North American Response Centers

HP 3000 APPLICATION NOTE

SYSTEM CONFIGURATION OR SYSTEM TABLE RELATED ERRORS

HEWLETT PACKARD

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This Application Note focuses upon errors related to a HP3000 system's configuration and configurable system tables. Numerous calls received by the Response Centers involve such errors and many can be easily resolved by modifying the system's configuration parameters or tables. This note describes the types of errors that can occur, their cause, and what type of action you can take to prevent their reoccurance.

Information from several sources, such as the *System Operation and Resource Management Reference Manual (P/N 32033-00005)* and the *MPE Intrinsics Reference Manual (P/N 30000-90010)*, has been consolidated here. In addition, it has been supplemented with knowledge gained by Response Center engineers in their experience dealing with these problems. The intent of this document is to provide explanations of errors that are directly related to configuration, rather than a comprehensive list of all types of errors you might encounter.

Six categories of errors are identified in this note: 1) Cold Load Errors, which occur during system startup, 2) Halts and System Failures, 3) Non-fatal errors, which result in messages to the System Console, 4) Command Interpreter errors, that might be received by a user when a command is entered, 5) File System errors, returned to an executing program by the File System, and 6) Load errors, which might occur when your program is loaded for execution.

COLD LOAD ERRORS

These errors can occur during system startup if the Initiator runs out of table entries, memory, virtual memory or the configuration is not correct. They are documented in the MPE Message System chapter of the *System Operation and Resource Management Reference Manual (P/N 32033-90005).*

To prevent the errors from recurring, increase the size of the table associated with the message or correct the system configuration through the Initiator dialogue via COOLSTART.

ERROR	CORRECTIVE ACTION
102 - USER SPECIFIED MAX DRT IS nnn	At least one device has been defined with a DRT number higher than the specified maximum. Either increase the HIGHEST DRT or decrease the DRT number of those devices with a DRT greater than the configured maximum.
103 - SYSTEM DISC MUST BE UNIT ZERO	Correct the I/O configuration for LDEV 1. It must be UNIT 0.
104 - SYSTEM DISC MAY ONLY BECONFIGURED ON A RELOAD	The type and subtype on the disc label do not match the the system I/O configuration for LDEV 1. Use a current COLDLOAD tape and/or mount the correct volume in LDEV 1.
105 - LDEV ONE MUST BE SYSTEM DISC	Check the I/O configuration. Ldev one must be in the System Volume Table. Specifying device You need not specify a device class 'SYSDISC' on a system; doing so, has no special effect.

106 - WRONG DRT FOR SYSTEM DISC	This error only happens on an UPDATE. The disc label is not correct, the disc is not on-line or the device is not a disc. Check the I/O configuration.
107 - NO DEVICE IN CLASS DISC	Check the I/O configuration for the device class 'DISC'. DISC is the ONLY device class required on a system. Change can be made in the I/O configuration or in Class Changes.
108 - COLD LOAD DEVICE MUST BE CONFIGURED	The system was booted from a device that is not in the I/O configuration. Boot from a configured device or configure the boot device.
110 - SYSTEM CONSOLE MUST BE IN DRT EIGHT UNIT ZERO	Check the I/O configuration for the system console. It must be DRT 8 UNIT 0.
111 - IMPROPER SPEED FOR SYSTEM CONSOLE	Check the I/O configuration for the terminal on DRT 8 UNIT 0. Make sure the speed is valid.
112 - LDEV nnn TERMINAL UNIT MUST BE ZERO	Check the UNIT number for LDEV nnn. The terminal controller used by this device does not support multiple units. It's possible an ADCC port has been configured with a non-zero UNIT number.
113 - LDEV nnn TERMINAL DRT MUST BE UNIQUE	Check the DRT number for LDEV nnn. The terminal controller used by this device does not support multiple units. Check to see if an ADCC port has a non-zero UNIT number or two ADCC ports have the same DRT.
114 - ILLEGAL MASTER DEVICE	Specified value is not the logical device number of a configured communications controller. When configuring a communications driver or virtual terminal you must assign the logical device number (preceeded by '#') of the associated communications interface.
115 - UNDEFINED CLASS devclass USED AS OUTPUT DEVICE BY FOLLOWING DEVICES	Check the I/O configuration. The device class 'devclass' is being used as an output device for the listed LDEVs but is not configured in the device class table. Add the device to the I/O configuration or add the class by answering yes to 'CLASS CHANGES'. Add the device class or change the output device. A common problem is specifying LP as the output for the streams device without specifying any devices in device class LP.
116 - NO OUTPUT DEVICE FOR LOGICAL DEVICE nnn	Check the I/O configuration for LDEV nnn and reconfigure to include a valid output device/class. Note that Job-accepting devices that have zero specified as the output device are invalid.

