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**********************************************************************************
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**
**
**
**     SSS    Y   Y   SSS    TTTTT  EEEEE  M   M
**    S   S   Y   Y  S   S     T    E      MM MM
**    S        Y Y   S         T    E      M M M
**     SSS      Y     SSS      T    EEEE   M M M
**        S     Y        S     T    E      M   M
**    S   S     Y    S   S     T    E      M   M
**     SSS      Y     SSS      T    EEEEE  M   M
**
**
**
**    U   U  PPPP     III    N   N  FFFFF    000      1     77777          333
**    U   U  P   P     I     NN  N  F       0   0    11         7        3   3
**    U   U  P   P     I     N N N  F       0   0     1        7            3
**    U   U  PPPP      I     N N N  FFFF    0   0     1       7           33
**    U   U  P         I     N N N  F       0   0     1      7              3
**    U   U  P         I     N  NN  F       0   0     1     7       ..     3   3
**     UUU   P        III    N   N  F        000     111    7       ..      333
**
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UFD UPDATE INFORMATION FILE -- REV 17.3

THIS UFD CONTAINS ALL SOFTWARE UPDATES GENERATED AFTER THE INITIAL REV 17 RELEASE TO THE FIELD. INFORMATION ABOUT ALL PREVIOUS UPDATE RELEASES SINCE THE INITIAL RELEASE IS PRESENTED IN THIS FILE ALSO. THE INITIAL REV 17 RELEASE WAS 17.2.

A MAGTAPE IS SUPPLIED TO UPDATE YOUR MASTER DISK. THE TAPE CONSISTS OF LOGICAL TAPES A1, B1 AND B2. TO UPDATE YOUR MASTER DISK, RESTORE LOGICAL TAPE A1 ONTO YOUR MASTER DISK PARTITION MXXXA1, RESTORE TAPE B1 ONTO PARTITION MXXXB1 AND TAPE B2 ONTO PARTITION MXXXB2. THE TAPE WILL OVERWRITE THE FILES THAT ARE ON YOUR DISK. IF YOU DO NOT HAVE THREE SEPARATE DISK PARTITIONS ON YOUR MASTER DISK, RESTORE THE TAPE ON THE PARTITION WHERE THE FILES YOU ARE UPDATING CURRENTLY EXIST.

NAME	DIRECTORY	SOURCE NO.	SCN NO.	DATE
*				
* REV 17.3	FEBRUARY 5, 1980			
*				
URCT1	<MXXXA1>T&MSR1 (SOURCE)	SRC0732.007	345	020580
URCT1	<MXXXA1>T&M (RUN)		345	020580
RTCT2	<MXXXA1>T&MSRC (SOURCE)	SRC0784.010	347	020580
RTCT2	<MXXXA1>T&M (RUN)		347	020580
XACHE1	<MXXXA1>TMS400 (SOURCE)	1305.007	348	020580
XACHE1	<MXXXA1>T&M (RUN)		348	020580
MTUT3	<MXXXA1>T&MSR1 (SOURCE)	SRC0698.009	349	020580
MTUT3	<MXXXA1>T&M (RUN)		349	020580
MDLCT2	<MXXXA1>TMS400 (SOURCE)	SRC1317.003	354	020580
MDLCT2	<MXXXA1>T&M (RUN)		354	020580
HSMT3	<MXXXA1>T&MSR1 (SOURCE)	SRC0791.008	355	020580
HSMT3	<MXXXA1>T&M (RUN)		355	020580
HSMT4	<MXXXA1>TMS400 (SOURCE)	1337.002	356	020580
HSMT4	<MXXXA1>T&M (RUN)		356	020580
PPPTST	<MXXXA1>T&MSR1 (SOURCE)	SRC1344.004	364	020580
C_PPPTST	<MXXXA1>T&MSR1 (COMMAND)		364	020580
PPPTST	<MXXXA1>T&M (RUN)		364	020580
ACCEPT	<MXXXA1>ACCEPT (DIRECTORY)		387	020580
APPLIB	<MXXXA1>APPLIB (DIRECTORY)		388	020580
VAPPLB	<MXXXA1>LIB (BINARY)		388	020580
APPLIB	<MXXXA1>LIB (BINARY)		388	020580
A$KEYS	<MXXXA1>SYSCOM (INSERT)		388	020580
A$KEYS.PL1	<MXXXA1>SYSCOM (INSERT)		388	020580
AVAIL	<MXXXA1>FILAID (SOURCE)		389	020580
C_AVAI	<MXXXA1>FILAID (COMMAND)		389	020580
AVAIL	<MXXXA1>CMDNCC (RUN)		389	020580
C4000	<MXXXA1>SYSTEM (BINARY)		391	020580
C2014A	<MXXXA1>SYSTEM (BINARY)		391	020580

C2014B	<MXXXA1>SYSTEM (BINARY)	391	020580
C02016	<MXXXA1>SYSTEM (BINARY)	391	020580
ED	<MXXXA1>ED (DIRECTORY)	394	020580
ED	<MXXXA1>CMDNCO (RUN)	394	020580
NSED	<MXXXA1>CMDNCO (RUN)	394	020580
ED2000	<MXXXA1>SYSTEM (RUN)	394	020580
F4000	<MXXXA1>SYSTEM (BINARY)	395	020580
F2021A	<MXXXA1>SYSTEM (BINARY)	395	020580
F2021B	<MXXXA1>SYSTEM (BINARY)	395	020580
C_SHLB	<MXXXA1>SYSTEM (COMMAND)	395	020580
FLIB4	<MXXXA1>FLIB4 (DIRECTORY)	397	020580
FTNLIB	<MXXXA1>LIB (BINARY)	397	020580
VFTNLIB	<MXXXA1>VFTNLIB (DIRECTORY)	398	020580
IFTNLB	<MXXXA1>LIB (BINARY)	398	020580
PFTNLB	<MXXXA1>LIB (BINARY)	398	020580
NPFTNLB	<MXXXA1>LIB (BINARY)	398	020580
S4000	<MXXXA1>SYSTEM (BINARY)	398	020580
S2050	<MXXXA1>SYSTEM (BINARY)	398	020580
LOGPRT	<MXXXA1>SYSTEM (SOURCE)	401	020580
*LOGPRT	<MXXXA1>SYSTEM (RUN)	401	020580
C_LOGPRT	<MXXXA1>SYSTEM (COMMAND)	401	020580
C_LLOGPRT	<MXXXA1>SYSTEM (COMMAND)	401	020580
MAGNET	<MXXXA1>MAGNET (DIRECTORY)	402	020580
MAGNET	<MXXXA1>CMDNCO (RUN)	402	020580
MAGSR	<MXXXA1>MAGSR (DIRECTORY)	403	020580
MAGSAV	<MXXXA1>CMDNCO (RUN)	403	020580
MAGRST	<MXXXA1>CMDNCO (RUN)	403	020580
FIXRAT	<MXXXA1>FIXRAT (DIRECTORY)	404	020580
MAKE	<MXXXA1>CMDNCO (RUN)	404	020580
K2014A	<MXXXA1>SYSTEM (RUN)	405	020580
K2014B	<MXXXA1>SYSTEM (RUN)	405	020580
K4000	<MXXXA1>SYSTEM (RUN)	405	020580
IMIDAS	<MXXXA1>SYSTEM (RUN)	405	020580
MSORTS	<MXXXA1>MSORTS (DIRECTORY)	406	020580
MSORTS	<MXXXA1>LIB (BINARY)	406	020580
PHYSR	<MXXXA1>PHYSR (DIRECTORY)	407	020580
PHYSAV	<MXXXA1>CMDNCO (RUN)	407	020580
PHYRST	<MXXXA1>CMDNCO (RUN)	407	020580
PMA	<MXXXA1>PMA (DIRECTORY)	409	020580
PMA	<MXXXA1>CMDNCO (RUN)	409	020580
PMAERR	<MXXXA1>SYSOVL (SOURCE)	409	020580
PRI400	<MXXXA1>PRI400 (DIRECTORY)	412	020580
PRIRUN	<MXXXA1>PRIRUN (DIRECTORY)	412	020580
RJECOM	<MXXXA1>RJECOM (DIRECTORY)	414	020580
RUNOFF	<MXXXA1>RUNOFF (DIRECTORY)	422	020580
RUNOFF	<MXXXA1>CMDNCO (RUN)	422	020580
SEG	<MXXXA1>SEG (DIRECTORY)	423	020580
SEG	<MXXXA1>CMDNCO (RUN)	423	020580
SHARE4	<MXXXA1>LIB (RUN)	423	020580
SORT	<MXXXA1>SORT (DIRECTORY)	424	020580
SORT	<MXXXA1>CMDNCO (RUN)	424	020580
SRTLIB	<MXXXA1>LIB (BINARY)	424	020580
VSRTLI	<MXXXA1>LIB (BINARY)	424	020580
NEWSPL	<MXXXA1>NEWSPL (DIRECTORY)	425	020580

SPOOLQ	<MXXXA1>SPOOLQ (DIRECTORY)	425	020580
SPOOL	<MXXXA1>CMDNCO (RUN)	425	020580
PROP	<MXXXA1>CMDNCO (RUN)	425	020580
SPOOL$	<MXXXA1>LIB (BINARY)	425	020580
VSPOO$	<MXXXA1>LIB (BINARY)	425	020580
VPSD	<MXXXA1>VPSD (DIRECTORY)	426	020580
VPSD	<MXXXA1>CMDNCO (RUN)	426	020580
VPSD16	<MXXXA1>CMDNCO (RUN)	426	020580
BASICV	<MXXXB1>BASIC (DIRECTORY)	390	020580
COBOL	<MXXXB1>COBOL (DIRECTORY)	391	020580
DBG	<MXXXB1>DBG (DIRECTORY)	392	020580
FORMS	<MXXXB1>FORMS (DIRECTORY)	395	020580
FTN	<MXXXB1>FTN (DIRECTORY)	396	020580
MIDAS	<MXXXB1>MIDAS (DIRECTORY)	405	020580
PRINET	<MXXXB1>PRINET (DIRECTORY)	413	020580
RJEGRTS	<MXXXB1>RJEGRTS (DIRECTORY)	415	020580
RJEHASP	<MXXXB1>RJEHASP (DIRECTORY)	416	020580
RJEX80	<MXXXB1>RJEX80 (DIRECTORY)	417	020580
RJE1004	<MXXXB1>RJE1004 (DIRECTORY)	418	020580
RJE200UT	<MXXXB1>RJE200UT (DIRECTORY)	419	020580
RJE7020	<MXXXB1>RJE7020 (DIRECTORY)	420	020580
RPG	<MXXXB1>RPG (DIRECTORY)	421	020580
X.25	<MXXXB1>X.25 (DIRECTORY)	427	020580
DPTX-DSC	<MXXXB1>DPTX-DSC (DIRECTORY)	428	020580
DPTX-TSF	<MXXXB1>DPTX-TSF (DIRECTORY)	429	020580
DPTX-TCF	<MXXXB1>DPTX-TCF (DIRECTORY)	430	020580
DBMS	<MXXXB2>DBMS (DIRECTORY)	393	020580
F77	<MXXXB2>F77 (DIRECTORY)	399	020580
PL1G	<MXXXB2>PL1G (DIRECTORY)	408	020580
POWER	<MXXXB2>POWER (DIRECTORY)	410	020580
POWERPLUS	<MXXXB2>POWERPLLS (DIRECTORY)	411	020580

****
********** REASON FOR CHANGE **********
********** SORTED BY SCN # **********
****

*
345 (URCT1)

REV 17.3 -- DOCUMENTATION -- UTCT1

REASON FOR CHANGE:
THE PRINTING THAT TAKES PLACE ON THE DEVICE DURING
THE EVFU TEST DOES NOT SHOW THE OPERATOR THAT IN FACT

THE FORMS LOAD IS BEING TESTED. THE MESSAGE PRINTED
ON THE DEVICE DOES NOT CHECK FOR WORSE CASE PAPER SLEW.

DESCRIPTION OF CHANGE:
EACH CHANNEL HAS BEEN LOADED WITH VARIED AMOUNTS OF LINES
AND FULL LINE PRINTING (132 CHARACTERS) NOW TAKES PLACE.

*
347 (RTCT2)

REV 17.3 -- DOCUMENTATION -- RTCT2

REASON FOR CHANGE:
TO BETTER CHECK THE PIC.

DESCRIPTION OF CHANGE:
A SHORT PIC TEST WAS ADDED AFTER TEST26. THE PIC IS ENABLED
DELAY 1CCO MSEC AND STOP PIC. CHECK TO MAKE SURE THE NUMBER
OF COUNTS IS +/- 10% OF THE CORRECT AMOUNT. IT IS DONE FOR
BOTH 3.2 U SEC AND 1C24 U SEC CLOCKS.

*
348 (XACHE1)

REV 17.3 -- DOCUMENTATION -- XACHE1

REASON FOR CHANGE:
TO ACCOMMODATE P750 MICROCODE REVISION K.

DESCRIPTION OF CHANGE:
ADDED NEW TIMING CONSTANTS.

*
349 (MTUT3)

REV 17.3 -- DOCUMENTATION -- MTUT3

REASON FOR CHANGE:
DEVICE WILL NOT WORK IF WE TRY TO CHANGE DEVICE ADDRESS ON
THE CONTROLLER TO ANYTHING EXCEPT THE STANDARD DEVICE
ADDRESS ('14).

DESCRIPTION OF CHANGE:
CORRECTED ROUTINE THAT CHANGES 9/1 PIO INSTRUCTIONS TO
NEW DEVICE ADDRESS.

*
354 (MDLCT2)

REV 17.3 -- DOCUMENTATION -- MDLCT2 (DIAGNOSTIC)

REASON FOR CHANGE:
MICRO-CODE REVISION. FORMAT-ERROR HANDLING WAS IMPROVED IN THE MICRO-CODE, SO A TEST WAS ADDED TO EXERCISE IT. IF AN OLD REVISION OF MICRO-CODE IS ON THE MDLC, A MESSAGE SAYING "OUT OF REV" WILL BE TYPED. THE TEST WILL CONTINUE TO RUN EVEN IF THE MICRO-CODE IS OUT OF REVISION.

DESCRIPTION OF CHANGE: ADDED SUB-TEST 24 TO EXERCISE RECEIVED FORMAT ERROR LOGIC.

*
355 (HSMT3)

REV 17.3 -- DOCUMENTATION -- HSMT3 (DIAGNOSTIC)

REASON FOR CHANGE:
REV 7 OF HSMT3 HAD A BUG WHICH CAUSED FAILURES ON P100-P200 CPU'S WITHOUT HSA. A UII CONSTANT HAD BEEN MOVED INCORRECTLY.

DESCRIPTION OF CHANGE:
A CONSTANT IN THE UII ROUTINE WAS MOVED INTO AN AREA THAT MOVED WITH THE PROGRAM DURING RELOCATION.

*
356 (HSMT4)

REV 17.3 -- DOCUMENTATION -- HSMT4

REASON FOR CHANGE:
TEST FAILED WHEN IT WAS RUN ON A P750.

DESCRIPTION OF CHANGE:
ADDED INSTRUCTIONS TO CLEAN CACHE PARITY AFTER AN UNCORRECTABLE MEMORY PARITY TRAP.

*
364 (PPPTST)

REV 17.3 -- DOCUMENTATION -- PPPTST

THIS REVISION ENHANCES THE PARALLEL PORTION OF DIAGNOSTIC TO SUPPORT TESTING OF CONTROLLER FUNCTIONS. THE SOC DRIVER HAS BEEN UPDATED SO THAT TEST #1 WOULD PRINT CORRECTLY. TEST #8 WAS REWRITTEN SO THAT A FORM FEED WOULD START THE TEST. THE AMLC DRIVER WAS ENHANCED TO SUPPORT DIFFERENT BAUD RATES. SEE TABLE BELOW FOR BAUD RATES NOW SELECTABLE.

