

Software Release Notice



AOS/VS Release Notice

Revision 7.70

Model Number 3900

August 1992

085-000147-16

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1. Introduction.

AOS/VS is available as Model 3900 and also as Model 31133. This release notice contains information about AOS/VS Model 3900. If you have a system with "Pre-Installed AOS/VS", you should read the release notice for AOS/VS Model 31133 (085-000780-09). New machines that come with Pre-Installed AOS/VS are the DS/7500; and ECLIPSE MV/5500 DC, MV/5600 DC, MV/3600 DC, MV/3500 DC, MV/3200 DC, MV/2500 DC, MV/2000 DC, MV/1400 DC, and MV/1000 DC computers. For all other machines, read this notice.

If you are running AOS/VS Model 31133 or 31446, read this release notice if you want to know about enhancements, changes and other detailed technical information not documented in the Model 31133 release notice. You may also want to read this notice if you have disabled pre-installed AOS/VS, as explained in Appendix D of the manual "Using the AOS/VS System Management Interface (SMI)" (069-000203-02).

The purpose of this release notice is to provide you with information about Revision 7.70 of AOS/VS that is not available in the AOS/VS documentation.

This product consists of the following parts:

Part Description -----	Part Number -----
AOS/VS Rev. 7.70 release notice	085-000147-16
AOS/VS Rev. 7.70 release media	See Section 7 of this release notice

This printed release notice always accompanies the software. After you have installed the product, you can print additional copies of this notice. Its filename is :UTIL:085_000147_16. Please note that a printed notice may be more up to date than the copy on the release medium.

In the event of differences between the printed copy of the Release Notice and the copy on the distribution medium, the printed copy takes precedence.

2. Product Description

AOS/VS, Advanced Operating System/Virtual Storage, is one of several Data General proprietary operating systems. Running on ECLIPSE MV/Family and DS/Series computers, AOS/VS is a multitasking, multiprogramming, demand-paged, virtual-storage, operating system that is suited for time-sharing, batch processing, and real-time control applications.

This revision of AOS/VS combines the functionality of all previous revisions and their updates, and adds new functionality and changes.

3. Environment

3.1 Hardware and Microcode

To run AOS/VS Models 3900 and 31133, DGC recommends that you have at least 3 megabytes of memory. For Model 31446, AOS/VS Operating System Environment for the DS/7500-series Systems, we suggest at least 4 megabytes of memory.

The Microcode revision of your system varies depending on your configuration. The following list shows the latest revisions of Microcode available. AOS/VS has been qualified with these revisions, and will work with later revisions.

Computer -----	Suggested Microcode Revision -----	Additional Notes -----
MV/1000 DC	10.00	
MV/1400 DC	10.00	
MV/2000 DC	8.10	
MV/2000 (enhanced)	10.00	
MV/2500 DC	6.00	
MV/3500 DC	51/83	Dependent on the revision of the processor chip set.
MV/4000	13.00	Models 8468, 8469, 8760, and 8761
MV/4000-class integrated systems	13.00	Models 8764 and 8765
MV/5500 DC	51/83	Dependent on the revision of the processor chip set.
MV/5600 DC	51/83	Dependent on the revision of the processor chip set.

continued

Computer -----	Suggested Microcode Revision -----	Additional Notes -----
MV/6000	11.00	Without hardware floating point.
DS/7500	8.10	
DS/7500 (enhanced)	10.00	
MV/7800, MV/7800 DC, MV/7800 U, MV/7800 C	11.00	
MV/7800 DCX, MV/7800 XP	5.00	
MV/8000, MV/8000 II, MV/8000 C	11.00	Without hardware floating point. With hardware floating point. (Model 9300 with ATI is not supported.)
MV/9300, MV/9500, and MV/9600	2.01	
MV/10000	9.00	Model 8780
MV/10000 SX	9.00	Model 8880
MV/15000 Models 8, 10, and 20	8.00	
MV/18000	3.00	
MV/20000	13.00	
MV/40000	4.4	

AOS/VS Revision 7.70 requires that Model 6026 (MTB) tape drive controllers be at least revision 48.

You must upgrade your 6236-, 6239-, and 6357-class disk Microcode to the latest revision available (Revision 11.06), which corrects some data corruption and mirroring problems.

3.2 Software

AOS/VS and many system programs in the root (:) expect to find system files in a particular directory structure. You should not rename system files or directories, or create links to them. If you do, AOS/VS may not work properly.

AOS/VS ships with up-to-date error messages in the ERMES file and the related .OB files for AOS/VS and its utilities. These include the error and diagnostic messages from both DGC language products used to build AOS/VS and their language runtime environments.

If you rebuild your system's ERMES file (using the macro LINK_ERMES.CLI), be sure that the language and runtime .OB files included are at least as recent as those in the following list:

Product	.OB file	Revision
-----	-----	-----
C	CERMES.OB	4.10
Common Language Runtime Environment	CLREERMES.OB	3.12
DGL	DGLERMES.OB	3.20
F77	F77ERMES.OB	4.10
LANG_RT	LANG_RTERMES.OB	3.53
PL/1	PL1ERMES.OB	2.52
PL/1 16	PL1ERMES16.OB	3.12

3.3 Patches

There are patches in the directory :UPDATE:7.70 which resolve problems in the following programs when run under revision 7.70 of AOS/VS.

Program Name	Patch Name
-----	-----
FTA.PR	5.30_FTA.PR_PAT
FTA.PR	5.50_FTA.PR_PAT
SVTA.PR	5.30_SVTA.PR_PAT
SVTA.PR	5.50_SVTA.PR_PAT
TPMSCCP.PR	3.51_TPMSCCP.PR_PAT
XTS.PR	5.61_XTS_PMGR_RINGO_PAT

3.4 Optional Patches

The 7.70 AOS/VS release contains several optional patches. A patch can have, as a status, one of the following:

- 1) UNCHANGED: carried forward from a previous release, unchanged except for the name.
- 2) REWRITTEN: The patch has the same function as in a previous release, but has been rewritten to apply to 7.70.
- 3) NEW: It is a new optional patch as of this release.
- 4) IN SOURCE: The patch is no longer optional, and has been incorporated into AOS/VS functionality. Note that in this case, the patch name indicates a previous revision.

NOTE: All optional patches now have a suffix of `_OPAT` to differentiate them from required patches.

After installing this release, you can find these patches in the `:UPDATE:7.70` directory. The following table summarizes the status of each optional patch.

Filename -----	Status -----
7.70_AOSVS_MV40000_OPAT	UNCHANGED
7.70_AOSVS_FILE_ELEMENT_SIZE_OPAT	UNCHANGED
7.70_AOSVS_FLUSH_BUFFERS_OPAT	UNCHANGED
7.70_AOSVS_ROOT_ACL_OPAT	UNCHANGED
7.70_AOSVS_SEA_BUFFERS_OPAT	UNCHANGED
7.70_AOSVS_SEA_ENTRIES_OPAT	UNCHANGED
7.70_AOSVS_SYSCALL_CHARGE_OPAT	UNCHANGED
7.70_AOSVS_TUNPBLK_OPAT	UNCHANGED
7.70_AOSVS_DISCONNECT_OPAT	UNCHANGED
7.70_AOSVS_UACL_OPAT	UNCHANGED
7.70_LPMGR.PR_ORD_CR_OPAT	UNCHANGED
7.70_AGENT.PR_GIGATAPE_OPAT	CHANGED
7.70_XLPT.PR_HEADER_OPAT	CHANGED
7.70_AOSVS_DIR_TLM_OPAT	NEW
7.70_LPMGR.PR_NO_CONOLOG_OPAT	NEW

You can find detailed information about all of these optional patches in Appendix A of this notice.

4. Enhancements and Changes

This section lists all the enhancements and changes to AOS/VS since Revision 7.69.

4.1 Enhancements

4.1.1 Hardware Support Enhancements

- a) AOS/VS Revision 7.70 supports a new tape sub-system, which has a number of new features associated with it. Model numbers 6762/6764 reflect a 2.6-4.0 gbyte R-DAT(Rotary Digital Audio Tape-drive). The SCSI 2 drive may sit in either a 3.5" or 5.25" slot and supports from 2.6 to 4 gbytes per cartridge.

This tape sub-system supports multiple (new) densities, a hardware-based data compression mode, and a deferred soft error reporting scheme. (See 4.1.2.a)
- b) AOS/VS Revision 7.70 supports a new SCSI 2 DISK/TAPE controller, with model numbers 6786, 6787.
- c) AOS/VS Revision 7.70 supports a new 520 Mbyte 3.5 inch SCSI disk sub-system, model numbers 6796 and 6799.
- d) AOS/VS Model 31133 only, supports the MV/3200 DC and MV/3600 DC, which are new 32-bit computer systems. For further information about starting AOS/VS on these systems, please refer to the manual, "Starting and Updating Preinstalled AOS/VS on ECLIPSE MV/3000 DC and MV/5000 DC Series Systems (069-000481-04).

4.1.2 AOS/VS KERNEL Enhancements

- a) The system call handlers for ?GOPEN/?OPEN have been enhanced to support the new tape sub-systems described under Hardware Support Enhancements in this document. The DENSITY fields ?OPD0-?OPD2(?GOPEN) and ?IDD0-?IDD2(?OPEN) have been redefined to also include a LOW/MED/HIGH density request. The actual density selected by these new combinations are a function of the tape sub-system under control.

Two new flags, ?ICOFF in ?IRES(?OPEN), and ?ODCOF in ?ODF1(?GOPEN), have been implemented to control the hardware compression mode feature of the new tape sub-system described under Hardware Support Enhancements.

A new "Deferred Soft Error Reporting" scheme has also been implemented to support the new tape sub-system listed under Hardware Support Enhancements.

Instead of reporting soft-error information for each error occurrence, periodic reports are written to the OP CONSOLE in the following format:

```

From system on dd-mm-yy at hh:mm:ss
Deferred Soft Error Report
Device Code: xxx    Unit: xxx
Total Bytes Transferred: xxx
Ratio Errors/Bytes:      xxx Acceptance Level {GOOD    }
                                           {MARGINAL}
                                           {BAD      }

```

- b) The ?SYLOG system call now supports CONO logging. When this feature is enabled, all messages written to the OP CONSOLE are also written to a log file in the root directory, named CONO_LOG.

See the CLI32 SYSLOG helpfile or the System Call Dictionary entry for ?SYLOG for more detail.

