

STATUS LOG INTERPRETATION

ARIA 1.2

ESL # 1112, REV. G

P/N 001-75310-02

Comments or Questions?

The Technical Communications group, which developed this manual, invites you to contact us with any comments, questions or corrections. We are constantly working to update and improve the status log interpretation manual.

When referring to this manual, please identify it with the 4-digit ESL number and revision level noted on the cover and at the bottom of every page.

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PREFACE: USING THIS MANUAL

The status log of Octel® Overture™ 250 and 350 message servers is an automatic record of exception events. Reading the status log is essential to monitoring a message server's use and, especially, for troubleshooting.

This manual provides all the information needed for reading status log entries. It can also be used for reading control bus messages independent of the status log. In addition, this manual contains explanations of a variety of other codes that are also helpful in troubleshooting.

First-time users of this manual should read Chapter One to become familiar with the status log, where reference information is located and how information is presented in this manual.

This manual applies to the Octel® Aria™ 1.2 user interfaces. For other releases, use the status log interpretation manual for that release.

Organization

Chapter One: Reading the Status Log provides an overview of the status log, instructions for displaying the log in various ways and instructions for reading the entries.

Chapter Two: Status Codes describes all status codes with associated subcodes and entry formats.

Chapter Three: File System Messages describes all control bus messages used with file systems.

Chapter Four: Line Card Messages describes all control bus messages used with line cards.

Chapter Five: ACP Messages describes all control bus messages used with ACP cards.

Chapter Six: PIC Messages describes all control bus messages used with PIC cards.

Appendix: Other Codes describes some troubleshooting codes that are not used in the status log.

Glossary defines many terms as used in this manual.

Assumptions About the Reader

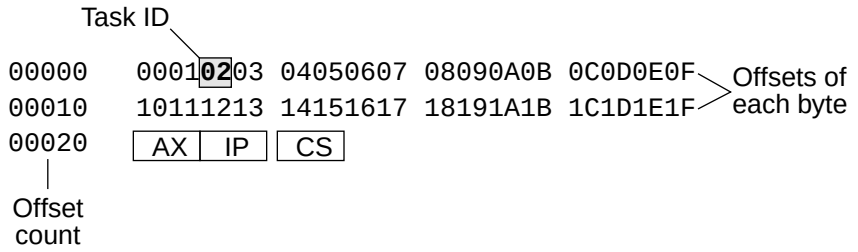
This manual assumes that you are familiar with Octel Overture 250 and 350 message servers, including the basic software and hardware configurations, and terminology. Check the appropriate service manual if more information is needed.

You should also be familiar with the hexadecimal numbering system. It is used routinely throughout this manual. Skill in doing arithmetic with hex

numbers—with or without a hex calculator—is occasionally helpful, but not necessary.

Conventions in the Manual

The main use for this manual is interpreting codes in status log entries. The locations of the codes are given as **offsets**. An offset is a count of bytes (with two hex digits per byte) from the beginning of some data structure, such as a status log entry or a control bus message. The count begins with zero. Offsets are always given as hexadecimal numbers. In the figures, the values shown are the offsets of each byte, instead of real data. For example, the figure below shows the task ID at offset 02 (the third byte) of a status log entry.



Status log entries and other data structures are broken down into **fields** that carry a specific piece of information. In the illustrations in this manual, each field is boxed to show its location and length. It is labelled (inside the box or out, as convenient) to explain its content. The figure above shows that the field holding the task ID information starts at offset 02 and is one byte (or two hex digits) long. The AX field starts at offset 20 and is two bytes long.

Key fields are shaded. These are the fields most commonly referred to and the first ones to check. The task ID is marked as a key field in the figure.

All values for fields are given as hex numbers unless stated otherwise.

CHAPTER 1: READING THE STATUS LOG

The status log is a key troubleshooting tool for Octel® Overture™ 250 and 350 message servers. With it, the causes of problems, hardware and software, can be tracked down. Some problems can even be spotted before they happen and prevented.

This chapter provides instructions for interpreting the status log, starting with what the log is and when to use it. The instructions include how to view the status log and how to find an explanation of a status log entry. The chapter ends with details of data structures commonly used in entries, including reference tables.

If you are unfamiliar with the status log, you should read the whole chapter before starting work.

If you are experienced with the status log, you should at least skim the chapter to locate reference information and to see how information is presented.

1.1 OVERVIEW OF THE STATUS LOG

This section describes what is in the status log and how the operating system maintains the log. The next section describes how to use the status log.

1.1.1 Contents of the Status Log

The status log keeps a running record of significant events occurring throughout the message server. This includes events such as:

- The message server booting
- An error reading or writing to a data file
- A task timing out
- A network message not being delivered

Each status log **entry** holds information about the event and the status of the message server at the time the event occurred. This information frequently includes:

- When the event occurred
- The task involved
- The boards involved
- The control bus messages involved

An entry may also include special information about the event, such as an associated IUN, mailbox number, file name or Tree location. All the information in an entry is intended to help establish what happened and why.

1.1.2 Structure

Of course, there is a limit to how many entries can be stored in the log. The status log operates as a **ring buffer**. When entries overflow the top of the buffer space, they wrap around to the bottom and overwrite the oldest entries. See Figure 1-1. The status log holds almost two kilobytes (six bytes are used for pointers and flags) of the most recent entries.

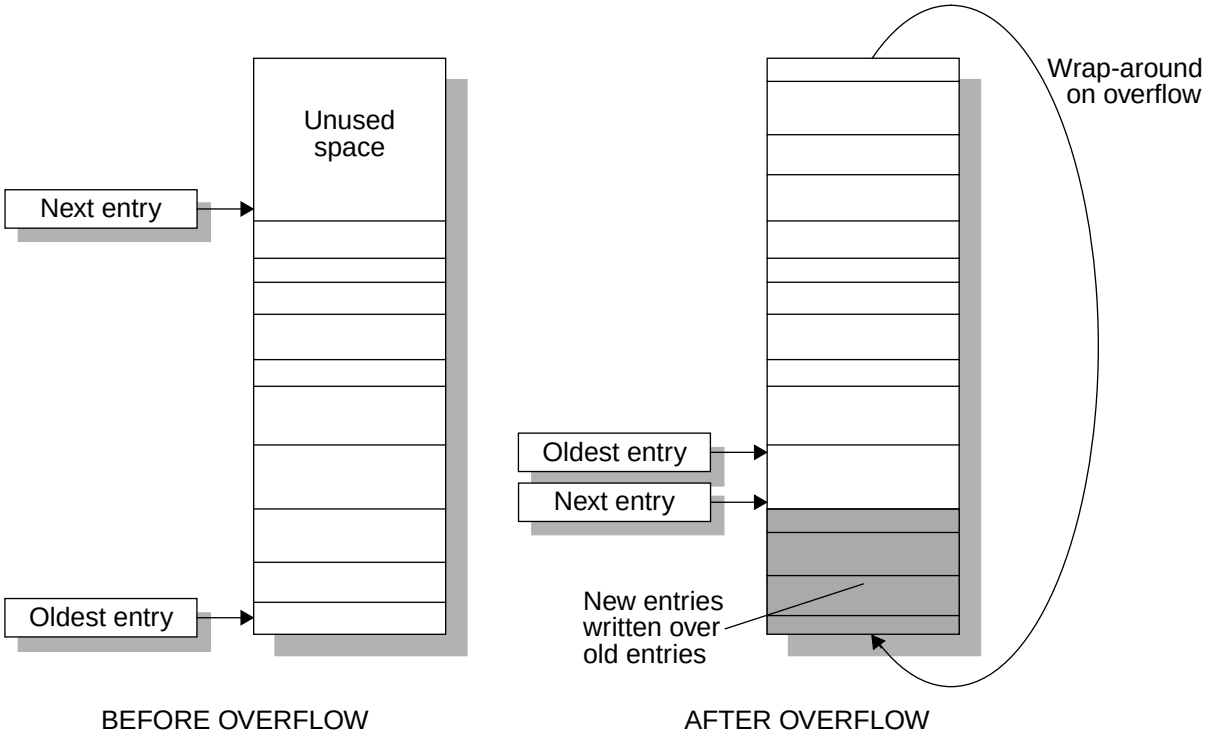


Figure 1-1. Ring Buffer Operation

The status log is stored in two places: as part of the system status table and as part of Record 50. These are in files 04 and 2D, respectively.

Figure 1-2 shows a typical status log entry as displayed with Menu 13.2 (the usual way of viewing the status log). Entries are from 16 to 255 bytes long. The first row of every entry is the **entry header** (formally known as the error control block common header). It contains the **status code** and **subcode**, which identify the event, and other routine information. After the header there is usually a **body** with more information. What fields are in the body and how they are coded depends on the status code and subcode. For very extensive descriptions, two or three entries are produced for a single event, but these are rare.

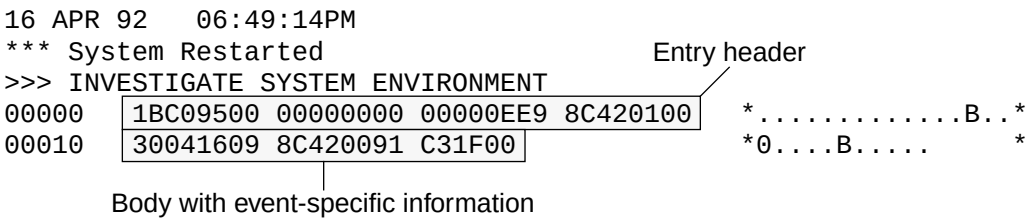


Figure 1-2. Status Log Entry Example

Most of the fields are loaded in **Intel order**: the most-significant byte at the right and the least-significant byte at the left (this is a side-effect of the way the Intel microprocessor operates). These values need to be **transposed** (see Figure 1-3) before they are interpreted. Fields coded in ASCII—usually names and phone numbers—do not need to be transposed.

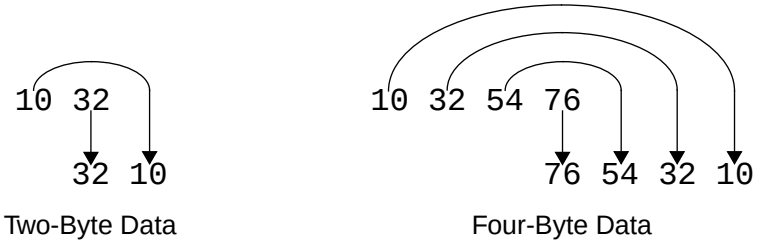


Figure 1-3. Transposing Intel Order to Normal Order

1.2 CHECKING THE STATUS LOG

This section describes when and how to check the status log. Following sections give details of the process.

1.2.1 When to Check the Status Log

Check any time there is a problem with the system's operation. Many of the status codes are for errors (though not necessarily ones caused by the message server).

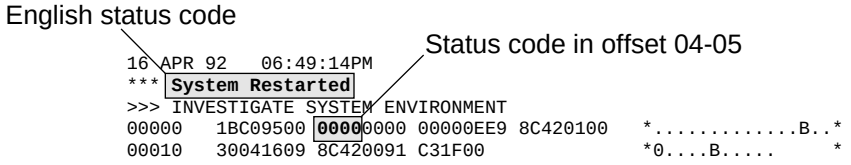
Check as a part of routine maintenance. Some of the codes are for events that are just unusual or possibly significant, such as the message server booting or the AMIS directory becoming 90% full. Even systems that are running perfectly well log entries. But the entries may reveal an unnoticed problem (the message server rebooted for no known reason) or indicate a problem developing (if the AMIS directory reaches 100%, some network messages may not be sent).

Check periodically and frequently. The system manager normally does this. When the log fills up, it starts overwriting the oldest entries. If those entries have not already been checked, their information is lost.

1.2.2 How to Check the Status Log

Following is a list of steps for interpreting the status log using this manual. The first part finds what event caused the entry. This may be all the information needed. If not, work through the second part until enough information has been found. It is rarely necessary to translate the whole entry. Then, with the third part, analyze the rest of the entries and do maintenance on the log.

Table 1-1. How to Check the Status Log

Step #	Step Description	For Details, See Section:
	Find the Event Description	
1	Get a printout of the status log, usually from Menu 13.2.	1.3 on page 7
2	Identify entries of interest with the English status codes. See Figure 1-4. Include any entry missing the English code. This is all entries if Menus 13.2 or 13.3 were not used to display the status log.	1.3.1 on page 8
	 Figure 1-4. Status Code Location	
3	Get the status code from offset 04-05 of the entry (see Figure 1-4) and find the description for the code in Chapter 2.	1.4 on page 18
4	Get the subcode, if there is one, from offset 08-09. Find the description for the subcode, including the format illustration, under the status code's description in Chapter 2.	1.4 on page 18
	Get More Information as Needed	
5	Translate the task ID in offset 02. This tells what part of the software and possibly what board was involved.	1.5.1 on page 22
6	If there are control bus messages: • Translate the peripheral address in offsets 04-05 of the IORB header. • Translate the task ID in offset 00 of each control bus message. The task ID and peripheral address indicate which boards were involved.	1.5.2 on page 28 1.5.3 on page 34
7	If there are control bus messages, get the message type from offset 02 of each control bus message. Find the descriptions: Chapters 3 through 6 for a control bus message. Message type and contents give detailed information about the event.	1.5.3 on page 34
8	Examine other fields as needed.	
	Continue Through the Log	
9	If there are more entries of interest, repeat steps 3-8.	
10	File the printout of the status log. These printouts form a long-term record of the system's operation.	
11	Clear the status log after **all** entries have been accounted for. Press **C** while in Menu 13.2. This makes the log easier to read. There will be nothing but new entries the next time.	1.3.1 on page 8

1.3 DISPLAYING THE STATUS LOG

There are several ways to see the status log. Which one you should use will depend on the situation.

Table 1-2. Easiest Display Methods

Situation	Method
Online	Status Log: “Display from Menu 13” on page 8 Record 50: “Display from Datafile Utilities” on page 14
Off-line and can boot fully	Status Log: “Display from Menu 20 While Off-Line” on page 10 Record 50: “Display from Disk Utilities” on page 12
Off-line and can boot partially	“Display from Disk Utilities” on page 12
System shutdown	“Display from Dump” on page 16

The SST holds the original and preferred copy of the status log. Record 50 also has a copy of the log, but it is updated only during a system crash and so is useful only for diagnosing the crash.

This section has instructions for getting each display and shows how to read it. In these instructions, a **^** by a letter (**^C** for example) means hold down the **Ctrl** key and press that letter.

1.3.1 Display from Menu 13

The most common way to check the status log is by entering Menu 13.2. This display is the easiest to read: the entries are separated from each other, ordered from oldest to newest and partially translated.

Menu 13.3 is used to watch the log while the system operates. After the entries have been shown, the system waits for more to be logged. The status log cannot be printed or cleared from Menu 13.3.

To get the Menu 13 display:

1. Log onto the system manager terminal.
2. From the Main Menu, select option **13 - System Maintenance**.
3. From Menu 13, select option **2 - Review Status Log** or option **3 - Scroll Status Log**.
4. The status log, plus an inventory of the message server's software, starts scrolling on the screen. To pause, press any key. To resume scrolling, press any key. To end the scrolling, press **^C**.
5. Print a copy of the log by pressing **P** (Menu 13.2 only).

The beginning of the printout will resemble Figure 1-5.

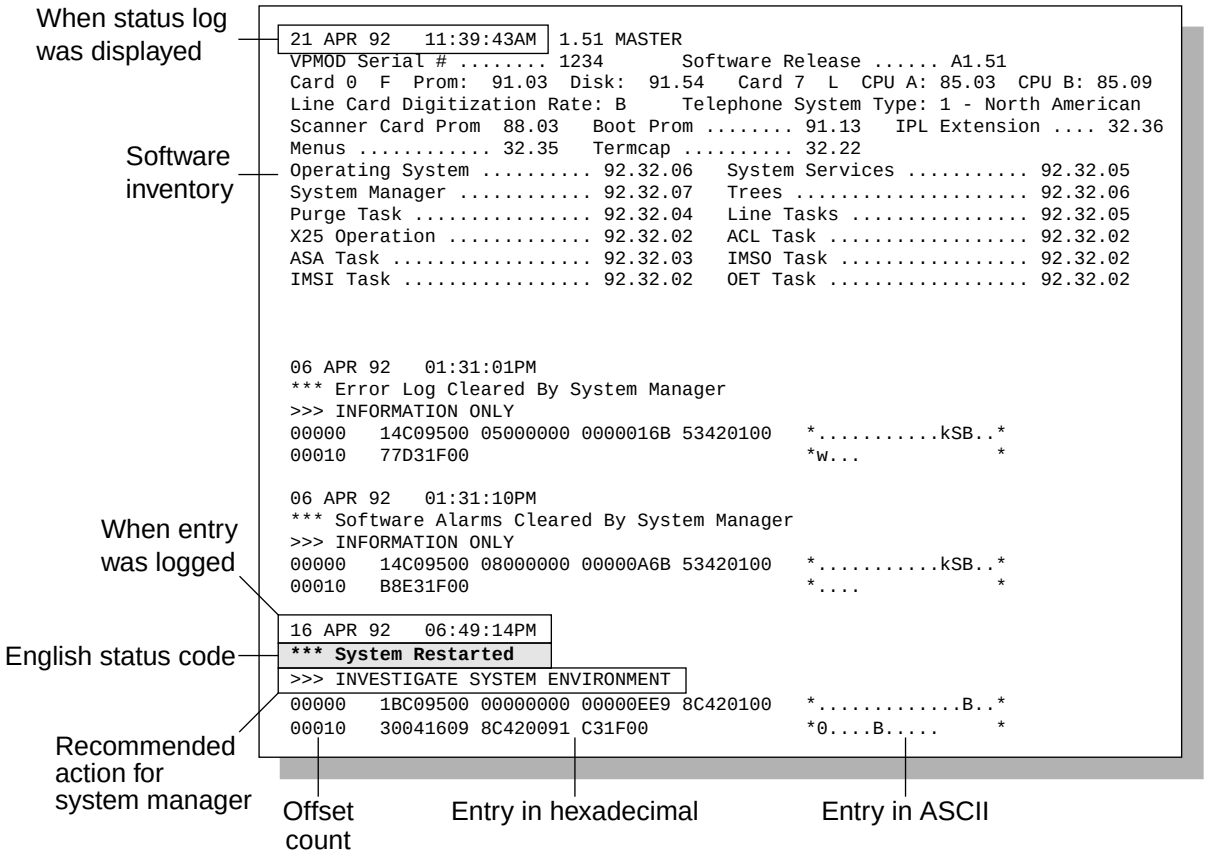


Figure 1-5. Menu 13 Display Example

Selected Parts of Figure

Recommended action for system manager. These recommendations are intended for the system manager. There are four possible: Information Only, Monitor Closely, Investigate System Environment, Notify Support Representative.

Entry in hexadecimal. This is the raw data of the status log entry. These are the codes that this manual explains.

Entry in ASCII. This is also the raw data of the status log entry, but expressed as ASCII characters. Periods are substituted for non-printable characters (00-1F, 7F-FF). This form of the entry helps in reading those data fields that are written in ASCII. Also, patterns can be more easily recognized in this form.

1.3.2 Display from Menu 20 While Off-Line

The easiest way to check the status log while off-line is through Menu 20. This display is the same as with Menu 13.2: the entries are separated from each other, ordered from oldest to newest and partially translated.

To get the Menu 20 display:

1. Activate the service option.
2. At the **ENTER BOOT COMMAND:** prompt, press **^DU**. The system will continue with most of the boot process.
3. From Menu 20, select the **Display Status Log** option.
4. The status log, plus an inventory of the message server's software, starts scrolling on the screen. To pause, press any key. To resume scrolling, press any key. To end the scrolling, press **^C**.
5. Print a copy of the log by pressing **P**.

The beginning of the printout will resemble Figure 1-6.

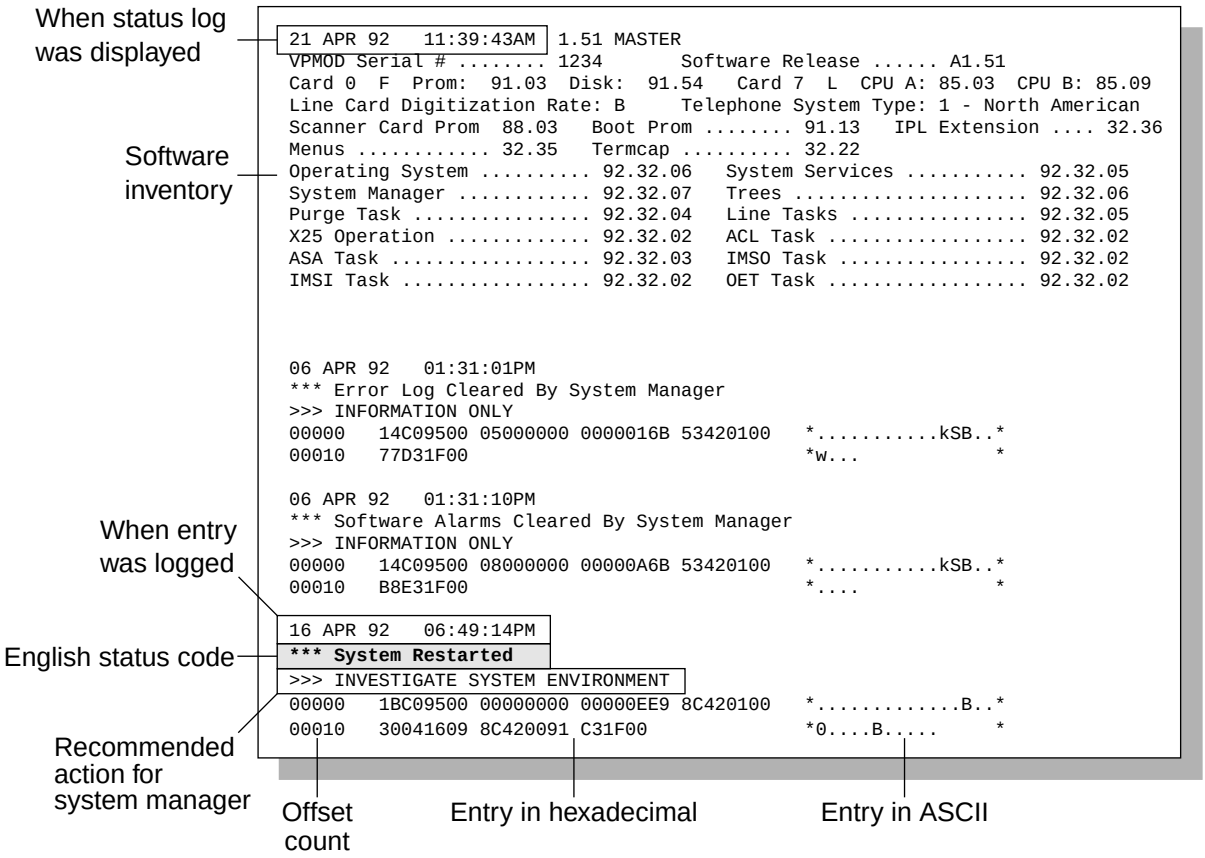


Figure 1-6. Menu 20 Display Example

Selected Parts of Figure

Recommended action for system manager. These recommendations are intended for the system manager. There are four possible: Information Only, Monitor Closely, Investigate System Environment, Notify Support Representative.

Entry in hexadecimal. This is the raw data of the status log entry. These are the codes that this manual explains.

Entry in ASCII. This is also the raw data of the status log entry, but expressed as ASCII characters. Periods are substituted for non-printable characters (00-1F, 7F-FF). This form of the entry helps in reading those data fields that are written in ASCII. Also, patterns can be more easily recognized in this form.

1.3.3 Display from Disk Utilities

An alternative way to read the status log is through the disk utilities. In this case, only the raw data is displayed. Entries must be located and separated from the log before they can be interpreted.

To get the disk utilities display:

1. Activate the service option.
2. At the **ENTER BOOT COMMAND:** prompt, press **^DI**.
3. From the Install Options menu, select option **I - Disk Utility**.
4. From the Disk Utility Options menu, select option **A - Read Disk Record**.
5. At **ENTER READ DRIVE NUMBER:**, enter **0** or, if reading Drive 0 fails and if there are two system drives, enter **1**.
6. At **ENTER FILE NUMBER (HEX):**, enter the file number from Table 1-3; at **ENTER RECORD NUMBER (HEX):**, enter **0**; at **ENTER NUMBER OF RECORDS (HEX):**, enter **1**.
7. Press any key to return to the Disk Utility menu.
8. Select option **D - Display Record Buffer**.
9. For a printout, make sure the printer is connected and turned on. On a Wyse 50 terminal, press **Shift-Ctrl-Print** simultaneously. On an HP 700/43 terminal, press the **Copy Pr** key.
10. At **ENTER RECORD DISPLACEMENT (0-0x27ff):**, enter the beginning offset of the status log from Table 1-3.
11. The log starts scrolling on the screen. To pause, press any key. To resume scrolling, press any key. To end the scrolling, press **^C**.

The beginning of the printout will resemble Figure 1-7.

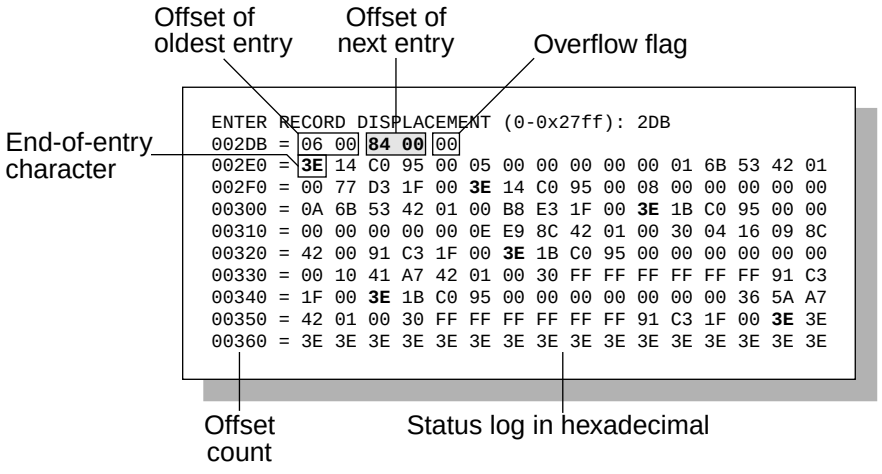


Figure 1-7. Disk Utilities Display Example

Selected Parts of Figure

Offset of oldest entry. The first two bytes of the status log are a pointer to the oldest entry. In this example, the first entry is at offset 06 in the status log, or offset 02E1 in record 29. This is always the case when the ring buffer has not overflowed.

Offset of next entry. The next two bytes are a pointer to where the next entry will go. The entry preceding this point is the most recent one. In this example, the next entry will start at offset 84 in the status log, or offset 035F in record 29. The unused portion of the status log is filled with the end-of-entry character when the ring buffer has not overflowed.

Overflow flag. A **00** in this byte means the ring buffer has not overflowed. A **01** means it has overflowed and entries have been lost.

End-of-entry character. Offset 05 in the status log always holds the end-of-entry character: **3E**. This character is copied onto the end of every entry. In the example, the end-of-entry characters have been highlighted to show how they set off the individual entries.

Status log in hexadecimal. This is the raw data of the status log entries. To interpret these codes with this manual, copy the numbers from between a pair of end-of-entry characters. Arrange the numbers in rows 16 bytes (32 digits) long and similar to the entries in the Menu 13.2 display, (see Figure 1-5, “Menu 13 Display Example,” on page 8). This is the format used by the descriptions in Chapter 2.

Table 1-3. Status Log Locations

File Type	Location
SST	File 04 Offset 02DB - 0ADA
Record 50	File 2D Offset 18B0 - 20AF

1.3.4 Display from Datafile Utilities

An alternative way to read the status log is through the datafile utilities under Menu 20. In this case, only the raw data is displayed. Entries must be located and separated from the log before they can be interpreted.

To get the datafile utilities display:

1. Log onto the system manager terminal. Or, at the **ENTER BOOT COMMAND:** prompt, press **^DU** and then skip to step 3.
2. From the Main Menu, select option **20 - Service Operations**.
3. From Menu 20, select the **Datafile Utilities** option.
4. From the Datafile Utilities menu, select option **1 - Read Datafile Record**.
5. At **Enter position of source drive:**, enter **0** or, if reading Drive 0 fails and if there are two system drives, enter **1**.
6. As prompted, enter the parameters from Table 1-4.
7. At **Enter record half (1-2):**, enter **1** or **2** as desired.
8. The Datafile Utilities menu re-appears. Select option **3 - Display Record**.
9. For a printout, make sure the printer is connected and turned on. On a Wyse 50 terminal, press **Shift-Ctrl-Print** simultaneously. On an HP 700/43 terminal, press the **Copy Pr** key.
10. At **Enter start address (0-27FF)[hex]:**, enter the beginning offset of the status log from Table 1-4.
11. The log starts scrolling on the screen. To pause, press any key. To resume scrolling, press any key. To end the scrolling, press **^C**.

The beginning of the printout will resemble Figure 1-8.

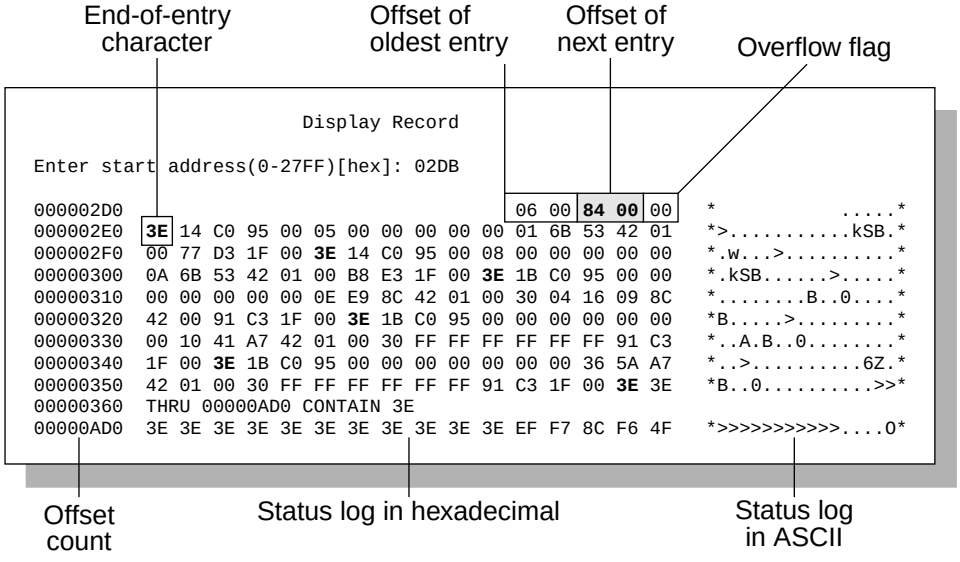


Figure 1-8. Datafile Utilities Display Example

Selected Parts of Figure

Offset of oldest entry. The first two bytes of the status log are a pointer to the oldest entry. In this example, the first entry is at offset 06 in the status log, or offset 02E1 in record 29. This is always the case when the ring buffer has not overflowed.

Offset of next entry. The next two bytes are a pointer to where the next entry will go. The entry preceding this point is the most recent one. In this example, the next entry will start at offset 84 in the status log, or offset 035F in record 29. The unused portion of the status log is filled with the end-of-entry character when the ring buffer has not overflowed.

Overflow flag. A **00** in this byte means the ring buffer has not overflowed. A **01** means it has overflowed and entries have been lost.

End-of-entry character. Offset 05 in the status log always holds the end-of-entry character: **3E** (**>** in ASCII). This character is copied onto the end of every entry. In the example, the end-of-entry characters have been highlighted to show how they set off the individual entries.

Status log in hexadecimal. This is the raw data of the status log entries. To interpret these codes with this manual, copy the numbers from between a pair of end-of-entry characters. Arrange the numbers in rows 16 bytes (32 digits) long and similar to the entries in the Menu 13.2 display, (see Figure 1-5, “Menu 13 Display Example,” on page 8). This is the format used by the descriptions in Chapter 2.

Status log in ASCII. This is also the raw data of the status log entries, but expressed as ASCII characters. Periods are substituted for non-printable characters (00-1F, 7F-FF). This form of the status log helps in reading those data fields that are written in ASCII. Also, patterns can be more recognizable in this form. It is especially helpful in spotting the end-of-entry characters (**>**) between entries.

Table 1-4. Status Log Locations in Datafile Format

Parameter	…in SST	…in Record 50
Datafile Type	2 - System	3 - Utility
Datafile Subtype	0 - SST	0 - Dump Records
Record Number	0	0
Offset (Start Address)	02DB-0ADA	18B0-20AF

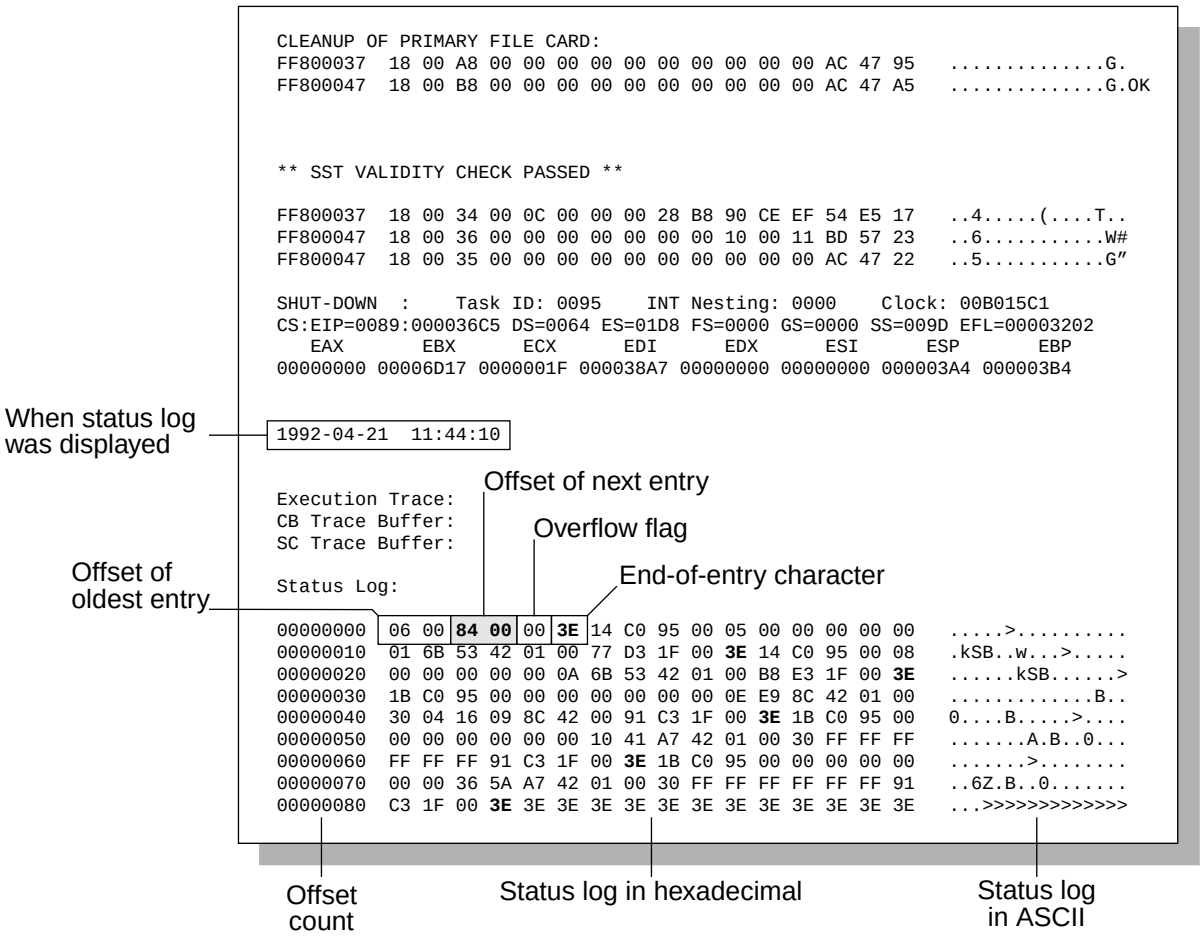
1.3.5 Display from Dump

When a message server is shut down using Menu 13.1, it does an extensive dump that includes the status log. As with the Disk Utilities, this display is raw data and must be interpreted in the same way.

