



AML Management Unit
3.10c

Release Notes

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1 Version 3.10 AMU Release Notes

This release notes covers the Version 3.10 release of the AML Management Software (AMU). If question arise about any of these notes, call theADIC/GRAU Technical Assistance Center at the appropriate number:

- 00-800-9999-3822

1.1 For Your Safety



Attention

The AMU 3.0 has processes which sends itself time controlled commands to robots. Please make sure, that nobody is inside the library, if the AMU will be started. The AMU send commands undepended of a started host software.

1.2 Requirements

The CD_ROM of this AMU version is a complete version, which does not require a previous version of AMU software. AMU 3.10 can replace all previous installed AMU versions.

The following software releases are required:

Table 1-1 Software Release Requirements

Software	Version	Version for use DCI
AML/2 robot Standard Gripper tower parallel gripper	AML/2 2.20F or higher AML/2 2.20G or higher AML/2 2.30E or higher	AML/2 2.30G with Fix 4 or higher
AML/E robot Standard gripper parallel gripper:	AML/E 2.20K or higher AML/E 2.30D or higher	AML/E Version 2.30G with Fix 4
AML/J robot	AML/J 2.40D or higher	AML/J Version 4.01
Scalar 1000	Scalar 1000 Microcode 1.01 or higher	
DAS	UNIX: DAS 1.20 OS/2: DAS 3.012	
SNI-robar	Robar V2.5 or higher (recommended Robar-SV V3.0 ^a)	
HACC/OS400	Version 2.2 or higher	
HACC/VM	Version 1.4.2 or higher	
HACC/MVS	Version 3.00 and PTF ZY30012 ^b	
TwinATL	Version S0308D20 or higher	

a.Support of the new AMU 3.0-Features

b.Older versions of HACC/MVS do not support Dual-AMU and AMU-Clean-Management

Other host application software version prerequisites do not apply.

1.3 System Hard- and Software

Table 1-2 Hardware- and System-Software Requirements

Processor	Pentium 120 (minimum)
Memory	32MB Minimum (64MB recommended) Systems having heavy load or more than two hosts connected should have 64MB)
Disk	850 MB or more
IBM OS/2	Warp 3.0 with MPTS Fixpack WR08610 or higher (for update look at the ADIC/GRAU Service CD-ROM 3/1999 (326S00003) or ask ADIC/GRAU Technical Assistance)
IBM DATABASE 2	DB/2 2.1 or higher (for updates ask ADIC/GRAU Technical Assistance)
IBM Communications Manager	if necessary: CM/2 1.11 or higher
IBM TCP/IP	if necessary: OS/2 WARP CONNECT with TCP/IP support
Dataswitch (only AML/2 and AML/E with Dual AMU)	Automatic Data Switch The Manual Data Switch, previous used for Backup AMU will not longer supported on AML/2 and AML/E.

1.4 Updates

Updates of any of these products should be performed by authorized and trained personnel.

Update from AMU 2.00 and earlier

The update of AMU 2.00 to AMU 3.10C should be performed by authorized and trained personnel.

Update from AMU 2.20,AMU 2.30 or AMU 2.40 or AMU 3.10C

If the correct prerequisites have already been installed, an update to AMU 3.10C may be performed by trained customer personnel.

2 AMU Installation Program

2.1 Installation

Perform the following steps to install the AMU version 3.10 :

- Step 1** Check the correct level of your system software with the command `syslevel` (MPTS, DB/2)
AMU 3.02 and higher does not work with a older Database Manager and without the MPTS Fixpack WR08610)
- Step 2** If you install an update stop the current processing. Run shutdown AMU. If you run an initial installation, begin with step 5.
- Step 3** Open an OS/2 window.
- Step 4** Insert the AMU-Software CD-ROM and change in the installation directory
- Step 5** rename the `startup.cmd` e.g. `ren startup.cmd startup.org` in case of a update(renamed the `startup.cmd`). For new installation call direct the program `Install`
- Step 6** Restart the computer (shutdown and boot).
- Step 7** Insert the first diskette of AMU Software into the diskette drive or the CD-ROM in the CD-ROM drive.

Information

Do not interrupt the installation process. This may lead to undefined conditions and problems with the database.