- c) The AOS/VS Kernel has been enhanced with new Terminal Services functionality, which provides PMGR support for most IAC controllers in ring 0. TTI/TTO functionality is still provided by LPMGR.PR, except in the cases of XBUS systems(MV/5500) with an integrated LAC.(See Terminal Services Enhancements)
- d) The ?BLKIO system call has been enhanced to support 32 bit TAPE records for those TAPE controllers that support a 32 bit record count. At present, this feature is only supported on MTJ TAPE controllers.
- e) In the case of a system panic, AOS/VS 7.70 supports automatic memory dump to tape followed by an auto reboot. See VSGEN Enhancements for details.
- f) When dumping system memory to tape during Emergency Shut Down, a message is displayed reminding the user to copy the system symbol table to file 1 of the tape. This message is displayed after the selected tape drive is validated, but before the dump is completed. The "Memory dump completed" message is still displayed after completion. If you have selected the new automatic memory dump to tape feature, no messages are displayed.

4.1.3 AOSVS File System Enhancements

- a) Most of the File System system call handlers have been enhanced to eliminate any dependencies on the Master JP. The system calls ?CREATE, ?GOPEN, ?GCLOSE, ?DELETE, ?RENAME, ?ILKUP, ?SOPEN, ?DIR, ?FSTAT, ?GNAME, ?SACL, ?GACL, ?GNFN, ?RDUDA, ?CRUDA, ?WRUDA, ?SATR, ?SCLOSE,

?CGNAM, ?DACL, ?FNAME, ?UPDATE, and ?GTRUNC no longer have to execute on the Master JP.

4.1.4 CLI16 Enhancements

- a) Support for ?PRIVILEGE has been added to CLI16, with prompts SuSpSm compatible with CLI32.
- b) Support for the new LOW/MED/HIGH density options for TAPES has been added to CLI16 commands DUMP/LOAD/MOUNT and COPY.

4.1.5 CLI32 Enhancements

- a) The SYSLOG command now accepts a /CONO switch; used in concert with the /START and /STOP switches, it enables and disables CONO logging.
- b) The CHARACTERISTICS command now supports a /KVT switch to provide Kanji XLT support.
- c) The WRITE, PREFIX and SEND commands now support a /7BIT switch. Use this switch to remove parity bits from the arguments to these commands. You may then create files containing true bracket characters. For example,

```
write/l=temp/7bit [!ASCII 333]
```

places an ASCII 133 character in the file.

- d) The SYSLOG command now supports a /VERBOSE switch. You can use this switch to report on SUPERUSER and CONO logging. In addition you will see more information concerning current SYSLOG status, specifically, an indication of whether an exclusion bitmap is set, and the detail of logging selected.
- e) When using the !SYSTEM pseudomacro, you may specify the new /SPECIFIC switch, which returns either AOS/VS or AOS/VS II, depending on the system you are running.
- f) Two new pseudomacros ([!LOOPSTART] and [!LOOPEND]) provide looping in CLI32 macros.
- g) A new pseudomacro, [!EXIT], changes the flow of control during macro execution. [!EXIT/LOOP] exits the current loop construct, [!EXIT/MACRO] leaves the current macro, and [!EXIT/ALL] 'returns' to the prompt.
- h) The SORT switch on FILESTATUS and !FILENAMES now allow switches to indicate how the output is to be sorted. Switches like TCR, LENGTH and TYPE are allowed, along

with a 'negative' value to invert the output. (F/SORT=-LENGTH will display files from largest to smallest.)

- i) Pseudo-macros are now supported in dummy argument expansions in macros. %[!VARO]% is now a legal construct.
- j) The PASSWORD command now supports the /NPROMPT and /PROMPT switches. These switches can be used to allow the user to 'LOCK' commands without having to enter the password every time, and to reset the effect the /NPROMPT switch response.
- k) The default for HISTORY compression is now ON.
- l) The FILESTATUS command now supports the /NOEQUAL switch.
- m) The density switches for the commands COPY, MOUNT and CONTROL @EXEC PREMOUNT will now accept the values HIGH, MEDIUM and LOW.
- n) An NOCA switch is now allowed when executing CLI32. When using this switch, console interrupts are ignored while the initial IPC (logon macro) is being processed. This can be done with 'X CLI32/NOCA' or by using a custom logon that uses this feature.
- o) The ERROR message resulting from a CLI32 command, may be 'written' to a named string by using the global switch: /ESTR=<name>.
- p) The SYSLOG command, with a new file argument, will now retain the logging level (e.g. FULL detail). Previously, logging level would always get set to MINIMAL. The SYSLOG command will now also accept the /DETAIL switch when using a file name argument.

4.1.6 DUMP_II and LOAD_II Common Enhancements

- a) In previous releases of DUMP_II and LOAD_II, you could use the /TYPE= switch to include or exclude directory types. You now specify directories to traverse or not with the /TRAVERSE= switch. The /TYPE switch is reserved for file types. This is consistent with CLI32 functionality. Read DUMP_II documentation or use CLI HELP for more information.
- b) DUMP_II and LOAD_II now support more than 65534 records in one tape file. This uses the full capacity of high-capacity media used by these utilities when smaller buffer sizes are used. See the "Environment" section of this notice for Microcode requirements to support this

feature. Also see the "Warnings" section of this notice for tape interchange restrictions.

- c) A /FASTFORWARD switch is now available so that faster file positioning can occur when using high capacity tape cartridges with some configurations. See the "Environment" section of this notice for controller firmware prerequisites.

4.1.7 DUMP_II Enhancements

- a) Relative tape densities (HIGH, MEDIUM and LOW) are now supported by the /DENSITY switch.
- b) The /NCOMPRESS switch has been added to allow tape interchange between some cartridge tape drives.

4.1.8 EXEC Enhancements

- a) The version of EXEC included with AOS/VS Revision 7.70 supports Custom Logon, which allows you to construct a site-tailored logon procedure that replaces the customary EXEC logon procedure. You can find information regarding the use of this new feature in an appendix of the manual "Managing AOS/VS and AOV/VS II."
- b) EXEC.PR will no longer crash due to "Invalid state reached in state machine" errors. If this problem is encountered the error message will still be displayed and logged (if logging is on), but a memory dump will not be taken unless EXEC.PR is patched to do so. Commands such as CONTROL @EXEC CONSOLESTATUS will return "Console in Error state" and the affected console will not be accessible until EXEC is recycled.
- c) XMNT now supports ANSI-3 labels.
- d) Multi-line mapper commands using the command continuation char (&) are now allowed.

4.1.9 REPORT Enhancements

- a) A new /MIRROR switch has been added to REPORT to display disk mirroring events.
- b) An enhancement to the /FILE switch allows REPORT to display all file accessed under a directory.

4.1.10 SCOM Enhancements

- a) The output format of SCOM has been enhanced to include absolute line numbers. The new format is: page number/line number (absolute line number).

- b) A new /V switch (meaning verbose) has been added to let a user expand the "page number/line number (absolute line number)" format into a more descriptive form "page XX, line YY (line ZZ)". This switch is useful for new SCOM users.
- c) A new /DNP switch, which stands for "Display Non-Printable characters", has been added. When this switch is used, SCOM will display non-printable characters in mnemonic form for the well known ones such as carriage-returns, form feeds, etc. and in octal value for the others.

4.1.11 SYSLOG Enhancements

- a) The ?SYLOG system call now supports CONO logging, When this feature is enabled, all messages written to the operator's console are written to a log file in the root directory named CONO_LOG. See the CLI32 SYSLOG helpfile, the manual "Managing AOS/VS and AOS/VS II", or the ?SYLOG system call documentation for more information.

4.1.12 Terminal Services Enhancements

- a) During system initialization, AOS/VS Rev 7.70 Terminal Services provides users with more information regarding its activities. This information includes the total number of consoles genned and time stamps. An example initialization output is shown in the following:

```
From system on 23-Mar-92 at 15:45:11
Terminal Services Initialization Started
      Number of consoles genned: 64
```

```
From system on 23-Mar-92 at 15:45:11
Terminal Services Initialization Complete
```

- b) A new terminal characteristic, ?CKVT, is now implemented which, when used in conjunction with the ?CXLT characteristic (VT100 support) enables support for Kanji VT100 terminals. The ?CKVT characteristic may be turned on through CLI32 by using the command:

```
CHARACTERISTICS/ON/KVT
```

- c) AOS/VS Rev 7.70 includes support for the DG ANSI terminal mode in all environments except MCP1, CPI-24, IAC-8 (non-68k based), IAC16, LAC-12 and MV/7500DC DUARTs. These functions can be accessed on compatible DG terminals via the ?CXLT characteristic, available through the CLI command CHAR/ON/XLT. This new feature has no effect on other functions or environments previously supported through the ?CXLT characteristic.

- d) AOS/VS Rev 7.70 now supports variable ring buffer sizes for all types of terminal controllers. For information regarding the maximum ring buffer sizes supported for each type of controller refer to the "Notes" section of this document.
- e) THERE IS A PARTIAL REV-LOCK BETWEEN AOS/VS REV 7.70 AND TERMCONTROLLER SOFTWARE! If you are running the XNS protocol on your ITC128 or LTC64 you should load TERMCONTROLLER Software Rev 22025 or greater. If you are running the TCP/IP protocol on these controllers you should load TERMCONTROLLER Software Rev 3.36 or greater.

Failure to use these new TERMCONTROLLER software revisions can result in two problems. First, if you used VSGEN to create system specifying "N" to the question "TERMMANAGER download?" as part of IAC of type "128" or "64" gen, you must install the appropriate new revision of TERMCONTROLLER software before running that system. If you fail to do this, ITC-128s or LTC-64s on your system will fail to boot.

- f) AOS/VS Rev 7.70 Terminal Services combined with the AOS/VS Monitor Rev 5.30 allow the following terminal controller statistics to be gathered on a PER ENGINE, PER CONTROLLER basis for a user specified time slice:

- * Number of write requests issued.
- * Number of read request issued.
- * Number of control requests issued.
- * Number of bytes written.
- * Number of bytes read.
- * Number of times the HOST checked for interrupts caused by the engine.

In addition, the following statistics have been made available to be used by the monitor in calculating idle time on a per engine basis:

- * Maximum number of idle ticks registered for a 1 second period since the engine was booted.
- * Current number of idle ticks registered for the last 1 second period.
- * Total number of idle ticks registered since the engine was booted.