To get the dump display:

1. Log onto the system manager terminal.
2. From the Main Menu, select option **13 - System Maintenance**.
3. From Menu 13, select option **1 - Shut Down with Dump**.
4. From Menu 13.1, select option **1 - allow lines to clear**.
5. The dump starts scrolling on the screen and on the printer. To pause, press any key. To resume scrolling, press any key. To end the scrolling, press **^C**.

The printout will resemble Figure 1-9. The status log is almost the last thing in the dump, coming after several pages of the execution trace and the CB trace buffer.




```
CLEANUP OF PRIMARY FILE CARD:
FF800037  18 00 A8 00 00 00 00 00 00 00 00 00 AC 47 95   .............G.
FF800047  18 00 B8 00 00 00 00 00 00 00 00 00 AC 47 A5   .............G.OK



** SST VALIDITY CHECK PASSED **

FF800037  18 00 34 00 0C 00 00 00 28 B8 90 CE EF 54 E5 17   ..4.....(....T..
FF800047  18 00 36 00 00 00 00 00 00 00 00 10 00 11 BD 57 23   ..6..........W#
FF800047  18 00 35 00 00 00 00 00 00 00 00 00 00 AC 47 22   ..5..........G"

SHUT-DOWN  :    Task ID: 0095    INT Nesting: 0000    Clock: 00B015C1
CS:EIP=0089:000036C5 DS=0064 ES=01D8 FS=0000 GS=0000 SS=009D EFL=00003202
   EAX       EBX      ECX      EDI      EDX      ESI      ESP       EBP
00000000 00006D17 0000001F 000038A7 00000000 00000000 000003A4 000003B4

1992-04-21  11:44:10

Execution Trace:
CB Trace Buffer:
SC Trace Buffer:

Status Log:

00000000  06 00 84 00 00 3E 14 C0 95 00 05 00 00 00 00 00   .....>..........
00000010  01 6B 53 42 01 00 77 D3 1F 00 3E 14 C0 95 00 08   .kSB..w...>.....
00000020  00 00 00 00 00 0A 6B 53 42 01 00 B8 E3 1F 00 3E   ......kSB......>
00000030  1B C0 95 00 00 00 00 00 00 00 0E E9 8C 42 01 00   .............B..
00000040  30 04 16 09 8C 42 00 91 C3 1F 00 3E 1B C0 95 00   0....B.....>....
00000050  00 00 00 00 00 00 10 41 A7 42 01 00 30 FF FF FF   .......A.B..0...
00000060  FF FF FF 91 C3 1F 00 3E 1B C0 95 00 00 00 00 00   .......>........
00000070  00 00 36 5A A7 42 01 00 30 FF FF FF FF FF FF 91   ..6Z.B..0.......
00000080  C3 1F 00 3E 3E 3E 3E 3E 3E 3E 3E 3E 3E 3E 3E 3E   ...>>>>>>>>>>>>
```

Figure 1-9. Dump Display Example

Selected Parts of Figure

Offset of oldest entry. The first two bytes of the status log are a pointer to the oldest entry. In this example, the first entry is at offset 06 in the status log. This is always the case when the ring buffer has not overflowed.

Offset of next entry. The next two bytes are a pointer to where the next entry will go. The entry preceding this point is the most recent one. In this example, the next entry will start at offset 84 in the status log. The unused portion of the status log is filled with the end-of-entry character when the ring buffer has not overflowed.

Overflow flag. A **00** in this byte means the ring buffer has not overflowed. A **01** means it has overflowed and entries have been lost.

End-of-entry character. The byte at offset 05 always holds the end-of-entry character: **3E** (**>** in ASCII). This character is copied onto the end of every entry. In the example, the end-of-entry characters have been highlighted to show how they set off the individual entries.

Status log in hexadecimal. This is the raw data of the status log entries. To interpret these codes with this manual, copy the numbers from between a pair of end-of-entry characters. Arrange the numbers in rows 16 bytes (32 digits) long and similar to the entries in the Menu 13.2 display, (see Figure 1-5, “Menu 13 Display Example,” on page 8). This is the format used by the descriptions in Chapter 2.

Status log in ASCII. This is also the raw data of the status log entries, but expressed as ASCII characters. Periods are substituted for non-printable characters (00-1F, 7F-FF). This form of the status log helps in reading those data fields that are written in ASCII. Also, patterns can be more recognizable in this form. It is especially helpful in spotting the end-of-entry characters (**>**) between entries.

1.4 READING A STATUS CODE DESCRIPTION

Descriptions for status log entries are in Chapter Two. They are listed in numerical order, based on the status code in offset 04-05. Adjacent status codes using the same format may be grouped together. A typical description is shown in Figure 1-10.

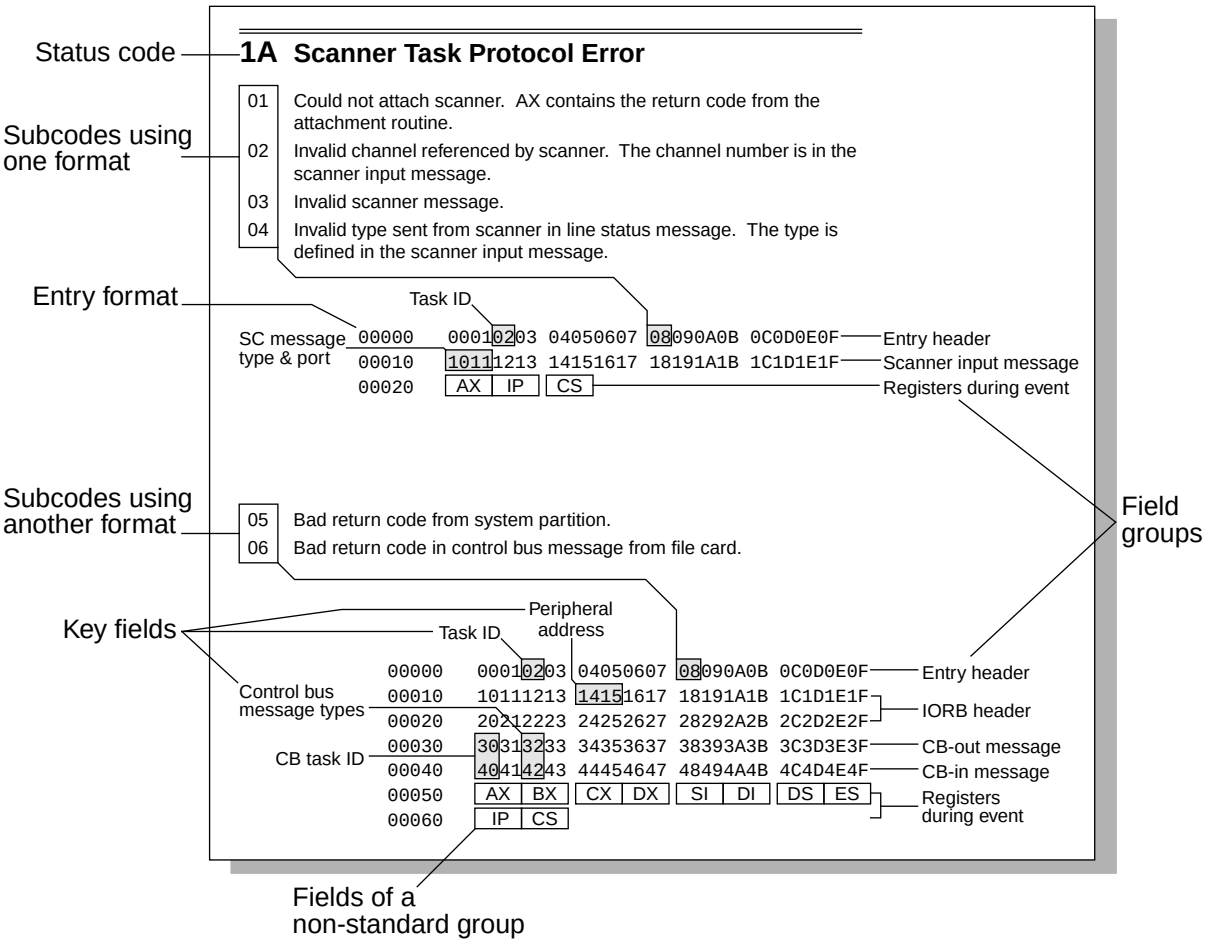


Figure 1-10. Example Status Code Explanation

Selected Parts of Figure

Subcodes using one or another format. The subcodes, in offset 08-09, provide the specific meaning of the entry. Typically, only offset 08 is highlighted in the illustrations. Subcodes rarely extend to using offset 09, so it is usually zero. Subcodes using the same format are grouped together.

Entry format. The entries are illustrated with a format similar to Menu 13.2's display. Other displays can be used by keeping track of the offsets within each entry. The values shown in the illustrations are the offsets. That is, offset 02 of an illustration shows "02"; offset 3C shows "3C".

Key fields. Fields that are of frequent interest are shaded.

Field groups. The fields of an entry can usually be grouped together. The groups are labelled on the illustration's right side. Three standard groups are detailed in the next section: entry header, IORB header and control bus message.

Fields of a non-standard group. Fields that are not part of a standard group are explained in a table below the format illustration.

1.5 STANDARD FIELD GROUPS

There are three standard groups used in status log entries:

- The entry header is the first part of every entry.
- The IORB (Input/Output Request Block) header gives information about an exchange of control bus messages.
- Control bus messages carry instructions and data between the CP and other parts of the message server.

These structures are not detailed in the status code descriptions (except for identifying key fields). Instead, they are explained here.

There is one other commonly occurring group: “Registers during event”. This group shows the contents of various registers of the microprocessor of the CP at the time the status event was recognized. The register contents are used in high-level troubleshooting. The format of the register group varies from status code to status code. For more information about the registers, see the data sheet of the microprocessor.

1.5.1 Entry Header

The entry header is the first part of every status log entry. It is formally known as the error control block common header. Besides defining what the entry is about, the header provides some standard information. See Figure 1-11.

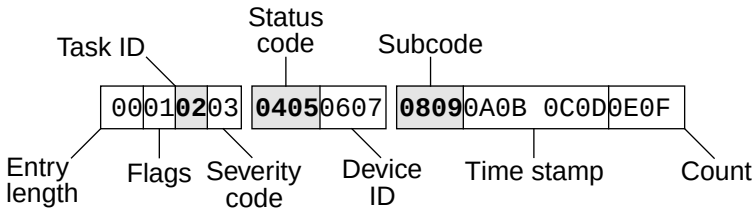


Figure 1-11. Entry Header Format

Key Fields

Task ID. Identifies the software task that generated the entry. This is a strong clue to what operation or board is having a problem. Line tasks also indicate a particular port. Translate the task ID with Table 1-5 and Table 1-6 on the following pages.

Status code. This code identifies the event or class of events that caused the entry. The status codes are listed in numerical order in Chapter Two.

Subcode. This code, when used, identifies the event more precisely than the status code. Although the subcode is a two-byte field, the descriptions in Chapter Two usually highlight only one byte, offset 08. In these cases, offset 09 is always zero and can be ignored.

Other Fields

Entry length. The number of bytes in the total entry.

Flags. The bits of this field are independently-set flags. The following values add together to form the value in the field:

- 01 (Bit 0 set.) The message server terminated the task and restarted.
- 02 (Bit 1 set.) New, expanded EDB format.
- 20 (Bit 5 set.) OS related.
- 40 (Bit 6 set.) Request from an application task instead of an OS routine.
- 80 (Bit 7 set.) Task related.

Severity code. Indicates how severely the event affected system operation. The codes are:

- 00 Possibly significant event.
- 01 Recovered from error.
- 02 Degraded session.
- 03 User interaction terminated.
- 04 Line restarted.
- 05 Single user long-term error.
- 06 Multiple user long-term error.
- 07 System reset occurred.
- 08 Task terminated.
- 09 Task restarted.

Device ID. The meaning of the code depends on what task or module generated the entry. Generally, the value will be 0000.

Time stamp. This field records when the entry was logged. The three bytes from offset 0B-0D are the count of minutes since midnight, January 1, 1984. The first byte of the time stamp, offset 0A, is the count of seconds within the minute. Translate with “Reading the Time Stamp” on page 26.

Count. The occurrence count is 00 or 01 depending on the task.

Table 1-5. Task IDs

Task ID	Task Name
00-8F	Line Tasks—To find the port, use Table 1-6.
90	Root Task
91	Scan Task 0
92	Scan Task 1
93	Scan Task 2
94	File Task 0
95-9C	System Management Tasks 0-7 respectively
9D	Purge Task
9E	Minute Task
9F	File Task 1
A0	File Task 2
A1	File Task 3
A2	X.25 Task
A3	OCL Task
A4	ASA Task
A5	SMDI Task Start
A6	Unused
A7	SMDI Task End
A8	IMS Task
A9	IMS Task
AA	Overflow Evaluation Task
AB	Simplified Protocol Task
AC	SMS Task
AD	Background Task
AE	Modem Task
AF	SBR Task
B0	Administrative Task (unused in Aria 1.0)
B1	ABCA Communications Handler Task (unused in Aria 1.0)
B2-E8	Unused
E9	Poll Daemon Task
EA	Modem Daemon Task
EB	Test Daemon Task
EC	File System Cleanup Daemon Task
ED	SCSI Task
EE	Debug Task
EF	Idle Task
F0-FF	Unused

Table 1-6. Task ID to Port

Task ID	350 Port	250 Port
00	1A	1A
01	1B	1B
02	1C	1C
03	1D	1D
04	1E	1E
05	1F	1F
06	1G	1G
07	1H	1H
08	1I	2A
09	1J	2B
0A	1K	2C
0B	1L	2D
0C	2A	2E
0D	2B	2F
0E	2C	2G
0F	2D	2H
10	2E	3A
11	2F	3B
12	2G	3C
13	2H	3D
14	2I	3E
15	2J	3F
16	2K	3G
17	2L	3H
18	3A	4A
19	3B	4B
1A	3C	4C
1B	3D	4D
1C	3E	4E
1D	3F	4F
1E	3G	4G
1F	3H	4H
20	3I	5A
21	3J	5B
22	3K	5C
23	3L	5D

Task ID	350 Port	250 Port
24	4A	5E
25	4B	5F
26	4C	5G
27	4D	5H
28	4E	6A
29	4F	6B
2A	4G	6C
2B	4H	6D
2C	4I	6E
2D	4J	6F
2E	4K	6G
2F	4L	6H
30	5A	7A
31	5B	7B
32	5C	7C
33	5D	7D
34	5E	7E
35	5F	7F
36	5G	7G
37	5H	7H
38	5I	8A
39	5J	8B
3A	5K	8C
3B	5L	8D
3C	6A	8E
3D	6B	8F
3E	6C	8G
3F	6D	8H
40	6E	9A
41	6F	9B
42	6G	9C
43	6H	9D
44	6I	9E
45	6J	9F
46	6K	9G
47	6L	9H

Task ID	350 Port
48	7A
49	7B
4A	7C
4B	7D
4C	7E
4D	7F
4E	7G
4F	7H
50	7I
51	7J
52	7K
53	7L
54	8A
55	8B
56	8C
57	8D
58	8E
59	8F
5A	8G
5B	8H
5C	8I
5D	8J
5E	8K
5F	8L
60	9A
61	9B
62	9C
63	9D
64	9E
65	9F
66	9G
67	9H
68	9I
69	9J
6A	9K
6B	9L

Task ID	350 Port
6C	10A
6D	10B
6E	10C
6F	10D
70	10E
71	10F
72	10G
73	10H
74	10I
75	10J
76	10K
77	10L
78	11A
79	11B
7A	11C
7B	11D
7C	11E
7D	11F
7E	11G
7F	11H
80	11I
81	11J
82	11K
83	11L
84	12A
85	12B
86	12C
87	12D
88	12E
89	12F
8A	12G
8B	12H
8C	12I
8D	12J
8E	12K
8F	12L

Reading the Time Stamp

The time stamp is decoded into a regular date and time as part of the Menu 13 display. But when displaying the status log with the disk utilities or the shutdown dump use the following method to find when an entry was logged.

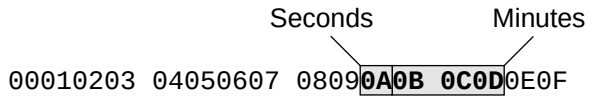


Figure 1-12. Entry Header with Time Stamp Detail

These instructions are designed for use with a calculator that has a hex-to-decimal conversion function. In most cases you will already know the date and can stop after finding the time. The example column shows the results of the steps on a time stamp of 2D5DB64B.

Table 1-7. Reading the Time Stamp

Step #	Step Description	Example
	Find the Time	
1	Transpose the minutes value and convert it to decimal.	$4BB65D \Rightarrow 4961885$
2	Divide by the number of minutes per day: 1440.	$\frac{4961885}{1440} = 3445.753472$
3	Note the integer portion and subtract it.	3445.753472 Integer Fractional
4	Multiply the fractional portion by the number of hours per day: 24.	0.753472×24 =18.083328
5	Note the integer portion and subtract it. The integer portion is the hour of the day on a 24-hour clock.	Hour of day = 18
6	Multiply the fractional portion by the number of minutes per hour: 60. Round to the nearest minute and note the result. (Any fractional portion is due to the calculator's round-off error in step 2.)	$0.083328 \times 60 = 4.99968$ Minute of hour = 5
7	Convert the seconds value to decimal.	$2D \Rightarrow 45$ Second of minute = 45
8	Combine the results from steps 5, 6 and 7. This is the time on a 24-hour clock.	18:05:45 or 6:05:45 PM

Table 1-7. Reading the Time Stamp (Continued)

<table>
<tr><th>Step #</th><th>Step Description</th><th>Example</th></tr>
<tr><td colspan="3">Find the Date</td></tr>
<tr><td>9</td><td>Divide the integer portion from step 2 by the number of days per year: 365.</td><td>$\frac{3445}{365} = 9.4383562$</td></tr>
<tr><td>10</td><td>Note the integer portion and subtract it.</td><td>9th year</td></tr>
<tr><td>11</td><td>Mentally, add the integer portion to 1984 and note it. This is the year the entry was logged.</td><td>1984 + 9 = 1993</td></tr>
<tr><td>12</td><td>Multiply the fractional portion from step 10 by the number of days per year: 365. Round to the nearest day. (Any fractional portion is due to the calculator’s round-off error in step 9.)</td><td>0.43835616×365
= 159.9999999
Day of the year = 160</td></tr>
<tr><td>13</td><td>Subtract the number of leap days from 1984 to the year before the entry was logged. (Leap years through 2000 are: 1984, 1988, 1992, 1996, 2000.)</td><td>160 - 3 = 157</td></tr>
<tr><td></td><td>If the result is negative, add 32 to it. Subtract 1 from the year found in step 11. The month is December. Skip the rest of the steps.</td><td>If day of the year = 1, then:
1 - 3 = -2; -2 + 32 = 30;
1993 -1 = 1992
Date is 30 December 1992</td></tr>
<tr><td>14</td><td>Determine the month with the table below. Use the regular or leap year column depending on the year the entry was logged.
<table>
<tr><th>Regular Year</th><th>Month</th><th>Leap Year</th></tr>
<tr><td>0-30</td><td>January</td><td>0-30</td></tr>
<tr><td>31-58</td><td>February</td><td>31-59</td></tr>
<tr><td>59-89</td><td>March</td><td>60-90</td></tr>
<tr><td>90-119</td><td>April</td><td>91-120</td></tr>
<tr><td>120-150</td><td>May</td><td>121-151</td></tr>
<tr><td>151-180</td><td>June</td><td>152-181</td></tr>
<tr><td>181-211</td><td>July</td><td>182-212</td></tr>
<tr><td>212-242</td><td>August</td><td>213-243</td></tr>
<tr><td>243-272</td><td>September</td><td>244-273</td></tr>
<tr><td>273-303</td><td>October</td><td>274-304</td></tr>
<tr><td>304-333</td><td>November</td><td>305-334</td></tr>
<tr><td>334-364</td><td>December</td><td>335-365</td></tr>
</table></td><td>Month is June</td></tr>
<tr><td>15</td><td>Subtract the lower value of the month’s range. Add 1.</td><td>157 - 151 +1 = 7
Day of the month = 7</td></tr>
<tr><td>16</td><td>Combine the results from steps 11, 14 and 15.</td><td>7 June 1993</td></tr>
</table>

1.5.2 IORB Header

The IORB (Input/Output Request Block) header gives information about an exchange of control bus messages. The header is 32 bytes long. See Figure 1-13.

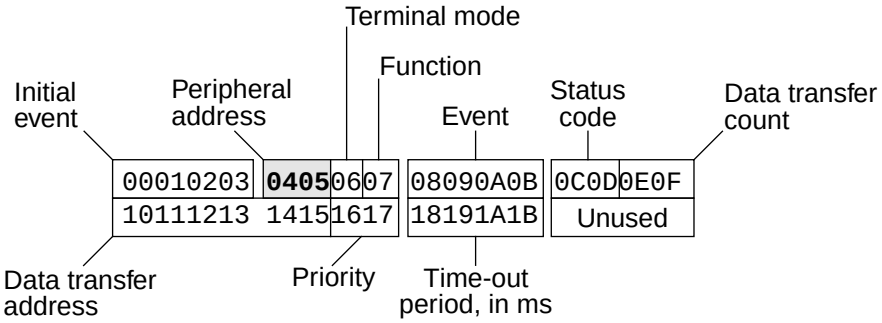


Figure 1-13. IORB Header

Key Field

Peripheral address. This field identifies the peripheral, or destination, card that the CP was communicating with through the CB messages. The peripheral is identified in terms of a bank, slot and channel. Each of these is expressed as a four-bit number (one hex digit) as shown in Figure 1-14. Translate the peripheral address with Table 1-8 and Table 1-9 on the following pages.

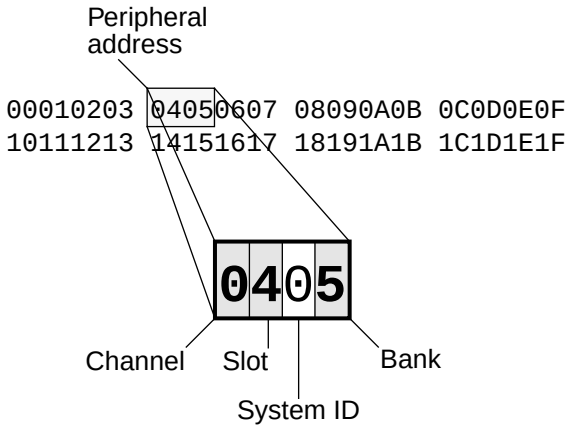


Figure 1-14. Peripheral Address Detail

- **Bank** identifies a collection of slots.
- **Slot** identifies a card within a bank. The type of card in a particular slot depends on the message server configuration.
- **Channel** identifies a port on a line card.

Other Fields

Terminal mode.

00 Normal terminal channel

01 Simplified Transfer Protocol channel

Function. The meaning depends on the type of operation, as shown in Table 1-10, “IORB Function and Status Codes,” on page 32.

Status code. The meaning depends on the type of operation, as shown in Table 1-10, “IORB Function and Status Codes,” on page 32. With the System Manager Console operation, the meaning also depends on the function code.

Table 1-8. Bank and Slot of the Peripheral Address

Bank	Slot	350 Card	250 Card
0	0	Not used	File card portion of CCF
	1	Card 2	Line TIC
	2	Card 3	Line TIC
	3	Card 4	Line TIC
	4	Card 5	Line TIC
	5	Card 6	Line TIC
	6	Card 1	Line TIC
	7	Not used	Line TIC
1	0	Card 8	Not used
	1	Card 9	Line TIC
	2	Card 10	Line TIC
	3	Card 12	Not used
	4	Card 13	Not used
	5	Card 14	Not used
	6	Card 7	Not used
	7	Card 11	Not used
2	0	Card 16	
	1	Card 17	
	2	Card 18	
	3	Card 26	
	4	Card 27	
	5	Card 28	
	6	Card 25	
	7	Card 29	
3	0	Card 30	
	1	Card 31	
	2	Card 32	
	3	Card 34	
	4	Card 35	
	5	Card 36	
	6	Not used	
	7	Card 15	
4	0	Not used	
	1	Card 20	
	2	Card 21	
	3	Card 22	
	4	Card 23	
	5	Card 24	
	6	Card 19	
	7	Card 33	

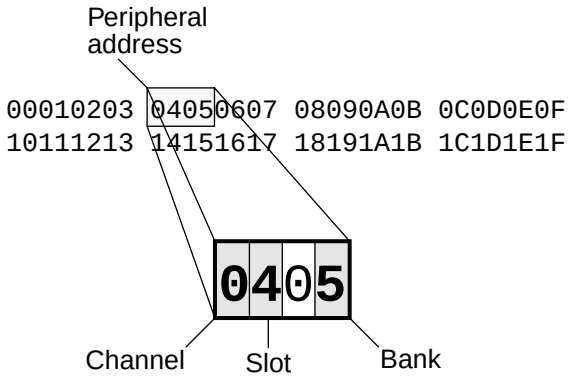


Figure 1-15. IORB Header with Peripheral Address Detail

Table 1-9. Channel of the Peripheral Address

Channel	350 Line Card Port	250 Line TIC Port
0	A	A
1	B	B
2	C	C
3	D	D
4	E	E
5	F	F
6	G	G
7	H	H
8	I	
9	J	
A	K	
B	L	

Table 1-10. IORB Function and Status Codes

Operation	Function Codes		Status Codes	
	Code	Description	Code	Description
Control Bus	00	Read	00	OK
	01	Write, then read	01	Operation failed
	02	Cancel current operation	02	Incoming message lost
	03	Write	03	Operation cancelled
	04	Reset peripheral device	04	Unsolicited incoming message before write
	05	Special post operation	05	Incoming message after write
			08	I/O time-out
			09	Task aborted by daemon
Scanner Card	00	Read	00	Normal return
	01	Write	01	Incoming message lost
	02	Read conditional	02	Incoming message available, write was not done
	03	Cancel read	03	No message available
	04	Unconditional write	04	Invalid operation
			05	Operation failed
Data Bus	00	FS from/to LC	00	OK
	01	CP from/to FS	01	Invalid request
	02	CP from/to LC	02	DB/DMA time-out
			03	SBI DMA FIFO underrun
			04	SBI DMA FIFO overrun
			05	DB checksum (CRC error)
System Manager Console *(Status code depends on function code)*	00	Read	00	Normal return
	01	Write	01	Receiver queue empty
	03	Write unconditional	02	Operation failed
	04	Cancel write	03	Invalid request
	05	Connect terminal	04	Task not connected
	06	Disconnect terminal		
	07	Read block		
	08	Get input count		
	0A	Open physical terminal channel		
	02	Set baud rate	00	TX = 1200, RX = 1200
			01	TX = 9600, RX = 9600
			02	TX = 1200, RX = 75
	09	Set/reset raw input mode	00	Set raw mode off
			01	Set raw mode on

Table 1-10. IORB Function and Status Codes (Continued)

Operation	Function Codes		Status Codes	
	Code	Description	Code	Description
ACP	00	ACP card read	00	OK
	01	ACP card write	01	Incoming message lost
	02	ACP post	02	Incoming message is available
	03	ACP get buffer	03	Operation failed
	04	ACP wait on timer	04	ACP out to lunch
	05	Set up multiple wait	05	ACP function aborted by OSX
	06	Write to serial port	06	Serial port write done
			07	Multiple wait done
			08	LC posted ACP event
			FF	Operation time-out

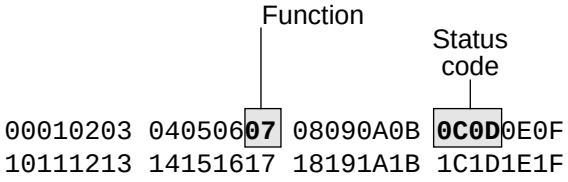


Figure 1-16. IORB Header with Function and Status Code Detail

1.5.3 Control Bus Messages

The CP uses control bus messages to exchange instructions and data with other parts of the message server. The messages usually appear in the status log as request/response pairs (CB-out and CB-in, respectively). Usually, requests come from the CP and responses go to the CP. Each message is 16 bytes long. See Figure 1-17.

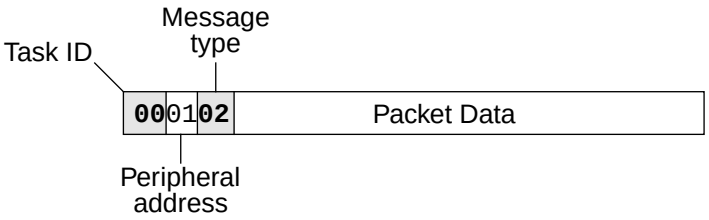


Figure 1-17. Control Bus Message Format

The response message echoes the task ID and peripheral address (offset 00-01) of the request. Offset 03 of the response is usually a return code.

Sometimes, the message type of the request message does not match up with that of the response message, perhaps showing a nonsensical type such as 00 or FF. Offsets 03 and 04 of the request are sometimes overwritten in the course of logging the entry. This does not interfere with the system's operation but does make interpreting the status log entry more difficult. In such a case, assume the request was appropriate to the response. If this is not adequate, check the CB Trace Buffer. The most recent messages are saved in offset 10A0-189F of Record 50, and can be read there or in the CB Trace Buffer portion of the shutdown dump.

Key Fields

Task ID. Also known as the source ID, it identifies the task that produced the request message. Line tasks can also be associated with a particular port. Translate the task ID with Table 1-5, “Task IDs,” on page 24.

Message type. Indicates the meaning of the message and how to interpret its packet data. The message type depends on the kind of card that the CP was communicating with. Determine that with the peripheral address (see below). Find descriptions of the control bus message types for:

File cards in Chapter 3

Line cards in Chapter 4

ACPs in Chapter 5

PIC cards in Chapter 6

Since control bus messages are usually logged in request/response pairs, the descriptions are organized by the message type of the request. The response is described immediately after the request.

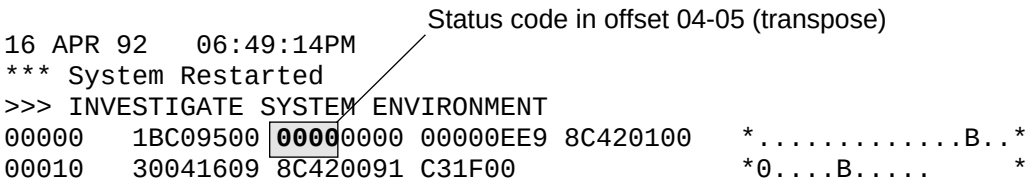
Other Fields

Peripheral address. Also known as the destination ID, it indicates the card the CP is communicating with. This is the same value as in offset 04 of the IORB header. Since the bank value is missing, the field’s usefulness is limited. Check offsets 04-05 of the IORB header for full destination information. See Section 1.5.2, “IORB Header,” on page 28.

Packet data. Thirteen bytes of data whose interpretation depends on the message type. Packet data formats for each message type are described in Chapters 3 through 6.

CHAPTER 2: STATUS CODES

This chapter gives descriptions of all status codes. They are listed in numerical order, based on the status code in offset 04-05 (after transposing):

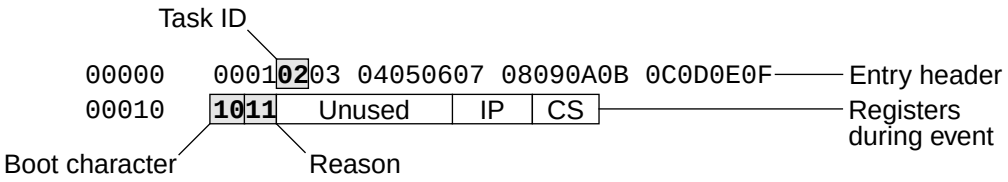


Adjacent status codes using the same format may be grouped together.

See Section 1.4, “READING A STATUS CODE DESCRIPTION,” on page 18 and Section 1.5, “STANDARD FIELD GROUPS,” on page 21.

All values in the illustrations are the bytes’ offsets, not sample data.

00 Boot Reason and Time

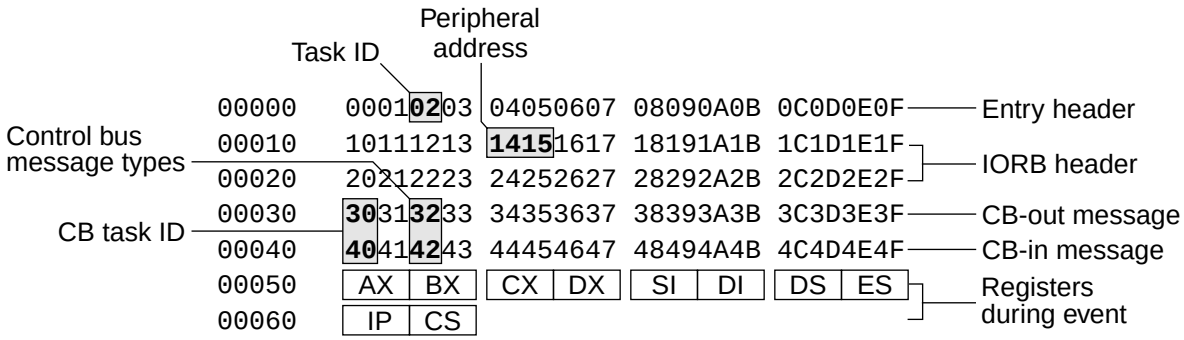


Offset	Label	Field Description
10	Boot character	Character the voice processing module was booted with, in ASCII: 30 Booted with **0** 41 Booted with **A** 42 Booted with **B**
11	Reason	Why the system was down: 00 Input power failure (brown out) 01 Input power failure (long) 02* Interrupt 3 (major system error) 03* Memory parity error 04* System manager shutdown 05 Red temperature NMI 06 Watchdog timer NMI 07 OPI ready error 08 CP was reset, or, undetermined error (power failure) 20 DS is not Task State Segment. 40 System crash routine entered—SRAM considered to be OK. 50 Unable to write SST. 60 Unable to write Rec 50.

* SST will dump and write to record 50.

