

COMMUNICATOR 3000

Version G.22.00 of MPE V/E (Release 22)

COMMUNICATOR 3000



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HP 3000 Computer Systems



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Version G.22.00 of MPE V/E (Release 22)



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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 <i>may</i> 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 <i>must</i> 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>

CONVENTIONS (continued)

Δ When necessary for clarity, the symbol Δ may be used in a syntax statement to indicate a required blank or an exact number of blanks. For example:

```
SET[(modifier)] $\Delta$ (variable);
```

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, RETURN indicates the carriage return key.

CONTROL *char*

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

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Release 22 Overview

*by Ross Martin and Bob Stamps
Software Technology Center*

This Hewlett-Packard software release is based on the original MPE V/E (G.00.00) operating system and is referred to as Release 22 (G.22.00). This release of the Communicator describes product introductions and enhancements that have been added to our existing software products. This commercial release further extends the functionality and performance of MPE V/E-based HP 3000 systems.

SYSTEM INFORMATION

With the creation of the Software Technology Division, HP has committed to continuing to meet customer needs on MPE V systems. This commitment assures that HP will continue to support MPE V for the long term.

The MPE V strategy can be summarized as:

- Continuing to provide viable solutions for customers interested in maintaining their MPE V systems
- Providing a suitable migration solution for customers who wish to upgrade to MPE XL or other HP systems' solutions

As a part of this commitment to MPE V customer satisfaction, HP is increasing its level of investment in new MPE V enhancements and bug fixes. Prior to the next Platform introduction, there will be one additional release, known as Release 23, which will reflect new levels of enhancements and fixes which have been requested by large numbers of customers over the years. Release 23 is a future MPE V release positioned to make customers even more satisfied with their systems, and will make it clear that HP is still listening and responding to customer needs.

An MPE V intrinsic called HPVOLINFO has been available since MPE V Release 20 (G.20.00), but documentation about the intrinsic has not been published until this issue of the Communicator. HPVOLINFO allows the gathering of volume space information which used to require a manual process to obtain. HPVOLINFO is supported on both MPE V and MPE XL.

HP has added a new STORE option called PACKED, which improves the performance of a labeled tape STORE.

HP is also improving and enhancing TurboIMAGE for MPE V. For example, HP TurboIMAGE is now providing a Multiple Database Transaction Logging (MDBX) capability. The logging and recovery capability was limited to transactions involving a single database. Now, MDBX solves the problem of complex applications with units of work that span multiple databases. Although the software was provided with Release 21, both the software and documentation are available with the current release.

ADDITIONAL SOFTWARE PRODUCTS

The A.06 version of Information Access is being released with MPE V Release 22 (G.22.00). The following enhancements have been included:

- New CONVERT function
- IMAGE automatic masters as tables
- ADMIN quick configuration
- 2048 character Item Clause
- GROUP BY Clause increased

New Volume Intrinsic – HPVOLINFO

*by Pat Alvarez, Wayne Booth, Mark Dovi and Lalitha Pejavar
Computer Systems Division*

Product Name

HPVOLINFO Intrinsic

PRODUCT OVERVIEW

On MPE, there are different methods to find out how much volume space is available or used through various commands and utilities - FREE, LISTF, REPORT, VINIT, VOLUTIL, etc. Until now, there were no intrinsics that returned this type of information. Obtaining volume information was a very manual process through the use of these commands and utilities. The customer had to write privileged mode programs, which were not supported by HP, in order to retrieve volume information from the system tables. As a way to gather volume information more easily, a new volume intrinsic is now provided which returns information similar to that returned by the volume commands and utilities available today. This intrinsic is supported on both MPE V and MPE XL.

HPVOLINFO

The new volume intrinsic is HPVOLINFO. This intrinsic provides a way to retrieve volume information from both system and nonsystem volumes (on MPE V, nonsystem volumes are equivalent to private volumes). The volume information that is returned can be used to track volume space usage. More specifically, the information that is returned describes how the space on volumes is allocated - i.e. how much is used for operating system purposes, how much space is free space, how much space is used for spool files, etc. Also, with this information, volume fragmentation and lost disc space information can be determined. With this intrinsic, the trend of volume usage can be observed so that future disc needs can be predicted.

The term "volume" used throughout this document refers to a disc pack that is mounted in a disc drive.

The following information is returned from HPVOLINFO:

- Drive type
- Capacity of a volume
- Sector size of a drive
- Amount of volume space used by MPE
- Spool file space usage
- Permanent and temporary file space usage
- Volume type
- Volume set name
- Number of volume classes
- List of volume classes
- Ldev that a volume is configured on
- Free space information
- Number of member volumes
- List of member volume names
- Number of volume sets
- List of volume sets

New STORE Option – PACKED

*by Ching-Ching Su
Commercial Systems Division*

To improve the performance of a labeled tape STORE, a new labeled STORE tape format is now available. Results of STORE performance testing shows the new labeled tape STORE performance has significantly improved (e.g., an 86% improvement when storing between 200 and 1000 files) over that of regular labeled tape and is comparable to that of unlabeled tape. In this article, the new labeled STORE tape will be referred to as **PACKED** tape.

USER INTERFACE

Customers can use the new STORE option **PACKED** to create the **PACKED** tape. All STORE/RESTORE functions that apply to regular labeled tape also apply to **PACKED** tape.

Syntax

```
:STORE filesetlist;*storefile;PACKED
```

Creation of the PACKED tape is similar to that of regular labeled tape. First, the user must setup a :FILE equation describing the destination device, the volumeset, etc., prior to issuing a valid STORE command. Second, the user must state the PACKED option in the STORE command.

For example, when preparing for a backup to the volume VOL06, the following file equation would be entered:

```
:FILE T;DEV=TAPE;LABEL=VOL06
```

This would be followed by the STORE command:

```
:STORE filesetlist;*T;PACKED
```

Restoring files is identical to that of regular labeled tape.

TAPE FORMAT

The PACKED tape format conforms to ANSI labeled tape format. For PACKED tape, STORE places all of the STORE/RESTORE data into one logical file. Only a user header label generated by STORE/RESTORE is not within the file data area. The STORE/RESTORE data is laid out the same order as the regular labeled tape, but disk file images are separated by a simulated tapemark rather than a set of trailing labels for one file followed by a set of header labels for the successor file. The simulated tapemark is an eighty byte record that contains the ASCII character string "End of logical file."

Following is the format of PACKED tape.

