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VAX/VMS V1.6

The text "Release Notes" is centered in a bold, sans-serif font within a white rectangular box.

Release Notes

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Order No. AA-J039A-TE

The text "VAX11" is written in a large, bold, sans-serif font, with the "11" being significantly larger than the "VAX".

VAX11

August 1979

This document defines the VAX/VMS V1.6 update kit and describes how to install the kit on a VAX/VMS V1.5 system. Successful installation of the kit produces a VAX/VMS V1.6 system.

VAX/VMS V1.6

Release Notes

Order No. AA-J039A-TE

SUPERSESSON/UPDATE INFORMATION:	This is a new document. It supplements the information in the <i>VAX/VMS Release Notes</i> for V1.5
OPERATING SYSTEM AND VERSION:	VAX/VMS V1.6
SOFTWARE VERSION:	VAX/VMS V1.6

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VAX/VMS V1.6 RELEASE NOTES

1.0 HOW TO INSTALL VAX/VMS V1.6

Version 1.6 of VAX/VMS is distributed as an update kit consisting of documentation and VAX/VMS patch and replacement files on floppy diskettes.

When you install the kit, a VAX/VMS V1.6 system is produced, provided that:

1. The kit is installed on a VAX/VMS V1.5 system
2. You have applied no other patches to the VAX/VMS V1.5 system
3. You install all the updates contained in the kit (all updates are mandatory)

1.1 Identifying the VAX/VMS V1.6 Kit

Existing VAX/VMS V1.5 customers receive this kit, which they then use to update their V1.5 system. Customers who purchase a VAX/VMS license after V1.6 is released receive the kit as a component of their order. These new customers must install a VAX/VMS V1.5 system and then install the V1.6 update kit.

The components of the VAX/VMS V1.6 update kit are:

1. SPD 25.1.4, VAX/VMS Operating System Version 1.6 (Order No. AE-C770D-TE).
2. This manual, VAX/VMS V1.6 Release Notes (Order No. AA-J039A-TE).
3. The update medium, seven floppy diskettes that contain the patches and replacement modules for the VAX/VMS components that are changed by this release.

<u>Diskette Label</u>	<u>Part Number</u>
VMSV160A BIN RX01	AS-J062A-BE
VMSV160B BIN RX01	AS-J063A-BE
VMSV160C BIN RX01	AS-J064A-BE
VMSV160D BIN RX01	AS-J065A-BE
VMSV160E BIN RX01	AS-J066A-BE
VMSV160F BIN RX01	AS-J067A-BE
VMSV160G BIN RX01	AS-J068A-BE

4. The manual, RMS-11 User's Guide (Order No. AA-D538A-TC), which replaces the following VAX/VMS documentation:

Introduction to RMS-11 (Order No. AA-0001A-TC) and RSX-11M RMS-11 V1.5 Utilities User's Guide (Order No. AA-D083A-TC).

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5. The manual, RMS-11 MACRO-11 Reference Manual (Order No. AA-H683A-TC), which replaces the following VAX/VMS documentation:

IAS/RSX-11M RMS-11 MACRO Programmer's Reference Manual (Order No. AA-0002A-TC).

1.2 VAX/VMS Optional Software Products

This kit contains updates to VAX/VMS components; it does not contain updates to any VAX/VMS Optional Product. The following table lists the names of optional software products currently available for sale to customers; the versions supported for VAX/VMS V1.5, and the versions supported for VAX/VMS V1.6.

VAX/VMS Optional Software Products

Product Name	Version Supported by VAX/VMS	
	V1.5	V1.6
DECnet-VAX	1.1	1.2
VAX-11 FORTRAN IV-PLUS	1.2	1.3
VAX-11 BLISS-32	1.0	1.0
VAX-11 COBOL-74	4.0	4.1
VAX-11 2780/3780 PROTOCOL EMULATOR	---	1.0
FORTRAN IV/VAX TO RSX CROSS COMPILER	2.2	2.3
PDP-11 BASIC-PLUS-2/VAX	1.5	1.5
PDP-11 DATATRIEVE/VAX	1.1	1.2
PDP-11 CORAL-66/VAX	3.0	3.0

1.3 Before Installing the Kit

To ensure successful installation of the kit, do the following:

1. Read the VAX-11 Software Installation Guide.

The Guide is the basic document for understanding how to install or update any VAX/VMS component or optional product.

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2. Read the VAX/VMS Release Notes for VAX/VMS V1.5.

The V1.5 Release Notes contain the information required to bring earlier versions of VAX/VMS to the V1.5 support level as well as notes needed for the successful use of V1.5. All customers should read the V1.5 Release Notes, as the V1.6 Release Notes supplement the information in the V1.5 Release Notes.

3. Read this manual, the VAX/VMS V1.6 Release Notes.

This manual describes how to produce a VAX/VMS V1.6 system from the update kit and a VAX/VMS V1.5 system.

4. Ensure that the VAX11/780 is at the required hardware ECO level.

There are no hardware or microcode ECOs required for V1.6. However, do ensure that the V1.5 ECOs, as noted in the Release Notes for V1.5, have been made.