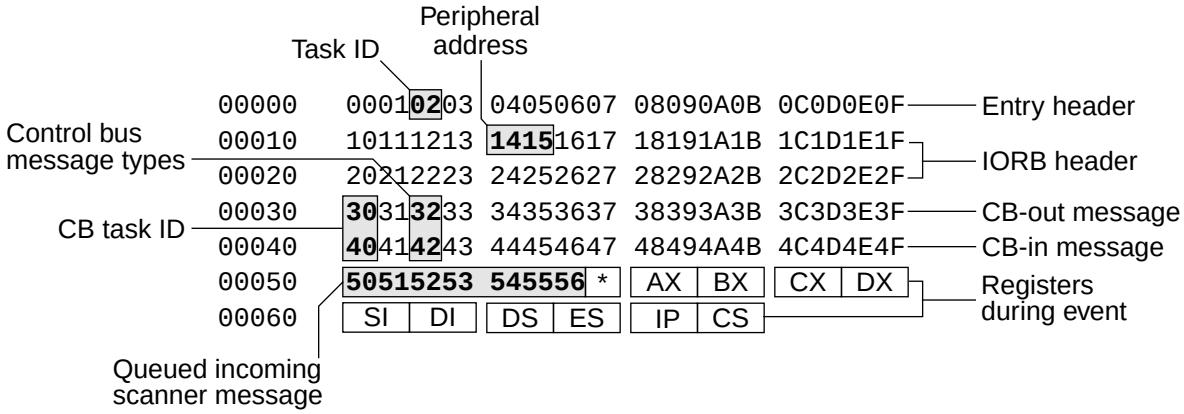
01 SST Bad at Write

The format of the system status table is bad.



02 Scanner Wrong Incoming Message

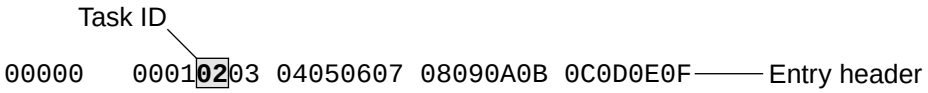
The scanner has probably received a message that is not valid from either the RS-232 port or the remote access port.



Offset	Label	Field Description
50-56	Queued incoming scanner message	Check offsets 50 and 51 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
57	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

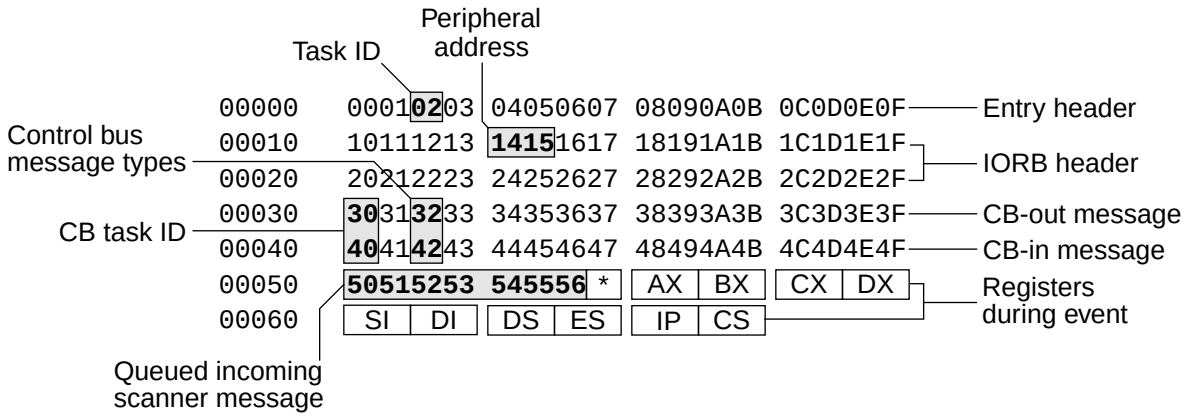
03 Scanner No Carrier After Ring

Indicates that someone called the RDAC port and hung up without entering the system. If this status code frequently occurs, try changing the telephone number assigned to the RDAC port. Also, ensure that the remote-access number is not part of the system's hunt group.



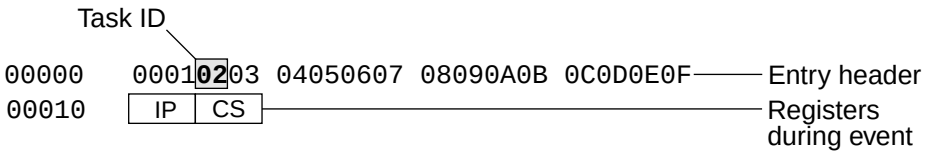
04 RS-232 Integration Link Reset

Information only. Indicates that the link was reset in Menu 13.6.



Offset	Label	Field Description
50-56	Queued incoming scanner message	Check offsets 50 and 51 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
57	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

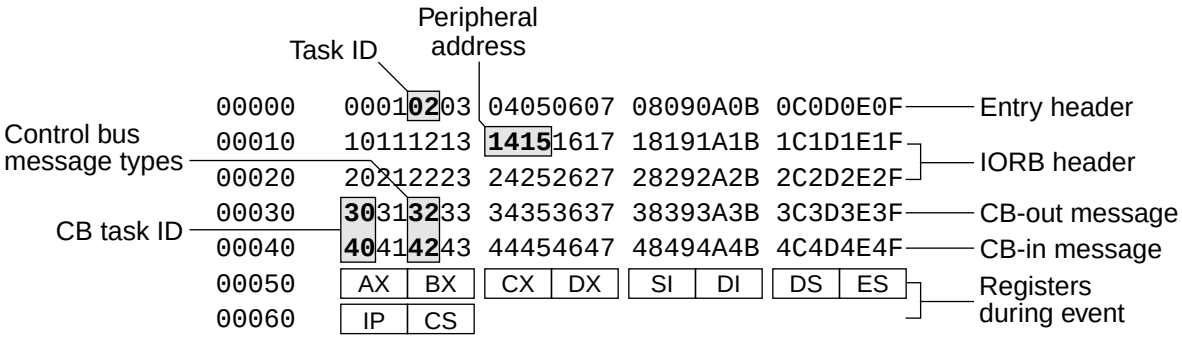
05 Status Log Cleared



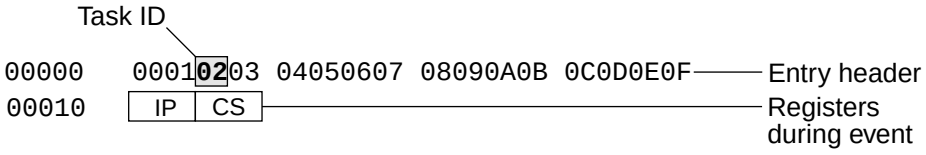
06 Error During Garbage Collect

This error is usually due to the number of drives running being less than the number of drives installed while attempting to run garbage collect.

07 SMT Internal Error



08 SMT Software Alarms Cleared



09 Software Download Utility Error

0A SMT Invalid User Record Lock State

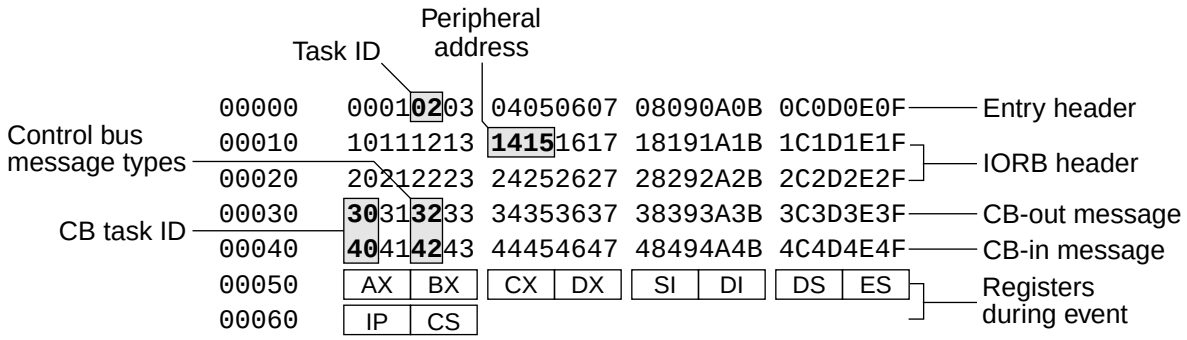
This error is usually logged when a system management task attempts for thirty minutes to access a user record that is locked. Possible bad line card.

0B SMT File System I/O Error

Two reasons why this error is logged are:

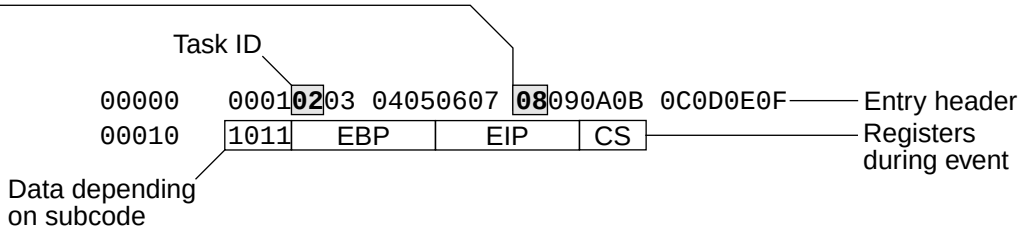
- The system manager has deleted a node and then calls the system manager mailbox to retrieve messages during the 4-hour period needed by the system to delete the node. An external address record message is played.
- A bad CDR block is downloaded.

Possible bad file card.



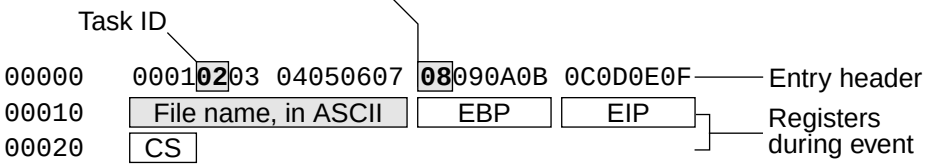
0C SMT-Related OCL Error

10	Problem sending application status command to OCL. Offset 10-11: return code from X_SIGNAL_32.
14	OCL initialization error, ACACLLIB_INIT_16 failed. Offset 10-11: return code from ACACLLIB_INIT_16.
15	Bad response to OCL start line command. Offset 10-11: response type returned from OCL.
16	Bad response to OCL stop line command. Offset 10-11: response type returned from OCL.
17	Bad response to OCL line status query. Offset 10-11: response type returned from OCL.
18	Bad OCL signal—line status error.
19	Problem sending application status command to OCL. Offset 10-11: return code from X_SIGNAL_16.
1A	Bad OCL signal—application add error.
1B	Bad OCL signal—application delete error.
1C	Bad OCL signal—application modify error.
1D	Bad OCL signal—LUN status error.
1E	Bad OCL signal—clear LUN error.
1F	Bad OCL signal—EAP add error.
20	Bad OCL signal—EAP delete error.
21	Bad OCL signal—EAP modify error.
22	Bad OCL signal—line configuration error.
23	Bad X.25 LUN open error.
24	Bad X.25 LUN read error.
25	Bad X.25 LUN write error.
26	Bad X.25 LUN IOCTL error.
27	Bad X.25 LUN close error.
28	Bad X.25 LUN I/O abort error.
29	Bad return from priority queue. Offset 10-11: return code from ACOS_RCVPQ_16.
2A	Wrong item number (line, application, LUN, etc.) returned by OCL. Offset 10-11: ID number returned from OCL.
2B	Wrong response to OCL queue entry. Offset 10-11: response type returned from OCL.
2C	SMT/OCL application states out of synch. Offset 10-11: file ID.

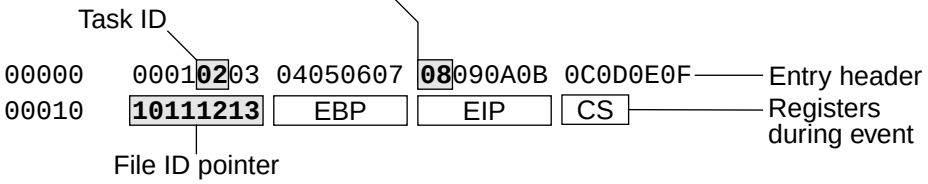


0D SMT-Related File Management Error

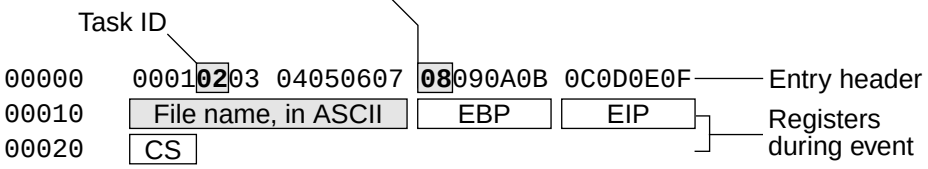
01	X.25 configuration file does not exist.
02	Creation of X.25 configuration file failed.
03	Opening X.25 configuration file failed.



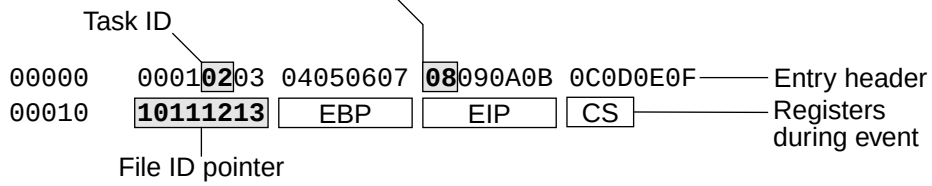
04	Closing X.25 configuration file failed.
05	Error reading X.25 configuration file.
06	Error writing X.25 configuration file.



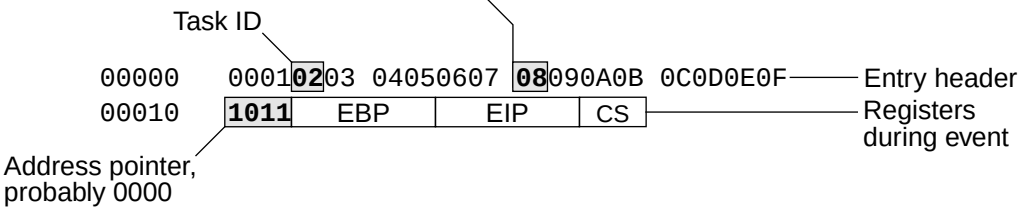
09	Application number—file does not exist.
0A	Application number—file creation failed.
0B	Application number—file open failed.



0C	Application number—file close failed.
0D	Application number—file read error.
0E	Application number—file write error.



23	Unable to allocate memory for the file record buffer.

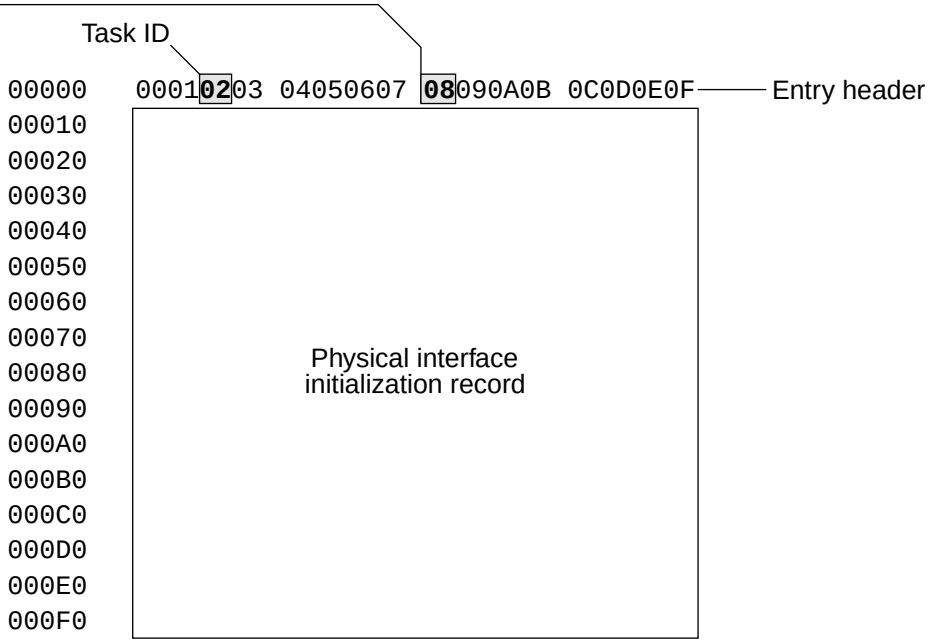


0E SMT-Related X.25 Line Error

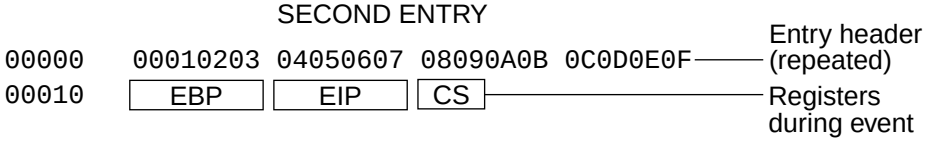
07 Problem sending the start X.25 physical interface command to OCL.

WHOLE "ENTRY" USES TWO STATUS LOG ENTRIES

FIRST ENTRY



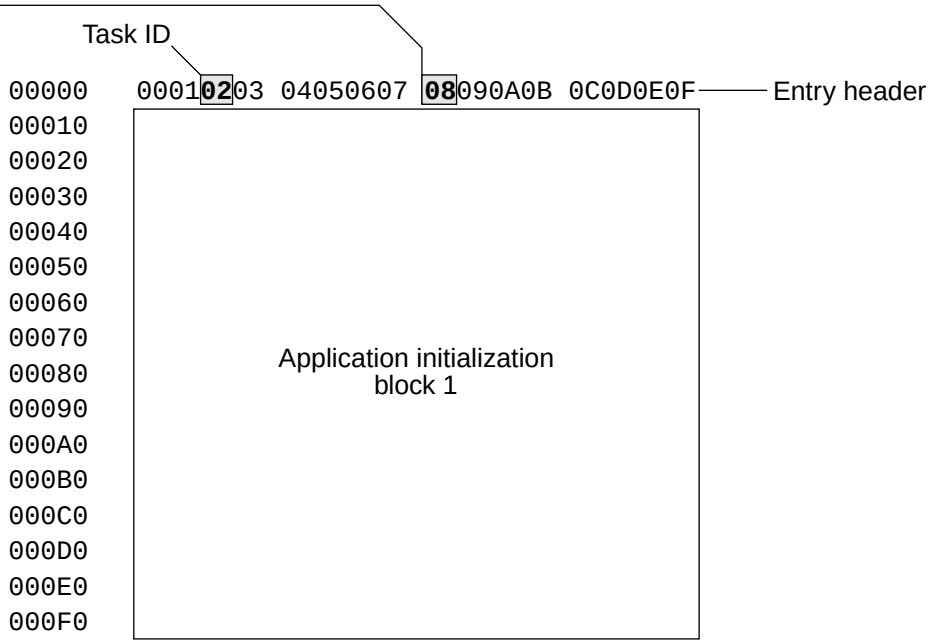
SECOND ENTRY



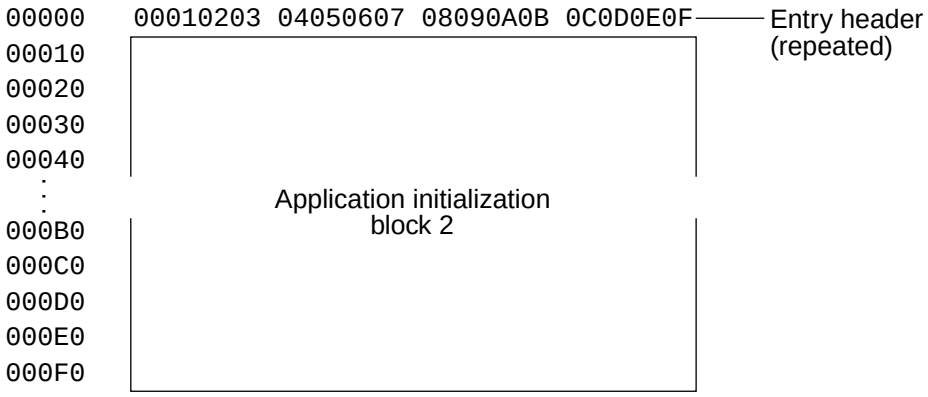
0F Problem putting an entry on the OCL signal queue.

WHOLE "ENTRY" USES THREE STATUS LOG ENTRIES

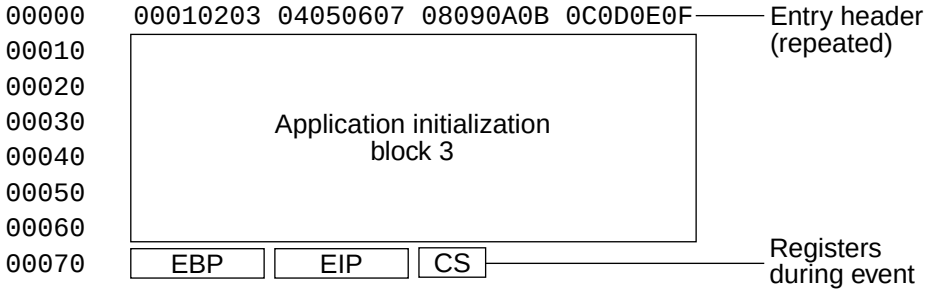
FIRST ENTRY



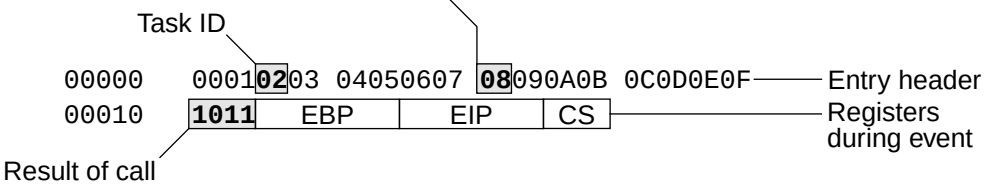
SECOND ENTRY



THIRD ENTRY

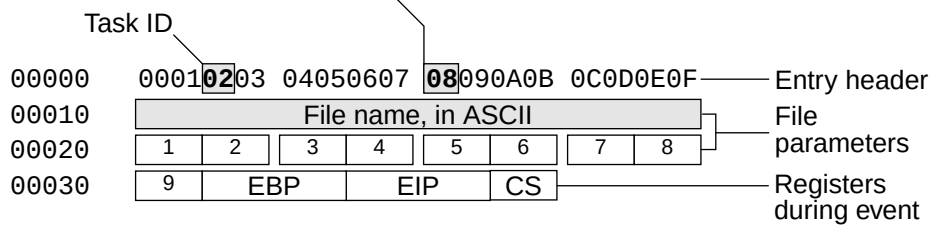


23	X.25 open failure (normally LMS LUN).
24	X.25 read failure (normally associated with LMS).
25	X.25 write failure (normally associated with LMS).
26	X.25 IOCTL failure (normally associated with LMS).
27	X.25 close failure (normally associated with LMS).
29	Priority queue receive error (normally associated with LMS, but this can also mean an unexpected receive type).



0F File Creation Informational Entry

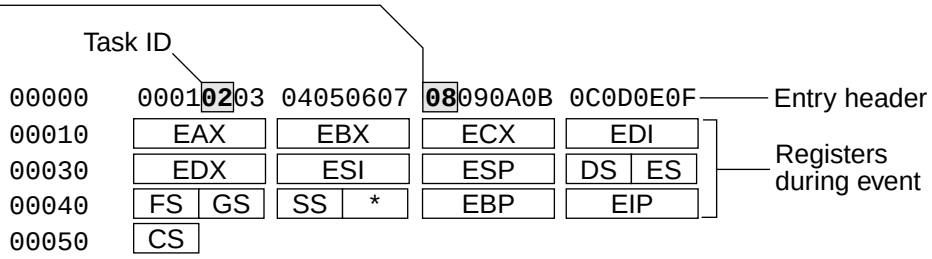
00	System created X.25 configuration file. This entry should be seen only if this is a first-time installation. If this code is seen at any other time, the file had to be recreated and any previous X.25 configuration information was lost.
02	Creation of X.25 configuration file failed.
08	System created application configuration file. This entry should be seen only if this is a first-time installation or right after the system has been initialized. If this code is seen at any other time, the file had to be recreated and any previous application configuration information was lost.
0A	Creation of application configuration file failed.



[1]File type
[2]Locking definitions
[3]Access definitions
[4]Creator
[5]Super record size
[6]Record size
[7]Super field size
[8]Field size
[9]Record count

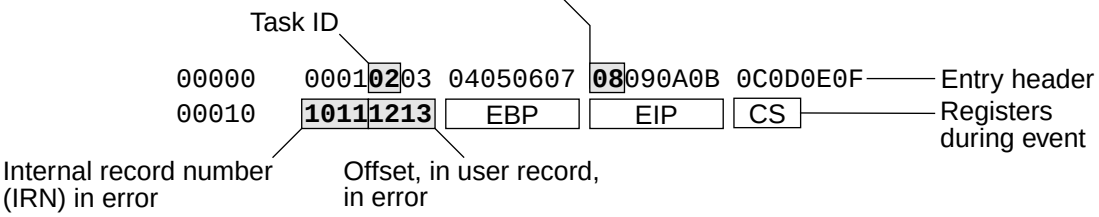
10 SMT-Related AMIS Internal Error

01	Bad AMIS EAR number.
02	AMIS EAR Array is full.
03	AMIS EAR Entry is full.
04	Failed to delete AMIS EAR number.
06	Garbage Collect failed to remove unused AMIS EAR numbers.

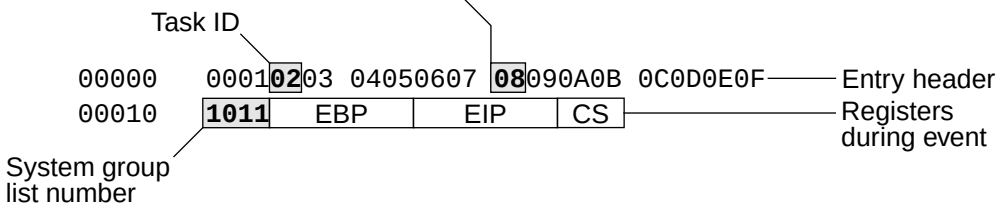


11 Error During Upgrade Performed by SMT

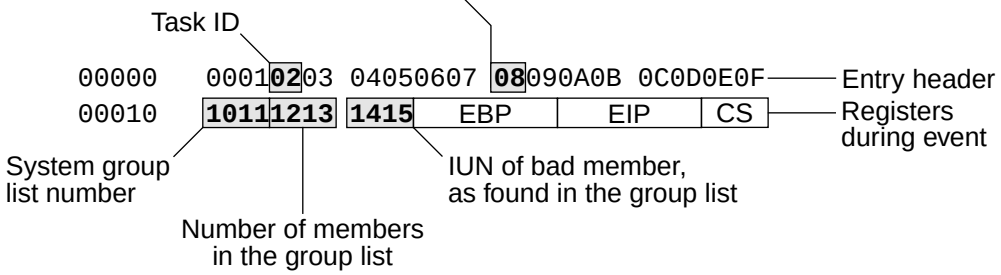
01	Error reading user record or invalid user record. Not upgraded.
02	Allowed length exceeded during upgrade. Group lists or messages omitted.
03	Error during follow-me-forward upgrade.
04	Error during personal group list upgrade.
05	Error during message descriptor upgrade.



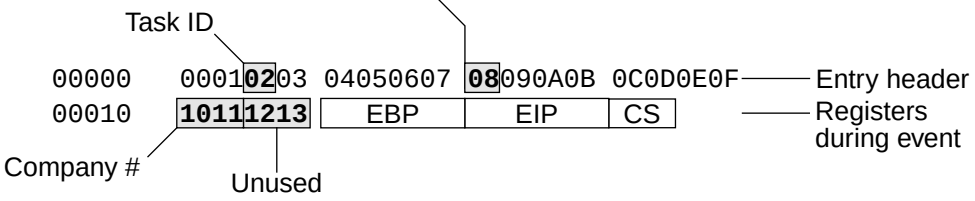
11 Error reading, writing or adding the system distribution list. The list was not converted.



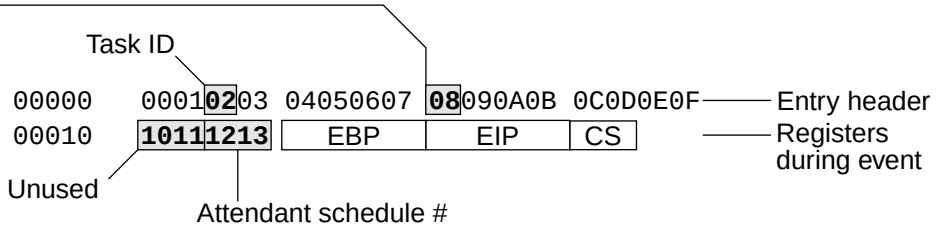
12 Error found in a member of the system distribution list. The member was not converted.



13 Error reading, writing or adding a company record. The record was not converted.



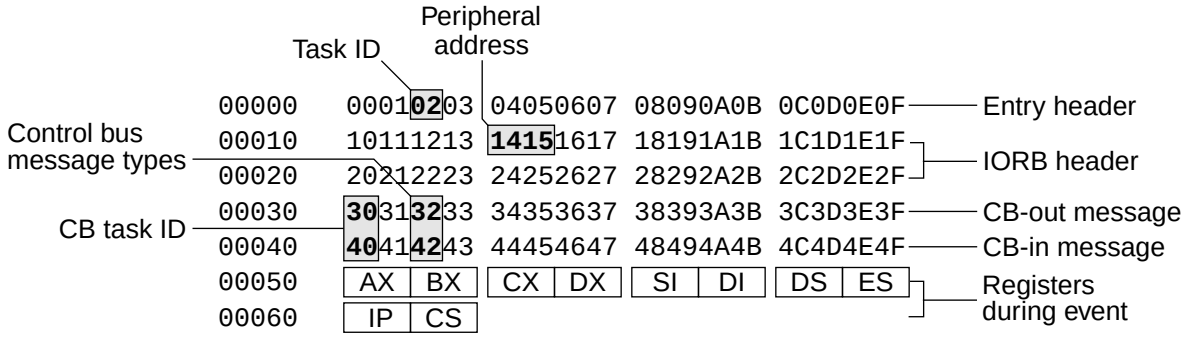
14 Error reading, writing or adding an attendant record. The record was not converted.



12 SMT Could Not Get a New User Record

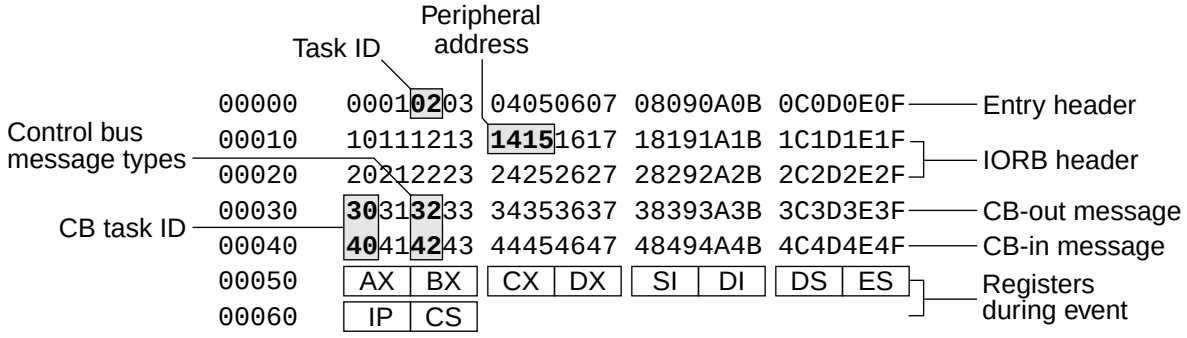
All of the user records initially configured in the system are in use. If the system attempts to create a new mailbox, company record, attendant record, etc., “system full or capacity reached” is displayed on the system manager’s screen.

To correct this problem: get a bigger system, increase the system capacity or delete unused mailboxes.



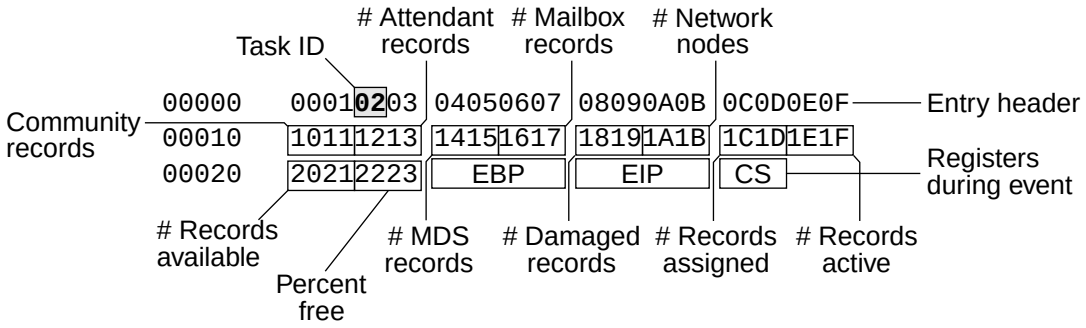
13 SMT Could Not Find the ICN in the AMT

The ICN used to look up the AMT is not valid. The expected AMT entry might either be corrupted or it never existed. If a bad company record is logged, the corresponding AMT entry was never created. If the bad company record is known, it can be fixed and the AMT can be rebuilt by rebooting the system. Otherwise, find which company record the ICN is associated with, and determine if the AMT entry is corrupted or if the ICN is simply invalid.



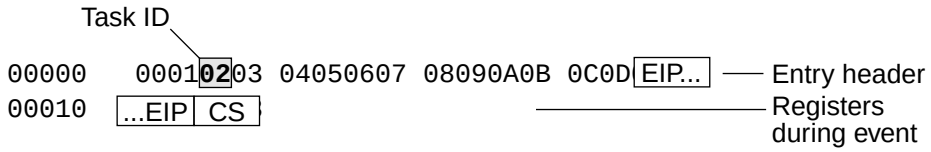
14 IRN Usage Report

This entry is logged on completion of Reformat Option 0, User Record Validity Check.



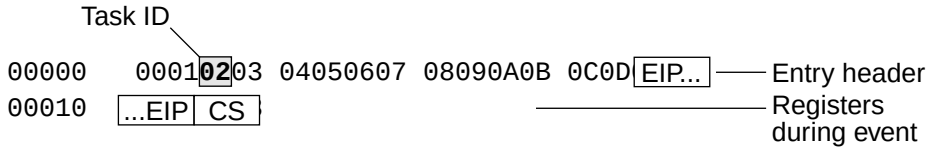
16 Bad Password Attempts Accessing SMT

Someone entered three bad passwords while attempting to access the SMT.



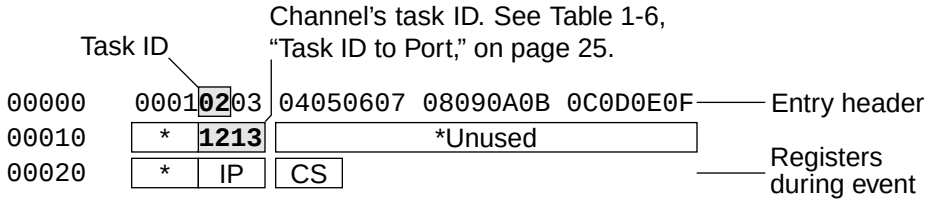
17 Possible Unauthorized Access to SMT

Someone logged into the SMT and, at the security banner, logged off. This could be an indication of an unauthorized access attempt.



18 Channel Disabled

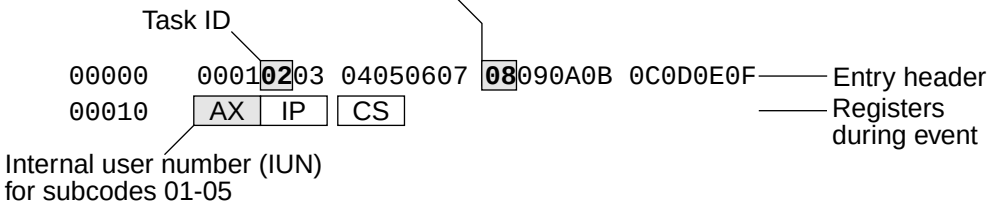
Applies to IVMS and MID Integrations only.