- Step 8** Open an OS/2 window and change to the drive or directory, where your AMU software is located
e.g.

```
C :> e:<Enter>
E :> cd amu310
```

- Step 9** Enter in this directory

```
E:\AMU310> install
```


Step 10 Select the installation options

```
          I N S T A L L A T I O N      U T I L I T Y
          A M U - V E R S I O N  3.10C
          A D I C / G R A U Storage Systems

1 = New Installation of AML Management Software
    (Installation without backup of an older Version)

2 = AMU Update from AMU *1) to 3.10C

3 = Deinstallation (Rollback) of a previously installed AMU 3.10C

4 = End

Select an Option:
```

*1) Option 2 is for any kind of AMU software update (AMU 2.40x, AMU 3.0x, AMU3.10x). The next selections are only available update of AMU 2.40x, 3.0x and new installation.

Step 11 Select your robot hardware.

```
          I N S T A L L A T I O N      Robot Selection
          A M U - V E R S I O N  3.10C

1 = Installation for AML/2, AML/E and AML/J
    (AML/2 without IBM-RIC adapter)

2 = Installation for AML/2 with Quadron Software for RIC adapter

3 = Installation for Scalar 1000

Select an Option:
```

Step 12 Select your optional moduls

```
          I N S T A L L A T I O N - Optional modul selection
          A M U - V E R S I O N  3.10C

          Please select the moduls which you want start with this AMU

1 = Installation without additional moduls

2 = Installation with Dismount Manager (DIM)

3 = Installation with Clean Manager (CLM) and DIM

Select an Option:
```

Step 13 Select your DAS-Option

```
      I N S T A L L A T I O N - Option DAS
      A M U - V E R S I O N 3.10C

Please select 'Y' if you want install a AMU with DAS or 'N' for
installation AMU without DAS

Press Y or N:
```

Step 14 Select the Drive Control Interface Option

```
      I N S T A L L A T I O N - Drive Control Inerface
      A M U - V E R S I O N 3.10C

Please select 'Y' if you want install the Drive Control Inerface
or 'N' for installation without DCI

DCI is necessary for usage of DLT Low Profile drives

Press Y or N:
```

Step 15 Confirm the selected configuration, when you will ask.

Step 16 Login with AMUADMIN when prompted to log on.



Warning

Please do not interrupt the installation process.

The following steps only apply to systems with a second harddisk (AML controller).

Step 17 Terminate OS/2 and restart the computer.

Step 18 Wait until the following appears on the top left corner on the monitor:

■ OS/2

Step 19 Press keys <Alt>+<F1>

```
RECOVERY CHOICES

Select the system configuration file to be used, or enter the option
corresponding to the archive desired.

ESC - Continue the boot process using \CONFIG.SYS without changes
C   - Go to command line, (no files replaced, used original CONFIG.SYS)
V   - Reset primary video display to VGA and reboot
M   - Restart the system from Maintenance Desktop (Selective Install)

Choosing an archive from the list below replaces your current CONFIG.SYS,
Desktop directory, and INI files with older versions. These older versions
might be different from your current files. Your current files are savrd in
\OS2\ARCHIVES\CURRENT.

1) Archive created 18.6.97 12.00.00
2) Archive created 18.6.97 12.10.00
3) Archive created 18.6.97 12.20.00
X) Original archive from INSTALL created 18.6.97 10.00.00
```

Step 20 Select <C> as command line.

Enter the following command:

```
C:> amu\hddcopy
```

Step 21 For Systems with VTAM Connection: Please have a look at the AMU Reference Guide and the CM/2 Documentation.

Information

After changes of the relationship between the database table coordinates and pool, the select tables must be updated. The relationship will be changed by e.g.:

- insert of clean cartridges from Host or from the AMU
- insert or eject of scratch tapes from scratchpools.

For update run every time you have big pool table changes or the database selects are very slow the following procedure

- stop the AMU and run:

```
C:\amu> arcbndit
```

2.2 Deinstallation

During the installation, the previous AMU version, if present, was saved into backup directories. Selecting the corresponding option from the installation program menu allows to deinstall the AMU Version 3.10C and restore the previous installed AMU Version:

Step 1 Stop operation of the AML Management Software. (Host commands ROSO and HOLD or DAS command Robhome and DAS shutdown). Select "Shutdown AMU" from the AMU User Interface.

Step 2 Change the name of the file STARTUP.CMD to STARTUP.ORG.

```
C:> move startup.cmd startup.org
```

Step 3 Restart the computer (shutdown and boot).

Step 4 Insert the first diskette of AMU Software into the diskette drive or CD-ROM in the CD-ROM drive.

