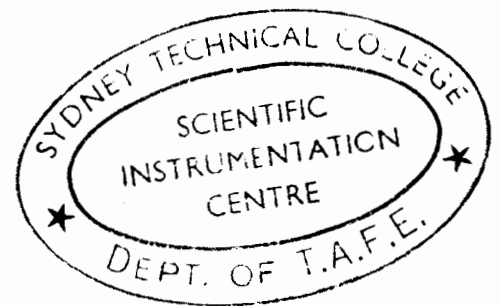




# RTE-6/VM Software

## Installation Manual



# PRINTING HISTORY

The Printing History below identifies the Edition of this Manual and any Updates that are included. Periodically, Update packages are distributed which contain replacement pages to be merged into the manual, including an updated copy of this Printing History page. Also, the update may contain write-in instructions.

Each reprinting of this manual will incorporate all past Updates, however, no new information will be added. Thus, the reprinted copy will be identical in content to prior printings of the same edition with its user-inserted update information. New editions of this manual will contain new information, as well as all Updates.

To determine what software manual edition and update is compatible with your current software revision code, refer to the appropriate Software Numbering Catalog, Software Product Catalog, or Diagnostic Configurator Manual.

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# Preface

This manual contains installation information for the HP 92084A RTE-6/VM software in the HP 1000 Model 60 or 65 Computer Systems. Software installation is performed by the HP 1000 Customer Engineer after installation of the hardware equipment. Refer to the HP 1000 Model 60/65 System Installation and Service Manual (Part No. 5955-4359) for information on hardware installation. In the case of component installation or upgrading from a prior operating system, software installation is done after installation of the RTE-6/VM firmware and completion of the self tests.

The software installed is the Primary System, which is a preconfigured system designed to demonstrate the operations of the HP 1000 System and to provide a working system for the user to gain familiarity with the RTE-6/VM operating system. The System Manager then can configure a system tailored to the specific applications.

There are three sections in this manual, separated by divider tabs. The first section, Chapter 1, contains introductory information on HP 1000 Computer System software and the Primary System. The second section, Chapter 2, contains information for the HP 1000 Customer Engineer to install the Primary System Disc. The third section contains Chapters 3 through 5. Chapters 3 and 4 provide operational information for the System Manager, showing the features and capabilities of the Primary System. Chapter 5 contains generation considerations to aid the System Manager in reconfiguring the system.

There are also four appendices to this manual. Appendix A provides boot-up troubleshooting procedures. Appendix B describes the manual boot-up procedure. Appendix C defines the Primary System configuration. Appendix D provides procedures for installing the Primary System as supplied on the disc and tape media.

Refer to the Index to Operating System Manuals (Part No. 92084-90001) for a cross-reference listing and brief description of the instruction manuals available for the RTE-6/VM Operating System.



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# Chapter 1

## General Information



### HP 1000 Software

The HP 1000 Model 60/65 Computer System software consists of the RTE-6/VM operating system and any feature products ordered. The Primary System software is delivered on a medium appropriate to your system. There are five possible Primary Systems (System No. 600 through 604) to support the HP 1000 Model 60/65 system disc units. The medium on which the system is supplied is determined by your disc model.

### Primary Disc Identification

The Primary Disc number can be found on the front of the disc, the top of the disc pack, or the side of the magnetic tape and the CS80 tape cartridge. Compare this number with the list of numbers in the following table to verify that the correct Primary System medium has been supplied for your system disc.

Logical Primary System Number	Part Number	Medium
604	92084-13301	CS80 Cartridge Tape
600	92084-13001	7906 MAC Disc Cartridge
600	92084-13002	7920 MAC Disc Pack
601	92084-13003	7925 MAC Disc Pack
602	92084-13004	7906 ICD Disc Cartridge
602	92084-13005	7920 ICD Disc Pack
603	92084-13006	7925 ICD Disc Pack

The Primary System provides a configured operating system that is not processor dependent. However, an option is provided to allow reconfiguration of the processor if needed. Each disc also contains all the HP 92084A RTE-6/VM operating system components (on LU 10) required for generating a new system. The Primary System is described below. The configuration of the Primary System is given in Appendix C of this manual.

## The Primary System

The Primary System is a factory generated system that can be booted-up by the HP Customer Engineer installing the system. The Primary System has the following features:

1. Provides a tested, working operating system to test the functionality of the installed hardware and to demonstrate the system operations without the need for a system generation.
2. Provides a starter system with sufficient capability that can be used by the customer until a customized system is generated by the System Manager.
3. Provides HP installation of many HP 1000 Series E/F Computer system drivers and two driver partitions containing dummy drivers for customer driver addition.
4. Provides the ability to determine programmatically if the processor is an E or F-Series computer and what firmware options are included, and then to reconfigure the disc library of opcode/subroutine entry points to reflect the higher speed processors or optional firmware. This allows subsequently loaded programs to use the improved speed of installed firmware.

## Installation Summary

The following is a summary of the activities required to complete the installation of a Model 60 or 65 HP 1000 Computer System supplied on a disc cartridge. If your Primary System is supplied on any of the magnetic tapes, restore it to your disc before performing any of the installation procedures. Refer to Appendix D for the appropriate procedure.

1. Check for proper disc operation.
2. Back up the Primary System (non-CS80 discs only)
3. Boot-up the Primary System.
4. Modify the LU Reassignment Table.
5. Perform the Primary System Tests.

6. Run diagnostics, as appropriate, on accessories that are not part of the Primary System. DS/1000-IV interface cards supplied with the system may be tested with the Primary System.

## Component Installation

If you have ordered only the 92084A RTE-6/VM product, you may not want to use the Primary System. Otherwise, you need to boot the Primary System without making any changes. Access the contents of LU 10, back up LU 10 (refer to the RTE-6/VM Utility Programs Reference Manual for details), then generate your RTE-6/VM system (refer to the RTE-6/VM On-Line Generator Reference Manual and the RTE-6/VM System Manager's Reference Manual for system generation information). You must install the appropriate firmware and perform the firmware self tests. Refer to the Firmware Installation and Reference Manual (12791-90001) for details.



# Chapter 2

## Primary System Installation

If your Primary System is supplied on tape (either 800/1600 bpi magnetic tape or CTD tape cartridge), refer to Appendix D for installation/restoration procedures.

### Verifying Disc Operations



The following initialization procedure should be executed only once. The HP Customer Engineer normally performs this procedure during system installation. There are two procedures for the supported discs: one procedure is used for the CS80 discs, and one procedure is for the MAC and ICD discs.

For CS80 discs, proceed as follows:

#### CAUTION

Do not install the CTD tape cartridge until the following procedure has been completed.

1. Perform the installation and checkout procedure as described in the appropriate disc Installation and Operating Manual.
2. Remove the CTD front panel by pulling it toward you and insert the tape cartridge.

#### CAUTION

Do not touch the SAVE lever after inserting the CTD tape cartridge. This can result in the loss of the Primary System.

Once the cartridge is inserted, the tape tension is automatically adjusted and a self-test performed. The BUSY light will flash intermittently. Tape loading takes about 50 seconds for the 7908 disc and about 110 seconds for 7911 and 7912 discs. When the BUSY light goes off and remains off, tape loading is complete.

3. Press the RESTORE lever to the right and hold until the BUSY light flashes. Release the RESTORE lever and immediately press it to the right again and hold until the BUSY light turns on.

The Primary System is now being restored from the cartridge tape to the disc. Restoration takes about 9 minutes for the 7908, 14 minutes for the 7911, and 35 minutes for the 7912 disc.

When restoration is complete, the BUSY light goes off and the tape is rewound, indicated by a buzzing noise.

4. Remove the tape by pressing the EJECT lever to the right. Store it in the proper container.
5. Reinstall the CTD front panel.

Proceed to the disc backup procedure.

For MAC and ICD discs, proceed as follows:

1. Ensure that a scratch disc cartridge is installed if the system disc is removable.
2. Restore power to the cabinet by positioning the circuit breaker to ON or pressing the SYSTEM ON/OFF switch.
3. Test the MAC/ICD disc drive by running diagnostics (refer to the appropriate manual in the 92711B diagnostic package, 91711-90006 or 5955-4355)

#### NOTE

It is recommended that at least five short passes of this diagnostic be executed on a scratch disc to avoid chances of destroying the Primary System Disc.

4. Replace the scratch disc with the Primary System disc.

## Disc Backup Procedure

The Primary System disc should be backed up for the customer during system installation. For component installation (RTE-6/VM only), the system manager should back up the Primary System before continuing with the installation.

For 7908, 7911, and 7912 discs, there is no need for backup since the Primary System is supplied on the CTD tape cartridge.

For 7906/20/25/33 discs and systems with a 264X terminal, the PSAVE and !BCKOF utilities should be used for the saving operations. Off-line utilities contained in !BCKOF can be used for copying disc cartridges (LUs 2, 3, and 10) from disc-to-disc or tape-to-disc.

The LU numbers for these discs are contained in Appendix C of this manual.

If the Primary System is to be backed up on magnetic tape, follow the steps given below:

1. Boot up the Primary System without any changes. Refer to the boot-up, I/O configuration, memory configuration, and disc initialization procedures given below.
2. Run the on-line restore utility PRSTR to back up the Primary System. Refer to the PRSTR Disc Backup Example given below.
3. Repeat the boot-up procedure given below to reconfigure the system to reflect your hardware configuration.

### Loading Off-Line Utility !BCKOF

The off-line utility package !BCKOF is supplied on a set of three cartridges: !BCK01 contains a memory-based operating system; !BCK02 contains the files FORMT and PSPAR (scheduled by the off-line utilities); !BCK03 contains the off-line PRSTR, PCOPY and PSAVE utilities. Loading the off-line utilities requires first loading the operating system cartridge and booting the system. Install the !BCK01 cartridge and load the memory-based operating system as follows:



1. Select the S-Register. Set bits:
  - 15-14 to the boot ROM number
  - 11-6 to the tape/terminal select code
  - 5 to 1 for slow boot
2. Press STORE.
3. Press PRESET, IBL, then PRESET again.
4. Press RUN.

When the front panel shows HLT 77 (102077 octal), boot the system as follows:

1. Select the S-Register. Set bits:
  - 15 to 1 to force reconfiguration
  - 14-6 to the system disc select code:
    - H-series (ICD disc), set to assigned select code;
    - All other disc units, set to 00
  - 5-0 to the system console select code (any supported device except MUX).
2. Press STORE.
3. Select the P-Register. Set bit 1 (octal 2).
4. Press STORE.
5. Press RUN.

The memory-based operating system is now loaded. The reconfiguration process begins automatically with the following sequence of information messages and prompts. The configuration shown is only an example and modifies the select code associated with the magnetic tape unit (LUs 23 and 24) and the CS80 disc, (LU 16).

START RECONFIGURATION

LIST DEVICE LU#?

1

I/O RECONFIGURATION ALREADY PERFORMED:  
CURRENT SELECT CODE #,NEW SELECT CODE#?

15,15 \*SYSTEM CONSOLE

CURRENT I/O CONFIGURATION:

SELECT CODE 11= TBG

SELECT CODE 15= EQT 1,TYPE 5

\*System Console

SELECT CODE 17= EQT 8,TYPE 23

\*Magnetic Tape Unit

SELECT CODE 20= EQT 8,TYPE 23

\*(Requires 2 Select Codes)

Update 1

```

SELECT CODE 50= EQT 9,TYPE 31 *7900 Disc
SELECT CODE 51= EQT 9,TYPE 31 *(Requires 2 Select Codes)
SELECT CODE 52= EQT 3,TYPE 32 *MAC Disc
SELECT CODE 53= EQT 4,TYPE 32 *ICD Disc (S.C set at Bootup)
SELECT CODE 54= EQT 5,TYPE 33 *CS80 Disc
SELECT CODE 60= EQT 2,TYPE 0 PRMPT *Extra Sys Console (DVR00)
SELECT CODE 61= EQT 7,TYPE 0 PRMPT *Extra Sys Console (DVR00)
SELECT CODE 62= EQT 6,TYPE 5 PRMPT *Extra Sys Console (DVR05)

```

I/O RECONFIGURATION?(YES/NO)

YES

\*Reconfigure system

CURRENT SELECT CODE#,NEW SELECT CODE#?(/E TO END)

-

17,23

\*Reconfigure Mag Tape Unit

-

20,24

\*Reconfigure Mag Tape Unit

-

54,16

\*Reconfigure CS80 Disc

-

/E

\*End I/O reconfiguration

NEW I/O CONFIGURATION:

```

SELECT CODE 11= TBG
SELECT CODE 15= EQT 1,TYPE 5
SELECT CODE 16= EQT 5,TYPE 33
SELECT CODE 23= EQT 8,TYPE 23
SELECT CODE 24= EQT 8,TYPE 23
SELECT CODE 50= EQT 9,TYPE 31
SELECT CODE 51= EQT 9,TYPE 31
SELECT CODE 52= EQT 3,TYPE 32
SELECT CODE 53= EQT 4,TYPE 32
SELECT CODE 60= EQT 2,TYPE 0 PRMPT
SELECT CODE 61= EQT 7,TYPE 0 PRMPT
SELECT CODE 62= EQT 6,TYPE 5 PRMPT

```

OK TO PROCEED?(YES/NO)

YES

\*Reconfiguration OK

CURRENT POSITION MEM SIZE: 128 PAGES

MEM RECONFIGURATION?(YES/NO)

NO

\*Do not touch memory

SET TIME

LU#	EQT#	SUBC#	S.C.	TYPE	DESCRIPTION
1	1	0	25B	5B	INTERACTIVE TERMINAL
4	1	1	25B	5B	LEFT C.T.U.
5	1	2	25B	5B	RIGHT C.T.U.
8	8	0	23B	23B	MAG TAPE/MASS STORAGE
9	5	1	16B	33B	CS80 CARTRIDGE TAPE
10	2	1	60B	0B	INTERACTIVE TERMINAL
11	7	0	61B	0B	INTERACTIVE TERMINAL
12	9	0	50B	31B	7900 DISC
13	3	0	52B	32B	79XX (MAC) SERIES DISC
14	4	0	53B	32B	79XXH (ICD) SERIES DISC
15	5	0	16B	33B	79XXA (CS80) SERIES DISC

Please enter tape-LU for reading !BCKO2: 4 (Left CTU)  
Please insert tape with !BCKO2 (then " " return) (Same CTU)

PROGRAM FORMT READY  
PROGRAM PSPAR READY

Please insert tape with !BCKO3 (then " " return)  
OFFLINE DISC-TAPE SAVE/RESTORE/COPY SYSTEM, !BCKOF  
TASK?

RE  
PROGRAM PRSTR READY  
ENTER OPTIONS

..  
..  
TASK?  
..  
..

## **!BCKOF Backup Example**

This example illustrates the use of !BCKOF to backup LUs 2, 3, and 10, using an HP 7906M disc drive. !BCKOF can also be used on other disc and magnetic tape drives to restore information on disc. It cannot be used to store information onto magnetic tape. For backup onto magnetic tape, use the PSAVE utility.

After the memory based operating system has been loaded, enter the IO command and note the disc LU number. The example dialog is as follows:

TASK?	
<u>CO</u>	Copy LU 2 to fixed platter
ENTER OPTIONS	
<u>VE</u>	Verification desired
ENTER SOURCE LU	
<13>	Disc LU
ENTER DEST LU	
<13>	Disc LU
ENTER HARD COPY LU	
<CR>	
DEFINE SRCE TRACK MAP	
DEFINE SUBCHANNELS,LU = XX	(7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,400,0,0,2,0,10

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,400,0,2,2,0,10

COPYING  
PCOPY NORMAL END OF JOB

TASK?