THE BAUD RATES BELOW ARE NOW SELECTABLE USING THE COMMAND MODE (SENSE SW 15) INPUT SEQUENCE B, X WHEN X WOULD BE THE NUMBER CORRESPONDING TO CERTAIN BAUD RATES DESIRED:

B.1 -- 150 BAUD
B.2 -- 300 BAUD
B.3 -- 600 BAUD
B.4 -- 1200 BAUD
B.5 -- 2400 BAUD
B.6 -- 4800 BAUD
B.7 -- 9600 BAUD

THIS REVISION WILL NOW SUPPORT ALL PRINTERS (SERIAL OR PARALLEL) LPTST1 AND URCT1 WILL NO LONGER BE USED TO TEST SUCH DEVICES.

*
387 (ACCEPT)

REV 17.3 -- DOCUMENTATION -- ACCEPT

ACCEPT WAS UPDATED TO REFLECT CHANGES IN THE COBOL LIBRARY NAMES AT REV 16.

*
388 (APPLIB)

SUBJECT: APPLICATIONS LIBRARY FOR REV 17.3

THE FOLLOWING BUG FIXES AND CHANGES WERE MADE TO THE APPLICATIONS LIBRARY (APPLIB AND VAPPLB) FOR REV 17.3:

1. THE INTERNAL ROUTINE MSGPRT, USED BY CMDL$A TO PRINT ERROR

MESSAGES, HAS BEEN CHANGED TO MSG$$A IN ORDER TO BE CONSISTENT WITH APPLIB NAMING CONVENTIONS.

2. THE ROUTINE MSUB$A WAS NOT BLANKING OUT THE DESTINATION SUBSTRING IF THE SOURCE SUBSTRING WAS NULL. THIS HAS BEEN CHANGED TO BE CONSISTENT WITH SIMILAR STRING MANIPULATION RULES IN VARIOUS LANGUAGES (E.G. PL1, COBOL, BASIC), IE. IF THE SOURCE STRING IS NULL THE DESTINATION STRING WILL BE ENTIRELY PADDED WITH BLANKS. THIS CHANGE ALSO AFFECTS MSTR$A IN THE SAME WAY.

*
389 (AVAIL)

REV 17.3 -- AVAIL -- DOCUMENTATION

IF THE PHYSICAL RECORD WAS NOT 1040, THE DSKRAT FILE WAS NOT CLOSED CORRECTLY -- THIS FIX IS IN REV 17.3.

*
390 (BASICV)

REV 17.3 -- DOCUMENTATION -- BASICV

22242 - ACCESS VIOLATION ON 750 PROCESSOR. FIXED

22881 - PROGRAM RUNS ON P650 BUT NOT ON P750. FIXED.

25479 - UNPREDICTABLE CRASHES FROM CHANGE STATEMENT. FIXED.

*
391 (COBOL)

COBOL RUNTIME LIBRARY (VCOBLB, NVCOBLB) FOR REV. 17.3

REV. 17.3 CONTAINS SEVERAL BUG FIXES AND PERFORMANCE IMPROVEMENTS, SOME OF WHICH HAD BEEN PREVIOUSLY RELEASED, BUT POSSIBLY DISCONTINUED.

0 WHEN USING INDEXED I/O, WHICH IS DONE THROUGH MIDAS, THE RUNTIME LIBRARY CALLS NTFYM$ TO LEAVE SEGMENT DIRECTORY SUBFILES OPEN BETWEEN CALLS, RESULTING IN A POSSIBLE PERFORMANCE INCREASE. THIS ENHANCEMENT HAD BEEN PREVIOUSLY AVILABLE AT REV. 16.6, BUT WAS

MISTAKENLY DROPPED FOR 16.9 AND 17.2. DUE TO THE WAY THE MIDAS LIBRARY WORKS, THE PREVIOUSLY ABSENCE OF THESE CALLS WOULD MANIFEST ITSELF NOT ONLY THROUGH REDUCED THROUGHPUT, BUT FILES WOULD BE LEFT OPEN UPON EXIT TO PRIMOS.

- AN ADDITIONAL IMPROVEMENT HAS BEEN MADE TO NOT LOCK DATA RECORDS ALL THE TIME WHEN SEQUENTIALLY TRAVERSING A MIDAS FILE.

BUGS FIXED ARE:

- PROCEDURE CALLS TO EXTERNAL, SHARED, OR RING C LIBRARIES CANNOT HAVE XB% RELATIVE ARGUEMENT POINTERS UNLESS THE XB% IS LOADED IN THE PROCESS OF TRANSFERRING THE ARGUEMENT LIST VIA AN ARGUEMENT POINTER WITHOUT THE 'S' (STORE) BIT SET. IF THESE RULES ARE VIOLATED, AS THE LIBRARY PREVIOUSLY DID, RESTARTED CALLS COULD EITHER FAIL OR WORK WITH INCORRECT DATA. IT IS ALMOST IMPOSSIBLE TO ASSIGN SYMPTOMS TO THIS BUG DUE TO ITS SPORADIC AND UNTRACEABLE NATURE.

- THE INTERNAL LIBRARY ROUTINE, C$AU, HAS BEEN REPLACED BY THE USE OF K$GETU IN CALLS TO SRCH$$ AND TSRC$$ TO DO THE SAME FUNCTION. UNDER C$AU, IT WAS POSSIBLE TO ASCRIBE MORE FILE UNITS OPEN TO EXTERNAL SUBSYSTEMS THAN ACTUALLY SO, POSSIBLY CAUSING A 'NO FILE UNITS AVAILABLE' ERROR.

- USE OF PARAMETERS FROM SYSCOM>FILD.P HAVE BEEN REPLACED BY THEIR EQUIVALENTS FROM SYSCOM>KEYS.P. THIS IS AN INTERNAL COSMETIC CHANGE.

*
392 (DBG)

REV 17.3 --DOCUMENTATION -- DBG

MODIFICATIONS TO DBG FOR REV 17.3

1) TYPE COMMAND NOW WORKS WITH MEMBERS OF PL1G STRUCTURE.

2) HELP COMMAND PRINTS NAME OF IDR REFERENCE MANUAL.

3) ACTION LISTS AND OTHER ATTRIBUTES NOW HANDLED CORRECTLY IF EXIT BREAKPOINT SET IN CURRENT BLOCK.

*
393 (DBMS)

DBMS 17.3 DOCUMENTATION

THIS DOCUMENT DESCRIBES PROBLEMS AND BUGS THAT WILL BE ELIMINATED BY INSTALLATION OF REV 17.3 DBMS.

A. FORTRAN SUBSCHEMA COMPILER (FSUBS)

1. THE FOLLOWING POST PROCESSING CHANGES HAVE BEEN MADE: VECTORS MAY NOW APPEAR IN CHUNKS; ITEMS SUBORDINATE TO A GROUP LEVEL ITEM WITH NO OCCURS CLAUSE MAY NOW APPEAR IN A CHUNK; A POST PROCESSING MAP INDICATING WHICH ITEMS ARE IN A CHUNK WILL APPEAR IN THE SUBSCHEMA LISTING FILE. (TAR #24054).

B. COBOL SUBSCHEMA COMPILER (CSUBS)

1. THE FOLLOWING POST PROCESSING CHANGES HAVE BEEN MADE: VECTORS MAY NOW APPEAR IN CHUNKS; ITEMS SUBORDINATE TO A GROUP LEVEL ITEM WITH NO OCCURS CLAUSE MAY NOW APPEAR IN A CHUNK; A POST PROCESSING MAP INDICATING WHICH ITEMS ARE IN A CHUNK WILL APPEAR IN THE SUBSCHEMA LISTING FILE; TYPE STRING IN THE SCHEMA AND TYPE PICTURE 'XXX ... ' IN THE COBOL SUBSCHEMA ARE TREATED AS EQUIVALENT DATA TYPES, I.E., IF THE PICTURE LITERAL DEFINES AN ITEM OF THE SAME LENGTH AS THE TYPE STRING SPECIFICATION IN THE SCHEMA, THAT ITEM CAN BE IN A CHUNK. (TAR #24054, #24047).

C. DATA MANIPULATION LANGUAGE COMMAND PROCESSOR (DMLCP)

1. IT WAS POSSIBLE TO STORE A RECORD INCORRECTLY (OR NOT BE ABLE TO STORE IT AT ALL), WHEN THE LOCATION MODE OF THE RECORD WAS DIRECT AND THE DATABASE KEY WAS PART OF THE RECORD, AS OPPOSED TO BEING A LEVEL 77 DATA-BASE-DATA-NAME.

2. CHANGES HAVE BEEN MADE TO FIND, FORMAT V TO FIX THE FOLLOWING PROBLEM:

   IN COBOL APPLICATIONS, IF THE OPTIONAL PHRASE "CURRENT" WAS MISSING AND SET OCCURRENCE SELECTION WAS THRU LOCATION MODE OF OWNER AND THE LOCATION MODE OF THE OWNER WAS DIRECT, THEN THE DBK OF THE OWNER RECORD WAS NOT RETRIEVED CORRECTLY FROM THE USER WORK AREA.

3. UNDER CERTAIN CIRCUMSTANCES BEFORE IMAGE RECOVERY MIGHT FAIL BECAUSE FORCE WRITING OF THE BEFORE IMAGE FILE WAS NOT DONE. THIS BUG HAS BEEN FIXED.

4. WHEN A RECORD OCCURRENCE WAS MODIFIED AND MADE SMALLER BY A CERTAIN AMOUNT, THE UNUSED PIECES OF THE RECORD REMAINED LINKED TO THE USED PIECES. ALL SUBSEQUENT FINDS AND FETCHS OF THAT RECORD OCCURRENCE WOULD RESULT IN AN MM17 ERROR (DELETED RECORD INVOLVED). THIS BUG HAS BEEN FIXED.

5. THE FOLLOWING PERFORMANCE IMPROVEMENT HAS BEEN MADE: A BIT MANIPULATION RCUTINE HAS BEEN REWRITTEN, CONSIDERABLY SPEEDING UP OPERATIONS THAT INVOLVE SORT, SEARCH, AND CALC KEYS.

6. UNDER CERTAIN UNUSUAL CONDITIONS COMMAND REWIND WOULD FAIL. UNDER OTHER UNUSUAL CONDITIONS, UPDATE TRANSACTIONS MAY HAVE BEEN ABORTED UNNECESSARILY. THESE BUGS HAVE BEEN FIXED.

7. UNDER CERTAIN CIRCUMSTANCES, WHEN BEFORE-IMAGE RECOVERY WAS RUN AFTER A SOFT CRASH IT WOULD COMPLETE SUCCESSFULLY BUT LEAVE THE DATABASE IN AN INCONSISTENT STATE. THIS BUG HAS BEEN FIXED.

8. OCCASIONALLY, A PARTICULAR TYPE OF CONCURRENT UPDATE CONFLICT CAUSED AN INTERNAL FATAL ERROR MESSAGE TO BE PRINTED. THIS CONCURRENCY CONFLICT WILL NOW GENERATE A NON-FATAL ERROR MESSAGE, WITH A CONTINGENCY TYPE OF 21. (TAR #13346).

D. CLEAN-UP PROCESSOR (CLUP)

1. CLUP USED TO CLOSE THE COMMAND INPUT FILE UNIT. IT WILL NOW CLOSE ALL FILE UNITS THE USER HAS OPEN EXCEPT FOR COMMAND INPUT AND COMMAND OUTPUT (UNITS 6 AND 127 RESPECTIVELY). (TAR #23843).

E. DBUTL

1. MANY NEW FEATURES HAVE BEEN ADDED TO DBUTL FOR REV 17.3. DBMS>INFO FOR DETAILS.

F. SCHEMA EDITOR (SCHED)

1. THE SCHEMA EDITOR HAS BEEN SIGNIFICANTLY ENHANCED TO ALLOW THE ADDITION OF NEW SET TYPES TO A SCHEMA. SEE DBMS>INFO FOR DETAILS. IN ADDITION, A SERIES OF BUG FIXES HAVE BEEN MADE.

2. IT WAS POSSIBLE THAT SCHED MIGHT GO INTO AN INFINITE LOOP IF A RECORD HAD NO ITEMS: THIS HAS BEEN FIXED.

3. A PROBLEM AROSE IF ADDITIONAL AREAS WERE ADDED TO THE WITHIN CLAUSE OF A NEW RECORD SEVERAL TIMES IN THE SAME SCHED SESSION. THIS HAS BEEN FIXED.

4. SCHED WAS UNABLE TO DECOMPILE REAL LITERALS IN THE CHANGE SESSION: THIS HAS BEEN FIXED.

5. IF A SCHED SESSION WAS ABORTED, SOMETIMES SCHED WAS UNABLE TO

UNLOCK THE SCHEMA SEGMENT SEGMENT DIRECTORY: THIS HAS BEEN FIXED.

G. DATABASE ADMINISTRATOR COMMAND PROCESSOR (DBACP)

1. DBACP WILL NOW CORRECTLY COMPUTE THE NUMBER OF AREAS, RECORDS, SETS, AND LOCKS FOR THOSE SCHEMAS WHERE SOME OF THESE ENTITIES ARE NOT INCLUDED (FOR EXAMPLE, IF SCHEMA HAD NO SETS OR LOCKS, THEN THE CALCULATION OF THE NUMBER OF AREAS WOULD BE INCORRECT).

REV 17.3 -- ED -- DOCUMENTATION

THIS UPDATE DISCUSSES 12 "BUGS" WHICH HAVE BEEN FIXED FOR THE REV 17.3 EDITOR.

THE FOLLOWING "BUGS" HAVE BEEN FIXED FOR THE REV 17.3 EDITOR:

1) TYPING AN ASTERISK (*) ON A COMMAND LINE WITHOUT PRECEEDING IT BY ANY COMMANDS WILL NO LONGER CAUSE THE EDITOR TO HANG. THE USER WILL INSTEAD RECIEVE AN ERROR MESSAGE. (TAR 80916)

2) UNLOAD (AND DUNLOAD) WILL NOW CORRECTLY COMPRESS BLANK LINES WHEN WRITING THEM TO A FILE. (TAR 25812)

3) SAVE HAS BEEN IMPLEMENTED SO A FILE CAN BE SAVED WITHOUT LEAVING THE EDITOR.

4) THE EDITOR PRINTS THE NAME OF THE FILE JUST WRITTEN AFTER A SAVE OR FILE COMMAND HAS BEEN EXECUTED, IF THE NAME WAS NOT SPECIFIED ON THAT COMMAND.

5) QF (OR QUIT FINAL) HAS BEEN IMPLEMENTED. THIS ALLOWS THE USER TO QUIT OUT OF A MODIFIED FILE WITHOUT BEING QUERIED IF IT'S OK.

6) IB (OR INSERT BEFORE) HAS BEEN IMPLEMENTED. THIS IS IDENTICAL TO AN INSERT PRECEEDED BY AN N-1 THAT DOES NOT PRINT THE LINE.

7) NLOCATE HAS BEEN IMPLEMENTED. THIS IS ANALOGOUS TO NFIND ANYWHERE ON THE LINE.

8) X WITHOUT A BUFFER NAME TO BE EXECUTED RE-EXECUTES THE LAST COMMAND LINE.

9) OOPS HAS BEEN IMPLEMENTED. IT REINSTATES THE LAST LINE CHANGED THE WAY IT WAS BEFORE THE MODIFICATION, AT THE CURRENT LOCATION.

10) PPRINT HAS BEEN ADDED. IT PRINTS A RANGE OF LINES, RELATIVE TO THE CURRENT POITION WITHOUT CHANGING YOUR CURRENT POSITION. THE FORMAT IS PP F L, WHERE F IS THE NUMBER OF LINES AWAY FROM THE CURRENT POSITION FROM WHICH TO START PRINTING AND L IS THE RELATIVE NUMBER OF LINES FROM THE CURRENT POSITION AT WHICH TO STOP PRINTING. IF ONLY ONE NUMBER IS SPECIFIED IF IT IS NEGATIVE IT IS THE FIRST NUMBER AND THE DEFAULT LAST NUMBER IS THE CURRENT LINE. IF ONLY ONE NUMBER IS SPECIFIED AND IT IS POSITIVE THAT IS WHERE TO STOP PRINTING AND THE FIRST LINE IS THE CURRENT LINE. PP WITHOUT ANY NUMBERS DEFAULTS TO -5 5 (OR PRINT FROM 5 LINES ABOVE THE CURRENT POSITION TO 5 LINES AFTER THE CURRENT POSITION.)