Step 5 Open an OS/2 window and change to install drive (e.g A:).

Step 6 Type "Install" and press <ENTER>.

Step 7 Select the deinstallation option from the installation menu. Wait until the deinstallation process completes.

3 Changes in AMU 3.10C

Table 3-1 Changes in the changed modules for version 3.10c

Module	Explanation of Changes
amuconst.rc amuconst.ini	modify the version number
ArcSQLe.dll	(+ ArcSQLe.BND, ArcSQLeN.BND, ArcBSQL.BND) Prevent the error: 'normal' termination of the ARC process
Art.exe	TrcAssign macro added, function EvtReceive is now called with the correct szReceiver parameter. These changes should make analysis more easy.
Bud.exe	only LogWrite improved for EvtSend errors. Self triggering added, that means if the communication to the partner is lost a flag is set when update requests are received by the 'active on error'- BUD. After reconnect the flag is used to start the transmission of database updates without an external trigger (until now a next command / next update was necessary to restart the transmission of updated database records.
Cfg.dll	default version changed to "V03.10C "
Cfg.dll, HocPmac.dll	Next try to prevent SYS 3170; our own routines should be called before the system exit routines are done.
Clm.exe	insert of cleaning cartridges to pre-defined slots skip cleaning request (internal MOCL sent by KRNP), when drive cleaning bit wasn't reset by a previous cleaning operation;this prevents us from having a cleaning loop until all cleaning cartridges are wasted;
Con-Clean.exe	Currently mounted clean cartridges are shown in the correct way.
ConCont.dll	Maximum number of records (which may be stored) increased from 64 to 128 commands.
ConLog.exe	The current window position and size and the current fonttype and -size are stored into the os2.ini (Appl. AMU, keys: ConLog_Fontsize, ConLog_WinPosSize). During startup of the online log these values are read from the inifile and used for more convenience. Window-Pos-Size is corrected if the window was moved outside the visible screen.
DBconv.exe	When started with option '-d' (restore existing DBconv.dat file) the existance of the DBconv.dat file was not checked before the database was dropped. So it was possible to loose the ABBA database by a simple user mistake. Now DBconv stopps with an error message if the datafile doesn't exist.
filetr.exe	Now the configured files will saved permanent.

Table 3-1 Changes in the changed modules for version 3.10c

Module	Explanation of Changes
hoc3964.dll, hocaml2.dll	enable DTR for support of a new 8 multi-port PCI adapter
HocAml2.dll	For Dual-AMU systems send received messages to RTE, only if this isn't possible send directly to KRN (until now all received messages were sent directly to KRN, no routing was possible)
HocEhll.exe	fixed problem, when RTE is inactive if we can't send HACC request to RTE, we send directly to KRN
	added ExitList function added DosError () function to prevent 3170 popup window, when hocEhll.exe process ends due to inactive 3270 presentation screen
HocScan.dll	changed open and initialization of serial communication port now some trace messages are written.
HocTcpIp.dll	fixed ROBAR reconnect (no more timeout)
install.cmd	enhancement for set to ACTIVE and correct KRNLOAD
KrnLStep.dll	changed fct. KrnGetRequester a switch normal didn't work, when only one host is configured; the problem was, that the loop end criteria, which checks valid AMU requesters, was derived from KrnCfghosts->usNumOf instead of KrnCfGAMUs->usNumOf
	Better (more expressive) LogWrites in some error cases. Send LOOK-Kommand direct to KrnP (do not use the routing via the KRN-receiving queue). Use of the newer constants (more expressive constants) for the option (= select case) of ArcEView calls.
KrnLUtil.dll	Prevention of a double-mount situation in case of the following command sequences: MOVE - KEEP - MONT (Keep and Mount same drive) INVT - KEEP - MONT (Keep and Mount same drive) in both case the MONT must wait until the KEEP ends, this was done by a query with KrnManageTapeDevStatus, but the function-call was done with the wrong coordinate. Now this function is called with the drive coordinate of the (possibly) next cmd. An additional command sequence is triggered inside of KrnActMontOrKeep (KKLR = Keep, Keep, same drive, same robot).
	Correct answers to the ABBA1-Inventories. The part of generating an ABBA1-answer when no volser was detected (starting at line 226) is nearly new, the return values NO_ERROR and AMU_WRN_INVT_MISMATCH must be handled in separated parts
KrnPhys.dll	added synchronization for KRN list access via hmtx-semaphore in function KrnRhoRecv() and KrnAMU-PRecv()