<u>CO</u>	Copy LU 3 to fixed platter
<u>ENTER OPTIONS</u>	
<u>VE</u>	Verification desired
<u>ENTER SOURCE LU</u>	
<u>&lt;13&gt;</u>	disc LU
<u>ENTER DEST LU</u>	
<u>&lt;13&gt;</u>	disc LU
<u>ENTER HARD COPY LU</u>	
<u>&lt;CR&gt;</u>	



DEFINE SRCE TRACK MAP  
DEFINE SUBCHANNELS,LU = XX (7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,100,205,0,2,0,4

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,100,205,2,2,0,4

COPYING  
PCOPY NORMAL END OF JOB

TASK?

<u>CO</u>	Copy LU 10 to fixed platter
<u>ENTER OPTIONS</u>	
<u>VE</u>	Verification desired
<u>ENTER SOURCE LU</u>	
<u>&lt;13&gt;</u>	disc LU
<u>ENTER DEST LU</u>	
<u>&lt;13&gt;</u>	disc LU
<u>ENTER HARD COPY LU</u>	
<u>&lt;CR&gt;</u>	

DEFINE SRCE TRACK MAP  
DEFINE SUBCHANNELS,LU = XX (7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,300,257,0,2,0,8

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,300,257,2,2,0,8

COPYING  
PCOPY NORMAL END OF JOB

Now remove the Primary System disc. Replace it with a blank disc.  
Continue with the off-line copying utility.

TASK?  
CO Copy LU 2 to removable disc  
ENTER OPTIONS  
VE Verification desired  
ENTER SOURCE LU  
<13> disc LU  
ENTER DEST LU  
<13> disc LU  
ENTER HARD COPY LU  
<CR>

DEFINE SRCE TRACK MAP  
DEFINE SUBCHANNELS,LU = XX (7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,400,0,2,2,0,10

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,400,0,0,2,0,10

COPYING  
PCOPY NORMAL END OF JOB

TASK?  
CO Copy LU 3 to removable disc  
ENTER OPTIONS  
VE Verification desired  
ENTER SOURCE LU  
<13> disc LU  
ENTER DEST LU  
<13> disc LU  
ENTER HARD COPY LU  
<CR>

DEFINE SRCE TRACK MAP  
DEFINE SUBCHANNELS,LU = XX (7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,100,205,2,2,0,4

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,100,205,0,2,0,4

COPYING  
PCOPY NORMAL END OF JOB

TASK?  
CO Copy LU 10 to removable disc  
ENTER OPTIONS  
VE Verification desired  
ENTER SOURCE LU  
<13> disc LU  
ENTER DEST LU  
<13> disc LU  
ENTER HARD COPY LU  
<CR>

DEFINE SRCE TRACK MAP  
DEFINE SUBCHANNELS,LU = XX (7906 example)

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,300,257,2,2,0,8

DEFINE DEST TRACK MAP  
DEFINE SUBCHANNELS,LU = XX

MODEL,#TRKS,FIRST CYL,HEAD,#SURF,ADDRESS,#SPARES  
7906,300,257,0,2,0,8

COPYING  
PCOPY NORMAL END OF JOB

TASK?  
/E

## Booting-Up the Primary System Disc

Load the Primary System as follows. Refer to the label inside the front door of the CPU cabinet to determine what cards are in what select codes.

1. Ensure that power is applied to all system components, e.g., system console, disc drive, floating-point box on the 2117, etc.
2. Push the battery select switch on the battery backup box to INT.
3. On the CPU front panel, select the S-register and press CLEAR DISPLAY.
4. Set Bits 14 and 15 to the disc loader ROM location.
5. Set Bits 6 thru 11 to the disc octal select code (12B).
6. Set bits 5 and 12.
7. Press STORE, then PRESET, IBL, PRESET (again) and RUN. (The computer stops with a halt 102077.)
8. Select the S-register.
9. Set bits 0 thru 5 to the select code of the system console (15B). Set bit 15. Leave the disc select code in bits 6 through 11 unchanged.
10. Press STORE, then RUN.

## I/O Configuration

Note that the keyboard entries in interactive dialog are underlined and terminated by pressing RETURN on the terminal keyboard.

Upon a successful boot-up, the terminal will display:

```
START RECONFIGURATION
LIST DEVICE LU#?
```

Enter: 1 (List on system console)

The current I/O configuration will be displayed, including any reconfiguration that was done through the front panel. The terminal then displays the query:

I/O RECONFIGURATION? (YES/NO)

Enter: YES (if any changes are required)

If you are using the on-line restore utility PSAVE to backup the disc, enter NO. Then proceed to the memory configuration section. For more detailed information, consult the Memory and I/O Reconfiguration section in the RTE-6/VM System Manager's Manual (92084-90009).

If the response to "I/O RECONFIGURATION?" was NO, go to the Memory Configuration section of this manual.

If YES, continue.

To restart I/O configuration at this point, enter /R at any time. The command /E terminates the I/O configuration mode.

The terminal will display:

CURRENT SELECT CODE #, NEW SELECT CODE #? (/E TO END)

Enter the commands as appropriate to reconfigure the Primary System to the actual hardware environment as described in the RTE-6/VM System Manager's Reference manual. The preconfigured select codes are given in Appendix C of this manual. For example, if your system has a 2619 line printer instead of a 2608 line printer, enter:

60,xx where xx is the I/O slot where the line printer interface card is.

If you have a 2640A/B terminal on DVR00, enter:

64,xx where xx is the I/O slot of the terminal interface card.

Continue this process until the actual hardware configuration is represented.

Enter /R to restart I/O reconfiguration.

Enter /E to terminate the I/O configuration mode after all changes have been made. Next, the terminal will display the new configuration and the message:

NEW I/O CONFIGURATION PERMANENT? (YES/NO)

Enter:

YES

to allow the changes to be transferred permanently to the disc. The Reconfigurator program will then proceed to the memory reconfiguration phase.



## Memory Configuration

After I/O configuration, the terminal will display this statement and query:

```
CURRENT PHYSICAL MEM SIZE XXXX PAGES  
MEM RECONFIGURATION? (YES/NO)
```

Enter: YES

If the on-line restore utility PSAVE is to be used to back up the disc, enter NO. If the response to "MEMORY RECONFIGURATION?" was NO, the terminal will display:

```
RECONFIGURATION COMPLETE
```

Proceed to the Disc Initialization section.

If YES was entered, continue as described below.

### NOTE

A /R answer to any prompt will restart memory configuration. This allows recovery from errors.

If the response to MEMORY RECONFIGURATION was yes, the terminal will display:

```
PHYSICAL MEM SIZE? (# PAGES)
```

Enter the total number of memory pages available.

The terminal will next display the query:

```
DEFINE BAD PAGES BEGINNING AT PAGE XXXX (/E TO END)
```

Enter: /E (No bad memory pages are allowed.)

The terminal will display the following information:

```
CURRENT SIZE OF SAM  
DEFAULT : XXXX WORDS  
EXTENSION: YY PAGES  
SAM EXTENSION STARTS AT PHYSICAL PAGE XX  
MAX PAGES AVAIL FOR SAM EXTENSION: XX
```

The terminal next prompts to change SAM as follows:

```
CHANGE SAM EXTENSION? (#PAGES/CRG RTN)
```

Press space bar & return key for no change.

The configurator next displays memory information:

CURRENT PARTITION DEFINITIONS:

PART'N nn = pp pages, RT  
BG

where nn = the partition number  
pp = number of pages in partition  
RT = Real Time  
BG = Background  
S = Subpartition  
R = Reserved Partition

CURRENT PART'N REQMTS:

REAL TIME  
PROGRAM NAME # PAGES (Program requirements will be printed.)  
BACKGROUND  
PROGRAM NAME # PAGES (Program requirements will be printed.)  
MAX PROGRAM SIZE:  
W/OUT COMMON: XX PAGES  
W/COMMON : XX PAGES  
W/TABLE II : XX PAGES  
MAX # OF PART'NS: XX (including sub-partitions)  
PAGES REMAINING: XXX  
DEFINE PART'NS FOR XXX PAGES:  
# PAGES, RT/BG/S(,R)  
PART'N 1?

Enter: # of pages, RT or BG. The Primary System has a maximum of 16 partitions. (A 32-page partition is very useful for running extended background programs.)

The terminal will display the new partition definitions in the following format:

PART'N XX = # PAGES,RT or BG

The terminal will print:

UNASSIGNED PROGRAMS:  
MODIFY PROG PAGE REQMTS? (/E TO END)  
PNAME, # PAGES

Enter: /E

The terminal will display:

ASSIGN PROG PART'NS? (/E TO END)  
PNAME,PART'N#

Enter: /E

Next, the terminal issues the query:

NEW MEMORY CONFIGURATION PERMANENT? (YES/NO)

Enter: YES to make memory configuration permanent.  
/R to restart memory configuration.

## Disc Initialization

Upon completion of memory configuration, control is transferred to the operating system and the following will be displayed:

SET TIME

```
*****
*
*   HP 1000 SYSTEM with RTE-6/VM   *
*
*   Commencing System Start Up    *
*
*****
```

:TR,\*RASLU RE-ASSIGN SYSTEM LU'S  
FMGR-006 (This is only a temporary message.)

```
*****
*
*           HP 1000 SYSTEM           *
*
*   System Start Up Completed       *
*
*   System Date Code:  XXXX         *
*
*****
```

```
*****
*****      INITIALIZATION MENU      *****
*****
*   DESIRED ACTION          **          ENTER          *
*
*   ENABLE SESSION          **          TR,*EN.S        *
*   NON-SESSION            **          TR,*NON.S       *
*
*   REPEAT LAST MENU       **          TR,*MENU        *
*
*****
```

Enter "SYTO,2,0" to turn off system time-out.

Next, transfer to one of the following files if a non-CS80 disc is used in your system:

<u>File Name</u>	<u>Type of Disc</u>
*I7925	HP 7925 Disc
*I7920	HP 7920 Disc
*I7906	HP 7906 Disc

For example, if your system uses the HP 7906 disc, enter:

:TR,\*I7906

ignore any FMGR 054 error code displayed.

Next determine if DS/1000-IV was ordered for your system. If DS/1000-IV was NOT ordered, proceed to procedure given below. If DS/1000-IV was ordered, proceed to the System Verification section.

For system without DS/1000-IV, the dialogue should be as follows:

:TR,\*P6DSN

/LOADR: PNAME ?DSMOD  
/LOADR:\$END

/LOADR: PNAME ?DINIT  
/LOADR:\$END

Disc initialization is complete. Proceed to verify the Primary System. At this point, you may want to repack LU 2. If you need to backup your disc on magnetic tape, follow the example given below. If not, proceed to the system verification section.

## PSAVE Disc Backup Example

This example illustrates backing up the RTE-6/VM components (on LU 10) and the Primary System (LU 2, LU 3) from the disc onto the magnetic tape using PSAVE. To restore the tape back to the disc, use utility !BCKOF (off-line) or PRSTR (on-line).

To back up on-line, run PSAVE from the File Manager program and use the following example. Besure that all other disc LUs are dismounted. This procedure takes several minutes due to the verification procedure.

:RU,PSAVE

ENTER OPTIONS

MU

Specify multiple units

ENTER DISC LU(S)

2,3,10

Enter LUs to be saved

```

ENTER TAPE LU
8                               Enter mag tape LU
ENTER FILE NUMBER
1
ENTER HARD COPY LU
<CR>
ENTER TITLE
SAVE OF PRIMARY SYSTEM LU 2,3,10

```

```

SAVING DISC LU   XX TO FILE   1   TAPE   1

TAPE NUMBER:      1   SAVE FILE:      1   USER:USER
PROGRAM:  PSAVE   OPTIONS:  MU        DATE: TUE 10 NOV, 1981
DISC LU:  XX     TITLE:SAVE OF PRIMARY SYSTEM LU 2,3,10
SECTION:  1     (TRK   0   SEC   0)

```

The above display will be repeated as each LU is stored on tape. Clearly mark the tape as the Primary System Backup Tape saved with PSAVE. The customer should archive the tape.

Normally, after the off-line operations have been completed, reboot to return to normal system functions. To continue with the system installation procedure, proceed to the boot-up procedure

## System Verification

Enable the Session Monitor to verify the Primary System. Enter the following to display another menu:

```
:TR,*EN.S
```

```

*****
***** LOGON MENU *****
*****
*      DESIRED ACTION      **          ENTER          *
*                          **          *              *
* LOGON- SYSTEM MANAGER   **          MANAGER.SYS/HP   *
* LOGON- USER            **          USER.GENERAL     *
*                          **          *              *
*****
          (STRIKE A KEY FOR A LOGON PROMPT)

```

Press any key on the terminal keyboard for the logon prompt. Next, logon as the system manager using the password HP. Note that HP is used as the Primary System password and security code.

```
PLEASE LOG-ON:MANAGER.SYS/HP
```

```

SESSION      1      X:XX AM THU., X XXX., 1982
PREVIOUS TOTAL SESSION TIME:  00 HRS.,  00 MIN.,  03 SEC

```

```

*****
***** MASTER SYSTEM MANAGER MENU *****
*****
*          DESIRED ACTION          **          ENTER          *
*          **
*   VERIFY PROCESSOR                **          TR,*VPROC        *
*   VERIFY PERIPHERALS              **          TR,*VP          *
*   ACCOUNT MAINTENANCE             **          TR,*AM          *
*   LOAD PROGRAMS                   **          RU,LOADR        *
*   DISTRIBUTED SYSTEMS             **          TR,*T6CMC       *
*   LOGOFF                           **          TR,*LGOFF       *
*          **
*   REPEAT LATEST MENU              **          TR,*MENU        *
*****

```

## Verify Processor

To start Processor checkout, enter:

:TR,\*VPROC

The system will display the following menu.

```

*****
***** PROCESSOR CHECKOUT *****
*****
*          DESIRED ACTION          **          ENTER          *
*          **
*   CPU VERIFICATION                **          RU, TXPM0,1,1      *
*   MEMORY VERIFICATION             **          TR,*T6CM1       *
*   FIRMWARE IDENTIFICATION         **          RU, TXPF0,1       *
*   HP-IB                           **          RU, TXIB0,1,51    *
*   VERIFY F.P. HARDWARE            **          RU, TXPF1,1 (F-CPU ONLY)*
*   VERIFY VMA FIRMWARE             **          RU, VMACK,1        *
*   VERIFY VIS FIRMWARE             **          RU, VISOD,1 (F-CPU ONLY)*
*   VERIFY SIS FIRMWARE             **          RU, TXPF2,1 (F-CPU ONLY)*
*   RESET TO PRIOR MENU LEVEL       **          TR,*RESET        *
*          **
*   REPEAT LATEST MENU              **          TR,*MENU        *
*****

```

### CAUTION

Test only those items present in your system. Running any test without the appropriate hardware or firmware installed may hang up the system, requiring you to re-boot.

When you have finished testing the appropriate hardware and firmware, return to the prior menu by entering:

:TR,\*RESET

## Verify Peripherals

To checkout the peripherals in your system, enter:

:TR,\*VP

The system will display the following menu.

```
*****
*****          PERIPHERAL CHECKOUT          *****
*****
*          DESIRED ACTION          **          ENTER          *
*          **                      **                      *
*   DISC          **          TR,*T6CM2          *
*   MAG TAPE     **          RU,TXMT0,1,8          *
*   LINE PRINTER **          RU,TXWLO,1,1,6          *
*   PTP TERMINAL **          RU,TXTTO,1,1,4,5          *
*   MP TERMINALS **          TR,*T6CM4          *
*   RS-232 TERMINALS **          TR,*T6CM6          *
*   RESET        **          TR,*RESET          *
*          **                      **                      *
*   REPEAT LATEST MENU **          TR,*MENU          *
*****
```

Before performing any of the tests indicated in the menu, mount your discs by executing a procedure file called :\*Mxxxx, where xxxx is the four-digit disc model number.

To test the system cartridges with LU numbers 2, 3, 10, 11, 12, 13, and 14, enter:

:TR,\*T6CM2

To test any other disc cartridges, enter:

:RU,TXMV1,1,LU where LU is the LU number of disc  
to be tested.

