



COMMUNICATOR 3000
MPE V Release 31, Version G.31.00

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

HP 3000 Commercial Systems
COMMUNICATOR 3000

MPE V Release 31 (Version G.31.00)



**HEWLETT
PACKARD**

HP Part No. 32033-90287
Printed in U.S.A. July 1993

R3330

NOTICE

The information contained in this document is subject to change without notice.

HEWLETT-PACKARD MAKES NO WARRANTY OF ANY KIND WITH REGARDS TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced or translated to another language without prior written consent of Hewlett-Packard Company.

Copyright © 1984 - 1993 by HEWLETT-PACKARD COMPANY

Hewlett-Packard
SWT/Software Technology Center
8000 Foothills Boulevard
Roseville, CA 95747 USA

CONVENTIONS USED IN THIS MANUAL

NOTATION	DESCRIPTION
nonitalics	Words in syntax statements which are not in italics must be entered exactly as shown. Punctuation characters other than brackets, braces, and ellipses must also be entered exactly as shown. For example: EXIT;
<i>italics</i>	Words in syntax statements which are in italics denote a parameter which must be replaced by a user-supplied variable. For example: CLOSE <i>filename</i>
[]	An element inside brackets in a syntax statement is optional. Several elements stacked inside brackets means the user may select any one or none of these elements. For example: $\left[\begin{array}{l} A \\ B \end{array} \right]$ User may select A or B or neither.
{ }	When several elements are stacked within braces in a syntax statement, the user must select one of those elements. For example: $\left\{ \begin{array}{l} A \\ B \\ C \end{array} \right\}$ User must select A or B or C.
...	A horizontal ellipsis in a syntax statement indicates that a previous element may be repeated. For example: [, <i>itemname</i>] . . . ; In addition, vertical and horizontal ellipses may be used in examples to indicate that portions of the example have been omitted.
	A shaded delimiter preceding a parameter in a syntax statement indicates that the delimiter <i>must</i> be supplied whenever (a) that parameter is included or (b) that parameter is omitted and any <i>other</i> parameter which follows is included. For example: <i>itema</i>  [, <i>itemb</i>] [, <i>itemc</i>] means that the following are allowed: <i>itema</i> <i>itema, itemb</i> <i>itema, itemb, itemc</i> <i>itema, , itemc</i>
□	When necessary for clarity, the symbol □ may be used in a syntax statement to indicate a required blank or an exact number of blanks. For example: SET [(<i>modifier</i>)] □ (<i>variable</i>);

underlining

When necessary for clarity in an example, user input may be underlined. For example:

NEW NAME? ALPHA

In addition, brackets, braces, or ellipses appearing in syntax or format statements which must be entered as shown will be underlined. For example:

LET var[[subscript]] = value

shading

Shading represents inverse video on the terminal's screen. In addition, it is used to emphasize key portions of an example.



The symbol  may be used to indicate a key on the terminal's keyboard. For example,  indicates the carriage return key.

 char

Control characters are indicated by  followed by the character. For example, Y means the user presses the control key and the character Y simultaneously.

Contents

1. Introduction

Introduction to Release 31	1-1
Introduction	1-1
EDITOR	1-1
SPOOK5 (SPooler LOOK up) Utility	1-1
Spooler	1-2
HPDEVCONTROL	1-2
DELETEVAR	1-2
INITIAL	1-2

2. System Information

Security Enhancement for EDITOR A.08.00	2-1
Overview	2-1
Details of Operation	2-2
File Security Attributes	2-2
Example	2-3
Error Conditions	2-4
SPOOK5 (SPooler LOOK up) Utility Enhancements	2-6
Introduction	2-6
New HELP facility:	2-6
New REDO command:	2-6
DELETE command changed:	2-7
Problem in the ALTER command fixed:	2-7
Problem in the COPY command fixed:	2-7
MODE command expanded:	2-7
New SET Command:	2-8
Command Input Length Increased:	2-8
TDP can now be called from within SPOOK5:	2-9
Altered spool files are now always scheduled for printing:	2-9
List without SPOOK5 line numbers:	2-9
Setting SPSAVE status for an output spool file:	2-9
A :FILE command before doing an INPUT or OUTPUT is no longer required:	2-9
Send INPUT and OUTPUT file listings to the Line Printer:	2-10
Be able to find all occurrences of a string without stopping:	2-10
Be able to abbreviate F[IRST] and L[AST] when specifying a line range:	2-10
COPY spool files >1024 records without having to enter an MPE FILE command:	2-10
CCTL= parameter of MODE or SET command now implemented:	2-10
Modified WIDTH= parameter of MODE or SET command:	2-10
NLS Compatibility:	2-11
Protection of accidental purging of MPE files:	2-11

COPY and APPEND commands now give information about the new files created:	2-11
Use \$STDINX instead of \$STDIN:	2-12
COPY command simplified:	2-12
SPOOK5 now copies blank lines:	2-12
The XPLAIN command has been updated:	2-12
JCWs can now be Removed on MPE V with the DELETEVAR Command . .	2-13
Introduction	2-13
Syntax	2-13
Parameters	2-13
Use	2-13
Examples	2-13
Introducing the HPDEVCONTROL Intrinsic on MPE V	2-14
Introduction	2-14
Syntax	2-14
Parameters	2-14
Operation Notes	2-16
Condition Codes	2-16
Sample Program	2-16
Free Space Check on Ldev 1 now done by INITIAL during a Coldload	2-18
Introduction	2-18
The Problem	2-18
The Solution	2-18
Summary	2-19
The MPE V Spooler now Supports the MPE/iX SPSAVE Feature	2-20
Introduction	2-20
Saving a Spool File	2-20
Summary of Command Changes	2-20
Differences between SPSAVE on MPE V and MPE/iX	2-21
RFA Support of SPSAVE	2-22
SPOOK5 Support of SPSAVE	2-22
Third Party Networked Spooler Support	2-22
Latest Network Patches and Fixes Submitted to Release 31	2-23
Introduction	2-23
Versions	2-23
NMMAINT Listings	2-23
Obsolete MPE III Commands Removed from MPE V	2-27
Commands Removed	2-27
Final Update on Year 2000 Changes for MPE V	2-28
Change in the Default Access Capability of PUB.SYS	2-29
NS3000/V Error Message 5027	2-30

3. Additional Software Products	
HP GLANCEPLUS/V 60-DAY TRIAL SOFTWARE	3-1
BRW/V A.02.80	3-2
BRW/V Enhancements	3-2
On Line Review screen doesn't use LP as hardcoded default	3-2
On Line Review screen shows current file location	3-2
RSTART support of ''' TPI operator and LASER CCTL for BRW/iX reports	3-2
Defect fixes	3-2
BRW-DESK A.00.03	3-3
BRW-DESK Enhancements	3-3
Current file location displayed on prompt line	3-3
Enter/Next Page on last page is the same as Exit	3-3
Escape sequences are removed before display, for improved alignment	3-3
RPG/V Enhancement for Release 31	3-4
Introduction	3-4
Overview of \$INCLUDE	3-4
Description of \$INCLUDENOW	3-5
Syntax	3-5
Example	3-5
Announcing the VPlus VMERGE Utility	3-6
Introduction	3-6
VMERGE Utility	3-6
How to Use the New Hi-Li Features	3-7
Introduction	3-7
HPDSETENV Changes	3-7
HPDGETENV Changes	3-9
HPDGETENV and HPDSETENV Errors and Exceptions:	3-10
YYMMDD, COBOL Packed, and COBOL Zoned Data Conversion Support	3-11
Application Buffer and Form Initialization Merge Enhancement	3-12
4. Technical Articles	
VPlus VMERGE Utility User's Guide	4-1
Introduction	4-1
Overview	4-1
Forms File Handling by FORMSPEC and VMERGE	4-2
Input File Compatibility	4-2
Application Requirements for Combined Forms Files	4-3
Technical Reference	4-3
Example 1: Using VMERGE to Combine Forms Files	4-4
Example 2: Using VMERGE to Divide a Forms File	4-5
VMERGE Messages	4-6
Deleting Forms Using FORMSPEC's Batch Mode Facilities	4-11

5. Hardware Support		
Extended MPE V Hardware Support		5-1
6. Fix Table		
Release 31 Fix Table		6-1
Introduction		6-1
Release 31 (G.31.00)		6-1
7. Product Release Information		
MPE V Product Releases		7-1
Product Release Information		7-3
8. Catalog of User Documentation		
Introduction		8-1

Introduction

Introduction to Release 31

Software Technology Division

Introduction

MPE V does it again! The enhancements requested by customers, the System Improvement Committee (SIC), and other user groups are provided to you in this release. As in Release 30, customers who participated in the design prototype testing were impressed with the level of enhancements and fixes and astonished at the exceptional quality of Release 31. The MPE V team has worked hard to put new processes in place to provide you with continued quality. These efforts have produced great results. We hope you enjoy the benefits. Read on for a brief description of the new enhancements.

EDITOR

EDITOR A.08.00 includes numerous fixes aimed at making the product more reliable and easier to use. Also included is an enhancement that has long been requested by users - the ability to automatically pass disk file security attributes from the TEXT file to the KEEP file. These security attributes are:

- Security matrix
- Lockword
- SECURE / RELEASE status of file
- Access Control Definitions

The new EDITOR security feature can be activated using any of the following three methods:

- Running EDITOR with the appropriate parm value
- Setting the appropriate JCW before invoking EDITOR
- A new SET command option within EDITOR

SPOOK5 (SPooler LOOK up) Utility

One of the most popular MPE V utilities is SPOOK5 (so named because it can look at ghost spool files which are files that cannot be seen with the MPE LISTF command). A number of enhancements makes the utility even more powerful and much easier to use. The enhancements include a full HELP facility that not only gives you the full syntax of the commands with an explanation of the parameters, but also helpful hints on using the commands. A REDO facility has been added. Also, OFFLINE parameters are added to

several commands to allow you to get line printer listings of spool files output to tape or input from tape.

Other convenient enhancements include eliminating the need to issue MPE FILE commands before using the utility's INPUT, OUTPUT, APPEND, and COPY commands. The listing facility has been enhanced to allow you to list the contents of spool files without the line numbers. This enhancement allows you to view spool files that are 80 bytes long on your terminal without having the lines wrap on your terminal display.

Other enhancements will also provide the capability to:

- set and see the SPSAVE status of spool files with the SPOOK5 ALTER and SHOW commands, respectively
- abbreviate the range list keywords "First" and "Last" to simply "F" and "L"
- find all occurrences of a string in a spool file without having to keep reissuing the SPOOK5 FIND command

The original default behavior of both the EDITOR and SPOOK5 is preserved for users who do not want to use the new enhancements while providing flexibility of implementation for those who do.

Spooler

The SPSAVE feature in the native mode spooler on MPE/iX allows users to specify that a copy of a spool file is to be saved after the spool file has printed. Release 31 now provides MPE/iX's SPSAVE feature on MPE V.

HPDEVCONTROL

The MPE/iX HPDEVCONTROL intrinsic is now available on MPE V. This intrinsic allows users to programmatically load and place the DAT & 7980 tape drives ONLINE.

DELETEVAR

The DELETEVAR command improves flexibility by allowing specific or all job control words (JCWs) to be deleted for a particular job/session. Prior to Release 31, a job/session had no way of removing JCW entries other than logging off and back on again which would remove all JCWs.

INITIAL

INITIAL now ensures adequate free space on ldev 1 during coldload to prevent forced reload if free allocation error is encountered. This enhancement should help eliminate unplanned reloads by having INITIAL pre-allocate space on ldev 1 before it is too late to perform a start from disk.

These and future enhancements are designed to simplify your system management and operation. We built in MPE/iX compatibility with many of the enhancements to achieve easier use in a mixed MPE V and MPE/iX environment as well as for simplified migration. For example, no code changes are required to run an HPDEVCONTROL program on MPE/iX that was developed for MPE V. This provides easier migration when you upgrade to MPE/iX. These releases, along with other MPE V activities, are providing you a long term solution for your current investment.

System Information

Security Enhancement for EDITOR A.08.00

by

Robert Holdsworth

Software Technology Division

Overview

EDITOR A.08.00, releasing with MPE V Release 31, has been enhanced with a long-requested security feature - the optional ability to pass on security attributes of the TEXT file to the KEEP file. This is implemented through a new global option on the SET command. The syntax is:

```

/SET SECURE                << Activates KEEP file security >>

/VERIFY SECURE             << Display status of KEEP file security >>
                           << as shown below                >>

SECURE = TRUE (I.E. NOSECURE = FALSE) << Indicates security is active >>

/SET NOSECURE              << Deactivates KEEP file security >>

/VERIFY SECURE             << Display status of KEEP file security >>
                           << as shown below                >>

NOSECURE = TRUE (I.E. SECURE = FALSE) << Indicates security is not active >>

```

Note

When SECURE is FALSE, the KEEP command behaves as it always has, creating a file with standard EDITOR new file default security. The default setting for SECURE upon first entering EDITOR is FALSE, thereby preserving EDITOR's original behavior. However, some users may wish to enter EDITOR with the initial value of SECURE set TRUE. Two methods are available for doing so; EDITOR can be run with PARM=1 or the JCW EDITORSETSECURE can be set to 1. Examples are shown below:

```

:RUN EDITOR.PUB.SYS;PARM=1          << Initial value of SECURE is TRUE >>

:SETJCW EDITORSETSECURE=1
:EDITOR                             << Initial value of SECURE is TRUE >>

```

:DELETEVAR EDITORSETSECURE
:EDITOR

<< New on MPE V with Release 31 >>
<< Initial value of SECURE is FALSE >>

Regardless of the chosen initial value, once within EDITOR the user can control the setting of SECURE with SET as shown above.

Details of Operation

Passing of security attributes from the TEXT file to the KEEP file occurs only when the following three conditions apply:

1. SECURE is TRUE. This must be done prior to the first KEEP command for which security is desired, and is described in detail above.
2. The most recently TEXTed file is a permanent disk file.
3. The KEEP file is a permanent disk file.

Note that when the above three conditions apply, KEEP will apply TEXT file security in all of the following cases:

- When the KEEP file is a new permanent disk file.
- When the KEEP file is an existing permanent disk file that is not the TEXT file.
- When the KEEP file is the TEXT file. This allows preservation of existing security when modifying and KEEPing an existing permanent disk file.

The value of the SECURE option, TRUE or FALSE, remains in effect through the editing session until modified with SET or until EDITOR is exited and re-entered.

Note EDITOR does **NOT** apply security to EDITOR work files ("K" files) that are created while SECURE is true, and does **NOT** apply security to workfiles that are renamed as a result of the KEEPQ command.

