) will be ATTACHed to the virtual machine (*userid*) during a reservation

adic

Column	Value	Explanation
	CP	Drive (*rdev*) will be set to status CP FREE during a reservation
Release	0	No release requests exist for the drive (*rdev*), Userid (*userid*)
	1	One release request exists for drive (*rdev*), Userid (*userid*)
Detach	0	Drive (*rdev*) will not be automatically DE-TACHed from the virtual machine (*userid*) by HACC/VM after the release
	1	Drive (*rdev*) will be automatically DETACHed from the virtual machine (*userid*) by HACC/VM after the release.

QUERY RSM (RESOURCE MANAGEMENT)

Displays information on the internal resource manager. The RSM information is mainly concerned with criteria for dispatching, scheduling and other values within the system that are significant for the control and usage of the central resources.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	**2**
Query	**RSM**	**{STIme |**
		TIMe |
		DSPCAse|
		DSPCDti|
		DSPCOrf|
		ELptime|
		DSPTime|
		IND}

STIME	Startup time of the HACC/VM system
TIME	Current time
DSPCASE	Dispatching cases
DSPCDTI	Common dispatch time indicator
DSPCORF	Correlation factor
ELPTIME	Current elapsed time
DSPTIME	Current dispatch time

Beispiel

QUERY RSM IND

IND displays the value of the CP INDICATE command.

Beispiel

QUERY RSM DSPT

The operand DSPT (DSPTIME) displays the current "Dispatch_Time".

QUERY SCRATCH

Displays the files used (scratch lists) and their status when the Scratch_List_Facility is implemented (refer to *HACC/VM System Reference Guide*). The names managed by the Server for scratch lists have the following format:

File name	File type	File mode
scrlistfn	SCRATCH	A

Command class: *SOP

Authorization: B15

Command	Operand (Position 1-n)	
	1	**2**
Query	**SCratch**	**[ALL|*scrlistfn*]**

ALL   Displays the status of all scratch lists (default)

empty   As for ALL

scrlistfn   Name of the scratch list for which the status is to be displayed. Partial qualification is allowed analog to the CMS command LISTFILE.

Beispiel

QUERY SCRATCH ALL

Displays the status of all scratch lists.

Beispiel

QUERY SCRATCH SCR*

Displays the status of all scratch lists with prefix 'SCR'.

Display per scratch list:

scrlistfn: owner1=n owner2=n ...

adic

QUERY STORAGE

Inquires the storage allocation of the HACC/VM Server machine. (First possible as from VM/ESA).

Command class: *SOP

Authorization: B15

Command	Operand (Position 1-n)	
	1	**2**
Query	**STorage**	**[Used|Free]**

USED	Displays the storage used in kilobytes and percentage (against the defined storage)
empty	As for USED
FREE	Displays the free storage in kilobytes and percentage (against the defined storage).

Beispiel

QUERY STORAGE

QUERY SYSTAB (SYSTEM TABLE)

Selective display of information from the internal system tables (SYSTABnn RUNFILE).

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)		
	1	**2**	**3**
Query	**SYStab**	*nn*	**[{*zeilennr*|**|'*string*}[*spalten* ...]]**

nn	Number of the system table to be displayed
zeilennr	Line number within a system table
*	All lines of a system table
string	All lines containing the character string *string*. (The character string must be preceded by a single quote (') when *string* starts with a numeric digit).
spalten	[*position* [*anzahl* [*position* [*anzahl*]]...]]
	position First column to be displayed
	anzahl Number of columns to be displayed from *position*. The last specification for *anzahl* is not mandatory. The default value in this case is 1.

Beispiel

        QUERY SYS 16 N206

Displays the significance of the AML error code N206. All AML error codes are displayed when the command is called without an error code.

Beispiel

QUERY SYS 4 VSE

Displays all lines of the system table SYSTAB04 RUNFILE (subsystem defini-
tions) that contain the string VSE.

QUERY TASK

Displays the HACC/VM tasks. The entries in the task queue (TLOG) are displayed. This queue contains all tasks within the system selected for processing. This means for mount tasks, for example, that it was possible to provide both the drive and a volser required for a possible scratch substitution.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	**2**
Query	**Task**	**[ALL]**
	TLog	*taskid*

ALL   Displays all TLOG entries in the system

empty   As for ALL

SHORT   Display in short form (default)

LONG   Display in long form

> **Beispiel**

QUERY TASK

```
HACADM513I Command from User OBISAMAM accepted: QUERY TASK
 . ident... crd crtim request............. upd uptim state.............. task#
 . VMUTIL.. 321 36002 TASK#BAT            321 36400 3722:C/R:STOP:1        12002
 . HACADP.. 320 47012 *ROB:(1,1):IN:I01:": 320 47472 WAITADP:HACADP:*ROB   1039
 . 12002... 321 36368 *BAT:(1,1):EJ:E00:65 321 36400 INIT                  2182
 . 12002... 321 36400 *BAT:(1,1):EJ:E00:65 321 36400 INIT                  2183
 . DYNAMCMS 320 59166 KE:06AB:650077:JOB_N 320 59166 INIT                  1279
 . CMSUSR1  320 60446 MO:06AC:004711:N/A   321 06003 WAITOPR                788
```

ident	Userid of the requesting subsystem or the TaskId of the batch control task or Userid of the HACC/VM Adapter waiting for the reply from the AML system
crd	Day on which the task was created (creation day)
crtim	Seconds since 0:00 after which the task was created (creation time)
request	The task sent to the HACC/VM system
upd	Day on which the task status was last updated (update day)
uptim	Seconds since 0:00 after which the task was last updated (update time)
state	Task status

INIT	The relative task is set to status INIT after transfer from MLOG to TLOG. The task status changes to WAITADP as soon as the task was successfully passed on to the corresponding HACC/VM Adapter.
END	The task status changes to END when the task has been successfully processed by the AML system or the task was cancelled with the HACC/VM CANCEL command. During an automatic HACC/VM recovery, the task causing the error is terminated by HACC/VM (END) and a new task created.
WAITADP	The task has been sent to the corresponding HACC/VM Adapter and awaits a reply from the AML system (waiting for Adapter).
WAITOPR	An error occurred during task processing and needs manual intervention by the operator (waiting for operator intervention).
WAITRCY	An error occurred during task processing. HACC/VM tries to correct the problem automatically (waiting for recovery completion).