1.4 Installing the Kit

The procedures in the VAX-11 Software Installation Guide describe how to install the kit. Refer to Section 6.2, "Updating the System."

When you perform the update procedure, insert the floppy diskettes in this order:

VMSV160A
VMSV160B
VMSV160C
VMSV160D
VMSV160E
VMSV160F
VMSV160G

1.4.1 Printing Update Descriptions - Updates are either patches to existing code or module replacements. The application of the updates is controlled by command files on the update distribution medium (the floppy diskettes). These command files contain comments that briefly describe each update. If you want a description of each update printed at the operator's console as the updates are applied, be sure to answer YES to the update procedure question:

Do you want an explanation of each update displayed during the update? (Y/N):

1.4.2 Printing Patches Applied by the Update Kit - As the updates are applied, two outputs are produced: the patched (or replaced) images and journal files of the patches. Journal files contain a record of each patch made during the update process. If you want a listing of the patches produced by the update process, you must print them. The procedure is:

1. Complete the update procedure that installs VAX/VMS V1.6, including rebooting the system to transfer control to V1.6 (as described in the VAX-11 Software Installation Guide).

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2. Log in to any account, and issue the following command:

```
PRINT SYS$SYSTEM:*.JNL,SYS$LIBRARY:*.JNL
```

The journal files for the patches will be submitted to the SYS\$PRINT queue.

Note that the journal files contain information about patches applied to native mode images. They do not contain information about modules which have been replaced during the update process or patched compatibility mode images.

2.0 DIFFERENCES BETWEEN VAX/VMS V1.5 AND V1.6

This section summarizes the differences between VAX/VMS V1.5 and VAX/VMS V1.6. Because V1.6 is an update kit and not a major release of VAX/VMS, there are few functional changes to the software. Most changes are fixes to problems found since the last version was released.

2.1 RMS-11 V1.8 Now Supported

This update includes replacement modules that upgrade RMS-11 V1.5 to RMS-11 V1.8. RMS-11 V1.8 has added several features of interest to the VAX-11 RMS programmer and the compatibility mode programmer who builds and runs RSX-11M task images on a VAX/VMS system.

RMS-11 V1.8 enhancements include:

1. An Indexed File Load (IFL) utility, used as an initial load utility to optimize the loading of indexed files. IFL is the fastest way to load indexed files in both native and compatibility modes.
2. A new RMS-11 User's Guide, containing extensive information on file structure, file design, and use of RMS utilities (for both native and compatibility mode programmers), as well as information on ODL modifications and program optimization techniques for the compatibility mode programmer.
3. A mass-insert mode for compatibility mode programs which optimizes the loading of a collated series of records into an indexed file.
4. Deferred write capability for compatibility mode programs that write to indexed files. Now, RMS-11 I/O buffers are written only when they must be replaced, eliminating (particularly at initial file load time) the equivalent of one physical write to a program logical-record write. Note that VAX-11 RMS already has this feature.
5. Changes to the CONVERT utility to take advantage of the new mass insert and deferred write features as well as improved buffer management. While not as fast as IFL, CONVERT is another way to load indexed files in both native and compatibility modes.
6. New disk overlay ODL files (both 9KB and 12KB) for optimal overlaying of RMS code (compatibility mode only). Included is a prototype ODL that users can edit to produce customized overlays.

VAX/VMS V1.6 RELEASE NOTES

The RMS-11 documentation has changed to correspond with the RMS-11 V1.8 release:

The new manual, RMS-11 User's Guide (Order No. AA-D538A-TC), becomes part of the VAX-VMS documentation kit replacing:

Introduction to RMS-11 (AA-0001A-TC) and
RSX-11M RMS-11 V1.5 Utilities User's Guide (AA-D083A-TC).

The new manual, RMS-11 MACRO-11 Reference Manual (Order No. AA-H683A-TC) becomes part of the VAX/VMS documentation kit, replacing:

IAS/RSX-11M RMS-11 MACRO Programmer's Reference Manual (AA-0002A-TC).

3.0 PROBLEMS RESOLVED BY THIS RELEASE

The problems resolved by this release are identified in the command files that apply the updates to your system. Follow the instructions in Section 1.4.1 of this document to produce, during the update process, a listing of the problems resolved by VAX/VMS V1.6. Appendix A of this manual contains summaries of the updates in the V1.6 kit.

The following sections identify the problems and restrictions noted in the Release Notes for VAX/VMS V1.5 that have been resolved by V1.6.

3.1 VAX-11 RMS Restriction on Use of UFO Option

The Additional Notes on VAX/VMS V1.5 noted that the user file option (UFO) in the file options field (FOP) of the file access block (FAB) was restricted to use with sequential and relative files.

The restriction is now removed. You can now specify this option on an \$OPEN or \$CREATE for indexed sequential (ISAM) files.

4.0 CURRENT PROBLEMS

This section lists known problems or restrictions which exist in VAX/VMS V1.6.

