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APOLLO
TECHNICAL NOTE 3

issued by
I D Benest

Release Document Software Version 2.2

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DISTRIBUTION:

F R A Hopgood	A S Williams
R W Witty	C P Wadsworth
D A Duce	E Fielding
C J Prosser	J Loveluck
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J Brown	T Watson
I D Benest	
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Software Version 2.2 is now running on the Apollo and the corresponding release document is included with this note. The following sections in that document apply at Rutherford:

1.1 PASCAL

Our documentation is the preliminary version and some sections are missing.

1.5 DISPLAY MANAGER

1.6 SHELL COMMANDS

1.7 STREAM MANAGER

2 CORRECTIONS

3 ERRORS REMAINING IN VERSION 2.2

Documentation errors have been amended in the Master copy.

jg-wp

RELEASE DOCUMENT

Software Version 2.2

This document describes the Version 2.2 software. It covers the enhancements that have been incorporated and the errors that have been corrected. In addition, it lists the known errors remaining in the software.

Version 2.2 contains essentially the same software as Version 2.1. However, a variety of errors found in the version 2.1 software have been corrected.

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1 NEW FEATURES AND ENHANCEMENTS

This section describes the new features supported by Version 2.2 and covers enhancements to several system components.

1.1 PASCAL

Support for Pascal is included in this release. Apollo's Pascal language is based on the ISO draft standard DP/7185, and provides most of the standard language features plus numerous extensions. The Pascal User's Guide (part #792) describes the extensions, the implementation of the I/O system, and the use of the compiler. The manual will be available in late September.

1.2 PARALLEL PRINTER

Aegis now supports the Printronix parallel printer, multiple printers on a network, and better pagination control. In addition, it is now possible to quit a background print server process.

The parallel Printronix printer is connected to the Apollo node through the PBU. Use the "device printronix" directive in the configuration file to direct files to the Printronix.

1.2.1 PRINT_FILE Program Enhancements

Invoke the PRINT_FILE program with the following command:

```
PRF pathname [-FTN | -NPAG] [-PR [printer_name]]
```

Specify `-FTN` to use FORTRAN forms control conventions. If the file's carriage control attribute is `STREAM_$F77_CC`, PRINT_FILE automatically uses FORTRAN forms control, so you need not specify `-FTN`. (Within a program, you can set the carriage control attribute by calling `STREAM_$REDEFINE`.)

Use the `-NPAG` option to suppress pagination. If you omit this option, the print server inserts a page eject every 66 lines.

Use the `-PR` option to define the printer on which this file is to be printed. This option is useful only if more than one printer is in use on the network, or if a printer has been assigned a nonstandard name with the "printer_name" configuration directive. If you omit the printer_name from the `-PR` option, PRF uses the name "P". Note that "P" is also the

default printer name for the print server.

1.2.2 PRINT_SERVER Program Enhancements

The print server program is now invoked as follows:

```
PRSVR [config_file_name] [-B | -Q]
```

By default, PRSVR uses /SYS/PRINT/PRINTER_CONFIG.DATA as the configuration file. To use a different configuration, create a file containing configuration directives and specify its name as "config_file_name". For a complete list of configuration directives, type HELP PRSVR CONFIG.

The -B option causes the print server to run as a background process. If this option is present, a background process is created, a message is printed to that effect, and the program exits. After about 10 seconds of initialization, the print server process prints an introductory message on the printer. It then scans the print queue and prints any files intended for it. The scan is repeated every 10 seconds until a file is found or until the background process is quit.

If you omit the -B option, the print server runs in the current process.

The -Q option terminates (quits) a print server background process. If you use this option, the command line must contain the configuration file name (if any) that was used when the background process was created.

The print server background process should no longer be created using the display manager CPO command.

1.2.3 Miscellaneous Changes

The print queue directory is now /SYS/PRINT. This directory must be present on one node in the network. The link name on each node to the print queue is also /SYS/PRINT. This link has the replacement text "//printer-node-name/SYS/PRINT". Previously, the print queue directory was /PRINT and the link name was /PRINT_LINK.

The help text has been updated for the PRSVR and PRF commands. Help text has been added for the print server configuration directives; to read this, type HELP PRSVR CONFIG.

1.3 SERIAL PRINTER

To connect the Spinwriter to an Apollo Computer node, use the RS-232c connector supplied by Apollo. By default, the printer software assumes that the Spinwriter is connected to SIO line 3 (labeled "Serial Line 4" on some older units). The ASCII file /SYSTEST/SPIN_TEST is a test file for the spinwriter. By printing this file, you can test the operation of the Spinwriter.