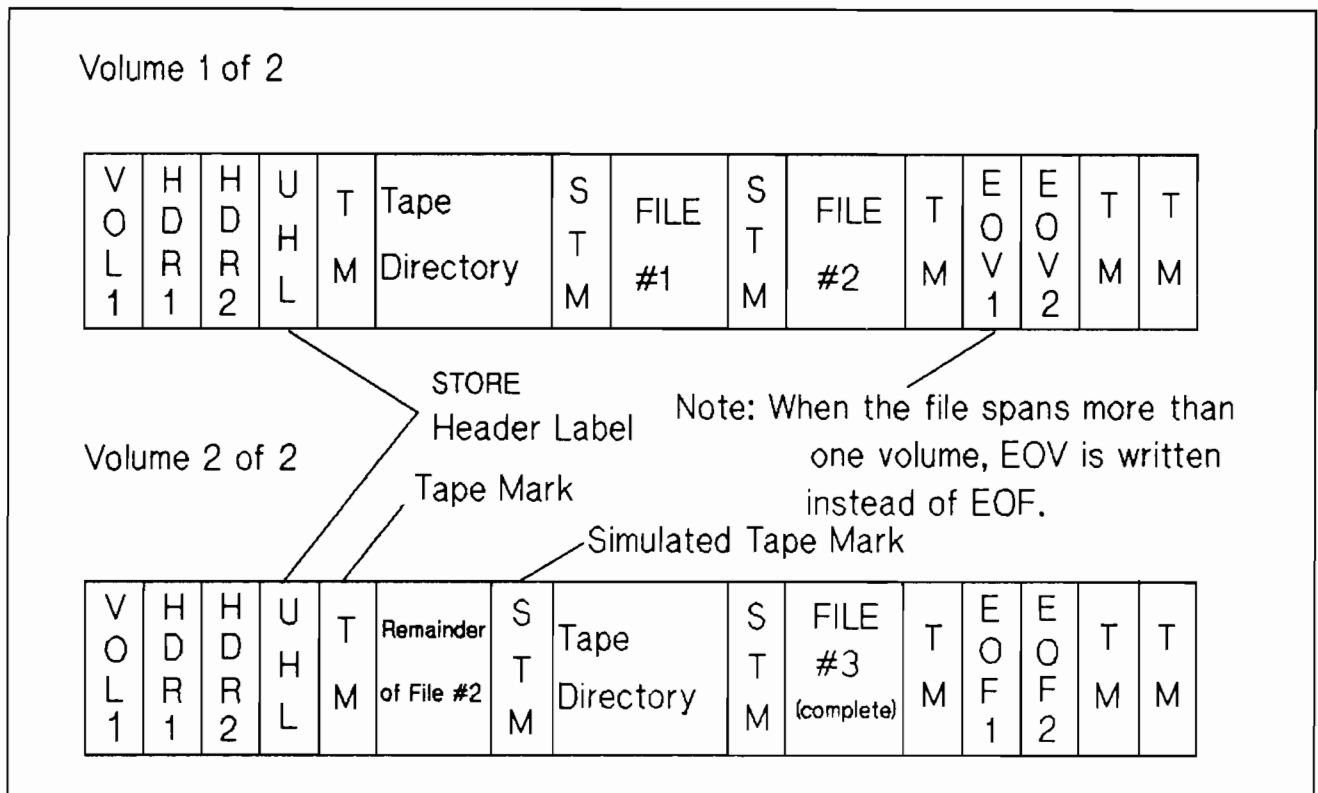


Figure 1. Packed Tapes

Multiple Database Transaction Logging (MDBX)

*by Ron Harnar and Mark Boronkay
Data Management Systems Division*

TurboIMAGE provides a transaction logging and recovery capability that allows a programmer to group multiple TurboIMAGE intrinsic calls into logical transactions that are treated as single units of work during database recovery. In the past, the logging and recovery capability was limited to transactions involving a single database. This posed problems for complex applications with units of work that span multiple databases. To address this specialized requirement, TurboIMAGE is providing a multiple-database transaction (MDBX) capability.

The following changes have been made to TurboIMAGE in order to support MDBX:

- The TurboIMAGE intrinsics `DBBEGIN` and `DBEND` are enhanced so that programmers can define MDBXs involving up to 15 databases.
- A new mode (404) is added to `DBINFO` for obtaining information about MDBXs.
- The `DBRECOV` utility is modified to allow recovery of MDBXs.
- New operational requirements are enforced for applications that use MDBXs.
- The TurboIMAGE log file is changed to permit logging of MDBXs.

Two types of MDBXs are available—optimized and non-optimized. A non-optimized MDBX makes use of `DBBEGIN` and `DBEND` records in the user log file. An optimized MDBX generates new logging records (`MDBXBEGIN` and `MDBXEND`) designed to save space in the log file.

NOTE

The use of the new log records generated by an "optimized" MDBX will prevent Silhouette from processing these entries appropriately. It is therefore recommended that Silhouette users use "non-optimized" MDBXs on log files that are accessed by Silhouette.

The use of MDBX is optional. TurboIMAGE applications that are currently using single-database transactions can continue to do so without any coding or operational changes. The above changes apply only if the programmer wishes to take advantage of the MDBX enhancement.

These enhancements are also available in the previous MPE/V Release 21 with version C.00.67 of TurboIMAGE/V.



Announcing Information Access A.06

*by Guy Randazzo
Software Technology Division*



INTRODUCTION

The A.06 version of Information Access is being released with MPE V Release 22 (G.22.00). Besides the usual defect fixes, it contains a number of very useful enhancements. Each enhancement is described in some detail below. (The corresponding MPE XL version is A.06.11, which will ship with the MPE XL 3.0 Retrofit).

NEW CONVERT FUNCTION

A new function has been added to Access Server that can be used in the SQL statement or in ADMIN view tables. The function, CONVERT, can be used to convert any data type to any other data types. Some general uses include:

- Convert character strings to any numeric type.
- Convert one numeric type to another, possible to output to a binary file to be read by a special application.
- Convert a numeric type to a character string (for date conversion, for example)
- To shorten or lengthen a character string.
- Format a numeric as a character string, specifying decimal place.

CONVERT Syntax

The exact syntax of the new function:

```
NEW_ITEM = CONVERT(expression,datatype-len,{decimals{,conv-type}})
```

expression --> See Appendix C of the Database Administration manual

datatype-len --> I1 | I2 | I3 | I4 | R2 | R4 | L | C len | X len
| P len | Z len | N len

decimals --> constant

conv-type --> C | R (Used if converting to I, P or Z only).