File Security Attributes

The file security attributes that are mapped from the TEXT file to the KEEP file when SECURE is TRUE are:

- Security matrix
- Lockword
- SECURE / RELEASE status of file
- Access Control Definitions (ACDs)

Example

The following LISTFs show SECURFIL with a lockword, non-default security matrix, released, and with an ACD in effect. EDITOR is run, and the SET SECURE command is entered. File SECURFIL is TEXTed and a KEEP is done to NEWFILE. The final LISTFs show correct transfer of lockword, security matrix, released status, and ACD.

```
:LISTF SECURFIL,-3
*****
FILE: SECURFIL.TEST.EDIT

FILE CODE : 0          FOPTIONS: STD,ASCII,FIXED
BLK FACTOR: 3         CREATOR : BOB
REC SIZE: 72(BYTES)   LOCKWORD: LOCK
BLK SIZE: 108(WORDS) SECURITY--READ   : ANY,AC,GU
EXT SIZE: 2(SECT)    WRITE       : ANY,AC,GU
NUM REC: 1           APPEND      : ANY,AC,GU
NUM SEC: 2           LOCK        : ANY,AC,GU
NUM EXT: 1           EXECUTE     : ANY,AC,GU
MAX REC: 1           **SECURITY IS OFF
MAX EXT: 1           COLD LOAD ID: %37540
NUM LABELS: 0        CREATED : WED, 20 JAN 1993
MAX LABELS: 0        MODIFIED: WED, 20 JAN 1993      11:46 AM
DISC DEV #: 1        ACCESSED: FRI, 5 FEB 1993
DISC TYPE : 4        LABEL ADDR: %405654
DISC SUBTYPE: 2     SEC OFFSET: %1
CLASS: DISC          FLAGS: NO ACCESSORS
FCB VECTOR: %0       %0
EXT MAP: %100405654
```

```
:LISTF SECURFIL,-2
ACCOUNT= EDIT        GROUP= TEST

FILENAME      -----ACD ENTRIES-----

SECURFIL      BOB.EDIT      : R,W,X,A,L
               @.SYS       : R,W,X,A,L
```

```
:EDITOR
HP32201A.08.00 EDIT/3000 FRI, FEB 5, 1993, 1:52 PM
(C) HEWLETT-PACKARD CO. 1993
/T SECURFIL
FILE UNNUMBERED
/SET SECURE
/K NEWFILE,UNN
/EXIT
```

```
END OF SUBSYSTEM
:LISTF NEWFILE,-3
```

FILE: NEWFILE.TEST.EDIT

```
FILE CODE : 0          FOPTIONS: STD,ASCII,FIXED
BLK FACTOR: 3         CREATOR : BOB
REC SIZE: 72(BYTES)  LOCKWORD: LOCK
BLK SIZE: 108(WORDS) SECURITY--READ   : ANY,AC,GU
EXT SIZE: 2(SECT)    WRITE          : ANY,AC,GU
NUM REC: 1           APPEND         : ANY,AC,GU
NUM SEC: 2           LOCK           : ANY,AC,GU
NUM EXT: 1           EXECUTE        : ANY,AC,GU
MAX REC: 1           **SECURITY IS OFF
MAX EXT: 1           COLD LOAD ID: %37540
NUM LABELS: 0       CREATED : FRI,  5 FEB 1993
MAX LABELS: 0       MODIFIED: FRI,  5 FEB 1993      1:53 PM
DISC DEV #: 1       ACCESSED: FRI,  5 FEB 1993
DISC TYPE : 4       LABEL ADDR: %1410224
DISC SUBTYPE: 2    SEC OFFSET: %1
CLASS: DISC        FLAGS: NO ACCESSORS
FCB VECTOR: %0     %0
EXT MAP: %101410224
```

```
:LISTF NEWFILE,-2
ACCOUNT=  EDIT          GROUP=  TEST
```

```
FILENAME      -----ACD ENTRIES-----
NEWFILE      BOB.EDIT          : R,W,X,A,L
              @.SYS           : R,W,X,A,L
```

Error Conditions

The following new warning messages may occur when SECURE is TRUE. The messages indicate that something went wrong obtaining TEXT file security attributes or in applying these attributes to the KEEP file. When any of the following messages occur, check the security disposition of the KEEP file at the end of the editing session and if necessary use appropriate MPE commands to apply the desired security.

- ***** WARNING *** CAN'T APPLY TEXTFILE SECURITY TO KEEPFILE.**
This message can occur prior to closing the KEEP file and indicates a failure during transfer of security information from the TEXT file. More detail will be provided from the following possible messages:
- *** TEXTFILE FOPEN FAILURE**
The TEXT file could not be opened. This error can occur if the TEXT file is purged prior to the KEEP command.
- *** TEXTFILE TO KEEPFILE HPACDPUT FAILURE**
The HPACDPUT intrinsic failed when EDITOR attempted to map the ACD from the TEXT file to the KEEP file. Note that read access to the TEXT file is not adequate to

retrieve ACD information; the user must also have read access to the TEXT file ACD (be the file creator, account manager, system manager, or be granted explicit RACD access in the ACD).

■ * DUMMY FOPEN FAILURE

Indicates failure to open a temporary work file for ACD transfer.

■ * TEXTFILE TO DUMMY HPACDPUT FAILURE

Indicates failure to transfer ACD information to the temporary work file.

■ * DUMMY TO KEEPFILE HPACDPUT FAILURE

Indicates failure to transfer ACD information from the temporary work file.

■ * FLABELINFO FAILURE

The FLABELINFO intrinsic failed when called to obtain the TEXT file security matrix and secure bit setting.

If the KEEP file is successfully closed and SET SECURE is in effect, EDITOR may attempt to perform ALTSEC, RENAME, and RELEASE commands if required. The failure of any of these will result in one of the following warning messages:

■ * ALTSEC FAILURE ON CLOSED KEEPFILE

■ * RENAME FAILURE ON CLOSED KEEPFILE

■ * RELEASE FAILURE ON CLOSED KEEPFILE

SPOOK5 (SPooler IOOK up) Utility Enhancements

by

Len Croley

Software Technology Division

Introduction

One of the most used MPE V utilities is SPOOK5 (so named because it can look up ghost spool files which are files that cannot be seen with the MPE LISTF command). It is also one of the utilities with the most enhancement requests. HP has responded to some of these requests. The enhancements that have been completed are discussed in this article.

New HELP facility:

SPOOK5 has been enhanced with a new HELP facility that gives full syntax, parameter, and operation details with examples. The XPLAIN command will, however, only give the brief command syntax the same as before. The new HELP command syntax and operation is as follows:

```
>HELP [MPE]
or
>HELP [command[,keyword]]
or
>HELP [command[,ALL]]
```

PARAMETERS:

MPE	Enters the MPE HELP subsystem.
<i>command</i>	Can be any SPOOK5 command. For MPE commands, enter the MPE HELP facility by using the the >HELP MPE command and then enter the MPE command.
<i>keyword</i>	Can be PARMS, OPERATION, or EXAMPLE or the command name for more detailed information about the command.
ALL	Gives the syntax, PARMS, OPERATION, and EXAMPLE of the command without having to specify each section.

New REDO command:

A new REDO command has been added. This command is especially handy if you have to re-issue a command such as the ALTER command several times with only minor changes or if you enter a lengthy command such as the DELETE command with a long list of Device File IDs and make a mistake in the middle of the command. The only SPOOK5 command that cannot be redone is the REDO command itself. This command works the same as the MPE REDO command and, can be abbreviated by entering "R". The REDO command will only redo the last command issued. It does not have a "REDO stack" so it cannot REDO the second or third command back.

DELETE command changed:

The DELETE command has been changed so it can be called by just using "D" or any amount of characters that spell the DELETE command ("DE", "DEL", "DELE", or "DELETE"). To do this, the DEBUG command was changed so that it can only be called using "DEB", "DEBU", or "DEBUG".



Problem in the ALTER command fixed:

There was a problem with the ALTER command so that if you wanted to change the destination of an active Job \$STDLIST output spool file from a class (such as LP) to a specific LDEV or from a specific LDEV to a class name, the JMAT (Job MASTER Table) entry for the job was not modified to reflect the change. This caused the JOBINFO Intrinsic (Item 32) to return an error instead of the target device class name or LDEV. This problem has been fixed.

Problem in the COPY command fixed:

There was a problem in the COPY command where if you made a specific syntax error while entering the COPY command, a variable would not get re-initialized and this would prevent you from successfully doing the COPY command again until you EXIT SPOOK5 and rerun it. Further, when the problem occurred, you would usually have to issue the EXIT command three times before the program successfully terminated. This problem has been fixed.

MODE command expanded:

The MODE command has been expanded to allow the user to better control how certain actions will be accomplished during the entire time the SPOOK5 program is being used. These items, however, will not carry forward to the next time you run the SPOOK5 utility.

The new MODE command has the following syntax and parameters:

```
>MODE [parmname={nnn} ] [,parmname={nnn} ] [,...]
      {OFF}                {OFF}
      {ON }                {ON }
      {character}         {character}
```

nnn A positive integer to be used as specified below with the specific parmnames that will accept a value.

OFF The keyword OFF is used to control specific parmnames as listed below.

ON The keyword ON is used to control specific parmnames as listed below.

character A specific alpha, numeric, or special character to be used as listed below.

parmname One of the following parameter keywords:

- CCTL - Controls whether the COPY command will copy the contents of spool files with or without CCTL (printer control) information. Default = OFF; CCTL not copied.
- CONTROLS - Controls the display of I/O Control characters for the LIST & FIND commands. Default = OFF; do not display.
- LANG - Controls what language is to be used for the

- SPOOK5 message catalog. The language number must be a valid NLS language number that is configured on the system with NLS. Default = 0 (No language configured).
- LONG - Controls whether the SHOW command will use the short or long form of information about the spool files. Default = OFF; short form used.
 - PROMPT - Sets the character to be used by SPOOK5 as the prompt character. Default = >.
 - QUIET - Controls whether or not the SPOOK5 line numbers are printed in the LIST command. Default = OFF; print line numbers.
 - STOP - Controls whether the FIND command will stop each time a character match is found or will continue searching until the search range has been met, displaying each match found. Default = ON; stop on each match.
 - WIDTH - Sets the width of the lines written to \$STDLIST. Default = 0 (OFF) characters (use the \$STDLIST MPE configured record length). A valid line width number is any number between 0 and 132 (0 = use \$STDLIST configured.)

Note For more information on the operation, specific use, and examples, use the new HELP facility by entering the SPOOK5 command "HELP MODE".

New SET Command:

A new SET command has been implemented. This command is exactly the same as the MODE command. It was implemented for those who are more used to the SET command for setting parameters that will control the operation of the program or utility. For more details of the SET command, enter the SPOOK5 command "HELP SET".

Command Input Length Increased:

For some SPOOK5 commands, users want to type in many more characters than the previous limit of 80 characters to use the command. This is especially true for the OUTPUT or INPUT commands. For example, if a user wanted to OUTPUT many specific spool files, the limit of 80 characters for a command caused the user to have to create more than one output tape because not all of the spool file ID numbers could be entered in a single command. Similarly, for the INPUT command, the user would have to remount the tape multiple times to read a large number of specific files that were OUTPUT to the tape. To facilitate the ability to use these and other commands where more than 80 characters are desired, the utility has been enhanced to accept up to 276 characters (the same as an MPE command). The same value as MPE was used to also facilitate being able to issue lengthy MPE commands from within the utility.

TDP can now be called from within SPOOK5:

A problem was fixed that would not allow TDP or other programs that used the “;PARM=” parameter of the :RUN command to run correctly. The utility uses the ;PARM= value to pass the son level to be used as part of the prompt [>(1) for level 1]. This utility has now been modified so that if the program being run with the RUN command is not SPOOK5.PUB.SYS then “;PARM=0” is passed instead of the SPOOK5 sublevel. NOTE: “;PARM=0” will be passed even though you specified a different value in your run command.

Altered spool files are now always scheduled for printing:

A problem was fixed where if you altered a spool file above the outfence for the target printer while running the utility as a son process to other programs, the file would not be scheduled for printing when the EXIT command was used instead of the QUIT command to return to the father process. This problem has been fixed.

List without SPOOK5 line numbers:

There are now two methods of specifying that you want to list the contents of a spool file without the line numbers. The first method is to specify “,UNN” in the SPOOK5 LIST command and the second method is to specify “QUIET=ON” in the MODE or SET command. When the second method is used, line numbers will never be listed unless you specify “QUIET=OFF” in the MODE or SET command. Using the “,UNN” parameter in the LIST command will only list unnumbered for that one execution of the LIST command. For further information, use the HELP command to refer to the PARMS, OPERATION, and EXAMPLE sections of both the LIST and MODE commands.

Setting SPSAVE status for an output spool file:

As of Release 31, MPE V has an enhancement allowing you to specify that an output spool file is to be created with SPSAVE status so that after the last copy of the file has been printed, instead of deleting the file, MPE will reset the priority of the spool file to 0 and save the file instead of deleting it. With this enhancement, you can now set the SPSAVE status for output spool files with the ALTER command. Further, the output of the SHOW command has been modified so that if the file has SPSAVE status set, it will show an “S” in the “RFS” column of the file detail listing. For further information, use the HELP command to refer to the PARMS, OPERATION, and EXAMPLE of the SHOW and ALTER commands. SPSAVE status can only be cleared by deleting the spool file either by using the utility’s DELETE or PURGE command or by using the MPE DELETESPOOLFILE command.

A :FILE command before doing an INPUT or OUTPUT is no longer required:

The utility will now automatically open up a class “TAPE” device for you for the INPUT and OUTPUT commands. The formal file designator for the INPUT command is SPOOKIN and for the OUTPUT command it is SPOOKOUT. You can either redirect these formal file designators as needed or provide your own as you had to do in the past. Since the default device is “TAPE”, if you are using a serial device such as a serial disk or cartridge tape, you must redirect the output and use the “*filename” parameter. For example, to output a file is now as easy as simply issuing the command “O23” (“O” is the OUTPUT command and “23” is the device file ID).

Send INPUT and OUTPUT file listings to the Line Printer:

You can now get a copy of information about the files written to tape with the OUTPUT command or of the files recovered back onto the system with the INPUT command by specifying the new “;OFFLINE” parameter for the INPUT and OUTPUT commands. The formal file designator for the offline listing is SPOOKLP. This listing is directed to a line printer with a class name of LP. This file can be redirected as desired using an MPE :FILE command. For example, to OUTPUT all files belonging to the finance department, get an offline listing of the files output, and purge the files after writing them to tape, issue the command “O @.FINANCE;O;P” (“O” is the OUTPUT command, “@.FINANCE” is the file set specification, “;O” is the “OFFLINE” parameter, and “;P” is the PURGE parameter).

Be able to find all occurrences of a string without stopping:

By first setting the STOP=OFF parameter of the MODE or SET command, the FIND command will now find all occurrences of a string without stopping when the first string is found.

Be able to abbreviate F[IRST] and L[AST] when specifying a line range:

You can now use just “F” for FIRST and “L” for LAST when specifying a line range. Some examples are:

```
L L-20/L
L F,30
C F/LAST-6
```

COPY spool files >1024 records without having to enter an MPE FILE command:

Before, when you used the COPY command to copy a spool file to a disk file, the file would be opened without any file size specification. As a result, if your spool file was greater than 1024 records (the MPE default file size), the COPY command would terminate with an FSERR 0 (END OF FILE) as soon as record number 1023 was copied. Users would then have to issue an MPE FILE command specifying a ;DISC= parameter large enough to hold the complete spool file in order to complete the COPY command. Now, the utility will specify a file size large enough to hold the entire contents of the source file when doing a COPY command.

CCTL= parameter of MODE or SET command now implemented:

The CCTL= parameter of the MODE or SET command is now implemented so you can take your choice - do or don't copy the CCTL character at the first of each spool file line when using the COPY or APPEND commands. (The default is OFF.) Now you can copy spool files to disk files and not have the annoying CCTL byte at the first of each line in your disk file.

Modified WIDTH= parameter of MODE or SET command:

The WIDTH= parameter of the MODE or SET command now works with HP700 series Terminals for 132 character line widths. After issuing the two SPOOK5 commands MODE QUIET=ON and MODE WIDTH=132, you can now list 132 character lines to the HP700 series terminals without getting line wrap. Another way to do this is to issue the MODE WIDTH=132 command and then use the ;UNN parameter of the LIST command.

NLS Compatibility:

The utility is being enhanced to allow localization of the message catalog file. To support the message catalog, the LANG= parameter of the MODE or SET command has been implemented in this version.

The following files on the PUB.SYS account are used by the utility:

- SPCAT000 - This is the GENCAT prepared default message catalog.
- SPCATSRC - This is the source of the default message catalog that can be converted to any language.
- SPHLP000 - This is the MSGCAT prepared default HELP file.
- SPHLPSRC - This is the source of the default HELP file.

Protection of accidental purging of MPE files:

The utility's DELETE command will accept wild cards to delete spool files while the PURGE command will only accept dfid (Device File ID) numbers to purge spool files. However, with the enhancement to the MPE PURGE command to accept wild cards, it has been found that some people will accidentally purge MPE files because they forget which SPOOK5 command will accept wild cards and try to PURGE @.@ spool files. As a result of the wrong format of the command, the utility would pass the command to MPE for execution. While MPE states the number of files that will be purged and asks the user if they want to continue, it has been found that the users still thought that the question was asking about spool files, not MPE files. As a result, users would answer the MPE question with "YES" and would wind up purging all files of all groups of the logon account if they had AM (Account Manager) capability.