See the release notice for Rev 5.30 of the AOS/VS and AOS/VS Performance Package for more details on these statistics.

- g) AOS/VS Rev 7.70 Terminal Services now supports automatic baud rate matching (AUTOBAUD) functions in all terminal controller environments except on ITC-128s and LTC-64s. AUTOBAUD functions are also available for DUARTs based terminal connections except for those on the MV/7500 DC.

The AUTOBAUD facility now supports additional baud rates without operator intervention. Supported baud rates are 300, 600, 1200, 1800, 2400, 4800, 9600, and 19200. Supported parities are 7-bit mark parity and 8-bit no parity.

AUTOBAUD functions can be initiated by system managers via VSGEN dialog or EXEC and CLI commands. See the manuals, "Using the CLI (AOS/VS and AOS/VS)" and "Managing AOS/VS and AOS/VS" for more details.

4.1.13 VSGEN Enhancements

- a) VSGEN now asks an "Asian Language Support?" question for nearly all terminal controller types. In prior revisions, the answer to this question could only be YES or NO. In Revision 7.70, IKIS and NONE are valid responses. When reading older specification files, VSGEN sets the Asian Language default to NONE. Users must select IKIS for each controller that will use Asian Language. Some restrictions apply -- see the manual "Installing, Starting, and Stopping AOS/VS."
- b) Full controller line group editing is provided by VSGEN in Revision 7.70. This new functionality is available when adding or editing Terminal Services devices. See the manual "Installing, Starting and Stopping AOS/VS" for a complete presentation of line group editing.
- c) Default terminal attribute editing is now provided by VSGEN so that you can define and save your own default terminals. This new functionality is available from the VSGEN main menu with the new 'T' (TERMINAL) command. See the manual "Installing, Starting and Stopping AOS/VS" for a complete presentation of default terminal attribute editing.
- d) VSGEN now supports the TERMANAGER download option for ITC-128s and LTC-64s. See the Terminal Services Enhancements section for more detailed information, or see the manual "Installing, Starting and Stopping AOS/VS."

- e) VSGEN now displays line group attributes for IAC, DRT, CPI, and ATI devices and CONO attributes in a new format, these in response to the LIST device command, and when creating the .CSF file.
- f) VSGEN now allows the specification of LOW/MEDIUM/HIGH densities for the new multiple density tape sub-systems described under Hardware Support Enhancements in this document.
- g) VSGEN provides support of the new automatic memory dump to tape feature of AOS/VS. If, under system parameters, you accept Automatic boot, Automatic re-boot, and decline Automatic dump bypass, you may now accept Automatic memory dump, and specify the number of seconds to wait (for possible operator intervention) before dumping. If you decline Automatic memory dump, the system will wait for you to perform a dump manually.
- h) VSGEN now allows full definition for ?CLMAX characteristic words. Previous revisions only allowed definition of the first five words.

4.1.14 New BROWSE Utility

- a) BROWSE is a new utility included in AOS/VS Revision 7.70 that you can use to view files. BROWSE utilizes a superset of the function keys supported by other AOS/VS menu-based utilities. BROWSE allows forward scrolling, backward scrolling, string searching, multiple file viewing, file positioning, and may other features. See the CLI manual or type HELP/V *BROWSE.

4.2 Changes

4.2.1 AOS/VS Kernel Changes

- a) A race condition in the detection of memory restart conditions, that could result in process hangs has been corrected.
- b) A deadlock problem involving System Logging and the Filesystem, that could result in system hangs, has been corrected.
- c) The Unicorn drivers code has been modified to report a hard error on the OP console and log the error, on the occurrence of a "spurious interrupt". Previously, a "spurious interrupt" would result in a 25007 panic.
- d) All problems corrected by the 7.69_AOSVS_PAT.19 patch file have been corrected in source.
- e) The ?CREATE system call handler has been modified to use the current DATE/TIME for any entries in the ?CTIM time block that have a value of -1. Previously the -1 was used as the DATE/TIME value.
- f) A problem with histograms hanging on multiprocessor systems has been fixed.
- g) Automatic reboot works for multiprocessor systems during normal shut-downs, even if additional processors were not stopped manually. The system stops additional processors during normal shut-down.
- h) AOS/VS now requires the number of buffers to be at least 128. This is an increase from the previous minimum of 58.
- i) The Programmable Interval Timer (PIT) contains an undefined value after it reaches zero. Some machines continue to count and AOS/VS previously tried to take advantage of that possibility. This caused CPU time accounting problems on machines with PITs which reset to the contents of the initial counter register. In 7.70, this problem is fixed; the system always assumes the PIT value is 0 after it has completed a counting cycle.
- j) 7.70 guarantees that all consecutive PIT readings will move forward, even if hardware drops a bit.
- k) A problem with some machines returning the message 'Invalid month' when setting the date has been fixed.

4.2.2 AOS/VS File System Changes

- A ?GOPEN of an IPC file will now allocate an FCB (File Control Block), and properly support 'delete on last close' functionality. Previously, certain system calls, such as ?CGNAME -- issued against a channel to a deleted IPC file -- would result in a 6032 panic.

4.2.2 AOS/VS AGENT Changes

- a) The AGENT has been modified to handle the inability of certain TAPES to reposition backwards, in doing a ?TRUNCATE of a TAPE.
- b) All problems corrected by 7.69_AGENT.PR_PAT.07 patch file have been corrected in source.
- c) A problem with IPC notification for QSUBMITs using ?EXEC has been fixed.
- d) The AGENT handling of SPOOL and QUEUE files has been modified to allow for longer username:queue strings used for the TMP files. Previously, "filename too long" errors could result with long username or queue name strings.

4.2.3 BISYNC Changes

- a) A bug was fixed in GSMGR which would cause a panic 14340 "Page Fault at Interrupt Level" to occur.
- b) A change was included in the AGENT to properly verify the user's buffer size on a ?SRCV system call.

4.2.5 CLI16 Changes

- a) CONTROL @EXEC STATUS would not show the stream numbers of the BATCH_INPUT queue. This has been fixed.
- b) CONTROL @EXEC ELONGATE will now return "Wrong device for this command" if the device does not support this feature.

4.2.5 CLI32 Changes

- 1) SEND <FRED> used to result in an "Invalid byte pointer passed as system call argument" error. This has been fixed.
- 2) The [!CONSOLE] pseudo-macro was not returning the correct information when it was used in batch. This has been fixed.

- 3) The output from a call to DUMP_II in batch was putting an additional line after the 'queued' message. This has been fixed.
- 4) If a LOGFILE was set to an existing file of type DIR, all future LOGFILES would be created as DIR-type files. This has been fixed.
- 5) In the initial release of CLI32, it was possible to use the !ASCII pseudomacro to generate true bracket characters. This was removed in revision 7.70 because of several problems that caused this caused in macros sets. New functionality has been added to WRITE, PREFIX and SEN to get some of the functionality back. PREFIX/7BIT [!ASCII 276] will now set the prefix to a '>' on an 8-bit console.
- 6) If CLI32 was PROC'd with an initial IPC message that set class2 warnings to errors, (e.g. CREATE/2=ERROR <filename>), no error was displayed. This has been fixed.
- 7) There were several instances of recursive macros running out of stack and heap space. In the case where the recursion occurs as the last command in a macro, large amounts of space are now recovered.
- 8) A line containing multiple '(' characters immediately after a call to a macro would cause a protection fault. This problem has been fixed.
- 9) There were several problems associated with CONTROL/I and CONTROL/M that have all been fixed.
- 10) CHAR/STOPBITS=1.5 would give an illegal switch value error. This has been fixed.
- 11) Using the CONTROL @EXEC command CREATE/OPEN/CONT to create a batch queue where the queue name was numeric has been fixed and no longer results in a traceback.
- 12) If a user did not have READ access to :HELP, they could not use the HELP commands, even if they had access to the help file itself. This has been fixed.
- 13) The MOVE command was not correctly copying UDAs. This has been fixed.
- 14) The command PASSWORD/STR would appear to hang. This was because the prompt output was being redirected to the string. The password prompt will now be displayed on the console.

- 15) Templates which contained multiple '+' or '-' characters in a row would take very large amounts of CPU time to process. This has been fixed.
- 16) A problem involving the expansion of more than two levels of parentheses when another command followed on the same line, (e.g. WRITE (((A)));WRITE B) has been fixed.
- 17) The !EXPLODE pseudomacro was giving an error if no arguments were seen. It now returns a null string if no arguments are seen.
- 18) The SPACE command would trap if the second argument value was greater than 2^{31} . This has been fixed.
- 19) Mount ID's greater than 2^{15} were not being displayed correctly. This has been fixed.
- 20) CLI32 would hang if a command was entered and the initial argument was greater than 1024 characters long. This has been fixed.
- 21) Several problems with STRINGS have been fixed.
- 22) CLI32 would not display an error if a file was MOVED to a CPD and the CPD ran out of space. This has been fixed.
- 23) CLI32 commands (principally MOVE) that make use of the '#' character in templates would trap. This has been fixed.
- 24) Lexical comments, ('\\') would not behave as expected all the time. This has been fixed.
- 25) The [!HOST] pseudomacro would not change if the host name was changed. CLI32 had to be restarted to get the new HOST name. This has been fixed.
- 26) There were several problems with the HISTORY command when changing the SAVE values. This has been fixed.
- 27) The HELP command was not correctly identifying programs (.PR files). This has been fixed.
- 28) Invalid arguments to the PAUSE command were incorrectly set to ERRORS. They are now CLASS2 warnings.
- 29) CX MOUNTSTATUS will now show the correct density and some typos have been corrected.
- 30) The WHO command would not work correctly if a username:processname pair were given when both were numeric values.