11) MODE AND SYMBOL NAMES NOW MATCH WITH LEFT UNIQUE SUBSTRING RATHER THAN HAVING TO TYPE THE ENTIRE NAME.

12) THE FIRST COUPLE WORDS OF THE STACK SEGMENT ARE INITIALLY ZEROED SO THE FORTRAN LIBRARY WILL GET RESET EACH INVOCATION.

REV 17.3 -- DOCUMENTATION -- FORMS

THIS UPDATE DESCRIBES THE CHANGES MADE TO THE FORMS MANAGEMENT SYSTEM AT SOFTWARE REVISION 17.3. IT INVOLVES THE ADDITION OF A DEVICE DRIVER FOR THE P3234 TERMINAL, AND REMOTE LOGIN SUPPORT WITH THE INQUIRE PSEUDO-TERMINAL TYPE. IT ALSO INCLUDES A CHANGE IN THE SEGMENT NUMBER FOR THE SHARED FORMS LIBRARY.

<1. P3234 DEVICE DRIVER

<THE P3234 DEVICE DRIVER (P3$IO) IS DESIGNED FOR A STOCK P3234 TERMINAL
<AND IS CAPABLE OF SUPPORTING FUNCTION KEYS.

<THE DEVICE DIMENSIONS ARE 24 LINES BY 80 COLUMNS (1920 CHARACTERS).
<ALL CHARACTER POSITIONS EXCEPT THE LAST SEVEN, (74,24) THROUGH (80,24),
<ARE AVAILABLE FOR USE BY THE FORM DEFINITION.

<IF A FORM IS INVOKED WHICH HAS NO UNPROTECTED FIELDS (I.E. IT IS
<TOTALLY PROTECTED), THE BELL WILL RING AND THE RESULTS WILL BE
<UNPREDICTABLE.

<WHEN AN INPUT OPERATION OCCURS, THE DATA ON THE SCREEN MAY BE
<TRANSMITTED TO THE COMPUTER BY PRESSING THE SEND KEY (TOP LEFT OF
<KEYBOARD). IF FUNCTION KEYS ARE ENABLED, STRIKING ANY OF THE 16
<FUNCTION KEYS (F1 - F16 ALONG TOP OF KEYBOARD) WILL SEND THE DATA TO
<THE COMPUTER AND MAKE AVAILABLE TO THE APPLICATION PROGRAM THE NUMBER
<OF THE FUNCTION KEY DEPRESSED.

<WHEN USER INPUT IS REQUIRED, ONE OF THE FOLLOWING PROMPT MESSAGES IS
<PRINTED IN THE LOWER RIGHT CORNER OF THE SCREEN.

< ENTER
< OPERATOR INPUT IS REQUIRED - PRESS THE SEND KEY OR ONE OF THE
< FUNCTION KEYS WHEN DONE.

< DATA?
< THE DATA IN THE FIELD TO WHICH THE CURSOR IS POSITIONED DOES NOT
< CONFORM TO ANY OF THE VALIDATION CRITERIA SPECIFIED IN THE FORM
< DEFINITION. RE-ENTER THE DATA AND DEPRESS THE SEND KEY.

< SIZE?
< TOO MANY CHARACTERS WERE SENT FOR A GIVEN FIELD IN THE FORM
< DEFINITION. THIS USUALLY INDICATES THAT A CHARACTER WAS LOST
< DURING TRANSMISSION. PRESS THE APPROPRIATE SEND OR FUNCTION KEY
< AGAIN.

< FUNC?
< A FUNCTION KEY WAS PRESSED WHEN FUNCTION KEYS WERE DISABLED.
< RE-ENTER THE DATA AND PRESS THE SEND KEY.

<NO SPECIAL SWITCH SETTINGS ARE REQUIRED WHEN A FORMS PROGRAM IS RUN ON
<THE P3234.

<2. SHARED SEGMENT

<IN PREVIOUS RELEASES, THE FORMS SHARED LIBRARY HAS BEEN IN SEGMENT
<NUMBER 2014, WITH THE COBOL AND MIDAS LIBRARIES. HOWEVER, THE ADDITION
<OF THE P3234 DRIVER IN THIS RELEASE (REV 17.3) HAS INCREASED THE SIZE
<OF THE FORMS LIBRARY. TO ALLOW ROOM FOR THIS, AND FOR ANY OTHER DEVICE
<DRIVERS WHICH USERS MAY WISH TO INCLUDE, A NEW SEGMENT NUMBER HAS BEEN
<ALLOCATED FOR FORMS - SEGMENT 2021. THEREFORE, FUTURE EXPANSIONS OF
<THE FORMS LIBRARY, EITHER BY PRIME OR BY USERS, WILL NOT AFFECT THE
<COBOL AND MIDAS SHARED LIBRARIES, WHICH WERE PREVIOUSLY OCCUPYING THE
<SAME SEGMENT AS FORMS.

<3. REMOTE LOGIN SUPPORT

<THE USER MANUAL FOR REV 17 FORMS DOES NOT YET INCLUDE A DESCRIPTION OF
<THE INQUIRE FACILITY. HERE THEN IS A REPEAT OF THE INFORMATION
<PREVIOUSLY GIVEN AT REV 16.2.

< FORMS WILL NOW FUNCTION PROPERLY ACROSS A REMOTE LOGIN USING X.25.
< AS IT IS IMPOSSIBLE TO IDENTIFY THE TERMINAL (THROUGH THE USER
< NUMBER) ON REMOTE LOGIN, USING A PUBLIC DATA NETWORK, OR USING
< DIAL-UP LINES, A NEW PSEUDO-TERMINAL TYPE, "INQUIRE", HAS BEEN
< DEFINED. WHEN A USER NUMBER IS ASSOCIATED WITH THIS
< PSEUDO-TERMINAL TYPE (THROUGH FAP'S TCB COMMAND), THE OPERATOR IS
< QUERIED AT PROGRAM EXECUTION TIME FOR THE ACTUAL TYPE OF THE
< TERMINAL.

<N.B. REMEMBER THAT IT IS NOT NECESSARY TO PUT THIS TERMINAL TYPE INTO
<THE DEVICE CONTROL FILE (DCF.AS).

REV 17.3 -- DOCUMENTATION -- FTN

THE FOLLOWING BUG FIXES WERE MADE TO FTN AT REV 17.3:

BAD CODE WAS SOMETIMES GENERATED FOR ARRAY SUBSCRIPT EXPRESSIONS INVOLVING PARENTHESES.

BAD CODE WAS GENERATED FOR AN INTEGER *2 ARRAY WITH UPPER BOUND 1. (TAR'S 10438, 81571).

DUMMY ARRAYS WITH INTEGER *4'S IN THEIR DIMENSIONS OR IN THEIR SUBSCRIPT EXPRESSIONS WERE NOT ALWAYS HANDLED CORRECTLY (TAR'S 80669, 81465).

AN IMPLICIT STATEMENT SHOULD AFFECT THE BOUNDS OF A DUMMY ARRAY BUT DID NOT (TAR'S 24844, 24245).

THE COMPILER FAILED TO DETECT AN ARRAY WHICH IS GIVEN DIMENSIONS TWICE IN ONE PROGRAM (TAR'S 12524, 12637, 12534, 25547).

THE DO-LOOP OPTIMIZER MISHANDLED LOGICAL IF STATEMENTS (TAR 20312).

A QUOTED CHARACTER STRING WHICH CROSSES TO A CONTINUATION LINE WAS PARSED WRONG (TAR'S 24568, 15453).

THE DO-LOOP OPTIMIZER (FOR R-MODE) SOMETIMES WOULD LEAVE OUT THE DBL INSTRUCTION.

THE EXPRESSIONS B*-1 AND B*-C WERE REJECTED BY THE COMPILER BECAUSE IT DID NOT ALLOW UNARY MINUS IN ALL CONTEXTS.

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397 (FTNLIB)

REV 17.3 -- DOCUMENTATION -- R-MODE FORTRAN LIBRARY

ON EXPONENT UNDERFLOW, THE FORTRAN FLOATING POINT EXCEPTION HANDLER (F$FLEX) NOW STORES ZERO IN THE FLOATING POINT ACCUMULATOR (AS WELL AS IN THE RESULT VARIABLE) -- TAR 20375.

THIS CHANGE ALLOWS CALCULATIONS TO CONTINUE USING THE VALUE OF ZERO RATHER THAN THE VALUE THAT CAUSED THE EXCEPTION.

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398 (VFTNLIB)

SUBJECT: FTN/F77 LIBRARY FOR REVISION 17.3

THIS DOCUMENT DECSRIBES THE COMBINED FTN/F77 LIBRARIES FOR REV. 17.3. MAJOR ENHANCEMENTS INCLUDE THE MERGING OF THE F77 AND FTN LIBRARIES, I/O MODIFICATIONS, THE ADDITION OF NEW ROUTINES, AND BUG FIXES.

MERGED LIBRARY

BEGINNING WITH REV. 17.2, BOTH THE SHARED (PFTNLB, S2050, AND IFTNLB) AND UNSHARED (NPFTNLB AND IFTNLB) VERSIONS OF THE FORTRAN LIBRARY CONTAIN THE COMPLETE FUNCTIONALITY REQUIRED BY PROGRAMS COMPILED BY EITHER F77 OR FTN. IN MERGING THE TWO LIBRARIES, THE FOLLOWING CHANGES WERE MADE IN THE LIBRARY STRUCTURE:

1. TWO VERSIONS OF F$IO, CALLED F$IOFTN AND F$IO77, ARE INCLUDED IN THE LIBRARY. THESE CONTAIN ONLY THE ENTRY POINTS REQUIRED BY EACH TYPE OF FORTRAN RUN FILE. THEY SHARE THE SAME CONIOC TABLES AND IOCS$; HOWEVER, THE ROUTINES IN F$IOFTN READ AND WRITE RECORDS IN A COMPATIBLE FASHION, WHEREAS THE ROUTINES IN F$IO77 READ AND WRITE VARIABLE-LENGTH RECORDS IN THE DEFAULT CASE. THE ROUTINES IN F$IOFTN IGNORE THE VARIABLE-LENGTH BIT (BIT 1) SET IN

EACH ENTRY OF THE CONIOC TABLES. TO ELIMINATE NAME CONFLICTS, F77 GENERATES A CALL TO F$CB77 TO DUMP THE I/O BUFFER AT THE END OF A TRANSFER, INSTEAD OF A CALL TO F$CB. THE FOLLOWING ENTRY POINT NAMES ARE PRESENT IN F$IO77:

F$IFR - INITIALIZE FORMATTED READ
F$IBR - INITIALIZE UNFORMATTED READ
F$ILDR - INITIALIZE LIST-DIRECTED READ
F$INR - INITIALIZE NAMELIST READ
F$IFW - INITIALIZE FORMATTED WRITE
F$IBW - INITIALIZE UNFORMATTED WRITE
F$ILDW - INITIALIZE LIST-DIRECTED WRITE
F$INW - INITIALIZE NAMELIST WRITE
F$IIFR - INITIALIZE INTERNAL FORMATTED READ (DECODE)
F$IIFW - INITIALIZE INTERNAL FORMATTED WRITE (ENCODE)
F$IILD - INITIALIZE INTERNAL LIST DIRECTED READ
F$XFR - DATA TRANSFER
F$CB77 - TERMINATE LIST

2. THE VARIABLE LENGTH I/O UTILIZED BY F77 PROGRAMS HAS CAUSED THE IOCS ROUTINES TO BE ENHANCED AS FOLLOWS:

A. THE PL1G LIBRARY ROUTINE P$RLIN HAS HAD A NEW ENTRY POINT, F$RLIN ADDED TO IT WHICH IS CALLED BY F$IO77. THIS ROUTINE BYPASSES THE USE OF RDLIN$ AND I$AD07.

B. A NEW I$BD07 ROUTINE, CALLED I$BD7X, HAS BEEN ADDED TO THE LIBRARY. THIS IS CALLED BY F$IO77 DIRECTLY FOR BINARY READS FROM DISK, ELIMINATING THE CALL TO RDBIN.

THESE TWO ROUTINES WERE MADE NECESSARY NOT ONLY BY THE USE OF VARIABLE-LENGTH I/O IN F$IO77, BUT ALSO BY ENHANCEMENTS IN THE BUFFER BOUNDARY CHECKING DISCUSSED BELOW.

3. THE FORTRAN STATEMENT "BACKSPACE" IS NOW SUPPORTED FOR DISK AND MAGTAPE IN BOTH FTN AND F77 AS OF REV. 17.2. PRIOR TO THIS REV. FTN SUPPORTED "BACKSPACE" FOR MAGTAPE ONLY.

4. AS OF REV. 17.2 THE FORTRAN STATEMENT "ENDFILE" WORKS ACCORDING TO THE FORTRAN-77 STANDARD. PRIOR TO REV. 17.2 FTN TOOK "ENDFILE" TO MEAN "CLOSE FILE" -- IT CLOSED DISK FILES, WROTE AN END-OF-FILE MARK, AND REWOUND TAPE UNITS. "ENDFILE" NOW WRITES AN END-OF-FILE MARK AND POSITIONS AFTER IT. IT DOES NOT CLOSE DISK FILES OR REWIND TAPE UNITS.

BUFFER SIZE AND BOUNDARY CHECKING

IN FTN PROGRAMS WHICH ATTEMPT I/O, THERE HAS CLASSICLY BEEN NO CHECKING

OF F$IOBF OVERFLOW. IN GOING TO A VARIABLE-LENGTH RECORD FORMAT REQUIRED BY ANS FORTRAN-77, IT WAS FOUND NECESSARY TO PUT CHECKS INTO F$I077 FOR AN END-OF-BUFFER CONDITION. THE SPECIFIC ENHANCEMENTS TO THE LIBRARY ARE AS FOLLOWS:

1. A GLOBAL RUN-TIME VARIABLE CALLED F$IOSZ (FOUND IN THE F$IOBF SOURCE MODULE) CONTAINS THE CURRENT LENGTH OF F$IOBF. IN THE UNSHARED LIBRARY, IT IS SET TO 128, WHILE IN THE SHARED LIBRARY ITS VALUE IS 16K-1. F$I077, PLUS F$RLIN AND I$BD7X MENTIONED ABOVE, USE THE VALUE IN F$IOSZ TO CHECK FOR END OF BUFFER CONDITIONS.

2. THE SIZE OF F$IOBF IN THE SHARED AND UNSHARED VERSIONS OF THE LIBRARY MIRRORS THE DEFAULT VALUES OF F$IOSZ, NAMELY, 128 WORDS IN THE UNSHARED VERSION, AND 16K-1 WORDS IN THE SHARED VERSION. SINCE 16K-1 IS THE MAXIMUM BUFFER SIZE THAT F$I077 (AND F$IOFTN) CAN TRANSFER, SHARED LIBRARY USERS NEED NEVER WORRY ABOUT I/O BUFFER OVERFLOW FOR RECORD SIZES UNDER 16K-1. FTN PROGRAMS USE THE SAME F$IOBF, BUT ARE NOT AWARE OF F$IOSZ, AND NO CHECKING OF BUFFER OVERFLOW IS DONE. IN BOTH LIBRARIES, RECORDS LARGER THAN F$IOSZ CAN BE WRITTEN; HOWEVER, SUCH RECORDS WILL BE WRITTEN OUT AS MULTIPLE RECORDS. THUS WRITING A 16K RECORD USING THE SHARED LIBRARY WILL RESULT IN TWO RECORDS ACTUALLY BEING WRITTEN, THE FIRST CONTAINING 16K-1 WORDS, AND THE SECOND CONTAINING ONE WORD - IF VARIABLE SIZE RECORDS ARE BEING OUTPUT (AVAILABLE ONLY WITH F77) - OR 16K-1 WORDS IF FIXED LENGTH RECORDS ARE BEING WRITTEN.