NOTE

Converting numeric types to 'X' type indicates that the numbers should be zero padded on the front. If converting to 'C', then extra zeros are stripped from the converted character string. Using the 'X' type is convenient when converting dates where you want the zero padding in front of the day or month. This feature is available on MPE V version A.06.02, and MPE XL version A.06.12, and later. It is not available on MPE XL version A.06.11.

CONVERT Examples

Here are a few examples of it's use:

```
*
* The first example breaks up a product number into two pieces, its
* type, which is a character string and its sub-type. Just to
* demonstrate the capability of the CONVERT function, the 3 byte ASCII
* numeric string is converted to an integer.
```

```
SQL
  SELECT
    PRODUCT-NBR , TYPE = SUB(PRODUCT-NBR,1,3) ,
    SUB-TYPE = CONVERT(SUB(PRODUCT-NBR,4,3),I1)
  FROM
    ORDER-DETAIL;
```

```
*
* Next, we convert the on hand quantity, which is a packed number,
* to a character string with no decimal places.
```

```
*
SQL
  SELECT
    PRODUCT-NBR, ON-HAND-QTY,
    NEW-ON-HAND-QTY = CONVERT(ON-HAND-QTY,C8,0)
  FROM
    INVENTORY;
```

```
*
* Finally, we convert both unit cost and price to a 2 word or 4 byte
* integer because these items are packed decimal and we are using a
* PASCAL program to read a binary file and PASCAL does not support
* packed decimal.
```

```
*
SQL
  SELECT
    PRODUCT-NBR, UNIT-COST = CONVERT(UNIT-COST,I2),
    PRICE = CONVERT(PRICE,I2)
  FROM
    PRODUCT-MASTER;
```

```
*
* This last example demonstrates some arbitrary uses.
```

```

*
SQL
  SELECT
    c20-to-p20 = CONVERT(c20,P20,6,R),
    c10-to-c20 = CONVERT(c10,C20),
    small-mult = CONVERT(item1-i2 * item2-i2, I1),
    int-to-c   = CONVERT(i2, C6),
    r4-to-c30-6= CONVERT(r4, C30, 6),
    date       = CONVERT(month,X2) + '-' + CONVERT(day,X2) + '-' +
                CONVERT(year,X2)
  FROM
    generic-table;

```

IMAGE AUTOMATIC MASTERS AS TABLES

In ADMIN on the Environment Configuration menu, a new function key has been added which says Auto Masters. The function key will take you to a screen which lets the DBAs indicate whether they want automatic master datasets to be considered valid for configuration as IMAGE tables. If you choose this option, then the automatic master datasets will be displayed when adding IMAGE tables.

ADMIN QUICK CONFIGURATION

In ADMIN on the Add Table menu, a function key has been added which says IMAGE Quick Def. This function key will take you to 2 screens which allow you to configure more than one dataset at a time. On the first screen, you enter the database information. On the second screen, you will get a list of all the dataset names in the database. Select which datasets you want to be configured as IMAGE tables. The default table name is the same as the dataset name, but you can change this. After pressing the ENTER key, each table will be added with all of the items in the dataset using the default data conversions. The Change Table screens can then be used to modify the selection of items and their data conversions, if desired.

2048 CHARACTER ITEM CLAUSE

Starting with Access Server A.06, the item clause length has been increased from 1024 to 2048 bytes. This will allow users to create view tables that are far more complex and useful. The current 1024 byte limit is very restrictive when a need for sophisticated view tables arises.

GROUP BY CLAUSE INCREASED

The GROUP BY clause in Access Server has been increased from 160 characters to 320 characters. This is because NewWave Access will often fully qualify the item names if duplicate names exists in tables that are joined, making the 160 character limit too severe.



HPVOLINFO Volume Intrinsic

*by Pat Alvarez, Wayne Booth, Marck Dovi and Lalitha Pejavar
Computer Systems Division*

HPVOLINFO

Returns volume information.

SYNTAX

```
HPVOLINFO
  ( status,
    volspecifiernum, volspecifier [,itemnum, item][...]
  );
```

Volume information is returned by the HPVOLINFO intrinsic. Up to six items of information can be retrieved by specifying one or more itemnum/item pairs. The itemnum/item parameters must appear in pairs. Note, some of the itemnums to HPVOLINFO are MPE V specific while others are MPE XL specific.

PARAMETERS

status

32-bit signed integer (optional)

Returns the status of the HPVOLINFO 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 represented by these bits, defines the subsystem that set the status information. On MPE XL, the volume management identification number is 163. On MPE V, this field will contain a 0.

WARNING

Since **HPVOLINFO** can return information on the success of its execution in the *status* parameter, it is good programming practice to specify this parameter and check its value after the intrinsic call. If an error condition is encountered and the caller did not specify the *status* parameter, **HPVOLINFO** causes the calling process to abort.

The values of *status.info* that can be returned from a call to **HPVOLINFO** are listed below.

Error Number	Meaning
0	No errors or warnings (Successful call).
-150	Invalid itemnum.
-151	Itemnum or item missing (not paired).
-152	Required parameter omitted.
-153	Parameter address out of bounds
-154	Split stack calls not allowed.
-155	Ldev, volume set/class, volume not mounted.
-156	Invalid volume specifier number.
-157	Invalid volume specifier.
-158	Ldev not a disc ldev.
-159	Device class not configured for volumes.
-160	Device class does not map into a volume class.
-161	Free space range sizes not in ascending order.
-162	Invalid number of free space ranges specified.
-163	Volume class cannot be specified with system set.
-164	Error while scanning the directory.
-165	Volume label is unreadable.

- 166 Disc free space map is bad.
- 167 Allocation is disabled for disc free space map.
- 168 Defective tracks table is unreadable.
- 169 Disc I/O error.
- 170 Virtual memory is only valid on system volumes.
- 171 Directory size is not valid for specified volume.
- 172 Spool files are only valid on system volumes.
- 173 Item number is only valid on MPE XL systems.
- 174 Item number is only valid on MPE V systems.
- 175 List length specified is invalid.
- 176 Item number / volume specifier number
 combination is illegal.
- 177 Item is not yet implemented.
- 178 Volume table is in an inconsistent state.
- 179 Unrecognized drive type.
- 150 Array passed in cannot hold all names - List
 truncated.
- 151 File label is unreadable.

In addition, the following warnings/errors may be returned by the XL version of HPVOLINFO:

- 180 Physical I/O error.
- 181 An unexpected error was detected. The error stack
 should be checked to determine the exact error.
- 182 An error was detected in the label management
 subsystem. The error stack should be checked to
 determine the exact error.
- 183 Disc access error. The error stack should be checked
 to determine the exact error.
- 184 A mirrored volume that was specified is disabled.
- 185 The volume set specified is not a volume set on the
 system.