NOTE

Problems and restrictions documented in the V1.5 Release Notes still exist in VAX/VMS V1.6 unless they have been documented as resolved in Section 3.0 of this manual.

4.1 VMSRTL Error Affecting FORTRAN IV-PLUS Programs

There is an error in the Run-Time Library that could cause a FORTRAN program to fail if the program attempts to execute an ENCODE or DECODE statement while another I/O statement is in progress.

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The error symptom is the following message (produced when the error OTS\$_INDATCOR is signaled):

```
%OTS-F-INTDATCOR internal data corrupted in Run-Time Library
```

A sample program that will produce this problem is the following, where the function ENC is called while processing the I/O element list for the TYPE statement. Function ENC then performs an ENCODE, causing the error to occur.

```
CHARACTER*10 ENC
TYPE *,ENC(3)
END
CHARACTER*10 FUNCTION ENC(J)
ENCODE (10,101,ENC) J
101 FORMAT (I10)
RETURN
END
```

To avoid the problem, perform ENCODE or DECODE statements outside I/O statements.

4.2 SYSGEN Utility AUTOCONFIGURE Errors

The AUTOCONFIGURE command assumes incorrect CSR addresses for all but the first line printer in a configuration. For example, AUTOCONFIGURE assumes CSR %0174004 and vector %0170 for the second line printer; the correct assignments are CSR %0164004 and vector %0170.

Until the SYSGEN code is changed, you can work around the problem by installing the line printers at the correct CSR assignments and then including appropriate commands in the start-up command file [SYSMGR]SYSTARTUP.COM.

For example, the commands for a second line printer could be:

```
$RUN SYS$SYSTEM:SYSGEN
CONNECT LP80/ADAPTER=3/CSR=%0764004/VECTOR=%0170
```

If you use the command format AUTOCONFIGURE TR-number, the SYSGEN program should include all devices on that TR in the configuration. Actually, an access violation occurs and no devices on that TR are configured.

4.3 VAX-11 RMS Restrictions

This section contains restrictions caused by problems that exist in VAX/VMS V1.6.

4.3.1 RMS\$_BUG_XX2 Status Return in ISAM \$PUT and \$UPDATE Operations - An RMS\$_BUG_XX2 error is now returned as the status for a \$PUT or \$UPDATE operation on an ISAM file when the lack of record IDs would cause a split of a primary data bucket. Previously, the problem was not recognized and could have caused damage to the file structure.

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If you receive the RMS\$BUG XX2 error, the file structure has not been corrupted. You can continue processing if you reorganize the file by reloading in sequential access mode.

The problem cannot occur when bucket size is defined as one block; is unlikely when bucket sizes are less than four blocks; may occur if large bucket sizes (greater than 16 blocks) are used.

4.3.2 Packed Decimal Data Strings Not Checked on Record Operations - Currently VAX-11 RMS does not check packed decimal data strings for validity on record operations. Thus, an invalid packed decimal string may appear to have a higher key value than the highest possible valid packed decimal string produced using the CMPP instruction.

To prevent any problems, validate packed decimal strings that are used as key values in ISAM files.

4.4 Restriction on Use of UETP Terminal Test

The UETP terminal test will fail in the following situation:

1. There are two DZ11 multiplexers in the configuration.
2. One DZ11 is interfaced to eight lines, all running at 9600 baud.
3. The other DZ11 is interfaced to eight lines, all running at 2400 baud.

The symptom is an incorrect UETP test termination message. Instead of a message similar to:

```
%UETP-I-ENDED, test of controller TTB ended at 14:38:24:29
```

a message is started, then interrupted by a vertical tab, then completes without identifying the DZ11 controller.

The problem occurs when the UETP test generates AST service routines. (See Section 5.5 of this manual.)

To avoid the problem, restrict DZ11 line speeds to 2400 baud (the default line speed) when there are two DZ11's in a configuration. Note that the problem occurs only during the UETP Terminal Test. You do not have to restrict terminal baud rates at any other time.

4.5 Restrictions on Using SYE

The current version of the SYE program cannot be run from a command file. Also, to be able to display errors with SYE, the VAX11/780 must have a +1 in the highest byte of the System Identification (SID) Register. The +1 identifies the CPU as an 11/780.

To determine whether the SID contains the correct CPU type code, have field service examine the SID Register, and set the correct CPU type code, if necessary.

4.6 Restrictions to Use of RMSIFL Utility

There are two situations where using RMSIFL could cause problems. See Section 5.2, "Corrections to RMS-11 User's Guide," for more details.

4.6.1 Records Containing Duplicate Key Values May Lose Input Order - RMS-11 routines maintain a first-in, first-out (FIFO) ordering of records containing duplicate key values. When RMSIFL sorts records, this order can change unpredictably, depending on how the records occur in the sort work files when the work files are merged.

4.6.2 Large Bucket and Record Sizes Can Cause RMSIFL Command Line Termination - RMSIFL does not limit bucket or record sizes for input or output files. However, unusually large bucket and record sizes may cause RMSIFL to terminate the command line (especially if RMSIFL must sort the input file).