117 - OUTPUT CLASS FOR DEVICE nnn NO LONGER EXISTS	Check the I/O configuration for LDEV nnn and reconfigure to include a valid output device/class. Verify that you haven't deleted a device/class which is used by other devices as an output device.
118 - DEVICE CLASS devclass CANNOT BE OUTPUT DEVICE	Device class 'devclass' is not a valid output device. Check the I/O configuration and reconfigure with a valid output device class.
119 - LOGICAL DEVICE nnn CANNOT BE OUTPUT DEVICE	LDEV nnn is not a valid output device. Check the I/O configuration and reconfigure with a valid output device.
120 - LOGICAL DEVICE nnn DOES NOT EXIST	Check the I/O configuration. A reference is being made to a nonexistent logical device.
121 - LDEV nnn AND LDEV nnn ON SAME DRT AND UNIT	Two logical devices have the same DRT and UNIT numbers. Change the configuration so each logical device has a unique DRT and UNIT.
122 - DEVICES OF DIFFERENT TYPE RANGES IN CLASS devclass	Check the I/O configuration of all devices in class 'devclass'. One or more is configured with a TYPE that is not compatible with the other devices in 'devclass'.
123 - ILLEGAL TYPE COMBINATIONS IN CLASS devclass	Check the I/O configuration of all devices in class 'devclass'. One or more is configured with a TYPE that is not compatible with the other devices in 'devclass', e.g. printers and discs in the same class.
124 - CONFIGURED MEMORY SIZE EXCEEDS PHYSICAL MEMORY AVAILABLE	The system is configured with more memory than is actually in the system. Answer the 'MEMORY SIZE=xxx' question with smaller value.
127 - MORE THAN ONE DEVICE FOR DRT nnn	Check the I/O configuration for two or more LDEVs with the same DRT on a controller that does not support multiple units.
128 - HIGHEST DRT SUPPORTED BY THIS CPU IS nnn	Answer the 'HIGHEST DRT= nnn' with a smaller number.
129 - FOLLOWING DRTS MUST BE CHANGED	Check the I/O configuration of the DRTs listed. If the DRT is greater than user specified 'HIGHEST DRT=xxx' or the DRT is greater than the CPU will support, you will get this message.
130 - NOT A SUPPORTED SPEED	Check the I/O configuration and make sure all devices are configured at a supported speed.