- 186 The volume class specified is not present in the volume set specified.
- 187 The member volume specified is not present in the volume set specified.
- 152 Parts of the set or class are not mounted. Data was only gathered on the portion of the set or class that was mounted so the data may be incomplete.

volspecifiernum

16-bit signed integer by value (optional)

A 16-bit integer indicating which volume specifier is to be used to obtain information from HPVOLINFO. The default value for this parameter is 0 if it is not included by the caller. This parameter is used in conjunction with the volspecifier parameter. The following are valid volume specifier numbers:

- 0 volume specifier is ignored. Using this specifier number is equivalent to specifying all the volumes on the system.
- 1 volume specifier is the logical device number of the volume for which information is to be obtained.
- 2 volume specifier is a volume set name.
- 3 volume specifier is a volume set/volume class name pair.
- 4 volume specifier is a volume set/volume name pair.
- 5 volume specifier is a device class name.

volspecifier

type varies (optional)

The volspecifier is optional when the volspecifiernum is 0 since the volspecifier is ignored. However, for volspecifiernums 1 through 5, the volspecifier parameter must be specified. On MPE V, volspecifier must be declared as a byte array. The data type of the volspecifier depends on the volspecifiernum:

volspecifiernum	volspecifier
0	ignored
1	16-bit signed integer
2,3,4,5	character array

When a 0 is used as the volspecifiernum, the volspecifier is ignored. When a volspecifiernum of 0 is used, it refers to all the volumes on the system. This includes all the system and nonsystem volumes.

When a 1 is used as the volspecifiernum, the volspecifier must be a ldev number which corresponds to a configured and mounted volume. An ldev number can be any number between 1 and 999.

For the character specifiers, the first character determines the delimiter character for the parameter. The delimiter must be printable, cannot be alphanumeric, and cannot be one of the special characters ".", ":", or "_" as explained below. For example, to pass the volume set FOO, the following array is a valid way to pass FOO using '%' as the delimiter: %FOO%.

For specifiers 3 and 4, the volume set name and the volume class or volume name must be separated by a colon. For example, %SET1:CLASS0% or %SET2:VOLUME8% may be used. A colon (:) *cannot* be used as a delimiter character.

Since a volume set or class can be fully qualified on MPE V, periods (.) are allowed in the name. Because periods (.) and underscores (_) are allowed in a MPE XL name, these characters (period and underscore) *cannot* be used as delimiters.

With specifiers 2 and 3 on MPE V, for private volumes, a volume set/class name may be partially or fully qualified (e.g. VSETNAME.GROUP.ACCNT or CLASSNAM.GROUP.ACCNT). Each field of the name must be one to eight alphanumeric characters (beginning with a letter) for a possible total of 55 characters, e.g.:

```
%SETxxxxx.GROUPxxx.ACCOUNTx:CLASSxxx.GROUPxxx.ACCOUNTx%
```

has six eight-character fields, four periods, a colon, and two delimiters. When the volume set or class name is not fully qualified, it refers to the volume set or class in the logon group and/or account.

On MPE XL, a valid volume set or class name consists of as many as 32 characters, where the first character is alphabetic, followed by any combination of alphanumeric characters. The MPE XL name may include the underscore (_) and the period (.).

On MPE XL, the name of the system volume set is "MPEXL_SYSTEM_VOLUME_SET". Since the system volume set on MPE V does not have a predefined name, the name "MPEXL_SYSTEM_VOLUME_SET" is used to be compatible with MPE XL. On both MPE V and MPE XL, for items that return volume set names (i.e. item #3 and item #12), this name is returned when returning the system volume set name.

Note that when the system volume set name is used on MPE V, it cannot be followed by a class name (see discussion of volume specifier number 5 below). Also, on MPE V group and account names cannot be used to partially or fully

qualify the set or volume name when the system volume set name is specified.

For specifier 4 on MPE V, a volume name consists of up to 8 alphanumeric characters, beginning with a letter. For private volumes, names may be partially or fully qualified (e.g. VNAME.GROUP.ACCNT). Each field of the name must be one to eight alphanumeric characters (beginning with a letter) for a possible total of 55 characters, e.g.:

`%SETXXXXX.GROUPXXX.ACCOUNTX:NAMEXXXX.GROUPXXX.ACCOUNTX%`

has six eight-character fields, four periods, a colon, and two delimiters. When the volume name is not fully qualified, it refers to the volume name in the logon group and/or account.

On MPE XL for specifier 4, the volume name consists of any string consisting of 1 to 16 alphanumeric characters, underscores, or periods, where the first character is alphabetic.

On MPE V, the concept of a volume class does not exist for the system volume set, therefore, in order to access a subset of the system volume set, device classes are used. But, on MPE XL, the concept of volume classes is valid for both system and nonsystem volume sets and therefore, volume classes take the place of device classes. Specifier 5, for Item# 6 and 7 provides compatibility between MPE V and MPE XL. Specifier 5 passes the device class of a group of volumes as they apply to the I/O configuration. The maximum number of characters allowed in the string is 8. On MPE V, when this specifier is used, it must refer to a device class that is configured to a group of volumes.

On MPE XL, when a device class name is specified, a configured and mounted volume class with the same name must exist in the system volume set. Data will be returned based on this *volume class* in the *system volume set* if it exists; otherwise an error will result.

itemnum

16-bit signed integer by value (optional)

Cardinal number of the item desired. This specifies which item value is to be returned. Refer to Item# in Table 2-2.

item

type varies (optional)

On MPE V, item must be declared as a byte array. The actual type of the item specified by the corresponding item number. Refer to Item in Table 2-2.

SPECIAL CONSIDERATIONS

No special capabilities are required in order to use the HPVOLINFO intrinsic.

Split-stack calls are not permitted.

When an error is returned, the values in the item parameters are all undefined. It is not guaranteed that the data returned in an item is meaningful if any status value less than 0 is returned.

On MPE V, real values are accepted from the caller and returned to the caller in 64-bit HP3000 format. This is the default format for MPE V.

On MPE XL, real values are accepted from the caller and returned to the caller in the format that is the default for the mode of the caller. If the intrinsic is called from compatibility mode, then any real values specified to HPVOLINFO must be in 64-bit HP3000 format and any real values returned by HPVOLINFO will be in that format. If the intrinsic is called from native mode, then any real values specified to HPVOLINFO must be in 64-bit IEEE format and any real values returned by HPVOLINFO will be returned in that format. Since the format used is always the default for the mode of the caller, this difference will have no impact on porting between MPE V and MPE XL.