- 31) The UNLOCK will now only unlock the specified commands.
- 32) [!READ] was not returning a null string if the EOF was seen and no EOF string had been specified. This has been fixed.
- 33) The TREE command would give an 'Invalid packet version' error if the argument was a remote process. This has been fixed.
- 34) When more than one argument was passed to the QPRINT command, and one of the arguments was a template while the another was a file that was found through the searchlist, the template was not being used and would give a 'No files match template' error. This has been fixed.
- 35) Using MOVE over networks would sometimes give an 'invalid system call parameter' error. This has been fixed.
- 36) CX SPOOLSTATUS <queuname> was returning "<queuname> being processed by: " if the named queue had not been started. CLI32 will now return "<queuname> not being processed" as the error message.
- 37) CONTROL @EXEC with no arguments was trapping. It will now return the appropriate error message.
- 38) FILESTATUS : <filename> was displaying ':' two times. This has been fixed.
- 39) FILESTATUS <template> <remote_file_name> was not resolving the filename on the remote host. This has been fixed.
- 40) QSUBMIT/QUEUE=FTQ/DEST=XYZ <filename> no longer returns the error "Invalid byte pointer passed as system call argument". This now works correctly.
- 41) [!VAR/PREVIOUS=n] did not work as specified in the manual. This has been fixed.
- 42) CX LOGGING/ caused a traceback. This has been fixed.
- 43) VAR/INFO/LEVEL=n and VAR/INFO/PREVIOUS did not return correct results. This has been fixed.
- 44) VAR/ALL/PREVIOUS and VAR/LEVEL=n/ALL was setting current variables that did not exist at the previous level to 2139961. They are now set to 0.

- 45) LOGOFF <dir_name> did not give an error until the BYE command was seen. The LOGOFF command will now return an "Illegal file type for macro" error.
- 46) WRITE/FILEID=X/NONEWLINE<some text> will no longer return a conflicting switches error.
- 47) CX MOUNTSTATUS now returns information correctly. Some information had been duplicated and some spaces were missing.
- 48) DIR/I returned an "UNKNOWN MESSAGE CODE" error if a user did not have access to the initial directory. This has been fixed.
- 49) CX/MODIFY/QRPI=32768 caused a traceback and fixed point overflow. This has been fixed.
- 50) CLI32 inserted a DIM OFF character into the error message. This caused problems with users on different terminals and has been removed.
- 51) The unsigned arithmetic pseudomacros will now give an error if a number greater than 4294967295 is seen.
- 52) !UDIVIDE will now give an error if the second argument is zero.
- 53) STRING/PREVIOUS/ALL did not change any current strings to null if they did not exist in the previous level. This has been fixed.
- 54) The message, "Warning: Illegal decimal number" was shown twice when the command VAR1 was done with CLASS1 set to WARNING. This has been fixed.
- 55) If the set LOGOFFMACRO command cannot be fully executed or if an access error occurs, the logoff macro will now remain set.
- 56) CLOSE/FILE=<fileid>/ALL would return "Conflicting switches" but would still close the files. This has been fixed. The error is shown and the files will remain open.
- 57) OPEN/READ/FORCE will now give a "Conflicting switch" error.
- 58) OPEN/READ/WRITE <filename> will now return an error as documented.
- 59) !ASCII will now return "Illegal octal number" for arguments greater than 377.

- 60) WR [!ASC 205] does not start blink as documented in the manual. Some terminals will write out information to CLI input buffer if this character is seen. This is correct functionality.
- 61) CX LOGGING/STOP and CX ACCESS will no longer give 2 status messages back from EXEC.
- 62) HISTORY and LOCK/STATUS did not validate arguments. This has been fixed.
- 63) The PREFIX was written to a logfile with an extra NewLine. This has been fixed.
- 64) If the logoff macro is set, and the PROMPT BYE command issued at the CLI prompt, the next command would cause a traceback. This has been fixed.
- 65) PROC/LOCALITY=<number> was not changing the locality to 2. This has been fixed.
- 66) Several fixes have been made to the CLI32 UNLOCK command so that it behaves as specified in the documentation.
- 67) !DATE would return 3 digits for the year if the year was 2000 or greater. All CLI32 dates will display and accept 2 digits for the year field. If the year is between 68 and 99, it is used as 1968 to 1999. If the number is between 00 and 67 it is used internally as 2000 to 2067.
- 68) F/AS/BEFORE/TLA=25-JUL-80 will work correctly on IPC files.
- 69) The SEARCHLIST/INSERT=<n> <pathname> command would not add the path or return an error if the searchlist was empty and <n> was greater than 2. This has been fixed.
- 70) The RIGHTFILL switch on the !SUBSTRING pseudomacro did not work correctly if it was after the ITEM switch. This has been fixed.
- 71) CX LIMIT will now work correctly if it is given values less than 0:00:01.
- 72) The AUTOSIZE switch was ignored if the NHEADER switch was used on the FILESTATUS command. AUTOSIZE and NHEADER now work correctly.
- 73) QPLOT, QPRINT and QFTA were missing a line from the error message. This has been fixed.
- 74) CX LOGGING/START/MAX=<n> <file> would cause a traceback if <n> were greater than 32767. This has been fixed.

- 75) CX LIMIT <n> hh:mm:ss would cause a traceback if <n> were greater than 32767. This has been fixed.
- 76) <command>/str would give a "Switch unknown, /str", the command output will now be written to the <unnamed> string except in cases where the /STRING switch was already defined. (QBATCH, PROC ...)
- 77) The MOVE command would show a directory error but print out a filename if a directory in a pathname did not exist or the user did not have proper access. This has been fixed.
- 78) QFTA/STREAM=n/DEST=<dest> <filename> will now give an error. Specifying streams are no longer supported for QFTA.
- 79) HISTORY/WRITE=HIST.OUT <n> will now give an error if line <n> does not exist.
- 80) Files that had a size greater than 2³¹ would be shown with an incorrect size by the FILESTATUS command. This has been fixed.
- 81) If a macro contained a line with a lexical comment with a conditional pseudo-macro on the next line would not work correctly. This has been fixed.
- 82) Commenting out conditional lines with the COMMENT command would not work correctly. This has been fixed.
- 83) An '&<nl>' construct, followed by a <space> would incorrectly drop the space. This has been fixed.
- 84) CLI32 was not consistent with CLI16 regarding NewLines following the completion of an XEQ or PROC. This has been fixed.
- 85) STRING [PIPEFILENAME] would give an 'Illegal open for pipe type file' error. This has been fixed.
- 86) QBATCH/CPU=<time> will now work for all times up to 36:24:30.
- 87) CONTROL @EXEC CONSOLESTATUS @CONn will now display the consolename in the error message if there is an error.
- 88) If a LOGFILE is being used, WRITE/L would incorrectly write to the logfile rather than the listfile. This has been fixed.
- 89) The PREFIX command will now allow both the /I and /HISTORY= switches at the same time.

- 90) !READ/SECURE will throw away text after the first '[' is seen.
- 91) The problems related to errors that happen at the time of writing CLI32 output have been fixed. CLI32 would loop if it hit an error while trying to write to a file in a directory if there was not enough space for the WRITE. This is fixed.
- 92) '[MACRONAME/SWITCH=(VAL1,VAL2) (ARG1,ARG2)]' will no longer give an error.
- 93) The buffersize that can be specified on the MOVE command (MOVE/BUFFERSIZE=n) must be less than or equal to 65535. An attempt to specify a larger buffer size will result in an error.
- 94) Previously, MOVE/TYPE=\DIR <destination_dir> # would not move non-empty directories. This has been corrected for DIR, LDU and CPD file types.
- 95) Baud Rate of 38400 is now reported correctly for the CHARACTERISTICS command.
- 96) CLI32 macroname and switch combination > 255 characters are now handled correctly.
- 97) A problem with CLI32 not printing out a NewLine till the program completes execution has been fixed.
- 98) CLI32 no longer loops when writing out strings longer than 32000 characters.
- 99) /STR= and STRING/NAME= will now reference the unnamed string.
- 100) CLI32 will now return the Qpriority information even in cases where the user specifies the priority.
- 101) QPLOT, QPRINT, and QFTA errors now conform to QBATCH errors.
- 102) CLI32 will no longer accept templates that end in ":". An error message "Illegal Filename template" will be printed.
- 103) There was a problem running a macro that executed a series of programs. The NewLines to be printed after each program were being buffered and printed all at once at the end. This has been fixed.

- 104) Boundary values for device name, streams, time etc. in the CONTROL @EXEC LIMIT command no longer cause a traceback.
- 105) Imbedded spaces in the CONTROL/I @EXEC command no longer give an error.
- 106) CONTROL/I/1=WARNING @EXEC (and /M) is now consistent in reporting errors and continuing.
- 107) CONTROL/M @EXEC will no longer give an error message when there are spaces in the command line following it.
- 108) Various problems regarding the SUBSTRING pseudomacro have been fixed.
- 109) The /COUNT switch used to return the number of files processed, as opposed to the number of files 'successfully' processed. This problem has been fixed.
- 110) The problem with wrong values returned by the BIAS command when setting BIAS to 1 has been fixed.
- 111) The TRACE/CONDITIONAL/PREV command used to return "Conflicting switches", but still set the trace to on. This problem has been fixed.
- 112) Passwords can now be changed by reading in the new password from a file.
- 113) Various commands used to return error messages of the form "Error:File : <filename> " even in cases of directory related errors. This problem has been fixed.
- 114) Commands of the type CONTROL/I @abcd now return an error if abcd is not an IPC port.
- 115) Commands supporting the switches /LEVEL=n and /PREVIOUS=n no longer give a traceback for values of n > 32767.
- 116) The READ pseudomacro with the /LENGTH switch now works correctly.
- 117) LOCK/VERIFY command will now display the command specified.
- 118) PASSWORD, PASSWORD/CHANGE, LOCK and UNLOCK will accept passwords up to 32 characters.
- 129) Zero-length passwords are now treated the same as invalid passwords with LOCK commands, and re-prompting will not occur.

- 120) Files created by the PASSWORD/WRITE command will not specify the password length. The password will be padded up to 33 characters, encrypted and written out.
- 121) Problems regarding the last part of the termination messages getting printed twice on the screen have been fixed.
- 122) LIST/K; WR/L will report "Error: File does not exist, file @LIST" consistently every time.
- 123) If a temporary listfile existed but the user did not have write access to it, the error message would not print out the filename correctly. This has been fixed.
- 124) CONTROL/L/M @EXEC <exec-command> will redirect output to the listfile. CONTROL/L/T will also work correctly.
- 125) Errors that occur during a PROC or QBATCH command can be redirected to the listfile by using the /L switch.
- 126) CLI32 no longer prints out "Process termination, PID 0" error messages.
- 127) CLI32 no longer gives the error message "Not a command, macro or program" when the program to be executed has only +.E access.
- 128) CONTROL/I/L (or /M) @EXEC now sends output to the listfile without any errors.
- 129) Various problems regarding CONTROL @EXEC argument handling have been fixed.
- 130) The QDISPLAY command now supports a queuname up to 31 characters. This is consistent with EXEC.
- 131) CLI32 now handles error messages up to 255 characters on a ?RETURN call.
- 132) The problem with CLI32 returning "UNKNOWN MESSAGE CODE 00000000" and invalid term messages from BYE has been fixed.
- 133) CLI32 now expands command lines of the type " (create/m type del) a b) " correctly.
- 134) The SUBSTRING pseudomacro of the type [!SUBSTRING/ITEM=m-n abcd] will now return NULL if n < m.
- 135) The WHO command will now set the string correctly for commands like WHO/STRING=ABCD.