131 - LDEV nnn TERMINAL SPEED NOT SUPPORTED BY HARDWARE	Check the I/O configuration and make sure LDEV nnn is configured at a supported speed.
132 - NON RESPONDING BOARD FOR TERMINAL ON LDEV nnn DRT nnn	Check the I/O configuration. The terminal on LDEV nnn DRT nnn does not map to a terminal controller board or the board is not responding.
133 - WRONG BOARD FOR TERMINAL ON LDEV nnn DRT nnn	Check the I/O configuration. The terminal on LDEV nnn DRT nnn does not map to a terminal controller board.
134 - CHANGE LDEV nnn TO DRT nnn	Check the I/O configuration. LDEV nnn is an ATP port and its DRT must be a multiple of eight.
135 - LDEV DRTS #125, 127 RESERVED BY HPIB INTERFACE	This message is for the Series III which has a HP-IB interface. Reconfigure without using DRTs 125, 126 or 127.
136 - CHANNEL ON HPIB INTERFACE CANNOT BE ZERO, ONE OR FIFTEEN III.	This will only appear on a Series III. GIC channels on the HP-IB interface cannot be set to 0,1 or 15.
137 - HIGHEST SUPPORT DISC LDEV IS nnn	Check I/O configuration and configure all discs below the value nnn.
200 - VOLUME TABLE FULL	The Volume Table can only contain 64 volumes.
300 - OUT OF CST ENTRIES	Increase the number of CST entries.
301 - OUT OF DST ENTRIES	Increase the number of DST entries.
302 - OUT OF PCB ENTRIES	Increase the number of PCB table entries.
303 - OUT OF WSTAB ENTRIES	Increase the 'MAXIMUM # OF CONCURRENT RUNNING PROGRAMS'.
304 - OUT OF CSTBLK ENTRIES	Increase the 'MAXIMUM # OF CONCURRENT RUNNING PROGRAMS.
330 - OUT OF VIRTUAL MEMORY ON LDEV nnn	System tables are too large. Use a previous COLDLOAD tape or decrease the size of the tables.
350 - OUT OF MEMORY	The total amount of main memory needed to build the resident portion of the system has been exceeded. Decrease the size of core resident tables.
351 - OUT OF BANK ZERO	The first 64K words of memory, called Bank 0, have been filled with system tables and more space in Bank 0 is needed. Possible solutions are: 1) Decrease system table sizes, 2) if the system is a Series 4x, install the V/E firmware, or 3) update the operating system to V/E.

SYSTEM HALT 4

Cause: Stack overflow on the Interrupt Control Stack. One possible cause for the halt would be an underconfigured ICS. Some hardware problems might also generate an ICS overflow. These include: noisy or bad modems, turning power off and then on again on a multiplexer, or a continuously interrupting disc or tape drive.

Action: If it is an underconfigured ICS that is causing this halt, then increase the size of the ICS.

SF1 - System Failure 1

Cause: The User Controller Process (UCOP) Request Queue is full.

Action: Enlarge the UCOP. This is the request queue for the User Controller Process. UCOP is responsible for creating and deleting processes, changing priorities, and expanding and contracting stacks. Recommended configuration is 2 per user. If you have process handling applications, you may need to configure more.

SF3 - System Failure 3

Cause: Timer Request List (TRL) is full.

Action: Increase the size of the table. This table is used by the memory logging facility, for calls to PAUSE, timed terminal I/O, and various other timings such as modem timing and logon timeouts. Recommended configuration is 2 * (number of terminals).

SF600 - System Failure 600

Cause: Ran out of entries in the Special Request Table. This will be the cause only on a system that is running MPE IV or MPE V/P and was running on the ICS at the time of the failure.

Action: Increase the size of the table. This table is used to temporarily buffer the parameters for segment expansion and to form the queue for devices waiting for a segment to arrive in memory. Recommended configuration is (number of PCBs) + (number of LDEVs).

SF601 - System Failure 601

Cause: Ran out of entries in the Disc Request Table. This failure should only occur on an MPE IV system. Any system on a version later that MPE IV which runs out of DRQ table entries will get a console message.

Action: Enlarge your Disc Request Table. Systems with disc cacheing should be configured => 255.

SF602 - System Failure 602

Cause: Ran out of Swap Table entries. This will only be the cause if the system was running on the ICS at the time of the failure.

Action: Increase the size of the Swap Table. This table keeps track of each process's locality list. Recommended configuration is 8 * (number of PCBs).

SF620 - System Failure 620

Cause: Low-level message system integrity problem:

1. Corrupted MSG Harbor table
2. Bad message frames.
3. Bad message queue structure.

SF620's are caused by an overflow of the Primary Message Table. One common occurance is when the I/O system is logging errors.

Action: Make sure you have more Primary Message Table entries configured than System Buffer entries. Check if the system is logging I/O errors for some reason. Recommended configuration is 2 * (number of PCBs).

MPE TABLE DISC REQUEST HAS OVERFLOWED

Cause: Ran out of entries in the Disc Request Table. On systems running an MPE V based version of the operating system, you will get this message rather than a System Failure 601. This is an informational message only; the integrity of the system is not compromised.

Action: Enlarge the configured value of the Disc Request Table. If you have Disc Cacheing, the Disc Request Table should be => 255.

MPE TABLE SBUFF HAS OVERFLOWED

Cause: Ran out of System Buffers.