4.7 Incorrect Error Message from SET and SHOW Commands

When a DCL SET or SHOW command is used with an ambiguous keyword, for example, SET P or SHOW P, DCL displays the following incorrect error message:

```
%SYSTEM-W-NORMAL, Normal successful termination
```

The correct message is the following:

```
%DCL-W-ABKEYW, Ambiguous keyword
```

This error will be corrected in VAX/VMS Version 2.0.

5.0 NOTES TO PUBLISHED DOCUMENTATION

This section contains notes that correct or supplement published documentation.

5.1 Supplementary Documentation for SYE

This section supplements the documentation for SYE now in the VAX/VMS Operator's Guide and the VAX/VMS Release Notes for V1.5.

5.1.1 Changes to SYE Prompts and Responses - The SYE prompt for the input file now defaults to [SYSERR]ERRLOG.OLD. If you have renamed the current version of ERRLOG.SYS to this file, press carriage return. If not, type the file specification of the error log file you wish to define as the input file. The prompt now looks like this:

```
_INPUT FILE      [ [SYSERR]ERRLOG.OLD ] ?
```

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The output file prompt remains as it was in V1.5. However, if the terminal is a CRT and you wish to avoid the top-of-form control for the output file, respond to the output file prompt by typing:

/NOFORMS

If you are directing the output to the line printer, respond to the output file prompt by typing:

LP:

The four display options for the options prompt are:

- ROLL-UP Displays a count of errors on devices selected by response to _DEVICE NAME prompt. The display includes a time histogram of when the entries were made, as well as the number of entries for each device type selected.
- BRIEF Displays the error heading and device registers (when applicable) for devices selected. The display includes a time histogram of when the entries were made, as well as the number of entries for each device type selected.
- CRYPTK Displays the device registers for the selected devices. Only entries made as 'device error' are displayed. Note that this option is useful only when the device name selected is a single device type and unit (e.g. DBA1).
- STANDARD Displays a full report of the devices selected and the entry types. The display includes a time histogram of when the entry types were made and the number of entries for each type.

When responding to the _DEVICE NAME prompt, you can divide entries concerning mass storage devices into two categories depending on which qualifier you append to the device name. The qualifiers are:

- /ERROR Scans device error entries.
- /CONFIGS Scans configuration change entries.

You can omit a specific device (or group of devices) from the display by typing a hyphen before the device name in response to the _DEVICE NAME prompt. For example, the reply -DMA0/ERROR would omit all device errors from DMA0.

Note that there are some _DEVICE NAME replies that can be used to enable display of errors not related to devices. For example:

- CP Extracts machine checks and SBI errors.
- ME Extracts main memory errors.
- SY Extracts errors sent to the error log through the system service, Send Message to Error Logger (\$SNDERR).
- UNKNOWN Extracts unknown or unsupported entries.

Note that these special device names do not support the /ERROR or /CONFIG qualifiers.

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5.2 Corrections to RMS-11 User's Guide (AA-D538A-TC)

The following changes should be made to the RMS-11 User's Guide.

1. Add the following note to Section 9.5.2.

NOTE

Any records containing duplicate key values can lose their input order. This note applies to:

- Duplicate Primary Keys where RMSIFL sorts the input file
- All duplicate Alternate Keys

RMS-11 routines maintain a first-in, first-out (FIFO) ordering of records containing duplicate key values. When RMSIFL sorts records, this order can change unpredictably, depending on how the records occur in the sort work files when the work files are merged.

2. Delete the following block of text from page 9-62:

"The output file must not have a bucket size greater than five blocks. Otherwise, RMSIFL prints the message:

```
?IFL -- THERE IS NOT ENOUGH IFL MEMORY FOR THE CURRENT COMMAND LINE"
```

3. Add the following note to the end of Section 9.5.4.1.

NOTE

RMSIFL dynamically allocates virtual address space to accommodate the requirements of input and output files. Therefore, the utility does not specifically limit the bucket sizes of input or output files or the sizes of records in either file. However, the combination of unusually large bucket and record sizes, especially if RMSIFL must sort the input file, can cause RMSIFL to terminate execution of the command line.

Normally, the utility terminates after printing the message:

```
?IFL -- THERE IS NOT ENOUGH IFL MEMORY FOR THE CURRENT COMMAND LINE
```

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RMSIFL also can terminate abnormally with a memory protection or other system-level error.

If either of these situations occurs:

1. Submit a Software Performance Report with all details of the situation including input and output file bucket sizes, input file Maximum Record Size, size of the largest record actually in the input file, and terminal display when RMSIFL aborted.
2. Recover using one of the following methods:
 - a. Reduce input file bucket or maximum record size or both, and restart RMSIFL.
 - b. Populate the output file using RMSCNV.

5.3 Supplement to RMS-11 User's Guide

One of the new features of RMS-11 is a prototype ODL file that users can edit to produce customized overlays. Following is a brief description of usage.