F77 USERS LOADING THEIR PROGRAMS WITH THE UNSHARED LIBRARY WHO WISH TO PROVIDE THEIR OWN F$IOBF MUST NOW PROVIDE THEIR OWN F$IOSZ IF THEY WISH TO CHANGE THE BUFFER SIZE. THIS IS DONE THE SAME WAY AS THE F$IOBF SOURCE MODIFICATION:

```
INTEGER*2 F$ICSZ,BUFSIZ(N)
COMMON /F$IOSZ/F$IOSZ
COMMON /F$IOBF/BUFSIZ
DATA F$IOSZ/N/
```

WHERE N IS THE SIZE OF F$IOBF. F$IOSZ CAN BE USED BY THE F77 PROGRAMMER FOR HIS OR HER OWN CHECKING AS WELL. F77 PROGRAMS USING THE SHARED LIBRARY HAVE NO ACCESS TO F$IOBF OR F$IOSZ DIRECTLY, BUT SINCE THE SIZE OF F$IOBF IN THE SHARED LIBRARY IS THE MAXIMUM VALUE ALLOWED THEY SHOULD HAVE NO REASON TO TOUCH EITHER OF THEM.

F77 RUN TIME ERRORS

THE F77 I/O ROUTINES CURRENTLY OUTPUT AN ERROR CODE AT THE USER TERMINAL AT RUNTIME RATHER THAN A LINE OF TEXT. THESE ERROR CODES MEAN THE FOLLOWING:

100	BAD LUTBL ENTRY
101	NO DRIVER FOR DEVICE
102	WRONG FILE TYPE
103	FORMAT/DATA MISMATCH
104	BAD FORMAT STATEMENT
105	BAD DOPE VECTOR
106	I/O BUFFER OVERFLOW

CODES 100,104, AND 105 CAN INDICATE THAT THE PROGRAM IS WRITING OVER ITSELF OR PARTS OF THE LIBRARY; 104 AND 105 COULD ALSO BE OUTPUT IN THE UNLIKELY EVENT OF COMPILER AND/OR LIBRARY ERROR. HOWEVER, ODDS ARE THAT USER PROGRAM IS ITSELF IN ERROR, AND USERS ARE CAUTIONED TO CHECK THEIR PROGRAMS CAREFULLY BEFORE CONCLUDING THAT THE SYSTEM IS A FAULT.

NEW ROUTINES

1. ADDITION OF V-MODE AND I-MODE FORTRAN-77 SUPPORT ROUTINES. MANY OF THESE ROUTINES ARE ALSO USED BY THE PL1G COMPILER. FTN AND F77 USERS NEED ONLY DO AN LI (OR LI NPFTNLB) TO LOAD THEIR PROGRAMS WHEN USING THESE LIBRARIES. THESE ROUTINES WERE ADDED AT REV. 17.2.

2. THE FOLLOWING ROUTINES WERE ADDED AT REV. 17.2 TO SUPPORT FORTRAN-77 I/O:

F$BKSP - BACKSPACE STATEMENT
F$ENDF - ENDFILE STATEMENT
F$REW - REWIND STATEMENT
F$OPEN - OPEN STATEMENT
F$CLOS - CLOSE STATEMENT
F$INQU - INQUIRE BY UNIT STATEMENT
F$INQF - INQUIRE BY FILE STATEMENT
F$STOP - STOP STATEMENT
F$PAUS - PAUSE STATEMENT

3. F$SRPWR (WHICH RAISES A REAL*4 NUMBER TO A REAL*4 POWER) WAS ADDED TO THE LIBRARY AT REV. 17.3 FOR USE BY F77, PL1G, AND FULL PL/1.

4. SEVERAL (BUT NOT ALL) ROUTINES NEEDED FOR FULL PL/1 WERE ADDED TO THE LIBRARY AT REV. 17.3.

BUG FIXES FOR REV. 17.2

1. THE FOLLOWING PRIMOS DYNTS HAVE BEEN ADDED TO THE

LIBRARIES: GINFO AND THE PLP DYNTS (PBIN, PBINL, P$CAFT, P$CBFR, P$CCAT, P$CCIP, P$CCMP, P$CCPY, P$CDAT, P$CHAR, P$CHRL, P$CIDX, P$CMVF, P$CMVV, P$CREV, P$CSBF, P$CSRC, P$CTIM, P$CTRM, P$CTRN, P$CVFY, P$NSRT, PL1$NL).

PL/P USERS NO LONGER NEED TO SEARCH THE PL/P LIBRARY (PLPLIB). THEY MAY NOW SEARCH THE FORTRAN LIBRARY INSTEAD (OR EXCLUSIVELY).

2. THE FOLLOWING PRIMOS DYNTS WERE DELETED FROM THE LIBRARIES: TA$ AND SEGAC$.

3. THE FOLLOWING FTN SUPPORT ROUTINES WERE SLIGHTLY SPED UP

BY THEIR USE OF THE NEW SHORT CALLED ($X) MATH FUNCTIONS: ALOG10, ATAN2, DLOG10, TANH, E$62, E$66, E$22.

4. DINT (FOR FTN) WAS SPED UP SLIGHTLY.

5. SINCSX (CALLED ONLY FROM FTN PROGRAMS) WAS REWRITTEN IN ORDER TO INCREASE ITS ACCURACY. THIS ROUTINE IS SIGNIFICANTLY FASTER THAN ITS PREDECESSOR. (TAR 22787)

6. REMOVED UNNEEDED LIST COMMON IN ERRST$.

7. O$AA01 SUPPRESSES SINGLE SPACE AT END OF LINE.

8. CSQRT (FOR FTN) WAS MODIFIED TO ALWAYS RETURN A RESULT THAT IS WITHIN THE PRINCIPAL RANGE OF THE FUNCTION.

BUG FIXES FOR REV. 17.3

1. ERRORS WERE CORRECTED IN THE FOLLOWING I-MODE F77 FUNCTIONS: SHFT, LT, RT, LS, RS, AND CDLOG, CDSIN, AND CDCOS. (I-MODE SUPPORT FOR F77 WAS ADDED TO THE LIBRARY AT REV. 17.2, BUT THE COMPILER DID NOT GENERATE I-MODE CODE UNTIL REV. 17.3)

2. ERRORS WERE CORRECTED IN THE FOLLOWING V-MODE F77 FUNCTIONS: CDLOG, CDSIN, CDCOS, AND ALL ALLOWED INTRINSIC FUNCTIONS MAY BE PASSED AS PARAMETERS TO FORTRAN-77 SUBROUTINES.

3. THE LIST OF ENTRIES INTO THE SHARED FORTRAN LIBRARY,

CONTAINED IN THE FILE FTDYNT, WAS EXPANDED TO CONTAIN THE NAMES OF ALL SHARED SHIFT TABLES. (THIS WAS NECESSARY FOR SUPPORT OF FULL PL/1.)

4. F$IO77 AND I$BD7X WERE MODIFIED TO FIX A BUG IN THE DIRECT ACCESS OF FILES AND A BUG INVOLVING THE POSSIBLE MISPOSITIONING OF RECORDS DURING UNFORMATTED FILE ACCESS.

5. O$AL06 AND O$AP02 WERE MODIFIED SO THAT THEY NOW OUTPUT A BLANK RECORD WHEN THEY ARE CALLED WITH A COUNT WORD OF ZERO. PRIOR TO REV. 17.3 THESE ROUTINES TRIED TO OUTPUT ONE SEGMENT OF DATA WHEN CALLED WITH A COUNT WORD EQUAL TO ZERO.

6. MINOR TYPOS WERE CORRECTED IN THE FTN SUPPORT ROUTINES DEXP$X AND DEXP.

7. F$IOFTN WAS CHANGED TO:

A. ALLOW OUTPUT OF THREE AND FOUR DIGIT EXPONENTS AS FOLLOWS (TAR 25269):

EXPONENTS WHOSE MAGNITUDE IS IN THE RANGE 100 <= EXPONENT < 1000 WILL BE OUTPUT BY NOT PRINTING THE "E" (OR "D") BEFORE THE EXPONENT, AND USING THAT SPACE FOR THE SIGN OF THE EXPONENT. THE SIGN OF THE EXPONENT WILL ALWAYS BE OUTPUT IN THIS FORM, AND EXPONENTS OUTPUT IN THIS MANNER MAY BE READ WITH FORTRAN I/O STATEMENTS. EXAMPLES OF THIS FORM ARE "1.2+456" AND "1.2-456", WHICH SIGNIFY THE NUMBERS 1.2*(10**456) AND 1.2*(10**(-456)) RESPECTIVELY.

EXPONENTS WHICH ARE LARGER IN MAGNITUDE THAN 999 WILL BE OUTPUT WITH AN INDICATION OF OVERFLOW. THUS, 1.2$456 SIGNIFIES THAT A POSITIVE EXPONENT, NOTE THE "$" SIGN, WHOSE FIRST THREE DIGITS (OF FOUR) ARE "456" WAS OUTPUT. SIMILARLY, 1.2=456 SIGNIFIES THAT A NEGATIVE EXPONENT, NOTE THE "=" SIGN, WHOSE FIRST THREE DIGITS (OF FOUR) ARE "456" WAS OUTPUT. SINCE THIS FORM OF OUTPUT IS INTENDED TO DENOTE AN ERROR IN OUTPUT FORMAT, IT CANNOT BE READ WITH FORTRAN I/O STATEMENTS. FOUR DIGIT EXPONENTS CAN ONLY BE OUTPUT USING FORTRAN-77'S "EW.DEE" FORMAT. THIS FORMAT IS NOT AVAILABLE TO FTN PROGRAMS.

FTN'S OUTPUT OF THREE AND FOUR DIGIT EXPONENTS (AS DESCRIBED ABOVE) IS IDENTICAL TO F77'S. TWO DIGIT EXPONENTS ARE STILL OUTPUT BY FTN PROGRAMS AS THEY ALWAYS HAVE BEEN; NAMELY, WITH AN "E", OR "D", FOLLOWED BY A SPACE, IF A POSITIVE EXPONENT, OR A "-" SIGN, IF A NEGATIVE EXPONENT, FOLLOWED BY THE TWO DIGITS OF THE EXPONENT. FOR EXAMPLE, "1.2E 34" AND "1.2E-34" REPRESENT

1.2*(10**34) AND 1.2*(10**(-34)) RESPECTIVELY. F77'S OUTPUT OF TWO DIGIT EXPONENTS IS IDENTICAL TO FTN'S EXCEPT THAT A "+" SIGN IS ALWAYS OUTPUT FOR A POSITIVE EXPONENT (INSTEAD OF A SPACE) AFTER THE "E" OR "D" OF THE EXPONENT. FTN USERS WHO DESIRE THIS FUNCTIONALITY MAY REASSEMBLE F$IOFTN AND REBUILD THEIR FORTRAN LIBRARY. SEE PARAGRAPH I BELOW FOR DETAILS.

B. FREE FORMAT DECODE OF "XX" INTO AN INTEGER*2 VARIABLE NOW GIVES AN ERROR.

C. A SLASH MAY NOW BE USED TO TERMINATE A RECORD IN LIST DIRECTED INPUT. (TAR 13550)

D. IMPLIED REPEAT OF GROUPS IN A FORMAT STATEMENT NOW WORKS CORRECTLY. (TAR 12577)

E. FREE FORMAT INPUT OF A NON-NUMERIC CHARACTER WHEN READING INTO A REAL VARIABLE NOW GIVES AN ERROR. (TAR 81771)

F. FREE FORMAT INPUT OF REAL NUMBERS INPUT IN EXPONENTIAL FORM WITH A SPACE AFTER THE "E" OR "D" OF THE EXPONENT (RATHER THAN A "+" SIGN) IS NOW ALLOWED.

G. AN ASSEMBLY OPTION HAS BEEN ADDED SO THAT TRAILING BLANKS IN INPUT FIELDS MAY NOW BE TREATED AS ZEROES RATHER THAN BEING IGNORED. THUS, THE NUMBER "2 <SPACE> <SPACE> <SPACE>" READ IN I4 FORMAT CAN BE INTERPRETED AS THE NUMBER 2000 RATHER THAN THE NUMBER 2. FOR COMPATIBILITY WITH PRIOR FTN PROGRAMS, F$IOFTN IS ASSEMBLED TO IGNORE TRAILING BLANKS ON INPUT. F77 ALSO IGNORES TRAILING BLANKS ON INPUT UNLESS THE FILE IS OPENED WITH "BLANK='ZERO'" SPECIFIED OR A FORMAT STATEMENT USES THE "BZ" DESCRIPTOR. SEE PARAGRAPH I BELOW FOR DETAILS. (TAR 22000)

H. AN ASSEMBLY OPTION HAS BEEN ADDED SO THAT A "/" AS THE LAST ITEM IN A FORMAT STATEMENT SKIPS ONE LINE. THUS, "WRITE(1,'(/)')" CAN EITHER SKIP ONE LINE OR TWO (SINCE THE CLOSING ")" OF THE FORMAT STATEMENT CAUSES A BLANK LINE TO BE OUTPUT IN EITHER CASE). FOR COMPATIBILITY WITH PRIOR FTN PROGRAMS, F$IOFTN IS ASSEMBLED TO SKIP ONE LINE. USERS WHO WISH TWO LINES SKIPPED MAY REASSEMBLE F$IOFTN AS DESCRIBED IN PARAGRAPH I. F77 ALWAYS SKIPS TWO LINES. (TAR'S 25251 AND 25757)

I. F$IOFTN MAY BE REASSEMBLED TO CHANGE CERTAIN DEFAULTS BY SETTING THE B-REGISTER TO THE INDICATED OCTAL VALUES:

B-REGISTER = 2 TO TREAT TRAILING BLANKS AS ZEROES
B-REGISTER = 4 TO PRINT A PLUS SIGN AFTER "D" AND "E" IN

EXPONENTIAL OUTPUT
B-REGISTER = 10 FOR "/" TO SKIP ONE LINE IF AT THE END OF A FORMAT STATEMENT

THE ABOVE OPTIONS MAY BE COMBINED WITH EACH OTHER. SELECTION OF ONE OR MORE OF THESE OPTIONS IS DONE BY USING THE COMMAND LINE FORM "PMA FILENAME 2/N" WHERE N EQUALS THE OCTAL VALUE DESIRED. THE SUGGESTED WAY TO REBUILD THE FORTRAN LIBRARY IS TO EDIT THE FILE C_COMPILE IN THE MASTER DISK UFD VFTNLIB>SOURCES SO THAT A "2/N" (WHERE "N" IS THE OCTAL VALUE DESIRED) IS ADDED TO THE LINE WHICH ASSEMBLES F$IOFTN, AND THEN USE THE FILE C_VFTNLIB IN THE MASTER DISK UFD VFTNLIB TO REASSEMBLE AND REBUILD THE FORTRAN LIBRARY. THE FORTRAN LIBRARY ON THE MASTER DISK CONTAINS A COPY OF F$IOFTN WHICH WAS BUILT WITH ALL BITS IN THE B-REGISTER EQUAL TO ZERO.

8. F$ALFA0.PMA, F$ALFA1.PMA, I$ARFA0.PMA, AND I$ARFA1.PMA WERE MODIFIED SO THAT LOGICAL*1 AND CHARACTER VARIABLES IN LONG COMMON BLOCKS ARE ACCESSED CORRECTLY ACCROSS SEGMENTS BY PL1, PL1G, AND F77.

*
399 (F77)

SUBJECT: FORTRAN-77 FOR REV 17.3

THIS MEMO DESCRIBES THE OPERATING PROCEDURES OF THE NEW FORTRAN-77 COMPILER. IN PARTICULAR, THE COMMAND LINE OPTIONS OF THE NEW COMPILER ARE LISTED AND NOTES ON THE USE OF THE COMPILER ARE FURNISHED. THIS INFORMATION WILL ALLOW USERS ALREADY FAMILIAR WITH FORTRAN-77 TO COMPILE, LOAD, AND EXECUTE THEIR PROGRAMS. USERS NOT FAMILIAR WITH THE FORTRAN-77 LANGUAGE SHOULD READ THE FORTHCOMING USER'S MANUAL.

1 F77 COMPILER OPTIONS

F77 IS THE FORTRAN-77 COMPILER. IT IS INVOKED BY THE COMMAND:

F77 NAME [OPTIONS]

OPTIONS ARE PRECEDED BY A '-'. THE NAME MAY BE A PATH NAME, BUT NEITHER IT NOR ANY FILE NAME MADE FROM IT MAY EXCEED 32 CHARACTERS.

THE COMMAND LINE SYNTAX IS THE SAME AS OTHER PRIME COMPILERS: THE -S, -B, AND -L OPTIONS ARE ALL SUPPORTED.