To help keep this from occurring in session mode, two things have been done:

1. A change was made to the MPE message clearly stating that the number of files selected are "MPE FILES".
2. The utility has been changed to first give the user a warning the command could not be executed and it would be passed to MPE for execution. Then, the user is asked if they want the command to be passed to MPE for execution. If the user enters "NO" or simply presses the carriage return key, the command will not be passed to MPE and the user will get back to the SPOOK5 prompt.

With two full opportunities to stop the command, first by responding to a question from the utility, and then by responding to a question from MPE, it is felt that the accidental purging of MPE files should only occur in rare circumstances.

In batch mode, neither SPOOK5 nor MPE will ask any questions. If the utility cannot execute the command in batch mode, it will automatically pass the command to MPE to be executed. In MPE, when executing the MPE Wild card PURGE command in batch mode, the user is not asked to verify that they want this command executed.

COPY and APPEND commands now give information about the new files created:

The COPY command will now show you information about the new file created by the command if the new file is a spool file. The APPEND command will now also show this information, but not until the file is closed with the APPEND END command.

Use \$STDINX instead of \$STDIN:

The utility will now open and FREAD from \$STDINX to read in commands instead of using the READ Intrinsic, which reads from \$STDIN. This will keep the utility from being aborted if the user tries to issue an MPE command while running the utility and enters a ":" as the first character of the MPE command name.

COPY command simplified:

Before, if the user TEXTed a file and then entered the COPY command without a line range parameter, SPOOK5 would create a 2 line file with only an FOPEN and an FCLOSE record. The COPY command has been modified so that the user need only enter C[OPY] to make a copy of the complete TEXTed file.

SPOOK5 now copies blank lines:

There was a problem where the utility would not copy blank lines from the source file to the target file with either the COPY or APPEND commands. This problem has been fixed so that the target file is now an exact copy of the source file.

The XPLAIN command has been updated:

The X[PLAIN] command has been updated to reflect all of the command syntax changes to the commands. The XPLAIN command still only gives a one screen preview of the commands. For full help text, use the HELP command.

JCWs can now be Removed on MPE V with the DELETEVAR Command

by

Steve Smead

Software Technology Division

Introduction

Prior to Release 31, a job/session had no way of removing JCW entries other than logging off and back on again which would remove all JCWs. On MPE/iX, compatibility mode JCWs can be removed with the DELETEVAR command. The DELETEVAR command also deletes native mode CI variables on MPE/iX.

Beginning with Release 31, the DELETEVAR command is available on MPE V to remove specific JCWs or all JCWs for a particular job/session. Note, however, that this command does not work with CI variables on MPE V because CI variables are not available on MPE V. The DELETEVAR name, however, was selected for removing JCWs on MPE V to provide compatibility with the existing command that performs this function on MPE/iX.

Syntax

```
DELETEVAR jcwname
```

Parameters

jcwname The name of a valid job control word (JCW) or @ which indicates all user-defined JCWs.

Use

DELETEVAR may be issued from a session, job, in BREAK, or from a program. The command is not breakable. System-defined and system-reserved JCWs cannot be deleted.

Examples

To delete the user-defined JCW named "ABC", enter:

```
DELETEVAR ABC
```

To delete all user-defined JCWs, enter:

```
DELETEVAR @
```

Introducing the HPDEVCONTROL Intrinsic on MPE V

by

Steve Smead

Software Technology Division

Introduction

The MPE/iX HPDEVCONTROL intrinsic is now available on MPE V. This intrinsic provides access to specified peripheral functionality without the device being opened. The functions currently supported include remote tape loads and remote tape online for 7980 and DAT tape devices. This facilitates unattended backup and tape verification operations. The remote DAT online is also useful to place the DAT drive online without having to eject and reload the tape.

The supported functions, calling sequence, parameter types, and error returns match the HPDEVCONTROL intrinsic on MPE/iX. This allows running an HPDEVCONTROL program on MPE/iX that was developed for MPE V with no code changes.

Syntax

```
          D  BA  DV  D
HPDEVCONTROL(status,ldev,itemnum,item);
```

Parameters

status

double by reference (required)

Returns the status of the HPDEVCONTROL call. If no errors or warnings are encountered, status returns 32-bits of zero. If errors or warnings are encountered, status is interpreted as two 16-bit fields:

Bits (0:16) comprise status.info. A negative value indicates an error condition, and a positive value indicates a warning condition.

Bits (16:32) comprise status.subsys. The value represents the subsystem that sets the status information. There is no specific subsystem identifier for HPDEVCONTROL.

The values that can be returned in status.info are listed below. These return values match those returned by the HPDEVCONTROL intrinsic on MPE/iX.

ldev

byte array (required)

Passes the LDEV number of the device to be accessed. The data must be left-justified.

Note This parameter must be delimited with a printable, non-numeric character and can be zero left-filled:

"7" or
 "00000007" or
 a7a or
 a00000007a

Whatever delimiter begins the parameter must also end the parameter. The delimiter itself must not appear within the parameter.

itemnum **double by value (required)**
 Specifies which operation is to be performed (refer to the table below).

item **double by reference (optional)**
 Reserved for MPE/iX. Ignored if supplied.

Table 2-1. Itemnum and Item Values

Itemnum	Mnemonic	Item Description
100	D	Load Media: Attempts to load the media (tape devices only).
101	D	Online: Programmatically places the tape device on line.

Table 2-2. Error Status Codes

Status.info	Description
-2	User lacks ND capability.
-3	Access violation. Ldev is not in the AVAIL state.
-8	Invalid ldev. Device is not configured, is not a real device, or is not supported by this intrinsic.
-9	Invalid parameters. Did not pass required parameters.
-16	Invalid itemnum.
-18	Bounds violation. Invalid address for reference parameters. Also returned if called in split-stack mode.
-24	I/O error. Device cannot be placed in the requested state.

Operation Notes

This intrinsic is only supported on tape devices (type 24) whose subtype is 5 (HP7980) or 6 (HPC1511A - DDS). This intrinsic cannot be called in split-stack mode.

If the device is not in an available state, HPDEVCONTROL will block until the operation can be performed on the device.

Condition Codes

CCE	No errors. Status = 0
CCG	Not returned by this intrinsic.
CCL	Error return in Status. Refer to the above table for possible returns.

Sample Program

The following SPL program can be used to access the HPDEVCONTROL intrinsic. The HPDEVCONTROL function is passed in the run-time PARM word while the ldev number is passed in the run-time INFO string.

```
$control uslinit,code,map
begin
<< ***** >>
<< RUN TAPEON;PARM=func;INFO="ldev" >>
<< >>
<< func = 100 = remote load >>
<< 101 = remote online >>
<< >>
<< ldev = DAT/7980 ldev # >>
<< ***** >>

integer runparm = q-4;
integer l, len;
double return'status, item;
byte array buf(0:71):= "TAPEON (A.00.00)";
byte array info(0:9);

intrinsic print,getinfo,quit,terminate,hpdevcontrol;

print(buf, -16, 0);
info(0):= "%";
len:= 10;
getinfo(info(1), len);
if runparm = 0 or len = 0 then
begin
l:=move buf:="This program puts a DAT/7980 drive online as follows:";
print(buf, -1, 0);
l:=move buf:=" RUN TAPEON;PARM=func;INFO='ldev' ";
print(buf, -1, 0);
```

```
l:=move buf:="Where func = 100 (remote load) or 101 (remote online)";
print(buf, -1, 0);
l:=move buf:="          ldev = DAT or 7980 ldev #";
print(buf, -1, 0);
l:=move buf:="This program uses the HPDEVCONTROL intrinsic. ";
print(buf, -1, 0);
terminate;
end;
info(len+1):= "%";
HPDEVCONTROL(return'status, info, double(runparm), item);
if return'status <> 0D then
  quit(integer(return'status & dlsr(16)));
end.
```



Free Space Check on Ldev 1 now done by INITIAL during a Coldload

by

Steve Smead

Software Technology Division

Introduction

Prior to Release 31, a customer could be forced into an unplanned reload if a coldload operation failed because of insufficient contiguous disk space for the system SL on tape or if there was insufficient space for INITIAL to allocate certain system tables on disk. Beginning with this release, SYSDUMP and INITIAL prevent this problem from occurring. This article describes the problem and the method used to overcome it.

The Problem

Inadequate free disk space on ldev 1 can cause INITIAL to halt, requiring an unplanned reload, in one of the following situations:

1. Patches, user software, or third party software installations can add new segments or increase the size of existing segments in SL.PUB.SYS such that a new extent in the SL is allocated, increasing the size of the SL file.

A coldload tape created with this larger SL file can cause problems if you use it to coldload a system with a smaller SL file and little free space on ldev 1. INITIAL purges the old SL file on disk, and tries to load the SL file from the coldload tape onto the disk. If the tape SL file is the same size or smaller than the one purged from the disk, the file reloads with no problem. But if the tape file is larger, then INITIAL must find enough contiguous space on ldev 1 to contain the new SL file. If space cannot be found, INITIAL halts with the following error:

```
ERROR 326 - OUT OF DISC SPACE ON LDEV 1
```

When this happens, INITIAL is too far into the coldload process to perform a start from disk, so a reload is necessary.

2. Even if the size of SL.PUB.SYS does not increase, ERROR 326 can still occur if free space is extremely low on ldev 1. INITIAL needs a minimum of around 2500 sectors of contiguous free space on ldev 1 during a coldload for holding system tables. If this free space is not available, the system must be reloaded.

The Solution

SYSDUMP and INITIAL have been enhanced in Release 31 to address the problems discussed above.

To solve the first problem, when SYSDUMP creates a coldload tape it now writes a SYSDUMP/INITIAL communication record to the tape containing the size of the system SL. A similar record resides on disk, containing the current size of the system SL. During an UPDATE or COLDSTART, INITIAL checks the size of the new SL on the coldload tape. If it is larger than the SL on disk (i.e. the coldload tape was from another system or is a coldload

tape from the same system with SL changes that increased the size of the SL), INITIAL now tries to find a large enough block of free disk space for the new SL *before* purging the old SL. If the space can be allocated or the size of the new SL is less than or equal to the size of the SL on disk, the coldload proceeds without operator intervention. If the new SL is larger and space cannot be allocated, INITIAL displays the following:

```
CANNOT ALLOCATE BLOCK OF ##### SECTORS ON LDEV 1 REQUIRED FOR NEW SL ON TAPE.  
INITIAL MAY HALT LATER AND A RELOAD WOULD BE REQUIRED TO RECOVER.  
RECOMMEND HALT NOW, COOLSTART, FREE UP SPACE ON LDEV 1 AND ANOTHER COLDLOAD.
```

```
HALT COLDLOAD NOW (YES) ?
```

This message warns the operator that the coldload may fail and recommends a COOLSTART to free up ##### contiguous sectors for the new SL. This ensures that the next coldload attempt will successfully allocate the space for the new SL. If the operator chooses to continue when the above message is displayed, INITIAL may or may not abort - this depends on whether or not enough space can be found once the old SL is purged. The operator is given the option of continuing, risking a forced RELOAD.

Caution There is a widespread rule of thumb among MPE V system managers that 17000 contiguous sectors are required for a COLDLOAD. This is in fact the recommended contiguous free space minimum on ldev 1 for an AUTOINST update to a new version of MPE V. In this instance, 17000 sectors is sufficient for the FOS SL on tape that will always be the same size. After the AUTOINST update, however, system SLs can double in size when adding HP subsystem software, third party, or user segments to the system SL. Therefore 17000 free sectors will not always guarantee a successful coldload.

The second problem has been addressed in INITIAL by always attempting to preallocate 2500 contiguous sectors early enough so a start from disk can be performed if the allocation fails. If 2500 contiguous sectors cannot be found, the following is displayed:

```
CANNOT ALLOCATE BLOCK OF 2500 SECTORS ON LDEV 1 REQUIRED FOR COLDLOAD.  
INITIAL MAY HALT LATER AND A RELOAD WOULD BE REQUIRED TO RECOVER.  
RECOMMEND HALT NOW, COOLSTART, FREE UP SPACE ON LDEV 1 AND ANOTHER COLDLOAD.
```

```
HALT COLDLOAD NOW (YES) ?
```

This message and the recommended action is similar to the above message, differing only in the amount of free space required. Note that if less than 2500 sectors of free space exist on ldev 1 *and* the new SL file on tape is larger than the SL file on disk, both messages will appear if the operator chooses not to halt the system after the first warning.

Summary

This enhancement should help eliminate unplanned reloads by having INITIAL pre-allocate space on ldev 1 before it is too late to perform a start from disk.

The MPE V Spooler now Supports the MPE/iX SPSAVE Feature

by

Steve Smead

Software Technology Division

Introduction

The SPSAVE feature in the native mode spooler on MPE/iX allows you to specify that a copy of a spool file is to be saved after the spool file has printed. This feature is now supported in the MPE V spooler beginning with Release 31.

Saving a Spool File

To specify that you want to save the spool file for the STDLIST of a job, add the SPSAVE keyword to the JOB command. For example:

```
JOB REPORTS,MGR.FINANCE;OUTCLASS=PP,13;HIPRI;SPSAVE
```

To create a spool file that will be saved after it is printed, add the SPSAVE keyword to the FILE equation. For example:

```
FILE PAYROLL;DEV=PP,13,2;ENV=LP602.HPENVSYS;SPSAVE
```

The command interface is the same as on MPE/iX.

Summary of Command Changes

- The JOB command now supports the SPSAVE keyword which sets SPSAVE on the STDLIST spool file.

```
!JOB REPORTS,MGR.FINANCE;OUTCLASS=PP,13;HIPRI;SPSAVE
```

- The FILE command now supports the SPSAVE keyword to set SPSAVE on a new spool file.

```
:FILE PAYROLL;DEV=PP,13,2;ENV=LP602.HPENVSYS;SPSAVE
```

- The LISTEQ command shows ;SPSAVE if set on a spool file equation.

```
:listeq
```

```
FILE EQUATIONS
```

```
FILE PAYROLL;DEV=PP,13,2;ENV=LP602.HPENVSYS;SPSAVE
```

- The ALTSPoolFILE command now supports the SPSAVE keyword to set SPSAVE on an old spool file in the READY, OPEN, ACTIVE, or LOCKED state.

```
:ALTSPoolFILE #0123;SPSAVE
```

- The SHOWOUT command has been modified to SHOW SPSAVE if present. This was done by changing the "FRM" column that formerly showed "F" when a forms message was

present to "FS" which now shows "F" under the "F" column for a forms message, and "S" under the "S" column to indicate SPSAVE.

Sample SHOWOUT output before Release 31:

DEV/CL	DFID	JOBNUM	FNAME	STATE	FRM	SPACE	RANK	PRI	#C	DONE
LP	#052	#J14	\$STDLIST	READY	F	6828	D	2	1	

Note the presence of a forms message on #O52.

Sample SHOWOUT output beginning with Release 31:

DEV/CL	DFID	JOBNUM	FNAME	STATE	FS	SPACE	RANK	PRI	#C	DONE
LP	#04	#J4	PAYROLL	READY	S	36	D	1	1	
LP	#06	#J3	PAYROLL1	READY	F	36	D	1	1	
LP	#08	#J5	PAYROLL2	READY	FS	36	D	1	1	

Spool file #O4 has SPSAVE set, #O6 has a forms message, and #O8 has both.

Differences between SPSAVE on MPE V and MPE/iX

The SPSAVE implementation on MPE V had to be slightly different from MPE/iX because the native mode spooler interface and features are different from the spooler on MPE V. SPSAVE on MPE V was designed to be easy for operators already familiar with the MPE V spooler and spooler commands while maintaining as much MPE/iX compatibility as possible. The following paragraphs summarize the differences.

The native mode spooler on MPE/iX uses a special SPSAVE state for a SPSAVE spool file once the spool file has printed. The output priority is irrelevant once the spool file enters the SPSAVE state because the spool file cannot be printed or altered in any way; however, another copy of the SPSAVE spool file can be printed using the SPOOLF command. The SPSAVE spool file can only be removed if explicitly deleted using the SPOOLF or DELETESPOOLFILE command.