Beispiel

QUERY TASK 2

```
HACADM513I Command from User OBISUSR1 accepted: QUERY TASK 2
HACQTA108I Task=0002 created at 06/03/96 on 18:27:57 for Requester=(*)
HACQTA108I Adapter=OBISHADP, System=(1,1)
HACQTA108I Type=*ROB_Cmd, Request=*ROB:(1,1):ULC:*:*:*:00000101:*:INQ
HACQTA108I State=Wait for dispatch, updated at 06/03/96 on 18:27:57
```

Requester	(*)	Internal task
	userid	Userid that created a HACC/VM request
	ctltaskid	ID of the batch control task for type=*BAT_Cmd
Adapter	Userid of a HACC/VM Adapter machine	
Type	*ROB_Cmd	
	*BAT_Cmd	
Request	*request*	
State	Wait for dispatch	

QUERY UNITTAB

Corresponds to the UNITTAB QUERY command (Page 87) and displays the so-called USECOUNT of a cartridge unit. This is the number of successful mounts since the last CLEANING.

The only difference between the commands is the authorization.

Command class: *SOP

Authorization: B15

Command	Operands (Position 1-n)	
	1	**2**
Query	**UNITTab**	*rdev*

rdev   Address of a cartridge unit controlled by HACC/VM

Beispiel

QUERY UNITT 380

Displays the USECOUNT of the drive with address 380.

REFRESH

Updates the HACC/VM internal system tables (SYSTABnn RUNFILE) with the current contents of the corresponding parameter file (Snn$xxxx PARM). This allows to put changes in the HACC/VM system configuration into effect without having to interrupt the HACC/VM processing.

Command class: *ADM

Authorization: A13

Command	Operands (Position 1-n)	
	1	**2**
REFresh	**SYStab**	*nn*

nn   Number of the system table to be updated

Changes in the HACC/VM parameter files S03$AUSR, S06$UNIT, S07$LDEV, S08$SERV and S99$CNST, cannot be dynamically updated with the REFRESH command. This is only possible with a HACC/VM cold start.

Temporary modifications to system table 8 can be made with the SETSVR command (Page 80).

Beispiel

A new volser range has been added to the robot system. The range can be made known to the HACC/VM system dynamically by modifying the corresponding HACC/VM parameter file S05$VOLS.

    R E F R E S H   S Y S   5

Updates the internal system table 5 with the parameter file S05$VOLS.

The HACC/VM Server machine accesses the HACC/VM Product minidisk 192 containing the parameter files of the HACC/VM system again before this command is executed.

RELEASE

Creates a so-called release request in order to release a particular unit previously reserved with the RESERVE command (Page 69). HACC/VM manages these requests in a wait queue.

The release request can be satisfied (drive released - *released*) as soon as there are no further allocations (ATTACH/GIVE) in a subsystem and, at the same time, there is no cartridge in the drive (*kept*).

Command class: *ADM

Authorization: A11

Command	Operands (Position 1-n)			
	1	**2**	**3**	**4**
RELease	{*rdev*|**ALL**}	**From**	*subsys*	[{<u>NODetach</u>|DETach}]

rdev   Real address previously reserved for the specified subsystem with RESERVE.

ALL   All real addresses previously reserved for the specified subsystem with RESERVE.

subsys   Identifies a defined subsystem (S04$SUBS)

NODETACH   Cartridge return by the specified subsystem is awaited

DETACH   CP DETACH forces cartridge return to the Server

> **Beispiel**

RELEASE ALL FROM DYNAMCMS NODETACH

Releases the reservation of all drives for subsystem DYNAMCMS. The NODETACH option prevents a DETACH by HACC/VM.

Specifying the DETACH option does **not** automatically execute a KEEP for a cartridge possibly mounted on the drive. The RELEASE is first effective after a separate KEEP task has been successfully exe-

cuted.

adic

REMOVE

Removes tasks from the message queue (MLOG) unconditionally and immediately.

This command should be used with caution because a subsystem request normally follows each MLOG entry. REMOVE is the functional equivalent of CANCEL.

Command class: *SOP

Authorization: B11

Command	Operands (Position 1-n)	
	1	
REMove	***tasknr***	

tasknr   Identifies the MLOG entry to be removed.

RESERVE

The RESERVE command is part of the HACC/VM resource management. The resource management of the cartridge units is normally performed exclusively by HACC/VM when HACC/VM has been installed as a standard version.

The HACC/VM Server machine is then the *Owner* of all drives controlled by HACC/VM. However, particular drives can be dedicated to a virtual machine as part of the standard configuration (Default_owner = *userid* in parameter file S06$UNIT).

It is sometimes necessary in certain application cases to allow a subsystem to control (ATTACH, GIVE) a unit that is exclusively controlled by HACC/VM (Default_owner = *hacsvr* in parameter file S06$UNIT). This function can be realized with the RESERVE command.

The RELEASE command (refer to Page 66) can reset such cartridge unit reservations. The DROP RESERVE command (refer to Page 9) can be used to cancel reservation requests that have not yet been satisfied.

The RESERVE command creates a reservation request that is satisfied as soon as an appropriate drive is available. Sequential reservation requests are managed in a wait queue. The QUERY RESERVE command (refer to Page 48) can be used to display the reservation requests.

Command class: *ADM

Authorization: A11

Com.	Operands (Position 1-n)					
	1	2	3	4	5	6
RESErve	{*rdev*|ANY}	For	*ssy[,job]*	FRee	[{CP|HACC}]	[*feedback*]
				ATtach	[*vdev*]	[*feedback*]

rdev   Real unit address to be reserved for the subsystem specified under *ssy*.

(*rdev* must be within the so-called real range of the subsystem (refer to HACC/VM parameter file S04$SUBS)).

ANY   Creates a reservation request for an optional real unit address from the real range for the subsystem specified under *ssy* (refer to HACC/VM parameter file S04$SUBS).

When all drives (for ANY) or the single drive specified in real address format are/is marked as in use, the reservation is first effective when the requested drives are free.

ssy   A defined HACC/VM subsystem (refer to HACC/VM parameter file S04$SUBS).

job   Optional text to be displayed in the drive display of the HACC/VM Monitor function.