If a lot of activity is occurring on the system while this intrinsic is called, some of the item values returned may not reflect the expected result. For example, when HPVOLINFO is called to return the disc space used by permanent files, a value is returned. But, if immediately after the value is returned, a process on the system purges a file (FCLOSEs a file with disposition 4), the value will not reflect this difference.

On MPE V, a set or class is considered to be logically mounted if all of its members are logically mounted (i.e. LMOUNT or MOUNT command was used).

On MPE XL, if the volume specifier is a set or class then at least the master volume must be logically mounted (i.e. volume must be in a master or member state). If the volume specifier is a logical device number or a volume name then both the volume specified and the master volume (of the set enclosing the volume specified) must be logically mounted.

If the volume specifier is a logical device number then it must be a member of a set or class that is logically mounted. If the volume specifier is a volume set name then the set must be logically mounted. If the volume specifier is a volume class name then the class must be logically mounted. If the volume specifier is a volume name then that volume must be a member of a set or class that is logically mounted. When the volume specifier is a device class name, all of the logical device numbers in the specified device class must be members of logically mounted sets/classes. Finally, all the volumes on the system (whether they are logically mounted or not) may be specified by using volume specifier number 0.

If the volumes for volume specifier numbers 1 through 5 are not logically mounted as specified above then the HPVOLINFO intrinsic will return a "volume not mounted" error. If the caller chooses to continue with the same specifier, the LMOUNT (on MPE V) or VSOPEN (on MPE XL) command can be used with the COMMAND or HPCICOMMAND intrinsic to logically mount the appropriate volume sets/classes. If a volume is taken offline while the intrinsic is accessing it, the process will hang (because IOs cannot complete to the disc) until the volume is back online.

On MPE XL, since mirrored discs maintain identical copies of the same information on two discs, the values that are returned by this intrinsic reflect information from only one of the volumes in a mirrored disc pair. When retrieving an ldev number (Item# 13) using a volume name that is associated with a mirrored disc pair, only one of the ldev numbers of the mirrored pair will be returned. Which one of the two ldev numbers will be returned is random and therefore, it should be noted that the ldev number returned in this case may be different across system start ups. Subsequent use of the ldev numbers returned for mirrored discs are guaranteed to provide accurate information for the mirrored volume set.

On MPE XL, if information is requested for the split backup volume set the information returned will be for the split user volume set.

ITEM NUMBER, ITEM SUMMARY

The itemnums and items are described here. All item parameters are passed by reference.

Item# = 2

Number of Volume Sets

Returns the number of system and nonsystem volume sets that are configured on the system. This item may be used in conjunction with Item# 3. This item returns a 32-bit signed integer containing the number of volume sets. Note: 0 is the only valid specifier.

Item# = 3

List of Volume Set Names

Returns a list of all the system and nonsystem volume set names mounted on the system. On MPE V, the volume set name is fully qualified for private volumes (i.e. "volume-set-name.group.account"), each field consisting of one to eight alphanumeric characters, for a possible total of 26 characters (a name, group, and account and two periods). On MPE XL, the volume set name consists of a string consisting of 1 to 32 alphanumeric characters, underscores, or periods. The item must be a character array where the list of set names will be returned. The first 4 bytes of the array are interpreted as a 32-bit integer describing the length of the array. The caller must set this value to equal the maximum number of names that will fit in the array being passed. Item# 2 can be used to determine the maximum number of names that could be returned. Upon return, the value will have been modified to reflect the actual number of names returned. The remaining bytes will be mapped to a list of 32-byte names.

Item# = 4

Number of Volume Classes

Returns the number of volume classes that a volume or volume set is associated with. This item may be used in conjunction with Item# 5. A volume can be associated with more than one volume class, therefore, when a 1 or 4 is used as the specifier, the number returned is the number of volume classes that the volume is a member of. When a 2 is used as the specifier, the number returned is the number of volume classes that are a subset of the volume set. On MPE XL, this number only includes classes whose members are all logically mounted. This item returns a 32-bit signed integer containing the number of volume classes.

Item# = 5

List of Volume Class Name

Returns a list of volume class names. A volume can be associated with more than one volume class, therefore, when a 1 or 4 is used as the specifier, the list returned is a list of volume classes that the volume is a member of. When a 2 is used as the specifier, the list returned is a list of volume classes that are a subset of the volume set. On MPE XL, the list only includes the names of classes whose members are all logically mounted. On MPE V, the volume class name is fully qualified for private volumes (i.e. "volume-class-name.group.account"), each field consisting of one to eight alphanumeric characters, for a possible total of 26 characters (a name, group, and account and two periods). On MPE XL, the volume class name consists of

a string consisting of 1 to 32 alphanumeric characters, underscores, or periods. The item must be a character array where the list of class names will be returned. The first 4 bytes of the array are interpreted as a 32-bit integer describing the length of the array. The caller must set this value to equal the maximum number of names that will fit in the array being passed. Item# 4 can be used to determine the maximum number of names that could be returned. Upon return, the value will have been modified to reflect the actual number of names returned. The remaining bytes will be mapped to a list of 32-byte names.

Item# = 6

Number of Member Volumes

Returns the number of member volumes in the specified volume set/class or device class. This item may be used in conjunction with Item# 7. When a 2 or 3 is used as the specifier, the number of member volumes that make up the volume set or class is returned. When a 5 is passed, the number of member volumes configured with the passed device class is returned. For specifier 2 or 3, the returned number includes the master volume in the total count. For example, if a volume set consists of a master volume, MASTER and two member volumes, MEMBER1 and MEMBER2, and the specifier used is a volume set name, the number that will be returned for this item is three. On MPE XL, since you can remove some or all of the volumes in a volume set (excluding the master volume), this number will depend on the number of volumes you have mounted at the time the intrinsic call is made. On MPE V, since the concept of master and member volumes only refer to private volumes, if the system volume set is specified, the count will consist of the number of volumes that are designated as system volumes. On MPE XL, since mirrored discs maintain identical copies of the same information on two discs, the number returned by this item will reflect only one of the volumes in a mirrored disc pair. This item returns a 32-bit signed integer containing the number of member volumes.