The file MAKRMSODL.CMD is an MCR command file that you can use indirectly. This file edits its own copy of the prototype RMS11.ODL file after asking you questions about the functions performed by your program. Using this file to produce a customized ODL file prevents you from making an error while editing a renamed copy of the RMS11.ODL. However, the command file uses the same ODL statements describing a 9KB overlay structure. Therefore, the resulting task is not smaller than if you used RMS11S.ODL, RMS11X.ODL or your own version of RMS11.ODL.

Note that to use the MAKRMSODL.CMD on a VAX/VMS system, you must log in using the /CLI=MCR switch.

5.4 Corrections to VAX/VMS Release Notes, V1.5

Section 6.2, "Obtaining a Parameter String from the Command Interpreter," contains an error. Replace the second paragraph in Section 6.2 with the following:

To request return of a command line, the request block must contain the constant 1 in its first byte (this constant has the symbolic name CLI\$K_GETCMD). On return from this request, the third and fourth longwords in the request block contain a character string descriptor that describes the parameter string present in the command. Note that the offset within the request block is defined in the constant CLI\$Q_RQDESC.

5.5 Supplement to VAX/VMS System Services Reference Manual

This section supplements the information in Section 3.2.5, the AST Service Routine.

During the exit sequence from an AST service routine, a brief interval exists between the time the system reenables ASTs and the time it completely removes the AST argument list from the stack. During this interval, four longwords remain on the stack of the access mode exiting the AST. If an AST service routine calls a service that itself produces an AST, and if the second AST occurs before the argument list from the first AST is completely removed, four excess longwords are left on the stack. If ASTs continue to occur faster than the system can service them, the stack will overflow.

Therefore, AST service routines that call services which themselves produce ASTs should be carefully designed to prevent stack overflow. For example, the AST service routine specified in a \$QIO call should not contain another \$QIO specifying the same or a different AST service routine, unless you are certain that ASTs will not be produced faster than they can be serviced.

6.0 NATIVE MODE ASSEMBLER

Beginning with VAX/VMS Version 1.5, the supported assembler is MACRO32, the native mode assembler that assembles native mode programs. Be sure that all assembly operations you perform directly or in command files use the DCL MACRO command, rather than invoking MAR, the compatibility mode assembler that assembles native mode programs. A particular instance of such a change is seen in the VAX/VMS source kit assembly command files. MAR does not run on Version 1.5 or later version of VAX/VMS.

APPENDIX A
SUMMARIES OF UPDATES IN VAX/VMS V1.6

This appendix contains summaries of the updates in the VAX/VMS V1.6 kit.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

COPY

EC08 TMH 14-Jul-1979 Module: COPYMATH
Fix insufficient working set limit errors when
copying files to magtape.

DBDRIVER

EC02 SPR 11-23987 LMK 16-MAY-1979
MODULE: DBDRIVER
Fix retrievable error recovery branch computation for
diagnostic function errors.

DCL

Install a new DCL image with following errors corrected:

1. INQUIRE - Allow DN conditions when an error occurs during the read. This will permit, for example, the handling of a BREAK key in response to the INQUIRE. (SPR #11-21973).

Disable interpretation of # as an indirect (command procedure) file specification during an INQUIRE. (SPR #11-2363).

Return the null string on an INQUIRE in BATCH if the record begins with \$ (i.e. is another command).
2. LOGOUT - Correct several causes of access violations in LOGINOUT upon termination of BATCH jobs. (SPR'S #11-21913, #11-21726, #11-21616).
3. Permit expressions to contain valid sequences of operators between operands. (e.g. A#B=(-R)).
4. Correct access violation during the skipping of data in SYS\$INPUT stream upon CONTROL Y. (SPR #11-24245)
5. STOP process - Allow lower case characters to be used (within quotes) for the process name.
6. Correct inconsistent reporting of facility code # messages to always report SYSTEM. (SPR #11-23831).

ADDITIONAL NOTE:

Before this DCL becomes effective for all users of the system at least one suitably privileged user must log in specifying /CLI=DCL/DE and all others must log out and back in again.

Alternatively the system can be rebooted.

Because the DCL of version 1.5 is still active, no attempt will be made here to purge DCL.EXE. After this version of DCL has been verified, DCL.EXE may be purged from SYS\$SYSTEM.

THIS COMMAND FILE COPIES A NEW COPY OF DTF.EXE TO SYS\$SYSTEM.
THIS FIXES THE SLP OUTPUT BUG.

DRDRIVER

EC03 SPR 11-23987 LMK 16-MAY-1979
MODULE: DRDRIVER
Fix retrievable error recovery branch computation for
SEARCH and diagnostic function errors.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

ERRFMT

EC001 KDM0040 12-JUL-1979
 MODULE: ERRFMT
 If unable to write to error log file, create a new file and send a message to the operator. Also created two patch areas.

F11AACP

EC0005 ACG23542 14-May-1979
 MODULE: RWVB
 Check LBN of virtual map against volume size to protect against bad data in mapping pointers.