FREE   The drive will be set to status CP FREE when reserved.

ATTACH   The drive will be allocated (ATTACHed) to the subsystem when reserved.

CP   Standard when the FRee option is used; the drive will be set to status CP FREE when reserved. Only in combination with FREE.

HACC   Special case when the FRee option is used; the drive will be set to status CP FREE when reserved. The unit is used with HACC/VM internal mechanisms. Only in combination with FREE.

vdev   Virtual address when the ATTACH operand is used.

           (*vdev* must be within the virtual device range of the subsystem - refer to HACC/VM parameter file S04$SUBS)

feedback   *xrm user2* [*text*]

           xrm

           SR   CP SMSG to *user2* for RESERVE/RELEASE

           SM   CP SMSG to *user2* for MOUNT/KEEP

           SRM   CP SMSG to *user2* for RESERVE / MOUNT / KEEP / RELEASE

           MR   CP MSG to *user2* for RESERVE/RELEASE

           MM   CP MSG to *user2* for MOUNT/KEEP

           MRM   CP MSG to *user2* for RESERVE / MOUNT / KEEP / RELEASE

           user2   Router or Server machine for the specified subsystem, must not be HACC defined, authorized.

           text   Optional text to be sent to *user2.*

The *feedback* option is normally used together with special Server machines (amonst others, the HACC/VM Router machine) for automatic process control for applications that manage the drives independently.

Beispiel

R E S E   A N Y   F   D Y N A M C M S   F R   C P   S R M   H A C R O U T E

Creates a reservation request for a drive from the device pool defined for the DYNAMCMS subsystem.

As soon as a suitable drive becomes free, it is reserved for the DYNAMCMS subsystem with status CP FREE.

The *feedback* operand SRM HACROUTE informs the virtual machine HACROUTE on all RESERVE/RELEASE and MOUNT/KEEP events for this unit using SMSG messages.

RESUME

Reactivates/repeats tasks with the attribute "WAITADP" (the task is waiting for a reply from the HACC/VM Adapter). This means that the task in question is reset to its initial status and is dispatched again. The task is passed to the corresponding HACC/VM Adapter and the respective AML system again.

Command class: *SOP

Authorization: B10

Command	Operands (Position 1-n)	
	1	
RESume	**{*tasknr*|QUEUE}**	

tasknr   Identifies a WAITADP task to be passed to the Adapter again for processing.

QUEUE   Reactivates/repeats all tasks with attribute WAITADP.

Beispiel

RES 4712

HACC/VM task 4712 is sent again to the respective HACC/VM Adapter.

Refer also to *MODIFY AORDER (Adapter Order)* on Page 17

RETRY

Reactivates/repeats tasks with the attribute 'WAITOPR' (task requires manual intervention) that were acknowledged negatively by the AMU or AML system and that could not be automatically cleared by HACC/VM.

The RETRY command creates new MLOG entries for MO/KE tasks ("REQUEING TO MLOG") and deletes the erroneous task and a corresponding unit allocation. All tasks apart from MO/KE are reset to their initial status and dispatched again.

Command class: *SOP

Authorization: B10

Command	Operands (Position 1-n)	
	1	
RETry	**_tasknr_**	

tasknr   Identifies a WAITOPR task to be either reinitialized or requeued (MOUNT/KEEP).

ROBCOMM (ROBOT COMMAND)

Sends AML commands directly to an AML system (AMU). The valid AML commands and their syntax are defined in the S10$ROBC parameter file. These definitions normally cover the complete scope of the AMU commands.

Precondition for using an AML command with ROBCOMM is that the corresponding robot command for execution is defined ("enabled") in the S10$ROBC parameter file.

Command class: *EOP

Authorization: C20

Command	Operands (Position 1-n)		
	1	**2**	**3**
ROBcomm	**{adp|*sys,rob*}**	***robcmd***	***[parameter]***

adp	Name of the virtual machine enabled as HACC/VM Adapter function
sys,rob	System and robot IDs separated by comma
robcmd	Robot command to be executed
parameter	Parameters required to execute the command (each separated by a space/blank)

Section *AML commands* from Page 2 describes the AML commands that can be executed with the ROBCOMM command.

Beispiel

ROB HACADP ACOM

ROBcomm sends the robot command ACOM through the Adapter with the Userid "HACADP". The ACOM command triggers a communication test to the AML communication and archive computer (AMU).

Beispiel

ROB 1,1 INV 01321001

ROBcomm sends the robot command INV through the HACC/VM Adapter responsible for communication with AML system 1.

RUK (REWIND UNLOAD KEEP)

Forces the release of a blocked unit (*rdev*) or an unload.

This command should be used with caution because the command executes a CP DETACH without considering any possible tape processing still active on the unit in question.

Command class: *EOP

Authorization: C30

Command	Operands (Position 1-n)		
	1	**2**	**3**
RUK	***rdev***	***[owner]***	**[(*optionen*[)]]**

rdev   Real address of a cartridge drive

owner   VM-Userid to which the unit is dedicated (attached or given). *Owner* need not be specified when the unit has status CP FREE.

KEep   Unloads the cartridge and requests the AML system to store it in the cartridge archive. (KEEP is default)

NOKeep   Unloads the cartridge station without returning the respective cartridge back to the archive position in the AML tower

KEEPImmed   As for KEEP but with the difference that the keep task is sent immediately to the AMU ignoring the KEEP wait time.

REATtach   Dedicates the unit back to the previous *owner* after the unload and keep process

ATtach   As for REATTACH

NOATtach   Does not dedicate the unit back to the previous *owner* after the unload and keep process. (This is the default).

Beispiel

      RUK 590 VSE1 (KEEP

Forces a REWIND/UNLOAD for the cartridge unit 590 through a CP DETACH (the dedication is not reset).

The KEEP option triggers the AML robot system to clear the drive. The cartridge is returned to its defined archive position.

SETRDT (SET REAL-DEVICE-TABLE)

Dynamically modifies certain fields in the internal system table 6 (Device Table - SYSTAB06 RUNFILE).