The "Not mounted-not tested" messages are not errors. The system assumes that if certain cartridges are not mounted, you do not want to test them. Refer to the 91711B Diagnostic manual for error codes encountered during these verification tests.

Ensure that all tests have been successfully completed before continuing. Dismount the cartridges using the procedure file `:*Dxxxx`, where `xxxx` is the four-digit disc model number.

Return to the master system manager's menu by entering:

`:TR,*RESET`

## Primary System Auto Bootup Check

This procedure cannot be performed unless the reconfiguration was permanent. To check the auto boot-up feature, perform the following:

1. Turn off main circuit breaker (including disc) and the battery backup on the CPU.
2. Turn off the battery on the computer.
3. Set the CPU switch to the LOCK position.
4. Turn the circuit breaker on.

The CPU will load the ROM boot, wait for disc to come up to speed (disc ready status), and complete the bootup.

Observe the system console. A successful boot will be indicated by several messages being displayed. The final message informs you that the system start up is completed. To perform the following procedures, log-on as the system manager by entering `:*EN.S` (or `"TR,*EN.S"`) and `"MANAGER.SYS/HP"`.

## LU Reassignment

### CAUTION

If you do not modify the file `*RSLU1` to define your system disc and peripherals, the automatic boot-up execution of `*RSLU1` will set all system LUs to 0 and thus render them unusable.

LU reassignment is done by modifying the file called `*RSLU1`. Use the EDIT program to change this file; refer to the EDIT/1000 User's Guide for information on how to use the EDIT program. The `*RSLU1` file must be edited to reflect your specific system disc and peripherals. For example, if your system disc is a 7920, you need to delete those lines that contain references to 7920. A listing of this file is shown in Table 2-1.



Table 2-1. File \*RSLU1 Listing

```

:SV;4,,IH
:* *RSLU1 92084-17098 REV.2226 820629
:*
:** LU REASSIGNMENT FILE FOR PRIMARY SYSTEMS
:**
:SYLU,6,2,,      * SET LIST DEVICE TO SYSTEM CONSOLE
:SYLU,7,0,,      * SPARE
:SYLU,8,0,,      * TURN OFF MAG. TAPE UNIT
:SYLU,9,0,,      * SPARE
:SYLU,15,0,,     * TURN OFF DISC LU
:SYLU,16,0,,     * TURN OFF DISC LU
:SYLU,17,0,,     * TURN OFF DISC LU
:SYLU,18,0,,     * TURN OFF DISC LU
:SYLU,19,0,,     * TURN OFF DISC LU
:SYLU,20,0,,     * TURN OFF DISC LU
:SYLU,21,0,,     * TURN OFF DISC LU
:SYLU,22,0,,     * TURN OFF DISC LU
:SYLU,23,0,,     * TURN OFF DISC LU
:SYLU,24,0,,     * TURN OFF DISC LU
:SYLU,25,0,,     * TURN OFF DISC LU
:SYLU,26,0,,     * TURN OFF DISC LU
:SYLU,27,0,,     * TURN OFF DISC LU
:SYLU,28,0,,     * TURN OFF DISC LU
:SYLU,29,0,,     * TURN OFF DISC LU
:SYLU,30,0,,     * TURN OFF DISC LU
:SYLU,31,0,,     * TURN OFF DISC LU
:SYLU,32,0,,     * TURN OFF DISC LU
:SYLU,33,0,,     * TURN OFF DISC LU
:SYLU,34,0,,     * TURN OFF DISC LU
:SYLU,35,0,,     * TURN OFF DISC LU
:SYLU,36,0,,     * TURN OFF DISC LU
:SYLU,37,0,,     * TURN OFF DISC LU
:SYLU,38,0,,     * TURN OFF DISC LU
:SYLU,39,0,,     * TURN OFF DISC LU
:SYLU,40,0,,     * TURN OFF DISC LU
:SYLU,41,0,,     * TURN OFF DISC LU
:SYLU,42,0,,     * TURN OFF DISC LU
:SYLU,43,0,,     * TURN OFF DISC LU
:SYLU,44,0,,     * TURN OFF DISC LU
:SYLU,45,0,,     * TURN OFF DISC LU
:SYLU,46,0,,     * TURN OFF MULTIPOINT INTERFACE
:SYLU,47,0,,     * TURN OFF MULTIPOINT TERMINAL #1
:SYLU,48,0,,     * TURN OFF MULTIPOINT TERMINAL #2
:SYLU,49,0,,     * TURN OFF MULTIPOINT TERMINAL #3
:SYLU,50,0,,     * TURN OFF MULTIPOINT TERMINAL #4
:SYLU,51,0,,     * TURN OFF HPIB INTERFACE
:SYLU,52,0,,     * TURN OFF HPIB DEVICE #1
:SYLU,53,0,,     * TURN OFF HPIB DEVICE #2
:SYLU,54,0,,     * TURN OFF HPIB DEVICE #3
:SYLU,55,0,,     * TURN OFF HPIB DEVICE #4

```

```

:SYLU,56,0,, * TURN OFF HPIB DEVICE #5
:SYLU,57,0,, * TURN OFF HPIB DEVICE #6
:SYLU,58,0,, * TURN OFF HPIB DEVICE #7
:SYLU,59,0,, * TURN OFF HPIB DEVICE #8
:SYLU,60,0,, * TURN OFF HPIB DEVICE #9
:SYLU,61,0,, * TURN OFF HPIB DEVICE #10
:SYLU,62,0,, * TURN OFF HPIB DEVICE #11
:SYLU,63,0,, * TURN OFF HPIB DEVICE #12
:SYLU,64,0,, * TURN OFF HPIB DEVICE #13
:SYLU,65,0,, * TURN OFF HPIB DEVICE #14
:SYLU,66,0,, * TURN OFF DVR05 TERMINAL
:SYLU,67,0,, * TURN OFF L-CTU
:SYLU,68,0,, * TURN OFF R-CTU
:SYLU,69,0,, * TURN OFF DVR05 TERMINAL
:SYLU,70,0,, * TURN OFF L-CTU
:SYLU,71,0,, * TURN OFF R-CTU
:SYLU,72,0,, * TURN OFF DVR05 TERMINAL
:SYLU,73,0,, * TURN OFF L-CTU
:SYLU,74,0,, * TURN OFF R-CTU
:SYLU,75,0,, * TURN OFF DVR05 TERMINAL
:SYLU,76,0,, * TURN OFF L-CTU
:SYLU,77,0,, * TURN OFF R-CTU
:SYLU,78,0,, * TURN OFF DVR00 TERMINAL
:SYLU,79,0,, * TURN OFF POWER FAIL
:SYLU,80,0,, * TURN OFF GRAPHICS LINE PRINTER
:SYLU,81,0,, * TURN OFF 2608 LINE PRINTER READ BACK
:SYLU,82,0,, * TURN OFF 12792A MUX TERMINAL # 1
:SYLU,83,0,, * TURN OFF 12792A MUX TERMINAL # 2
:SYLU,84,0,, * TURN OFF 12792A MUX TERMINAL # 3
:SYLU,85,0,, * TURN OFF 12792A MUX TERMINAL # 4
:SYLU,86,0,, * TURN OFF 12792A MUX TERMINAL # 5
:SYLU,87,0,, * TURN OFF 12792A MUX TERMINAL # 6
:SYLU,88,0,, * TURN OFF 12792A MUX TERMINAL # 7
:SYLU,89,0,, * TURN OFF 12792A MUX TERMINAL # 8
:SYLU,90,0,, * TURN OFF SPOOLING #1
:SYLU,91,0,, * TURN OFF SPOOLING #2
:SYLU,92,0,, * TURN OFF SPOOLING #3
:SYLU,93,0,, * TURN OFF SPOOLING #4
:SYLU,94,0,, * TURN OFF SPOOLING #5
:SYLU,95,0,, * TURN OFF SPOOLING #6
:SYLU,96,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,97,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,98,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,99,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,100,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,101,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,102,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,103,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,104,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,105,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,106,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,107,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,108,0,, * TURN OFF DISTRIBUTED SYSTEMS

```

```

:SYLU,109,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,110,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,111,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,112,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,113,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,114,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,115,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,116,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,117,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,118,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,119,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,120,0,, * TURN OFF DISTRIBUTED SYSTEMS
:SYLU,121,0,, * TURN OFF DUMMY DRIVER LU
:SYLU,122,0,, * TURN OFF DUMMY DRIVER LU

```

```

:*
:SV,0,,IH
::

```

After deleting the proper lines, exit the Editor and create file \*RASLU:

```

/EC*RASLU
created file *RASLU::2:4:30
closed file *RASLU::2:4:30
end of edit
:

```

If you have DS/1000-IV in your system, proceed to the next two sections. If you have Multi-Point terminals, skip the next two sections and continue with the Multi-Point Configuration section. If you don't have any of the above, proceed to the Power Fail Test section.

## DS/1000-IV Configuration

Enable the DS/1000-IV related LUs by using the editor to modify file \*RASLU as follows. Run the screen editor by entering:

```

:RU,EDIT,*RASLU::2

```

If one 12771A is ordered, change \*RASLU as follows:

(Std Entry)	(Change To)
: <u>SYLU,99,0</u>	: <u>SYLU,99,37,1</u>

If two 12771A cards are ordered, change \*RASLU as follows:

:SYLU,99,0                                    :SYLU,99,37,1  
:SYLU,101,0                               :SYLU,101,39,1

If one 12773A is ordered, change \*RASLU as follows:

:SYLU,100,0                                :SYLU,100,38,0

If one 12771A and one 12773A are ordered, change \*RASLU:

:SYLU,99,0                                :SYLU,99,37,0  
:SYLU,100,0                             :SYLU,100,38,1

In similar manner, one 12889A can be activated by entering:

:SYLU,98,40,0

One 12825/12794A can be activated by entering:

:SYLU,96,35,0  
:SYLU,97,36,0

A second 12825/12794A can be activated by entering :

:SYLU,104,41,0  
:SYLU,105,42,0

Now exit the Editor with ER and proceed to the DS/1000-IV Initialization section.

## DS/1000-IV Initialization

Set up the distributed system as follows:

Enter "TR,\*T6CMC" to bring up the DS programs.

For systems with one 12771A hardwired Interface, enter:

:SYLU,99,37,1

For systems with two 12771A hardwired interfaces, enter:

:SYLU,99,37,1  
:SYLU,101,39,1

For systems with one 12771A (hardwired) & one 12773A (Modem) interface, enter:

:SYLU,99,37,0  
:SYLU,100,38,1

For systems with one 12773A (modem) interface, enter:

:SYLU,100,38,0

For one 12889A, enter:

:SYLU,98,40,0

For one 12825/12794A, enter:

:SYLU,96,35,0

:SYLU,97,36,0

For a second 12825/12794A, enter:

:SYLU,104,41,0

:SYLU,104,42,0

To verify DS/1000-IV you must use a DS interface card on an existing customer's DS node.

Connect the DS interface card to an initialized interface card on the customer's system.

Determine from the customer the node number that the interface card was connected to, and the node number of the system the card is in.

#### CAUTION

If using a hardwired cable of more than 600 feet, you must reset the jumpers on the 12665 interface cards. Refer to the operating and service manual for the 12665 interface kit (manual no. 12665-90001) under jumper positioning.

Several DINIT answer files, #DSFL1 through #DSFL6, are provided for your convenience. Select the file that most closely matches your DS configuration and modify it accordingly. An example is shown below. Using EDIT, modify file #DSFL1 as follows:

\*\* DINIT SYSTEM ENTRY

-----

YES

NO

/D

5

2

MANAGER.SYS/HP

HP

1

Change this to the node number that  
the interface card was connected to.

1,0            Change the "1" to the node number that  
                 the interface card was connected to.

2,9,20,1,N    Change the "2" to the node number of  
                 the customer's system to which you  
                 are connected.

9  
/E  
DLIST  
EXECW  
PTOPM  
EXECM  
OPERM  
PROGL  
RFAM  
5  
/E  
HP  
HP



Exit the editor by entering

/ER

Run the DINIT program using the file just modified. For example:

:RU,DINIT,#DSFL1 (or the file just modified)

To test your node enter:

:RU,TXDS0,1,9,XX    where xx is the customer's node to  
                         which you are connected.

Upon successful completion of the test, this message will be displayed:

DS/1000 TEST FINISHED ON NODE # X 0 ERRORS

If TWO DS/1000 nodes are ordered, switch the interface cards on your system and run TXDS0 again.

Refer to the 91711B Diagnostics Manual for error code information.

To terminate DS properly, follow the sequence shown below:

```
:RU,DINIT
/DINIT: SHUTDOWN
YES
/DINIT: SHUTDOWN
/DINIT: # ACTIVE TCBS = 0
/DINIT: # ACTIVE REMOTE SESSIONS: 0
/DINIT: NETWORK MANAGEMENT SECURITY CODE?
HP
```

DINIT will complete the shutdown. Next, the DS/1000-IV programs will be aborted.

## Multi-Point Configuration

If the 91730A & 12790A interface (Multi-Point) cards were not ordered, go to the Power Fail Test section.

### CAUTION

If you enable the Multi-Point LU numbers and do not have a Multi-Point terminal you will be unable to reboot the system.

Enable the Multi-Point LU numbers by using the Editor to modify file \*RASLU. Modify the following entries:

(Std Entry)	(Change To)	
<u>:SYLU,46,0</u>	<u>:SYLU,46,9</u>	Enable Multi-Point LUs
<u>:SYLU,47,0</u>	<u>:SYLU,47,10</u>	Enable MP Terminal #1
<u>:SYLU,48,0</u>	<u>:SYLU,48,11</u>	\
<u>:SYLU,49,0</u>	<u>:SYLU,49,12</u>	] Enable Terminals 2,3,4
<u>:SYLU,50,0</u>	<u>:SYLU,50,13</u>	/ only if installed

Then exit EDIT with /ER.

Remove power to the CPU. Connect the Multi-Point 2645A to the 12790A Interface Cable. For option 001 (Modem), connect the 13232U Modem bypass cable between the RS232 connectors. Set the snap switches on the 12790A interface board to the synchronous settings (all closed). Reapply power to the CPU.

To prepare for the Multi-Point test, enter:

```
:TR,*VP
```

Next, enter:

```
:CT,46,20B,100000B      Issue control request  
:CT,47,20B,0101B      to the terminal
```

To initiate the Multi-Point test, enter:

```
:TR,*T6CM4
```

Refer to the 91711B Diagnostic Manual for error code information. This test must run without errors before continuing.

## Power Fail Test

Be sure the battery backup is properly installed. The battery switch should be in the INT position.

Press the battery test button located on the side of the battery pack. If the batteries are charged, the red LED on the battery pack will be on while pressing the test button. Enter

```
:RU,TXPM0,1,15
```

Now turn off the computer power while TXPM0 is running.

After approximately 10 seconds, restore computer power. The following message will be printed on the system console.

```
AUTOR ABORTED  
POWER FAILED AT  HH:MM,MMMNDAYOF19XX
```

Note that this message will appear twice if the system console is the list and log device.

This completes the power fail test.

## Time Base Generator Check

To check the time base generator, first enter

```
:SYTI
```

and the time will be displayed. Again enter

```
:SYTI
```

Check to verify that the time has been incremented.



## Primary Disc Cleanup

To clean up the system test files used, enter:

:TR,\*PUMFG  
:PU,\*PUMFG

## Spool System Initialization

The spool system is initialized by running program GASP. Refer to the RTE-6/VM Batch and Spool Reference Manual for a description of the spool system and the initialization procedure.

## System Support Log

File "SLOG is to be a service log that is to be updated by HP personnel as an aid on future service calls. A copy of this log should be made and filed in the System Support Log binder supplied with your HP 1000 system.