Because the SPSAVE state is a native mode spooler feature, it is not used on MPE V. Instead, a spool file will be deferred at priority 0 after printing if SPSAVE was set. SPSAVE will remain set so if another copy of the SPSAVE spool file is printed by increasing the priority above the outfence, the spool file will again defer at priority 0 once it has printed.

Unlike MPE/iX, spool files deferred with SPSAVE on MPE V can be altered. Common to MPE/iX, however, will be the inability to remove the SPSAVE setting on an existing spool file, and the SPSAVE spool file can be removed from the system only if explicitly deleted (i.e. with the DELETESPOOLFILE command).

SHOWOUT on MPE/iX does not show SPSAVE. Instead the user must list spool files with the native mode LISTSPF command to see SPSAVE settings. In the absence of this native mode command on MPE V, the SHOWOUT command was used to provide this function.

ALTSPoolFILE on MPE/iX does not support SPSAVE. Instead the user must change spool files with the native mode SPOOLF command to set SPSAVE. In the absence of this command on MPE V, the ALTSPoolFILE command was used to provide this function.

To set SPSAVE programmatically on MPE/iX, the HPFOPEN intrinsic must be used. The FOPEN intrinsic on MPE/iX cannot set SPSAVE unless it is present in a file equation. Because HPFOPEN does not exist on MPE V, SPSAVE cannot be set unless a file equation is used. FOPEN itself will not support SPSAVE on MPE V and MPE/iX.

Because FOPEN does not support SPSAVE without a file equation, RFA (Remote File Access) will likewise not support SPSAVE when the remote system is either an MPE V or MPE/iX system.

RFA Support of SPSAVE

MPE V will not support SPSAVE using RFA as is the case with the current version of MPE/iX. This means that a spool file created on a remote MPE V or MPE/iX machine using SPSAVE in the file equation (i.e. FILE OUT;DEV=NODENAME#PP;SPSAVE) will not have SPSAVE set on the target system. If SPSAVE needs to be set on a remote spool file, use one of the following two means:

1. Create the spool file locally with SPSAVE and let a third party networked spooler package that supports SPSAVE transfer the spool file to the remote system. The networked spooler application can choose to save the SPSAVE spool file copy on either the source or target system.
2. Transfer the spool file with RFA, then use the ALTSPoolFILE command on the remote system, specifying the SPSAVE parameter.

SPOOK5 Support of SPSAVE

The following SPOOK commands will be enhanced to support SPSAVE:

ALTER The SPSAVE option will be added to the existing ALTER options.
SHOW The SHOW ;@ output will show the presence of SPSAVE.

The APPEND and COPY commands will propagate the SPSAVE setting to the target spool file. The OUTPUT and INPUT commands will preserve SPSAVE.

Third Party Networked Spooler Support

The following vendors have been notified of this enhancement and should be modifying their software to support SPSAVE on MPE V:

- HOLLAND HOUSE's UNISPOOL
- UNISON's SPOOLMATE
- QUEST's NBSPOOL
- NSD's TRANSPoolER

Latest Network Patches and Fixes Submitted to Release 31

by

Steve Smead

Software Technology Division

Introduction

The latest general release patches and fixes have been submitted to Release 31 in an effort to proactively incorporate fixes for known problems and avoid the installation of networking patches immediately after an update. The following products are affected:

- NS Transport (32343A)
- Link Support Services (32098-20011)
- Node Management Services (32098-20010)
- INP Links (30020B)

Versions

The five digit VUFs for the NS Transport, Link Support, and Node Management Services products have not changed in Release 31. Instead, the lower three digits in the full eight digit VUF for modules within these products that have changed in Release 31 have been updated. A single character suffix has been appended to the five digit product VUFs in the BSTORE to differentiate these updated products from the Release 23, 2P, and 30 versions that have the same five digit product VUFs. For example, the product number for NS Transport in Release 23, 2P, and 30 is A.01.23. In Release 31, the product number is A.01.23C.

Caution Release 31 NS Transport was built off the “C” patch for Release 23, 2P and 30 (NSTANW4). Be careful not to install the “C” patch or earlier patches to NS Transport on Release 31 as doing so could back out fixes. Link Support Services currently has a single patch (LSSANW0) applicable to Release 23, 2P and 30. This patch is included in Release 31. Node Management Services currently has a single patch (NMSANW5) applicable to Release 23 and 2P. This patch is also included in Release 31.

The five digit VUF for the INP Links product has been rolled in Release 31 which obsoletes any prior patches for this product.

NMMAINT Listings

Network Transport 32343A module versions:

Program file:	NETCP.NET.SYS	Version:	A01230B1
Program file:	NETSERVE.NET.SYS	Version:	A0123000
Program file:	SOCKREG.NET.SYS	Version:	A0123000
Catalog file:	NETMSG.NET.SYS	Version:	A0123000
Catalog file:	SOCKCAT.NET.SYS	Version:	A0123000

Program file:	STUD.NET.SYS	Version:	A0123000
Program file:	NODESTAT.NET.SYS	Version:	A0123000
SL procedure:	NET'SM4'VERS	Version:	A0123000
SL procedure:	NET'UI'VERS	Version:	A0123000
SL procedure:	NET'SL'VERS	Version:	A01230B0
SL procedure:	NET'NI'VERS	Version:	A01230C0
SL procedure:	NET'PROBE'VERS	Version:	A0123000
SL procedure:	NET'ARP'VERS	Version:	A0123000
SL procedure:	NET'DIAL'VERS	Version:	A01230B0
SL procedure:	NET'TCPO'VERS	Version:	A01230B0
SL procedure:	NET'TCP1'VERS	Version:	A01230B0
SL procedure:	NET'PXPO'VERS	Version:	A0123000
SL procedure:	NET'PXP1'VERS	Version:	A0123000
SL procedure:	NET'IP'VERS	Version:	A0123000
SL procedure:	NET'IPU'VERS	Version:	A0123000
SL procedure:	NET'PD'VERS	Version:	A01230B0
SL procedure:	NET'X25'VERS	Version:	A0123001
SL procedure:	SOCKIOVERS	Version:	A01230B0
SL procedure:	SOCKACCESSVERS	Version:	A01230B0
SL procedure:	SOCKMISC1VERS	Version:	A01230B0
SL procedure:	SUBSYS3FMTVERS	Version:	A0123000
SL procedure:	SUBSYS5FMTVERS	Version:	A0123000
SL procedure:	NET'VCSWS'VERS	Version:	A0123000

Network Transport 32343A overall version = A.01.23

Node Management Services 32098-20010 module versions:

SL procedure:	NMVERS00	Version:	A0123025
SL procedure:	NMVERSCSL	Version:	A0123A28
SL procedure:	NMVERS01	Version:	A0123A02
SL procedure:	NMLOGSLVERS	Version:	A0123A31
SL procedure:	NMLOGDATAVERS	Version:	A0123A21
SL procedure:	NMVERS04	Version:	A0123A14
SL procedure:	NMVERS05	Version:	A0123A09
SL procedure:	NMINTERVERS	Version:	A0123A02
SL procedure:	BFMVERS	Version:	A0123B28
Program file:	NMMAINT.PUB.SYS	Version:	A0123A08
Program file:	NMFILE.PUB.SYS	Version:	A0123A09
Program file:	NMLOGMON.PUB.SYS	Version:	A0123A52
Program file:	NMDUMP.PUB.SYS	Version:	A0123057
Catalog file:	NMCAT.PUB.SYS	Version:	A0123013
SL procedure:	SUBSYSOFMTVERS	Version:	A0123007

Node Management Services 32098-20010 overall version = A.01.23

Link Support Services 32098-20011 module versions:

SL procedure: TRAN'VERSO Version: B0223004
SL procedure: TRAN'VERS1 Version: B0223004
SL procedure: SUBSYS8FMTVERS Version: B0223019
SL procedure: LINKVERS Version: B0223A34
Program file: LINKMGR.PUB.SYS Version: B0223A44
Program file: PCMANAGE.PUB.SYS Version: B0223A08

Link Support Services 32098-20011 overall version = B.02.23

INP/LAN LINKS module versions (from CSLIST):

COMSYS1 INSTALLED VUF IS A.55.39
COMSYS2 INSTALLED VUF IS A.55.39
COMSYS3 INSTALLED VUF IS A.55.39
COMSYS4 INSTALLED VUF IS A.55.39
COMSYS5 INSTALLED VUF IS A.55.39
CSUTILITY INSTALLED VUF IS A.05.08
CSDUMMY INSTALLED VUF IS A.05.00
CSDUMP INSTALLED VUF IS A.55.39
TRACPROG INSTALLED VUF IS A.55.38
IOINPO INSTALLED VUF IS A.55.42
IOINP1 INSTALLED VUF IS A.55.42
DSM INSTALLED VUF IS A.55.32
INPDPAN INSTALLED VUF IS A.05.23
NETCONF INSTALLED VUF IS A.55.39
CSLIST INSTALLED VUF IS A.55.38

DOWNLOADFILE= CSDBSC2.PUB.SYS PROTOCOL TYPE= BISYNC (DS,RJE,X.21)
BOARD TYPE= INP 20B COMPILE DATE= FRI, AUG 9, 1991, 11:36 AM
PROTOCOL VERSION = 01.22

DOWNLOADFILE= CSDBSCX2.PUB.SYS PROTOCOL TYPE= BISYNC (DS,RJE,X.21)
BOARD TYPE= INP 20B COMPILE DATE= THU, OCT 23, 1986, 11:59 AM
PROTOCOL VERSION = 01.17

DOWNLOADFILE= CSDIMF2.PUB.SYS PROTOCOL TYPE= IMF BISYNC
BOARD TYPE= INP 20B COMPILE DATE= MON, DEC 7, 1987, 1:26 PM
PROTOCOL VERSION = 01.47

DOWNLOADFILE= CSDIMFS2.PUB.SYS PROTOCOL TYPE= IMF SDLC
BOARD TYPE= INP 20B COMPILE DATE= WED, NOV 23, 1988, 11:25 AM
PROTOCOL VERSION = 01.23

DOWNLOADFILE= CSDLAPB2.PUB.SYS PROTOCOL TYPE= X.25
BOARD TYPE= INP 20B COMPILE DATE= FRI, AUG 21, 1987, 11:42 AM
PROTOCOL VERSION = 01.22

DOWNLOADFILE= CSDMRJE2.PUB.SYS PROTOCOL TYPE= MRJE
BOARD TYPE= INP 20B COMPILE DATE= MON, OCT 12, 1987, 11:58 AM
PROTOCOL VERSION = 01.13

DOWNLOADFILE= CSDMTS2.PUB.SYS PROTOCOL TYPE= MTS
BOARD TYPE= INP 20B COMPILE DATE= MON, FEB 22, 1988, 9:33 AM
PROTOCOL VERSION = 00.48

DOWNLOADFILE= CSDNBSC2.PUB.SYS PROTOCOL TYPE= NS/BSC
BOARD TYPE= INP 20B COMPILE DATE= TUE, OCT 17, 1989, 11:46 AM
PROTOCOL VERSION = 00.23

DOWNLOADFILE= CSDNLPB2.PUB.SYS PROTOCOL TYPE= NS/X.25/LAPB
BOARD TYPE= INP 20B COMPILE DATE= FRI, JUN 8, 1990, 1:20 PM
PROTOCOL VERSION = 02.42

DOWNLOADFILE= CSDSNA2.PUB.SYS PROTOCOL TYPE= SNA SDLC
BOARD TYPE= INP 20B COMPILE DATE= MON, APR 16, 1990, 10:11 AM
PROTOCOL VERSION = 01.25

Obsolete MPE III Commands Removed from MPE V

by

Steve Smead

Software Technology Division

Commands Removed

To make room for new commands and features in MPE V, the following obsolete commands have been removed from the operating system beginning with Release 31:

QUANTUM	This command adjusted dispatcher queues and quantums. It was replaced by the TUNE command in MPE IV.
MON, MOFF, MIOENABLE, MIODISABLE	These four commands were used prior to MPE IV to collect system event and performance data and log this information to tape. These console or operator commands could be allowed, disallowed, and shown with the ALLOW, DISALLOW, and SHOWALLOW commands prior to Release 31. The "allow" commands no longer recognize the removed MON, MOFF, MIOENABLE, and MIODISABLE commands.

If you use any of these removed commands beginning with Release 31, the following error message will be displayed:

UNKNOWN COMMAND NAME. (CIERR 975)

Final Update on Year 2000 Changes for MPE V

by

Len Croley

Software Technology Division

Most of the changes required to make the MPE V systems recognize dates in the year 2000 and beyond were completed in Release 30. Two functions, however, remained to be certified to work in the year 2000. These functions were Labeled Tapes and SADUTIL (Stand Alone Disk Utility). As of Release 31, both functions are certified to work in the year 2000 and beyond. Labeled Tapes did not require any changes. SADUTIL, however, did require changes and only the Release 31 or later version (3.16) will work in the year 2000 and beyond. Please be sure to create a new Stand Alone Diagnostic tape for your system when updating to MPE V Release 31 or later. Instructions are in chapter 11 (SADUTIL) of the MPE V System Utilities Reference Manual (32033-90008) or in your Release Update documentation.

Change in the Default Access Capability of PUB.SYS

by

Dave Morris

Software Technology Division

The default LOCK access of the PUB group in the SYS account has been changed from "AL,GU" (Account Librarian and Group User only) to "ANY". This makes the PUB.SYS default access capability compatible with MPE/iX. If you are affected by this change in the security of PUB.SYS, you can manually change it back with the ALTGROUP command.

NS3000/V Error Message 5027

by

Gary Robillard & Robert Ross

Software Technology Division

Imagine a user setting up a Network Directory with two different node names pointing to the same IP address and using the same X.25 address key. The user might do this so different applications could use either node name to get to the same system transparently. This method works fine. However, every time the NS X.25 transport is started the following error logging message would be received on the console:

```
** NETXPORT X.25 : INTERNAL ERROR: Internal resource error
- Loc: 5027: Class: 2; Parm= %000013; PortID: %000123 %002345
```

The error logging message warns the user that only one of the two node entries could be taken into account by X.25. In this case there isn't a problem because both entries have identical addresses, just different node names. The entries are essentially equivalent since the node name is not used by X.25. But, this may not always be the situation.

The following table documents other situations that may generate logging location code 5027.

Table 2-3. Logging Location Code

Loc. Code	Logging Class	Explanation	Action
5027	CLAS0002	Error while processing Mapping buffer. Parm = 1 means that an attempt to expand an internal DST failed via a call to CNF_PO_Expand_Info_Ref.	Submit SR against error. Check the NS3000/V Error Message & Recovery Mnl for "Submitting an SR."
		Parm = 5 means a duplicate IP or X.25 address was encountered while processing configuration information.	Check config file for duplicate IP or X25 address.
		Parm = 8 means a mapping table overflow has occurred.	STOP/START the NI if a NETCONTROL UPDATE was done; otherwise submit an SR.
		Parm = 12 means a buffer manager error has occurred.	Submit SR against error. Check the NS3000/V Error Message & Recovery Mnl for "Submitting an SR."

Additional Software Products

HP GLANCEPLUS/V 60-DAY TRIAL SOFTWARE

by

Jim Jen

Software Technology Division

A one-time, 60-day trial copy of HP GlancePlus/V, Hewlett-Packard's powerful and easy-to-use performance tool, is available to you on this release of MPE V. For more information, see file GLREADME in the PUB.SYS group after you have installed this release.

GlancePlus/V enables you to maximize system performance by quickly pinpointing system bottlenecks. It is also key in understanding the effects of migrating from an MPE V to an MPE/iX environment. Your investment in GlancePlus/V is protected when you migrate to MPE/iX systems; a full trade-in credit for GlancePlus/V can be applied toward your purchase of GlancePlus for MPE/iX. The consistent interface of the two GlancePlus products also insures that no retraining is required when moving from one platform to another.