Command class: *ADM

Authorization: A11

Command	Operands (Position 1-n)		
	1	**2**	**3**
SETRdt	*rdev*	**FR**	**CLEAR**
		{MO|KE|BU}	

rdev	Real address of a cartridge unit
FR	Marks the unit as FREE (**not** regarded as marked as in use = mounted by HACC/VM). Only in combination with CLEAR.
MO	Sets the unit status to MOUNTING
KE	Sets the unit status to KEEPING
BU	Marks the unit as BUSY
CLEAR	Initializes the entry for the specified cartridge unit in the internal system table 6 (device table). At the same time, the AML command ULC is started to verify the logical coordinates of this unit. Only in combination with FR.

> **Beispiel**

SETR 590 FR CLEAR

Modifies the corresponding entry in system table 6 for unit address 590:

- Status-1   (unit activity)   = state1 'FR'

- Status-2   (unit in use)   = CLEAR 'NON'

- AML command ULC is executed for this unit. The HACC/VM status information for the unit is updated when the AML system still regards the unit as marked in use.

SETSVR (SET SERVER)

Modifies the internal system table 8 (SYSTAB08 RUNFILE).

Only modifies the HACC/VM system temporarily. A subsequent HACC/VM system restart enables the parameters defined in the S08$SERV PARM parameter file.

Command class: *ADM

Authorization: A11

Command	Operands (Position 1-n)		
	1	**2**	**3**
SETSvr	*varname*	*position*	*value*

varname   Variable name to be modified

position   Position of the variable value to be modified

value   New variable value

Beispiel

        SETS DPTI 2 10

Modifies the 'DPTI' entry in system table 8 (SYSTAB08 RUNFILE):

Parameter 2 (2) defines the nth horizontal position for the value assignment of the variable in question.

Parameter 3 (10) replaces the value at the position defined by parameter 2.

SHUTDOWN

Shuts down a HACC/VM component (Adapter, Server, Router) in an orderly manner.

Command class: *SYS

Authorization: E11

Command	Operand (Position 1-n)		
	1	**2**	**3**
SHUTdown	**ADP**	**{*adp*|*sys,rob*}**	
	SVR	**{*|ONLY}**	**[LOGoff]**
	ROUter	***rtr***	

Format 1:   ADP

Stops a HACC/VM Adapter machine.

Operand 2:

adp   Userid of the respective HACC/VM-Adapter machine

sys,rob   System and robot Id separated by comma

Format 2:   SVR

Terminates the HACC/VM Server or the HACC/VM system.

Operand 2:

ONLY   Only the Server function is stopped.

*	Terminates the Server and all active Adapters as well as Routers.

Format 2:   ROUTER

Stops a HACC/VM Router machine.

Operand 2:

rtr	Userid of the Router machine

For all formats

LOGOFF	The respective virtual machines are logged off from the VM system:

Beispiel

SHUT SVR * LOG

Terminates the HACC/VM Server including all active Adapters and Routers with CP LOGOFF.

Restriction: SERVER_ADPS = 'MAN' or <> 'SVR'

SERVER_ROUS = 'MAN' or <> 'SVR'

START

Manually restarts HACC/VM Adapter machines and/or Router machines.

Command class: *SYS

Authorization: E10

Command	Operands (Position 1-n)		
	1	**2**	**3**
START	**ADP**	*{adp|*|sys,rob}*	*[({Warm|Cold}[)]]*
	ROUter	*rtr*	[(RTable *rtable*[)]]

ADP	Starts one or more HACC/VM Adapters.
ROUTER	Starts a HACC/VM Router machine.
adp	Userid of the particular HACC/VM-Adapter machine
	or
*	all Adapter machines are started
	or
sys,rob	system and robot Id separated by a comma.
rtr	Userid of the Router machine
WARM	Warm start for the Adapters
COLD	Cold start for the Adapters
rtable	CMS file name of the table in which the actions for certain commands/messages are stored. Only in combination with START ROUter.

Beispiel

START ADP HACADP

Starts the HACC/VM Adapter machine HACADP.

Restarting an Adapter machine can be useful when the communication with the AML control computer (AMU) was interrupted by a malfunction and the HACC/VM cannot recover the connection.

SVRCNTRL (SERVER CONTROL)

Modifies the functions/variables defined in the S09$SVRC parameter file.

Command class: *T/A

Authorization: D10

Command	Operands (Position 1-n)		
	1	**2**	**3**
SVRcntrl	**COnsole**	**{ON|OFF}**	**[*userid*]**
	TRACe		
	TRAP		
	UNAUth		

CONSOLE	ON	effects CP SPOOL CONSOLE ... START
	OFF	effects CP SPOOL CONSOLE ... STOP
TRACE	ON	enables the Server internal trace and creates the Debug-File HACTRACE LOG on the Server Minidisk 191.
	OFF	disables the Server internal trace
TRAP	ON	certain events are recorded in the SERVRLOG LOG1 file.
	OFF	no trapping
UNAUTH	ON	a message is sent to the HACC administrator and - master operator when unauthorized users attempt to use commands.
	OFF	No messages are created.
userid		Only in combination with CONSOLE ON

Beispiel

SVR CONS ON VMOP

Spools the console of the HACC-Server machine to the *userid* VMOP.

UNITTAB

The UNITTAB command is part of the HACC/VM resource management and serves to control the preventive unit cleaning by HACC/VM.

The USECOUNT in the internal HACC Unit file HACCUNIT NAMES for the drives defined in the S06$UNIT parameter file is set to 0 during the initial HACC/VM start.

The current USECOUNT, the number of successful mounts since the last CLEANING, is recorded per drive in the HACCUNIT NAMES files. This value is continually compared to the threshold value "Cleaning necessary" and HACC/VM triggers cleaning of the drive in question when the USECOUNT counter exceeds the threshold value for a cleaning period.

The threshold value for a cleaning period varies according to the unit type and is defined in the S99$CNST parameter file.

Command class: *ADM

Authorization: A13

Command	Operands (Position 1-n)		
	1	**2**	**3**
UNITTab	**INIt**		
	Query	*rdev*	
	Set	*rdev*	**{*usecount*|CLEAN}**

INIT   Initializes the HACC Unit file HACUNIT NAMES from the HACC internal system table 6.

adic

Beispiel

U N I T T   I N I

Initializes all drives defined in system table 06 with USECOUNT 0 in HACUNIT NAMES.