- 136) Global strings are now set correctly for commands like PROC/STR=ABCD/BLOCK :CLI.PR.
- 137) CLI32 will now create destination directories with hashframe sizes of the source directory, when moving directories with the MOVE command. Before they would always create them with a hashframe size of 7.
- 138) LOCK/V/L=<listfile> will now print all the commands locked to the listfile correctly.
- 139) CLI32 will now try to execute the correct file when a directory with the same name as a .PR file is found on the searchlist.
- 140) The problem with !READ printing out text in spite of errors has been fixed.
- 141) Setting the PROMPT to VARO would cause a traceback. This has been fixed.
- 142) The /BRIEF switch will no longer display 'normal' console enabled messages. It used to require the /ALL switch to suppress the output.
- 143) NON-printable ASCII characters are now displayed with a (^). Previously, nothing would be printed. For example:

```
WRITE [!ASCII 1] will print ^A.
```
- 144) The CURRENT command now shows the correct unnamed STRING value.
- 145) @OUTOUT is now closed prior to executing a PROCESS or XEQ command so that output is not lost.
- 146) Certain instances of using named strings with PROCESS/STRING would cause a traceback. This has been fixed.
- 147) White space before lexical comments is now removed. Previously, some commands would return an "Invalid Number of Arguments" error.
- 148) [!USER pid-number] now works correctly.
- 149) If a CLI32 is PROCed in a directory that the user does not have access to, the correct message (Directory access denied) will be given. It used to give "UNKNOWN MESSAGE CODE 51200000".

- 150) CHAR/RESET @CONx where CONx is the current user console, would not show the correct characteristics after a PUSH;POP. This has been fixed.

4.2.6 DISPLAY Changes:

- a) DISPLAY would allow conflicting switches to be specified for output radix (specifically /HEX/DEC). When specifying these switches together, DISPLAY will now report a "Conflicting Switches" error.

4.2.7 DUMP_II and LOAD_II Common Changes

- a) A single "-" template character was being treated like a "+" character when expanding templates. This has been corrected.
- b) Templates with the "-" wild card character were not working properly by not excluding files with multiple dots in their names. This has been fixed.
- c) A double volume name insert problem has been corrected in the "Warning: Label contains incorrect VOLID" message after entering a volume name with an "@" character when prompted to specify a new VOLID.
- d) Entering a shorter volume name for the "Retry, New volume, or Quit?" prompt after the operator refused the current mount request would corrupt the EXEC request to mount the required volume. The shorter name would be followed by the longer previous volume name characters.
- e) Files are now processed with a size equal to the /MAXSIZE value. The previous revision would only process files less than this size value.
- f) The /OWNER switch value is truncated to ten characters when it follows /IBM in the command line. This permits a valid string comparison with the maximum ten character value from the actual IBM format label.
- g) An error is displayed when the /BLOCKCOUNT value does not range from 1 to 255 and then the utility terminates abnormally.
- h) Using a date of 29-FEB-92 (with the /TLM, /TLR or /TLA switches) would return as "Illegal Date Format" error. This has been corrected.
- i) Labeled tapes are now closed properly just before an abnormal termination. This allows EXEC to rewind the last labeled tape volume.

4.2.8 DUMP_II Changes

- a) A stack overflow would occur at the end of the first @MTJ volume for the "File space exhausted" system error and filemarks would not be written. This has been corrected.
- b) An extra error would be given when appending to an IBM labeled tape set. The label conversions work properly now.

4.2.9 LOAD_II Changes

- a) Loading a directory with extended element sizes caused the first file in that directory to inherit the element size from the directory if the file did not have an extended element size. This has been corrected.
- b) Misleading error messages were being given when a file from an IBM labeled tape did not exist. The ending label conversions now work properly and the right message is given.
- c) Empty directories are now loaded again when a trailing "#" is used in a file name template.
- d) The last read in progress is no longer canceled for tape operations that use the /MAXCAPACITY switch. This would sometimes cause drive or controller termination problems and would result in a "Physical unit off-line" warning for the next load operation.
- e) A fixed point overflow or division by zero would sometimes occur when the /STATISTICS were given at the end of a LOAD_II operation. This was a problem when computing the throughput value based on the elapsed and dead time values.
- f) An error message is displayed and LOAD_II terminates when the /CONFIRM switch is used alone without a /DELETE or /RECENT switch.
- g) The /RECENT switch now loads the correct files when they were created on the same day. The current disk file would not be replaced when the dumpfile version was created after 18:12:14 or before that when the file size was larger than the original disk file.
- h) The file count in the /STATISTICS report is now accurate when compared to DUMP_II.
- i) A problem when using the /ELEMENT switch that would rarely cause an "Attempt to Exceed Maximum Index Level" error to occur has been corrected.

- j) The /MAXCAP switch would sometimes cause a hang after reading back all the files from a tape dumpfile under some MV configurations.

4.2.10 EXEC Changes

- 1) EXEC would sometimes return "Device already allocated" errors when attempting to start devices. This has been fixed.
- 2) The problem where MOUNT/VOLID would result in the mounting of volids that had been premounted, rather than the volids specified in the premount command has been fixed.
- 3) XMNT would not allow the operator to put the first volume back on and issue a DLOAD/N. This has been corrected.
- 4) XMNT would return "Attempt to access process not in hierarchy" errors when batching mount requests. This has been fixed.
- 5) Problem related to SNA RESTARTS, which caused "Substring or Do Case Index out of range" errors have been fixed.
- 6) "Internal Inconsistency" errors occurred when bringing down IBM systems connected to MVs through SNA. This has been fixed.
- 7) The problem where CONTROL @EXEC OPERATOR ON would cause any jobs that were in the queue with special forms to be printed has been fixed.
- 8) CONTROL @EXEC START <queue> <device> would sometimes produce a "Device is already started, filename argument is invalid" error. This has been fixed.
- 9) Changes were made to XLPT to eliminate the formfeed at the start of the job.
- 10) The correct number of estimated pages is now printed on the header page of a job.
- 11) Jobs are no longer enqueued if the user issues a QPRINT on files with "Access Denied" or "Illegal file type".
- 12) CONTROL @EXEC ELONGATE <device> ON would not return an error if used on the wrong type of device. This has been fixed.
- 13) Changes made to COOP_TOOLKIT.LB have resolved CONTROL @EXEC SPOOLSTATUS hangs.

- 14) Assigning OP to a GROUP before starting EXEC would prevent users not in that group from logging on. This has been fixed.
- 15) The problem with the offset ?XFDUN used with ?EXEC system call which was producing "Conflicting argument and/or switches" errors, has been corrected.
- 16) QCOMP.PR would sometimes terminate with "Heap Overflow" errors. This has been fixed.
- 17) A problem where QBATCH notification messages were sent to the wrong user has been fixed.
- 18) A problem where "Illegal character in logical tape name" errors were reported when a hyphen was used in a volume id has been corrected.
- 19) A problem where "Caller not privileged for this action" errors would be returned from batch jobs has been corrected.
- 20) CONTROL @EXEC CANCEL, HOLD and UNHOLD were not validating privileges properly. This has been corrected.
- 21) Problems with using /SEQUENTIAL were fixed so that DDUMP and DUMP_II will now work as they did under EXEC 1.21.
- 22) "Cleanup File Does Not Exist. Device Terminated" errors would be reported by EXEC on the first print request following system initialization. This has been fixed.
- 23) Changes were made to XLPT to resolve a problem where the page would start printing at the top-of-page and not at the top-of-form.
- 24) Issuing CONTROL @EXEC RESTART @device while printing would result in a "Read Access Denied" error even though the RESTART was effective. This has been fixed.
- 25) Problems with mount entries staying in the MOUNTQ after completion of the batch job have been fixed.
- 26) A problem where CONTROL @EXEC DISMOUNTED commands would return "No Outstanding Mount Requests" errors has been corrected.
- 27) Extensive work has been done to eliminate "Hardware Protection Violation. Inward Address Reference" errors which would bring down the XMNT process while issuing CONTROL @EXEC DISMOUNTED commands.

- 28) XMNT now generates the DISMOUNT request on normal terminations of an explicit labeled DUMP within 30 seconds after termination.
- 29) A user that does not have BATCH privilege will now receive "Warning: may not run batch jobs" errors if they try to submit a job.
- 30) The problem where "Device is Busy Cannot Mount or Dismount" errors were reported when CONTROL @EXEC DISMOUNTED commands were issued, has been corrected.
- 31) When a user issued a MOUNT/NOPEN command, the operator would respond with a CONTROL @EXEC MOUNTED @unitname, but the mounted message would not be returned to the user. This has been fixed
- 32) "Negative Time" errors reported through EXEC have been fixed.
- 33) Problems with starting and stopping devices which could potentially result in EXEC not processing any CONTROL @EXEC commands have been resolved.
- 34) "Termination through ?BOMB" errors were sometimes reported by EXEC. This has been corrected.
- 35) QMODIFY/<parameters> <sequence number> will now return an "Already Active" error if the job is active.
- 36) If CONTROL @EXEC OPERATOR OFF is issued and Operator is off, no error will be returned.
- 37) Batch jobs would abort with "Abort: Caller not privileged for this action" error, when superuser was invoked by a user with the privilege. This has been resolved.
- 38) A "File Access Denied" error is now returned if the user does not have write/append access on the QOUTPUT and QLIST files specified on the QBATCH command.
- 39) If CUSTOM LOGON was running on the system, XBAT would leave the file open count equal to 1 after the completion of a batch job. This has been resolved.
- 40) CONTROL @EXEC STOP <devicename> would result in EXEC.PR crashing if the device had an active stream. This has been fixed.
- 41) EXEC.PR would sometimes crash with "Insufficient memory" errors. This has been resolved.