## Primary Disc Clean Up

To clean up the system test files used, enter:

:TR,\*PUMFG  
:PU,\*PUMFG

## Spool System Initialization

The spool system is initialized by running program GASP. Refer to the RTE-6/VM Batch and Spool Reference Manual for a description of the spool system and the initialization procedure.

## System Support Log

File "SLOG is to be a service log that is to be updated by HP personnel as an aid on future service calls. A copy of this log should be made and filed in the System Support Log binder supplied with your HP 1000 system.



# Chapter 3

## System Start-Up and Shut-Down



### Starting Up Your System

When your disc-based HP 1000 system is installed, the RTE-6/VM Primary System will reside on the system disc cartridge. The only procedure necessary to load the Primary System into memory and make your system operational is to turn on the components and, for removable discs, insert the system disc cartridge into the disc drive. The Primary System loading and start-up are entirely automatic. To start-up your system it is assumed that your system has been shut down following the System Shut-Down procedure given later in this chapter.

If you want to reconfigure your system for any reason, perform steps 1 through 4 given below and then perform the manual boot-up procedure as described in Appendix B of this manual.

### Auto Boot-Up

Given below is the simple procedure to be followed in starting up your system. If you have previously been through these steps and have followed the System Shut-Down procedure, you may wish to skip ahead to the System Start-Up Summary at the end of this section, otherwise proceed to the procedure given below.

STEP 1. Turn on disc drive power

Ensure that the Battery Switch is set to "OFF".

If your system is the 2178A or 2179A (vertically racked model), go to the front of the cabinet and locate the system ON/OFF power switch in the upper right corner of the rack, refer to the HP 1000 System Installation and Service Manual if necessary. Press this switch, which should light up.

If your system is the 2178B or 2179B (desk model), go to the rear of the disc drive unit. Locate the power switch in the lower left corner and set it to ON.

STEP 2. Turn on main power to computer

If you have a 2178A or 2179A (vertically racked model), you turned on the main power to the computer when you set the system ON/OFF switch to ON. Proceed to Step 3.

If you have a 2178B or 2179B (desk model), set the Battery Switch to OFF. Locate the POWER switch at the rear of the computer mini-rack in the bottom left corner and set the switch to ON.

STEP 3. Insert disc cartridge/pack

If you want to change or insert a disc cartridge, first set the RUN/STOP switch on the front of the disc drive to STOP. When the DOOR UNLOCKED light comes on, open the door of the drive, pulling the top of the door out towards you, and slide out the cartridge. Insert the new cartridge with the labeled surface up and close the door.

If you want to change or insert a disc pack on a 7920 or 7925 disc, proceed as follows. Set the RUN/STOP switch on the front upper right hand corner of the drive to STOP. When the DOOR UNLOCKED light turns on, open the door on the top of the drive by pulling up on the handle closest to the front of the drive. To remove the disc data pack, position the plastic disc carrier cover over the disc data pack. Carefully push the cover down and around the pack, then turn the handle counterclockwise until it turns easily (this seats the cover on the disc pack). Now remove the data pack and cover from the drive by pulling straight up. Position the carrier bottom under the pack and secure by turning the bottom center knob counterclockwise.

To insert a disc data pack, proceed as follows. Remove the carrier bottom by turning the bottom center knob clockwise to release the bottom and pull the carrier bottom down. Place the data pack and carrier in the well of the open disc drive. Press down on the carrier cover and turn the handle clockwise to seat the data pack, then remove the carrier cover by pulling straight up. Close the drive door and set the RUN/STOP switch to RUN. The DOOR UNLOCKED light should go off and the DRIVE READY light should go on. Store the disc pack carrier set.

STEP 4. Set RUN/STOP switch (for non-CS80 drives)

On the front of the disc drive cabinet, locate the RUN/STOP (or LOAD/UNLOAD) switch. Set it to RUN (or LOAD) and observe that the door unlocked light turns off.

If manual boot-up is to be performed, proceed to Appendix B.

STEP 5. Verify correct system start-up

Turn the power switch at the rear of the terminal to ON. If power is already on, press the RESET button twice in rapid succession.

The message "TERMINAL READY" should be displayed at the top of the screen of the system console. For non-CS80 disc drives, look at the DISC READY indicator on the front of the disc drive unit. It will take about 30 seconds for the disc to come up to speed, and the DRIVE READY indicator will light. A message will be displayed on the terminal screen indicating that the various subsystems in your Primary System are being initialized. Then you will see the message:

```
*****
*
*           HP 1000 SYSTEM           *
*
*   System Start Up Completed       *
*
*   System Date Code: XXXX          *
*
*****
```

Your Primary System is running and ready for use.

If you have no display on the system console:

1. Check to make sure the terminal is plugged in and that the power switch under the rear door of the terminal is set to ON.
2. Perform the SHUT-DOWN procedure and then wait 5-10 seconds.
3. Perform the START-UP procedure again.

If you still have no display, see "Boot-up Trouble-Shooting" in Appendix A.

STEP 6. Turn on power fail battery

Now that the system is running, locate the battery box inside the rear of the computer cabinet. Behind the battery cable, locate the battery switch marked:

INT

EXT  OFF

Set this switch to int. This turns the power-fail battery ON, which protects the main memory of the computer for up to two hours if the power should fail. When power returns, the computer will then be able to resume operation with no loss of memory.

If the real time clock is to be kept by your system, enter the time using the TM command. A FMGR transfer file called \*STIME may also be used in setting the system time. Refer to the RTE-6/VM Terminal User's Reference Manual for details of this command.

## System Startup

1. Set Battery Switch to "OFF".
2. Turn on MAIN POWER for disc drive and computer.
3. For discs other than the 7908/7911/7912 discs, insert your System disc cartridge/pack into the disc drive. and set the RUN/STOP switch to RUN.
4. Verify correct system start-up.
5. Set Power Fail Battery switch to "INT".

## System Shutdown

### CAUTION

Always set the Disc Drive RUN/STOP switch to STOP prior to turning MAIN POWER off. For stand alone disc packs, always turn power off before turning the main power off.

To shut down your system, perform the procedure given below. If the system is in the session environment, begin with Step 1. If not, proceed to Step 2.

STEP 1. Shut-down Session Monitor.

Ensure that there are no active sessions, then perform the shut-down procedure as described in the RTE-6/VM System Manager's Manual.

STEP 2. For 7905/6/20/25 discs, set RUN/STOP or the LOAD/UNLOAD switch.

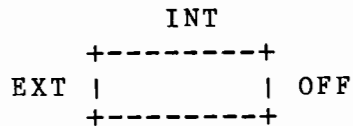
To unload the heads from the disc before powering the system down, set the RUN/STOP switch on the front of the disc unit to STOP. (Or set the LOAD/UNLOAD switch to UNLOAD.) Then, if desired, remove the

disc cartridge from the drive and close the door. It takes approximately 30 seconds for the drive to stop turning and the door to unlock.

For the 7908/11/12 discs, be sure to unload the cartridge tape.

### STEP 3. Turn off power-fail battery

To prevent your power-fail battery from running down when you shut your system down, it must be shut off. Locate the battery box at the rear of the computer unit marked:



and set the switch to off.

### STEP 4. Turn off main power

If you have a vertical racked configuration, go to the front of the unit and locate the system ON/OFF switch in the upper right corner. Press this switch and the light will go out and power will be off.

If you have a desk configuration, go to the rear of the desk and locate the disc drive POWER switch and the computer MAIN power switch. These are located in the lower left corner of their respective units. Set these to OFF.

## System Shut-Down Summary

1. Shut-down Session Monitor (if used).
2. Set RUN/STOP switch to STOP (or LOAD/UNLOAD switch to UNLOAD).
3. Remove disc cartridge; and for 7908/11/12 disc drives, remove the cartridge tape.
4. Turn off power-fail battery.
5. Turn off MAIN power for disc drive, computer, and system console.





# Chapter 4

## Primary System Operations

### Primary System Operations Overview

Upon successful system start-up, you can initialize the Primary System for either Session or Non-Session (File Manager, FMGR) operation. Many functions are predefined and presented in menu form. You can type in the appropriate entry shown in the menu. For example, to select the session environment while the following menu is displayed

```
*****
*****      INITIALIZATION MENU      *****
*****
*          DESIRED ACTION          **          ENTER          *
*          **                      **                      *
*    ENABLE SESSION                **          TR,*EN.S        *
*    NON-SESSION                   **          TR,*NON.S       *
*          **                      **                      *
*    REPEAT LAST MENU              **          TR,*MENU        *
*          **                      **                      *
*****
```

enter the following:

:TR,\*EN.S

The operations that may be performed in each mode are shown in Figures 4-1 and 4-2. These two figures are simplified flow charts. The next legal operation after each functional block is indicated by the arrow head pointing to another functional block. These operations are briefly described in this chapter. Detailed information can be found in the RTE-6/VM manual set, with a documentation map and descriptions of each manual in the RTE-6/VM Index to Operating System Manual (92084-90001).

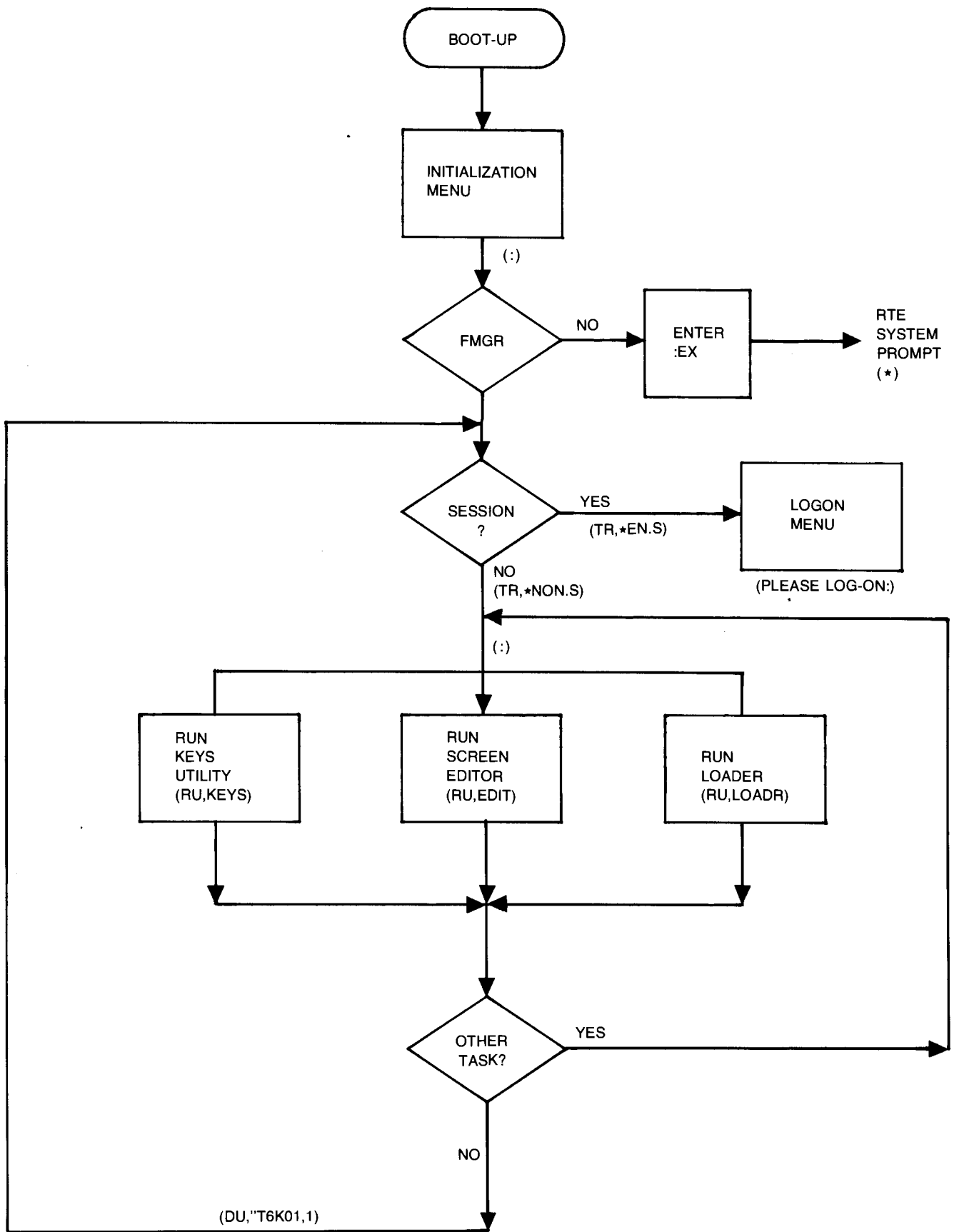


Figure 4-1. System (Non-Session) User Operations

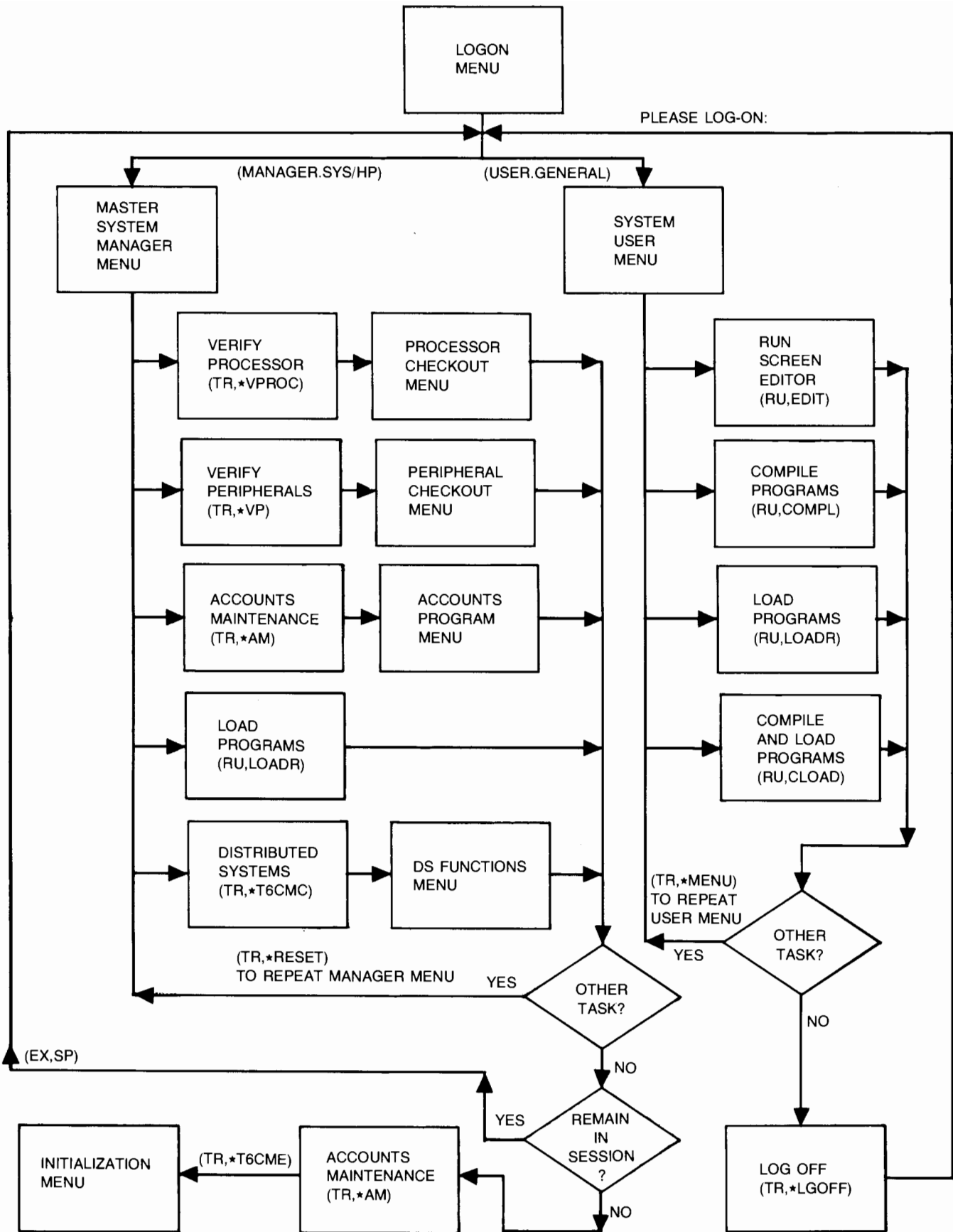


Figure 4-2. Session Operations

## Program Prompt

After selecting a particular system function, certain programs may be run to allow you to perform the selected task. The prompt for the individual program is described in the corresponding manual describing that program. Some common interactive program prompts are shown below. To get back to the next task, you must exit from the active program and select the desired function from the appropriate menu displayed.

