HEWLETT PACKARD

Communicator/1000

For Software Update 6.0

READER COMMENT SHEET
6.0 Communicator/1000
5961-6201

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___	(91790A)	NS-ARPA/1000	___	(92050A)	Datapair/1000
___	(92077A)	RTE A	___	(92078A)	VC+
___	(92084A)	RTE-6/VM	___	(92131A)	QDM/1000
___	(92833A)	Pascal/1000	___	(92836A)	Fortran-77
___	(92857A)	Basic/1000-C	___	(92860A)	Symbolic Debug/1000
___	(92861A)	Graphics/1000 (DGL)	___	(92862A)	Graphics/1000 (AGP)
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Chapter 1
Introduction

This introductory chapter is a brief explanation of the content and format of the Communicator/1000. At the 6.0 release, a version of the Communicator/1000 has also been provided online in directory /HP1000_INFO/COMMUNICATOR60.LST. The new grep utility can be used to search the Communicator/1000 for keywords. It can also be printed to any line printer.

1.1 Purpose of the Communicator/1000 and how to use it.

The Communicator/1000 accompanies software and/or manual updates. It is designed to be a reference document to describe product changes and to give general considerations on how to incorporate these changes in the system.

The Communicator/1000 performs basically three functions:

1) Reports the *changes* that have occurred *within* a product for both maintenance and enhancements (Chapter 2).

If the change is in response to a Service Request, this is noted. The descriptions are meant to be a quick overview to give the user a condensed look at the changes. More specific information must be obtained from the particular product's updated manuals.

When changes made to a product affect the generation, loading, or installation of that product, mention is made in Chapter 4. Major usage changes are also mentioned in Chapter 4. Again, for specific instructions you should refer to the appropriate manual.

2) Lists the *Current Revision Codes, Updated Media* and *Manual Part Numbers* for current products (Chapter 3). This chapter indicates:

- the current revision codes for the software modules and firmware belonging to a product,
- the software media part numbers that are being shipped in this update cycle; these media will contain the updated software for a particular product,
- the part numbers of the manuals that are being updated in this update cycle.

Chapter 3 is not intended to replace the Software Numbering Catalog or Software Numbering File for each product, but rather it is intended to be a quick reference source for revision codes and a help in determining what media and manuals will be received by a customer for a particular product.

3) Characterizes the different *media formats* sent to a customer, along with a brief explanation of the *Software Update Procedures* associated with each media (Chapter 5).

All software media can be read by HP-supported utilities which are described in various manuals. The user is directed to the appropriate reference manual for more specific instructions.

How to use the Communicator/1000:

The following are some suggestions to help you use the Communicator/1000 as a reference:

- When you receive the Communicator/1000, check Chapter 1 for any changes that might have occurred in the Communicator/1000 format and could affect how you will use it.

- Depending on the products for which you have a subscription service and the media you have chosen, you will receive a set of software and/or and manuals. If you are unfamiliar with the media you have received, check Chapter 5 for a description of the media format and suggestions for update procedures.

- Before you regenerate your system or load any software on-line, be sure to look through Chapter 4 to see if there have been any changes to load or generation procedures.

- Chapter 3 can be used to resolve any confusion concerning what software or manuals you should have received. Any software files or manuals that have been deleted from or added to the product will be highlighted there.

- Chapter 2, along with the updates you receive for your manuals, describes the corrections and enhancements made in this update cycle.

- Appendix A is provided to assist you in upgrading your current 5.2 or 5.27 RTE-A system to a new 6.0 system.

- Appendix B is provided to assist you in upgrading your current 5.2 or 5.27 RTE-6/VM system to a new 6.0 system.

- Appendix C is a copy of the RTE-A primary answer file, PRIMARY.ANS. It is provided for reference purposes only.

NOTE

The Communicator/1000 is only a quick reference document for an update cycle and is not intended to supersede the product manuals. Refer to the product manuals for the precise information on how to use the product.

1.2 Naming and Revision Code Convention

The 5.24 release of NS-ARPA/1000 introduced a new revision numbering scheme. In the past, a revision 5.2 module contained the four-digit code of 5020, where the zero between the 5 and the 2 acted as a placeholder for the period. The next interim release based on the 5.2 minor release would contain the revision code 5021, and so forth.

For the purpose of coordinating the revision numbers of released code and patched code, the numbering scheme now uses all four digits of the revision code. The naming convention is as follows:

W.XYZ where:
- W corresponds to a major operating system release
- X corresponds to a minor operating system or subsystem release
- Y corresponds to an interim release
- Z corresponds to a patch release

This naming convention will be used in all references to a particular cycle. This current update cycle is 6.0, that is, a major operating system release.

Note that in certain literature, such as the Software Status Bulletin (SSB), the '.' is omitted, and the naming convention looks like 'revision 6000'. The zero is no longer a place holder for the period.

As in the past, the software in an update shipment may be of different revision codes. The revision code of a software module or product indicates the update cycle in which that software module or product was last updated. For example, a 6.0 update shipment may contain Graphics software with revision code 6000, Image software with revision code 5000, RTE-A modules with revision code 6000 and revision 5270, etc.

1.3 Revision Code History

The following is a history of the releases of RTE-A and their corresponding revision codes. In addition, there is a description included for the interim releases since 5.2.

RTE-A Release	Revision Code	Comments
C.83	2340	
A.84	2401	
A.85	2440	
4.0	2540	
4.1	4010	
5.0	5000	
5.1	5010	
5.2	5020	
5.21	5021	Original SCSI Release
5.22	5022	SCSI Update
5.23	5023	SCSI Update
5.24	5240	NS-ARPA/1000 Release
5.25	5250	SCSI Boot Release
5.26	5260	C/1000 Release with Debug/1000
5.27	5270	A990 Support, Misc. Enhancements
6.0	6000	HP 1000 Release

Chapter 2
Description of Software Changes

This chapter describes the reasons behind the software changes in this update. Changes that were initiated by Service Requests filed are listed with their SR numbers.

The entries are categorized into three types: Problem/Solution, Enhancement, and Note. A Problem/Solution entry describes a problem along with the actions taken by Hewlett-Packard to fix it. An Enhancement entry similarly describes a modification to software that improves its utility or simplicity of usage. Finally, a Note contains useful information about a change that may impact the user but is not directly related to a software fix or enhancement.

The products are sorted by their part numbers. For each product, the entries are grouped by their affected functional area (if applicable). For example, RTE-A has "Bootex" entries first, followed by those of "Build". Under each functional area, the entries are further grouped by Problem/Solution, Enhancements, then Notes, where the SR numbers are sorted numerically. Please see the SR Index for a numerical list of ALL the SR numbers. We hope that this format will make the Communicator much easier to use.

For more information on individual filenames that have changed, please refer to chapter 3.

2.1 (24612B) A-Series System and Peripheral Diagnostics

2.1.1 SCSI

SR# 5003078972

PROBLEM: The install diags.cmd command file does not work to create a bootable 24612A SCSI DDS diagnostic tape.

The tape is built successfully, but when booted, it hangs.

SOLUTION: This problem has been fixed at the 6.0 release.

2.1.2 VSCSI

SR# 1653006395

ENHANCEMENT: A SCSI diagnostic has been added to the 92077A/24398B products, !VSCSI. It includes functions similar to those available for testing CS/80 devices using EXER.

This is needed so mass storage devices can be tested and can have the ability to spare bad blocks when connected to the HP 1000 via the 12016A SCSI interface.

2.2 (91750A) DS/1000-IV

2.2.1 INSTALLATION

SR# 5003004440

PROBLEM: The file *LDDS used /DS as root directory for DS/1000-IV relocatables. However, the product tape puts DS/1000-IV relocatables on /DS1000.

SOLUTION: The file *LDDS was changed so the default root directory for DS/1000-IV relocatables is /DS1000.

SR# NONE

ENHANCEMENT: DSVCP has been added to DS/1000-IV program loads. Also, DSRTR and TRFAS have been changed to load with SZ:+1.

2.2.2 PROGL

SR# 5000179465

PROBLEM: PROGL leaves files open. If PROGL is linked with a user-written version of the subroutine #DNFL and it is servicing multiple download requests with the same file number and different system files, it will only close the last file.

SOLUTION: PROGL has been modified to check file names instead of file numbers to determine if the system file should be closed on completion of a download.

2.2.3 REMAT

SR# NONE

PROBLEM: The IO and PL commands in REMAT would send output to the system console instead of the terminal REMAT was being executed from.

SOLUTION: REMAT has been modified to check the LU of the terminal where REMAT was executing and send this information to APLDR.

2.2.4 X.25

SR# NONE

PROBLEM: The mask used by the DS customizing subroutine, CSV66/CXL66, to clear the device type in the EQT/DVT was incorrect. The device type is cleared so that it can be set to 66b for DS use.

SOLUTION: The mask value has been corrected.

2.3 (91751A) DSN/X.25 1000

2.3.1 DSN/X.25

SR# NONE

PROBLEM: Due to the faster speed of the A990, the LAP-B Card configuration read-back completes with a device status error (card needs configuration data) when executed just after the downloading of configuration data.

SOLUTION: The DD*60 driver has been fixed to provide a 20 ms delay; this allows the downloading of the card configuration to complete properly.

SR# NONE

PROBLEM: PAD terminal status bits are not always set properly at linkup time.

SOLUTION: At 6.0, all PAD terminal status bits are set upon linkup indication.

SR# NONE

PROBLEM: If X.25/1000 is configured with more VC numbers than the network port, the recovery procedure fails. If XNET sends a Call on a VC not configured on the network, the DS connect request times out before the recovery procedure completes. Then DS sends a second connect request which causes a second VC table to be allocated to this EQT table, ending up with two VC tables linked to the same EQT table. The first VC is still waiting for a Clear Conf. The Clear on this VC is retried and, after a total of 6 minutes (2 X 3 minutes), a LinkDown indication is sent on this LU, causing the activities on the second VC to be disrupted.

SOLUTION: At 6.0, VC allocation is allowed only if the VC is in state P1.

SR# NONE

ENHANCEMENT: Program portability has been improved. The three words of the #X25A table have been moved into VCTR, and #X25A.REL is no longer relocated during the generation. Also, module /X25/REL/#X25A.REL,which is no longer used, has been deleted.

2.4 (91781A) RJE/1000-II

2.4.1 Structure Changes

SR# NONE

NOTE: Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

PLEASE NOTE that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we felt that sending an "update" would just cause confusion.

2.5 (91790A) NS-ARPA/1000

2.5.1 BSD IPC

SR# 4701113423

PROBLEM: INPRO aborts with an SR violation error when more than three connection requests are queued for a BSD IPC server program. This will cause the NS-ARPA subsystem to lock up. If the LAN card continues to receive packets, SAM can fill up as well. The system must be rebooted to recover.

When a connection request is received and there are already three connection requests queued on a BSD IPC call socket, the call socket does not have sufficient memory to store the information from the fourth connection request. When this happens, Sigmod.IPCConnInd returns without calling DS_LeaveCritical. The next call to DS_EnterCritical causes the SR violation error.

SOLUTION: If three connect requests are already queued on a BSD IPC call socket, then new connect requests are ignored. The remote TCP will reissue the connect request when no acknowledgement is received.

SR# 5003030312

PROBLEM: The Fortran, C, and Pascal versions of the BSD IPC example programs use different methods to pass data back and forth. The C server example does not match the example in the BSD IPC manual.

SOLUTION: The examples have been rewritten to ensure all three versions (C, Pascal, Fortran) are using the same logic to accomplish one common goal.

2.5.2 DSCOPY

SR# 5003008466

PROBLEM: When a programmatic DSCOPY is run in the system session and a

user session is logged onto the system console, DSCOPY may become buffer limit suspended on LU 1. This occurs even though the LL option is set to a file and the SI option is specified.

SOLUTION: DSCOPY will now close the output file only if the output device is non-interactive.

SR# NONE

PROBLEM: DSCOPY of a multiple file mask produces the wrong filenames if the destination files exist.

SOLUTION: DSCOPY has beenmodified to use the correct filedescriptors.

SR# NONE

ENHANCEMENT: Symbolic links are a new feature at the 6.0 release. DSCOPY will now support symbolic links.

2.5.3 DSMOD

SR# 1653033076

PROBLEM: DSMOD's CN command does not work when used in a transfer file. The error message displayed is "/DSMOD: NODE SPEC. ERROR!".

SOLUTION: The error has been corrected. This fix will be included in the 6.0 release.

2.5.4 FMTRC

SR# 2200047969

ENHANCEMENT: Presently, tracing is only available in octal output. FMTRC has been enhanced to output the trace records in octal, hexadecimal, or NICE format. The NICE format will parse some of the protocols such as TCP and IP into the component fields.

2.5.5 FTP

SR# 1650165365

PROBLEM: An FTP to a VAX running FUSION hangs with both client and server in receive state when verbose is off and an open is done.

SOLUTION: FTP has been modified to correctly parse multiple replies.

SR# 4701067074

PROBLEM: FTP binary get of a FMGR type 1 file does not transfer extents.

SOLUTION: FTPSV and FTP have been modified to call FmpSize for FMGR files.

SR# 4701162040

PROBLEM: BINARY type 6 file transfers do not work between 6.0 and non-6.0 or non-RTE systems.

SOLUTION: Both the source and destination files are now forced to be type 1, thus removing the extents.

SR# NONE

PROBLEM: FTP.HELP does not include the -T option in the runstring.

SOLUTION: This has been fixed in the 6.0 release.

SR# 4701053660

ENHANCEMENT: The HP 1000 FTP server reports the file descriptor of the file being transferred in the 150 server reply to mget/mput.

SR# 4701062877

ENHANCEMENT: The 5.24 FTP does not calculate the file length for a type 2 file and requires that it be specified in the file descriptor. FTP will now calculate the size of type 1, 2, or 6 files from the number of bytes transferred. 6.0 to 6.0 file transfers will also transfer the size.

SR# 5000640045

ENHANCEMENT: FTP has been modified to recognize when the FTP server is an HP 1000. When FTP knows that the server is an HP 1000, it will set the transfer mode to BINARY and transfer the file type, size, and record length along with the file. A new user and server command, SYSTEM, has been implemented. The server will respond with its system type when this command is used.

2.5.6 INETD

SR# 5000621011

ENHANCEMENT: INETD has been added to NS-ARPA/1000 and ARPA/1000 to replace FTPMN and TNMON. Examples are provided for the configuration file, /etc/inetd.conf, and the file that maps service names to TCP ports, /etc/services. Usage and features are described in the on-line help file.

2.5.7 INITIALIZATION

SR# 4701072702

PROBLEM: The command file NSSTART_EZ.CMD incorrectly uses its positional variables.

NSSTART_EZ.CMD was created by combining the functions that previously were in UPNS.CMD, LANSTART.CMD, and RPDEFAULTS.CMD. The order for the parameters was changed to put the LAN LU first, since it is the only parameter that is never optional. The necessary change was not made to the EDIT command on line 102 and the CN command on line 111.

SOLUTION: The code has been changed to reflect the correct order as follows:

```
nsstart_ez.cmd lan_lu [node_name] [ip_address]
```

SR# 4701072710

PROBLEM: The command file NSSTART_EZ.CMD does not work correctly. It may run EDIT interactively or display the message "No such file USAGE" or "No such file START".

SOLUTION: There is an error in the IF command on line 81. An "IS" is missing.

Line 81 has been changed, from:
"IF $NS_TEMP = EDIT"
to:
"IF IS $NS_TEMP = EDIT".

SR# 4701072736

PROBLEM: The command file NSSTART_EZ.CMD fails when attempting to edit the file /system/nsfile.nsin. The edit command on line 102 of NSSTART_EZ.CMD is incorrect. The comma should be a vertical bar, "|".

In addition, when the edit command is executed, the file nsfile.nsin does not exist; therefore, the edit command must perform an exit and create (ec) instead of exit and replace (er).

SOLUTION: The file has been changed to modify the example default file and edit the node_name, ip_address, lan_lu, then exit and create the nsfile.nsin.

SR# 4701050328
SR# 5000637967

PROBLEM: NSINIT/NETINIT will not accept responses which begin with /D or /E for questions which require a filename.

SOLUTION: NSINIT/NETINIT has been modified to accept responses beginning with /D or /E that contain more than 2 characters when prompting for a filename.

SR# 1653001230

ENHANCEMENT: The default number of networking programs and sockets has been increased from 13 and 38 to 23 and 68, respectively. The default is adjusted to be higher if NFT is used in an NS-ARPA system. This will allow more TELNET and FTP connections in an

ARPA/1000 system.

2.5.8 INPRO

SR# 4701116749

PROBLEM: A bug in the A900 microcode (SR #4701-115980) can cause unpredictable behavior in INPRO. In one case, INPRO aborted due to an UI error. The A900 microcode bug causes instructions to be fetched from data space when CDS is on and interrupts are off. INPRO turns off interrupts while reading and updating its timer counter, NS_OS3. The effect depends on what is in the data space.

SOLUTION: INPRO has been modified so that the section which turns interrupts off (CLC 4 ... STC 4) is now non-CDS. This will avoid the bug in the A900 microcode.

2.5.9 INSTALLATION

SR# 4701109009

ENHANCEMENT: NS-ARPA and ARPA programs are now transportable between systems running the same version of RTE-A and networking software. This was accomplished by eliminating the use of non-transportable system entry points by the networking software. As part of this change, the networking modules that are generated into the system have been modified. NSPEC is no longer needed. NSABP is now partitionable. It is no longer necessary to search NSLIB for the DSGLO module during RTAGN's system relocation phase.

2.5.10 IPCLookup

SR# 1653025221

PROBLEM: IPCLookup ignores the retry count variable and hangs when the destination node doesn't exist. The retry count was not

checked against the maximum value; instead, the maximum timeout was checked.

SOLUTION: The retry count is now checked and, if it is exceeded, an error will be returned.

2.5.11 PING

SR# 1653001461

PROBLEM: PING does not return all socket resources if the user issues the BREAK command before PING has a chance to report that the given host is unreachable. In this case, only one socket out of the required two sockets will be freed. The other one will never be freed.

SOLUTION: PING will now reset the state of the socket before it terminates. This will allow the socket to be released.

2.5.12 REMAT

SR# NONE

PROBLEM: IO and PL commands in REMAT would send output to the system console instead of the terminal REMAT was being executed from.

SOLUTION: REMAT was modified to check the LU of the terminal where REMAT was executing, and send this information to APLDR.

2.5.13 TCP

SR# 4701126581

PROBLEM: Sockets created by programs using BSD IPC sometimes do not get cleaned up after the program calls shutdown and aborts.

SOLUTION: A timer is now set when a connection is in the FIN WAIT-2 state and the user's program has terminated.

2.5.14 TELNET

SR# 5000603407

PROBLEM: TELNET does not act correctly following a close command. If TELNET is given a hostname in its runstring, it should terminate after a close command, but it doesn't. If an invalid command is entered following the close, TELNET will display the Unknown Command message twice and then terminate. When this happens, the terminal port configuration does not get restored.

SOLUTION: TELNET's close command processing has been fixed. If a hostname is given in the runstring, the close command will terminate TELNET. When no hostname is specified in the runstring, TELNET will remain in command mode following a close command. Subsequent commands, valid and invalid, are now processed correctly.

SR# 5003030858

PROBLEM: The port protocol on a TELNET pseudo terminal LU cannot be set to HP-XON/XOFF. A CN,LU,34b,3 command will cause the following error message:

```
I/O device error on LU    xx    The reason is:
I/O request error
Request has been flushed
```

SOLUTION: TNSRV no longer rejects any control requests with function code 34b. TNSRV only needs to know whether it should send the DC1 on a read request, so it just checks bit 1 of the protocol word to determine if HP protocol is being used. It is left up to the drivers to determine if any request is illegal.

2.6 (92050A) Datapair/1000

2.6.1 SCSI Support

SR# NONE

NOTE: SCSI disk type (30B) is now supported on a Datapair system.

2.7 (92077A) RTE-A Operating System

2.7.1 APLDR

SR# 4701009985

PROBLEM: APLDR loads CDS programs with multiple code segments; however, when the program executes, it gets CS06 or MP errors.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4700926014

ENHANCEMENT: As of the 6.0 release, APLDR can now write to LUs greater than 63.

2.7.2 BOOTEX

SR# 4701094318

PROBLEM: The BOOTEX command "SA", which sets the size of SAM and/or XSAM during a "slow boot", does not properly check for memory overflow when SAM and XSAM are distinct (as opposed to when SAM and XSAM are allocated from the same memory pool). BOOTEX neglects to add the size of XSAM to the total size of the system so far and therefore can incorrectly allow a command to allocate more memory than is available in the system.

SOLUTION: BOOTEX properly computes the SAM and XSAM size at 6.0.

SR# 5000493106

PROBLEM: If a user attempts to build the SWAP file on a cartridge without enough continuous free space, an infinite loop of error messages will begin. The error message is "Ran out of disc space, reducing SW file size by half". The problem occurs on a

system using the 5.1 version of BOOTEX.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000611590

PROBLEM: When booting a Datapair system and the Info files are inconsistent, BOOTEX asks, "Continue with which?"

The answer to this question is not intuitively obvious, unless the user has the manual.

SOLUTION: At 6.0, the message will be now displayed as:

Continue with which (0-exit,1-primary,2-secondary)?

2.7.3 CALLS UTILITY

SR# NONE

PROBLEM: The Calls utility doesn't send some output and prompts to the redirected LU when the "-L" runstring option is used. Debug/1000 uses this feature when its "+L:lu" runstring option is used.

SOLUTION: If the Calls "-L" option argument names an interactive LU or a symbolic link to an interactive LU, all menus and prompts will be redirected to that LU. Otherwise, these prompts are issued to the scheduling terminal.

SR# NONE

NOTE: The Calls utility, which performs online text display by keywords, is fully supported at 6.0. This utility was provided at 5.2 for use by Mail/1000 online help, but was not fully documented. At 6.0, online help and manual information is furnished. The CallM utility, which can be used to generate compressed input files for Calls, is also provided. These utilities are the RTE-A equivalents of the GENIX/CMD/HELP utilities on RTE-6/VM.

2.7.4 CI

SR# 5000616581

PROBLEM: CI is interpreting WHILE in an echo command as if it were the beginning of a WHILE-DO-DONE control. For example, an error is produced by including:

```
echo `error while creating file`
```

in a command file within a WHILE structure.

SOLUTION: As of 6.0, CI once again correctly handles the quoted `while`.

SR# 5003008094

PROBLEM: CN,1,20b and CN,1,21b enable and disable the local terminal, not the system console.

SOLUTION: The system console can now be enabled or disabled by using the commands CN,100001b,20b or CN,100001b,21b.

SR# 4700979310

ENHANCEMENT: When a program is RPed with the 'C' (clone) option, it is not obvious from documentation whether a permanent or temporary ID segment will be created.

Actually, if an RP is done without any options, it defaults to 'P', a permanent ID segment. However, if any option is given, the default becomes 'T', a temporary ID segment. To get a clone with a permanent ID segment, the command must be:

```
CI> RP,io.run,bla,cp
```

Both the RTE-A User's Manual (92077-90002) and the on-line help file (RP.HELP) will be changed to clarify this situation.

SR# 5000651034

ENHANCEMENT: An online help file is now provided for the CI POLL command.

2.7.5 CI UTILITIES

SR# 5003050799

ENHANCEMENT: For revision 6.0, CI will have a new, internal variable $DATC. This variable will provide the user with a quick answer to the question, "Which revision of RTE am I running?". CI will set it at start-up.

2.7.6 CS/80

SR# 1650009308

PROBLEM: XUTIL does not pass a negative number for the message buffer length.

SOLUTION: This has been fixed in the 6.0 release.

SR# 1650120865

PROBLEM: There is a problem setting the device timeout value for DD*33. If the user attempts to use the CN lu 26b command with a timeout value of 500, the system reports the following:

```
CI> cn 22 26b 500 -1
I/O device error on lu     22     The reason is:
I/O request error
Request has been flushed
Bad parameter
```

If a timeout value of 502 is used, then the call works as it

should.

SOLUTION: This has been fixed for the 6.0 release.

SR# 2200047894

ENHANCEMENT: An enhancement has been made to the CN commands so users can change the track map information in the DVT for a disk device.

The 'CN lu 76b' command can be used to change the track map information in the DVT.

SR# 5003065771

ENHANCEMENT: The CS/80 error parameter area is now displayed in decimal representation.

2.7.7 CSYS

SR# 1650038414

ENHANCEMENT: At revision 6.0, CSYS will work with CTD LUs greater than 63.

SR# 1650098244

ENHANCEMENT: At revision 6.0, CSYS will write larger records to the CTD. This results in a substantial performance improvement.

2.7.8 DD*24

SR# 1650149104

ENHANCEMENT: DD*24 now permits a maximum buffer length of 32 KBytes on read requests, instead of the 16 KByte limit which is imposed by the 5.2 driver.

2.7.9 DRIVERS

SR# 5003012401

PROBLEM: When using FST to backup large files (6-30 Mbytes) to a 9145 32-track tape drive, the tape drive LU intermittently times out if a timeout value of 500 tics is set (the default). Setting the timeout to 12000 tics (2 minutes) appears to eliminate the problem.

The default timeout for the 32 track tape should be changed from 500 to some greater value that will keep FST from timing-out when backing up large data files.

SOLUTION: The default timeout value for the 9145 drive is now 20 seconds.

SR# NONE

NOTE: Gen records for the 650/A magneto-optical (MO) disk drives have been added to define the entire surface as a single disk LU. The two new gen records, M650A_1 and M650A_3, are described below:

Driver	Entry point	TX	DX	QU	BL	PR	TO	DT
DDQ30	DDQ30	20	8	FI	UN	0	2500	30B
Model	DP							
650/A with 92279A media (512 byte sectors)								
M650A_1	2:0	0	0	0	17925	64	100001b	
650/A with 92280A media (1024 byte sectors)								
M650A_3	2:0	0	0	0	19660	64	100003b	

2.7.10 EDIT

SR# 1650173021

PROBLEM: Edit/1000 revision 5.2 disables an RTE-A terminal's secondary program scheduling after screen-mode is used, if it was enabled before the screen mode and the secondary program is not "HPMDM". This happens only with the D MUX serial drivers.

SOLUTION: This has been fixed for the 6.0 release.

SR# 1653022194

PROBLEM: Edit/1000 displays a password at the bottom of the screen in screen mode if DS file transparency is used.

SOLUTION: Edit now removes the password and file security code when it displays the source file name on the screen mode bottom line, in response to the SH (show) and ?? (one line status) commands, and it the "closed file" message. It will display the password during the "Opened file" message, and "Created

file" message if the create is deferred to the "ER" or first "WR" command, and on any source file read or write error message.

Edit will continue to display the password in messages for files other than the source file.

2.7.11 FMGR

SR# 5003032201

PROBLEM: Adding a trailing comma to the TM command from FMGR sets the system clock to an incorrect value.

SOLUTION: This has been fixed for the 6.0 release.

2.7.12 FMP

SR# 1650171009

PROBLEM: The UDSP search does not work correctly if one of the search paths is a read-protected directory.

SOLUTION: At revision 6.0, the UDSP search for a file will skip any directories that are read-protected.

SR# 4700977256

PROBLEM: FmpCopy can create illegal filenames when the 'D' option is used. When the 'D' option is used, FmpCopy creates a 13 character temporary filename to use for the copy function. After a successful copy, the original dest file is purged and the temp copy is renamed to the dest name. If the original name is less than 13 characters and the full path is long, using the 13 character filename may cause the length of the full path to exceed 63 characters.

SOLUTION: At revison 6.0, FmpCopy will attempt to create temporary

filenames at the same length as the orignal destination filename.

SR# 4701112342

PROBLEM: FmpRunProgram can fail with a false error condition when the calling program's ID segment address happens to be the same as the value of ASCII characters in the 19th and 20th characters of a runstring.

SOLUTION: FmpRpProgram will now clear word 10 of the dcb before calling FmpOpen.

SR# 5000036608

PROBLEM: FMPCOPY fails when the buffer length is 16416 words or more. For large files (1000 blocks or more), only one block is copied with a bad EOF. Small files usually work OK. All copy operations work correctly if the buffer size is less than 16416 words.

SOLUTION: At revision 6.0, FmpCopy will cap the transfer length at 16k words.

SR# 5000126987

PROBLEM: The CLOSE utility is loaded with a load command file named #CLSDS, and its relocatable is %CLSDS. This is not documented anywhere.

SOLUTION: At revision 6.0, the relocatable for the close utility is in the file "close.rel". The link command file is named "close.lod".

SR# 1650029629

ENHANCEMENT: At revision 6.0, FmpOwner will use the 'Q' option when it opens a directory to determine ownership.

SR# 2200027656

ENHANCEMENT: The WD command will now accept a trailing slash on the directory name.

SR# 4701149682

ENHANCEMENT: At revision 6.0, FmpCopy has been enhanced to make better use of the buffer that is passed to it when performing I/O to or from a device. Prior to this revision, FmpCopy truncated records to or from devices at 256 bytes. When copying from a device to a device or from a device to a type 1 file, the maximum record size will be dependent on the size of the buffer passed to FmpCopy.

Also at revision 6.0, the CDS version FmpCopy has been enhanced to set the streaming bit when the destination device is a streaming tape drive. After writing the EOF, a dynamic status request is sent to the device to check for any errors.

2.7.13 FMP LIBRARIES

SR# 4701103234

PROBLEM: The RexBuildPattern routine incorrectly rejects some valid regular expressions. When an end of a class ']' is the last character of the expression, RexBuildPattern rejects the expression as illegal.

SOLUTION: This has been fixed for the 6.0 release.

2.7.14 FORMC

SR# 5000588889

ENHANCEMENT: At the 6.0 release, FORMC will no longer check a user's capability level if the 'FO' command is used to format floppies.

2.7.15 FREES

SR# 4700983270

PROBLEM: The FREES command gives an incorrect output with the +M option (output in MB).

SOLUTION: This has been fixed in the 6.0 release.

SR# NONE

NOTE: The +Q option has been added at 6.0 to return status from the FREES program to the father program.

2.7.16 FST

SR# 1650121053

PROBLEM: When running FST from a read-protected command file, FST aborts but does not set the $RETURN1 variable.

SOLUTION: This has been fixed at the 6.0 release.

SR# 2200039222

PROBLEM: If the scratch file is created in the default style and placed in /SCRATCH/, and the working directory is /SCRATCH/, then a backup file mask of '@' will include FST's scratch file.

SOLUTION: FST will now check the directory address of the scratch file so it will not select its own scratch file.

SR# 4701041053

PROBLEM: When restoring a TAR file with FST, FST tries to restore the './' and '../' entries when they exist on a TAR tape.

SOLUTION: This has been fixed at the 6.0 release.

SR# 4701042705

PROBLEM: To restore any files from a FST backup, FST must first be able to restore the entire directory file from the archive. For large FST backups on a DAT tape, this can easily require more than 100,000 free disk blocks.

SOLUTION: For revision 6.0, the MinDir option has been added to FST. This allows FST to create a minimum-sized directory file containing information for only those files being restored.

SR# 4701147256

PROBLEM: FST can create and verify tapes which cannot be read by FST after the backup. The problem only occurs when FST crosses a tape boundary, the YES option is not used, and the tape being overwritten was not previously written by FST or TF. Also, this does not happen with CTD tapes.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701148379

PROBLEM: FST does not restore a file that crosses a tape boundary when the DUP and VERIFY options are set and the file being restored already exists.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000563726

PROBLEM: The error "Clearing selections for TF restore" is produced when attempting to unselect files that were previously selected for FST backup. The error occurs if the tape that is loaded is a

TF format tape and the tape header has been read prior to selecting the files for backup. When the message is output, the UN command fails to clear the selected files.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000579656

PROBLEM: FST builds an incorrect destination filename for FMGR files when the destination mask is a FMGR LU.

SOLUTION: This has been fixed for the 6.0 release.

SR# 1650069294

ENHANCEMENT: At revision 6.0 of RTE-A, the 'RwndOff' option was added to FST. This will cause FST to take the media offline upon exit. (This will cause CTD tapes to unload.)

SR# 1650170860

ENHANCEMENT: At 6.0, FST will abort non-interactive executions when a single 'BA' command yields mulitple files with the same name.

SR# 1653010611

ENHANCEMENT: At revision 6.0, FST will backup remote files which are already open in shared mode. FST is not able to backup remote files which are open in exclusive mode.

SR# 2200040766

ENHANCEMENT: At revision 6.0 when restoring an FST tape, FST will create the FST directory file to be the exact size required.

SR# 2200040774

ENHANCEMENT: When FST restores a binary file from a tar archive, the final

block will be padded with nulls.

SR# 2200041558

ENHANCEMENT: At 6.0, FST will check the break flag between forward file commands.

SR# 4701036509

ENHANCEMENT: At revision 6.0, FST will only require the node to be specified when selecting files to be restored from a backup. Prior to 6.0, FST required both the node and the account information.

SR# 4701043992

ENHANCEMENT: At revision 6.0, FST was enhanced to read a start-up command file. This can be used to set up defaults for many of FST's commands.

SR# 5000158444

ENHANCEMENT: At revision 6.0, FST will allow the FST directory file to be located on a remote system using DS transparency.

SR# 5000159152

ENHANCEMENT: At revision 6.0, FST has an "Inhibit" option that will cause FST to inhibit the rewind between backup operations. FST will still rewind the tape upon exit.

SR# 5000181719

ENHANCEMENT: The Z option was added to FST at revision 6.0. This option will cause FST to pause when disk-full errors are encountered.

SR# 5000212670

ENHANCEMENT: At revision 6.0, FST will allow the "Verify" option to be disabled after the "Clear" backup bit option has been set. This will cause FST to clear the backup bit of every file which was backed-up, without verifying the archive's contents.

2.7.17 GENERATOR

SR# 1650021733

PROBLEM: RTAGN ignores the size specified for the snap file, eg. snp::::120. This means that extents are always created.

SOLUTION: This has been fixed at the 6.0 release.

SR# 1650140574

PROBLEM: The generator does not allow the maximum buffer limits to be specified, and this causes an error during the DVT definition phase. For example, the following statement will cause an error:

Dvt,/Rte_A/ddc00.rel,MHP_Printer:4,lu:24,BL:BU:4080:6112

SOLUTION: This has been fixed for the 6.0 release.

SR# 2200032466

PROBLEM: Generating X.25 into an A-series can cause the generation to fail. DDX00.rel contains a "PS" indicating pseudo driver. This works fine for the IFT statement but causes the DVT statement to return an error. Since the same relocatable is used for the IFT and DVT statement, the generator needs to ignore the "PS" for the DVT.

SOLUTION: This has been fixed for the 6.0 release.

SR# 2200033845

PROBLEM: If there is a comma at the end of the line in the IFT specification statement when using RTAGN, the generator may either parse the line correctly, or it may report a parameter error, depending on whether the line has an even or odd number of characters.

SOLUTION: This has been fixed for the 6.0 release.

SR# 2200045070

PROBLEM: RTAGN puts a default device type of 70 in the low order bits (0-5) of DVT6 instead of in bits 8-13.

SOLUTION: Because some software was depending on a device type of 0b, RTAGN now uses 0b as the default and puts it in bits 8-13 of DVT6. The RTE-A System Generation and Installation Manual now says the default device type is 0b.

SR# 5000084723

PROBLEM: RTAGN gives the wrong error count if a 'DI' command is placed in the wrong spot in the answer file.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000141796

PROBLEM: RTAGN only overlays the list, snap, and system file if the file descriptor, as opposed to the file name, begins with an apostrophe (') or caret (^). Thus, you can only overlay an existing file if the file is in your current working directory or in a global directory. Note that /GLOBAL/^FILE works because RTAGN manipulates it internally as ^FILE::GLOBAL.

SOLUTION: This has been fixed for the 6.0 release.

SR# 2200047563

ENHANCEMENT: RTAGN has been enhanced to treat 0 words of XSAM the same way it treats a null specification for XSAM.

SR# 4701112995

ENHANCEMENT: The default size for the system file was too small. It has now been increased to 1024 blocks.

SR# 5000264465

ENHANCEMENT: At 6.0, the generator will now report the number of available words in the system area that were not used.

2.7.18 HPCRT

SR# 4700970830

PROBLEM: The HpCrtStatus routine does not work properly. Either it MPs or else the status buffer contents are incorrect. The problem was that a temporary buffer was not being passed correctly.

SOLUTION: This has been fixed in the 6.0 release.

SR# 4701148296

PROBLEM: All the HpZ input routines work on the principle of parsing information from the previously declared input buffer at the 'current position', which is maintained in a global variable called HpZIbufPos. As each routine executes, it is supposed to update 'current position' upon exit so that a succeeding routine can parse the next piece of information from the buffer.

HpZHexI does not do this correctly in all cases. The problem is that the position varies depending upon how the routine terminated. For example, given the call 'HpZHexI(number,4)' to parse up to four hex characters, if the current position in an input line of 'ru,foo, 00FF,AB' points to the blank, it will be left pointing to the following comma upon return. This is correct behavior. If we give it an input line of 'ru,foo, FF,AB' instead, with the current position again at the blank, upon exit the pointer will be pointing to the 'A'. This is incorrect behavior resulting from the parse terminating on

condition rather than on count. HpZHexI is defined as returning 'true' if no number was parsed. This also does not work in all cases. The input buffer 'ru,foo, X' with an initial position pointing to the blank should return 'true' because 'X' is not a legal hexadecimal digit. It does not.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000527044

PROBLEM: The HpCrtReadChar routine does not set BIT 15 in the variable STATUS after a successful call, as indicated in the Relocatables Manual.

The same defect exists in HpCrtXReadChar.

SOLUTION: HpCrtReadChar and HpCrtXReadChar have both been fixed to set the sign bit of the status word on a normal return.

SR# 5003039347

PROBLEM: On an RTE-A 5.2 system, the return from an HPCrtQTDPort7 call is lu=0. On RTE-A 5.16, the value was 32767. Both of these are incorrect.

There are really two problems. The first is that there was a defect in the code when it was calculating an IFT offset. The second problem is that it wasn't documented that the Port_0_to_6_LU had to be configured as a modem port (bit 13 set when it was initialized with CN 30B) in order for the function to work.

SOLUTION: The code and the manual have been fixed for the 6.0 release.

2.7.19 HPMDM

SR# 1650157107

PROBLEM: Both the documentation on HPMDM in the RTE-A Driver Reference Manual and HPMDM's on-line help specify the command to select XON/XOFF protocol for a port as "HA=XX". However, the source file HPMDM.FTN as supplied actually uses "HA=XO".

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701066613

PROBLEM: RTEA2.CMD says that the documentation for HPMDM is in the Utilities Manual. This is not correct; the documentation is in the Driver Reference Manual.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000479840

PROBLEM: HPMDM can hang in the HpMdmKill subroutine trying to "OF" a program which has locked the session LU passed to HPMDM.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003007906

PROBLEM: HPMDM prints excess characters to the log device.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000398511

ENHANCEMENT: At revision 6.0, HPMDM will not display a message for LUs which are not in the HPMDM control block.

SR# 5003054148

ENHANCEMENT: At revision 6.0, the source for callb.ftn will include instructions for linking the program.

2.7.20 I/O

SR# 4701160457

PROBLEM: Powerfail on revision 5270 is not robust enough for repeated powerfails. This can be duplicated easily on systems with SCSI disks. Symptoms vary, from UI errors to halts.

SOLUTION: This has been fixed at the 6.0 release.

2.7.21 ID*52

SR# 4701067108

PROBLEM: A-Series CPU-CPU communications using ID*52 and the 12006A PIC card, as shipped, do not work. The problem is that ID*52 forces DVCMD to be pulsed at ~227 nsec; however, the filter on the PIC card filters out signals<525 nsec.

SOLUTION: This problem has been fixed at 6.0 by adding control requests to ID*52. This gives users the option to use either pulse mode or level mode DVCMD.

2.7.22 INSTALLATION

SR# 5003014449

PROBLEM: FPUT to floppies requires a timeout greater than 500 tics.

SOLUTION: The default timeout value for floppy drives is now changed to 7 seconds.

SR# 5003064311

PROBLEM: The file IMAGE6.CMD does not copy the library SHSLB.LIB to the libraries directory before it attempts linking the IMAGE programs. Some of the programs reference this library explicitly in order to resolve some undefined externals. These undefined externals can also be satisfied from other libraries, however the size of the programs increases.

SOLUTION: Both rtea1.cmd (for RTE-A) and inci.cmd (for RTE-6) have been updated to copy the SHSLB.LIB file to the proper destination library.

2.7.23 INSTL

SR# 4701076653

PROBLEM: At revision 5.27, INSTL option 'N' doesn't set the consoleless flag in BOOTEX.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003017830

ENHANCEMENT: INSTL can now enable CS/80 timeout retry by setting option = 'E'.

2.7.24 LI

SR# 4700983098

PROBLEM: If the 5.2 LI is loaded as a non-EMA/VMA program, as per the instructions in the .LOD file, then the message

LI: Insufficient free memory for record buffer; size LI up

is always reported.

SOLUTION: LI now reports this message only if there really is insufficient free memory.

SR# 4700983502

PROBLEM: If the directory information specifying the number of records for a file being listed by LI is incorrect or not up-to-date, LI quits listing the file at the number of records given by the out-of-date directory entry instead of continuing onward. A record count of zero is properly ignored, but there remains a problem for files which are kept open and appended to without updating the directory info, such as /SYSTEM/NS_EVENT.LOG of NS-ARPA/1000. Files updated by programs which did not properly close the file (e.g., were aborted) may also exhibit this behavior. LI should not blindly trust the directory but instead verify that there are no more records past the advertised limit.

SOLUTION: LI now uses the directory's notion of the end-of-file up until that EOF point is reached, at which time LI checks to see if an EOF mark is actually read. If not, LI stops claiming that it knows the EOF position and will read through the file to find the true EOF mark if necessary (as for the "$" command).

SR# 4700984773

PROBLEM: The LI program should check the BReak flag while performing "find-all" pattern searches via the "@" command.

SOLUTION: LI now checks the BReak flag and exits the pattern search if set.

2.7.25 LIF

SR# 4701013235

PROBLEM: LIF hangs in an infinite loop in the IADDR routine.

SOLUTION: This has been fixed at the 6.0 release.

2.7.26 LINK

SR# 5000593343

PROBLEM: The Link NA command no longer works at 5.2. It may cause an MP violation or other unpredictable results.

SOLUTION: The NA command now works as expected.

SR# 1650135145

ENHANCEMENT: Link will no longer generate the "Warning: File not indexed" message when the MS (Multiple Search) command is used, as the warning is inappropriate in this case.

SR# 2200041780

ENHANCEMENT: At 6.0, Link will recognize NLS relocatable catalog file names in the runstring as files to be relocated. The type extension must contain "R" as the first character, followed by 3 digits, i.e., TEAL.R000.

SR# 5000220517

ENHANCEMENT: At 6.0, LINK will include the sharable EMA label, if any, in the summary of information at the end of the .map file.

SR# 2200040956

PROBLEM: When MACRO is run to build a MACRO library and a 'table' is requested, the table lines are 1 character too short if the MACRO name is an odd number of characters. (The control statement used here is MACRO,M,T.)

SOLUTION: This has been fixed in &macr6 at revision 6.0.

SR# 2200040972

PROBLEM: If a MACRO library is built with a macro by the name of 'DATA', MACRO will fail when the library is referenced with a "DCB not open" error on the source file.

SOLUTION: This problem is fixed at 6.0. The MACRO opcode tables now all come from the same table source code so they will always be consistent. Further, an internel revision flag is kept with the table and is put in each MACRO library. If they mismatch, an error is generated.

The error is cleared by reprocessing the MACRO library with a special new option in MACRO.

SR# 2200047845

PROBLEM: If the file /libraries/$maclb.mlb is corrupted, running MACRO on prog.mac will result in the error message, "Illegal file position PROG.MAC" instead of any message pointing to the library.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000125724

PROBLEM: The MACRO/1000 Manual does not document the limit on the number of labels in a MACRO program. However, the real problem is that MACRO mismanages its symbol table space and, as a result, fails to handle as many symbols as it should.

SOLUTION: This has been corrected for the 6.0 release.

SR# 5000151662

PROBLEM: MACRO emits line number information for include files. DEBUG thinks these are main file line numbers and gets confused.

SOLUTION: At 6.0, Macro will process include files such that each module's DEBUG information will be complete if all code in that module comes from the same file as the Nam record. As a result, entire modules may be in include files without losing debug information. The DEBUG interface does not allow switching files within a module, so DEBUG information that would come from a file other than the Nam record will not be generated.

SR# 5000275271

PROBLEM: When compiling MACRO source which compiled correctly on revision 2540, error 217 (Incomplete expression in operand files) or error 290 (Not enough parameters in microcode call) occur.

SOLUTION: This has been fixed for the 6.0 release.

SR# NONE

ENHANCEMENT: The SEXT opcode was added to MACRO.

Soft EXT op code: SEXT foo

foo may be defined locally but if not is external. CALL can make the routine external while still allowing it to be defined locally.

SR# NONE

NOTE: MACRO was changed to allow the symbol table to be put in EMA/VMA.

2.7.27 MERGE

SR# 4701012120

PROBLEM: The MERGE utility does not always return the proper number of errors in $RETURN1, returning zero when errors occurred.

SOLUTION: At 6.0, MERGE will return non-zero in $RETURN1 for any errors which occur.

SR# 5000534800

PROBLEM: MERGE cannot accept an LU as the destination file; an "Illegal name" FMP error is reported. For example, "merge a b 1" reports this error.

SOLUTION: MERGE now builds a file descriptor without file type and main size fields for destination descriptors which specify an LU number.

SR# 4700974295

ENHANCEMENT: MERGE previously allowed up to 128 characters of source file names to be entered in the runstring. This limit has been increased to 256.

SR# NONE

NOTE: At 6.0, MERGE will not allow relocatables to be MERGE command files. Files of type 5 will be treated as files to be merged, rather than as command files, even if only one file to merge appears in the runstring.

2.7.28 MPACK

SR# 1650115683

ENHANCEMENT: At revision 6.0, MPACK will set the $RETURN1 variable to indicate successful completion. $RETURN1 will be zero if MPACK completes without any errors.

SR# 2200045229

ENHANCEMENT: At revision 6.0, when removing extents and truncating a file, MPACK will only require the contiguous free space on disk to be large enough to contain the final truncated version of the file. Prior to revision 6.0, MPACK required the free space to be at least as large as the total allocated size of the original file.

2.7.29 MUX

SR# 1653024646

PROBLEM: Ports configured for Half HP+XON/XOFF (203b) should not use the HP ENQ/ACK handshake. The MUX, however, still uses the ENQ/ACK handshake when a port configured for protocol 203b issues a CN 11 (formfeed) command.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701078576

PROBLEM: During initialization, D-MUXes may time-out or get driver-defined error 29 on A990 CPUs.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701115220

PROBLEM: Due to the faster speed of the A990, some of the timing loops within ID800 were executing too quickly. This caused the driver to time-out in some cases.

SOLUTION: This has been fixed for the 6.0 release.

2.7.30 Mail/1000

SR# 2200047910

PROBLEM: The visual mode message menu shows only the first two digits of each message number, which is not helpful for folders which contain more than 99 messages.

SOLUTION: The visual mode menu now displays 3 digits of the message number, right-justified.

SR# 2200048108

PROBLEM: When RMAIL detects an invalid address in the /mail/admin/addressbook.mail file, the error message reports garbage instead of the offending address. RMAIL then shuts down rather than continuing on with that address ignored.

SOLUTION: RMAIL now reports the proper address and continues onward with the next entry in the addressbook file.

SR# 4700948315

PROBLEM: RMAIL will append a dot (.) to single-label domain names found in a message if the local host has a single-label domain name. A single-label domain name is a hostname in which no ".DOMAIN.ORGANIZATION" appears, to use NS/ARPA terminology. Basically, it refers to hostnames which do not contain upper-level network information separated by dots. For example, if mail.cf specifies "domain localhost" and a message

comes through which is "To: software_samantha@DSD", then RMAIL will pass this message on to host DSD with the modified header "To: software_samantha@DSD." with a trailing dot after "DSD". This is illegal RFC-822 standard syntax and may confuse host DSD if the dot is unexpected.

SOLUTION: RMAIL now properly handles qualifying domain names when the local domain contains no upper-level network information. Fixed in the 6.0 release.

SR# NONE

NOTE: Mail/1000 supports the Domain Name System (DNS) at 6.0. DNS client versions of Mail/1000 programs Sendmail and SMTP may be loaded at Mail installation time. Optionally, a caching-only server may be installed that locally caches information retrieved from full-service nameservers elsewhere on the network.

SR# NONE

NOTE: At 6.0, Mail/1000 provides the utilities uuencode and uudecode for mailing binary files. These utilities are compatible with their UN*X namesakes.

2.7.31 OPERATING SYSTEM

SR# 4701093906

PROBLEM: The routine called by many RTE modules to verify that a buffer supplied by the user is "legal" can fail to detect the use of an invalid page. The routine is $VBUF of IOMOD, and it is called to check the validity of buffers used in EXEC read and write calls, among other uses. This routine may not catch a buffer which spans a user map register containing 177777b, that is, a page of the user's logical address space which has been set invalid, as by the RTE dispatcher or by EMA/VMA mapping instructions. An error such as I004 should be generated in this situation, but no error is detected.

SOLUTION: $VBUF properly rejects buffers which span user map registers

that contain either 177777b or 77777b, in addition to the other validity checks performed at 6.0.

SR# 5000590919

PROBLEM: A HALT 5 may occur when using the dummy version of the OPMSG RTE-A module from $SYSA.

The PRMSG entry point needs to be coded for a JSB calling sequence, rather than a JMP.

SOLUTION: The correct calling sequence is now coded.

2.7.32 PRIMARY

SR# 1650141333

PROBLEM: The example answer file which is supplied with RTE-A contains a misleading comment in the section which defines the system libraries. The specification of user libraries in the location suggested by the comment can result in errors when linking programs which use entry points in these libraries.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701090407

PROBLEM: At 5.27, a SCSI primary system cannot be generated using the second half of the primary.ans file.

SOLUTION: The second half of the primary.ans file has been corrected.

2.7.33 SAM

SR# NONE

PROBLEM: The SAM utility reports an unknown block when an unassigned LU is spooled. This problem was introduced at 5.2, when spooling of unassigned LUs was introduced.

SOLUTION: The SAM program now checks the spool node list off the dummy DVT for LU 0. Entry point DDV, which points to that DVT, has been moved into $VCTR to keep the SAM program transportable.

2.7.34 SCOM

SR# 5000562751

PROBLEM: Whenever Scom is run on a FMGR file with a negative security code, Scom reports "Incorrect security code" even if the security code is entered properly in the runstring.

SOLUTION: Scom no longer calls FmpFileName but instead uses the file descriptor as entered in the runstring. This corrects the problem.

2.7.35 SCSI

SR# 1653022913

PROBLEM: ASAVE and FST will fail verify if the 2GB SCSI DAT is on the same interface as the SCSI disk.

SOLUTION: This has been fixed for the 6.0 release.

SR# 1653030338

PROBLEM: Powerfail doesn't work if disks are SCSI. When doing a power-up cycle, the SCSI disk seems to take a long time compared to the CPU. If an I/O request has been pending on the SCSI disk, a special driver error 43 or the message "device not ready" is displayed on the console.

SOLUTION: This problem has been fixed for the 6.0 release.

SR# 4701148650

PROBLEM: SCSI boot doesn't work from a C1716M multifunctional 5.25" Optical Disk or from a C2247 hard disk.

SOLUTION: The SCSI firmware has been changed to fix this problem. Use the VSCSI 'TS' function to verify the new SCSI firmware, which is '921030.0006'.

SR# 5003018234

PROBLEM: The cartridge list is not updated when switching between FMGR and CI media on a 650A drive.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003022053

PROBLEM: The SCSI drivers contain a list of addresses to their extensions. The tape driver DDQ24 overwrites the last three internal addresses with data. The driver should be changed to use a store indirect instead of a store.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003022269

PROBLEM: When calling the routine NodeListBits in DDQ30, a flag for set/clear is passed from the E-register. In NodeListBits, the E-register is used to clear bit 15 of the address. This causes the routine to lose the original definition of the E-register.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003023671

PROBLEM: DDQ24 should return a 0 transfer log for a dynamic status request. Currently, it returns the length of the last SCSI data phase, which happens to be the length of the request sense data transfer.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003023689

PROBLEM: DDQ24 does not update status words upon exit when no error is encountered. This can lead to programs thinking that errors occurred due to bits set during driver communication between the device driver and the interface driver.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003031229

PROBLEM: TF is unable to append to a SCSI DDS tape, part of the C2212A subsystem. The following error occurs:

```
TF: co @ 5 a
Append option selected.

Current contents of tape:

Tape format:  TF
Title:        TF:  co @ 5 v
Date:         Tue Dec 10, 1991 11:28:36 am
```

```
Do you want to append to this tape (Y/N) ? y
Positioning tape beyond files previously written.
I/O device error on LU     5    The reason is:
Special driver defined error=     26
Request has been flushed
Tape i/o error.  Status is 1.
Can't append.
Command terminated.
TF:
```

SOLUTION: This has been fixed for the 6.0 release.

SR# 1653000380

ENHANCEMENT: SCSI drivers should return the recovered error in DVT6.

At 6.0, both DDQ30 and DDQ24 device drivers now return the "Recovered Error" in DVT6.

SR# 1653000406

ENHANCEMENT: Control request 16B has been implemented to enable/disable the DDQ24 driver to issue the request-sense command if the check condition occurred and the UE bit is set.

Example:

1. `CALL EXEC(3,lu+16b,1)` — disable the driver to issue request-sen if UE bit is set.

2. `CALL EXEC(1,20000b+lu,..)` — if the check condition occurred ($dv6 error bit is set), $dv18 indicates SCSI check condition error.

   A request sense Z-buffer call can get the request sense data.

   or

   `Call EXEC(1,lu,..)` — if the check condition occurred ($dv6 error bit is set), $dv16 indicates driv error.

SR# 4701103580

ENHANCEMENT: Previously, the SCSI interface driver IDQ35 enabled the pass-through mode if the transfer length was greater than 5120 words, which was hard-coded. At 6.0, users can set the pass-through fence.

DDQ30's dvp03 contains the RTE block number which is the pass-through fence. If driver parameter 3 is defaulted to a value of 0, IDQ35 will use a value of 24 RTE blocks (3072 words) for the pass-through fence. If the transfer length is greater than or equal to the pass-through fence, then the pass-through mode is enabled.

SR# 5003022079

ENHANCEMENT: The SCSI interface driver IDQ35 does a request sense when a check condition is issued by a device. Each device has a different amount of sense data that is valid and/or useful. In the past, IDQ35 always got 20 bytes. However, some devices go beyond this count for important information. If the device conforms strictly to the SCSI specification, the missed information cannot be retrieved on a subsequent call to get sense data.

At 6.0, IDQ35 can get more than 20 bytes of data on a check condition request sense. If the UE bit is set, check condition will return to the user program, which can then check the condition and use a Z-buffer call to request any size of the sense data.

2.7.36 SIGNALS

SR# 4701126623

PROBLEM: Signals are delivered in the wrong order. On page 13-2 of the Programmer's Reference Manual, the order that signals will be delivered is from 1 to 32. Currently, the order that the signals are being delivered is from 17 to 32 and then 1 to 16. When the two words that contain the bits that indicate that

signals are pending are examined, they are in the opposite order of the correct order.

SOLUTION: The code has been fixed to implement the correct order at revision 6.0.

SR# 5003066845

PROBLEM: The class number and the request type in the SglIO signal dependent data are sometimes invalid.

In the past, changes were made to handle class I/O requests being flushed. These changes broke the existing code under certain circumstances.

SOLUTION: The code and documentation have been fixed in the 6.0 release of RTE-A.

2.7.37 SPOOLING

SR# 4701091942

PROBLEM: If session accounting is not turned on ("AC,ON" in BOOT.CMD) then a session's spooling is not automatically terminated when the session logs off.

SOLUTION: At 6.0, the O/S spool cleanup procedures are executed at logoff time regardless of the state of session accounting.

2.7.38 SYSTEM LIBRARY

SR# 1653027680

PROBLEM: IFTTY returns -1 (TRUE) for unassigned LUs at 5.27. In previous versions of RTE-A, it returned 0 for unassigned LUs.

SOLUTION: This problem has been fixed for 6.0. IFTTY for RTE-A now checks the LUT to determine if an LU is unassigned and thus not

interactive.

2.7.39 Structure Changes

SR# NONE

NOTE: Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

PLEASE NOTE that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we felt that sending an "update" would just cause confusion.

2.7.40 TF

SR# 1650116459

PROBLEM: TF does not correctly restore group and other protection bits.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701154088

PROBLEM: TF can memory protect when using a very large group of copy commands.

SOLUTION: This has been fixed for the 6.0 release.

2.7.41 VSCSI

SR# 5003065763

PROBLEM: VSCSI with the -ALL option to a DAT DDS tape does not gracefully handle the FMP test.

If a tape is loaded in the DAT drive, VSCSI reports:

"Illegal LU "

If no tape is loaded, VSCSI reports:

"Driver Error: Wrong media; No disk in drive"

along with FMP test failed.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5003068007

PROBLEM: When !VSCSI is booted and run for the first time, it will report SCSI address 7 for HP-IB LUs 6 through 9, 15 through 19, and 24. When run a second time, a 'LU 02 abort' is reported.

SOLUTION: This has been fixed for the 6.0 release.

SR# 1653006395

ENHANCEMENT: A SCSI diagnostic has been added to the 92077A/24398B products, !VSCSI. It includes functions similar to those available for testing CS/80 devices using EXER.

This is needed so mass storage devices can be tested and can have the ability to spare bad blocks when connected to the HP 1000 via the 12016A SCSI interface.

SR# 4701080945

ENHANCEMENT: VSCSI has been enhanced to support SCSI function 25h: Query a disk unit and read back the total volume size.

Also, the VSCSI command UNITSIZE has been implemented at 6.0 to report the total number of blocks on the disk unit.

2.7.42 WH

SR# 5000490177

ENHANCEMENT: WH can now be instructed to issue "More..." prompts for any execution by including the "-p" flag in the runstring before the 2-character report style option (if specified). For example, "wh -p al" requests "More..." prompting for the AL report. "More..." prompting will not occur unless this option is specified. Note that use of prompting for program status listings is likely to introduce inaccuracies into the information reported, since the listing is not based on a snapshot of the system at some instant, reflecting instead the state of the system as each line is printed.

2.7.43 WHZAT

SR# 5000535922

ENHANCEMENT: If the WH listing is sent to a printer, a form feed will be issued at the end of the listing.

2.8 (92078A) RTE-A Virtual Code+

2.8.1 CI

SR# 1650058875

ENHANCEMENT: As of release 6.0, CI has "environment" variables. They can be accessed programmatically from applications in the same session. This capability exists only in the VC+ (92078A) version of CI.

SR# 1650097485

ENHANCEMENT: In the past, the SET command in CI displayed the variables in a random fashion. As of revision 6.0, CI displays all variables in a sorted order. This is available only in the VC+ (92078A) version of CI.

SR# 4701087478

ENHANCEMENT: CI has been enhanced to allow ksh-style command editing (emacs, gmacs, and vi) and csh-style filename completion.

SR# 5000430470

ENHANCEMENT: In the VC+ (92078A) version of CI only, the current working directory can be the prompt string. The maximum length of the prompt string has been increased to 78 characters to allow this to work. In addition, the WD command itself can be "redefined" to do this, using an alias and a function, as follows:

```
alias wd my_wd

function my_wd {
  \WD $1 $2
   set prompt $WD` >`
}
```

SR# 5000541086

ENHANCEMENT: As of revision 6.0, $PROMPT can be up to 78 characters long. This is available only with the VC+ (92078A) version of CI.

SR# 5000541953

ENHANCEMENT: CI now has two different areas for user-defined variables, local space and the Environment Variable Block (EVB). Both are configurable. The local space for variables can be set at load time via the LINK em command. This would then be the size for all users on the system.

The EVB is set for each user by GRUMP.

This is only available in the VC+ (92078A) version of CI.

SR# 5000593491

ENHANCEMENT: At 6.0, users now have the concept of a session environment. CI can "export" variables to the Environment Variable Block (EVB). Subsequent copies of CI can access these variables. Any program running in the specific session can also access these variables via the new EXEC(39) call. This is only available in VC+ (92078A).

2.8.2 CI UTILITIES

SR# 1650140723

PROBLEM: CLGON returns error -9 if the user's password contains a period. For example, if user TEST has password "ABC.DEF", calling CLGON with "TEST/ABC.DEF" results in the -9 error. Also, if the user tries to log on interactively, entering the password at the logon prompt ie: login: TEST/ABC.DEF <return> LOGON returns: "No such directory TEST/ABC::users"

SOLUTION: CLGON has been modified to allow a "period" in the user's password.

SR# 5000482547

PROBLEM: The GRUMP command PA (password) is not listed when responding to the GRUMP> prompt with a "?". However, details for the PA command are listed when responding to the GRUMP> prompt with "? PA".

SOLUTION: This has been fixed in the 6.0 release.

SR# 1650022285

ENHANCEMENT: At revision 6.0, the touch utility will be shipped with VCPLUS. The runstring option +B will cause a file's backup bit to be set; -B will cause the bit to be cleared.

SR# 1653010579

ENHANCEMENT: At revision 6.0, the 'cp' utility will be shipped with VC+. cp allows a directory tree to be copied while preserving the directory attributes of all the files.

2.8.3 D.RTR

SR# 4700921668

ENHANCEMENT: Symbolic links have been added to the RTE-A file system at revision 6.0.

SR# 5000581496

ENHANCEMENT: With revision 6.0 of the RTE-A product, the user may use the CDS version of D.RTR. The CDS version of D.RTR doubles the capacity of the open file table and global directory table.

SR# 4700921650

ENHANCEMENT: At revision 6.0, the CDS version of D.RTR can be configured at

link time to issue a 40b request to the SCSI driver every time a SCSI disk LU is mounted. D.RTR will also send a 41b request to the SCSI driver every time a SCSI disk LU is dismounted.

SR# 4701069450

ENHANCEMENT: At revision 6.0, the CDS version of D.RTR will compare the number of blocks/bit in the volume header against the blocks/bit calculated for the size of the disk being mounted. D.RTR will not mount volumes which do not have the correct information in the volume header.

SR# 5000581496

ENHANCEMENT: With revision 6.0 of the RTE-A product, the user may use the CDS version of D.RTR. The CDS version of D.RTR doubles the capacity of the open file table and global directory table.

2.8.4 FMP

SR# 1650027201

PROBLEM: FmpCopy will not successfully copy type 2 files to magnetic tape if the record length is greater than 128 words. When attempted, all the records are truncated to 128 words on the tape.

SOLUTION: At revision 6.0, FmpCopy will use the record length of a type 2 file as the transfer length when performing IO to or from a device. (Note that the user-supplied buffer must be large enough to contain the transfer buffer and, at the minimum, an additional 160 words for the DCBs. A -223 error will be returned if a type 2 file cannot be transferred to or from a device without truncating the records.)

SR# 4700977256

PROBLEM: FmpCopy can create illegal filenames when the 'D' option is used. When the 'D' option is used, FmpCopy creates a 13 character temporary filename to use for the copy function.

After a successful copy, the original dest file is purged and the temp copy is renamed to the dest name. If the original name is less than 13 characters and the full path is long, using the 13 character filename may cause the length of the full path to exceed 63 characters.

SOLUTION: At revison 6.0, FmpCopy will attempt to create temporary filenames at the same length as the orignal destination filename.

SR# 4701112342

PROBLEM: FmpRunProgram can fail with a false error condition when the calling program's ID segment address happens to be the same as the value of ASCII characters in the 19th and 20th characters of a runstring.

SOLUTION: FmpRpProgram will now clear word 10 of the dcb before calling FmpOpen.

SR# 5000036608

PROBLEM: FMPCOPY fails when the buffer length is 16416 words or more. For large files (1000 blocks or more), only one block is copied with a bad EOF. Small files usually work OK. All copy operations work correctly if the buffer size is less than 16416 words.

SOLUTION: At revision 6.0, FmpCopy will cap the transfer length at 16k words.

SR# 1650029629

ENHANCEMENT: At revision 6.0, FmpOwner will use the 'Q' option when it opens a directory to determine ownership.

SR# 4701149682

ENHANCEMENT: At revision 6.0, FmpCopy has been enhanced to make better use of the buffer that is passed to it when performing I/O to or from a device. Prior to this revision, FmpCopy truncated records to or from devices at 256 bytes. When copying from a

device to a device or from a device to a type 1 file, the maximum record size will be dependent on the size of the buffer passed to FmpCopy.

Also at revision 6.0, the CDS version FmpCopy has been enhanced to set the streaming bit when the destination device is a streaming tape drive. After writing the EOF, a dynamic status request is sent to the device to check for any errors.

2.8.5 FMP LIBRARIES

SR# 4701103234

PROBLEM: The RexBuildPattern routine incorrectly rejects some valid regular expressions. When an end of a class ']' is the last character of the expression, RexBuildPattern rejects the expression as illegal.

SOLUTION: This has been fixed for the 6.0 release.

2.8.6 GENERATOR

SR# 4701010736

PROBLEM: The lower bound of the class buffer limits must be <=4095 words. Values greater than this cause the bound to be treated as zero.

SOLUTION: At 6.0, the upper and lower bounds are stored in separate words, rather than squeezing both into one word. The limit of 8160 words for the upper bound is removed, as well as the limit of 4080 words difference between the upper and lower bounds. Entry points $SPBL and DSPBL have been replaced by $UpClassLimit, which contains the upper bound, and $NLowClassLimit, which contains the negated lower bound, both in words.

2.8.7 LANVCP

SR# 1650161489

PROBLEM: VCPMT sends messages to the scheduling terminal and not to the system console.

SOLUTION: This has been fixed for the 6.0 release.

2.8.8 MACRO

SR# 1650101089

PROBLEM: The macro &CDSONOFF incorrectly generates a PCAL type 1 calling sequence; it should generate type 0.

SOLUTION: At 6.0, the &CDSONOFF library was changed to use pcal 0 calls.

2.8.9 MULTIUSER/SESSION

SR# 1650097063

PROBLEM: Sometimes LOGON is unable to access the .GRP file when it should otherwise succeed.

SOLUTION: The file opening scheme for LOGON has been modified to further reduce the chances of this failure.

SR# 1653027888

PROBLEM: If a group has more than 448 users, the group table is corrupted after one of the higher-numbered users logs on and then off.

SOLUTION: As of 6.0, groups with more than 448 users will not have this problem.

SR# 4700923144

PROBLEM: Running VC1.CMD as part of installing VCPLUS onto a primary system for the first time produces error messages because the directory /USERS does not exist.

SOLUTION: VC1.CMD now checks for the existence of /USERS before attempting the copy.

SR# 5003044636

PROBLEM: When accounting is turned off, telnet sessions are not released at logoff time.

SOLUTION: This has been fixed at the 6.0 release.

SR# 1650062364

ENHANCEMENT: A command stack was added to Grump at revision 6.0 of VCPLUS.

SR# 1650161612

ENHANCEMENT: If a password entered with AL, US, or NU contains a space or comma, GRUMP terminates the password at that character. The user or System Manager would expect the password to be "MY CAT", and in reality it is "MY".

SOLUTION: In the case of changing the password via the NE or AL commands, an error message will always be issued in the interactive case. In the case of PA, the password command, the error checking will be done.