Action: Increase the number of System Buffers. It's suggested value is 20 (or 50 if MTS is installed on the system). This problem may result from a bad magnetic tape generating numerous tape parity errors.

MAX SPOOFLE KILOSECTORS IN USE, ALL QUEUES SHUT

NO MORE SPACE IN SPOOL CLASS, ALL QUEUES SHUT

Cause: One or more of three conditions are true, a) the maximum number of spoolfile kilosectors are already allocated, b) the disc drives in device class 'SPOOL' are out of space or c) the maximum number of spoolfiles are already open.

Action:

a) Print or SPOOK off some spoolfiles or reconfigure the system and answer the question 'MAX # OF SPOOFLE KILOSECTORS=xxxx' with a larger value.

b) Print or SPOOK off some spoolfiles, purge any un-needed user files, recover lost disc space, do a VINIT CONDENSE, or reconfigure the system and add the class 'SPOOL' to more disc drives.

c) Reconfigure the system and answer the question 'MAX # OF OPENED SPOOLFILES = xxx' with a larger value.

THE REPLY INFORMATION TABLE IS FULL, REQUEST IS QUEUED

THE REPLY INFORMATION TABLE IS FULL, x REQUEST(S) ARE QUEUED

THE REPLY INFORMATION TABLE AND ASSOCIATED QUEUE ARE BOTH FULL

Cause: There are too many console requests for replies outstanding.

Action: This table is a fixed size table; you must REPLY to the requests. The table is structured so it can contain 39 entries before it will begin to queue subsequent requests. There is room to queue 52 requests for a total of 91 outstanding requests before you will see the third message. At this point, you must REPLY to the outstanding requests.

UNABLE TO OBTAIN CST ENTRIES

Cause: Code Segment Table is full.

Action: Enlarge the CST or remove user segments from the system SL, account SLs or group SLs. The maximum size is 192 on systems without the expanded tables firmware. With the expanded tables firmware, the maximum is 2048.

UNABLE TO OBTAIN PROCESS DST ENTRY

Cause: Data Segment Table is full.

Action: Enlarge the DST. The maximum size on an MPE IV based system is 1024 and on an MPE V based system, it is 4096. If you are already configured at the maximum, you may want to investigate runnning a different mix of applications. Processes that use many extra data segments or open many files require more DST entries.

UNABLE TO OBTAIN VIRTUAL MEMORY

Cause: a) No more virtual memory available or b) The DST table is full.

Action: a) Configure more virtual memory. You can configure virtual memory through the Initiator dialogue on all system domain discs with the exception of LDEV 1. Changing the size of virtual memory on LDEV 1 requires a RELOAD.

b) Check DST usage using OPT.

LDEVnnn, NO PROCESS CONTROL BLOCK AVAILABLE

NO PROCESS CONTROL BLOCK AVAILABLE FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 0

Cause: No available entries in the Process Control Block.

Action: Increase the size of the Process Control Block (PCB) table. The maximum on an MPE IV based system is 256. On an MPE V based system, the maximum is 1024. (Each process on the system requires one PCB entry; a typical session will require two or three entries.)

LDEVnnn, UNABLE TO ALLOCATE STACK

UNABLE TO ALLOCATE STACK FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 1

Cause: No available entries in the Data Segment Table.

Action: Increase the size of the Data Segment Table (DST). The maximum on an MPE IV based system is 1024. On an MPE V based system, the maximum is 4096. The recommended configuration is 8 * (number of users) + 64.

LDEVnnn, UNABLE TO ALLOCATE JOB INFORMATION TABLE

UNABLE TO ALLOCATE JOB INFORMATION TABLE FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 2

Cause: No entries available in the Data Segment Table to allocate an entry for the Job Information Table DST.

Action: The Job Information Table (JIT) is a data segment and therefore needs an entry in the DST. There is one JIT per job or session. Increase the size of the Data Segment Table (DST). The maxiumum on an MPE IV based system is 1024. On an MPE V based system, the maximum is 4096. The recommended configuration is 8 * (number of users) + 64.