Table 3-1 Changes in the changed modules for version 3.10c

Module	Explanation of Changes
KrnPmac.dll	<p>fixed problem with PMAC register dump</p> <p>Build answer for correct command with correct return code. Avoid blocking of KrnP when first command is to a DG drive and it fails. Remember PIDDATA for command if there is an error in KrnReadAMUPQueue called from KrnSendContMsg. Build answer for failed command if KrnSendContMsg fails, not for command that triggered this function. New function KrnTriggerResponseAndCommand that replaces the calls of KrnBuildAMUPResponse. This function triggers the next RHO command by KrnSendContMsg and handles its errors. It also builds the answer for the requested command by calling KrnBuildAMUPResponse.</p>
Log.dll	<p>A lot of trace messages added (especially for LogInit-ReadForce), length for strcmp corrected, so the name of the monitoring queue should be found during the second run. Length for EvtSend of the name of the new monitoring queue corrected (it's better to send the zero-terminated string).</p>
LogView.exe	<p>After use of pushbutton 'View' the correct tool (Log2Asc.exe or LogCopy.exe) is used to generate the logview.txt. The choice is done by the filename of the selected file (starting with log* indicates the use of Log2Asc). This is an additional feature for more convenience.</p>
Rte.exe	<p>Rte should only work on commands with a minimum of 70 characters, AML/2 format has 70 characters, usable ABBA1 format has 80 characters. On shorter commands there is the risk of an access violation.</p>

4 Changes in Version 3.10B

Table 4-1 Changes in the changed modules for version 3.10b

Module	Description
KrnPmac.DLL	Changes in the synchronisation of the threads (Problems with fast > 300MHz Computers). Initialisation of variables with 0. Changes in the memory management.
Bud.exe	- Changes in the Log- and Traces for better analysis for the problem of a lost of communicatin between the two AMU computers. - Additional changes in the memory management.
Clm.exe	If the user increased the MaxUseCount of a drive during the started cleaning (already sended NTFY 1309) now the clm completed this cleaning to prevent a for ever locked drive.
FileTr.exe	GUI fields can now be entered by the Tab key.
AmuConst.ini AmuConst.rc	ADS icon was missing because a value DTYP NUMOF was not correct.
ConArc.DLL	Check boxes now only enabled for devices from type tower
ConEdVol.DLL	For Update all in Edit Volser Range, now the field Owner must be filled with values 1-3.
ArcBase.DLL	Additional check of the COwner, modification only to 1,2 or 3 allowed.
KrnPhys.DLL	access to the request table now with a semaphore.
cfg.dll	CAN address for DCI changed to 2 digits, additional PROC KRNLOAD

5 Changes in Version 3.10a

Table 5-1 Changes in the changed modules for version 3.10a

Module	Description
KrnUtil.DLL	Krn Trap after a negative answer for a not longer necessary KEEP (rc=1094 or N203) changes of the logwrites for **kernel** state mismatch
ConTrc.DLL	Write/Formate trace produced an error message
KrnPMAC.DLL	Teach with option 1P has produced a trap, because of a too small buffer
HocEHLL.exe	Trap if the communication session is inactive
KrnPhys.dll	Drive are not able to operate if the drive name is higher then 99 (Coordinate not found in KrnRefPt)
KrnP.exe	corrected exit list
DBconv.exe	not valid values in the column VTYPE will be replaced with U instead of X
AMU.msg	changed Logwrites for BUD (remove the wrong %)
AmuConst.ini	additional Drive M8100 (Diana-4)
HOCSan.DLL	Correction in the protocol to the scanner communication (Barcode reading with fast AML controller)

Configuration Changes

With AMU 3.10a will supported the new drive M8100 from Fujitsu (Diana-4) for the media type 3590 (Magstar). For using of the drive, you need the robot code 4.00 or higher for AML/J and 2.30G for AML/2 and AML/E. The new drive has the AMU type 'DZ'.