2.8.10 OPERATING SYSTEM

SR# 4701093559

PROBLEM: When an ID segment for a CDS program is created by cloning an

existing ID segment, the "current code segment" field is not initialized to the "initial code segment" field. This causes the dispatcher to set the maps incorrectly when the program is run. This is a problem only for programs which have the AL bit set, indicating that all segments must be in memory (as is the case for shared programs).

SOLUTION: At 6.0, the $IDRPL module sets the current code segment field to the initial code segment value, avoiding the problem.

2.9 (92081A) Image/1000-II

2.9.1 Structure Changes

SR# NONE

NOTE: Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

PLEASE NOTE that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we felt that sending an "update" would just cause confusion.

2.10 (92084A) RTE-6/VM Operating System

2.10.1 CALLS

SR# NONE

NOTE: The Calls and CallM utilities are now shipped with the RTE-6/VM product, as well as with as RTE-A, since Calls is used by the online help facility of DEBUG/1000.

2.10.2 CI

SR# 5000616581

PROBLEM: CI is interpreting WHILE in an echo command as if it were the beginning of a WHILE-DO-DONE control. For example, an error is produced by including:

echo `error while creating file`

in a command file within a WHILE structure.

SOLUTION: As of 6.0, CI once again correctly handles the quoted `while`.

SR# 5000651034

ENHANCEMENT: An online help file is now provided for the CI POLL command.

2.10.3 CI UTILITIES

SR# 5003050799

ENHANCEMENT: For revision 6.0, CI will have a new, internal variable $DATC. This variable will provide the user with a quick answer to the question, "Which revision of RTE am I running?". CI will set it at start-up.

2.10.4 DVA37

SR# 4701070607

PROBLEM: The HPIB driver DVA37 is erroneously inserting an ACG and UCG command into the HPIB command sequence. This can cause some devices to hang because they cannot interpret these commands.

SOLUTION: This has been fixed for the 6.0 release.

2.10.5 DVS23

SR# 4700964262

PROBLEM: Under 5.2 RTE-6/VM, blank new tapes cannot be used on a DAT drive. The density is genned in at 1600. Nevertheless, the device times out when using a new blank tape.

SOLUTION: DVS23's set density control request has been modified. Using the control request 'CN lu 15b 1' or 'CN lu 15b 1600' to set the tape density will now allow a brand new DAT tape to be used.

2.10.6 EDIT

SR# 1653022194

PROBLEM: Edit/1000 displays a password at the bottom of the screen in screen mode if DS file transparency is used.

SOLUTION: Edit now removes the password and file security code when it displays the source file name on the screen mode bottom line, in response to the SH (show) and ?? (one line status) commands, and it the "closed file" message. It will display

the password during the "Opened file" message, and "Created file" message if the create is deferred to the "ER" or first "WR" command, and on any source file read or write error message.

Edit will continue to display the password in messages for files other than the source file.

2.10.7 FMP

SR# 4700977256

PROBLEM: FmpCopy can create illegal filenames when the 'D' option is used. When the 'D' option is used, FmpCopy creates a 13 character temporary filename to use for the copy function. After a successful copy, the original dest file is purged and the temp copy is renamed to the dest name. If the original name is less than 13 characters and the full path is long, using the 13 character filename may cause the length of the full path to exceed 63 characters.

SOLUTION: At revison 6.0, FmpCopy will attempt to create temporary filenames at the same length as the orignal destination filename.

SR# 4701112342

PROBLEM: FmpRunProgram can fail with a false error condition when the calling program's ID segment address happens to be the same as the value of ASCII characters in the 19th and 20th characters of a runstring.

SOLUTION: FmpRpProgram will now clear word 10 of the dcb before calling FmpOpen.

SR# 5000036608

PROBLEM: FMPCOPY fails when the buffer length is 16416 words or more. For large files (1000 blocks or more), only one block is copied with a bad EOF. Small files usually work OK. All copy operations work correctly if the buffer size is less than 16416 words.

SOLUTION: At revision 6.0, FmpCopy will cap the transfer length at 16k words.

SR# 5000126987

PROBLEM: The CLOSE utility is loaded with a load command file named #CLSDS, and its relocatable is %CLSDS. This is not documented anywhere.

SOLUTION: At revision 6.0, the relocatable for the close utility is in the file "close.rel". The link command file is named "close.lod".

SR# 1650029629

ENHANCEMENT: At revision 6.0, FmpOwner will use the 'Q' option when it opens a directory to determine ownership.

2.10.8 FMP LIBRARIES

SR# 4701103234

PROBLEM: The RexBuildPattern routine incorrectly rejects some valid regular expressions. When an end of a class ']' is the last character of the expression, RexBuildPattern rejects the expression as illegal.

SOLUTION: This has been fixed for the 6.0 release.

2.10.9 FORMC

SR# 5000588889

ENHANCEMENT: At the 6.0 release, FORMC will no longer check a user's capability level if the 'FO' command is used to format floppies.

2.10.10 FREES

SR# 4700983270

PROBLEM: The FREES command gives an incorrect output with the +M option (output in MB).

SOLUTION: This has been fixed in the 6.0 release.

SR# NONE

NOTE: The +Q option has been added at 6.0 to return status from the FREES program to the father program.

2.10.11 FST

SR# 1650121053

PROBLEM: When running FST from a read-protected command file, FST aborts but does not set the $RETURN1 variable.

SOLUTION: This has been fixed at the 6.0 release.

SR# 2200039222

PROBLEM: If the scratch file is created in the default style and placed in /SCRATCH/, and the working directory is /SCRATCH/, then a backup file mask of '@' will include FST's scratch file.

SOLUTION: FST will now check the directory address of the scratch file so it will not select its own scratch file.

SR# 4701041053

PROBLEM: When restoring a TAR file with FST, FST tries to restore the './' and '../' entries when they exist on a TAR tape.

SOLUTION: This has been fixed at the 6.0 release.

SR# 4701042705

PROBLEM: To restore any files from a FST backup, FST must first be able to restore the entire directory file from the archive. For large FST backups on a DAT tape, this can easily require more than 100,000 free disk blocks.

SOLUTION: For revision 6.0, the MinDir option has been added to FST. This allows FST to create a minimum-sized directory file containing information for only those files being restored.

SR# 4701147256

PROBLEM: FST can create and verify tapes which cannot be read by FST after the backup. The problem only occurs when FST crosses a tape boundary, the YES option is not used, and the tape being overwritten was not previously written by FST or TF. Also, this does not happen with CTD tapes.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701148379

PROBLEM: FST does not restore a file that crosses a tape boundary when the DUP and VERIFY options are set and the file being restored

already exists.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000563726

PROBLEM: The error "Clearing selections for TF restore" is produced when attempting to unselect files that were previously selected for FST backup. The error occurs if the tape that is loaded is a TF format tape and the tape header has been read prior to selecting the files for backup. When the message is output, the UN command fails to clear the selected files.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000579656

PROBLEM: FST builds an incorrect destination filename for FMGR files when the destination mask is a FMGR LU.

SOLUTION: This has been fixed for the 6.0 release.

SR# 1650170860

ENHANCEMENT: At 6.0, FST will abort non-interactive executions when a single 'BA' command yields mulitple files with the same name.

SR# 1653010611

ENHANCEMENT: At revision 6.0, FST will backup remote files which are already open in shared mode. FST is not able to backup remote files which are open in exclusive mode.

SR# 2200040766

ENHANCEMENT: At revision 6.0 when restoring an FST tape, FST will create the FST directory file to be the exact size required.

SR# 2200040774

ENHANCEMENT: When FST restores a binary file from a tar archive, the final block will be padded with nulls.

SR# 2200041558

ENHANCEMENT: At 6.0, FST will check the break flag between forward file commands.

SR# 4701036509

ENHANCEMENT: At revision 6.0, FST will only require the node to be specified when selecting files to be restored from a backup. Prior to 6.0, FST required both the node and the account information.

SR# 4701043992

ENHANCEMENT: At revision 6.0, FST was enhanced to read a start-up command file. This can be used to set up defaults for many of FST's commands.

SR# 5000158444

ENHANCEMENT: At revision 6.0, FST will allow the FST directory file to be located on a remote system using DS transparency.

SR# 5000159152

ENHANCEMENT: At revision 6.0, FST has an "Inhibit" option that will cause FST to inhibit the rewind between backup operations. FST will still rewind the tape upon exit.

SR# 5000181719

ENHANCEMENT: The Z option was added to FST at revision 6.0. This option will cause FST to pause when disk-full errors are encountered.

SR# 5000212670

ENHANCEMENT: At revision 6.0, FST will allow the "Verify" option to be disabled after the "Clear" backup bit option has been set. This will cause FST to clear the backup bit of every file which was backed-up, without verifying the archive's contents.

2.10.12 GENERATOR

SR# 4701133462

PROBLEM: RT6GN accepts "CS80" as a disk model in response to the question, "SYSTEM DISC MODEL?". for the question However, for the questoin, "DEVICE (MODEL, HP-IB ADDRESS, UNIT,VOLUME)?", it will not accept models beginning with "C" other than "CTD". The generator will accept "XXX", but not "CS80" or "C2200" for this question.

SOLUTION: This problem has been fixed for the 6.0 release. RT6GN will accept CS-80 disk models beginning with "C" for the question "DEVICE (MODEL,HP-IB ADDR,UNIT,VOLUME)?". Models such as "CS80" and "C2200A" will now be accepted and treated as unknown CS-80 disk models.

SR# 4701151381

PROBLEM: Under certain load situations, RT6GN can give the "FIXUPS NOT RESOLVED" error. When this error occurs, the program that the generator was loading will be corrupt. No error is given in the summary at the end of the generation.

SOLUTION: This has been fixed for the 6.0 release.

2.10.13 HPCRT

SR# 4700970830

PROBLEM: The HpCrtStatus routine does not work properly. Either it MPs or else the status buffer contents are incorrect. The problem was that a temporary buffer was not being passed correctly.

SOLUTION: This has been fixed in the 6.0 release.

SR# 4701148296

PROBLEM: All the HpZ input routines work on the principle of parsing information from the previously declared input buffer at the 'current position', which is maintained in a global variable called HpZIbufPos. As each routine executes, it is supposed to update 'current position' upon exit so that a succeeding routine can parse the next piece of information from the buffer.

HpZHexI does not do this correctly in all cases. The problem is that the position varies depending upon how the routine terminated. For example, given the call 'HpZHexI(number,4)' to parse up to four hex characters, if the current position in an input line of 'ru,foo, 00FF,AB' points to the blank, it will be left pointing to the following comma upon return. This is correct behavior. If we give it an input line of 'ru,foo, FF,AB' instead, with the current position again at the blank, upon exit the pointer will be pointing to the 'A'. This is incorrect behavior resulting from the parse terminating on condition rather than on count. HpZHexI is defined as returning 'true' if no number was parsed. This also does not work in all cases. The input buffer 'ru,foo, X' with an initial position pointing to the blank should return 'true' because 'X' is not a legal hexadecimal digit. It does not.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000527044

PROBLEM: The HpCrtReadChar routine does not set BIT 15 in the variable STATUS after a successful call, as indicated in the Relocatables Manual.

The same defect exists in HpCrtXReadChar.

SOLUTION: HpCrtReadChar and HpCrtXReadChar have both been fixed to set the sign bit of the status word on a normal return.

2.10.14 INSTALLATION

SR# 5000474064

PROBLEM: LOAD6.CMD does not work for type 6 files being targeted at FMGR cartridges.

SOLUTION: The LOAD6.CMD and INCI.CMD command files were updated to work with FMGR files. In addition, the security code parameter was ignored except for MLLDR. This has been fixed.

SR# 5003064311

PROBLEM: The file IMAGE6.CMD does not copy the library SHSLB.LIB to the libraries directory before it attempts linking the IMAGE programs. Some of the programs reference this library explicitly in order to resolve some undefined externals. These undefined externals can also be satisfied from other libraries, however the size of the programs increases.

SOLUTION: Both rtea1.cmd (for RTE-A) and inci.cmd (for RTE-6) have been updated to copy the SHSLB.LIB file to the proper destination library.

SR# NONE

NOTE: Several of the link/load files for RTE-6/VM have changed their name to the newer style file names with type extensions. The installation files (LOAD6.CMD and INCI.CMD) have been updated to reflect this.

2.10.15 LI

SR# 4700983098

PROBLEM: If the 5.2 LI is loaded as a non-EMA/VMA program, as per the instructions in the .LOD file, then the message

LI: Insufficient free memory for record buffer; size LI up

is always reported.

SOLUTION: LI now reports this message only if there really is insufficient free memory.

SR# 4700983502

PROBLEM: If the directory information specifying the number of records for a file being listed by LI is incorrect or not up-to-date, LI quits listing the file at the number of records given by the out-of-date directory entry instead of continuing onward. A record count of zero is properly ignored, but there remains a problem for files which are kept open and appended to without updating the directory info, such as /SYSTEM/NS_EVENT.LOG of NS-ARPA/1000. Files updated by programs which did not properly close the file (e.g., were aborted) may also exhibit this behavior. LI should not blindly trust the directory but instead verify that there are no more records past the advertised limit.

SOLUTION: LI now uses the directory's notion of the end-of-file up until that EOF point is reached, at which time LI checks to see if an EOF mark is actually read. If not, LI stops claiming that it knows the EOF position and will read through the file to find the true EOF mark if necessary (as for the "$" command).

SR# 4700984773

PROBLEM: The LI program should check the BReak flag while performing "find-all" pattern searches via the "@" command.

SOLUTION: LI now checks the BReak flag and exits the pattern search if set.

2.10.16 LIF

SR# 4701013235

PROBLEM: LIF hangs in an infinite loop in the IADDR routine.

SOLUTION: This has been fixed at the 6.0 release.

2.10.17 LINK

SR# NONE

PROBLEM: Revision codes in LINK were incorrect and inconsistent. The banner revision code was correct, but the help message revision code was incorrect.

SOLUTION: Both revision codes have been updated to 6000.

2.10.18 LUPRN

SR# 5000559732

PROBLEM: LUPRN will not execute properly if there is not a /SYSTEM directory. The message 'Cannot open "LUPRN driver name file; FMP error = -209' is displayed.

SOLUTION: LUPRN will now check for the absence of the file or the /SYSTEM directory.

Fixed in the 6.0 release of RTE-6/VM.

2.10.19 MACRO

SR# 2200040956

PROBLEM: When MACRO is run to build a MACRO library and a 'table' is requested, the table lines are 1 character too short if the MACRO name is an odd number of characters. (The control statement used here is MACRO,M,T.)

SOLUTION: This has been fixed in &macr6 at revision 6.0.

SR# 2200040972

PROBLEM: If a MACRO library is built with a macro by the name of 'DATA', MACRO will fail when the library is referenced with a "DCB not open" error on the source file.

SOLUTION: This problem is fixed at 6.0. The MACRO opcode tables now all come from the same table source code so they will always be consistent. Further, an internel revision flag is kept with the table and is put in each MACRO library. If they mismatch, an error is generated.

The error is cleared by reprocessing the MACRO library with a special new option in MACRO.

SR# 2200047845

PROBLEM: If the file /libraries/$maclb.mlb is corrupted, running MACRO on prog.mac will result in the error message, "Illegal file position PROG.MAC" instead of any message pointing to the library.

SOLUTION: This has been fixed for the 6.0 release.

SR# 5000125724

PROBLEM: The MACRO/1000 Manual does not document the limit on the number of labels in a MACRO program. However, the real problem is

that MACRO mismanages its symbol table space and, as a result, fails to handle as many symbols as it should.

SOLUTION: This has been corrected for the 6.0 release.

SR# 5000151662

PROBLEM: MACRO emits line number information for include files. DEBUG thinks these are main file line numbers and gets confused.

SOLUTION: At 6.0, Macro will process include files such that each module's DEBUG information will be complete if all code in that module comes from the same file as the Nam record. As a result, entire modules may be in include files without losing debug information. The DEBUG interface does not allow switching files within a module, so DEBUG information that would come from a file other than the Nam record will not be generated.

SR# 5000275271

PROBLEM: When compiling MACRO source which compiled correctly on revision 2540, error 217 (Incomplete expression in operand files) or error 290 (Not enough parameters in microcode call) occur.

SOLUTION: This has been fixed for the 6.0 release.

SR# NONE

ENHANCEMENT: The SEXT opcode was added to MACRO.

Soft EXT op code: SEXT foo

foo may be defined locally but if not is external. CALL can make the routine external while still allowing it to be defined locally.

SR# NONE

NOTE: MACRO was changed to allow the symbol table to be put in EMA/VMA.

2.10.20 MERGE

SR# 4701012120

PROBLEM: The MERGE utility does not always return the proper number of errors in $RETURN1, returning zero when errors occurred.

SOLUTION: At 6.0, MERGE will return non-zero in $RETURN1 for any errors which occur.

SR# 5000534800

PROBLEM: MERGE cannot accept an LU as the destination file; an "Illegal name" FMP error is reported. For example, "merge a b 1" reports this error.

SOLUTION: MERGE now builds a file descriptor without file type and main size fields for destination descriptors which specify an LU number.

SR# 4700974295

ENHANCEMENT: MERGE previously allowed up to 128 characters of source file names to be entered in the runstring. This limit has been increased to 256.

SR# NONE

NOTE: At 6.0, MERGE will not allow relocatables to be MERGE command files. Files of type 5 will be treated as files to be merged, rather than as command files, even if only one file to merge

appears in the runstring.

2.10.21 MPACK

SR# 1650115683

ENHANCEMENT: At revision 6.0, MPACK will set the $RETURN1 variable to indicate successful completion. $RETURN1 will be zero if MPACK completes without any errors.

SR# 2200045229

ENHANCEMENT: At revision 6.0, when removing extents and truncating a file, MPACK will only require the contiguous free space on disk to be large enough to contain the final truncated version of the file. Prior to revision 6.0, MPACK required the free space to be at least as large as the total allocated size of the original file.

2.10.22 MUX

SR# 4701161141

PROBLEM: If the WELCOM file contains only CN30 commands to initialize the MUX, the driver data structures are not completely initialized. In this state, the MUX will function correctly as soon as a normal write or read is processed. If instead a BREAK is received before any other activity, the MUX will hang.

SOLUTION: The driver code has been changed so that the CN30 command does not defeat the AutoGen code and leave the structures incompletely defined.

2.10.23 Miscellaneous

SR# NONE

NOTE: Throughout the RTE products, the word "disc" has been changed to reflect the new spelling, "disk". Please check and be sure you don't have any files that are looking for the old spelling. You can use the new 'grep' utility to search for "disc" in your files.

2.10.24 PRINT

SR# 4701108050

PROBLEM: PRINT0 fails to link in a minimum E-series configuration. Link reports "Program is too large" and terminates.

SOLUTION: The #prin0 link/loader command file has been changed to make the program EB (extended background).

2.10.25 SCOM

SR# 5000562751

PROBLEM: Whenever Scom is run on a FMGR file with a negative security code, Scom reports "Incorrect security code" even if the security code is entered properly in the runstring.

SOLUTION: Scom no longer calls FmpFileName but instead uses the file descriptor as entered in the runstring. This corrects the problem.

2.10.26 Structure Changes

SR# NONE

NOTE: Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

PLEASE NOTE that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we felt that sending an "update" would just cause confusion.

2.10.27 TF

SR# 1650116459

PROBLEM: TF does not correctly restore group and other protection bits.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701154088

PROBLEM: TF can memory protect when using a very large group of copy commands.

SOLUTION: This has been fixed for the 6.0 release.

2.10.28 WHOSD

SR# 5000099606

ENHANCEMENT: At revision 6.0 of RTE, WHOSD will report all users of the specified LU, directory or file. WHOSD will now also report open files and active programs.

2.11 (92833A) Pascal/1000

2.11.1 Structure Changes

SR# NONE

NOTE: Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

PLEASE NOTE that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we felt that sending an "update" would just cause confusion.

2.12 (92836A) Fortran-77 Compiler

2.12.1 DEBUG

SR# 1650140616

PROBLEM: DEBUG cannot display the value of some PARAMETER variables (named constants).

SOLUTION: Since the Fortran connections to DEBUG were developed, DEBUG has been enhanced so that it can handle named constants. At revision 6.0, Fortran has been updated to take advantage of this. Some data types, such as CHARACTER, may not be supported by DEBUG as named constants yet. Also, note that the value displayed may not be the declared value of the named constant. If a constant is passed to a subroutine that clobbers it (in violation of the standard), the displayed value can be either the original value or the clobbering value.

2.12.2 FORTRAN

SR# 1653008573

PROBLEM: If you try to use the $INCLUDE '...' type of entry, the complier fails with a disaster.

The error is: "Problem with include file: no such directory".

SOLUTION: The manual claims that include file names in $INCLUDE directives can be in quotes (as they can be in INCLUDE statements). This was not true and was never the intent. However, for HP-UX compatibility, the compiler will be enhanced at 6.0 to allow quoted file names in $INCLUDE directives.

SR# 4701085191

PROBLEM: FTN7X revision 5270 can erroneously report 105 errors when specifying $SET variables in the runstring and within a $IF/$ENDIF section.

SOLUTION: This has been fixed for the 6.0 release.

SR# 4701127480

PROBLEM: There were some major problems with the handling of $SET variables. The problems usually caused incorrect errors such as error 44 when a reference was made to a $SET variable. The problems were made worse when the cross-reference option (C) was used.

SOLUTION: The handling of $SET variables has been reworked for the 6.0 release.

SR# 4701147942

PROBLEM: The compiler incorrectly allowed a variable in an absolute common block to appear in a DATA statement. The resulting incorrect relocatable file caused an internal error in LINK.

SOLUTION: It is not possible to initialize a variable in an absolute common block using a DATA statement. The compiler will be changed at 6.0 to issue an error for this case, and the manual will be changed to indicate that variables in absolute common blocks may not appear in DATA statements.

SR# 5003052332

PROBLEM: When an assignment expression had a substring of an array element on the left side, it was possible, especially if the right side was not just a simple variable name, that an incorrect warning 106 would be generated.

SOLUTION: Array elements were not supposed to be checked for overlap; this particular check has been removed. Since the compiler was warning about many cases of potential overlap which were really OK, the check has now been placed under a compiler option. Overlap checking is now done only when the "p" option is used.

2.13 (92857A) Basic/1000C

2.13.1 BBMG

SR# NONE

PROBLEM: BBMG opened scratch files for read access only, but it also required write access to these files.

SOLUTION: This has been fixed in the 6.0 release.

2.13.2 COMPILER

SR# 1650025411

PROBLEM: Performing the BASIC/1000C function INT on a real variable and storing the value in an array of DOUBLE or INT either doesn't store the value or makes a program memory protect.

SOLUTION: This has been fixed in the 6.0 release.

SR# 1650042242

PROBLEM: When a BASIC/1000C program opens a type 2 file using 'ASSIGN @Fi TO File$; WIDTH 48,FORMAT OFF', a warning 57 is issued. The file is closed again using 'ASSIGN @Fi TO *'. After a few opens,the program gets aborted with a runtime error 109.

SOLUTION: This has been fixed in the 6.0 release.

SR# 1650141705

PROBLEM: The Basic compiler cannot be invoked from the CM prompt or XQed from the CI prompt.

SOLUTION: This has been fixed in the 6.0 release.

SR# 2200035865

PROBLEM: A compiled Basic program with `IF..THEN..ELSE' memory-protects at run time.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000116095

PROBLEM: When the BASIC/1000C compiler returns a value from the POS function into an EMA variable, the variable does not receive the value.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000126540

PROBLEM: The call to TIMEDAY with a local variable works fine; however, with an EMA variable, a call to TIMEDAY causes an EMA error, and the program aborts.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000139923

PROBLEM: When a Basic/1000C program has CDS ON and single-line functions that forward reference other single-line functions, the compiler does not always patch the forward reference properly.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000229104

PROBLEM: A compiled BASIC/1000C program which REDIMs a string array will abort with a runtime error.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000466789

PROBLEM: The function RPT$ in a compiled BASIC/1000C program doesn't work correctly if the count parameter is in EMA.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000476499

PROBLEM: If a BASIC/1000C program opens and closes a file in shared mode a number of times, the program will get Error 109.

SOLUTION: This has been fixed in the 6.0 release.

SR# NONE

PROBLEM: A compiled BASIC/1000C program could not perform output correctly if the Format string was in EMA.

SOLUTION: This has been fixed in the 6.0 release.

SR# 2200024026

ENHANCEMENT: The Basic/1000C compiler now has been enhanced to return values in the $RETURN variables as follows:

```
return1 = no. of errors
return2 = no. of source lines
return3 = no. of words in data segment (non-cds)
          no. of words in code segment (cds)
return4 = 0    (non-cds)
          no. of words in data segment (cds)
```

This is the same as Pascal.

2.13.3 DEBUG

SR# 1650121483

PROBLEM: Debug cannot display EMA variables for BASIC/1000C programs. Array elements also cannot be displayed correctly.

SOLUTION: This has been fixed in the 6.0 release.

2.13.4 I/O

SR# 1650016394

PROBLEM: If a string does not have its maximum length, the compiled Basic program (or Interpreter) will not output it with packed binary zero in case of binary I/O.

SOLUTION: This has been fixed in the 6.0 release.

SR# 2200027607

PROBLEM: The BASIC/1000C Interpreter does not report an error when a PRINT statement accesses a record greater than 32767. The Compiler reports an error message.

SOLUTION: This has been fixed in the 6.0 release. The compiler now does not report an error when a PRINT statement accesses a record greater than 32767.

SR# 2200036491

PROBLEM: BASIC/1000C does not suppress carriage control to printers.

SOLUTION: It has been decided not to suppress carriage control to printers. Instead, it has been documented in the 6.0 release of the BASIC/1000C Reference Manual (part number 92857-90001).

SR# 4700940460

PROBLEM: The HP-IB driver accepts a Secondary Address as optional parameter 1 of a read or write call. When the user attempts to address secondary address zero, this parameter is passed as 0. In any case, the driver looks at the parameter, and if it finds zero, assumes that no parameter was passed. The reason that BASIC was able to use secondary address zero in the interpreter but not in the compiler was that the interpreter treated secondary address zero as a special case and did the I/O 'manually' instead of using auto-addressing.

SOLUTION: The compiler has been fixed in the 6.0 release.

SR# 4700956045

PROBLEM: If a compiled BASIC/1000C program is loaded to use VMA working space, the input operation from a file will not be performed correctly.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000184333

PROBLEM: BASIC/1000C (Compiler/Interpreter) cannot open a write-protected file even if only for a read.

SOLUTION: This has been fixed in the 6.0 release.

SR# NONE

PROBLEM: When a BASIC/1000C program accesses LU 1, the interpreter will access the session LU, but the compiler will access the system console.

SOLUTION: This has been fixed in the 6.0 release.

2.13.5 INTERPRETER

SR# 4701078816

PROBLEM: When calling an external routine from the interpreter, the user is allowed to pass up to 3070 words of parameters. However, an SC04 gets generated with much less than 3070 words.

SOLUTION: This has been fixed at the 6.0 release.

SR# 5000297564

PROBLEM: A RE_SAVE in the Basic Interpreter will fail with an FMP error.

SOLUTION: This has been fixed in the 6.0 release.

SR# 5000466797

PROBLEM: The IF-THEN-ELSE statement containing the PRINT statement to print two arguments to a file produces the following errors:

```
  BUG ***22 encountered in BASIC EXECUTOR
or:
  ERROR: (31)  Exceeded width on PRINT when NOWRAP was in effect.
```

SOLUTION: This has been fixed in the 6.0 release.

2.13.6 LINK

SR# 5000264036

PROBLEM: When using LINK_E.LOD (or LINK_V.LOD, LINK_E_CDS.LOD, LINK_V_CDS.LOD) to link a compiled BASIC/1000C program, LINK will generate warning 187. These warning messages are not documented in the manual.

SOLUTION: These warning messages have been documented in the 6.0 release of the BASIC/1000C Reference Manual (part number 92857-90001).

2.13.7 Miscellaneous

SR# 5000129809

ENHANCEMENT: The compiler and the interpreter of BASIC/1000C used to be locked into memory for performance reasons. They are now enhanced to allow swapping.

2.13.8 RBEX

SR# NONE

PROBLEM: As of the 5.1 release, RBEX could not write to a file.

SOLUTION: This has been fixed in the 6.0 release.

2.14 (92860A) Symbolic Debug/1000

2.14.1 CALLS

SR# NONE

NOTE: The Calls and CallM utilities are now shipped with the RTE-6/VM product, as well as with as RTE-A, since Calls is used by the online help facility of DEBUG/1000.

2.14.2 CALLS UTILITY

SR# NONE

PROBLEM: The Calls utility doesn't send some output and prompts to the redirected LU when the "-L" runstring option is used. Debug/1000 uses this feature when its "+L:lu" runstring option is used.

SOLUTION: If the Calls "-L" option argument names an interactive LU or a symbolic link to an interactive LU, all menus and prompts will be redirected to that LU. Otherwise, these prompts are issued to the scheduling terminal.

SR# NONE

NOTE: The Calls utility, which performs online text display by keywords, is fully supported at 6.0. This utility was provided at 5.2 for use by Mail/1000 online help, but was not fully documented. At 6.0, online help and manual information is furnished. The CallM utility, which can be used to generate compressed input files for Calls, is also provided. These utilities are the RTE-A equivalents of the GENIX/CMD/HELP utilities on RTE-6/VM.

2.14.3 Miscellaneous

SR# NONE

NOTE: The two changes made to Debug at patch revision 5261 are included in the 6.0 release. The first change was to ship the correct CDS version of Debug, which was introduced at release 5.26 (revision 5260) but would not execute. The second change fixed a problem in the installation command file, INSTALL.CMD, which inhibited proper installation on RTE-6/VM.

2.14.4 XDB

SR# NONE

NOTE: At 6.0, a version of Debug/1000 with an Xdb-like user interface is included with the Debug product. Xdb will execute only on RTE-A systems with VC+.

2.15 (92861A) Graphics/1000-II DGL Version 2.0

2.15.1 CRT

SR# 2200026377

PROBLEM: The buffer that is returned from the keyboard function ZKYBD with a 12065 card is incorrect. The first half of the returned buffer is correct, the second half is rubbish, and the rest is blank-filled. The returned length (ACTUAL) is correct. Similar symptoms are exhibited by doing an REIO request with the buffer length specified as a byte count. The transmission log that is returned in this case, however, reflects the number of words that were transferred instead of the number of bytes, as it should.

This is a result of the fact that ID*50 and the 12065A always return a word count even when the user specifies a byte count. SR 4700-943357 addresses this anomaly. Currently, DGL is coded to expect this to happen. The problem comes about because DGL is using REIO to make the request, and REIO does not expect this condition.

SOLUTION: K0025 has been modified to specify a word count in revision 6.0.

SR# 5000542993

PROBLEM: ZDINT on a 12065A (handler D0025) with bit 7 set in the control word prevents the screen from being cleared (as it should), but it also causes the screen to flash. The flash should not occur.

SOLUTION: The END_FRAME command was being sent to the card regardless of the setting of bit7. It should not be sent if bit7 is set. This change affects the Device Handler's Manual, in the 12065 section. The initialization sections of both the Graphics Display Device Handler (AGP Only) and the Graphics Display Device Handler (DGL Only) sections now has the first sentence of the "Graphics Memory" paragraph changed from: Screen cleared unless bit 7 is set... to: Screen cleared and graphics display turned on unless bit 7 is set...

Also, the last sentence of the paragraphs ("Graphics display is turned on.") has been removed.

2.15.2 DIDD

SR# 5000218404

PROBLEM: AGP/DGL should support LUs greater than 63.

SOLUTION: The AGP and DGL subroutines that take an LU parameter have been modified at 6.0 to allow LUs greater than 63.

2.15.3 PLOTTERS

SR# 1650164459

ENHANCEMENT: An HP-GL/2 handler for DGL has been added to support all of the new peripherals that use it. It provides increased speed as well as a decrease in memory requirements for some situations.

SR# 4700968859

ENHANCEMENT: The 7570 handlers (D0070 and D0071) now allow 7575A and 7576A as valid device identifiers returned from the plotter.

2.15.4 PRINTERS

SR# 1650170613

PROBLEM: Several problems in regards to paper handling exist when trying

to use the 2235 Rugged Writer Printer: 1) If a ZDINT is done with bit 7 clear on the D0074 handler, the formfeed that is done is not a conditional formfeed as is documented in the manual; rather, it is an unconditional formfeed.

2) If the D0053 or D0054 handlers are used instead (as suggested in the 2235 section of the Device Handlers Manual), a formfeed is not performed when a ZDINT is done regardless of the setting of bit 7.

3) The D0053 and D0054 handlers leave the paper at a position that is not top-of-form at the end of the job.

The cause of problems 1 and 2 is that the Rugged Writer doesn't support the vertical forms control escape sequence that the 293X printers did. When the 2235 handler was coded, an unconditional formfeed was sent to overcome this problem. A better solution is to send a reset escape sequence to the printer when a ZDINT is done without bit 7 set. Both the 239X and 2235 printers do a conditional formfeed when ZDINT is received. This should be done in D0053, D0054 and D0074.

The cause of problem 3 is that neither of the D0053 and D0054 handlers sends a reset at the end of a job.

SOLUTION: The handlers have been fixed, as detailed above, in the 6.0 release.

SR# 4700950691

PROBLEM: The QuietJet and QuietJet Plus will produce half size plots when low density is used after high density.

The density change escape sequence is only sent on the high resolution plot, and reset printer is never sent. This means that even though high resolution was not specified on the second plot, the density is not reset back to low resolution on the printer, but DGL assumes that it is.

SOLUTION: D0075 and D0076 have been modified at revision 6.0 to always send a set density command in order to ensure that the printer's density matches what the handler thinks it is.

SR# 5003011460

PROBLEM: D0077 leaves the LaserJet in a state that causes the next print to the device to be garbled.

SOLUTION: The handler now sends reset escape sequences instead of form feed characters at revision 6.0.

SR# 5000256099

ENHANCEMENT: A new handler to print color graphics on the PaintJet has been added at the 6.0 release.

2.15.5 TERMINALS

SR# 4701014407

PROBLEM: The 2397 DGL handler (D0060) asks the terminal if it has a locator even when the spooling bit is set. This results in the program aborting with an I011 error (Attempt to input to spooled LU). When the spool bit is set, the handler should assume that the terminal does not have a locator and should proceed without the inquiry.

The spool bit is not being checked before asking the terminal if it has a locator.

SOLUTION: The 6.0 version of D0060 has been modified to only inquire the terminal if the spool bit is not set.

SR# 4701038356

PROBLEM: The escape sequence "Ec *m1mm5Q" is output when a mark is displayed. The "m" immediately preceding the 5 is extraneous, and the action taken upon this by HP graphics terminals is undocumented. The terminals, however, appear to ignore it. The ZMARK code for this escape sequence should be changed to "Ec *m1m5Q" in order to minimize confusion.

SOLUTION: DIDD has had the extra character removed from the escape sequence at revision 6.0.

SR# 2200042424

ENHANCEMENT: The display handlers for the 2393A and 2397A terminals now recognize device IDs of 2393A and 2397A, respectively, in addition to the currently required device ID of 2390A.

2.16 (92862A) Graphics/1000-II AGP Version 2.0

2.16.1 DIDD

SR# 5000218404

PROBLEM: AGP/DGL should support LUs greater than 63.

SOLUTION: The AGP and DGL subroutines that take an LU parameter have been modified at 6.0 to allow LUs greater than 63.

2.16.2 JDINT

SR# 2200022442

ENHANCEMENT: The LU lock bit in the JDINT call was of questionable usefulness given the fact that AGP did not lock the LU until after the device was initialized. A disclaimer regarding this appeared in the paragraph describing the LU lock bit in the JDINT section of the "AGP Version 2.0 Supplement for HP 1000 Systems" (92862-90001). The code has been changed at 6.0 to lock the LU before the device is initialized, and the documentation of this restriction has been removed.

2.17 (94202A) PCIF/1000 Allen-Bradley Handlers

2.17.1 SUBREQUEST MESSAGES

SR# 2200046144

PROBLEM: Whenever an incoming message was NAK'd and retransmitted, the firmware would erroneously leave the bit set that tells the driver there is more data to this message. The driver would then come back and re-read the same data again, thinking that it was the rest of the message; this appended the message to itself. If the appended message was now longer that 250 bytes (the maximum for Allen-Bradley messages), the highway handler would throw this message away. PCIF would eventually time-out, returning an ERROR 38 to the caller.

SOLUTION: The firmware flag that tells the driver there is more data to the message is now cleared whenever a message is retransmitted after a NAK occurs.

SR# 2200046227

PROBLEM: Subrequest messages would get overwritten by subsequent incoming solicited messages that were retransmitted by the data highway. This was due to a buffer-full condition in the firmware buffers. A similar problem occurs for unsolicited messages.

SOLUTION: At 6.0, a separate buffer has been provided for each subrequest message so they don't overwrite other buffers.

SR# 2200045583
SR# 2200046359
SR# 2200046573
SR# 5000214007

PROBLEM: When a 'Cancel-first-buffer' command is sent to the card, the firmware replies by setting the flag but not clearing the backplane data buffer. When the driver picks up the data buffer from the backplane, it frequently contains garbage which sometimes translated into a command that meant that a powerfail occurred.

SOLUTION: This has been fixed for the 6.0 release.

2.18 (94203A) PCIF/1000 Gould-Modicon Handlers

2.18.1 BIT WRITES

SR# 2200045161

PROBLEM: On a GM 484 when there is an odd number of bytes, and the last byte contains less than 8 bits, PCIF swaps all bytes except the last one, which simply gets left-justified. When this takes place in procedure FMT_SWP_DATA_ARRAY, the last byte was being temporarily stored in a variable that wasn't being correctly restored.

SOLUTION: The highway handler now correctly restores the last byte.

2.18.2 MODBUS ADDRESSING

SR# 2200046219

PROBLEM: The variable that temporarily held the PC_Station_Number in procedure, VERIFY_BUFFER, was typed as a signed byte, hence, its maximum value was 127.

SOLUTION: The highway handler has been modified to hold the PC_Station_Number in an unsigned byte (max value 255).

2.19 (94250A) Forms/1000-A

2.19.1 FORMS

SR# 5000161125

PROBLEM: FORMS/1000 treats a timeout as if the enter key were pressed.

SOLUTION: FORMS/1000 now checks the driver bits correctly as specified in the RTE-6/VM Driver Reference Manual.

2.20 (94250B) Forms/1000-B

2.20.1 BUFFER READS

SR# 1650072983

PROBLEM: With F_GETBUFFER, data corruption can be caused by a mismatch between the buffer length variable and the actual length of the read in. This is because FORMS/1000 does not check the actual length of the receive buffer against the length passed to the routine.

SOLUTION: F_GETBUFFER will now validate the buffer length given by the user against the actual buffer length.

2.20.2 FORMS

SR# 1650028761

PROBLEM: When a form is displayed and the window line is on line 24, the

form can jump (the window line causes the form to jump a line, and then it is scrolled down one).

SOLUTION: The terminal setting InhEOLWrp is set ON when the window line is displayed, and left OFF at all other times as per normal.

SR# 5000400150

PROBLEM: At slower baud rates, F_ACTIVATERM will often cause an error 5. Any I/O outside of Forms/1000 before calling F_ACTIVATERM at slower speeds may not have completed when Forms tries to determine the status of the terminal.

SOLUTION: F_ACTIVATERM will try 3 times to check the status of a terminal before failing it. An interval of 1/10th of a second will separate each attempt.

2.20.3 PROGRAM SCHEDULING

SR# 1650044438

PROBLEM: FORMS/1000 always re-enables the primary program which can cause problems with other software scheduling FORMS/1000. The reason is that FORMS/1000 does not know whether the primary program was enabled before it started.

SOLUTION: An optional parameter has been added to the F_DEACTIVATERM to allow for the situation where the primary program does not want to be enabled on termination of FORMS/1000.

SR# 2200041228

PROBLEM: F_DEACTIVATERM only enables primary program scheduling, whereas F_ACTIVATERM disables both primary and secondary program scheduling.

SOLUTION: F_DEACTIVATERM now enables both primary and secondary program scheduling.

2.20.4 REAL FIELDS

SR# 1650119230

PROBLEM: FORMS/1000 does not check that a valid input to a real field will also be acceptable output to that same field.

SOLUTION: FORMS/1000 will only accept a real input as valid if it is an acceptable real output to the same field, if it is not, an error 26 will be generated.

2.21 (98170A) ARPA/1000

2.21.1 FMTRC

SR# 2200047969

ENHANCEMENT: Presently, tracing is only available in octal output. FMTRC has been enhanced to output the trace records in octal, hexadecimal, or NICE format. The NICE format will parse some of the protocols such as TCP and IP into the component fields.

2.21.2 FTP

SR# 1650165365

PROBLEM: An FTP to a VAX running FUSION hangs with both client and server in receive state when verbose is off and an open is done.

SOLUTION: FTP has been modified to correctly parse multiple replies.

SR# 4701067074

PROBLEM: FTP binary get of a FMGR type 1 file does not transfer extents.

SOLUTION: FTPSV and FTP have been modified to call FmpSize for FMGR files.

SR# 4701162040

PROBLEM: BINARY type 6 file transfers do not work between 6.0 and non-6.0 or non-RTE systems.

SOLUTION: Both the source and destination files are now forced to be type 1, thus removing the extents.

SR# NONE

PROBLEM: FTP.HELP does not include the -T option in the runstring.

SOLUTION: This has been fixed in the 6.0 release.

SR# 4701053660

ENHANCEMENT: The HP 1000 FTP server reports the file descriptor of the file being transferred in the 150 server reply to mget/mput.

SR# 4701062877

ENHANCEMENT: The 5.24 FTP does not calculate the file length for a type 2 file and requires that it be specified in the file descriptor. FTP will now calculate the size of type 1, 2, or 6 files from the number of bytes transferred. 6.0 to 6.0 file transfers will also transfer the size.

SR# 5000640045

ENHANCEMENT: FTP has been modified to recognize when the FTP server is an HP 1000. When FTP knows that the server is an HP 1000, it will set the transfer mode to BINARY and transfer the file type, size, and record length along with the file. A new user and server command, SYSTEM, has been implemented. The server will respond with its system type when this command is used.

2.21.3 INETD

SR# 5000621011

ENHANCEMENT: INETD has been added to NS-ARPA/1000 and ARPA/1000 to replace FTPMN and TNMON. Examples are provided for the configuration file, /etc/inetd.conf, and the file that maps service names to TCP ports, /etc/services. Usage and features are described in the on-line help file.

2.21.4 INITIALIZATION

SR# 4701050328
SR# 5000637967

PROBLEM: NSINIT/NETINIT will not accept responses which begin with /D or /E for questions which require a filename.

SOLUTION: NSINIT/NETINIT has been modified to accept responses beginning with /D or /E that contain more than 2 characters when prompting for a filename.

SR# 1653001230

ENHANCEMENT: The default number of networking programs and sockets has been increased from 13 and 38 to 23 and 68, respectively. The default is adjusted to be higher if NFT is used in an NS-ARPA system. This will allow more TELNET and FTP connections in an ARPA/1000 system.

2.21.5 INPRO

SR# 4701116749

PROBLEM: A bug in the A900 microcode (SR #4701-115980) can cause unpredictable behavior in INPRO. In one case, INPRO aborted due to an UI error. The A900 microcode bug causes instructions to be fetched from data space when CDS is on and interrupts are off. INPRO turns off interrupts while reading and updating its timer counter, NS_OS3. The effect depends on what is in the data space.

SOLUTION: INPRO has been modified so that the section which turns interrupts off (CLC 4 ... STC 4) is now non-CDS. This will avoid the bug in the A900 microcode.

2.21.6 INSTALLATION

SR# 4701109009

ENHANCEMENT: NS-ARPA and ARPA programs are now transportable between systems running the same version of RTE-A and networking software. This was accomplished by eliminating the use of non-transportable system entry points by the networking software. As part of this change, the networking modules that are generated into the system have been modified. NSPEC is no longer needed. NSABP is now partitionable. It is no longer necessary to search NSLIB for the DSGLO module during RTAGN's system relocation phase.

2.21.7 PING

SR# 1653001461

PROBLEM: PING does not return all socket resources if the user issues the BREAK command before PING has a chance to report that the given host is unreachable. In this case, only one socket out of the required two sockets will be freed. The other one will never be freed.

SOLUTION: PING will now reset the state of the socket before it terminates. This will allow the socket to be released.

2.21.8 RTE-A FILES

SR# NONE

PROBLEM: The RTE-A files which were included in the 5.24 version of ARPA/1000 are included in the 5.27 and 6.0 releases of RTE-A. They no longer need to be included in ARPA/1000.

SOLUTION: The RTE-A files will be removed from the 6.0 release of ARPA/1000.

2.21.9 TELNET

SR# 5000603407

PROBLEM: TELNET does not act correctly following a close command. If TELNET is given a hostname in its runstring, it should terminate after a close command, but it doesn't. If an invalid command is entered following the close, TELNET will display the Unknown Command message twice and then terminate. When this happens, the terminal port configuration does not get restored.

SOLUTION: TELNET's close command processing has been fixed. If a hostname is given in the runstring, the close command will terminate TELNET. When no hostname is specified in the runstring, TELNET will remain in command mode following a close command. Subsequent commands, valid and invalid, are now processed correctly.

SR# 5003030858

PROBLEM: The port protocol on a TELNET pseudo terminal LU cannot be set to HP-XON/XOFF. A CN,LU,34b,3 command will cause the following error message:

```
I/O device error on LU    xx    The reason is:
I/O request error
Request has been flushed
```

SOLUTION: TNSRV no longer rejects any control requests with function code 34b. TNSRV only needs to know whether it should send the DC1 on a read request, so it just checks bit 1 of the protocol word to determine if HP protocol is being used. It is left up to the drivers to determine if any request is illegal.

Chapter 3
Current Revisions & Changes

This chapter lists the current revision codes for each supported software product and notes any changes that have occurred to the product in this update cycle.

Those products that have been changed in this update cycle are marked with a '+' to the left of the product number. If a product has been updated, the listing will also include:

a) Manuals and

b) Software media

that have been updated (or added) in this update cycle and are being distributed with the subscription services for this product.

If software has been updated for the product, then those modules that have been changed/added/deleted are marked with a '*' to the left of the file name, and the type of update is shown to the right of the current revision code: updated files show the new revision code; added or deleted files are marked as 'New' or 'Deleted' (respectively).

At the 6.0 release, several files have changed part numbers. This has occurred primarily for two reasons. First, as you probably know, all files in HP1000 software products are assigned part numbers when the part changes. As one series of part numbers runs out, a new series must be created. This is what happened to several of the 92077-1xyyy series parts for certain types of files. Second, we decided that significant changes to the software should (in most cases) get a new part number so that older products that use the same part would not have to be changed. You will notice these changes primarily in the 92077A, 92078A, and 92084A products.

Note that updated products may have only manual changes or only software changes. This is noted in the manual or media lists. The manual changes are listed in the format 'Edition#/Update#' and/or 'Print Date'. For example, '2/2' means edition 2, update 2 and '3/-' means edition 3, no update. Also, E1292 means this manual ***edition*** was printed in December 1992. and U1292 means this manual ***update*** was printed in December 1992.

A history of the firmware for both the A and M/E/F Series machines and other miscellaneous interface cards are at the end of this chapter.

3.1 +(24612B) A-Series System and Peripheral Diagnostics

	Filename	Part Number	Rev	Change
*	!A990D	24612-16064	New	--> 5270
*	!AIMXD	24613-16001	New	--> 2301
*	!AOUTD	24613-16002	New	--> 2301
*	!ASIC	24612-16035	New	--> 2301
*	!BCM	24612-16042	New	--> 5270
*	!CDSBI	24612-16048	New	--> 5020
*	!CDSPC	24612-16050	New	--> 2326
*	!CPU	24612-16015	New	--> 2301
*	!CSIC	24612-16051	New	--> 2326
*	!DCDVR	24612-16004	New	--> 5270
*	!DID	24612-16052	New	--> 2401
*	!DIGIO	24613-16003	New	--> 5020
*	!DSDVR	24612-16006	New	--> 5270
*	!EIG	24612-16027	New	--> 5020
*	!FDL	24612-16041	New	--> 2213
*	!FPD	24612-16025	New	--> 4010
*	!HPIB	24612-16036	New	--> 5020
*	!IOM	24612-16019	New	--> 5270
*	!LIS	24612-16029	New	--> 5020
*	!MAD	24612-16021	New	--> 5270
*	!MCD	24612-16023	New	--> 5270
*	!MCDXL	24612-16046	New	--> 2326
*	!MTDVR	24612-16054	New	--> 5000
*	!MUX	24612-16040	New	--> 5020
*	!OBIO	24612-16060	New	--> 5020
*	!PIC	24612-16037	New	--> 5020
*	!PROM	24612-16038	New	--> 2301
*	!PSI	24612-16039	New	--> 5020
*	!SCDVR	24612-16067	New	--> 5270
*	!SCSI	24612-16065	New	--> 5270
*	!SFD	24612-16017	New	--> 5270
*	!SIS	24612-16031	New	--> 2301
*	!STDVR	24612-16069	New	--> 6000
*	!VSCSI	92077-15031	New	--> 6000
*	!WCS	24612-16032	New	--> 2213
*	#AUTO	24612-18013	New	--> 5270
*	%A990D	24612-16063	New	--> 5270
*	%CDSBI	24612-16047	New	--> 5270
*	%CDSPC	24612-16049	New	--> 5270
*	%CPU	24612-16014	New	--> 5270
*	%DCDVR	24612-16003	New	--> 5270
*	%DDL	24612-16010	New	--> 5020
*	%DEBUG	24612-16011	New	--> 2301
*	%DSDVR	24612-16005	New	--> 5270
*	%EIG	24612-16026	New	--> 5270

* %FPD	24612-16024	New	--> 5270
* %IOM	24612-16018	New	--> 5270
* %LIS	24612-16028	New	--> 5270
* %LPDVR	24612-16012	New	--> 2540
* %MAD	24612-16020	New	--> 2340
* %MADMG	24612-16045	New	--> 5270
* %MAPS	24612-16009	New	--> 2301
* %MCD	24612-16022	New	--> 5270
* %MSGS	24612-16033	New	--> 2301
* %MTDVR	24612-16053	New	--> 5000
* %OBIO	24612-16059	New	--> 4010
* %PFCON	24612-16034	New	--> 2401
* %SCDVR	24612-16066	New	--> 5270
* %SFD	24612-16016	New	--> 5270
* %SIS	24612-16030	New	--> 5270
* %STDVR	24612-16068	New	--> 6000
* B24612.SNF	24612-17998	New	--> 6000
* BCMDC	24612-16044	New	--> 5270
* BCMMT	24612-16058	New	--> 5270
* BCMSC	24612-16070	New	--> 5270
* BCMST	24612-16071	New	--> 6000
* CINFDS	24998-16616	New	--> 6000
* EXRTP	24398-16068	New	--> 6000
* LANMEM	24398-16072	New	--> 5270
* MTEXR	24398-16058	New	--> 6000
* MTVER	24398-16017	New	--> 6000
* OPER	24398-16032	New	--> 6000
* TINFDS	24998-16618	New	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
(no media changes)	

3.2 +(91750A) DS/1000-IV

Filename	Part Number	Rev	Change
!COPY3	91750-16213	5000	
#LKDS	91750-17007	5010	
#RMOTA	91750-17005	2540	

	#RMOTM	91750-17004	5010	
	$D3KBB	91750-12019	2201	
	$D3KL2	91750-12016	2201	
	$D3KLB	91750-12017	5020	
	$D3KMB	91750-12021	2201	
	$D3KRB	91750-12018	2201	
	$D3N25	91750-12029	2401	
	$D3X25	91750-12028	2440	
	$DSAL	91750-12027	5020	
*	$DSLB1	91750-12001	5020	--> 6000
	$DSLB2	91750-12002	5020	
	$DSLB3	91750-12003	2540	
	$DSLSM	91750-12015	5020	
	$DSMA	91750-12008	2440	
	$DSMX6	91750-12023	5020	
	$DSNMA	91750-12010	2440	
	$DSNRR	91750-12011	2013	
	$DSNSM	91750-12012	2340	
	$DSRR	91750-12013	2226	
	$DSSM	91750-12014	5020	
	%#SEND	91750-16208	2140	
	%#SPLU	91750-16221	2013	
	%ADV00	91750-16286	5270	
*	%APLDL	91750-16040	2113	--> 6000
	%CNSLM	91750-16048	2340	
	%COMND	91750-16049	2013	
*	%CSV66	91750-16268	5010	--> 6000
*	%CXL66	91750-16269	5010	--> 6000
	%DDA66	91750-16292	2340	
	%DINIS	91750-16069	5020	
	%DINIT	91750-16068	5020	
	%DLIS1	91750-16072	5000	
	%DLIS2	91750-16073	5000	
	%DSIN2	91750-16078	5020	
	%DSINF	91750-16077	5020	
	%DSINL	91750-16079	5020	
	%DSLIN	91750-16263	5020	
	%DSMOD	91750-16092	5020	
	%DSTES	91750-16100	2013	
	%DSVCP	91750-16102	5020	
	%DVA65	91750-16105	4010	
	%DVA66	91750-16107	2326	
	%DVB65	91750-16300	2401	
	%DVG67	91750-16108	2201	
	%DVS64	91750-16241	2140	
	%EDI6D	91750-16240	2140	
	%EXECM	91750-16111	5020	
	%EXECW	91750-16112	5000	
	%FCL7	91750-16243	2140	
	%GRPM	91750-16124	5020	

	%ID*66	91750-16126	5010	
	%IDS64	91750-16242	2326	
	%INCNV	91750-16129	2340	
	%IOMAP	91750-16130	5020	
	%LOG3K	91750-16132	2540	
	%LUMAP	91750-16133	5000	
	%LUQUE	91750-16134	2201	
	%MATIC	91750-16136	5010	
	%MDFCL	91750-16293	2340	
	%MDV00	91750-16109	2201	
	%MVCP3	91750-16212	5020	
	%OPERL	91750-16142	2440	
	%OPERM	91750-16143	2140	
	%OTCNV	91750-16144	2440	
	%PLOG	91750-16147	5020	
	%PROGL	91750-16150	5240	
	%PROGZ	91750-16226	5240	
	%PTOPM	91750-16151	2340	
	%QCLM	91750-16152	5020	
	%QUEUE	91750-16153	2401	
	%QUEX	91750-16154	2340	
	%QUEX1	91750-16155	5020	
	%QUEZ	91750-16156	2201	
	%QUEZ1	91750-16157	2401	
*	%REMAN	91750-16159	5020	--> 6000
	%RESA	91750-16283	2540	
	%RESM	91750-16162	2440	
	%RESSM	91750-16163	2440	
	%RFAM1	91750-16164	2440	
	%RFAM2	91750-16165	2440	
	%RMOT1	91750-16168	5020	
	%RMOTE	91750-16167	5020	
	%RMTIO	91750-16169	2013	
	%RPCNV	91750-16170	5020	
	%RQCNV	91750-16171	5020	
	%RSM	91750-16172	5020	
	%RTRY	91750-16173	2301	
	%SGXL	91750-16234	2201	
	%SLCIN	91750-16176	2113	
	%SYSAT	91750-16202	5020	
	%TLOG	91750-16177	5020	
	%TRC3K	91750-16178	5020	
	%UPLIN	91750-16179	5020	
	%VCPMN	91750-16180	2226	
	%WHZ6D	91750-16527	5000	
*	*LDDS	91750-17008	5010	--> 6000
*	A91750	91750-18999	5020	--> 6000
*	A91750.MNF	91750-17999	New	--> 6000
	LINK2	91750-17009	5010	
	N.CMD	91750-17013	5010	

```
  NO                    91750-17012  5010
  README                91750-17014  5010
* Y.CMD                 91750-17010  5020  --> 6000
* YES                   91750-17011  5020  --> 6000
```

Manual Part#	Title	Edition/ Update	Print Date
91750-91001	DS/1000-IV Cover Letter	-/-	E1292
91750-90012	DS/1000-IV User's Man. for RTE-A & RTE-6	2/-	E1292
91750-90013	DS/1000-IV Gen. and Initialization Manual	2/-	E1292
91750-90014	DS/1000-IV Theory of Op./Troubleshooting	1/-	E0590
91750-90015	DS/1000-IV Quick Ref. Guide RTE-A & RTE-6	2/-	E1292

The following two manuals have been deleted from the product and are in support life until January 1, 1998.

91750-90004 DS/1000-IV Getting Started With DS/1000-IV
91750-90006 DS/1000-IV Communications Bootstrap Loader ROM

The following four manuals have been deleted from the product and are in support life until June 30, 1995. These manuals are in support life because they contain information on obsoleted products.

91750-90002 DS/1000-IV User's Manual
91750-90005 DS/1000-IV Quick Reference Guide
91750-90010 DS/1000-IV Network Manager's Manual, Volume I
91750-90011 DS/1000-IV Network Manager's Manual, Volume II

Media Part#	Media Option
91750-13310	022
91750-13501	050
91750-13502	051
91750-13600	AAH

3.3 +(91751A) DSN/X.25 1000

```
   Filename             Part Number  Rev    Change
  -------------------- -----------  ----  --------

  Directory: /X25/ADM/

* A91751               91751-17999  5020  --> 6000
```

```
* M91751                91751-17997  5020  --> 6000

  Directory: /X25/CMD/

  ?XINFO.HLP            91751-17330  2440
  ?XINIT.HLP            91751-17315  2440
  ?XMOD.HLP             91751-17335  2440
  ?XPLOG.HLP            91751-17320  2440
  ?XTLOG.HLP            91751-17325  2440
  DLOEF.X25             91751-17025  5000
  DLOOA.X25             91751-17027  5000
  GENPK.LOD             91751-17240  5010
  INSTALL_X25A.CMD      91751-17030  5010
  LAPBV.LOD             91751-17245  5010
  N.CMD                 91751-17037  5010
  NO.CMD                91751-17038  5010
  SRVEY.LOD             91751-17265  5010
  TESTERROR.CMD         91751-17039  5010
  X25.CMD               91751-17015  2440
  X25.LOD               91751-17200  4010
  XINFO.LOD             91751-17230  5010
  XINIT.LOD             91751-17215  5010
  XLOEF.X25             91751-17024  5000
  XLOOA.X25             91751-17026  5000
  XMOD.LOD              91751-17235  5010
* XNET.LOD               91751-17250  5000  --> 6000
  XPLOG.LOD             91751-17220  5010
  XREAD.LOD             91751-17255  5010
  XTLOG.LOD             91751-17225  5010
  XWRIT.LOD             91751-17260  5010
  Y.CMD                 91751-17035  5010
  YES.CMD               91751-17036  5010

  Directory: /X25/REL/

* #X25A.REL              91751-16014  2440  --> Deleted
  #X25T.REL             91751-16003  2440
  #XCOM.REL             91751-16007  2440
  CSPAD.REL             91751-16230  5020
  CSTB.REL              91751-16006  2440
  CVPAD.REL             91751-16231  5020
* DD*60.REL              91751-16005  5000  --> 6000
  DDX00.REL             91751-16004  5020
  DDX60.REL             91751-16002  5000
  DVX00.REL             91751-16001  5020
* GENPK.REL              91751-16200  5000  --> 6000
* LAPBV.REL              91751-16180  5000  --> 6000
  SRVEY.REL             91751-16220  5020
* X25DS.LIB              91751-12002  5020  --> 6000
* X25LB.LIB              91751-12001  5020  --> 6000
```

```
  X25NONCDS.REL          91751-16309  5000
  XFOEF.REL              91751-16010  5000
  XINEF.REL              91751-16008  2440
* XINFA.REL              91751-16122  5020  --> 6000
* XINIT.REL              91751-16040  5020  --> 6000
  XINXA.REL              91751-16012  2440
* XMOD.REL               91751-16060  5020  --> 6000
* XNET.REL               91751-16020  5020  --> 6000
* XNFEF.REL              91751-16120  5020  --> 6000
  XNFOA.REL              91751-16013  2440
* XPLOG.REL              91751-16081  5000  --> 6000
  XREAD.REL              91751-16140  5000
  XTLOG.REL              91751-16100  5020
  XWRIT.REL              91751-16160  5010

  Directory: /X25/TXT/

  CSTB.MAC               91751-18006  2440
```

Manual Part#	Title	Edition/ Update	Print Date
91751-90002	DSN/X.25/1000 Reference Manual	4/-	E0490
91751-90003	DSN/X.25/1000 Advanced Guide	3/-	E0490
5958-3402	X.25 : THE PSN CONNECTION	2/-	E1085

Media Part#	Media Option
91751-13308	022
91751-13501	050
91751-13502	051
91751-13600	AAH

3.4 +(91781A) RJE/1000-II

```
   Filename              Part Number  Rev    Change
  --------------------- -----------  ----  --------

  Directory: /RJE/

* A91781                91781-18999  5010  --> 6000
  AMERI.REL              91781-16200  2427
  CANAD.REL              91781-16201  2427
  CON.PAS                91781-18004  2427
```

	CON.REL	91781-16004	2427
	DANIS.REL	91781-16202	2427
	DDD63.REL	91781-16030	4010
	DDV63.REL	91781-16777	2427
	DUTCH.REL	91781-16203	2427
	ENGLI.REL	91781-16204	2427
	FINNI.REL	91781-16205	2427
	FMT.FTN	91781-18021	2427
	FMT.REL	91781-16021	2427
	FRENC.REL	91781-16206	2427
	GERMA.REL	91781-16207	2427
	ITALI.REL	91781-16208	2427
	KATAK.REL	91781-16213	2427
	NATIV.REL	91781-16214	2427
	NORWE.REL	91781-16209	2427
*	PASCAL.LIB	92833-16113	5000 --> Deleted
	PORTU.REL	91781-16210	2427
	REFERENCE_MANUAL	91781-90001	2410
	RINIT.REL	91781-16002	5000
	RJE.CMD	91781-17001	5000
	RJE.DAT	91781-18100	5010
	RJE.HELP	91781-17000	2427
	RJE.LOD	91781-17003	5000
	RJE.REL	91781-16001	2540
	RJELB.LIB	91781-12001	4010
	RJEXX.REL	91781-16003	5000
	RJTAB.REL	91781-16005	2427
	ROUTE.PAS	91781-18023	2540
	ROUTE.REL	91781-16023	2540
	SPANI.REL	91781-16211	2427
	STAT.FTN	91781-18022	2427
	STD3780.TXT	91781-17002	2427
	SWEDI.REL	91781-16212	2427

Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
91781-13301	022
91781-13501	050
91781-13502	051
91781-13600	AAH

3.5 (91782A) DSN/MRJE 1000

Filename	Part Number	Rev
Directory: /MRJE/		
%DVN00	12792-16008	2540
A91782	91782-17999	5010
DCCMD.REL	91782-16003	5000
DCTF1.REL	91782-16004	5000
DDD63.REL	91781-16030	4010
DDV63.REL	91781-16777	2427
FMTRA.REL	91782-16007	4010
MLB00.Z80	91782-17002	4010
MLTAB.REL	91782-16008	2501
MLTRA.REL	91782-16006	5000
MRFIL.REL	91782-16005	5010
MRJE.CMD	91782-17001	5000
MRJE.DAT	91782-17003	2501
MRJE.LOD	91782-17004	5000
MRJE.REL	91782-16001	5000
MRJL.LIB	91782-12003	4010
MRJL6.LIB	91782-12002	4010
MRJLB.LIB	91782-12001	5010
MRKIL.REL	91782-16206	5000
MRLOG.REL	91782-16202	2540
POI.REL	91782-16002	5000
STOPL.REL	91782-16207	5000

3.6 (91784A) PMF/1000

Filename	Part Number	Rev
Directory: /PMF/		
"HPFOF	91784-17005	5000
#BENCH	91784-17751	5000
#PMF	91784-17015	5000
#PMFMG	91784-17757	5000
#PMFSH	91784-17767	5000
*FMGR	91784-17773	5000
*PMF	91784-17001	5000
A91784	91784-17999	5000
BENCH.LOD	91784-17769	5000

BENCH.REL	91784-12016	4010
DDD63.REL	91781-16030	4010
DDV63.REL	91781-16777	2427
ERCDE.DAT	91784-17006	2501
HDTER_IDX.DAT	91784-17003	4010
HGSL2.LIB	91784-12003	5000
HGSLB.LIB	91784-12002	5000
HITDA.PASI	91784-18802	2501
HITSH.PASI	91784-18801	2501
HITTY.PASI	91784-18803	2501
HMSLB.LIB	91784-12001	5000
HOHLP_IDX.DAT	91784-17004	2501
HOMFL.REL	91784-16023	4010
HOSLB.LIB	91784-12006	5000
HPMDP.REL	91784-16024	4010
HPMLP.REL	91784-16025	4010
HSDPW.DAT	91784-17007	2501
HSMPH.REL	91784-16026	4010
HSMTM.REL	91784-16020	2501
HTMPP.REL	91784-16022	5000
HTMTR.REL	91784-16021	4010
HUHLP_IDX.DAT	91784-17009	5000
HUSLB.LIB	91784-12018	5000
KATAK.REL	91784-16360	2501
NATIV.REL	91784-16365	2501
PASCAL_ERR.REL	92833-16125	5000
PASCAL_TRA.REL	92833-16168	5000
PMF.CMD	91784-17771	5000
PMF.LOD	91784-17014	5000
PMF6.LIB	91784-12007	5000
PMFA.LIB	91784-12019	5000
PMFA_CDS.LIB	91784-12021	5000
PMFLB.LIB	91784-12017	5000
PMFLB_CDS.LIB	91784-12020	5000
PMFLG.REL	91784-12015	5000
PMFMD.REL	91784-16402	2501
PMFMG.LOD	91784-17770	5000
PMFMG.REL	91784-12009	5000
PMFSH.LOD	91784-17768	5000
PMFVR.REL	91784-12010	4010
PMONA.REL	91784-12011	4010
PMONB.REL	91784-12012	2501
PMONC.REL	91784-12013	4010
PSIM.REL	91784-12014	5000
PSI_DOWNLOAD.DAT	91784-17008	5000
SAMPLE.CON	91784-17010	2501