- 42) The problem where notify messages were being sent to the wrong pid has been fixed.
- 43) A problem where CONTROL @EXEC STOP would not stop a queue if it was in an active status has been corrected.
- 44) Many "Invalid State reached in state machine" errors have been corrected or eliminated.
- 45) EXEC.PR would sometimes crash with "Internal Inconsistency error, Null pointer encountered". This has been resolved.
- 46) CONTROL @EXEC HALT would sometimes cause EXEC to crash. This has been fixed.
- 47) CONTROL @EXEC MODIFY/PAGES will now return an error if used on jobs in a PLOT queue.
- 48) XBAT would return "Process name in use" if there were two queuenames (queues of batch type) where the first 13 characters were identical, and had batch jobs running at the same time in the same stream. This problem has been resolved.
- 49) CONTROL @EXEC OPERATOR ON would return "Warning no such cooperative" if MOUNTQ was deleted. EXEC will now return the message "Device unknown to EXEC".
- 50) EXEC now returns the error "Cooperative with the specified name does not exist" if the process specified with the /NAME switch on CONTROL @EXEC START command does not exist, or the username supplied is not the same as that of EXEC.
- 51) XLPT.PR would sometimes hang if CONTROL @EXEC START, STOP or SPOOLSTATUS commands were issued in a fast sequence. This has been resolved.
- 52) A problem was fixed where XMNT.PR would abort if the user interrupted a dump/load during an explicit mount session.
- 53) EXEC would sometimes abort when a queue was being created with the same name as a queue that was actively being deleted. This has been fixed.
- 54) EXEC would sometimes leave invalid information in the JOBS file if AOS/VS failed and ESD was not run. This has been fixed.
- 55) EXEC would sometimes hang when starting of stopping printers. This has been corrected.

- 56) EXEC would sometimes fail when invalid error codes were received from its cooperative processes. This has been fixed.
- 57) NULL characters were sometimes being written into EXEC logfiles. This has been fixed.
- 58) NULL characters were sometimes being written into batch output and batch list files. This has been fixed.
- 59) The output of the OPERATOR command is now logged.

4.2.11 LOCK_CLI Changes

- a) The QSNA command would never work when using LOCK_CLI. This has been fixed.

4.2.12 PATCH Changes

- a) When patching an overlay (for a 16-bit program), the patch would be applied incorrectly if lower-case symbols were used. This has been fixed.
- b) A copy of PATCH.PR and PATCH.ST is not longer included in the :UPDATE directory as well as the :UTIL directory. Instead, :UPDATE now contains link files which resolve to the copies of PATCH.PR and PATCH.ST in the :UTIL directory.

4.2.13 PREDITOR Changes

- a) PREDITOR now maintains the password encryption state and correctly displays this value as a default response to the "Encrypt password" question. Previously, PREDITOR always displayed "N" as the default response for this question.

4.2.14 REPORT Changes:

- a) Sometimes SYSLOG files would include filenames that were not properly null terminated. REPORT will now correctly output these filenames when they are encountered.
- b) When bad event records are encountered by Report, they will be skipped rather than aborting the REPORT program.
- c) Several FIXED POINT OVERFLOW problems were corrected in the REPORT program. When field overflows are encountered, the field will be represented as a series of asterisks. REPORT no longer aborts in these situations.
- d) Problems with REPORT displaying the revision number in wrong format have been corrected.

- e) When REPORT wrapped a line, the last character on the initial line was duplicated as the first character on the next line. This problem has been fixed.
- f) A number of event codes that were previously not recognized are now supported (see the Enhancements section of this notice).
- g) REPORT sometimes aborted with subscript out of range errors. This has been fixed.
- h) REPORT displayed some usernames with non-printable characters when the /FAILED_LOGON switch was used. This has been corrected. If a username contains any non-printable characters, REPORT will now display *NON_PRINTABLE* for the username instead.
- i) REPORT sometimes aborted with fixed point overflow errors when the /X switch was used. This have been fixed.

4.2.15 SCOM Changes:

- a) SCOM would not properly ignore case when the /IGNORE switch was used. This has been corrected.
- b) SCOM/MAXLEN=n would fail if one of the files had a line with >n characters. This has been fixed.

4.2.16 SED Changes:

- a) Trailing blanks would not be removed if only one blank existed on a line. This has been fixed.
- b) Changes to a file would sometimes be flushed when an invalid BYE command was entered. This has been fixed.
- c) The overflow problem associated with using the /NO_RECREATE switch after 18:12:16 has been fixed.

4.2.17 SPEED Changes

- a) SPEED did not properly support 8-bit characters with the I command. This has been fixed.
- b) The ZJ command did not work properly when the text buffer had only one character. ZJ will now jump to the end of the buffer as expected.

4.2.18 SPRED Changes

- a) SPRED would not find a symbol table file for a program whose pathname included a directory with ".PR" in its name. This has been fixed.

4.2.19 Terminal Services Changes:

- a) A number of bugs that resulted in terminal controller softpanics, especially on ITC-128 and LTC-64 controllers, have been fixed.
- b) When an application issues a ?OPEN on a console that is not already open, terminal services clears the "binary mode" state. In previous revisions, this state was not consistently cleared on all controller types.
- c) When an application issues a ?WRITE system call with the ?IRCL field set to zero, terminal services now processes the ?WRITE. This processing includes cursor positioning and forced output. In previous revisions these ?WRITE system calls did no processing.
- d) On a connection-oriented line, such as modem or TermServer, a timed ?READ request may not start timing until the connection is established. (A timed ?READ is a ?READ issued after issuing ?STOM to set a time-out value and setting the time-out characteristic, CHAR/ON/TO.) In previous revisions timed ?WRITE system calls started timing after the connection was established, but timed ?READS started timing immediately on all consoles. In rev 7.70 ?READS will wait for the connection before they start timing on all controllers except IAC-8, IAC-16, MCP-1, IAM-16, FCM-16, LAC-12, LAC-8, and CPI-24.
- e) PIM devices are no longer supported in AOS/VS 7.70.
- f) ?GECHR and ?GCHR system call functions have been altered to allow PID 2 or users with System Manager privilege turned on to determine the current characteristics of a specific console. This function was available only for default characteristics in the past.
- g) Software sizing limitations that prevented installing LAC controllers on device codes, other than 40/41, on MV/2500, MV/2000, and MV/1000 systems have been eliminated.

NOTE - Certain hardware restrictions may still limit the number of LAC controllers possible on these systems.

- h) All problems corrected by 7.69_LPMGR.PR_PAT.05 patch file have been corrected in source.

4.2.20 VSGEN Changes:

- a) PIM devices are not supported in AOS/VS 7.70. If VSGEN encounters an older spec file that includes a PIM device,

it will automatically remove it from the configuration. Warning messages are displayed by VSGEN.

- b) The default answer for VT100 for all Terminal Services controllers except IAC 16 has been changed to YES.
- c) VSGEN now enforces a low limit of 128 for the Cache system parameter. Values from old spec files are updated and new spec files reflect the new minimum.
- d) The <system name>.SSF file hosts a significantly different format for CONO and all Terminal Services devices. VSGEN reads both the old and the new format when you specify either the /BATCH= or the /DEF= switches, and produces new spec files in the new format.

5. Notes and Warnings

5.1 Notes

- 1) Normally, an estimated amount of system CPU resources used during AOS/VS system calls is charged against the user's accumulated CPU time. You can install an optional patch, 7.70_AOSVS_SYSCALL.CHARGE_OPAT, to enable more accurate accounting of user CPU time. This patch will cause the actual amount of CPU time spent in the system on behalf of a user process to be added to that user's accumulated CPU time.

System calls ?RUNTM, ?PSTAT and ?XPSTAT can be used to report user CPU time use as before, but only when this patch is not installed. Otherwise, the CPU time used will have the Operating System component of CPU time added to the user's CPU time spent. This means that the user CPU time number returned in ?RUNTM, ?PSTAT and ?XPSTAT will include any operating system CPU time spent on behalf of that user.

The affected number returned in the ?RUNTM, ?PSTAT, and ?XPSTAT system calls is at offset ?GRCH for the ?RUNTM system call, ?PSCH/?PSCL for the ?PSTAT system call, and ?XPCH (double word) for the ?XPSTAT system call.

- 2) AOS/VS Rev 7.70 only supports TDFTs (Terminal Dependent Function Tables) in the following environments; CPI, MCP1, LAC-12, IAC-16, IAC-8 (non 68k version). TDFT support is not planned for other controllers.
- 3) In previous revisions, consoles associated with IAC-24s were improperly numbered. AOS/VS Rev 7.70 fixes this problem. It distributes the names so that they alternate between the two processors on the IAC-24 (the even numbered lines on one processor and the odd on the other). This is in keeping with console numbering on the other terminal controllers with multiple processors.

However, the result of this fix is that these consoles will have different numbers when rev 7.70 is installed. Specifically, if the lowest-numbered console on the IAC-24 is @CONx, then the console number for a particular terminal changes as follows:

7.69	7.70
@CON(x+0	@CON(x+0
))
1	2
2	4
:	:
11	22
12	1
13	3
14	5
:	:
23	23

- 4) Intelligent asynchronous controllers such as IAC-8, IAC-16, IAC-24, ITC-128, etc., allocate a portion of their memory for input and output buffers, also called ring buffers. The amount of memory available varies from revision to revision. If you have taken the VSGEN default answers for Input buffer byte length and Output buffer byte length, you will not have a problem. But if you specified larger-than-default answers or if you select Asian language or ANSI terminal support on some controllers, your system may use more space than actually exists. Your system will come up, but the controller will not function properly. During system initialization the system will print the message "IAC DEVICE CODE xxx IAC memory oversubscribed." You will have to generate a new system with smaller sizes for input and output buffers.

The following tables shows the total and average amounts of memory available for ring-buffer allocation (for average space, we round down odd numbers to the next even number), using actual patch space for files, which may be pre-patched, as shipped. If you apply additional patches, the ring buffer space may change. All values are decimal bytes.

Note that these tables should be used as a guideline. Some variance on your system is possible.