THE FOLLOWING OPTIONS ARE SUPPORTED:

```
-XREF       -- PRODUCE A CROSS-REFERENCE LISTING.  (IMPLIES L)
-NOXREF     -- NO CROSS REFERENCE.
-OFFSET     -- PRODUCE AN OFFSET MAP IN L_NAME (IMPLIES L)
-EXPLIST    -- PRODUCE A PSEUDO-ASSEMBLY LISTING OF THE GENERATED
               CODE IN L_NAME (IMPLIES L)
-OPTIMIZE   -- EXECUTE THE OPTIMIZER PHASE
-NOOPTIMIZE -- DON'T USE THE OPTIMIZER
-STATISTICS -- PRINT OUT STATISTICS ABOUT THE COMPILATION
-RANGE      -- COMPILE CODE TO CHECK SUBSCRIPT AND SUBSTR RANGES
-UPCASE     -- MAP LOWER CASE TO UPPER CASE IN IDENTIFIERS
-LCASE      -- UPPER AND LOWER CASE ARE DISTINCT IN IDENTIFIERS
-SILENT     -- SUPPRESS LEVEL 1 (WARNING) ERROR MESSAGES
-DEBUG      -- PRODUCE A FULL DEBUGGER (DBG) SYMBOL TABLE.
-64V        -- PRODUCE V-MODE CODE
-BIG        -- DENOTES THAT ARRAYS MAY BE LARGER THAN 1 SEGMENT
-NOBIG      -- ASSUMES ARRAYS ARE LESS THAN ONE SEGMENT
-PRODUCTION -- PRODUCE "PRODUCTION" DEBUGGER SYMBOL TABLE
-INTL       -- MAKE INTEGER*4 THE DEFAULT
-INTS       -- MAKE INTEGER*2 THE DEFAULT
-LOGL       -- MAKE LOGICAL*4 THE DEFAULT
-LOGS       -- MAKE LOGICAL*2 THE DEFAULT
-D01        -- CAUSES ALL DO LOOPS TO BE AT LEAST ONE TRIP
-DYNM       -- ALLOCATE LOCAL VARIABLES ON THE STACK.
-SAVE       -- ALLOCATE LOCAL VARIABLES IN STATIC SPACE.
-ERRTTY     -- WRITE ERROR MESSAGES TO THE TERMINAL.
-ERRLIST    -- CREATE AN ERROR ONLY LISTING FILE.
-XREFS      -- MAKE A CROSS REFERENCE IN WHICH VARIABLES THAT ARE
               DECLARED BUT NOT USED ARE NOT PRINTED OUT.
-32I        -- GENERATE 32I MODE CODE.
```

THE DEFAULT OPTIONS AS DISTRIBUTED ARE '-B YES -L NO -64V -OPTIMIZE -UPCASE -INTL -LOGL -NOBIG -DYNM -ERRTTY '. THE DEFAULT OPTIONS MAY BE CHANGED BY USE OF THE PROGRAM F77DF, WHICH IS FOUND IN THE TOOLS UFD.

EXAMPLE:

```
F77 FOO -L YES -INTS
```

WILL COMPILE FOO TO PRODUCE AN OBJECT FILE NAMED B_FOO AND A LISTING FILE NAMED L_FOO. INTEGERS WILL BE ASSUMED TO BE INTEGER*2, LOGICALS WILL BE ASSUMED TO BE LOGICAL*4, AND THE CODE WILL BE OPTIMIZED.

EACH COMPILATION PRODUCES TEMPORARY FILES (NAMED "T$XXXX") IN THE CURRENT WORKING DIRECTORY. THESE FILES ARE NORMALLY DELETED AT THE END OF THE COMPILATION.

2 ERROR MESSAGES

ERROR MESSAGES ARE WRITTEN TO THE TERMINAL WHEN THE -ERRTTY OPTION IS ON, AND ARE ALSO DUMPED TO THE LISTING FILE. THE FILE "FILENAME.ERROR" IS NO LONGER CREATED. FOUR LEVELS OF ERRORS ARE REPORTED: LEVEL 1 IS A WARNING, LEVEL 2 IS AN ERROR THAT HAS BEEN FIXED, LEVEL 3 IS AN ERROR THAT HAS NOT BEEN FIXED, AND LEVEL 4 IS AN ERROR THAT PREVENTS CONTINUED COMPILATION. ANY ERROR OF LEVEL 3 PREVENTS OPTIMIZATION AND CODE GENERATION IF DETECTED PRIOR TO THOSE PHASES.

3 PROGRAM LOADING

AT REV. 17.3 THE F77 COMPILER OUTPUTS BOTH I-MODE AND V-MODE CODE . THUS, THE SEGMENTED LOADER (SEG) MUST BE USED TO LOAD THE OBJECT MODULES PRODUCED BY THE COMPILER. ONLY THE STANDARD LIBRARY IS NEEDED.

4 MISCELLANEOUS NOTES

4.1 CROSS-REFERENCE OPTION

IT IS UNLIKELY THAT THE CROSS-REFERENCE OPTION WILL CAUSE THE COMPILER'S VIRTUAL SYMBOL SPACE TO OVERFLOW FOR VERY LARGE SOURCE PROGRAMS, BECAUSE EXTERNAL PROCEDURES WITHIN A SOURCE FILE ARE NOW COMPILED SEPARATELY.

4.2 DBG INTERFACE

THE LINE NUMBERS GIVEN IN DBG REFER TO THE LINE NUMBERS FOUND IN THE SCURCE FILE . THUS ANY CODE IN $INSERT FILES CAN NOT BE SEEN BY THE DEBUGGER. SINCE COMPILATION IN DEBUG MODE PRODUCES EXTRA INFORMATION IN THE BINARY AND SEG FILES , USE OF THE "-DEBUG" OPTION FOR LARGE PROGRAMS MAY REQUIRE A SIGNIFICANT AMOUNT OF DISK SPACE.

AT REV 17.3, USE OF DBG ON PROGRAMS IN WHICH MULTIPLE EXTERNAL PROCEDURES EXIST IN A SINGLE SOURCE FILE IS SUPPORTED.

4.3 SEGMENT USAGE

COMPILATION OF F77 PROGRAMS USES SEGMENTS 4004-4007 AND 4027. IN USER PROGRAMS SEGMENTS 4027 THROUGH 4010 ARE USED - IN DESCENDING ORDER - AS THE SYSTEM FREE STORAGE POOL (IN WHICH ALLOCATE AND FREE REQUESTS OPERATE AND IN WHICH SOME COMPILER-GENERATED TEMPORARIES ARE ALLOCATED).

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401 (LOGPRT)
PLEASE SEE LOGPRT>INFO

*
402 (MAGNET)

REV 17.3 -- MAGNET -- DOCUMENTATION

MAGNET REV 17.3 FIXES TAR #25766 -- READ OPERATIONS NOW RESULT IN CORRECT RECORD AND LINE COUNTS BEING PRINTED.

*
403 (MAGSAV/RST)
REV 17.3 -- DOCUMENTATION -- MAGSAV/RST

MAGSAV/MAGRST

1) THE MAGSAV PROGRAM HAS BEEN CHANGED SO THAT A SUB-UFD CALLED MFD CAN BE SAVED BY TYPING MFD. IF THE USER IS ATTACHED TO A TOP-LEVEL MFD, THE WHOLE MFD WILL BE SAVED (EXACTLY AS BEFORE). HOWEVER, IF THE USER IS NOT ATTACHED TO A TOP-LEVEL MFD, THE FOLLOWING MESSAGE IS OUTPUT:-

WARNING-SAVING FILE OR SUB-UFD CALLED MFD

THE PROGRAM THEN LOOKS FOR AN ENTRY IN THE CURRENT UFD CALLED MFD.

NOTE THAT IF A SUB-UFD CALLED MFD IS RESTORED WHILE ATTACHED TO A TOP-LEVEL MFD, ANY FILES IN THE UFD (AND IN ANY SUB-UFDS CALLED MFD) WILL ALL BE RESTORED AS FILES IN THE TOP-LEVEL MFD.

IF AN ATTEMPT IS MADE TO RESTORE A FILE CALLED MFD WHILE ATTACHED TO A TOP-LEVEL MFD, THE MESSAGE:-

FILETYPE MISMATCH, FILE OMITTED: MFD

IS OUTPUT AND THE FILE IS NOT RESTORED.

2) A BUG INTRODUCED AT REV 1.2 HAS BEEN FIXED. IT CAUSED TAPES TO RUN OFF THE REEL WHILE RESTORING.

END-OF-FILE MARKS ARE ALSO NOW WRITTEN AT THE END OF A PHYSICAL REEL. THEREFORE, IF THE BLOCK WHICH MARKS END OF REEL IS MISSED (FOR EXAMPLE, THE TAPE IS BAD AT END OF REEL), AN END-OF-FILE MARK WILL BE DETECTED, AN ERROR MESSAGE OUTPUT AND END OF PHYSICAL REEL ASSUMED. THIS IS ALSO IN ORDER TO STOP TAPES RUNNING OFF END OF REEL.

3) BOTH MAGSAV AND MAGRST WILL NO LONGER ACCEPT A .CR. IN ANSWER TO THE 'TAPE UNIT NO:' PROMPT. ONLY A NUMBER FROM 0 TO 7 WILL BE ACCEPTED; PREVIOUSLY A .CR. WAS TAKEN AS ZERO.

*
404 (MAKE)

REV 17.3 -- MAKE -- DOCUMENTATION

REV 17.3 MAKE HAS AN ADDITIONAL QUESTION WHICH ASKS THE USER TO SELECT THE BAUD RATE. THE DEFAULT IS 30C BAUD.

*
405 (MIDAS)

REV 17.3 -- DOCUMENTATION -- MIDAS

REV. 17.3 CF MIDAS IS A 'BUG FIX' RELEASE. NO NEW FUNCTIONALITY HAS BEEN ADDED OR OLD FUNCTIONALITY DROPPED. BECAUSE OF THE NUMBER OF BUG FIXES IN THIS REV. THAT DID NOT MAKE IT IN TIME FOR REV. 17.2, RELEASE OF THE RE-WRITTEN UTILITIES HAS BEEN DELAYED AND IS CURRENTLY PLANNED FOR REV. 17.4. THE BUG FIXES IN THIS REV. INCLUDE:

0 TAR 12659
THE SYMPTOM WAS THE RECEIPT OF 'MIDAS ERROR 20' WHEN ADDING AN ENTRY AFTER SEVERAL ENTRIES HAD BEEN DELETED. WHAT WAS HAPPENING WAS THE 'STOPPER' ENTRIES WERE BEING PLACED IN THE WRCNG SPOT.

0 TAR 14758
AFTER MPACK'ING A FILE, ADDING AN ENTRY TO THE FILE MIGHT CAUSE MIDAS TO LOOP UNTIL THE DISK IS FULL. THE PROBLEM WAS THE MPACK WAS SHRINKING DOWN THE SIZE OF THE ROOT BLOCK SO NOTHING COULD BE

INSERTED.

0 TAR 21043
CURRENCY CHECKS IN MIDAS DID NOT ALLOW FOR LARGE MIDAS FILES, WHERE THE DATA FILE EXPANDED PAST SEGMENT 256. THE PROBLEM WAS 8 BITS INSTEAD OF 10 BITS OF THE SEGMENT NUMBER WAS BEING PRESERVED.

0 TAR 21258
SEE TAR 21043.

0 TAR 21615
SYMPTOM IS THAT A MIDAS ERROR 52 OCCURS WITH A DIRECT ACCESS FILE WHEN ADDING TO THE PRIMARY KEY. THE FILE IN FACT ONLY HAS INDEX SUBFILE 2 FULL AND SUBFILE 3 - 10 AVAILABLE. THE CAUSE IS THE USE OF THE (NEGATIVE) DIRECT ACCESS FLAG INSTEAD OF '0' (PRIMARY INDEX) IN CHECKING THE SIZE OF THE INDEX BEING EXPANDED.

0 TAR 21702 (REV. 17.2)
MANY USERS ARE APPARENTLY INSERTING MIDAS>KPARAM INTO THEIR PROGRAMS. THIS IS BAD PRACTICE. THEY SHOULD BE USING SYSCOM>PARM.K THIS ALSO MEANS THAT KPARAM HAS TO BE COPIED TO MIDAS FROM MIDAS>SOURCE.

0 TAR 21724
SEARCHES FOR THE NEXT GREATER ENTRY VIA FIND$ WITH FL$NXT SET ON A PARTIAL KEY FAILED BY RETURNING THE CURRENT OR PREVIOUS ENTRY. THIS WAS DUE TO NOT EXAMINING THE NEXT LAST LEVEL INDEX BLOCK TO THE RIGHT IN LOOKING FOR THE DESIRED ENTRY.

0 TAR 21726
WHEN FL$USE WAS SPECIFIED, MIDAS DID NOT CHECK THAT THE CURRENT INDEX POSITION DESCRIBED BY THE USER ARRAY WAS THE SAME INDEX AS THE ONE THE USER WAS TRYING TO DO AN OPERATION ON. THIS WAS FIRST NOTICED IN DELET$ OPERATIONS THAT PREVIOUSLY WORKED.

0 TAR 21813
SEE TAR 14758.

0 TAR 21918
MPACK'ING A FILE THAT CONTAINED LOCKED RECORDS WOULD TRASH THE FILE, EVEN IF THE FILE WERE BEING MPACK'ED TO A NEW FILE. THE CODE TO UNLOCK RECORDS WAS FIXED AND MPACK WILL NOT UNLOCK RECORDS IN THE OLD FILE IF IT IS BEING MPACK'ED TO A NEW FILE.

0 TAR 22451 (REV. 17.2)
RPG HAD PROBLEMS WITH UPDAT$ AND LOCK$. FIXED.

0 TAR 23802
FIND$ ON A PARTIAL KEY DID NOT WORK. SEE TAR 21724.

0 TAR 23803
FIND$ OPERATIONS WITH FL$PLW SET TO GET THE NEXT INDEX ENTRY ON A

PARTIAL KEY SEARCH DID NOT WORK. SEE TAR 27124 AND TAR 23802.

0 TAR 24263 (REV. 17.2)
A KEY SIZE OF 256 BITS COULD OVERFLOW AND SET THE WRONG BIT IN CREATK.

0 PSF 27192
SEE TAR'S 21724, 23802, 23803.

0 PSF 27194
MIDAS DOES NOT INHIBIT BREAK'S FOR ALL OPERATIONS. THIS HAS BEEN FIXED SO THE KX$LCK AND KX$ULK WHICH GET AND RELEASE THE MIDAS 'LOCK' DISABLE AND ENABLE BREAK'S.

*
406 (MSORTS)

REV 17.3 -- MSORTS -- DOCUMENTATION

REV 17.3 MSORTS INCLUDES THE FOLLOWING BUG FIX. THE MSORTS LIBRARY ROUTINE RADXEX DID NOT WORK IF THE SORT KEY CROSSED A WORD BOUNDARY. THIS PROBLEM USUALLY RESULTED IN AN ILLEGAL INSTRUCTION ERROR.

407 (PHYSAV/RST)
INITIAL REV 17 RELEASE. SEE PHYSR>INFO

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408 (PL1G)

PL1G COMPILER FOR REV. 17.3

SUBJECT: PL1G COMPILER FOR REV. 17.3

THIS MEMO DESCRIBES THE OPERATING PROCEDURES OF THE PL1G COMPILER. IN PARTICULAR, THE COMMAND LINE OPTIONS OF THE COMPILER ARE LISTED AND NOTES ON THE USE OF THE COMPILER ARE FURNISHED. THIS INFORMATION WILL ALLOW USERS ALREADY FAMILIAR WITH PL/I SUBSET G TO COMPILE, LOAD, AND EXECUTE THEIR PROGRAMS.

1 CHANGES AT REVISION 17.3

1.1 COMMAND-RELATED CHANGES

-ERRTTY/-NCERRTTY/-ERRLIST COMMAND LINE OPTIONS HAVE BEEN ADDED; THIS OBVIATES THE NEED FOR A "FILENAME.ERROR" FILE, WHICH HAS BEEN ELIMINATED. ERROR MESSAGES WILL NOW BE SORTED BY LINE NUMBER IN LISTING FILES.