Installing the GlancePlus/V trial copy is a quick and simple procedure. It is important not to begin the installation until you are ready to use it. The 60-day trial period begins at installation and only one trial is allowed on each system. Even if you are not currently interested in this trial, it is recommended you keep the trial copy files on your system to aid the Response Center in critical problem diagnosis. The three trial copy files are GLREADME, GLTRUCK, and UHAUL in the PUB.SYS group.

BRW/V A.02.80

by

Frank Heartney

Software Technology Division

BRW/V Enhancements

This release is primarily a defect fix release. In addition, the Request Report and On Line Review screen have been enhanced to handle BRW/iX reports containing new features destined for a future MPE/iX release. The principal defect fix is for Integer Comparison Predicates. The enhancements include:

On Line Review screen doesn't use LP as hardcoded default

The print function key in the On Line Review and Select Report screens now take the Default Print Device from the value configured in an RCONF file by RSETUP. Previously, 'LP' was hardcoded. This will be helpful if you routinely use a print device other than LP.

On Line Review screen shows current file location

In the On Line Review screen, the prompt line will now display the current page and column within the report, so the user will have a better idea where they are in the report. For NOCCTL reports, the current line number is displayed, instead of a page number. In addition, for NOCCTL files, a goto line function key is available, similar to the goto page function key for CCTL files.

RSTART support of ''' TPI operator and LASER CCTL for BRW/iX reports

Although not directly relevant for the MPE V platform, if RSTART is used on a MPE/iX platform, it will need to handle all features in current BRW/iX reports. Starting with the MPE/iX 4.7 submittal, BRW/iX report will support a new ''' operator for comparison predicate parameters for TPI keyword searches, and a new CCTL option 'LASER', to use form feed characters to denote page breaks in a report.

Defect fixes

The defect fixes in this release are:

- 5000-685065 Integer comparison predicates are broken in A.02.61
- D500-155168 The LOG function returns natural Log, not Log 10
- 1653-042622 Integer overflow related to Precision -2R
- 1653-042077 Bounds violation in Define Lines screen
- 1650-169748 BRW aborts when 'Enter' is pressed instead of 'Add Table' in Define Lines screen

BRW-DESK A.00.03

by

Frank Heartney

Software Technology Division

BRW-DESK Enhancements

This release is primarily a defect fix release, addressing problems reading CCTL files in previous version of BRW-DESK. In addition, BRW-DESK will now handle files with escape sequences and form feed characters better. The enhancements include:

Current file location displayed on prompt line

For CCTL files, the prompt line will display the current page and column. For NOCCTL files, the prompt line will display the current line and column.

Enter/Next Page on last page is the same as Exit

Previously, the BRW browser made it awkward to exit a BRW report because the only way to exit was by pressing the F8 key. Now, the BRW browser behaves more like other HP Desk browsers. Pressing the Enter or Next Page key while on the last page of the report will exit the browser.

Escape sequences are removed before display, for improved alignment

In preparation for improved escape sequence support in BRW/iX on MPE/iX 4.7, the BRW-DESK browser will string escape sequences from the report so the horizontal scrolling will maintain proper alignment.

RPG/V Enhancement for Release 31

by

Don Jenkins

Software Technology Division

Introduction

This article describes a new feature added to RPG/V version A.08.08 for Release 31. It is a new compiler command, \$INCLUDENOW, which is a subset of the \$INCLUDE command. It allows you to insert RPG statements into your program at the location of the \$INCLUDENOW command. All of the records in the file named in the \$INCLUDENOW command are entered at this point. In particular, it allows you to insert RPG specifications into subroutines and I-spec DS records, where the \$INCLUDE previously had problems.

Overview of \$INCLUDE

To understand how \$INCLUDE is used, it is necessary to understand how the pre-processor RPGCOPY works. When RPGCOPY is invoked (by \$COPY as the first record of your source program), it opens ten temporary files; one each for F-specs (and the H-spec), E-specs, L-specs, I-specs (excluding any DS records), I-specs for DS records only, detail C-specs, total C-specs, subroutine C-specs, O-specs, and tables/arrays. It then begins reading the RPG source program, placing its records sequentially in the appropriate temporary files. When it encounters a \$INCLUDE record, it stops processing the RPG source program and instead reads the entire include file. This file may include a mix of specification-types. Records from this file are appended to the appropriate temporary file. When all the records from this file have been processed, RPGCOPY returns to the original source file. You may have as many include files in your program as you wish. Each is processed as above. The final result is merged back into a single file in appropriate order, and passed back to the compiler.

An example may help clarify the above. Suppose you have a program with an include statement in the middle of your detail C-specs. The include file contains some F-specs, I-specs, detail C-specs, total C-specs, and O-specs. When the pre-processor is invoked, it reads your source file, placing each record into the appropriate temporary file. When the \$INCLUDE is encountered, source processing stops and the include file records are added to the temporary files. In this example, the F-specs are appended to the end of the F-spec temporary file, the I-specs to the end of the I-spec temporary file, and so forth. The point to note here is that the detail C-specs end up inserted at the point of the \$INCLUDE statement, the total C-specs become the first entries in the total calculations since those from the source program have not yet been processed, and the O-specs become the first O-specs of the final program for the same reason. You can see, if you have multiple specification-types in your include file, care must be taken where the \$INCLUDE is inserted in your file to insure your final desired result. If your include file contains only a single specification-type, you may insert the \$INCLUDE where you wish these specifications to occur within your program (with the limitation noted above). For example, if your include file contains only detail C-specs, and you place the include statement within your I-specs, the C-specs will be placed before any of your source program C-specs.

If your include file contains an H-spec, its \$INCLUDE statement must be placed prior to any F-specs in your source program.

Any other specification-type (A-spec, \$-spec, comment (* in column 6), blank line, etc. is placed in the section where the previous line was placed).

Description of \$INCLUDENOW

This subsystem command copies source code from a source library into the source program before compilation. Place this command at the point in the source program where you want the text inserted.

To use \$INCLUDENOW, you must enable the source library facility by entering a \$COPY compiler command as the first line of your program. Only one \$COPY command is needed, regardless of how many \$INCLUDEs or \$INCLUDENOWs are in your program.

The records in the source library file named in the \$INCLUDENOW command must be of a single specification type, since all the records in the file are inserted at the point of the command. Note that this differs from \$INCLUDE, in that the file named in this command may include a mix of specification types. Also, \$INCLUDE may not position I-spec DS records or C-spec subroutine records correctly, depending on their format. \$INCLUDENOW does not have this problem.

Do not use \$INCLUDENOW within a compile-time table or array (after the first "***" separator line).

The \$INCLUDENOW command lines are listed on \$STDLIST so that you can verify their location. The inserted lines from the library file are identified with a "C" in column 5 of the source listing.

\$INCLUDENOW does not support modification of lines.

Syntax

```
$INCLUDENOW file_name[.group[.account]]
```

where

file_name	The name of the source library file containing the source statements to insert.
group	The MPE XL group where the library resides.
account	The MPE XL account where the library resides.

Example

The following \$INCLUDENOW command inserts all the records in the source library file PAF106 into the source program at the point where the command occurs:

```
$INCLUDENOW PAF106 (this assumes PAF106 is in your current group.account)
```

Announcing the VPlus VMERGE Utility

by Mike Kerwan and Rachel Schwab
Commercial Systems Division

Introduction

The B.06.05 version of VPlus is available on this MPE V release. This version contains several fixes and enhancements, including a new utility, VMERGE.PUB.SYS.

VMERGE Utility

VMERGE is a new VPlus utility that allows users to combine two or more separately compiled VPlus forms files into a single forms file, which may then be used with an application program to manage the entry and retrieval of data.

Combining multiple forms files with VMERGE provides the following advantages:

- Some file size limitations can be overcome. Since there are limitations on how many physical records can be placed in a VFORM file, VPlus users sometimes find that they cannot use a single forms file to hold all the forms their application requires. With VMERGE, it is possible to add more forms (from a second forms file) to the ones in the initial forms file, even if the first is at or near the maximum size.
- It is sometimes easier to maintain a large forms file as several separately compiled modules that can then be combined with VMERGE rather than to maintain one large forms file.

Please refer to the "Technical Articles" chapter of this *Communicator* for a detailed article on how to successfully use VMERGE.

How to Use the New Hi-Li Features

by

Rachel Schwab

Commercial Systems Division

Introduction

The A.00.11 version of Hi-Li is available on this MPE V release. This version contains several bug fixes and four new features. These new features are:

- forms caching
- terminal bell suppression
- YYMMDD, COBOL packed, and COBOL zoned data conversion support
- application buffer and form initialization merge enhancement

The first and second features have been implemented by adding new modes to the HPDSETENV and HPDGETENV intrinsics. The third feature has been implemented by new type conversion codes added to the available data mapping methods. The fourth feature has been implemented by new data mapping methods added to those allowed by the HPDSEND and HPDREAD intrinsics. A description of these changes follows.

HPDSETENV Changes

Four new modes for forms caching and one new mode for suppressing the terminal bell have been added to the HPDSETENV intrinsic. Following is a description of this intrinsic with details about the new modes and their corresponding ENVBUF parameters.

```
          R          R          I          R          R
HPDSETENV (GLOBALPAK, RETURNPAK, MODE, ENVBUFDESCRPT, ENVBUF)
```

Allows application to configure elements of the current execution environment.

Abbreviation definition:

I = integer (4 bytes).

R = Pascal record, COBOL group, array in BASIC, FORTRAN, and Transact).

Parameters:

```
-----
| GLOBALPAK      | compound parameter, input to intrinsic      |
|                |                                              |
| RETURNPAK     | compound parameter, output from intrinsic   |
|                |                                              |
| MODE          | four byte integer, input to intrinsic      |
|                |                                              |
|                |                2 = native language identifier, |
|                |                                              |
```


	3 = auto test option,
	4 = device token,
	5 = form token,
	* new * 7 = bell option,
ENVBUFDESCRPT	four byte integer, input to intrinsic
ENVBUF	compound parameter, input to intrinsic
	This parameter defines the area where the requested element configuration is returned. The value you supply for this parameter depends on the mode you have specified. Here are the details for the * new * mode listed above. For the other modes, please consult the reference manual.
	Mode Element Length/Format
	7 bell option four byte integer
	0 = sound bell,
	1 = suppress bell.

HPDGETENV and HPDSETENV Errors and Exceptions:

- *new* -73 Form loaded indicator not set.
- *new* -71 @ Unable to load cache entry (form).
- *new* -69 @ Unable to purge cache entry (form).
- 68 Unrecognized auto test option code passed.
- *new* -67 Cache directory space value out of range.
- *new* -66 No cache directory space configured.
- 65 Terminal has not been switched out of block mode.
- 64 @ Attempt to switch device into block mode failed.
- 63 @ Attempt to switch device out of block mode failed.
- 62 Language characteristic may not be set for current forms file.
- *new* -61 May not configure cache if forms file already open.
- 60 @ Attempt to configure language failed.
- 58 @ Attempt to return forms file language characteristic failed.
- 56 Unrecognized configuration mode code passed.
- 27 Terminal was switched out of block mode (and is not "enabled").
- 17 Terminal is not enabled.
- 9 Forms file is not open.
- 6 Communications area is not set up.
- 5 Inappropriate file name passed.

YYMMDD, COBOL Packed, and COBOL Zoned Data Conversion Support

Chapter 4 in the *Hi-Li Reference Manual*(32424-90002) discusses the available data mapping methods. With this version of Hi-Li, enhancements have been made to the D and E methods of data transfer. These methods allow you to transfer data or a subset of data and provide data type conversion within your application.

The **DATADESCRIPT** parameter is a compound parameter used in the **HPDREAD**, **HPDSEND**, and **HPDPRINTFORM** intrinsics to tell Hi-Li how you want to transfer data between your application and your form. It contains ten subparameters. One of these subparameters, **TYPNCVCODE**, is a four-byte integer that tells Hi-Li the type of data conversion you want performed. Several new values are available for this subparameter to support YYMMDD, COBOL packed, and COBOL zoned data conversion.

Following is a list of the available **TYPNCVCODE**s and their meanings:

Value(s)	Conversion Type										
0	no conversion										
1	two byte integer conversion										
2	four byte integer conversion										
3	four byte HP3000 format floating point (real) conversion										
4	eight byte HP3000 format floating point (long) conversion										
5	reserved for four byte IEEE format floating point (real) conversion										
6	reserved for eight byte IEEE format floating point (long) conversion										
7 *new*	six byte YYMMDD date conversion										
1010..1189, 2010..2189, 3010..3189, 4010..4189 *new*	<ul style="list-style-type: none">■ Thousands digit indicates COBOL data type:<table><thead><tr><th>Value</th><th>Type</th></tr></thead><tbody><tr><td>1nnn</td><td>unsigned COBOL packed type</td></tr><tr><td>2nnn</td><td>signed COBOL packed type</td></tr><tr><td>3nnn</td><td>unsigned COBOL zoned type</td></tr><tr><td>4nnn</td><td>signed COBOL zoned type</td></tr></tbody></table>■ Hundreds and tens digits indicate total number of 9s in the COBOL PIC clause; 18 digits maximum.■ Ones digit indicates number of 9s to the right of the V character in the COBOL PIC clause; 9 decimal places maximum.■ Examples:<ul style="list-style-type: none">□ PIC S9(9)V9(9) COMP-3 is specified as 2189□ PIC 9(18) COMP-3 is specified as 1180□ PIC SV9 is specified as 4011□ PIC 9 is specified as 3010	Value	Type	1nnn	unsigned COBOL packed type	2nnn	signed COBOL packed type	3nnn	unsigned COBOL zoned type	4nnn	signed COBOL zoned type
Value	Type										
1nnn	unsigned COBOL packed type										
2nnn	signed COBOL packed type										
3nnn	unsigned COBOL zoned type										
4nnn	signed COBOL zoned type										

Application Buffer and Form Initialization Merge Enhancement

Two additional data mapping methods for mapping data that is to be moved between the application and the fields in the form are available on this release to supplement the two methods previously available.

The mapping method which is to be used by HPDSEND and/or HPDREAD is indicated by the value in the DESCRPTTYPE subparameter of the DATADESCRPT parameter. Following is a list of the possible values for this four-byte integer subparameter and explanations for each value.

Value	Meaning
-1	Do not transfer data.
0	Move concatenated string of data from/to DATABUF; the number of bytes moved is equal to the sum of the lengths of all the fields in the form; no data conversion is performed.
1 *new*	For HPDSEND, non-blank application buffer fields overlay corresponding fields in the form which were initialized to blanks by form specifications. For HPDREAD, same mapping as specifying 0; that is, no data conversion is performed.
2 *new*	For HPDSEND, non-blank application buffer fields overlay corresponding fields in the form. For HPDREAD, same mapping as specifying 0; that is, no data conversion is performed.

By using one of the new DESCRPTTYPE (1 or 2) values, the application can merge the application buffer content with the form specification initialization.

Technical Articles

VPlus VMERGE Utility User's Guide

*by Mike Kerwan and Rachel Schwab
Commercial Systems Division*

Introduction

VMERGE is a new VPlus utility that allows users to combine two or more separately compiled VPlus forms files into a single forms file, which may then be used with an application program to manage the entry and retrieval of data.

Combining multiple forms files with VMERGE provides the following advantages:

- Some file size limitations can be overcome. Since there are limitations on how many physical records can be placed in a VFORM file, VPlus users sometimes find that they cannot use a single forms file to hold all the forms their application requires. With VMERGE, it is possible to add more forms (from a second forms file) to the ones in the initial forms file, even if the first is at or near the maximum size.
- It is sometimes easier to maintain a large forms file as several separately compiled modules that can then be combined with VMERGE rather than to maintain one large forms file.

Overview

VMERGE usually resides in PUB.SYS. It may be run on either MPE/iX or MPE V. Before VMERGE is invoked, the user must specify two input forms files and one output file. The input files are specified with file equations for the formal designators VMASTER and VAUX. The output file is specified with a file equation for the formal designator VOUTPUT. VMASTER and VAUX must exist, and each may be of type VFORM (slow forms file) or VFAST (fast forms file). VOUTPUT is created by the VMERGE utility and is of type VFAST.