6 Changes in Version 3.10

6.1 Drive Control Interface

AMU 3.10 can be configured with a communication line to the Drive Control Interface (CAN-Bus) for

- Check the drive state
- Check Drive Clean requirements
- Determine time for drive dismount by the robot

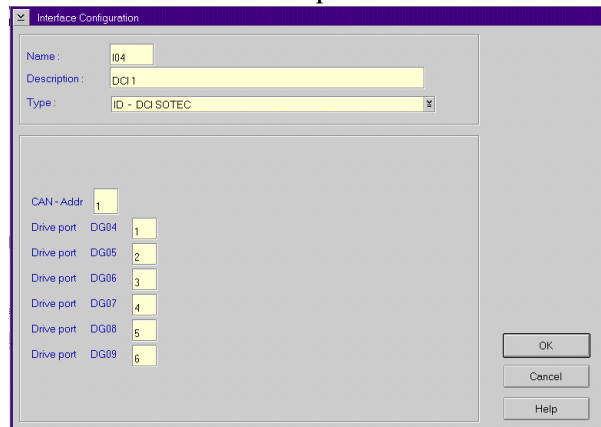
6.2 Backup Deamon

AMU 3.10 will be distributed with a new BUD for a more safety control of the database on the Dual-AMU. New Features are:

- No more updates possible from a passive to a active AMU
- In case of a missing coordinate, the BUD send now futher updates to the other coordinates.

6.3 Configuration

For the DCI create the new Interface type ID (DCI-SOTEC) for configure CAN address and the DCI port.



For the Host a new configuration field for Insert- and Eject-ranges for Default using, if the Host does not send a Insert-or Rject area in the command.

For the AMU to AMU communication with TCP/IP changed the configuration to reduce the configuration to only 2 hostnames and 2 ports (automatic duplication for the second AMU communication ICON)

6.4 File Transfer

New Graphical Interface in the Service for transfer configuration files from one to the other PC with the FTP (free preselection of files and target PC)

7 Detailed AMU process changes

7.1 ARC

- new query for number of dirty records (used for switch command)

7.2 ART, LOG, TRC

- no changes

7.3 BUD

- complete new

7.4 CON

- ConConf changes for DCI
 - line from AMU to drive container with configuration Icon
 - In Host configuration default Logical Ranges, if the host send insert/ejects without a range
- In Menu Service replaced the BUD Control with Dual-AMU Service with File-Transfer, Activate this AMU
- Allowed the Configuration for no cyclic drive cleaning

7.5 CLM

- support of the Clean command from DCI

7.6 DIM

- no changes

7.7 HOC

- Changes for Dual-AMU configuration

7.8 KRN-L

- in case of a krn state mismatch, autorecovery
- new internal status command for drive cleaning
- enhancement in the switch modul for the normal switch
- support of the new separat process KRN-P
- support of the new BUD

7.9 KRN-P

- process separated
- enhancement for Drive control CAN commands to the DCI, new reco-

very commands to the robot for operate the handle on the DLT drive

7.10 RFM

- no changes

7.11 RTE

- free memory before exit

7.12 PMMAINT

- enhancement of the preparing of the configuration

7.13 CFG

Table 7-1 New Types in the configuration

Code for media type in AMU	Media Type
DG	Drive DLT (Low Profile)
ID	DCI Communication

8 Addressed Tickets

8.1 AMU 3.10C

Table 8-1 Solved problems in AMU 3.10C

Ticket number	Problem
ET0000025079	wrong status returned for HACC/MVS command INC and INV
ET0000031435	Backup from RFM menu does not work
ET0000035284	TCP/IP Communication problems
ET0000035904	SYS3175 during save the configuration
ET0000036288	3270 communication problems without RTE
ET0000037043	Insert Cleaning cartridges to a predefined position in the AML
ET0000037074	TCP/IP Communication to ROBAR
ET0000040136	Installation of AMU with BUD
ET0000040136	Installation of AMU with BUD
ET0000041574	Online Log is hanging up
ET0000044344	SYS 3170 bei HOC EHLL Communication
ET0000045397	Display of Online Log, if moved to the outside of monitor
ET0000046169	Cleaning DLT7000 endless loop

8.2 AMU 3.10B

Table 8-2 Solved problems in AMU 3.10B

Ticket number	Problem
ET0000036640 ET0000031062	KRN Tap SYS 3175
ET0000036863	Problems with configuration changes and locked drives

Table 8-2 Solved problems in AMU 3.10B

Ticket number	Problem
ET0000036525	Problems with wrong COwner in the database (Owner = 0)
ET0000038039	interne Problems with the command list access, which produced a complete system stop