Item# = 7

List of Member Volume Names

Returns the list of names of the member volumes in the specified volume set/class or device class. When a 2 or 3 is used as the specifier, the list of member volumes that make up the set or class is returned. When a 5 is passed, the list of member volumes configured with the passed device class is returned. On MPE V for specifier 2 or 3, the returned list will include the master volume. On MPE XL, a volume class need not include the master volume so that specifier 3 may return a list that does not include the master volume. On MPE XL, since you can remove some or all of the volumes in a volume set (excluding the master volume), this list will depend on the number of volumes you have mounted at the time the intrinsic call is made. On MPE V, since the concept of master and member volumes only refer to private volumes, if the system volume set is specified, the list will consist of the list of volumes that are designated as system volumes. The item must be a character array where the list of member volumes will be returned. The first 4 bytes of the array are interpreted as a 32-bit integer describing the length of the array. The caller must set this value to equal the maximum number of names that will fit in the array being passed. Item# 6 can be used to determine the maximum number of names that could be returned. Upon return, the value will have been modified to reflect the actual number of names returned. The remaining bytes will be mapped to a list of 32-byte names.

Drive Type
Item# = 8 Returns the type of the drive specified. The drive type refers to the name of the drive, i.e. HP7935 or HP7937. The character array that is used must be large enough to contain the longest type string, currently 13 characters.

Drive Sector Size
Item# = 9 Returns the drive's logical sector size. Currently this logical size is 256 bytes. In the future, discs may have different physical sector sizes. However, MPE will map them to system wide logical sector sizes. This item returns a 32-bit signed integer containing the drive's logical sector size in bytes.

Volume Type
Item# = 10 Returns a 32-bit integer value specifying the volume type. Valid types are:

- 1 - System Volume
- 2 - NonSystem Volume

On MPE, there are two types of volume sets - the system volume set and the nonsystem volume sets. A volume from the system volume set is considered a system volume, and a volume from the nonsystem set is considered a nonsystem volume. On MPE V, a nonsystem set is equivalent to a private volume set.

Volume Name
Item# = 11 Returns the volume name of the specified ldev. On MPE V, the volume name is fully qualified for private volumes (i.e. "volume-name.group.account"), each field consisting of one to eight alphanumeric characters, for a possible total of 26 characters (a name, group, and account and two periods). On MPE XL, the volume name consists of a string consisting of 1 to 16 alphanumeric characters, underscores, or periods. The character array must be specified with a length of 32 bytes.

Volume Set Name
Item# = 12 Returns the volume set name corresponding to the passed ldev. A ldev can be associated with only one volume set. On MPE V, the volume set name is fully qualified for private volumes (i.e. "volume-set-name.group.account"), each field consisting of one to eight alphanumeric characters, for a possible total of 26 characters (a name, group, and account and two periods). On MPE XL, the volume set name consists of a string consisting of 1 to 32 alphanumeric characters, underscores, or periods. The character array must be specified with a length of 32 bytes.

Logical Device Number
Item# = 13 Returns the logical device number of the specified volume. On MPE XL, since mirrored discs maintain identical copies of the same information on two discs, either of the two discs may be returned by this item. This item returns a 16-bit signed integer containing the logical device number.

Volume Capacity

Item# = 14 & 15

Returns the volume capacity. When a 1 or 4 is used as the specifier, the volume capacity consists of the capacity of the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the capacity of the volumes that make up the volume set or class are totaled and this total value is returned. Item# 14 returns a 64-bit signed integer containing the volume capacity in sectors and item# 15 returns it as a 64-bit real.

Item# = 16 & 17

Total MPE Overhead

Returns the total MPE overhead. The total MPE overhead consists of everything on a volume that is not set aside for file space use. In other words, the overhead is the volume space that is used for operating system purposes. Some of the space that is considered MPE overhead includes the following: on MPE V - volume label, virtual memory, directory, defective tracks/sector table, initial segments, disc cold load information table, volume table, free space map and channel programs; on MPE XL - volume label, file label table, directory, volume set information table, free space map, transient space, and transaction management overhead. A subset of the MPE overhead is returned through itemnums 18 & 19 (MPE XL transient space), 20 & 21 (MPE XL configured transient space), 22 & 23 (MPE V virtual memory), 24 & 25 (Directory), 26 & 27 (MPE XL file label tables), and 28 & 29 (MPE XL transaction management). When a 1 or 4 is used as the specifier, the total MPE overhead consists of the MPE overhead on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the MPE overhead on the volumes that make up the set or class is returned. Note: the files that comprise the code for the operating system are not included in this overhead. Item# 16 returns a 64-bit signed integer containing the total MPE overhead in sectors and item# 17 returns it as a 64-bit real.

Item# = 18 & 19

MPE XL Transient Space Overhead

Returns the MPE XL transient space overhead. This item is only valid on MPE XL. The transient space overhead is volume space that is used for temporary processes such as stacks, heaps, and operating system data structures. When a 1 or 4 is used as the specifier, the transient space consists of the transient space on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the transient space on the volumes that make up the set or class is returned. The transient space overhead is a subset of the total MPE overhead (Item# 16 & 17). Item# 18 returns a 64-bit signed integer containing the transient space overhead in sectors and item# 19 returns it as a 64-bit real.

Item# = 20 & 21

Configured Maximum MPE XL Transient Space

Returns the configured maximum MPE XL transient space. This item is only valid on MPE XL. The configured maximum MPE XL transient space overhead is volume space that is configured for transient space use, but is not necessarily used. See Item# 18 & 19. It is the space that is configured for stacks, heaps and operating system structures. When a 1 or 4 is used as the specifier, the configured maximum transient space consists of the configured transient space on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the configured transient space on the volumes that make up the volume set or class is returned. Item# 20 returns a 64-bit signed integer containing the configured maximum transient space in sectors and item# 21 returns it as a 64-bit real.

MPE V Virtual Memory Overhead

Item# = 22 & 23

Returns the MPE V virtual memory overhead. This is only valid on MPE V. The MPE V virtual memory overhead is the amount of volume space that is allocated for saving segments of main memory temporarily. The amount of configured virtual memory space is equivalent to the amount of used virtual memory space. Virtual memory on MPE V, is allocated on system volumes only. There is no virtual memory on private volumes. When a 1 or 4 is used as the specifier, the virtual memory overhead consists of the virtual memory on the volume whose ldev or volume name was specified. When a 2 is passed, the only valid specifier is "MPEXL_SYSTEM_VOLUME_SET" since virtual memory is allocated only on system volumes. Because virtual memory is only valid on the MPE V system volume set and because the concept of volume classes does not hold for the MPE V system volumes, specifier 3 is not a valid specifier for this item. The MPE V virtual memory overhead is a subset of the total MPE overhead (Item# 16 & 17). Item# 22 returns a 64-bit signed integer containing the virtual memory overhead in sectors and item# 23 returns it as a 64-bit real.