19 Scanner Task Internal Error

This error could be logged because of an inconsistency in the system tables, or an invalid response from the scanner to the CPU.

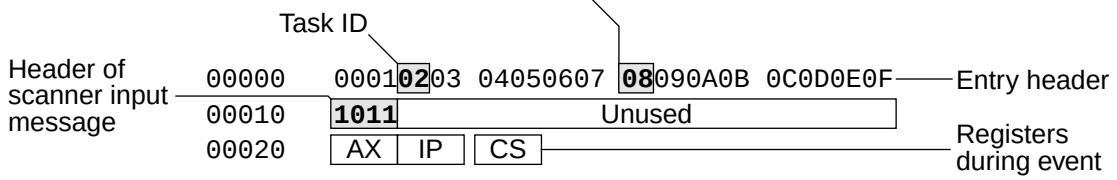
01	Bad user record.
02	No priority queue assigned to message-waiting link number.
03	Bad link number in user record (with ACP integration only).
04	Could not lock user record.
05	Could not refresh user record.
06	CDR buffer not available.



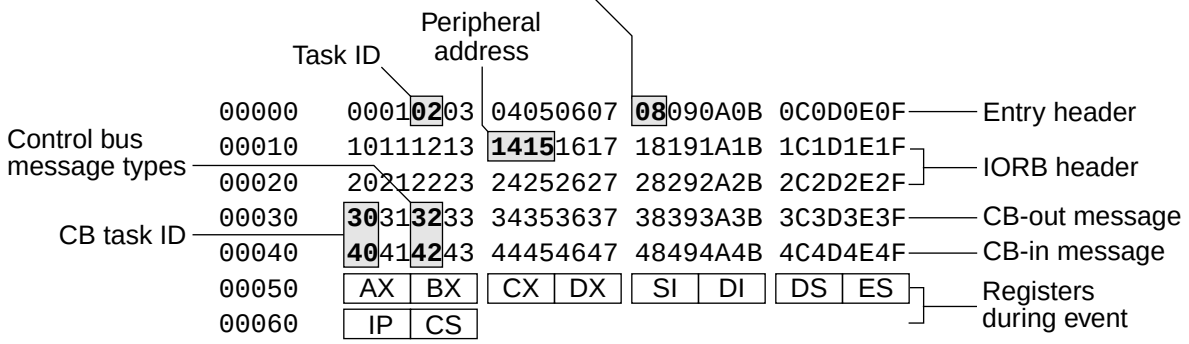
1A Scanner Task Protocol Error

This error could be logged because of an inconsistency in the system tables, or an invalid response from the scanner to the CPU.

01	Could not attach scanner. AX, in offset 20-21, contains the return code from the attachment routine.
02	Invalid channel referenced by scanner. The channel number is in the scanner input message.
03	Invalid scanner message.
04	Invalid type sent from scanner in line status message. The type is in the scanner input message.



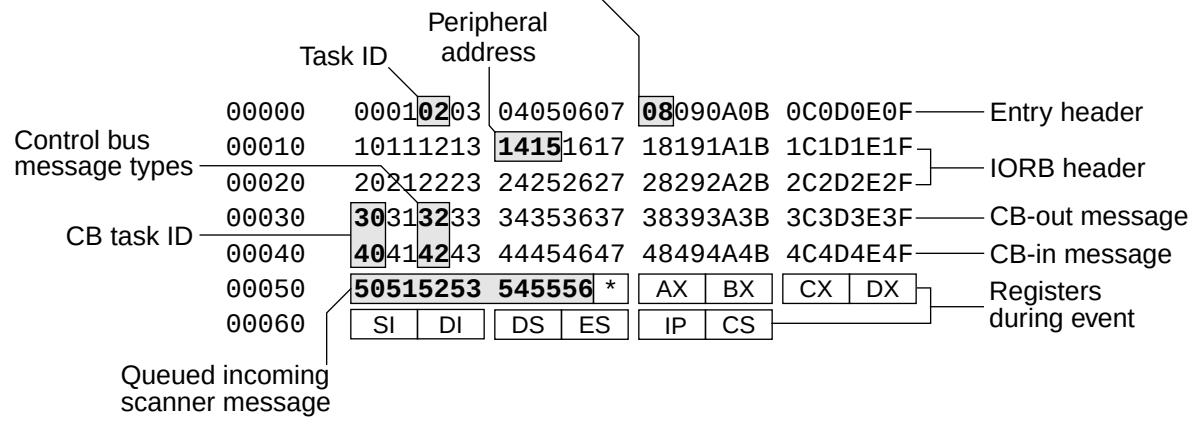
05	Bad return code from system partition (file read/write).
06	Bad return code in control bus message from file card (file read/write).



1B Scanner Task Message Waiting Error

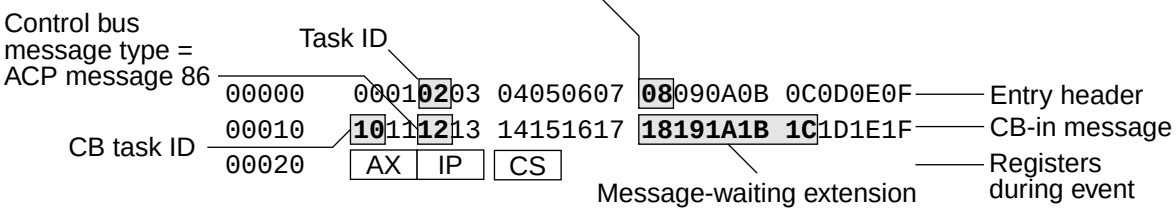
A switch or PID device sent a **block** message to the Scanner Task. This means that the message-waiting operation could not be performed and should be tried again.

01	Message waiting time-out. The scanner did not respond in time.
02	Queue overflow during message waiting. Two messages were received that were not the correct response from the scanner.

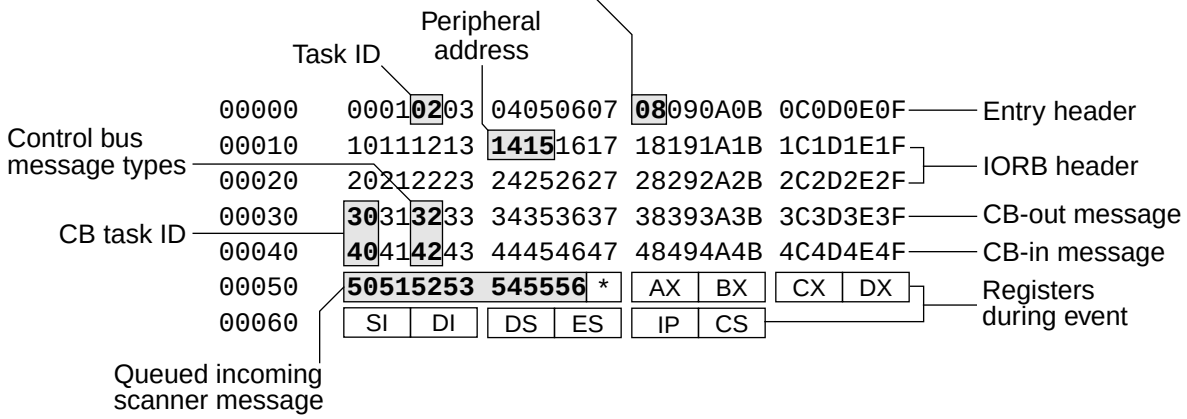


Offset	Label	Field Description
50-56	Queued incoming scanner message	Check offsets 50 and 51 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
57	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

03	Message waiting busy. The extension number in the block message did not match an extension in the AMT. This can happen when the message-waiting extension is different than the mailbox extension.



05 Unexpected negative acknowledgment from scanner. This is usually seen while installing a new DMID integration or changing the PBX type specification to DMID from something else.

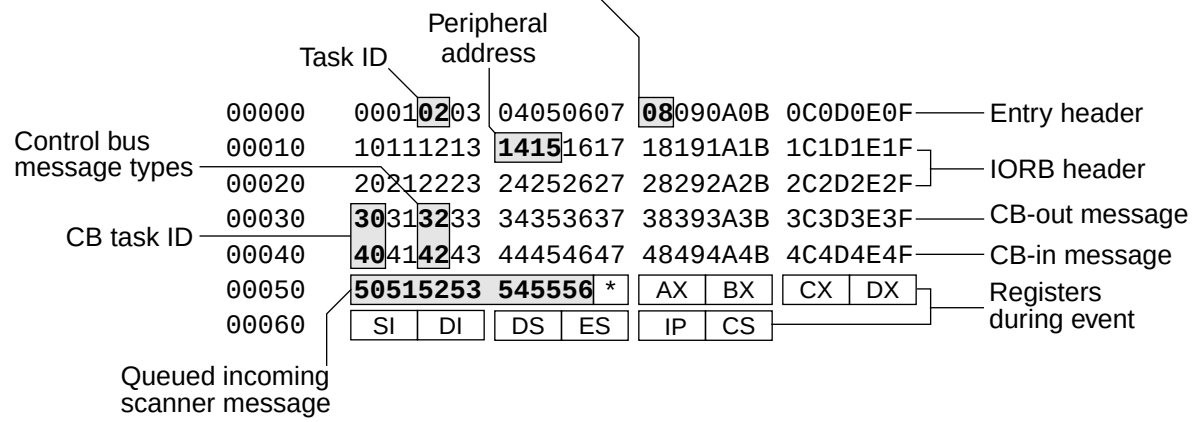


Offset	Label	Field Description
50-56	Queued incoming scanner message	Check offsets 50 and 51 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
57	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

1C Message Waiting, Illegal Extension

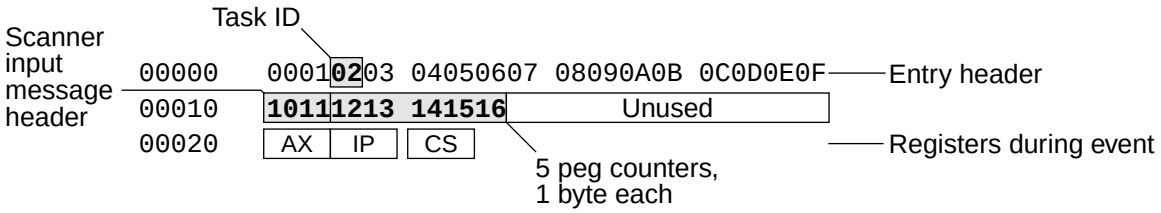
This error would be logged during problems with 1AESS, 5AESS, DMS100 and SL100 SMDI integrations using RS-232. To resolve this error, perhaps check the mailbox profile to assure that the extension field is correct and that the number is seven digits long. If the profile is correct, try having the extension validity checked in the CO database and the COS for message waiting ability.

01	Bad extension.
02	Extension does not have message waiting.



Offset	Label	Field Description
50-56	Queued incoming scanner message	Check offsets 50 and 51 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
57	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

1D Error Counters Reported by Scanner



Offset	Peg Counter Description—depends on integration type		
	NEC, PID/R, APID75, APID85, DMID	**IVMS, MID**	**Centrex**
12	Number of bad (false) LTNs received.	Number of bad (false) LTNs received.	Number of bad (false) LTNs received.
13	Number of incomplete messages received.	Number of incomplete messages received or time-outs while waiting for an acknowledgment.	Unused
14	Number of times the wrong number of characters was in a message before the end-of-text character was found.	Number of messages received out of sequence.	Unused
15	Number of integration link errors received.	Number of integration link errors received.	Number of integration link errors received.
16	Number of times an integration message had an illegal character.	Number of messages of the wrong length received.	Number of incomplete messages received.

1E Error Information from PID

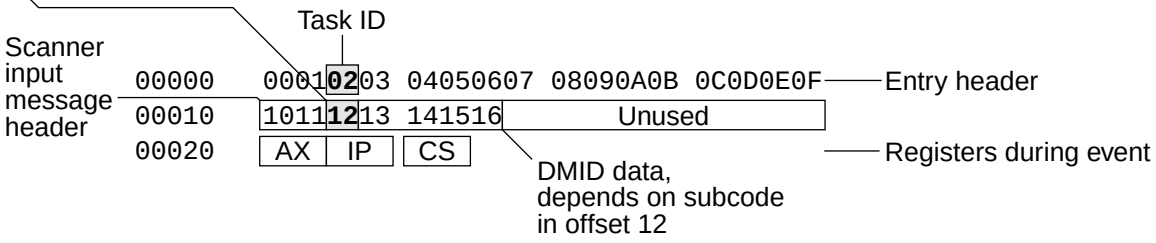
Note that the **subcode is in offset 12**. Offset 08-09 is unused.

Also, the subcode meaning depends on the PID type. Below are the subcodes for DMID integrations. For MID subcodes, see “MID Integration” on page 66.

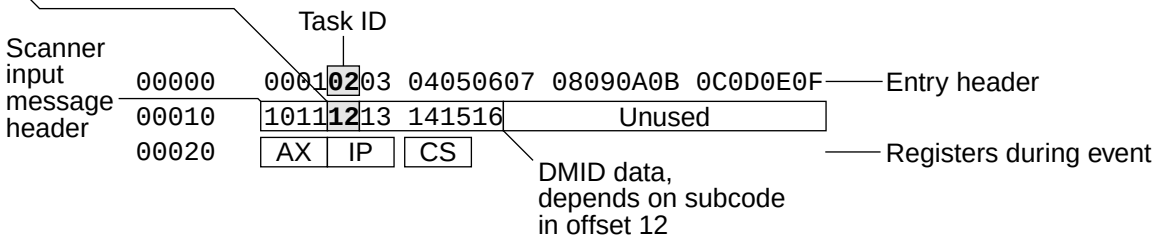
DMID Integration

The DMID data field in offset 13-16 varies with the subcode in offset 12.

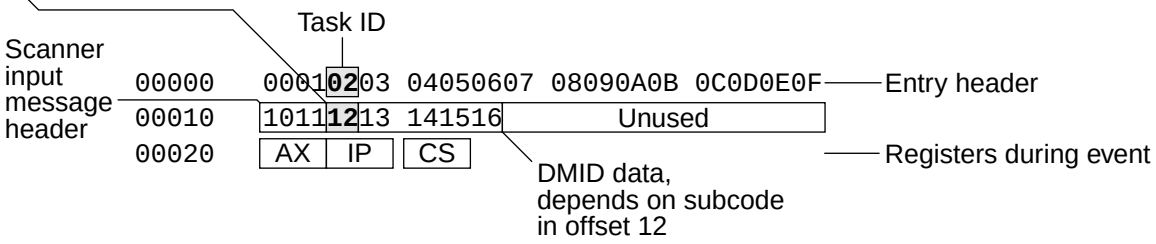
00	DMID firmware revision number. Logged when the DMID is powered up, even if error logging is disabled. DMID data is: Offset 13-14: firmware revision number. Offset 15-16: unused.
01	RS232 serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 13: number of no RS-232 buffer errors. Offset 14: number of bad RS-232 message length errors. Offset 15: number of RS-232 message time (100 ms) expired errors. Offset 16: number of bad RS-232 header errors.
02	Interrupt 0 or 1 error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 13: number of interrupt 0 errors. Offset 14: number of interrupt 1 errors. Offset 15: number of watchdog interrupt errors. Offset 16: unused.
03	MPDA-A serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 13: number of MPDA I/F parity errors. Offset 14: number of MPDA I/F overflow errors. Offset 15: number of MPDA I/F bad header errors. Offset 16: number of MPDA I/F message time (100 ms) expired errors



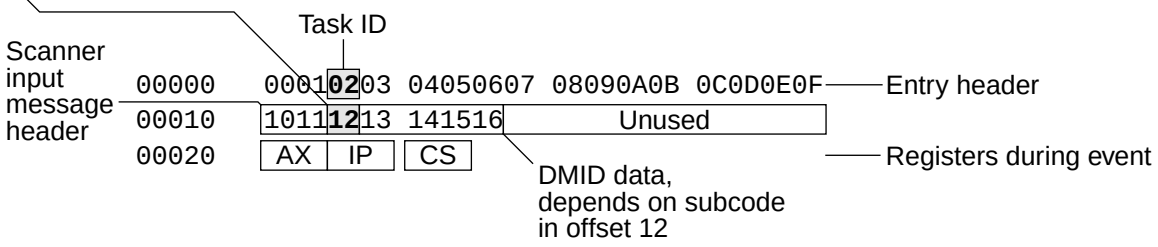
04	MPDA-B serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 13: number of MPDA I/F parity errors. Offset 14: number of MPDA I/F overflow errors. Offset 15: number of MPDA I/F bad header errors. Offset 16: number of MPDA I/F message time (100ms) expired errors.
05	MPDA-C serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 13: number of MPDA I/F parity errors. Offset 14: number of MPDA I/F overflow errors. Offset 15: number of MPDA I/F bad header errors. Offset 16: number of MPDA I/F message time (100ms) expired errors.
06	DMID received unknown transparency message. It reset the phone and re-established transparency. When the PBX initialized, it sent this message. Service affecting, fatal. DMID data is: Offset 13-14: received message. Offset 15-16: unused.
07	DMID received unknown transparency message. It reset the phone and re-established transparency. When the PBX initialized, it sent this message. Service affecting, fatal. DMID data is: Offset 13-14: received message. Offset 15-16: unused.
15	Pilot number download time-out. DMID data is unused.
16	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 13: MPDA A, B or C. Offset 14: A/B/C state. Offset 15: A/B/C timer. Offset 16: data.
17	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 13: MPDA A, B or C. Offset 14-16: data.
18	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 13: MPDA A, B or C. Offset 14: A/B/C state. Offset 15: A/B/C timer. Offset 16: data.



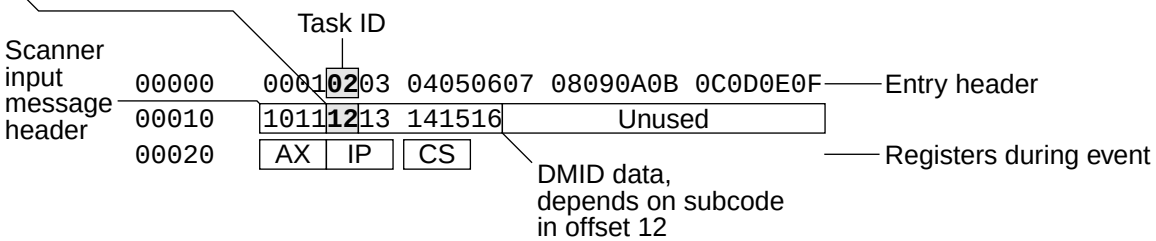
19	MPDA-A/B/C power-up warning. Not service affecting. DMID data is: Offset 13: MPDA A, B or C. Offset 14: A/B/C state. Offset 15: A/B/C timer. Offset 16: data.
1A	MPDA-A/B/C power-up warning. Not service affecting. DMID data is: Offset 13: MPDA A, B or C. Offset 14: A/B/C state. Offset 15: A/B/C timer. Offset 16: data.
20	DMID received LED wink message and did not know what to do with it. Not service affecting. Notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.
22	DMID received LED flash message when the channel was in the wrong state. Not service affecting. The PBX can send multiple lamp flash messages. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.
27	DMID received a digit but the channel was in the wrong state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.



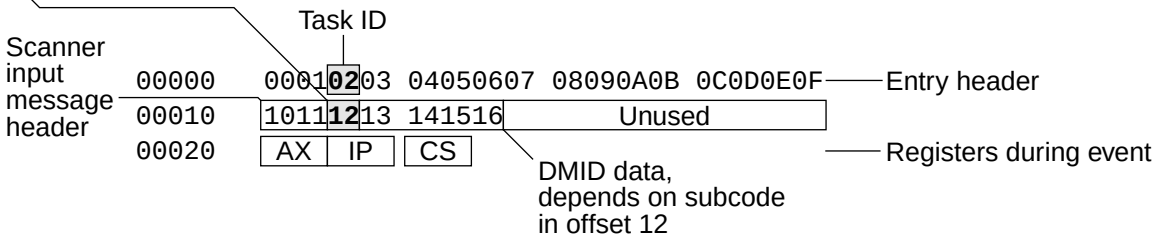
29	DMID received an ASCII message but the channel was in the wrong state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.
2C	Bad LTN message from scanner. Service affecting, non-fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: message type from scanner. Offset 14-15: LTN number. Offset 16: unused.
2D	Got off-hook response message from scanner when the channel was in the wrong state. Service affecting. Notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.
2E	Off-hook response from scanner expired. The caller might get an open tree greeting or get dropped. Service affecting, non-fatal. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: A/B counter.
30	Bad RS-232 message from scanner. Service affecting, non-fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: message type from scanner. Offset 14-15: LTN number. Offset 16: unused.



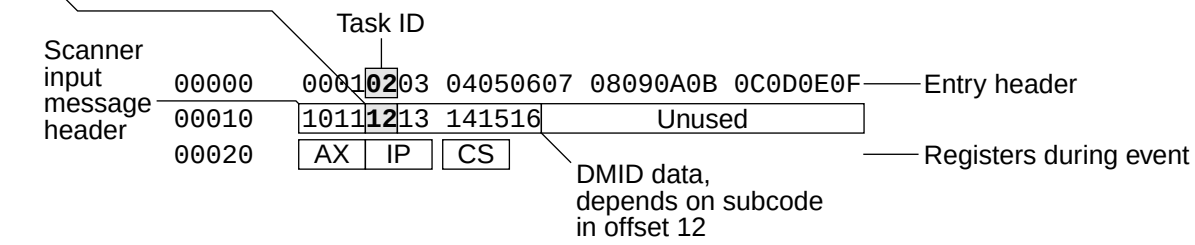
31	Off-hook or Call ID message pending expired. The caller gets an open tree greeting. Service affecting, non-fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: unused.
32	Timed-out after 18 seconds in answer pending state. The caller gets an open tree greeting. Service affecting, non-fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: A/B state.
35	MPDA-A/B/C response time-out for idle poll message. Transparency is re-established. Service affecting, fatal. Check DMID channels A, B and C connections, and check internal cables. Notify Product Support Engineering. DMID data is: Offset 13: A, B or C. Offset 14: A/B/C state. Offset 15: A/B/C timer. Offset 16: unused.
36	Timed-out after five seconds in phone session state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: A or B. Offset 14: A/B state. Offset 15: A/B timer. Offset 16: processing LTN.
37	DSP enable time expired. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: A or B. Offset 14: A/B state. Offset 15: A/B timer. Offset 16: processing LTN.



38	DSP enable time expired. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: A or B. Offset 14: A/B state. Offset 15: A/B timer. Offset 16: processing LTN.
39	Scanner sent non-digit extension for message waiting. Message waiting will have problems. Service affecting, can be fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: LTN number. Offset 14: LTN state. Offset 15: LTN timer. Offset 16: received digit.
3A	DMID received MIK LED on message when not in this state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13-16: received message.
3B	DMID received MIK LED on message when not in this state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13-16: received message.
3C	MIK/MCK release expired. Transparency mode will be re-established. Message waiting will not work until transparency is re-established. Service affecting, non-fatal. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 13: C. Offset 14: C state. Offset 15: C timer. Offset 16: C counter.
3D	Received type 1 off-hook message from PBX. The system may log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. Not service affecting. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.

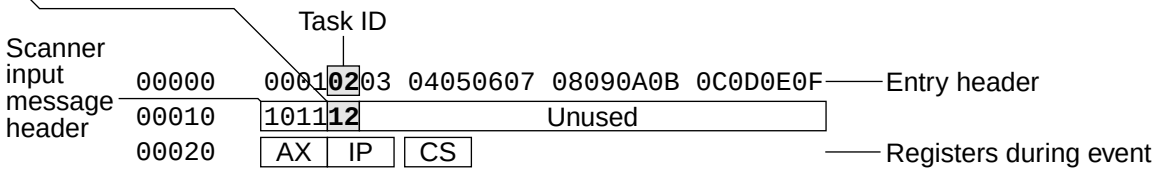


3E	Received type 2 off-hook message from PBX. The system may log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. Not service affecting. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.
3F	Received type 3 off-hook message from PBX. The system may log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. Not service affecting. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.
40	Received type 1 on-hook message from PBX. The system may log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. Not service affecting. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.
41	Received type 2 on-hook message from PBX. The system may log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. Not service affecting. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.
42	Received unknown message from MPDA. Emulates Meridian Telecenter Software and re-establishes transparency mode. Service affecting and fatal. Notify Product Support Engineering. Unknown MPDA interface messages will not cause this error. DMID data is: Offset 13-14: received message. Offset 15: A,B or C. Offset 16: unused.
43	Received MSB LED-on message. DMID data is unused.

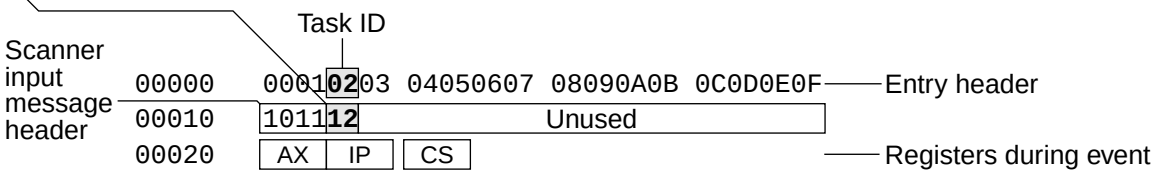


MID Integration

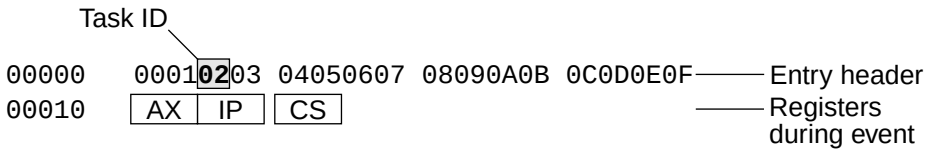
00	Display revision numbers of 651/751 EPROMs.
03	751 internal RAM error. Replace the 751.
04	751 overwrote its incoming message buffers. Service affecting, but not fatal. Notify engineering.
05	751 detected a checksum error while communicating with the 652. Not fatal, unless occurring repeatedly.
06	751 detected an interrupt on the IIC bus. Service affecting, but not fatal. If there are more than a few occurrences, replace the MID (all six channels associated with the particular bus will be bad).
07	751 detected a line input overrun. Service affecting, but not fatal. Notify engineering.
08	751 detected an unrecognized command. Notify engineering.
30	652 detected an incorrect message from a 751. Service affecting, but not fatal.
31	652 detected an unmatched message from a 751. Service affecting, but not fatal.
32	652 detected a checksum error on the IIC bus from a 751. Service affecting, but not fatal.
33	652 detected no response from a 751. Service affecting, but not fatal.
40	652 internal RAM error. Replace the 652.
41	652 external RAM error. Replace the 652.
42	652 detected that the 188 sent wrong message. Service affecting, but not fatal.
43	652 detected that the 188 sent a bad checksum. Service affecting, but not fatal.
44	652 detected that the 188 sent a bad serial number. Service affecting, but not fatal.
45	652 detected that the 188 sent an unmatched message. Service affecting, but not fatal.
46	652 detected that the 188 sent an unmatched general message. Service affecting, but not fatal.
47	652 detected that the 188 sent a message that was too long.
49	652 detected that the 188 message was not processed.
50	652 detected no digits in buffer during an incall. Service affecting, but not fatal.



51	652 detected too few digits in buffer during an incall. Service affecting, but not fatal.
52	652 detected more than 16 digits in buffer during an incall. Service affecting, but not fatal.
53	652 detected a condition where the state is longer than 60 seconds. Service affecting, but not fatal.
54	652 big transmit buffer overrun error. Service affecting, but not fatal.
55	Bad or blocked extension for transfer. Service affecting, but not fatal.
56	No message waiting indication DN found. Service affecting, but not fatal.
57	No message waiting clear DN found. Service affecting, but not fatal.
58	No digit echo during message waiting indication. Service affecting, but not fatal.
59	No digit echo during message waiting clear. Service affecting, but not fatal.
5A	Bad or blocked extension for message waiting indication. Service affecting, but not fatal.
5B	Bad or blocked extension for message waiting clear. Service affecting, but not fatal.
5C	Outcall failed. Service affecting, but not fatal.
5D	During transfer, no digits found.
5E	During transfer, no message from SL-1 for approximately 12 seconds.
5F	During incall, no volume message from SL-1 for approximately 12 seconds.
60	No digit information received from PBX on incoming call. Check if ADD feature in SL-1 programming is enabled for that particular TN.
61	No dial digit message from VPM.
80	Display revision numbers of the 188 EPROM.
81	652 processor bad. Fatal error. Replace the MID.

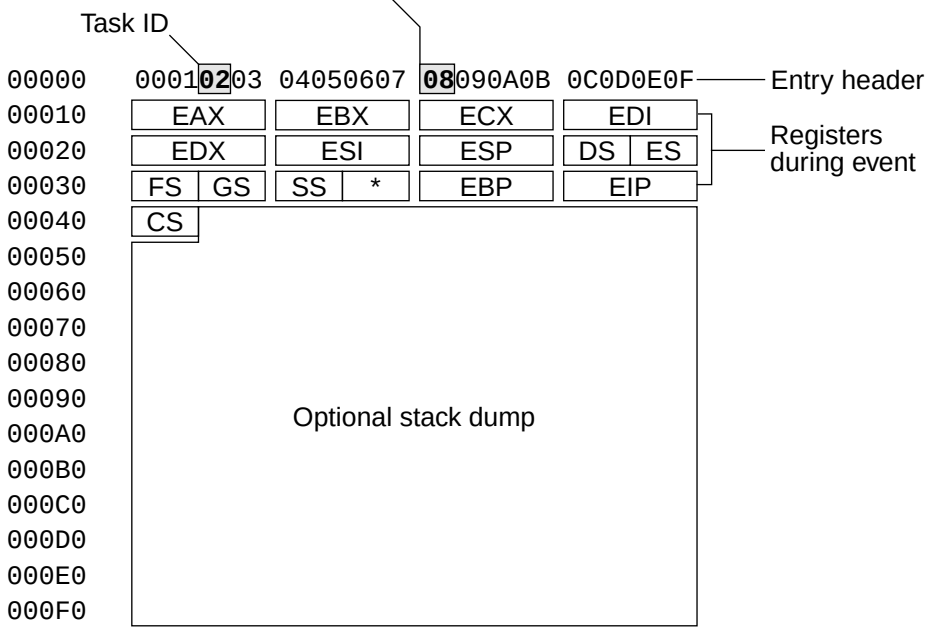


1F RS-232 Link Down



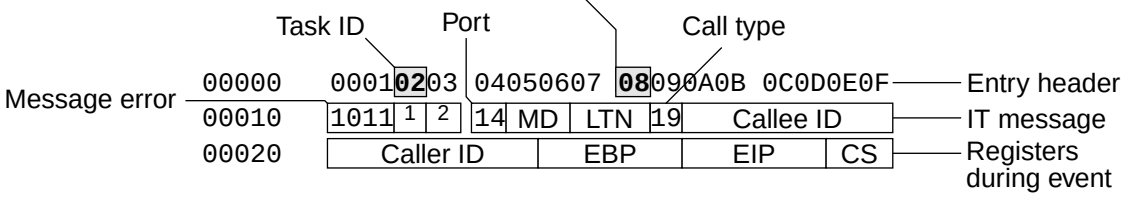
20 SMDI Internal Error

00 Integration port transmit fault error.



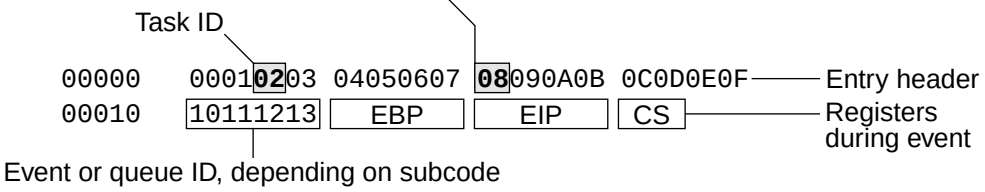
*Unused

01 System call wait on multiple events error. The system restarted.
03 Invalid message waiting message error.



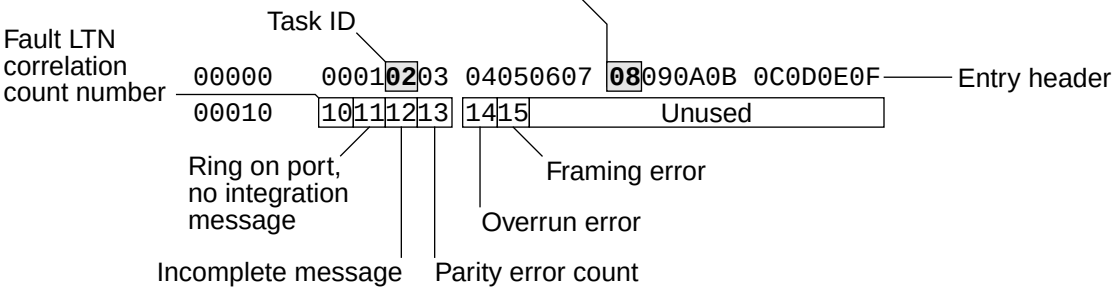
Offset	Label	Field Description
10-25	IT message	Integration Task message
12	[1]Message type	
13	[2]Digits	

06	System call event create error. Offset 10-13: Integration Task initial event ID.
07	System call queue create error. Offset 10-13: priority queue ID.



21 SMDI Protocol Error

00	Integration link 0.
⋮	
0F	Integration link 15.



22 Internal Error in the X-Interface Code

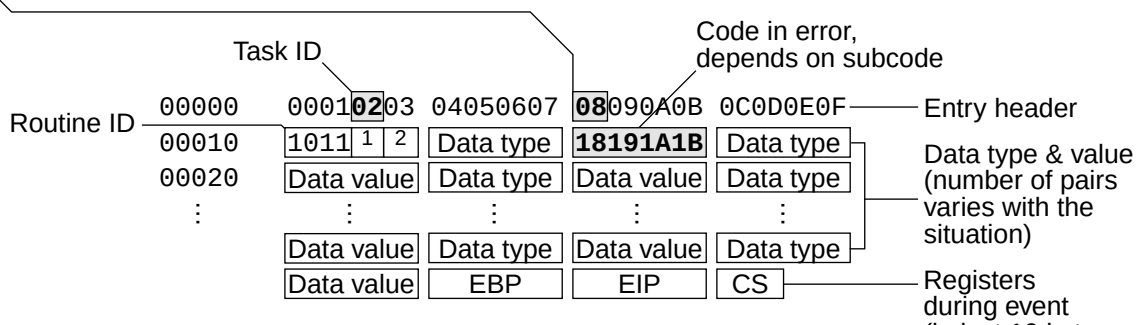
The entry formats for status code 22 are unusual in a couple of ways. First, they (with two exceptions) are variable length. Second, they (with one exception) use **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

The following fields are used in all but one of the subcodes:

Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

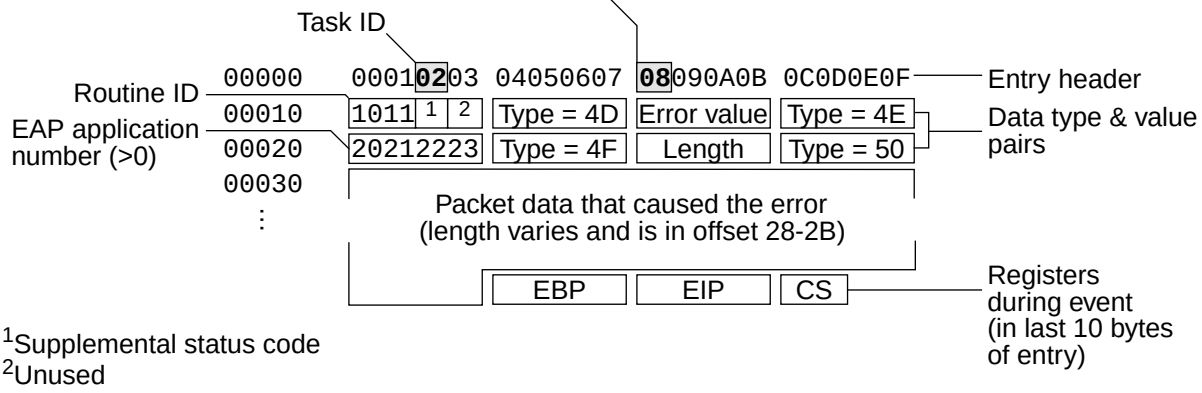
20 X-interface routine attempted to send an incorrect IOCTL command to D-queue. Offset 18-1B holds the IOCTL code that is in error.