The software and interface are sensitive to the settings of the dip switches under the translucent cover on the front panel. The required switch positions are as follows:

Switch 1:

- 1: off (manual clear)
- 2: off (reserved)
- 3: off (clear all tab stops)
- 4: off (reverse channel active high)
- 5: off (break enable)
- 6: off (etx/ack protocol)
- 7: off (auto carriage return off)
- 8: off (reserved)

Switch 2:

- 1: off (twin feeder)
- 2: off (constant pitch thimble)
- 3: off (local lf)
- 4: off (normal mode)

Switch 3:

- 1: on (baud rate select)
- 2: off (ditto)
- 3: on (ditto)
- 4: on (full duplex)

Switch 4:

- 1: off (parity check disable)
- 2: off (ditto)
- 3: off (6 lines per inch)
- 4: off (10 characters per inch)

1.4 MAGTAPE

Aegis now supports the Cipher magtape with a driver.

1.5 DISPLAY MANAGER

The version 2.2 display manager processes form feed, backspace, carriage return, and newline characters in transcript pads.

A new command, CMS (Clear Mark Stack), has also been added. This command clears the 2-item stack of screen coordinates selected by the <MARK> key. The definition of the <LINE DEL> (L2) key has been changed to use this command, so that earlier screen coordinates are not accidentally used in deleting lines.

Two minor enhancements have been made to cursor positioning:

1. When you bring a window to the top of the stack, the cursor moves to its last previous position in the window.
2. When a fault occurs in the display manager's process, the cursor now moves to the display manager's input window.

1.6 SHELL COMMANDS

1.6.1 CPBOOT Command

A new shell command, CPBOOT (COPY BOOT), has been added. CPBOOT copies the special system boot file SYSBOOT. The command has the following format:

```
CPBOOT from-dir to-dir
```

The from-dir must contain the file SYSBOOT. The to-dir must be the entry directory on the target logical volume. This command is useful for copying SYSBOOT to a floppy disk, thus making the SAU (stand-alone utilities) directory on the floppy disk accessible from the boot PROM.

1.6.2 Date and Time in CHN Commands

The CHN command now supports the -D option. Its full format is:

```
CHN old_name [new_name] [-D | -Y] [-U] [-S]
```

If you specify -D, today's date is appended to "new_name" in the form ".mm.dd". Similarly, if you specify -Y, today's date is appended in the form ".yy.mm.dd".

1.6.3 Before and After Dates in CPT

The CPT command now accepts two additional options:

```
-AF date copy files with dtm > specified date.  
-BE date copy files with dtm < specified date.  
date formats: [[[yy]yy]/mm/dd.][hh:mm[:ss]]
```

If you specify -AF, only files modified since the specified date are copied. If you specify -BE, only files modified before the specified date are copied.

1.7 STREAM MANAGER

The streams insert file for FORTRAN, STREAMS.INS.FTN, now includes definitions for constants in STREAM_\$INQUIRE and STREAM_\$REDEFINE.

2 CORRECTIONS

This section summarizes the errors in the Version 2.1 software that have been corrected in Version 2.2.

2.1 DISPLAY MANAGER

- * When two windows overlapped by exactly five raster units, the window border was sometimes erased.
- * Calls to PAD_\$RAW and PAD_\$COOKED did not work reliably if the transcript pad contained a partial record.
- * Problems with cursor positioning at the bottom of an edit pad have been corrected.
- * Problems with editing in a nonstandard font have been corrected. In addition, the name of the NONIE.R.8 font has

been changed to NONIE.R.16.

- * If the remote node became inaccessible (for example, if it was shut down) while remote files were being edited, the display manager might eventually completely crash. This problem no longer exists.

2.2 SHELL COMMANDS

- * At invocation of a command file, the shell sometimes could not be found and a "file not found" error occurred.
- * The MOVE_FILE program now correctly handles directories as well as files. In Version 2.1, the MVF command sometimes did not work for directories, or resulted in incorrect directory listings.
- * The COMPARE_TREE program now compares all files in a directory that contains links. Previously, it occasionally omitted files or compared some files more than once.
- * The COPY_FILE program no longer ignores the -LDEL option.