3.7 +(91790A) NS-ARPA/1000

	Filename	Part Number	Rev	Change
	Directory: /NS1000/			
*	A91790_EZ_INSTAL.TXT	91790-17091	New	--> 6000
	A91790_INSTALL.TXT	91790-17034	5270	
	Directory: /NS1000/CATALOGS/			
*	INETD.C000	91790-16310	New	--> 6000
	Directory: /NS1000/CMD/			
*	INSTALL_NS1000.CMD	91790-17033	5270	--> 6000
*	NSSTART_EZ.CMD	91790-17089	5240	--> 6000
	N_LINK.CMD	91790-17105	5240	
*	OF_NS.CMD	91790-17106	5240	--> 6000
	Directory: /NS1000/DOC/			
	BREVL.HELP	91790-17094	5020	
	BRTRC.HELP	91790-17095	5020	
	DSCOPY.HELP	91790-17103	5020	
	DSCOPY.HLP	91790-17037	5016	
	EVMON.HELP	91790-17096	5020	
	FMTRC.HELP	91790-17097	5020	
*	FTP.HELP	91790-17102	5020	--> 6000
*	FTP.HLP	98170-17014	5016	--> 6000
*	INETD.HELP	91790-17107	New	--> 6000
	LOGCHG.HELP	91790-17098	5020	
	NRLIST.HELP	91790-17099	5020	
	NSTRC.HELP	91790-17100	5020	
	PING.HELP	91790-17101	5240	
	TELNET.HELP	91790-17104	5020	
	TELNET.HLP	91790-17079	5000	
	Directory: /NS1000/DSREL/			
	!COPY3	91750-16213	5000	
	%ADV00	91750-16286	5270	
*	%APLDL	91750-16040	2113	--> 6000
	%CNSLM	91750-16048	2340	
*	%CXL66	91750-16269	5010	--> 6000
*	%DDA66	91750-16292		--> 2340
	%DLIS2	91750-16073	5000	
	%DSLIN	91750-16263	5020	

```
  %DSTES                91750-16100  2013
  %DSVCP                91750-16102  5020
  %EXECM                91750-16111  5020
  %EXECW                91750-16112  5000
  %ID*66                91750-16126  5010
  %IOMAP                91750-16130  5020
  %LOG3K                91750-16132  2540
  %LUMAP                91750-16133  5000
  %LUQUE                91750-16134  2201
* %MDFCL                91750-16293       --> 2340
  %MVCP3                91750-16212  5020
  %OPERL                91750-16142  2440
  %POPN1                91750-16148  2540
  %PROGL                91750-16150  5240
  %PROGZ                91750-16226  5240
  %PTOPM                91750-16151  2340
  %QUEX1                91750-16155  5020
  %QUEZ1                91750-16157  2401
  %RESA                 91750-16283  2540
  %RFAM2                91750-16165  2440
  %RMOT1                91750-16168  5020
  %RPCNV                91750-16170  5020
  %RQCNV                91750-16171  5020
  %SGXL                 91750-16234  2201
  %SYSAT                91750-16202  5020
  %TRC3K                91750-16178  5020
  %VCPMN                91750-16180  2226

  Directory: /NS1000/ETC/

* INETD.CONF            91790-17109  New   --> 6000
* SERVICES              91790-18301  New   --> 6000

  Directory: /NS1000/EXAMPLES/

* #ANSNS                91790-17063  5270  --> 6000
  ALL_NODES.NRIN        91790-17061  5240
* BSDCLIENT.C           91790-18295  5240  --> 6000
* BSDCLIENT.FTN         91790-18290  5240  --> 6000
* BSDCLIENT.LOD         91790-17110  New   --> 6000
* BSDCLIENT.PAS         91790-18292  5240  --> 6000
* BSDSERVER.C           91790-18296  5240  --> 6000
* BSDSERVER.FTN         91790-18291  5240  --> 6000
* BSDSERVER.LOD         91790-17111  New   --> 6000
* BSDSERVER.PAS         91790-18293  5240  --> 6000
  CHILD.FTN             91790-18269  5010
  CLIENT.FTN            91790-18265  5010
  CLIENT.PAS            91790-18263  5010
  COPY.FTN              91790-18240  5240
  COPY.PAS              91790-18239  5240
```

```
  DATAFILE                91790-17084  5010
  DEFAULT.NSIN            91790-17088  5240
  EX_LAN_WORKSHEET.TXT    91790-17055  5240
  EX_RTR_WORKSHEET.TXT    91790-17056  5240
  HOSTS                   91790-18298  5240
  IPC1.PAS                91790-18236  5240
  IPC2.PAS                91790-18241  5240
  IPC3.FTN                91790-18237  5240
  IPC4.FTN                91790-18238  5240
* NETWORKS                91790-18299         --> 5240
  NODE1_LAN.NSIN          91790-17062  5240
  NODE1_RTR.NSIN          91790-17050  5240
  NODE2_LAN.NSIN          91790-17051  5240
  NODE2_RTR.NSIN          91790-17068  5240
* NSSTART.CMD             91790-17054  5240  --> 6000
  NS_WORKSHEET.TXT        91790-17045  5240
  PARENT.FTN              91790-18270  5240
  PROTOCOLS               91790-18300  5240
  RPM1.PAS                91790-18267  5240
  RPM2.PAS                91790-18268  5000
  SERVER.FTN              91790-18266  5010
  SERVER.PAS              91790-18264  5010
* SERVICES                91790-18301  5240  --> Deleted

  Directory: /NS1000/INCLUDE/

  ERRNO.H                 91790-18302  5240
  EXTCALLS.PASI           91790-18279  5240
  FCNTL.H                 91790-18285  5240
  IN.H                    91790-18283  5240
  NETDB.H                 91790-18282  5240
  SOCKET.FTNI             91790-18288  5240
  SOCKET.H                91790-18281  5240
  SOCKET.PASI             91790-18278  5240
  TYPES.H                 91790-18280  5240

  Directory: /NS1000/LIB/

  $D3N25                  91750-12029  2401
  $D3X25                  91750-12028  2440
* BSD_CDS.LIB             91790-12017  5270  --> 6000
  DS3K.LIB                91790-12014  5240
* NSINFLB.LIB             91790-12015  5240  --> 6000
* NSLIB.LIB               91790-12003  5240  --> 6000
* NSLIB_CDS.LIB           91790-12004  5240  --> 6000
* NSSYS.LIB               91790-12012  5240  --> 6000
* NSSYS_CDS.LIB           91790-12013  5240  --> 6000
```

Directory: /NS1000/LOD/

	#SEND.LOD	91790-17046	5240	
	BREVL.LOD	91790-17001	5240	
	BRTRC.LOD	91790-17002	5240	
	CONSM.LOD	91790-17003	5240	
	DSCOPY.LOD	91790-17004	5240	
	DSLIN.LOD	91790-17005	5240	
	DSMOD.LOD	91790-17006	5240	
	EVMON.LOD	91790-17007	5000	
*	FMTRC.LOD	91790-17008	5240	--> 6000
*	FTP.LOD	98170-17002	5240	--> 6000
*	FTPMN.LOD	98170-17001	5015	--> Deleted
*	FTPSV.LOD	98170-17003	5240	--> 6000
	GRPM.LOD	91790-17040	5000	
	IFPM.LOD	91790-17039	5000	
*	INETD.LOD	91790-17108	New	--> 6000
*	INPRO.LOD	91790-17009	5240	--> 6000
	LOG3K.LOD	91790-17010	5240	
	LOGCHG.LOD	91790-17011	5240	
	MATIC.LOD	91790-17043	5000	
	MMINIT.LOD	91790-17012	5240	
	NFTMN.LOD	91790-17013	5240	
	NRINIT.LOD	91790-17014	5240	
	NRLIST.LOD	91790-17015	5240	
*	NSINF.LOD	91790-17017	5240	--> 6000
*	NSINIT.LOD	91790-17018	2608	--> 6000
	NSLINK.LOD	91790-17092	5005	
*	NSPARS.LOD	91790-17019	2608	--> 6000
*	NSPR1.LOD	91790-17020	5020	--> 6000
*	NSPR2.LOD	91790-17021	5020	--> 6000
*	NSPR3.LOD	91790-17022	5240	--> 6000
	NSTRC.LOD	91790-17026	5240	
*	OUTPRO.LOD	91790-17027	5240	--> 6000
	PING.LOD	98170-17004	5240	
	PRDC1.LOD	91790-17028	5240	
*	PRODC.LOD	91790-17029	5240	--> 6000
	QCLM.LOD	91790-17044	5000	
	QUEUE.LOD	91790-17038	5000	
	QUEX.LOD	91790-17041	5020	
	QUEZ.LOD	91790-17042	5000	
	RMOTE.LOD	91790-17030	5240	
	RMOTE_X25.LOD	91790-17065	5240	
	RPMMN.LOD	91790-17075	5240	
	RQCNV.LOD	91790-17067	5240	
	RQCNV_X25.LOD	91790-17066	5240	
	TELNET.LOD	91790-17078	5240	
*	TNMON.LOD	91790-17076	5000	--> Deleted
	TNSRV.LOD	91790-17077	5240	
	UPLIN.LOD	91790-17032	5240	

```
  UPLIN_X25.LOD          91790-17064  5240

  Directory: /NS1000/MISC/

* A91790.MNF             91790-17998  5270  --> 6000
* A91790.SNF             91790-17999  5270  --> 6000
* NSERRS.MSG             91790-17036  5016  --> 6000
  NSINIT.MSG             91790-17035  5240

  Directory: /NS1000/REL/

  #SEND.REL              91790-16010  5240
* BREVL.REL              91790-16022  5240  --> 6000
* BRTRC.REL              91790-16023  5240  --> 6000
* CONSM.REL              91790-16024  5240  --> 6000
* DSCOPY.REL             91790-16032  5240  --> 6000
* DSMOD.REL              91790-16037  5240  --> 6000
* DS_CDSERRORCATCH.REL   91790-16039  5240  --> 6000
* DS_ERRORCATCHER.REL    91790-16041  5240  --> 6000
  ERRNODEC.REL           91790-16287  5240
* EVMON.REL              91790-16045  5240  --> 6000
* FMTER.REL              91790-16056  5240  --> Deleted
* FMTGBL.REL             91790-16057  5240  --> Deleted
* FMTRC.REL              91790-16059  5240  --> 6000
* FMTUI.REL              91790-16061  5240  --> Deleted
* FMVIN.REL              91790-16062  5240  --> Deleted
* FTP.REL                98170-16046  5240  --> 6000
  FTPLIB2.REL            98170-16004  5015
* FTPMN.REL              98170-16001  5240  --> Deleted
* FTPSLIB.REL            98170-16002  5240  --> 6000
* FTPSV.REL              98170-16047  5240  --> 6000
* FTPULIB.REL            98170-16003  5240  --> 6000
  GRPM.REL               91790-16065  5240
* IFPM.REL               91790-16072  5240  --> 6000
* INDEC.REL              91790-16074  5240  --> 6000
  INEHTAB.REL            91790-16075  5240
* INETD.REL              91790-12019  New   --> 6000
* INPRO.REL              91790-16087  5240  --> 6000
* LOGCHG.REL             91790-16111  5240  --> 6000
  MATIC.REL              91790-16113  5240
* MMINIT.REL             91790-16118  5240  --> 6000
* NFTMN.REL              91790-16132  5240  --> 6000
* NRERR.REL              91790-16235  5240  --> 6000
* NRINIT.REL             91790-16139  5240  --> 6000
* NRLIST.REL             91790-16140  5240  --> 6000
* NSABP.REL              91790-16031  5000  --> 6000
* NSINF.REL              91790-16145  5240  --> 6000
* NSINIT.LIB             91790-12002  5240  --> 6000
* NSPARS.LIB             91790-12005  5240  --> 6000
* NSPEC.REL              91790-16038  2608  --> Deleted
```

* NSPR1.LIB	91790-12006	5240	--> 6000
* NSPR2.LIB	91790-12007	5240	--> 6000
* NSPR3.LIB	91790-12008	5240	--> 6000
* NSTRC.REL	91790-16168	5240	--> 6000
OTEHTAB.REL	91790-16171	5240	
* OUTDEC.REL	91790-16172	5240	--> 6000
* OUTPRO.REL	91790-16173	5240	--> 6000
* PING.REL	98170-16006	5240	--> 6000
* PRDC1.REL	91790-16178	5240	--> 6000
* PRODC.REL	91790-16181	5240	--> 6000
PROSW_CDS.REL	91790-16182	2608	
QCLM.REL	91790-16187	5240	
QUEUE.REL	91790-16188	2608	
* REMAT.REL	91790-16189	5240	--> 6000
* RPMMN_CDS.REL	91790-16248	5240	--> 6000
* TELNET.REL	91790-16255	5240	--> 6000
* TNMON.REL	91790-16253	5240	--> Deleted
* TNSRV.REL	91790-16254	5240	--> 6000
* UPLIN.REL	91790-16229	5240	--> 6000
* UPLN2.REL	91790-16230	5240	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
91790-91001	NS-ARPA/1000 Cover Letter	-/-	E1292
91790-90020	NS-ARPA/1000 User/Prog. Ref. Manual	5/-	E1292
91790-90030	NS-ARPA/1000 Gen. and Init. Manual	7/-	E1292
91790-90031	NS-ARPA/1000 Maint. & Principles of Op.	5/-	E1292
91790-90040	NS-ARPA/1000 Quick Reference Guide	4/-	E1292
91790-90045	NS-ARPA/1000 Error Msg. and Recovery Man.	4/-	E1292
91790-90050	NS-ARPA/1000 DS/1000-IV Compat. Svcs. Man.	3/-	E0891
91790-90060	NS-ARPA/1000 BSD IPC Reference Manual	2/-	E1292
5958-8523	NS Message Formats Reference Manual	4/-	E1292
5958-8563	NS Cross System NFT Reference Manual	3/-	E0891

Media Part#	Media Option
91790-13301	022
91790-13502	051
91790-13600	AAH

3.8 (92049A) A900 Microprogramming Package

Filename	Part Number	Rev
Directory: /A900_MICROPROG/		
A92049	92049-17999	2540
ID*42.REL	92049-16003	2540
M92049	92049-17998	2540
MPARA.LIB	92049-12002	2540
MPARA.LOD	92049-17002	2540
MPARA.REL	92049-16001	2540
WLOAD.LOD	92049-17007	2540
WLOAD.REL	92049-16002	2540
WUTLS.LIB	92049-12001	2540

3.9 +(92050A) Datapair/1000

	Filename	Part Number	Rev	Change
	Directory: /DATAPAIR/			
*	A92050	92050-17999	5000	--> 6000
	DDP31.REL	92050-16001	2622	
	DPAIR.LIB	92050-12001	5270	
	DPTRP.REL	92050-16003	5000	
*	IDP31.REL	92050-16002	5000	--> 6000
*	M92050	92050-17998	2622	--> Deleted
*	M92050.MNF	92050-17998	New	--> 6000
	MIMON.LOD	92050-17009	5000	
*	MIMON.REL	92050-16017	5000	--> 6000
	PAIO.LOD	92050-17002	5000	
*	PAIO.REL	92050-16005	2622	--> 6000
	PAIR.LOD	92050-17001	5000	
	PAIR.REL	92050-16004	5270	
*	PAIR_PAIO.LIB	92050-12002	2622	--> 6000
	PINIT.LOD	92050-17008	5000	
*	PINIT.REL	92050-16016	2622	--> 6000
	PREPAIR.LOD	92050-17011	5000	
*	PREPAIR.REL	92050-16009	5000	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
92050-90001	DataPair/1000 Reference Manual	2/-	E1292
92050-90003	DataPair/1000 Quick Reference Insert	2/-	E1292
92050-90011	DataPair/1000 Self Study Course	1/1	U1086

Media Part#	Media Option
92050-13301	022
92050-13502	051
92050-13601	AAH

3.10 (92069A) Image/1000 (A, E, F-Series)

Filename	Part Number	Rev
#DBBLD	92069-18309	2340
#DBDS	92069-18308	2340
#DBMS1	92069-18304	2340
#DBMS2	92069-18305	2340
#DBMS3	92069-18306	2340
#IMAGE	92069-18288	2540
#IMAGL	92069-18289	2540
#QUERY	92069-18307	2540
#RDBA	92069-17001	2540
$DBBLL	92069-12009	2540
$DBDSL	92069-12011	5000
$DSDB	92069-12007	2340
$QRYXL	92069-12008	5000
%BAIMX	92069-16255	2026
%DBBLX	92069-16001	2540
%DBCOP	92069-16256	2540
%DBDRT	92069-16310	2340
%DBDSX	92069-16015	2540
%DBLOX	92069-16311	5000
%DBMS	92069-12002	5010
%DBRED	92069-16160	2340
%DBRSX	92069-16126	2140
%DBSPX	92069-16133	2140
%DBSTX	92069-16125	2540
%DBULX	92069-16127	2540
%LOCAL	92069-12006	2540

	%NO_DS	92069-12005	2540
	%QURYX	92069-16060	5010
	%RD.TB	92069-16257	2340
	%RDBA	92069-12003	2540
	%RDBAM	92069-16312	5000
	%RDBAP	92069-16259	5010
	%RECVX	92069-16134	5010
	%REMOT	92069-12004	2540
	*DBUP	92069-12001	2540
	*IMAGA	92069-18230	2540
	*IMAGE	92069-18287	2540
	*IMAGX	92069-18303	2540
	A92069	92069-18998	5010
	QSHELP	92069-16122	2540

3.11 +(92077A) RTE-A Operating System

	Filename	Part Number	Rev	Change
	Directory: /RTE_A/			
*	!ARSTR	92077-16639	5270	--> Deleted
*	!FORMC	92570-16286	New	--> 6000
*	!PBV	92077-16416	5270	--> Deleted
*	!RESTORE	92077-16639	New	--> 6000
*	!VSCSI	92077-15031	5270	--> 6000
	"CDSLB	92059-18027	2326	
*	"EDIT	92074-17004	5020	--> 6000
	"FCHLP	92084-17150	2226	
	"MACLB	92059-18026	2326	
	#AB2MI	92077-17030	5000	
	#APLDA	92077-17132	5000	
	#ARSTR	92077-17101	5000	
	#ASAVE	92077-17100	5000	
	#AUTOR	92077-17042	5020	
	#BUILD	92077-17036	5000	
*	#CIA	92077-17026	5010	--> Deleted
*	#CIX	92077-17105	5000	--> Deleted
*	#CIX	92570-17032	New	--> 6000
*	#CLSDS	92077-17019	5000	--> Deleted
	#COMND	92077-17043	5000	
	#COPYL	92077-17038	5000	
	#CSYS	92077-17035	5000	
*	#DDERR	92077-17133	5000	--> Deleted
*	#DDRTR	92077-17016	5000	--> Deleted
*	#DL	92077-17028	5000	--> Deleted

```
  #DRSTR              92077-17110  5000
  #DSAVE              92077-17111  5000
* #DSRTR              92077-17018  5020  --> Deleted
* #DSRTR              92570-17075  New   --> 6000
  #ED1KA              92074-17005  2540
  #ERTSH              92077-17214  5000
  #EXER               24398-17016  5010
  #EXER1              24398-17015  5010
  #FCA                92077-17008  5000
  #FMGR               92077-17032  5000
  #FORMA              92077-17286  5010
  #FORMC              92077-17034  5000
  #FORMF              92077-17104  5000
  #FORMT              92077-17041  5000
* #FOWN               92077-17029  5000  --> Deleted
* #FPACK              92077-17012  5000  --> Deleted
  #FPUT               92077-17013  5000
  #FSCON              92077-17014  5000
* #FST                92077-17273  5000  --> Deleted
* #FSTP               92077-17274  5000  --> Deleted
* #FVERI              92077-17015  5020  --> Deleted
  #HPMDM              92077-17280  5000
  #INSTL              92077-17039  5000
  #IS                 92077-17112  5000
  #LIF                92077-17033  5000
* #LINDX              92077-17021  5000  --> Deleted
* #LINK               92077-17020  5010  --> Deleted
* #LINK2              92077-17134  5000  --> Deleted
* #MACRO              92059-17004  5000  --> 6000
  #METER              92077-17130  5000
  #MEXPL              92077-17287  5000
  #MI2AB              92077-17031  5000
  #MSGM               92089-17002  2440
  #MTEXR              92077-17288  5000
  #NLSID              92089-17013  2540
  #OLDRE              92059-17002  2213
* #PBV                92077-17010  2540  --> Deleted
  #PRINO              92077-17025  5000
  #PRINT              92077-17024  5000
  #RMTERM             92077-17279  5000
  #RS                 92077-17115  5020
  #RTAGN              92077-17040  5000
* #TF                 92077-17102  5000  --> Deleted
  #TRFAS              92077-17017  5020
* $BIGLB              92077-12006  5270  --> Deleted
* $CMDLB              92077-12004  5020  --> 6000
  $COMPT              92077-12031  5000
* $CRLIB              92077-12025  5020  --> Deleted
* $CRLIB              92570-12017  New   --> 6000
  $DBULB              92077-12027  5020
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*	$DDLIB	92077-12030	2441	--> Deleted
	$DKLIB	92077-12024	5020	
*	$DSLDR	92077-12015	5270	--> Deleted
*	$DSLDR	92570-12005	New	--> 6000
*	$DTCLB	92071-12015	5020	--> 6000
*	$ED1KA	92074-12011	5020	--> 6000
	$EMCLB	92077-12007	2214	
	$FCL1	92084-12085	2540	
	$FCL2	92084-12086	2540	
	$FDSLB	24998-12004	5000	
	$FLIB	24998-12008	5010	
*	$FMGR	92077-12005	5020	--> 6000
*	$FMP	92077-12003	5270	--> Deleted
*	$FMP	92570-12008	New	--> 6000
*	$FMP1	92077-12041	5270	--> Deleted
*	$FMP2	92077-12042	5270	--> Deleted
*	$FMPC	92077-12018	5270	--> Deleted
*	$FMPC	92570-12027	New	--> 6000
	$FNDLB	24998-12005	2227	
	$FNEWF	24998-12010	5020	
	$FOLDF	24998-12009	5000	
*	$FST	92077-12036	5270	--> Deleted
*	$FSTA	92077-12037	4010	--> 6000
	$HPIB	92077-12021	5020	
	$LDRLN	92084-12038	5020	
	$MATH	24998-12007	5010	
*	$PBULB	92077-12019	5270	--> 6000
	$PRINT	92077-12008	5020	
*	$SFMP	92570-12031	New	--> 6000
*	$SYSA	92077-12001	5020	--> Deleted
*	$SYSA	92570-12003	New	--> 6000
*	$SYSLB	92077-12012	5270	--> Deleted
*	$SYSLB	92570-12006	New	--> 6000
*	$TFLIB	92077-12020	5000	--> Deleted
	$VLB6B	12829-12002	2214	
*	$VLBA1	92077-12014	5010	--> Deleted
*	$VLBA1	92570-12004	New	--> 6000
	$WFCLB	92077-12022	2327	
*	%$IDRPL	92077-16994	5020	--> Deleted
*	%$IDRPL	92570-16009	New	--> 6000
*	%$M000	92089-16002	5020	--> 6000
	%$MWB1	92077-16097	2227	
	%AB2MI	92077-16433	2441	
*	%ABORT	92077-16826	5020	--> Deleted
*	%ABORT	92570-16010	New	--> 6000
	%ALARM	92077-16870	5000	
*	%APLDA	92077-16098	2540	--> 6000
*	%ARSTR	92077-16587	5270	--> 6000
*	%ASAVE	92077-16586	5270	--> 6000
	%ATRAN	92059-16013	2540	

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* %BIGLB              92570-16180  New   --> 6000
* %BUILD              92077-16336  5270  --> Deleted
* %BUILD              92570-12012  New   --> 6000
* %CA000              92077-16740  5020  --> Deleted
* %CI                 92077-16445  5270  --> Deleted
* %CI000              92077-16737  5020  --> Deleted
* %CI000              92570-16161  New   --> 6000
* %CISUB              92077-16535  5020  --> Deleted
* %CIX                92077-16651  5020  --> Deleted
* %CIX                92570-16164  New   --> 6000
  %CKTRM              92077-16748  2441
* %CL000              92077-16781  5010  --> Deleted
* %CL000              92570-16155  New   --> 6000
* %CLASS              92077-16442  5020  --> Deleted
* %CLASS              92570-16022  New   --> 6000
* %CLSDS              92077-16463  5010  --> Deleted
* %CMPBF              92077-16415  2303  --> Deleted
  %COMND              92077-16076  2214
  %COPYL              92070-16336  2327
* %CR000              92077-16739  5010  --> Deleted
* %CR000              92570-16159  New   --> 6000
* %CSYS               92077-16636  5020  --> 6000
* %CX000              92077-16738  5000  --> Deleted
* %CX000              92570-16232  New   --> 6000
  %DD*00              92077-16699  2540
  %DD*12              92077-16758  2441
  %DD*20              92077-16727  2441
  %DD*23              92077-16730  2441
* %DD*24              92077-16648  5270  --> 6000
  %DD*30              92077-16669  5000
* %DD*33              92077-16668  5020  --> 6000
  %DD*36              92077-16732  2441
  %DDC12              92077-16386  2402
* %DDERR              92077-16778  5010  --> Deleted
  %DDM30              92077-16666  5000
* %DDRTR              92077-16455  5270  --> Deleted
* %DE000              92077-16779  5010  --> Deleted
* %DE000              92570-16190  New   --> 6000
  %DECAR              24306-16001  2540
* %DL                 92077-16447  5020  --> Deleted
* %DL000              92077-16759  5010  --> Deleted
* %DL000              92570-16152  New   --> 6000
  %DRSTR              92077-16701  5000
* %DSAVE              92077-16702  5000  --> 6000
* %DSQ                92077-16721  5000  --> Deleted
* %DSQ                92570-16024  New   --> 6000
* %DSRTR              92077-16462  5270  --> Deleted
* %DSRTR              92570-16257  New   --> 6000
  %ED000              92074-16055  5020
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*	%EDIT	92074-12008	5020	--> 6000
*	%ERLOG	92077-16147	5020	--> Deleted
*	%ERLOG	92570-16030	New	--> 6000
	%ERTLB	92077-16816	2526	
	%ERTSH	92077-16815	2526	
*	%EXEC	92077-16136	5270	--> 6000
	%EXER	24398-16062	5020	
*	%EXER1	24398-16066	5020	--> 6000
	%FC0	92084-15042	2540	
*	%FC000	92077-16787	5010	--> 6000
	%FC1	92084-15043	2540	
	%FC2	92084-15044	2540	
	%FC3	92084-15045	2540	
	%FC4	92084-15046	5000	
	%FC5	92084-15047	2540	
	%FC6	92084-15048	2540	
	%FCMA	92077-12016	5000	
	%FFL	92077-16067	5000	
	%FMGR	92077-16310	2540	
*	%FORMA	92077-16814	5000	--> 6000
*	%FORMC	92077-16786	5010	--> 6000
*	%FORMF	92077-16393	5000	--> 6000
	%FORMT	92077-16697	5010	
*	%FOWN	92077-16449	5010	--> Deleted
*	%FP000	92077-16768	5020	--> Deleted
*	%FP000	92570-16178	New	--> 6000
*	%FPACK	92077-16451	5020	--> Deleted
*	%FPUT	92077-16452	5270	--> 6000
*	%FS000	92077-16904	5270	--> Deleted
*	%FS000	92570-16111	New	--> 6000
*	%FSCON	92077-16453	5000	--> 6000
*	%FST	92077-16906	5270	--> Deleted
*	%FSTP	92077-16907	5270	--> Deleted
	%FT000	92077-16773	5010	
*	%FV000	92077-16764	5020	--> Deleted
*	%FV000	92570-16174	New	--> 6000
*	%FVERI	92077-16454	5020	--> Deleted
*	%FW000	92077-16766	5010	--> Deleted
	%GEN27	92077-16629	5020	
	%GEN67	91830-16002	2544	
	%ID*00	92077-16756	2540	
	%ID*01	92077-16390	2540	
	%ID*27	92077-16628	5020	
	%ID*36	92077-16722	2441	
	%ID*37	92077-16696	5020	
	%ID*43	92077-16096	5020	
	%ID*50	92077-16667	5010	
*	%ID*52	92077-16753	2441	--> 6000
	%ID*67	91830-16001	5270	
	%ID000	92089-16059	2540	

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  %IDM00          92077-16754  5020
  %IDM37          92077-16700  2402
  %IDS00          92077-16755  5000
* %INSTL          92077-16090  5270  --> 6000
* %IOMOD          92077-16471  5020  --> Deleted
* %IOMOD          92570-16020  New   --> 6000
* %IORQ           92077-16827  5270  --> Deleted
* %IORQ           92570-16021  New   --> 6000
  %IS             92077-16724  5010
* %LIF            92077-16638  5020  --> 6000
* %LINDX          92077-12026  5000  --> Deleted
* %LINKA          92077-16464  5270  --> Deleted
* %LINKB          92077-16466  5270  --> Deleted
* %LK000          92077-16749  5270  --> Deleted
* %LOAD           92077-16156  5020  --> Deleted
* %LOAD           92570-16016  New   --> 6000
* %LOCK           92077-16484  5270  --> Deleted
* %LOCK           92570-16023  New   --> 6000
* %MACR0          92059-16015  5000  --> 6000
* %MACR1          92059-16016  5000  --> 6000
* %MACR2          92059-16017  5000  --> 6000
* %MACR3          92059-16018  5000  --> 6000
  %MACR4          92059-16019  5000
* %MACR5          92059-16020  5000  --> 6000
* %MACR6          92059-16021  5000  --> 6000
* %MACR7          92059-16022  5000  --> 6000
* %MACRE          92059-16030  5000  --> 6000
* %MACRL          92059-16029  5020  --> 6000
* %MACRO          92059-16014  5020  --> 6000
  %MAPOS          92077-16728  5000
* %MAPS           92077-16828  5020  --> Deleted
* %MAPS           92570-16011  New   --> 6000
  %MDMLB          92077-16392  5000
* %MEMRY          92077-16469  5010  --> Deleted
* %MEMRY          92570-16012  New   --> 6000
  %METER          92077-16733  5020
  %MEXPL          92077-16663  2401
* %MI2AB          92077-16432  2540  --> 6000
  %MODEM          92077-16391  2540
  %MSGM           92089-12001  2440
* %MSGTB          92089-16001  5020  --> 6000
  %MSOUT          92077-16776  2540
  %MTEXR          92077-16649  5020
  %MUXUP          92077-16660  5270
  %NLSID          92089-16057  2540
* %OLDRE          92059-16023  5000  --> 6000
  %OPMSG          92077-16151  5000
* %PBV            92077-16414  2441  --> Deleted
* %PERR           92077-16472  2540  --> Deleted
* %PERR           92570-16014  New   --> 6000
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  %PR000              92077-16714  5020
  %PRIN0              92077-16054  5020
  %PRINT              92077-16009  5020
* %PROGS              92077-16829  5020  --> Deleted
* %PROGS              92570-16013  New   --> 6000
* %RPL40              92077-16949  5270  --> 6000
* %RPL41              92077-16948  5270  --> 6000
* %RPL42              92078-16103  5270  --> 6000
* %RPL43              92078-16104  5270  --> 6000
* %RPL60              92077-16475  5270  --> 6000
* %RPL61              92077-16476  5270  --> 6000
* %RPL70              92077-16477  5270  --> 6000
* %RPL71              92077-16478  5270  --> 6000
* %RPL90              92077-16479  5270  --> 6000
  %RS                 92077-16731  2540
  %RS000              92077-16784  2540
* %RTAGN              92077-16077  5270  --> Deleted
* %RTAGN              92570-12022  New   --> 6000
* %RTIOA              92077-16470  5270  --> 6000
* %SAM                92077-16443  5000  --> 6000
* %SAMON              92077-16736  5020  --> Deleted
* %SCHED              92077-16141  5000  --> Deleted
* %SCHED              92570-16025  New   --> 6000
  %SECON              92077-16783  5000
* %SIGNL              92077-16869  5270  --> Deleted
* %SIGNL              92570-16031  New   --> 6000
  %SPCOM              92077-16744  5000
  %SPSLG              92077-16745  5010
  %STAT               92077-16154  5020
  %STRNG              92077-16444  5000
  %SWAP               92077-16735  2540
* %SYCOM              92077-16149  5010  --> Deleted
* %SYCOM              92570-16026  New   --> 6000
* %TF                 92077-16598  5000  --> Deleted
  %TIME               92077-16438  5010
* %TRFAS              92077-16461  5010  --> 6000
* %UTIL               92077-16830  5010  --> Deleted
* %UTIL               92570-16017  New   --> 6000
* %VCTR               92077-16473  5270  --> Deleted
* %VCTR               92570-16018  New   --> 6000
* %VEMA               92077-16741  5010  --> Deleted
* %VEMA               92570-16019  New   --> 6000
  %VISOA              92077-16383  2302
* %XCMND              92077-16152  5020  --> Deleted
* %XCMND              92570-16015  New   --> 6000
  &AUTOR              92077-18385  5020
* &BIGLB              92077-18073  5270  --> Deleted
* &CDSONOFF           92059-18024  5020  --> 6000
  &FFL                92077-18067  5000
  &MUXUP              92077-18660  5270
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* >FS000               92077-16905  5270  --> Deleted
* >FS000               92570-16112  New   --> 6000
  >LG000               92089-16028  2440
  >LG001               92089-16029  2440
  >LG002               92089-16030  2440
  >LG003               92089-16031  2440
  >LG004               92089-16032  2440
  >LG005               92089-16033  2440
  >LG006               92089-16034  2440
  >LG007               92089-16035  2440
  >LG008               92089-16036  2440
  >LG009               92089-16037  2440
  >LG010               92089-16038  2440
  >LG011               92089-16039  2440
  >LG012               92089-16040  2440
  >LG013               92089-16041  2440
  >LG041               92089-16042  2440
  >LG291               92089-16043  2440
* >LK000               92077-16750  5270  --> Deleted
  >MS000               92089-16008  2440
* >TF000               92077-16763  5000  --> Deleted
* >TF000               92570-16194  New   --> 6000
* A92077               92077-18999  5020  --> 6000
* A990FWID.LOD         12990-17001  New   --> 6000
* A990FWID.REL         12990-16020  New   --> 6000
  ASK.REL              92077-16964  5000
* BIGLB.MRG            92077-17239  5000  --> Deleted
* BIGLB.MRG            92570-17038  New   --> 6000
* BIGLB_BLD.CMD        92077-17260  5020  --> Deleted
* BOOTEX               92077-16364  5270  --> Deleted
* BOOTEX               92570-16071  New   --> 6000
* CALLB.FTN            92077-18941  5000  --> 6000
* CALLM.REL            92570-16262  New   --> 6000
  CALLS.LOD            92077-17317  5020
* CALLS.REL            92077-12044  5020  --> 6000
* CINC.LOD             92570-17030  New   --> 6000
* CINC.REL             92570-16156  New   --> 6000
* CINFO                24998-16620  5270  --> 6000
* CINFR                24998-16628  5270  --> 6000
* CISUB.R000           92570-16158  New   --> 6000
* CISUBNC.REL          92570-15072  New   --> 6000
  CLOCK.LOD            92570-17080  5270
  CLOCK.REL            92570-16267  5270
* CLOSE.LOD            92570-17028  New   --> 6000
* CLOSE.REL            92570-16154  New   --> 6000
* DDC00.REL            92077-16888  5270  --> 6000
* DDC01.REL            92077-16889  5270  --> 6000
* DDERR.LOD            92570-17042  New   --> 6000
* DDERR.REL            92570-16189  New   --> 6000
* DDLIB.REL            92570-16191  New   --> 6000
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* DDQ24.REL              92077-15024  5270  --> 6000
* DDQ24_GEN.MAC          92077-19025  New   --> 6000
* DDQ24_GEN.REL          92077-15025  5270  --> 6000
* DDQ30.MAC              92077-19020  New   --> 6000
* DDQ30.REL              92077-15020  5270  --> 6000
* DDQ30_GEN.MAC          92077-19021  New   --> 6000
* DDQ30_GEN.REL          92077-15021  5270  --> 6000
* DDRTR.LOD              92570-17037  New   --> 6000
* DDRTR.REL              92570-12019  New   --> 6000
* DL.LOD                 92570-17012  New   --> 6000
* DL.REL                 92570-16074  New   --> 6000
* DOWNLOAD.LOD           12990-17002  New   --> 6000
* DOWNLOAD.REL           12990-16022  New   --> 6000
* FCO                    92077-16808  5270  --> Deleted
  FMPSPLIT.MRG           92077-17306  5000
* FORMF                  92077-16810  5270  --> Deleted
* FOWN.LOD               92570-17069  New   --> 6000
* FOWN.ROOO              92570-16239  New   --> 6000
* FOWN.REL               92570-16237  New   --> 6000
* FPACK.LOD              92570-17036  New   --> 6000
* FPACK.REL              92570-16176  New   --> 6000
* FREES.COOO             92077-16770  5020  --> 6000
  FREES.LOD              92077-17011  5020
* FREES.REL              92077-16450  5020  --> 6000
* FST.LOD                92570-17023  New   --> 6000
* FST.REL                92570-12014  New   --> 6000
* FSTLIB.LIB             92570-12015  New   --> 6000
* FSTP.LOD               92570-17024  New   --> 6000
* FSTP.REL               92570-16113  New   --> 6000
* FVERI.LOD              92570-17035  New   --> 6000
* FVERI.REL              92570-16173  New   --> 6000
* GETFWID.REL            12990-16021  New   --> 6000
* GREP.LOD               92570-17020  New   --> 6000
* GREP.REL               92570-12013  New   --> 6000
* HPCRT.LIB              92077-12035  5270  --> 6000
  HPC_NR.LIB             92571-16010  3200
  HPC_NRE.LIB            92571-16013  3200
* HPMDM.FTN              92077-18938  5240  --> 6000
* HPMDM.REL              92077-16938  5240  --> 6000
  HPMDM_LIB.MAC          92077-18939  5270
  HPMDM_LIB.REL          92077-16939  5270
  HPMDM_TABLE.MAC        92077-18940  4010
  HPMDM_TABLE.REL        92077-16940  4010
  ID100.REL              92077-16885  5270
  ID101.REL              92077-16886  5270
  ID200.REL              92077-16996  5270
  ID400.REL              92077-16883  5270
* ID800.REL              92077-16887  5270  --> 6000
* ID801.REL              92077-16957  5270  --> 6000
* IDQ35.REL              92077-15019  5270  --> 6000
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* IDR37.REL              92077-15008  5020  --> 6000
* IDZ00.REL              92077-16968  5270  --> 6000
  IO.LOD                 92077-17027  5010
* IO.R000                92077-16761  5270  --> 6000
* IO.REL                 92077-16446  5270  --> 6000
  LAN8023.CMD            91830-17018  5020
* LI.LOD                 92077-17108  5020  --> 6000
* LI.R000                92077-16977  5010  --> 6000
* LI.REL                 92077-16646  5020  --> 6000
* LINDX.LOD              92570-17087  New   --> 6000
* LINDX.REL              92570-12029  New   --> 6000
* LINK.C000              92570-16007  New   --> 6000
* LINK.LOD               92570-17003  New   --> 6000
* LINK.R000              92570-16008  New   --> 6000
* LINKA.REL              92570-12001  New   --> 6000
* LINKB.REL              92570-12002  New   --> 6000
* LI_VMA.REL             92077-16986  5020  --> 6000
* LS.LOD                 92570-17082  New   --> 6000
* LS.REL                 92570-16270  New   --> 6000
* M92077                 92077-18998  5270  --> 6000
  MENU                   91830-17009  5000
  MERGE.LOD              92077-17023  5010
  MERGE.R000             92077-16980  5010
* MERGE.REL              92077-16431  5020  --> 6000
  MONITOR.LOD            92077-17257  5010
  MONITOR.REL            92077-12033  5020
* MPACK.LOD              92077-17309  5020  --> Deleted
* MPACK.LOD              92570-17034  New   --> 6000
* MPACK.R000             92570-16166  5270  --> 6000
* MPACK.REL              92570-16165  5270  --> 6000
  MSG.M                  92089-17005  2440
  NM.LOD                 91830-17024  5000
  NM.REL                 91830-16004  5000
  NM2.LOD                91830-17015  5000
  NM2.REL                91830-16005  5000
  NMGR.LOD               91830-17016  5000
  NMGR.REL               91830-16006  5000
  NMSTK.LIB              91830-12001  5000
* PASCAL.LIB             92833-16113  5000  --> 6000
  PASCAL_ERR.REL         92833-16125  5000
  PASCAL_ERR_ALT.REL     92833-16222  5000
* PASCAL_FMGR.LIB        92833-16107  5000  --> 6000
  PASCAL_FMGR_ALT.LIB    92833-16210  5000
* PRIMARY.ANS            92077-17326  5270  --> 6000
  READR.LOD              91830-17003  5000
  READR.REL              91830-16003  2544
* REV10UPGRADE.MIC       12990-16019  New   --> 6000
  RMTERM.FTN             92077-18942  5010
  RMTERM.REL             92077-16942  5010
* RPL_A900_REV4.REL      92077-15018  5270  --> 6000
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* RPL_A990.REL          92077-15030  5270  --> 6000
* RTEA1.CMD             92077-17194  5270  --> 6000
* RTEA2.CMD             92077-17195  5020  --> 6000
* SAM.LOD               92077-17131  5010  --> Deleted
* SAM.LOD               92570-17009  New   --> 6000
* SAMU.R000             92077-16988  5020  --> Deleted
* SAMU.R000             92570-16067  New   --> 6000
* SAMU.REL              92077-16734  5020  --> Deleted
* SAMU.REL              92570-16065  New   --> 6000
* SBIGLB.MRG            92570-17090  New   --> 6000
  SCOM.C000             92077-16985  5010
  SCOM.LOD              92084-17036  5010
* SCOM.REL              92077-16983  5020  --> 6000
* SEC1000.LIB           92078-12004  5020  --> Deleted
* SEC1000.LIB           92570-12011  New   --> 6000
  SETVCPSTRING.LOD      92570-17081  5270
  SETVCPSTRING.REL      92570-16268  5270
  SHSLB.LIB             92833-16220  5000
  SHSLB_ALT.LIB         92833-16221  5000
  SPORT.LOD             92077-17303  5010
  SPORT.REL             92077-16963  5020
* TF.LOD                92570-17043  New   --> 6000
* TF.REL                92570-16192  New   --> 6000
* TFLIB.LIB             92570-12021  New   --> 6000
* TINFO                 24998-16622  5270  --> 6000
* TINFR                 24998-16626  5270  --> 6000
* UPGRADE60.CMD         92570-17101  New   --> 6000
* VSCSI.LOD             92077-17322  5270  --> 6000
* VSCSI.REL             92077-15022  5270  --> 6000
  VSCSILIB.REL          92077-15023  5270
* WH.LOD                92077-17022  5010  --> Deleted
* WH.LOD                92570-17014  New   --> 6000
* WH.R000               92077-16760  5020  --> Deleted
* WH.R000               92570-16079  New   --> 6000
* WH.REL                92077-16110  5020  --> Deleted
* WH.REL                92570-16075  New   --> 6000
* WHSUB.REL             92077-16111  5020  --> Deleted
* XFMP.LIB              92077-12010  5270  --> 6000
  XMB.REL               92077-16864  5000
* ZLPBK.HEX             12016-16212  New   --> 6000
* ZRAMTST.HEX           12016-16211  New   --> 6000

  Directory: /RTE_A/HELP/

  ??.HELP               92077-17099  5020
  ADVLINK.HELP          92077-17258  5020
  AS.HELP               92077-17048  5020
  ASK.HELP              92077-17301  5020
  AT.HELP               92077-17049  5020
  BR.HELP               92077-17050  5020
```

```
* CALLM.HELP            92570-17078  New   --> 6000
* CALLS.HELP            92570-17077  New   --> 6000
* CD.HELP               92077-17051  5020  --> 6000
  CI.HELP               92077-17045  5020
* CL.HELP               92077-17052  5020  --> 6000
* CLOSE.HELP            92570-17029  New   --> 6000
* CN.HELP               92077-17053  5020  --> 6000
* CO.HELP               92077-17054  5020  --> 6000
* CR.HELP               92077-17055  5020  --> 6000
* CRDIR.HELP            92077-17056  5020  --> 6000
* CZ.HELP               92078-17085  New   --> 6000
* DC.HELP               92077-17057  5020  --> 6000
* DL.HELP               92077-17058  5020  --> Deleted
* DL.HELP               92570-17021  New   --> 6000
* DT.HELP               92077-17059  5020  --> 6000
* ECHO.HELP             92077-17117  5020  --> 6000
  EX.HELP               92077-17061  5020
* FOWN.HELP             92077-17063  5020  --> Deleted
* FOWN.HELP             92570-17070  New   --> 6000
* FPACK.HELP            92077-17065  5020  --> 6000
* FREES.HELP            92077-17062  5020  --> 6000
* FVERI.HELP            92077-17064  5020  --> 6000
  GO.HELP               92077-17066  5020
* GREP.HELP             92570-17019  New   --> 6000
  IF.HELP               92077-17118  5020
* IN.HELP               92077-17067  5020  --> 6000
* IO.HELP               92077-17068  5270  --> 6000
  IS.HELP               92077-17119  5020
* LI.HELP               92077-17069  5020  --> 6000
  LINDX.HELP            92077-17070  5020
* LINK.HELP             92077-17044  5020  --> 6000
* LS.HELP               92570-17083  New   --> 6000
  MACRO.HELP            92059-17003  5020
* MASK.HELP             92077-17071  5020  --> Deleted
* MASK.HELP             92570-17022  New   --> 6000
* MC.HELP               92077-17072  5020  --> 6000
* MERGE.HELP            92077-17073  5020  --> 6000
  METER.HELP            92077-17128  5020
* MO.HELP               92077-17074  5020  --> 6000
* MPACK.HELP            92077-17310  5020  --> 6000
* NOTIFY.HELP           92077-17319  5020  --> 6000
  OF.HELP               92077-17075  5020
* OWNER.HELP            92077-17076  5020  --> 6000
* POLL.HELP             92077-17324  New   --> 6000
  PR.HELP               92077-17077  5020
* PRINT.HELP            92077-17079  5020  --> 6000
  PROT.HELP             92077-17080  5020
* PS.HELP               92077-17120  5020  --> 6000
  PU.HELP               92077-17081  5020
* PWD.HELP              92077-17329  New   --> 6000
```

```
  RN.HELP                92077-17082  5020
* RP.HELP                92077-17083  5020  --> 6000
  RS.HELP                92077-17121  5020
* RU.HELP                92077-17084  5020  --> 6000
  SAM.HELP               92077-17129  5020
  SCOM.HELP              92077-17307  5020
  SET.HELP               92077-17123  5020
  SS.HELP                92077-17086  5020
  STACK.HELP             92077-17311  5020
* SZ.HELP                92077-17087  5020  --> 6000
  TM.HELP                92077-17088  5020
* TO.HELP                92077-17089  5020  --> 6000
  TR.HELP                92077-17090  5020
* UL.HELP                92077-17091  5020  --> 6000
* UNPU.HELP              92077-17092  5020  --> 6000
  UNSET.HELP             92077-17125  5020
  UP.HELP                92077-17093  5020
* VS.HELP                92077-17094  5020  --> 6000
  WD.HELP                92077-17095  5020
* WH.HELP                92077-17096  5020  --> 6000
  WHILE.HELP             92077-17126  5020
* WS.HELP                92077-17097  5020  --> 6000
* XQ.HELP                92077-17098  5020  --> 6000

  Directory: /RTE_A/MAIL/

  ADDRESSBOOK.MAIL       92511-17013  5020
* CDS_MAIL1K.LIB         92511-12006  5020  --> 6000
* DNS_RESOLVER.LIB       92511-12008  New   --> 6000
* DNS_SENDMAIL.LOD       92511-17021  New   --> 6000
* DNS_SENDMAIL.REL       92511-12009  New   --> 6000
* DNS_SMTP.LOD           92511-17022  New   --> 6000
* DNS_SMTP.REL           92511-12010  New   --> 6000
  DUMMYDS.REL            92077-15014  5020
* INETD.C000             92511-16040  5020  --> Deleted
* INETD.CONF             92511-17018  5020  --> Deleted
* INETD.HELP             92511-17019  5020  --> Deleted
* INETD.LOD              92511-17020  5020  --> Deleted
* INETD.REL              92511-12007  5020  --> Deleted
* INSTALLMAIL.CMD        92511-17014  5020  --> 6000
  M1KSS.LOD              92077-17320  5020
* M1KSS.REL              92077-15015  5020  --> 6000
* MAIL.C000              92511-17006  5020  --> 6000
* MAIL.CALL              92511-16029  5020  --> 6000
  MAIL.CF                92511-17015  5020
* MAIL.HELP              92511-17012  5020  --> 6000
  MAIL.LOD               92511-17001  5020
* MAIL.REL               92511-12001  5020  --> 6000
* MAIL1K.LIB             92511-12005  5020  --> 6000
* MAILSUBS.LIB           92511-12002  5020  --> 6000
```

*	NAMED.BOOT	92511-17026	New	--> 6000
*	NAMED.REL	92511-12013	New	--> 6000
	NEWMAIL.LOD	92511-17008	5020	
	NEWMAIL.R000	92511-16023	5020	
*	NEWMAIL.REL	92511-16020	5020	--> 6000
	NOTIFY.LOD	92077-17318	5020	
*	NOTIFY.REL	92077-15017	5020	--> 6000
	RDMSG.LOD	92511-17010	5020	
*	RDMSG.REL	92511-16021	5020	--> 6000
*	RESOLV.CONF	92511-17024	New	--> 6000
*	RESOLVER.FTNI	92511-18044	New	--> 6000
*	RMAIL.LIB	92511-12004	5020	--> 6000
	RMAIL.LOD	92511-17003	5020	
*	RMAIL.REL	92511-12003	5020	--> 6000
	SENDMAIL.LOD	92511-17007	5020	
*	SENDMAIL.REL	92511-16018	5020	--> 6000
*	SERVICES	92511-17017	5020	--> Deleted
*	SIG_NAMED.HELP	92511-17027	New	--> 6000
*	SIG_NAMED.REL	92511-16054	New	--> 6000
	SMTP.LOD	92511-17016	5020	
*	SMTP.REL	92511-16033	5020	--> 6000
*	UUDECODE.REL	92511-12011	New	--> 6000
*	UUENCODE.HELP	92511-17025	New	--> 6000
*	UUENCODE.REL	92511-12012	New	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
59310-90064	HP-IB In HP 1000 Comp. Syst. Users Man.	8/-	E1292
92059-90001	MACRO/1000 Reference Manual	3/-	E1292
92074-90001	EDIT/1000 User's Manual	3/-	E1292
92077-90002	RTE-A User's Manual	6/-	E1292
92077-90004	RTE-A Utilities Manual	5/-	E1292
92077-90007	RTE-A Programmer's Reference Manual	6/-	E1292
92077-90011	RTE-A Driver Reference Manual	6/-	E1292
92077-90013	RTE-A System Design Manual	5/-	E1292
92077-90019	RTE-A Driver Designer's Manual	3/1	E0790
92077-90020	RTE-A Quick Reference Guide	7/-	E1292
92077-90034	RTE-A System Gen. and Install. Manual	6/-	E1292
92077-90035	RTE-A LINK User's Manual	4/-	E1292
92077-90036	RTE-A Index and Glossary	5/-	E1292
92077-90037	Relocatable Libraries Reference Manual RTE-A/RTE-6/VM	5/-	E1292
92077-90038	RTE-A Primary System Software Install.	10/-	E1292
92077-90039	Getting Started With RTE-A	2/1	E0189
92077-90050	RTE-A Software Entry Point Directory	7/-	E1292
92077-90056	RTE-A System Manager's Manual	3/-	E1292
92511-90001	RTE-A Mail/1000 User's Manual	2/-	E1292

Media Part#	Media Option
92077-13305	022
24998-13328	022
92077-13312	022
24998-13327	022
92077-13311	022
92077-13413	041
92077-13439	042
92077-13469	044
92077-13470	044
92077-13471	044
92077-13472	044
92077-13473	044
92077-13474	044
92077-13475	044
92077-13476	044
92077-13477	044
92077-13478	044
92077-13479	044
92077-13480	044
92077-13481	044
92077-13482	044
92077-13483	044
92077-13484	044
92077-13485	044
92077-13486	044
92077-13487	044
92077-13416	044
92077-13418	044
92077-13498	044
92077-13401	044
92077-13403	044
92077-13405	044
92077-13450	044
92077-13451	044
92077-13452	044
92077-13454	044
92077-13455	044
92077-13457	044
92077-13511	050
92077-13512	051
92077-13520	061
24998-13540	061
92077-13512	061
24998-13539	061
92077-13519	061
92077-13605	AAH

92077-13601	AAH
92077-13603	AAH
24998-13613	AAH
24998-13614	AAH

3.12 +(92078A) RTE-A Virtual Code+ (VC+)

	Filename	Part Number	Rev	Change
	Directory: /VCPLUS/			
*	#CICDS	92078-17010	5010	--> Deleted
*	#CIXC	92078-17013	5000	--> Deleted
*	#LOGON	92078-17005	5000	--> Deleted
	#OUTPT	92078-17003	5000	
	#PATH	92078-17020	5000	
	#PROMT	92078-17007	5000	
	#RESTR	92078-17030	5000	
	#RINFO	92078-17014	5000	
	#SINFO	92078-17016	5000	
	#SMP	92078-17004	5000	
	#SP	92078-17001	5000	
	#SPGET	92078-17002	5000	
*	#WHOSD	92078-17019	5000	--> Deleted
*	$BGCDS	92078-12003	5270	--> Deleted
*	$CDS	92078-12001	5270	--> Deleted
*	$CDS	92570-12025	New	--> 6000
*	$CRCDS	92078-12002	5020	--> Deleted
*	$FCDS	24998-12011	5270	--> 6000
	$FNDLB	24998-12005	2227	
*	$LNLIB	92078-16029	2540	--> Deleted
*	$SCDS	92570-12030	New	--> 6000
*	%BGCDS	92570-16252	New	--> 6000
*	%CDSFH	92078-16001	5020	--> Deleted
*	%CDSFH	92570-16233	New	--> 6000
*	%CICDS	92078-16016	5270	--> Deleted
*	%CIXC	92078-16033	5020	--> Deleted
*	%CR000	92570-16159	New	--> 6000
*	%DL000	92570-16152	New	--> 6000
*	%ENVRN	92570-16279	New	--> 6000
*	%GR000	92078-16094	5010	--> Deleted
	%KI000	92078-16098	5000	
*	%LN000	92078-16028	5010	--> Deleted
*	%LOGON	92078-16013	5020	--> Deleted
	%OUTPT	92078-16005	5010	
*	%PATH	92078-16026	5010	--> Deleted

```
* %PATH                92570-16282  New   --> 6000
  %PM000               92078-16027  5010
  %PROMT               92078-16015  5020
  %PT000               92078-16024  5010
  %RE000               92078-16032  5000
  %RESTR               92078-16031  5000
  %RI000               92078-16096  5010
  %RINFO               92078-16019  5010
* %RPL40               92077-16949  5270  --> 6000
* %RPL41               92077-16948  5270  --> 6000
* %RPL42               92078-16103  5270  --> 6000
* %RPL43               92078-16104  5270  --> 6000
* %RPL63               92078-16009  5270  --> 6000
* %RPL72               92078-16010  5270  --> 6000
* %RPL73               92078-16011  5270  --> 6000
* %RPL91               92078-16012  5270  --> 6000
  %RT000               92078-16023  2540
  %SI000               92078-16095  5010
  %SINFO               92078-16020  5010
  %SL000               92078-16100  5000
  %SMP                 92078-16007  2540
  %SP                  92078-16002  5020
  %SP000               92078-16022  5020
  %SPGET               92078-16004  5020
* %SPOOL               92078-16003  5020  --> Deleted
* %SPOOL               92570-16027  New   --> 6000
  %SPRT                92078-16006  5020
* %WHOSD               92078-16025  2441  --> Deleted
* &BGCDS               92078-18030  5270  --> Deleted
* &CDSHD               92078-18017  5270  --> Deleted
* &CDSHD               92570-18253  New   --> 6000
* A92078               92078-17999  5270  --> 6000
* ALGRP.HLP            92078-17049  5000  --> Deleted
* ALGRP.HLP            92570-17047  New   --> 6000
* ALUSR.HLP            92078-17050  5000  --> Deleted
* ALUSR.HLP            92570-17048  New   --> 6000
* BGCDS.MRG            92078-17033  2540  --> Deleted
* BGCDS.MRG            92570-17072  New   --> 6000
* CHECK.REL            92078-16060  5000  --> Deleted
* CHECK.REL            92570-16033  New   --> 6000
* CI.FTN               92570-18073  New   --> 6000
* CI.LOD               92570-17013  New   --> 6000
* CI.R000              92570-16157  New   --> 6000
* CI.REL               92570-16073  New   --> 6000
  CIALOGOF.LOD         92078-17066  5000
  CIALOGOF.REL         92078-16105  5020
* CIENV.REL            92078-16131  New   --> 6000
* CIENVNC.REL          92570-16285  New   --> 6000
* CISUB.REL            92570-16072  New   --> 6000
* CIX.LOD              92570-17031  New   --> 6000
```

*	CIX.R000	92570-16160	New	--> 6000
*	CIX.REL	92570-16163	New	--> 6000
*	CMPLT.LOD	92570-17068	New	--> 6000
*	CMPLT.REL	92570-16235	New	--> 6000
*	CRLINKS.CMD	92570-17093	New	--> 6000
*	CROUT.LIB	92570-12010	New	--> 6000
	CVTUSR.REL	92078-16101	5000	
*	DDMAX.MAC	92570-18264	New	--> 6000
*	DDMAX.REL	92570-16264	New	--> 6000
*	DDRTR_CDS.LOD	92570-17039	New	--> 6000
*	DDRTR_CDS.REL	92570-12020	New	--> 6000
*	DL_CDS.LOD	92570-17033	New	--> 6000
*	DL_CDS.REL	92570-16153	New	--> 6000
*	GREP_CDS.LOD	92570-17085	New	--> 6000
*	GREP_CDS.REL	92570-12028	New	--> 6000
	GRLIB.LIB	92078-12006	5020	
*	GRUMP.LOD	92078-17039	5000	--> Deleted
*	GRUMP.LOD	92570-17046	New	--> 6000
*	GRUMP.R000	92570-16230	New	--> 6000
*	GRUMP.REL	92078-16090	5020	--> Deleted
*	GRUMP.REL	92570-12023	New	--> 6000
*	GRUMPAB.HLP	92078-17059	5000	--> Deleted
*	GRUMPAB.HLP	92570-17049	New	--> 6000
*	GRUMPCMDS.HLP	92078-17064	5000	--> Deleted
*	GRUMPCMDS.HLP	92570-17050	New	--> 6000
*	GRUMPEX.HLP	92078-17053	5000	--> Deleted
*	GRUMPEX.HLP	92570-17051	New	--> 6000
*	GRUMPHE.HLP	92078-17063	5000	--> Deleted
*	GRUMPHE.HLP	92570-17052	New	--> 6000
	GRUMPHLP.CMD	92078-17272	5020	
*	GRUMPKI.HLP	92078-17055	5000	--> Deleted
*	GRUMPKI.HLP	92570-17053	New	--> 6000
*	GRUMPPA.HLP	92078-17056	5000	--> Deleted
*	GRUMPPA.HLP	92570-17054	New	--> 6000
*	GRUMPRU.HLP	92078-17058	5000	--> Deleted
*	GRUMPRU.HLP	92570-17055	New	--> 6000
*	GRUMPTR.HLP	92078-17057	5000	--> Deleted
*	GRUMPTR.HLP	92570-17056	New	--> 6000
	HPC.LIB	92571-16009	3200	
	HPC_E.LIB	92571-16012	3200	
	KILLSES.LOD	92078-17061	5000	
	KILLSES.REL	92078-16097	5000	
*	LIGRP.HLP	92078-17043	5020	--> Deleted
*	LIGRP.HLP	92570-17057	New	--> 6000
*	LIUSR.HLP	92078-17044	5020	--> Deleted
*	LIUSR.HLP	92570-17058	New	--> 6000
*	LNS.LOD	92570-17097	New	--> 6000
*	LNS.REL	92570-16103	New	--> 6000
*	LOGON.LOD	92078-17005	New	--> 6000
*	LOGON.R000	92078-16028	New	--> 6000

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* LOGON.REL              92570-16076  New   --> 6000
* LOGONNLS.LIB           92078-16029  New   --> 6000
* LS_CDS.LOD             92570-17084  New   --> 6000
* LS_CDS.REL             92570-16271  New   --> 6000
* M92078.MNF             92078-17998  New   --> 6000
* NEGRP.HLP              92078-17051  5010  --> Deleted
* NEGRP.HLP              92570-17059  New   --> 6000
* NEUSR.HLP              92078-17052  5010  --> Deleted
* NEUSR.HLP              92570-17060  New   --> 6000
* PASCAL_CDS.LIB         92833-16104  5000  --> 6000
* PUGRP.HLP              92078-17045  5000  --> Deleted
* PUGRP.HLP              92570-17061  New   --> 6000
* PUUSR.HLP              92078-17046  5000  --> Deleted
* PUUSR.HLP              92570-17062  New   --> 6000
* REGRP.HLP              92078-17047  5000  --> Deleted
* REGRP.HLP              92570-17063  New   --> 6000
* RESIZE.REL             92570-16284  New   --> 6000
* REUSR.HLP              92078-17048  5000  --> Deleted
* REUSR.HLP              92570-17064  New   --> 6000
* RPL_A990_CDS.REL       92078-16130  5270  --> 6000
* SBGCDS.MRG             92570-17091  New   --> 6000
  SEC01.REL              92078-16039  5020
  SEC02.REL              92078-16040  5000
* SEC1000.LIB            92570-12011  New   --> 6000
  SEC1000CDS.LIB         92078-12005  5020
  SECCOMMAND.HLP         92078-17062  5010
* SECOS.REL              92078-16073  5010  --> Deleted
* SECOS.REL              92570-16032  New   --> 6000
  SECTL.LOD              92078-17035  5000
  SECTL.REL              92078-16057  5000
  SECTLMSG.CAT           92078-18085  5000
  SECTLMSG.REL           92078-16085  5000
* SECURITY.REL           92078-16102  5000  --> 6000
* SECURITY.TBL           92078-18102  5000  --> 6000
  SESLU.LOD              92078-17060  5000
  SESLU.REL              92078-16099  5000
  STGEN.LOD              92078-17036  5000
* STGEN.REL              92078-16059  5000  --> 6000
  STGENMSG.CAT           92078-18084  5000
  STGENMSG.REL           92078-16084  5000
* TOUCH.REL              92570-16263  New   --> 6000
* VC1.CMD                92078-17023  5270  --> 6000
* VC2.CMD                92078-17024  5010  --> 6000
* VCPTR.LOD              92078-17082  5020  --> Deleted
* VCPTRACE.REL           92078-16119  5020  --> Deleted
* WHOSD.LOD              92570-17066  New   --> 6000
* WHOSD.REL              92570-16234  New   --> 6000
```

```
  Directory: /VCPLUS/HELP/

* ALIAS.HELP            92078-17088  New   --> 6000
* CD.HELP               92570-17094  New   --> 6000
* CI.HELP               92078-17092  New   --> 6000
* CP.HELP               92570-17099  New   --> 6000
* FUNCTION.HELP         92078-17090  New   --> 6000
* FUNCTIONS.HELP        92078-17091  New   --> 6000
* GRUMP.HELP            92078-17054  5020  --> Deleted
* GRUMP.HELP            92570-17065  New   --> 6000
  KILLSES.HELP          92078-17041  5020
* LNS.HELP              92570-17018  New   --> 6000
* MV.HELP               92570-17098  New   --> 6000
  PATH.HELP             92078-17022  5020
* PWD.HELP              92570-17095  New   --> 6000
* RESIZE.HELP           92570-17074  New   --> 6000
  RINFO.HELP            92078-17015  5020
* RM.HELP               92570-17100  New   --> 6000
  SESLU.HELP            92078-17042  5020
* SET.HELP              92078-17086  New   --> 6000
  SINFO.HELP            92078-17017  5020
  SP.HELP               92078-17011  5020
* SYMLINK.HELP          92570-17017  New   --> 6000
* TOUCH.HELP            92570-17079  New   --> 6000
* UNALIAS.HELP          92078-17089  New   --> 6000
* UNSET.HELP            92078-17087  New   --> 6000
  USERS.HELP            92078-17009  5020
* VISUAL.HELP           92570-17102  New   --> 6000
* WHOSD.HELP            92078-17021  5020  --> Deleted
* WHOSD.HELP            92570-17067  New   --> 6000

  Directory: /VCPLUS/LANVCP/DOC/

  CONFIG.READ           92078-17067  5020
  INSTALL.READ          92078-17068  5020
  IPL_BUILD.READ        92078-17069  5020

  Directory: /VCPLUS/LANVCP/INSTALL/

  BOOT_VCP.CMD          92078-17072  5270
  INSTALL_VCP.CMD       92078-17073  5270

  Directory: /VCPLUS/LANVCP/LOD/

  DISPATCH.LOD          92078-17075  5020
  IPL_BUILD.LOD         92078-17077  5020
  IPL_EDIT.LOD          92078-17078  5020
  RMVCP.LOD             92078-17076  5020
  VCPMT.LOD             92078-17079  5270
  VCPMT1_0.LOD          92078-17080  5270
```

VCPMT2_0.LOD	92078-17081	5270	
Directory: /VCPLUS/LANVCP/REL/			
BUILDTBUF.REL	92078-16108	5020	
DISPATCH.REL	92078-16109	5020	
IPL_BUILD.REL	92078-16111	5270	
IPL_EDIT.REL	92078-16112	5270	
RMVCP.REL	92078-16110	5020	
TEST_PROCS.REL	92078-16126	5020	
TRY_RECOVER.REL	92078-16114	5020	
VCPMT_IPL_T.REL	92078-16115	5020	
* VCPMT_MAIN.REL	92078-16116	5270	--> 6000
* VCPMT_MAIN1_0.REL	92078-16127	5270	--> 6000
* VCPMT_MAIN2_0.REL	92078-16128	5270	--> 6000
VCPMT_TRACE.REL	92078-16118	5020	
VCP_DECLS.REL	92078-16120	5020	
VCP_DECLS1_0.REL	92078-16121	5020	
VCP_DECLS2_0.REL	92078-16122	5020	
VTIMR_SUB.REL	92078-16124	5270	

Manual Part#	Title	Edition/ Update	Print Date
92078-90001	RTE-A Virtual Code+ (VC+) Install. Guide	7/-	E1292

Media Part#	Media Option
92078-13301	022
92078-13501	050
92078-13502	051
92078-13601	AAH

3.13 +(92081A) Image/1000-II

Filename	Part Number	Rev	Change
Directory: /IMAGE2/			
%AR000	92081-16067	2540	
%BL000	92081-16068	2540	
%DB000	92081-16069	2540	
%EM000	92081-16070	2540	

```
  %LB000                92081-16071  2540
  %LO000                92081-16072  2540
  %QY000                92081-16073  5010
  %RB000                92081-16074  2540
  %RF000                92081-16075  5000
  %SA000                92081-16076  5000
  %ST000                92081-16077  2540
  %UT000                92081-16078  5000
  &ADD                  92081-18831  2540
  &CCRSH                92081-18833  2540
  &CRASH                92081-18836  2540
  &LOGGR                92081-18835  2540
  &SLOB                 92081-18832  2540
  &TRADE                92081-18834  2540
  >QY000                92081-17024  5010
* A92081                 92081-18999  5010  --> 6000
  AC_ZOO.UTL            92081-17190  2540
  BACKUP_TF.CMD         92081-17192  2540
  BACKUP_ZOO.UTL        92081-17185  2540
  BK_ZOO.UTL            92081-17191  2540
  CDS_DBMS.REL          92081-12023  5010
  CDS_DBMS1.CMD         92081-17175  2440
  CDS_DBMS2.CMD         92081-17176  2440
  CDS_DBMS3.CMD         92081-17177  2440
  CDS_LOCAL.REL         92081-12024  2440
  CDS_RDBA.REL          92081-12025  5010
  CDS_REMOT.REL         92081-12026  5010
  CMDZOO                92081-18837  2540
  CREATE_ZOO.CMD        92081-17183  2540
  DB6S1.CMD             92081-17027  2540
  DB6S2.CMD             92081-17028  2540
  DB6S3.CMD             92081-17029  2540
  DBARC.LOD             92081-17004  5000
  DBARC.REL             92081-16630  5000
  DBBLD.LIB             92081-12007  5000
  DBBLD.LOD             92081-17005  5000
  DBBLD.REL             92081-16013  5000
  DBCLN.LOD             92081-17017  5000
  DBCLN.REL             92081-16830  5000
  DBDS.LIB              92081-12008  5000
  DBDS.LOD              92081-17006  5000
  DBDS.REL              92081-16014  5000
  DBEMA.LIB             92081-12010  5010
  DBLOD.LOD             92081-17007  5000
  DBLOD.REL             92081-16670  5000
  DBMON.LIB             92081-12009  5000
  DBMON.LOD             92081-17008  5000
  DBMON.REL             92081-16015  5010
  DBMS.REL              92081-12001  5010
  DBMS1.CMD             92081-17021  2540
```