21 X.25 SP code detected an invalid subcode for reporting an EAP-related error (status code 24). Offset 18-1B holds the subcode that is in error. This entry is always followed by an entry for subcode 22 (see below).



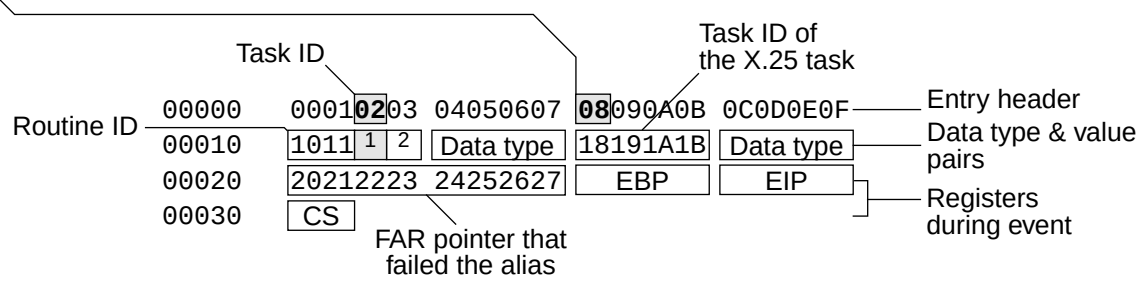
[1]Supplemental status code
[2]Unused

22 Extension of subcode 21. The body of the entry is what would have been logged in status code 24 (EAP-related error) if the subcode had been legal.



[1]Supplemental status code
[2]Unused

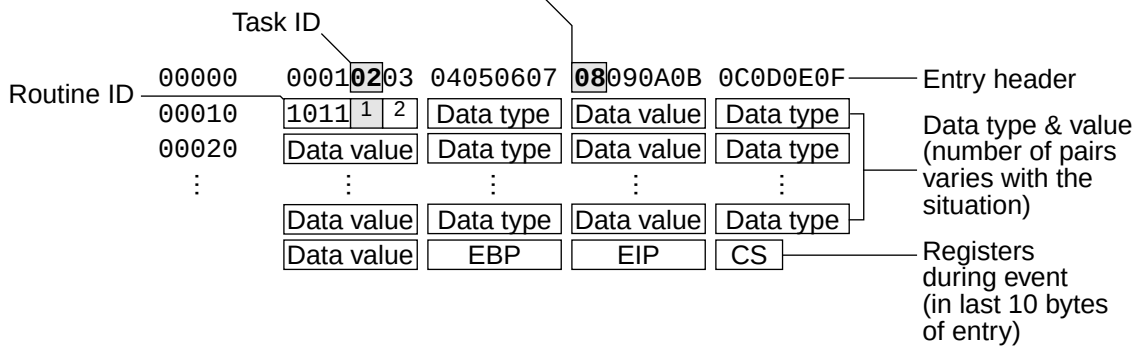
23 Unable to create a GDT alias to either the D-queue or Z-queue during initialization. Reported by SP router code.



Offset	Label	Field Description
12	[1]Supplemental status code	22 Alias of the D-queue failed. 23 Alias of the Z-queue failed.
13	[2]Unused	

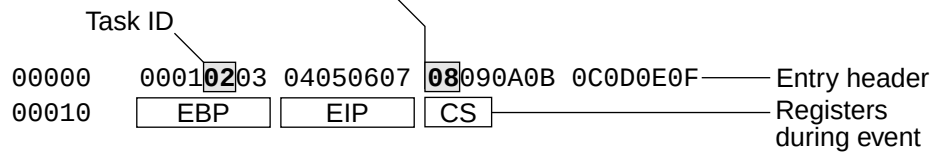
30 D-queue overflow. The data value field in offset 18-1B holds the lost command code.

34 X-interface reported it could not create one of the semaphore locks needed to control access to critical data structures and code.

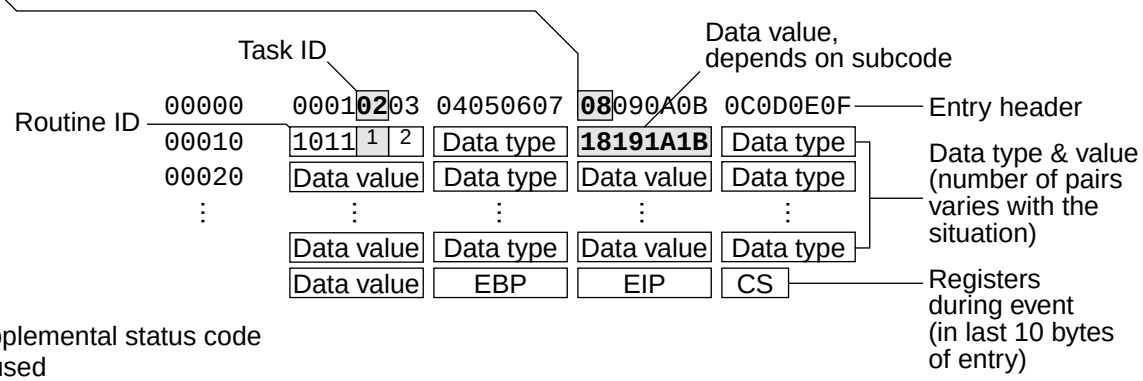


Offset	Label	Field Description
12	[1]Supplemental status code	Used only in subcode 34: 20 Creation of LOG lock failed. 21 Creation of critical section lock failed.
13	[2]Unused	

37 X.25 subsystem is being suspended. The preceding status log entry should help determine the cause of this entry.

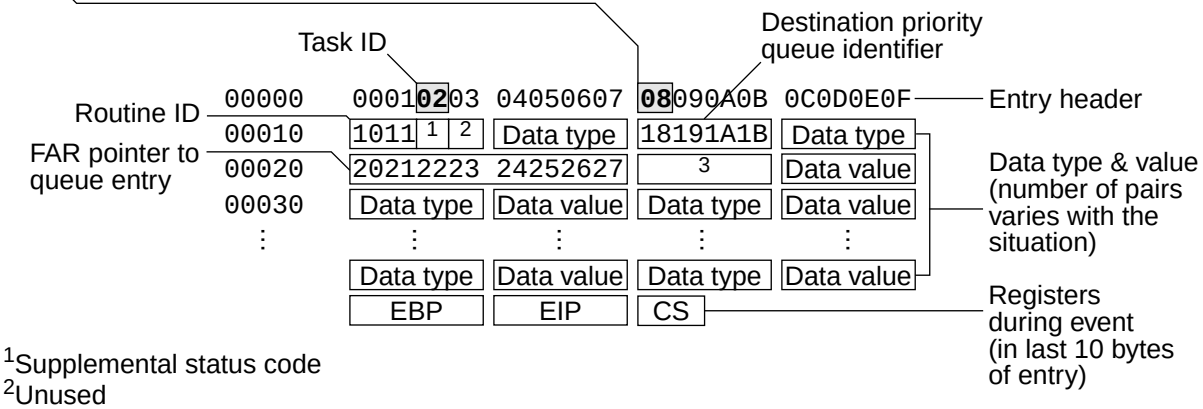


6B	Invalid flag type was used in TEST_AND_SET call. The data value field in offset 18-1B holds the flag type value.
72	Router in SP was not able to allocate memory for an internal table. If the supplemental status code in offset 12 is **0C**, the table was the router's X.25 LUN table. The data value field in offset 18-1B holds the number of bytes that were requested.
73	Router in SP had a problem creating the OCL signal queue. The data value field in offset 18-1B holds the return code from CREATPQ call; the field in offset 20-23 holds the number of entries requested for the priority queue.



[1]Supplemental status code
[2]Unused

74	Failed to place an entry in a priority queue.



[1]Supplemental status code
[2]Unused
[3]Result returned from SENPQ call

Table 2-1. Routine IDs (offset 10-11)

ID	Routine
00	A routine with no ID
	OCL Task Routines
01	Process action list (aclmain.c)
02	OCL main
03	Do init
04	Get OCL sig queue ID
05	Do server open
06	Do signal
07	Do IO response
08	Send queue entry
09	Phase 1 startup
0A	Do clear X.25 mem (aclclram.c)
10	Init App Table (aclapptb.c)
11	Add app
12	App signon LUN
13	App signoff LUN
14	App ready LUN
15	App end ready LUN
16	App req LUN
17	App can req LUN
20	Init act list (aclactls.c)
21	Add action entry
22	Del cur act entry
	Miscellanious
23	Line act comp
30	LS 0 DLD init (acllines.c)
31	LS 22 DLD line
32	LS 23 start line
33	LS 24 wait L1 start
34	LS 25 L2 start
35	LS 26 wait L2 up
36	LS 27 line up
37	LS 28 ref new calls
38	LS 29 wait for LUNs to clear
39	LS 30 L2 down
3A	LS 31 stop L1
40	LS 32 clram
41	LS bring L2 down
42	Start line
43	Stop line
44	Handle line state signal

ID	Routine
	Router Code Routines
64	Xint zclosed
65	Xint zread
66	Xint zreadd
67	Xint zwrite
68	Xint zwrited
69	Xint zioctlrw
6A	Xint zioctld
6B	Xint zsignal
6C	Run router
6D	Do ZQ ent
6E	Xint zopend
6F	Xint put DQ ent
70	Xint call
	X Interface Routines
71	Xopen
72	Xclose
73	X IOCTL
74	XIOabort
75	Xread
76	Xwrite
77	Xsignal
78	X log
79	Xfootprint
80	Xget LUN
81	XRETLUN
82	Xrwstat
83	Xset STATE
84	Xclear
	OCL Utilitiy Routines
87	Test and set
	OCL Interface Routines
90	OCL init
91	OCL open
92	OCL close
93	OCL read
94	OCL write
95	OCL set state
96	OCL get state
97	OCL footprint
98	OCL errlog

Table 2-1. Routine IDs (offset 10-11) (Continued)

ID	Routine
45	Init line table
46	Line LUN open
47	Line LUN close
48	LUN line stop
49	LUN act comp
4A	LUN ck ready LUN
50	Pkey decrypt (aclpcryp.c)
51	Pkey encrypt
52	LUNs 0 init LUN (aclluns.c)
53	LUNs 1 open LUN
54	LUNs 2 XIOmode LUN
55	LUNs 3 XIOopn LUN
56	LUNs 4 rd incall
57	LUNs 5 call acc LUN
58	LUNs 6 rd signon LUN
59	LUNs 7 wr signon resp
5A	LUNs 8 rd ready rec
5B	LUNs 9 ready state
5C	LUNs 10 in use
5D	LUNs 254 clear LUN
5E	LUNs shutdown LUN
5F	LUN handle call req signal
60	LUN app stop
61	Parms parm buf
62	Build parm buf
63	Interp num

ID	Routine
99	OCL open OC (two meanings, see next item below)
	Miscellanious
99	X X.25 init (sys_x_x25init_16 routine)
9A	Get LUN table (get_lun_table routine)
9B	(lun_line_shutdown routine)
9C	(handle_sigband_signal routine)
9D	Set translated address
	Stats Routines
A0	(stats_line_stats_query)
A1	(stats_drv_stats_query routine)
A2	(stats_drv_stats_clear routine)
A3	(stats_line_stats_clear routine)
A4	(stats_query_act_comp routine)
A5	(stats_clear_act_comp routine)
A6	(stats_get_clear_time routine)
	Miscellanious
A7	LUNs 12 ready outcall state state

Table 2-2. Supplemental Error Codes (Offset 12)

Code	Meaning
01	App queue
02	OCL queue
03	Dummy queue
04	App table
05	LUN table
06	Line table
07	Act table
08	LCL app table
09	LCL line table
0A	Add app
0B	Add line
0C	XLUN table

Code	Meaning
10	Unknow serial number
11	No serial number
12	Rec to short
13	Bad header command
14	Bad header
15	Bad command parameter
16	Bad signon
17	Bad ready command
18	Unknow version number
20	Log lock related
21	Crit. sect. lock related
22	DQ address related
23	ZQ address related
24	User addr related

Table 2-3. Data Types

Type	Following Data Value
00	Undefined field
01	Number entry
02	Return value
03	Task ID
04	Local User Number (LUN)
05	LUN flag
06	LUN OCL state
07	LUN app state
08	Line state
09	LUN state
0A	LUN d-type
0B	LUN d-item
0C	Line d-type
0D	Line d-item
0E	LUN SD
0F	LUN flag SD
10	LUN OCL state SD
11	LUN app state SD

Type	Following Data Value
30	RW length SD
31	Wait time
32	Minor error code
33	Release code
34	Reason code
35	Serial number
36	Header command
37	Header cer
38	Header buffer length
39	Command parameter buffer length
3A	Command parameter buffer pointer
3B	Build parameter return
3C	Chk signon return
3D	Chk ready command return
3E	Buffer pointer
3F	Buffer length
40	Line stop opt
41	Line shut mode

Table 2-3. Data Types (Continued)

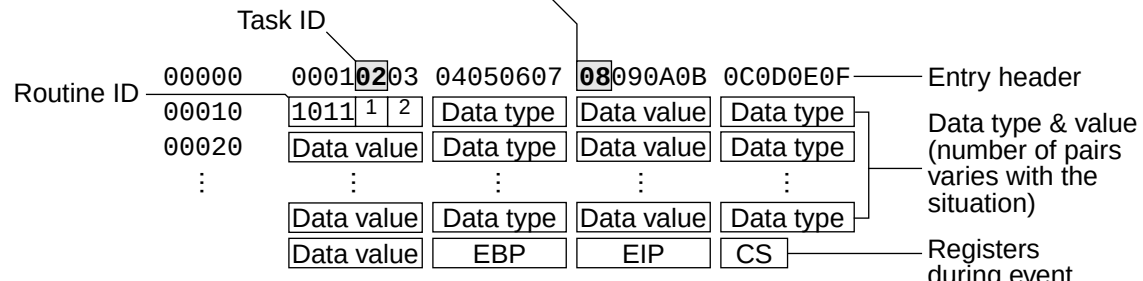
Type	Following Data Value
12	Line state SD
13	LUN state SD
14	LUN d-type SD
15	LUN d-item SD
16	Act OCL state
17	Act op
18	Act op SD
19	Act status
1A	FP index
1B	FP buffer pointer
1C	App number
1D	App number SD
1E	App state
1F	App stop opt
20	Appl cur rdy
21	Appl stats
22	Queue ID
23	Queue response app numumber
24	Queue response app status
25	Queue response status
26	Queue response LUN number
27	Queue IO type
28	Queue ent type
29	Queue ent type SD
2A	Queue ent pointer
2B	IOCTL command
2C	IOCTL command SD
2D	IOCTL SL type
2E	Signal value
2F	RW length

Type	Following Data Value
42	Line number
43	Parameter ent
44	Parameter type
45	Interp number
46	Line command
47	IOCTL status
48	Step path
49	DQ command
4A	ZQ command
4B	Function number
4C	Flag type
4D	Ext type error
4E	Ext type app
4F	Ext pack length
50	Ext type data
51	Ext cal req pack
52	Ext income call pack
53	Ext signon rec
54	Ext ready rec
55	Ext called address
56	Ext calling address
60	Bad stats type
61	Far ptr
63	Ext TID
64	Number of bytes

23 Internal Error in the OCL Interface Code

The entry format for status code 23 is unusual in a couple of ways. First, it is variable length. Second, it uses **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

10	Bad return value from XRETLUN routine.
11	Bad return value from XREAD routine.
12	Bad return value from XIOABORT routine.
13	Bad return value from XWRITE routine.
14	Bad return value from XSETSTATE routine.
15	Bad return value from XCLOSE routine.
70	Bad return value from XGETLUN routine.
71	Bad return value from XGETBUF routine.
73	ACL_INIT routine failed to create a priority queue for a caller. If the supplemental status code in offset 12 is **01**, the application queue could not be created. The data value field in offset 18-1B holds the number of bytes that were requested.
77	Bad response status received from a priority queue entry.
78	Incorrect application number found when OCL interface routines received an application queue entry.
79	Incorrect entry type found when OCL interface routines received an application queue entry.
7A	Incorrect LUN number found when OCL interface routines received an application queue entry.



[1]Supplemental status code
[2]Unused

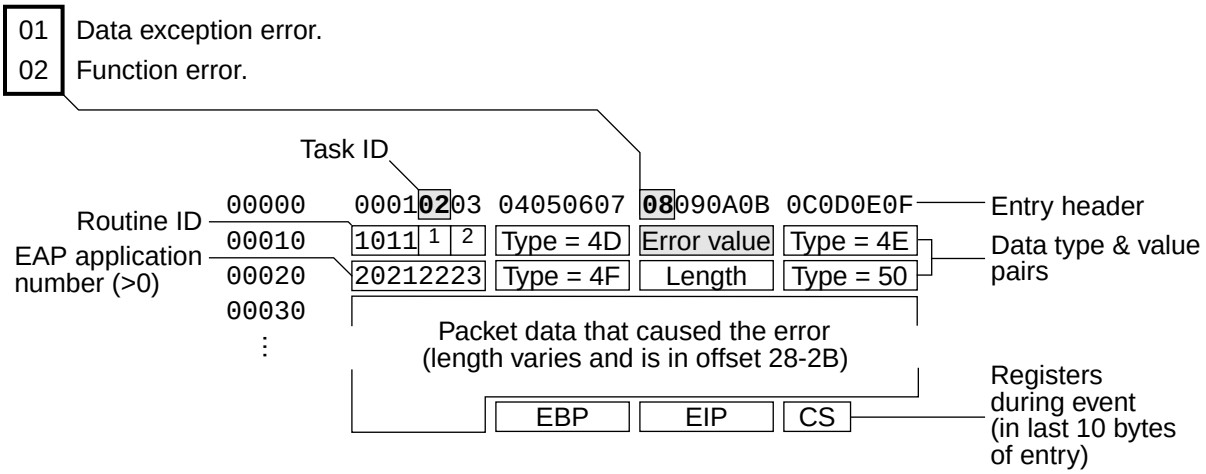
Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	[1]Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	[2]Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

24 EAP-Related Error

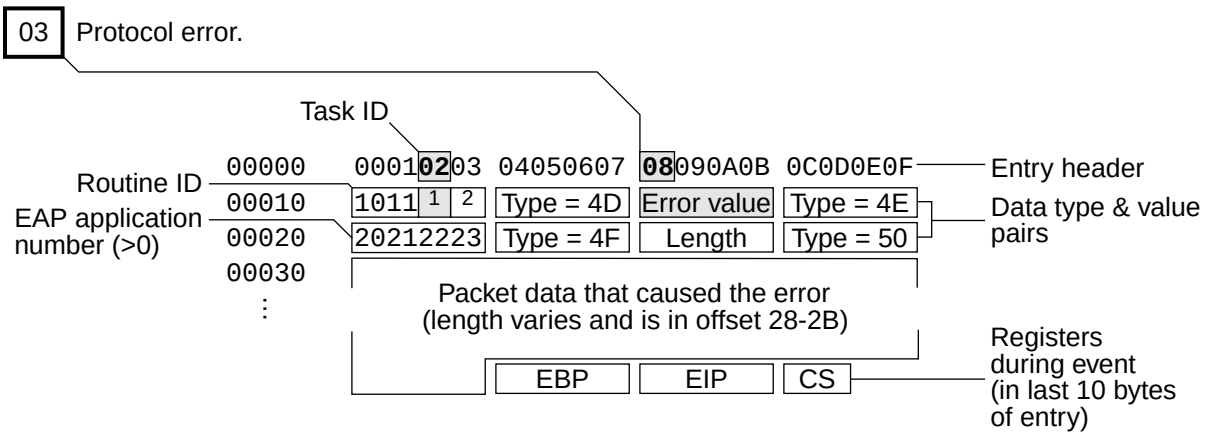
The entry formats for status code 24 are unusual in a couple of ways. First, they are variable length. Second, they use **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

The following fields are used in all of the subcodes:

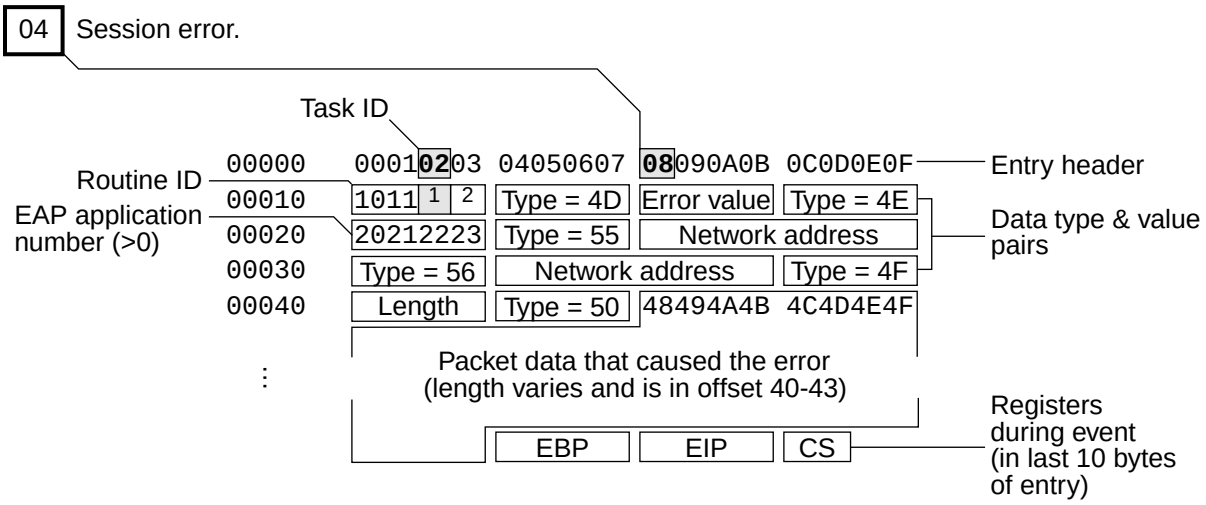
Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.



Offset	Label	Field Description
12	[1]Supplemental status code	
13	[2]Unused	
18-1B	Error value	Used only with subcode 01: 05 Illegal parameter type. 06 Parameter not valid with this command. 07 Required parameter missing. 08 Parameter value out of range. 09 String length incorrect. 0A Variable length value incorrect. 0B Non-digit found in digit string. 0C Inconsistent data. 0D Not an ASCIIZ string. 0E Conflicting parameters.

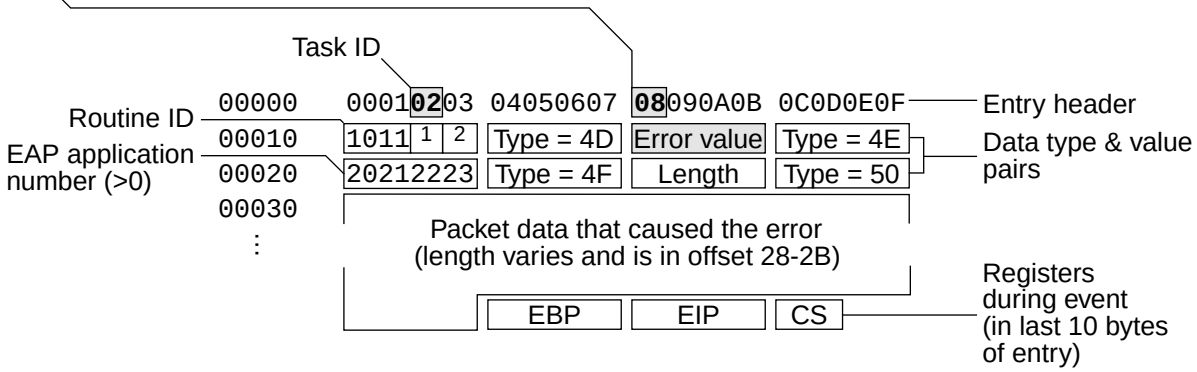


Offset	Label	Field Description
12	[1]Supplemental status code	00 No specific value is logged. C3 Application number does not exist. C4 OCL is not up. C5 OCL interface routine internal error. C6 All LUN's for the requested application number are busy. C7 Low LUN's for the requested application number. C8 Buffer overflow—LUN will be cleared. C9 LUN is cleared. CA Operation time-out—LUN will be cleared. CB LUN already open—ACL_CLOSE must be called first. CC ACL_INIT already performed. CD Successful ACL_OPEN call not performed. CE ACL_INIT call not performed.
13	[2]Unused	
18-1B	Error value	00 No specific value is logged. 01 Incorrect command header length. 02 Unknown command type. 03 Unexpected command modifier. 04 An invalid command was received. FC Completion code from ACL_WRITE not received. FD Completion code from ACL_READ not received. FE Completion code from ACL_OPEN not received.



Offset	Label	Field Description
12	[1]Supplemental status code	10 Unknown serial number received. 11 Missing serial number. 12 Record length too short. 13 Bad command within packet header. 14 Bad packet header received. 15 Bad parameter received. 16 Invalid application number or password in SIGNON. 17 Invalid application number in READY record.
13	[2]Unused	
28-2F, 34-3B	Network address	Network address in call request packet.

05	Time-out error. The error value in offset 18-1B is 76.
06	EAP non-service affecting (NSA) error.
07	EAP service affecting (SA) error.
08	Facility error.

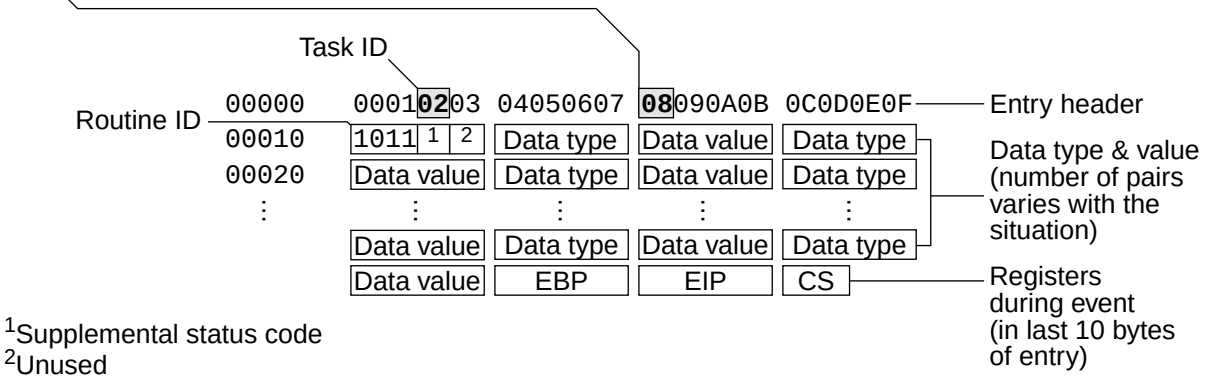


Offset	Label	Field Description
12	[1]Supplemental status code	If the error value, offset 18-1B, is 80 or 81, this field holds the number of the communication line.
13	[2]Unused	
18-1B	Error value	6E X.25 task is not ready. 6F OCL task is not ready. 80 Communication line is down. The line number is logged at offset 12. 81 Communication line is up. The line number is logged at offset 12. FF Internal error.

25 Error in the OCL System Utility Routine

The entry format for status code 25 is unusual in a couple of ways. First, it is variable length. Second, it uses **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

6B	OCL utility routine reported invalid flag type in TEST_AND_SET routine. The data value field in offset 18-1B holds the flag type.
74	OCL utility routine failed to send a priority queue entry.

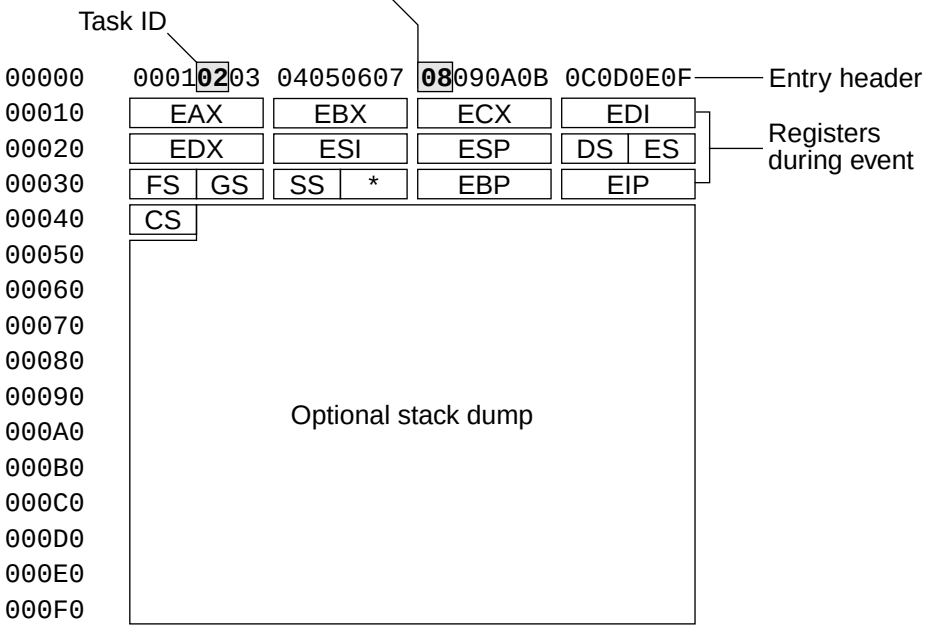


[1]Supplemental status code
[2]Unused

Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

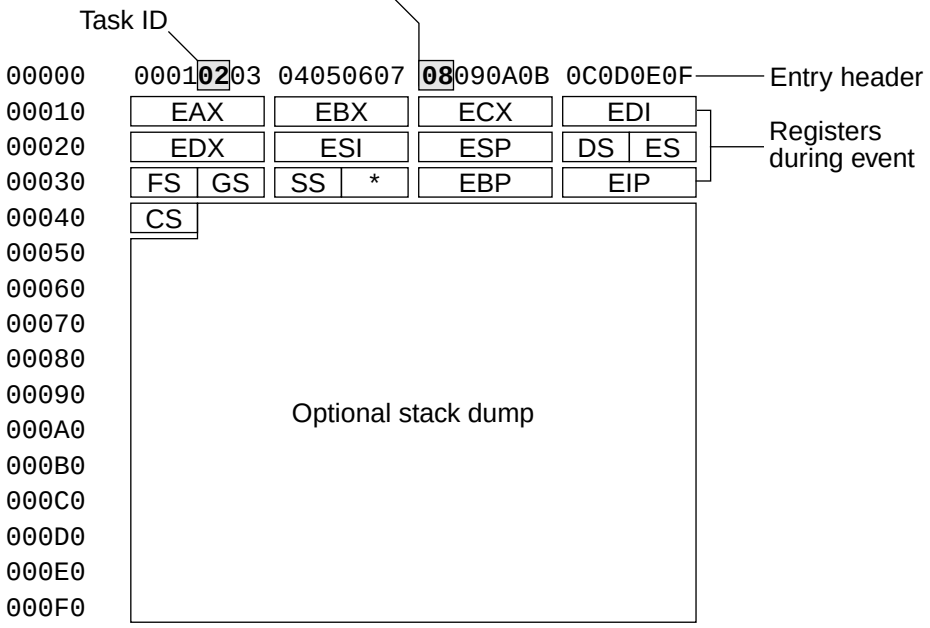
26 Internal Error Occurred During IVR Application

01	Programming logic error.
02	Logic error in Trees.
03	Unknown return code received.
04	Value from Trees is out of range.
05	Wrong number of parameters from Trees.
06	Bad digit string.
07	Error when attempting to acquire called ID.
08	Error when attempting to acquire caller's ID.
E4	Error in message send command.
E5	Error in outcall (LT-IVR).
E6	Error in ready outcall.
E7	Error in transfer reconnect.
E8	Error in phrase evaluate return code.
E9	Error in message record command.
EA	Error in message play command.
EB	Error in message inquiry command.



*Unused

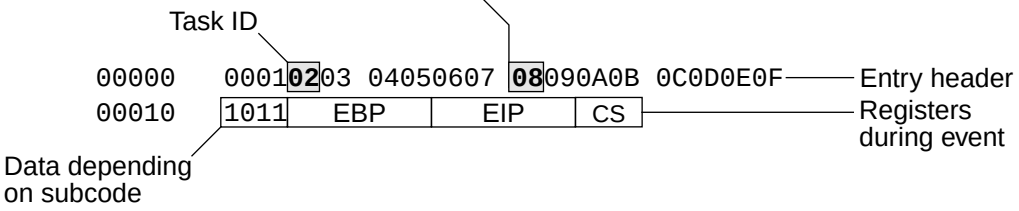
EC	Error in message delete command.
ED	Error in message save command.
EE	Error in IVR_ACL_IO routine.
EF	Error in IVR error parameter routine.
F0	Error in visit mailbox command.
F1	Error in exit subscriber mailbox command.
F2	Error in exit destination mailbox command.
F3	Error in transfer blind command.
F4	Error in transfer command.
F5	Error in time/date command.
F6	Error in time-out default command.
F7	Error in port disconnect command.
F8	Error in super session command.
F9	Error in key purge command.
FA	Error in key cutoff command.
FB	Error in key action command.
FC	Error in digit play command.
FD	Error in digit collect command.
FE	Error in ready response command.
FF	Error in phrase play command.



*Unused

27 Internal Error Occurred During ASA Application

4D	Incorrect LUN state returned from OCL when the ASA task sent a request to OCL.
5C	Unknown parameter type received.
72	Status code returned by MEM_GDT_GET_16 routine when attempting to allocate memory space for the ASA task.
73	Status code returned by ACOS_CREATPQ_16 routine when attempting to create a priority queue for the ASA task.
75	Status code returned by ACOS_RCVPQ_16 routine when attempting to receive data from a priority queue.
77	Error response status returned from ACOS_RCVPQ_16 routine.
79	Unexpected response received from ACOS_RCVPQ_16 routine.
9D	Status code generated by SYS_ENT_FDIR_FACCESS routine when attempting a file access from the voice processor.
9E	Cannot find corresponding entry in ASA application table.
A1	ASA could not create an event.
A2	Invalid upload/download index detected in the ASA task.
A3	ASA passed an invalid upload/download request block to an SP routine and the routine returned an error to the ASA task.
A4	ASA detected an invalid upload/download type in the ASA internal table.
A5	ASA task detected an invalid upload/download status in the ASA internal table.