As VMERGE runs, informative messages are presented on \$STDLIST. If any problems are encountered, appropriate error messages are displayed. These messages are described in the VMERGE Messages section of this user's guide.

Forms File Handling by FORMSPEC and VMERGE

VPlus forms files exist in files with two different file codes: VFORM (slow forms file) and VFAST (fast forms file). VFORM files are created and modified with FORMSPEC. VFORM files contain the “source” for each form in the file, coded in a way that FORMSPEC can understand. When a forms file is compiled by FORMSPEC, “object” forms are added to the VFORM file. The object forms are accessed when the forms file is used with ENTRY or another application program that invokes the VPlus intrinsic functions.

When you use FORMSPEC to compile a VFORM file, you may request the creation of a fast forms file. This file contains only the object forms for the forms in the specified VFORM file. Processing the VFAST file is fast because the file is smaller than its corresponding VFORM file. That is, the fast forms file does not contain source forms and, therefore, can be accessed faster. Since a fast forms file does not contain source forms, it cannot be modified by FORMSPEC.

Both VFORM and VFAST files are limited in the number of records they can hold. However, the problem is more severe with VFORM files since they contain both source and object forms.

Previously, the only way to create a fast forms file was by compiling a VFORM file with FORMSPEC. Consequently, you might have been unable to include forms that theoretically could have fit into a VFAST file, since the source and object forms might have been too large to fit into a VFORM file. Now, VMERGE gives you an alternate method for generating VFAST files that contain additional forms. However, VFAST files still have limited capacity, and so there are still limits on the total number of forms you can place in a forms file, even using VMERGE.

Initial analysis shows that the ratio of fast form file size to slow form file size is around 1/3 to 1/10. This suggests that you can expect to combine forms from three or more nearly full (to FORMSPEC) forms files into one forms file, by using VMERGE. However, this is an estimate only, since non-typical forms files may vary considerably in their object to source ratios.

Input File Compatibility

Not all forms files can be successfully combined using VMERGE. The input forms files must be “compatible” in order to be combined with VMERGE. The compatibility factors are:

- form names—the same form name may not appear in both the VMASTER and the VAUX files.
- save fields—if both input files use save fields, the specifications for both files must be identical in all respects: names of save fields, lengths, data types, and initial values. The save fields must also be defined in the same order. It is permissible for one file to use save fields and the other not.
- global function key labels—if both input files define global function key labels, the specifications for both files must be identical in all respects. It is permissible for one file to define global function key labels and the other not. In this case, the global function key labels from the file which has them will be retained in the output file.
- terminal selection and language id—both input files must have exactly the same set of terminals selected and the same Forms File Language specified (from FORMSPEC Terminal/Language Selection Menu).

There are a number of forms file characteristics that may differ between the two input files that are not serious enough for VMERGE to consider the two files as incompatible. These include:

- head form name
- error enhancement
- window display line
- error window color
- window enhancement

The characteristic found in the VMASTER file is retained in the VOUTPUT file.

Application Requirements for Combined Forms Files

VMERGE takes two FORMSPEC-compiled forms files specified by the VMASTER and VAUX file designators, extracts the object forms from each file, and places these forms in a VFAST file specified by the VOUTPUT file designator.

Every forms file has a \$HEAD form designated for it. Additionally, every form in a forms file has a "Next Form" designated for it. Next Form may be \$HEAD or it may be the name of another form in the file. In order to compile a forms file, FORMSPEC requires that any form named as the \$HEAD or as a Next Form exist in the file. Consequently, it is impossible for a form in the VMASTER forms file to refer to a form in the VAUX forms file as its Next Form and vice versa.

Therefore, the application program used with a combined forms file must be coded to sequence among the forms in the combined forms file without depending on the Next Form designation. The Next Form designation can only be used when it and the current form originated from the same forms file.

VMERGE users should be aware that VMERGE makes the \$HEAD form from VMASTER the \$HEAD for VOUTPUT. If data entry operators are used to seeing the \$HEAD form from the VAUX file, they may be surprised if this \$HEAD form is no longer what is displayed when they bring up their application.

Technical Reference

VMERGE normally resides in PUB.SYS; if it is moved from PUB.SYS, it must be moved to a group with "DS" capability.

VMERGE is invoked with the following command:

```
:RUN VMERGE.PUB.SYS
```

Before invoking VMERGE, three file equations must be given. VMERGE's two input forms files are indicated by the file designators VMASTER and VAUX. VMASTER and VAUX must designate existing forms file, with file codes VFORM or VFAST. The VMASTER and VAUX files must have been compiled with a recent version of FORMSPEC. If an input file is provided that does not meet this criterion, a message is given, and VMERGE processing halts.

VMERGE's output VFAST forms files is indicated by the file designator VOUTPUT. If the designated file already exists and has the file code VFAST, then it is purged and recreated by VMERGE. If the file exists but has a file code other than VFAST, the file is not purged, a warning message is given, and VMERGE halts.

The files used by VMERGE are opened for exclusive use to avoid concurrent update problems.

Two JCWs (job control words) are defined for use with VMERGE: VMERGETERSE and VMERGEERROR. If the user sets VMERGETERSE to 1 before running VMERGE, then the messages indicating the form names contained in the VMASTER and VAUX files are suppressed. The VMERGEERROR JCW is set by VMERGE after it runs. If VMERGE detected a severe error that prevented the VOUTPUT file from being successfully created, VMERGEERROR is set to 1. If VMERGE successfully created the VOUTPUT file, VMERGEERROR is set to 0.

Example 1: Using VMERGE to Combine Forms Files

Suppose your company has three distinct uses for an order form prepared by a salesperson. The order form is used in the shipping department, the billing department, and the marketing department. Currently the original order form is passed among three clerks who each enter their data using their own VPlus forms files (SHIPFF, BILLFF, and MARKETFF) that are distinct to their respective departments. Your job is to merge the forms files and fix the application program so that one clerk can enter the data for all three departments.

You decide that each of the three application areas (shipping, billing, and marketing) should be selectable by pressing a function key. Once an area has been selected, processing will be performed using the same sequence as when the application for that area existed on its own. Remember that while combining the three applications into one, you will need to examine the effect of \$HEAD being different from what two of the original three programs expected. Most likely, you will want to create a new form to serve as the \$HEAD for the combined application.

After examining and fixing the application program, you will need to look at the forms files and make them compatible, if they are not already. You will need to make sure that the save fields, if any, have distinct names and are identical in each of the forms files that uses them. Additionally, you will need to check that the global function key specifications are compatible in the three forms files. Note that in some cases incompatibilities may be so extensive that it will be impossible to merge the forms files.

Next you determine what order to merge the forms files together. Suppose in this example that the marketing forms file is much more volatile than the other two. Therefore, you decide that this file should be the last one merged. You also need to decide which form your combined application should use as its \$HEAD. Suppose in this example you depend on the \$HEAD form from BILLFF being the \$HEAD of the combined forms file.

Combining the forms files is accomplished in two stages. In the first stage you enter:

```
:FILE VMASTER=BILLFF
:FILE VAUX=SHIPFF
:FILE VOUTPUT=INTERFF
:RUN VMERGE.PUB.SYS
```

VMERGE creates the intermediate forms file INTERFF.

In the second stage you enter:

```
:FILE VMASTER=INTERFF
:FILE VAUX=MARKETFF
:FILE VOUTPUT=COMBOFF
:RUN VMERGE.PUB.SYS
```

VMERGE creates the final forms file COMBOFF. You may wish to keep the intermediate forms file, INTERFF, so you won't need to recreate it if only MARKETFF changes.

Now you could test COMBOFF with your combined application program.

Example 2: Using VMERGE to Divide a Forms File

Another use of VMERGE is to divide an existing forms file into two or more smaller forms files. This might be desirable if different forms in the original forms file were going to be modified by different people, or if compiling the entire forms file takes a long time.

When VMERGE is used to divide a file, there are few compatibility problems since the original form file is already "merged". You will have to be careful not to introduce incompatibilities (for example, refer to the \$HEAD and Next Form issues discussed earlier) as a result of dividing the file.

Suppose you have a forms file named BIGFF that you want to remove forms F1, F2, and F3 from and place them into another forms file, LITTLEFF. The F1, F2, and F3 forms are changed often and you want to separate them out in order to minimize the time it takes to recompile each time you make changes to them.

First, you would FCOPY BIGFF to LITTLEFF by entering the following command:

```
:FCOPY FROM=BIGFF;TO=LITTLEFF;NEW
```

Second, you would run FORMSPEC on BIGFF to delete forms F1, F2, and F3. You would need to fix up the Next Form fields for any affected forms.

Third, you would probably want to make advantage of some of FORMSPEC's batch mode facilities to delete all but the F1, F2, and F3 forms from LITTLEFF (see the Deleting Forms Using FORMSPEC's Batch Mode Facilities section below).

Fourth, you would compile both forms file to verify that no \$HEAD or Next Form dependencies exist. The compilation for BIGFF will be lengthy, but it will only need to be done once.

Fifth, you would make your changes to the forms in LITTLEFF and add additional forms that could not be put into BIGFF due to size limitations.

After you had taken all these steps you could combine the two forms files with VMERGE:

```
:FILE VMASTER=BIGFF  
:FILE VAUX=LITTLEFF  
:FILE VOUTPUT=UPERFF  
:RUN VMERGE.PUB.SYS
```

Check your application using the SUPERFF forms file.



VMERGE Messages

Following are the messages produced by the VMERGE utility. The cause of each, and the action you may take is also described.

Message: hp32209V.UU.FF VMERGE (c) Hewlett-Packard Co. 1992
ALL RIGHTS RESERVED

Cause : Header generated at the start of VMERGE processing.

Action : None.

Message: ***** Internal processing error (VM1001)

Cause : An unexpected condition has been detected by VMERGE.

Action : Preserve the input files for diagnosis and contact HP rep.

Message: Begin VMERGE Processing ... (VM1003)

Cause : Given at the start of processing.

Action : None.

Message: No consistency check required, AUX file is \$NULL (VM1004)

Cause : Self-explanatory.

Action : None.

Message: Consistency check of MASTER and AUX files begun ... (VM1005)

Cause : Self-explanatory.

Action : None.

Message: Input files are consistent (VM1006)

Cause : The consistency check of MASTER and AUX has been completed,
and the files have been found consistent.

Action : None.

Message: ***** Input files are not consistent (VM1007)

Cause : The consistency check of MASTER and AUX has been completed,
and the files have been found inconsistent. (Normally an
explanatory message indicating why they are inconsistent will
have been issued prior to this one.) The OUTPUT file will
not be produced.

Action : Adjust the input files to overcome the indicated inconsistency
and rerun VMERGE.

Message: End of VMERGE Processing. (VM1009)

Cause : Self-explanatory.

Action : None.

Message: ***** Form name table could not be allocated (VM1400)

Cause : An attempt to allocate an extra data segment to hold a form
name table for the MASTER or AUX forms has failed.

Action : Consult with your system administrator to determine why this failure occurred on your system. This is probably due to limitations on the number of Extra Data Segments that can be created in your configured environment.

Message: ***** Form name table overflow (VM1401)
Cause : More forms have been found in the MASTER or AUX file than can be accomodated in the form name table.
Action : Contact your HP rep.

Message: ***** Conflicting data in MASTER forms file (VM1402)
Cause : Invalid or inconsistent data has been found in the MASTER file.
Action : Recreate the file and rerun VMERGE. If the problem persists, contact your HP rep.

Message: ***** Conflicting data in AUX forms file (VM1403)
Cause : Invalid or inconsistent data has been found in the AUX file.
Action : Recreate the file and rerun VMERGE. If the problem persists, contact your HP rep.

Message: ***** Error accessing table in an extra data segment (VM1404)
Cause : An attempt to access data in an extra data segment was rejected by the MPE operating system.
Action : Rerun VMERGE. If the problem persists, contact your HP rep.

Message: ***** Version of MASTER file format not supported by VMERGE (VM1500)
Cause : The MASTER file was compiled with a version of FORMSPEC that is not supported by VMERGE. (Versions prior to B.03.03 are not supported.)
Action : Reconstruct the file with the current version of FORMSPEC.

Message: ***** Version of AUX file format not supported by VMERGE (VM1501)
Cause : The AUX file was compiled with a version of FORMSPEC that is not supported by VMERGE. (Versions prior to B.03.03 are not supported.)
Action : Reconstruct the file with the current version of FORMSPEC.

Message: Warning: Error enhancement settings differ (VM1504)
Cause : The error enhancement settings differ in the MASTER and AUX files.
Action : None. (The value from the MASTER file is retained in OUTPUT.)

Message: Warning: Window display line settings differ (VM1505)
Cause : The display line settings differ in the MASTER and AUX files.
Action : None. (The value from the MASTER file is retained in OUTPUT.)

Message: Warning: Error window color settings differ (VM1506)
Cause : The error window color settings differ in the MASTER and AUX files.

Action : None. (The value from the MASTER file is retained in OUTPUT.)

Message: Warning: Window enhancement settings differ (VM1507)

Cause : The window enhancement settings differ in the MASTER and AUX files.

Action : None. (The value from the MASTER file is retained in OUTPUT.)

Message: ***** Terminal Specific settings differ (VM1508)

Cause : The terminal settings differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

Message: ***** Language ID settings differ (VM1509)

Cause : The language id settings differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

Message: ***** Number of databases differ (VM1510)

Cause : The number of databases differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

Message: ***** Save fields specifications differ (VM1521)

Cause : The save field specifications differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

The save field specifications must be identical in all respects in both input files.

Message: ***** Global function key labels differ (VM1531)

Cause : The global function key labels differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

Message: ***** 307x terminal settings differ (VM1541)

Cause : The 307x terminal settings differ in the MASTER and AUX files.

Action : Revise the files to make them compatible and rerun the utility.

Message: Form name "nnnnnnnnnnnnnnnn" found in MASTER file (VM1601)

Cause : Documents that the named form was found in the MASTER file.

Action : None.

Message: Form name "nnnnnnnnnnnnnnnn" found in AUX file (VM1603)

Cause : Documents that the named form was found in the AUX file.

Action : None.

Message: ***** MASTER and AUX contain duplicate form name(s) (VM1611)

Cause : Forms with the same name were found in both the MASTER and AUX files.

Action : Remove or rename the duplicate forms from one file and rerun VMERGE.

Message: ***** Duplicate form name: nnnnnnnnnnnnnnnn (VM1612)

Cause : Identifies a form name found in both the MASTER and AUX files.

Action : Remove or rename the duplicate form form one file and rerun VMERGE.

Message: ***** Unattached messages; use fast forms files (VM1613)

Cause : Messages have been found that are not associated with any form.
OUTPUT file is not produced.

Action : Compile the input files and produce fast forms files. Use the
fast forms files as input to VMERGE.

Message: ***** MASTER file could not be opened (VM1700)

Cause : The file designated as MASTER could not be opened.

Action : Remove the impediment to opening the file and rerun VMERGE. (The
file may not exist under the designated name, or may be already
open for exclusive use, etc.)

Message: ***** Error reading MASTER file (VM1701)

Cause : An error occurred in attempting to read the MASTER file.

Action : Regenerate the file and rerun VMERGE.

Message: ***** Error in MASTER file data (VM1702)

Cause : An inconsistency was found in the data in the MASTER file.

Action : Recreate the file and rerun the utility. If the problem persists
contact your HP rep.

Message: MASTER file opened (VM1703)

Cause : Self-explanatory.

Action : None.

Message: ***** MASTER file type is not VFORM or VFAST (VM1704)

Cause : Self-explanatory.

Action : Designate the correct file and rerun VMERGE.

Message: MASTER file designated as: fff ... f (VM1705)

Cause : Shows the full pathname of the MASTER file.

Action : None.

Message: ***** MASTER file has not been compiled (VM1706)

Cause : Self-explanatory.

Action : Compile the MASTER file and rerun VMERGE.

Message: ***** AUX file could not be opened (VM1800)

Cause : The file designated as AUX could not be opened.