LDEVnnn, UNABLE TO ALLOCATE JOB DIRECTORY TABLE

UNABLE TO ALLOCATE JOB DIRECTORY TABLE FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 3

Cause: No entries available in the Data Segment Table to allocate an entry for the Job Directory Table DST.

Action: The Job Directory Table (JDT) is a data segment and therefore needs an entry in the DST. The is one JDT per job or session. Increase the size of the Data Segment Table (DST). The maximum on an MPE IV based system is 1024. On an MPE V based system, the maximum is 4096. The recommended configuration is 8 * (number of users) + 64.

LDEVnnn, NO JOB PROCESS COUNT TABLE ENTRY AVAILABLE

NO JOB PROCESS COUNT TABLE ENTRY AVAILABLE FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 4

Cause: No available entries in the Job Process Count Table (JPCNT)

Action: Increase the number of 'MAX # OF CONCURRENT RUNNING JOBS' and 'MAX # OF CONCURRENT RUNNING SESSIONS'. This table is indirectly configurable and is used for locking RINs when the process does not have 'MR' capability.

LDEVnnn, UNABLE TO ALLOCATE FILE SYSTEM DATA SEGMENT

UNABLE TO ALLOCATE FILE SYSTEM DATA SEGMENT FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 5

Cause: No available entries in the Data Segment Table (DST)

Action: Increase the size of the Data Segment Table. The file system will obtain a DST on behalf of a job or session and therefore needs an entry in the DST. The maximum on an MPE IV based system is 1024. On an MPE V based system, the maximum is 4096. The recommended configuration is 8 * (number of users) + 64.

LDEVnnn, UNABLE TO ALLOCATE $STDLIST

UNABLE TO ALLOCATE $STDLIST FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 6

Cause: One or more of three conditions are true, a) the maximum number of spoolfile kilosectors are already allocated, b) the disc drives in device class 'SPOOL' are out of space or c) the maximum number of spoolfiles are already open.

Action:

a) Print or SPOOK off some spoolfiles or reconfigure the system and answer the question 'MAX # OF SPOOFLE KILOSECTORS=xxxx' with a larger value.

b) Print or SPOOK off some spoolfiles, purge any un-needed user files, recover lost disc space or reconfigure the system and add the class 'SPOOL' to more disc drives.

c) Reconfigure the system and answer the question 'MAX # OF OPENED SPOOLFILES = xxx' with a larger value.

LDEVnnn, UNABLE TO ALLOCATE $STDIN

UNABLE TO ALLOCATE $STDIN FOR Jnn JOB WAITING

JOB OVERLOAD TYPE 7

Cause: One or more of three conditions are true, a) the maximum number of spoolfile kilosectors are already allocated, b) the disc drives in device class 'SPOOL' are out of space or c) the maximum number of spoolfiles are already open.

Action:

a) Print or SPOOK off some spoolfiles or reconfigure the system and answer the question 'MAX # OF SPOOFLE KILOSECTORS=xxxx' with a larger value.

b) Print or SPOOK off some spoolfiles, purge any unneeded user files, recover lost disc space or reconfigure the system and add the class 'SPOOL' to more disc drives.

c) Reconfigure the system and answer the question 'MAX # OF OPENED SPOOLFILES = xxx' with a larger value.

STACK SPACE REQUIRED EXCEEDS CONFIGURATION MAXDATA. (CIERR 638)

Cause: The stack space required to execute the command is greater than the system configured maximum stack size.

Action: Reconfigure the system and answer the question 'MAX STACK SIZE' with a larger value.

NO TAPE OR CTAPE DEVICE, UNABLE TO ISSUE IMPLICIT FILE COMMAND. PLEASE RE-CONFIGURE OR USE EXPLICIT FILE EQUATION. (CIERR 664)

Cause: A STORE of RESTORE command was issued without using a file equation referencing the tape drive and the device class 'TAPE' or 'CTAPE' does not exist on the system.

Action: Issue a file equation for the tape drive and back reference it in the STORE/RESTORE command or re-configure the system and add the device class 'TAPE' or 'CTAPE'.

CAN'T ALLOCATE RIN, RIN TABLE FULL. (CIERR 1692)

Cause: You are trying to obtain a RIN and the RIN Table is full.