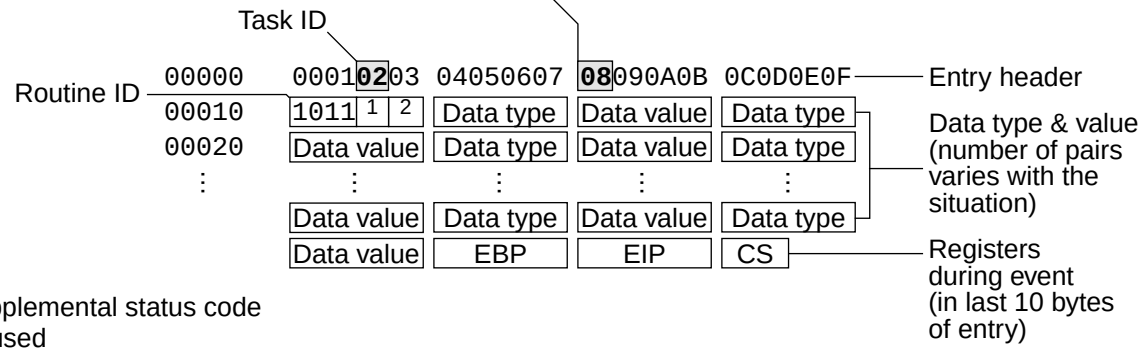
28 Internal Error in the OCL Task

The entry formats for status code 28 are unusual in a couple of ways. First, they are variable length. Second, they use **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

The following fields are used in all of the subcodes:

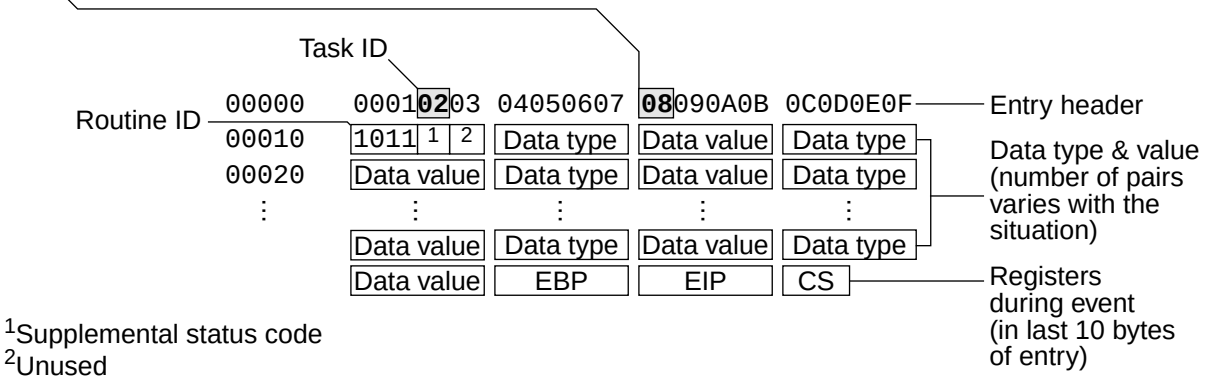
Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

11	Bad return code from XREAD routine.
15	Bad return code from XCLOSE routine.
16	Bad return code from XOPEN routine.
17	Bad return code from XIOCTL routine.
18	Invalid LUN number detected.
20	Incorrect IOCTL command found in line state machine.
40	Application number not found in application table.
42	Unrecognized signal value received by OCL task.
43	Inconsistent or illegal action operation found within either the line state machine or the LUN state machine.
44	Bad status value found in action list entry.
45	Incorrect state entered in line state machine.
46	Incorrect parameter passed to a specific state of the line state machine.
47	Invalid IOCTL type value found when the OCL task attempted to invoke XIOCTL.
48	Bad result value from X.25 XIOLST level 1 status detected.
49	Bad result value from X.25 XIOLST level 2 status detected.
4B	Action entry address missing in LUN state machine.
4C	Unrecognized command type detected in LUN state machine.
4D	Inconsistent OCL state in OCL LUN table detected.
4E	Invalid shutdown option detected when the OCL task attempted to stop an application.



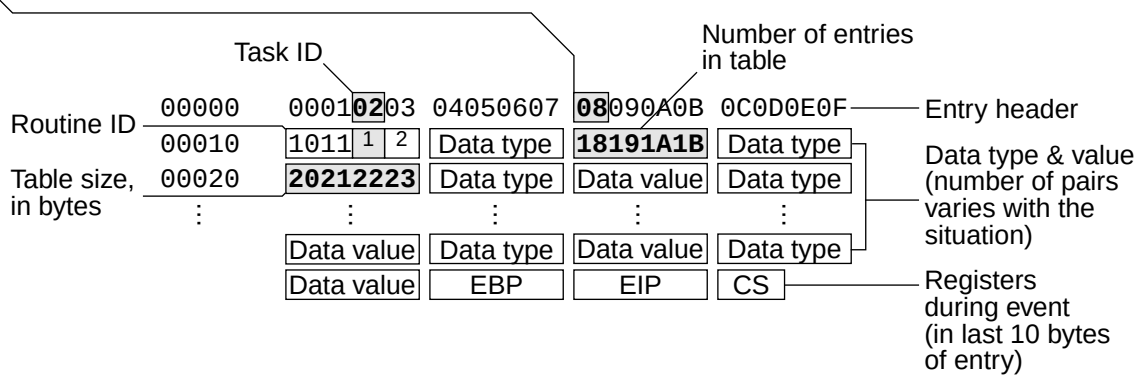
[1]Supplemental status code
[2]Unused

4F	Unrecognized command in line state machine.
50	Invalid shutdown option detected when LUN state machine attempted to shutdown an LUN for a physical interface.
51	Invalid shutdown mode detected when LUN state machine attempted to shutdown a line.
52	Ready application count in application table does not match ready count in OCL LUN table.
53	Invalid application status detected.
55	Matching action was not in progress when the OCL task received an I/O response from a priority queue.
56	Unknown action operation value detected in an entry of the action list.
57	Action table full.
58	No matching action list entry found for an I/O response from a priority queue.
59	OCL task reported key pointer passed to public key encryption/ decryption is not NULL.
62	Action list initialization routine called more than once.
63	No current action entry when requesting deletion of current action.
66	OCL task tried to write on the server LUN.
67	OCL task attempted to write a CLEAR packet on the server LUN.
69	Line number out of range. The data value field in offset 18-1B holds the line number.
6C	Bad return value received when the OCL task requested to build a parameter buffer.



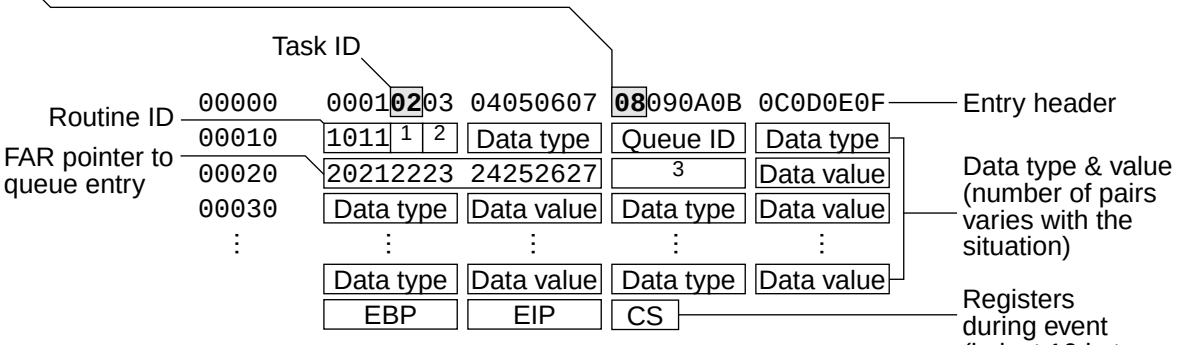
[1]Supplemental status code
[2]Unused

72 OCL task attempted to allocate dynamic memory for the internal tables.



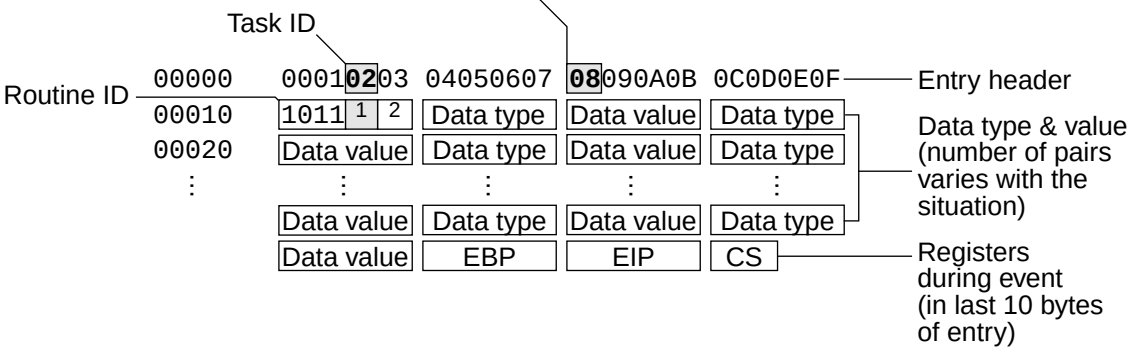
Offset	Label	Field Description
12	[1]Supplemental status code	04 Application table cannot be allocated. 05 LUN table cannot be allocated. 06 Line table cannot be allocated. 07 Action table cannot be allocated. 08 Local action table cannot be allocated. 09 Local line table cannot be allocated.
13	[2]Unused	

74 OCL task failed to send a queue entry.



[1]Supplemental status code
[2]Unused
[3]Result returned from SENPQ call

75	Bad status value returned when the OCL task attempted to receive a queue entry from a priority queue.
79	Unrecognized or unexpected entry type found when the OCL task received a priority queue entry.
7A	Invalid LUN number detected when the OCL task received a priority queue entry.
7D	Server LUN failed to open properly. The data value field in offset 18-1B holds the status code for the open action.
90	Bad OCL stats request. The data value field in offset 18-1B holds the incorrect value for the request.



Offset	Label	Field Description
12	[1]Supplemental status code	01 Application queue. 02 OCL signal queue.
13	[2]Unused	

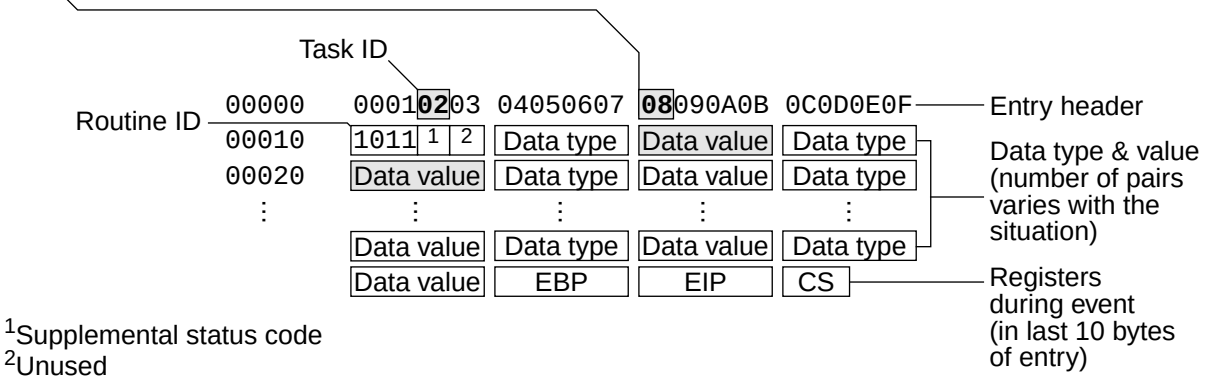
29 Internal Error in the Router Code

The entry formats for status code 29 are unusual in a couple of ways. First, they are variable length. Second, they use **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.

The following fields are used in all of the subcodes:

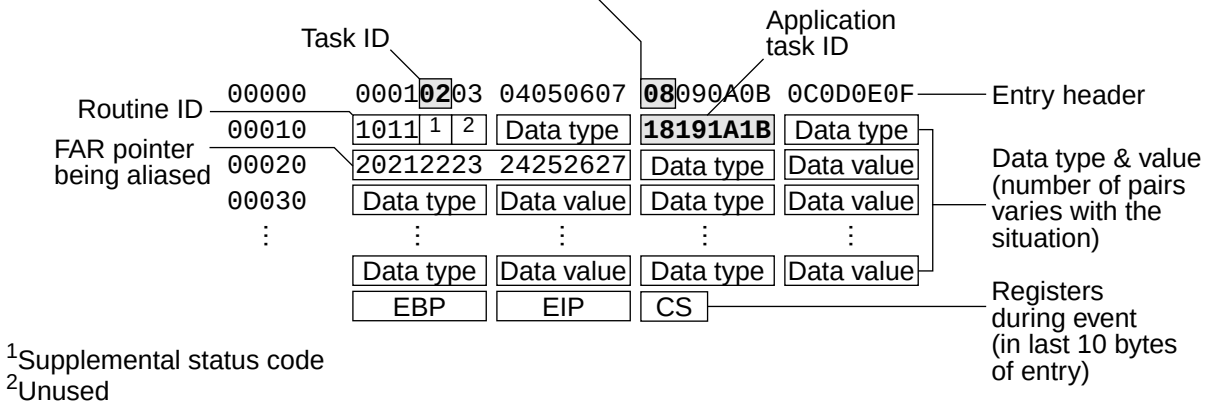
Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

18	X.25 router detected invalid LUN. Offset 18-1B: the LUN.
30	Router attempted to put a new entry in the D-queue but the D-queue had no more room.
31	Requested transfer length is greater than actual packet length when X.25 packet WRITE operation is performed. Offset 18-1B: LUN. Offset 20-23: packet length.
32	Router reported it received an unrecognized ZQ entry type. Offset 18-1B: command code. Offset 20-23: related LUN.
33	Unexpected or invalid status in the ZQ entry picked up from the TITN code. Offset 18-1B: LUN. Offset 20-23: the status.
6A	Unrecognized X interface routine called.
72	X.25 attempted to allocate dynamic memory for the internal tables. If the supplemental status code at offset 12 is **0C**, the X.25 LUN table could not be allocated.
7B	Router in SP reported that the task trying to process a Z-queue entry is not an X.25 task. Offset 18-1B: ID of the task processing the entry. Offset 20-23: X.25 task ID.



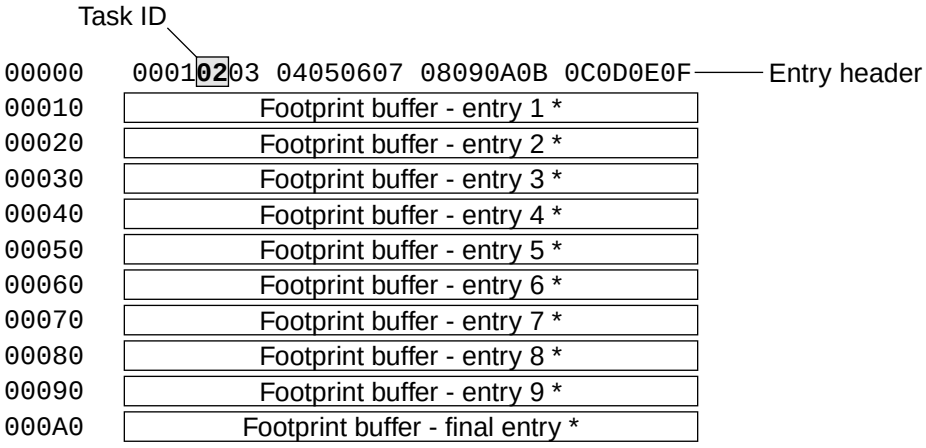
[1]Supplemental status code
[2]Unused

7C OS failed to alias application task address to the X.25 task.



[1]Supplemental status code
[2]Unused

2E Debug Messages in X.25



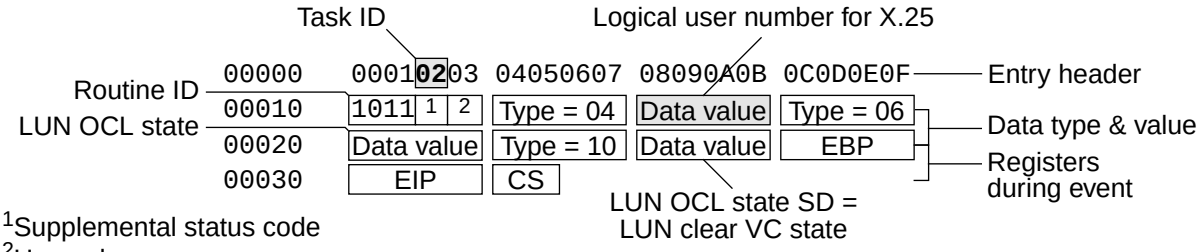
* Byte 0: footprint operation code **
Byte 1: operation status
Byte 2: lun_acl_state value when entry was made (operation dependant)
Byte 3: lun_app_state value when entry was made (operation dependant)
Byte 4 - 0F: operation dependant buffer (12 bytes)

** Footprint operation codes:

1	Open operation footprint	8	Get application LUN footprint
2	Close operation footprint	9	Return application LUN footprint
3	Read operation footprint	10	Abort an I/O in progress
4	Write operation footprint	11	Set encryption key in router
5	IOCTL operation footprint	12	Change I/O user for LUN
6	Signal received footprint	13	Get outcall LUN footprint
7	Application footprint operation		

2F OCL Debug Error

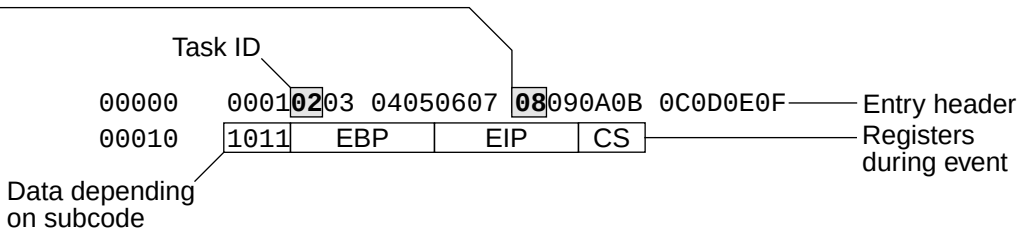
The entry format for status code 2F is unusual in one way. It uses **data type and value pairs**: the data-type field holds a code identifying the kind of data in the following data-value field.



Offset	Label	Field Description
10-11	Routine ID	Routine that logged the event. See Table 2-1, “Routine IDs (offset 10-11),” on page 75.
12	Supplemental status code	Extra information about the event. See Table 2-2, “Supplemental Error Codes (Offset 12),” on page 77.
13	Unused	
Varies	Data type	Identifies the kind of data in the following data-value field. See Table 2-3, “Data Types,” on page 77.

30 SP-Related OCL Error

01	Problem sending application status command to OCL. Offset 10-11: return code from X_SIGNAL_32.
02	Bad OCL initialization error.
03	Bad response to OCL start line command. Offset 10-11: response type returned from OCL.
04	Bad response to OCL stop line command. Offset 10-11: response type returned from OCL.
05	Bad response to OCL line status query. Offset 10-11: response type returned from OCL.
06	Bad OCL signal—line status error.
07	Bad OCL signal—application status error.
08	Bad OCL signal—application add error.
09	Bad OCL signal—application delete error.
0A	Bad OCL signal—application modify error.
0B	Bad OCL signal—LUN status error.
0C	Bad OCL signal—clear LUN error.
0D	Bad OCL signal—EAP add error.
0E	Bad OCL signal—EAP delete error.
0F	Bad OCL signal—EAP modify error.
10	Bad OCL signal—line configuration error.
11	Bad X.25 LUN open error.
12	Bad X.25 LUN read error.
13	Bad X.25 LUN write error.
14	Bad X.25 LUN IOCTL error.
15	Bad X.25 LUN close error.
16	Bad X.25 LUN I/O abort error.
17	Bad return from priority queue. Offset 10-11: return code from RCVPQ.
18	Wrong item number (line application, LUN, etc.) returned by OCL. Offset 10-11: ID number returned from OCL.
19	Wrong response to OCL queue entry. Offset 10-11: response type returned from OCL.
1A	SMT/OCL application states out of sync Offset 10-11: file ID.

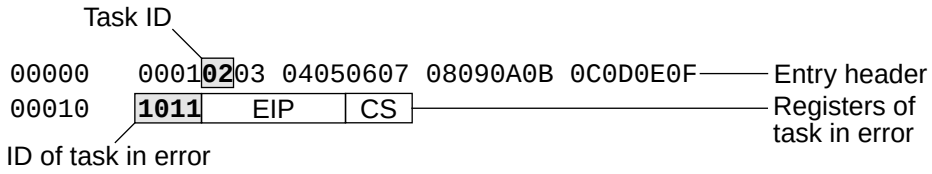


31 Task Loop

Task running for more than four seconds without performing I/O.

32 Task Locked Out

Task has not run for more than five minutes although in a ready state.



33 **Fatal Inconsistency in the OS**

34 **Fatal Inconsistency for Requestor in Application Task**

35 **Control Bus Error—Minor**

36 **Control Bus Error—Major**

37 **Control Bus Error—Indeterminate**

38 **Privilege Violation Interrupt**

39 **Spurious Interrupt**

3A **Data Bus Error—Unsolicited Device Interrupt**

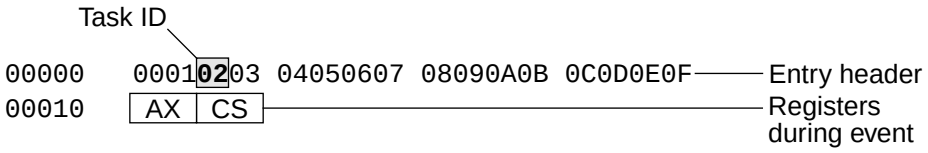
3B **Data Bus Error—Unsolicited Software Timer Interrupt**

3C **Data Bus Error—Device Time-out**

3D **DMA Error—Unsolicited Device Interrupt**

3E **DMA Error—Unsolicited Software Timer Interrupt**

3F **DMA Error—Device Time-out**



40 **Scanner Card Error—Minor**

41 **Scanner Card Error—Major**

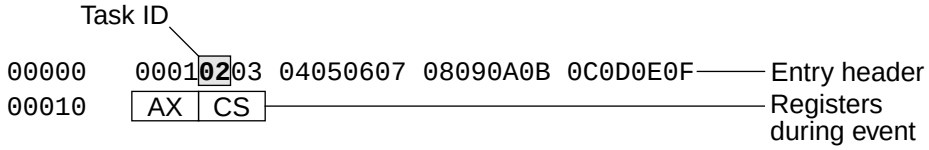
42 **Scanner Card Error—Indeterminate**

43 **System Manager I/O Error (Transmission Error)**

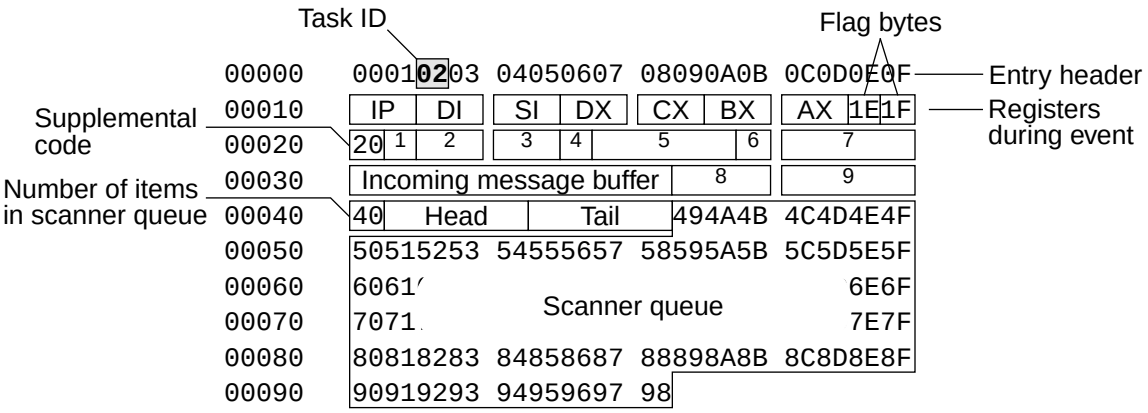
44 **DUART-0 Spurious Device Interrupt**

45 **Scanner Card Error—Acknowledgment Bad Channel**

46 **Scanner Card Error—Acknowledgment Not Expected**



47 Scanner Card Error—Bad Checksum

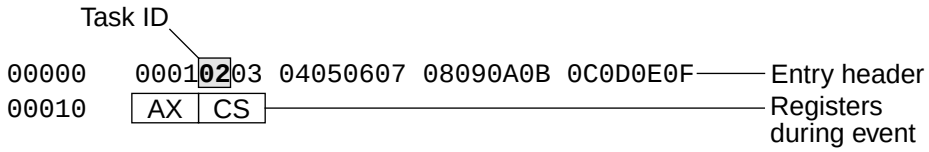


Offset	Label	Field Description
20	Supplemental code	Carries four flags. The following values add together to form the value in the field: 10 (Bit 4 set.) Overrun. 20 (Bit 5 set.) Parity. 40 (Bit 6 set.) Framing. 80 (Bit 7 set.) Break.
21	[1]Transmit retry counter	
22-23	[2]Next acknowledgment	Header of the next acknowledgment expected from the scanner.
24-25	[3]Send acknowledgment	Header of the acknowledgment to send to the scanner.
26	[4]Incoming characters	Number of characters yet to be received from the scanner.
27-2A	[5]Incoming pointer	Pointer to the incoming-message buffer.
2B	[6]Outgoing characters	Number of characters left to transmit.
2C-2F	[7]Outgoing pointer	Pointer to the outgoing-message buffer.
39-3B	[8]Whole acknowledgment	The acknowledgment, including checksum, to be transmitted.
3C-3F	[9]Outgoing origin	Pointer to the origin of the outgoing message buffer.
41-44	Head	Head of the scanner queue.
45-48	Tail	Tail of the scanner queue.

48 Scanner Card Error—Transmit Time-out

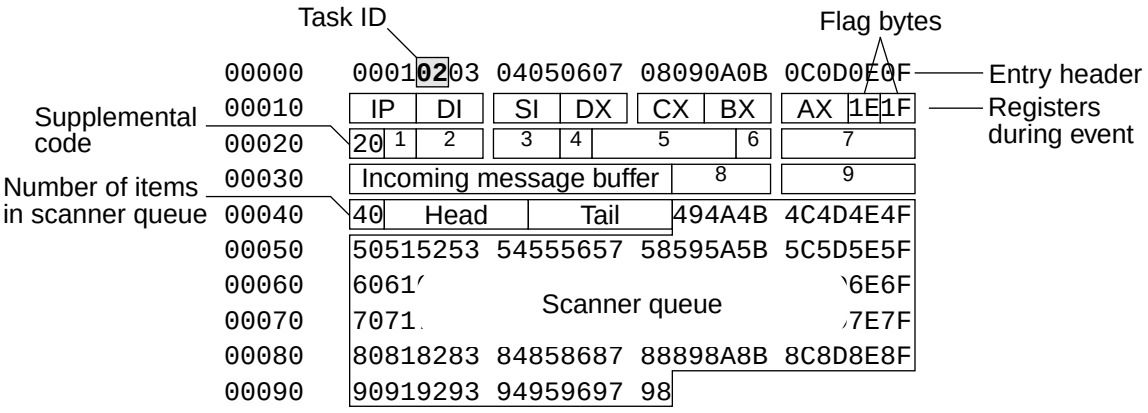
49 Scanner Card Error—Transmit Time-out Maximum

Fatal error.



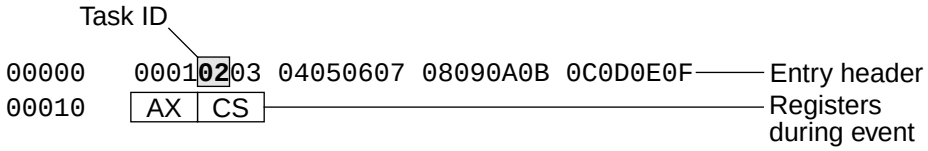
4A Scanner Card Error—Duo Errors

4B Scanner Card Error—Parity Error



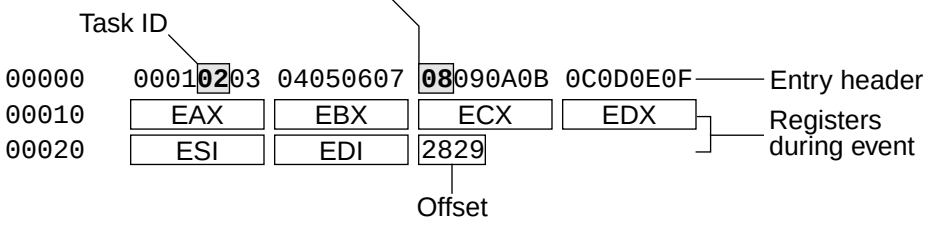
Offset	Label	Field Description
20	Supplemental code	Carries four flags. The following values add together to form the value in the field: 10 (Bit 4 set.) Overrun. 20 (Bit 5 set.) Parity. 40 (Bit 6 set.) Framing. 80 (Bit 7 set.) Break.
21	[1]Transmit retry counter	
22-23	[2]Next acknowledgment	Header of the next acknowledgment expected from the scanner.
24-25	[3]Send acknowledgment	Header of the acknowledgment to send to the scanner.
26	[4]Incoming characters	Number of characters yet to be received from the scanner.
27-2A	[5]Incoming pointer	Pointer to the incoming-message buffer.
2B	[6]Outgoing characters	Number of characters left to transmit.
2C-2F	[7]Outgoing pointer	Pointer to the outgoing-message buffer.
39-3B	[8]Whole acknowledgment	The acknowledgment, including checksum, to be transmitted.
3C-3F	[9]Outgoing origin	Pointer to the origin of the outgoing message buffer.
41-44	Head	Head of the scanner queue.
45-48	Tail	Tail of the scanner queue.

4C Scanner Card Error

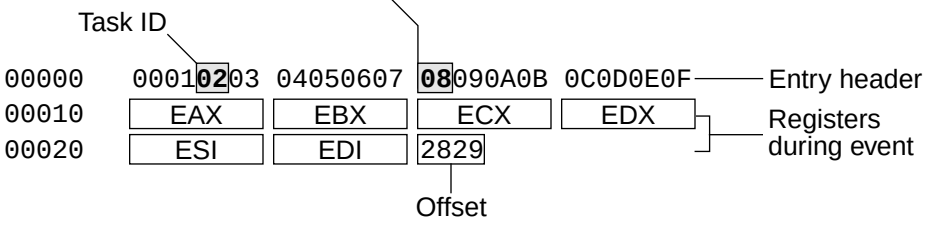


4D ACP-Related Error

01	Failed to send SBI message.
02	Illegal function code in message.
03	Illegal function code received.
04	Bad CIP message received.
05	Message buffer fouled up.
06	Invalid request type.
07	Invalid buffer length.
08	Invalid buffer count.
09	Invalid message count.
0A	Message lost.
0B	Out of buffers.
0C	Invalid serial port state.
0D	No serial port task defined.
0E	Invalid link for write to serial port.
0F	Invalid message waiting length for Intecom.
10	Invalid bank specified in write request.
11	Buffer not allocated for serial port write.
12	Error rechaining buffer.
13	Error releasing buffer.

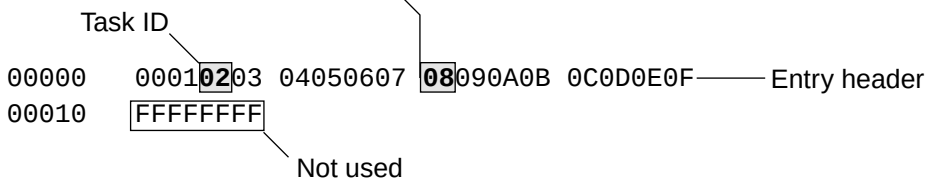


14	Error getting new buffer.
15	Invalid length in transmit message.
16	No transmit routine defined.
17	Invalid serial port write message type.
18	Invalid PBX type in control block.
19	Invalid MID message length.
1A	MID transmit failed.
1B	Timer not running but it should be.
1C	Invalid timer.
1D	Timer error—acknowledgment arrival not being timed.
1E	Illegal channel in message.
1F	Illegal station number in CIP message.
20	Serial receive buffer error.
21	Error getting buffer.
22	Serial transmit error.



4E PIPL Flash Upgrade Error

01	Switch 3 of the master CCF dip switch is set (that is, ON). This invoked the inactive core code of the CCF flash EPROM.
02	Unable to synchronize with all detected cards.
03	Identification (or CB WHO-R-U) error at slot nn.
04	Unable to read OS record 0.
05	Unable to find the xxx file.
06	Unable to open the xxx file.
07	Unable to read the xxx file.
08	Unable to upload the xxx file.
09	CB PROM start upload error at slot nn.
0A	CB PROM end upload error at slot nn.
0B	CB PROM diagnostics status error at slot nn.
0C	CB PROM DMA status error at slot nn.
0D	CB PROM start DMA error at slot nn.
0E	DMA error at slot nn.



50 Control Bus Error—Checksum Error

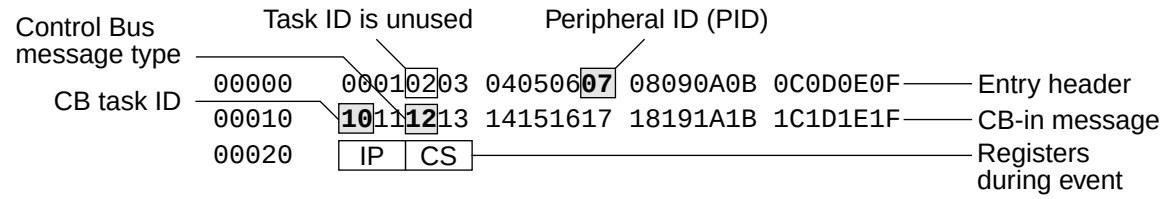
The CP read an incoming control bus message and:

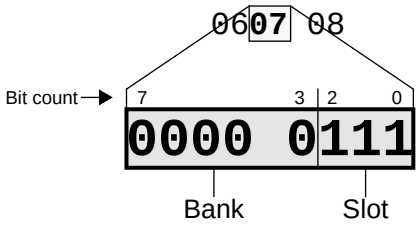
- the checksum in the message does not match the calculated checksum, or
- the slot in the peripheral address of the message does not match the slot value from the interrupt handler (shown in offset 07, bits 0-2, of the entry header).

This is a failure in transmitting the message. The CP responds by sending control bus message 04, Checksum Error, to the peripheral and logging this entry. Normally, the peripheral sends the original message again. But, if the Checksum Error message cannot be transmitted, the status code 50 entry is immediately followed by status code 58 and 5D entries.

The status code 50 entry contains the control bus message as the CP received it.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.



Offset	Label	Field Description
07	Peripheral ID (PID)	The card that the CP was exchanging control bus messages with. The PID is made of two fields:  Read with the table on the next page. For channel or port information, see if there is a CB message in the status entry. If there is, get the high-order digit from offset 11 of the entry (which is the peripheral address field of the control bus message). Refer to Table 1-9, “Channel of the Peripheral Address,” on page 31.