2.3 STREAM MANAGER

- * The stream manager sometimes left CTRL/Q (quit) disabled after certain errors occurred in opening files. This error has been corrected.
- * STREAM_\$REDEFINE no longer returns an error status after correctly redefining the concurrency (bit 9 in the mask) to STREAM_\$N_AND_N.
- * STREAM_\$PUT_REC and STREAM_\$PUT_CHR now correctly write data to an SIO line, even if the data length is greater than 128 bytes.
- * STREAM_\$REDEFINE now correctly changes type uids.

2.4 DISPLAY DRIVER

- * Bounds checking for screen coordinates in SMD_\$BLT_U is now performed correctly.

2.5 FORTRAN COMPILER

- * When %INCLUDE was the first non-comment statement, a fault sometimes occurred in STRTK during compilation.
- * A fault sometimes occurred in OBJ_GEN during compilation of a BLOCK DATA subprogram. This error has been corrected; you no longer need to compile BLOCK DATA with -NDB.
- * Assumed dimension used on a dummy array -- DARRAY(*) -- caused faults in ADD_TN called from CHECK_DUMMY_ARRAY.
- * An ELSE statement preceded by GOTO caused an erroneous "no path to statement" error. This has been corrected, and statement labels on the ELSE statement are no longer necessary to avoid error.
- * The FORTRAN compiler now correctly parses statements of the form:

type*length FUNCTION name(arglist)

- * Use of the intrinsic functions LOG10, ALOG10, and DLOG10 no longer results in "undefined global" errors at execution time.
- * GOTO statements in COMMON areas or dummy arguments no longer result in faults at compilation.
- * Dividing an INTEGER*2 by an INTEGER*4 previously generated a call to the nonexistent M\$DIS\$WWL.
- * Compiler-generated temps are now correctly used. Previously, temps for variable dimensions of dummy argument arrays and DO loops with extended ranges were sometimes incorrectly reused.

2.6 MISCELLANEOUS CORRECTIONS

- * Exiting from INVOL with CTRL/Q left the disk assigned, rendering it unusable. This problem has been corrected.

3 ERRORS REMAINING IN VERSION 2.2

This section summarizes the known problems remaining in the software and documentation.

- * Aegis cannot be started on a 256Kb node using the normal start-up procedures. Instead, issue the REset command,

change the contents of A7 to 13FFC0, then execute Aegis.
The sequence is as follows:

```
> RE
> A A7:L
  10023E: 13FFFF 13FFC0/
> EX AEGIS
```

3.1 STREAM MANAGER

- * STREAM \$REDEFINE has no effect on SIO lines, but does not return an error.
- * The pad byte added to an odd-length record is not always zero.

3.2 SHELL COMMANDS

- * Command files that pipe output through the SH command should always use the SH -S option. Otherwise, CTRL/Q will quit the currently executing command instead of the command file, and you will be unable to quit the command file.
- * Some commands cannot accept pathnames of more than 32 characters. The following commands are subject to this restriction:

CATF	CMF	CMSRF	CREFS
DLDUPL	DLF	ED	EDSTR
EXFLD	FLEN	FMC	FMT
FSERR	LAMF	MACRO	MVF
OS	PAGF	REVL	SRF
TEE			

- * CHANGE_PATTERN -- The CHPAT command does not accept the -C option.
- * CROSS_REFERENCE_SYMBOLS -- The CREFS command treats underscores as token separators, causing symbols to be split in the output listing.
- * DISMOUNT_VOLUME -- The DMTVOL command does not accept both the -NW and -FU options.
- * EDIT_STREAM -- The /pat/ line address does not work with the A, C, I, or S commands.

- * `FILE_LENGTH` -- If the file contains more than 32K characters, the `FLEN` command returns a negative number.
- * `FORMAT` -- The formatter accepts the dollar sign (\$) instead of circumflex (^) as an argument substitution character. Also, if `FORMAT` cannot find the specified input file, it reads from standard input.

3.3 FORTRAN COMPILER

- * A `DATA` statement with a character array variable causes an access violation. The stack can be destroyed, and if it is, the process is unusable.

3.4 DOCUMENTATION

- * The `CPF` command (`COPY_FILE`) should not show `-AE` as an option.
- * The `EDSTR` command (`EDIT_STREAM`) is documented as `STRED` (`STREAM_EDIT`).
- * The `FLEN` command (`FILE_LENGTH`) is documented as `WC` (`WORD_COUNT`).
- * The `-S` option for the `SH` (`SHELL`) program is not documented. This option causes the program to act as though executing a shell program; it does not prompt and exits on error.
- * The display manager's `FL` command (Font Load) is referred to as `LF`.
- * The display manager's `DC` command (Continue Process) is incorrectly listed as `AC`.