LINES IN %INCLUDE FILES ARE NOW NUMBERED SEPARATELY, MEANING THAT LINE NUMBERS IN LISTINGS AND ERROR MESSAGES REFER TO THE LINE NUMBER IN THE SOURCE FILE RATHER THAN TO A COMPILER-GENERATED SEQUENTIAL LINE NUMBER. THIS CHANGE ALLOWS THE ORIGINAL SOURCE FILE TO BE SPECIFIED BY THE COMPILER AS THE DBG SOURCE FILE; THEREFORE, NO "FILENAME.DBG" FILE IS NEEDED OR PRODUCED.

SINCE THE SIZE OF FILE CONTROL BLOCKS PRODUCED BY THE COMPILER HAS CHANGED, INCOMPATIBILITIES MAY RESULT WHEN USING PRE-17.3 PL1G BINARIES WITH THOSE PRODUCED BY THIS COMPILER. SHOULD THIS OCCUR, RECOMPILATION OF THE OLDER PROGRAMS WILL RESOLVE THE DIFFICULTY.

1.2 PROGRAM-RELATED CHANGES

SEVERAL RESTRICTIONS HAVE BEEN RELAXED. THE MAXIMUM SIZE OF A SOURCE LINE IS NOW 255 CHARACTERS (AN ERROR MESSAGE WILL BE ISSUED IF THIS SIZE IS EXCEEDED); A STATEMENT MAY HAVE UP TO 6143 TOKENS; AND %INCLUDE FILENAMES MAY NOW BE UP TO 128 CHARACTERS LONG AND MAY INCLUDE PASSWORDS. EXTRALINGUAL CHARACTERS APPEARING IN THE SOURCE OUTSIDE STRINGS AND COMMENTS WILL NOW BE FLAGGED AS AN ERROR.

1.3 I/O-RELATED CHANGES

SEVERAL CHANGES REQUIRING MODIFICATION OF SOURCE PROGRAMS ARE IN THE REVISION>17.3 PL1G LIBRARY. THE FILE FORMAT OF DIRECT FILES HAS CHANGED SO AS TO BE COMPATIBLE WITH THAT OF SEQUENTIAL FILES; TO ACCESS OLD FORMAT DIRECT FILES, "-NOSIZE" MUST BE SPECIFIED IN THE TITLE OPTION. DEVICE NAMES MUST NOW BE PRECEDED WITH "@" (E.G., "@TTY", "@MTO", ETC.). RECORD SIZES IN TITLE OPTIONS ARE NOW SPECIFIED IN BYTES RATHER THAN IN WORDS.

SOME RESTRICTIONS HAVE BEEN RELAXED. RECORD SIZES MAY NOW

BE UP TO 131,062 BYTES LONG. PATHNAMES IN TITLE OPTIONS MAY BE UP TO 128 CHARACTERS LONG AND MAY CONTAIN PASSWORDS.

SEQUENTIAL FILES MAY NOW BE DAM FILES, AND DIRECT FILES MAY BE SAM FILES.

2 PL1G COMMAND LINE OPTIONS

PL1G IS THE PL/I SUBSET G COMPILER. IT IS INVOKED BY THE COMMAND:

PL1G NAME [OPTIONS]

OPTIONS ARE PRECEDED BY A '-'. THE NAME MAY BE A PATH NAME, BUT NEITHER IT NOR ANY FILE NAME MADE FROM IT MAY EXCEED 128 CHARACTERS. THE COMMAND LINE SYNTAX IS THE SAME AS OTHER PRIME COMPILERS: THE -S, -B, AND -L OPTIONS ARE ALL SUPPORTED.

THE FOLLOWING OPTIONS ARE SUPPORTED:

```
-XREF        -- PRODUCE A CROSS-REFERENCE LISTING.  (IMPLIES L)
-OFFSET      -- PRODUCE AN OFFSET MAP IN L_NAME (IMPLIES L)
-EXPLIST     -- PRODUCE A PSEUDO-ASSEMBLY LISTING OF THE GENERATED
                CODE IN L_NAME (IMPLIES L)
-OPTIMIZE    -- EXECUTE THE OPTIMIZER PHASE
-NOOPTIMIZE  -- DON'T USE THE OPTIMIZER
-STATISTICS  -- PRINT OUT STATISTICS ABOUT THE COMPILATION
-RANGE       -- COMPILE CODE TO CHECK SUBSCRIPT AND SUBSTR RANGES
-UPCASE      -- MAP LOWER CASE TO UPPER CASE IN IDENTIFIERS
-LCASE       -- UPPER AND LOWER CASE ARE DISTINCT IN IDENTIFIERS
-NESTING     -- PUT A  NESTING LEVEL NUMBER IN THE LISTING (IMPLIES L)
-SILENT      -- SUPPRESS LEVEL 1 (WARNING) ERROR MESSAGES
-DEBUG       -- PRODUCE A FULL DEBUGGER (DBG) SYMBOL TABLE
-64V         -- PRODUCE V-MODE CODE
-32I         -- PRODUCE I-MODE CODE
-BIG         -- DENOTES THAT ARRAYS MAY BE LARGER THAN 1 SEGMENT
-PRODUCTION  -- PRODUCE "PRODUCTION" DEBUGGER SYMBOL TABLE
-ERRTTY      -- LIST ERRORS ON THE TERMINAL
-NOERRTTY    -- DO NOT LIST ERRORS ON THE TERMINAL
-ERRLIST     -- PRODUCE AN ERRORS-ONLY LISTING FILE
```

THE DEFAULT OPTIONS AS DISTRIBUTED ARE '-B YES -L NO -64V -OPTIMIZE -UPCASE -ERRTTY'. THE DEFAULT OPTIONS MAY BE CHANGED BY USE OF THE PROGRAM PL1GDF, WHICH IS FOUND IN THE TOOLS UFD.

EXAMPLE:

```
PL1G FOO -L YES -NESTING
```

WILL COMPILE FOO TO PRODUCE AN OBJECT FILE NAMED B_FOO AND A LISTING FILE NAMED L_FOO. THE LISTING WILL CONTAIN A NESTING LEVEL NUMBER AND THE CODE WILL BE OPTIMIZED.

EACH COMPILATION PRODUCES TEMPORARY FILES (NAMED "T$XXXX") IN THE CURRENT WORKING DIRECTORY. THESE FILES ARE NORMALLY DELETED AT THE END OF THE COMPILATION.

3 ERROR MESSAGES

FOUR LEVELS OF ERRORS ARE REPORTED: LEVEL 1 IS A WARNING, LEVEL 2 IS AN ERROR THAT HAS BEEN FIXED, LEVEL 3 IS AN ERROR THAT HAS NOT BEEN FIXED, AND LEVEL 4 IS AN ERROR THAT PREVENTS CONTINUED COMPILATION. ANY ERROR OF LEVEL 3 PREVENTS OPTIMIZATION AND CODE GENERATION IF DETECTED PRIOR TO THOSE PHASES.

4 PROGRAM LOADING

AT REV. 17.3 THE PL1G COMPILER OUTPUTS V-MODE AND I-MODE CODE. THUS, THE SEGMENTED LOADER (SEG) MUST BE USED TO LOAD THE OBJECT MODULES PRODUCED BY THE COMPILER. ALSO, THE PL1G LIBRARY MUST BE LOADED PRIOR TO LOADING THE STANDARD LIBRARY. THIS LIBRARY IS NAMED PL1GLB AND IS LOCATED IN UFD LIB. THUS, THE FOLLOWING COMMANDS ISSUED TO SEG'S VIRTUAL LOADER SHOULD BE USED FOR PL1G PROGRAMS (AFTER ALL USER MODULES HAVE BEEN LOADED):

```
$LI PL1GLB
$LI
```

5 MISCELLANEOUS NOTES

5.1 CROSS-REFERENCE OPTION

THE CROSS-REFERENCE OPTION MAY CAUSE THE COMPILER'S VIRTUAL SYMBOL SPACE TO OVERFLOW FOR VERY LARGE SOURCE PROGRAMS.

5.2 DBG INTERFACE

AT REV 17.3, USE OF DBG ON PROGRAMS IN WHICH MULTIPLE EXTERNAL PROCEDURES EXIST IN A SINGLE SOURCE FILE IS NOT SUPPORTED. ALSO, THE COMPILER DOES NOT PROVIDE %INCLUDE LINE NUMBERS TO DBG; THEREFORE, ALL STATEMENTS IN %INCLUDE FILES ARE REFERENCED AS IF THEY APPEARED DIRECTLY ON THE SOURCE FILE LINE CONTAINING THE %INCLUDE.

5.3 SEGMENT USAGE

COMPILATION OF PL1G PROGRAMS USES SEGMENTS 4004-4007 AND 4027. IN USER PROGRAMS SEGMENTS 4027 THROUGH 4010 ARE USED - IN DESCENDING ORDER - AS THE SYSTEM FREE STORAGE POOL (IN WHICH ALLOCATE AND FREE REQUESTS OPERATE AND IN WHICH SOME COMPILER-GENERATED TEMPORARIES ARE ALLOCATED).

5.4 ONCODE BUILTIN FUNCTION

VALUES RETURNED BY THE ONCODE BUILTIN FUNCTION ARE DIVIDED INTO TWO CLASSES ACCORDING TO WHETHER OR NOT THEY REPRESENT AN INPUT-OUTPUT ERROR. VALUES WHICH ARE LESS THAN THE VALUE OF THE SYMBOL "ONCODE_BASE" ARE INPUT-OUTPUT ERRORS AND VALUES GREATER THAN OR EQUAL TO "ONCODE_BASE" REPRESENT ALL OTHER RUNTIME ERRORS. THIS SYMBOL IS DEFINED IN THE FILE SYSCOM>ONCODES.PL1. SINCE THE VALUES RETURNED BY THIS FUNCTION ARE SUBJECT TO CHANGE, IT IS RECOMMENDED THAT THIS FILE BE INCLUDED IN THE SOURCE FILE (%INCLUDE 'SYSCOM>ONCODES.PL1') AND THE SYMBOLIC KEYS IN THE FILE REFERENCED INSTEAD OF THE NUMERIC VALUES THEMSELVES.

THE SYMBOLS DEFINED IN THIS FILE REPRESENT ALL ERRORS WHICH ARE NOT RELATED TO INPUT-OUTPUT. THUS, THESE SYMBOLS SHOULD HAVE THE VALUE OF THE SYMBOL "ONCODE_BASE" ADDED TO THEM BEFORE THEY ARE USED IN CALLING "SIGNL$", SO THAT THEY ARE NOT CONFUSED WITH THE INPUT-OUTPUT RELATED ERRORS.

TWO ONE-DIMENSIONAL ARRAYS OF CHARACTER STRINGS ARE ALSO DEFINED IN THIS FILE. THEY CONTAIN THE TEXT OF THE ERROR MESSAGES OUTPUT BY THE DEFAULT ONUNIT HANDLER. THE ARRAY "IO_ONCODE_MESSAGE" - WHICH CONTAINS STRINGS DECLARED AS "CHAR(68) VARYING" - CONTAINS THE TEXT OF THE INPUT-OUTPUT RELATED ERROR MESSAGES, AND THE ARRAY "ONCODE_MESSAGE" - WHICH CONTAINS STRINGS DECLARED AS "CHAR(46) VARYING" - CONTAINS THE TEXT OF ALL THE OTHER POSSIBLE ERROR MESSAGES. TO ACCESS THE MESSAGE CORRESPONDING TO A GIVEN ONCODE VALUE, THE FOLLOWING CONSTRUCTS SHOULD BE USED:

```
ONCODE_VAL = ONCODE();
IF ONCODE_VAL > 0 & ONCODE_VAL <= MAX_IO_ONCODE
   THEN MSG = IO_ONCODE_MESSAGE(ONCODE_VAL);
ELSE IF ONCODE_VAL >= ONCODE_BASE &
                ONCODE_VAL < ONCODE_BASE + NEXT_AVAILABLE_CODE
   THEN MSG = ONCODE_MESSAGE(ONCODE_VALUE - ONCODE_BASE + 1);
ELSE /* NO MESSAGE AVAILABLE */;
```

A UNIQUE CBJECT GROUP WAS GENERATED FOR 32 I MODEHHHHH-MODE. THIS DOES NOT AFFECT ANY EXISTING DOCUMENTATION.

*
410 (POWER)

REV 17.3 -- DOCUMENTATION -- POWER

CHANGES SINCE REV 16.9

THE NUMBER OF DIGITS ALLOCATED FOR THE DISPLAY OF REAL NUMBERS HAS BEEN INCREASED FROM 12 TO 18.

ALL STANDARD FORMATS FOR LEADING EMBEDDED SIGNS ARE HANDLED CORRECTLY.

ATTEMPTS TC ADD A RECORD TO A MIDAS FILE IN WHICH DUPLICATE KEY VALUES ARE NOT ALLOWED FAIL WHEN ONE OF THE KEY VALUES IS A DUPLICATE.

SORTING RECORDS IN A BINARY FILE IS WORKS CORRECTLY.

THE 'ADD FILENAME' CCMMAND WILL CORRECTLY HANDLE FILES FOR WHICH THE LAST DESCRIPTOR IS OF TYPE 'DATE'.

*
411 (POWERPLUS)

DOCUMENTATION -- REV 17.3 -- POWERPLUS

CHANGES SINCE REV 16.9

THE NUMBER OF DIGITS ALLOCATED FOR THE DISPLAY OF REAL NUMBERS HAS BEEN INCREASED FROM 12 TO 18.

ALL STANDARD FORMATS FCR LEADING EMBEDDED SIGNS ARE HANDLED CORRECTLY.

ATTEMPTS TO ADD A RECORD TO A MIDAS FILE IN WHICH DUPLICATE KEY VALUES ARE NOT ALLOWED FAIL WHEN ONE OF THE KEY VALUES IS A DUPLICATE.

IN THREE LEVEL LINK STRUCTURES REPEATED ENTRIES ARE DISPLAYED

CORRECTLY.

SORTING RECORDS IN A BINARY FILE IS WORKS CORRECTLY.

THE 'ADD FILENAME' COMMAND WILL CORRECTLY HANDLE FILES FOR WHICH THE LAST DESCRIPTOR IS OF TYPE 'DATE'.

*
412 (PRIMCS)

1 CORRECTED REVISION 17.2 PROBLEMS

1.1 PRIMOS INITIALIZATION

1. CALCULATE PAGRCS("2) IN AINIT CORRECTLY.

2. 1ST 8 PAGES ON A PAGING PARTITION ARE NOT USED. THEREFORE, THE AVAILABLE NUMBER OF PAGING SPACE SHOULD BE 8 PAGES LESS THAN WHAT IT OTHERWISE CALCULATES.

3. PAGREL IS THE COMMON PAGDEV SHOULD BE INTEGER*4 INSTEAD OF INTEGER*2.

1.2 GETUN, RESERVE UNITS

DON'T ALLOW TOO MANY RESERVE UNITS TO BE ALLOCATED TO ONE PROCESS.

1.3 PRIMOS, CMD

SORT BAD RECORD INDICES TO PEVENT OVERLAPPING DEFINITIONS. IT IS CURRENTLY POSSIBLE TO MISS A BAD SPOT IF THE DEFECTIVE TRACKS ARE ADJACENT.

1.4 ABBREV

TO ADD USAGE INFORMATION TO ABBREV, AND FOLLOW THE WILD CARD STANDARD. REMOVE EXCESSIVE ERROR MESSAGES.

1.5 PASSWD COMMAND

PASSWD COMMAND NO LONGER ACCEPTS DIGIT AS FIRST CHARACTER IN A PASSWORD.

1.6 SMLC FOR RJE

FIX BUG IN SMLCEX TO NOTIFY EMULATORS ON ALL STATUS IF LOW OVERHEAD NODE NOT SET.

1.7 T$SLC1

TO UPDATE DATA SET STATES WORD IF NO CONTROL BLOCK GIVEN.

1.8 BAD PASSWORD, STATIC NODE

DEFAULT ON-UNIT FOR BAD-PASSWORD FAILS TO TURN ON TTY OUPUT.