PID	Bank	Slot	350 Card	250 Card
00	0	0	Not used	File card portion of CCF
01		1	Card 2	Line TIC
02		2	Card 3	Line TIC
03		3	Card 4	Line TIC
04		4	Card 5	Line TIC
05		5	Card 6	Line TIC
06		6	Card 1	Line TIC
07		7	Not used	Line TIC
08	1	0	Card 8	Not used
09		1	Card 9	Line TIC
0A		2	Card 10	Line TIC
0B		3	Card 12	Not used
0C		4	Card 13	Not used
0D		5	Card 14	Not used
0E		6	Card 7	Not used
0F		7	Card 11	Not used
10	2	0	Card 16	
11		1	Card 17	
12		2	Card 18	
13		3	Card 26	
14		4	Card 27	
15		5	Card 28	
16		6	Card 25	
17		7	Card 29	
18	3	0	Card 30	
19		1	Card 31	
1A		2	Card 32	
1B		3	Card 34	
1C		4	Card 35	
1D		5	Card 36	
1E		6	Not used	
1F		7	Card 15	
20	4	0	Not used	
21		1	Card 20	
22		2	Card 21	
23		3	Card 22	
24		4	Card 23	
25		5	Card 24	
26		6	Card 19	
27		7	Card 33	

Limit

Four attempts to send a control bus message to the CP failed with checksum errors. On the fourth failure, the CP does not send a Checksum Error message. Instead, the CP does a soft reset for the peripheral: it clears the checksum error and checksum-nak counters, and sets the message exchange disposition to response mode. A status code 51 entry is immediately followed by a status code 5D entry.

The status code 51 entry contains the control bus message as the CP received it in the last attempt.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

52 Control Bus Error—Checksum-Nak On Response

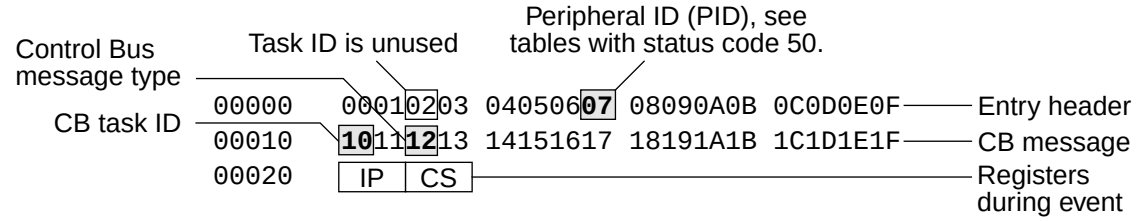
If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

53 Control Bus Error—Checksum-Nak On Transmission

The CP received a control bus message 04, Checksum Error, from a peripheral. This indicates that the peripheral found a checksum error when it tried to read a control bus message from the CP. Normally, the CP sends the original message again.

The status entry contains the original control bus message.

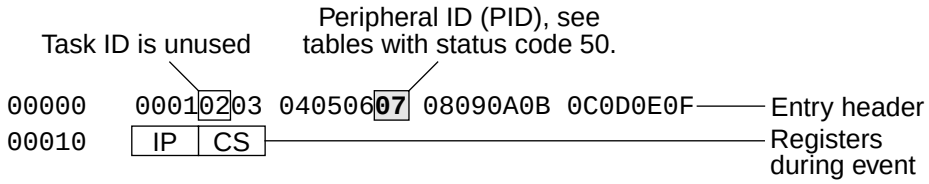
If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.



54 Control Bus Error—Checksum-Naks Exceeded Limit

Four attempts to send a control bus message to a peripheral failed with checksum errors. On the fourth failure, the CP does not re-send the original message. Instead, the CP does a soft reset for the peripheral: it clears the checksum error and checksum-nak counters, and sets the message exchange disposition to response mode. A status code 54 entry is immediately followed by a status code 5D entry.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.



55 Control Bus Error—Invalid Channel Reference

An incoming control bus message has an illegal peripheral address:

- The PID points to an unused slot or to the spare CB peripheral.
- The PID points to a PIC in the Control Bus Assignment table (CBA) but not in the PIC/TIC table.
- The channel in the peripheral address of the control bus message is out-of-range for the peripheral's channels.
- For a file system or a line card, the CB task ID is out-of-range for task IDs. The channel is not checked for these cards.

The CP ignores the message.

The entry contains the control bus message as the CP received it.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

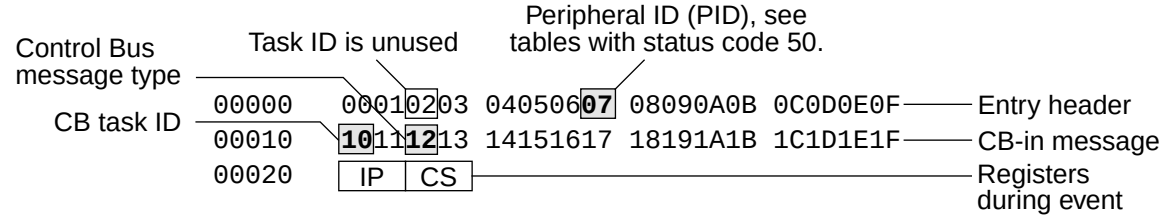
56 Control Bus Error—Empty Control Bus Slot

The CP received a control bus message interrupt from an unused slot or the spare CB peripheral.

The CP ignores the message.

The entry contains the control bus message as the CP received it. The Peripheral ID, offset 07, has the bad slot information.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.



57 Control Bus Error—Reset Peripheral

A CB peripheral was reset including:

- clear the checksum error counter
- clear the checksum-nak counter
- set the message exchange disposition to response mode

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

58 Control Bus Error—Transmit Error

The CP failed in sending a control bus message because:

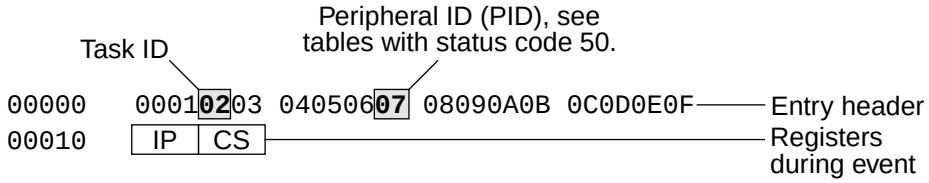
- the peripheral took too long getting ready to receive a message.
- the SBI or the peripheral took too long acknowledging that the message had been delivered.
- a CRC error occurred during delivery.

If the Task ID (offset 02) = FF then there is no task ID: the field is unused.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

59 SBI DMA FIFO Underrun

5A SBI DMA FIFO Overrun



5B SBI Failed to Cycle in Control Bus Input Read

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

5C SBI Failed to Cycle in Control Bus Output Write

The CP failed in sending a control bus message because the SBI or the peripheral took too long acknowledging that the message had been delivered.

This entry is always followed by a status code 58 entry.

The Task ID field, offset 02, is unused.

If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

5D Soft Reset of Control Bus Peripheral

A CB peripheral was reset including:

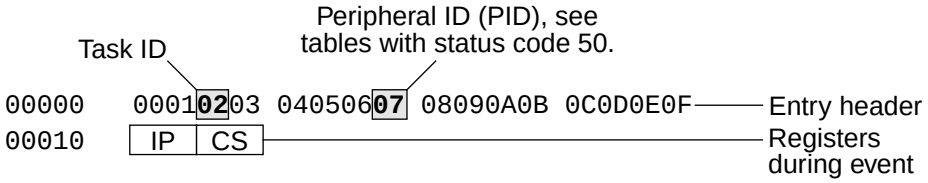
- clear the checksum error counter
- clear the checksum-nak counter
- set the message exchange disposition to response mode

This reset is usually done after the CP fails in sending a control bus message.

The Task ID field, offset 02, is unused.

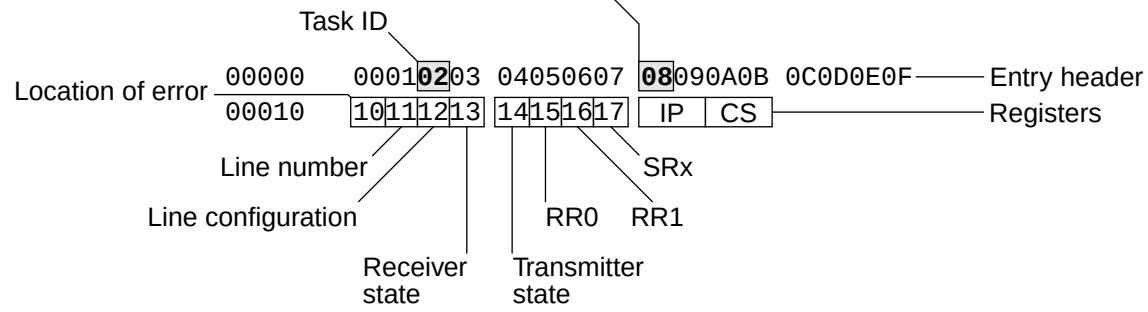
If there is only one control bus error logged, monitor the system for a few days. If there are several errors pointing to the same peripheral, replace that card. If there are several errors pointing to different peripherals, replace the CP.

5E SBI DMA CRC Error



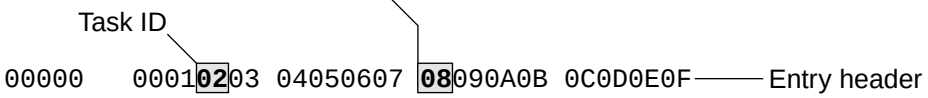
5F X.25 Task Crashed

00 Invalid state in driver.



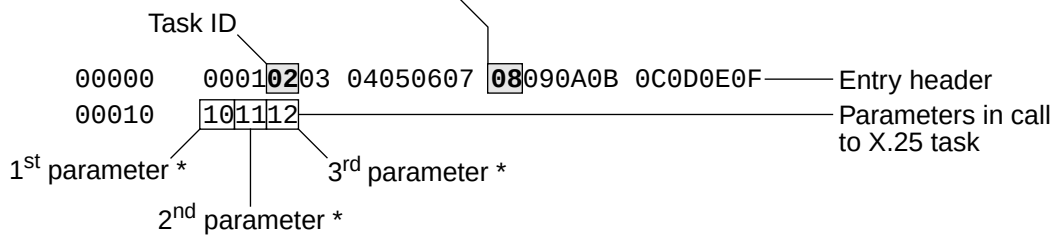
Offset	Label	Field Description
10	Location of error	Where error was detected: 00 DMA_CHAIN_INT_RX 01 DMA_CHAIN_INT_TX 02 DU1_INT_RX 03 RX_ASYNC_INT 04 SCC_INT_SIES 05 SCC_INT_RX 06 SCC_INT_TX 07 TX_ASYNC_INT 08 Timer Tick, RX 09 Timer Tick, TX 0A VXD_ASM_SEND 0B VXD_ENABLE_RX 0C VXD_START_LINK
11	Line number	Physical interface line number.
15	RR0	RR0 value, for SCC lines only.
16	RR1	RR1 value, for SCC lines only.
17	SRx	SRx value, for DUART lines only.
18-19	IP	Location where error was detected.
1A-1B	CS	Location where error was detected.

01 C variables too large for data area.



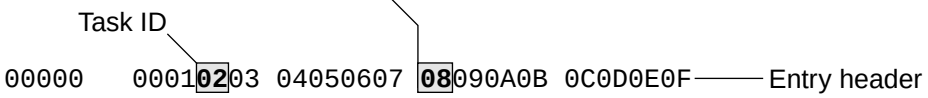
Body Unknown

02 X.25 task panic. To find where the task panicked, grep for **m_crash**.



* the relative number byte in the crash identifier

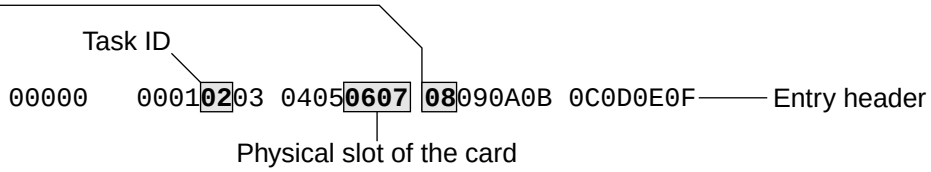
03 X.25 reboot routine called.



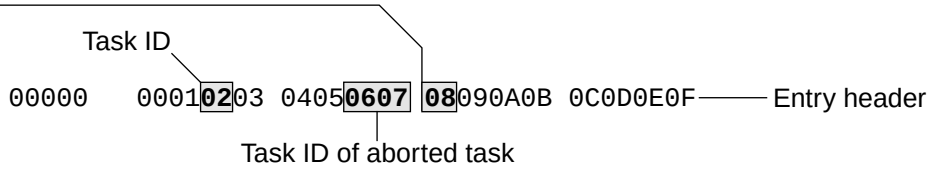
Body Unknown

60 Logic Card Status

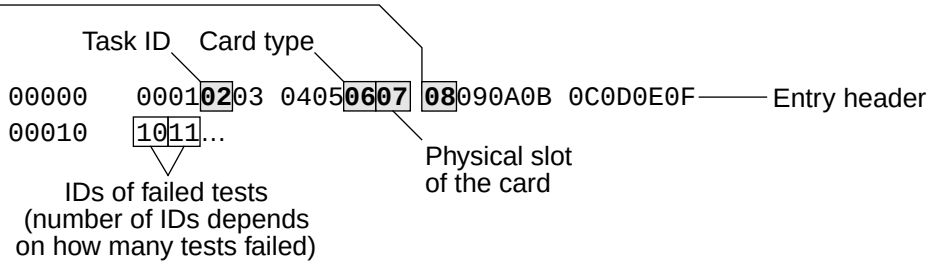
00 Dead logic card detected.
01 Logic card uploaded and running.



02 Line task was aborted by Daemon Task because of card failure.

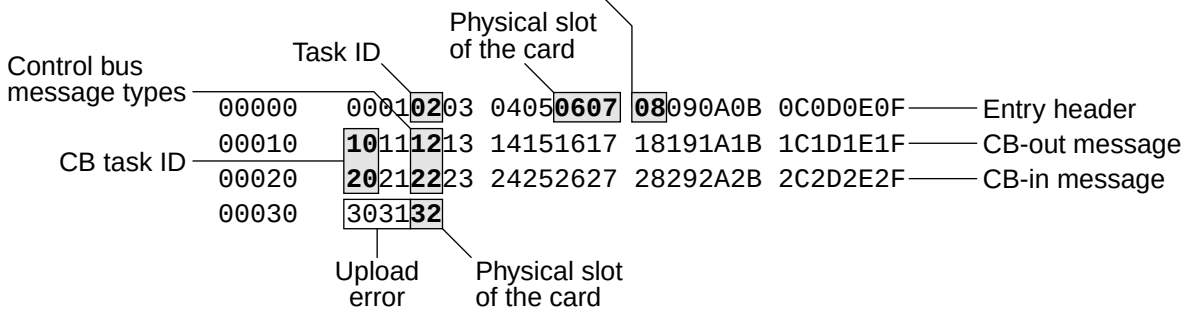


03 Logic card diagnostic test failed. The length of this entry varies with the number of tests that failed.

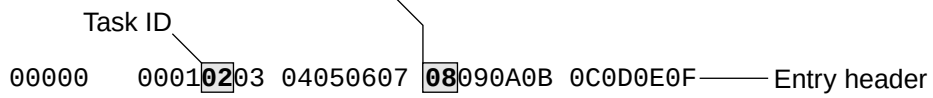


Offset	Label	Field Description
06	Card type	The type of card being tested: 04 Aspen fax card with 4 c30s 15 Fax LT card, 4 port, ground/loop start 16 Fax LT card, 8 port, ground/loop start 17 Fax LT card, 4 port, E & M 18 Fax LT card, 8 port, E & M 19 Voice LT card, 4 port, ground/loop start 1A Voice LT card, 8 port, ground/loop start 1B Voice LT card, 4 port, E & M 1C Voice LT card, 8 port, E & M 1F Fax LT card, 8 port, VTIC 20 FLT Mitel 8 port

04 Logic card failed to upload. The control bus messages are the last outgoing and the last incoming messages.

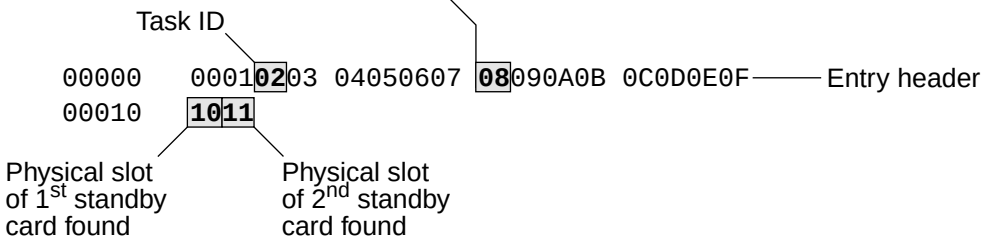


05 No DLC found in the system.

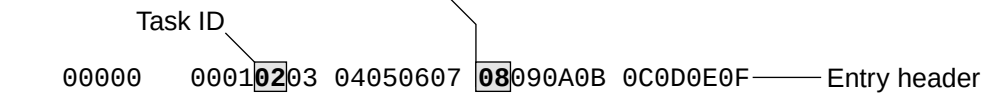


61 Incomplete Standby Redundant Card Set

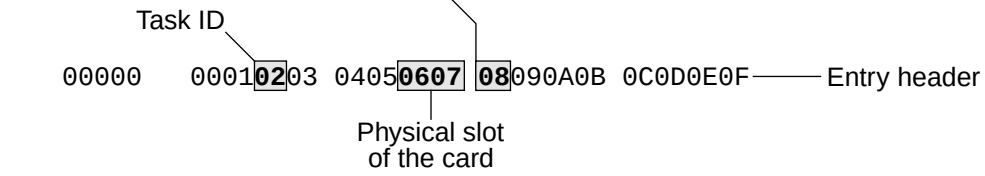
00 Incomplete standby card set found. Offset 11 appears only if a second card was found.



01 No standby redundant cards found.

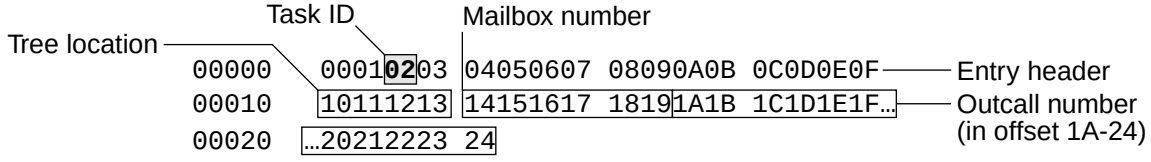


02 Standby redundant card was removed.



62 Invalid Leading Digit Dialed for Automated Attendant Transfer

The first digit of an extension number cannot be the trunk-level extension number.



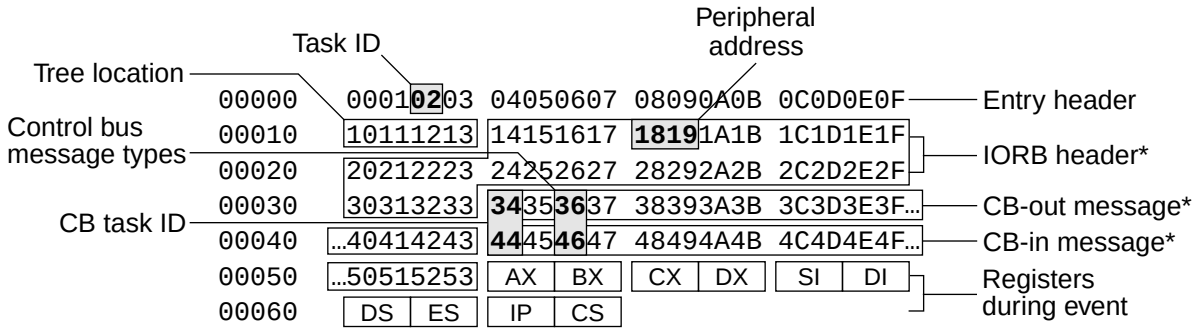
63 Channel Reset Was Successful

64 FS/CP Software Error

System or session/task restarted.

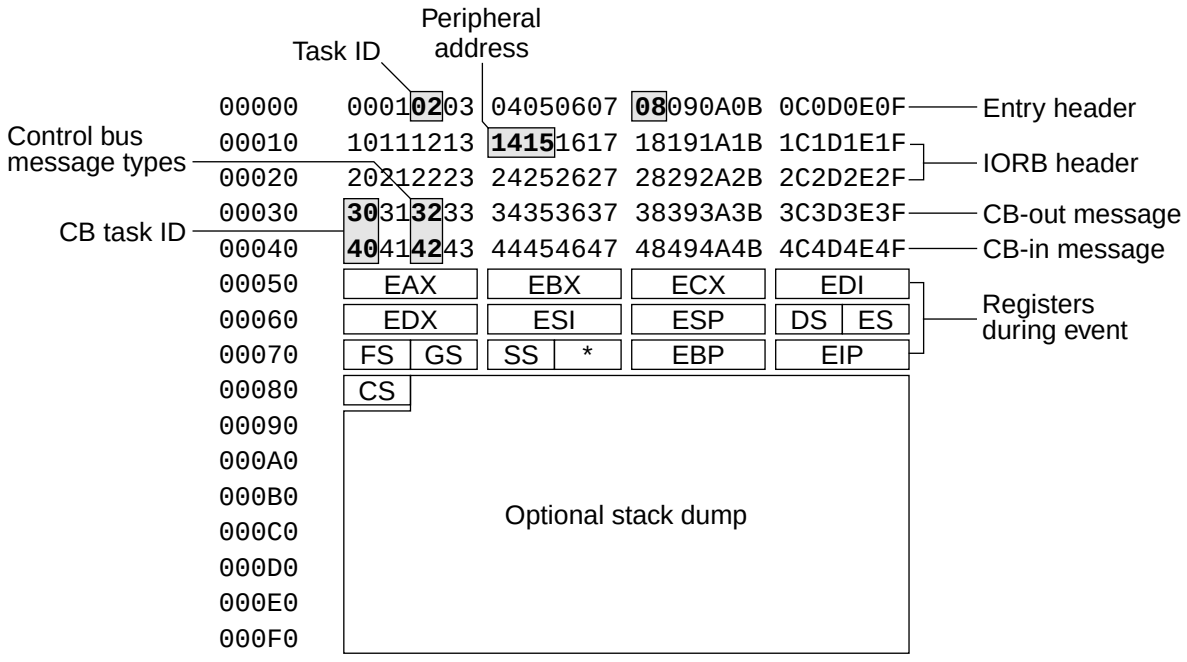
The format of the entry varies with the exact cause. Check the entry size.

68-Byte Entry



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

82-Byte Entry



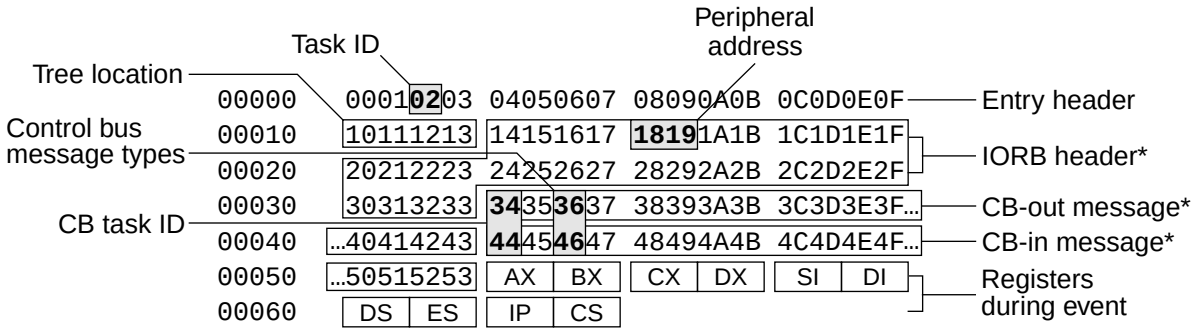
*Unused

65 LC Protocol Error

System or session/task restarted.

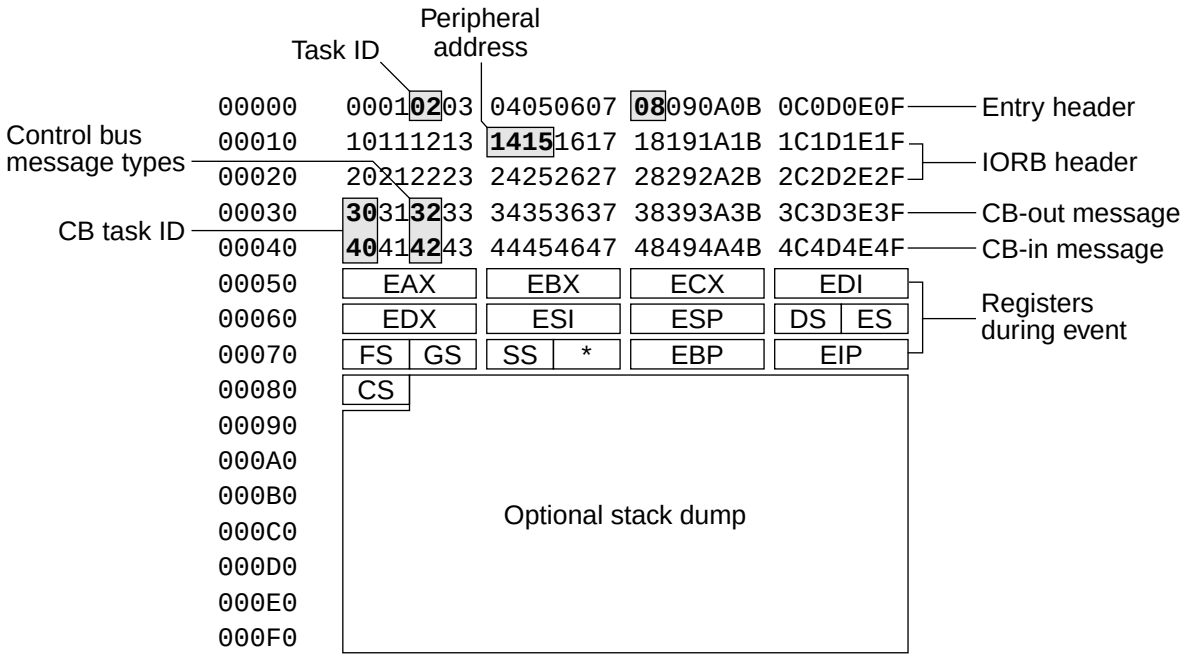
The format of the entry varies with the exact cause. Check the entry size.

68-Byte Entry



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

82-Byte Entry



*Unused

66 Line Task Internal Error

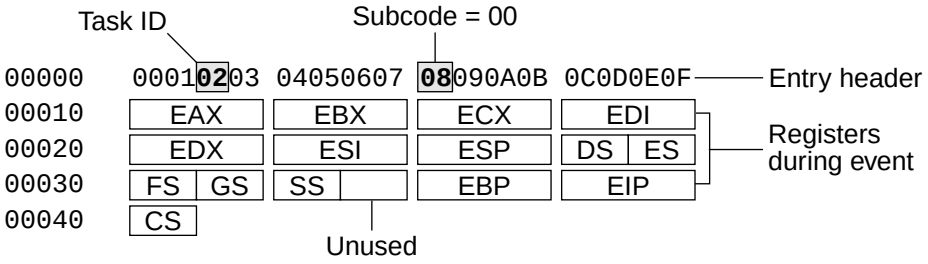
System or session/task restarted.

00 The format of the entry varies with the exact cause. Check the entry size.

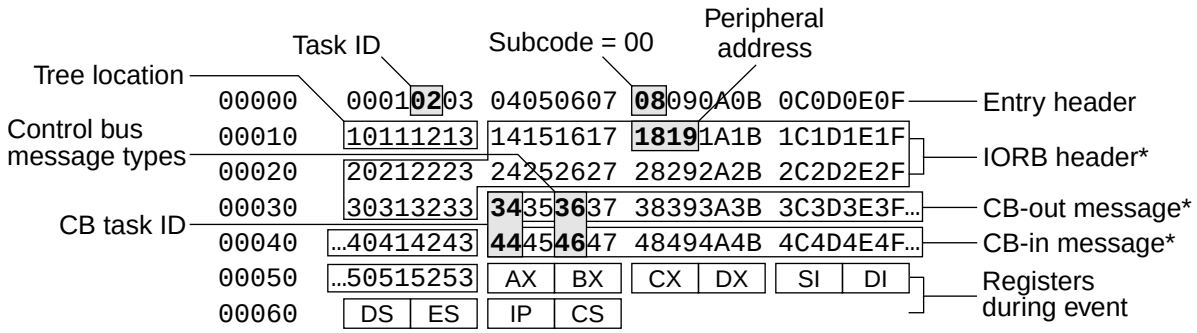
42-Byte Entry

Caused by:

- network directory lookup failure
- batch network transmission failure
- failure of DMA data transfer between CP and DLC
- problem with logging EDBN error code



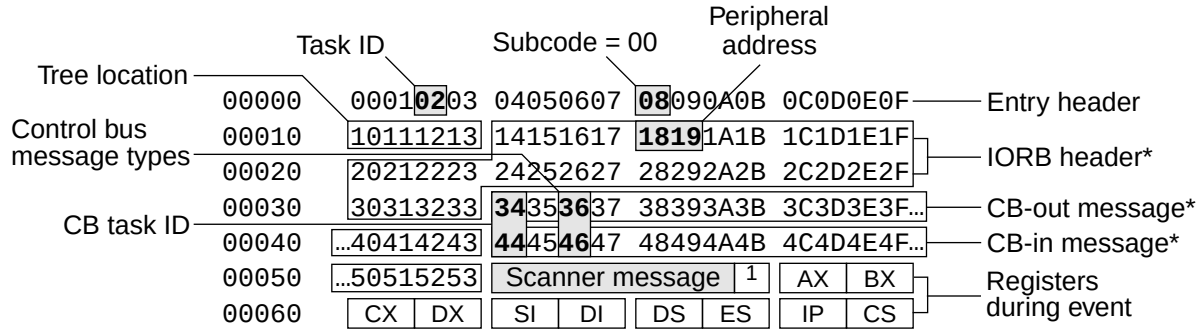
68-Byte Entry



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

6F-Byte Entry

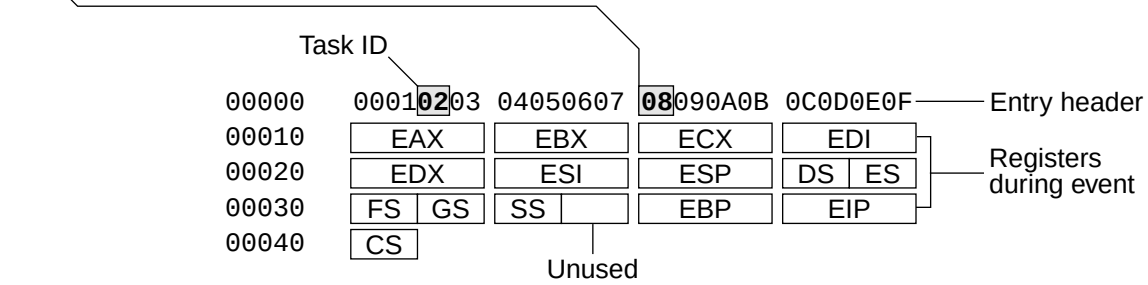
Scanner task error.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-5A	Scanner message	Queued incoming scanner message. Check offsets 54 and 55 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
5B	[1]Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

01	Not an XMD entry.
02	XMD format error.
03	Phrase error.
04	Not an XMD entry (networking).
05	XMD format error (networking).
06	Phrase error (networking).
07	Type error (networking).
08	Error in converting node record value to user record value.

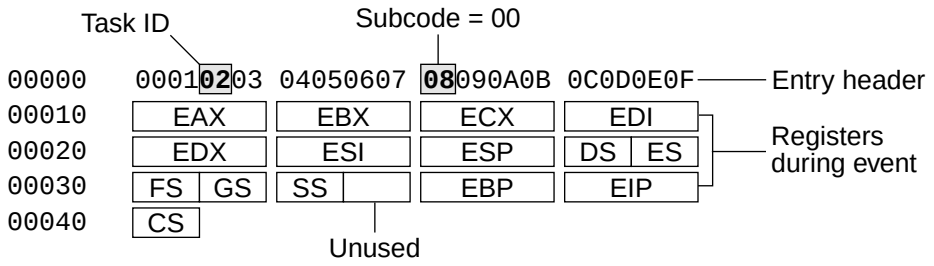


67 Tree Invalid Parameter to Action

System or session/task restarted.

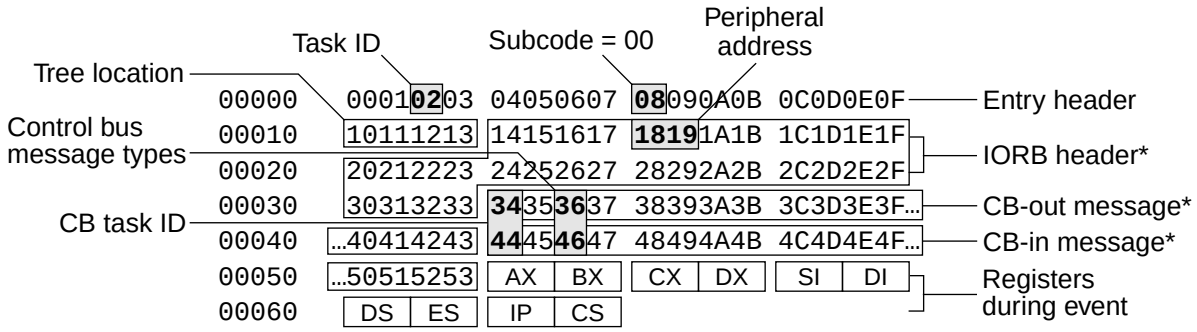
00 The format of the entry varies with the exact cause. Check the entry size.

42-Byte Entry



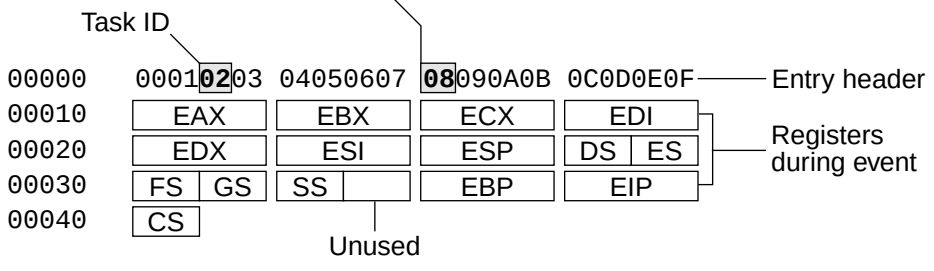
68-Byte Entry

Reported by Line Task.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

03 Wrong IRN.



68 Tree Invalid Action Sequence

System or session/task restarted.

69 Tree Invalid UR Lock State

System or session/task restarted.

6A Tree Missing Event

6B Interpreter Temporary Area Overflow

6C Bad User Record at Read

Session/task restarted.

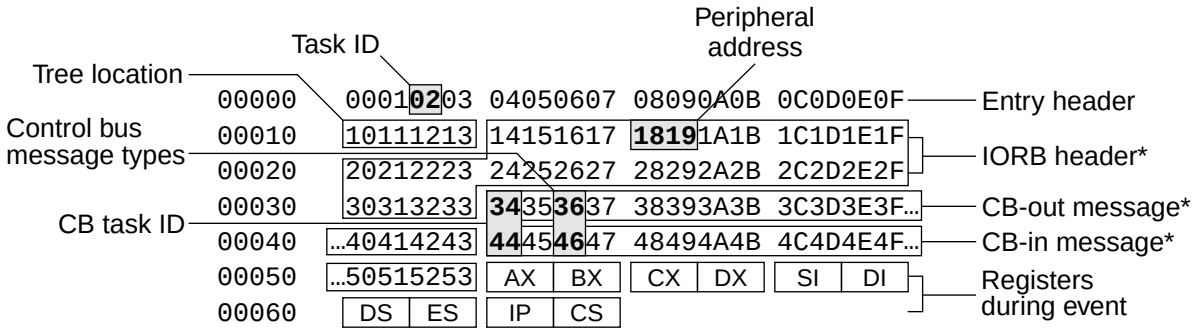
6D Bad User Record During Processing

Session/task restarted.