8.3 AMU 3.10a

Table 8-3 Solved problems in AMU 3.10a

Ticket number	Problem
ET0000033419	KRN-Trap direct after a KEEP which is not longer necessary (drive is already empty)
ET0000033919	Failure message during the format trace direct on a floppy drive (drive a:\)
ET0000033920	Teach with the option 1P produced a Trap
ET0000034028	Trap if the Host communication session not active
ET0000034432	Drive with names about D99 will not found in the teach point file

8.4 AMU 3.10

Table 8-4 Solved problems in AMU 3.10

Ticket number	Problem
ET0000030906	Enhancement of Logwrite for the FLIP command
ET0000033088	Kernel State mismatch produced a stop of the system
ET0000030878	sort files in the View Log files dialog
ET0000031062	Prevent the system failure SYS3170
ET0000015086	Move to the second problembox in a AML/J
GR000002985	Problems with the file transfer of the AMU-CONF.INI file to the DUAL-AMU

9 Known Bugs and Work Arounds

Table 9-1 Known Bugs and Work arounds

Ticket number	Problem	Workaround
19990505_3	Rho File Manager starts KRN without any options (Problem with DAS or Dual-AMU)	After using RFM, restarts the AMU (shutdown AMU, call AmuStart.cmd)
ET0000025079	The command INVT in the ABBA/1 format returned for coordinates with ejected volser FREI00 and 0L instead of the volser and *E	Use the command ULC (HACC/MVS command ACC to get informations about the coordinate)
ET0000031435	The function BACKUP of the RFM does not work.	Use the command receive files from rho to make a backup of the controller micro-code of AML/2 and AML/E
GR000004295	On AML/2 twin systems the pass trough function does not work	Insert the cartridges always on the robot, where the drive is located for the mount
GR000002878	AMU-Manual Mode also for AML/J	Configure the robot type R0 (AML/2)

Table 9-1 Known Bugs and Work arrounds

Ticket number	Problem	Workaround
SNS007	<p>EJ(T) support for volume mountable from Insert area The AMU 3.0 offers the direct mounting of cartridges from a EIF position or an HICAP door. It is currently not possible to issue an EJ or EJT command for such cartridges. This can cause troubles for the applications, that usually do not know whether a cartridge is in such a position or not. This error will be corrected in the next AMU release.</p>	<p>The consequence in BS2000 is that the MAREN statements //EXPORT-VOLUME and //RETURN-VOLUME will be rejected for volumes that are mountable from an EIF or an HICAP door. Procedures using this statement will go to error. Waiting for the AMU correction,</p> <ul style="list-style-type: none"> - the removal of such volumes from the BS2000 MAREN catalogue can be done by a manual removal from the EIF or HICAP door (i.e without any //EXPORT-VOLUME //RETURN-VOLUME on BS2000). - it is still possible to insert the cartridges into the robot with IN before using them for mounting. - the use of the MAREN statements //EXPORT-VOLUME and //RETURN-VOLUME on BS2000 is forbidden for volumes in the robot if the volumes are not explicitly inserted with IN.
SNS021	<p>Commands for drives during a AMU generated drive cleaning will be canceled by AMU.</p>	<ul style="list-style-type: none"> • For compatibility with ROBAR, do not use AMU drive cleaning for drive used by ROBAR. • Set in DAS the option <code>no_avc</code>

10 Example of Start Scripts

10.1 Startup.cmd

```
startcm
cmwait -w 600
cd amu
start AmuStart
start nnlink
```

10.2 c:\AMU\AmuStart.cmd

```
@REM -----
@REM      Filename:      AmuStart.cmd
@REM      Description:   Start Script for the AMU modules
@REM
@REM      [cd can
@REM      DL                      Download binaries to CAN-controller
@REM      cd ..]
@REM      start /C /min "AMU Kernel" krn [/S] [/R] [/B]
@REM      Options: /S      AMU with a DAS
@REM              /R      Dual AMU (AMU router is running)
@REM              /B      Dual AMU (AMU Backup Deamon is running)
@REM      [start /C /min "AMU Router" rte]          Dual-AMU with router
@REM      [start /C /min "AMU Backup Deamon" bud]  Dual-AMU with Backup Deamon
@REM      start con [/L]          Option: /L automatic start of Online Log
@REM -----

cd can
DL
cd ..

start /C /min "AMU Kernel" krn /S /R /B
start /C /min "AMU Router" rte
start /C /min "AMU Backup Deamon" bud
start con /L
exit
```