```
  DBMS2.CMD              92081-17022  2540
  DBMS3.CMD              92081-17023  2540
  DBRBR.LOD              92081-17009  5000
  DBRBR.REL              92081-16016  5000
  DBRFR.LIB              92081-16560  5000
  DBRFR.LOD              92081-17010  5000
  DBRFR.REL              92081-16017  5000
  DBRST.LOD              92081-17011  5000
  DBRST.REL              92081-16760  5000
  DBSPA.LOD              92081-17012  5000
  DBSPA.REL              92081-16770  5000
  DBSPL.LOD              92081-17013  5000
  DBSPL.REL              92081-16775  5000
  DBSTR.LOD              92081-17014  5000
  DBSTR.REL              92081-16765  5000
  DBULD.LOD              92081-17015  5000
  DBULD.REL              92081-16780  5000
  DBUPGRADE.LOD          92081-17182  5000
  DBUPGRADE.REL          92081-16060  2540
  DBUTL.HLP              92081-17025  5000
  DBUTL.LIB              92081-12011  5000
  DBUTL.LOD              92081-17016  5000
  DBUTL.REL              92081-16018  5010
  DSDB.LIB               92081-12006  2540
  IMAGE6.CMD             92081-17001  5010
  IMAGEA.CMD             92081-17002  5010
  INIT_IMAGE.UTL         92081-17184  2540
  LOCAL.REL              92081-12002  2440
  NEW_LOGSET.CMD         92081-17186  2540
  NEW_LOGSET.UTL         92081-17187  2540
  NO_DS.REL              92081-12005  2440
  OHNO_GOTTA_GO.UTL      92081-17197  2540
* PASCAL.LIB             92833-16113  5000  --> Deleted
* PASCAL_CDS.LIB         92833-16104  5000  --> Deleted
  QUERY.LIB              92081-12012  5010
  QUERY.LOD              92081-17018  5000
  QUERY.REL              92081-16019  5010
  RDBA.REL               92081-12003  5010
  RDBAM.REL              92081-16880  5000
  RDBAM6.LOD             92081-17179  5000
  RDBAMA.LOD             92081-17174  5010
  RDBAP.REL              92081-16020  2540
  RDBAP6.LOD             92081-17180  2540
  RDBAPA.LOD             92081-17181  5010
  RDBCLN.LOD             92081-17178  5000
  RDTB.REL               92081-16410  2440
  RECOVER_RB.CMD         92081-17193  5000
  RECOVER_RB.UTL         92081-17194  2540
  RECOVER_RF.CMD         92081-17195  2540
  RECOVER_RF.UTL         92081-17196  2540
```

	REMOT.REL	92081-12004	5010
	SAM6I.REL	92081-16022	2440
	SAMAI.REL	92081-16021	2440
	SHORT_DBOPN.REL	92081-16281	2540
*	SHSLB.LIB	92833-16220	5000 --> Deleted
	SHUTDOWN.UTL	92081-17189	2540
	STARTUP.UTL	92081-17188	2540
	USNUM.REL	92081-16577	2440
	ZOOBLD	92081-18838	2540
	ZOORT	92081-18839	2540

Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
92081-13301	022
92081-13501	050
92081-13502	051
92081-13601	AAH

3.14 (92083A) Profile Monitor

Filename	Part Number	Rev
Directory: /PROFILER/		
A92083.SNF	92083-18999	5000
CPLOT.REL	92083-16005	5000
CTRAC.LOD	92083-17003	5000
CTRAC.REL	92083-16003	5000
INSTALL.CMD	92083-17004	5000
PREPRO.REL	92083-16004	5000
PROFILELIB.LIB	92083-12002	5000

3.15 +(92084A) RTE-6/VM Operating System

Filename	Part Number	Rev	Change
Directory: /RTE_6/			
* !BCK10	92084-16736	5020	--> 6000
* !BCK11	92084-16736	5020	--> 6000
* !BCK12	92084-16736	5020	--> 6000
* !BCK13	92084-16736	5020	--> 6000
* !BCK14	92084-16736	5020	--> 6000
* !BCKO1	92084-16736	5020	--> 6000
* !BCKO2	92084-16736	5020	--> 6000
* !BCKO3	92084-16736	5020	--> 6000
* !BCKO4	92084-16736	5020	--> 6000
* !BCKO5	92084-16736	5020	--> 6000
* !BCKO6	92084-16736	5020	--> 6000
* !BCKO7	92084-16736	5020	--> 6000
* !BCKO8	92084-16736	5020	--> 6000
* !BCKO9	92084-16736	5020	--> 6000
!MTLDR	92067-16512	2126	
* "CMD	92084-17004	5010	--> 6000
* "EDIT	92074-17004	5020	--> 6000
"FCHLP	92084-17150	2226	
* "HELP	92084-17001	2540	--> 6000
"LUPRN	92084-17363	5010	
"MACLB	92059-18026	2326	
* #CI6	92084-17207	5010	--> 6000
* #CIX	92077-17105	5000	--> Deleted
* #CIX	92570-17032	New	--> 6000
#CIX6	92077-17247	2540	
* #CLSDS	92084-17254	2440	--> Deleted
* #DL	92077-17028	5000	--> Deleted
#DRREL	92084-17361	5000	
#DRRPL	92084-17362	5000	
* #DSRTR	92084-17212	5020	--> 6000
* #ED1K6	92074-17003	5020	--> 6000
#EXER	24398-17016	5010	
#EXER1	24398-17015	5010	
#FC6	92084-17151	5000	
#FORMC	92077-17034	5000	
#FORMT	92084-17029	2340	
* #FOWN	92077-17029	5000	--> Deleted
* #FPACK	92077-17012	5000	--> Deleted
#FSCON	92077-17014	5000	
* #FST	92077-17273	5000	--> Deleted
* #FSTP	92077-17274	5000	--> Deleted
* #FVERI	92077-17015	5020	--> Deleted

	#IS	92077-17112	5000	
	#LIF	92077-17033	5000	
	#LINDX	92084-17209	2440	
*	#LINK	92084-17210	2440	--> 6000
*	#MACRO	92059-17004	5000	--> 6000
	#MLLD6	92084-17189	5020	
	#OLDRE	92059-17002	2213	
	#PATH	92084-17270	2440	
*	#PRINO	92084-17265	2440	--> 6000
	#PRINT	92084-17266	2440	
	#READR	92084-17005	2340	
	#RT6GN	92084-17268	5000	
	#SAVER	92084-17006	2340	
	#SGMTR	92084-17106	2540	
	#SWTCH	92084-17039	5000	
	#SXREF	92084-17264	2440	
*	#TF	92077-17102	5000	--> Deleted
	#TRFAS	92084-17253	5020	
*	#WHOSD	92084-17269	2440	--> Deleted
	$6FCLB	92084-12035	2540	
*	$ACCLB	92068-12018	5020	--> 6000
*	$CRLIB	92077-12025	5020	--> Deleted
*	$CRLIB	92570-12017	New	--> 6000
	$DSCLB	92084-12062	5020	
*	$DTCLB	92084-12053	5020	--> 6000
*	$ED1K6	92074-12005	5020	--> 6000
	$EMCLB	92084-12002	2540	
	$FCL1	92084-12085	2540	
	$FCL2	92084-12086	2540	
	$FDSLB	24998-12004	5000	
	$FLIB	24998-12008	5010	
*	$FMP6	92084-12071	5270	--> 6000
	$FNDLB	24998-12005	2227	
	$FNEWF	24998-12010	5020	
	$FOLDF	24998-12009	5000	
*	$FST	92077-12036	5270	--> Deleted
	$FST6	92084-12088	4010	
	$IB6A	92084-12036	2540	
	$LDRLN	92084-12038	5020	
	$MATH	24998-12007	5010	
	$MLSLB	92084-12015	2122	
	$PRINT	92084-12077	5010	
*	$R6GNL	92084-12076	5000	--> 6000
	$RBLIB	92084-12018	5020	
	$RSLIB	92068-12006	2540	
	$SGMLB	92084-12084	5020	
*	$SYLB6	92084-12001	5020	--> 6000
*	$TFLIB	92077-12020	5000	--> Deleted
	$UTLIB	92084-12033	5010	
	$VCLIB	92084-12016	2227	

	$VLB6A	12829-12001	2226	
	$VLB6B	12829-12002	2214	
*	%$CNFG	92084-12011	5000	--> 6000
	%$DVTB	12792-16005	2341	
	%$DVTN	12792-16009	2341	
	%$LDR	92084-12013	2540	
*	%$TA32	92084-16604	2540	--> 6000
*	%$TB32	92084-16605	2441	--> 6000
*	%$TM33	92084-16652	2441	--> 6000
	%0DV05	92001-16028	2141	
	%4AUTR	92067-16118	2441	
	%4PVMP	92067-16001	1806	
*	%6DA37	92084-16593	2540	--> 6000
	%6DP43	92084-15056	5000	
*	%6DV37	92084-16592	2540	--> 6000
	%6MTM	92084-12029	2122	
*	%ACCTS	92067-16361	2540	--> 6000
	%ATRAN	92059-16013	2540	
*	%BMPG1	92084-12003	2540	--> 6000
*	%BMPG2	92084-12014	5270	--> 6000
	%BMPG3	92084-12004	5020	
*	%CI	92077-16445	5270	--> 6000
*	%CI000	92077-16737	5020	--> Deleted
*	%CI000	92570-16161	New	--> 6000
	%CISU6	92084-16945	5020	
*	%CIX	92077-16651	5020	--> Deleted
*	%CIX	92570-16164	New	--> 6000
	%CKTRM	92077-16748	2441	
*	%CL000	92077-16781	5010	--> Deleted
*	%CL000	92570-16155	New	--> 6000
*	%CLOAD	92084-16525	5010	--> 6000
*	%CLSDS	92077-16463	5010	--> Deleted
*	%COMPL	92084-16524	5010	--> 6000
*	%CR000	92077-16739	5010	--> Deleted
*	%CR000	92570-16159	New	--> 6000
	%CR6S1	92084-12024	5010	
*	%CR6S2	92084-12025	5270	--> 6000
	%CR6S3	92084-12026	5020	
	%CSERR	92084-12054	2122	
*	%CX000	92077-16738	5000	--> Deleted
*	%CX000	92570-16232	New	--> 6000
	%DBUGR	92084-12019	2441	
	%DDT05	12792-16011	2540	
	%DDV05	12792-16003	2540	
	%DDV12	12792-16004	2141	
	%DECAR	24306-16001	2540	
*	%DL	92077-16447	5020	--> Deleted
*	%DL000	92077-16759	5010	--> Deleted
*	%DL000	92570-16152	New	--> 6000
	%DRREL	92084-12009	5000	

	%DRRPL	92084-12010	2540	
	%DSCHD	09580-16126	2540	
*	%DSRTR	92077-16462	5270	--> Deleted
*	%DSRTR	92570-16257	New	--> 6000
	%DVA05	92084-16607	5020	
	%DVA12	92001-16020	1827	
	%DVA13	91200-16001	1649	
	%DVA32	92084-16708	2540	
	%DVB12	92062-16004	2540	
	%DVC12	92068-16110	5010	
	%DVC32	92084-16709	2540	
	%DVD12	92068-16129	5010	
	%DVM00	12792-16002	5000	
	%DVM33	92084-16650	5020	
	%DVM72	09580-16079	5010	
	%DVN00	12792-16008	2540	
	%DVN33	92084-16651	5020	
	%DVP32	92084-16710	5000	
	%DVR00	92084-16637	2441	
	%DVR12	92084-15028	1806	
	%DVR23	92202-16001	5020	
	%DVR31	92084-16712	2540	
	%DVR32	92084-16711	5000	
	%DVR33	92084-16713	2122	
*	%DVS23	92084-15050	5020	--> 6000
	%DVT00	12792-16010	5000	
	%ED000	92074-16055	5020	
*	%EDIT	92074-12008	5020	--> 6000
	%EXER	24398-16062	5020	
*	%EXER1	24398-16066	5020	--> 6000
	%FC0	92084-15042	2540	
*	%FC000	92077-16787	5010	--> 6000
	%FC1	92084-15043	2540	
	%FC2	92084-15044	2540	
	%FC3	92084-15045	2540	
	%FC4	92084-15046	5000	
	%FC5	92084-15047	2540	
	%FC6	92084-15048	2540	
	%FCM6	92084-12055	5000	
	%FFL	92077-16067	5000	
*	%FORMC	92077-16786	5010	--> 6000
*	%FORMT	92067-16554	5010	--> 6000
*	%FOWN	92077-16449	5010	--> Deleted
*	%FP000	92077-16768	5020	--> Deleted
*	%FP000	92570-16178	New	--> 6000
*	%FPACK	92077-16451	5020	--> Deleted
*	%FS000	92077-16904	5270	--> Deleted
*	%FS000	92570-16111	New	--> 6000
*	%FSCON	92077-16453	5000	--> 6000
*	%FST	92077-16906	5270	--> Deleted

*	%FSTP	92077-16907	5270	--> Deleted
*	%FV000	92077-16764	5020	--> Deleted
*	%FV000	92570-16174	New	--> 6000
*	%FVERI	92077-16454	5020	--> Deleted
*	%FW000	92077-16766	5010	--> Deleted
	%HELP	92084-12032	5010	
	%INDXR	92084-12006	5020	
	%IS	92077-16724	5010	
*	%LGTAT	92084-16166	5000	--> 6000
*	%LIF	92077-16638	5020	--> 6000
	%LINDX	92077-12026	5000	
*	%LINKA	92084-12070	5010	--> 6000
*	%LINKB	92084-16946	5010	--> 6000
*	%LINKC	92084-16947	5010	--> 6000
	%LINKD	92084-16948	5000	
	%LINKE	92084-16949	5000	
	%LP31	92062-16003	2441	
*	%LUPRN	92084-15061	5010	--> 6000
	%M*LIB	92084-16362	5020	
*	%MACR0	92059-16015	5000	--> 6000
*	%MACR1	92059-16016	5000	--> 6000
*	%MACR2	92059-16017	5000	--> 6000
*	%MACR3	92059-16018	5000	--> 6000
	%MACR4	92059-16019	5000	
*	%MACR5	92059-16020	5000	--> 6000
*	%MACR6	92059-16021	5000	--> 6000
*	%MACR7	92059-16022	5000	--> 6000
*	%MACRE	92059-16030	5000	--> 6000
*	%MACRL	92059-16029	5020	--> 6000
*	%MACRO	92059-16014	5020	--> 6000
	%MDMLB	92084-16958	5000	
	%MLLDA	92084-12064	5020	
	%MLLDB	92084-12063	5020	
	%MLLDR	92084-16361	5020	
	%MODEM	92077-16391	2540	
	%MSAFD	92064-16086	2002	
	%NSESN	92084-12023	5020	
*	%OLDRE	92059-16023	5000	--> 6000
*	%PATH	92078-16026	5010	--> 6000
	%PR000	92077-16714	5020	
	%PRINO	92077-16054	5020	
	%PRINT	92077-16009	5020	
	%PVM00	12792-16001	2034	
	%READR	92068-16054	2241	
*	%READT	92084-16568	2441	--> 6000
*	%RT6GN	92084-12007	5020	--> 6000
	%RT6VM	92084-16956	2341	
	%SAVER	92068-16053	5010	
	%SGMTR	92084-12034	5000	
*	%SMON1	92084-12021	5010	--> 6000

```
  %SMON2              92084-12022  5000
* %SPOL1              92084-12027  2122  --> 6000
  %SPOL2              92084-12028  5000
  %SRQ*P              59310-16005  1806
* %SSTCH              92084-12008  5010  --> 6000
* %SXREF              92084-12017  2441  --> 6000
  %T5IDM              92084-16528  2209
* %TF                 92077-16598  5000  --> Deleted
* %TRFAS              92077-16461  5010  --> 6000
  %TVLIB              91200-16002  1649
  %TVVER              91200-16004  1649
* %WHOSD              92078-16025  2441  --> Deleted
  %WHZAT              92084-16526  5000
* %WRITT              92084-16569  2302  --> 6000
  &$CMND              92084-18463  5000
* &$TA32              92084-18604  2540  --> 6000
* &$TB32              92084-18605  2441  --> 6000
* &$TM33              92084-18652  2441  --> 6000
  &4AUTR              92067-18456  2441
  &C*TAB              92084-18135  2340
* &CDSONOFF           92059-18024  5020  --> 6000
  &FFL                92077-18067  5000
  *BCKCT              92084-17158  2212
  *BCKMT              92084-17156  5010
* *DOSNP              92084-17360  5010  --> 6000
  *MLLD6              92084-17359  5000
  *PBULD              92084-17157  2121
  *STIME              92084-17100  2440
  =AVL2               92084-16943  2341
  =EXT                92084-16941  2540
  =FLAG               92084-16942  2540
  =FPORT              92084-16944  2341
* >FS000              92077-16905  5270  --> Deleted
* >FS000              92570-16112  New   --> 6000
* >TF000              92077-16763  5000  --> Deleted
* >TF000              92570-16194  New   --> 6000
* A92084              92084-17999  5020  --> 6000
  ASK.REL             92077-16964  5000
* BCKUP.LIB           92084-12050  5020  --> 6000
* BEGGT.LIB           92084-12051  5020  --> 6000
* CALLM.REL           92570-16262  New   --> 6000
* CALLS.LOD           92077-17317  New   --> 5020
* CALLS.REL           92077-12044  New   --> 6000
* CLOSE.LOD           92570-17028  New   --> 6000
* CLOSE.REL           92570-16154  New   --> 6000
  CMD.REL             92084-15063  5010
  COMM.REL            92084-16915  5020
* DL.LOD              92570-17012  New   --> 6000
* DL.REL              92570-16074  New   --> 6000
* DV800_0.REL         92084-15068  5270  --> 6000
```

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* DV800_1.REL           92084-15070  5270  --> 6000
  DVC00.REL             92084-15073  5010
* FORMT                 92084-16737  5020  --> 6000
* FOWN.LOD              92570-17069  New   --> 6000
* FOWN.R000             92570-16239  New   --> 6000
* FOWN.REL              92570-16237  New   --> 6000
* FPACK.LOD             92570-17036  New   --> 6000
* FPACK.REL             92570-16176  New   --> 6000
* FREES.C000            92077-16770  5020  --> 6000
  FREES.LOD             92077-17011  5020
* FREES.REL             92077-16450  5020  --> 6000
* FST.LOD               92570-17023  New   --> 6000
* FST.REL               92570-12014  New   --> 6000
* FSTLIB.LIB            92570-12015  New   --> 6000
* FSTP.LOD              92570-17024  New   --> 6000
* FSTP.REL              92570-16113  New   --> 6000
* FVERI.LOD             92570-17035  New   --> 6000
* FVERI.REL             92570-16173  New   --> 6000
  GENIX.LOD             92084-17370  5010
  GENIX.REL             92084-15064  5010
* INCI.CMD              92084-17262  5020  --> 6000
  KEYS.REL              92084-15065  5010
  KYDMP.REL             92084-15067  5010
* LI.LOD                92077-17108  5020  --> 6000
* LI.R000               92077-16977  5010  --> 6000
* LI.REL                92077-16646  5020  --> 6000
* LI_VMA.REL            92077-16986  5020  --> 6000
* LOAD6.CMD             92084-17279  5020  --> 6000
  M92084                92084-17998  5270
  MERGE.LOD             92077-17023  5010
  MERGE.R000            92077-16980  5010
* MERGE.REL             92077-16431  5020  --> 6000
  MONITOR.LOD           92077-17257  5010
  MONITOR6.REL          92077-12034  5020
* MPACK.LOD             92077-17309  5020  --> Deleted
* MPACK.LOD             92570-17034  New   --> 6000
* MPACK.R000            92570-16166  5270  --> 6000
* MPACK.REL             92570-16165  5270  --> 6000
  ONLIN.LIB             92084-12061  5020
* PASCAL.LIB            92833-16113  5000  --> 6000
  PASCAL_ERR.REL        92833-16125  5000
  PASCAL_ERR_ALT.REL    92833-16222  5000
* PASCAL_FMGR.LIB       92833-16107  5000  --> 6000
  PASCAL_FMGR_ALT.LIB   92833-16210  5000
* PCOPY                 92084-16740  5020  --> 6000
  PCOPY.LOD             92084-17152  5020
  PCOPY.REL             92084-16655  5020
* PRSTR                 92084-16739  5020  --> 6000
  PRSTR.LOD             92084-17154  5020
  PRSTR.REL             92084-16657  5020
```

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* PSAVE                 92084-16741  5020  --> 6000
  PSAVE.LOD             92084-17153  5020
  PSAVE.REL             92084-16656  5020
* PSPAR                 92084-16738  5020  --> 6000
  PSPAR.LOD             92084-17155  5020
  PSPAR.REL             92084-16700  5020
  SCOM.C000             92077-16985  5010
  SCOM.LOD              92084-17036  5010
* SCOM.REL              92077-16983  5020  --> 6000
  SEP.6                 92084-17205  2340
  SHSLB.LIB             92833-16220  5000
  SHSLB_ALT.LIB         92833-16221  5000
  SPORT.LOD             92077-17303  5010
  SPORT.REL             92077-16963  5020
* TF.LOD                92570-17043  New   --> 6000
* TF.REL                92570-16192  New   --> 6000
* TFLIB.LIB             92570-12021  New   --> 6000
* WHOSD.LOD             92570-17066  New   --> 6000
* WHOSD.REL             92084-15076  New   --> 6000
* XFMP.LIB              92077-12010  5270  --> 6000
  ]E^FFP                92084-17274  2440
  ]F^FFP                92084-17275  5000
  ]F^FPB                92084-17276  5000
  ]F^SIS                92084-17277  5000
  ]F^VIS                92084-17278  2440
  ]M^FFP                92084-17273  2440
  ]RT6OS                92084-17271  5010
  ]RT6VM                92084-17272  2440

  Directory: /RTE_6/HELP/

  ??.HELP               92077-17099  5020
  AG.HELP               92084-17213  5020
  AS.HELP               92084-17214  5020
  ASK.HELP              92077-17301  5020
  BL.HELP               92084-17215  5020
  BR.HELP               92084-17216  5020
* CALLM.HELP            92570-17078  New   --> 6000
* CALLS.HELP            92570-17077  New   --> 6000
* CD.HELP               92077-17051  New   --> 6000
  CI.HELP               92077-17045  5020
* CL.HELP               92077-17052  5020  --> 6000
* CLOSE.HELP            92570-17029  New   --> 6000
  CN.HELP               92084-17217  5020
* CO.HELP               92077-17054  5020  --> 6000
* CR.HELP               92077-17055  5020  --> 6000
* CRDIR.HELP            92077-17056  5020  --> 6000
  CU.HELP               92084-17218  5020
* DC.HELP               92077-17057  5020  --> 6000
* DL.HELP               92077-17058  5020  --> Deleted
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* DL.HELP              92570-17021  New   --> 6000
  DN.HELP              92084-17219  5020
* ECHO.HELP            92077-17117  5020  --> 6000
* EQ.HELP              92084-17220  5020  --> 6000
  EX.HELP              92084-17222  5020
* FOWN.HELP            92077-17063  5020  --> Deleted
* FOWN.HELP            92570-17070  New   --> 6000
* FPACK.HELP           92084-17223  5020  --> 6000
* FREES.HELP           92077-17062  5020  --> 6000
* FVERI.HELP           92077-17064  5020  --> 6000
  GO.HELP              92084-17224  5020
  HE.HELP              92084-17225  5020
  IF.HELP              92077-17118  5020
* IN.HELP              92084-17226  5020  --> 6000
  IS.HELP              92077-17119  5020
  IT.HELP              92084-17227  5020
* LI.HELP              92077-17069  5020  --> 6000
  LINDX.HELP           92084-17228  5020
  LINK.HELP            92084-17229  5020
* LU.HELP              92084-17230  5020  --> 6000
  MACRO.HELP           92059-17003  5020
* MASK.HELP            92077-17071  5020  --> Deleted
* MASK.HELP            92570-17022  New   --> 6000
* MC.HELP              92084-17232  5020  --> 6000
* MERGE.HELP           92077-17073  5020  --> 6000
* MO.HELP              92077-17074  5020  --> 6000
* MPACK.HELP           92077-17310  5020  --> 6000
* OF.HELP              92084-17233  5020  --> 6000
  ON.HELP              92084-17234  5020
* OWNER.HELP           92077-17076  5020  --> 6000
  PATH.HELP            92078-17022  5020
* POLL.HELP            92077-17324  New   --> 6000
  PR.HELP              92084-17236  5020
  PRINT.HELP           92084-17267  5020
  PROT.HELP            92084-17237  5020
  PU.HELP              92077-17081  5020
* PWD.HELP             92077-17329  New   --> 6000
  QU.HELP              92084-17238  5020
  RN.HELP              92077-17082  5020
  RP.HELP              92084-17239  5020
* RU.HELP              92084-17240  5020  --> 6000
  SCOM.HELP            92077-17307  5020
  SET.HELP             92077-17123  5020
  SL.HELP              92084-17241  5020
  SS.HELP              92084-17242  5020
  ST.HELP              92084-17243  5020
  STACK.HELP           92077-17311  5020
  SZ.HELP              92084-17244  5020
  TI.HELP              92084-17245  5020
  TM.HELP              92084-17246  5020
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*	TO.HELP	92084-17247	5020	--> 6000
	TR.HELP	92077-17090	5020	
	UL.HELP	92084-17248	5020	
*	UNPU.HELP	92077-17092	5020	--> 6000
	UNSET.HELP	92077-17125	5020	
	UP.HELP	92084-17249	5020	
	UR.HELP	92084-17250	5020	
*	VS.HELP	92077-17094	5020	--> 6000
	WD.HELP	92077-17095	5020	
	WH.HELP	92084-17251	5020	
	WHILE.HELP	92077-17126	5020	
*	WHOSD.HELP	92078-17021	5020	--> Deleted
*	WHOSD.HELP	92570-17067	New	--> 6000
	WS.HELP	92084-17252	5020	
*	XQ.HELP	92077-17098	5020	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
92084-90001	RTE-6/VM Index to Operating Sys. Manuals	2/-	E1283
92084-90002	Getting Started With RTE-6/VM	1/-	E1281
92084-90003	RTE-6/VM Quick Reference Guide	4/-	E0589
92084-90004	RTE-6/VM TerminaUser's Reference Man.	1/6	U0887
92084-90005	RTE-6/VM Programmer's Reference Manual	1/7	U0790
92084-90006	RTE-6/VM Batch and Spooling Ref. Man.	1/2	U0186
92084-90007	RTE-6/VM Utility Programs Reference Man.	4/1	U0790
92084-90008	RTE-6/VM Loader Reference Manual	1/4	U0790
92084-90009	RTE-6/VM System Manager's Reference Man.	4/2	U0790
92084-90010	RTE-6/VM On-Line Generator Ref. Man.	3/-	E0887
92084-90011	RTE-6/VM Software Installation Manual	3/2	U0790
92084-90014	RTE-6/VM Debug Subroutine Reference Man.	1/-	E1281
92084-90025	RTE-6/VM DVM33/DVN33 Reference Manual	1/5	U0887
92084-90026	RTE Driver DVA37 for HP59310B Intf. Bus	2/2	U0186
92084-90036	RTE-6/VM CI User's Manual	4/1	U0790
92084-90038	RTE-6/VM LINK User's Manual	2/2	U0887
92084-90039	RTE-6/VM Software Entry Point Directory	6/-	E0790
92084-90040	RTE Driver DVS23 for HP 7974A Mag. Tape	1/-	E0186
92084-90050	RTE-6/VM Serial Driver Reference Manual	1/1	U0790
5955-8867	HP 12792B 8-Chan. Asynch. Mux. User Man	1/1	U0185
5955-8868	HP 12792B 8-Chan. Asynch. Mux. Cnfg. Gd.	1/1	U0185
09580-93027	RTE Drvr DVM72 RTE Universal Intf. Drv.	3/1	U1283
12732-90001	RTE Drvr DVR33 For HP12732A/HP12733A Dsk.	3/-	E1079
29029-95001	RTE Drvr DVR00 For Mult.-Dev. Sys. Cntrl.	3/1	U1081
59310-90064	HP-IB In HP 1000 Comp. Sys. Users Man.	7/1	U1084
91200-90005	RTE Drvr DVA13 (for HP 91200B) Prog.Man.	2/-	E1179
92001-90015	RTE Drvrs DVR05/DVA05 HP 263X/264X Trm.	8/1	U0790
92059-90001	MACRO/1000 Reference Manual	2/-	E0887
92062-90003	2631A/2635A Printer Utility Subroutine	3/-	E0884
92062-90004	2608A Line Printer Driver DVB12	4/2	U0186

92068-90012	RTE-IVB Drivers DVR32 and DVA32	1/4	U1084
92068-90016	READR/SAVER Utility Reference Manual	2/-	E0782
92068-90022	DVC12 Line Printer Driver Ref. Man.	2/-	E0186
92074-90001	EDIT/1000 User's Manual	2/2	U0790
92077-90037	Relocatable Libraries Reference Manual	4/1	U0790
92200-93005	RTE Operating System Driver Writing Man.	7/-	E0887
92202-93001	RTE Drvr DVR23 For HP7970 Mag. Tape	5/-	E1084

The above list of manuals was supplied with RTE-6/VM software for the RTE-6/VM release 5270. We will be distributing the manuals for the release 6000 software later and will provide an update sheet with the correct manual information.

Media Part#	Media Option
92084-13307	022
92084-13527	050
92084-13528	051

3.16 (92101A) Basic/1000D

Filename	Part Number	Rev
#BASIC	92101-17001	2140
#RTETG	92101-17002	2140
%694BS	29102-16003	C
%A2313	29102-60016	B
%ALARM	92413-16007	B
%BAIN1	92101-16001	2140
%BAIN2	92101-16005	2213
%BAIN3	92101-16007	2213
%BAMLB	92101-12002	2140
%BASLB	92101-12003	2213
%BATG3	92101-16024	2013
%BATG4	92101-16023	2013
%BATGN	92101-16008	2013
%BBUFF	92101-16034	2140
%DTRAP	92101-16035	2140
%TSKSC	92101-16013	A
&BBUFF	92101-18034	2140

3.17 +(92131A) QDM/1000

	Filename	Part Number	Rev	Change
	Directory: /CATALOGS/			
	ARCHV.C000	92131-16442	5010	
	CHDB.C000	92131-16567	5010	
	CONSW.C000	92131-16564	5010	
	DATIN.C000	92131-16409	5010	
	DBMEN.C000	92131-16435	5010	
	DBSWT.C000	92131-16558	5010	
	DCTRY.C000	92131-16444	5010	
	FIX2.C000	92131-16437	5010	
	FIXER.C000	92131-16436	5010	
	GRPKG.C000	92131-16450	5010	
	MANRD.C000	92131-16410	5010	
	PDMON.C000	92131-16339	5010	
	PDSYS.C000	92131-16432	5010	
	PEDIT.C000	92131-16141	5010	
	PGPED.C000	92131-16439	5010	
	PULL.C000	92131-16448	5010	
	QCNFG.C000	92131-16438	5010	
	QDEDT.C000	92131-16446	5010	
	QDMDB.C000	92131-16447	5010	
	QDMPC.C000	92131-16467	5010	
	QDSUP.C000	92131-16440	5010	
	QERLB.C000	92131-16464	5010	
	RAWDT.C000	92131-16431	5010	
	RDB.C000	92131-16449	5010	
	RLIST.C000	92131-16445	5010	
	RMONT.C000	92131-16433	5010	
	RPGEN.C000	92131-16434	5010	
	SCHCR.C000	92131-16561	5010	
	SDOWN.C000	92131-16441	5010	
	VALID.C000	92131-16443	5010	
	Directory: /F1000/			
	FCOMM.REL	94250-16613	5010	
*	FLULB.LIB	94250-12523	5010	--> 6000
*	FLULB_CDS.LIB	94250-12723	5010	--> 6000
	FOBLK.REL	94250-16504	5010	
*	FOCLO_CDS.REL	94250-16705	5000	--> 6000
*	FOFLL.LIB	94250-12528	5010	--> 6000
*	FOFLL_CDS.LIB	94250-12728	5010	--> 6000
*	FOFRL.LIB	94250-12531	2520	--> 6000
*	FOFRL_CDS.LIB	94250-12731	2520	--> 6000

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  FOLCL.TXT              94250-17572  5010
* FOPLL_CDS.LIB          94250-12737  5010  --> 6000
* FOPRL.LIB              94250-12538  2520  --> 6000
* FOPRL_CDS.LIB          94250-12738  2520  --> 6000
  FRULB.LIB              94250-12546  2520
  FRULB_CDS.LIB          94250-12746  2520
  FUSE1.REL              94250-16506  2520
  FUSE4.REL              94250-16509  2520
  FUSE7.REL              94250-16512  2520
  FUSE9.REL              94250-16514  2520
  LFOAS_CDS.LOD          94250-17529  5000

  Directory: /QDM_RELOCS/

  !RXX                   92130-17240  5010
  #QDSS                  92131-17019  5010
  A92131                 92131-17999  5020
  ARC21.REL              92131-16092  5010
  ARC22.REL              92131-16093  5010
  ARC24.REL              92131-16095  5010
  ARC25.REL              92131-16096  5010
  ARC31.REL              92131-16100  5010
  ARC32.REL              92131-16101  5010
  ARC33.REL              92131-16102  5010
  ARC34.REL              92131-16103  5010
  ARC35.REL              92131-16104  5010
  ARCH0.REL              92131-16098  5010
  ARCH1.REL              92131-16099  5010
  ARCHV.LOD              92131-17131  5000
  ARCHV.REL              92131-16097  5010
  ARCLB.LIB              92131-12020  5010
  ARCUT.REL              92131-16106  5010
  CHDB.LOD               92131-17192  5010
  CHDB.REL               92131-16566  5010
  CONSW.LOD              92131-17191  5010
  CONSW.REL              92131-16563  5010
  DAINI.REL              92131-16451  5010
  DATOA.REL              92131-16156  5010
  DATOB.REL              92131-16157  5010
  DATOC.REL              92131-16158  5020
  DATOE.REL              92131-16160  5020
  DATOF.REL              92131-16161  5020
  DATOH.REL              92131-16394  5010
  DATIN.LOD              92131-17201  5000
  DATIN.REL              92131-16155  5010
  DATLB.LIB              92131-12002  5020
  DATUT.REL              92131-16154  5020
  DBMEN.LOD              92131-17002  2518
  DBMEN.REL              92131-16007  5010
  DBMSR.LOD              92131-17003  2620
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DBMSR.REL	92131-16008	5010
DBSWT.LOD	92131-17182	5010
DBSWT.REL	92131-16557	5010
DCT0A.REL	92131-16146	5010
DCT0B.REL	92131-16147	5010
DCT0C.REL	92131-16148	5010
DCT0D.REL	92131-16149	5020
DCT0E.REL	92131-16150	5010
DCTRY.LOD	92131-17037	2518
DCTRY.REL	92131-16115	5010
DCTUT.REL	92131-16151	5010
DIRCR.LOD	92131-17279	2518
DIRCR.REL	92131-16406	5010
FIX2.LOD	92131-17027	2518
FIX2.REL	92131-16021	5020
FIXER.LOD	92131-17102	5000
FIXER.REL	92131-16057	5010
GETV.CMD	92131-17318	5010
GP2225.LOD	92131-17179	5010
GP2225.REL	92131-16478	5010
GP239X.LOD	92131-17122	5010
GP2563.LOD	92131-17180	5010
GP2563.REL	92131-16480	5010
GP262X.LOD	92131-17066	5010
GP262X.REL	92131-16454	5010
GP264X.LOD	92131-17077	5010
GP264X.REL	92131-16455	5010
GP268X.LOD	92131-17181	5010
GP268X.REL	92131-16482	5010
GP7470.LOD	92131-17090	5010
GP7470.REL	92131-16457	5010
GP7475.LOD	92131-17091	5010
GP7475.REL	92131-16458	5010
GP7550.LOD	92131-17081	5010
GP7550.REL	92131-16456	5010
GP758X.LOD	92131-17093	5010
GP758X.REL	92131-16459	5010
GP9872.LOD	92131-17094	5010
GP9872.REL	92131-16460	5010
GP987X.LOD	92131-17095	5010
GP987X.REL	92131-16461	5010
GPLB4.LIB	92131-12007	5000
GRFMT.LIB	92131-12006	5000
GRLOC.LOD	92131-17063	5000
GRLOC.REL	92131-16453	5010
GRP0A.REL	92131-16281	5010
GRP0B.REL	92131-16282	5010
GRP0C.REL	92131-16283	5010
GRP0D.REL	92131-16289	5010
GRP0E.REL	92131-16290	5010

GRP0F.REL	92131-16296	5010
GRP0G.REL	92131-16298	5010
GRP0H.REL	92131-16304	5010
GRP0I.REL	92131-16305	5010
GRP0J.REL	92131-16311	5010
GRP0K.REL	92131-16312	5010
GRP0L.REL	92131-16555	5010
GRP0M.REL	92131-16513	5010
GRP10C.REL	92131-16500	5010
GRP10E.REL	92131-16511	5010
GRP10G.REL	92131-16553	5010
GRP10I.REL	92131-16494	5010
GRP10K.REL	92131-16488	5010
GRP10M.REL	92131-16526	5010
GRP1C.REL	92131-16284	5010
GRP1E.REL	92131-16291	5010
GRP1F.REL	92131-16297	5010
GRP1G.REL	92131-16299	5010
GRP1I.REL	92131-16306	5010
GRP1K.REL	92131-16313	5010
GRP1L.REL	92131-16507	5010
GRP1M.REL	92131-16546	5010
GRP2C.REL	92131-16285	5010
GRP2E.REL	92131-16292	5010
GRP2G.REL	92131-16300	5010
GRP2I.REL	92131-16307	5010
GRP2K.REL	92131-16314	5010
GRP2M.REL	92131-16533	5010
GRP3C.REL	92131-16286	5010
GRP3E.REL	92131-16293	5010
GRP3G.REL	92131-16301	5010
GRP3I.REL	92131-16308	5010
GRP3K.REL	92131-16315	5010
GRP3M.REL	92131-16517	5010
GRP4C.REL	92131-16287	5010
GRP4E.REL	92131-16294	5010
GRP4G.REL	92131-16302	5010
GRP4I.REL	92131-16309	5010
GRP4K.REL	92131-16316	5010
GRP4M.REL	92131-16538	5010
GRP5C.REL	92131-16288	5010
GRP5E.REL	92131-16295	5010
GRP5G.REL	92131-16303	5010
GRP5I.REL	92131-16310	5010
GRP5K.REL	92131-16317	5010
GRP5M.REL	92131-16528	5010
GRP6C.REL	92131-16113	5010
GRP6E.REL	92131-16180	5010
GRP6G.REL	92131-16319	5010
GRP6I.REL	92131-16326	5010

GRP6K.REL	92131-16334	5010
GRP6M.REL	92131-16536	5010
GRP7C.REL	92131-16335	5010
GRP7E.REL	92131-16336	5010
GRP7G.REL	92131-16337	5010
GRP7I.REL	92131-16338	5010
GRP7K.REL	92131-16343	5010
GRP7M.REL	92131-16530	5010
GRP8C.REL	92131-16496	5010
GRP8E.REL	92131-16503	5010
GRP8G.REL	92131-16541	5010
GRP8I.REL	92131-16490	5010
GRP8K.REL	92131-16484	5010
GRP8M.REL	92131-16515	5010
GRP9C.REL	92131-16498	5010
GRP9E.REL	92131-16509	5010
GRP9G.REL	92131-16551	5010
GRP9I.REL	92131-16492	5010
GRP9K.REL	92131-16486	5010
GRP9M.REL	92131-16521	5010
GRPER.REL	92131-16280	5010
GRPIN.REL	92131-16469	5010
GRPKG.LOD	92131-17227	5000
GRPKG.REL	92131-16279	5010
GRPLB.LIB	92131-12013	5010
GS7470.LOD	92131-17166	5010
GS7475.LOD	92131-17178	5010
GS7550.LOD	92131-17157	5010
GS758X.LOD	92131-17165	5010
LINK_QDM.CMD	92131-17228	5010
LOGEA.REL	92131-16085	5010
MANRD.LOD	92131-17089	2518
MANRD.REL	92131-16181	5010
PDM01.REL	92131-16003	5010
PDM02.REL	92131-16004	5010
PDMON.LOD	92131-17001	5000
PDMON.REL	92131-16002	5010
PDMUT.REL	92131-16005	5010
PDSYS.LOD	92131-17004	5010
PDSYS.REL	92131-16010	5010
PED00.REL	92131-16032	5010
PED01.REL	92131-16037	5010
PED02.REL	92131-16344	5010
PED03.REL	92131-16345	5010
PED04.REL	92131-16038	5010
PED05.REL	92131-16346	5010
PED06.REL	92131-16039	5010
PED07.REL	92131-16352	5010
PEDIT.LOD	92131-17026	2518
PEDIT.REL	92131-16044	5010

PEDIT_PASCLIB.REL	92131-16042	5010
PEDUT.REL	92131-16351	5010
PGPE1.REL	92131-16015	5010
PGPE2.REL	92131-16016	5020
PGPE3.REL	92131-16017	5010
PGPED.LOD	92131-17010	5000
PGPED.REL	92131-16014	5010
PRIME.REL	92131-16145	5000
PULL.LOD	92131-17132	2518
PULL.REL	92131-16081	5010
PULLX.LIB	92131-12019	5010
PULUT.REL	92131-16090	5010
Q1PANS	92131-17282	5000
QASCI.REL	92131-16191	5000
QCG00.REL	92131-16019	5010
QCG01.REL	92131-16020	5010
QCG02.REL	92131-16397	5010
QCG03.REL	92131-16022	5010
QCG04.REL	92131-16023	5010
QCG05.REL	92131-16024	5010
QCG07.REL	92131-16026	5010
QCG08.REL	92131-16027	5010
QCG09.REL	92131-16028	5010
QCG10.REL	92131-16029	5010
QCG11.REL	92131-16030	5010
QCG12.REL	92131-16031	5010
QCG14.REL	92131-16033	5010
QCG15.REL	92131-16034	5010
QCG16.REL	92131-16035	5010
QCG17.REL	92131-16036	5010
QCG18.REL	92131-16396	5010
QCG21.REL	92131-16040	5010
QCG22.REL	92131-16041	5010
QCHEK.LOD	92131-17158	2518
QCHEK.REL	92131-16123	5010
QCMSG.REL	92131-16329	5000
QCNFG.LOD	92131-17092	2518
QCNFG.REL	92131-16018	5010
QCNLB.LIB	92131-12010	5010
QDE01.REL	92131-16429	5010
QDE02.REL	92131-16430	5010
QDEDT.LOD	92131-17506	2620
QDEDT.REL	92131-16428	5010
QDMDB.LOD	92131-17208	5000
QDMDB.REL	92131-16140	5010
QDMPC.LOD	92131-17127	5010
QDMPC.REL	92131-16466	5010
QDRET.REL	92131-16424	5010
QDSS0.REL	92131-16052	5010
QDSS1.REL	92131-16053	5010

QDSS2.REL	92131-16054	5010
QDSS3.REL	92131-16055	5010
QDSS4.REL	92131-16417	5010
QDSUP.LOD	92131-17104	5000
QDSUP.REL	92131-16051	5010
QERLB.LIB	92131-12011	5010
QERLC.LIB	92131-12014	5010
RAWDT.LOD	92131-17204	2518
RAWDT.REL	92131-16179	5020
RDB.LOD	92131-17159	5010
RDB.REL	92131-16110	5010
RDB00.REL	92131-16086	5010
RDB01.REL	92131-16111	5010
RDB02.REL	92131-16112	5010
RDB03.REL	92131-16114	5010
RDB04.REL	92131-16116	5010
RDB05.REL	92131-16118	5010
RDB06.REL	92131-16120	5010
RDB07.REL	92131-16122	5010
RDB08.REL	92131-16124	5010
RDB09.REL	92131-16184	5010
RDB10.REL	92131-16197	5010
RDB11.REL	92131-16117	5010
RDB12.REL	92131-16399	5010
RDB20.REL	92131-16452	5010
RDBLB.LIB	92131-12001	5010
RDLOG.REL	92131-16185	5010
RLASC.REL	92131-16395	5010
RLIST.LOD	92131-17176	2518
RLIST.REL	92131-16421	5010
RMONT.LOD	92131-17203	2603
RMONT.REL	92131-16174	5010
RMT0A.REL	92131-16175	5010
RMT0B.REL	92131-16176	5010
RMT0C.REL	92131-16177	5010
RMT0D.REL	92131-16178	5010
RMTLB.LIB	92131-12008	5010
RMTUT.REL	92131-16173	5010
ROLL.LOD	92131-17209	2620
ROLL.REL	92131-16142	5000
ROLLV.LOD	92131-17177	2518
ROLLV.REL	92131-16422	5010
ROLL_LU.LOD	92131-17500	2518
ROLL_LU.REL	92131-16425	5010
RPG0A.REL	92131-16165	5020
RPG0B.REL	92131-16166	5010
RPG0C.REL	92131-16167	5010
RPG0D.REL	92131-16168	5010
RPG0E.REL	92131-16169	5020
RPG0F.REL	92131-16170	5010

RPGEN.LOD	92131-17202	5010
RPGEN.REL	92131-16164	5010
RPGL1.LIB	92131-12012	5000
RPGLB.LIB	92131-12009	5020
RPGUT.REL	92131-16163	5010
SCHCR.LOD	92131-17190	5010
SCHCR.REL	92131-16560	5010
SDOWN.LOD	92131-17130	5000
SDOWN.REL	92131-16073	5010
SDWN0.REL	92131-16074	5010
SDWN1.REL	92131-16075	5010
SDWN2.REL	92131-16076	5010
SDWN3.REL	92131-16077	5010
VALID.LOD	92131-17175	2518
VALID.REL	92131-16423	5010
VERFY.CMD	92131-17317	5010
WELCOM	92131-17233	5000

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GRL02	92131-17009	5000
GRL03	92131-17015	5000
GRL04	92131-17023	5000
GRL05	92131-17030	5000
GRL06	92131-17231	5010

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CAFT01	92131-17473	5010
CAQA01	92131-17466	5010
SAFT01	92131-17475	5010
SARW01	92131-17478	5010

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ABUTE	92131-17252	5010
ARCHIV	92131-17253	5010
COMNTS	92131-17254	5010
DATES	92131-17255	5010
ENEXTS	92131-17256	5010
ENTRYS	92131-17257	5010
GLIST	92131-17258	5010
GROUPS	92131-17259	5010
LOG	92131-17260	5010
MODE1	92131-17261	5010
MODE2	92131-17262	5010
NODES	92131-17263	5010
PARMD	92131-17264	5010
PARMS	92131-17265	5010
PFILES	92131-17266	5010
PMKEYS	92131-17267	5010
PROCS	92131-17268	5010
QDSS	92131-17278	5010
RUNS	92131-17269	5010
SMALL	92131-17270	5010
STATNS	92131-17271	5010
STEPS	92131-17272	5010
UNITS	92131-17273	5010
VSETS	92131-17274	5010
WATD	92131-17275	5010
WATS	92131-17276	5010
WORST	92131-17277	5010

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SKASBG	92131-17468	2518
SKDESC	92131-17118	5000
SKEND	92131-17465	2518
SKFT01	92131-17119	5000
SKFTBG	92131-17471	2518
SKIC01	92131-17120	5000
SKQABG	92131-17464	2518
SKRWBG	92131-17477	2518
SKSA01	92131-17476	2518
SKWSBG	92131-17469	2518

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CPFT01	92131-17472	5010
SPAUTO	92131-17308	5010
SPFT01	92131-17474	5010
SPQA01	92131-17467	5010
SPWS01	92131-17470	5010

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AUTOT.LOD	92131-17240	5010
AUTOT.PAS	92131-18571	5010
AUTOT.REL	92131-16571	5010
QDM.BAT	92131-17234	5010
QDM.SLK	92131-17235	5010
QDM_CHART.CHA	92131-17236	5010

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ANBC01	92131-17492	5000
ANHG01	92131-17489	5000
ANPC01	92131-17494	5000
ANSG01	92131-17490	5000
ANXB01	92131-17491	5000
ERBC01	92131-17485	5000
ERHG01	92131-17482	5000
ERPC01	92131-17487	5000
ERSG01	92131-17483	5000
ERXB01	92131-17484	5000
RPABUT	92131-17462	5000
RPBARC	92131-17320	5010
RPCFIG	92131-17463	5000
RPCNTL	92131-17237	5000
RPDIF.REP	92131-17232	5010
RPFT01	92131-17456	5000
RPFT02	92131-17457	5000
RPFTAB	92131-17106	5000

RPHIST	92130-17234	5000
RPLOG	92131-17460	5000
RPPARM	92131-17461	5000
RPQA01	92131-17451	5000
RPQA02	92131-17452	5000
RPQDM	92131-17098	5000
RPRW01	92131-17458	5000
RPSCAT	92130-17236	5000
RPSY01	92131-17459	5000
RPTAB	92130-17235	5000
RPTRCK	92131-17239	5000
RPWS01	92131-17453	5000
RPWS02	92131-17454	5000
RPWS03	92131-17455	5000
RPWSXR	92131-17309	5010

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VAL01	92131-17479	2518
VAL02	92131-17480	2518
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Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
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92131-13502	051

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Filename	Part Number	Rev
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CLEAN_.CMD	92571-17007	3200
INSTALL_CC.CMD	92571-17006	3200
Directory: /C1000/ETC/		
C1000.SNF	92571-17999	3200

CCSC.MSGS	92571-17008	3200

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ASSERT.H	92571-18029	3200
CTYPE.H	92571-18014	3200
CTYPE.HE	92571-18030	3200
ERRNO.H	92571-18013	3200
FLOAT.H	92571-18028	3200
LIMITS.H	92571-18019	3200
LOCALE.H	92571-18016	3200
LOCALE.HE	92571-18031	3200
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NR_VARGS.H	92571-18025	3200
RTE.H	92571-18021	3200
RTE.HE	92571-18032	3200
SETJMP.H	92571-18018	3200
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STDARG.H	92571-18020	3200
STDARG.HE	92571-18034	3200
STDDEF.H	92571-18012	3200
STDEFS.H	92571-18023	3200
STDIO.H	92571-18027	3200
STDIO.HE	92571-18035	3200
STDLIB.H	92571-18015	3200
STDLIB.HE	92571-18036	3200
STRING.H	92571-18022	3200
STRING.HE	92571-18037	3200
TIME.H	92571-18026	3200
TIME.HE	92571-18038	3200
VARARGS.H	92571-18017	3200

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CC.LIB	92571-16004	3200
CC2.LIB	92571-16006	3200
CC3.LIB	92571-16007	3200
CC4.LIB	92571-16008	3200
CCOMP1.LIB	92571-16001	3200
CCOMP2.LIB	92571-16002	3200
CCOMP3.LIB	92571-16003	3200
CCOMP4.LIB	92571-16036	3200
CC_E.LIB	92571-16005	3200
HPC.LIB	92571-16009	3200
HPC_E.LIB	92571-16012	3200
HPC_MEF.LIB	92571-16011	3200
HPC_MEFE.LIB	92571-16014	3200
HPC_NR.LIB	92571-16010	3200
HPC_NRE.LIB	92571-16013	3200

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CC.LOD	92571-17001	3200
CC2.LOD	92571-17003	3200
CC3.LOD	92571-17004	3200
CC4.LOD	92571-17005	3200
CC_E.LOD	92571-17002	3200

Directory: /C1000/MRG/

LIB.MRG	92571-18040	3200
LIB_E.MRG	92571-18043	3200
LIB_MEF.MRG	92571-18042	3200
LIB_MEFE.MRG	92571-18045	3200
LIB_NR.MRG	92571-18041	3200
LIB_NRE.MRG	92571-18044	3200

Directory: /C1000/REL/

CC.REL	92571-16021	3200
CC2.REL	92571-16023	3200
CC3.REL	92571-16024	3200
CC4.REL	92571-16025	3200
CC_E.REL	92571-16022	3200
CONFIG.REL	92571-16027	3200
DEF_ALLOC.REL	92571-16030	3200
EDEF_ALLOC.REL	92571-16031	3200
EXIT.REL	92571-16032	3200
EXIT_E.REL	92571-16033	3200
EXIT_NR.REL	92571-16034	3200
EXIT_NRE.REL	92571-16035	3200
G_SYMTAB.REL	92571-16029	3200
INSTALL_HEAP.REL	92571-16028	3200
SISID.REL	92571-16026	3200

Directory: /C1000/SRC/

ARG_BUF.C	92571-18003	3200
CONFIG.C	92571-18011	3200
G_SYMTAB.C	92571-18001	3200
HEAP_LOCATION.C	92571-18004	3200
INSTALL_HEAP.C	92571-18002	3200
LDATA.C	92571-18010	3200
MSSTMT.C	92571-18039	3200
UNIXIO.C	92571-18005	3200
_CPARSE.C	92571-18007	3200
_CUPARSE.C	92571-18008	3200
_STARTUP.C	92571-18006	3200
_UPARSE.C	92571-18009	3200

3.19 +(92833A) Pascal/1000 (RTE-6/VM, RTE-A)

	Filename	Part Number	Rev	Change
	Directory: /PASCAL/			
*	A92833	92833-17998	5010	--> 6000
	CONFIG_GUIDE.DOC	92833-17085	5000	
	Directory: /PASCAL/CMP/			
	ALB.REL	92833-16061	5000	
	CDSOF.REL	92833-16063	5000	
	CDSON.REL	92833-16064	5000	
	DCT.REL	92833-16067	5000	
	PASCAL.ERR	92833-17021	5000	
	Directory: /PASCAL/CMP/CDS/			
	CAT.REL	92833-16171	5000	
	DATE.REL	92833-16219	5010	
	DBG.REL	92833-16172	5000	
	DCL.REL	92833-16173	5010	
	DLB.REL	92833-16174	5010	
	ELB.REL	92833-16175	5000	
	ERW.REL	92833-16176	5000	
	EV1.REL	92833-16177	5000	
	EV2.REL	92833-16178	5000	
	EV3.REL	92833-16179	5000	
	EV4.REL	92833-16180	5000	
	EV5.REL	92833-16181	5000	
	EXP.REL	92833-16182	5000	
	FLD.REL	92833-16183	5000	
	INT.REL	92833-16184	5000	
	MAN.REL	92833-16185	5000	
	MEX.REL	92833-16186	5010	
	MIM.REL	92833-16187	5000	
	MNU.REL	92833-16188	5000	
	NFS.REL	92833-16189	5000	
	OPT.REL	92833-16190	5000	
	PASCAL.REL	92833-16191	5000	
	PASCAL_C.LOD	92833-17048	5000	
	PASCOMP_C.LOD	92833-17045	5000	
	PRG.REL	92833-16192	5000	
	SAMER.REL	92833-16208	5000	
	SCN.REL	92833-16193	5000	
	SG00P.REL	92833-16194	5000	
	SG01P.REL	92833-16195	5000	

SLB.REL	92833-16196	5000
SSL.REL	92833-16197	5000
STF.REL	92833-16198	5000
STM.REL	92833-16199	5000
STP.REL	92833-16200	5000
SUM.REL	92833-16226	5000
TLM.REL	92833-16201	5010
ULB.REL	92833-16202	5000
UNT.REL	92833-16203	5000
UTL.REL	92833-16204	5000
XFM.REL	92833-16205	5000

Directory: /PASCAL/CMP/STD/

CAT.REL	92833-16062	5000
DATE.REL	92833-16229	5010
DBG.REL	92833-16065	5000
DCL.REL	92833-16066	5010
DCV.REL	92833-16227	5000
ERW.REL	92833-16071	5000
ETC.LIB	92833-16223	5000
EV1.REL	92833-16072	5000
EV2.REL	92833-16073	5000
EV3.REL	92833-16074	5000
EV4.REL	92833-16075	5000
EV5.REL	92833-16076	5000
EXP.REL	92833-16077	5000
FCB.REL	92833-16137	5000
FDUBL.REL	92833-16069	5000
FLD.REL	92833-16078	5000
FORCE.REL	92833-16131	5000
GO.REL	92833-16132	5000
INT.REL	92833-16079	5000
MAN.REL	92833-16080	5000
MEU.REL	92833-16133	5000
MEX.REL	92833-16081	5010
MIM.REL	92833-16082	5000
MSC.LIB	92833-16134	5010
NOTEL.REL	92833-16135	5000
NUM.REL	92833-16136	5000
OPT.REL	92833-16085	5000
PASCAL.REL	92833-16103	5000
PASCAL_6.LOD	92833-17047	5000
PASCAL_A.LOD	92833-17046	5000
PASCOMP_6.LOD	92833-17033	5000
PASCOMP_A.LOD	92833-17032	5000
PASS.LIB	92833-16138	5000
PCIOF.REL	92833-16140	5000
PCIOR.REL	92833-16139	5000
PICK.LIB	92833-16141	5000

PRG.REL	92833-16086	5000
SAM6.REL	92833-16142	5000
SAMA.REL	92833-16143	5000
SCN.REL	92833-16087	5000
SEGTB.REL	92833-16144	5000
SG00P.REL	92833-16088	5000
SG01P.REL	92833-16089	5000
SG02P.REL	92833-16145	5000
SG03P.REL	92833-16146	5000
SG04P.REL	92833-16147	5000
SG05P.REL	92833-16148	5000
SG06P.REL	92833-16149	5000
SG07P.REL	92833-16150	5000
SG08P.REL	92833-16151	5000
SG09P.REL	92833-16152	5000
SG10P.REL	92833-16153	5000
SG11P.REL	92833-16154	5000
SG12P.REL	92833-16155	5000
SG13P.REL	92833-16156	5000
SG14P.REL	92833-16157	5000
SG15P.REL	92833-16158	5000
SG16P.REL	92833-16159	5000
SG17P.REL	92833-16160	5000
SG18P.REL	92833-16161	5000
SG19P.REL	92833-16224	5000
SSC.REL	92833-16163	5000
STF.REL	92833-16092	5000
STM.REL	92833-16093	5000
STP.REL	92833-16094	5000
SUM.REL	92833-16225	5000
TLM.REL	92833-16095	5010
TRACE.REL	92833-16164	5000
TRACE1.REL	92833-16165	5000
UNT.REL	92833-16097	5000
UTL.REL	92833-16098	5000
XFM.REL	92833-16099	5000

Directory: /PASCAL/ETC/ALTER/

ALTER.DAT	92833-17049	5000
ALTER.DOC	92833-17100	5000
ALTER.LOD	92833-17050	5000
ALTER.REL	92833-16209	5000

Directory: /PASCAL/INSTALL/

CONFIG_CMP	92833-17073	5000
INSTALL	92833-17071	5000
INSTALL_6	92833-17079	5000
INSTALL_A	92833-17078	5000

```
  INSTALL_ALTER          92833-17083  5000
  INSTALL_ALT_LIBS       92833-17089  5000
  INSTALL_C              92833-17077  5000
  INSTALL_CDS_LIBS       92833-17087  5000
  INSTALL_CMP            92833-17074  5000
  INSTALL_ERR_FILE       92833-17090  5000
  INSTALL_FMGR_LIB       92833-17088  5000
  INSTALL_LIBS           92833-17072  5000
  INSTALL_STD_LIBS       92833-17086  5000
  LINKSZ.LOD             92833-17098  5000
  RESTORE_ALTER          92833-17094  5000
  RESTORE_CDS_CMP        92833-17093  5000
  RESTORE_LIBS           92833-17091  5000
  RESTORE_STD_CMP        92833-17092  5000
  SAMPLE.PAS             92833-17062  5000
  SIZE_UP_LINK_6         92833-17097  5000
  SIZE_UP_LINK_A         92833-17096  5000
  SIZE_UP_LINK_C         92833-17095  5000
  TEST_CDS               92833-17076  5000
  TEST_STD               92833-17075  5000

  Directory: /PASCAL/LIB/CDS/

* PASCAL_CDS.LIB         92833-16104  5000  --> 6000
  PASCAL_CERR.REL        92833-16167  5000
  PASCAL_CTRA.REL        92833-16116  5000

  Directory: /PASCAL/LIB/STD/

* PASCAL.LIB             92833-16113  5000  --> 6000
  PASCAL_ERR.REL         92833-16125  5000
  PASCAL_ERR_ALT.REL     92833-16222  5000
* PASCAL_FMGR.LIB        92833-16107  5000  --> 6000
  PASCAL_FMGR_ALT.LIB    92833-16210  5000
  PASCAL_LH2.REL         92833-16117  5000
  PASCAL_TRA.REL         92833-16168  5000
  PASCAL_TRB.REL         92833-16169  5000
  PASCAL_TRC.REL         92833-16170  5000
  SHSLB.LIB              92833-16220  5000
  SHSLB_ALT.LIB          92833-16221  5000
```

Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
92833-13320	022
92833-13511	050
92833-13512	051
92833-13601	AAH

3.20 +(92836A) Fortran-77 Compiler

	Filename	Part Number	Rev	Change
	Directory: /FTN7X/			
	"FTN7X	92836-17001	5010	
*	#FTN7X	92836-17002	5020	--> 6000
*	$F7XCS	92836-12001	5270	--> 6000
*	$FCLBA	92836-12002	5010	--> 6000
*	%F7X1	92836-16002	5270	--> 6000
*	%F7X2	92836-16003	5270	--> 6000
	%FRPLS	92836-16004	5010	
*	%FX000	92836-16006	5270	--> 6000
	&FRPLS	92836-18004	5010	
*	A92836	92836-17999	5270	--> 6000
*	M92836.MNF	92836-17998	New	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
92836-90001	FORTRAN 77 Programmer's Reference	3/-	E1292

Media Part#	Media Option
92836-13303	022
92836-13501	050
92836-13502	051
92836-13601	AAH

3.21 +(92857A) Basic/1000C

	Filename	Part Number	Rev	Change
	Directory: /BASIC/			
	"BERRS	92857-17009	2401	
*	A92857.SNF	92857-17999	5000	--> 6000
	BASIC_ERRORS.SRC	92857-17010	2401	
*	M92857.MNF	92857-17998	2540	--> 6000
	Directory: /BASIC/COMPILER/			
	BDAT.LOD	92857-17018	2540	
	BDAT.REL	92857-16239	2401	
	B_EIO.REL	92857-16291	2401	
	B_EMA.REL	92857-16249	2401	
	B_MLE.EDIT	92857-17022	2401	
	B_MLV.EDIT	92857-17023	2401	
*	B_VMA.REL	92857-16250	2401	--> 6000
*	CBASIC1.REL	92857-12013	5000	--> 6000
*	CBASIC2.REL	92857-12016	5000	--> 6000
*	CBASIC_CDS1.REL	92857-12014	5000	--> 6000
*	CBASIC_CDS2.REL	92857-12017	2540	--> 6000
	CBASIC_CDS_LIB.MERG	92857-17029	2401	
*	CBASIC_CMP.LIB	92857-12012	5000	--> 6000
	CBASIC_LIB.MERG	92857-17028	2401	
*	CBA_1.REL	92857-12010	5000	--> 6000
	CBA_123.MERG	92857-17021	2401	
*	CBA_2.REL	92857-12011	5000	--> 6000
*	CBA_3.REL	92857-12015	2430	--> 6000
	CDSOF.REL	92857-16379	2401	
	CDSON.REL	92857-16378	2401	
	CDS_B_EIO.REL	92857-16380	2401	
	CDS_B_EMA.REL	92857-16381	2401	
	CDS_B_VMA.REL	92857-16382	2440	
	CDS_FMPSTUFF.REL	92857-16305	2401	
	CDS_IB_XX.MAC	92857-18302	2401	
	CDS_IB_XX.REL	92857-16302	2401	
	CDS_L_EMA.REL	92857-16383	2401	
	CDS_MMGT2.REL	92857-16303	2401	
	CDS_MMGT2_ENI.REL	92857-16347	2440	
	CDS_RT_AM.REL	92857-16304	2401	
	FMPSTUFF.REL	92857-16306	2401	
	F_EMA.REL	92857-16240	2401	
	IB_XX.MAC	92857-18241	2401	
	IB_XX.REL	92857-16241	2401	
	INSTALL_6.CMD	92857-17019	5000	

```
* INSTALL_6.LOD          92857-17013  2401  --> 6000
  INSTALL_A.CMD          92857-17020  5000
  INSTALL_A.LOD          92857-17014  2401
  INSTALL_AC.CMD         92857-17025  5000
* LINK_E.LOD             92857-17015  2540  --> 6000
* LINK_ENI.LOD           92857-17030  2540  --> 6000
* LINK_ENI_CDS.LOD       92857-17031  5000  --> 6000
* LINK_E_CDS.LOD         92857-17027  5000  --> 6000
  LINK_L.LOD             92857-17016  2401
  LINK_L_CDS.LOD         92857-17026  5000
* LINK_V.LOD             92857-17017  2540  --> 6000
* LINK_V_CDS.LOD         92857-17024  5000  --> 6000
  L_EMA.REL              92857-16242  2401
  MMGT2.REL              92857-16243  2401
  MMGT2_ENI.REL          92857-16346  2440
  RT_6M.REL              92857-16244  2401
  RT_AM.REL              92857-16245  2401
  SAM6C.REL              92857-16248  2401
  SAMAC.REL              92857-16247  2401
  S_EMA.MAC              92857-18246  2401
  S_EMA.REL              92857-16246  2401

  Directory: /BASIC/INTERPRETER/

  BAS_6.LOD              92857-17002  5000
  BAS_A.LOD              92857-17001  2540
  BBMG.LOD               92857-17003  2440
  BCALL.LIB              92857-16132  2401
  BCALL_CDS.LIB          92857-16221  5000
  BEXEC.REL              92857-16215  2401
* BLIB1.LIB              92857-12006  5000  --> 6000
* BLIB2.LIB              92857-12007  2540  --> 6000
* BMSKL.REL              92857-12003  5000  --> 6000
* BSSKL.REL              92857-12004  5000  --> 6000
  BXLUEX.REL             92857-16421  2540
  B_T12.REL              92857-16131  2401
  FOB_6.REL              92857-16387  2540
  FOB_A.REL              92857-16386  2540
  FOX_6.REL              92857-16144  2540
  FOX_A.REL              92857-16145  2540
  INSTALL_6_BAS.CMD      92857-17008  5000
  INSTALL_A_BAS.CMD      92857-17007  5000
* LBMGL.LIB              92857-12002  5000  --> 6000
  MRBAS.MER              92857-17011  2440
  MRRBX.MER              92857-17012  2401
  RBX_6.LOD              92857-17006  5000
  RBX_A.LOD              92857-17005  2401
  RINTR.LOD              92857-17004  5000
  RINTR.REL              92857-16128  5000
* RLIB1.LIB              92857-12008  5000  --> 6000
```

*	RLIB2.LIB	92857-12009	5000	--> 6000
*	RLIB3.LIB	92857-12001	2540	--> 6000
*	RLIB4.LIB	92857-12018	5000	--> 6000
	RNSRQ.REL	92857-16296	5000	
*	RXSKL.REL	92857-12005	5000	--> 6000
	SAM6.REL	92857-16411	2540	
	SAMA.REL	92857-16410	2540	
	SAM_6.REL	92857-16151	2401	
	SAM_A.REL	92857-16152	2401	

Manual Part#	Title	Edition/ Update	Print Date
92857-90001	BASIC/1000C Reference Manual	3/-	E1292
92857-90002	BASIC/1000C Install. and Config. Guide	4/-	E1292

The following manual was deleted from the product and is in support life until January 1, 1998.