QUERY	USECOUNT inquiry for the specified unit.
rdev	Real address of a cartridge unit controlled by HACC/VM.

Beispiel

U N I T T   Q   3 8 0

Displays the USECOUNT for the drive with address 380.

The format "UNITTAB QUERY..." corresponds to the "QUERY UNITTAB..." format (Page 60)

SET	Sets the USECOUNT/CLEAN-LIMIT for the specified cartridge unit in the HACUNIT NAMES file.
rdev	Real address of a cartridge unit controlled by HACC/VM
usecount	Numeric direct value
CLEAN	Sets 'Cleaning necessary' (after the next mount)

Beispiel

U N I T T   S   3 8 0   C L E A N

Sets the symbolic USECOUNT 'CLEAN' for drive address 380 to a unit-specific threshold, this means that cleaning is performed after the next unit usage.

Beispiel

UNITT S 380 0

Sets USECOUNT 0 for drive address 380 to a fixed value (here 0). The 0 means that cleaning is currently being performed. (Cleaning performed manually).

HACC/ABRP COMMANDS

The commands for the HACC/ABRP components are split into process-relevant commands to the **B**ackup/**R**estore **M**anager (BRM) and catalog-relevant commands to the **M**edia **A**rchive **M**anager (MAM).

The commands are always passed to the corresponding HACC/ABRP Service machine for execution with the CP command SMSG.

Both the BRP and the MAM Service machine manage an internal database in which all relevant information are stored and used should a restart become necessary. These databases contain all user data for users defined in the ABRP System. Each user (CMS machine) is allocated a special authorization in order to prevent, for example, unauthorized users starting backup processes or to protect secured data against unauthorized access.

BRM (BACKUP/RESTORE MANAGER) COMMANDS

BACKUP

Starts a backup process.

Two types of backup are possible, a so-called aggregate backup and an *immediate* backup.

Aggregate backup: The backup covers a predefined aggregate, this means that all data allocated to the aggregate are logged with the respective backup procedure (DDR, VMFPLC2, SFS,....).

immediate Backup: The data specified in the command are logged with the specified procedure.

```
         ì            ì AggregateNameü                        ü
         ¦ AGGRegate  ¦                ý                       ¦
         ¦            î   Synonym      þ                       ¦
         ¦                                                     ¦
         ¦            ì DEVNO rdev [(FROM nnnn [TO nnnn]]    ü¦
         ¦            ¦                                        ¦
         ¦            ¦              é ì ALL              üü ¦
         ¦            ¦              ê ¦                  ¦ ü ¦
BACKUP   ¦            ¦ CPVOL volser ê ¦ alloc1 [alloc2....] ¦ ¦  ý
         ¦ DDR        ¦              ê ¦                  ý ¦ ¦
         ¦            ¦              ë ¦ FROM nnnn [TO nnnn] ¦þ¦
         ¦            ¦                                        ¦
         ¦            ì USER UserId ì vdev1...vdevnü          ¦
         ¦            ¦             ¦               ý          ¦
         ¦            ¦             î    ALL        þ          ¦
         î            î MAP mapname                          þþ
```

AggregateName   Name of an aggregate previously defined in the MAM catalog of the ABRP/VM system

Synonym   Short name assigned to an aggregate in the MAM catalog. This short name is also used in the backup definitions using the VM directory.

rdev   Real device address of a disk to be backed up

adic

volser   Volser of a VM formatted disk to be backed up

Userid   Userid for which minidisks are to be backed up

vdev1...vdevn   Virtual addresses of the minidisks to be backed up

mapname   Short name used for backup definitions in the CP directory

CANCEL TASK

Aborts and terminates an ABRP task. All resources used by the task, such as a BRP machine and drive, are released.

$$\textbf{CANCEL} \begin{Bmatrix} \textbf{T}\text{ASK }\textit{Tid} \\ \text{COMMAND }\textit{CmdObjId} \end{Bmatrix}$$

Tid   Unique TaskId under which a backup or restore task is processed in the ABRP system.

CmdObjId   Object-Id of the command in the ABRP queue

QUERY

Inquires the status of one or all ABRP tasks or commands.

$$\mathbf{Q}\text{UERY} \begin{Bmatrix} \mathbf{T}\text{ASK} \left[Tid \right] \\ \mathbf{Q}\text{UEUE} \left[CmdObjId \right] \end{Bmatrix}$$

Tid   Unique TaskId under which a certain part (i.e. OPEN, CLOSE) of a backup or restore process is processed in the ABRP system.

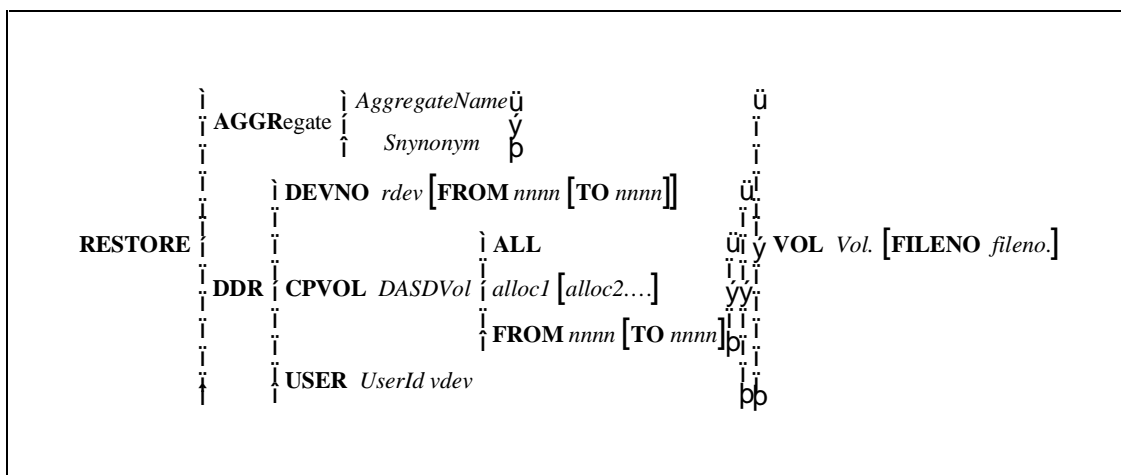All active ABRP tasks are displayed when the TaskId is not specified.