<u>Program</u>	<u>Prompt</u>	<u>Exit</u>
Editor	/	EC<namr> ER or A (abort)
Loader	/LOADR:	/E
BASIC (optional)	>	BYE
REMAT (optional)	\$	EX
FMGR	:	EX
Session	Please Log On:	EX,SP
ACCTS	NEXT?	EX

## Logical Unit Numbers

In a program command, a numerical parameter, called a Logical Unit (LU) number, is used to address a particular Input/Output (I/O) device. Each such number is assigned to a specific device to be input (read) from or output (written) to. I/O devices are assigned LU numbers at system generation time, and the numbers are used thereafter to address each device.

LU numbers are decimal integers: Numbers 1 through 6 and 8 are referred to as "standard LUs" and are generally assigned to the following devices (and are so assigned in your Primary System).

LU 1 System console (264X, 262X, or 2635)

LU 2 System mass storage (system disc)

LU 3 Auxiliary mass storage

LU 4 Left cartridge tape unit on system console

LU 5 Right cartridge tape unit on system console

LU 6 Standard list device (usually a line printer)

LU 8 Magnetic Tape Unit

Logical unit number zero (0) is not associated with any particular device; it has a special purpose internal to the system. The remaining LUs may be assigned to any type of device. In the Primary System some of these may be assigned to devices already. To see the Primary System LU assignments, refer to the Primary System generation answer file (#AN60X) or the generator output list file ('LF60X). The last character in these file names corresponds to the Primary System number (600 through 604) as described in Chapter 1 of this manual.

It is important to realize that you can reassign any LU number from one device to another, except LU 1, the system console and LU 2 or LU 3, the system discs. Reassigning LUs is useful when a particular output device is down for some reason or for the convenience of the user. The system console can have its LU number reassigned only if the second device can perform all the tasks of a system console. Refer to the LU, and EQ commands, in the RTE-6/VM Terminal User's Reference Manual for the correct procedures to switch LU assignments.

## Selecting The Operation Environment

You may select the session environment to take advantage of the Session Monitor features of the RTE-6/VM software. A sample session account file has been established in your Primary System. You may also wish to simply run the File Manager. The initialization menu is displayed first to allow you to select the appropriate environment.

If you selected the Session environment, a menu is displayed to allow you to log-on as the system manager or as a system user. You need a password to log-on as the system manager. The password is HP on the Primary Disc. Note that HP is also the system security code and the DS (if used) security code. The password entered will not be echoed for security reasons. Upon successful log-on, a master menu is displayed to allow you to select various functions.

If you selected the non-session environment, a File Manager menu will be displayed. You can select the various operations presented in this menu. Operations provided in the session and non-session environments are described in this chapter.

## System Manager Operations

In the session environment, to log-on as the system manager, press the space bar to get the log-on prompt "PLEASE LOG-ON: ". Enter MANAGER.SYS/HP. Initially, the Primary System password is "HP". You may want to change it as soon as applicable. Refer to the RTE-6/VM System Manager's Manual for the procedure.

After successful log-on, the master system manager menu is displayed, followed by the File Manager prompt ":". The master menu is shown below. Enter the proper input corresponding to the function you wish performed.

```
*****
*****      MASTER SYSTEM MANAGER MENU      *****
*****
*      DESIRED ACTION          **          ENTER          *
*
*      VERIFY PROCESSOR        **          TR,*VPROC      *
*      VERIFY PERIPHERALS      **          TR,*VP          *
*      ACCOUNT MAINTENANCE     **          TR,*AM          *
*      LOAD PROGRAMS           **          RU,LOADR        *
*      DISTRIBUTED SYSTEMS     **          TR,*&T6CMC       *
*      LOGOFF                   **          TR,*LOGOFF       *
*
*
*      REPEAT LATEST MENU      **          TR,*MENU        *
*****
```

## Verify Processor

Enter TR,\*VPROC to verify the processor. The following menu will be displayed:

```
*****
*****      PROCESSOR CHECKOUT      *****
*****
*      DESIRED ACTION          **          ENTER          *
*
*      CPU VERIFICATION        **          RU, TXPM0, 1, 1    *
*      MEMORY VERIFICATION     **          TR,*T6CM1        *
*      FIRMWARE IDENTIFICATION **          RU, TXPF0, 1      *
*      HP-IB                    **          RU, TXIB0, 1, 51   *
*      VERIFY F.P. HARDWARE     **          RU, TXPF1, 1 (F-CPU ONLY) *
*      VERIFY VMA FIRMWARE      **          RU, VMACK, 1      *
*      VERIFY VIS FIRMWARE      **          RU, VISOD, 1 (F-CPU ONLY) *
*      VERIFY SIS FIRMWARE      **          RU, TXPF2, 1 (F-CPU ONLY) *
*      RESET TO PRIOR MENU LEVEL **          TR,*RESET        *
*****
```

Some of these functions are described in the 91711B Diagnostic Manual. Note that some operations will display program aborted messages between tests. This is normal because of control transfer between the test programs and the File Manager.

## Verify Peripherals

Enter TR,\*VP from the master system manager menu to check the peripherals. The following configuration will be displayed.

```

*****
*****      PERIPHERAL CHECKOUT      *****
*****
*      DESIRED ACTION      **      ENTER      *
*      **      **      *
* DISC      **      TR,*T6CM2      *
* MAG TAPE  **      RU, TXMT0,1,8      *
* LINE PRINTER **      RU, TXWLO,1,1,6      *
* PTP TERMINAL **      RU, TXTTO,1,1,4,5      *
* MP TERMINALS **      TR,*T6CM4      *
* RS-232 TERMINALS **      TR,*T6CM6      *
* RESET      **      TR,*RESET      *
*      **      **      *
* REPEAT LATEST MENU      **      TR,*MENU      *
*****

```

Note that certain tests are interactive. The optional point-to-point terminal test requires a blank mini-cassette for testing the device-write functions.

For more peripheral test information, refer to the 91711B Diagnostic Manual.



## System Configuration

For the configuration of your Primary System, refer to the following file(s):

#AN60X    Generation Answer File

'LF60X    Generator Output List File

where 60X corresponds to the Primary System number as described in Chapter 1 of this manual.



## Session Account Maintenance

Enter "TR,\*AM" to perform session related operations. The following menu will be displayed.

```
*****
***** ACCOUNTS PROGRAM *****
*****
*      DESIRED ACTION          **          ENTER          *
*                               **                               *
*  ON-LINE USAGE              **          RU,ACCTS         *
*  DISABLE SESSION            **          TR,*T6CME        *
*  LIST ALL GROUPS             **          RU,ACCTS,#T6CM8   *
*  LIST ALL USERS              **          RU,ACCTS,#T6CM9   *
*  RESET                       **          TR,*RESET       *
*                               **                               *
*  REPEAT LAST MENU           **          TR,*MENU         *
*****
```

Run the ACCTS program by entering the first entry shown in the menu. Detail information on the ACCTS program is contained in the RTE-6/VM System Manager's Manual. You can return to the Initialization menu by transferring to the procedure file &T6CME. You may list all groups or all users in the Primary System with the proper entry shown on the menu.

The ACCTS program prompt is "NEXT?". While in the ACCTS program, you may get a summary of the program commands by entry HE. Exiting from the ACCTS program will return you to the menu shown above. To return to the master system manager menu, enter "TR,\*RESET".

## Load Programs

The Loader program LOADR is used to load programs into memory using the compiled relocatable modules. The LOADR program can be used interactively and the entry is shown in the master system manager menu. When your program has been successfully loaded, terminate the Loader program with /END. If necessary, save your program with the File Manager SP command. If not, you must reload your program the next time you log-on to the system. The MLLDR loader program may also be used to load programs. Refer to the RTE-6/VM Loader Reference manual for details in program loading.

## Distributed System Test

To test the optional Distributed System, enter "TR,\*T6CMC". The following distributed system functions are presented in a menu.

```
*****
*****      DISTRIBUTED SYSTEM FUNCTIONS      *****
*****
*      DESIRED ACTION      **      ENTER      *
*      **      **      *
* RUN REMAT      **      RU,REMAT      *
* LOCAL NODE#      **      LU (WITHIN REMAT)      *
* NODE 1 DIRECTORY      **      DL (WITHIN REMAT)      *
* LIST,FILE,LU      **      LI (WITHIN REMAT)      *
* LIST/LOG DEVICES      **      LL (WITHIN REMAT)      *
* SEND MESSAGE      **      TE (WITHIN REMAT)      *
* VERIFY DS LINKS      **      TR,*T6CM3      *
* RESET      **      TR,*RESET      *
*      **      **      *
* REPEAT LAST MENU      **      TR,*MENU      *
*****
```

Refer to the DS/1000-IV manual set for more information.

## Session Termination

To exit from session operations, transfer to the procedure file call LGOFF. Entering "TR,\*LGOFF" will return you to the initialization menu.

## System User Operations

To log-on as a general system user in the session environment enter USER after the "PLEASE LOG-ON:" prompt. No password is required. A master user menu is displayed. Some actions are identical to those previously described. They will not be repeated here.

```

*****
*****          SYSTEM USER MENU          *****
*****
*      DESIRED ACTION          **          ENTER          *
*                               **          *
*  EDIT FILES                  **          RU,EDIT        *
*  COMPILE PROGRAMS           **          RU,COMPL        *
*  LOAD PROGRAMS              **          RU,LOADR        *
*  COMPILE & LOAD              **          RU,CLOAD        *
*  LOGOFF                      **          TR,*LGOFF       *
*                               **          *
*****

```

To perform any of the functions indicated by the master user menu, enter the appropriate input. These operations are briefly described below. Refer to RTE-6/VM Terminal User's Reference Manual for more information.

## Text/Program Preparation

Run the screen Editor Program to prepare or modify text files or source programs. Enter "RU,EDIT". Refer to the Getting Started with RTE-6/VM Manual for instructions on how to use the screen Editor. Detail description of EDIT is contained in the EDIT/1000 User's Guide (92074-90001).

## Create Relocatable Files

To create relocatable files, run the compiler program for the language in which your source program was written. The Getting Started with RTE-6/VM Manual contains information on how to compile a source file.

## Compile and Load Programs

When you are developing a program you may want to run the Compiler separate from the Loader to ensure that the syntax is correct. If you are reasonable sure that there are no errors in your program, you may want to compile and load your program in one step. Enter

:RU,CLOAD,<your source file>

When your program has been loaded, control is returned to the File Manager with the colon (:) prompt displayed. Next, execute your program with the RU command. Refer to the RTE-6/VM Utility Programs Reference Manual for more information on the CLOAD program.

## Non-Session Operations

To select non-session operations after boot-up, enter "TR,\*NON.S" as shown in the initialization menu. Various File Manager functions are presented in the following menu.

```
*****
*****          NON-SESSION OPERATIONS          *****
*****
*      DESIRED ACTION          **                ENTER          *
*                                **                *
*  EDIT FILES                  **                RU,EDIT        *
*  LOAD PROGRAMS              **                RU,LOADR        *
*  KEYS                        **                RU,KEYS        *
*  PREVIOUS MENU              **                DU,"T6K01,1      *
*                                **                *
*  REPEAT LAST MENU          **                TR,*MENU        *
*****
```

You can create or modify files and load programs using the entries shown in the menu. If you have softkey functions on your terminal, you can use the KEYS program to set them up. Refer to the RTE-6/VM Utility Programs Reference Manual for a description of the KEYS program.

To return to the initialization menu, enter "DU,"T6K01,1".



# Chapter 5

## Customizing Your System

The full set of features and capabilities of the HP 1000 System is available to the System Manager. After performing the operations given in Chapters 3 and 4, you may wish to tailor the system to your needs. You may want to add or decrease the number of programs to be executed concurrently in the system, change the system I/O or memory configuration, generate a new operating system, etc. Refer to the RTE-6/VM System Manager's Manual for considerations in planning and changing your system.

### Reconfiguring Your System

The RTE-6/VM operating system contains a program that can be scheduled at boot-up (system start up) to allow reconfiguration of your system Input/Output (I/O) devices, and memory, without performing an entire regeneration of your system. This allows you to adapt your generated system to the physical I/O configuration in an existing system. The reconfigurator program also allows you to change the size of System Available Memory (SAM), alter the program partition requirements, and repartition the system to avoid bad pages of memory. These changes can either be temporary, changing the memory resident copy of the operating system, or permanent by changing the system on the disc as well as the memory resident copy.

For instruction on the use of the reconfigurator, refer to the I/O and memory reconfiguration chapter in the RTE-6/VM System Manager's Manual. If you are already familiar with the reconfigurator, you may want to see Appendix B in this manual for instructions on the register settings to enable the reconfigurator.

As an aid when running the reconfigurator, refer to the Primary System Logical Unit Number Assignment table in the System Support Log. This table contains the initial Primary System logical unit assignments and can be used to prepare responses if it is necessary to reconfigure the I/O in your system.

## Firmware Considerations

To take advantage of installed firmware, you can run program TXPFO to effect any changes. Program TXPFO determines the processor (E or F-series) and what firmware options are installed. It provides the option to change the disc library of opcode/subroutine entry points to reflect the processor and firmware used.

After completion of the change, the new system can be used only with the hardware for which it was configured. Removing any firmware after the change invalidates the system configuration your system may no longer work correctly. Note that only those programs loaded or reloaded after the change will utilize the available firmware. The run-string for TXPFO is:

```
:RU,TXPFO,1,CH
```

Refer to the 91711B Diagnostic Manual (91711-90006) for more information on program TXPFO.

## Generating Your Own System

When you have become familiar with the HP 1000 system through the use of the Primary System, you may want to generate a new operating system tailored to your specific requirements. System generation consists of building an operating system by collecting and organizing various software modules, which include RTE-6/VM and various user programs necessary for a particular application. The result is a computer system with its memory and peripheral devices configured to meet your specific requirements. This system also contains the resources (programs and files) necessary for your particular application.

To perform a generation, follow these steps:

1. Study the RTE-6/VM On-Line Generator Reference Manual and RTE-6/VM System Manager's Manual, to become familiar with the procedures required to generate a system.
2. Plan your new system in detail by deciding which software modules to include and what your I/O and memory structure will be like, using the guidelines in the RTE-6/VM System Manager's Manual and the generation documentation supplied with your Primary System. Fill out the worksheets mentioned and illustrated in the RTE-6/VM System Manager's Manual.

3. Fill out the generation worksheets in the manuals and use them to modify a copy of the existing Primary System answer file residing on the Primary System disc, or to create an answer file that contains the answers to the queries of RT6GN, the RTE-6/VM On-Line Generator. LU 10 contains the RTE-6/VM relocatables.
4. If you have a 7906 disc subsystem, use the primary disc cartridge (LU 10) as the source of your software modules and run RT6GN, storing the system file in a file on the fixed platter that will remain when you take the primary cartridge out.
5. When you have generated your new system file, you must put it on your target disc in order to use it. However, be sure to back up your present system before running SWTCH. Use the SWTCH program to transfer the system file to a target disc. Refer to the RTE-6/VM System Manager's Manual for instructions.