Ring Buffer Space for:	Total RB Space	RB Space Per Line
-----	-----	-----
CPI/24		
no options	9350	388
ANSI	4246	176
IKIS	6648	276
ANSI & IKIS	1544	64
IAC-8:		
no options	9054	564
ANSI	4920	306
IKIS	6722	420
ANSI & IKIS	2588	160
IAC-16:		
no options	4130	128
ANSI		
10 lines	3780	188
11 lines	2920	132
12 lines	2060	84
13 lines	1200	46
14 lines	348	12
15 lines	Insufficient memory	
16 lines	Insufficient memory	
IKIS		
10 lines	5982	298
11 lines	5310	240
12 lines	4638	192
13 lines	3966	152
14 lines	3294	116
15 lines	2622	86
16 lines	1950	60
ANSI & IKIS		
10 lines	1416	70
11 lines	528	24
12 - 16 lines	Insufficient memory	
LAC-12:		
no options	17002	708
ANSI	11898	494
IKIS	13906	578
ANSI & IKIS	8802	366

continued

Ring Buffer Space for: -----	Total RB Space -----	RB Space Per Line -----
LMC:		
no options	20426	1276
ANSI	16186	1010
IKIS	17474	1092
ANSI & IKIS	13234	826
MCP1:		
no options	20764	1296
ANSI	16524	1032
IKIS	17812	1112
ANSI & IKIS	13572	848
ITC128 and LTC64:		
no options	89972	1404
IAC8-3:		
no options	52520	3282
IAC24:		
no options	282104	11754
LAC16, LAC32, and FCM32:		
no options	251628	7862
Integrated LAC16:		
no options	186092	5814
LMC8:		
no options	314664	19666
Integrated LMC8:		
no options	249128	15570

- 5) The :SYSGEN directory contains two new VSGEN files: VSGEN.CON and VSGEN.HLP. These files are used by VSGEN's new line group editor. Anyone using the new T (TERMINAL) command or the MODIFY command from the line group editor's main menu must have write access to the VSGEN.CON file.

5.2 Warnings

- 1) With AOS/VS Terminal Services, much of the system call processing related to terminals is processed in Ring 0 of the operating system. This is in contrast with the past when portions of this processing was the responsibility of PID 1 PMGR. While PID 1 PMGR does retain some minor responsibilities with Rev 7.70, CPU utilization associated with consoles should not be measured exclusively by examining this PID's CPU consumption. The AOS/VS Monitor Rev 5.30 is equipped with tools to aid in accurately measuring terminal overhead. See that product's release information for details.
- 2) Consoles supported by Terminal Services will return a PID of 0 if an application does a ?GPORT on the associated global port number. For example, an application does an ?ILKUP system call on @CONSOLE. Next the returned global port number is given to the ?GPORT system call and the PID returned in AC1 is 0. If the application then uses this PID (0) has input to the ?PNAME system call it would be returned an error since PID 0 is invalid input for ?PNAME.
- 3) THERE IS A PARTIAL REV-LOCK BETWEEN AOS/VS REV 7.70 AND TERMCONTROLLER SOFTWARE! If you are running the XNS protocol on your ITC128 or LTC64 you should load TERMCONTROLLER Software Rev 22025 or greater. If you are running the TCPIP protocol on these controllers you should load TERMCONTROLLER Software Rev 3.36 or greater.

Failure to use these new TERMCONTROLLER software revisions can result in the following problem. If you used VSGEN to create system specifying "N" to the question "TERMMANAGER download?" as part of IAC of type "128" or "64" gen, you must install the appropriate new revision of TERMCONTROLLER software before running that system. If you fail to do this, ITC-128s or LTC-64s on your system will fail to boot.

- 4) The command sequence ^O ^S ^O yields different results when issued via a keyboard attached through an ITC128 or LTC64 versus other types of controllers. The ^S will not be ignored and must be followed by a ^Q in order to restore output. This is a known restriction and will not change in a future revision of AOS/VS.
- 5) A new line interface was created between AOS/VS 7.70 and the AOS/VS Performance Package 5.30 to provide additional functionality. This interface re-implements the Line Monitor features which allow you to collect data about "Response Time" and "Think Time" for each terminal connected to your system. The new Line Monitor allows all types of terminal connections to be monitored as well as allowing more than 128 connections to be monitored.

With AOS/VS 7.70, if Line Monitoring is enabled for the AOS/VS Performance Package, either by SYSTUNE or by patching location GURUFLAG to 1, revisions of the AOS/VS Performance Package prior to 5.30 will no longer work.

- 6) The BROWSE utility will NOT run on any terminal that does not support the "Read Model ID" command. This includes D2 and D200 type terminals.
- 7) If you use 150MB or greater tape cartridge media to move data between systems, please note that there are tape interchange restrictions with the latest versions of DUMP_II and LOAD_II.

AOS/VS 7.70 allows the DUMP_II and LOAD_II programs to access more than 65534 tape records in one tape file. Prior revisions of AOS/VS did not. Tapes containing these "high record" counts cannot be read by earlier revisions of AOS/VS (or revisions of AOS/VS prior to 7.69). To avoid this problem, use large buffer sizes when using DUMP_II/LOAD_II for media interchange (16KB for 150MB cartridge and 32KB for 2GB cartridge if possible).

- 8) AOS/VS Terminal Services AUTOBAUD functionality will only work on terminals that are either set to 7 data bits/mark parity OR 8 data bits/no parity.
- 9) The optional patch <5.30,5.50>_FTA.PR_PAT must be applied in order for EXEC to properly handle queues of type "FTA".
- 10) The optional patch <5.30,5.50>_SVTA.PR_PAT must be applied in order for SVTA to properly handle terminal characteristics in conjunction with AOS/VS Revision 7.70.
- 11) The optional patch 3.51_TPMS CCP.PR_PAT must be applied in order for TPMS to work properly with AOS/VS Revision 7.70.
- 12) If you use a 150 Mbyte or greater tape cartridge devices, note that only the DUMP_II/LOAD_II programs allow the full capacity of the tape to be accessed. All other AOS/VS utilities that access tape media (such as DISPLAY, CLI COPY command and AGENT labeled tape) cannot access record counts greater than 65534 and will have unpredictable results if used to access or create a tape file with greater record counts.
- 13) There are various line printer controllers that incorrectly return the status of the line printer (i.e. status indicates that the line printer is on-line and ready when it is off-line or even powered off). Because of this incorrect status, the process (including EXEC if executing a CONTROL @EXEC START queue @line-printer) will hang when trying to open the line printer. To avoid this problem insure that the line

printer is powered on and is on-line before trying to access it.

- 14) There is a known problem with CLI32 when using the FILESTATUS/PACKET/SORT command with a template argument (such as +). When doing so, all packets will be reported with the same values. To work around this problem, use the command FILESTATUS/PACKET [!FILE/SORT +] to obtain the proper results (or use an earlier revision of CLI32).
- 15) The patch 5.61_XTS_PMGR_RINGO_PAT must be installed in XTS.PR to fix the XTS and PMGR IPC interface problem where XTS uses PID 1 to determine IPC is from PMGR. In AOS/VS Revision 7.70, PMGR resides in Ring 0 and this check is no longer true.
- 16) For MV/3000 Series machines, AOS/VS Revision 7.70 expects the name of the microcode file to be MV3.MCF; so, prior to installing Revision 7.70, you should change the name of this file from MV35.MCF to MV3.MCF. If you do not change the name of the file, you will have to boot the microcode file from tape every time you bring up the system, until you change the name of the file.

6. Documentation

6.1 Manuals and Templates

In the following list, asterisks (*) mark the Manuals that are new or that have been substantially revised since AOS/VS Rev. 7.69.

Part Number -----	Name -----
014-001344-02	10 binders for the manuals listed below
014-001728-00	Information Update: Starting Your ECLIPSE MV/1000 DC
069-000031-02	Learning to Use Your AOS/VS System
069-000203-02	Using the AOS/VS System Management Interface (SMI)
069-000293-00	Starting and Updating Preinstalled AOS/VS
093-000197-04	SPEED Text Editor (AOS and AOS/VS) User's Manual
093-000242-02	AOS/VS Macroassembler (MASM) Reference Manual
093-000245-02	AOS/VS Link and Library File Editor (LFE) User's Manual
093-000246-01	AOS/VS Debugger and File Editor User's Manual
093-000249-02	SED Text Editor User's Manual (AOS and AOS/VS)
093-000335-01	AOS/VS System Concepts
093-000361-03	AOS and AOS/VS SED Text Editor Template
093-000396-01	AOS Debug/FED Template
*093-000540-02	AOS/VS and AOS/VS II Error and Status Messages, with addendum 086-000194-00
*093-000541-02	Managing AOS/VS and AOS/VS II, with addendum 086-000193-00

continued

Part Number -----	Name -----
*093-000542-02	AOS/VS, AOS/VS II, and AOS/RT32 System Call Dictionary, ?A through ?Q, with addendum 086-000195-00
*093-000543-02	AOS/VS, AOS/VS II, and AOS/RT32 System Call Dictionary, ?R through ?Z, with addendum 086-000196-00
*093-000646-01	Using the CLI (AOS/VS and AOS/VS II), with addendum 086-000200-00

NOTE: Initial shipments of AOS/VS 7.70 will not include the addendum. The addendum will be sent to customers who have purchased the Software Subscription Service or Support Plus.

You can also find out about enhancements to the CLI and system utilities by reading the pertinent sections in this release notice. On-line Help files also include these new features.

093-000650-01	AOS/VS and AOS/VS II Menu-based Utilities (template)
*093-000675-02	Installing, Starting, and Stopping AOS/VS

6.2 Documentation-Changes Files

Print the documentation-changes files listed below after installing your software. (The files are located in directory :UTIL.) Follow the instructions on the first page of each file. The documentation is incomplete without them. Filenames preceded by an asterisk have been revised since AOS/VS Revision 7.67.

Filename -----	For Manual -----
069_000031_02	Learning to use your AOS/VS System
069_000293_00	Starting and Updating Preinstalled AOS/VS
093_000242_02	AOS/VS Macroassembler (MASM) Reference Manual
093_000245_02	AOS/VS Link and Library File Editor (LFE) User's Manual
093_000246_01	AOS/VS Debugger and File Editor User's Manual
*093_000335_01	AOS/VS System Concepts

7. Software

7.1 Media

Model Number -----	Part Number -----	Description -----
3900H	071-000463-14	1600-bpi reel-to-reel magnetic tape Vol. 1
3900H	071-001657-00	1600-bpi reel-to-reel magnetic tape Vol. 2
3900C	071-000463-14	1/4-inch cartridge tape (15.2 Mbyte) Vol. 1
3900C	071-001657-00	1/4-inch cartridge tape (15.2 Mbyte) Vol. 2
3900B	061-000443-01	1/8-inch cartridge tape (21 Mbyte) Vol. 1
3900B	061-000634-00	1/8-inch cartridge tape (21 Mbyte) Vol. 2
3900J	070-000278-01	1/2-inch cartridge tape (130 Mbyte) Vol. 1
3900A	079-000236-01	1/4-inch cartridge tape (150 Mbyte) Vol. 1

7.2 Files

The files shipped with AOS/VS Revision 7.70 are listed in a separate text file that you can print. The pathname of this file is :UTIL:7.70_AOSVS_FILES.