1.9 SMLC (T$SLC1, PRIMENET, BSCMAN)

TO MAKE SEGMENT 0 ALLOCATION NODE DYNAMIC FOR SMLC ROUTINES AND TO SUPPORT 8 SMLC LINES FOR T$SLC1, PRIMENET, AND BSCMAN.

1.10 DPTX

FIX A PROBLEM WITH SUCCESSIVE OUTPUT OF LARGE SCREENS OF DATA.

1.11 PL/I CONDITION SUPPORT

CHAGE CONDITION MECHANISM TO SUPPORT THE SYSTEM AND SWAP OPTIONS OF THE PL/I ON-STATEMENT.

1.12 PHANTOM, BENCHMARK

TO PUT PHANTOMS ON LWO PRIORITY QUEUE WHEN THEY LOGIN. THIS IS IMPORTANT FOR BENCHMARKS WHICH ARE FREQUENTLY RUN USING PHANTOMS.

1.13 BLOCK DEVICE INTERFACE SEMAPHORE

TO ENABLE 'QUIT' WHILE WAITING ON THE DPTX MULTIPLE SEMAPHORES.

1.14 SETIME COMMAND

TO FIX BUG IN SETIME CMMAND. IT ACCEPTED NON-NUMERICS WITHOUT AN ERROR MESSAGE IN SOME CASES.

1.15 AMLDIM

THE TIMING FOR GRACE PERIODS IN THE AMLDIM WAS BASED UPON THE LAST

LINE SPEED. IF THAT SPEED CHANGED, THEN THE GRACE PRIOD VALUES ARE ALSO CHANGED.

1.16 DMA CHAINING

ADDED DMA CHAINING FOR LARGE TAPE RECORDS.

1.17 ATTACH

FIX TWO BUGS IN ATTACH COMMAND.

1. ATTACH UNKNOWN-UFD>SUBUFD CAUSED AND ATTACH TO HOME.

2. ATTACH UFD>SUBUFD I/O WAS SAME AS ATTACH SUBUFD (I.E. SEARCHED THE MFD FOR SUBUFD.

1.18 STATUS COMMAND

STATE UNITS ALWAYS PRINTS TREENAME ON A SECOND LINE EVEN IF IT WOULD FIT ON THE FIRST.

1.19 PROCESS-FAULT HANDLER FOR INTERRUPT PROCESSES

TO FIX TOO SMALL OF A STACK FRAME FOR PROCESS-FAULT HANDLER FOR INTERRUPT PROCESS.

1.20 OLD-STYLE SVC'S

TO GET OLD-STYLE SVC'S TO PRINT ERROR IF NO ALTRN SUPPLIED.

1.21 MDLC FOR RJE

ALLOW DEVICES OTHER THAN 50 OR 51 TO BE SPECIFIED.

1.22 DPTX, 327C SUPPORT, BLOCK DEVICE INTERFACE

TO FIX BLOCK DEVICE INTERFACE BUG. 3270 SUPPORT TRAFFIC MANAGER TIME-STANDING.

1.23 COMOUTPUT BUFFER OVERFLOW IN PUDCOM, PABORT

TO PREVENT COMOUTPUT BUFFER OVERFLOW BY TAKING A PROCESS ABORT WHILE EMPTYING THE BUFFER.

1.24 SCHED AND CHAP COMMAND

TO ADD SOME REAL TIME CAPABILITY TO THE SCHEDULER, FOR TP SUPPORT.

1.25 COMO HANDLNG FOR USER 1

1. A NEW MECHANISM TO HANDLE MESSAGES SENT TO USER 1 BY OTHER USERS.

2. A NEW FUNCTION IN 'STATUS' COMMAND 'STAT SY' WILL PRINT OUT THE VERSION NUMBER OF THE OPERATING SYSTEM CURRENTLY RUNNING. IF TYPED AT SYSTEM CONSOLE, IT WILL ADDITIONALLY PRINT OUT THE AMOUNT OF MAIN MEMORY IN USE.

1.26 DPTX/TSF, 3270 TERMINAL SUPPORT, FREE POOLS, QUEUE

TO MOVE THE IDENTIFICATION OF THE FREE POOL THAT TM IS TO USE FOR ITS DPTX QUEUES TO EXECUTION TIME RATHER THAN COMPLETION TIME TO AVOID A CONFLICT WITH NETWORKS.

1.27 DPTX

DPTX FILES WHICH USED IP_QUEUES.INS.FTN IN ORDER TO OBTAIN CERTAIN PROCESS NUMBERS NOW MUST ALSO INSERT PHUSRS.INS.FTN. THIS WAS DONE SO HAT NON-DPTX PROCESSES WHICH NEED TO KNOW CERTAIN PROCESS NUMBERS WILL NOT HAVE TO LOAD DPTX INFO WHICH WOULD NEVER BE USED.

1.28 DPTX, BSCMAN

DELETED PARAMETER STATEMENTS AD ADDED ASSIGNMENT STATEMENTS TO OBTAIN FREE POOL IDS. TO OBTAIN FREE POOL IDS AT RUNTIME, RATHER THAN LOAD TIME.

1.29 NETWORKS

INTERNAL

-ADDED NEW QUEUES TO NETWORKS.
-REMOVE IPC FROM NETS.
-REMOVE NETEV3 FRCM NETS.
-REMOVE FARR FROM NETS.
FIX MISC QUEUE ROUTINE BUGS.
-ADD DEBUG ASSEMBLY FLAG.
-REMOVE CONSISTENCY CHECKS FROM ROUTINES ASSEMBLED WITHOUT DEBUG.
-REMOVE SEMAPHORES FROM FREEPOOLS FOR GETBK, GETBKC INTERLOCK.
FIX MISC RLOGIN BUGS.
-FIX REMOTE LOGIN WHEN ALREADY COMING REMOTE DUPLEX PROBLEMS.
FIX MISC PNCDIM BUGS.
DISCONNECT FROM RING ON 'SH ALL'.

ADD SEGMENTS 30 AND 31 FOR NETS, 32 TO 37 AS SPARES.
USER VISIBLE

MISC NETWORK PRIMITIVE FIXES
-X$GVVC RETURNS XS$UNK IS TARGET USER IS NOT LOGGED IN.
-XLCONN RETURNS XS$UNK INSTEAD OF XS$BPN IF NODE RAME IS NOT FOUND

-X$CLR WILL NOW DRAIN THE USERS NETWORK SEMAPHORE.
-XRASGN WILL NO LONGER RETURN XS$QUE WHEN ASSIGNING A PORT AFTER AN ASSIGN
FOR A COUNT OF -1.

1.30 SYNCHRONOUS COMMUNICATIONS

1. FIX TCP CLEAR MASK INSTRUCTION AT INITIALIZATION FOR WARM START.

2. FIX BUG WITH 8 SMLC LINES.

1.31 NETWORKS

FIX TYPO IN BUG FIX OF 12/14/79. THIS PROBLEM CAUSES A HALT IF A USER IS REMOTELY LOGGED IN AND THE LINE TO HIS SYSTEM GOES DOWN.

1.32 NETWORKS

FIX BUG IN COMPATIBLE MODE SMLC INIT WHICH UNMAPS TO MANY SEGMENTS.
FIX INCORRECT CALL TO GETSEG IN NETUTU.FTN

1.33 COMO HANDLING FOR USER 1

FIX A BUG WHICH WAS INTRODUCED BY THE INSTALLATION OF USER 1 MESSAGE HANDLING MECHANISM.

1.34 NETWORKS

FIX PROBLEM WITH FACILITIES AND FAM OVER PDN'S. ADDED NEW PRIMENET KEY TO XLCOMM AND XLACPT TO USER BEST FACILITIES ACCORDING TO NT TYPE. REWRITE FACILITIES PARSING CODE AND PUT IN FACILITEIS PARSNG IN ALL CALL REQUESTS AND CALL ACPT CODE PATHS.

1.35 'STAT SYS' COMMAND

THE STAT SYS COMMAND WILL NOW PRINT 'PRIMOS' INSTEAD OF 'PRIMOS IV'.

1.36 MAG TAPE

1) REMOVE OVERLAP OF DMA CHANNELS BY MTDIM (CONTROLLER 2) AND PRIME NETWORK CONTROLLER.

2) DOCUMENT DMA USE OF PNC IN TMAIN. ALSO UPDATE DMA CHANNEL TABLE TO SHOW REMOVAL OF IPC.

1.37 CMD WRITE PROTECT

FIX CMD WRITE PROTECT PROBLEM. DON'T USE WP CONDITION BIT FOR SM WRITE.

1.38 MAG TAPE

FIX BUG IN INDEXING 2ND CHANEL IN DMA CHAINING.

1.39 CMD WRITE PROTECT

FIXED CMD WRITE PROTECT PROBLEM. FIXED FORMAT ORDER.

1.40 NETWORKS

FIX BUGS WHICH ALLOW PRIMITIVES USER TO CRASH SYSTEM. FIX BAD FACILITIES EXCEPTION PARSING IN X$FLTY; CORRECT ERROR PATH IN XLACPT.

1.41 TERMINAL BUFFER

1) DPTX HAD A NEED FOR BUFFER SPACE GREATER THAN 1 SEGMENT.

2) TAR #5115, AIWIT.FTN WILL NOT ALLOW OUTPUT BUFFER OF LESS THAN 100 CHARACTERS.

THE TFLIO3 BUFFERING MECHANISMS WERE ENHANCED TO INCORPORATE TWO SEGMENTS WORTH OF BUFFERING SPACE.

1.42 DPTX

ENHANCEMENTS AND BUG FIXES TO BRING DPTX TO GENERAL RELEASE.

1.43 DPTX

FIX BUG IN TM3270 WHICH WOULD HANG UP TERMINALS ON CERTAIN OPERATOR ACTIONS.

413 (PRINET)

REV 17.3 -- DOCUMENTATION -- PRINET
INCLUDES CHANGES TO FAM, NETCFG, X$KEYS

NETPRT IS NO LONGER INCLUDED WITH PRINET. ITS FUNCTIONALITY HAS BEEN ABSORBED BY LOGPRT. SEE LOGPRT>INFO FOR DOCUMENTATION.

CHANGES TO FAM FOR 17.3

10/29/79 CONNECT REQUEST FREQUENCY WAS CHANGES FROM A CONSTANT 10 SECONDS TO A STEP FUNCTION SO THAT THE FREQUENCY OF CALL REDUCES THE LONGER A REMOTE FAM IS DOWN.

2/4/80 STACK OVERFLOW ON STOP IS FIXED BY CALLING LOGO$$ RATHER THAN STOP.

2/6/80 PRIMENET CONNS AND ACPTS ARE NOW DONE WITHOUT FACILITIES BUT WITH THE NEW KEY XK$FCT (FIXES TELENET PROBLEMS).

N.B. THIS VERSION OF THE FAM IS INCOMPATIBLE WITH PRE-REV 17.3 PRIMOS.

CHANGES TO NETCFG FOR 17.3

1) IPC SUPPORT HAS BEEN REMOVED FROM REV 17.3 OF PRIMOS. THEREFORE, NETCFG NO LONGER QUERIES FOR IPC SUPPORT.

2) THE ACCEPTABLE RANGE FOR SYNCHRONOUS LINE NUMBERS HAS BEEN CHANGED FROM 0 - 3 TO 0 - 7, IN LINE WITH THE NEW SUPPORT FOR 8 SYNCHRONOUS LINES IN PRIMOS. NOTE THAT CURRENTLY, NETWORKS DOES NOT SUPPORT MORE THAN 2 SYNCHRONOUS LINES.
3) THIS VERSION OF NETCFG IS FULLY COMPATIBLE WITH THE REV 17.1 NETCFG.

THE FOLLOWING CHANGES HAVE BEEN MADE TO THE X$KEYS FILE FOR 17.3

- A NEW KEY, XK$FCT HAS BEEN ADDED. THIS KEY INSTRUCTS PRIMENET TO FILL IN THE FACILITIES FIELD AS IT THINKS BEST. THE USER MAY NOT SPECIFY ANY FACILITIES WITH THIS KEY.

- A NEW KEY XK$HDX HAS BEEN ADDED. THIS IS FOR FUTURE GROWTH.

- THE VALUE FOR XK$RTE HAS BEEN CHANGED. THIS SHOULD NOT AFFECT ANY PROGRAMS CURRENTLY WRITTEN, AS THIS KEY IS NOT USED BY PRIMENET.

14 (RJECOM)

RJECOM>DOC.UFD CONTAINS A PRE-RELEASE VERSION OF THE EMULATOR HANDBOOK, IN RUNOFF SOURCE AND RUNOFF OUTPUT FORM.

HE SUB UFD 'CARDSPOOL>INFO' CONTAINS THE DOCUMENTATION FOR HE CARD SPOOLER.

15 (RJEGRTS)

REV 17.3 -- DOCUMENTATION -- RJEGRTS

JEGRTS>U_SYMBNT>GERTS	GRTS MAIN SYMBIONT ROUTINE	DATED 12/12/79
JEGRTS>U_SYMBNT>GRTSUB	GRTS SUBROUTINES	DITTO
JEGRTS>U_SYMBNT>GRTCOD	GRTS COMMON	DITTO
	VARIABLES ETXREC,SOHREC,STXREC,TRSL$$,SPRC$$ CHANGED TO BE ON A PER-LINE BASIS.	
JEGRTS>RPARAM	GRTS RECEIVE PARAMETERS	DATED 01/08/80
	PARAMETER MAXLOP CHANGED FROM 9999 TO 9 (RECEIVE PROCESSING) - NOW PROCESSES 10 OUTPUT BUFFERS BEFORE RETURNING (USED TO BE 10,000 !)	
JEGRTS>RECEIV	GRTS RECEIVE MODULE.	DATED 01/17/80
	EXTRA CODE ADDED TO COPE WITH R FILE WITH BAD PASSWORD IN HEADER. PRINTS 'BAD RECEIVE FILE' AND DISABLES RECEIVE PROCESSING.	

16 (RJEHASP)

SUBMITTED AS PART OF THE RJE 'PACKAGE'
NO CHANGES MADE AT 17.3

17 (RJEX80)

REV 17.3 -- DOCUMENTATION -- RJEX80

JEX80. RJE80 BECAME RJEX80 ON 14TH AND 15TH JANUARY.
THE CHANGES WERE NOT ALL DATED AND INITIALLED
BECAUSE THERE WERE SO MANY OF THEM.
UFD NAMES CHANGED, FILENAMES CHANGED,
COMMAND FILES CHANGED, AND THE WS AND RJ
COMMANDS THEMSELVES CHANGED - TO WSX80 & RJX80.

RJEX80>TRANSMIT RJEX80 TRANSMIT MODULE. DATED 01/17/80
CHANGES -- STOP CHANGENAME OF TFILE
IF THE NEXT FILE TO BE SENT DOES NOT EXIST.
SYMPTOMS WERE AN ENTRY SLOT IN TRANSMIT Q.

18 (RJE1C04)

SUBMITTED AS PART OF THE RJE 'PACKAGE'
NO CHANGES MADE AT 17.3

19 (RJE2COUT)

REV 17.3 -- DCCUMENTATION -- RJE20OUT

JE20OUT>TRANSMIT 20CUT TRANSMIT MODULE. DATED 12/19/79.
CHANGES MADE TO CORRECT ERROR WHEREBY THE
PREVIOUS T FILE WOULD BE DELETED WHEN AN ERROR
OCCURRED ON OPENING THE SEND FILE.

RJE20OUT>TRANSMIT 20CUT TRANSMIT MODULE. DATED 01/16/80.
CHANGED TO SET CORRECT BIT IN T FILE HEADER
WHEN RUNNING IN ASCII MODE.
CHANGED FOR TAR 24786.

20 (RJE7C20)

REV 17.3 -- DOCUMENTATION -- RJE7020

JE7020>U_SYMBNT>J7020 MAIN 7020 SYMBIONT MODULE. DATED 10/25/79.

CHANGES MADE TO SEND DC4 AT THE END OF A BLOCK AFTER RECEIVING A WARNING STATUS FROM THE HOST.