Action: Via SYSDUMP, check the number of RINs configured and currently being used. Say 'YES' to 'LIST GLOBAL RINS?' to list the allocated RINs. There may be some that you can free up with the 'FREERIN' command. If your RIN table is underconfigured, you must RELOAD your system to increase its size.

UNABLE TO OBTAIN PCB ENTRY. (CIERR 7017)

Cause: PCB table is full.

Action: Increase the size of the PCB table via SYSDUMP or the Initiator. The maximum for an MPE IV based system is 256. On an MPE V based system, the maximum is 1024.

UNABLE TO OBTAIN STACK. (CIERR 7018)

Cause: Data segment table is full. A stack is considered a data segment and therefore needs an entry in the Data Segment Table.

Action: Increase the size of the DST via SYSDUMP or the Initiator. The maximum for an MPE IV based system is 1024. On an MPE V based system, the maximum is 4096.

UNABLE TO OBTAIN JIT DST. (CIERR 7019)

Cause: Data Segment table is full. A JIT is a data segment and therefore needs an entry in the DST.

Action: Increase the size of the DST via SYSDUMP or the Initiator. The maximum for a MPE IV based system is 1024. On an MPE V based system, the maximum is 4096.

UNABLE TO OBTAIN JDT DST. (CIERR 7020)

Cause: The Data Segment Table is full. A Job Directory Table (JDT) is a data segment and therefore needs an entry in the DST.

Action: Increase the size of the DST via SYSDUMP or the Initiator. The maximum for a MPE IV based system is 1024. On a MPE V based system, the maximum is 4096.

UNABLE TO OBTAIN A FILE DST. (CIERR 7021)

Cause: The Data Segment Table is full. The file system uses DSTs.

Action: Increase the size of the DST via SYSDUMP or the Initiator. The maximum for a MPE IV based system is 1024. On a MPE V based system, the maximum is 4096.

UNABLE TO OBTAIN JOB PROCESS COUNT ENTRY. (CIERR 7023)

Cause: There are no more available entries in the Job Process Count Table.

Action: Increase the size of the Job Process Count Table. It is indirectly configured through SYSDUMP or the Initiator by answering the questions 'MAX # OF CONCURRENT RUNNING SESSIONS = xxxx' and 'MAX # OF CONCURRENT RUNNING JOBS = xxxx' with a higher value.

OUT OF VIRTUAL MEMORY (FSERR 57)

Cause: FSERR 57 could be caused if Virtual Memory is underconfigured or by an underconfigured DST. It could also occur if the configured size of the Maximum Extra Data Segment is too small.

Action: Check table usage with OPT to determine if the error might be caused by an underconfigured DST or VM.

Also check the configured value of the Maximum Extra Data Segment to see if it is large enough to accommodate the program running.

GLOBAL RIN UNAVAILABLE (FSERR 60)

Cause: The program you are running needs a GLOBAL or LOCAL RIN and none is available.

Action: Via SYSDUMP, check the number of LOCAL and GLOBAL RINS that are configured and currently being used. Say 'YES' to LIST GLOBAL RINS? to list the currecntly allocated RINS. There may be some that are not being used that you can free up with the :FREERIN command.

If your RIN table is underconfigured, you must RELOAD your system to increase its size.

NO "SPOOL" CLASS ON THE SYSTEM (FSERR 81)

Cause: An attempt was made to 'spool' input or output and the device class 'SPOOL' is not configured on the system.

Action: Reconfigure the system and add the device class 'SPOOL' to at least one system domain disc drive. This can be done in the 'CLASS CHANGES' section of SYSDUMP or the Initiator.

STACK SPACE REQUIRED EXCEEDS SPECIFIED MAXDATA (LOADERR 25)

Cause: The initial stack space required to execute the program is greater than MAXDATA.

Action: RUN the program with the MAXDATA parameter and increase the space or PREP the program specifying a larger MAXDATA; or decrease the initial stack space required by decreasing the system default stack size and recompiling.

CODE SEGMENT TOO LARGE (LOADERR 33)

Cause: A code segment within the program is larger than the system configured maximum code segment size.

Action: Reconfigure the system and answer the question 'MAX CODE SEG SIZE=xxxxx' with a larger value.