Action : Remove the impediment to opening the file and rerun VMERGE. (The
file may not exist under the designated name, or

may be already

open for exclusive use, etc.)

Message: ***** Error reading AUX file (VM1801)
Cause : An error occurred in attempting to read the AUX file.
Action : Regenerate the file and rerun VMERGE.

Message: ***** Error in AUX file data (VM1802)
Cause : An inconsistency was found in the data in the AUX file.
Action : Recreate the file and rerun the utility. If the problem persists contact your HP rep.

Message: AUX file opened (VM1803)
Cause : Self-explanatory.
Action : None.

Message: ***** AUX file type is not VFORM or VFAST (VM1804)
Cause : Self-explanatory.
Action : Designate the correct file and rerun VMERGE.

Message: AUX file designated as: fff ... f (VM1805)
Cause : Shows the full pathname of the AUX file.
Action : None.

Message: ***** AUX file has not been compiled (VM1806)
Cause : Self-explanatory.
Action : Compile the AUX file and rerun VMERGE.

Message: ***** OUTPUT file could not be opened (VM1900)
Cause : Self-explanatory.
Action : Remove the impediment to opening the OUTPUT file and rerun VMERGE.

Message: ***** Error writing OUTPUT file (VM1901)
Cause : Self-explanatory.
Action : Correct the problem that has caused the write error and rerun VMERGE. You may need to consult with your system administrator to determine the problem.

Message: OUTPUT file opened (VM1903)
Cause : Self-explanatory.
Action : None.

Message: ***** OUTPUT file type is not VFAST (VM1904)
Cause : The file designated as OUTPUT pre-exists but is not of type VFAST.
Action : This is viewed as an error since it is assumed that the user has unintentionally designated the name of a file being used for other purposes. Redesignate the OUTPUT file (or purge the old file if the name is correct) and rerun VMERGE.

Message: OUTPUT file designated as: fff ... f (VM1905)
Cause : Shows the full pathname of the OUTPUT file.
Action : None.

Message: Error closing OUTPUT file (VM1906)
Cause : Self-explanatory.
Action : Correct the problem that has caused the error and rerun VMERGE.
You may need to consult with your system administrator to determine the problem.

Message: ***** OUTPUT file purged (VM1911)
Cause : Inconsistency or some other problem has prevented the OUTPUT file from being successfully generated. To avoid confusion, the file is purged.
Action : Correct the underlying problem and rerun VMERGE.

Message: ***** OUTPUT file pre-existed and could not be purged (VM1912)
Cause : An attempt to purge the existing file with the name designated for the OUTPUT file failed.
Action : Make sure that the correct file name has been designated. If so, determine why it could not be purged and remove the impediment.

Deleting Forms Using FORMSPEC's Batch Mode Facilities

Suppose you wanted to delete all forms but F1, F2, and F3 from a forms file named LITTLEFF. To accomplish this, you would take the following steps:

1. Use the FORMSPEC "FORMS" command to generate a list of forms in LITTLEFF and redirect the list to a disk file.

```
:FILE FORMOUT;REC=-80,16,F,ASCII;DEV=DISC;TEMP  
:RUN FORMSPEC.PUB.SYS;INFO="$STDIN"  
>FILE LITTLEFF  
  
>FORMS  
>EXIT  
:SAVE FORMOUT  
:RENAME FORMOUT,FORMCMDS  
:RESET FORMOUT
```

2. Bring FORMCMDS into an editor. Delete all lines that do not list form names. Delete the lines listing forms F1, F2, and F3. Insert the keyword "DELETE" in front of every other form name. Delete the text remaining after the form name.
3. Add the command FILE LITTLEFF as the first line in the file.
4. Add an EXIT command as the last line in the file.
5. Keep the updated FORMCMDSq file and exit the editor.
6. Execute the commands in the FORMCMDS file. Note: you may want to do this inside a job file.



Hardware Support

Extended MPE V Hardware Support

Hewlett-Packard likes to exceed customer expectations. In the case of our 'classic' HP 3000s, we have been consistently extending the hardware support life of the most popular systems due to popular demand and parts availability. The following chart shows the *earliest* dates that we would consider ending hardware support. Systems with extended dates are marked by asterisks (*). Please note that these dates could be extended in the future even further. You can expect to be notified at least a year in advance of the end of hardware support.

Your software support is similarly assured. SWT guarantees your software support will be available for as long as you require it.

Table 5-1. Earliest End of Hardware Support

Product	Earliest End of Hardware Support
Micro 3000	APL 1, 1995 *
Micro 3000LX	JAN 1, 1997
Micro 3000GX	DEC 31, 1997
Micro 3000RX	JAN 24, 1997
Micro 3000XE	JAN 1, 1996
Series 37 w/512KB Mem	MAR 1, 1996 **
Series 37XE w/1MB Mem	MAR 1, 1996 **
Series 37XE	JAN 1, 1996
Series 39A	APL 1, 1995 *
Series 39B	APL 1, 1995 *
Series 40	APL 1, 1995 *
Series 42	APL 1, 1995 *
Series 44	APL 1, 1995 *
Series 48	APL 1, 1995 *
Series 52	APL 1, 1995 *
Series 58	APL 1, 1995 *
Series 64A	MAR 1, 1996
Series 64B	MAR 1, 1996
Series 68	MAR 1, 1996
Series 70	MAR 1, 1996

Note:

* Extended

** Previously extended

Contractual support is no longer available for Series II, Series III, Series 30, and Series 33. HP support for these products is on a time and materials basis and is on "best effort" offering only.

Fix Table

Release 31 Fix Table

*by Ross Martin
Software Technology Division*

Introduction

This section contains a table listing the fixes for MPE V Release 31.

The table contains the product number, SR number, and a one-line description that is obtained from the SR. For more detailed information, please reference the Software Release Bulletin for MPE V.

Release 31 (G.31.00)

Product	SR	Brief Description
HP32196	1653-035048	Change to TERMHANDLR so it does not forget it already has a timer request when multiple XOFFs are received from printer causing SF3s.
HP32414	5003-036640	Change to NLCONVCUSTDATE to recognize mmddyy in any format without separators for any supported language.
HP32231	4701-172338	Fix to SADUTIL to recognize the years 2000-2027 for printing out dates and for specification for recovering files.
HP32002	1653-037028	Fix to STORE that causes FSERR numbers to be reported as if they were logical device numbers.
HP30167 HP32002	4701-172916	Fix to TURBOSTORE which allows for FCHECK to return error status information correctly.
HP30167 HP32002	4701-121368	Turbostore and CMRESTORE return Error 9017 with no LDEV#.
HP30167	4701-160275	RESTORE treating NEWUSER warnings as though they are errors.
HP32033	4701-166074	PURGE leaves exclusive bit set in file label when FCLOSE fails.

HP32033	4701-175216	SPSAVE option for MPE V SPOOLER.
HP32033	5000-073247	INITIAL check for free space on coldload.
HP32033	5000-583666	HPDEVCONTROL intrinsic.
HP32033	1653-014266	DELETEVAR command enhancement.
HP32033	4701-079988	PUB.SYS group dirc space wrong if ACD on sys. file
HP32033	4701-115113	PUB.SYS group dirc. space wrong, incorrect JSECST handling.
HP32033	4701-175968	INITIAL loses 2000 sectors of freespace every COLDLLOAD.
HP32033	5003-039123	Fix CXLISTEQ to not place 0 after LISTEQ filename
HP32033	5003-103382	Fix of Command Interpreter to correct BREAK problem.
HP32033	4701-186130	Fix FACCCHECK bug that causes problems for FLABELINFO and LISTDIR5 with 8 char. file, group & acct names.
HP32050	4701-072835	SegmenterBNDS violation on copy if USL built by CI fix is in module 02 of HP32050.
HP32201	4701-152769	EDITOR to map security from text file to keep file
HP32201	4701-168625	Fix to correct error handling when KEEPQ is used on file with user labels in EDITOR.
HP32201	5003-071431	Fix in EDITOR to re-arm CNTL-Y trap after calling the COMMAND intrinsic so it is not lost.
HP32201	9999-014450	Fix to EDITOR handling of meta commands so they terminate upon hard error or CNTL-Y to close data loss windows.
HP32201	5003-074609	EDITOR A.07.21 got ERROR40 when keeping empty file to \$NEWPASS causing batch jobs to abort.
HP32201	5000-106336	SET LINES > 99 causes bad formatting.
HP32201	9999-027441	Enhance KEEP warning for overwrites.
HP32201	9999-012292	Texting a fixed rec file after a variable rec file leaves RIGHT and LENGTH at variable settings.
HP32201	4700-002469	Lost file on enlarged file KEEP if out of disc space.

HP32201	9999-018380	FSERR 100 and temp file lost during keep if both temp and perm names already exist.
HP32201	4700-038661	File corruption on KEEP if EDITOR run with large MAXDATA.
HP32002	4701-183079	HP EXPLAIN submittal to handle SPOOK5 Utility/ RAPID - TAPE
HP32002	1650-023028	Fix problem of JOBINFO intrinsic not working when ALTER with SPOOK5 Utility is used.
HP32002	4701-084798	Can't copy after syntax error
HP32002	5000-157743	Run SPOOK5 Utility from TDP--ALTPRI and FILE won't print
HP32002	4700-202283	Can't run TDP from within SPOOK5 Utility
HP32002	1650-023028	Fix to JMAT for SPOOK5 Utility

Please refer to the SRB for more detail on any of these fixes.



Product Release Information

MPE V Product Releases

The following table is both a historical and current list of new products introduced for each MPE V version release for the HP 3000 Computer System.

Table 7-1. MPE V Product Releases

V.UU.FF.	Name	Release	Product(s) Introduced/Added
G.03.04	V-DELTA-4: Legally Evaluated by Dept. of Defense	R28C2	Roll-in of V-Delta-3 The Legally Evaluated DOD release SUBSYS VUF = G.A3.04 HPWORD SERVICES (HP27558) HPEDIT/V (HP30316) NSPAD (NSPAD)
G.1P.00 G.1P.10 G.1P.20	Platform Release 1P	R3035	Roll-in of V-Delta-9 Series 6400 Model 1300H DDS Roll-in of HP GlancePlus/V (HP50733)* Roll-in of DeskManagerPLUS (HP36567)*
G.20.00	Release 20	R3042	Roll-in of Platform 1P HP Search/V (HP36381A) HP Browse/V (HP36382A)
G.21.00	Release 21	R3114	Roll-in of Release 20 VPLUS/Windows (HP36393A)
G.22.00	Release 22	R3140	Roll-in of Release 21 Various Enhancements and Fixes No new products

Table 7-1. MPE V Product Releases (continued)

V.UU.FF.	Name	Release	Product(s) Introduced/Added
G.23.00	Release 23	R3215	Roll-in of Release 22 Various Enhancements and Fixes 6 of the top 8 SIC requested enhancements plus 7 other enhancements 35 of the top 40 high impact problems fixed HP EXPLAIN
G.2P.00	Platform Release 2P	R3237	Roll-in of Release 23 21 Customer Requested Fixes No new products
G.30.00	Release 30	R3248	Roll-in of Platform Release 2P 15 Customer Requested Fixes No new products
G.31.00	Release 31	R3330	Roll-in of Release 30 33 Customer Requested Fixes 3 Customer Requested Enhancements 24 Enhancements to SPOOK No new products

*Product has been retrofitted on this version.

Product Release Information

Supported Releases

The following matrix provides information on the supported versions of MPE V. It lists the currently supported releases and the SPUs they are supported on. The matrix also provides all known factory support termination dates. A version of MPE V will not have factory support after its support termination date.

Table 7-2. Supported Release Matrix

RELEASE	V.UU.FFs	Supported Systems	Support Termination Date
V-Delta-4	G.03.04	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	¹
Platform Release 1P	G.1P.00, G.1P.10 G.1P.20	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX,RX	JAN 1, 1994
Platform Release 2P	G.2P.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX,RX	JAN 1, 1997 ²
Release 30	G.30.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX,RX	FEB 1, 1994 ³
Release 31	G.31.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX,RX	SEP 1, 1994 ³

- ¹ DOD version (G.03.04) is only for customers who require DOD "C2" certification from the U.S. Government. This version will have continuing support for these customers only.
- ² Or twelve months after the actual first customer ship date of the next platform, whichever is later.
- ³ Or six months after the actual first customer ship date of the next platform, whichever is later.





Catalog of User Documentation

Introduction

This chapter contains a list of customer manuals for the HP 3000 Computer System.

If your contract includes Material Based Services for your appropriate operating system and software services, you will receive both software and manual updates. If you would like to obtain additional copies of all the manual updates, these can be ordered as part of your support contract under the Manual Update Service.

As of this release the subscription services column of this catalog has been removed. If you would like to know more specific information about subscription services please contact your HP representative.

You may order additional copies of individual manuals by calling 1-800-227-8164. Please use the following catalog to look up the customer order number needed to place your order.

Manual Title	Customer Order No.	Latest Edition	Current Update
Communicator 3000	32033-90287	7/93	
FOS SYSTEM MANUALS			
General Information Manual	5953-7583	10/84	
Fundamental 3000 Data Communication Handbook	5957-4634	6/84	
EDIT/3000 Reference Manual	03000-90012	8/80	
Using the HP 3000: An Introduction to Interactive Programming	03000-90121	4/79	
MPE V Segmenter Reference Manual	30000-90011	11/82	8/86
MPE V Debug/Stack Dump Reference Manual	30000-90012	8/86	
Compiler Library Reference Manual	30000-90028	11/76	
QUERY/3000 Reference Manual	30000-90042	5/87	
KSAM/3000 Reference Manual	30000-90079	8/86	
MPE V File System Reference Manual	30000-90236	10/89	
MPE V System Operation an Resource Management Reference Manual	32033-90005	10/89	
MPE V Commands Reference Manual	32033-90006	12/92	
MPE V Intrinsic Reference Manual	32033-90007	12/92	
MPE V System Utilities Reference Manual	32033-90008	10/89	
HP 3000 Guide for the New User	32033-90009	1/86	
HP 3000 Guide for the New System Operator	32033-90021	4/86	
MPE Quick Reference Guide	32033-90023	10/89	
MPE V Storing and Restoring Reference Manual	32033-90133	6/87	10/88
MPE V System Backup and Recovery User's Guide	32033-90134	6/87	10/88
MPE V Security & Accounting	32033-90136	10/88	
MPE V TABLES Manual	32033-90147	10/91	
MPE V General User's Reference Manual	32033-90158	10/88	
Data Entry and Forms Management System V/PLUS/3000	32209-90001	7/86	11/87
Using VPLUS/V	32209-90004	8/86	
FCOPY Reference Manual	32212-90003	6/92	
Native Language Support Reference Manual	32414-90001	11/87	10/88
SORT-MERGE/3000 Reference Manual	32214-90002	9/81	9/84
TurboIMAGE Database Management System Reference Manual	32215-90050	12/85	
HP Hi-Li Reference Manual	32424-90002	11/87	