7.3 Organization

7.3.1 H, C and B Tape Medium Organization

Magnetic Tape Medium (1600-bpi magnetic tape, and 21 Mbyte cartridge tape):

Like AOS/VS Revisions 7.68 and 7.69, 7.70 media consists of two volumes, whereas revisions prior to 7.67 consisted of a single tape volume.

Volume 1

Tape file	Contents	
-----	-----	
0	TBOOT	(Tape bootstrap)
1	FIXUP	(Disk fixer utility)
2	DFMTR	(Disk formatter)
3	INSTL	(Installer Utility)
4	TBOOT	(System bootstrap)
5	Starter System	(:SYSGEN:SYS.PR)
6	First dump file	(First dump file)
7	Operating system	(Second dump file (part 1)) and utilities

Volume 2

Tape file	Contents	
-----	-----	
0	TBOOT	(Tape bootstrap)
1	FIXUP	(Disk fixer utility)
2	DFMTR	(Disk formatter)
3	INSTL	(Installer Utility)
4	TBOOT	(System bootstrap)
5	Starter System	(:SYSGEN:SYS.PR)
6	First dump file	(First dump file)
7	Operating system	(Second dump file (part 2)) and utilities

The formats of the two volumes are the same, with the exception of file seven. What was previously contained in file seven has been split between file seven on volume 1 and file seven on volume 2. Basically, :UTIL:#, HELP:#, and UPDATE:# have been moved to the second volume, because the H, C and B tapes were too small to hold the entire AOS/VS product.

Note that when using the OS SYSTEM MEDIA for starting from tape, either volume may be used. When loading from file seven, it is not critical that you load volume 1 before loading volume 2, only that you load them both.

7.3.2 J and A Tape Media Organization

Magnetic tape medium organization (130 Mbyte cartridge tape).

The AOS/VS J and A media consist of one volume, whereas H, C and B media consist of two volumes. Basically, the two file 7 dump files for the H, C and B media are contained in one file for the J and A media.

Volume 1

Tape file	Contents	
-----	-----	
0	TBOOT	(Tape bootstrap)
1	FIXUP	(Disk fixer utility)
2	DFMTR	(Disk formatter)
3	INSTL	(Installer Utility)
4	TBOOT	(System bootstrap)
5	Starter System	(:SYSGEN:SYS.PR)
6	First dump file	(First dump file)
7	Operating system	(Second dump file) and utilities

8. Installation Instructions

The procedures for installing a new system and for installing a release to an existing AOS/VS system are almost identical. Detailed installation instructions can be found in the manual, "Installing, Starting, and Stopping AOS/VS" (093-000675-01). New Users should see Chapter 3, and users upgrading from a previous revision should see Chapter 7.

9. Preparing a Software Trouble Report (STR)

If you found an error in AOS/VS, its utilities or its documentation, or if you have suggestions to make about the product, please fill out and return to Data General a Software Trouble Report (STR). (If your contract permits, you may report the information called for in this section to your Data General representative.) You can use current printed STR forms, or you can use a new on-line STR form (pathname :UTIL:STR_FORM_AOSVS). If you use the on-line form, first copy it, edit the copy, and then print and submit the copy.

To help expedite STR processing, include only one problem or suggestion on each STR form. Please use the following guidelines when filling out your Software Trouble Report.

- a) List the name of the product as AOS/VS on the STR. Calling the product VSGEN or SED or AGENT may lead to misfiled or delayed STRs.
- b) Decide what kind of STR you are writing:

Enhancement - describe the proposed enhancement clearly and tell why you want it. The better we understand what you want, the easier it is for us to evaluate your request.

Documentation error - give the page and section or paragraph, and tell why you think there is an error.

Software problem - clearly and specifically state the problem so that support personnel can try to reproduce it. Avoid phrases like "the program does not work", or "fails."

- c) On the STR form provide all of the following information:

- o Date
- o Revisions of the product, Microcode and operation system.
- o Names and revisions of other software this product uses
- o The CPU type
- o Terminal and printer types, if relevant
- o The command line, complete instruction, or program name that caused the problem
- o How often the problem occurs and how serious it is
- o The action(s) necessary to reproduce the problem

- d) See Chapter 10 in "Managing AOS/VS and AOS/VS II" for help in filling out the STR.

APPENDIX A AOS/VS Optional Patches

:UPDATE:7.70:7.70_AOSVS_DISCONNECT_OPAT

This optional patch allows a process to detect a MODEM or NETWORK disconnect as a Ctrl-C, Ctrl-B interrupt, assuming the process has an outstanding and enabled ?KWAIT system call. A MODEM or NETWORK disconnect would normally generate a ?KINTR with a value of -1, causing the process to terminate; with the patch installed the process's ?KWAIT completes with a value indicating that a Ctrl-C, Ctrl-B has been received.

:UPDATE:7.70:7.70_AOSVS_UACL_OPAT

This optional patch enables ACL checking for unit type files, such as MTU (magnetic tape unit), and DKU (disk unit). The default behavior is that, even though the caller's ACL byte is returned in ACO for a ?GOPEN call to a unit type file, ACLs are not enforced for subsequent unit I/O. With the patch installed, ACLs on unit I/O operations are enforced. For ?OPENS, the agent enforces the open type against the ACL byte.

:UPDATE:7.70:7.70_LPMGR.PR_ORD_CR_OPAT

This optional patch enables the functionality provided by the new Screen Management option: ?SCMGT.FLAGS.ESNC, for all Screen Edit I/O, regardless of the packet interface used. The ?SCMGT.FLAGS.ESNC option (Ordinary CARRIAGE-RETURN) treats a CR as a LF, with no truncation of the line.

:UPDATE:7.70:7.70_AOSVS_ROOT_ACL_OPAT

This optional patch changes the ACL of the ROOT (:) from +,E to +,RE. It should apply to all future revisions of the AOS/VS product, unless specifically mentioned in a subsequent release or update notice.

:UPDATE:7.70:7.70_AOSVS_SEA_ENTRIES_OPAT

This optional patch increases the maximum number of SEARCH LIST entries from 8 to 16. It should apply to all future revisions of AOS/VS, unless specifically mentioned in a subsequent release or update notice.

NOTE: This patch may cause certain problems with applications whose handling of the ?GLIST entries or buffer size is inconsistent with the capabilities allowed by the patch. If you encounter problems with this patch, we recommend that it not be used.

:UPDATE:7.70:7.70_AOSVS_SEA_BUFFERS_OPAT

This optional patch increases the size of the maximum allowed ?SLIST buffer from 256. to 512. bytes, and the size of the maximum allowed ?GLIST buffer from 512 to 1024. bytes. This patch should apply to all future revisions of AOS/VS, unless specifically mentioned in a subsequent release or update notice.

NOTE: This patch may cause certain problems with applications whose handling of the ?GLIST entries or buffer size is inconsistent with the capabilities allowed by the patch. If you encounter problems with this patch, we recommend that it not be used.

:UPDATE:7.70:7.70_AOSVS_FILE_ELEMENT_SIZE_OPAT

This optional patch changes the ?CREATE handling of a user defined file element size. Whereas the previous functionality rounded up the user defined value to the next multiple of the default element size, the patch allows element sizes less than the default element to be used. For specified element sizes greater than the default element size, the old behavior is retained. This patch should apply to all future revisions of AOS/VS.

NOTE: Application programs that depend on the old functionality may have problems with this patch. If you encounter such problems with this patch, we recommend that it not be used.

:UPDATE:7.70:7.70_AOSVS_SYSCALL_CHARGE_OPAT

This optional patch changes the nature of CPU time accounting. The patch causes AOS/VS to add system time spent by a System Call handler on behalf of a user to the "CPU Time (in Milliseconds) used by the Process", which is returned in:

```
offset ?GRCH (double word) in ?RUNTM
offset ?PSCH (double word) in ?PSTAT
offset ?XPCH (double word) in ?XPSTAT
```

The patch allows a more accurate picture of the CPU time being utilized by a process. This is a different picture from that presented by previous AOS/VS revisions or unpatched AOS/VS 7.67. This patch should apply to all future revisions of AOS/VS.

:UPDATE:7.70:7.70_AOSVS_FLUSH_BUFFERS_PAT

The effect of this optional patch is similar to that of the "RUNLCL Patch" provided by BJ Inc. It alters the flushing functionality for File Index Blocks from "Flush Immediately after a Change" to "Release the Modified System Buffer to the SYSTEM LRU QUEUE, where it is flushed with a ?GCLOSE, ?UPDATE, or via

the LRU mechanics (i.e. if someone else needs your buffer, it gets flushed to DISK)".

The benefits of this patch is that your system runs faster, due to less DISK I/O from buffer flushing. The risk is that if your SYSTEM crashes, and ESD cannot be run, FIXUP will most likely DELETE or TRUNCATE your OPEN files with size changes reflected only in System Buffers. We do not recommend using this patch, but do recognize that a similar patch has been in use by customers for some time. This patch should apply to all future revisions of AOS/VS.

:UPDATE:7.70:7.70_AGENT.PR_GIGATAPE_OPAT

This optional patch corrects one case of GIGATAPE drives producing a timeout error when loading very large files.

:UPDATE:7.70:7.70_AOSVS_MV40000_OPAT

All MV/40000 users with DPF DISKS should apply this optional patch to bypass a potential hardware problem on these systems.

:UPDATE:7.70_LPMGR.PR_NO_CONOLOG_OPAT

This patch will disable ?LOGEV system calls in LPMGR.PR for the purpose of CONO logging. This patch simply eliminates the system call overhead for those users, who do not wish to have CONO logging.

:UPDATE:7.70_AOSVS_DIR_TLM_OPAT

This optional patch designed to make the TLM functionality of AOS/VS DIRECTORIES more compatible with VSII. The TLM of the DIRECTORY will be updated on any CREATE, DELETE, RENAME, or any operation that results in adding or deleting a DIRECTORY DATA BLOCK(DDB).

NOTE: Some additional flushing overhead will be incurred through the use of this patch. The patch is intended for application software that requires more accurate TLM information on directories.

[End of Release Notice]