JE7020>U_SYMBNT>J7020 7020 SYMBIONT DATED 01/04/80.
CHANGES MADE SIMPLY ADDING COMMENTS TO INSTRUCT THE ANALYST HOW TO AVOID THE 'LOOP AFTER RECEIVE TIME-OUT' THAT OCCURS ON SOME SITES. THE MOD HAS NOT BEEN PUT IN AS STANDARD AS IT DOES NOT OCCUR ON ALL SITES.

21 (RPG)

SUBJECT: INFORMATION PERTAINING TO REV 17.3 RPG

TAR RESPONSES SINCE REV 17.0 HAVE BEEN SUMMARIZED IN THIS DOCUMENT.

RPG WAS UPDATED FOR REV 17.2 TO PROVIDE FOR USE OF TREEPATHS IN THE FILE NAME OR FILE NAME REPLACEMENTS.

INFORMATION PERTAINING TO REV17.3 RPG

E N H A N C E M E N T

TREEPATH CAPABILITY
THE FUNCTION OF ALLOWING THE USER THE CAPABILITY OF OVERRIDING AT RUNTIME A FILENAME AS GIVEN ON THE FILE SPECIFICATION LINE HAS BEEN ADDED. TO UTILIZE THIS FEATURE, A 'T' MUST BE SUPPLIED IN COLUMN 52 OF THE HEADER SPECIFICATION. AFTER INVOKING THE RUNTIME IMAGE, THE USER WILL BE PROMPTED FOR FILE NAME REPLACEMENTS.

T A R R E S P O N S E S

TAR 14419
IF FILE ADDITION IS SPECIFIED FOR A SEQUENTIAL OUTPUT FILE WITH MORE THAN THREE INDICATORS USED TO CONDITION OUTPUT, THE INDICATION THAT ADD IS REQUESTED IS IGNORED AND THE FILE IS TRUNCATED RATHER THAN APPENDED.
RESPONSE: FIXED FOR REV 17.2.

TAR 14420
MATCHING RECORDS NOT WORKING WITH ONLY SECONDARY FILES.
RESPONSE: MATCHING IS ALLOWED WITH PRIMARY AND SECONDARY FILES ONLY. NOT A PROBLEM.

TAR 24450
UPDATING DIRECT ACCESS FILES CAUSES THE RPG PROGRAM TO HANG.
RESPONSE: THE PROBLEM WAS FOUND TO BE IN MIDAS WHICH HAS BEEN FIXED FOR REV 17.2. USE REV 17.2 VERSION OF MIDAS.

TAR 14746
UPDATING A MIDAS FILE USING MATCHING RECORD CAUSES UPDATES TO THE WRONG RECORD.
RESPONSE: FIXED FOR REV 17.3

TAR 22449
PACKED FIELDS IN THE BEGINNING OF THE RECORD RESULTS IN AN END POSITION TOO LOW ERROR MESSAGE.
RESPONSE: FIXED FOR REV 17.2.

TAR 14418
IF THE SAME INDICATOR NUMBER IS USED FOR THE PLUS, MINUS, AND ZERO FIELD INDICATOR IN THE INPUT SPECIFICATIONS THEN THE LATTER ASSIGNMENT IS NOT RECOGNIZED.
RESPONSE: FIXED FOR REV 17.3.

TAR 14421
COMPARE OPERATION IN REV 15.4 RPG IS NOT WORKING PROPERLY.
RESPONSE: THE PROBLEM WAS PREVIOUSLY REPORTED IN TAR 15386 AND FIXED IN REV 16 OF RPG.

TAR 21711
A CONSTANT OTHER THAN $ WHICH IS TO THE LEFT OF THE ZERO SUPPRESSION STOP CHARACTER IS NOT BEING SUPPRESSED.
RESPONSE: FIXED IN REV 17.3.

TAR 22121
NON-LR CALCULATION SPECIFICATIONS EMBEDDED IN LR CALCULATION SPECIFICATION LINES ARE IGNORED.
RESPONSE: MIXING OF DETAIL, TOTAL, LR, AND SR CALCULATION SPECIFICATIONS IS NOT ALLOWED.

TAR 22122
OUTPUT CONDITIONED BY MORE THAN THREE INDICATORS IN AN OR LINE, THUS REQUIRING USE OF AN AND LINE, DOES NOT FUNCTION AT ALL.
RESPONSE: FIXED IN REV 17.3.

TAR 22123
ZERO LINE FEED DOES NOT WORK IN REV 16.4 RPG.
RESPONSE: REV 17 ENHANCEMENT. THIS IS DOCUMENTED IN THE RPG MANUAL AS UNIMPLEMENTED AS OF REV 16.

TAR 22124
SPACE ONE BEFORE ON OUTPUT REQUEST GIVES ADDITIONAL BLANK LINE.
RESPONSE: THIS IS RELATED TO THE ZERO LINE FEED. REV 17 ENHANCEMENT.

TAR #2125
THERE IS NO REPORT ON THE RPG PROGRAM LISTING AS GENERATED BY THE REV 16 RPG COMPILER OF INDICATORS USED BUT NOT ASSIGNED, NOR DOES THE USER'S PROGRAM HALT IF SUCH A CONDITION OCCURS.
RESPONSE: REV 17 ENHANCEMENT. THE RUNTIME INTERPRETER CANNOT HALT THE USER'S PROGRAM AT THIS POINT. IT IS THE RPG PROGRAMMER'S RESPONSIBILITY TO CHECK THE WARNING MESSAGES ISSUED BY THE COMPILER.

TAR #2126
THE DEBUG FEATURE IN THE CALCULATION SPECIFICATIONS SUPPRESSES ZEROS WHETHER THEY BE LEADING ZEROES OR EMBEDDED ZEROES.
RESPONSE: FIXED IN REV 17.3.

TAR #2127 PRE-RELEASE VERSION OF REV 17 RPG IS DROPPING THE CHARACTER FOUND IN POSITION ONE ON ALL PRINTED OUTPUT.
RESPONSE: PROBLEM WAS CORRECTED ON OFFICIAL RELEASE OF SOFTWARE.

TAR #2128 FILES CONDITIONED BY EXTERNAL INDICATORS (U-INDICATORS) ARE DEFERENCED BY THE RPG SOFTWARE IF OUTPUT IS NOT CONDITIONED BY A U-INDICATOR. THIS THEN CAUSES A UNIT NOT OPEN MESSAGE TO BE ISSUED.
RESPONSE: CONDITION OUTPUT USING THE APPLICABLE U-INDICATOR.

TAR #2130 UNABLE TO UPDATE A COMPRESSED (SEQUENTIAL) FILE IN REV 16 RPG. THE APPEND CAPABILITY IS NOT FUNCTIONING.
RESPONSE: FIXED IN REV 17.2.

TAR #2131
END POSITION TOO LOW MESSAGE GIVEN WHEN THE FIRST FIELD OF AN OUTPUT RECORD IS A SMALL PACKED FIELD.
RESPONSE: MESSAGE ISSUANCE IS CORRECTED IN REV 17.2.

TAR #2132
PROGRAM EXECUTION STOPS WHEN A CHAIN TO A GIVEN RECORD OCCURS.
RESPONSE: SEE TAR 22450.

TAR #2139
THE WRONG RECORDS ARE UPDATED WHEN UPDATING A MIDAS FILE USING MATCHING RECORD.
RESPONSE: SEE TAR 14746.

TAR #2348
NOT ALL INDICATORS ARE PRINTED ON THE INDICATOR SUMMARY GIVEN BY THE REV 17 RPG COMPILER.
RESPONSE: FIXED FOR REV 17.3

TAR #2349
MORE THAN ONE UPDATE TO THE SAME RECORD OF A FILE WITHIN THE SAME PROGRAM CYCLE CAUSES PREVIOUS UPDATES TO BE LOST.
RESPONSE: FIXED IN REV 17.3.

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(RUNOFF)

THIS DOCUMENT LISTS THE CHANGES THAT HAVE BEEN MADE TO RUNOFF FOR REVS 16.9 AND 17.3, AND A PREVIOUSLY UNDOCUMENTED RESTRICTION.

1) THE .PERF COMMAND USED TO PRINT THE FIRST '-' IN THE FIRST COLUMN WHICH COULD CAUSE IT TO BE INTERPRETED AS A FORTRAN CONTROL CHARACTER, IT WILL NOW SKIP THE FIRST COLUMN. (TAR 81588)

2) WHEN USING DECIMALIZATION THE MARGINS ARE FIGURED RELATIVE TO CURRENT POSITION. IF THE DECIMAL NUMBER WAS RESET FOR LEVEL ONE BEFORE DOING ANY DECIMAL HEADINGS, RUNOFF TRIED TO UNDENT AS THOUGH IT WERE ALREADY AT THE TEXT MARGIN AFTER THE FIRST LEVEL HEADING. THIS SHOULD NO LONGER HAPPEN.

A RESTRICTION THAT RUNOFF USERS SHOULD BE AWARE OF IS, WHEN USING DECIMALIZATION A .UNDENT WITHOUT THE NUMBER OF SPACES TO UNDENT WILL CAUSE RUNOFF TO UNDENT ALL THE WAY TO THE LAST SET MARGIN, THIS MAY CAUSE FURTHER DECIMALIZATION TO INCORRECTLY SET ITS RELATIVE MARGINS.

3) IF A SYMBOL DEFINITION GETS TRUNCATED BECAUSE IT IS OVER 30 CHARACTERS IN LENGTH, A WARNING WILL BE ISSUED AND ERRORS FLAGGED, BUT RUNOFF WILL CONTINUE PROCESSING THE FILE.

4) .RETURN NOW OPERATE AS THE MANUAL DESCRIBES. IF ONE DOES A RETURN FROM THE MAIN FILE YOU ARE RETURNED TO COMMAND LEVEL. (TAR 81366)

5) ADDING A FOOTER WILL NO LONGER CAUSE RUNOFF TO SHORTEN THE NUMBER OF TEXT LINES BY 1. (TAR 81365)

6) THE .PICTURE COMMAND WILL NO LONGER SKIP ONE MORE THEN THE NUMBER OF LINES REQUESTED. (TAR 81365)

THIS IS THE WHOLE DOCUMENT.

(SEG)

REV 17.3 -- DOCUMENTATION -- SEG

THE FOLLOWING CHANGES WERE MADE TO SEG FOR REV 17.3

DBGSUB -- ERROR REPORTING CHANGED FROM IMMEDIATE RETURN TO START RETURN TO PREVENT SUCH ERRORS AS 'DISK FULL' FROM OCCURRING.

LOD415 -- SUPPORT FOR REAL 32-I MODE DESECTORING MODE HAS BEEN ADDED.

REV 17.3 -- SORT/VSRTLI -- DOCUMENTATION

S DOCUMENT LISTS THE CHANGES THAT HAVE BEEN MADE TO VSRTLI FOR REV 17.3
CE SORT USES VSRTLI ROUTINES, CHANGES MADE TO THE LIBRARY AFFECT THE
T COMMAND.

FN THE MAXIMUM RECORD LENGTH IS SPECIFIED TO BE AN ODD NUMBER OF
RACTERS, THE VARIABLE LENGTH (BINARY) RECORDS OF THIS LENGTH ARE
TED, THEN "WARNING - LINE TRUNCATED" MESSAGES ARE ISSUED EVEN THOUGH
DATA IS LOST.

THE FIX ELIMINATING THIS BUG REQUIRED CHANGES TO THE ROUTINE RLSE$S.

MAXIMUM NUMBER OF SORT FIELDS (KEYS) HAS BEEN INCREASED FROM 50 TO
AS REQUIRED BY SPSS RELEASE 8.0.

THIS CHANGE REQUIRED MODIFICATIONS TO THE DATA COMMON MASCOM AND TO
ROUTINE KGT$$S.

(SPCOL)

REV 17.3 -- DOCUMENTATION -- SPOOL

NING: REV 17.3 SPOOLER IS INCOMPATIBLE WITH REV 17.1 ENVIRONMENT FILES.
IF YOU HAVE REV 17.1, BE SURE TO INSTALL THE NEW ENVIRONMENT FILES
THAT COME WITH 17.3. THEN MAKE ANY CUSTOMIZED CHANGES TO
THE NEW FILES.

THE FOLLOWING BUG FIXES WERE MADE TO REV 17.3 SPOOL:

FILES PRINTING ON THE CENPR PORT WILL NOW BE FORMATTED
CORRECTLY WHEN USING -FTN FORMAT CONTROL (BLANK LINES
NOT ALWAYS PRINTED) -- TAR 21203, 23853.

-FTN FORMATTING NOW WORKS CORRECTLY WHEN PRINTING ON
THE VERSATEC (NO BLANK LINES WERE BEING PRINTED) --
TAR'S 23080, 13314.

THE XON/OFF SENT BY THE PRINTRONIX ON AN AMLC LINE IS
NOW RECOGNIZED (DATA WAS BEING LOST) -- NO TAR.

(VPSD)

REV 17.3 -- DOCUMENTATION -- VPSD

REV 17.3 VPSD DECODES ALL CHARACTER AND DECIMAL INSTRUCTIONS.
THE INSTRUCTIONS ADDED BITS SYMBOL TABLE ARE:

1. XAD
2. XCM
3. XDV
4. XED
5. XMP
6. XMV
7. ZCM
8. ZED
9. ZMV
10. XBTD
11. XDTB
12. XVRY
13. ZFIL
14. ZMVD
15. ZTRN

THE TRANSFER FIELD LENGTH TO L REG. INSTRUCTION
(OP CODES 001323, 001333) NOW HAS ITS CORRECT
MNEMONIC OUTPUT. THAT IS, TFLL0 AND TFLL1 ARE
NOW OUTPUT. (OLDER VERSIONS OF VPSD OUTPUT TFFL0
AND TFFL1).

(X.25)

REV 17.3 -- DOCUMENTATION -- X.25
INCLUDES CHANGES TO FAM, NETCFG, X$KEYS

NETPRT IS NO LONGER INCLUDED WITH X.25. ITS FUNCTIONALITY HAS BEEN
ABSORBED BY LOGPRT. SEE LOGPRT>INFO FOR DOCUMENTATION.

CHANGES TO FAM FOR 17.3

29/79 CONNECT REQUEST FREQUENCY WAS CHANGES FROM A CONSTANT 10 SECONDS TO A STEP FUNCTION SO THAT THE FREQUENCY OF CALL REDUCES THE LONGER A REMOTE FAM IS DOWN.

/80 STACK OVERFLOW ON STOP IS FIXED BY CALLING LOGO$$ RATHER THAN STOP.

/80 PRIMENET CONNS AND ACPTS ARE NOW DONE WITHOUT FACILITIES BUT WITH THE NEW KEY XK$FCT (FIXES TELENET PROBLEMS).

THIS VERSION OF THE FAM IS INCOMPATIBLE WITH PRE-REV 17.3 PRIMOS.

NGES TO NETCFG FOR 17.3

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2) THE ACCEPTABLE RANGE FOR SYNCHRONOUS LINE NUMBERS HAS BEEN CHANGED FROM 0 - 3 TO 0 - 7, IN LINE WITH THE NEW SUPPORT FOR 8 SYNCHRONOUS LINES IN PRIMOS. NOTE THAT CURRENTLY, NETWORKS DOES NOT SUPPORT MORE THAN 2 SYNCHRONOUS LINES.

3) THIS VERSION OF NETCFG IS FULLY COMPATIBLE WITH THE REV 17.1 NETCFG.

HE FOLLOWING CHANGES HAVE BEEN MADE TO THE X$KEYS FILE FOR 17.3

) A NEW KEY,)K$FCT HAS BEEN ADDED. THIS KEY INSTRUCTS PRIMENET TO FILL IN THE FACILITIES FIELD AS IT THINKS BEST. THE USER MAY NOT SPECIFY ANY FACILITIES WITH THIS KEY.

) A NEW KEY XK$HDX HAS BEEN ADDED. THIS IS FOR FUTURE GROWTH.

) THE VALUE FOR XK$RTE HAS BEEN CHANGED. THIS SHOULD NOT AFFECT ANY PROGRAMS CURRENTLY WRITTEN, AS THIS KEY IS NOT USED BY PRIMENET.

(DPTX-DSC)
SEE DPTX-DSC>INFO

(DPTX-TSF)

SEE DPTX-TSF>INFO

(DPTX-TCF)
SEE DPTX-TCF>INFO

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