CmdObjId   Object-Id of the command in the ABRP queue.

All active ABRP tasks are displayed when the CmdObjId is not specified.

MAM (MEDIA ARCHIVE MANAGER) COMMANDS

RESTORE

Starts a restore task.

The restore command can be used to recreate data. This command is issued internally using the MAM utility ABRCAT when data are selected to be restored in the menu.

```
                  ì            ì AggregateName ü                    ü
                  ¡ AGGRegate  ¡                ý                    ¡
                  ¡             î    Snynonym    þ                    ¡
                  ¡            ì DEVNO rdev [FROM nnnn [TO nnnn]]     ü¡
          RESTORE ¡            ¡              ì ALL             ü ì ý VOL Vol. [FILENO fileno.]
                  ¡ DDR ¡ CPVOL DASDVol ¡ alloc1 [alloc2…]     ýý¡
                  ¡            ¡              ¡ FROM nnnn [TO nnnn] þ¡ ¡
                  î            ì USER UserId vdev                   þþ
```

rdev	Real device address of the disk on which the secured data were stored and which are to be restored
DASDVol	Volser of the disk on which the secured data were stored and which are to be restored
TapeVol	Volser of the cartridge containing the data to be restored
Userid	Userid for which a complete minidisk (DDR) or certain CMS files (CMSFILE) on a minidisk are to be restored
vdev1...vdevn	Virtual address of the minidisk on which the secured data were stored
Fileno.	Number of the tape file containing the data to be restored.

INIT

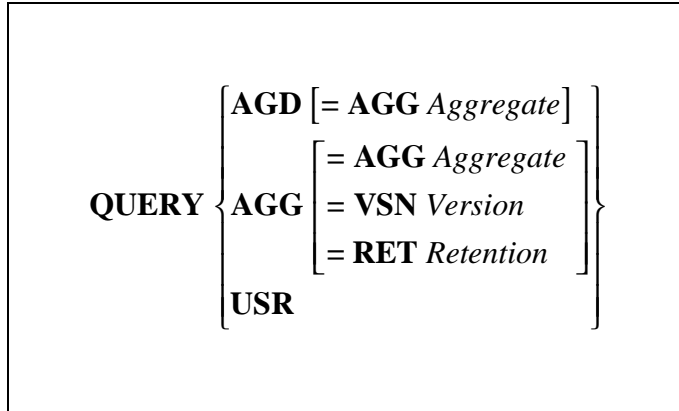Initializes cartridges to be used by the ABRP system.

INITV *Volser*

Volser   Volser under which the cartridge will be used in the ABRP

adic

QUERY AND LIST

Displays various information from the MAM catalog. The LIST command can be used to write the data to a Reader file instead of displaying the information on the screen.

$$\text{QUERY} \begin{Bmatrix} \textbf{AGD} \begin{bmatrix} = \textbf{AGG } Aggregate \end{bmatrix} \\ \textbf{AGG} \begin{bmatrix} = \textbf{AGG } Aggregate \\ = \textbf{VSN } Version \\ = \textbf{RET } Retention \end{bmatrix} \\ \textbf{USR} \end{Bmatrix}$$

AML COMMANDS

The commands described in the following are available for the communication between HACC/VM and an AML system. These commands can be sent to an AML system with the HACC/VM command ROBCOMM.

The corresponding 3270 session on the AML Archive computer (AMU) converts the command character strings when 3270 communication is implemented between HACC/VM (Adapter machine) and the AML system.

COMMAND FORMAT

The single commands are shown in the following syntax (using a MOUNT command as an example):

CMD	DEV	VOLSER	ST	Coordinate 1	Coordinate 2
MO	X	X	-	-	-

CMD	Designation of the AML command
DEV	AML device name
VOLSER	Volser
ST	Volser status
Coordinate 1	AML coordinate
Coordinate 2	AML coordinate

COMMAND OVERVIEW

The AML commands are described in detail in the corresponding system manuals.

The following AML commands can be sent with the HACC/VM command ROBCOMM directly to an AML system for processing:

AML com- mand	Function
ACOM	**AML COM**munication Test Communication test between HACC/VM and AML system
AOFF	**AML OFF** Disables the communication between HACC/VM and AML system. The connection can only be reactivated manually on the robot system.
ROSA	**RO**bot **StA**rt Starts a robot
ROSO	**RO**bot **StO**p Stops a robot
ROPO	**RO**bot to **Po**sition Positions a robot
BON	**B**arcode **ON** Enables the barcode check
BOFF	**B**arcode **OFF** Disables the barcode check
MAN	**MAN**ual mode Disables automatic operation and switching to simulation mode. The AML control computer (AMU) acknowledges all host tasks positively.
AUTO	**AU**tomatic mode Enables automatic operation (disables simulation mode)
MO	**MO**unt Mounts a volser on a drive of the AML system
KE	**KE**ep Unloads a cartridge on a drive of the AML system

AML com-mand	Function
MV	**M**o**V**e Moves a cartridge from one coordinate to another in an AML system
EJT	**EJ**ect **T**otal Ejects a cartridge in a defined ejection area. The storage position is released. The storage position can be marked as in use by a newly inserted cartridge when dynamic storage is implemented.
EJ	**EJ**ect Ejects a cartridge in a defined ejection area. The storage position in the AML system remains reserved for the ejected volser.
IN	**IN**sert Inserts a cartridge from a defined insertion area.
INC	**IN**ventory by **C**oordinate Checks the occupation of a specific coordinate of the AML system (barcode reader). The volser of the barcode label is output when the storage position is marked as in use by a cartridge.
INV	**IN**ventory by **V**olser Outputs the coordinate and status of a cartridge in the AML system.
SCH	**S**ear**CH** The robot checks a certain area of the AML systems specified as start and end coordinates (barcode reader). The command is terminated when a cartridge is found at a coordinate and the coordinate and volser of the found cartridge are output.
DL	**D**own**L**oad Modifies information (volser, coordinate, status) in the AML control computer (AMU).
ULC	**U**p**L**oad **C**oordinate Outputs information on a coordinate of the AML system.
ULV	**U**p**L**oad **V**olser Outputs information on a volser of the AML system.
UPC	**UP**date Status by **C**oordinate Modifies status information of a specific coordinate of the AML system.

