

Dump and load of software for YAMAMA GT6 - GT9

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1 Introduction

1.1 Before reading this document

Read the safety regulations presented in the Maintenance Safety document and make sure that all applicable precautions are followed during the dump/load procedure.

1.2 Purpose of this document

The purpose of this document is to describe how the dump/loading process of the ABB Advant Station and Advant Controller program is done.

Caution! The dump/load procedure is only to be performed by authorised operating personnel.

Handle disks containing system program with care and always store in a safe place.

It is necessary to take new copies every year and after display or logic changes. You shall also change the disks every fifth year to avoid information losses due to bad disks.

It is very important that the date of the dump and all changes that have been made are recorded in a log-book before the program is dumped, see examples below.

LOG-BOOK FOR PROGRAM CHANGES:

No.	Date	PC/DB	Comments	Node	Sign
01	961010	PC1.1.1.1	New element	11	NH

LOG-BOOK FOR DAT TAPE/DISKETTES:

No.	Date	Time	Sign	Source	Ver.	Action
01	961010	09:00	NH	1	A	Station Backup
					B	

Note! There must be two dumps marked with "A" and "B" respectively.

2 Initial Installation of System Software

The Advant Station 500 Series Operator Station tape contains everything you need to load the system.

Caution! Loading this tape will erase the data you have on your disks. If you want to save data stored on the disks, e.g. displays, backup all your data to a tape before loading this tape. See *Chapter 6 - Dumping the Advant Station* for more information.

2.1 Configure the disk devices and load HP-UX and the Advant software

To install or reinstall, perform the following steps:

1. Switch on the power to the DDS tape drive. When the lights on the tape drive stop blinking, insert the AdvaCommand 1.8 system tape.
2. Switch on the power on the Operator Station if the power is off. Otherwise restart the Operator Station by pressing [System Config - Station - Station Restart]. If you want to select tape device directly when powering up, press intermittent on the <ESC> key directly after power on.

The central unit is faster to power up than the monitor, so you cannot see any messages on the screen. After a while you get the menu for selecting device.

3. After approx. 5-60 seconds the text "Processor is booting from the first available device" appears on the screen. Press any key within 10 seconds to terminate boot session. You will now get the "Main menu".

Type after Main menu: Enter command> b scsi.3.0

Press <CR>

On the question "Do you want to interact with IPL", answer "N".

The install function will now boot from the tape. A warning sound starts and goes on for about 2-3 minutes, but just ignore it.

Use the <tab> key to navigate between fields and the arrow keys within fields. Use the <CR> <space bar> to pop-up a choice list. If the menus are not clear, select the "help" item for more information.

4. Select keyboard language (no. 44 = UK-English).
Confirm the selection by pressing <CR>

From the "Welcome to the Ignite-UX" display, select [Install HP-UX] and press <CR>.

- In the "User Interface and Media Options" display,
- under Source Location Options select the "Media only installation"
 - under User Interface Options select the "Advanced Installation"

Then continue by selecting [OK] and press <CR>

The display /opt/ignite/bin/itool has several tabs, or sections. Select the different sections by using tab and <CR>. Fill in all sections mentioned below before pressing <GO>.

a. In the section "Basic", Environment shall be "AdvaCommand 1.8-2 Image with English HP-UX 10.20 CDE". (Other default installations can be accepted)

b. In section "Software" you shall select the category "ABB" by using the arrow keys. Use the <tab> key to move to option/product table. To select the options you have bought (see below) use the <space bar>.



Warning! The Advant Station programs are protected by copyright law and international treaties. Before you install any of the options on your station, you must verify that you have acquired the right to use that particular option on your station and have received the Software Certificate authorization for such use.

C. In the section "System" enter your network data:

For Operator Station 1:

- **Hostname:** as1
- **IP Address:** 192.36.66.1
- **Time and Date:** *Set time and date to current time. When changing the time you should start with changing the year.*

Highlight [Network Services] and press <CR>

In the sub display "Static Routes" enter:

- **Destination:** "default"
- **Gateway:** 192.36.66.254
- **Destination Hop Count:** 1

**If something has been added or modified, highlight "Add" or "Modify" and press <CR>
Exit the [Network Services] sub display by selecting [OK] and press <CR>**

5. Highlight "Go" and press <CR>

6. Confirm the warnings by highlighting [Go] and pressing <CR>

Now the operator station software will be loaded into the station. The entire loading will take approx. 1 hour and no interaction is needed during the loading.