Item# = 24 & 25

Directory Space Overhead

Returns the Directory space overhead. Directory space is the area on system and nonsystem volumes reserved for accounting information. More specifically, the directory space overhead consists of the directory space used for permanent files. When a 1 or 4 is used as the specifier, the directory space overhead consists of the directory space on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the directory space overhead on the volumes that make up the volume set or class is returned. On MPE V, the system directory is allocated on ldev 1 and for private volumes the directory is allocated on the master volume of the volume set or class. Therefore, specifying a volume set or class will give you the same results as specifying the master volume of the set or class. The directory space overhead is a subset of the total MPE overhead (Item# 16 & 17). Item# 24 returns a 64-bit signed integer containing the directory space overhead in sectors and item# 25 returns it as a 64-bit real.

Item# = 26 & 27

MPE XL File Label Overhead

Returns the MPE XL file label overhead. This item is only valid on MPE XL. On MPE XL, each volume has its own Label Table. The Label Table contains file labels and extent descriptors for files that begin on that volume. When a 1 or 4 is used as the specifier, the file label overhead consists of the overhead on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the file label overhead on the volumes that make up the set or class is returned. The file label overhead is a subset of the total MPE overhead (Item# 16 & 17). Item# 26 returns a 64-bit signed integer containing the file label overhead in sectors and item# 27 returns it as a 64-bit real.

Item# = 28 & 29

MPE XL Transaction Management Overhead

Returns the MPE XL transaction management overhead. This item is only valid on MPE XL. The transaction management overhead consists of any logging information that is maintained in order to provide file consistency and also file recovery. When a 1 or 4 is used as the specifier, the transaction management overhead consists of any logging information kept on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the transaction management overhead on the volumes that make up the volume set or class is returned. The transaction management overhead is a subset of the total MPE overhead (Item# 16 & 17). Item# 28 returns a

64-bit signed integer containing the transaction management overhead in sectors and item# 29 returns it as a 64-bit real.

Item# = 30 & 31

Spool File Disc Space Usage

Returns the MPE spool file disc space usage. Spool file space consists of the volume space that is used by hidden spool files. Hidden spool files are files that are not a part of the permanent file space. This space can only be found on system volumes that are configured with the device class of SPOOL. Spool file space is not allocated on nonsystem volumes. When a 1 or 4 is used as the specifier, the spool file space consists of the space that is used on the volume whose ldev or volume name was specified. When a 2 is used as the specifier, the volume set name must refer to the system volume set name. Using 3 as a specifier is only valid on MPE XL. Item# 30 returns a 64-bit signed integer containing the spool file disc space usage in sectors and item# 31 returns it as a 64-bit real.

Item# = 32 & 33

Disc Space Used by Permanent Files

Returns the disc space used by permanent files. When a 1 or 4 is used as the specifier, the disc space used by files consists of the disc space used by permanent files on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the disc space used by permanent files on the volumes that make up the volume set or class is returned. Item# 32 returns a 64-bit signed integer containing the disc space used by files in sectors and item# 33 returns it as a 64-bit real.

Item# = 34 & 35

Reserved for Disc Space Used by Temporary Files

Item# = 36 & 37

Free Space Distribution Array

Returns the free space distribution array. The caller passes an array that specifies a series of ranges. The intrinsic will return the number of free areas whose size is within each of the ranges. The caller must pass an array of 64-bit values. The values may be in integer format (Item#36) or real format (Item# 37). On MPE V, the largest value that may be specified in either format is 2,147,483,646. Real values will be rounded off by the intrinsic. The first value is the number of ranges (minimum number of ranges is 2 and the maximum is 16). The remaining values are the lower bounds for the ranges in ascending order. Upon return, the first element will be the number of free areas whose size is smaller than the smallest bound specified. Each remaining element will be the number of free space areas whose size is greater than or equal to the bound and less than the next larger bound. The following shows an example which returns values in 6 ranges.

Array Index	Values Passed In	Free Area Size Ranges
1	6	1 - 9 contiguous sectors
2	10	10 - 99 contiguous sectors
3	100	100 - 999 contiguous sectors
4	1000	1000 - 9999 contiguous sectors
5	10000	10000 - 99999 contiguous sectors
6	100000	100000 - and up contiguous sectors

For example, if there are 4 areas of free space that are between the sizes of 100 and 999, the third value of the free space distribution array would contain a 4 upon return. NOTE: the number of ranges specified in the example (in the first element of the array) is 6, but only 5 lower bounds are specified because the smallest lower bound is assumed to be 1. When a 1 or 4 is used as the specifier, the free space distribution array consists of the contiguous free space areas on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the free space distribution array returns the total values from the volumes that make up the volume set or class. The item passed must be a variable length array of 64-bit numbers (maximum array length of 16 elements). Item# 36 returns an array of 64-bit integers containing the free space distribution and item# 37 returns it as an array of 64-bit reals.

Item# = 38 & 39

Free Space Distribution Sectors Per Range

Returns the free space distribution sectors per range. The caller passes an array that specifies a series of ranges. The intrinsic will return, for each range specified in the array, the total free space for free areas found in that range. See Item# 36 & 37 for the format of the free space distribution array passed to the intrinsic and for the format of the returned array.

For example, using the input array from the example in Item# 36 & 37, if there are 4 areas of free space that are between the sizes of 100 and 999, and the sizes of these areas are 101, 850, 519, and 432 sectors, the third value of the return array would contain a 1902 ($101+850+519+432 = 1902$). When a 1 or 4 is used as the specifier, the free space distribution sectors per range consists of the contiguous free space areas on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the free space distribution sectors per range returns the total values from the volumes that make up the volume set or class. The item passed must be a variable length array of 64-bit numbers (maximum array length of 16 elements). Item# 38 returns an array of 64-bit integers containing the free space distribution sectors per range and item# 39 returns it as an array of 64-bit reals.

Item# = 40 & 41

Total Free Space

Returns the total free space on a volume or a group of volumes. When a 1 or 4 is used as the specifier, the total free space consists of the total free space on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the total free space on the volumes that make up the volume set or class is returned. Item# 40 returns a 64-bit signed integer containing the total free space in sectors and item# 41 returns it as a 64-bit real.

Item# = 42 & 43

Largest Contiguous Free Space Area

Returns the largest contiguous free space area on a volume or a group of volumes. When a 1 or 4 is used as the specifier, the largest contiguous free space consists of the largest contiguous free space on the volume whose ldev or volume name was specified. When a 2 or 3 is passed, the largest contiguous free space on the volumes that make up the volume set or class is returned. For example, for specifiers 2 or 3, if a volume set is composed of the ldevs 2, 3 and 4, and the largest contiguous free space on these volumes

are 37785, 56528, and 56171, respectively, the value that is returned is 56528. Item# 42 returns a 64-bit signed integer containing the largest contiguous free space area in sectors and item# 43 returns it as a 64-bit real.