AML com-mand	Function
UPV	**UP**date Status by **V**olser
	Modifies status information of a specific volser of the AML system.

Table 2: AML command overview

The following table contains the AML commands that can be executed with the HACC/VM command ROBCOMM, together with the respective parameters:

An X in a field means that the parameter is mandatory for the ROBCOMM command. The parameters are to be separated by a space (blank).

CMD	DEV	VOLSER	ST	Coordinate 1	Coordinate 2
ACOM	-	-	-	-	-
AOFF	-	-	-	-	-
ROSA	-	-	-	-	-
ROSO	-	-	-	-	-
ROPO	-	-	-	X	-
BON	-	-	-	-	-
BOFF	-	-	-	-	-
MAN	-	-	-	-	-
AUTO	-	-	-	-	-
MO	X	X	-	-	-
KE	X	X	-	-	-
MV	-	-	-	X	X
EJ	X	X	-	-	-
EJT	X	X	-	-	-
VI	X	-	-	-	-
INC	-	-	-	X	-
INV	-	X	-	-	-
SCH	-	-	-	X	X
DL	-	X	X	X	-
ULC	-	-	-	X	-
ULV	-	X	-	-	-
UPC	-	-	X	X	-
UPV	-	X	X	-	-

Table 3: AML command parameters for ROBCOMM

The reply from the AML system is displayed as message HACADM512I on the HACC/VM Monitor screen:

HACADM512I ADP=*adpid*: RSP_01:*reply data*

The reply data in this message have the following format:

$$seqn : \begin{cases} P \\ N \\ D \\ E \end{cases} : [Nxxx] : cmd : sys : rob : [dev] : \begin{cases} volser \\ amuvers \end{cases} [status] : \begin{cases} coor1 \\ robvers1 \end{cases} \begin{cases} coor2 \\ robvers2 \end{cases}$$

seqn	Task number under which the ROBCOMM command was transferred to the AMU
P	Command was executed successfully
N	Error (Nxxx) occurred during command execution
D	One data record is returned for every cartridge inserted during insertion
E	Insertion area is empty
Nxxx	AML error code by negative reply (refer to *AML* from Page 1)
cmd	AML command issued
sys	System Id
rob	Robot Id
dev	AML device designation
volser	Volser
amuvers	Version of the AMU Software

status	*lp*	two character VOLSER status		
	l	logical status:	C	Cleaning tape
			S	Scratch tape
			M	Data tape
			0	Init-status (no VOLSER assigned)
	p	physical status:	B	Tape in archive
			E	Tape ejected
			M	Tape mounted in drive
			L	Init-status (VOLSER="FREI00")
			U	Undefined

coor1	AML coordinate (source)
robvers1	Version of the robot control software of the robot with Id 1
coor2	AML coordinate (target)
robvers2	Version of the robot control software of the robot with Id 2 (when present)

AML ERROR CODES

N001: Syntax error

N002: Unexpected message from robot

N003: Serious error in the Setup file

N004: Serious error in Archive mirror

N005: ROBOT not ready

N006: ROBOT error (refer to preceding warning)

N007: Error situation cannot be diagnosed

N008: ROBOT emergency stop

N009: ROBOT switched to setup operating mode

N010: Unknown command to robot

N011: Invalid assignment (i.e. robot - volser)

N012: Command suspended by manual intervention

N014: Command suspended by program command

N015: Tower has not revolved into position

N016: Robot error EXCP_AUS 5001

N100: Unexpected robot crash

N101: Robot crash during cartridge removal/insertion

N102: Robot timeout

N103: PC-IC communication timeout

N104: Cartridge lost

N105: Cartridge stuck in gripper

N110: Crash during cartridge removal from a box

N111: Crash during cartridge insertion in a box

N112: Crash during cartridge removal from a tape station

N113: Crash during cartridge insertion in a tape station

N201: Drive not defined

N202: Drive marked as in use (recognised by ARCHIVE-PC)

N203: Drive empty (recognised by ARCHIVE-PC)

N204: Drive marked as in use (recognised by ROBOT)

N205: Drive empty (recognised by ROBOT)

N206: Cartridge cannot be removed from the drive

N207: Unit cannot be closed

N208: Cartridge cannot be removed from the chute (3490)

N301: Unknown volser

N302: Volser not in archive

N304: Barcode cannot be read

N305: No barcode label found/no cartridge found

N306: Wrong volser at specified coordinate

N401: Coordinate undefined

N402: No volser at specified coordinate

N403: Slot should be empty but is marked as in use

N501: Door to I/O rack not closed

N503: Ejection slot overflow

N504: Cartridge in waste box (VI)

The error messages can be displayed with the HACC/VM command QUERY SYS 16 Nnnn.

GLOSSARY

This glossary defines the most important HACC/VM and HACC/VSE abbreviations and terms.

$JOBEXnn. This SVA routine performs recovery tasks as a HACC/VSE component after job aborts and at the end of jobs and steps when VSE systems are connected to HACC/VM.

$ROBEXIT. This SVA routine performs the communication with the HACC/VM system as a HACC/VSE component when VSE systems are connected to HACC/VM.

AML. Automatic Mixed Media Library. Identifies cartridge robot systems made by ADIC/GRAU Storage Systems.

Adapter. The HACC/VM Adapter machines serve to communicate with the systems.

Alert. A so-called Alert Userid is defined within the HACC/VM system parameters and this Userid is alerted by messages or spool files when problems occur during automatic operation. An Alert log (*svrid* ALERTLOG) is also created for problem analysis.

AMU. AML Management Unit. The control computer of an AML system. Also used for the communication between HACC/VM and the AML system.

Archive. All coordinates and cartridges (volser) are stored in the AMU database (SQL). An archive can also be kept in the HACC/VM system. This is especially necessary when several HACC systems (HACC/VM and HACC/MVS) access an AML system without organizational separation.

Batch-Process. HACC/VM creates a batch process for each Batch_Command_File received with an own task number (TaskId). Special HACC/VM commands can be used to control batch processes.