At this point, for the 7906 disc, set the RUN/STOP switch to STOP and remove the primary disc cartridge. Then insert your system disc cartridge and set the switch to RUN. When the DRIVE READY indicator lights, continue with SWTCH.

6. If you have a 7920 or 7925 disc subsystem, generate your system using the primary disc pack (LU 10) as the source for your software modules. Put your system file on one of the alternate logical cartridges of the pack (not on the same logical cartridge as your software archives). When RT6GN is finished, transfer this file to your backup device. At this point, your Primary System should be backed up on your system backup device. Refer to the RTE-6/VM Utility Programs Reference Manual for the procedure. Now run SWTCH on the file to put it on the correct place on the disc.
7. If you have a 7908/11/12 disc, generate your system using the primary (LU 10) as the source for your system software modules. Make sure to generate the FC (File Copy) utility into the system as it will be required later. Put your system file on some disc LU other than 2, 3, or 10. When RT6GN is finished, use PSAVE to perform a pushbutton (PB) backup of your Primary System to a blank cartridge tape. Use FC to backup all files that you need on your new system onto another cartridge tape. At this point, you run SWTCH and overlay the existing system with the new one. Boot-up the new system and use the FC utility to restore your files.



## Freeing Program ID Segments

Each program loaded on-line requires an ID segment, which is a 34-word array that the system uses to identify a program. Your Primary System has approximately 18 free long ID segments for use by programs loaded on-line. This means that you can have 5 extra programs at one time that are loaded and ready to be executed. However, you may want to have more temporary programs available for concurrent execution. This can be done by using the File Manager to save these programs.

## Saving Temporary Programs

To save a temporary program, perform the following:

:SP,<program>

where:

SP is the FMGR, "save program" operator command

<program> is the name of the program to be saved.

The program will be stored in a File Manager file. Now enter:

:OF,<program>

where:

OF is the FMGR command to "off" the program. This releases the program's ID segment.

The program is now saved in a File Manager file and its ID segment is available to some other program loaded on-line.

Saved programs can be executed by the File Manager. An ID segment is temporarily assigned to the program and automatically released after the program terminates.

To restore an ID segment to the program so that it can be executed under operating system control, type

:RP,<program name>

where:

RP is the FMGR command that restores the program's ID segment, so that the RTE-6/VM operating system will once again recognize the existence of the program.

To keep some ID segments free, use the SP command to save the program, and then use the OF command to free the ID segment.

For further explanation of the OF, SP and RP commands, see the File Manager Command section of the RTE-6/VM Terminal User's Reference Manual.

## Purging Files

As you develop your programs or applications, you often create new files and update old ones. It is useful to be able to delete all but the current files to keep your records up to date. To purge a file you no longer need, enter

:PU,namr

where:

PU is the FMGR command to purge a file from the system.

namr is the name and location of the file to be purged.

This command will permanently remove a file from the system. This is the command you would use to remove a program saved in a type 6 file from the system if that was necessary. You may recover the disc space by using PK command.

For additional information on the FMGR commands, refer to RTE-6/VM Terminal User's Reference Manual.



# Appendix A

## Boot-Up Troubleshooting



### Introduction

To start up your system, be sure all the components are set up as described below. Perform the Shut-Down procedure, wait 5-10 seconds, then the System Start-Up procedure given in this manual. If you continue to have trouble, check for the proper configuration of your system. If the configuration is correct, check the following items.

### Disc Drive

Check that the disc drive POWER switch at the rear of the disc drive unit is set to ON.

Check the unit number of the drive. You should see a 0 displayed next to the drive indicator lights. If not, open the grill on the front of the disc drive unit (7906) by pushing the bottom of the grill in. Locate the rotary LU SELECT switch, and set it to 0.

For CS80 discs, check the HP-IB address on the rear of the drive. It should be set to 0. If properly set, then refer to the appropriate disc installation and Operating Manual for checkout procedure.

### Computer Cards

Check that all cards are firmly installed in the CPU card cage. There must not be any blank slots between cards. Verify that the correct cables are connected to the cards.

### Computer Power

#### 2178A and 2179A Models

For the vertically racked mounted models, check that the computer is plugged in and the ON/OFF switch on the front, upper right corner of the cabinet is depressed, and lit. This indicates that power to the system is on.

Check that the CPU successfully completes the power-on self test as described in the HP 1000 Computer System Installation and Service Manual.

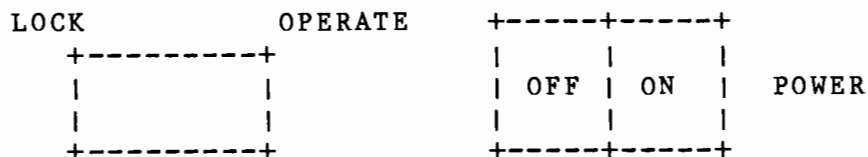
#### 2178B and 2179B Models

For the desk models, check that the computer is plugged in and the ~POWER switch at the rear of the computer in the lower left corner is set to ON.

Ensure that the CPU successfully completes the power-on self test as described in the HP 1000 Computer System Installation and Service Manual.

#### 2178 AND 2179A/B Models

For both vertically racked mounted and desk models, if the keys to the computer are available to unlock the front door and the front panel of the computer at your installation, open them. Inside you will see two switches labeled



Set the LOCK/OPERATE switch to LOCK for auto boot-up, and the POWER switch to ON then close and lock the front panel of the computer. At this point, a few of the register lights on the front panel of the computer should be lit.

#### Terminal Power

Check that the power switch under the rear door of the terminal is set to ON. Then check for the system cable and terminal keyboard connections. Next, reset the terminal.

For the 264X terminals, press twice quickly the RESET TERMINAL key on the upper left side of the keyboard. TERMINAL READY should be displayed on the screen. If not, check to be sure the terminal is plugged in, then check that the power switch under the rear door of the terminal is set to ON.

Check that the REMOTE key, just below the RESET TERMINAL key, is depressed. If not, press it and it will lock in the depressed position.

For other terminals, refer to the appropriate terminal operator/owner manual for terminal checkout information.

#### Power Fail Battery

Be sure the Power Fail Battery and the battery cable or the Battery Load Simulator Plug are attached at the rear of the computer and plugged into the BATT INPUT plug.

#### Register Halts

If you are still unable to start up your system, check the front panel of the computer. Displayed in the register you will see an octal halt code. For the explanation of this code, refer to the Loader ROM Installation Manual for the appropriate action for the halt message displayed. There could also be system halts displayed. Refer to the RTE-6/VM System Manager's Reference Manual for a description of these messages.



# Appendix B

## Manual System Start-Up Procedure

### Manual Start-Up

The procedure below assumes that the system power and all devices are on.

To start up your HP 1000 Computer System Model 60/65 manually, perform the following:

1. Open the front door of the cabinet containing the computer with the key provided.
2. Open the front panel of the CPU with the key provided and set the LOCK/OPERATE switch inside to OPERATE.
3. Close the front panel.
4. Press the HALT switch.
5. Display the S-register by pressing the register-select switch until the indicator light is over the S-Label.
6. Press the clear display switch.
7. Enter the following numbers into the Display Register.

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

	====		=====		=====		=====		=====		=====		=====		=====
Loader	^	Disc select	code	^											0 for Prim Sys
ROM															Surface # of disc
position															where Bootstrap Loader
															Loader or boot extension
															resides (non-CS80 discs).
		01 for 7906/20/25													0 for normal boot-up
		disc													1 if reconfiguration
															on boot-up is desired

8. Press the STORE switch.
9. Press the PRESET, IBL, PRESET and then the RUN switches.



10. If bit 5 was NOT set, and the procedure has been followed correctly, your RTE-6/VM Primary System should now be running. Proceed to Chapter 4 of this manual to get acquainted with your system.

If you chose to reconfigure your system (bit 5 was set), you will see 102077 displayed in the Display Register. To continue with the reconfiguration, follow the procedure given below.

### Reconfiguration

1. Display the S Register as described above, and press the Clear Display switch.
2. Enter the following numbers in the S Register.

```

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
==
^          Disc select code   System console
|          select code
Enter 1

```

The Primary System default select codes are:

```

Disc = 12B
Console = 15B

```

The system select codes are given in the Primary System Hardware Configuration Table in the System Support Log.

3. Press the STORE switch.
4. Press the PRESET switch and then the RUN switch.
5. The configurator program now has control and will display the message:

```

START RECONFIGURATION
LIST DEVICE LU#

```

on the system confole.

To perform the reconfiguration, follow the instruction given in Chapter 10 of the RTE-6/VM System Manager's Manual.

# Appendix C

## Primary System Configuration

This appendix contains reference information about how your HP 1000 Primary System was configured by Hewlett-Packard. The information is provided in table form.

Table C-1 shows the correct locations (select codes) for the various interface cards installed on the Primary System.

Table C-2 shows the pre-defined Primary System Logical unit number assignments, EQT entry numbers, and subchannel number assignments.

Tables C-3 and C-4 show how the Equipment Table (EQT) entries and the Interrupt Table entries were configured into your Primary System.

A listing of the answer file used to generate the Primary System is contained in file #AN60X located on cartridge 02. The last number (X) corresponds to the last digit of your Primary System number. This file may be edited for use in generating customer-specific systems.

A listing of the generation maps output when your Primary System was generated is contained in file 'LF60X located on cartridge 02. This file can be listed out on the printer to provide a listing of the Primary System generation.

Table C-1. Hardware Configuration

SELECT CODE	DRIVER	I/O Card
4	DVP43	Standard Power Fail
10	--	122791A Firmware Expansion Module
11	--	12539C Time Base Generator
12	DVR/A32/DVM33	MAC/ICD or CS/80 Disc
13	DVA66	12825A/12794A DS/1000-IV Port
14	DVA66	12793A DS/3000 Port
15	DVA05	12966A 264x/263x/262x Terminal
16	DVB12	2608B Line Printer
17	DVR23	7970B/E Mag Tape PCA #1
20	DVR23	7970B/E Mag Tape PCA #2
21	DVA37	59310B HP-IB Interface
22	DVM/P00,DDV05	12792A Terminal Multiplex Card/Pre-Driver
23	DVR07	12790A Terminal Multi-Point Card
24	DVA05	Point to Point Terminal
25	--	Spare

Additional Select Codes for Reassignment at System Boot-Up.

50	DVR/A32,DVM33	Peripheral Disc Controller #1
51	DVR/A32,DVM33	Peripheral Disc Controller #2
60	DVA12	Line Printer (2613/17/19/31)
61	DVA05	Point to Point Terminal
62	DVA05	Point to Point Terminal
63	DVA05	Point to Point Terminal
64	DVR00	Point to Point Terminal
65	DVG67	DS 1000-3000 12889A (SC14)
66	DVA65	DS 1000-1000 12771A (SC13)
67	DVA66	DS 1000-1000 12771A (SC14)
70	DVA65	DS 1000-1000 12771A
76	DVY77	Dummy Driver
77	DVZ77	Dummy Driver

Pseudo Select Codes

52-57	DVS 43	Spooling
71	DVR07	Multipoint Terminal #1
71	DVR07	Multipoint Terminal #2
71	DVR07	Multipoint Terminal #3
71	DVR07	Multipoint Terminal #4
72	DVZ12	Graphics Line Printer (2608 only)
73		DS/1000-IV

Table C-2. Logical Unit Number Assignments

LU NO.	EQT NO.	SUB CHNL.	DESCRIPTION
1	2	0	System Console (2645/2648)
2	1	0	System Disc
3	1	1	Auxiliary System Disc
4	2	1	Left CTU
5	2	2	Right CTU, System Console
6	6	0	Line Printer
7	0	0	Reserved
8	8	0	Magnetic Tape Unit
9	0	0	Spare
10	1	2	System Disc
11	1	3	System Disc
12	1	4	System Disc
13	1	5	System Disc
14	1	6	System Disc
15	1	7	System Disc
16	1	8	System Disc
17	1	9	System Disc
18	1	10	System Disc
19	1	11	System Disc
20	1	12	System Disc
21	1	13	System Disc
22	1	14	System Disc
23	1	15	System Disc
24	1	16	System Disc
25	1	17	System Disc
26	1	18	System Disc
27	1	19	System Disc
28	1	20	System Disc
29	1	21	System Disc
30	1	22	System Disc
31	1	23	System Disc
32	1	24	System Disc
33	1	25	System Disc
34	1	26	System Disc
35	1	27	System Disc
36	1	28	System Disc
37	1	29	System Disc
38	1	30	System Disc
39	1	31	System Disc

Table C-2. Logical Unit Assignments (Continued)

LU NO.	EQT NO.	SUB CHNL.	DESCRIPTION
40	1	32	System Disc
41	1	33	System Disc
42	1	34	System Disc
43	1	35	System Disc
44	1	36	System Disc
45	1	37	System Disc
46	9	0	Multi-Point Interface
47	10	0	Multi-Point Terminal #1
48	11	0	Multi-Point Terminal #2
49	12	0	Multi-Point Terminal #3
50	13	1	Multi-Point Terminal #4
51	5	0	HP-IB Interface
52	5	1	HP-IB Device (Address #1)
53	5	2	
thru	:	thru	HP-IB Devices (Address #2 thru 13)
64	5	13	
65	5	14	HP-IB Device (Address #14)
66	7	0	Terminal
67	7	1	Left CTU
68	7	2	Right CTU
69	23	0	Terminal
70	23	1	Left CTU
71	23	2	Right CTU
72	24	0	Terminal
73	24	1	Left CTU
74	24	2	Right CTU
75	25	0	Terminal
76	25	1	Left CTU
77	25	2	Right CTU
78	26	0	Multi-Point Terminal
79	4	0	Power Fail
80	3	0	Graphics Line Printer
81	6	3	2608A Line Printer Read Back
82	14	0	Mux Port #0
83	15	0	Mux Port #1
84	16	0	Mux Port #2
85	17	0	Mux Port #3
86	18	0	Mux Port #4
87	19	0	Mux Port #5
88	20	0	Mux Port #6
89	21	0	Mux Port #7

Table C-2. Logical Unit Assignments (Continued)

LU NO.	EQT NO.	SUB CHNL.	DESCRIPTION
90	27	0	Spooling #1
91	28	0	Spooling #2
92	29	0	Spooling #3
93	30	0	Spooling #4
94	31	0	Spooling #5
95	32	0	Spooling #6
96	35	0	DS (SC 14, DVA66)
97	36	0	DS (SC 14, DVA66)
98	40	0	DS (DVG67)
99	37	0	DS (DVA65)
100	38	0	DS (DVA65)
101	39	0	DS (DVA65)
102	33	0	DS Remote I/O Mapping, DDV00)
103	34	0	DS Remote I/O Mapping, DDV00)
104	41	0	DS (SC 13, DVA66)
105	42	0	DS (SC 13, DVA66)
106	0	0	DS
107	0	0	DS
108	0	0	DS
109	0	0	DS
110	0	0	DS
111	0	0	DS
112	0	0	DS
113	0	0	DS
114	0	0	DS
115	0	0	DS
116	0	0	DS
117	0	0	DS
118	0	0	DS
119	0	0	DS
120	0	0	DS
121	43	0	Dummy Driver (121)
122	44	0	Dummy Driver (122)
123	0	0	
124	0	0	
125	0	0	
126	0	0	
127	0	0	
128	0	0	
129	0	0	
130	0	0	

Table C-2. Logical Unit Assignments (Continued)

LU NO.	EQT NO.	SUB CHNL.	DESCRIPTION
131			LUs 131 thru 263 undefined
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			
143			
144			
145			
146			
147			
148			
149			
150			
151			
152			
153			
154			
155			
156			
157			
158			
:			
:			
:			
:			
:			
:			
:			
:			
:			
:			
263			