EC0006 ACG0038 14-May-1979
 MODULE: CLENUF
 Call READ_HEADER with FIR address only if present, to prevent system crash under certain virtual I/O failures.

EC0007 ACG0045 6-Jun-1979
 MODULE: TRUNC
 Fix cleanup processing after a truncate that deallocates no blocks to prevent a file ID file number check on a multi-header file.

F11BACP

EC0001 ACG23542 14-May-1979
 MODULE: RWVB
 Check LBN of virtual map against volume size to protect against bad data in mapping pointers.

EC0002 ACG0037 14-May-1979
 MODULE: SWITVL
 Range check RVN against volume set size before indexing into RVT; also allow RVN 1 on a volume which is not a volume set.

EC0003 ACG0039 16-May-1979
 MODULE: SELVOL
 Fix error exit processing in volume selection routine, to prevent ACP from looping on a contiguous allocation failure on a volume set.

EC0004 ACG0045 6-Jun-1979
 MODULE: TRUNC
 Fix cleanup processing after a truncate that deallocates no blocks to prevent a file ID file number check on a multi-header file.

EC0005 ACG0046 12-Jul-1979
 MODULE: SHFDIR
 Fix condition handler that handles truncate errors during directory shuffling.

EC0006 ACG0051 12-Jul-1979
 MODULE: RDBLOK
 Enable datacheck for all ACP writes.

JOBCTL

EC002 SPR 11-23644 RTM 1-June-1979
 MODULE: J8CSTDET
 Make NOSWAP batch queues work.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

LINKER

- EC0001 TJP0001 7-FEB-79
- Correct false error report when first file specification of the CLUSTER option begins with a directory specification.
- Change the illegal character set for option keywords to produce more appropriate message when they are misspelled.
- Correct the bug in processing CLUSTER options which allowed the buffer in use to overwrite local pointers on the stack.
- All of the above patch applies to module LNK_PROCOPTNS.
- Finally set the Linker version number to V1A.20 where the A indicates the first ECO to Linker version 1.20. This applies to modules LNK_MAIN and LNK_MAPROUTINES.
- EC0002 BLS0001 16-MAY-79
- Check if current isect descriptor set up before accessing structure (LNK_IMGOUT). This condition arises if user attempts to data into a psect defined in a shareable image or if an object module has a missing set-relocation-base command.
- EC0003 BLS0002 16-MAY-79
- Ensure that all universal symbols found in VMSRTL are not suppressed when creating a shareable image (LNK_ORJPASS1).
- EC0004 BLS0003 16-MAY-79
- Correct divide by zero error (LNK_ORJPASS2)
- EC0005 BLS0004 16-MAY-79
- Clear local variable on routine entry (LNK_VMALLO).

LOGINOUT

- EC01 KDM0036 24-MAY-1979
- MODULE: LOGIN0
- Delete pages mapped as private command interpreter if mapping fails to prevent crash.

MACRO32

- EC001 RN0003 R. Newland
- MODULE: P2ACT1
- Store signed word for not PC-relative, non-optimised 16-bit displacement and deferred displacement

MCR cli

- EC001 RN0001 30-June-1979
- Allow ON conditions if .ASK and an I/O error occurs (e.g. BREAK key).
- Change return sequence to LOGINOUT image on end of file to call MCRSABORT which makes things look like a LOGOUT command was encountered. See also COMMAND and MESSAGE.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

Cause an .ASK to receive EOF from RMS if the data entered began with a \$ and was from a process permanent (i.e. BATCH) file to be consistent with reading of SYSSINPUT.

| in numeric expression is taken as a comment delimiter if immediately preceded by a blank

Fix return sequence to LOGINOUT image so that it can use result parsing to obtain the command line even in the case that we aborted due to some problem (end of file (MCRCHAR) or hangup pending (MCRCMD)) by adding a new routine MCRSABORT to handle aborting the process.

Correct expression syntax errors occurring if 3 operators in sequence.

Allow trailing ",,"s in task name.

Perform quote compression on STOP command.

Clear first part done and trace pending bits in PSL before exiting the rundown image.

Make STATUS=0 display using system facility, not MCR.

Fix bug in MCR\$SETQUALVAL which prohibited default qualifier values on all but parameter parse. Allow default qualifier values on all but GETOPT parse calls.

Disable indirect recognition during .ASK

Evaluate special symbols during evaluation of string expressions.

Make <STRLEN> return octal value (as in 11M)

Add <RSX11D> special symbol

SYSTEM PROTECTION

Correct the protection on 1.5 system files.
A bug in COPY gave the WORLD delete access to system files.

REQUEST

EC01 TMH 1-MAY-1979
MODULE: REQUEST
Fix insertion of job name in message when batch jobs use the REQUEST command.

RSXSHR

EC07 TMH 12-Jun-1979 Module: RSXSURROU
Fix MRKTS interpretation of ticks/second.

RUNDET

EC01 RIH 11-JUN-1979
MODULE: RUNPRSFIL
Make image names for RUNDET work correctly if referencing known files. Trailing semi-colon for null version number must be stripped.