92857-90003	BASIC/1000C Quick Reference Guide	1/1	U0684

Media Part#	Media Option
92857-13301	022
92857-13501	050
92857-13502	051
92857-13601	AAH

3.22 +(92860A) Symbolic Debug/1000

	Filename	Part Number	Rev	Change
	Directory: /DEBUG/			
*	CALLS.LOD	92077-17317	5020	--> Deleted
*	CALLS.REL	92077-12044	5020	--> Deleted
	CDS_DEBUG.LOD	92860-17015	5260	
*	CDS_DEBUG.REL	92860-12003	5261	--> 6000
*	CDS_DEBUGA.LIB	92860-12004	5260	--> 6000
*	DEBUG.C000	92860-17003	5261	--> 6000
*	DEBUG.CALL	92860-16167	5260	--> 6000
	DEBUG.LOD	92860-17001	5260	
*	DEBUG.REL	92860-12001	5261	--> 6000
*	DEBUG.SNF	92860-17999	5261	--> 6000

* DEBUG6.LIB	92860-12082	5260	--> 6000
* DEBUGA.LIB	92860-12081	5260	--> 6000
* INSTALL.CMD	92860-17008	5261	--> 6000
* M92860.MNF	92860-17998	New	--> 6000
* README	92860-17019	5261	--> Deleted
* XDB.C000	92860-16168	New	--> 6000
* XDB.CALL	92860-16173	New	--> 6000
* XDB.HELP	92860-17023	New	--> 6000
* XDB.LIB	92860-12006	New	--> 6000
* XDB.LOD	92860-17022	New	--> 6000
* XDB.REL	92860-12005	New	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
92860-90001	Symbolic Debug/1000 Reference Manual	6/-	E1292

Media Part#	Media Option
92860-13301	022
92860-13404	044
92860-13405	044
92860-13407	044
92860-13501	050
92860-13502	051
92860-13601	AAH

3.23 +(92861A) Graphics/1000-II DGL Version 2.0

Filename	Part Number	Rev	Change
Directory: /GRAPHICSV2/DGL/			
* A0000.LIB	92861-12121	4010	--> 6000
* A0000_CDS.LIB	92861-12122	4010	--> 6000
* A0001.LIB	92861-12003	4010	--> 6000
* A0001_CDS.LIB	92861-12070	4010	--> 6000
* A0017.LIB	92861-12032	4010	--> 6000
* A0017_CDS.LIB	92861-12115	4010	--> 6000
* A0025.LIB	92861-12149	4010	--> 6000
* A0025_CDS.LIB	92861-12150	4010	--> 6000
* A0072.LIB	92861-12207	5000	--> 6000
* A0072_CDS.LIB	92861-12219	5020	--> 6000

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* A0073.LIB            92861-12215  5020  --> 6000
* A0073_CDS.LIB        92861-12211  5020  --> 6000
* A92861               92861-18999  5020  --> 6000
* B0000.LIB            92861-12123  4010  --> 6000
* B0000_CDS.LIB        92861-12124  4010  --> 6000
* B0001.LIB            92861-12004  4010  --> 6000
* B0001_CDS.LIB        92861-12071  4010  --> 6000
* B0004.LIB            92861-12013  4010  --> 6000
* B0004_CDS.LIB        92861-12072  4010  --> 6000
* B0017.LIB            92861-12033  4010  --> 6000
* B0017_CDS.LIB        92861-12116  4010  --> 6000
* B0072.LIB            92861-12208  5000  --> 6000
* B0072_CDS.LIB        92861-12212  5000  --> 6000
* B0073.LIB            92861-12216  5020  --> 6000
* B0073_CDS.LIB        92861-12220  5020  --> 6000
  CHART_DGL.FTN        24998-18579  2420
* COLDM.REL            92861-12145  2540  --> 6000
* COLDM_CDS.REL        92861-12146  2540  --> 6000
* D0001.LIB            92861-12002  4010  --> 6000
* D0001_CDS.LIB        92861-12073  4010  --> 6000
* D0002.LIB            92861-12009  4010  --> 6000
* D0002_CDS.LIB        92861-12074  4010  --> 6000
* D0003.LIB            92861-12012  4010  --> 6000
* D0003_CDS.LIB        92861-12075  4010  --> 6000
* D0006.LIB            92861-12019  4010  --> 6000
* D0006_CDS.LIB        92861-12076  4010  --> 6000
* D0007.LIB            92861-12022  4010  --> 6000
* D0007_CDS.LIB        92861-12077  4010  --> 6000
* D0008.LIB            92861-12023  4010  --> 6000
* D0008_CDS.LIB        92861-12078  4010  --> 6000
* D0009.LIB            92861-12024  4010  --> 6000
* D0009_CDS.LIB        92861-12079  4010  --> 6000
* D0010.LIB            92861-12025  4010  --> 6000
* D0010_CDS.LIB        92861-12080  4010  --> 6000
* D0015.LIB            92861-12026  4010  --> 6000
* D0015_CDS.LIB        92861-12081  4010  --> 6000
* D0016.LIB            92861-12027  4010  --> 6000
* D0016_CDS.LIB        92861-12082  4010  --> 6000
* D0018.LIB            92861-12044  4010  --> 6000
* D0018_CDS.LIB        92861-12083  4010  --> 6000
* D0019.LIB            92861-12028  4010  --> 6000
* D0019_CDS.LIB        92861-12084  4010  --> 6000
* D0020.LIB            92861-12127  4010  --> 6000
* D0020_CDS.LIB        92861-12128  4010  --> 6000
* D0021.LIB            92861-12045  4010  --> 6000
* D0021_CDS.LIB        92861-12085  4010  --> 6000
* D0025.LIB            92861-12147  4010  --> 6000
* D0025_CDS.LIB        92861-12148  4010  --> 6000
* D0026.LIB            92861-12137  5020  --> 6000
* D0026_CDS.LIB        92861-12138  5020  --> 6000
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* D0027.LIB	92861-12048	4010	--> 6000
* D0027_CDS.LIB	92861-12110	4010	--> 6000
* D0028.LIB	92861-12049	4010	--> 6000
* D0028_CDS.LIB	92861-12111	4010	--> 6000
* D0029.LIB	92861-12050	4010	--> 6000
* D0029_CDS.LIB	92861-12112	4010	--> 6000
* D0030.LIB	92861-12051	4010	--> 6000
* D0030_CDS.LIB	92861-12113	4010	--> 6000
* D0031.LIB	92861-12053	4010	--> 6000
* D0031_CDS.LIB	92861-12087	4010	--> 6000
* D0032.LIB	92861-12055	4010	--> 6000
* D0032_CDS.LIB	92861-12088	4010	--> 6000
* D0036.LIB	92861-12058	4010	--> 6000
* D0036_CDS.LIB	92861-12089	4010	--> 6000
* D0045.LIB	92861-12164	4010	--> 6000
* D0045_CDS.LIB	92861-12163	4010	--> 6000
* D0046.LIB	92861-12129	4010	--> 6000
* D0046_CDS.LIB	92861-12130	4010	--> 6000
* D0047.LIB	92861-12131	4010	--> 6000
* D0047_CDS.LIB	92861-12132	4010	--> 6000
* D0048.LIB	92861-12133	4010	--> 6000
* D0048_CDS.LIB	92861-12134	4010	--> 6000
* D0053.LIB	92861-12139	5020	--> 6000
* D0053_CDS.LIB	92861-12140	5020	--> 6000
* D0054.LIB	92861-12141	5020	--> 6000
* D0054_CDS.LIB	92861-12142	5020	--> 6000
* D0055.LIB	92861-12143	5020	--> 6000
* D0055_CDS.LIB	92861-12144	5020	--> 6000
* D0058.LIB	92861-12165	5020	--> 6000
* D0058_CDS.LIB	92861-12166	5020	--> 6000
* D0059.LIB	92861-12157	4010	--> 6000
* D0059_CDS.LIB	92861-12158	4010	--> 6000
* D0060.LIB	92861-12159	4010	--> 6000
* D0060_CDS.LIB	92861-12160	4010	--> 6000
* D0061.LIB	92861-12167	5000	--> 6000
* D0061_CDS.LIB	92861-12169	5000	--> 6000
* D0063.LIB	92861-12168	5020	--> 6000
* D0063_CDS.LIB	92861-12170	5020	--> 6000
* D0064.LIB	92861-12204	5020	--> 6000
* D0064_CDS.LIB	92861-12206	5020	--> 6000
* D0065.LIB	92861-12181	5020	--> 6000
* D0065_CDS.LIB	92861-12182	5020	--> 6000
* D0066.LIB	92861-12179	5020	--> 6000
* D0066_CDS.LIB	92861-12180	5020	--> 6000
* D0067.LIB	92861-12175	5020	--> 6000
* D0067_CDS.LIB	92861-12176	5020	--> 6000
* D0068.LIB	92861-12183	5020	--> 6000
* D0068_CDS.LIB	92861-12184	5020	--> 6000
* D0069.LIB	92861-12193	5020	--> 6000
* D0069_CDS.LIB	92861-12194	5020	--> 6000

*	D0070.LIB	92861-12195	5000	--> 6000
*	D0070_CDS.LIB	92861-12196	5000	--> 6000
*	D0071.LIB	92861-12199	5020	--> 6000
*	D0071_CDS.LIB	92861-12200	5020	--> 6000
*	D0072.LIB	92861-12209	5000	--> 6000
*	D0072_CDS.LIB	92861-12213	5000	--> 6000
*	D0073.LIB	92861-12217	5020	--> 6000
*	D0073_CDS.LIB	92861-12221	5020	--> 6000
*	D0074.LIB	92861-12223	5020	--> 6000
*	D0074_CDS.LIB	92861-12224	5020	--> 6000
*	D0075.LIB	92861-12225	5020	--> 6000
*	D0075_CDS.LIB	92861-12226	5020	--> 6000
*	D0076.LIB	92861-12227	5020	--> 6000
*	D0076_CDS.LIB	92861-12228	5020	--> 6000
*	D0077.LIB	92861-12229	5020	--> 6000
*	D0077_CDS.LIB	92861-12230	5020	--> 6000
*	D0078.LIB	92861-12233	New	--> 6000
*	D0078_CDS.LIB	92861-12234	New	--> 6000
*	D0079.LIB	92861-12231	New	--> 6000
*	D0079_CDS.LIB	92861-12232	New	--> 6000
	DEMOS_DGL.TXT	24998-19009	2420	
*	DIDD.LIB	92861-12109	4010	--> 6000
*	DIDD_CDS.LIB	92861-12069	4010	--> 6000
	GRAPH_DGL.FTN	24998-18578	2420	
*	K0000.LIB	92861-12125	4010	--> 6000
*	K0000_CDS.LIB	92861-12126	4010	--> 6000
*	K0001.LIB	92861-12005	4010	--> 6000
*	K0001_CDS.LIB	92861-12090	4010	--> 6000
*	K0017.LIB	92861-12034	4010	--> 6000
*	K0017_CDS.LIB	92861-12117	4010	--> 6000
*	K0025.LIB	92861-12151	4010	--> 6000
*	K0025_CDS.LIB	92861-12152	4010	--> 6000
*	L0001.LIB	92861-12006	4010	--> 6000
*	L0001_CDS.LIB	92861-12091	4010	--> 6000
*	L0002.LIB	92861-12010	4010	--> 6000
*	L0002_CDS.LIB	92861-12092	4010	--> 6000
*	L0004.LIB	92861-12014	4010	--> 6000
*	L0004_CDS.LIB	92861-12093	4010	--> 6000
*	L0005.LIB	92861-12017	4010	--> 6000
*	L0005_CDS.LIB	92861-12094	4010	--> 6000
*	L0006.LIB	92861-12020	4010	--> 6000
*	L0006_CDS.LIB	92861-12095	4010	--> 6000
*	L0017.LIB	92861-12035	4010	--> 6000
*	L0017_CDS.LIB	92861-12118	4010	--> 6000
*	L0018.LIB	92861-12046	4010	--> 6000
*	L0018_CDS.LIB	92861-12096	4010	--> 6000
*	L0019.LIB	92861-12029	4010	--> 6000
*	L0019_CDS.LIB	92861-12097	4010	--> 6000
*	L0027.LIB	92861-12052	4010	--> 6000
*	L0027_CDS.LIB	92861-12114	4010	--> 6000

*	L0031.LIB	92861-12054	4010	--> 6000
*	L0031_CDS.LIB	92861-12098	4010	--> 6000
*	L0032.LIB	92861-12056	4010	--> 6000
*	L0032_CDS.LIB	92861-12099	4010	--> 6000
*	L0046.LIB	92861-12135	4010	--> 6000
*	L0046_CDS.LIB	92861-12136	4010	--> 6000
*	L0059.LIB	92861-12153	4010	--> 6000
*	L0059_CDS.LIB	92861-12154	4010	--> 6000
*	L0060.LIB	92861-12188	4010	--> 6000
*	L0060_CDS.LIB	92861-12187	4010	--> 6000
*	L0061.LIB	92861-12171	5000	--> 6000
*	L0061_CDS.LIB	92861-12173	5000	--> 6000
*	L0063.LIB	92861-12172	5020	--> 6000
*	L0063_CDS.LIB	92861-12174	5020	--> 6000
*	L0067.LIB	92861-12177	5020	--> 6000
*	L0067_CDS.LIB	92861-12178	5020	--> 6000
*	L0068.LIB	92861-12185	5020	--> 6000
*	L0068_CDS.LIB	92861-12186	5020	--> 6000
*	L0070.LIB	92861-12197	5000	--> 6000
*	L0070_CDS.LIB	92861-12198	5000	--> 6000
*	L0071.LIB	92861-12201	5020	--> 6000
*	L0071_CDS.LIB	92861-12202	5020	--> 6000
*	L0072.LIB	92861-12210	5000	--> 6000
*	L0072_CDS.LIB	92861-12214	5000	--> 6000
*	L0073.LIB	92861-12218	5020	--> 6000
*	L0073_CDS.LIB	92861-12222	5020	--> 6000
	M0COM.REL	92861-16161	2420	
*	M92861.MNF	92861-17998	New	--> 6000
*	P0001.LIB	92861-12007	4010	--> 6000
*	P0001_CDS.LIB	92861-12100	4010	--> 6000
*	P0002.LIB	92861-12011	4010	--> 6000
*	P0002_CDS.LIB	92861-12101	4010	--> 6000
*	P0004.LIB	92861-12015	4010	--> 6000
*	P0004_CDS.LIB	92861-12102	4010	--> 6000
*	P0005.LIB	92861-12018	4010	--> 6000
*	P0005_CDS.LIB	92861-12103	4010	--> 6000
*	P0006.LIB	92861-12021	4010	--> 6000
*	P0006_CDS.LIB	92861-12104	4010	--> 6000
*	P0017.LIB	92861-12036	4010	--> 6000
*	P0017_CDS.LIB	92861-12119	4010	--> 6000
*	P0019.LIB	92861-12030	4010	--> 6000
*	P0019_CDS.LIB	92861-12105	4010	--> 6000
*	P0059.LIB	92861-12155	4010	--> 6000
*	P0059_CDS.LIB	92861-12156	4010	--> 6000
*	P0060.LIB	92861-12189	4010	--> 6000
*	P0060_CDS.LIB	92861-12190	4010	--> 6000
	PDGL1.PASI	92861-18344	2420	
	PDGL2.PASI	92861-18345	2420	
	PGNDM.REL	92861-16901	2420	
	PGNDM_CDS.REL	92861-16902	2420	

```
  T1INT.FTN              92861-18707  2420
* V0001.LIB              92861-12008  4010  --> 6000
* V0001_CDS.LIB          92861-12106  4010  --> 6000
* V0004.LIB              92861-12016  4010  --> 6000
* V0004_CDS.LIB          92861-12107  4010  --> 6000
* V0017.LIB              92861-12037  4010  --> 6000
* V0017_CDS.LIB          92861-12120  4010  --> 6000
* V0019.LIB              92861-12031  4010  --> 6000
* V0019_CDS.LIB          92861-12108  4010  --> 6000
* V0059.LIB              92861-12161  4010  --> 6000
* V0059_CDS.LIB          92861-12162  4010  --> 6000
* V0060.LIB              92861-12192  4010  --> 6000
* V0060_CDS.LIB          92861-12191  4010  --> 6000
  Z0BFR.FTN              92861-18343  2420
  Z1CTB.FTN              92861-18790  2420
  Z1PTB.FTN              92861-18743  2420
```

Manual Part#	Title	Edition/ Update	Print Date
92861-90003	Device Handler Manual, Vol. 1 and 2	4/-	E1292
97084-90000	DGL Programmer's Reference Manual	2/-	E1292

The information contained in the following manuals was incorporated into the DGL Programmer's Reference Manual and, therefore, these manuals have been put into support life until January 1, 1998.

24998-90010 Letter explaining Instructional demo
92861-90001 DGL Programmer's Reference Manual Supplement

Media Part#	Media Option
92861-13301	022
92861-13501	050
92861-13502	051

3.24 +(92862A) Graphics/1000-II AGP Version 2.0

```
   Filename              Part Number  Rev    Change
  --------------------- -----------  ----  --------

  Directory: /GRAPHICSV2/AGP/

* A92862                92862-18999  5020  --> 6000
  CHART_AGP.FTN         24998-18580  2420
```

*	COM.REL	92862-12020	2540	--> 6000
	DEMOS_AGP.TXT	24998-19010	5000	
	FONT1.DAT	92862-16428	2420	
	FONT2.DAT	92862-16429	2420	
	FONT3.DAT	92862-16430	2420	
	FONT4.DAT	92862-16431	2420	
	FONT5.DAT	92862-16432	2420	
	FONT6.DAT	92862-16433	2420	
	HOUSE_AGP.FTN	24998-18582	2420	
	HOUSE_AGP.PAS	24998-18583	2440	
	KONTB.FTN	92862-18454	2420	
	KOPAG.FTN	92862-18376	2420	
	KOSDF.FTN	92862-18377	2420	
	K1FIL.FTN	92862-18464	2420	
*	M92862.MNF	92862-17998	New	--> 6000
	PAGP1.PASI	92862-18447	2420	
	PAGP2.PASI	92862-18448	2420	
	PAGP3.PASI	92862-18449	2420	
*	SDUM.REL	92862-12021	2420	--> 6000
*	SDUM_CDS.REL	92862-12022	2420	--> 6000
*	UPLIB.LIB	92862-12016	4010	--> 6000
*	UPLIB_CDS.LIB	92862-12017	4010	--> 6000
	VIEW_AGP.FTN	24998-18581	2440	
*	WPGDM.REL	92862-12023	2540	--> 6000
*	WPGDM_CDS.REL	92862-12024	2540	--> 6000
	WSP.FTN	92862-18349	2540	
	WSP.REL	92862-16349	2540	
*	WSPLB.LIB	92862-12018	4010	--> 6000
*	WSPLB_CDS.LIB	92862-12019	4010	--> 6000
	WSP_CDS.REL	92862-16642	2540	
*	ZMNTL.REL	92862-12002	5020	--> 6000
*	ZMNTR.REL	92862-12001	5000	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
97085-90007	AGP Reference Manual	2/-	E1292
97085-90010	AGP User's Guide	2/-	E1292

The information contained in the following manuals was incorporated into the AGP Reference Manual and, therefore, these manuals have been put into support life until January 1, 1998.

24998-90010 Letter explaining Instructional demo
92862-90001 AGP Reference Manual Supplement

Media Part#	Media Option
92862-13301	022
92862-13501	050
92862-13502	051
92862-13601	AAH

3.25 +(94200B) PCIF/1000

	Filename	Part Number	Rev	Change
	Directory: /PCIF/F1000/			
	FCOMM.REL	94250-16613	5010	
*	FLULB.LIB	94250-12523	5000	--> 6000
	FOBLK.REL	94250-16504	5010	
*	FOCLO.REL	94250-16505	5000	--> 6000
*	FOFLL.LIB	94250-12528	5000	--> 6000
	FOLCL.TXT	94250-17542	2520	
*	FOPRL.LIB	94250-12538	2520	--> 6000
	FRULB.LIB	94250-12546	2520	
	FUSE9.REL	94250-16514	2520	
	Directory: /PCIF/GSWPCIF/			
	ABMOD1.CRS	94200-16518	5000	
	ABMOD2.CRS	94200-16519	5000	
	ABMOD3.CRS	94200-16520	5000	
	ABMOD4.CRS	94200-16521	5000	
	ABMOD5.CRS	94200-16522	5000	
	APPA	94200-17503	5005	
	APPB	94200-17504	5005	
	APPC	94200-17505	5005	
	APPD	94200-17506	5005	
	APPE	94200-17507	5005	
*	APPF	94200-17508	5005	--> Deleted
	APPF	94200-17509	5005	
*	APPG	94200-17509	5005	--> Deleted
	APPG	94200-17510	5005	
*	APPH	94200-17510	5005	--> Deleted
	APPH	94200-17511	5005	
*	APPI	94200-17511	5005	--> Deleted
	APPI	94200-17512	5005	
	COURSE0.REL	94200-16502	2606	

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  CSCR06.TXT              94200-17234  2618
  CSCR16.TXT              94200-17236  2618
  GEMOD1.CRS              94200-16530  5000
  GEMOD2.CRS              94200-16531  5000
  GEMOD3.CRS              94200-16532  5000
  GEMOD4.CRS              94200-16533  5000
  GEMOD5.CRS              94200-16534  5000
  GMOD1.CRS               94200-16511  5000
  GMOD2.CRS               94200-16512  5000
  GMOD3.CRS               94200-16513  5000
  GMOD4.CRS               94200-16514  5000
  GMOD5.CRS               94200-16515  5000
  MAINMENU.CRS            94200-16523  5000
  PCHAB.TXT               94200-17211  5000
  PCHGE.TXT               94200-17501  5000
  PCHGM.TXT               94200-17213  5000
  PCPAB.TXT               94200-17212  5000
  PCPGE.TXT               94200-17502  5000
  PCPGM.TXT               94200-17214  5000

  Directory: /PCIF/PCIFGEN/

  "CDSLB                  92059-18027  2326
  AUTOR.FTN               94200-18109  4010
  AUTOR.LOD               94200-17108  5000
  AUTOR.REL               94200-16109  4010
* B94200                  94200-17999  5000  --> 6000
  DDP61.REL               94200-16359  4010
* M94200.MNF              94200-17995  New   --> 6000
  PCC11.REL               94200-16041  4010
  PCCCP.REL               94200-16042  4010
  PCCLI.REL               94200-16032  4010
  PCCON.REL               94200-16031  4010
  PCCT1.REL               94200-16033  4010
  PCCT2.REL               94200-16034  4010
  PCCT3.REL               94200-16035  4010
  PCCT4.REL               94200-16036  4010
  PCCT5.REL               94200-16037  4010
  PCCT7.REL               94200-16038  4010
  PCCT8.REL               94200-16039  4010
  PCCT9.REL               94200-16040  4010
  PCCUT.REL               94200-16046  4010
  PCDMX.REL               94200-16220  4010
  PCFOC.LOD               94200-17004  5000
  PCFOI.REL               94200-16045  4010
  PCGEN.LIB               94200-12002  4010
  PCHLT.REL               94200-16223  4010
  PCIF_BUILD.CMD          94200-17001  4010
  PCLDM.LOD               94200-17103  5000
  PCLGE.LOD               94200-17002  5000
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PCLHL.LOD	94200-17106	5000
PCLOP.LOD	94200-17104	5000
PCLTM.LOD	94200-17105	5000
PCMC0.REL	94200-16412	4010
PCMC1.REL	94200-16413	4010
PCMC2.REL	94200-16414	4010
PCMC3.REL	94200-16415	5005
PCMC4.REL	94200-16416	4010
PCMC5.REL	94200-16417	5005
PCMC6.REL	94200-16418	5005
PCMC7.REL	94200-16419	4010
PCMN0.REL	94200-16201	4010
PCMN1.REL	94200-16202	4010
PCMN2.REL	94200-16203	4010
PCMN3.REL	94200-16204	5005
PCMN4.REL	94200-16205	4010
PCMN5.REL	94200-16206	5005
PCMN6.REL	94200-16207	5005
PCMN7.REL	94200-16208	4010
PCMUX.REL	94200-16047	4010
PCOPN.REL	94200-16221	4010
PCP01.FRM	94200-17011	4010
PCP01.HLP	94200-17012	4010
PCP02.FRM	94200-17013	4010
PCP02.HLP	94200-17014	4010
PCP03.FRM	94200-17015	4010
PCP03.HLP	94200-17016	4010
PCPGE.DAT	94200-18010	5000
PCPGF.DAT	94200-18407	5000
PCS0.REL	94200-16209	4010
PCS0C.REL	94200-16107	4010
PCS1.REL	94200-16210	4010
PCS1C.REL	94200-16108	4010
PCTMO.REL	94200-16222	4010
PCTST.LOD	94200-17404	5000
PCTST.PAS	94200-18404	4010
PCTST.REL	94200-16404	4010
[PCHHL	94200-18302	2618
[PCPHL	94200-18301	2525

Directory: /PCIF/RUNTIME/

PCC01.FRM	94200-17017	4010
PCC01.HLP	94200-17018	4010
PCC02.FRM	94200-17019	4010
PCC02.HLP	94200-17020	4010
PCC03.FRM	94200-17021	4010
PCC03.HLP	94200-17022	4010
PCC04.FRM	94200-17023	4010
PCC04.HLP	94200-17024	4010

PCC05.FRM	94200-17025	4010
PCC05.HLP	94200-17026	4010
PCC07.FRM	94200-17029	4010
PCC07.HLP	94200-17030	4010
PCC08.FRM	94200-17031	4010
PCC08.HLP	94200-17032	4010
PCC09.FRM	94200-17033	4010
PCC09.HLP	94200-17034	4010
PCC11.FRM	94200-17037	4010
PCC11.HLP	94200-17038	4010
PCCB5.FRM	94200-17027	4010
PCCB5.HLP	94200-17028	4010
PCCB9.FRM	94200-17035	4010
PCCB9.HLP	94200-17036	4010
PCERR.ERR	94200-17005	4010
PCLBC.LIB	94200-12003	4010
PCLIB.LIB	94200-12001	4010
PCMER.ERR	94200-17102	4010
PCMSG.ERR	94200-17101	4010

Manual Part#	Title	Edition/ Update	Print Date
94200-90002	HP Programmable Controller Interface/1000	3/-	E1186
94200-90003	Getting Started with PCIF/1000 User Man.	1/-	E0684

Media Part#	Media Option
94200-13303	022
94200-13302	022
94200-13504	051
94200-13503	051
94200-13601	AAH

3.26 +(94202A) PCIF/1000 Allen-Bradley Handlers

	Filename	Part Number	Rev	Change
	Directory: /PCIF/AB/			
	!PCCA6	94202-17009	5005	
*	!PCFAB	94202-16003	4010	--> 6000
	"PCCA6	94202-17010	2606	

	#ABDN	94202-17003	5005	
	#ABTST	94202-17004	5005	
	#ABUP	94202-17002	5005	
	$ABLBC	94202-12002	5005	
	$ABLIB	94202-12001	5005	
	%ABDN	94202-16007	5005	
	%ABTST	94202-16008	2435	
	%ABUP	94202-16006	5005	
	%PCCHA	94202-16016	5005	
*	%PCHAB	94202-16002	4010	--> 6000
*	%PCHAC	94202-16013	4010	--> 6000
	%PCP2B	94202-16019	5005	
	%PCP2C	94202-16020	5005	
*	%PCPAB	94202-16001	4010	--> 6000
*	%PCPAC	94202-16012	4010	--> 6000
	&ABDN	94202-18007	5005	
	&ABLBC	94202-18018	5005	
	&ABLIB	94202-18009	5005	
	&ABTST	94202-18008	2435	
	&ABUP	94202-18006	5005	
	*AB	94202-17001	5005	
*	A94202	94202-17999	5000	--> 6000
	[PCHAB	94202-18005	5005	
	[PCHAC	94202-18011	5005	
	[PCP2B	94202-18021	5005	
	[PCP2C	94202-18022	5005	
	[PCPAB	94202-18004	5005	
	[PCPAC	94202-18010	5005	

Manual Part#	Title	Edition/ Update	Print Date
94202-90001	Using PCIF/1000 with Allen Bradley Programmable Controllers	4/-	E0388

Media Part#	Media Option
94202-13301	022
94202-13502	051
94202-13601	AAH

3.27 +(94203A) PCIF/1000 Gould-Modicon Handlers

	Filename	Part Number	Rev	Change
	Directory: /PCIF/GM/			
*	A94203.SNF	94203-17999	5000	--> 6000
	GM.CMD	94203-17005	5000	
	GMDN.LOD	94203-17002	5000	
	GMDN.PAS	94203-18008	5000	
	GMDN.REL	94203-16008	5000	
	GMDN0.PAS	94203-18012	5000	
	GMDN0.REL	94203-16012	5000	
	GMLBC.FTN	94203-18010	5000	
	GMLBC.LIB	94203-12001	5000	
	GMUP.LOD	94203-17001	5000	
	GMUP.PAS	94203-18007	5000	
	GMUP.REL	94203-16007	5000	
	GMUP0.PAS	94203-18011	5000	
	GMUP0.REL	94203-16011	5000	
	PCC06.FRM	94203-17007	5005	
	PCC06.HLP	94203-17008	5000	
	PCC06.REL	94203-16018	5005	
	PCC10.FRM	94203-17009	5000	
	PCC10.HLP	94203-17010	5000	
	PCC10.REL	94203-16019	5000	
*	PCHGC.REL	94203-16015	5000	--> 6000
	PCPGC.REL	94203-16014	5000	
	[PCHGC	94203-18016	5000	
	[PCPGC	94203-18017	5000	

Manual Part#	Title	Edition/ Update	Print Date
94203-90001	Using PCIF/1000 w/ Gould Program. Cntrlrs.	5/-	E0787

Media Part#	Media Option
94203-13301	022
94203-13502	051
94203-13601	AAH

3.28 (94204A) PCIF/1000 Siemens Handlers

Filename	Part Number	Rev
Directory: /PCIF/SIEMENS/		
!PCCS6	94204-17005	2525
!PCCSD	94204-17007	2525
!PCFSI	94204-16003	4010
"PCCS6	94204-17006	2525
"PCCSD	94204-17008	2525
#SIDN	94204-17003	2525
#SIUP	94204-17002	2525
$SILIB	94204-12001	2525
%PCCHS	94204-16015	2525
%PCCPS	94204-16014	2525
%PCHSC	94204-16013	2540
%PCHSI	94204-16002	2540
%PCPSC	94204-16012	2540
%PCPSI	94204-16001	2540
%SIDN	94204-16007	2540
%SIUP	94204-16006	2540
&SIDN	94204-18007	2540
&SILIB	94204-18009	2525
&SIUP	94204-18006	2540
*SI	94204-17001	2540
A94204	94204-17999	4010
[PCHSC	94204-18011	2540
[PCHSI	94204-18005	2540
[PCPSC	94204-18010	2540
[PCPSI	94204-18004	2540

Manual Part#	Title	Edition/ Update	Print Date
94204-90001	Using PCIF/1000 w/ SIEMENS Program. Cntrlr	1/-	E0186

3.29 (94206A) PCIF/1000 General Electric Handlers

Filename	Part Number	Rev

Directory: /PCIF/GE/

!PCCG6	94206-17001	2606
!PCFGE	94206-16007	2606
"PCCG6	94206-17002	2606
#GEDN	94206-17004	5000
#GEUP	94206-17003	5000
$GELIB	94206-12001	2606
%GEDN	94206-16013	2606
%GEDN0	94206-16015	2606
%GEUP	94206-16012	2606
%GEUP0	94206-16014	2606
%PCCHG	94206-16006	4010
%PCH6	94206-16002	5000
%PCH6C	94206-16004	5000
%PCP6	94206-16001	2606
%PCP6C	94206-16003	2606
&GEDN	94206-18013	2606
&GEDN0	94206-18015	2606
&GELIB	94206-18016	2606
&GEUP	94206-18012	2606
&GEUP0	94206-18014	2606
*GE	94206-17007	4010
A94206	94206-17999	5000
[PCH6	94206-18009	4010
[PCH6C	94206-18011	4010
[PCP6	94206-18008	4010
[PCP6C	94206-18010	4010
[PCP6C	94206-18010	4010

Manual Part#	Title	Edition/ Update	Print Date
94206-90001	Using PCIF/1000 with General Electric Programmable Controllers	2/-	E1186

3.30 +(94250A) Forms/1000-A

Filename	Part Number	Rev	Change
Directory: /FORMS/			
!FBD01	94250-17091	2340	
!FBD02	94250-17092	2340	

	!FBD03	94250-17093	2340	
	!FBD04	94250-17094	2340	
	!FBD06	94250-17096	2340	
	!FBD07	94250-17097	2340	
	!FBD08	94250-17098	2340	
	!FDEM1	94250-17101	2340	
	!FDEM2	94250-17102	2340	
	!FDEM3	94250-17103	2340	
	!FDEM4	94250-17104	2340	
	"FBD01	94250-17071	2340	
	"FBD02	94250-17072	2340	
	"FBD03	94250-17073	2340	
	"FBD04	94250-17074	2340	
	"FBD05	94250-17075	2340	
	"FBD06	94250-17076	2340	
	"FBD07	94250-17077	2340	
	"FBD08	94250-17078	2340	
	"FDEM1	94250-17081	2340	
	"FOLCL	94250-17899	5000	
*	#LFBAS	94250-17004	2340	--> 6000
	#LFBEF	94250-17002	2340	
	#LFDAS	94250-17064	2340	
	#LFDEF	94250-17062	2340	
	#LFIAS	94250-17024	2340	
	#LFIEF	94250-17022	2340	
	#LFNAS	94250-17034	2340	
	#LFNEF	94250-17032	2340	
	#LFOAS	94250-17014	2340	
	#LFOEF	94250-17012	2340	
	#LPIAS	94250-17044	2340	
	#LPIEF	94250-17042	2340	
	#LPNAS	94250-17054	2340	
	#LPNEF	94250-17052	2340	
	$FBUTI	94250-12002	2340	
*	$FLULB	94250-12004	5000	--> 6000
	$FOFLL	94250-12003	2505	
	$FOFRL	94250-12006	2340	
	$FOPLL	94250-12005	2505	
	$FOPRL	94250-12008	2340	
	$FRULB	94250-12007	2340	
	%FBILD	94250-12001	5000	
	%FCOMM	94250-16393	5000	
	%FDEMO	94250-16500	2340	
	%FOBLK	94250-16171	2340	
	%FOCLO	94250-16391	2340	
	%FUSE1	94250-16172	2340	
	%FUSE2	94250-16173	2340	
	%FUSE3	94250-16174	2340	
	%FUSE4	94250-16175	2340	
	%FUSE5	94250-16176	2340	

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  %FUSE6                94250-16177  2340
  %FUSE7                94250-16178  2505
  %FUSE8                94250-16179  2505
  %FUSE9                94250-16180  2340
  &FDEMO                94250-18500  2340
  &FUSEX                94250-18195  2505
  *LFBAS                94250-17003  2340
  *LFBEF                94250-17001  2340
  *LFDAS                94250-17063  2340
  *LFDEF                94250-17061  2340
  *LFIAS                94250-17023  2340
  *LFIEF                94250-17021  2340
  *LFNAS                94250-17033  2340
  *LFNEF                94250-17031  2340
  *LFOAS                94250-17013  2340
  *LFOEF                94250-17011  2340
  *LPIAS                94250-17043  2340
  *LPIEF                94250-17041  2340
  *LPNAS                94250-17053  2340
  *LPNEF                94250-17051  2340
* A94250                94250-17999  5000  --> Deleted
* A94250.SNF            94250-17999  New   --> 6000
```

Manual Part#	Title	Edition/ Update	Print Date
(no manual changes)			

Media Part#	Media Option
94250-13301	022
94250-13501	050
94250-13502	051

3.31 +(94250B) Forms/1000-B

```
   Filename             Part Number  Rev    Change
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  Directory: /F1000/

* B94250.SNF            94250-17998  5010  --> 6000
  F1000.CMD             94250-17546  2520
  F1000_CDS.CMD         94250-17571  2520
  FBD01.FRM             94250-17500  5010
```

```
  FBD01.HLP              94250-17511  2520
  FBD02.FRM              94250-17501  2520
  FBD02.HLP              94250-17512  2520
  FBD03.FRM              94250-17502  2520
  FBD03.HLP              94250-17513  2520
  FBD04.FRM              94250-17503  2520
  FBD04.HLP              94250-17514  2520
  FBD05.HLP              94250-17515  2520
  FBD06.FRM              94250-17504  2520
  FBD06.HLP              94250-17516  2520
  FBD07.FRM              94250-17505  2520
  FBD07.HLP              94250-17517  2520
  FBD08.FRM              94250-17506  2520
  FBD08.HLP              94250-17518  2520
  FBEMA.LOD              94250-17834  5000
* FBEMA.REL               94250-16834  5000  --> 6000
  FBILD.REL              94250-12501  5010
  FBUTI.LIB              94250-12518  5010
  FCEMA.CMD              94250-17801  5000
  FCEMA_CDS.CMD          94250-17804  5000
  FCOMM.REL              94250-16613  5010
  FDEM1.FRM              94250-17507  2520
  FDEM1.HLP              94250-17519  2520
  FDEM2.FRM              94250-17508  2520
  FDEM3.FRM              94250-17509  2520
  FDEM4.FRM              94250-17510  2520
  FDEMO.FTN              94250-18503  2520
  FDEMO.REL              94250-16503  2520
  FEMA1.REL              94250-16821  5000
  FEMA2.REL              94250-16822  5000
  FEMA3.REL              94250-16823  5000
  FEMA4.REL              94250-16824  5000
  FEMA5.REL              94250-16825  5000
  FEMA6.REL              94250-16826  5000
  FEMA7.REL              94250-16827  5000
  FEMA8.REL              94250-16828  5000
  FEMA9.REL              94250-16829  5000
  FEMAX.FTN              94250-18830  5000
* FLULB.LIB               94250-12523  5010  --> 6000
* FLULB_CDS.LIB           94250-12723  5010  --> 6000
* FLULB_EMA.LIB           94250-12831  5010  --> 6000
* FLULB_EMA_CDS.LIB       94250-12832  5010  --> 6000
  FOBLK.REL              94250-16504  5010
* FOCLO.REL               94250-16505  5000  --> 6000
* FOCLO_CDS.REL           94250-16705  5000  --> 6000
* FOFLL.LIB               94250-12528  5010  --> 6000
* FOFLL_CDS.LIB           94250-12728  5010  --> 6000
* FOFRL.LIB               94250-12531  2520  --> 6000
* FOFRL_CDS.LIB           94250-12731  2520  --> 6000
  FOLCL.TXT              94250-17572  5010
```

* FOPLL.LIB	94250-12537	5010	--> 6000
* FOPLL_CDS.LIB	94250-12737	5010	--> 6000
* FOPRL.LIB	94250-12538	2520	--> 6000
* FOPRL_CDS.LIB	94250-12738	2520	--> 6000
FRULB.LIB	94250-12546	2520	
FRULB_CDS.LIB	94250-12746	2520	
FUSE1.REL	94250-16506	2520	
FUSE2.REL	94250-16507	2520	
FUSE3.REL	94250-16508	2520	
FUSE4.REL	94250-16509	2520	
FUSE5.REL	94250-16510	2520	
FUSE6.REL	94250-16511	2520	
FUSE7.REL	94250-16512	2520	
FUSE8.REL	94250-16513	2520	
FUSE9.REL	94250-16514	2520	
FUSEX.FTN	94250-18550	2520	
LFBAS.LOD	94250-17520	2520	
LFDAS.LOD	94250-17521	2520	
LFIAS.LOD	94250-17522	2520	
LFIAS_CDS.LOD	94250-17527	2520	
* LFMAS.LOD	94250-17802	5000	--> 6000
* LFMAS_CDS.LOD	94250-17803	5000	--> 6000
LFNAS.LOD	94250-17523	2520	
LFNAS_CDS.LOD	94250-17528	2520	
LFOAS.LOD	94250-17524	5000	
LFOAS_CDS.LOD	94250-17529	5000	
LPIAS.LOD	94250-17525	2520	
LPIAS_CDS.LOD	94250-17530	2520	
LPNAS.LOD	94250-17526	2520	
LPNAS_CDS.LOD	94250-17531	2520	
* M94250.MNF	94250-17996	New	--> 6000
README.DOC	94250-17543	2520	

Manual Part#	Title	Edition/ Update	Print Date
94250-90005	Forms/1000 Reference Manual	2/-	E0887
94250-90006	Getting Started with Forms/1000	1/-	E0885

Media Part#	Media Option
94250-13307	022
94250-13503	051
94250-13601	AAH

3.32 +(98170A) ARPA/1000

	Filename	Part Number	Rev	Change
	Directory: /ARPA1000/			
*	A98170_INSTALL.TXT	98170-17005	5240	--> 6000
	Directory: /ARPA1000/CATALOGS/			
*	INETD.C000	91790-16310	New	--> 6000
	Directory: /ARPA1000/CMD/			
*	INSTALL_ARPA.CMD	98170-17006	5240	--> 6000
	N_LINK.CMD	91790-17105	5240	
	Directory: /ARPA1000/DOC/			
	BREVL.HELP	91790-17094	5020	
	BRTRC.HELP	91790-17095	5020	
	EVMON.HELP	91790-17096	5020	
	FMTRC.HELP	91790-17097	5020	
*	FTP.HELP	91790-17102	5020	--> 6000
*	FTP.HLP	98170-17014	5016	--> 6000
*	INETD.HELP	91790-17107	New	--> 6000
	LOGCHG.HELP	91790-17098	5020	
	NRLIST.HELP	91790-17099	5020	
	NSTRC.HELP	91790-17100	5020	
	PING.HELP	91790-17101	5240	
	TELNET.HELP	91790-17104	5020	
	TELNET.HLP	91790-17079	5000	
	Directory: /ARPA1000/DSREL/			
	%RESA	91750-16283	2540	
	Directory: /ARPA1000/ETC/			
*	INETD.CONF	91790-17109	New	--> 6000
*	SERVICES	91790-18301	New	--> 6000
	Directory: /ARPA1000/EXAMPLES/			
*	#ANSARPA	98170-17016	5240	--> 6000
*	ARPASTART.CMD	98170-17010	5240	--> 6000
	NODE1.NETI	98170-17015	5240	

```
  Directory: /ARPA1000/LIB/

  $D3N25                91750-12029  2401
  DS3K.LIB              91790-12014  5240
* NSINFLB.LIB           98170-12006  5240  --> 6000
* NSLIB.LIB             91790-12003  5240  --> 6000
* NSLIB_CDS.LIB         91790-12004  5240  --> 6000
* NSSYS.LIB             91790-12012  5240  --> 6000
* NSSYS_CDS.LIB         91790-12013  5240  --> 6000

  Directory: /ARPA1000/LOD/

  BREVL.LOD             91790-17001  5240
  BRTRC.LOD             91790-17002  5240
  EVMON.LOD             91790-17007  5000
* FMTRC.LOD             91790-17008  5240  --> 6000
* FTP.LOD               98170-17002  5240  --> 6000
* FTPMN.LOD             98170-17001  5015  --> Deleted
* FTPSV.LOD             98170-17003  5240  --> 6000
* INETD.LOD             91790-17108  New   --> 6000
* INPRO.LOD             91790-17009  5240  --> 6000
  LOGCHG.LOD            91790-17011  5240
  MMINIT.LOD            91790-17012  5240
  NRINIT.LOD            91790-17014  5240
  NRLIST.LOD            91790-17015  5240
* NSINF.LOD             91790-17017  5240  --> 6000
* NSINIT.LOD            91790-17018  2608  --> 6000
  NSLINK.LOD            91790-17092  5005
* NSPARS.LOD            91790-17019  2608  --> 6000
* NSPR1.LOD             91790-17020  5020  --> 6000
* NSPR2.LOD             91790-17021  5020  --> 6000
* NSPR3.LOD             91790-17022  5240  --> 6000
  NSTRC.LOD             91790-17026  5240
* OUTPRO.LOD            91790-17027  5240  --> 6000
  PING.LOD              98170-17004  5240
  TELNET.LOD            91790-17078  5240
* TNMON.LOD             91790-17076  5000  --> Deleted
  TNSRV.LOD             91790-17077  5240
  UPLIN.LOD             91790-17032  5240

  Directory: /ARPA1000/MISC/

* A98170.MNF            98170-17998  5240  --> 6000
* A98170.SNF            98170-17999  5240  --> 6000
  NETINIT.MSG           98170-17017  5015
* NSERRS.MSG            91790-17036  5016  --> 6000

  Directory: /ARPA1000/OSREL/

* $BIGLB                92077-12006  5240  --> Deleted
```

```
* %EXEC                  92077-16136  5240  --> Deleted
* %VCTR                  92077-16473  5240  --> Deleted
* &BIGLB                 92077-18073  5240  --> Deleted
* DDC00.REL              92077-16888  5240  --> Deleted
* DDC01.REL              92077-16889  5240  --> Deleted
* HPCRT.LIB              92077-12035  5240  --> Deleted
* HPMDM.FTN              92077-18938  5240  --> Deleted
* HPMDM.REL              92077-16938  5240  --> Deleted
* ID400.REL              92077-16883  5240  --> Deleted
* ID800.REL              92077-16887  5240  --> Deleted
* ID801.REL              92077-16957  5240  --> Deleted
* IDZ00.REL              92077-16968  5240  --> Deleted