Table C-3. Equipment Table Assignments

EQT NO.	SELECT CODE	DRIVER	CONFIGURATION	DESCRIPTION
1	12	DVR32	D	System Disc
2	15	DVA05	B,X=13,T=30000	System Console
3	72	DVZ12		Graphics Line Printer
4	64	DVR00	B,T=30000	Terminal
5	21	DVA37	B,X=123,T=6000	HP-IB Interface (59310B)
6	16	DVB12	B,X=5	Line Printer (2608)
7	24	DVA05	B,X=13,T=30000	Terminal
8	17/20	DVR23	D,B T=500	Magnetic Tape Unit (7970B)
9	23	DVR07	X=8	Multi-Point Interface (12790A)
10	71	DVR07	X=8	Multi-Point Terminal #1
11	71	DVR07	X=8	Multi-Point Terminal #2
12	71	DVR07	X=8	Multi-Point Terminal #3
13	71	DVR07	X=8	Multi-Point Terminal #4
14	22	DVM00	B,X=21	Mux Port 1
15	22	DVM00	B,X=21	Mux Port 2
16	22	DVM00	B,X=21	Mux Port 3
17	22	DVM00	B,X=21	Mux Port 4
18	22	DVM00	B,X=21	Mux Port 5
19	22	DVM00	B,X=21	Mux Port 6
20	22	DVM00	B,X=21	Mux Port 7
21	22	DVM00	B,X=21	Mux Port 8
22	60	DVA12	B,T=6000	Line Printer 2613/17
23	61	DVR05	B,X=13,T=30000	Terminal
24	62	DVR05	B,X=13,T=30000	Terminal
25	63	DVR05	B,X=13,T=30000	Terminal
26	4	DVP43	M	Power Fail
27	52	DVS43	M,X=18	Spooling
:	:	:	:	Spooling (EQT 28-31,SC 53-56)
32	57	DVS43	M,X=18	Spooling
33	73	DVV00	-	Remote I/O Mapping
34	73	DVV00	X=11	Remote I/O Mapping,Subch.0,1,2
35	14	DVA66	X=12	DS/1000-IV (Transmit)
36	14	DVV66	-	DS/1000-IV (Receive)
37	66	DVA65	X=7,T=3	DS
38	67	DVA65	X=7,T=30	DS
39	70	DVA65	X=7,T=3	DS
40	65	DVG67	D	DS
41	13	DVA66	X=12	DS
42	13	DVA66	-	DS
43	76	DVY77	X=52	Dummy Driver
44	77	DVZ77	X=52	Dummy Driver
45	51	DVA32	D,T=100	Peripheral Disc
46	50	DVA32	D,T=100	Peripheral Disc



Table C-4. Interrupt Table Assignments

SELECT CODE	ENTRY	DESCRIPTION
4	ENT,\$POWR	Power Fail
12	EQT,1	System Disc
13	EQT,41	DS
14	EQT,35	DS
15	PRG,PRMPT	System Console
16	EQT,6	Line Printer (2608B)
17	EQT,8	Magnetic Tape
20	EQT,8	Magnetic Tape
21	EQT,5	HP-IB
22	PRG,PRMPT	12792A Mux
23	PRG,PRMPT	Multipoint
24	PRG,PRMPT	Terminal
50	EQT,46	Peripheral Disc #1
51	EQT,45	Peripheral Disc #2
52	EQT,27	Spooling
53	EQT,28	Spooling
54	EQT,29	Spooling
55	EQT,30	Spooling
56	EQT,31	Spooling
57	EQT,32	Spooling
60	EQT,22	Line Printer 2613/17/19/31
61	PRG,PRMPT	Terminal
62	PRG,PRMPT	Terminal
63	PRG,PRMPT	Terminal
64	PRG,PRMPT	Terminal
65	EQT,40	DS
66	EQT,37	DS
67	EQT,38	DS
70	EQT,39	DS
71	ABS,0	Multipoint Terminal
73	PRG,PRMPT	DS
76	EQT,43	Dummy Driver
77	EQT,44	Dummy Driver

# Appendix D

## Tape Media Installation Procedures

This appendix contains procedures for installing your Primary System when supplied on tape. A summary of procedures for booting the system and for installing the optional RTE-6/VM subsystems also is included, together with a brief description of the available backup utilities.

The software supplied is an RTE-6/VM operating system preconfigured to run on an M-, E-, or F-Series CPU.

### Material Supplied for Primary System Installation

Check your packing list to ensure that you have all the necessary tapes and manuals for your system configuration before installing the Primary System.

#### Primary System on Magnetic Tape

Note that the Primary System for the 7925 MAC/ICD disc is supplied on two magnetic tapes.

7906/7920 (MAC)	800 BPI	92084-13503	(Opt. 52)
	or 1600 BPI	92084-13504	(Opt. 53)
or 7925 (MAC)	800 BPI	92084-13505	AND
		92084-13516	(Opt. 54)
	or 1600 BPI	92084-13506	AND
		92084-13517	(Opt. 55)
or 7906H/7920H (ICD)	800 BPI	92084-13507	(Opt. 52)
	or 1600 BPI	92084-13508	(Opt. 53)
or 7925H (ICD)	800 BPI	92084-13509	AND
		92084-13518	(Opt. 58)
	or 1600 BPI	92084-13510	AND
		92084-13519	(Opt. 59)
or 7908/11/12/33 (CS80)	800 BPI	92084-13511	(Opt. 60)
	or 1600 BPI	92084-13512	(Opt. 61)
Magnetic Tape Loader Cassette (!MTLDR)		92084-13306	

Off-Line Backup Utility on Magnetic Tape (!BCKOF)

800 BPI 92084-13520  
or 1600 BPI 92084-13521

## Primary System on CTD Tape (CS80 Discs Only)

CTD Cartridge 92084-13301 (Opt. 22)

## Reference Manuals

You should also have a set of the RTE-6/VM manuals. The following manuals are needed for system installation/generation:

RTE-6/VM Utility Programs Reference Manual (92084-90007)  
HP 1000 M/E/F-Series Firmware Installation Manual (12791-90001)  
HP 12992 Loader ROMs Installation Manual (12992-90001)  
RTE-6/VM System Manager's Reference Manual (92084-90009)  
RTE-6/VM On-Line Generator Reference Manual (92084-90010)  
HP1000 Model 60/65 Installation and Service Manual (5955-4359)  
CS80 External Exerciser Reference Manual (5955-3462)

## Primary Files

The Primary System Tape consists of three files, stored in PSAVE format. (This format is available only under RTE-6/VM.) These files are described in the following table.

File	Description	On-Line LU
#1	RTE-6/VM Primary Op System	2
#2	Empty disc cartridge	3
#3	Relocatable files	10

The Primary System files are defined in the following tables:

Update 1

7906/7920 MAC or ICD Primary System Files

File	Trks	1st Cyl	Hd	#Hds	Unit	Spares	Subch
1	400	0	0	2	0	10	0
2	100	205	0	2	0	4	1
3	300	257	0	2	0	8	2

7925 MAC or ICD Primary System Files

File	Trks	1st Cyl	Hd	#Hds	Unit	Spares	Subch
1	500	0	0	2	0	6	0
2	500	0	2	7	0	11	1
3*	200	73	2	7	0	10	2
*Supplied on Magnetic Tape #2							

7908/7911/7912/7933 (CS80) Primary System Files

File	Trks	Blocks/Track (128-wd Blocks)	Subch
1	400	48	1
2	214	48	2
3	300	48	3



The Off-Line Backup Utility Tape contains the off-line utility !BCKOF, used for restoring these files on disc.

The Magnetic Tape Loader Cassette contains an off-line magnetic tape loader used to load !BCKOF from magnetic tape into memory.

## Installing Primary System from Magnetic Tape

### WARNING

Back up your current system. It will be destroyed if you overlay it with the Primary System. Note that the additional LUs will not be destroyed when the Primary System is restored. However, you may not be able to access them if your track map table is different from that of the Primary System.

Install the Primary System as follows:

1. Place the Magnetic Tape Loader cassette in the left CTU of your 264X Terminal. Load !MTLDR into memory from the cassette as follows:

HALT the computer.

Select and clear the S-Register, then

set bits 15-14 to the location of the cassette Loader ROM and bits 11- 6 to the select code of the 264x terminal.

Press STORE, PRESET, IBL, then PRESET again.

Press RUN. A HLT 77 should occur (102077 octal displayed).

2. Mount the Off-Line Backup Utility Tape (!BCKOF) and place on-line. Now start loading the memory based operating system (part of !BCKOF) from magnetic tape into memory as follows:

Select and clear the P-Register, then

set bit 1 (P-Register now contains 2 octal).

Press STORE.

Select and clear the S-Register, then

set bits 11-6 to the select code for the Magnetic Tape Unit.

Press STORE.

Press RUN. A HLT 77 should occur (102077 octal displayed).

3. Now load the reconfigurator and start-up program (part of !BCKOF) into memory from magnetic tape as follows:

Select and clear the P-Register, then

set bit 1 (P-Register contains 2 octal).

Press STORE.

Select and clear the S-Register, then

set bit 15 (to indicate that reconfiguration is to be done) and bits 11-6 to:

select code of 7906H/7920H/7925H (ICD) disc OR

0 for 7906/7920/7925 (MAC), 7908/11/12/33 (CS80),  
or any disc other than an ICD disc.

Press STORE.

Press RUN.

4. Now perform I/O Reconfiguration. It is important to have your system I/O configuration readily available for the following procedure. You must change the initial I/O configuration known to !BCKOF to your system I/O configuration. The initial configuration is shown below.

START RECONFIGURATION

LIST DEVICE LU #?

1

I/O RECONFIGURATION ALREADY PERFORMED:

CURRENT SELECT CODE#,NEW SELECT CODE#?

15 ,15 \*SYSTEM CONSOLE

CURRENT I/O CONFIGURATION:

SELECT CODE 11=	TBG			(Time Base Generator)
SELECT CODE 15=	EQT	1,TYPE	5	(System Console)
SELECT CODE 17=	EQT	8,TYPE	23	(Magnetic Tape Unit)
SELECT CODE 20=	EQT	8,TYPE	23	(Magnetic Tape Unit)
SELECT CODE 50=	EQT	9,TYPE	31	(7900 Disc)
SELECT CODE 51=	EQT	9,TYPE	31	(7900 Disc)
SELECT CODE 52=	EQT	3,TYPE	32	(79XX MAC Disc)
SELECT CODE 53=	EQT	4,TYPE	32	(79XX ICD Disc)
SELECT CODE 54=	EQT	5,TYPE	33	(79XX CS80 Disc)
SELECT CODE 60=	EQT	2,TYPE	0	PRMPT (Interactive Terminal)
SELECT CODE 61=	EQT	7,TYPE	0	PRMPT (Interactive Terminal)
SELECT CODE 62=	EQT	6,TYPE	5	PRMPT (Interactive Terminal)

I/O RECONFIGURATION? (YES/NO)  
YES

You do not have to reconfigure the console as it was done when you last set the S-Register. Reconfigure the TBG, the Magnetic Tape, and the disc if needed. If you will be restoring to an ICD disc, you do not need to reconfigure the disc, as this was automatically done the last time you set the S-Register. Enter the select code given above followed by your system select code (SC).

11, SC of your TBG  
17, SC of your Magnetic Tape Unit (lower channel)  
20, SC of your Magnetic Tape Unit (higher channel)  
54, SC of your CS80 disc OR  
52, SC of your MAC disc

Enter "/E" to terminate the I/O reconfiguration. The current I/O configuration will be displayed. When the "OK TO PROCEED?" prompt is displayed, enter YE to continue. Memory reconfiguration cannot be performed at this point in the procedure. Enter "NO" to the MEM RECONFIGURATION?(YES/NO)" prompt.

Program !BCKOF will resume its operation, displaying SET TIME and the final I/O configuration. Note the LU of your disc and the magnetic tape unit. A sample display is shown below.

SET TIME

LU#	EQT#	SUBC#	S.C.	TYPE	DESCRIPTION
1	1	0	15B	5B	INTERACTIVE TERMINAL
4	1	1	15B	5B	LEFT C.T.U.
5	1	2	15B	5B	RIGHT C.T.U.
8	8	0	23B	23B	MAG TAPE/MASS STORAGE
9	5	1	11B	33B	CS80 CARTRIDGE TAPE
10	2	1	60B	0B	INTERACTIVE TERMINAL
11	7	0	61B	0B	INTERACTIVE TERMINAL
12	9	0	50B	31B	7900 DISC
13	3	0	52B	32B	79XX (MAC) SERIES DISC
14	4	0	53B	32B	79XXH (ICD) SERIES DISC
15	5	0	11B	33B	79XX (CS80) SERIES DISC

Please enter tape-LU for reading !BCK02: 8

5. Now proceed to load the required utilities into memory.

Utility !BCKOF prompts for !BCK02. Enter 8 (the LU of the Magnetic Tape Unit) to continue. The utilities loaded will be displayed. Upon completion, the following prompt is displayed:

OFFLINE DISC-TAPE SAVE/RESTORE/COPY SYSTEM, !BCKOF  
TASK?

6. Now rewind the !BCKOF tape, remove the tape reel and mount the Primary System tape. Restore the Primary System. Because the Primary System for the 7925/7925H disc is supplied on two magnetic tapes, the utility RSTR (RE off-line) must be run twice. The procedure for restoring these MAC/ICD discs is given following the procedure for restoring the CS80 and 7906/20 MAC and 7906H/7920H ICD discs. In both procedures, your required responses are underscored after each prompt.

Restore the CS80 and 7906/20 MAC and ICD discs

```
TASK?
RE
ENTER OPTIONS                *SE = Selective (multiple)
SEVE                       *restore; VE = verify
ENTER DEST DISC LU
15                          *CS80 disc, OR
14                          *7906H/20H MAC disc, OR
13                          *7906/20 ICD disc, OR
12                          *7900 disc
ENTER FILE : SUBCHANNEL PAIRS
1:0,2:1,3:2                 *7906/20 MAC or ICS disc, OR
1:1,2:2,3:3                 *CS80 disc
ENTER TAPE LU
8
ENTER HARD COPY LU
1                            *your terminal
```

At this point, the magnetic tape is read and the header of file #1 is displayed. A sample header is shown below:

```
CREATED USING: PSAVE 92084-16656 REV.2121 <820712.0844>
READ USING: PRSTR 92084-16657 REV.2121 <820712.0844>
TAPE NUMBER: 1 SAVE FILE: 1 USER: MANAGER.SYS

PROGRAM:PSAVE OPTIONS: VE MU DATE: 5:16 PM MON.,22 FEB.,1982
DISC LU: 2 TITLE: PS#604 CS80 REV.2208
SECTION: 1 (TRK 0 SEC 0)
OK TO PROCEED? (YE/NO)
```

Verify that DISC LU: 2 is displayed in the header, then enter YE. The track map table (TMT) entry for LU 2 of the Primary System is then displayed.

If the disc unit is not ready, get it ready and up the device.

LU 2 of the Primary System is initialized. Subchannel 0 is restored and the transferred data verified after each disc write. (The tape does not have to be rewound and reread to verify the data.)



When file #2 is reached, a similar header is displayed followed by the OK TO PROCEED? (YE/NO) prompt. Verify that DISC LU: 3 is displayed in the header, then enter YE to continue. Initialization, restore, and verify are performed.

When file #3 is reached, another similar header is displayed followed by the OK TO PROCEED? (YE/NO) prompt. Verify that DISC LU 10 is displayed in the header, then enter YE to continue. Initialization, restore, and verify are performed.

The program displays the TASK? prompt when the three files have been restored onto the disc from magnetic tape. Terminate the program with /E, EN, or EX.