SDA

Update System Dump Analyzer (SDA)
(Print SDA.HLP for partial documentation)

SUMMARIES OF UPDATES IN VAX/VMS V1.6

RMS

- EC001 CDS0001 2-July-1979
The UFO option in the FOP field of the FAB will now work correctly for ISAM files.
- EC002 CDS0001 2-July-1979
The allocation of record ID's for SDR records is corrected.
- EC003 CDS0001 2-July-1979
\$DELETE following \$CONNECT for relative files returns error code.
- EC004 CDS0001 2-July-1979
UIF option on \$PUT to ISAM file with extra buffers and no alternate key changes works correctly.
- EC005 CDS0001 2-July-1979
\$GET on ISAM file with KGT option works correctly.
- EC006 CDS0001 2-July-1979
Force move mode for indirect openers of process permanent files.
- EC007 CDS0001 2-July-1979
Return RMSS_OK_DUP status when duplicate records encountered in alternate indices (ISAM).
- EC008 CDS0001 13-July-1979
Return RMSS_OK_LIM correctly for sequential access on alternate keys.
- EC009 CDS0001 13-July-1979
Return RMSS_BUG_1xx2 instead of incorrectly splitting to avoid generation of corrupt files.
- EC010 JAK0022 23-July-1979
Fix bug in quoted string syntax checking.

RMS-11 V1.8

The DFN utility is part of the release of RMS-11, and is on this floppy due to lack of space on floppies VMSV160D - VMSV160G. DFN is a functional subset of the DEF utility, and is provided for compatibility purposes only.

COPY A NEW VERSION OF DFN TO THE SYSTEM DISK

SORT32

- V1.01 RAS0001 20-Jun-1979
MODULE: SCRIO
Correct problem with extending the work files. Affected the subroutine interface when the input file size was not specified.

SOS

- EC003 PHL23630 4-MAY-1979
MODULE: COPY88
FIX TRANSFER OF RANGE WITH \pm OR $\pm*$ SO THAT THE COPY SIDE RECORDS THE VALUES OF THESE AND THE DELETE SIDE DOES NOT INTERPRET THEM IN THE CONTEXT OF THE FILE AFTER THE COPY HAS BEEN DONE. THE DELETE SIDE WAS DELETING BOTH THE SOURCE AND DESTINATION LINES.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

EC004 PHL0001 6-JUL-1979
 MODULE: SOSINT
 DISABLE AUTOMATIC /BASIC IF FILE TYPE IS .BAS
 THIS WAS AN UNDOCUMENTED FEATURE FROM RSTS AND
 WILL BE IN THE WAY FOR BASIC PLUS 2.

SYS

EC032 KDM 23-APR-1979
 MODULE: PAGEFAULT
 Fix demand-zero page table bug.

EC033 TGD 9-MAY-1979
 MODULE: TTZINTDSP
 Correct character size for parity terminals.

EC034 RIH23909 13-MAY-1979
 MODULE: SYSEVTSRV
 Fix occasional double setting of event flags.

EC035 RIH0015 14-MAY-1979
 MODULE: See actual patch documentation below.
 Performance improvement patch to make MPW_LOLIM an
 inviolable limit and remove priority
 option from MWAIT for DSWPSCHED.

EC036 ACG23542 14-MAY-1979
 MODULES: SYSACPFDT, IOCIOPST
 Validate LBN of mapped virtual transfer against volume size.

EC037 KDM2416A 25-MAY-1979
 MODULE: SYSCRMPSC
 Check for RELPAG greater than number of pages in section
 when mapping to a section.

EC038 RIH24218 4-JUN-1979
 MODULE: WRTMFYPAG
 Make PTESCAN in WRTMFYPAG checks rigorous to avoid boundary
 problems.

EC039 KDM 12-JUN-1979
 MODULE: IOLOCK
 Add section reference decrement for I/O fault in of CRF page.

EC040 RIH23254 14-JUN-1979
 MODULE: PROCSTRT
 Make PROCSTRT set WSLAST for new processes.

EC041 KDM24745 29-JUN-1979
 MODULE: SYSDBGLSC
 Move GSD's for temporary sections to delete pending list.
 Start up modified page writer if there are pages in transition
 for a global section being deleted.

EC042 MKP 3-July-1979
 MODULE: TTDRIVER
 Fix hangup function modifier (IOSM_HANGUP)
 to pass FDT validation.

SYSGEN

EC002 NPK0001 29-JUN-1979
 MODULE: AUTOCONFG
 Fix floating vector alignment on a number
 of controllers; PR611, PP611, DX11, DV11 CSR spacing;

EC003 SPR24718 LMK 29-JUN-1979
 MODULE: AUTOCONFG
 Allow more than 64 DZ=11 lines to work in compatability mode
 by naming the other lines TUxx instead of ITxx.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

TMDRIVER

Replace old driver with new driver.