  Directory: /ARPA1000/REL/

* BREVL.REL              91790-16022  5240  --> 6000
* BRTRC.REL              91790-16023  5240  --> 6000
* DS_CDSERRORCATCH.REL   91790-16039  5240  --> 6000
* DS_ERRORCATCHER.REL    91790-16041  5240  --> 6000
* EVMON.REL              98170-16048  5240  --> 6000
* FMTER.REL              91790-16056  5240  --> Deleted
* FMTGBL.REL             91790-16057  5240  --> Deleted
* FMTRC.REL              91790-16059  5240  --> 6000
* FMTUI.REL              91790-16061  5240  --> Deleted
* FMVIN.REL              91790-16062  5240  --> Deleted
* FTP.REL                98170-16046  5240  --> 6000
  FTPLIB2.REL            98170-16004  5015
* FTPMN.REL              98170-16001  5240  --> Deleted
* FTPSLIB.REL            98170-16002  5240  --> 6000
* FTPSV.REL              98170-16047  5240  --> 6000
* FTPULIB.REL            98170-16003  5240  --> 6000
* INDEC.REL              91790-16074  5240  --> 6000
  INEHTAB.REL            91790-16075  5240
* INETD.REL              91790-12019  New   --> 6000
* INPRO.REL              91790-16087  5240  --> 6000
* LOGCHG.REL             91790-16111  5240  --> 6000
* MMINIT.REL             91790-16118  5240  --> 6000
* NRERR.REL              98170-16053  5240  --> 6000
* NRINIT.REL             98170-16050  5240  --> 6000
* NRLIST.REL             91790-16140  5240  --> 6000
* NSABP.REL              91790-16031  5000  --> 6000
* NSINF.REL              98170-16049  5240  --> 6000
* NSINIT.LIB             98170-12001  5240  --> 6000
* NSPARS.LIB             98170-12005  5240  --> 6000
* NSPEC.REL              91790-16038  2608  --> Deleted
* NSPR1.LIB              98170-12002  5240  --> 6000
* NSPR2.LIB              98170-12003  5240  --> 6000
* NSPR3.LIB              98170-12004  5240  --> 6000
* NSTRC.REL              91790-16168  5240  --> 6000
  OTEHTAB.REL            91790-16171  5240
```

* OUTDEC.REL	91790-16172	5240	--> 6000
* OUTPRO.REL	91790-16173	5240	--> 6000
* PING.REL	98170-16006	5240	--> 6000
PROSW_CDS.REL	91790-16182	2608	
* TELNET.REL	91790-16255	5240	--> 6000
* TNMON.REL	91790-16253	5240	--> Deleted
* TNSRV.REL	91790-16254	5240	--> 6000
* UPLIN.REL	91790-16229	5240	--> 6000
* UPLN2.REL	91790-16230	5240	--> 6000

Manual Part#	Title	Edition/ Update	Print Date
98170-91001	ARPA/1000 Cover Letter	-/-	E1292
98170-90001	ARPA/1000 Node Manager's Manual	4/-	E1292
98170-90002	ARPA/1000 User's Manual	4/-	E1292

Media Part#	Media Option
98170-13301	022
98170-13502	051
98170-13600	AAH

3.33 Current Firmware Revisions

3.33.1 A400 Base Set Firmware

12100-80010 (U1212)# 12100-80011 (U1312)# 12100-80012 (U1412)# 12100-80013 (U1512)#	Revision 4000 Original Release # These parts are bundled in with the 12100-60001 A400 board.
12100-80015 (U1212)# 12100-80016 (U1312)# 12100-80017 (U1412)# 12100-80018 (U1512)#	See SN# 12100A-01
12100-80019 (U1212)# 12100-80020 (U1312)# 12100-80021 (U1412)# 12100-80022 (U1512)#	See SN# 12100A-04
12100-80023 (U1212)# 12100-80024 (U1312)# 12100-80025 (U1412)# 12100-80026 (U1412)#	Supplier changed from Signetics to Cypress (see SN# 12100A-09).

3.33.2 A400 OBIO Firmware

12100-80002 (U304)# 12100-80002 (U504)# 12100-80002 (U704)# 12100-80002 (U804)#	Revision 4000 Original Release # These parts are bundled in with the 12100-60001 A400 board.

3.33.3 A400 VCP Firmware

5180-4271 (U908)# 5180-4272 (U1108)#	Revision 4020 Original Release Required for D-MUX Console. # These parts are bundled in with the 12100-60001 A400 board.
5180-4286 (U908)# 5180-4287 (U1108)#	Revision 4020 # Same as above but plastic ROMs. (See S/N 2134A-12)
5181-8604 (U908)# 5181-8605 (U1108)#	Revision 4021 SCSI Boot Capability (See S/N 2134A-13)
5181-8657 (U908)# 5181-8658 (U1108)#	Vendor change. (See S/N 2134A-16)
5181-8667 (U908)# 5181-8668 (U1108)#	Revision 4024 # This firmware is included in upgrade kit 5181-8607. (See S/N 2134A-17)

3.33.4 A600 Minifloppy Controller

Prom 1	U73	5180-0136
Prom 2	U63	5180-0137
Prom 3	U43	5180-0144
CPU	U22	1820-2298
Cntlr	U105	1820-2456
GPIB	U12	1820-2549

3.33.5 A600 Base Set Firmware History

12101-60001	
12101-80002 (U0706)	Revision 4000
12101-80003 (U0806)	Original Release
12101-80004 (U1006)	
12101-80005 (U0506)	
12101-80006 (U0606)	
12101-80007 (U1106)	# These parts are bundled in with
12101-80008 (U0906)	the 12101-60001 processor board.
12101-80009 (U0305)	The 12101-60002 assembly no
12101-80010 (U0505)	longer includes these PROMs.
12101-80011 (U0605)#	
12101-80012 (U0705)#	
12101-80013 (U0805)#	
12101-80014 (U1005)#	

12101-60001	Revision 4000
12101-80002 (U0706)	
12101-80003 (U0806)	
12101-80021 (U1006)*	
12101-80005 (U0506)	* Changed to fix bug. .FDIV with E-register set returns incorrect results.
12101-80006 (U0606)	
12101-80007 (U1106)	
12101-80008 (U0906)	(See S/N 12101A-01)
12101-80009 (U0305)	
12101-80010 (U0505)	
12101-80011 (U0605)#	# These parts are bundled in with the 12101-60001 processor board. The 12101-60002 assembly no longer includes these PROMs.
12101-80012 (U0705)#	
12101-80013 (U0805)#	
12101-80014 (U1005)#	

12101-60002	Revision 401
12101-80024 (U0706)*	
12101-80025 (U0806)*	* Update 12101-60001 to 12101-60002 by removing four socketed mapping PROMs (12101-80001, 80012, 80013, and 80014). Firmware adds Data2 map instruction.
12101-80027 (U1006)*	
12101-80022 (U0506)*	
12101-80023 (U0606)*	
12101-80028 (U1106)*	
12101-80026 (U0906)*	(See S/N 2106AD-02)
12101-80029 (U0305)*	
12101-80030 (U0505)*	
12101-80031 (U0605)*	
12101-80032 (U0705)*	
12101-80033 (U0805)*	REQUIRED TO RUN RTE-A
12101-80013 (U1005)*	

12101-60002	Revision 401
12101-80024 (U0706)	
12101-80025 (U0806)	
12101-80027 (U1006)	
12101-80022 (U0506)	* Changed to fix bug. .PWR2 causes unimplemented instruction trap interrupt.
12101-80023 (U0606)	
12101-80028 (U1106)	
12101-80026 (U0906)	
12101-80034 (U0305)*	(See S/N 2106AK-01)
12101-80035 (U0505)*	
12101-80031 (U0605)	
12101-80032 (U0705)	
12101-80033 (U0805)	
12101-80013 (U1005)	

12101-60002
12101-80037 (U0706)*
12101-80025 (U0806)
12101-80027 (U1006)
12101-80022 (U0506)
12101-80036 (U0606)*
12101-80028 (U1106)
12101-80026 (U0906)
12101-80034 (U0305)
12101-80035 (U0505)
12101-80031 (U0605)
12101-80032 (U0705)
12101-80033 (U0805)
12101-80013 (U1005)

Revision 401

* Changed to fix bug. Power-Fail routine is not executed at power-fail.

(See S/N 2106AK-01)

12101-60002
12101-80040 (U0706)*
12101-80041 (U0806)*
12101-80043 (U1006)*
12101-80038 (U0506)*
12101-80039 (U0606)*
12101-80044 (U1106)*
12101-80042 (U0906)*
12101-80034 (U0305)
12101-80035 (U0505)
12101-80031 (U0605)
12101-80032 (U0705)
12101-80033 (U0805)
12101-80013 (U1005)

Revision 1001

* .FDV produces incorrect results for certain operands.

(See S/N 2106AK-04)

This firmware is included in upgrade kits 12101-60045 and 12101-60046.

3.33.6 A600+ Base Set Firmware

12105-80002 (U0405) 12105-80003 (U0505) 12105-80004 (U0605) 12105-80005 (U0705) 12105-80006 (U0805) 12105-80007 (U0905) 12105-80008 (U1005) 12105-80009 (U0308) 12105-80010 (U0808)	Revision 3 Original Release
12105-80024 (U0405)* 12105-80025 (U0505)* 12105-80026 (U0605)* 12105-80027 (U0705)* 12105-80028 (U0805)* 12105-80029 (U0905)* 12105-80030 (U1005)* 12105-80009 (U0308) 12105-80010 (U0808)	Revision 4 * Changed to fix bugs. .EXIT0, .EXIT1, and .EXIT2 changed to always read the CST from the code map. The JL, JLB, and JLY instructions were altered to execute one machine cycle faster (227 ns). (See S/N 2106BK-05)

3.33.7 A600/A600+ VCP Firmware History

5180-0173 (U606) 5180-0174 (U706)	Revision 4 Original Release
5180-0189 (U606)* 5180-0190 (U706)*	Revision 6 * Changed to fix bugs. Two power-fails in quick succession may result in an incorrect auto-restart. Booting remotely over FDL causes system to hang. Erroneous parity error message if memory is lost. Also several inconveniences are fixed and enhancements added. (See S/N 12102A-01)
12102-80003 (U606)* 12102-80004 (U706)*	Revision 4001 Changed to run with VC+. Also adds boot loaders for 1600 BPI Mag Tape, 3.5" Microfloppy, and 10 MB mini-winchester disc. VCP size is 8K and resides in EPROM. Included in 12107A A600+ Upgrade Kit. (See S/N 2106AK-3)
5180-4253 (U606)* 5180-4254 (U706)*	Revision 4004 * Changed to fix bug. If system disc and CPU are powered up simultaneously the CPU will not auto boot. (See S/N 2106AK-6A)
5180-4263 (U606)* 5180-4264 (U706)*	Revision 4011 * Changed to fix bug. Fixed break disable processing on the 12040B/C MUX. Added boot loader for the 55 Mbyte disc drive. Included in 12107A A600+ Upgrade Kit. Included in ROM Upgrade Kit 5180-4267.

5180-4271 (U606)*
5180-4272 (U706)*

Revision 4020

* A400 release, new I/O table in VCP power-up message. Supports the new serial I/O drivers introduced with RTE-A revision 4.1.

Included in upgrade kit p/n 5180-4274.

Required for D-MUX console.

5181-4286 (U908)*
5181-4287 (U1108)*

Vendor change from ceramic parts to plastic parts.

(See S/N 2436H-02)

5181-8604 (U908)*
5181-8605 (U1108)*

Revision 4021
SCSI Boot Capability

(See S/N 2436H-04)

5181-8657 (U908)#
5181-8658 (U1108)#

Vendor change.

(See S/N 2436H-05)

5181-8667 (U908)#
5181-8668 (U1108)#

Revision 4024

\# This firmware is included in upgrade kit 5181-8607.

(See S/N 2436H-06)

3.33.8 A700 Base Set Firmware History

12152-80011 (U91) 12152-80012 (U101) 12152-80013 (U111) 12152-80014 (U121)	Original Release
12152-80031 (U91)* 12152-80032 (U101)* 12152-80033 (U111)* 12152-80034 (U121)*	* Changed to fix bug. DDS will skip incorrectly.
12152-80035 (U91)* 12152-80036 (U101)* 12152-80037 (U111)* 12152-80038 (U121)*	* Add Code and Data Separation Instructions. Also several bugs were fixed. .LWD1 and .LWD2 are not privileged instructions. Any instruction in the A/B-Registers which causes an MP violation freezes the computer. (See S/N 2107AK-01) This firmware is included in upgrade kit 12152-60043. REQUIRED TO RUN VC+
12152-80053 (U91)* 12152-80054 (U101)* 12152-80055 (U111)* 12152-80056 (U121)*	Revision 2500 (currently supported Base Set) * Changed to be compatible with the I/O Extender.

3.33.9 A700 Floating Point History

12156-80005 (U106) 12156-80006 (U105) 12156-80007 (U103) 12156-80008 (U102)

12156-80013 (U106) 12156-80014 (U105) 12156-80015 (U103) 12156-80016 (U102)

12156-80017 (U106) 12156-80018 (U105) 12156-80019 (U103) 12156-80020 (U102)

12156-80025 (U106) 12156-80026 (U105) 12156-80027 (U103) 12156-80028 (U102)

12156-80029 (U106) 12156-80030 (U105) 12156-80031 (U103) 12156-80032 (U102)

12156-80033 (U106) 12156-80034 (U105) 12156-80035 (U103) 12156-80036 (U102)

Currently Supported FP Firmware

(See S/N 2107AK-1)

3.33.10 A700 VCP HISTORY

5180-0173 (U15) 5180-0174 (U35)

Revision 4
Original Release

Revision 6

5180-0189 (U15)* 5180-0190 (U35)*

* Changed to fix bugs. Two power-fails in quick succession may result in an incorrect auto-restart. Booting remotely over FDL causes system to hang. Erroneous parity error message if memory is lost. Also several inconveniences are fixed and enhancements added.

(See S/N 12102A-01)

Revision 4001

12152-80039 (U15)* 12152-80040 (U35)* 12152-80041 (U55)* 12152-80042 (U65)*

* Changed to run with VC+. Also adds boot loaders for 1600 BPI Map Tape, 3.5" Micro Floppy, and 10 Mb mini-winchester disc.

(See S/N 2107AK-01)

Revision 4004

12152-80043 (U15)* 12152-80044 (U35)* 12152-80045 (U55)* 12152-80046 (U65)*

* Changed to fix bug. If system disc and CPU are powered up simultaneously, the CPU will not auto boot.

Included in Upgrade Kit 12152-60043.

(See S/N 2107AK-2A)

Revision 4011

12152-80058 (U15)* 12152-80059 (U35)* 12152-80060 (U55)* 12152-80061 (U65)*

* Changed to fix bug. Break disable did work. Added boot loader for the 55 Mbyte disc drive.

Included in Upgrade Kit 12152-60064.

12152-80065 (U15)*
12152-80066 (U35)*
12152-80067 (U55)*
12152-80068 (U65)*

Revision 4020

* A400 release, new I/O table in VCP power-up message. Supports the new serial I/O drivers introduced with RTE-A revision 4.1.

  Included in upgrade kit p/n 12152-64004.

  Required for D-MUX console.

12152-80069 (U15)*
12152-80070 (U35)*
12152-80071 (U55)*
12152-80072 (U65)*

Revision 4021
SCSI Boot Capability

* Firmware included in upgrade kit 12152-64005.

  (See S/N 2137B-05)

3.33.11 A900 Firmware History

12201-80003 (U0803)
12201-80004 (U0802)
12201-80005 (U0801)
12201-80006 (U1103)
12201-80007 (U1102)
12201-80008 (U1101)
12201-80009 (U0703)
12201-80010 (U0702)
12201-80011 (U0701)
12201-80012 (U1003)
12201-80013 (U1002)
12201-80014 (U1001)
12201-80015 (U0603)
12201-80016 (U0602)
12201-80017 (U0601)
12201-80018 (U0903)
12201-80019 (U0902)
12201-80020 (U0901)
12201-80021 (U1407)
12201-80022 (U1607)

Original Release

12201-80024 (U0803)*
12201-80025 (U0802)*
12201-80026 (U0801)*
12201-80027 (U1103)*
12201-80028 (U1102)*
12201-80029 (U1101)*
12201-80030 (U0703)*
12201-80031 (U0702)*
12201-80032 (U0701)*
12201-80033 (U1003)*
12201-80034 (U1002)*
12201-80035 (U1001)*
12201-80036 (U0603)*
12201-80037 (U0602)*
12201-80038 (U0601)*
12201-80039 (U0903)*
12201-80040 (U0902)*
12201-80041 (U0901)*
12201-80042 (U1407)*
12201-80043 (U1607)*

* Rewrite firmware to execute Code and Data Separation instructions. Firmware change must be accompanied by a new Cache Control Board:

12203-60004.

This firmware is included in the 12203A Opt 001 Retrofit Kit.

REQUIRED TO RUN RTE-A AND VC+.

12201-80024 (U0803)
12201-80044 (U0802)*
12201-80026 (U0801)
12201-80027 (U1103)
12201-80028 (U1102)
12201-80029 (U1101)
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Computer does not Power-Fail Auto-restart. When power is restored, the computer comes up in VCP mode.

(See S/N 2139A-01)

12201-80045 (U0803)*
12201-80046 (U0802)*
12201-80047 (U0801)*
12201-80048 (U1103)*
12201-80049 (U1102)*
12201-80050 (U1101)*
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* If negative indices for EMA arrays are used, incorrect addresses are generated. This may appear as a Memory Protect error.

(See S/N 2139A-2)

12201-80052 (U0803)*
12201-80053 (U0802)*
12201-80054 (U0801)*
12201-80055 (U1103)*
12201-80056 (U1102)*
12201-80057 (U1101)*
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug. Computers with battery backup will not auto-restart. Also, a compare byte instruction (CBT) incorrectly clears the X-Register.

(See S/N 2139A-2)

12201-80060 (U0803)*
12201-80053 (U0802)
12201-80054 (U0801)
12201-80055 (U1103)
12201-80061 (U1102)*
12201-80062 (U1101)*
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

Revision 11

* A900 TBG runs too slow. The TBG loses approximately 24 seconds per day due to a firmware bug.

(See S/N 2139A-4)

This firmware is included in Upgrade Kit 12201-60051.

12201-80060 (U0803)
12201-80053 (U0802)
12201-80054 (U0801)
12201-80055 (U1103)
12201-80061 (U1102)
12201-80062 (U1101)
12201-80063 (U0703)*
12201-80064 (U0702)*
12201-80065 (U0701)*
12201-80066 (U1003)*
12201-80067 (U1002)*
12201-80068 (U1001)*
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug.
Erroneous results returned when .FPWR is followed by .FAD in MACRO code. This code is generated by the FORTRAN compiler in the expression: B=2*A**3

(See S/N 2139A-6)

This firmware is included in Upgrade Kit 12201-60069.

12201-80060 (U0803)
12201-80053 (U0802)
12201-80054 (U0801)
12201-80055 (U1103)
12201-80061 (U1102)
12201-80062 (U1101)
12201-80063 (U0703)
12201-80064 (U0702)
12201-80065 (U0701)
12201-80066 (U1003)
12201-80067 (U1002)
12201-80068 (U1001)
12201-80070 (U0603)*
12201-80071 (U0602)*
12201-80072 (U0601)*
12201-80073 (U0903)*
12201-80074 (U0902)*
12201-80075 (U0901)*
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug.
When using the .NGL instruction in MACRO to convert double precision floating point to single precision floating point, incorrect results were obtained if the instruction immediately following .NGL used address 000000 or 000001 to reference the A or B registers.

(See S/N 2139A-8)

12201-80076 (U0803)*
12201-80077 (U0802)*
12201-80078 (U0801)*
12201-80079 (U1103)*
12201-80080 (U1102)*
12201-80081 (U1101)*
12201-80063 (U0703)
12201-80064 (U0702)
12201-80065 (U0701)
12201-80066 (U1003)
12201-80067 (U1002)
12201-80068 (U1001)
12201-80070 (U0603)
12201-80071 (U0602)
12201-80072 (U0601)
12201-80073 (U0903)
12201-80074 (U0902)
12201-80075 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug.
Interim bank that contains SQRT fix but not I/O Extender changes. When taking the square root of floating point numbers that had all ones in the mantissa and exponent combinations of 4*16**n, an incorrect result was obtained.

12201-80084 (U0803)*
12201-80085 (U0802)*
12201-80086 (U0801)*
12201-80087 (U1103)*
12201-80088 (U1102)*
12201-80089 (U1101)*
12201-80063 (U0703)
12201-80064 (U0702)
12201-80065 (U0701)
12201-80066 (U1003)
12201-80067 (U1002)
12201-80068 (U1001)
12201-80070 (U0603)
12201-80071 (U0602)
12201-80072 (U0601)
12201-80073 (U0903)
12201-80074 (U0902)
12201-80075 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug.
This revision contains both the SQRT fix and changes for the I/O Extender.

(See S/N 2139A-9)

This firmware is included in Upgrade Kit 12201-60083.

12201-80090 (U0803)*	
12201-80091 (U0802)*	
12201-80092 (U0801)*	* Changed to fix bug.
12201-80093 (U1103)*	Fixed break disable problem
12201-80094 (U1102)*	(needed in conjunction with
12201-80095 (U1101)*	rev. 4011 of VCP).
12201-80063 (U0703)	
12201-80064 (U0702)	
12201-80065 (U0701)	
12201-80066 (U1003)	
12201-80067 (U1002)	(See S/N 2139A-19)
12201-80068 (U1001)	
12201-80070 (U0603)	
12201-80071 (U0602)	
12201-80072 (U0601)	
12201-80073 (U0903)	This firmware is included in
12201-80074 (U0902)	Upgrade Kit 12201-60090.
12201-80075 (U0901)	
12201-80042 (U1407)	
12201-80043 (U1607)	

12201-80096 (U0803)*	
12201-80097 (U0802)*	
12201-80098 (U0801)*	* Changed to fix
12201-80099 (U1103)*	Machine Check Bug
12201-80100 (U1102)*	
12201-80101 (U1101)*	(See S/N 2139A-23).
12201-80063 (U0703)	
12201-80064 (U0702)	
12201-80065 (U0701)	
12201-80066 (U1003)	
12201-80067 (U1002)	
12201-80068 (U1001)	
12201-80070 (U0603)	
12201-80071 (U0602)	
12201-80072 (U0601)	
12201-80073 (U0903)	This firmware is included in
12201-80074 (U0902)	Upgrade Kit 12201-60097.
12201-80075 (U0901)	
12201-80042 (U1407)	
12201-80043 (U1607)	

12201-80103 (U0803)*
12201-80104 (U0802)*
12201-80105 (U0801)*
12201-80106 (U1103)*
12201-80107 (U1102)*
12201-80108 (U1101)*
12201-80109 (U0703)*
12201-80110 (U0702)*
12201-80111 (U0701)*
12201-80112 (U1003)*
12201-80113 (U1002)*
12201-80114 (U1001)*
12201-80115 (U0603)*
12201-80116 (U0602)*
12201-80117 (U0601)*
12201-80118 (U0903)*
12201-80119 (U0902)*
12201-80120 (U0901)*
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix:

- self-test error after 50 or more power cycles (duplicated only with 50 Hz power).
- base relativity problem with VIS instructions.
- Cross map move bytes (MBxx) instructions now work for all cases.
- Self-test diagnoses incorrectly with the first 1Mb bank in the 8 Mb memory board has a single bit error.

(S/N 2139A-30)

* This firmware is included in kit 12201-60103.

3.33.12 A900 VCP Firmware History

NOTE

The old cache board, part no. 12203-60004, must have the old ROMs (prefix 12203-) and the new cache board must have the new ROMs (prefix 5180-).

12203-80002 (U0908) 12203-80003 (U1208)	Original Release
12203-80005 (U0908)* 12203-80006 (U1208)*	Revision 4001 * REQUIRED TO RUN RTE-A AND VC+ Included in the 12203A Opt. 001 Retrofit Kit.
12203-80007 (U0908)* 12203-80008 (U1208)*	Revision 4001 * Add boot loaders for 1600 BPI Map Tape, 3.5" Microfloppy, and 10 Mb mini-winchester disc. VCP is now in 8K eproms. (See S/N 2139A-3)
12203-80009 (U0908)* 12203-80010 (U1208)*	Revision 4004 * Changed to fix bug. If system disc and CPU are powered up simultaneously, the CPU will not auto boot. (See S/N 2139A-2)
OR	
5180-4253 (U0908)* 5180-4254 (U1208)*	These are new VCP ROMs to be used in the new A900 Cache board, part no. 12203-60011/17/18 The new board was needed for I/O Extender compatibility, and also includes field improvements. This set of ROMs is identical to those in the A600+. (See S/N 2139A-10)

12203-80012 (U0908)*
12203-80013 (U1208)*
OR
5180-4263** (U0908)*
5180-4264** (U1208)*

Revision 4011

* Fixed Break Disable processing on the 12040B/C MUX.

** These ROMS are used in newer A900 Cache board, part no. 12203-60011/17/18.

12203-80015#(U0908)*
12203-80016#(U1208)*
OR
5180-4271** (U0908)*
5180-4272** (U1208)*

Revision 4020

* A400 release, new I/O table in VCP power-up message. Supports the new serial I/O drivers introduced with RTE-A revision 4.1. Required for the D-MUX console.

\# This firmware is included in upgrade kit 12203-64001 for use in old A900 Cache board, part no. 12203-60001/60004.

** These ROMS are used in newer A900 Cache board, part no. 12203-60011/17/18.

ROMs 5180-4271 and 5180-4272 are part upgrade kit p/n 5180-4274.

5180-4286 (U0908)*
5180-4287 (U1208)*

Vendor change for 5180-4271 and -4272 only. Same as above but plastic parts.

(See S/N 2139B-09)

5181-8604 (U0908)*
5181-8605 (U1208)*

Revision 4021
SCSI Boot Capability

(See S/N 2139B-13)

5181-8657 (U908)# 5181-8658 (U1108)#	Vendor change. (See S/N 2139B-15)
5181-8667 (U908)# 5181-8668 (U1108)#	Revision 4024 # This firmware is included in upgrade kit 5181-8607. (See S/N 2139B-16)

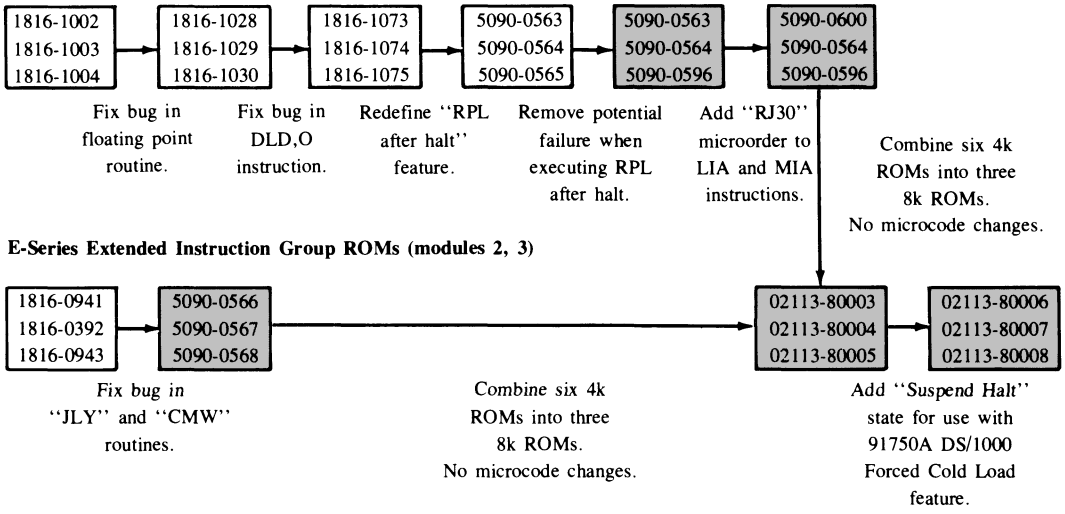
3.33.13 A990 Firmware History

12990-80106 (U1913)*	Original Release (revision 8) Firmware EPROM chip includes A990 base set microcode and VCP code.
12990-80111 (U1913)*	Revision 9 Firmware EPROM chip includes A990 base set microcode and VCP code.

ROM PART NUMBER HISTORY (1 of 4)

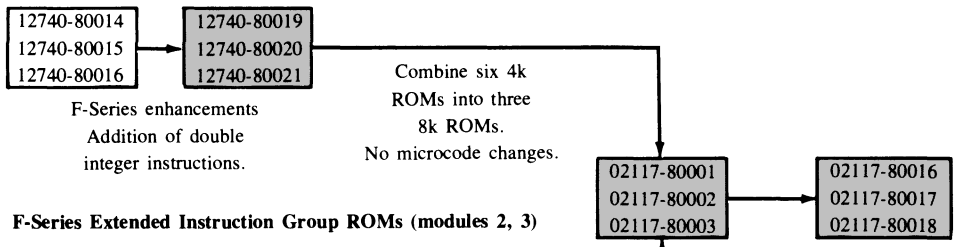
3.33.14 M/E/F-Series ROM History

E-Series Base Set ROMs (modules 0, 1)

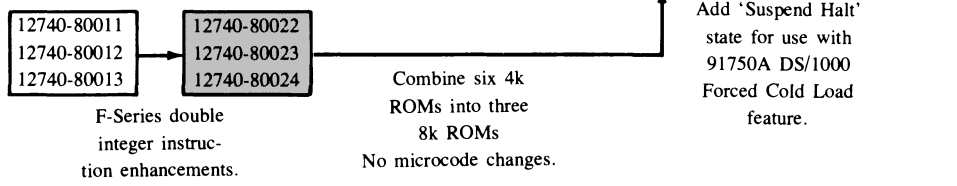


E-Series Extended Instruction Group ROMs (modules 2, 3)

F-Series Base Set ROMs (modules 0, 1)



F-Series Extended Instruction Group ROMs (modules 2, 3)

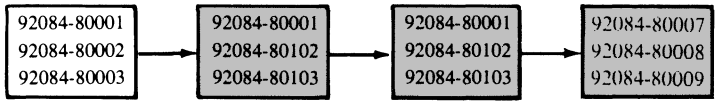


ROM PART NUMBER HISTORY (2 of 4)

E/F-Series RTE-6/VM Extended Memory Area/Virtual Memory Area ROMs (modules 36, 37)

Original Release
92084-80004 92084-80005 92084-80006

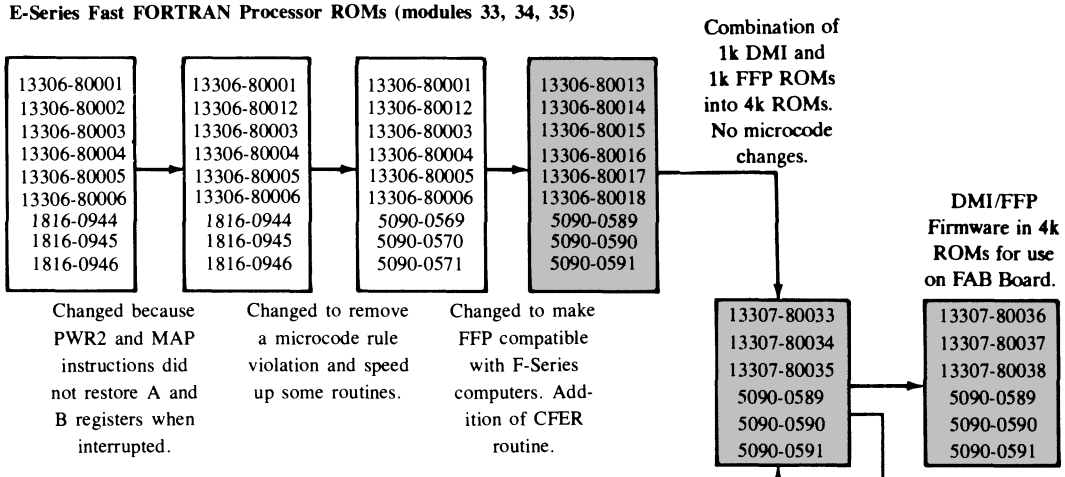
E/F-Series RTE-6/VM Operating System ROMs (E-Series modules 44, 45; F-Series modules 16, 17)



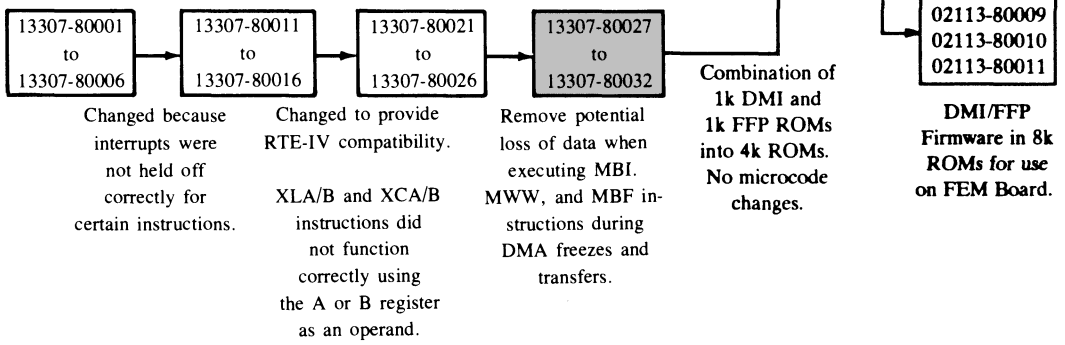
Original Release			
Rev #6B	7B	107B	10B

ROM PART NUMBER HISTORY (3 of 4)

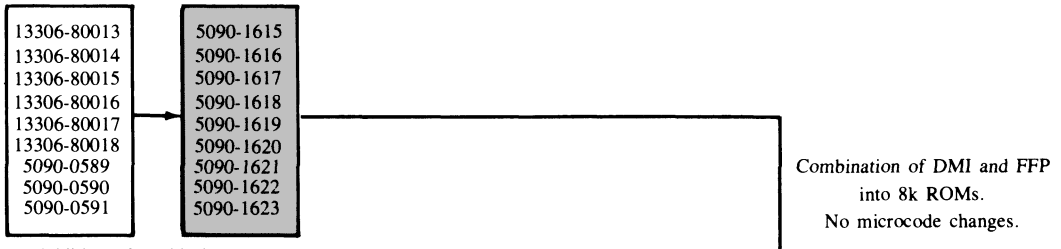
E-Series Fast FORTRAN Processor ROMs (modules 33, 34, 35)



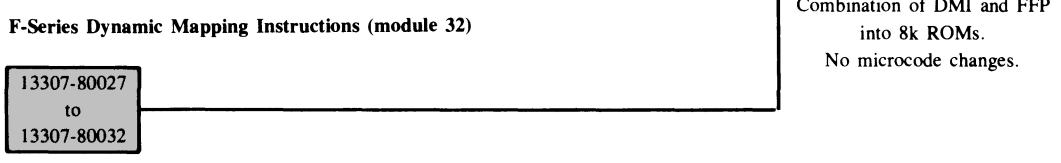
E-Series Dynamic Mapping Instructions (module 32)



F-Series Fast FORTRAN Processor ROMs (modules 33, 34, 35)



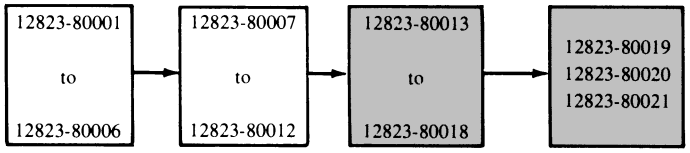
F-Series Dynamic Mapping Instructions (module 32)



Original Release

ROM PART NUMBER HISTORY (4 of 4)

F-Series Scientific Instruction Set ROMs (modules 40, 41, 42, 43)

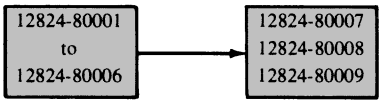


Addition of DPOLY, IATLG, FPWR, and TPWR routines as well as double precision capability.

Fix a bug in the /CMRT routine.

Combination of six 4k ROMs into three 8k ROMs. No microcode changes.

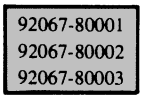
F-Series Vector Instruction Set ROMs (modules 12, 13, 14, 15)



Original release.

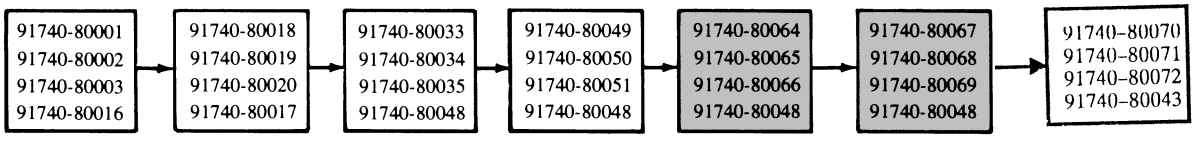
Combination of six 4k ROMs into three 8k ROMs. No microcode changes.

E/F-Series RTE-IVA/B Extended Memory Area ROMs (modules 36, 37)



Original release.

E/F-Series DS/1000 ROMs (modules 38, 39)



Date code 1740

Changed located of microcode addressing from modules 44/45 to 38/39.

Date code 1813

Enhance download capability.

Date code 1826

Enhance communication line noise immunity.

Date code 1913

Removal of potential download problems.

Date code 2003

Change ROM vendor for problems when installed on a FAB computer with in a 2 UCS boards.

Date code 2003

Date code 2540

Includes loader for 7974/8 tape No DS change.

3.33.15 PSI Firmware History

12007B 1000-1000 Modem Interface
12044A 1000-1000 Direct Connect Interface

91750-80008/80009	Original HDLC firmware.
91750-80021	This EPROM replaced 91750-80009. Refer to SN 12007B-04, 12044A-07.
5180-7233	The two 4k byte EPROMs were replaced with one 8k EPROM. Refer to SN 12007B-05, 12044A-08.
5181-6113	ROM from vendor changed. Refer to SN 12007B-09, 12044A-10.

12043A MRJE (Download)

5180-1966	
5180-7290	Refer to SN 12043A-05

12072A Data Link Slave Firmware

5180-1957	Original Data Link slave firmware.
5180-1965	Refer to SN 12072A-01.
5180-1974	No service note written.

12073A 1000-3000 Modem Interface
12082A 1000-3000 Direct Connect Interface

91750-80010/80011	Original BISYNC firmware.
91750-80012/80013	Refer to SN 12073A-1, 12082A-1.
91750-80016/80017	Refer to SN 12073A-2, 12082A-2.
5180-7263/7264	Refer to SN 12082-05 7/87.

12250A (MEF)
12075A X.25 (LAP-B) Modem Interface (A-Series)

5180-1958/1959	Original - Rev 2144 for X.25/1000, PCO 2201.
5180-1975/1976	LAP-B firmware Rev. 2323.
5180-7220/7221	Refer to SN 12075A-03. Rev. 2349.
5180-7232	The two 4k byte EPROMs were replaced with one 8k EPROM. Refer to SN 12075A-05. Rev. 2538.
5180-7260	Current Rev. 2648. Refer to SN 12075A-07.

12092A Multipoint Master Modem Interface

12092-80001/80002	Original Data Link/Multipoint Master firmware.
12092-80003/80004	Refer to SN 12092A-02.
12092-80005/80006	Refer to SN 12092A-05

3.33.16 12040 MUX Firmware History

ROM Part Number	Changes
12040-80001	Original 'A' version.
12040-80002	'A' version. Fixed port lockup due to powering down terminal.
5180-1970	'B' version of the product (12040B). Changes are: - round-robin buffer handling - no echo for control characters handled correctly - split baud rate groups added - character count reset fixed - cancel-all logic for parity fixed - ENQ/ACK handshake counter fixed - QTD modem box capability added - XON/XOFF added
5180-7227	'almost-a-C' version. (Not a warranty upgrade) Changes are: - ENQ/ACK timer changed to 10 seconds - control request can force XON - ports using parity now handle terminal power-downs - BREAK on odd parity ports no longer hangs port - KATAKANA (or character with hi-bit on) no longer hangs port if = terminator
C MUX	
5180-7228	'C' version (12040C, not a warranty upgrade) The only change was to set both BRG-0 and BRG-1 to 9600 baud to simplify use of the MUX as a console.
5181-6125	Vendor change only.
5181-8662	Vendor change only.
D MUX	
5180-7245	'D' version (12040D).
5180-7262	'D' version. Revision 4.11.

5180-7268	'D' version. Revision 5.02.
5180-7289	'D' version. Revision 5.19.
5180-7300	'D' version. Revision 5.20.
5181-8663	Vendor change only.

3.33.17 12076A LAN/1000 Card Firmware

U56	12076-81004	EPROM
U58	12076-81005	EPROM
U291	12076-81006	NOVRAM

3.33.18 12016A SCSI Firmware History

12016-80003	Original firmware (PC board part number 12016-60001).
12016-80005	PC board upgraded for reliability (new PC board part number 12016-60101).
12016-80009	Added SCSI Boot capability. Refer to S/N #12016A-03.

Chapter 4
Usage Considerations

This chapter discusses any significant changes in generation, installation, and usage and their impact for the products that have changed in this revision. Operating system module and system library size changes are also included.

The headers include the product number for that page. This should make it easier to find the usage considerations for a particular product.

4.1 Structure Changes

4.1.1 Pascal Libraries

Routine Pas.A1SharedSize has been modified to reflect ID segment changes at 6.0. Libraries PASCAL.LIB, PASCAL_CDS.LIB, and PASCAL_FMGR.LIB are affected by this change.

Please note that although IMAGE-II (92081A) and RJE-II (91781A) have been updated to have the Pascal libraries deleted from their product, updates for RJE-II and IMAGE-II will not be sent out at 6.0. Since the only change to these products is this deletion and the correct version of these libraries are sent out (and installed by) the Operating System, we feel that sending an "update" would just cause confusion.

4.1.2 Disc to Disk

Throughout the RTE products, the word "disc" has been changed to reflect the new spelling, "disk". Please check and be sure you don't have any files that are looking for the old spelling. You can use the new 'grep' utility to search for "disc" in your files.

4.2 (12016A) SCSI

4.2.1 Software Updates

The 12016A SCSI product includes the SCSI Reference Manual (part no. 12016-90001) and a tape of software necessary to use SCSI devices. This software is also shipped with the RTE-A operating system. Even after the 6.0 release, the tape included with the 12016A product will still contain software modules at revision 5270; this is for customers who run the SCSI product on a revision 5.2 or earlier RTE-A operating system. If you are updating your RTE-A operating system to 6.0, DO NOT use the software included with the SCSI product; use the software shipped with RTE-A. The 5.27 SCSI software is not compatible with the 6.0 RTE-A software.

4.3 (91751A) X.25/1000

4.3.1 Generation Considerations

The file /X25/REL/#X25A.REL no longer exists. The entry points it contained are now in VCTR. Delete the command RE /X25/REL/#X25A.REL from your answer file.

4.4 (91790A) NS-ARPA/1000

4.4.1 INETD

4.4.1.1 Description

Inetd is a monitor for NS-ARPA/1000 or ARPA/1000 systems that listens for incoming connections and schedules the appropriate server to handle the connection. Inetd will listen on up to 30 TCP protocol addresses (or "ports") at once, requiring fewer system resources than if separate programs were to listen for these connections. Inetd must be running before other hosts can connect to the local host through mail, ftp, or telnet. Inetd can be started only by superusers with appropriate privileges. It is started at network initialization time. Inetd also offers an extra level of security by allowing you to specify which hosts

may or may not use a service. A log of connections to services can optionally be kept in the file /etc/inetd.log, along with info about errors encountered and access denials. Currently, inetd supports the following services:

```
smtp   : simple mail transfer protocol
ftp    : file transfer protocol
telnet : TELNET virtual terminal
```

4.4.1.2 Installation

Prior to release 6.0, inetd was installed as part of the Mail/1000 product if SMTP service was installed (on RTE_A VC+ with NS-ARPA). The configuration file "inetd.conf" and the file "services", which maps service names to TCP ports, were both installed in the /SYSTEM directory; inetd was started with the command "xq inetd" in the Welcome file.

For release 6.0, inetd has been enhanced to support ftp and telnet and is installed as part of the NS-ARPA and ARPA products. It is no longer part of the RTE-A product. The installation script "install_ns1000" or "install_arpa" contains the appropriate commands for installing files needed by inetd, including the following files:

```
/programs/inetd.run : executable file for inetd monitor
/etc/inetd.conf     : configuration file that specifies services to
                      listen for
/etc/services       : file that maps services to the TCP port services use
```

Please refer to the on-line help file on inetd for how to set up the services in the "inetd.conf" and "services" files.

4.4.1.3 Important Notes

1. The location of the files "inetd.conf" and "services" have been changed from the directory /SYSTEM to /ETC. In addition, inetd is started up at NS initialization (nsinit) or ARPA initialization (netinit); therefore the "xq inetd" command in the Welcome file can be removed at 6.0.

2. Inetd replaces the ftp and telnet monitors, ftpmn and tnmon. Therefore these monitors should be removed from the /PROGRAMS directory.

4.4.2 Generation Considerations

At 6.0, NS-ARPA and ARPA programs are now transportable between systems running the same version of RTE-A and networking software. This was

accomplished by eliminating the use of non-transportable system entry points by the networking software. As part of this change, the networking modules that are generated into the system have been modified. NSPEC.REL is no longer needed and has been removed from the networking products. The other networking system module, NSABP, is now partitionable. Also, it is no longer necessary to search NSLIB for the DSGLO module during RTAGN's system relocation phase.

The following commands should be deleted from your RTAGN answer file. For ARPA/1000 systems, the global directory would be /ARPA1000.

```
RE /NS1000/REL/NSPEC.REL
SE /NS1000/LIB/NSLIB.LIB DSGLO
```

If you move NSABP into an OS partition, you must include NSABP in a PA command. Otherwise, a dummy version of NSABP will be included from $SYSA.

A few restrictions on program transportability should be noted. Some of the networking programs use labelled system common. These programs can only be moved to other systems with the same system common configuration. The networking software uses the cross map move byte instructions, MBxy, extensively. Older versions of the A900 microcode contain a bug in these instructions. So, programs linked with a snap file that includes an RPL file other than %rpl91 must not be run on an A900 without the latest firmware (Rev. 4). Chapter 3 contains a revision history of the A900 firmware and lists the part numbers for the each revision.

4.5 (92077A) RTE-A Operating System

4.5.1 Peripheral Support Changes

Many new peripherals have been supported since the 5.2 release. Please refer to the RTE-A System Generation and Installation Manual for a complete list of supported peripherals.

4.5.2 A990 Firmware

The RTE-A 6.0 Release includes new capabilities for EMA/VMA. There are now three E/VMA "models": Normal, Large, and Extended. The Extended E/VMA model is only available on A990 computers. Furthermore, to use Extended E/VMA, the firmware revision of the EPROM must be 10 (decimal) or greater. This is because the VMA instruction set microcode was modified at revision 10 for the new capability. The revision 10 EPROM also contains a fix for a bug in the .DIVD instruction (see SR number 4701-162396).

The A990 control store is a writeable control store, so it is possible to modify the instruction set microcode "on the fly", that is, while the computer is executing. If the firmware revision of the EPROM is 9 (decimal), then it is possible to upgrade the instruction set microcode programmatically. This is done with a program called DOWNLOAD. The DOWNLOAD program copies a microcode file (.mic) to control store and also copies the contents of the file to a SHEMA partition in main memory. The copy of microcode in main memory is used in case of power fail. The DOWNLOAD program sets a special flag in the RTE base page. The flag is two words, containing the physical page number of the SHEMA partition. When power returns after a power fail, the VCP looks at the flag and, if necessary, downloads the microcode from the main memory into control store before resuming execution.

The download program and the microcode upgrade file are included as part of the RTE-A 6.0 product. Also included is a program called A990FWID, which allows the user to determine the revision of the A990 EPROM.

To determine the revision of your EPROM, link and run the A990FWID program:

```
CI> wd /rte_a

CI> link a990fwid.lod /programs/a990fwid.run

CI> a990fwid
```

The A990 EPROM contains a directory. The directory contains an entry for the entire EPROM, as well as an entry for each separate piece (or product) in the EPROM.

The A990FWID program will read the entire EPROM directory. You need to look at the revision of product number zero, which is the product number of the entire EPROM. The output of A990FWID (for a revision 9 EPROM) looks like this:

Product Number (in octal)	Supercode/Revision octal	decimal	Product Description
000	000011	9	Entire EPROM
001	000024	20	VCP
002	000002	2	STST0 (Self-test module 0)
005	000001	1	XILINX (memory/IO)
003	000003	3	STSTC (Self-test module C)
011	000002	2	STSTD (Self-test module D)
012	000003	3	STSTE (Self-test module E)
013	000004	4	STSTF (Self-test module F)
014	000002	2	STSTG (Self-test module G)
015	000005	5	STSTH (Self-test module H)
210	000002	2	Baseset Microcode

1. If the revision of the entire EPROM is less than 9 decimal, then you have an EPROM that cannot be upgraded with the DOWNLOAD program. Contact your HP Service Representative to upgrade your EPROM.

2. If the revision of the entire EPROM is 9 decimal, you must use the DOWNLOAD program to download the revision 10 upgrade file.

3. If the revision of the entire EPROM is 10 decimal or greater, then you do not need to use the DOWNLOAD program.

To download the revision 10 upgrade file, link and run the DOWNLOAD program. The new microcode is in the file rev10upgrade.mic:

```
CI> wd /rte_a

CI> link download.lod /programs/download.run

CI> download rev10upgrade.mic
```

NOTE

Since this download operation must be done whenever the machine loses memory, you should put the download command into the system welcome file. This will upgrade the control store contents every time the machine is booted. Just add the following line to the BEGINNING of the welcome file:

```
download /rte_a/rev10upgrade.mic
```

The rev10upgrade.mic file can be copied to a different directory. Remember to change the above line in the welcome file to reflect the current location of the microcode file.

It is possible for the DOWNLOAD program to seriously hang the computer if bad microcode is downloaded. If this occurs, the machine can only be recovered by clearing memory, and cycling power. This is because if battery backup/auto restart is enabled, then the VCP keeps trying to reload the bad microcode every time power is cycled.

The DOWNLOAD program changes the name of the SHEMA partition containing the microcode to "A990 Firmware". This prevents the user from accidentally removing the SHEMA partition. Also, this prevents any subsequent execution of the DOWNLOAD program, since it will not be able to rename its SHEMA partition to that name. If the user wants to remove the microcode upgrade from control store (in effect, reverse the download process), then the machine must be made to lose memory power (that is,

memory is cleared(and then be rebooted.

4.5.3 Primary System Software

The Primary System has changed format at 6.0. It is no longer in ASAVE format but is in FST format. Instead of using ARSTR to load the Primary, a bootable subsystem !RESTORE is used to restore the tape; !RESTORE is a memory-based system that contains the FST utility. The !RESTORE program will prompt the user for information regarding system configuration, then creates the necessary directories and restores the Primary System files to these directories.

For more information, please refer to the RTE-A Primary System Software Installation Manual, part number 92077-90038.

4.5.4 Generation Considerations

4.5.4.1 New Module

A new module, %ENVRN, has been added at 6.0. This module allows the target system to perform EXEC(39) calls, which perform environment variable look-ups for various utilities (such as LI). This module must be relocated as /VCPLUS/%ENVRN in the "system relocation" section of the answer file. The module is partionable; use "PA,ENVRN" to do this before you relocate it.

Please note that if you use %RPL90 or %RPL91 in your system, you will need to relocate the modules mb10, mb12, and mb21 from xmb.rel (153 words) or all of xmb.rel (306 words). Otherwise, you will get undefined external errors.

If you have pre-4.0 RPL files, see the file PRIMARY.ANS in Appendix C for information on xmb modules.

4.5.5 6.0 Software Needed for Generation

The 6.0 revisions of the programs below must be used to upgrade to 6.0. A command file, upgrade60.cmd, is supplied with RTE-A to ease the loading of these programs. See the RTE-A COOKBOOK in Appendix B of the Communicator for details on the procedure.

4.5.5.1 RTAGN

Because of various changes to system entry points and the ID segment format, the 6.0 version of RTAGN is required to generate your 6.0 system. If an earlier revision is used, an error similar to:

```
Missing system entry point: $SHTB
```

will be issued. Check that RTAGN identifies itself as "Rev. 6000" in the banner line.

4.5.5.2 MACRO

The 6.0 version of MACRO is necessary to create macro libraries which can be used by the new MACRO. The standard installation command files will install the proper versions of $MACLB.MLB, $CDSLB.MLB, and $CDSONOFF.MLB. If an existing macro library is not recompiled with the new MACRO, an error will be generated when the 6.0 MACRO tries to use it:

```
21  >> Old macro library.  Try: 'MACRO,-3,,<maclib>'
```

Running MACRO with the suggested runstring will fix the problem. Any custom macro libraries present on your host may also be processed at this time. However, the pre-6.0 version of MACRO will no longer be able to use the library.

4.5.5.3 LINK

The 6.0 revision of LINK must be used to load programs for 6.0 systems because the ID segment format has changed. If an earlier revision of LINK is used, the .RUN files produced will incur an "Illegal program file" error when a 6.0 host attempts to RP them.

4.5.5.4 LINDX

The 6.0 revision of LINDX is required because the pre-6.0 LINDX cannot handle a library as large as $BIGLB has become. The installation files will merge together and index a version of $BIGLB. If the pre-6.0 LINDX is used for this purpose, it will report:

```
Not sized large enough
```

4.5.5.5 BUILD

The new revision of the BUILD program must be used to build a memory-based system at 6.0 for the same reasons the new RTAGN and LINK are needed. If an earlier revision of BUILD is used for a 6.0 system, an error similar to:

*** Illegal file position - snap file

will be generated.

4.5.6 CI Enhancements

4.5.6.1 New CI Variables

The following variables are now predefined by CI: $DATC, $HOME, and $OLDPWD. $PROMPT can now have a value of up to 78 characters.

4.5.7 PWD

4.5.7.1 Path Working Directory

A new command, PWD, has been added at 6.0. PWD displays the current working directory, similar to the pwd command in UN*X.

4.5.8 CD

4.5.8.1 Change Directory

The CD command can take either of two forms. In the first form, it changes the current directory to "argument". If "argument" is '-' the directory is changed to the previous directory ($OLDPWD). The default for "argument" is the value of the $HOME variable.

The second form of cd substitutes the string "new" for the string "old" in the current directory name, $WD, and tries to change to this new directory.

4.5.9 File System Enhancements

4.5.9.1 grep

grep, along with the utility fgrep, is new for the 6.0 release. grep and fgrep search files for lines matching a certain pattern, much the way the UN*X version of grep works. The difference between the two utilities is that grep supports regular expression patterns (similar to EDIT/1000), while fgrep supports fixed strings (making it a fast and compact way of finding text strings). As matches are found, they are copied to the

session LU. Both grep and fgrep are shipped with the RTE-A operating system.

4.5.9.2 ls

ls has been added to RTE-A for the 6.0 release. ls and its related commands list the contents of a directory. ls will report the name of any file matching the mask along with any other information requested. If no mask is supplied, the current working directory will be searched. The output is sorted in ascending collation order.

4.5.10 Mail/1000

Please refer to the MAIL/1000 Manual for details on using the enhancements to Mail/1000 at 6.0.

4.5.10.1 User Interface

Many changes have been made to allow more flexibility in file and folder handling, visual-mode presentation options, etc. For example, at 6.0, the "ignore" command arguments look like the following:

```
mask[:lines]
```

where <mask> is a pattern which matches header field names, and <lines> is the maximum number of lines to print of matching headers (from 0 to 255, default = 0). For example, "ignore to:3" prints up to 3 lines of "To:" header and suppresses any following lines.

4.5.10.2 DNS Client Support

Client support for the Domain Name Service (DNS) is provided at 6.0. If a customer's network is running a nameserver, then Mail/1000 may be configured to query that nameserver for mail routing and IP address info, in accordance with RFCs 1032-1035, 1123, etc.

4.5.10.3 Other Mail Standards

Sendmail replaces domains specified in message headers that are aliases for an official domain to the official name, as per the RFC-822 and RFC-1123 standards.

4.5.10.4 Host Routing

In addition to DNS client support, some other changes have been made to support unusual network setups and such. For example, at 6.0, the file /mail/admin/domainalias.cf may contain entries in the format:

```
fully.qualified.domain : |runstring
```

Here, runstring is a string suitable for FmpRunProgram that will be used to forward mail bound for fully.qualified.domain. The name of the temporary file that contains the message will be appended to the runstring. The message file will contain the routing envelope information at the top; this file is suitable for copying directly into another host's /mail/queue/ directory with name QMSG_x.QIN for further Mail/1000 processing.

4.5.10.5 New Mail Notification

The 6.0 release contains many enhancements in the area of new mail notification, including the ability for individual users to select different notification means based on message subject, sender, etc. Additional features include the following:

"notify off" turns off notifications for your session; "notify on" restores notifications. All notification messages sent while notification is off will be thrown away.

Session numbers may be used in place of logon names to direct messages solely to a single session. For instance, "notify 90 `I'll be back`" sends the message only to session 90.

Special user name "all" sends the message to all logged-on sessions.

4.5.10.6 Installation Process

The InstallMail.cmd file uses CI variables to determine the directories in which software will be installed, much like the NS-ARPA/1000 installation file.

4.5.10.7 uuencode/uudecode

The uuencode/uudecode utilities prepare a file for transmission via mail. Usage is as follows:

```
uuencode [-a] [-d remotedest] input output
uudecode [-a] filename [output]
```

Uuencode takes the named source file and produces an encoded version; this version is in ordinary text form and can be edited by EDIT/1000. The encoding uses only printable ASCII characters. The protections (or "mode") of the file and <remotedest> (for re-creation on the remote system) are included. The `-a' option causes RTE ASCII files to be translated to UNIX ASCII before the file is encoded (a newline character is inserted between each record). For files other than type 1 files or translated ASCII, the "remotedest" will include a full file descriptor including the file type and size.

Uudecode reads an encoded file, strips off any leading and trailing lines added by mailers and recreates the original file with the specified mode and name. The `-a' option causes uudecode to translate UNIX ASCII to RTE ASCII. (Newline characters are stripped out and interpreted as record separators.) If the "remotedest" does not include a file type, uudecode will by default create a type 1 file. If the `-a' option is supplied, the data will be decoded and translated to a type 4 ASCII file.

4.5.11 Size Changes

As an aid for your software development efforts, the size differences are listed here from the last update in the operating system modules and system libraries. Dots are place-holders, meaning that the module did not exist at that release. The percentage difference reported on the last row of the table is the average percentage change of those modules that have been changed. There is a summary following the table. The "# of size differences =" is the number of modules that existed in the 5.27 release and have changed in size. The "# of unique names: Rev.5270 =" line is the number of modules that existed in the 5.27 release and have been deleted at 6.0 release. The "# of unique names: Rev.6000 =" line is the number of modules that are new for the 6.0 release.

In addition we have given the size differences for BIGLB and BGCDS comparing these 6.0 libraries with and without symbolic links.

4.5.11.1 Operating System Size Differences

Operating System Modules Size Differences

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	ENVRN	710	710	100
$IDRPL	1024	-->	$IDRPL	1131	107	10
ABORT	521	-->	ABORT	547	26	4
CDSFH	804	-->	CDSFH	806	2	0
CHECK	138	-->	CHECK	150	12	8
CLASS	1689	-->	CLASS	1701	12	0
ERLOG	1741	-->	ERLOG	1749	8	0
EXEC	1019	-->	EXEC	1023	4	0
IOMOD	1099	-->	IOMOD	1095	-4	0
IORQ	1165	-->	IORQ	1176	11	0
LOAD	1322	-->	LOAD	1344	22	1
LOCK	744	-->	LOCK	751	7	0
MAPS	800	-->	MAPS	849	49	6
MEMRY	1965	-->	MEMRY	1990	25	1
MODULE0	3194	-->	MODULE0	3257	63	1
MSGTB	317	-->	MSGTB	328	11	3
PERR	525	-->	PERR	551	26	4
PROGS	758	-->	PROGS	766	8	1
RTIOA	988	-->	RTIOA	992	4	0
SAM	248	-->	SAM	244	-4	-1
SCHED	217	-->	SCHED	218	1	0
SECOS	256	-->	SECOS	266	10	3

Usage Considerations (92077A)

SIGNL	:	1279	-->	SIGNL	:	1318	39	3
UTIL	:	1028	-->	UTIL	:	1031	3	0
VCTR	:	415	-->	VCTR	:	360	-55	-13
VEMA	:	401	-->	VEMA	:	569	168	41
XCMND	:	859	-->	XCMND	:	988	129	15
		24516				25910	1394	5

```
    # of size differences   =    26
# of unique names: Rev.5270 =     0
                   Rev.6000 =     1
   Total file size change   =  1394
      Total file % change   =     4%
```

4.5.11.2 Driver Size Differences

Drivers Size Differences

Rev.5270				Rev.6000			Difference	
Module Name		Size		Module Name		Size	Words	%
DD.24	:	1112	-->	DD.24	:	1111	-1	0
DD.33	:	1981	-->	DD.33	:	1984	3	0
DDC00	:	1074	-->	DDC00	:	1083	9	0
DDC01	:	1849	-->	DDC01	:	1858	9	0
DDQ24	:	566	-->	DDQ24	:	771	205	36
DDQ30	:	529	-->	DDQ30	:	610	81	15
ID.52	:	445	-->	ID.52	:	471	26	5
ID800	:	1304	-->	ID800	:	1317	13	0
ID801	:	1422	-->	ID801	:	1435	13	0
IDQ35	:	1631	-->	IDQ35	:	1701	70	4
		11913				12341	428	3

```
    # of size differences   =    10
# of unique names: Rev.5270 =     0
                   Rev.6000 =     0
   Total file size change   =   428
      Total file % change   =     1%
```

4.5.11.3 BIGLB Size Differences (5.27 -> 6.0)

BIGLB Size Differences

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	$LEMAFH	133	133	100
.....	.....	-->	$LEMAINIT	183	183	100
.....	.....	-->	$LVMAFH	1340	1340	100
.....	.....	-->	$LVMAINIT	146	146	100
.....	.....	-->	$VMALINIT$	442	442	100
.....	.....	-->	$VMAXINIT$	452	452	100
.....	.....	-->	$XEMAFH	92	92	100
.....	.....	-->	$XEMAINIT	234	234	100
.....	.....	-->	$XVMAFH	1273	1273	100
.....	.....	-->	$XVMAINIT	129	129	100
.....	.....	-->	/G_AREA/	0	0	100
.....	.....	-->	/LASTBUF/	0	0	100
.....	.....	-->	/LINE_WINDOW/	0	0	100
.....	.....	-->	FASTSTRMATCH	195	195	100
.....	.....	-->	FGETOPT	431	431	100
.....	.....	-->	FMPABSFNAME	20	20	100
.....	.....	-->	FMPABSNAME	20	20	100
.....	.....	-->	FMPCOLUMNS	51	51	100
.....	.....	-->	FMPDIRINFO	70	70	100
.....	.....	-->	FMPLINES	50	50	100
.....	.....	-->	FMPMAKESLINK	15	15	100
.....	.....	-->	FMPREADLINK	15	15	100
.....	.....	-->	FMPSYMLINK	8	8	100
.....	.....	-->	FMPTEMPNAME	115	115	100
.....	.....	-->	GETGID	25	25	100
.....	.....	-->	GETREDIRECTION	297	297	100
.....	.....	-->	GREAD	2516	2516	100
.....	.....	-->	HPADD_NODE	719	719	100
.....	.....	-->	HPBACKUPCURSOR	68	68	100
.....	.....	-->	HPCOMPAREBUFFERS	24	24	100
.....	.....	-->	HPCOMPARE_BYTES	25	25	100
.....	.....	-->	HPCRTSCREENSIZE	68	68	100
.....	.....	-->	HPDELETEBUF	63	63	100
.....	.....	-->	HPDISPLAYBUF	160	160	100
.....	.....	-->	HPERASECHARS	68	68	100
.....	.....	-->	HPEXPANDNAME	255	255	100
.....	.....	-->	HPFIXUPPROMPT	787	787	100
.....	.....	-->	HPGETAPARM	218	218	100
.....	.....	-->	HPGETCURMASK	251	251	100
.....	.....	-->	HPGETLASTPARM	128	128	100
.....	.....	-->	HPGETLINE	86	86	100
.....	.....	-->	HPHIGHEST_VALUE	64	64	100
.....	.....	-->	HPINIT_TREE	55	55	100

```
.................: ..... --> HPINSERTBUF      :    72     72   100
.................: ..... --> HPLOWEST_VALUE   :    63     63   100
.................: ..... --> HPMOVE_STR       :    30     30   100
.................: ..... --> HPNEXTWORD       :   208    208   100
.................: ..... --> HPNEXT_NODE      :   108    108   100
.................: ..... --> HPNEXT_PTR       :    88     88   100
.................: ..... --> HPPREVWORD       :   211    211   100
.................: ..... --> HPPREV_NODE      :   102    102   100
.................: ..... --> HPPREV_PTR       :    87     87   100
.................: ..... --> HPPROC_CMD       :    97     97   100
.................: ..... --> HPSEARCHHISTORY  :   341    341   100
.................: ..... --> HPSTRIPREDIR     :   239    239   100
.................: ..... --> HPTREE_PTR       :   151    151   100
.................: ..... --> HPZDPARSE        :   225    225   100
.................: ..... --> INITSTRMATCH     :   320    320   100
.................: ..... --> MASKGETDIRENT    :   136    136   100
.................: ..... --> MASKISDS         :    41     41   100
.................: ..... --> MASKWRITEOK      :    61     61   100
.................: ..... --> RTEALLOCSHEMA    :   724    724   100
.................: ..... --> RTEALLOCXSAM     :     9      9   100
.................: ..... --> RTEEXTENDEDEV    :    23     23   100
.................: ..... --> RTEMMPASS        :    18     18   100
.................: ..... --> RTEPRIMESHINFO   :    60     60   100
.................: ..... --> RTERENAMESHEMA   :   134    134   100
.................: ..... --> RTERETURNSHEMA   :   319    319   100
.................: ..... --> RTESHELLREAD     :   210    210   100
.................: ..... --> VI_EDIT          :  2693   2693   100
.................: ..... --> VMAPOST          :   122    122   100
$EMA$            :    99 --> $EMA$            :    98     -1    -1
$INIT            :    94 --> $INIT            :   137     43    45
$PALC            :   102 --> $PALC            :   120     18    17
$PRTN            :   177 --> $PRTN            :   199     22    12
$VMA$            :  1266 --> $VMA$            :  1269      3     0
$VMAINIT$        :   443 --> $VMAINIT$        :   442     -1     0
ADDITEM          :    73 --> ADDITEM          :    72     -1    -1
ALLOCATEMEM      :    60 --> ALLOCATEMEM      :    59     -1    -1
ATACH            :   151 --> ATACH            :   150     -1     0
BUSYPROCESS      :    24 --> BUSYPROCESS      :    23     -1    -4
BYTSTRINGADDRESS:    12 --> BYTSTRINGADDRESS:    11     -1    -8
CALCBLOCKAD      :    44 --> CALCBLOCKAD      :    42     -2    -4
CHECKBITS        :   154 --> CHECKBITS        :   153     -1     0
CLGOF            :   280 --> CLGOF            :   269    -11    -3
CLGON            :   136 --> CLGON            :   134     -2    -1
CMNDSTACKSCREEN  :  1080 --> CMNDSTACKSCREEN  :  1096     16     1
CN..             :   211 --> CN..             :   218      7     3
COPYSPARSE       :   232 --> COPYSPARSE       :   231     -1     0
COUNTRECORDS     :   170 --> COUNTRECORDS     :   169     -1     0
COUNTWRITE       :   170 --> COUNTWRITE       :   169     -1     0
CRNTOLU          :    72 --> CRNTOLU          :    71     -1    -1
DEBUGADOPT       :   203 --> DEBUGADOPT       :   248     45    22
```

DEBUGEVMAPEEK	:	376	-->	DEBUGEVMAPEEK	:	470	94	25
DEBUGSTOP	:	67	-->	DEBUGSTOP	:	65	-2	-2
DELETEITEM	:	85	-->	DELETEITEM	:	84	-1	-1
DIRECPOSITION	:	227	-->	DIRECPOSITION	:	226	-1	0
DIRENTMATCH	:	66	-->	DIRENTMATCH	:	72	6	9
DISCRW	:	209	-->	DISCRW	:	206	-3	-1
DSOPENCON1	:	25	-->	DSOPENCON1	:	24	-1	-4
DTACH	:	120	-->	DTACH	:	119	-1	0
EIOSZ	:	17	-->	EIOSZ	:	16	-1	-5
ELAPSEDTIME	:	59	-->	ELAPSEDTIME	:	55	-4	-6
EMACHECKBITS	:	187	-->	EMACHECKBITS	:	186	-1	0
EMAFINDBITS	:	89	-->	EMAFINDBITS	:	87	-2	-2
EMAST	:	54	-->	EMAST	:	49	-5	-9
EXEC11TOMS	:	67	-->	EXEC11TOMS	:	65	-2	-2
FATTENMASK	:	260	-->	FATTENMASK	:	259	-1	0
FINDBITS	:	89	-->	FINDBITS	:	87	-2	-2
FINDDIGIT	:	56	-->	FINDDIGIT	:	55	-1	-1
FINDITEM	:	66	-->	FINDITEM	:	65	-1	-1
FMPACCESSDISC	:	184	-->	FMPACCESSDISC	:	185	1	0
FMPACCESSTIME	:	15	-->	FMPACCESSTIME	:	37	22	146
FMPASKDDOT	:	134	-->	FMPASKDDOT	:	142	8	5
FMPBUILDPATH	:	202	-->	FMPBUILDPATH	:	201	-1	0
FMPCLOSE	:	61	-->	FMPCLOSE	:	64	3	4
FMPCOPY	:	1502	-->	FMPCOPY	:	1639	137	9
FMPCREATETIME	:	15	-->	FMPCREATETIME	:	37	22	146
FMPDISCSIZE	:	122	-->	FMPDISCSIZE	:	120	-2	-1
FMPENDMASK	:	17	-->	FMPENDMASK	:	16	-1	-5
FMPEOF	:	15	-->	FMPEOF	:	37	22	146
FMPGETVALUE	:	47	-->	FMPGETVALUE	:	50	3	6
FMPINITMASK	:	708	-->	FMPINITMASK	:	728	20	2
FMPLIST	:	54	-->	FMPLIST	:	53	-1	-1
FMPLISTX	:	788	-->	FMPLISTX	:	787	-1	0
FMPMASKHEADER	:	53	-->	FMPMASKHEADER	:	65	12	22
FMPMASKPROT	:	142	-->	FMPMASKPROT	:	141	-1	0
FMPOPENSCRATCH	:	260	-->	FMPOPENSCRATCH	:	248	-12	-4
FMPOWNER	:	241	-->	FMPOWNER	:	240	-1	0
FMPPAGEDDEVWRITE	:	46	-->	FMPPAGEDDEVWRITE	:	45	-1	-2
FMPPAGEDWRITE	:	54	-->	FMPPAGEDWRITE	:	53	-1	-1
FMPPAGINATOR	:	330	-->	FMPPAGINATOR	:	331	1	0
FMPPARSEPATH	:	203	-->	FMPPARSEPATH	:	201	-2	0
FMPRECORDCOUNT	:	15	-->	FMPRECORDCOUNT	:	37	22	146
FMPRECORDLEN	:	19	-->	FMPRECORDLEN	:	41	22	115
FMPREWINDMASK	:	41	-->	FMPREWINDMASK	:	40	-1	-2
FMPRPPROGRAM	:	469	-->	FMPRPPROGRAM	:	470	1	0
FMPRUNPROGRAM	:	480	-->	FMPRUNPROGRAM	:	479	-1	0
FMPSETOWNER	:	41	-->	FMPSETOWNER	:	29	-12	-29
FMPSHORTNAME	:	131	-->	FMPSHORTNAME	:	61	-70	-53
FMPSIZE	:	15	-->	FMPSIZE	:	37	22	146
FMPUPDATETIME	:	15	-->	FMPUPDATETIME	:	37	22	146
FMPWORKINGDIR	:	50	-->	FMPWORKINGDIR	:	67	17	34

FREADDIR	:	135	-->	FREADDIR	:	145	10	7
FROMSYSESSION	:	21	-->	FROMSYSESSION	:	20	-1	-4
GETMYSONS	:	163	-->	GETMYSONS	:	162	-1	0
GETNEXTENT	:	42	-->	GETNEXTENT	:	41	-1	-2
GETOWNERNUM	:	24	-->	GETOWNERNUM	:	23	-1	-4
GETSN	:	69	-->	GETSN	:	68	-1	-1
HASHITEM	:	56	-->	HASHITEM	:	55	-1	-1
HPCRTGETCURSOR	:	30	-->	HPCRTGETCURSOR	:	46	16	53
HPCRTGETCURSORXY	:	61	-->	HPCRTGETCURSORXY	:	48	-13	-21
HPCRTREADCHAR	:	64	-->	HPCRTREADCHAR	:	66	2	3
HPCRTSTATUS	:	53	-->	HPCRTSTATUS	:	51	-2	-3
HPCRTXREADCHAR	:	64	-->	HPCRTXREADCHAR	:	66	2	3
HPZDICV	:	91	-->	HPZDICV	:	85	-6	-6
HPZHEXI	:	53	-->	HPZHEXI	:	59	6	11
HPZOCTD	:	29	-->	HPZOCTD	:	30	1	3
IFTTY	:	30	-->	IFTTY	:	35	5	16
LEGALLU	:	35	-->	LEGALLU	:	34	-1	-2
LKEMA	:	40	-->	LKEMA	:	50	10	25
MASKDCBTOLUTAB	:	98	-->	MASKDCBTOLUTAB	:	97	-1	-1
MASKDISCBPT	:	13	-->	MASKDISCBPT	:	12	-1	-7
MASKDISCLU	:	25	-->	MASKDISCLU	:	38	13	52
MASKDISCREAD	:	69	-->	MASKDISCREAD	:	73	4	5
MASKFILLBUF	:	39	-->	MASKFILLBUF	:	38	-1	-2
MASKMATCHLEVEL	:	28	-->	MASKMATCHLEVEL	:	27	-1	-3
MASKOLDFILE	:	17	-->	MASKOLDFILE	:	16	-1	-5
MASKOPENID	:	90	-->	MASKOPENID	:	89	-1	-1
MASKREADOK	:	62	-->	MASKREADOK	:	61	-1	-1
MASKSECURITY	:	34	-->	MASKSECURITY	:	33	-1	-2
MASKSETERROR	:	27	-->	MASKSETERROR	:	26	-1	-3
MEMBER	:	356	-->	MEMBER	:	355	-1	0
MMAP	:	88	-->	MMAP	:	93	5	5
NEWDIRREAD	:	112	-->	NEWDIRREAD	:	111	-1	0
NEXTCLASS	:	31	-->	NEXTCLASS	:	30	-1	-3
NEXTINCHAIN	:	45	-->	NEXTINCHAIN	:	44	-1	-2
NEXTITEM	:	61	-->	NEXTITEM	:	59	-2	-3
NEXTNEWLU	:	90	-->	NEXTNEWLU	:	89	-1	-1
NEXTOLDLU	:	115	-->	NEXTOLDLU	:	114	-1	0
OKASCII	:	57	-->	OKASCII	:	56	-1	-1
OLDDIROPEN	:	91	-->	OLDDIROPEN	:	90	-1	-1
OLDDIRREAD	:	223	-->	OLDDIRREAD	:	222	-1	0
OLDLUINFO	:	74	-->	OLDLUINFO	:	73	-1	-1
OTHERMATCH	:	198	-->	OTHERMATCH	:	203	5	2
OWNERTOID	:	364	-->	OWNERTOID	:	373	9	2
PERMANENTIDSEG	:	22	-->	PERMANENTIDSEG	:	21	-1	-4
POPDIR	:	194	-->	POPDIR	:	199	5	2
PROCESS_STRING	:	265	-->	PROCESS_STRING	:	279	14	5
PROGISSUPER	:	29	-->	PROGISSUPER	:	52	23	79
PROGRAMSID	:	128	-->	PROGRAMSID	:	127	-1	0
PUSHDIR	:	387	-->	PUSHDIR	:	423	36	9
SAVINGRESOURCES	:	22	-->	SAVINGRESOURCES	:	21	-1	-4

```
 SCANDIR          :    40 --> SCANDIR          :    41      1     2
 SECONDS          :    88 --> SECONDS          :    86     -2    -2
 SESSNTOOWNERNAME:    75 --> SESSNTOOWNERNAME:    74     -1    -1
 SETOWNERMASK     :   148 --> SETOWNERMASK     :   147     -1     0
 SETTM            :    97 --> SETTM            :   109     12    12
 SUPERUSER        :    77 --> SUPERUSER        :    76     -1    -1
 SYSTEMPROCESS    :    21 --> SYSTEMPROCESS    :    20     -1    -4
 TIMENOW          :    28 --> TIMENOW          :    26     -2    -7
 TM..             :    54 --> TM..             :    61      7    12
 VFNAM            :   363 --> VFNAM            :   362     -1     0
 VMAIO            :   135 --> VMAIO            :   133     -2    -1
 VMAREAD          :   196 --> VMAREAD          :   193     -3    -1
 VMAST            :    35 --> VMAST            :    80     45   128
 WILDCARDMASK     :   235 --> WILDCARDMASK     :   234     -1     0
 PSTVM            :   118 --> ................:  .....   -118  -100
                    -----                       -----   -----  ----
                    20065                       38741   18676    93

    # of size differences    =   136
# of unique names: Rev.5270 =     1
                   Rev.6000 =    71
   Total file size change    = 18676
      Total file % change    =    15%
```

4.5.11.4 BIGLB Size Differences (6.0 <-> 6.0)

BIGLB Size Differences

w/o Symbolic Links Rev.6000			w/ Symbolic Links Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	SFMP	1	1	100
DIRENTMATCH	72	-->	DIRENTMATCH	111	39	54
FMPABSFNAME	20	-->	FMPABSFNAME	154	134	670
FMPABSNAME	20	-->	FMPABSNAME	126	106	530
FMPASKDDOT	142	-->	FMPASKDDOT	174	32	22
FMPCOPY	1639	-->	FMPCOPY	1692	53	3
FMPINITMASK	728	-->	FMPINITMASK	794	66	9
FMPMAKESLINK	15	-->	FMPMAKESLINK	165	150	1000
FMPNEXTMASK	184	-->	FMPNEXTMASK	197	13	7
FMPOPEN	90	-->	FMPOPEN	109	19	21
FMPOWNER	240	-->	FMPOWNER	247	7	2
FMPREADLINK	15	-->	FMPREADLINK	72	57	380
FMPRPPROGRAM	470	-->	FMPRPPROGRAM	478	8	1
FMPSYMLINK	8	-->	FMPSYMLINK	9	1	12
FREADDIR	145	-->	FREADDIR	183	38	26
MASKMATCHLEVEL	27	-->	MASKMATCHLEVEL	86	59	218
OTHERMATCH	203	-->	OTHERMATCH	218	15	7
POPDIR	199	-->	POPDIR	295	96	48
PUSHDIR	423	-->	PUSHDIR	600	177	41
FMP	1	-->	.....	.....	-1	-100
	4641			5711	1070	23

```
    # of size differences   =    18
# of unique names: Rev.5270 =     1
                   Rev.6000 =     1
   Total file size change   =  1070
      Total file % change   =     0%
```

4.5.11.5 BGCDS Data Size Differences (5.27 -> 6.0)

BGCDS: Data Size Differences

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	/G_AREA/	0	0	100
.....	.....	-->	/LASTBUF/	0	0	100
.....	.....	-->	/LINE_WINDOW/	0	0	100
.....	.....	-->	ADDITEM	0	0	100
.....	.....	-->	ALLOCATEMEM	0	0	100
.....	.....	-->	CHANGEBITS	0	0	100
.....	.....	-->	CHECKBITS	0	0	100
.....	.....	-->	CLEAREMA	1	1	100
.....	.....	-->	DAYTIME	79	79	100
.....	.....	-->	DAYTIMENOW	63	63	100
.....	.....	-->	DELETEITEM	0	0	100
.....	.....	-->	DISCSIZE	0	0	100
.....	.....	-->	ELAPSEDTIME	1	1	100
.....	.....	-->	EMACHANGEBITS	0	0	100
.....	.....	-->	EMACHECKBITS	0	0	100
.....	.....	-->	EMAFINDBITS	0	0	100
.....	.....	-->	EXEC11TOMS	5	5	100
.....	.....	-->	FGETOPT	51	51	100
.....	.....	-->	FINDBITS	0	0	100
.....	.....	-->	FINDITEM	0	0	100
.....	.....	-->	FMPABSFNAME	0	0	100
.....	.....	-->	FMPABSNAME	0	0	100
.....	.....	-->	FMPCOLUMNS	10	10	100
.....	.....	-->	FMPDIRINFO	6	6	100
.....	.....	-->	FMPLINES	9	9	100
.....	.....	-->	FMPMAKESLINK	0	0	100
.....	.....	-->	FMPREADLINK	0	0	100
.....	.....	-->	FMPSYMLINK	0	0	100
.....	.....	-->	FMPTEMPNAME	9	9	100
.....	.....	-->	FREEMEM	0	0	100
.....	.....	-->	GETGID	0	0	100
.....	.....	-->	GETREDIRECTION	14	14	100
.....	.....	-->	GREAD	77	77	100
.....	.....	-->	HASHITEM	0	0	100
.....	.....	-->	HPADD_NODE	0	0	100
.....	.....	-->	HPBACKUPCURSOR	3	3	100
.....	.....	-->	HPDELETEBUF	2	2	100
.....	.....	-->	HPDISPLAYBUF	11	11	100
.....	.....	-->	HPERASECHARS	3	3	100
.....	.....	-->	HPEXPANDNAME	20	20	100
.....	.....	-->	HPFIXUPPROMPT	4	4	100
.....	.....	-->	HPGETAPARM	3	3	100
.....	.....	-->	HPGETCURMASK	4	4	100

```
................: ..... --> HPGETLASTPARM   :     5      5   100
................: ..... --> HPGETLINE       :     0      0   100
................: ..... --> HPHIGHEST_VALUE :     0      0   100
................: ..... --> HPINIT_TREE     :     1      1   100
................: ..... --> HPINSERTBUF     :     1      1   100
................: ..... --> HPLOWEST_VALUE  :     0      0   100
................: ..... --> HPNEXTWORD      :     7      7   100
................: ..... --> HPNEXT_NODE     :     0      0   100
................: ..... --> HPNEXT_PTR      :     0      0   100
................: ..... --> HPPREVWORD      :     7      7   100
................: ..... --> HPPREV_NODE     :     0      0   100
................: ..... --> HPPREV_PTR      :     0      0   100
................: ..... --> HPPROC_CMD      :     2      2   100
................: ..... --> HPSEARCHHISTORY :    12     12   100
................: ..... --> HPSTRIPREDIR    :     9      9   100
................: ..... --> HPTREE_PTR      :     0      0   100
................: ..... --> INITMEM         :     0      0   100
................: ..... --> MASKGETDIRENT   :    12     12   100
................: ..... --> MASKISDS        :     0      0   100
................: ..... --> MASKWRITEOK     :     0      0   100
................: ..... --> MOVE2           :     0      0   100
................: ..... --> MOVEFROMEMA     :     1      1   100
................: ..... --> NEXTCLASS       :     0      0   100
................: ..... --> NEXTINCHAIN     :     0      0   100
................: ..... --> NEXTITEM        :     0      0   100
................: ..... --> NUMERICTIME     :    33     33   100
................: ..... --> OKASCII         :     1      1   100
................: ..... --> REXADDSET       :     0      0   100
................: ..... --> REXALPHANBR     :     6      6   100
................: ..... --> REXAMATCH       :     0      0   100
................: ..... --> REXBREAKLINE    :     0      0   100
................: ..... --> REXBUILDCLASS   :     9      9   100
................: ..... --> REXBUILDCLOSURE :     2      2   100
................: ..... --> REXBUILDPATTERN :    17     17   100
................: ..... --> REXBUILDSUBST   :     6      6   100
................: ..... --> REXCATNEWCHAR   :     0      0   100
................: ..... --> REXCATNEWXCG    :     5      5   100
................: ..... --> REXCLASSMEMBER  :     0      0   100
................: ..... --> REXCTOI         :    12     12   100
................: ..... --> REXESC          :     3      3   100
................: ..... --> REXEXCHANGE     :     2      2   100
................: ..... --> REXFILLCLASS    :    12     12   100
................: ..... --> REXGETCHAR      :     0      0   100
................: ..... --> REXMATCH        :     2      2   100
................: ..... --> REXOMATCH       :     0      0   100
................: ..... --> REXPATTERNSZ    :     0      0   100
................: ..... --> REXSUFFIXOK     :     0      0   100
................: ..... --> RTEALLOCSHEMA   :    14     14   100
................: ..... --> RTEPRIMESHINFO  :     0      0   100
................: ..... --> RTERENAMESHEMA  :    13     13   100
```

.....	.....	-->	RTERETURNSHEMA	:	0	0	100
.....	.....	-->	RTESHELLREAD	:	17	17	100
.....	.....	-->	SECONDS	:	6	6	100
.....	.....	-->	TIMENOW	:	1	1	100
.....	.....	-->	VI_EDIT	:	48	48	100
FMPACCESSTIME	1	-->	FMPACCESSTIME	:	2	1	100
FMPCOPY	67	-->	FMPCOPY	:	81	14	20
FMPCREATETIME	1	-->	FMPCREATETIME	:	2	1	100
FMPEOF	1	-->	FMPEOF	:	2	1	100
FMPRECORDCOUNT	1	-->	FMPRECORDCOUNT	:	2	1	100
FMPRECORDLEN	1	-->	FMPRECORDLEN	:	2	1	100
FMPSHORTNAME	1	-->	FMPSHORTNAME	:	5	4	400
FMPSIZE	1	-->	FMPSIZE	:	2	1	100
FMPUPDATETIME	1	-->	FMPUPDATETIME	:	2	1	100
FMPWORKINGDIR	8	-->	FMPWORKINGDIR	:	7	-1	-12
GETRESETINFO	20	-->	GETRESETINFO	:	18	-2	-10
GROUPTOID	17	-->	GROUPTOID	:	18	1	5
IDTOGROUP	31	-->	IDTOGROUP	:	32	1	3
IDTOOWNER	26	-->	IDTOOWNER	:	27	1	3
MUSECCHK	54	-->	MUSECCHK	:	33	-21	-38
OPEN_FILE	40	-->	OPEN_FILE	:	39	-1	-2
OWNERTOID	38	-->	OWNERTOID	:	43	5	13
PREENTMATCH	16	-->	PREENTMATCH	:	17	1	6
PROCESSGRPNAME	13	-->	PROCESSGRPNAME	:	12	-1	-7
	338				987	649	192

```
    # of size differences    =    19
# of unique names: Rev.5270 =     0
                   Rev.6000 =    98
   Total file size change    =   649
      Total file % change    =    21%
```

4.5.11.6 BGCDS Code Size Differences (5.27 -> 6.0)

BGCDS: Code Size Differences

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	/G_AREA/	: 0	0	100
.....	.....	-->	/LASTBUF/	: 0	0	100
.....	.....	-->	/LINE_WINDOW/	: 0	0	100
.....	.....	-->	ADDITEM	: 76	76	100
.....	.....	-->	ALLOCATEMEM	: 63	63	100
.....	.....	-->	CHANGEBITS	: 178	178	100
.....	.....	-->	CHECKBITS	: 154	154	100
.....	.....	-->	CLEAREMA	: 62	62	100
.....	.....	-->	DAYTIME	: 242	242	100