Batch_Command_Facility. A HACC/VM facility to execute certain organizational processes (i.e. ejecting a large number of cartridges) by sending several HACC/VM commands simultaneously in a CMS file.

Batch_Command_File. A file containing (file name BTCHCMD), AML commands (*BAT statements) to be processed by HACC/VM. A Batch_Command_File is sent to the virtual reader of the HACC/VM Server machine for processing.

The sender normally receives an acknowledgement as a reply list after the Batch_Command_File has been processed.

BR (**B**ackup/**R**estore). Optional HACC/VM components for automatic backup in VM. Can be of use when VM does not have a tape management system.

BRM (**B**ackup/**R**estore **M**anager). Sub-component (virtual machine) of BR. Controls all backup and restore tasks of the BR.

BRP (**B**ackup/**R**estore **P**rocessor). Sub-component (virtual machine) of BR. Several BRP machines can be used to process several BR backup and restore tasks in parallel.

Cleaning. The write/read heads of the cartridge drives must be cleaned from time to time by inserting a cleaning cartridge. This a preventive measure in HACC/VM, this means that HACC/VM automatically mounts a cleaning cartridge before the control unit of the cartridge drive demands cleaning.

Client. HACC/VM regards all virtual machines that communicate with HACC/VM Server as clients. Client types are grouped as follows:
þ SUBSYSTEM
þ ADAPTER
þ OPERATOR
  · ROUTER
  · MONITOR

Dynamic area. An area defined as dynamic has no specific assignment between the volser of a cartridge and a coordinate as in a hierarchic system. This means that the respective slot released by the removal of a cartridge within the dynamic area can be used for the later insertion of a different cartridge.

DYNEXIT. The following exits are implemented in this routine when DYNAM/T is used as tape management system under VSE:
  · Message exit   MSGHOOK
  · Open exit   OPNHOOK
  · Close exit   CLSHOOK

EJECT. EJECT is the process of cartridge removal by the insertion/ejection unit of the AML system.

EPIC. Tape management system from the Legent company.

FAQS/ASO. Software package from the Legent company for automatic control of a VSE system.

FMSD. Foreign Mount Source Device. Refer to foreign mount.

Foreign Mount. Cartridges that are to be loaded temporarily on a drive within the AML system can be loaded using the so-called foreign mount area of the input/output area. The AML system does not check or consider a barcode which may be on the cartridge.

HACC (Host AML Communication Control). Control software that controls the connection between host applications and the AML robot system.

HACC/VSE. Interface software that is implemented when connecting the VSE tape management systems DYNAM/T and EPIC/VSE.

HACCPARM. A parameter file to be assembled for the connection of DYNAM/T-CMS to HACC/VM. The HACCPARM EXEC parameter procedure must also be adapted when the HACC/VM Router machine is used.

HACCPVSE. The HACCPVSE parameter file is assembled and linked in the VSE system when DYNAM/T-VSE is connected. The corresponding phase (HACCPVSE.PHASE) must be loaded in the SVA when HACC/VSE is enabled.

HACCVSNAP. The internal routine automatically generates a complete list of all significant variables when a HACC/VM error occurs.

Hexa tower. A revolving storage rack within an AML system comprising 6 segments. The maximum load capacity is currently 4320 cartridges.

IMOD (intelligent module). Identifies REXX procedures that can be executed under control of the FAQS /ASO software from the Legent company in a VSE system.

INSERT. INSERT is the process of cartridge insertion by the insertion/ejection unit of the AML system.

KEEP. The request to HACC/VM to unload (dismount) a cartridge from a drive supported by the AML system.

Coordinate. A unique coordinate is assigned to each slot serviceable by the AML system as well as every drive.

Logging. All messages received by HACC/VM are recorded in the SERVRLOG LOG1 log file and all message sent by HACC/VM are recorded in the SERVRLOG LOG2 file. (Enabled during HACC/VM parameter setting).

MAM (**M**edia **A**rchive **M**anager). Sub-component (virtual machine) of BR to manage backup data files created with BR.

MLOG. All tasks sent to the HACC/VM system as SMSG messages are managed in the so-called message log (message queue) and are moved to the TLOG as soon as all resources required for execution are available (drive, volser).

Monitor. The HACC/VM Monitor function serves to control and monitor the HACC/VM system. A HACC/VM Monitor machine is a special HACC/VM Operator.

MOUNT. The request to HACC/VM to load a cartridge on a drive supported by the AML system.

Operator. A HACC/VM Operator is a virtual machine that can generate HACC/VM commands. A special operator is a HACC/VM Monitor machine.

Problem-Box. When any sort of mechanical problems occur during cartridge handling in the AML system, the cartridge is ejected to the so-called problem box.

Quadro tower. A revolving storage rack within an AML system comprising 32 segments with 4 inner towers (each with 6 segments) and 8 outer segments. The maximum load capacity is currently 5760 cartridges.

Robot. One or two robots within an AML system that service the cartridges and drives within the AML system.

Router. A HACC/VM Router machine can generate HACC/VM commands controlled by console messages (also SMSG) from another virtual machine or by CP messages. The HACC/VM Router machine is used, for example, when DYNAM/B is connected. The HACC/VM Router machine is a special HACC/VM Operator type.

Scratch_Facility. A HACC/VM facility that supports scratch substitution. Internal scratch lists are created from scratch lists read in from the respective tape management system via the virtual reader of the HACC/VM Server machine.

Scratch substitution. HACC/VM supports the so-called scratch mount requests. To this purpose, HACC/VM manages internal scratch lists generated from the respective lists of the tape management system.

Server. The HACC/VM Server machine manages all tasks passed to the AML system.

Stealing. Tape management systems with the AVR function (Automatic Volume Recognition) do not create a mount message when a requested cartridge is already loaded on an available drive. This means that a drive is assigned to an application with AVR for which a parallel application has already created a mount request (i.e. by scratch processing). This leads to two application requiring a cartridge but only one mount request. HACC/VSE recognizes this situation and automatically creates a second mount request in this case.

TLOG. The so-called Task log contains all active HACC/VM tasks.

TMS-Exit. An interface program that passes on certain information to HACC/VSE via the tape management system (i.e. messages). This exit is part of the HACC/VSE components in certain circumstances.

TMS. Tape Management System (tape management system such as DYNAM/T or BVS for example).