Note! The station is automatically rebooted twice during the loading.

2.2 Start-up the Operator Station

- 1 When the Operator Station has been booted, the “*Network Configuration*” window will appear. Fill in the fields and then press "OK".

For Operator Station 1:

- Network address 1*:11
- Network address 2*:12
- Network node*: 1
- Network node description*: as1
- Network node type*: OS

Note!

If you want to restore a backup tape, this must be done in a *Backup Restore mode* that can be selected at start-up. When the window “*Workstation mode*” appears on the screen you must select "*Backup Restore mode*" and the press "OK".

If you do not want to restore a backup then just press "OK" and the Operator Station will be up and running after 5 - 10 minutes.

3 Patch the AS 500OS (if applicable)

Follow the procedure below to patch the AS 500OS.

- 1 **Insert the tape with the "AdvaCommand 1.8-patch" in the DDS-tape drive. Restart the AS 500OS by pressing [System Config - Station - Function Restart].**

Stop the AS 500OS during start-up (press help button in the "Network Configuration" window)

Open the Customer window, using the right mouse button. Log in with

commando: aosmaxd0 <CR>

Log in as "SuperUser":

Enter: su <CR>

Enter: vm-guld <CR> (password)

- 2 **Install the patch.**

To make it possible to remove the patch later, enter:

#rm -f /var/adm/sw/patch/PATCH_NOSAVE <CR>

Install the patch by entering:

#swinstall -v -s /dev/rmt/0m -x match_target=true <CR>

- 3 **Continue the start-up (close the customer window and the help window. Press "OK" in the "Network Configuration" window).**

4 Loading the Advant Station

4.1 General

In case of program loss etc., you may need to load the Advant Station by using the program dump described in the next chapter. This chapter describes how a program load is performed. The loading of the program can only be performed from the Advant Station and it is only recommended during standstill of the gas turbine, unless there are two or more operator stations in operation.

Caution! If an error occurs during the dumping or loading procedure **FAILED** is lit and an error code is displayed.

A program dump from one Advant Station should never be used to load another Advant Station.

4.2 Load Instruction

- 1 Insert the DAT-cassette with the Station Backup dump in the DAT-recorder.
- 2 Check that the green diode lights have stopped flashing.
- 3 Click “Station”, “Function restart” and “Yes”.
The Advant Station is now restarting

DURING THE RESTART THERE ARE A SEVERAL DIALOGUE WINDOWS OPENED. SINCE EACH WINDOW WILL BE OPENED ONLY FOR A SHORT TIME, YOU HAVE TO BE QUICK IF YOU INTEND TO START A DIALOGUE.

- 4 When the window “Workstation mode” comes up, immediately click on “Backup Restore Mode”.
- 5 Click on “OK”.
- 6 Click on the text “Restore of OS 1.8 Configurable Data”.
- 7 Click “Start” and “OK”.
The load of the Advant Station is now initiated. The loading will take approximately 30 min. When the yellow hourglass changes to a green dot, the load is finished.
- 8 Go to the menu; select “File” and “Exit”.
The Function restart sequence will be continued.

5 Dumping the Advant Station

5.1 General

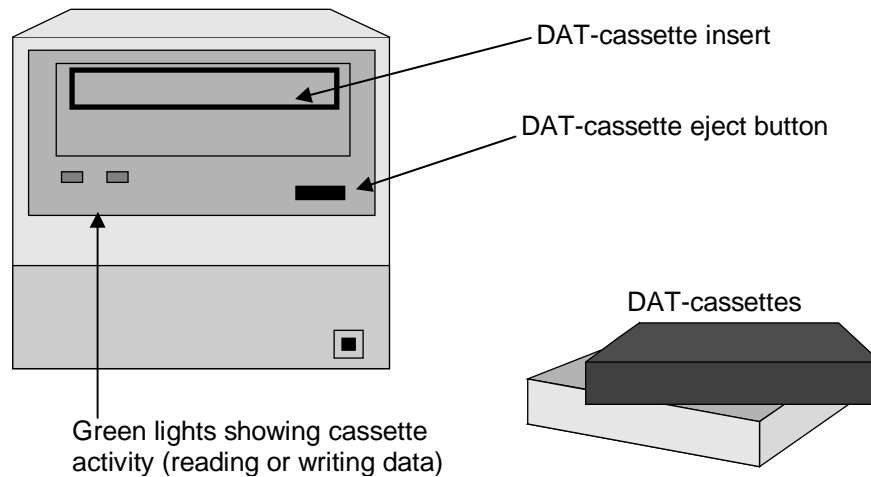
This chapter describes how a dump of the Advant Station software is performed. This should be done each time the displays are changed and as a regularly safety backup once a year. The dump can be performed only from the Advant Station.