```
.................: ..... --> DAYTIMENOW       :   191    191   100
.................: ..... --> DELETEITEM       :    85     85   100
.................: ..... --> DISCSIZE         :    22     22   100
.................: ..... --> ELAPSEDTIME      :    62     62   100
.................: ..... --> EMACHANGEBITS    :   217    217   100
.................: ..... --> EMACHECKBITS     :   189    189   100
.................: ..... --> EMAFINDBITS      :    86     86   100
.................: ..... --> EXEC11TOMS       :    63     63   100
.................: ..... --> FGETOPT          :   481    481   100
.................: ..... --> FINDBITS         :    84     84   100
.................: ..... --> FINDITEM         :    68     68   100
.................: ..... --> FMPABSFNAME      :    25     25   100
.................: ..... --> FMPABSNAME       :    24     24   100
.................: ..... --> FMPCOLUMNS       :    57     57   100
.................: ..... --> FMPDIRINFO       :    70     70   100
.................: ..... --> FMPLINES         :    56     56   100
.................: ..... --> FMPMAKESLINK     :    22     22   100
.................: ..... --> FMPREADLINK      :    22     22   100
.................: ..... --> FMPSYMLINK       :    19     19   100
.................: ..... --> FMPTEMPNAME      :   146    146   100
.................: ..... --> FREEMEM          :    95     95   100
.................: ..... --> GETGID           :    35     35   100
.................: ..... --> GETREDIRECTION   :   318    318   100
.................: ..... --> GREAD            :  2513   2513   100
.................: ..... --> HASHITEM         :    58     58   100
.................: ..... --> HPADD_NODE       :   699    699   100
.................: ..... --> HPBACKUPCURSOR   :    72     72   100
.................: ..... --> HPDELETEBUF      :    70     70   100
.................: ..... --> HPDISPLAYBUF     :   216    216   100
.................: ..... --> HPERASECHARS     :    71     71   100
.................: ..... --> HPEXPANDNAME     :   213    213   100
.................: ..... --> HPFIXUPPROMPT    :   792    792   100
.................: ..... --> HPGETAPARM       :   224    224   100
.................: ..... --> HPGETCURMASK     :   256    256   100
.................: ..... --> HPGETLASTPARM    :   132    132   100
.................: ..... --> HPGETLINE        :    89     89   100
.................: ..... --> HPHIGHEST_VALUE  :    64     64   100
.................: ..... --> HPINIT_TREE      :    57     57   100
.................: ..... --> HPINSERTBUF      :    76     76   100
.................: ..... --> HPLOWEST_VALUE   :    63     63   100
.................: ..... --> HPNEXTWORD       :   209    209   100
.................: ..... --> HPNEXT_NODE      :   106    106   100
.................: ..... --> HPNEXT_PTR       :    83     83   100
.................: ..... --> HPPREVWORD       :   210    210   100
.................: ..... --> HPPREV_NODE      :   100    100   100
.................: ..... --> HPPREV_PTR       :    83     83   100
.................: ..... --> HPPROC_CMD       :   102    102   100
.................: ..... --> HPSEARCHHISTORY  :   348    348   100
.................: ..... --> HPSTRIPREDIR     :   275    275   100
.................: ..... --> HPTREE_PTR       :   137    137   100
```

```
................: ..... --> INITMEM          :    27     27   100
................: ..... --> MASKGETDIRENT    :   144    144   100
................: ..... --> MASKISDS         :    45     45   100
................: ..... --> MASKWRITEOK      :    59     59   100
................: ..... --> MOVE2            :    19     19   100
................: ..... --> MOVEFROMEMA      :   110    110   100
................: ..... --> NEXTCLASS        :    38     38   100
................: ..... --> NEXTINCHAIN      :    49     49   100
................: ..... --> NEXTITEM         :    65     65   100
................: ..... --> NUMERICTIME      :   202    202   100
................: ..... --> OKASCII          :    64     64   100
................: ..... --> REXADDSET        :    37     37   100
................: ..... --> REXALPHANBR      :    65     65   100
................: ..... --> REXAMATCH        :   225    225   100
................: ..... --> REXBREAKLINE     :    22     22   100
................: ..... --> REXBUILDCLASS    :   128    128   100
................: ..... --> REXBUILDCLOSURE  :    76     76   100
................: ..... --> REXBUILDPATTERN  :   569    569   100
................: ..... --> REXBUILDSUBST    :   227    227   100
................: ..... --> REXCATNEWCHAR    :    63     63   100
................: ..... --> REXCATNEWXCG     :   212    212   100
................: ..... --> REXCLASSMEMBER   :    81     81   100
................: ..... --> REXCTOI          :   158    158   100
................: ..... --> REXESC           :    79     79   100
................: ..... --> REXEXCHANGE      :   153    153   100
................: ..... --> REXFILLCLASS     :   171    171   100
................: ..... --> REXGETCHAR       :    51     51   100
................: ..... --> REXMATCH         :    76     76   100
................: ..... --> REXOMATCH        :   178    178   100
................: ..... --> REXPATTERNSZ     :   102    102   100
................: ..... --> REXSUFFIXOK      :    48     48   100
................: ..... --> RTEALLOCSHEMA    :   683    683   100
................: ..... --> RTEPRIMESHINFO   :    50     50   100
................: ..... --> RTERENAMESHEMA   :   121    121   100
................: ..... --> RTERETURNSHEMA   :   285    285   100
................: ..... --> RTESHELLREAD     :   186    186   100
................: ..... --> SECONDS          :    80     80   100
................: ..... --> TIMENOW          :    30     30   100
................: ..... --> VI_EDIT          :  2756   2756   100
CLGOF           :   237 --> CLGOF           :   228     -9    -3
CLGON           :   121 --> CLGON           :   118     -3    -2
DIRENTMATCH     :    72 --> DIRENTMATCH     :    76      4     5
DISCRW          :   201 --> DISCRW          :   198     -3    -1
FMPACCESSDISC   :   165 --> FMPACCESSDISC   :   167      2     1
FMPACCESSTIME   :    26 --> FMPACCESSTIME   :    40     14    53
FMPASKDDOT      :   119 --> FMPASKDDOT      :   125      6     5
FMPCLOSE        :    64 --> FMPCLOSE        :    67      3     4
FMPCOPY         :  1503 --> FMPCOPY         :  1759    256    17
FMPCREATETIME   :    26 --> FMPCREATETIME   :    40     14    53
FMPDISCSIZE     :   114 --> FMPDISCSIZE     :   111     -3    -2
```

FMPEOF	:	22	-->	FMPEOF	:	36	14	63
FMPGETVALUE	:	55	-->	FMPGETVALUE	:	57	2	3
FMPINITMASK	:	750	-->	FMPINITMASK	:	781	31	4
FMPMASKHEADER	:	55	-->	FMPMASKHEADER	:	69	14	25
FMPNEXTMASK	:	198	-->	FMPNEXTMASK	:	199	1	0
FMPOPENSCRATCH	:	244	-->	FMPOPENSCRATCH	:	236	-8	-3
FMPPAGINATOR	:	315	-->	FMPPAGINATOR	:	318	3	0
FMPRECORDCOUNT	:	26	-->	FMPRECORDCOUNT	:	40	14	53
FMPRECORDLEN	:	27	-->	FMPRECORDLEN	:	41	14	51
FMPRPPROGRAM	:	483	-->	FMPRPPROGRAM	:	485	2	0
FMPSETOWNER	:	44	-->	FMPSETOWNER	:	36	-8	-18
FMPSHORTNAME	:	96	-->	FMPSHORTNAME	:	72	-24	-25
FMPSIZE	:	23	-->	FMPSIZE	:	37	14	60
FMPUPDATETIME	:	26	-->	FMPUPDATETIME	:	40	14	53
FMPWORKINGDIR	:	59	-->	FMPWORKINGDIR	:	72	13	22
FREADDIR	:	131	-->	FREADDIR	:	138	7	5
MASKDISCLU	:	30	-->	MASKDISCLU	:	43	13	43
MASKDISCREAD	:	75	-->	MASKDISCREAD	:	79	4	5
MASKGETNEXTENT	:	152	-->	MASKGETNEXTENT	:	153	1	0
MUSECCHK	:	232	-->	MUSECCHK	:	259	27	11
OTHERMATCH	:	189	-->	OTHERMATCH	:	194	5	2
OWNERTOID	:	349	-->	OWNERTOID	:	354	5	1
POPDIR	:	194	-->	POPDIR	:	196	2	1
PROCESS_STRING	:	230	-->	PROCESS_STRING	:	244	14	6
PUSHDIR	:	382	-->	PUSHDIR	:	416	34	8
SCANDIR	:	48	-->	SCANDIR	:	49	1	2
VMAREAD	:	171	-->	VMAREAD	:	169	-2	-1
		7254				26006	18752	258

```
    # of size differences   =    38
# of unique names: Rev.5270 =     0
                   Rev.6000 =    98
   Total file size change   = 18752
      Total file % change   =    49%
```

4.5.11.7 BGCDS Data Size Differences (6.0 <-> 6.0)

BGCDS: Data Size Differences

w/o Symbolic Links Rev.6000			w/ Symbolic Links Rev.6000			Difference	
Module Name	Size		Module Name	Size		Words	%
FMPABSFNAME	0	-->	FMPABSFNAME	1		1	100
FMPABSNAME	0	-->	FMPABSNAME	2		2	100
FMPASKDDOT	11	-->	FMPASKDDOT	12		1	9
FMPINITMASK	70	-->	FMPINITMASK	74		4	5
FMPMAKESLINK	0	-->	FMPMAKESLINK	11		11	100
FMPOPEN	7	-->	FMPOPEN	8		1	14
FMPREADLINK	0	-->	FMPREADLINK	6		6	100
GETRESETINFO	18	-->	GETRESETINFO	20		2	11
GROUPTOID	18	-->	GROUPTOID	17		-1	-5
IDTOGROUP	32	-->	IDTOGROUP	31		-1	-3
IDTOOWNER	27	-->	IDTOOWNER	26		-1	-3
MUSECCHK	33	-->	MUSECCHK	54		21	63
OPEN_FILE	39	-->	OPEN_FILE	40		1	2
OWNERTOID	43	-->	OWNERTOID	38		-5	-11
PROCESSGRPNAME	12	-->	PROCESSGRPNAME	13		1	8
PUSHDIR	8	-->	PUSHDIR	21		13	162
GETGID	0	-->	.....	.....		0	-100
	318			374		56	17

```
   # of size differences   =    16
# of unique names: Rev.5270 =     1
                   Rev.6000 =     0
  Total file size change    =    56
     Total file % change    =     1%
```

4.5.11.8 BGCDS Code Size Differences (6.0 <-> 6.0)

BGCDS: Code Size Differences

w/o Symbolic Links Rev.6000			w/ Symbolic Links Rev.6000			Difference	
Module Name	Size		Module Name	Size		Words	%
CLGOF	228	-->	CLGOF	237		9	3
CLGON	118	-->	CLGON	121		3	2
DIRENTMATCH	76	-->	DIRENTMATCH	111		35	46
FMPABSFNAME	25	-->	FMPABSFNAME	149		124	496
FMPABSNAME	24	-->	FMPABSNAME	109		85	354
FMPASKDDOT	125	-->	FMPASKDDOT	156		31	24
FMPCOPY	1759	-->	FMPCOPY	1826		67	3

FMPINITMASK	:	781	-->	FMPINITMASK	:	851	70	8
FMPMAKESLINK	:	22	-->	FMPMAKESLINK	:	115	93	422
FMPNEXTMASK	:	199	-->	FMPNEXTMASK	:	211	12	6
FMPOPEN	:	95	-->	FMPOPEN	:	108	13	13
FMPOWNER	:	194	-->	FMPOWNER	:	201	7	3
FMPREADLINK	:	22	-->	FMPREADLINK	:	68	46	209
FMPRPPROGRAM	:	485	-->	FMPRPPROGRAM	:	493	8	1
FREADDIR	:	138	-->	FREADDIR	:	175	37	26
MASKMATCHLEVEL	:	35	-->	MASKMATCHLEVEL	:	86	51	145
MUSECCHK	:	259	-->	MUSECCHK	:	232	-27	-10
OTHERMATCH	:	194	-->	OTHERMATCH	:	209	15	7
OWNERTOID	:	354	-->	OWNERTOID	:	349	-5	-1
POPDIR	:	196	-->	POPDIR	:	292	96	48
PUSHDIR	:	416	-->	PUSHDIR	:	588	172	41
GETGID	:	35	-->	.....	:	.....	-35	-100
		5780				6687	907	15

```
    # of size differences    =    21
# of unique names: Rev.5270 =     1
                   Rev.6000 =     0
   Total file size change    =   907
      Total file % change    =    1%
```

4.6 (92078A) VC+

4.6.1 CI Enhancements

There have been many changes to the CDS version of CI at 6.0, summarized below. Please refer to the RTE-A User's Manual for details on the new functionality.

4.6.1.1 Load File Name Changes

Two load file names have changed at 6.0: #CI is now CINC.LOD, and #CIC is now CI.LOD.

4.6.1.2 Command Aliases

Command aliasing has been implemented in VC+ at the 6.0 release. This allows a user to create new commands or cause standard commands to perform differently by replacing the original command with a new command: an alias. The new command can be a letter or a short word that, when typed, will be expanded by CI into the alias value. Anything that followed the alias in the original line now follows the expanded value.

4.6.1.3 Functions

Functions are similar to aliases. They can be thought of as memory-resident command files. Functions can include positional parameters and IF-THEN-ELSE or WHILE-DO-DONE constructs. They can be entered interactively from CI or via a CI command file.

4.6.1.4 Exporting Variables, Aliases, and Functions

At 6.0, users will be able to use CI's user variables in other programs, along with any defined aliases or functions, by exporting them to the Environment Variable Block (EVB). The syntax for SET has changed to allow for this capability. Individual exported variables can be accessed programmatically using the new EXEC(39) calls. (See the RTE-A Programmer's Reference Manual for more detail on these EXEC calls.) Note that the EVB uses dynamic memory and is non-swappable until the session logs off.

4.6.1.5 New CI Variables

The following variables are now predefined by CI: $COLUMNS, $DATC, $EVB_SIZE, $HOME, $KILLCHAR, $IFDVR, $LINES, and $OLDPWD. In addition, $KILLCHAR, $REPROMPT, and $VISUAL are initially undefined, but once defined have significance to CI. The following variables are automatically exported on start-up: $COLUMNS, $LINES, $HOME, $OLDPWD, and $WD. The last three variables must remain exported. $PROMPT can now have

a value of up to 78 characters.

4.6.1.6 CZ

The previous VC+ command CD, used to display or modify CDS code partition size, has been renamed to CZ to accommodate users who need this functionality.

4.6.1.7 Tilde Expansion

Tilde substitution involves substituting values of certain variables for the character "~" in a file name. A "~" by itself is replaced with the value of $HOME. "~+" is replaced with the value of $WD. "~-" is replaced with the value of $OLDPWD. In order for a ~string to be expanded, it must occur at the beginning of a parameter; also, it must either be at the end of the parameter or be followed by a "/".

4.6.1.8 Command Line Editing

By setting the $VISUAL CI variable, you can select the desired command line editing mode. The supported modes are EMACS, GMACS, VI, and CSH. The EMACS, GMACS, and VI modes enable command editing functions much like the HP-UX ksh program. Setting $VISUAL to CSH enables a mode that provides some of the editing features of the HP-UX csh program. In the CSH mode, only the file name completion, command line directory lists, and command line control functions are available. The csh-style history substitutions are not available.

While editing the current line, the $VISUAL editing mode allows you to edit lines that are longer than your current screen width by scrolling through the line. For lines that are longer than the current screen width, the following symbols are displayed at the end of the line:

> indicates that the line extends to the right.
< indicates that the line extends to the left.
* indicates that the line extends in both directions.

The current line is centered around the cursor as the cursor moves across the line. The default "viewing" width is 80 characters. Use the $COLUMNS variable to redefine the width.

Setting $VISUAL to EMACS, GMACS, VI, or CSH also has an effect on the functionality of the RTE command stack. By default, the RTE command stack routines do not insert duplicate lines in the stack. When setting $VISUAL, duplicate lines are allowed in the stack. To override this behavior, a ",NODUPES" can be added to the visual mode. For example, to use the VI editing mode without saving duplicate lines in the command stack, set $VISUAL to "VI,NODUPES".

The use of the $VISUAL editing modes is only supported when used with the HP 12040D 8-Channel MUX, the HP 12100A 4-Channel OBIO, or with a telnet psuedo terminal LU. FIFO mode is required when using the command editing features. When a port is not already in FIFO mode and command editing is enabled, the port will be reconfigured to enable FIFO mode after each prompt is issued. After the command line is terminated with the RETURN key, the previous state of the port is restored.

4.6.1.9 Command Editing Performance Considerations

For optimal performance when using command editing, the port should be configured to use FIFO mode and XON/XOFF handshaking. For example,

```
CI>     cn,$session,33b,100000b     !     enable     FIFO     CI>
cn,$session,34b,101b ! enable XON/XOFF Protocol (Force type 5)
```

When using XON/XOFF, the port must be in FIFO mode and the terminal's "G" (inhibit handshake) and "H" (inhibit DC2) straps must be set to allow the use of the standard RTE command stack and also the Edit/1000 screen mode function.

The required monitor program CMPLT should also be RP'ed and executed without wait in your WELCOME file as follows:

```
rp,/programs/cmplt.run
xq,cmplt
```

The CMPLT program performs the file name/command completion and the command line directory lists for the various command line editing modes. When a file name completion is requested, CMPLT is scheduled by CI to complete the file name. If CMPLT is already busy with another request, the system clones a copy of CMPLT for your request. To disable cloning, CMPLT can be linked as a system utility. In this case, when it is busy, the system will queue schedule CMPLT.

It is preferable to RP CMPLT as a permanent ID segment rather than a proto-id segment. When CMPLT is RP'ed as a permanent program and executed, it detaches into the system session and terminates serially reusable. Performance on global directory name completions or global directory lists is enhanced because CMPLT keeps a cache of the global directory names. When CMPLT is not RP'ed as a permanent program, the benefits of this cache are lost.

4.6.1.10 File Name and Command Name Completion

In addition to command line editing, the new features at 6.0 allow file name and command name completion. The user types enough of the name to be

unique, and CI fills in the rest. If the amount typed is not unique, the file or command name will be completed up to the point where the names differ.

If a name is the first word typed in a CI command line, command name completion is used; otherwise, file name completion is used.

4.6.2 Symbolic Links

The ability to use symbolic links is now part of the RTE-A/VC+ operating system. A symbolic link is a type of file that indirectly refers to a path name, which can be either a relative or an absolute path name. A symbolic link can refer to any FMP file, FMP directory, or logical unit. Symbolic links can also be used to refer to remote files by using the DS transparency syntax. At revision 6.0, WHOSD will report all users of the specified LU, directory, or file. WHOSD will now also report open files and active programs.

4.7 (92084A) RTE-6/VM Operating System

New functionality has been added to the RTE-6/VM product at the 6.0 release. A summary is below.

4.7.1 CI Enhancements

4.7.1.1 New CI Variables

The following variables are now predefined by CI: $DATC, $HOME, and $OLDPWD. $PROMPT can now have a value of up to 78 characters.

4.7.2 PWD

4.7.2.1 Path Working Directory

A new command, PWD, has been added at 6.0. PWD displays the current working directory, similar to the pwd command in UN*X.

4.7.3 CD

4.7.3.1 Change Directory

The CD command can take either of two forms. In the first form, it changes the current directory to "argument". If "argument" is '-' the directory is changed to the previous directory ($OLDPWD). The default for "argument" is the value of the $HOME variable.

The second form of cd substitutes the string "new" for the string "old" in the current directory name, $WD, and tries to change to this new directory.

4.7.4 WHOSD

4.7.4.1 Report Users of Directory

At revision 6.0, WHOSD will report all users of the specified LU, directory, or file. WHOSD will now also report open files and active programs.

4.7.5 CALLS

4.7.5.1 Online Help Facility

The Calls utility provides a general-purpose help facility, used either as a help subsystem for other programs or as the interface to a "database" of information grouped by keywords. Calls looks up keywords entered by the user in a catalog containing definitions of keywords and associated text, displaying that text. Additionally, the catalog can specify hierarchical groupings of keywords and can suggest related keywords that may be of further interest after the text for a certain keyword is viewed.

The runstring syntax is:

```
Calls [-flags] [keyword]
```

where

flags is a string of characters preceded by a dash (-). Where an argument is required, the next word in the runstring is consumed, delimited by blanks or a comma. The flags are:

C catalog

The name of the Calls catalog to use. By default, directory "/Catalogs/" and type extension ".call" are added to the given name. The default catalog is "/Catalogs/Calls.call".

L listfile

Divert the text listing to the named file. By default the text is listed to the terminal.

P pagesize

Set the number of lines per page for "More..." prompting on the terminal. The default size is 22 lines.

B

Build the index file and terminate. See the discussion below on index files.

keyword is the keyword for which the associated text is to be listed. If not given, then the default keyword ("[default]") for the selected catalog is listed.

For example, "calls -c utils -p 5" and "calls -cp utils 5" both use catalog "/Catalogs/Utils.call" and five lines per page.

At certain times Calls may prompt you to select another topic to display with:

Put cursor on desired name or type new name, press return.

This occurs when no topic keyword is given in the runstring, or when a mask is given. This also occurs when the topic selected has other topics associated with it, which you may want to also read.

When you press carriage return, Calls reads the line under the cursor from the screen, isolates the word under or to the left of the cursor, and uses that word as the new topic name. If there is no word to the left or under the cursor, Calls looks to the right of the cursor. If there is no word on the line at all, Calls terminates. Calls isolates the word by looking for blanks, commas or ')'s. To terminate Calls, type carriage return on a blank line.

If an unknown keyword is given, Calls lists the 16 keywords in ASCII-betical sequence around the given keyword, and then goes interactive as above.

The catalog is a text file, possibly compressed by the CallM utility, which acts as a data base containing keywords and explanatory text. The default catalog name is actually based on the name by which Calls is scheduled (that is, the second word in the received runstring). If Calls is RP'ed under a different name or the .RUN file is renamed, the new name becomes the default catalog name for that copy. For example, "rp calls utils" and then executing UTILS uses default file "/Catalogs/Utils.call".

The first time Calls is run on a catalog and after subsequent updates of the catalog, Calls builds a file called the index file in the same directory and with the same name as the catalog, but with type extension ".indx". More specifically, if the index file is missing or has an update timestamp that is older than the corresponding catalog, Calls rebuilds the index file. Calls will also attempt to rebuild the index if it appears that the index is invalid for the catalog, even if the update timestamps are in order. The index contains FMP internal file position pointers into the catalog file for the various topics, plus the keyword list and associated topic groupings. This means that the first person to run Calls on a catalog after an update must have write access into the catalog directory for the index file to be successfully created. It is suggested that the system manager installing a new catalog immediately run Calls on the catalog with the "-b" option to build the index.

Calls catalog files may be plain text files in the format given below, but more commonly the final catalog is built by the CallM utility, which

merges together plain text files and performs text compression on the result. Additionally, CallM can extract Calls catalogs from comments in source code. Enter "? callm" from CI for more information about the CallM utility.

4.7.6 Manual Updates

The manuals for the 6.0 update will be distributed at a later date. The manual numbering file, M92084, that is currently shipped with the product reflects the last manual update. A new manual numbering file with the correct manual information (along with an update sheet for Chapter 3 of the Communicator) will be provided with the 6.0 manuals.

4.7.7 Size Changes

As an aid for your software development efforts, the size differences are listed here from the last update in the operating system modules and system libraries. Dots are place-holders, meaning that the module did not exist at that release. The percentage difference reported on the last row of the table is the average percentage change of those modules that have been changed. There is a summary following the table. The "# of size differences =" is the number of modules that existed in the 5.27 release and have changed in size. The "# of unique names: Rev.5270 =" line is the number of modules that existed in the 5.27 release and have been deleted at 6.0 release. The "# of unique names: Rev.6000 =" line is the number of modules that are new for the 6.0 release.

4.7.7.1 Operating System Size Differences

There are no size changes in the Operating System for the 6.0 release.

4.7.7.2 Driver Size Differences

File: %DVS23

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
DVS23 :	1273	-->	DVS23 :	1299	26	2
	1273			1299	26	2

```
    # of size differences   =     1
# of unique names: Rev.5270 =     0
                   Rev.6000 =     0
   Total file size change   =    26
      Total file % change   =     2
```

4.7.7.3 System and Relocatable Library Size Differences

File: $FMP6 (New or deleted modules only)

Rev.5270			Rev.6000		Difference	
Module Name	Size		Module Name	Size	Words	%
.....	.....	-->	MASKGETDIRENT	136	136	100
.....	.....	-->	MASKISDS	41	41	100
.....	.....	-->	MASKWRITEOK	61	61	100
.....	.....	-->	FMPTEMPNAME	115	115	100
.....	.....	-->	FGETOPT	431	431	100
.....	.....	-->	HPINIT_TREE	55	55	100
.....	.....	-->	HPADD_NODE	719	719	100
.....	.....	-->	HPNEXT_NODE	108	108	100
.....	.....	-->	HPTREE_PTR	151	151	100
.....	.....	-->	HPLOWEST_VALUE	63	63	100
.....	.....	-->	HPNEXT_PTR	88	88	100
.....	.....	-->	HPPREV_NODE	102	102	100
.....	.....	-->	HPPREV_PTR	87	87	100
.....	.....	-->	HPHIGHEST_VALUE	64	64	100
.....	.....	-->	GETREDIRECTION	297	297	100
.....	.....	-->	HPSTRIPREDIR	239	239	100
.....	.....	-->	FMPSYMLINK	8	8	100
.....	.....	-->	FMPMAKESLINK	15	15	100
.....	.....	-->	FMPREADLINK	15	15	100
.....	.....	-->	FMPDIRINFO	70	70	100
.....	.....	-->	FMPABSNAME	20	20	100
.....	.....	-->	FMPABSFNAME	20	20	100
.....	.....	-->	HPCOMPAREBUFFERS	24	24	100
.....	.....	-->	HPCOMPARE_BYTES	25	25	100
.....	.....	-->	HPMOVE_STR	30	30	100
.....	.....	-->	INITSTRMATCH	320	320	100
.....	.....	-->	FASTSTRMATCH	195	195	100
.....	.....	-->	FMPLINES	9	9	100
.....	.....	-->	FMPCOLUMNS	9	9	100
.....	.....	-->	HPCRTSCREENSIZE	68	68	100
.....	.....	-->	HPZDPARSE	225	225	100
	-----			-----	-----	----
	0			3810	3810	32767

```
    # of size differences   =   100
# of unique names: Rev.5270 =     0
                   Rev.6000 =    31
   Total file size change   =  4113
      Total file % change   =     7
```

File: $FMP6 (Existing modules only)

Rev.5270			Rev.6000			Difference	
Module Name	Size		Module Name	Size		Words	%
FMPRUNPROGRAM	480	-->	FMPRUNPROGRAM	479		-1	0
FMPLIST	54	-->	FMPLIST	53		-1	-1
FMPLISTX	788	-->	FMPLISTX	787		-1	0
FMPPAGEDWRITE	54	-->	FMPPAGEDWRITE	53		-1	-1
FMPPAGEDDEVWRITE	46	-->	FMPPAGEDDEVWRITE	45		-1	-2
FMPPAGINATOR	330	-->	FMPPAGINATOR	331		1	0
COUNTWRITE	170	-->	COUNTWRITE	169		-1	0
FMPOWNER	241	-->	FMPOWNER	240		-1	0
DIRENTMATCH	66	-->	DIRENTMATCH	72		6	9
OTHERMATCH	198	-->	OTHERMATCH	203		5	2
SETOWNERMASK	148	-->	SETOWNERMASK	147		-1	0
FINDDIGIT	56	-->	FINDDIGIT	55		-1	-1
FATTENMASK	260	-->	FATTENMASK	259		-1	0
CALCBLOCKAD	44	-->	CALCBLOCKAD	42		-2	-4
LEGALLU	35	-->	LEGALLU	34		-1	-2
NEXTNEWLU	90	-->	NEXTNEWLU	89		-1	-1
GETNEXTENT	42	-->	GETNEXTENT	41		-1	-2
FMPMASKHEADER	53	-->	FMPMASKHEADER	65		12	22
FMPMASKPROT	142	-->	FMPMASKPROT	141		-1	0
NEXTOLDLU	115	-->	NEXTOLDLU	114		-1	0
POPDIR	194	-->	POPDIR	199		5	2
PUSHDIR	387	-->	PUSHDIR	423		36	9
SCANDIR	40	-->	SCANDIR	41		1	2
FMPENDMASK	17	-->	FMPENDMASK	16		-1	-5
DIRECPOSITION	227	-->	DIRECPOSITION	226		-1	0
FREADDIR	135	-->	FREADDIR	145		10	7
OLDDIROPEN	91	-->	OLDDIROPEN	90		-1	-1
OLDDIRREAD	223	-->	OLDDIRREAD	222		-1	0
NEWDIRREAD	112	-->	NEWDIRREAD	111		-1	0
FMPINITMASK	708	-->	FMPINITMASK	728		20	2
MASKDCBTOLUTAB	98	-->	MASKDCBTOLUTAB	97		-1	-1
MASKFILLBUF	39	-->	MASKFILLBUF	38		-1	-2
CRNTOLU	72	-->	CRNTOLU	71		-1	-1
MASKOPENID	90	-->	MASKOPENID	89		-1	-1
MASKMATCHLEVEL	28	-->	MASKMATCHLEVEL	27		-1	-3
MASKSECURITY	34	-->	MASKSECURITY	33		-1	-2
MASKDISCLU	25	-->	MASKDISCLU	38		13	52
MASKDISCBPT	13	-->	MASKDISCBPT	12		-1	-7
MASKOLDFILE	17	-->	MASKOLDFILE	16		-1	-5
DSOPENCON1	25	-->	DSOPENCON1	24		-1	-4
MASKSETERROR	27	-->	MASKSETERROR	26		-1	-3
WILDCARDMASK	235	-->	WILDCARDMASK	234		-1	0
OLDLUINFO	74	-->	OLDLUINFO	73		-1	-1

MASKREADOK	:	62	-->	MASKREADOK	:	61	-1	-1
FMPREWINDMASK	:	41	-->	FMPREWINDMASK	:	40	-1	-2
FMPCOPY	:	1502	-->	FMPCOPY	:	1639	137	9
COUNTRECORDS	:	170	-->	COUNTRECORDS	:	169	-1	0
COPYSPARSE	:	232	-->	COPYSPARSE	:	231	-1	0
FMPPARSEPATH	:	203	-->	FMPPARSEPATH	:	201	-2	0
FMPBUILDPATH	:	202	-->	FMPBUILDPATH	:	201	-1	0
BYTSTRINGADDRESS	:	12	-->	BYTSTRINGADDRESS	:	11	-1	-8
MASKDISCREAD	:	69	-->	MASKDISCREAD	:	73	4	5
DISCRW	:	209	-->	DISCRW	:	206	-3	-1
FMPDISCSIZE	:	122	-->	FMPDISCSIZE	:	120	-2	-1
PROCESS_STRING	:	265	-->	PROCESS_STRING	:	279	14	5
FMPSHORTNAME	:	131	-->	FMPSHORTNAME	:	61	-70	-53
FMPACCESSDISC	:	184	-->	FMPACCESSDISC	:	185	1	0
FMPSETOWNER	:	41	-->	FMPSETOWNER	:	29	-12	-29
FMPOPENSCRATCH	:	260	-->	FMPOPENSCRATCH	:	248	-12	-4
FMPCLOSE	:	61	-->	FMPCLOSE	:	64	3	4
FMPACCESSTIME	:	15	-->	FMPACCESSTIME	:	37	22	146
FMPCREATETIME	:	15	-->	FMPCREATETIME	:	37	22	146
FMPUPDATETIME	:	15	-->	FMPUPDATETIME	:	37	22	146
FMPEOF	:	15	-->	FMPEOF	:	37	22	146
FMPRECORDCOUNT	:	15	-->	FMPRECORDCOUNT	:	37	22	146
FMPRECORDLEN	:	19	-->	FMPRECORDLEN	:	41	22	115
FMPSIZE	:	15	-->	FMPSIZE	:	37	22	146
FMPWORKINGDIR	:	50	-->	FMPWORKINGDIR	:	67	17	34
FMPGETVALUE	:	47	-->	FMPGETVALUE	:	50	3	6
FMPASKDDOT	:	134	-->	FMPASKDDOT	:	142	8	5
OKASCII	:	57	-->	OKASCII	:	56	-1	-1
FINDBITS	:	89	-->	FINDBITS	:	87	-2	-2
CHECKBITS	:	154	-->	CHECKBITS	:	153	-1	0
EMAFINDBITS	:	89	-->	EMAFINDBITS	:	87	-2	-2
EMACHECKBITS	:	187	-->	EMACHECKBITS	:	186	-1	0
TIMENOW	:	28	-->	TIMENOW	:	26	-2	-7
SECONDS	:	88	-->	SECONDS	:	86	-2	-2
ELAPSEDTIME	:	59	-->	ELAPSEDTIME	:	55	-4	-6
EXEC11TOMS	:	67	-->	EXEC11TOMS	:	65	-2	-2
FINDITEM	:	66	-->	FINDITEM	:	65	-1	-1
ADDITEM	:	73	-->	ADDITEM	:	72	-1	-1
DELETEITEM	:	85	-->	DELETEITEM	:	84	-1	-1
NEXTITEM	:	61	-->	NEXTITEM	:	59	-2	-3
NEXTCLASS	:	31	-->	NEXTCLASS	:	30	-1	-3
NEXTINCHAIN	:	45	-->	NEXTINCHAIN	:	44	-1	-2
HASHITEM	:	56	-->	HASHITEM	:	55	-1	-1
ALLOCATEMEM	:	60	-->	ALLOCATEMEM	:	59	-1	-1
SYSTEMPROCESS	:	10	-->	SYSTEMPROCESS	:	9	-1	-10
BUSYPROCESS	:	41	-->	BUSYPROCESS	:	40	-1	-2
FMPRPPROGRAM	:	659	-->	FMPRPPROGRAM	:	660	1	0
PERMANENTIDSEG	:	21	-->	PERMANENTIDSEG	:	20	-1	-4
HPCRTXREADCHAR	:	64	-->	HPCRTXREADCHAR	:	66	2	3
HPCRTREADCHAR	:	64	-->	HPCRTREADCHAR	:	66	2	3

HPCRTSTATUS	:	53	-->	HPCRTSTATUS	:	51	-2	-3
HPCRTGETCURSOR	:	30	-->	HPCRTGETCURSOR	:	46	16	53
HPCRTGETCURSORXY	:	61	-->	HPCRTGETCURSORXY	:	48	-13	-21
HPZDICV	:	91	-->	HPZDICV	:	85	-6	-6
HPZOCTD	:	29	-->	HPZOCTD	:	30	1	3
HPZHEXI	:	53	-->	HPZHEXI	:	59	6	11
CMNDSTACKSCREEN	:	1080	-->	CMNDSTACKSCREEN	:	1096	16	1
		13980				14283	303	2

```
    # of size differences    =   100
# of unique names: Rev.5270 =     0
                   Rev.6000 =    31
   Total file size change    =  4113
      Total file % change    =     7
```

4.8 (92131A) QDM/1000

4.8.1 FORMS/1000 Libraries

The FORMS/1000 libraries that are part of the QDM/1000 software changed at the 6.0 release. The QDM/1000 software will be sent to customers on support for QDM/1000 under separate cover. Only those modules in QDM/1000 that are changing will be shipped. Refer to Chapter 3 in this document for a list of the changing FORMS/1000 libraries in the QDM product.

4.9 (92860A) Debug/1000

4.9.1 xdb Compatibility Mode

xdb provides an interface to Symbolic Debug/1000 that is similar to the xdb debugger for HP-UX. xdb provides a superset of Debug/1000 functionality; xdb contains all Debug/1000 functionality plus a new set of xdb-like commands. Any Debug/1000 command line may be entered by preceding it with a colon. Both xdb and Debug/1000 may be used on the same system. Note that in xdb mode, the term "current location" refers to the location currently listed on the screen rather than the point of suspension of execution.

Also note that the command stack saved in the .DBG file will contain either Debug/1000 commands, xdb commands, or both, depending on which utility has been used to debug the program in the past.

One useful feature of xdb is record/playback. This feature helps re-create program states and record all debugger output. It is particularly useful for bugs requiring a lengthy set-up.

Note: there is a significant difference between xdb/1000 and xdb for HP-UX in the area of record/playback. xdb/1000 does not implement separate files for "record" and "record-all". Turning on one of these features will close the file associated with the other, if any.

4.10 (92861A/92862A) AGP/DGL

See the AGP/DGL Device Handlers Manual for more information on the device handler changes to the Graphics software.

4.10.1 LUs > 63

The change to have AGP/DGL support LUs greater than 63 has been much-requested and has been implemented for the 6.0 release.

4.10.1.1 HP-GL/2 Handler

A new handler is required to drive new plotters and printers that support HP-GL/2. This handler is supplied with 6.0 and will meet the needs of future graphics peripherals supported on the HP 1000.

4.10.2 PaintJet Support

A new handler has been added to support devices such as the HP PaintJet and DeskJet 500C.

4.11 (98170A) ARPA/1000

4.11.1 INETD

4.11.1.1 Description

Inetd is a monitor for NS-ARPA/1000 or ARPA/1000 systems which listens for incoming connections and schedules the appropriate server to handle the connection. Inetd will listen on up to 30 TCP protocol addresses (or "ports") at once, requiring fewer system resources than if separate programs were to listen for these connections. Inetd must be running before other hosts can connect to the local host through mail, ftp, or telnet. Inetd can be started only by superusers with appropriate privileges. It is started at network initialization time. Inetd also offers an extra level of security by allowing you to specify which hosts may or may not use a service. A log of connections to services can optionally be kept in the file /etc/inetd.log, along with info about errors encountered and access denials. Currently, inetd supports the following services:

```
smtp   : simple mail transfer protocol
ftp    : file transfer protocol
telnet : TELNET virtual terminal
```

4.11.1.2 Installation

Prior to release 6.0, inetd was installed as part of the Mail/1000 product if SMTP service was installed (on RTE_A VC+ with NS-ARPA). The configuration file "inetd.conf" and the file "services", which maps service names to TCP ports, were both installed in the /SYSTEM directory; inetd was started with the command "xq inetd" in the Welcome file.

For release 6.0, inetd has been enhanced to support ftp and telnet and is installed as part of the NS-ARPA and ARPA products. It is no longer part of the RTE-A product. The installation script "install_ns1000" or "install_arpa" contains the appropriate commands for installing files needed by inetd, including the following files:

```
/programs/inetd.run : executable file for inetd monitor
/etc/inetd.conf     : configuration file that specifies services to
                      listen for
/etc/services       : file that maps services to the TCP port services use
```

Please refer to the on-line help file on inetd for how to set up the services in the "inetd.conf" and "services" files.

4.11.1.3 Important Notes

1. The location of the files "inetd.conf" and "services" have been changed from the directory /SYSTEM to /ETC. In addition, inetd is started up at NS initialization (nsinit) or ARPA initialization (netinit); therefore the "xq inetd" command in the Welcome file can be removed at 6.0.

2. Inetd replaces the ftp and telnet monitors, ftpmn and tnmon. Therefore these monitors should be removed from the /PROGRAMS directory.

4.11.2 Generation Considerations

At 6.0, NS-ARPA and ARPA programs are now transportable between systems running the same version of RTE-A and networking software. This was accomplished by eliminating the use of non-transportable system entry points by the networking software. As part of this change, the networking modules that are generated into the system have been modified. NSPEC.REL is no longer needed and has been removed from the networking products. The other networking system module, NSABP, is now partitionable. Also, it is no longer necessary to search NSLIB for the DSGLO module during RTAGN's system relocation phase.

The following commands should be deleted from your RTAGN answer file. For ARPA/1000 systems, the global directory would be /ARPA1000.

```
RE /NS1000/REL/NSPEC.REL
SE /NS1000/LIB/NSLIB.LIB DSGLO
```

If you move NSABP into an OS partition, you must include NSABP in a PA command. Otherwise, a dummy version of NSABP will be included from $SYSA.

A few restrictions on program transportability should be noted. Some of the networking programs use labelled system common. These programs can only be moved to other systems with the same system common configuration. The networking software uses the cross map move byte instructions, MBxy, extensively. Older versions of the A900 microcode contain a bug in these instructions. So, programs linked with a snap file that includes an RPL file other than %rpl91 must not be run on an A900 without the latest firmware (Rev. 4). Chapter 3 contains a revision history of the A900 firmware and lists the part numbers for the each revision.

Chapter 5
Media Installation and Update Procedures

Customers on Update Media subscription services will receive updates to software on magnetic tapes, CTDs, or DDS tapes, depending on the option they have ordered. This chapter contains information concerning the format of update/new media and should be used in conjunction with product configuration/installation manuals when removing software from the media.

```
************************************************************
*   Look at the media label and determine what format      *
*   is used.  Then find the section in this chapter        *
*   which corresponds to the media format (sections        *
*   are organized by format).  Follow the instructions     *
*   in that section to restore the files from the          *
*   media.                                                 *
************************************************************
```

5.1 General Information for Update Customers

1. *BACK UP YOUR disk BEFORE PROCEEDING.*
   This will insure that you can always return to your original system and start over.

2. *VERIFY YOUR BACKUP COPY.*
   It is suggested that you make two copies and verify them both.

3. The typical procedure for updating your system is to replace the existing files on your system with the files supplied on the media. When possible, you may want to store the new file to disk on a different CRN or volume. Then, when you're sure it has transferred correctly, purge your old copy. This is just to ensure that you get a good copy of the new file before you destroy your old one.

After you have installed your software:

1. Generate your new system right away. If there have been any errors in the transfer process, they wiill probably be detected this way.

2. Check the revision codes of your software as they appear in the generation map against those listed in the software numbering catalog or file, and make sure you have not left out any modules.

3. Boot, initialize and use your newly generated system to make sure that it works correctly.

4. Make backup copies of your newly generated system. Use a new tape to backup your system. Keep the old copy until it is time to update once again, and then use it to backup the next 'new' system. This way you will keep at least two revisions backed-up by rotating your media.

5. Keep the update media together with your old backup media. If you diskover problems later, you will always be able to get back to where you started and go through the installation procedure again.

NOTE

If Operating System software has not changed and there are no changes affecting your generation (e.g., generated-in libraries), then regeneration is not necessary and on-line reloading will be sufficient. Otherwise regeneration is necessary before reloading on-line.

5.2 Media Installation Procedures

Software is stored on media in one of several formats. Note that each physical media carries a label identifying the part number of the media, a description, and a revision code.

On media with files to be restored to hard disk there is a file called "HPHPHP" which describes each of the software parts. Information provided for each part includes

Part number
Software revision code
Module number
File type
File name
Directory path

All media (i.e., each tape), with a revision code after 2340 (all software updated at DSD4.0 is 2540 or greater) will have an HPHPHP file. The exception to this rule is diagnostics: they do not have the HPHPHP file.

The information in HPHPHP is helpful if you want to know what files are on the medium. For example, if the medium was missing a software module that was listed in HPHPHP, you would call your support office and request the missing software.

On each tape HPHPHP is the first file. On floppies, HPHPHP is the first file appearing in the directory listing. The HPHPHP file has no part number. Diagnostics and primary systems do not require an HPHPHP file.

5.3 'FST' Format for Restoring TF or FST Format Tapes

Please consult with the *Utilities Reference Manual* (92077-90004 or 92084-90007) on how to use the 'FST' utility.

A tape contains one or more products, each product being identified by a global directory. The HPHPHP file contains a list of all files on that tape. Here is an example on how to use 'FST':

```
CI> fst
FST> mt,<lu>
FST> verify
FST> re
     (NOTE: If tape is in FST format, FST will report the file count.)
FST> go
FST> ex
```

This would copy all files from the tape LU to your disk under the directory names that the files are stored on the tape.

5.4 'TF' Format for Restoring TF Format Tapes

Please consult with the Utilities Reference Manual (92077-90004 or 92084-90007) on how to use the 'TF' utility.

A tape contains one or more products, each product being identified by a global directory. The HPHPHP file contains a list of all files on that tape. Here is an example on how to use 'TF':

```
CI> tf
TF: co,<lu>,,v
```

This would copy all files from the tape LU to your disk under the directory names that the files are stored on the tape.

The above is the preferred and less complicated way. However, if you want to selectively restore certain products, follow the directions below.

```
CI> tf
TF: co,<lu>{/global1/},/global2/,v
```

where `<lu>` = LU of the tape
`global1` = Global directory identifying the files for a given product on the tape.
`global2` = Global directory on your system
`v` = verify

This will copy all the files from the tape with global directory /GLOBAL1 onto the disk on directory /GLOBAL2 and will verify each transfer. Files with duplicate names will not be copied and duplicate file errors will occur. To replace duplicate files, use the 'D' option.

5.5 VCP Bootable Format for CS/80 CTD

'VCP Bootable' means that these files are loaded directly from tape into memory, then executed by following the instructions in the appropriate diagnostic manual. The CTD media update in this format replaces the older version of the media. Refer to the appropriate diagnostic manual.

5.6 Customized Tapes

All Update tapes for RTE-A and RTE-6/VM are in FST format. Subsystems are customized in TF format.

The following products are currently shipped out in various Customized

Update tapes; not all are being sent out at this release:

DIRECTORIES	PROD.NAME	PROD.NUMBER	STANDARD FMT
/DS1000/	DS/1000	91750A	TF
/X25/	X.25	91751A	TF
/RJE/	RJE/1000-II	91781A	TF
/MRJE/	MRJE/1000	91782A	TF
/LAN/	LAN/1000	12076A	TF
/NS1000/	NS-ARPA/1000	91790A	TF
/DATAPAIR/	Datapair/1000	92050A	TF
/RTE_A/	RTE-A	92077A	FST
/VCPLUS/	VCPlus	92078A	TF
/IMAGE2/	Image/1000-II	92081A	TF
/RTE_6/	RTE-6 VM/OS	92084A	FST
/Pascal/	Pascal/1000	92833A	TF
/FTN7X/	Fortran 77	92836A	TF
/BASIC/	Basic/1000-C	92857A	TF
/DEBUG/	Symbolic Debug	92860A	TF
/GRAPHICSV2/DGL/	DGL/1000 V2	92861A	TF
/GRAPHICSV2/AGP/	AGP/1000 V2	92862A	TF
/PCIF/	PCIF/1000 #1	94200B	TF
/PCIF/	PCIF/Get_Start #2	94200B	TF
/PCIF/AB/	PCIF/AB Handler	94202A	TF
/PCIF/GM/	PCIF/GM Handler	94203A	TF
/FORMS/	Forms/1000A	94250A	TF
/F1000/	Forms/1000B	94250B	TF
/ARPA/	ARPA/1000	98170A	TF

There are two methods for restoring the contents of the customized update tape to the hard disk:

1. The first method is to use TF to copy the entire tape to the CI directories. Then copy the products that have FC as a standard format to a FMGR cartridge and purge the CI directory that was associated with it. This method is used if your system has a CI volume with enough space to contain all the files on the customized update tape.

   ```
   CI> tf
   TF: co <lu> ,, v              (Copy tape to specified directories)
   TF: ex
   CI> co /Directory/ ::crn1 p   (One CO command for each product whose
                                  standard format is FC)
   ```

   For example, suppose Pascal, Fortran 77, and Image-II are all on a single customized update tape. You would enter the following command sequence:

   ```
   CI> tf
   ```

```
TF: co 9 ,, v              (Copy the entire tape to a CI volume)
TF: ex
CI> co /ftn7x/ ::F7 p      (Copy the contents of /FTN7X to cartridge F7
CI> pu /ftn7x               and purge directory /FTN7X)
```

In this example, LU 9 is the LU of the tape drive on which the customized update tape is mounted. Cartridge F7 must exist on your system. Also, by defaulting the destination parameter in the TF CO command, Pascal and Image-II are copied to directories /PASCAL and /IMAGE2 respectively.

2. The second method is to enter TF and use the group copy command to copy all the products directly to the disk. This method is used if your system does not have a CI volume with enough space to contain all the files on the customized update tape.

   Enter one TF CO command for each product in the customized update tape. All products whose standard format is FC are copied directly from the tape to a FMGR cartridge and all products whose standard format is TF are copied directly to a CI volume.

```
CI> tf
TF: gr
TF: co <lu>{/Directory/} ::crn1 v  (One TF CO command for each product
     .                              whose standard format is FC)
     .
     .
TF: co <lu>{/Directory/} ,, v      (One TF CO command for each product
     .                              whose standard format is TF)
     .
     .
     .
TF: eg
TF: ex
```

   For example, suppose Pascal, PCIF, Fortran 77, and Image-II are all on a single customized update tape. You would use the following command sequence:

```
CI> tf
TF: gr
TF: co 9{/Pascal/},,v          (Copy Pascal to directory /PASCAL)
TF: co 9{/Image2/},,v          (Copy Image II to directory /Image2)
TF: co 9{/Ftn7x/},::F7,v       (Copy Fortran 7X to cartridge F7)
TF: co 9{/PCIF/},::D2,v        (Copy PCIF to cartridge D2)
TF: eg
TF: ex
```

   In this example, LU 9 is the LU of the tape drive on which the customized update tape is mounted. Cartridges F7 and D2 must exist on your system.

As you can see from method 2 above, you can copy down products selectively if you do not have enough disk space.

5.7 Additional Formats

For media in other formats such as ASAVE, PUSHBUTTON SAVE, LSAVE, and READT/WRITT, refer to the appropriate utilities manual and/or installation guide.

Note that some subsystem software may have a transfer file or other means of restoring files from media. See the appropriate configuration guide or reference manual for specific information.

RTE-A 6.0 Installation Cookbook	APPENDIX A

This appendix is intended as a guide to assist you in updating your HP 1000 RTE-A system from version 5.2 or 5.27 to version 6.0. Before beginning, read the RTE-A (92077A) section in Chapter 4 of the Communicator. The RTE-A section explains any the changes and impacts and lists the names and sizes of each system library module.

1. **Backup your system with ASAVE.**

   Make sure you have a memory-based ARSTR system which you can use to restore the ASAVE of your system. Refer to Chapter 3 of the ***RTE-A Utilities Manual*** for details on ASAVE and ARSTR.

2. **Copy the 6.0 version of the RTE-A and VC+ products from tape to /RTE_A and /VCPLUS.**

   A. Begin by clearing some room on a CI volume and creating the global directories /RTE_A and /VCPLUS. Create the sub-directory /GEN/REV60 to hold the answer, system, and snap files. If /RTE_A and /VCPLUS already exist, then purge everything in them before loading the 6.0 software onto the system.

      /RTE_A will require about 40000 blocks, and /VCPLUS will require about 12000 blocks.

   B. Use FST to copy the software off the update tape to the newly created directories. For additional details on FST, consult the ***RTE-A Utilities Manual***.

```
CI> crdir /rte_a
CI> crdir /vcplus
CI> crdir /gen/rev60
CI> FST mt<tape lu>|re @|ve|go
```

3. **Modify your answer file for the 6.0 changes.**

   (Refer to the "Generation Considerations" section in Chapter 4 of the Communicator for more details.)

A. New modules: /vcplus/%ENVRN

If the target system is to perform the EXEC(39) call, which performs environment variable look-ups for various utilities such as LI, then this module must be relocated in the "System Generation" section of the answer file. This module is partionable; to partition, use the "PA,ENVRN" command in your answer file. See the ***RTE-A System Generation and Installation Manual*** for the number of words required in the tag area.

B. SCSI disks:

The 6.0 revision of DDQ30_GEN.REL has two new model names, and two model names have been changed.

It is recommended that you use the new model names, below. Which model name you use depends on which media you use. These new model are used to configure the media as all one LU.

model	description
M650A_1	use to make 92279A media all one LU
M650A_3	use to make 92280A media all one LU

If you don't want to use these new models, you will have to change the DVT commands in your answer file to use the new names, below. These models are used to divide the 307MB on the 92280A media.

The 6.0 revision of DDQ30_GEN.REL changed two model names to be consistent with the naming convention that ":A" is used for the large LU and ":B" is used for the small LU. The changes are:

old model	new model
M19MB_3:A	M19MB_3:B
M51MB_3:B	M51MB_3:A

C. NS-ARPA/1000 and ARPA/1000 changes:

The 6.0 revisions of NS-ARPA/1000 or ARPA/1000 software MUST be used in conjunction with the 6.0 RTE-A operating system.

The file /NS1000/REL/NSPEC.REL no longer exists, and it should not be relocated. The library search command "SE /NS1000/LIB/NSLIB.LI is no longer needed and can be deleted. For ARPA/1000 systems, the global directory for these modules is /ARPA1000.

Module NSABP is now partitionable. File /NS1000/REL/NSABP.REL

may be relocated into an OS partition.

D. X.25 changes:

The file /X25/REL/#X25A.REL no longer exists. The entry points it con are now in VCTR. Delete the command "RE /X25/REL/#X25A.REL from your answer file.

E. Miscellaneous:

These changes are unlikely to affect the answer file for most systems:

- Module SAM is no longer optional. %SAM must be relocated; module "SAM.." is no longer available in $SYSA. Very few systems are currently generated without SAM.

- Five words of XSAM (or SAM if no XSAM) will be consumed per ID segment. If there is insufficient XSAM/SAM for this purpose, then the system will not boot.

- The real VEMA module must be relocated (from %VEMA, as opposed to "VEM.." from $SYSA) if the system is to use the new Large or Extended models of EMA/VMA. This will not affect any host that currently runs D.RTR, since the real VEMA must already be used.

- The required tag area size is slightly higher; see the ***RTE-A*** System Generation and Installation Manual for the number of words required for each partitioned module.

- Various restrictions on the values of class buffer limits (formerly known as spool buffer limits) have been removed. See Chapter 4 for more information.

4. **Generate your new 6.0 system.**

The 6.0 revisions of five programs must be used to upgrade to 6.0: RTAGN, MACRO, LINK, LINDX, and BUILD. These programs will run on your 5.2/5.27 system, and should be loaded using your existing 5.2/5.27 system libraries and snap file. The .RUN files should be placed in a temporary directory, where they can be used for installation purposes only -- don't put them in /PROGRAMS/, since the programs are incompatible with 5.2/5.27 systems.

A. Use the upgrade60.cmd file to load these programs.

A command file, upgrade60.cmd, is supplied with RTE-A to ease the loading of 6.0 versions of software needed for RTE-A 6.0

installation. This command file is to be run with your working directory set to a temporary directory created for this purpose. The directory may safely be /SCRATCH, if desired.

The .RUN files created by this command file are named RTAGN60.RUN, MACRO60.RUN, LINK60.RUN, LINDX60.RUN, and BUILD60.RUN. Each is created in the temporary directory. Once this command file completes, these five programs may be RP'ed as RTAGN, MACRO, LINK, LINDX, and BUILD before generating the new system and before executing rtea1.cmd, vc1.cmd, install_ns1000.cmd or any other software installation command files used.

See Chapter 4 for information on why this is necessary and for help with errors found during software installation.

```
crdir /tempdir LU
wd /tempdir
tr /rte_a/upgrade60 [rte_a_dir]
```

where:

LU	= the LU for your temporary directory.
rte_a_dir	= the directory where the RTE-A 6.0 software resides. The default is /RTE_A.

Now that the .RUN files have been created, they can be RP'ed as mentioned above, if desired:

```
rp /tempdir/rtagn60 rtagn
rp /tempdir/macro60 macro
rp /tempdir/link60  link
rp /tempdir/lindx60 lindx
rp /tempdir/build60 build
```

Note: once the entire 6.0 software installation is complete, you will want to remove these five ID segments. For example:

```
of rtagn id
of macro id
of link  id
of lindx id
of build id
```

When the temporary 6.0 programs are no longer needed, the contents of the temporary directory may be purged.

B. Use the following CI commands to generate the system, where

rtea60.ans is a copy of your 6.0 answer file:

```
CI> wd /gen/rev60
CI> ru rtagn rtea60.ans - - -
```

The last line will cause the generator to create 'rtea60.LST', 'rtea60.SYS', and 'rtea60.SNP'.

Be sure that the 6.0 relocatables and libraries are used in the generation. If RTAGN complains that any of the following entry points are missing, this probably indicates that a pre-6.0 version of the module has been relocated:

Defining module	New entry points
VCTR	$SHEMATBL
	$IDNBR
	$IDEXT
	$IDXSZ
	$MMPASS
	$RTNSHEMA
UTIL	$UPCLASSLIMIT
	$NLOWCLASSLIMIT
ABORT	$ABORTSHEMA
	$KILLSHTBL
VEMA	$XSHEMAREL

The following entry points no longer exist at 6.0, so undefined externals to these probably indicate that the referencing module is pre-6.0:

Formerly in VCTR:

```
$SHTB
$SH#
$SHSZ
$PENT
$VMAS
$CPLV
$SGNL
$IDNO
```

Formerly in other modules:

```
$SPBL
```

DSPBL

5. **Create /TARGETPROGRAMS and transfer to the command files to link up the essential RTE-A and VC+ programs:**

In the past, it was a requirement that the target software reside in a global directory. This is no longer the case. The software may exist in any directory or sub-directory.

Size requirements for an A-series system, with VC+, without subsystems:

```
/TARGETPROGRAMS uses about 15100 blocks
/LIBRARIES      uses about  7000 blocks
/HELP           uses about  1000 blocks
/CATALOGS       uses about   510 blocks
```

Note that these sizes are for a basic 6.0 RTE-A system that does not include any application software or other subsystems. Sizes of directories on individual systems may be much larger.

A. Create the directory using the following commands:

```
CI> crdir /targetprograms
CI> wd /rte_a
```

B. To preserve your 5.2/5.27 libraries, rename the existing /libraries to /libs527. Create a new /libraries for RTEA1.CMD to use for the 6.0 libraries. Be sure to specify the 'UPDATE' option in RTEA1.CMD, below.

   If you wish to retain your old software, you may wish to rename /libraries to /libs60 and rename /libs527 to /libraries if you wish to retain your old system.

C. Decide whether you want symbolic link support.

   /RTE_A/$BIGLB and /VCPLUS/$BGCDS are no longer shipped at 6.0. The proper versions must be built by RTEA1.CMD and VC1.CMD.

   At 6.0, you must choose between two possible versions of various libraries: the version containing support for file system symbolic links and the version that does not. There are four libraries shipped that are affected:

Description	File without symbolic links	File with symbolic links

Non-CDS FMP	/RTE_A/$FMP	/RTE_A/$SFMP
CDS routines	/VCPLUS/$CDS	/VCPLUS/$SCDS

At RTE software installation time, you choose which version of the above libraries will be installed on your system. This is accomplished by setting CI variable $RTE_SLINK appropriately, as documented below.

The RTEA1.CMD and VC1.CMD files will build the proper version of $BIGLB.LIB and $BGCDS.LIB for your system if the "UPDATE" parameter is specified. The libraries built will contain the the desired versions of $[S]FMP and $[S]CDS, according to whether symbolic link support is requested in variable $RTE_SLINK.

D. Set CI variables to configure the software installed.

There are now seven CI variables that may be set prior to transferring to the RTEA1/RTEA2/VC1/VC2 installation command files. A description of each appears below:

$RTE_CDS

If "T", this tells the RTEA1 and RTEA2 command files that CDS versions of software will be installed via VC1.CMD and VC2.CMD. This simply causes RTEA1.CMD and RTEA2.CMD not to load non-CDS versions of programs that will be loaded as CDS later, thereby saving time. The non-CDS programs that will not be loaded are as follows:

CI CIX D.RTR DL LS GREP

The default is to load the non-CDS versions of these programs.

$RTE_HPMDM

If "T", the HPMDM modem controller utility will be loaded by RTEA2.CMD. This utility requires file hpmdm_table.rel to be relocated into the system common area of the target system. The default is to not load this utility.

$RTE_SLINK

If "T", the target system is to have the capability to create and access symbolic links in the file system. This causes the versions of $BIGLB and $BGCDS which can access symbolic links to be installed and the LNS utility to be loaded. The default is to install $BIGLB and $BGCDS versions that cannot access

symbolic links and to not load LNS.

Note that setting $RTE_SLINK = T does not make sense for non-VC+ systems or for systems where the CDS version of D.RTR is not loaded.

$RTE_A990

If "T", programs that are used only on A990 processors will be loaded: Clock, SetVcpString, Download, and A990fwid.

$RTE_LIBS

May be set to the directory name where libraries are to be copied. The default is "/LIBRARIES". Note that this does not cause LINK to search this directory when loading programs; it only allows an alternate directory structure to be used for the target system.

$RTE_CATS

May be set to the directory name where NLS catalogs are to be copied. The default is "/CATALOGS".

$RTE_HELP

May be set to the directory name where help files are to be copied. The default is "/HELP".

For example, to load a CDS system that runs HPMDM and uses symbolic links, using the default directories /LIBRARIES, /CATALOGS, and /HELP:

```
set rte_cds = T
set rte_hpmdm = T
set rte_slink = T
```

Then follow the steps below to transfer to the installation command files.

E. Transfer to RTEA1.CMD and RTEA2.CMD to link the programs.

NOTE

If you use the 'UPDATE' option, be sure you have a backup of

/LIBRARIES, /CATALOGS, and /HELP because the command file RTEA1.CMD uses the 'd' option (replace and delete old version) during the update.

NOTE

The name of the LINK NLS catalog file has changed from >LK000 to LINK.C000. The new catalog file must be present in the /CATALOGS directory for the 6.0 revision of LINK to run. If the "UPDATE" option is given to RTEA1.CMD and the $RTE_CATS variable is set to the default of "/CATALOGS", then RTEA1.CMD will install the catalog for you. If you do not specify the "UPDATE" option or if $RTE_CATS is set to another directory, then you must copy file LINK.C000 from /RTE_A to /CATALOGS prior to running RTEA1.CMD.

```
CI> rtea1,<snap>,/targetprograms,/rte_a,abort,update,rtea2
```

where:

<snap>	= new 6.0 snap file (following our convention, it would be /gen/rev60/rtea60.snp). The file must have the .SNP type extension.
/targetprograms	= directory to place newly-compiled programs.
/rte_a	= directory that contains new 6.0 RTE-A relocatables (may be a sub-directory).
abort	= will abort transfer file if an error occurs. If not specified, the transfer file will continue.
update	= will update /LIBRARIES, /CATALOGS, and /HELP. If not specified, the directories won't be updated.
rtea2	= will transfer to RTEA2.CMD. If not specified, RTEA1.CMD will return to CI.

NOTE

If you want to save the NON-CDS versions of CI and CIX and you did not use the $RTE_CDS flag in step 5D, you must rename these files at this time. The following transfer files will overlay these programs with CDS versions.

F. If you have the VC+ product, use VC1.CMD and VC2.CMD to link the VC+ programs as follows:

```
CI> wd /VCPLUS
CI> vc1,<snap>,/targetprograms,/rte_a,/vcplus,abort,update,vc2
```

where:

<snap>	= new 6.0 snap file (following our convention, /gen/rev60/rtea60.snp). The file must have the .SNP type extension.
/targetprograms	= directory to place newly compiled programs.
/rte_a	= directory that contains new 6.0 RTE-A relocatables (may be a sub-directory).
/vcplus	= directory that contains new 6.0 VC+ relocatables (may be a sub-directory).
abort	= will abort transfer file if an error occurs. If not specified, the transfer file will continue.
update	= will update /LIBRARIES, /CATALOGS, and /HELP. If not specified, the directories won't be updated.
vc2	= will transfer to VC2.CMD. If not specified, VC1.CMD will return to CI.

6. **BUILD your 6.0 memory-based system (if needed).**

If you are running memory-based, you MUST use the 6.0 revision of BUILD to create your 6.0 memory-based system. The upgrade60.cmd file should have already loaded a 6.0 BUILD on your pre-6.0 system for you.

7. **Copy new system and snap files to the bootable LU.**

For a bootable LU 16 as a FMGR cartridge, use the following:

```
CI> wd, /gen/rev60
CI> co rtea60.snp snp60::16
CI> co rtea60.sys sys60::16
```

If your bootable LU is a CI volume, or if you are booting from a CI volume but your bootex is on a FMGR cartridge, then you will need to copy the system and snap files to the /SYSTEM directory.

8. **Prepare to boot the 6.0 system.**

A. Set up the boot command file (usually BOOT.CMD) and Welcome file (usually WELCOMEn.CMD where n is a number from 1-99). Copies of your 5.2/5.27 boot command and welcome files can be used. Place these files on your bootable LU and on /SYSTEM, respectively. Be sure to specify your 6.0 system and snap files in the boot command file.
It is recommended you comment out any references to subsystem and application start-up at this time. After you have successfully booted your RTE-A/VC+ system, you can remove the comments and bring up your subsystems and applications.

   Note that as of 5.27, there is no longer a requirement to have an 'EX' at the end of the Welcome file.

B. Install the 6.0 BOOTEX on your bootable LU.

NOTE

The 6.0 revision of BOOTEX is NOT backwards-compatible with your 5.2/5.27 system. If you still wish to access your old system, you will need a second copy of BOOTEX on your disk.

The 6.0 revision of BOOTEX must be used to slow-boot a 6.0 system. A disk-based system must be slow-booted at least once this way.

The 6.0 revision of /RTE_A/BOOTEX must be used as the "source" file to the INSTL utility (INSTL may be Rev.5020, Rev.5270, or Rev.6000). If an earlier revision of BOOTEX is used, an error similar to "All snap entry points not found: $SHSZ" is given after the "SN" command in the BOOT.CMD file. The FPUT utility may be run to put down your BOOTEX file. Refer to the ***RTE-A Utilities Manual*** for more information on how and when to use the INSTL and FPUT utilities.

The following is an example of how this could be done for a CI LU 16; your LU and file names may be different.