DATA SEGMENT TOO LARGE (LOADERR 35)

Cause: The sum of DL space, DB space and the STACK is greater than 32K words.

Action: One or a combination of the three parameters need to be reduced to bring the total space required below 32K words. Re-prep or re-run the program using the 'DL=' and/or 'STACK=' parms to reduce the space required by the data segment or reduce the program data area size.

DATA SEGMENT TOO LARGE (LOADERR 36)

Cause: The sum of DL space, DB space and STACK is greater than the system configured maximum stack size.

Action: Re-configure the system and answer the question 'MAX STACK SIZE = xxxxx' with a larger value. An alternative solution is to re-prep or re-run the program using the 'DL=' and/or 'STACK=' parms to reduce the space required by the data segment or reduce the program data area size.

UNABLE TO OBTAIN CST ENTRIES (LOADERR 65)

Cause: No more available entries in the Code Segment Table (CST) or Code Segment Table Extension (CSTX).

Action: Enlarge the CST or CSTX or remove user segments from the SL, account SLs or group SLs. The maximum size is 192 on systems without the expanded tables firmware. With the expanded tables firmware, the maximum is 2048.

UNABLE TO OBTAIN PROCESS DST ENTRY (LOADERR 66)

Action: Data Segment Table is full.

Cause: Enlarge the DST. The maximum size on a MPE IV based system is 1024 and on a MPE V based system, it is 4096. If you are already at the maximum, you may want to investigate running a different mix of applications. Processes that use many extra data segments or open many files require more DST entries.

UNABLE TO OBTAIN CSTX ENTRIES (LOADERR 69)

Cause: Extended Code Segment Table is full.

Action: Enlarge the CSTX. The CSTX is used for all programs code segments which are ALLOCATEd or RUN and is dependent on the number of users and the number of different applications they are running.

SEGMENT TABLE OVERFLOW (LOADERR 70)

Cause: No more available entries in the Loader Segment Table.

Action: Increase the size of the loader segment table through SYSDUMP or the Initiator. If you are running Hewlett-Packard's Manufacturing Software, it is recommended that you configure the LST at 32760. The table expands dynamically and will not waste space if configured to the maximum.

UNABLE TO OBTAIN VIRTUAL MEMORY (LOADERR 73)

Cause: There is no more virtual memory available to allocate for the stack of the process that is being loaded.

Action: An immediate work around is to terminate some processes thereby returning the virtual memory they are using. If the message comes up repeatedly, you can configure more virtual memory on all system domain disc drives through the Initiator (except LDEV 1).

READER COMMENT SHEET

North American Response Centers
HP 3000 Application Note: System Configuration or System Table Related Errors
RC Questions & Answers (August 1, 1986)

We welcome your evaluation of this Application Note and attached RC Questions & Answers Sheet. Your comments and suggestions help us to improve our publications. Please explain your answers under Comments, below, and use additional pages if necessary.

	AppNote	RC Q&A
Are these documents technically accurate?	☐ Yes ☐ No	☐ Yes ☐ No
Are the concepts and wording easy to understand?	☐ Yes ☐ No	☐ Yes ☐ No
Are the formats of the documents convenient in size, arrangement and readability?	☐ Yes ☐ No	☐ Yes ☐ No

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HEWLETT PACKARD RESPONSE CENTER QUESTIONS & ANSWERS

HP 3000 Questions Commonly Received by the North American Response Centers

Q. On my system console, I received the message "LOG FILE NUMBER nnn IS 3/4 FULL". What does this mean?

A. The message indicates that logging data has filled three-quarters of the system log file's allotted file space. System logging is used to record system usage and significant events such as device I/O errors. You can choose to enable or disable system logging, as well as the events to be logged, during the SYSDUMP dialogue.

The message is informative only and requires no action since a new log file will be created automatically once the current log file fills up.

Q. In a COBOLII program, how do you access the value returned from a call to a "typed procedure" intrinsic (such as FOPEN or FREAD)?