Caution! The dump is unique for each Advant Station and should never be used to load another Advant Station.

5.2 Dump Instruction

- 1 Insert the empty DAT-cassette in the DAT-recorder.
- 2 Check that the green diode lights stop flashing (see figure below).

DAT-recorder



- 3 Press "System config" on the Advant Station keyboard.
- 4 Click the dynamic key "Maintenance".
- 5 Click the dynamic key "Station backup".
- 6 Type correct password on the password log in line, press "OK".

A password dialogue window will open up. The password can be found above the line for password login; "...sbackup..." Write this word and press "OK". A new window will open up.

Note! The password is case sensitive

- 7 Select "Backup of OS 1.8 Configurable Data".**
When the line is selected, the line background will turn black.
- 8 Click "Start" under the "Action" menu. Then click "OK"**
Wait for approximately 30 minutes.
When the yellow hourglass changes to a green dot, the dump is finished.
- 9 Go to the menu and select "Edit", and "Exit".**

6 Loading of Advant Controller 400 program

Caution! Loading of the program must only be performed during standstill of the gas turbine.

The loading of Advant Controller 400 can only be performed with the help of Advant Station 140ES (Engineering Station) or equal.

Before the loading process of the AC400 program can take place, the engineering station needs access to the AC400 system.

The loading process can therefore be divided into three different procedures:

- Going on-line (getting access to the AC400 system)
- Loading of AC400
- Going off-line

GOING ON-LINE

- 1 Turn on the power for the engineering station.
- 2 Connect the engineering station with the AC400 computer.
- 3 Start "Application builder" with the icon in the Advabuild window.
- 4 Select "File", "Open", "Project" and actual project.
- 5 Select "File", "Open", "Node list", and select actual node.
- 6 Connect to AC400 with "Tools", "On-line builder".
- 7 Wait until "#" appears on the display. (The program is now ready to continue with either loading or dumping).

LOADING OF AC 400

- 8 Type: LDIR SRCE:*. *
then press [ENTER].
- 9 Check that the file needed is in the directory, for name of the file see 8:4.
- 10 Type: ECONFIG
then press [ENTER].
- 11 Press "Y" (yes) followed by [ENTER].

Note! This will cause the AC400 to stop executing all programs and drop all digital outputs

- 12 **Type:** RECONFIG
then press [ENTER].
- 13 Press "Y" (yes) followed by [ENTER].
- 14 **Type:** LOAP *name of the file*
then press [ENTER].
- 15 Check dump message.
- 16 If everything is OK, press "Y" (yes) followed by [ENTER].
- 17 Wait until "*name of file* SUCCESSFULLY LOADED" appears.
- 18 **Type:** DICONFIG
then press [ENTER].
- 19 Press "Y" (yes) followed by [ENTER].
- 20 **Type:** DIBM PC1>PC99
then press [ENTER].
- 21 **Type:** DBL PC1>PC99
then press [ENTER].
- 22 **Type:** LSS
then press [ENTER].
- 23 Check that all PC's are unblocked. When this is done, the loading procedure of the AC400 is complete.

GOING OFF-LINE

- 24 **Type:** TSESS
then press [ENTER].

7 Dumping of Advant Controller 400 Program

The dumping is like the loading process, it can only be performed with the help of Advant Station 140ES (Engineering Station) or equal. It can be divided into four different stages:

- Going on-line (getting access to the AC400 system)
- Dumping of AC400
- Dump to Flash Card (if applicable)
- Going off-line

GOING ON-LINE

- 1 See "GOING ON-LINE" in *Chapter 7*.

DUMPING OF AC400

- 2 Check that controller shows P1.
- 3 **Type: SHTARG**
then press [ENTER].
- 4 **Type: DUAP DDMM**
DD=day, MM=month (e.g.: 0405 is the fourth of May) This is followed by a program requesting a dump message.
- 5 **Type: DUAP DUMP AC400 YYMMDD HH:MM SIGN**
YY=year, MM=month, DD=day, HH=hour, MM=minute, SIGN=signature. The program is storing the files on the hard disk named (following the example given in step three): 04050001.AD and 04050002.AD. The dumping procedure of AC400 is now finished.