```
CI> instl,/system/rtea60.snp,/system/rtea60.sys,/gen/rev60/bootex,
    16,/rte_a/bootex

CI> fput,/gen/rev60/bootex,16
```

C. Set up the /programs directory :

After doing this, you will no longer be able to boot your old system. If you wish to have a way to boot the 5.2/5.27 system again in case your 6.0 system does not boot correctly, you need to make another boot.cmd file and another welcome file. You should use your existing 5.2/5.27 boot.cmd and welcome files for this step. In the boot.cmd file, you need to access all programs in the /old_progs directory. Be sure to RP CIX from the /old_progs directory in the boot command file. In the welcome file, the following two lines must be added at the top:

```
rn /programs /targetprograms
rn /old_progs /programs
```

To set up the /programs directory for 6.0, use the following:

```
CI> wd /programs
CI> rn /programs /old_progs
CI> rn /targetprograms /programs
```

9. **If running DATAPAIR/1000, then run PREPAIR on the 6.0 system file.**

As usual, systems running DataPair/1000 must be processed by the PREPAIR utility before booting. It is not necessary to run the 6.0 revision of PREPAIR.

10. **Boot your 6.0 system.**

If you placed your BOOTEX at sector 0, your boot string will look something like this:

```
VCP> %BDC27<boot command filename>
```

Perform the following steps only if you are satisfied that your new 6.0 system is working.

NOTE

If you want auto-boot after a power-up, you will need to have a 6.0 BOOTEX at sector 0 of the bootable LU.

11. Optional installation steps.

A. Create symbolic links (if desired).

A new command file, crlinks.cmd, may be executed on a 6.0 VC+ system with symbolic link capability to create several useful symbolic links. The links created are:

```
/programs/fgrep.run   -> /programs/grep.run
/programs/ll.run      -> /programs/ls.run
/programs/lsf.run     -> /programs/ls.run
/programs/lsx.run     -> /programs/ls.run
/programs/ftpls.run   -> /programs/ls.run
/programs/cp.run      -> /programs/lns.run
/programs/rm.run      -> /programs/lns.run
/programs/mv.run      -> /programs/lns.run
/help/fgrep           -> /help/grep
/help/ll              -> /help/ls
/help/lsf             -> /help/ls
/help/lsx             -> /help/ls
/help/uudecode        -> /help/uuencode
```

crlinks.cmd is shipped with VC+. The usage is:

```
wd /vcplus  (you must be in the vcplus directory)
crlinks [/programsdir] [/helpdir]
```

where programsdir defaults to /PROGRAMS

```
helpdir      defaults to /HELP
```

B. Update MACRO libraries (if needed).

Macro libraries used by the 6.0 version of MACRO must be compiled by the new MACRO. If an existing macro library has not already been recompiled with the new MACRO, an error will be generated when the 6.0 MACRO tries to use it, as follows:

```
21  >> Old macro library.  Try: 'MACRO,-3,,,<maclib>'
```

Running MACRO with the suggested runstring will fix the problem.

12. Load Security/1000.

There are two programs that must be loaded, SECTL and STGEN, for Security/1000. If you used the VC+ transfer files VC1.CMD and VC2.CMD, then these programs should already be loaded.

13. **Initialize Security/1000.**

To initialize and turn on the security each time the system is booted, the following line MUST BE THE FIRST COMMAND in the Welcome file:

```
ru,sectl,+in[:<snap file name>],+on
```

If the snap file name is not supplied, /system/snap.snp will be the default name used. For more details please refer to the ***RTE-A System Manager's Manual***.

14. **Load other RTE subsystem software.**

Load any subsystems needed to for your RTE-A/VC+ system, such as languages, networking, DEBUG/1000, etc.

15. **Load your own application software.**

Due to the change in the ID segment size, all of your existing software will need to be reloaded.

16. **Backup your new system.**

A. Build a new memory based ARSTR system. Using the 6.0 BUILD, ARSTR, and the current 6.0 system and snap files, create the type 1 file holding the memory based system. Use CI's 'CO' command to copy that file to magnetic tape (or use CSYS to put it on Linus tape), and then put this tape in a safe place to be used for restore if you have a disk crash. You should check to see that you can boot the ARSTR system from the tape you just made.

B. Before this new 6.0 system is complete, make an ASAVE of your system that you can restore in case of a disk crash.

See the ***RTE-A Utilities Manual*** for more details on the above utilities.

This completes the update. The new system is now generated, installed, verified, and backed up.

RTE-6/VM 6.0 Installation Cookbook	APPENDIX B

This appendix is intended as a guide to assist you in updating your HP 1000 RTE-6/VM system from version 5.2 or 5.27 to version 6.0.

1. **BACK UP your system (LUs 2 and 3) with PSAVE.**

Make sure you have an up-to-date copy of !BCKOF on mag tape or cassette tape (264x terminals). If you do not, then use the transfer files provided with RTE-6/VM (*BCKMT or *BCKCT) to make up a current copy.

You may wish to back up your old RTE-6/VM software using FST or another backup utility.

2. **Copy the 6.0 version of RTE-6 from tape to the /RTE_6 directory.**

Begin by clearing some room on a CI volume and creating the global directory /RTE_6. If this directory already exists, then purge ALL the files in it before restoring any files to the system. You can then use TF or FST to restore the new files to the /RTE_6 directory.

3. **Modify your answer file to reflect the changes required for 6.0.**

You may want to keep a separate copy of your answer file for 6.0 (eg. create a new directory /GENS/R60 and copy your old answer file into it). There are no changes to the answer file required for the operating system at 6.0.

Other Subsystems

If you need to change anything in the answer file for any other subsystems, you should do that now.

4. **Run the generator and repeat the above cycle until the gen is to your satisfaction.**

5. **Switch in the new system.**

Now is the time to run SWTCH to install the new system. You do not want to autoboot. You may want to save the current cartridge list so the

current cartridges don't have to be remounted.

6. **Boot up the system.**

Typically at this point, the system will boot up but will output error messages according to which subsystems need to be reloaded. Ignore these for the time being. The system will create a new $SYENT file on LU 2 for you. Log onto a terminal as the system manager and set your working directory to /RTE_6.

7. **Reload programs.**

There are three files provided with the RTE-6/VM product which facilitate the loading of the RTE-6 software. These are the following:

*DOSNP	Creates the SNAP file for LINK
INCI.CMD	Loads the core CI file system utilities and copies $FMP6 to /LIBRARIES. This file can also create a CI volume if you do not have one.
LOAD6.CMD	Loads the remaining RTE-6 programs

The INCI.CMD and LOAD6.CMD files contain a considerable amount of documentation about the installation process. You may wish to read both of them carefully before executing them. In addition, some programs which are typically not used are commented out and therefore not linked; you may wish to review those choices and perhaps uncomment some lines or comment out others.

The *DOSNP command file must be run from FMGR and is provided to create the LINK SNAP file. If you want several libraries to be automatically searched by LINK, you may want to run LINDX yourself.

If you have Fortran programs containing $FILES m,n directives and you want those programs to have access to files on CI volumes (new file system), then you should include the library $FNEWF in your LINDX command AND you should copy it to the /LIBRARIES directory. For example:

```
LINDX,SYSTEM,SNAP.6::2,$FMP6.LIB::LIBRARIES,$FNEWF.LIB::LIBRARIES,+NL
CO,$FNEWF::RTE_6,$FNEWF.LIB::LIBRARIES
```

This will create the SNAP file on LU 2. It will be copied to /SYSTEM later in the installation process.

Many programs have attributes which are assigned at link time according to their LINK command files. Before proceeding with the linking process, you

may wish to modify some of these LINK command files to make the programs run better on your system:

Example 1: You can match the size of FST's SHEMA to the actual size you have assigned to the FST1 SHEMA partition in the generation. The file FST.LOD describes how to do this.

Example 2: The LI program can be made to run in an ordinary 32-page partition by inhibiting VMA/EMA usage according to the comments in LI.LOD.

INCI.CMD will take a number of parameters. The only place they are documented is in the INCI.CMD file itself; they are included here for your reference.

PARAMETER	USE
1	This can be INIT, LOAD, or BOTH. If you are upgrading, you need to use LOAD.
2	This is where the RTE-6 software resides. In this case, we are using /RTE_6.
3	Disk LU to initialize a CI volume. Leave this blank.

The following are optional parameters:

4	If LOAD6 is here, the LOAD6.CMD command file will be automatically executed.
5	Security Code for parameter 6.
6	This is where the programs will be put. If this is blank, they will be put into /PROGRAMS. If this is a FMGR CRN, then parameter 5 is used as the security code.
7	If this is NOLIBS, the command file will copy only $FMP6 to /LIBRARIES. If it is blank, INCI.CMD will pause to allow you to copy other libraries to /LIBRARIES.
8	Path for LINK maps. If this is blank, LINK will output a warning message: LINK: ignoring command /<prog>.map This can be ignored. If you would like to save the maps, enter the appropriate path for the directory. (Note: this directory must exist. It will not be created.)

Here is the command line we used with INCI.CMD:

INCI.LOAD,/RTE_6,,LOAD6,,,,/MAPS

This will load both the file utilities and the system programs, putting them into the /PROGRAMS directory, putting LINK managers into the /MAPS directory, and getting the software from /RTE_6. During this process, INCI will pause so that libraries can be moved that were put into the SNAP file earlier. You have to type all the commands yourself; for example:

CO /RTE_6/$PASCAL.LIB /LIBRARIES/PASCAL.LIB D

8. **Restore the CM prompt.**

The CM breakmode prompt is available in RTE-6 if the CM program is RP'd in the WELCOM file. CM is an exact copy of CI. If you want to have CM, include this command in the WELCOM file:

```
:RP,CI::2,CM
```

If you have generated CI into the system rather than loading it after generation, you first need to create a copy of CI on LU 2 so that the WELCOM file can RP it. From a FMGR prompt:

```
:SP,CI::2
```

9. **Load any subsystem software.**

This includes such subsystems as DS/1000, FTN7X, DEBUG, IMAGE/1000-II, PASCAL, BASIC/1000-C, etc.

10. **Reboot and verify that everything now works.**

After all the subsystems have been reloaded, you should now reboot and check that everything is functional. If there are any problems, then you need to fix them before proceeding.

11. **Backup your system.**

Now is the time to make the backup of your system. If you have an LU 3, then you will need to make a PSAVE of both LU 2 and LU 3. Making an FST backup of your CI volumes is also a good idea at this time.

This completes the update. The new system is now generated, installed, verified, and backed up.

RTE-A Primary Answer File	APPENDIX C

This appendix is a copy of the 6.0 RTE-A Primary System Generation Answer File. This is intended to be used as reference and is contained in the file PRIMARY.ANS under the RTE-A (92077A) product.

```
*
* Source: 92077-17326  REV.6000 <921123.1058>
*
* Primary.ans- RTE-A Primary System Generation Answer File to make
* primary.sys(#92077-16954), primary.snp (#92077-16955) and primary.lst
* (#92077-17278).
*
*     ************************************************************************
*     *                                                                      *
*     *   This half of the primary answer file is used only for Primary      *
*     *   System generation.  It is NOT to be used with a user system.       *
*     *   To use this answer file as a sample for generating another         *
*     *   system, delete the first half of this file, and continue with      *
*     *   the instructions on the second half.                               *
*     *                                                                      *
*     ************************************************************************
*
* This answer file is to be used in a PRIMARY memory-based system.  There
* is nothing generated into LU 1.  It is required that the startup program
* be LUCFG.RUN, which maps the I/O card which has VCP enabled to the correct
* select code, and the correct interface driver to LU 1.  This generation
* requires:
*     LU 1:   ID100 at select code 20B (double-mapped if VCP port)
*     LU 110: ID400 at select code 77B (double-mapped if VCP port)
*     LU 120: ID800 at select code 30B (double-mapped if VCP port)
*     LU 130: IDM00 at select code 23B (double-mapped if VCP port)
*
* Note that if mapping occurs, do not use the previous LU.  (If 12100A is
*   the VCP port, LU 110 should not be used, since there are now two LUs
*   pointing to the same hardware.)
*
*$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$*
*                                                                             *
*                                DISCLAIMER                                   *
```

```
*                                ==========                                    *
*                                                                              *
*    The Primary System is designed to be extremely flexible and serves        *
* two main purposes.  First, it is used as a verification tool for all         *
* supported peripherals on the A-Series.  Second, it is used to generate       *
* a customized system for the particular needs of the customer.                *
*                                                                              *
*    To provide maximum flexibility the Primary System is NOT necessarily      *
* the configuration that HP recommends for the final system generation.        *
* Depending on the mix and cabling of the peripherals connected, the           *
* possibility exists of configuring the system in an unsupported manner,       *
* which can adversely impact system operation and performance.  It is the      *
* responsibility of the user to be aware of these limitations and not          *
* violate the maximum number or mix of devices on a given interface to         *
* avoid the possibility of data corruption or diminished system performance.*
*                                                                              *
*    For support and configuration information, contact your local sales       *
* representative or customer engineer for the information.                     *
*                                                                              *
*$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$*
*
*                      I/O    D E F I N I T I O N S
*
*  LU          DEVICE                                SELECT CODE        ADDRESS
* ----        --------                              -------------      ---------
*                                    SCSI
*                                    =====
*  44      SCSI DAT tape                                25B               3
*  35      SCSI 7980S                                   25B               3
* 20-21    SCSI hard disk                               25B               6
* 22-23    SCSI 650A MO disk                            25B               5
*  60      SCSI floppy single sided                     25B               0
*  61      SCSI floppy doubled sided                    25B               0
*                                   HP-IB
*                                   =====
*  25      HP-IB controller                             26B              36B
* 26-27    HP-IB disk                                   26B               2
*  40      HP-IB disk 20mb  (overlay)                   26B               2
*  41      CS-80 flexible disk single sided             26B               2
*  42      CS-80 flexible disk doubled sided            26B               2
*  54      CS-80 compatible cartridge tape cache        26B               2
* 28-29    2nd HP-IB disk                               26B               0
*  39      9144/5 standalone CS-80 cartridge tape       26B               1
*  37      7974A/7978A streaming tape drive             26B               3
*  38      7970 HP-IB tape drive                        26B               4
*  36      2932A line printer                           26B               7
*
*  85      2608S,2563A,2566A line printer               26B               7
```

```
*
*                              SCSI/HP-IB
*                              ==========
*  14     Reserved for SCSI DAT tape              27B                3
*   5     Reserved for SCSI 7980S                 27B                3
* 10-11   Reserved for SCSI hard disk             27B                6
* 12-13   Reserved for SCSI MO                    27B                5
* 50-51   Reserved for SCSI floppy                27B                0
*
*  15     Reserved for HP-IB controller           27B               36B
* 16-17   Reserved for HP-IB hard disk            27B                2
*  30     Reserved for HP-IB hard disk            27B                2
*  31     Reserved for single sided floppy        27B                2
*  32     Reserved for doubled sided floppy       27B                2
*  24     Reserved for CS/80 cartridge tape       27B                2
* 18-19   Reserved for 2nd HP-IB disk             27B                0
*   9     Reserved for 9144/45 cartridge tape     27B                1
*   7     Reserved for 7974/78 streaming tape     27B                3
*   8     Reserved for 7970 tape                  27B                4
*   6     Reserved for 2932A line printer         27B                7
*
*                              TERMINALS
*                              =========
* 100     12005 ASIC #1                           20B
* 110-113 12100 A400 OBIO 4-channel MUX           77B
* 120-127 12040 Rev D 8-channel MUX               30B
* 130-137 12040 Rev A,B,C 8-channel MUX           23B
*
*  You can load the Primary system from either a SCSI or an HP-IB disk on
*  select code 27B.  After the Primary system is loaded, the select codes
*  25B through 27B look like:
*
*  SC  ADDR  LU      SCSI system      HP-IB system
*  --- ---- -----  ----------------- ---------------
*  25b  5   22-23     --               SCSI MO disk
*       3   44/35     --               SCSI DAT/7980S
*       6   20-21     --               SCSI hard disk
*       0   60-61     --               SCSI floppy
*
*  26b  2  26-27/40   HP-IB disk       --
*       2    41       floppy (single)  --
*       2    42       floppy (doubled) --
*       2    54       HP-IB cartridge  --
*       0   18-19     HP-IB disk       --
*       1    39       9144/45 cartridge--
*       3    37       7974/78 tape     --
*       4    38       7970 tape        --
*       7   36/85     printer          --
```

```
*       36b   25       HP-IB controller --
*
*  27b  2   16-17/30  --              HP-IB disk
*       2    31       --              floppy (single)
*       2    32       --              floppy (doubled)
*       2    24       --              HP-IB cartridge
*       0   18-19     --              2nd HP-IB disk
*       1     9       --              9144 cartridge
*       3   7/14/5    DAT/7980S       7974/78 tape
*       4     8       --              7970 tape/DAT
*       5   12-13     SCSI MO disk    --
*       6   10-11     SCSI hard disk  --
*       0   50-51     SCSI floppy     --
*       7     6       --              2392A printer
*       36b   15      --              HP-IB controller
*
*************************************************************************
links,cp,,                Use current page links
* ======================
* System Relocation Phase
* ======================
le,off,                   Do not list the module entry points
er,,                      Echo errors to the terminal
re %vctr:92570,,          Entry points
tg 700                    Number of tags required
re %mapos:92077,,         Partitioned OS tag routines
re %rpl60:92077,,         No CDS no double precision floating point
re %exec:92077,,          EXEC request processing
re %rtioa:92077,,         Real-Time I/O control
re %maps:92570,,          Dynamic mapping system routines
re %progs:92570,,         Program state processing
re %util:92570,,          System variables and utilities
re %sam:92077,,           System available memory
re %sched:92570,,         Programmatic program scheduling
re %strng:92077,,         Runstring passing
re %erlog:92570,,         Error Logging
re %opmsg:92077,,         Operating system messages
re %sycom:92570,,         Operator commands
re %iomod:92570,,         I/O module
re %id*43:92077,,         Power fail driver
re %signl:92570,,         Signals module
re %$idrpl:92570,,        System ID dup IDRPL
re $math:24998,.dmp,      Required for A600 without CDS (RPL60)
re $math:24998,.ddi,      Required for A600 without CDS (RPL60)
*
se $syslb:92570,,         Search the system library
*
* define partitionable modules
```

```
*
pa perr,xcmnd,stat,dsq,vema,lock,load,memry,iorq
pa time,class,abort,alarm
*
ms $sysa:92570,,          Search the system dummy library
*
end,                      End system relocation phase
* ================================
* OS module/Driver partition Phase
* ================================
*
re %load:92570,,          Program loading and swapping
end
*
re %memry:92570,,         Memory management module
end
*
re %iorq:92570,,          I/O request processing
end
*
re %lock:92570,,          LU locking and resource numbers
re %time:92077,,          Time scheduling of programs
end
*
re %class:92570,,         Class I/O module
end
*
re %xcmnd:92570,,         Operator command extension module
re %stat:92077,,          Status command module
re %dsq:92570,,           NS/1000 module
end
*
re %perr:92570,,          Parity error handler
re %vema:92570,,          Virtual memory module
end
*
re %alarm:92077,,         Timer signal processing module
end
*
re %abort:92570,,         Abort processing module
end
*
* Driver partitions
*
re ddq30.rel:92077,,      Device driver for SCSI disks
re id100.rel:92077,,      Interface driver for 12005 ASIC
end
*
```

```
re ddq24.rel:92077,,      Device driver for SCSI DAT tape
re %dd*24:92077,,         Device driver for 7974/78 straming tape
end
*
re idq35.rel:92077,,      SCSI interface drvier
end
*
re %dd*33:92077,,         Device driver for CS/80 disks
end
*
re %id*37:92077,,         Interface driver for CS/80 disks
re,pri27.rel:92077,,      Driver for the Primary system only
end
*
re id400.rel:92077,,      Interface driver for A400 OBIO
end
*
re %idm00:92077,,         Interface driver for 12040 A/B/C MUX
re %dd*23:92077,,         Device driver for magnetic tape
end
*
re ddc00.rel:92077,,      Device driver for 100 series interfaces
end
*
re id800.rel:92077,,      Interface driver for 12040D 8-channel MUX
re %dd*12:92077,,         Device driver for HP-IB line printer
end
*
re %ddc12:92077,,         Device driver for HP-IB line printer
end
*
re %dd*00:92077,,         Device driver for A/B/C MUX
end
*
end,,                     End OS module/Driver partition phase
* ======================
* Table Generation Phase
* ======================
*
* SCSI -- hard disk, MO and DAT tape              Select Code = 25b
*
ift,idq35.rel:92077,SC:25B
*
*  SCSI hard disk                SCSI address 6,     LU 20-21
*
dvt,ddq30_gen.rel:92077, m64mb:0, lu:20 dp:1:6 dp:8:1
dvt,ddq30_gen.rel:92077, m64mb:1, lu:21 dp:1:6 dp:8:1
*
```

```
*  SCSI 650A MO disk              SCSI address 5,     LU 22-23
*
dvt,ddq30_gen.rel:92077, m64mb:0, lu:22 dp:1:5 dp:8:3
dvt,ddq30_gen.rel:92077, m64mb:1, lu:23 dp:1:5 dp:8:3
*
*  SCSI DAT/7980S                 SCSI address 3,     LU 44/35
*
dvt,ddq24_gen.rel:92077,,lu:44,dp:1:3
dvt,ddq24_gen.rel:92077,M7980,lu:35,dp:1:3
*
* SCSI floppy  single sided                    LU 60
*
dvt,ddq30_gen.rel:92077,m16mb:0,lu:60,dp:1:0:0:0:0:0,-
  dp:6:66:16:0
*
* SCSI floppy  double sided                    LU 61
*
dvt,ddq30_gen.rel:92077,m16mb:0,lu:61,dp:1:0:0:0:0:0,-
  dp:6:154:16:0
*
* HP-IB  -- disks, magnetic tape and printer        Select Code = 26b
*
ift,%id*37:92077,SC:26B
*
* Bus Controller LU              HP-IB address 36b,  LU 25
*
dvt,,,LU:25,TO:2000,DT:77B,TX:0,DX:1,DP:1:36B,PR:0
*
* HP-IB disk 64MB/20MB           HP-IB address 2,    LU 26-27/40
*
dvt,%dd*33:92077 m7908_cf:0 lu:26 dp:1:2 dp:2:0:0:00:0:4096 dp:7:64
dvt,%dd*33:92077 m7908_cf:0 lu:27 dp:1:2 dp:2:0:0:04:0:4096 dp:7:64

dvt,%dd*33:92077 m7908_cf:0 lu:40 dp:1:2 dp:2:0:0:00:0:1215 dp:7:64
*
*  Flexible disk single/doubled sided     HP-IB address 2,    LU 41/42
*
dvt,%dd*33:92077 m_floppy_cf:1 lu:41 dp:1:2:400b:0:0:0,-
  dp:6:66:16:0
dvt,%dd*33:92077,m_floppy_cf:1,lu:42,dp:1:2
*
* Cartridge tape with cache    HP-IB address 2,    LU 54
*
dvt,%dd*33:92077,mtape,lu:54,dp:1:2 dp:5:768
*
* 2nd HP-IB disk                 HP-IB address 0,    LU 28-29
*
dvt,%dd*33:92077 m7908_cf:0 lu:28 dp:1:2 dp:2:0:0:00:0:4096 dp:7:64
```

```
dvt,%dd*33:92077 m7908_cf:0 lu:29 dp:1:2 dp:2:0:0:04:0:4096 dp:7:64
*
* 9144/45 CS-80 cartridge tape    HP-IB address 1,    LU 39
*
dvt,%dd*33:92077,M9144:0,LU:39,DP:1:1
*
* 7974/78 streaming tape drive     HP-IB address 3,   LU 37
*
dvt,%dd*24:92077,M7974:0,LU:37,DP:1:3
*
* 7970 tape drive                  HP-IB address 4,   LU 38
*
dvt,%dd*23:92077,M7970E:0,LU:38,DP:1:4,PR:1
*
* 2932A Line Printer               HP-IB address 7,   LU 36
*
dvt,%dd*12:92077,M2932A,LU:36,DT:12B,DP:1:7
*
*    2608S,2563A,2566A line printer          HP-IB address = 7  LU 85
*
dvt,%ddc12:92077,,lu:85,dp:1:7
*
*
* Primary driver for HP-IB/SCSI                      Select Code = 27b
*
ift,%id*37:92077 sc:27b
dvt,pri27.rel:92077,,lu:15 dp:1:36b
dvt,pri27.rel:92077,,lu:16 dp:1:2 dt:33b
dvt,pri27.rel:92077,,lu:17 dp:1:2 dt:33b
dvt,pri27.rel:92077,,lu:30 dp:1:2 dt:33b
dvt,pri27.rel:92077,,lu:31 dp:1:2 dt:33b
dvt,pri27.rel:92077,,lu:32 dp:1:2 dt:33b
dvt,pri27.rel:92077,,lu:24 dp:1:2 dt:26b
dvt,pri27.rel:92077,,lu:9  dp:1:1 dt:26b
dvt,pri27.rel:92077,,lu:18 dp:1:0 dt:33b
dvt,pri27.rel:92077,,lu:19 dp:1:0 dt:33b
dvt,pri27.rel:92077,,lu:7  dp:1:3 dt:24b
dvt,pri27.rel:92077,,lu:8  dp:1:4 dt:23b

dvt,pri27.rel:92077,,lu:14 dp:1:3 dt:24b
dvt,pri27.rel:92077,,lu:5  dp:1:3 dt:24b
dvt,pri27.rel:92077,,lu:12 dp:1:5 dt:30b
dvt,pri27.rel:92077,,lu:13 dp:1:5 dt:30b
dvt,pri27.rel:92077,,lu:10 dp:1:6 dt:30b
dvt,pri27.rel:92077,,lu:11 dp:1:6 dt:30b
dvt,pri27.rel:92077,,lu:50 dp:1:0 dt:30b
dvt,pri27.rel:92077,,lu:51 dp:1:0 dt:30b
```

```
dvt,pri27.rel:92077,,lu:6  dp:1:7
*
*  Terminal LUs
*
* NOTE: There is no LU defined as LU 1.  This points to the bit bucket.
*
* ASIC #1  Terminal                                    Select Code = 20B
*                                                        LU 100
ift,id100.rel:92077,sc:20B
dvt,ddc00.rel:92077,MHP_Term:A,lu:100
*
*   12100A A400 OBIO 4-channel MUX ports A-D           Select Code = 77B
*                                                        LU 110-113
*
ift,id400.rel:92077
dvt,ddc00.rel:92077,MHP_Term:0,lu:110
dvt,ddc00.rel:92077,MHP_Term:1,lu:111
dvt,ddc00.rel:92077,MHP_Term:2,lu:112
dvt,ddc00.rel:92077,MHP_Term:3,lu:113
*
*   12040D Revision D 8-channel MUX port 0-7           Select Code = 30B
*                                                        LU 120-127
*
ift,id800.rel:92077,sc:30B
dvt,ddc00.rel:92077,MHP_Term:0,lu:120
dvt,ddc00.rel:92077,MHP_Term:1,lu:121
dvt,ddc00.rel:92077,MHP_Term:2,lu:122
dvt,ddc00.rel:92077,MHP_Term:3,lu:123
dvt,ddc00.rel:92077,MHP_Term:4,lu:124
dvt,ddc00.rel:92077,MHP_Term:5,lu:125
dvt,ddc00.rel:92077,MHP_Term:6,lu:126
dvt,ddc00.rel:92077,MHP_Term:7,lu:127
*
* 12040 A-C 8-channel MUX port 0-7 select code = 23B
*
ift,%idm00:92077,sc:23B, tx:20
*
dvt,%dd*00:92077,m26xx,lu:130,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:131,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:132,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:133,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:134,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:135,dp:1:20004B,tx:57,-
```

```
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:136,dp:1:20004B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
dvt,%dd*00:92077,m26xx,lu:137,dp:1:20040B,tx:57,-
  dp:5:CI:20040B:20040B:0,dp:9:CM:20040B:20040B:CM
*
end,,                       End of dvt generation phase
end,,                       End of ift generation phase
* =================
* Define Node Lists
* =================
node,16,17,30,31,32,24
node,26,27,40,41,42,54
node,18,19
node,28,29
node,10,11
node,20,21
node,12,13
node,22,23
node,50,51
node,60,61
end,                        End node list
*
end,                        End table generation phase
* =================
* Memory Allocation
* =================
clas 150,                   Class number allocation
resn 30,10                  Resource number allocation/debug table spec.
id 150,                     ID segment allocation
rs -150,                    Memory descriptor allocation
sam 32767,4096              SAM allocation/XSAM
sl 200 1048,                Spool limits
bg 30,                      Background swap priority allocation
qu 300 50,                  Quantum time slice value
sp 30,10                    Shared programs/extended schedule table
mb 0,                       Number of memory blocks for NS/1000 (0 if no NS)
us 1,                       Number of concurrent users (1 if no VC+)
lb,,                        LOGOF buffer limit (use defaults)
* ================================
* Labeled System Common Relocation
* ================================
*
* Add the system common table for HpMdm.run
*
re hpmdm_table.rel:92077
*
*
```

```
end,                        End labeled system common relocation
*
* Unlabeled (Blank) Common
*
com 1024,                   Number of words of memory to use
* ===============
* System Messages
* ===============
re %msgtb:92089,,           Message table
end
*
re %$m000:92089,,           Message module
end
*
end,                        End system messages
* ================
* System Libraries
* ================
lib sec1000.lib
lib $biglb.lib
end,                        End system libraries
*
end
*
*
*%%%
```

```
*     *   1.  Uncomment all required modules by removing the string          *
*     *       "*!REMOVE!".  Refer to the EDIT/1000 User's Guide, part no.    *
*     *       92074-90001, and the note at the bottom of these instructions  *
*     *       for information on how to use EDIT/1000 to edit this file.     *
*     *                                                                      *
*     *   2.  To select your system disk, remove *!REMOVESCSI! for SCSI      *
*     *       disk, remove *!REMOVEHPIB! and *!REMOVEHPIB64! for 64MB HP-IB  *
*     *       disk, or remove *!REMOVEHPIB! and *!REMOVEHPIB20! for 20MB     *
*     *       HP-IB disk.                                                    *
*     *                                                                      *
*     *   3.  If you want VC+ in your system, uncomment all VC+ modules      *
*     *       by removing the string "*!YESVC+!";  otherwise uncomment       *
*     *       the non-VC+ modules by removing the string "*!NO_VC+!".        *
*     *       VC+ is supplied with the HP 92078A Virtual Code+ package,      *
*     *       a product which allows a multiuser environment and spooling.   *
*     *                                                                      *
*     *   4.  If you have NS/1000 and LAN/1000 in your system, uncomment     *
*     *       all NS/1000 and LAN/1000 modules by removing the string        *
*     *       "*!YES_NS!";  otherwise, uncomment the non-NS modules by       *
*     *       removing the string "*!NO__NS!".  If you have NS/1000 but not  *
*     *       LAN/1000 in your system, refer to the NS subsystems' answer    *
*     *       file.                                                          *
*     *                                                                      *
*     *   5.  If you have APRA/1000 in your system, rename the "NS1000"      *
*     *       directory to "APRA1000" and comment the %adv00 driver and LU   *
*     *       mapping (lu 81 - 82) out.                                      *
*     *                                                                      *
*     *   6.  If you do not use an ASIC card as LU 1 (as generated in        *
*     *       this system) comment it out and change one of the              *
*     *       terminal LUs generated into the system (such as the            *
*     *       8-channel multiplexer) as LU 1.                                *
*     *                                                                      *
*     *   7.  Uncomment the "*" before the RPL file you will be using        *
*     *       according to your hardware configuration.  If you are using    *
*     *       the A600 (not the A600+), i.e., %RPL60, you will need to       *
*     *       remove the string "*!RPL60_!".  If you are using the A900 and  *
*     *       NS/1000, choose %RPL91 then either rpl_a900_rev4.rel (rev.4     *
*     *       firmware or later) or xmb.rel (pre rev.4 firmware).            *
*     *                                                                      *
*     *   8.  If you don't have NS/1000 in your system and you want to use   *
*     *       the DDC00/DDC01 modem handler, HPMDM.RUN, uncomment the        *
*     *       "*!YES_NS!" before HPMDM_TABLE.REL.  If you want to save       *
*     *       space, and not use terminal cassette tapes and slaved          *
*     *       devices, use DDC00.REL wherever DDC01.REL is specified.        *
*     *                                                                      *
*     *   9.  Run the RTE-A generator (RTAGN) on the answer file,            *
*     *       producing a new system and snap file.  Place them on           *
*     *       the /SYSTEM directory (on the LU mounted by BOOTEX).           *
```

```
*     *                                                                      *
*     *  10.  Create a new welcome command file (or copy WELCOME1.CMD).      *
*     *       Modify it to copy your new snap file to /SYSTEM/SNAP.SNP.      *
*     *                                                                      *
*     *  11.  Create a new boot command file (or copy BOOT.CMD).  Modify     *
*     *       this boot command file to designate the system and snap        *
*     *       files just created.  Also modify the startup program           *
*     *       (st,,nn) to indicate your new welcome file (welcomenn.cmd),    *
*     *       where nn is between 1 and 99.                                  *
*     *                                                                      *
*     *  12.  Boot the new system as before, specifying the new boot         *
*     *       command file in the VCP> string.  In this way, you can save    *
*     *       the Primary System as a backup system.                         *
*     *                                                                      *
*     *   NOTE: EDIT/1000 can perform the string removal with the            *
*     *         command ".,$x/*!REMOVE!//" (this edit command removes        *
*     *         all occurences of "*!REMOVE!" from the current line          *
*     *         until the end of the file.  Be sure you are at the           *
*     *         first line you want to modify when you execute this          *
*     *         command.                                                     *
*     *                                                                      *
*     ************************************************************************
*
*
*$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$*
*                                                                            *
*                                DISCLAIMER                                  *
*                                ==========                                  *
*                                                                            *
*    The Primary System is designed to be extremely flexible and serves      *
* two main purposes.  First, it is used as a verification tool for all       *
* supported peripherals on the A-Series.  Second, it is used to generate     *
* a customized system for the particular needs of the customer.              *
*                                                                            *
*    To provide maximum flexibility the primary system is NOT necessarily    *
* the configuration that HP recommends for the final system generation.      *
* Depending on the mix and cabling of the peripherals connected, the         *
* possibility exists of configuring the system in an unsupported manner,     *
* which can adversely impact system operation and performance.  It is the    *
* responsibility of the user to be aware of these limitations and not        *
* violate the maximum number or mix of devices on a given interface to       *
* avoid the possibility of data corruption or diminished system performance.*
*                                                                            *
*    For support and configuration information, contact your local sales     *
* representative or customer engineer for the information.                   *
*                                                                            *
*$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$*
*
```

```
*                  I/O    D E F I N I T I O N S
*
*  LU         DEVICE                          SELECT CODE        ADDRESS
* ----       --------                        -------------      ---------
*
*                                SCSI  #1
*                                ========
*   5         SCSI 7980S                          27B               4
*  14         DAT tape                            27B               3
* 12-13       650A                                27B               5
* 10-11       SCSI hard disk                      27B               6
*  50         SCSI floppy(single sided)           27B               0
*  51         SCSI floppy(double sided)           27B               0
*
*                                HP-IB #1
*                                ========
*         High-speed disk interface bus (load resistors installed),
*         maximum cable length 12 meters, 1 meter per device-load.
*                                ========
*         Maximum of 4 devices (up to four disks, four 9144/45 cartridge
*         tape units, or three of the above and one 7974/79/80).
*                                ========
*         If a 7974/79/80 is on the bus, the maximum cable length is
*         8 meters.
*                                ========
*         If this interface is connected to the 12122A internal disk
*         in the 248X computer, no other device can be connected to this
*         interface.
*
*  15     HP-IB #1 controller                 27B              36B
*
* 18-19   HP-IB disk                          27B               0
*   9     9144/5 standalone CS-80 cartridge tape 27B            1
* 16-17   HP-IB disk                          27B               2
*  30     HP-IB disk (20MB)                   27B               2
*  24     CS-80 compatible cartridge tape cache 27B             2
*  53     3.5" single-sided disk (9153/4)     27B               2
*  54     3.5" double-sided disk (9153/4)     27B               2
*   7     7974A/7978A streaming tape drive    27B               3
* 44-47   9133XV/4XV 5.25" Winchester hard disk 27B             4
* 36-37   9122D double-sided floppy           27B               5
* 32-33   9121 flexible disk                  27B               6
* 41-43   9133H/34H 5.25" Winchester fixed disk 27B             7
*  61     9133H 3.5" flexible disk            27B               7
*
*                                HP-IB #2
*                                ========
*         Low speed magnetic tape bus (load resistors installed),
```

```
*         a maximum of 2 7970 tape drives are supported.
*                                 ========
*         Maximum cable length is 20 meters.
*
*  40     HP-IB #2 controller                    26B              36B
*   8     7970 HP-IB tape drive                  26B               4
*  28     7970 HP-IB tape drive                  26B               6
*
*                               HP-IB #3
*                               ========
*         High speed magnetic tape bus (load resistors installed),
*         a maximum of 2 7974/79/80 tape drives are supported.
*                                 ========
*         Maximum cable length of 10 meters.
*
*  48     HI-IB #3 controller                    31B              36B
*  34     7974A/7980A streaming tape drive       31B               5
*  35     7974A/7980A streaming tape drive       31B               7
*
*                               HP-IB #4
*                               ========
*         Low speed peripheral / instrument bus.
*         Maximum cable length of 2 meters per device.
*                                 ========
*         A maximum of two 256X printers are supported on one interface;
*         no other devices are supported with them
*
*  91     HP-IB #4 controller                    25B              36B
*  85     2608S,2563A,2566A line printer         25B               1
*   6     2932A line printer                     25B               2
*  92     device #1                              25B               3
*  93     device #2                              25B               4
*  94     device #3                              25B               5
*  95     device #4                              25B               6
*
*         248X INTEGRATED DISKS (Micro/1000 with 12022A controller)
*         ========================================================
*
* 55,62   15MB hard disk                         32B
* 59,60   20MB hard disk                         32B
*  39     single-sided 3.5" flexible disk        32B
*  63     double-sided 3.5" flexible disk        32B
*
*                NETWORK LINKS (NS/1000 and IEEE802.3 LAN)
*                =========================================
*
* 79,80   Telnet LU
* 81,82   NS/1000 LU mapping                     37B
```

```
* 96,97   12076A 802.3 LAN card                    37B
*
*                          PARALLEL INTERFACE CARD
*                          =======================
*  84    Parallel Interface card                   35B
*
*                                  TERMINALS
*                                  =========
*
*   Terminal configuration (NOTE: The 12005 is configured as system console
*     LU 1.  LUs may be swapped to designate another device as the new
*     system console.  You should have a system console device.)
*
*   1     12005 ASIC #1                            20B
*  100    12005 ASIC #2                            21B
* 110-113 12100 A400 OBIO 4-channel MUX            77B
*  211    slaved device(printer) port B
*  212    left CTU               port B
*  213    right CTU              port B
* 120-127 12040D 8-channel MUX                     30B
*  221    slaved device(printer) port 1
*  222    left CTU               port 1
*  223    right CTU              port 1
* 130-137 12040A/B/C 8-channel MUX                 23B
*
*  Free lus:
*    2-4, 20-23, 25-27, 29, 31, 38, 49, 56-58,
*    64-69, 70-78, 83, 86-89, 90, 98, 99, 101-109, 114-119, 140-210,
*    214-219, 220, 224-255.
*
*!REMOVE!links,cp,,                Use current page links
*
* System Relocation
*
*!REMOVE!er,,                      Echo errors to the terminal
*!REMOVE!le,off,                   Do not list the module entry points
*!REMOVE!re /rte_a/%vctr,,         Entry points
*!REMOVE!tg 950                    Number of tags required
*!REMOVE!re /rte_a/%mapos,,        Partitioned OS tag routines
*
*     ###################################################################
*     #                                                                 #
*     #   If you use an RPL file for a hardware configuration with      #
*     #   fewer features than yours, your system will not be performing #
*     #   as well as it could.  You may not use an RPL file for a       #
*     #   hardware configuration with more features than yours.         #
*     #                                                                 #
*     #   Choose the correct RPL file for your system from the          #
```

```
*     #   choices below and remove the "*" in front of it.              #
*     #                                                                 #
*     ###################################################################
*
*                                                          DOUBLE PRECISION
*    RPL FILE              PROCESSOR TYPE     CDS          FLOATING POINT
*   ----------            ----------------   -----      ------------------
*re /rte_a/%rpl40,,             A400          NO               NO
*re /rte_a/%rpl41,,             A400          NO               YES
*re /vcplus/%rpl42,,            A400          YES              NO
*re /vcplus/%rpl43,,            A400          YES              YES
*re /rte_a/%rpl60,,             A600          NO               NO
*re /rte_a/%rpl61,,             A600+         NO               YES
*re /vcplus/%rpl63,,            A600+         YES              YES
*re /rte_a/%rpl70,,             A700          NO               NO
*re /rte_a/%rpl71,,             A700          NO               YES
*re /vcplus/%rpl72,,            A700          YES              NO
*re /vcplus/%rpl73,,            A700          YES              YES
*re /rte_a/%rpl90,,             A900          NO               YES
*re /vcplus/%rpl91,,            A900          YES              YES
*re /rte_a/rpl_a990.rel,,       A990          NO               YES
*re /vcplus/rpl_a990_cds.rel,, A990           YES              YES
*
*     ###########################################################
*     #                                                         #
*     #  For A900 with either NS/1000 or %envrn, choose either  #
*     #  rpl_a900_rev4.rel (rev.4 firmware or later) or         #
*     #  xmb.rel (pre rev.4 firmware)                           #
*     #                                                         #
*     ###########################################################
*
*re /rte_a/rpl_a900_rev4.rel
*re /rte_a/xmb.rel,mb02          For NS/1000 with A900 pre rev.4 firmware only
*re /rte_a/xmb.rel,mb12          For either NS/1000 or %envrn with
*                                   A900 pre rev.4 firmware only
*re /rte_a/xmb.rel,mb01          For %envrn with A900 pre rev.4 firmware only
*re /rte_a/xmb.rel,mb10          For %envrn with A900 pre rev.4 firmware only
*re /rte_a/xmb.rel,mb21          For %envrn with A900 pre rev.4 firmware only
*
*!REMOVE!re /rte_a/%exec,,          EXEC request processing
*!REMOVE!re /rte_a/%rtioa,,         Real-Time I/O control
*!REMOVE!re /rte_a/%iomod,,         I/O module
*!REMOVE!re /rte_a/%maps,,          Dynamic mapping system routines
*!REMOVE!re /rte_a/%progs,,         Program state processing
*!REMOVE!re /rte_a/%util,,          System variables and utilities
*!REMOVE!re /rte_a/%sam,,           System available memory
*!REMOVE!re /rte_a/%sched,,         Programmatic program scheduling
*!REMOVE!re /rte_a/%strng,,         Runstring passing
```

```
*!REMOVE!re /rte_a/%erlog,,        Error logging
*!REMOVE!re /rte_a/%opmsg,,        Operating system messages
*!REMOVE!re /rte_a/%sycom,,        Operator commands
*!REMOVE!re /rte_a/%id*43,,        Power-fail driver
*!REMOVE!re /rte_a/%$IDRPL,,       System ID dup IDRPL
*!REMOVE!re /rte_a/%signl,,        Signal processing module
*!YESVC+!re /vcplus/secos.rel,,    Security/1000 module
*!YESVC+!re /vcplus/check.rel,,    Security/1000 module
*!YESVC+!re /vcplus/%spool,,       Spooling module
*
*
*     ###################################################################
*     #                                                                 #
*     #   If you are using an A600 (not an A600+) WITHOUT CDS, then     #
*     #   the following paragraph applies.  If you are using any        #
*     #   other type of A-Series processor, (A400 with or without       #
*     #   CDS, A600+, A700 or A900) then the following paragraph        #
*     #   does NOT apply.                                               #
*     #                                                                 #
*     #   The two routines .DMP and .DDI must be relocated here         #
*     #   because they are required by code that is in the O.S.         #
*     #   partitions.  You cannot do library searches for code in       #
*     #   O.S. partitions.  This is required ONLY when using an         #
*     #   A600 (using %RPL60).  If you are using any other RPL,         #
*     #   these modules will cause duplicate entry point errors         #
*     #   if included in the generation.                                #
*     #                                                                 #
*     ###################################################################
*
*!RPL60_!re /rte_a/$math,.dmp   Required for A600 (not A600+)   (RPL60)
*!RPL60_!re /rte_a/$math,.ddi   Required for A600 (not A600+)   (RPL60)
*
*!REMOVE!se /rte_a/$syslb,,         Search the system library
*
* define partitionable modules
*
*!REMOVE!pa perr,xcmnd,stat,dsq,vema,lock,load,memry,iorq
*!REMOVE!pa time,class,abort,alarm
*!YESVC+!pa cdsfh,envrn
*!YES_NS!pa nsabp
*
*    ###################################################################
*    #                                                                 #
*    #  If you want to include the dummy version of a partitionable    #
*    #  module from $SYSA.LIB, remove the module from the PA module    #
*    #  list above as well as from the OS partition relocation phase   #
*    #  below.  For example, if you do not want NS/1000, you can       #
*    #  remove DSQ from the first PA command above and leave the       #
```

```
*    #  relocation statement of DSQ commented out below.              #
*    #                                                                #
*    ##################################################################
*
*!REMOVE!ms /rte_a/$sysa,,     Search the system dummy library
*
*!REMOVE!end,                       End system relocation phase
*
* OS module/Driver partition phase
*
*!REMOVE!re /rte_a/%load,,          Program loading and swapping
*!REMOVE!end
*
*!REMOVE!re /rte_a/%memry,,         Memory management module
*!REMOVE!end
*
*!REMOVE!re /rte_a/%iorq,,          I/O request processing
*!REMOVE!end
*
*!REMOVE!re /rte_a/%lock,,          LU locking and resource numbers
*!REMOVE!re /rte_a/%time,,          Time scheduling of programs
*!REMOVE!end
*
*!REMOVE!re /rte_a/%class,,         Class I/O module
*!REMOVE!end
*
*!REMOVE!re /rte_a/%xcmnd,,         Operator command extension module
*!REMOVE!re /rte_a/%stat,,          Status command module
*!REMOVE!re /rte_a/%dsq,,           NS/1000 module
*!REMOVE!end
*
*!YESVC+!re /vcplus/%cdsfh,,        For CDS systems only
*!REMOVE!al,                        Align next module
*!REMOVE!re /rte_a/%perr,,          Parity error handler
*!REMOVE!re /rte_a/%vema,,          Virtual memory module
*!REMOVE!end
*
*!YESVC+!re /vcplus/%envrn,,        EXEC interface to Environment Var Block
*!REMOVE!re /rte_a/%alarm,,         Timer signal processing module
*!REMOVE!end
*
*!REMOVE!re /rte_a/%abort,,         Abort processing module
*!YES_NS!re /ns1000/rel/nsabp.rel,,NS-ARPA abort processor
*!REMOVE!end
*
* Driver partitions
*
*!REMOVE!re /rte_a/ddq30.rel,,      Device driver for SCSI disks
```

```
*!REMOVE!end
*
*!REMOVE!re /rte_a/ddq24.rel,,      Device driver for SCSI DAT tape
*!REMOVE!end
*
*!REMOVE!re /rte_a/idq35.rel,,      SCSI interface drvier
*!REMOVE!end
*
*!REMOVE!re /rte_a/%dd*33,,        Device driver for CS/80 disks
*!REMOVE!end
*
*!YES_NS!re /rte_a/idz00.rel,,           Telnet driver
*!YES_NS!end
*
*!YES_NS!re /rte_a/%id*67,,        LAN: interface driver for IEEE802.
*!YES_NS!end
*
*!REMOVE!re /rte_a/%id*37,,        Interface driver for CS/80 disks
*!REMOVE!end
*
*!REMOVE!re /rte_a/id400.rel,,     Interface driver for A400 OBIO
*!REMOVE!end
*
*!REMOVE!re /rte_a/%idm00,,        Interface driver for 12040 rev A-C
*!REMOVE!re /rte_a/%dd*23,,        Device driver for magnetic tape
*!REMOVE!end
*
*!REMOVE!re /rte_a/%dd*00,,        Device driver for %idm00
*!REMOVE!re /rte_a/%dd*30,,        Device driver for disks (ICD)
*!REMOVE!end
*
*!YES_NS!re /ns1000/dsrel/%adv00,,       device driver for NS/1000
*!YES_NS!end
*
*!REMOVE!re /rte_a/id800.rel,,     Interface driver for 12040D 8-channel MUX
*!REMOVE!re /rte_a/%dd*12,,        Device driver for HP-IB line printer
*!REMOVE!end
*
*    ###################################################################
*    #                                                                 #
*    #  If you want to use slaved devices (such as printers) or CTUs   #
*    #  connected to your terminal, use DDC01.REL instead of DDC00.REL.#
*    #  Refer to the RTE-A System Generation and Installation manual,  #
*    #  part no. 92077-90034.                                          #
*    #                                                                 #
*    ###################################################################
*
*!REMOVE!re /rte_a/ddc01.rel,,     Device driver for 100 series interfaces
```

```
*!REMOVE!end
*
*!REMOVE!re /rte_a/%ddc12,,        Device driver for HP-IB line printer
*!REMOVE!end
*
*!REMOVE!re /rte_a/%id*27,,        Interface driver for 248X integrated disk
*!REMOVE!re /rte_a/%dd*24,,        Device driver for 7974A/78A streaming tape
*!REMOVE!end
*
*!REMOVE!re /rte_a/id100.rel,,     Interface driver for 12005 ASIC card
*!REMOVE!re /rte_a/%id*50,,        Interface driver for parallel card
*!REMOVE!end
*
*!REMOVE!end,,                     End OS module/Driver partition phase
*
*
* Table Generation phase - configure LU tables
*
*
* HP-IB #1 -- High speed disk interface bus         Select Code = 27b
* SCSI  #1 -- SCSI disk/DAT tape interface bus
*
*!REMOVEHPIB!ift,/rte_a/%Id*37,SC:27B
*
*!REMOVESCSI!ift,/rte_a/idq35.rel,SC:27B
*
* SCSI DAT tape                                     LU 14
* SCSI 7980S                                        LU 5
*
*!REMOVESCSI!dvt,/rte_a/ddq24_gen.rel,,lu:14,dp:1:3
*!REMOVESCSI!dvt,/rte_a/ddq24_gen.rel,M7980,lu:5,dp:1:4
*
* SCSI hard disk
*
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m64mb:0,lu:10,dp:1:6 dp:8:1
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m64mb:1,lu:11,dp:1:6 dp:8:1
*
* SCSI 650A MO disk
*
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m64mb:0,lu:12,dp:1:5 dp:8:3
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m64mb:1,lu:13,dp:1:5 dp:8:3
*
* SCSI floppy  single sided                 LU 50
*
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m16mb:0,lu:50,dp:1:0:0:0:0:0,-
*!REMOVESCSI!  dp:6:66:16:0
*
* SCSI floppy  double sided                 LU 51
```

```
*
*!REMOVESCSI!dvt,/rte_a/ddq30_gen.rel,m16mb:0,lu:51,dp:1:0:0:0:0:0,-
*!REMOVESCSI!  dp:6:154:16:0
*
*
*    ###################################################################
*    #                                                                 #
*    #  The bus controller dvt is needed only if Direct I/O to the     #
*    #  device is being done.                                          #
*    #                                                                 #
*    ###################################################################
*
* Bus Controller LU                                    HP-IB address 36b
*                                                        LU 15
*
*!REMOVEHPIB!dvt,,,LU:15,TO:2000,DT:77B,TX:0,DX:1,DP:1:36B,PR:0
*
*  HP-IB disk                                          HP-IB address 0
*                                                        LU 18-19
*
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M7908_CF:0,LU:18,DP:1:0,-
*!REMOVEHPIB!  DP:2:0:0:00:0:4096 DP:7:64
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M7908_CF:0,LU:19,DP:1:0,-
*!REMOVEHPIB!  DP:2:0:0:04:0:4096 DP:7:64
*
*
* 9144/5 standalone CS-80 cartridge tape              HP-IB address 1
*                                                        LU 9
*
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M9144:0,LU:9,DP:1:1
*
*  HP-IB disk (20MB)                                   HP-IB address 2
*                                                        LU 30
*
*!REMOVEHPIB20!dvt,/rte_a/%dd*33 m7908_cf:0 lu:30 dp:1:2 dp:2:0:0:00:0:1215,-
*!REMOVEHPIB20!  dp:7:64
*
*      Single-sided floppy                            HP-IB address 2
*                                                        LU 53
*
*!REMOVEHPIB20!dvt,/rte_a/%dd*33,M_FLOPPY_CF:1,LU:53,DP:1:2:400b:0:0:0,-
*!REMOVEHPIB20!  DP:6:66:16:0
*
*      Double-sided floppy                            HP-IB address 2
*                                                        LU 54
*
*!REMOVEHPIB20!dvt,/rte_a/%dd*33,M_FLOPPY_CF:1,LU:54,DP:1:2
*
```

```
* CS-80 compatible cartridge tape with cache        HP-IB address 2
*   size of disk cache is 256 physical blocks         LU 24
*   starting block address of disk cache is 77760
*
*!REMOVEHPIB20!dvt,/rte_a/%dd*33,mtape,lu:24,dp:1:2 dp:4:1:12224
*
*
*
*      HP-IB disk(64MB)                               HP-IB address 2
*                                                       LU 16-17
*
*!REMOVEHPIB64!dvt,/rte_a/%dd*33,M7908_CF:0,LU:16,DP:1:2,-
*!REMOVEHPIB64!  DP:2:0:0:00:0:4096 DP:7:64
*!REMOVEHPIB64!dvt,/rte_a/%dd*33,M7908_CF:0,LU:17,DP:1:2,-
*!REMOVEHPIB64!  DP:2:0:0:04:0:4096 DP:7:64
*
* CS-80 compatible cartridge tape with cache        HP-IB address 2
*   size of disk cache is 256 physical blocks         LU 24
*   starting block address of disk cache is 262144
*
*!REMOVEHPIB64!dvt,/rte_a/%dd*33,mtape,lu:24,dp:1:2 dp:4:4:0
*
*
* 7974A/7978A streaming tape drive                  HP-IB address 3
*                                                       LU 7
*
*!REMOVEHPIB!dvt,/rte_a/%dd*24,M7974:0,LU:7,DP:1:3
*
* 5.25" Winchester fixed disk (9133/4 XV)           HP-IB address 4
*                                                       LU 44-47
*
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9134X:0,LU:44,DP:1:4
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9134X:1,LU:45,DP:1:4
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9134X:2,LU:46,DP:1:4
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9134X:3,LU:47,DP:1:4
*
* flexible disk (9122D)                             HP-IB address 5
*                                                       LU 36-37
*
*!REMOVEHPIB!dvt,/rte_a/%dd*33,m_floppy_cf:0,lu:36,DP:1:5
*!REMOVEHPIB!dvt,/rte_a/%dd*33,m_floppy_cf:1,lu:37,DP:1:5
*
* 5.25" and 3.5" flexible disks (9121)              HP-IB address 6
*                                                       LU 32-33
*
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9121:0,LU:32,DP:1:6,TO:3000
*!REMOVEHPIB!dvt,/rte_a/%dd*30,M9121:1,LU:33,DP:1:6,TO:3000
*
```

```
* 3.5" flexible disk (9133H)                          HP-IB address 7
*                                                       LU 61
*
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M_FLOPPY_CF:1,LU:61,DP:1:7
*
* 5.25" Winchester fixed disk (9133H/9134H)           HP-IB address 7
*                                                       LU 41-43
*
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M9133_CF:0,LU:41,DP:1:7
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M9133_CF:1,LU:42,DP:1:7
*!REMOVEHPIB!dvt,/rte_a/%dd*33,M9133_CF:2,LU:43,DP:1:7
*
*
* HP-IB #2 -- Low speed mag tape bus                  Select Code = 26b
*
*
*!REMOVE!ift,/rte_a/%Id*37,SC:26B
*
* Bus Controller LU                                   HP-IB address 36b
*                                                       LU 40
*
*!REMOVE!dvt,,,LU:40,TO:2000,DT:77B,TX:0,DX:1,DP:1:36B,PR:0
*
* 7970 tape drive                                     HP-IB address 4
*                                                       LU 8
*
*!REMOVE!dvt,/rte_a/%dd*23,M7970E:0,LU:8,DP:1:4,PR:1
*
* 7970 tape drive                                     HP-IB address 6
*                                                       LU 28
*
*!REMOVE!dvt,/rte_a/%dd*23,M7970E:0,LU:28,DP:1:6,PR:1
*
* HP-IB #3 -- High speed mag tape bus                 Select Code = 31b
*
*
*!REMOVE!ift,/rte_a/%Id*37,SC:31B
*
* Bus Controller LU                                   HP-IB address 36B
*                                                       LU 48
*
*!REMOVE!dvt,,,LU:48,TO:2000,DT:77B,TX:0,DX:1,DP:1:36B,PR:0
*
*
* 7974A/7978A streaming tape drive                    HP-IB address 5
*                                                       LU 34
*
*!REMOVE!dvt,/rte_a/%dd*24,M7974:0,LU:34,DP:1:5
```

```
*
* 7974A/7978A streaming tape drive                    HP-IB address 7
*                                                       LU 35
*
*!REMOVE!dvt,/rte_a/%dd*24,M7974:0,LU:35,DP:1:7
*
*
* HP-IB #4 -- Low speed peripheral/instrument bus     Select Code = 25b
*
*
*!REMOVE!ift,/rte_a/%Id*37,SC:25B
*
* Bus Controller LU                                   HP-IB address 36b
*                                                       LU 91
*
*!REMOVE!dvt,,,LU:91,TO:2000,DT:77B,TX:0,DX:1,DP:1:36B
*
* 2608S,2563A,2566A Line Printer                      HP-IB address 1
*                                                       LU 85
*
*!REMOVE!dvt,/rte_a/%ddC12,,LU:85,DP:1:1
*
* 2932A Line Printer                                  HP-IB address 2
*                                                       LU 6
*
*!REMOVE!dvt,/rte_a/%dd*12,M2932A,LU:6,DT:12B,DP:1:2
*
* Four devices                                        HP-IB address 3-6
*                                                       LU 92-95
*
*!REMOVE!dvt,,,LU:92,TO:500,DT:77B,DX:1,DP:1:3
*!REMOVE!dvt,,,LU:93,TO:500,DT:77B,DX:1,DP:1:4
*!REMOVE!dvt,,,LU:94,TO:500,DT:77B,DX:1,DP:1:5
*!REMOVE!dvt,,,LU:95,TO:500,DT:77B,DX:1,DP:1:6
*
*
* 248x INTEGRATED DISK INTERFACE (MICRO/1000)        Select Code = 32b
*
*
*!REMOVE!ift,/rte_a/%Id*27,SC:32B
*
* Hard disk (15Mb)
*
*!REMOVE!dvt,/rte_a/%GEN27,M2480:15,LU:55
*!REMOVE!dvt,/rte_a/%GEN27,M2480:16,LU:62
*
* Hard disk (20Mb)
*
```

```
*!REMOVE!dvt,/rte_a/%gen27,m2480:11,lu:59
*!REMOVE!dvt,/rte_a/%gen27,m2480:12,lu:60
*
* 3.5" flexible disk  (singled-sided)
*
*!REMOVE!dvt,/rte_a/%GEN27,M2480:3,LU:39
*
* 3.5" flexible disk (double-sided)
*
*!REMOVE!dvt,/rte_a/%GEN27,M2480:14,LU:63
*
*
*
* IEEE 802.3 Local Area Network                    Select Code = 37b
*                                                    LU 96,97
*
*    ##################################################################
*    #                                                                #
*    #  The following are the table entries for ID*67, the LAN/1000   #
*    #  driver for the 12076A card.  The IFT extension area           #
*    #  defaults to 204 words, allowing 4 Multicast addresses to      #
*    #  be used by the card.  The formula to change this is:          #
*    #                                                                #
*    #    tx = 192 + (3 * max # of multicast addresses used by card)  #
*    #                                                                #
*    ##################################################################
*
*!YES_NS!ift,/rte_a/%id*67,sc:37B
*
*     DVT table entries for ID*67 (12076A 802.3 LAN card)
*     The first DVT entry must have an even LU number.
*
*!YES_NS!dvt,/rte_a/%gen67,m67:1,lu:96
*!YES_NS!dvt,/rte_a/%gen67,m67:0,lu:97
*
* LU mapping                                          LU 81-82
*
*!YES_NS!ift,/ns1000/dsrel/%ADV00,EIDV00,QU:FI,TX:2,AL:DY
*
*!YES_NS!dvt,,,LU:81,EddV00,TX:0
*!YES_NS!dvt,,,LU:82,EddV00,TX:5
*
*  Telnet pseudo terminal driver/LUs                  LU 79-80
*
*!YES_NS!ift,/rte_a/idz00.rel
*!YES_NS!dvt,/rte_a/ddc01.rel,MHP_TELNET,lu:79
*!YES_NS!dvt,/rte_a/ddc01.rel,MHP_TELNET,lu:80
*
```

```
*
* Parallel Interface Card                                Select Code = 35b
*                                                          LU 84
*
*!REMOVE!ift,/rte_a/%Id*50,SC:35B
*
*!REMOVE!dvt,,,LU:84,TO:5000,TX:2,DX:3,DP:1:0:0:0,DT:55B
*
*
*  Terminal LUs
*
*      ##############################################################
*      #                                                            #
*      # For systems with non-12005 ASIC system consoles:           #
*      #   change the 'lu:1' below to 'lu:yy', where yy is an       #
*      #   unused LU, and change the desired LU:XX to LU:1.         #
*      #                                                            #
*      ##############################################################
*
* ASIC #1 (default system console)                       Select Code = 20B
*                                                          LU 1
*
*!REMOVE!ift,/rte_a/id100.rel,sc:20B
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:A,lu:1
*
* ASIC #2  Terminal, slaved device (printer),           Select Code = 21B
*          left CTU and right CTU.                         LU 100, 200-202
*
*!REMOVE!ift,/rte_a/id100.rel,sc:21B
*
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:A,lu:100
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Slaved_Serial,lu:200
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:L,lu:201
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:R,lu:202
*
*   12100A A400 OBIO 4-MUX portA-D, portB's             Select Code = 77B
*     slaved device (printer), left CTU, right CTU.     LU 110-113,211-213
*
*    ##################################################################
*    #                                                                #
*    #  Do not specify a select code for ID400.REL.  It is forced to  #
*    #  select code 77B.                                              #
*    #                                                                #
*    ##################################################################
*
*!REMOVE!ift,/rte_a/id400.rel
*
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:0,lu:110
```

```
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:1,lu:111
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Slaved_Serial,lu:211
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:L,lu:212
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:R,lu:213
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:2,lu:112
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:3,lu:113
*
*   12040D 8-channel MUX, ports 0-7, port 1 is      Select Code = 30B
*     slaved device (printer), left CTU, right CTU.   LU 120-127,221-223
*
*!REMOVE!ift,/rte_a/id800.rel,sc:30B
*
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:0,lu:120
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:1,lu:121
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Slaved_Serial,lu:221
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:L,lu:222
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_CTU:R,lu:223
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:2,lu:122
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:3,lu:123
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:4,lu:124
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:5,lu:125
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:6,lu:126
*!REMOVE!dvt,/rte_a/ddc01.rel,MHP_Term:7,lu:127
*
*   12040A-C Pre-Revision D 8-MUX, port 0-7.        Select Code = 23B
*                                                     LU 130-137
*
*!REMOVE!ift,/rte_a/%idm00,sc:23B,tx:20
*
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:130,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:131,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:132,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:133,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:134,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:135,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:136,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*!REMOVE!dvt,/rte_a/%dd*00,M26XX,LU:137,DP:1:20004B,TX:57,-
*!REMOVE!    DP:5:CI:20040B:20040B:0,DP:9:CM:20040B:20040B:CM
*
*!REMOVE!end,,                    End of dvt generation phase
*
```

```
*!REMOVE!end,,                          End of ift generation phase
*
*
* Define Node Lists
*
* SCSI disks
*
*!REMOVESCSI!node,10,11
*!REMOVESCSI!node,12,13
*
* HP-IB disk

*!REMOVEHPIB!node,18,19
*
* 5.25" and 3.5" Flexible disks (9121)
*
*!REMOVEHPIB!node,32,33
*
* 9122D 3.5" flexible disks
*
*!REMOVEHPIB!node,36,37
*
* HP-IB disk(64MB)
*
*!REMOVEHPIB64!node,16,17,24
*
* HP-IB disk(20MB)
*
*!REMOVEHPIB20!node,30,24,53,54
*
* 5.25" Winchester fixed disk LUs (9133/4XV)
*
*!REMOVEHPIB!node,44,45,46,47
*
* 5.25" Winchester fixed disk LUs (9133/4H) and 9133H flexible disk
*
*!REMOVEHPIB!node,41,42,43,61
*
* 248x Integrated disk LUs
*
*!REMOVE!node,55,62,59,60,39,63
*
* 4-channel MUX port B/Rev. D 8-channel MUX CTUs and slaved printer
*
*!REMOVE!node,111,211,212,213
*!REMOVE!node,121,221,222,223
*
*!REMOVE!end,                          End node list
```

```
*
*!REMOVE!end,                          End interrupt table
*
*
* Memory Allocation
*
*
*!REMOVE!clas 150,                     Class number allocation
*!REMOVE!resn 30,0                     Resource number allocation/debug table spec
*!REMOVE!id 80,                        ID segment allocation
*!REMOVE!rs -150,                      Memory descriptor allocation
*!REMOVE!sam 32767,4096                SAM allocation/XSAM
*!REMOVE!sl 200 1048,                  Spool limits
*!REMOVE!bg 30,                        Background swap priority allocation
*!REMOVE!qu 300 50,                    Quantum time slice value
*!REMOVE!sp 30,0                       Shared programs/extended schedule table
*
*!YES_NS!mb 512,                       Number of memory blocks for NS/1000
*!NO__NS!mb 0,                         Number of memory blocks for NS/1000
*
*!YESVC+!us 15,                        Number of concurrent users (1 if no VC+)
*!NO_VC+!us 1,                         Number of concurrent users (1 if no VC+)
*!REMOVE!lb,,                          LOGOF buffer limit (use defaults)
*
*
* Labeled System Common Relocation
*
*
*!YES_NS!re /ns1000/dsrel/%resa
*
*    ######################################################################
*    #                                                                    #
*    #  If you are using the serial modem handler HPMDM, uncomment       #
*    #  the following line.                                               #
*    #                                                                    #
*    ######################################################################
*!YES_NS!re /rte_a/hpmdm_table.rel
*
*!YES_NS!se /ns1000/lib/nssys.lib
*
*!REMOVE!end,                          End labeled system common relocation
*
*
* Unlabeled (Blank) Common
*
*!REMOVE!com 1024,                     Number of words of memory to use
*
*
```

```
* System Messages
*
*!REMOVE!re /rte_a/%msgtb,,        Message table
*!REMOVE!end
*!REMOVE!re /rte_a/%$m000,,        Message module
*!REMOVE!end
*!YESVC+!re /vcplus/security.rel
*!YESVC+!end
*
*!REMOVE!end,                      End system messages
*
* System Libraries
*
*    ###################################################################
*    #                                                                 #
*    #   add here any other library routines which you often use       #
*    #                                                                 #
*    ###################################################################
*
*!REMOVE!lib sec1000.lib,,         Security/1000 library
*!YES_NS!lib bigns.lib             Merged NS-ARPA/1000 user libraries
*!YES_NS!lib $FNDLB                Required for NS-ARPA/1000
*!YES_NS!lib pascal.lib            Required for NS-ARPA/1000
*!REMOVE!lib $biglb.lib,,
*!REMOVE!end,                      End system libraries
*
* CDS Libraries
*
*    ###################################################################
*    #                                                                 #
*    #  add here any other CDS library routines which you often use    #
*    #                                                                 #
*    ###################################################################
*
*!YESVC+!lib sec1000cds.lib,,      Security/1000 CDS library
*!YES_NS!lib bigns_cds.lib         Merged NS-ARPA/1000 user libraries
*!YES_NS!lib $FNDLB                Required for NS-ARPA/1000
*!YES_NS!lib pascal_cds.lib        Required for NS-ARPA/1000
*!YESVC+!lib $bgcds.lib,,
*!YESVC+!lib sec1000.lib,,         Security/1000 library
*!YESVC+!lib $biglb.lib,,
*
*!REMOVE!end
```

1650009308, 2-20
1650016394, 2-98
1650021733, 2-32
1650022285, 2-62
1650025411, 2-94
1650027201, 2-63
1650028761, 2-112
1650029629, 2-25, 2-64, 2-73
1650038414, 2-21
1650042242, 2-94
1650044438, 2-113
1650058875, 2-60
1650062364, 2-67
1650069294, 2-30
1650072983, 2-112
1650097063, 2-66
1650097485, 2-60
1650098244, 2-21
1650101089, 2-66
1650115683, 2-46, 2-87
1650116459, 2-56, 2-89
1650119230, 2-114
1650120865, 2-20
1650121053, 2-27, 2-74
1650121483, 2-97
1650135145, 2-41
1650140574, 2-32
1650140616, 2-91
1650140723, 2-61
1650141333, 2-49
1650141705, 2-94
1650149104, 2-22
1650157107, 2-36
1650161489, 2-66
1650161612, 2-67
1650164459, 2-104
1650165365, 2-8, 2-115
1650170613, 2-105
1650170860, 2-30, 2-76
1650171009, 2-24
1650173021, 2-23
1653000380, 2-53
1653000406, 2-53
1653001230, 2-11, 2-118
1653001461, 2-13, 2-119
1653006395, 2-2, 2-58
1653008573, 2-91
1653010579, 2-62

1653010611, 2-30, 2-76
1653022194, 2-23, 2-71
1653022913, 2-50
1653024646, 2-46
1653025221, 2-12
1653027680, 2-55
1653027888, 2-67
1653030338, 2-51
1653033076, 2-7

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