ITEM#	ITEM	TYPE	APPLICABLE VOLUME SPECIFIERS
2	Number of volume sets	I32	0
3	List of volume set names	CA	0
4	Number of volume class names	I32	1,2,4
5	List of volume class names	CA	1,2,4
6	Number of member volumes	I32	2,3,5
7	List of member volume names	CA	2,3,5
8	Drive type	CA	1,4
9	Sector size (bytes)	I32	1,4
10	Volume type	I32	1,4
11	Volume name	CA	1
12	Volume set name	CA	1
13	Logical device number	I16	4
14	Volume Capacity (sectors)	I64	1,2,3,4
15	Volume Capacity (sectors)	R64	1,2,3,4
16	Total MPE overhead (sectors)	I64	1,2,3,4
17	Total MPE overhead (sectors)	R64	1,2,3,4
18	MPE XL transient space overhead (sectors)	I64	1,2,3,4
19	MPE XL transient space overhead (sectors)	R64	1,2,3,4
20	Configured maximum MPE XL transient space (sectors)	I64	1,2,3,4
21	Configured maximum MPE XL transient space (sectors)	R64	1,2,3,4
22	MPE V virtual memory overhead (sectors)	I64	1,2,4
23	MPE V virtual memory overhead (sectors)	R64	1,2,4
24	Directory space overhead (sectors)	I64	1,2,3,4
25	Directory space overhead (sectors)	R64	1,2,3,4

26	MPE XL file label overhead (sectors)	I64	1,2,3,4
27	MPE XL file label overhead (sectors)	R64	1,2,3,4
28	MPE XL transaction management overhead (sectors)	I64	1,2,3,4
29	MPE XL transaction management overhead (sectors)	R64	1,2,3,4
30	Spool file disc space usage (sectors)	I64	1,2,3,4
31	Spool file disc space usage (sectors)	R64	1,2,3,4
32	Disc space used by perm files (sectors)	I64	1,2,3,4
33	Disc space used by perm files (sectors)	R64	1,2,3,4
34	(Reserved for) Disc space used by temp files (sectors)	I64	1,2,3,4
35	(Reserved for) Disc space used by temp files (sectors)	R64	1,2,3,4
36	Free space distribution array	I64A	1,2,3,4
37	Free space distribution array	R64A	1,2,3,4
38	Free space distribution sectors per range	I64A	1,2,3,4
39	Free space distribution sectors per range	R64A	1,2,3,4
40	Total free space (sectors)	I64	1,2,3,4
41	Total free space (sectors)	R64	1,2,3,4
42	Largest contiguous free space area (sectors)	I64	1,2,3,4
43	Largest contiguous free space area (sectors)	R64	1,2,3,4

**** I16 = 16-bit signed integer
 I32 = 32-bit signed integer
 I64 = 64-bit signed integer
 R64 = 64-bit real
 CA = character array
 I64A = 64-bit signed integer array
 R64A = 64-bit real array

Table 2-2



PRODUCT RELEASE INFORMATION

SECTION

5

MPE V/E PRODUCT RELEASES

The following table is a Historical/Current list of new products introduced for each MPE V/E version release for the HP 3000 Computer System. It also includes products added after various releases of the Master Installation Tape (MIT).

MPE V/E Product Releases

V.UU.FF.	Name	Release	Product(s) Introduced/Added
G.03.04 SUBSYS VUF = G.A3.04	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.03.08	V-DELTA-8	R2944	Roll-in of V-Delta-7 HP CDINSTAL (HP32437) HP-IB CD-ROM (HPC1707) HP LaserRelease MICRO 3000RX
G.A3.09	V-DELTA-9	R3010	Roll-in of V-Delta-8 HP X.400/3000 Products (HP32056A) NewWave Office (B1720A) (Incorporation of General Release Patches)
G.1P.00	Platform 1P	R3035	Roll-in of V-Delta-9 Series 6400 Model 1300H DDS
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) HP GlancePlus/V (HP50733A) HP DeskManagerPLUS (HP36567A)*
G.22.00	Release 22	R3140	Roll-in of Release 21 Various Enhancements/Fixes No new products

*Product has been retrofitted on this version.

HP POWERPATCH MIT RELEASES

Hewlett-Packard now has a new software support service, HP PowerPatch. This service provides you with the ability to order current general-release FOS and workstation patches specifically designed for your system.

HP PowerPatch is provided to those of you who have AMS or RCS software support service agreement. With HP PowerPatch you will receive the most current set of patches available for your system.

If there is an HP PowerPatch tape available for your release, it should be ordered prior to performing the installation or update. Contact your Response Center. They will inform you if there is a current patch tape for the installation/update you are planning to perform. If there is an appropriate HP PowerPatch tape, you can install it at the same time as the installation/update. These patch sets will be revised periodically and are cumulative.

SUPPORTED RELEASES

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

SUPPORTED MIT MATRIX

MITs	V.UU.FFs	Supported Systems	Support Termination Date
V-Delta-4	G.03.04, G.B3.04, G.C3.04	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	OCT 1, 1990
V-Delta-5	G.A3.05, G.B3.05	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	SEPT 1, 1991
V-Delta-8	G.A3.08	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	JAN 1, 1992
V-Delta-9	G.A3.09	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	MAY 1, 1992
Platform 1P	G.1P.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	**AUG 1, 1993
Release 20	G.20.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	***DEC 1, 1992
Release 21	G.21.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	***DEC 1, 1992
Release 22	G.22.00	37, 39, 4X, 5X, 6X, 70, Micro3000 & 3000XE,LX,GX	***DEC 1, 1992

* DOD version (G.03.04) will be supported indefinitely.

** Or twelve months after the actual first customer ship date of next platform, whichever is later.

*** Or three months after the actual first customer ship date of the next platform, whichever is later.



CATALOG OF USER DOCUMENTATION

SECTION

6

This section 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. For additional copies of manual updates, Manual Update Services (MUS) can be ordered.

As of this release the subscription services column of this catalog has been removed. Contact your SE for specific information about subscription services.

Manual Title	Customer Order No.	Latest Edition	Current Update
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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	8/88	
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	
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Native Language Support Reference Manual	32414-90001	11/87	10/88
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TurboIMAGE Database Management System Reference Manual	32215-90050	12/85	
HP Hi-Li Reference Manual	32424-90002	11/87	

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HP 3000 Computer Systems

COMMUNICATOR 3000, Version G.22.00 of MPE V/E (Release 22)
Volume 3, Issue 4

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