Restore the 7925/7925H MAC and ICD disc

```
TASK?  
RE  
ENTER OPTIONS *SE = Selective (multiple)  
SEVE *restore; VE = Verify  
ENTER DEST DISC LU  
13 *MAC disc OR  
14 *ICD disc  
ENTER FILE : SUBCHANNEL PAIRS  
1:0,2:1  
ENTER TAPE LU  
8  
ENTER HARD COPY LU  
1
```

At this point, magnetic tape #1 is read and the header of file #1 is displayed. Refer to the CS80 and 7906/20 MAC/ICD restore procedure for a sample header.

When you respond YE to the OK TO PROCEED? (YE/NO) prompt, the TMT entry for LU 2 of the Primary System is displayed. LU 2 is initialized and subchannel 0 is restored as described above. The header and OK TO PROCEED prompt is again displayed when file #2 reached and the initialize, restore, verify is again performed. Since only two files are contained on this tape, RE then displays TASK? prompt when the last tape file has been processed.

Now mount magnetic tape #2 and proceed as follows:

```

TASK?
RE
ENTER OPTIONS
LUVE *LU = LU restore; VE = Verify
ENTER DEST DISC LU
13 *MAC disc OR
14 *ICD disc
ENTER FILE : SUBCHANNEL PAIRS
3:2
ENTER TAPE LU
8
ENTER HARD COPY LU
1

```

The file #3 header and OK to PROCEED prompt sequence is as above, and the initialize, restore and verify operations are performed. when the next TASK? prompt appears, enter /E, EN, or EX to terminate RE.

Your primary system, as supplied on magnetic tape, is now installed.

## Installing Primary System from CTD Tape (CS80 Discs Only)

The following characteristics of CTD tapes should be noted.

- \* A CTD tape is accessed as a disc, not as a magnetic tape or cassette. This means that every read or write of the CTD has an address associated with the access.
- \* When a CTD is LOADED, it is read from the end to the beginning. When the load is complete, the BUSY light goes off and stays off. Wait 10 seconds to be sure it stays off.
- \* When a CTD is UNLOADED, the tape is forwarded to its end. To manually unload a CTD:
  1. Press UNLOAD; the BUSY light should flash.
  2. Press UNLOAD again; the BUSY light should go off.
- \* When the CTD is BUSY (reading or writing data), the left light remains on.
- \* When the CTD is PROTECTED (the protect switch is on), the right light is on.

The CS80 disc Primary System supplied on CTD is in PSAVE format with the PB (PushButton) option. (This format is available only under RTE-6/VM.) The Primary is restored on disc by using the local RESTORE pushbutton on the CTD unit. You must remove the front panel to gain access to the local RESTORE (and SAVE) pushbutton.

Install the Primary System as follows:

**CAUTION**

Do not install the CTD tape cartridge until the installation and checkout procedure have been completed as described in the appropriate disc installation and operating manual. Be sure that the disc back panel indicates the HP-IB address "0". If not, set the address, power OFF the disc then power ON the disc.

**CAUTION**

Do not touch the SAVE button after inserting the CTD tape cartridge. To do so could result in the loss of the Primary System.

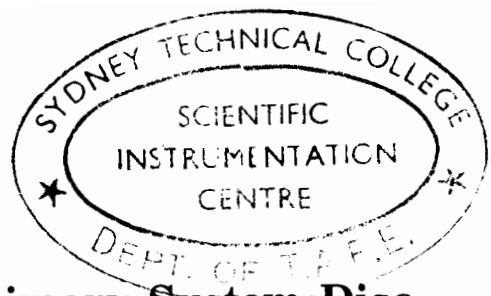
1. Remove the CTD front panel by pulling it toward you and insert the tape cartridge. The tape tension automatically adjusts and a self-test is performed. The BUSY light will flash intermittently while the loading is in process (approximately 50 seconds). When the BUSY light goes off and remains off, tape loading is complete.
2. Press the RESTORE button to the right and hold until the BUSY light flashes. Release the RESTORE lever and immediately press it to the right again. Hold until the BUSY light turns on, then let go.

The primary system is being restored from the CTD tape to the disc. Restoration takes about 9 minutes.

When restoration is complete, the BUSY light goes off and the tape rewinds. (A buzzing indicates rewinding.)

3. Remove the tape by pressing the EJECT lever to the right. Store the tape in its container.
4. Reinstall the CTD front panel.

Your CS80 Primary System disc is now installed and restored to disc.



## Booting a MAC/ICD/CS80 Primary System Disc

To boot a MAC/ICD/CS80 Primary System disc, proceed as follows:

1. First install the RTE-6/VM firmware as described in the HP 1000 M/E/F-Series Firmware Installation and Reference Manual.
2. Then install the CS80 Disc Loader ROM (Part No. 12992J) if your RTE-6/VM system is stored on a CS80 disc. Refer to the Loader ROM Installation Manual for details.
3. Now boot up your primary disc, following the procedure given in Chapter 2.

### WARNING

Do not permanently reconfigure your Primary System if you have Revision 2121. If you have Revision 2208 or later, you can proceed to permanent reconfiguration.

4. When the system boot is completed, the non-session FMGR prompt (\*) is displayed, followed by the SET TIME prompt. You now have a running system. Note that Primary always uses "HP" as the security code and password.
5. You should start a system manager information file for your RTE-6/VM system, logging the operations you have completed (or plan doing) relating to the modification of your primary. You may also want to keep the following:
  - \* the listing of the answer file and the generation map for your primary; the naming convention is as follows:

	Files	
	Answer	Gen. Map
7906/20 MAC	#AN600	'LF600
7925 MAC	#AN601	'LF601
7906/20 ICD	#AN602	'LF602
7925 ICD	#AN603	'LF603
CS80	#AN604	'LF604

- \* the Directory List (DL) for LU 2, LU 3, and LU 10
- \* a note defining the temporary/permanent configuration of your system. (The configuration should be permanent only if your Primary System is Revision 2208 or later.)

\* the Revision Code of your Operating System, VMA Firmware and loader ROMs.

6. Refer to Chapter 2 for optional primary operating procedures.

Initialization (formatting and sparing) of 79XX MAC/ICD cartridges may be desired. If so, use the file \*I79XX.

CS80 discs do not need initialization. However, if you use the transfer files \*M79XX and \*D79XX to mount and dismount cartridges on CS80 discs, you may see an error message. This error has no affect on the mount/dismount operation and may be disregarded.

## RTE-6/VM System Generation Considerations

1. Be sure that the answer file and the list file are correct for your disc model:

Answer file:

```
#AN600 - 7906/20 MAC disc
#AN601 - 7925 MAC disc
#AN602 - 7906H/20H ICD disc
#AN603 - 7925H ICD disc
#AN604 - 7908/11/12 CS80 disc
```

List file:

```
'LF600 - 7906/20 MAC disc
'LF601 - 7925 MAC disc
'LF602 - 7906H/20H ICD disc
'LF603 - 7925H ICD disc
'LF604 - 7908/11/12 CS80 disc
```

2. Consult the System Manager's Manual and the On-Line Generator Manual for general information about configuring your system (RP's, Libraries, etc.)

3. For optional subsystems, see the configuration information for each product.

Performance note: To increase the performance of the generator (RT6GN), reload it as Extended Background (EB) sized to 32 pages. Subsystem programs such as CMC, SGMTR and MLLDR also run most efficiently if loaded as EB programs sized to 32K. Be sure to remove subsystem program calls to libraries not generated with the system.

## Installing Optional Subsystems from Tape

Subsystems can be supplied on 800/1600 bpi magnetic tapes, tape cassettes, or CTD tape cartridges. The tape formats can be one of: FMGR ST command (Transfer Data and Create File) format; utility FC (File Copy) format, or utility READR/SAVER format. The label on the media specifies the format used: 800/1600 bpi tapes are supplied in either ST or FC formats; cassettes are supplied in either ST or READR/SAVER formats, and CTD cartridges are supplied only in FC format.

Each subsystem is supplied on a separate 800/1600 bpi mag tape or set of cassettes. All of the ordered subsystems are supplied on one CTD cartridge with the exception of quantity orders, when only one subsystem is supplied per CTD cartridge.

For a primary, you may store the files on LU 3, LU 11 or LU 12. (LUs 11 and 12 must be mounted; LU 3, the auxiliary disc, is already mounted.)

### Installing Subsystems Supplied in ST Format

Refer to the corresponding Configuration/Installation Guide to install subsystems supplied in FMGR ST format on mag tape or cassettes. (Most of the subsystems have transfer files.) Store the first file (the comment file) on disc, then list and edit if necessary to create a transfer file for automatically storing the remaining files.

The file-type options listed in the comment file are:

- R - BR (Binary Relocatable)
- S - AS (ASCII)
- D - BN (Executable Binary Relocatable Memory Image)
- A - BA (Binary Absolute or non-disc)

Refer to the Terminal User's Reference Manual for details of the FMGR ST command. In brief, run ST as

```
:ST, LU#,namr,opt1,opt2
```

where:

LU is the LU of the tape drive (usually LU 8) or 264x terminal (usually LU 1)

namr is the file descriptor

opt1 is one of BR, AS, BA, or BN as defined above.

opt2 is SA, fixed-length-record or absolute binary file

Example:               :ST,8,%XXX::-12,BR  
                      :ST,8,!YYY::-12,BASA

## Installing Subsystems Supplied in FC Format

Refer to the RTE-6/VM Utility Programs Reference Manual for details of the utility FC.

Since only one subsystem is contained on the 800/1600 bpi tape, you can call FC with the sequence

```
:RU,FC
FC:CO,-8,-LU,V      or
FC:CO,-8,crn,V
```

This will copy all the files for the subsystem from the tape to the disc (specified either as a negative LU number or a positive CRN designator) and will verify each transfer. Note that if a file on the disc has a name identical to that of a file on tape, that file will not be copied from the tape.

A CTD tape in FC format can contain one or more subsystems, each identified by a CRN. (Graphics might have more than one CRN.) The comment file on the FC tape identifies which subsystems are stored on tape, the files that belong to each subsystem, their revision code, their file type and their CRN. If more than one subsystem is stored on CTD, list the comment file, as follows:

```
:RU,FC
FC:LL,n      *LL command specifies list device
FC:LC,n      *LC command specifies listing CTD comment file
FC:EX
```

To store all the files for given subsystem from CTD to disc, call FC and specify the COpY command as

```
:RU,FC
FC:CO,-13{::xx},::yy,V
```

where:

-13 is the negative LU number of the CTD.

{::xx} specifies all files copied to CTD from crn XX (i.e., all files for a given subsystem) as reported by the LC command listing

yy is the CRN of your disc.

V specifies the verify option.

This will copy to disc yy all the files that were stored from crn xx to the CTD, and will verify each transfer. Files with duplicate names will not be copied.

## Installing Subsystems Supplied in READR/SAVER Format

Refer to the READR/SAVER Utility Reference Manual for details of that utility. When the subsystem is supplied in READR/SAVER format, the first file on each cassette is a command file. The file name (TR0000) is the same on all cassettes, but the content varies from cassette to cassette to describe only the files on that cassette. .

The sequence for running READR interactively to read the subsystem from each cassette to the disc is

```
:RU,READR
Command? MT,lu      *-LU of cassette
Command? OC,n       *crn of destination disc for subsystem
Command? OS,sc      *security code for files on disc (recommended)
Command? VE         *verify transfer of files to disc
Command? AL:1       *restore all files, beginning with file 1
```

## Backup Utilities Available on RTE-6/VM

The following is a brief summary of the available file backup utilities available with RTE-6/VM. Refer to the appropriate manual for a full description of the utility features and operating procedures.

### File Backup Utilities



SAVER and READR. Copies between disc and tape. Does not handle multi-volume copies in one operation; must be called for each volume of set.

SAVER format:

Dir.	datafil 1	datafil 2	...	datafil n	EOF	...
------	-----------	-----------	-----	-----------	-----	-----



FC. Copies tape-to-disc, disc-to-tape, disc-to-disc. Can handle multi-volume copies.

FC format on CTD:

Hdr	Comment	Dir.	EOF	data	data	EOF	...
-----	---------	------	-----	------	------	-----	-----

FC format on mag tape:

Hdr	EOF	Cmt fil	EOF	Dir.	fil	EOF	fil	EOF	...	EOF EOF	...
-----	-----	---------	-----	------	-----	-----	-----	-----	-----	---------	-----

WRITT and READT. Copies between disc and tape. System manager can copy System discs (LU 2 and LU 3).

WRITT format:

Header	data trk 1	data trk 2	...	data trk n	EOF	...
--------	------------	------------	-----	------------	-----	-----

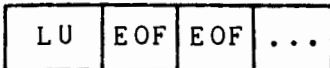
## Physical Backup Utilities

Save is not dependent on any particular file structure, but utility must run under RTE-6/VM on-line or off-line in a special RTE-IVE operating system.

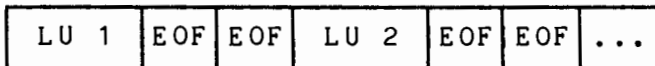
PSAVE and PRSTR. Saves and restores between disc and tape. Any subset of LUs can be restored from a unit PSAVE. PSAVE requires that the disc LU is mounted to you. PRSTR locks the disc LUs being restored. PRSTR can read SAVE/LSAVE/USAVE formats from RTE-IVB. Through FORMT, PRSTR does track sparing if VE option is selected and restore is to a MAC or ICD disc. PSAVE can simulate a local pushbutton save on a CS80 disc, and can restore using PRSTR with PB option or locally with pushbutton restore (local pushbutton save does not verify). PSAVE and PRSTR can run both on-line and off-line.

PSAVE format on mag tape:

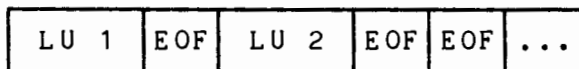
with LU (LU save) option



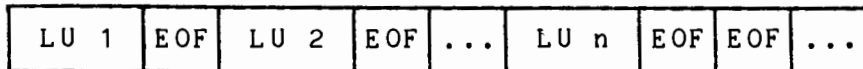
with LU option when tape is positioned, or file number specified



with LU option and CN,8,FF is used (refer to the Terminal User's Reference Manual for a description of the Control Non-Disc Device command CN)

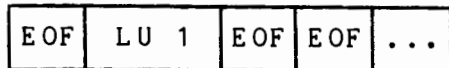


with MU (multiple LU save) option

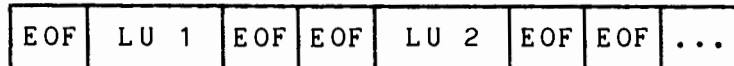


PSAVE format on CTD:

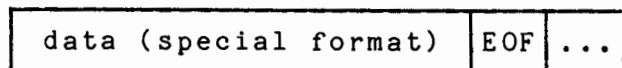
with LU (LU save) option



with LU option when tape is positioned, or file number is specified



with PB (pushbutton) option, or local pushbutton save



## Notes on Backup Utilities

PSAVE/PRSTR as an off-line utility is supplied on three cassettes under the name !BCKOF. When PSAVE/PRSTR is run from magnetic tape, the process is appreciably faster. If you wish to have !BCKOF on a mag tape:

1. Edit the file \*BCKMT, supplied on the primary, to reflect the correct CRN.
2. Transfer to \*BCKMT, specifying the LU of the magnetic tape unit as the first parameter in the transfer command (i.e., :TR,\*BCKMT,-8).

PSAVE tapes may have one or two EOFs separating files; PRSTR with the SE or LU option can restore either of these formats. To verify PSAVE, rewind the tape if the save started at the beginning of the tape; otherwise PSAVE backspaces over files and recalculates the checksums to verify the content of each record. A PSAVE with the PB option also can be restored with the local pushbutton.

A save using WRITT saves only the tracks that actually contain files and the FMGR directory. By using the IH option, multiple CRNs can be stored, each separated by only one EOF.

More than one WRITT backup can be stored on one mag tape.

An FC save on magnetic tape or CTD, and a save using SAVER, cannot store more than one backup; however, this backup can contain any number of files and CRNs.

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