- V0106 CHP0001 Carol Peters 13-July-1979 13:29
Removed line of code in read error recovery. Code used to backspace over the record and then space forward over it. Now the code simply backspaces and goes on to retry the read.
- V0105 ACG21614 Andrew C. Goldstein, 10-Jul-1979 15:30
Set volume valid when a foreign mounted tape comes on line.
- V01.4 - SPR22662 C. A. MONIA 29-Mar-1979 08:00
Defer recognition of attention interrupts on a unit while a rewind is in progress.
- V01.3 - CAM003 C. A. MONIA 22-Mar-1979 15:40
Add MASSBUS abort to timeout error recovery procedure.
- V01.2 - CAM002 C. A. MONIA 16-Feb-1979 13:30
Delete debugging code from interrupt service routine.
- V01.1 - SPR20998 C. A. MONIA 07-Feb-1979 10:33
Eliminate clearing software volume valid for transition offline status so medium offline error will be returned to requestor.

Copy new driver onto system disk. If desired, purge old driver.

VFY2

- EC0002 ACG23542 21-May-1979
MODULE: VFYLOS, VFYSRR
Add correct RVN to entries made in [1,3] during lost file scan.
- EC0003 ACG23542 21-May-1979
MODULE: VFYSBR
Fix bad block file conditional in read check.

VMSLIB

Replace macro definitions in STARLET.MLB and LIB.MLB

- EC001 RNO001 SPR #11-21466 6-July-1979
Save local symbol block when saving psect information in \$DEFINI and \$OFFSET.

VMSRTL

- EC011 SBL22044 31-JAN-1979.
Fix for RMS RSZ errors after a bad READ.
(Module FOR\$REC_PROC)
- EC012 SBL0012 02-FEB-1979
Fix entry mask and other problems in LIB\$CRC, LIB\$MATCHC, LIB\$SCANC, LIB\$SPANC.
- EC013 SBL0013 05-FEB-1979
Fix entry mask and other problems in MTH\$ANINT, MTH\$DNINT, MTH\$ININT, MTH\$JNINT, MTH\$IIDNNT and MTH\$JIDNNT.
- EC014 SBL22832 02-MAR-1979
Fix zerodivide error with MTH\$CSQRT of (0,0).
- EC015 SBL22786 14-MAR-1979
Fix FOR\$CNV_OUT_G so that FORTRAN G output formatting of values that round up to a power of 10 don't overflow.

SUMMARIES OF UPDATES IN VAX/VMS V1.6

- EC016 SBL0016 14-MAR-1979
Fix error in FORTRAN list-directed output
COMPLEX editing (Module FOR\$RUDF_LWL).
- EC017 SBL22994 20-MAR-1979
Prevent FOR\$CNV_IN_I and FOR\$CNV_IN_D from accepting
as input A and B respectively.
- EC018 SBL0018 26-MAR-1979
Fix obscure rounding bug in FOR\$CNV_IN_DEFG.
- EC019 SBL24926 13-JUL-1979
Fix SP location problems in LIB\$SIGNAL when user's
stack is unaligned.

SYE - System error logging.

Copy new image of SYE.EXE to system disk.
New features include:

- New device support.
- Input file default now works properly.
- Improved input file error handling.
- Add switch options to several commands.

See release notes for details.

RMS-11 V1.80 D

This floppy contains one-fourth of the new release (V1.8) of RMS-11.
The entire release is contained on four floppy disks,
VMSV160D = VMSV160G, of the VMS 1.6 Binary Update Kit.
ALL FOUR FLOPPIES MUST BE INSTALLED.

COPY CONVERT, RMS-11 LIBRARY, AND ODL FILES

RMS-11 V1.80 E

This floppy contains one-fourth of the new release (V1.8) of RMS-11.
The entire release is contained on four floppy disks,
VMSV160D = VMSV160G, of the VMS 1.6 Binary Update Kit.
ALL FOUR FLOPPIES MUST BE INSTALLED.

COPY RMS PROTOTYPE ODL, MACRO LIBRARY, AND BACKUP UTILITY

RMS-11 V1.80 F

This floppy contains one-fourth of the new release (V1.8) of RMS-11.
The entire release is contained on four floppy disks,
VMSV160D = VMSV160G, of the VMS 1.6 Binary Update Kit.
ALL FOUR FLOPPIES MUST BE INSTALLED.

COPY DEFINE AND DISPLAY UTILITIES

RMS-11 V1.80 G

This floppy contains one-fourth of the new release (V1.8) of RMS-11.
The entire release is contained on four floppy disks,
VMSV160D = VMSV160G, of the VMS 1.6 Binary Update Kit.
ALL FOUR FLOPPIES MUST BE INSTALLED.

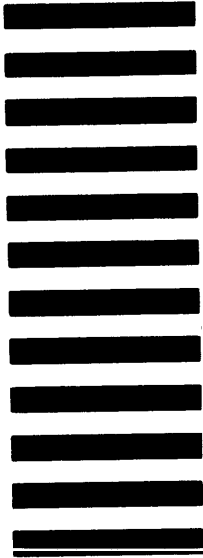
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