GOING OFF-LINE

- 6 **Type: TSESS**
the press [ENTER].

DUMP TO FLASH CARD (IF APPLICABLE)

- 7 **Format Flash Card:**
Put the flash in one of the two slots in the AS140ES. A pop-up window is shown. Go to File-Flash Card – Format (If message about couldn't find card is shown, go to File-Flash Card-Parameters and change "Flash Card Drive", "d" or "e".)

- 8 Loading Flash Card:**
Go to file-Flash Card-Write. In the window "Write Flash Card" choose the DUAP that should be saved at the card and push "OK"
- 9 The card is now OK to put back in the controller slot. Check for the green LED in front of the slot.**

8 Loading of Advant Controller 100 program

Caution! Loading of the program must only be performed during standstill of the gas turbine.

- 1 Switch on Advant Station 140ES (Engineering Station) or equal.
- 2 Connect Advabuild with the Advant Controller 100.
- 3 Use the serial port on the Advabuild and the upper connection on the AC100
- 4 Start "Application builder" with the icon in the Advant window.
- 5 Select "File", "Open", "Project", and actual project.
- 6 Select "File", "Open", "Node list" and double-click actual node.
- 7 Start "Function Chart Builder" by double-clicking the actual node in the node list (Application builder).
- 8 Select "File", "Initialise", "Yes".
- 9 Select "File", "Backtranslate Source". Select actual database and/or PC and answer "OK". The source code will now be read into the FCB
- 10 Select "File", "Generate Target Code", "OK" Files for the target will now be generated.
- 11 Select "Target", "Connect", "OK".
- 12 Select "Target", "Block program" This is to make loading of the program possible.
- 13 Select "Target", "Load Application", "Yes".
- 14 Select "Target", "Save in PROM", "Yes".
- 15 Select "Target", "Deblock program" This is to restart the program.
- 16 When finished, select "Target", "Disconnect".
- 17 For the redundant Controller repeat from step 10.
- 18 After loading both controllers one indicates "P" and the other "b1".

Note! There is no possibility to dump a program from Advant Controller 100.

9 Backup of Advant Controller 100 program

Each time a program in AC100 is changed a copy of the program should be made.

Note! Log-books should be recorded for program changes and diskette backups according to examples in *Section 1.2* of this document.

Note! It is not possible to dump a program from Advant Controller 100.

1. Connect AS140ES (Engineering Station) or equal with the desired AC100.
The following file formats should be generated and saved:

- Source code
- Target code

9.1 Source code

- 1 **Switch on Advant Station 140ES (Engineering Station) or equal.**
- 2 **Connect Advabuild with the Advant Controller 100.**
Use the serial port on the Advabuild and the upper connection on the AC100
- 3 **Start "Application builder" with the icon in the Advant window.**
- 4 **Select "File", "Open", "Project", and actual project.**
- 5 **Select "File", "Open", "Node list" and double-click actual node.**
- 6 **Start "Function Chart Builder" by double-clicking the actual node in the node list (Application builder).**
- 7 **Select "File", "Generate source".**
- 8 **Fill in PC and DB file names "YYYY".**
The PC-source code file is YYYY01.AAX and can be found under C:\PROJ\Project name\NODES\Target\PCDATA.
The DB-source code file is YYYY0101.BAX and can be found under C:\PROJ\Project name\NODES\Target\DBDATA.
- 9 **Copy the files to diskette(s).**

9.2 Target code

All files can be found under C:\PROJ\Project name\NODES\Nodename".

Copy all files and folders to diskette(s).

If one diskette is not enough put all files at first diskette and folders with containing files at second diskette.

10 Replacement of AC400 battery in battery back-up unit.

Replace the rechargeable battery package mounted inside the controller cabinet after every three years service.

Also replace after each complete discharge (the memory contents are lost) which introduces the risk of battery cell damage.

The battery should be replaced at any fault indicated by the diagnostics.

- The replacement of the battery Unit SB522 is made on-line (i.e. with the mains supply ON). The controller operation is not disturbed.
- Disconnect the plugable connector.
- Unscrew the two fixing screws and remove the battery.
- Install the new unit in the reverse order. Tighten the fixing screws firmly.

During the replacement procedure, LED CHARGE on the backup power supply will indicate OFF. This is also observed in the system status display at the Operator station.

Note! **The battery contains Cadmium and must be treated as hazardous waste**

REVISION

Rev. ind.	Page (P) Chapt. (C)	Description	Date Dept. / Init.