Manual Title	Customer Order No.	Latest Edition	Current Update
SUBSYSTEM MANUALS			
HP GlancePlus/V User's Manual	50733-90002	2/91	
HP Security Management Guide	30392-90001	10/88	
APS/3000 Reference Manual	32180-90001	11/86	
APS/3000 Quick Reference Card	32180-90002	11/86	
APS/3000 Pocket Guide Insert	32180-90003	11/86	
Flexible Discopy/3000	32199-90001	8/80	
OPT/3000 Reference Manual	32238-90001	11/86	
OPT Pocket Guide	32238-90002	11/86	
OPT Insert for MPE Pocket Guide	32238-90003	11/86	
DATA COMMUNICATIONS MANUALS			
LAN Cabling and Accessories Installation Manual	5955-7680	1/86	
LAN Link Troubleshooting Manual	5955-7681	10/86	
LAN/3000 and OfficeShare LAN/3000 Design Guide	5955-7689	11/85	
Making the LAN Connection: A Local Area Network Primer	5957-4624	9/84	
NS Cross-System NFT Reference	5958-8563	8/91	
NS3000/V Network Manager Reference Manual Volume	32344-90002	7/90	
NS3000/V Network Manager Reference Manual Volume	32344-90012	7/90	
NetIPC3000/V Programmer's Reference Manual	5958-8581	7/90	
NS3000/V Migration Guide	24405-90001	10/90	
NS X.25 3000/V Link Guide	24405-90002	7/90	
DSN/RJE 2780/3780 Emulator Reference Manual	30248-90002	8/90	
Point-To-Point Workstation I/O Reference Manual	30000-90250	12/84	4/87
ATP for Meridian SL-1 Interface Supplement to the ATP Installation Manual	30144-90016	4/86	
Workstation Configurator Reference Manual	30239-90001	10/89	
LANIC Installation and Service Manual (Series 39, 4X, or 6X)	30242-90001	2/85	5/87
LANIC Installation and Service Manual (Series 37	30242-90100	5/85	
Getting Started With SNA Node Management	30246-61001	4/92	
SNA Link Services Reference Manual	30246-61002	4/92	
Installing and Troubleshooting SNA IMF Node Manager's Guide	30247-90002	1/85	
MRJE User/Programmer Reference Manual	30249-90001	10/88	

Manual Title	Customer Order No.	Latest Edition	Current Update
IMF User/Programmer Reference Manual	30250-90001	5/87	
LU 6.2 Base Node Manager's Guide	30252-90001	8/90	
LU 6.2 API/V Node Manager's Guide	30253-90002	8/90	
APPC Subsystem On MPE V Node Manager's Guide	30253-90004	8/90	
Digital Multiplexed Interface (DMI) Reference Manual	30288-90001	6/86	
HP SNA Products (kit): <i>(w/binder)</i>	30291-61005	8/90	
<i>Kit contents or individually ordered manual:</i>			
Manager's Guide	5958-8542	8/90	
ACF/NCP & ACF/VTAM Guide	5958-8543	8/90	
Job Entry Subsystems Guide	5958-8544	11/89	
IMS Guide	5958-8545	4/88	
CICS Guide	5958-8546	8/90	
DISOS Guide	5958-8547	8/90	
AS/400 Guide	5960-1629	6/92	
SNA NRJE Node Manager's Guide (w/binder)	30292-61000	4/90	
SNA NRJE User Programmer Reference Manual (w/binder)	30292-61001	4/90	
SNA IMF Programmer's Reference Manual (w/binder)	30293-61005	6/92	
LU 6.2 API Application Programmer's Reference Manual	30294-61000	6/92	
RJE User/Programmer Reference Manual (w/binder)	30295-61001	8/90	
HP X.400/HPDesk Node Administrator's Guide	32055-90001	10/89	
HP AdvanceNet Using HPDesk Manager Connected to X.400	32055-90002	10/89	
DS/3000 HP 3000 to HP 3000 User/Programmer Reference Manual	32185-90001	12/85	7/87
DS/3000 HP 3000 to HP 1000 User/Programmer Reference Manual	32185-90005	12/85	
DSN/DS 3000 Reference Manual	32190-90001	9/82	
DSN/DS 3000 To 1000 Reference Manual	32190-90005	1/82	
DSN/MTS Multipoint Terminal Software Reference Manual	32193-90002	8/82	2/84
NS3000/V User/Programmer Reference Manual	32344-90001	7/90	
NS3000/V Network Manager Reference Manual Volume	32344-90002	7/90	
NS3000/V Error Message and Recovery Manual	32344-90005	7/90	
NS3000/V Network Manager Reference Manual Volume	1 32344-90012	7/90	
Repeater Installation Manual	92223-90002	11/85	12/88

Manual Title	Customer Order No.	Latest Edition	Current Update
PROGRAMMER PRODUCTIVITY TOOLS MANUALS			
Cooperative Services: Using Basic Serial Connection Files Manual	5957-9336	1/89	
TRACE Reference Manual	03000-90015	6/76	
HP SRC User's Guide (w/binder)	30234-60002	11/88	
<i>(binder contents)</i>			
HP SRC User's Guide		11/88	
HP SRC Implementation Guide		11/88	
HP SRC Quick Reference Card		11/88	
Getting Started with HP SRC		11/88	
HP Software Revision Controller/V Product Information Update	30234-90006	9/89	
HP EDIT Binder Kit	30316-90001	12/90	
Learning HP EDIT	30316-90002	12/90	
HP EDIT Quick Reference Guide	30316-90005	12/90	
Virtuoso Code Generator Reference Manual (w/binder)	30422-60001	10/89	
Virtuoso COBOL Sample Library Reference Manual (w/binder)	30426-60001	5/88	
Database Utilities Reference Manual	32244-90012	12/85	
REPORT/V User's Guide	32245-90001	2/85	
INFORM/V User's Guide	32246-90001	3/88	
Getting Started with TRANSACT (w/binder)	32247-60002	5/85 9/88	
TRANSACT/V Reference Manual	32247-90001	2/90	
HP TRANSACT Quick Reference Guide	32247-90020	8/92	
HP TOOLSET Reference Manual	32350-90001	1/84	
Cooperative Services: Pascal Reference Manual	32570-90032	1/89	
Cooperative Services: Developer's Guide	32570-90053	6/91	
Cooperative Services: 'C' Language Reference Manual	32570-90034	1/89	
Cooperative Services: COBOL Reference Manual	32570-90035	1/89	
Using Information Access PC	B1716-90014	5/90	

Manual Title	Customer Order No.	Latest Edition	Current Update
Information Access PC Connections and Batch File	B1716-90015	5/90	
Learning Information Access PC	B1716-90016	5/90	
Information Access PC Installation Card	B1716-90017	5/90	
Information Access Server: System Management	B1716-90018	5/90	
Information Access Server: Error Messages	B1716-90019	5/90	
Information Access Server: Database Administrati	B1716-90020	5/90	
Information Access Server: Master Index	B1716-90022	5/90	
Information Access Server: Learning the Administrator Utility	B1716-90023	5/90	
Information Access Server: Planning and Configuring	B1716-90024	5/90	
INFORMATION MANAGEMENT SERIES MANUALS			
Dictionary/3000 Reference Manual (w/binder)	32244-61000	12/87	
HP System Dictionary/V SDMAIN Reference Manual	32254-90001	12/86	8/87
HP System Dictionary Intrinsic Reference Manual	32254-90002	12/86	8/87
HP System Dictionary Utilities Reference Manual	32254-90003	12/86	11/87
HP System Dictionary General Reference Manual Volume 1	32254-90004	12/86	8/87
HP System Dictionary General Reference Manual Volume 2	32254-90005	12/86 11/87	
HP System Dictionary COBOL Definition Extractor Reference Manual	32255-90001	12/86	11/87
VISOR Tutorial Kit	32425-60001	10/88	
<i>Kit contents:</i>			
Introduction to VISOR		(10/88)	
Using EZAccess		(10/88)	
Using SQLAccess		(10/88)	
Reporting with EZReport		(10/88)	
Advanced VISOR Functions		(10/88)	
VISOR Reference Information		(10/88)	
TURBOIMAGE DBchange/V User's Guide	36020-90001	1/87	
HPSQL/V SQL Reference Manual	36215-90001	9/87	
HPSQL/V ISQL Reference Manual	36215-90002	9/87	

Manual Title	Customer Order No.	Latest Edition	Current Update
HPSQL/V Database Administration Guide	36215-90003	9/87	
HPSQL/V COBOL Application Programming Guide	36215-90004	9/87	
HPSQL/V Message Manual	36215-90005	9/87	
HPSQL/V Quick Reference Guide	36215-90006	9/87	
HPSQL/V Pascal Application Programming Guide	36215-90007	9/87	
TurboIMAGE Profiler User Guide	36914-91001	12/85	
LANGUAGE MANUALS			
BASIC for Beginners	03000-90025	11/72	
HP FORTRAN 77 Reference Manual	5957-4685	5/88	
HP FORTRAN 77 Programmer's Guide	5957-4686	3/87	11/87
HP FORTRAN 77 Quick Reference Guide	5957-4687	1/88	
FORTRAN/66V to HP FORTRAN/77 Migration Guide	5957-4690	6/87	9/87
SPL Reference Manual	30000-90024	2/84	
SPL Language Textbook	30000-90025	6/76	9/77
BASIC Interpreter Reference Manual	30000-90026	6/76	11/86
Scientific Library Reference Manual	30000-90027	6/76	9/77
FORTRAN /3000 Reference Manual	30000-90040	6/76	
HP FORTRAN 77/V Reference Manual Supplement	30000-90294	5/88	
HP FORTRAN 77/V Programmer's Guide Supplement	31501-90005	3/87	6/87
SPL Pocket Guide	32100-90001	11/76	
FORTRAN Pocket Guide	32102-90002	5/79	
BASIC/3000 Compiler Reference Manual	32103-90001	9/77	
HP RPG/V Reference Manual	32104-90001	12/88	9/89
HP RPG Pocket Guide	30318-90003	12/89	
RPG/V Utilities Reference Manual	32104-90006	12/88	
Pascal/3000 Reference Manual	32106-90001	10/83	
Pascal/3000 Pocket Guide	32106-90002	10/83	
HP Business BASIC Reference Manual	32115-90001	8/86	9/87
HP Business BASIC Quick Reference Guide	32115-90002	7/85	8/87
HP Business BASIC Programmer's Guide	32115-90003	8/86	7/87
BASIC/V to HP Business BASIC Conversion Guide	32115-90004	8/86	9/87
BASIC/260 to HP Business BASIC Conversion Guide	32115-90005	8/86	7/87
Using COBOL: A Guide for New Users of HP3000	32213-90003	3/78	

Manual Title	Customer Order No.	Latest Edition	Current Update
COBOL II/V Reference Manual	32223-90001	5/89	
COBOL/3000 to COBOLII/3000 Conversion Guide	32233-90005	12/79	
ADDITIONAL SOFTWARE PRODUCTS MANUALS			
HPCopycat/3000 Reference Manual	19550-90901	10/88	
Administrator's Guide to HPConvert/WPS	27500-90001	1/85	
Administrator's Guide to HPOffice Connect to DISOSS	27515-90001	10/86	
Using HP DeskManager Connect to DISOSS	27515-90004	10/86	
Using DISOSS Connected to HP DeskManager	27515-90006	10/86	
Using HP DeskManager Connected to the IBM Professional Office System	27521-90004	1/86	
Using the IBM Professional Office System Connect to HP DeskManager	27521-90005	1/86	
HP DeskManager: Intrinsic	27562-90003	12/91	
HPDRAW Reference Manual	32108-90001	12/83	
HPEASYCHART Reference Manual	32109-90001	1/84	
HPMenu Reference Manual	32112-90000	1/83	
HPMenu Administrator's Manual	32112-90001	6/83	
HPMenu Quick Reference Guide	32112-90002	6/83	
HPMap/3000	32113-90001	7/85	
Mapping Applications Casebook	32113-90002	7/85	
Programmatic Access to HPWORD Documents	32119-90001	9/86	
Using HPWORD	32120-90035	4/85	8/88
HPWORD Administration	32120-90061	9/86	8/88
HPFILE/LIBRARY Administration	27520-90019	1/91	
Using FILE/LIBRARY	27520-90020	1/91	
HPDESK Administration Guide	27568-90003	12/91	
Combined HPDESK Manual Set	27576A	12/91	
Printing With HPWORD	32120-90065	8/88	
HPListKeeper User's Guide/Reference Manual	32132-90020	9/86	
VisiCalc Quick Reference Guide	32133-90001	12/84	
VisiCalc Reference Manual	32133-90002	3/84	
Deluxe VisiCalc Quick Reference Manual	32133-90010	12/84	
Deluxe VisiCalc Reference Manual	32133-90011	12/84	
DSG/3000 Reference Manual	32250-90001	12/83	

Manual Title	Customer Order No.	Latest Edition	Current Update
DSG/3000 Quick Reference Guide	32250-90002	2/84	
Print Spooler Utility	32345-90001	8/86	12/86
HP Tapemaker/V User's Guide	32434-90004	4/88	
Resource Sharing for MPE V	32597-90079	3/91	
HPTREND User's Guide	35136-90001	2/87	
HP Easytime Reference Manual	35303-90001	2/87	
HP Business Report Writer/V Reference Manual (w/binder)	36070-60002	10/87	11/88
Business Report Writer/V Tutorial	36070-90010	10/87	
HPSPELL Administration	36561-90002	11/84	
HPSPELL Quick Reference Guide	36561-90003	11/84	
HP DeskManager User Reference Guide	36570-90133	12/91	
HP DeskManager Customization	36570-90135	12/91	
HP Desk Administration	36570-90134	12/91	
Using HPTELEX II	36572-90021	1/91	
Administrator's Guide to HPTELEX II	36572-90013	9/84	
HPTELEX II Reference Card	36572-90014	9/84	
Using HPSlate	36576-90043	10/89	
TDP/3000 Quick Reference Guide	36578-90003	11/80	8/88
Getting Started With TDP/3000	36578-90005	9/87	8/88
TDP/3000 Reference Manual	36578-90009	8/88	
IFS/3000 Reference Manual	36580-90001	1/84	9/84
IDS/FORM Reference Manual	36581-90002	2/85	
HP Graphics Curator	36926-90001	2/86	
HP Graphics Curator Update	36926-90007	11/86	
HP LaserRX/MPE User's Manual: Analysis Software	50700-90024	3/91	
HP Performance Collection Software User's Manual (for MPE Systems)	50700-90022	4/92	
HP LaserRX/MPE: A Journey of Discovery	50700-90026	3/91	
TRANSFORM/3000 Reference Manual	99940-90001	11/86	
TRANSFORM/3000 IBM S/36 OCL Translation	99940-90002	11/86	
PROCMON/3000 Reference Manual	99941-90001	11/86	
HP GlancePlus/V User's Manual	50733-90002	2/91	



Customer Comment Card

MPE V Communicator 3000

HP Part No.: 32033-90287

R3330

We welcome your evaluation of this manual. Your comments and suggestions will help us improve our publications. Attach additional pages if necessary.

Please circle the following Yes or No:

- | | | |
|--|-----|----|
| ■ Is this manual well organized? | Yes | No |
| ■ Is the information technically accurate? | Yes | No |
| ■ Are instructions complete? | Yes | No |
| ■ Are concepts and wording easy to understand? | Yes | No |
| ■ Are the examples and pictures helpful? | Yes | No |
| ■ Are there enough examples and pictures? | Yes | No |

Additional Comments: _____

Please provide:

Name: _____ Title: _____

Company: _____ Address: _____

City: _____ State: _____ Zip Code/Country _____

Please send to:



Thank you for your assistance.

No postage is required. Just remove this card, fold so that the pre-addressed label is on the outside, secure and mail.

Tape closed

PLEASE DO NOT STAPLE

Tape closed

.....Fold here.....Fold here.....



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT No. 256 ROSEVILLE CA



- POSTAGE WILL BE PAID BY ADDRESSEE -

Learning Products Manager R5YA
Hewlett-Packard Company
SWT/Software Technology Center
8000 Foothills Blvd.
Roseville, CA 95747-9987
USA



Fold here

Fold here

Detach or fold here ->

Customer Comment Card

MPE V Communicator 3000

HP Part No.: 32033-90287

R3330

We welcome your evaluation of this manual. Your comments and suggestions will help us improve our publications. Attach additional pages if necessary.

Please circle the following Yes or No:

- | | | |
|--|-----|----|
| ■ Is this manual well organized? | Yes | No |
| ■ Is the information technically accurate? | Yes | No |
| ■ Are instructions complete? | Yes | No |
| ■ Are concepts and wording easy to understand? | Yes | No |
| ■ Are the examples and pictures helpful? | Yes | No |
| ■ Are there enough examples and pictures? | Yes | No |

Additional Comments: _____

Please provide:

Name: _____ Title: _____

Company: _____ Address: _____

City: _____ State: _____ Zip Code/Country _____

Please send to:



Thank you for your assistance.

No postage is required. Just remove this card, fold so that the pre-addressed label is on the outside, secure and mail.