A. In SPL, the ":=" symbol is used to assign a value to a typed procedure. In COBOL this can be translated into the GIVING clause of the CALL statement. For example, the syntax of the FREAD intrinsic is shown in the Intrinsic Manual as:

```
lgth := FREAD(filenum,target,tcount).
```

The corresponding COBOLII code would be:

```
CALL INTRINSIC "FREAD" USING filenum, target, tcount GIVING lgth.
```

Q. I am getting an error when texting a file into EDITOR -- ERROR #43 OUT OF SEQUENCE LINE NUMBER nnnn". What causes this and is there a way to prevent it from happening?

A. This problem will occur if you have a numbered or unnumbered EDITOR file that has eight digits at the end of each record. For example, this error message would occur if you had a telephone number (with area code) without punctuation at the end of each record. EDITOR interprets the digits as line numbers. To avoid the error message text the file in, "TEXT filename, UNN" or be sure that there are fewer than eight digits at the end of your records.

Q. If I assign many different UDC files to each user on my system, will that have any effect on performance?

A. Yes. The more UDC files you have, the slower the logon time will be. (The number of UDC's will also effect performance but not as much as having many UDC files.) When you logon with a UDC, MPE must first open the file COMMAND.PUB.SYS and read that file to determine which UDC files are set at the user, account, and system level. It must then open those files and build an extra data segment which contains the command name, and the file number and record number of the command definition, for each command.

more...

Q. What is the difference between the SPREAD and the COMPACT options of a RELOAD?

A. There are five different RELOAD options. SPREAD and COMPACT may be confusing due to their similarities. We'll compare all five options by first defining each and then looking at their advantages and disadvantages.

With the SPREAD option, MPE tries to place a file back on a disc of the same device class as it was originally created. Failing this, MPE will try to place it on a disc of the same type and subtype as it was previously placed. Failing this, it will attempt to place it on a disc of the same type as previously placed. Failing this, MPE will try to place the file on any disc of the device class DISC. Finally, should this fail, a message is printed and the file is NOT reloaded.

The advantage of the SPREAD option is that the discs are repacked, reducing fragmentation and increasing free space. Disc seek time is also reduced because of the repacked files. The disadvantage is that if the discs are nearly full it may NOT be possible to restore all the files that were previously stored.

With the COMPACT option, MPE attempts to place a file back on the same volume (ldev) from which it came. Failing this, the SPREAD option is used.

The advantage is, assuming the same discs are used, and if no new tracks were deleted, a successful reload is guaranteed, no matter how full the discs are. Although this will result in some increased freespace and decreased fragmentation and seek time, it is not as effective as the SPREAD option. You should consider this option if you have large files purposely spread across different discs for performance reasons. With COMPACT, the files are replaced back on the same volumes while having some of the advantages of the Spread option reload.

With the RESTORE option, MPE attempts to place the files back on the same volume (ldev) AT THE SAME LOCATION (ADDRESS) from which they came. Failing this, it tries to place them anywhere on the volumes from which they came. Should this fail then the SPREAD option is again used.

The advantage is that it offers the same guarantees as the COMPACT option with the files being replaced at their exact previous locations (addresses). This includes the files that were using alternate tracks (tracks used in- place-of defective tracks). The big disadvantage is that NO compacting is done so the same fragmentation STILL exists.

With the NULL option, MPE creates a null directory. This means that you get MPE and its system files (the subset of files from PUB.SYS that MPE requires). The system will come up within minutes. However, NO user files or accounting structure are created.

The advantage is that if you suspect directory corruption on your system, this option will clean it up by totally rebuilding it. You would then use the :RESTORE command with the CREATE parameter to reload your accounting structure and user files.

Hewlett-Packard recommends using the ACCOUNTS option reload. This allows the system to come up within minutes with MPE, a directory (accounting structure) and system files which reside in the PUB group of the SYS account. Once the system is up the :RESTORE command can be used to restore all user files into their accounts.

This method has ALL the advantages of the SPREAD option reload with a bonus. Should a SPREAD option fail on the ninth reel (for example) of a reload, the process must be started over from the beginning because MPE is not running until all the tapes have been read. However, with the ACCOUNTS option reload, MPE comes up first and then the user files are :RESTOREd back into their groups and accounts. This is a very safe way to reload your system unless you come under one of the "special circumstances" listed above.