6E Bad User Record at Write

Session/task restarted.

6F Tree Internal Error (Error Action)



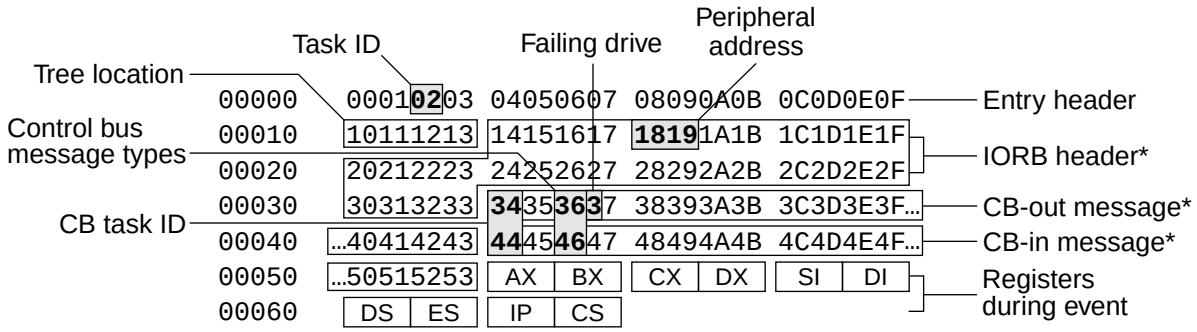
*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

70 File System Drive I/O Error During a Write Operation

Session/task restarted. The subscriber heard a deletion notification or an area-of-interest message when the error occurred.

If there are several status code 70 or 72 entries pointing to different drives, replace the CCF card.

If there are several entries pointing to one drive, run validity checks, garbage collect and then the long test from the drive-test utility menu. If the test fails, replace the drive.

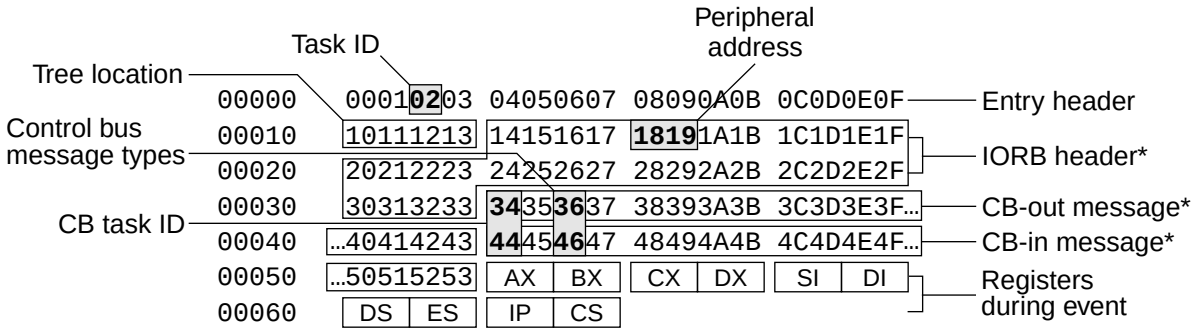


*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
37	Failing drive	The left digit is the number of the effected drive. Actually, this digit is part of a message ID occupying offset 37-38 (offset 03-04 of the CB-out message). See the description for the control bus message type.

71 File System DMA Time-Out

System restarted.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

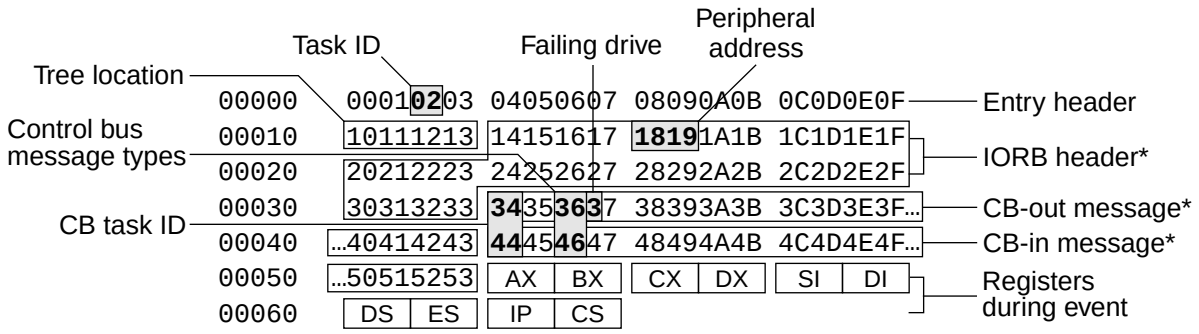
72 Scramble Code or I/O Error During Message-Read Operation

The subscriber heard a deletion notification or an area-of-interest message when the error occurred.

If the return code of the CB-in message (offset 47) is 01 (unrecoverable disk error), examine the file card status log for more information.

If there are several status code 70 or 72 entries pointing to different drives, replace the CCF card.

If there are several entries pointing to one drive, run validity checks, garbage collect and then the long test from the drive-test utility menu. If the test fails, replace the drive.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
37	Failing drive	The left digit is the number of the effected drive. Actually, this digit is part of a message ID occupying offset 37-38 (offset 03-04 of the CB-out message). See the description for the control bus message type.

73 Scanner Unexpected Error Acknowledgment

The system logged the error and continued.

74 Scanner Wrong Incoming Message

The system logged the error and continued.

75 Line Task Seize Line Time-out

The system logged the error and continued.

76 Scanner Incoming Message at Write

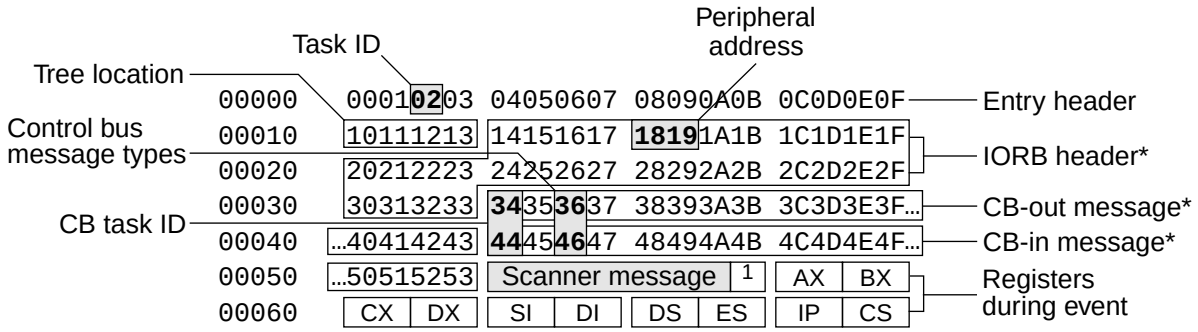
The system logged the error and continued.

77 Scanner Incoming Queue Overflow

The system logged the error and continued.

78 Scanner Error Request Prior to Reset

The system logged the error and continued.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

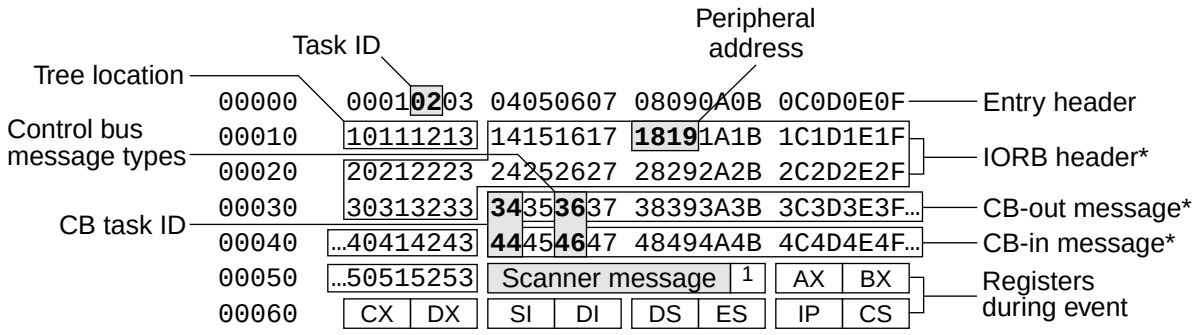
Offset	Label	Field Description
54-5A	Scanner message	Queued incoming scanner message. Check offsets 54 and 55 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
5B	[1]Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

79 Scanner/ITIC Line Failure

The system logged the error and continued.

7A Message Waiting Bad Extension

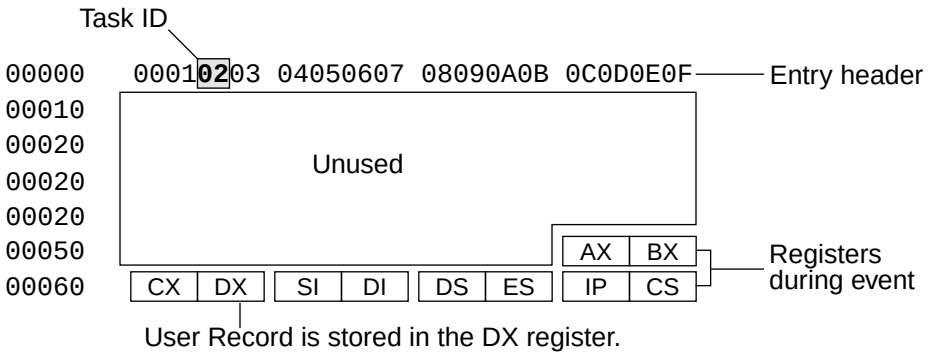
The system logged the error and continued. Offset 37-3B contains the extension that the PBX did not recognize. (Except for FLT-M Integration on Mitel PBX—see below.)



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

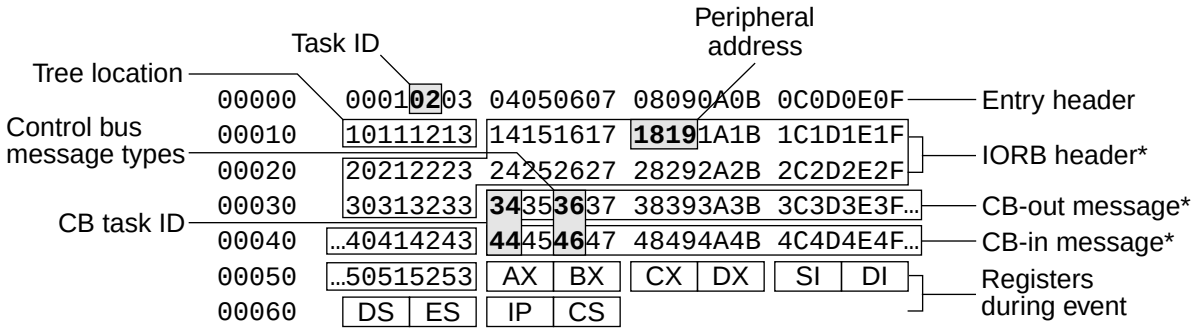
Offset	Label	Field Description
54-5A	Scanner message	Queued incoming scanner message. Check offsets 54 and 55 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
5B	[1]Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

FLT-M Integration on Mitel PBX



7B Data Bus Checksum Error

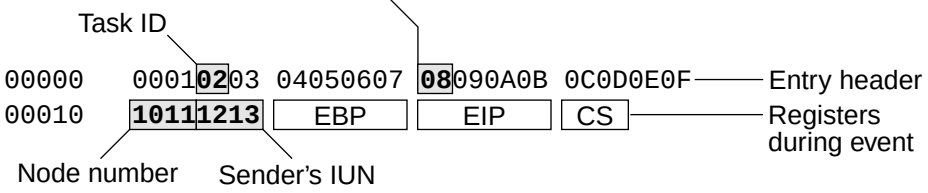
7C File System Out of Synch



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

7D Batch Network Transmit Error

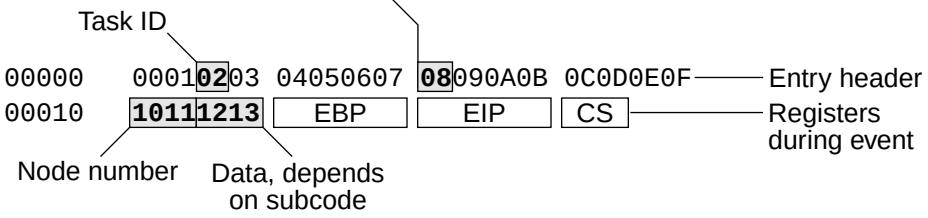
01 Sender mailbox was deleted. The IUN in the network message cannot be translated into a mailbox number.



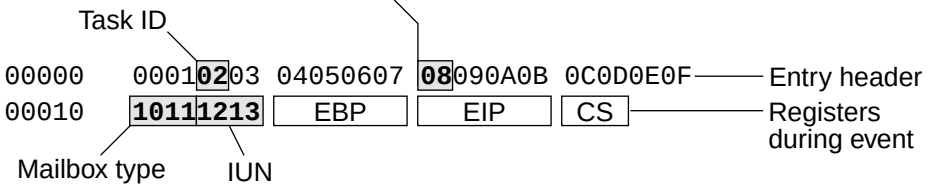
02 Bad priority level.
Offset 12-13: priority level.

03 Incorrect message type.
Offset 12-13: message type.

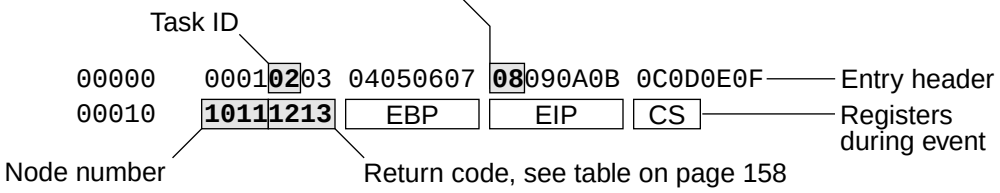
09 Miscellanious problem with sending message.
Offset 12-13: return code identifying problem, see table on page 158.



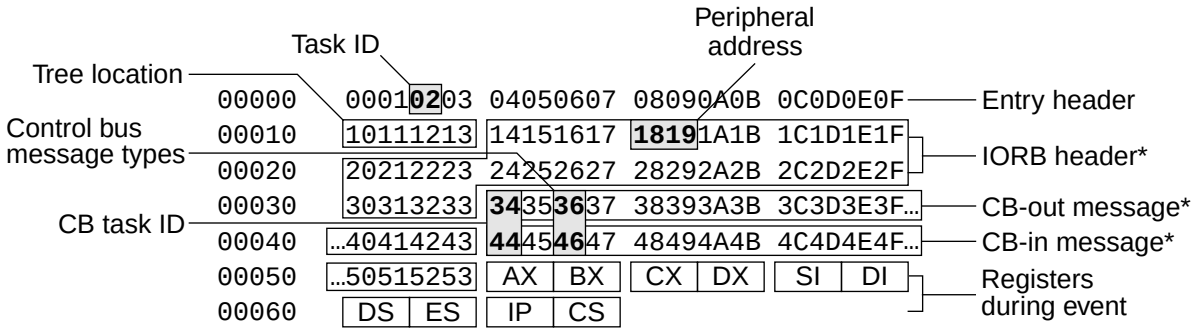
10 Illegal mailbox type found during return-to-sender operation.



11 Software error during return-to-sender operation.

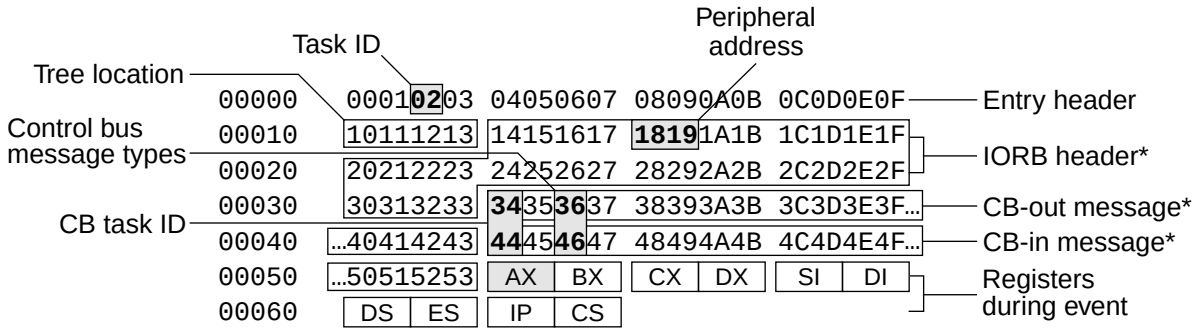


7E Batch Network Receive Error



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

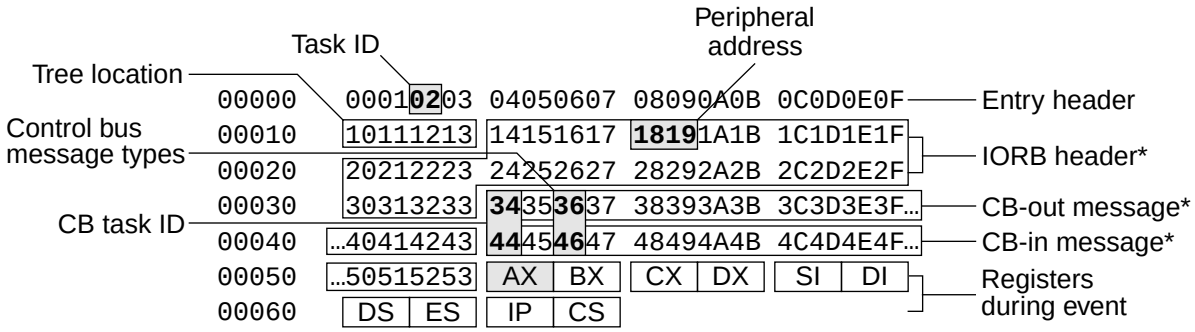
7F Batch Network File System I/O Error



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-55	AX	The AX register at the time of the event identifies the cause of the error: 01 Get new message, new segment or close old message failed on file system protocol. 02 Illegal message type returned from file system in get new message. 03 Drive error in get new message. 04 File system detected a DMA error from the previous I/O operation while executing get new message or get new message segment. 05 Drive error on get new message segment. 06 Get message destination failed on file system protocol. 07 Illegal message type returned from file system in get destination. 08 Drive error in get destination. 09 File system detected a DMA error from the previous I/O operation while executing get new message destination. 0B Unknown error return in get message segment. 0D I/O error in start message search (ACT46). 0E File system protocol error in start message search (ACT46). 0F Get new destination returned an unknown return code (FS).

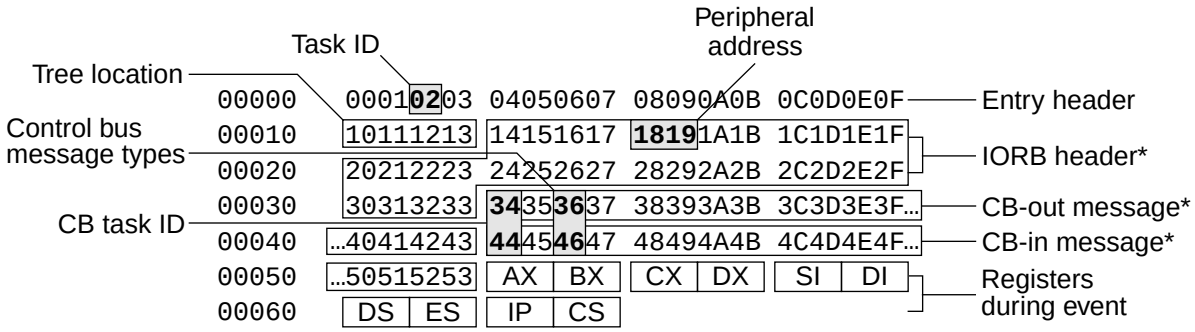
80 Batch Network Internal Error



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-55	AX	The AX register at the time of the event identifies the cause of the error: 01 Get new message action was executed while a previous message was active. 02 Get new message action was entered with an invalid record area definition. 03 Get new message action was executed with illegal priority. 04 Get new message action was entered with the wrong user record (or no record) in area A or B. 05 Level or INN mismatch in get new message action. 06 Message/segment pending while executing get new message action. 07 Get new message action was attempted without a message search. 08 Get new message action failed on a garbled mailbox string returned from the file system. 09 Level or INN mismatch in get new message segment action. 0A Message/segment pending while executing a get new message segment action. 0B Get new message segment action was attempted without a message search. 0C Get new message segment action attempted following “no more segments.” 0D No message/segments found when attempting to decrement the use count in get new message destination action. 0E No message active when attempting to get a destination from the file system. 0F Get new message destination action entered with an invalid record area definition. 10 Get new message destination action was executed with illegal priority. 11 Get new message destination action was entered with the wrong node record (or no record) in area A or B. 12 Level or INN mismatch in get new message destination action. 13 Message/segment pending while executing a get new message destination. 14 Get new message destination action attempted without a message search. 15 “No more destinations” on first destination (get destination action). 16 Get new destination action failed on a garbled mailbox string returned from the file system. 17 Get new message action executed while file system search was not active. 18 Get new destination action executed while file system search was not active. 19 Get new destination error from low level routine detected by MDS. 1A Get new destination error from low level routine. No entry in MDS.

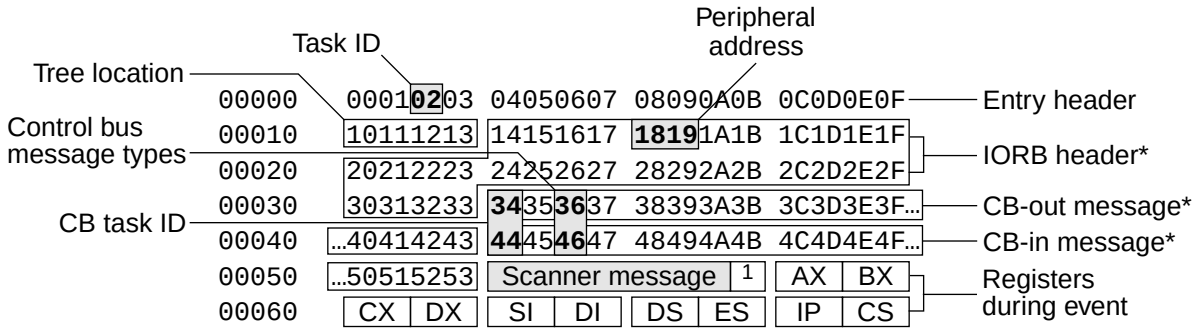
81 Debug Information Message



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

82 Error Status from OS Scanner Driver

83 Catastrophic Error Signalled by Scanner



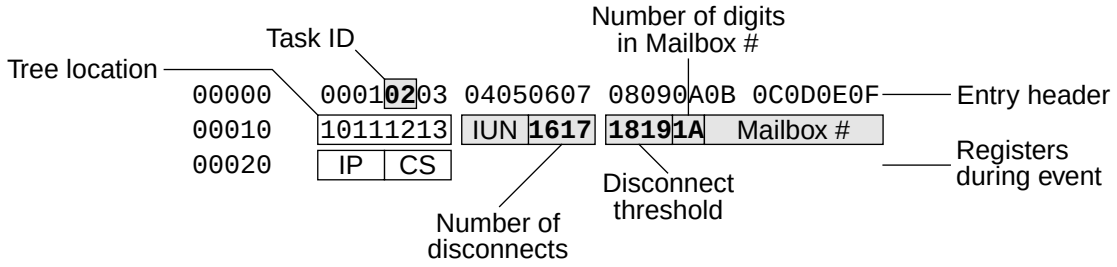
*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-5A	Scanner message	Queued incoming scanner message. Check offsets 54 and 55 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
5B	*Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

84 Bad Password Disconnect

This error entry is logged if a caller tries to access a mailbox and enters the incorrect password a number of times during one session. The system disconnects the caller after a predetermined number of attempts (set by the system manager in menu 1.1). This status code helps the system manager detect unauthorized activity in the system.

85 Subscriber Exited with Unheard Messages

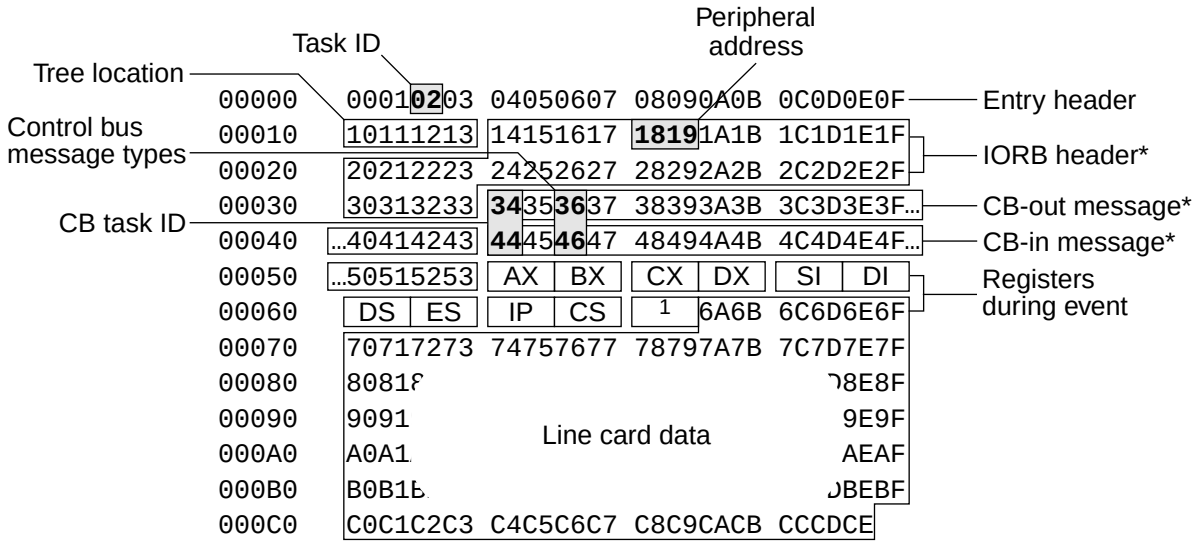


Offset	Label	Field Description
16-17	Number of disconnects	Number of bad password disconnects in the user record. For status code 85, this field does not apply and is 0000.
18-19	Disconnect threshold	Threshold for bad password disconnects in the user record. For status code 85, this field does not apply and is 0000.
1B-1F	Mailbox #	Mailbox number as a decimal string. Do not transpose. This field can be read directly. The number of digits in the mailbox number is given in offset 1A.

86 Line Task Read or Response Time-out

This entry is often logged because there was no response to the CB-out message. In that case the field for the CB-in message will hold garbage. This garbage data is usually clearly inappropriate as a response; for instance, a File System 38 message in response to a Line Card A2.

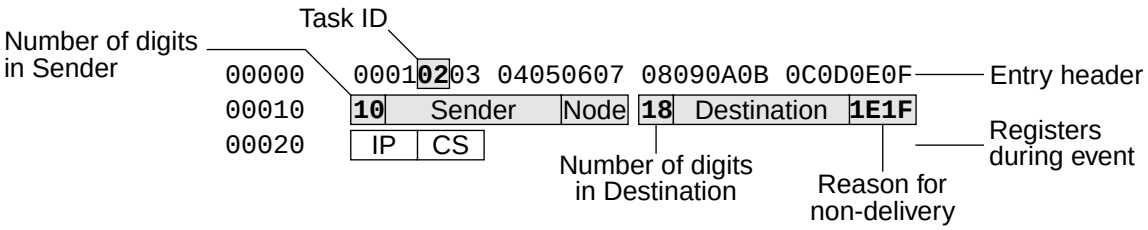
This error is followed by a reset command to the port. This usually works but is a fatal condition if it fails.



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

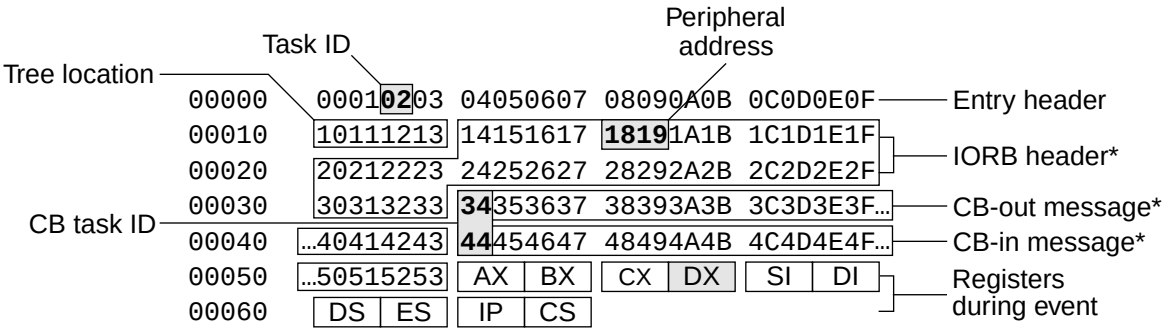
[1]Line card data address

87 Batch Network Returned Message—Sender's Box Full



Offset	Label	Field Description
11-15	Sender	Mailbox number of the sender or forwarding mailbox, as a decimal string. The number of digits in the mailbox number is given in offset 10.
16-17	Node	Node number of the original destination.
19-1D	Destination	Mailbox number of the original destination or forwarding destination mailbox, as a decimal string. Do not transpose; this field can be read directly. The number of digits in the mailbox number is given in offset 18.
1E-1F	Reason for non-delivery	01 Mailbox at remote (destination) node was not found. 02 Invalid mailbox type for the network message. 03 Mailbox at remote node is full. 04 Mailbox at remote node is full with future delivery messages. 05 Remote node file system is full. 06 System manager has deleted the node on the base system. 07 System manager has disabled the node on the base system. 08 Bad message detected during transmission. 09 Remote node busy—message returned. 0A Receiving node did not answer network call. 0B Bad line conditions—message returned. 0D ASCII name doesn't match—message returned. 0E Mailbox blocking—message returned. 0F User had extended absence greeting. 10 No fax-capable mailbox to receive message. 11 No fax-capable port to receive message. 12 No fax-capable node to receive message. 13 No fax-capable port to receive message. 29 Remote is not supporting AMIS. 2A Remote does not support version sent. 2B Remote has blacklisted us. 2C Cannot access AMIS. 2D Remote says message is too long. 2F Remote mailbox not accepting this message. 31 Remote sent cutoff. 32 Bad message.

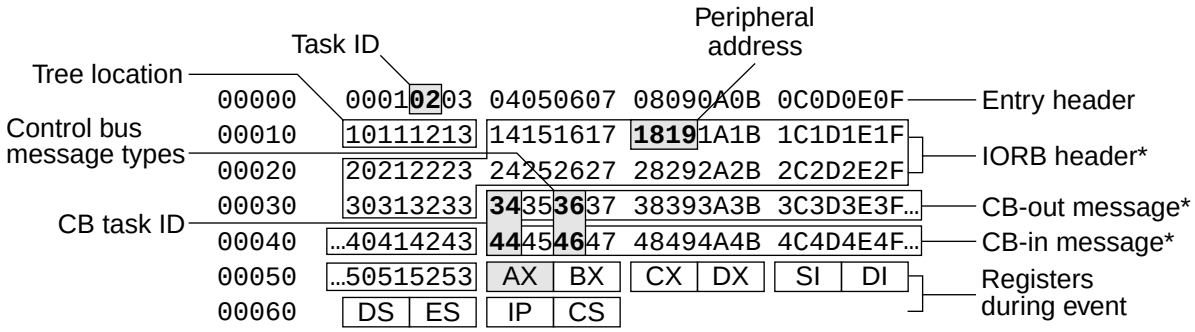
88 Bad Community Record at Read



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
34-43	CB-out message	The output control bus message is slightly different with status code 88. The message type (offset 36) and the first byte of the packet data (offset 37) are overwritten with the value **FFFF**—but the message type is actually 28. To decode the CB-out message, refer to file system message 28, Read Data.
44-53	CB-in message	Read as file system message 29, Read Data Response.
5A-5B	DX	The DX register at the time of the event identifies the cause of the error: 01 Inactive community record 02 Bad community record level 03 Bad community ICN 04 Bad community number length 05 Bad community ASCII name length 06 Bad abbreviated address length 07 Bad community bulletin mailbox IUN 08 Bad community extension length 09 Bad community attendant number 0A Bad community attendant schedule number 0B Bad community after hours mailbox IUN 0C Bad group ASCII name length 0D Bad group bulletin mailbox IUN 0E Bad group after hours mailbox IUN 0F Bad group extension length 10 Bad group attendant number 11 Bad group attendant schedule number

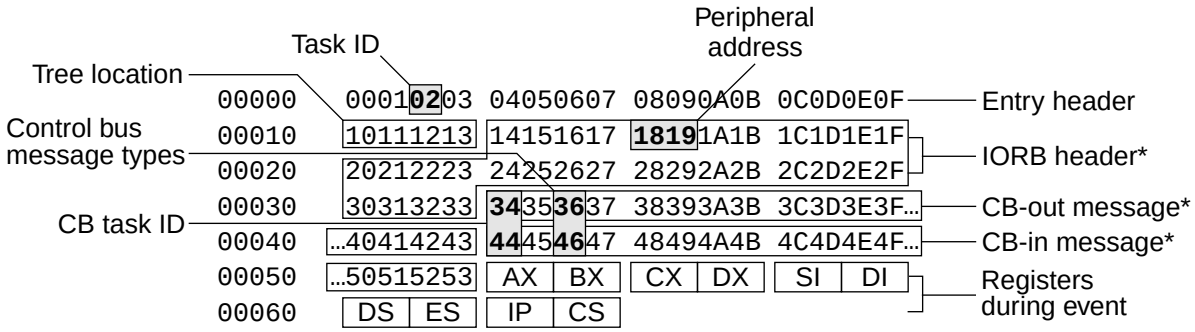
89 Batch Network Informational Error



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

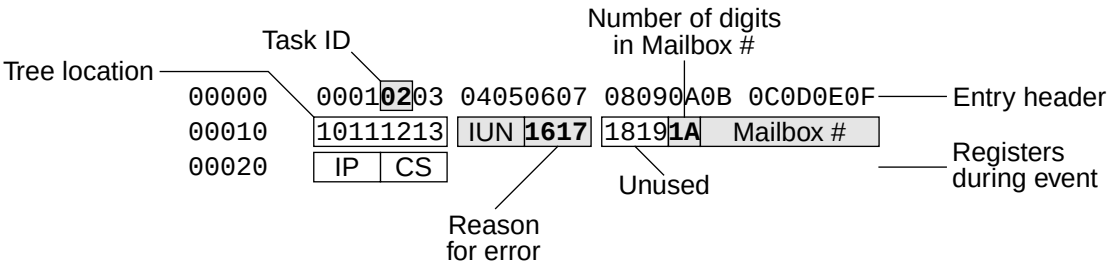
Offset	Label	Field Description
54-55	AX	The AX register at the time of the event identifies the cause of the error: 01 Failed to close old message in get new message. 02 I/O error when decrementing use count in get new destination.

8A SMDI Integration-Related Error



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

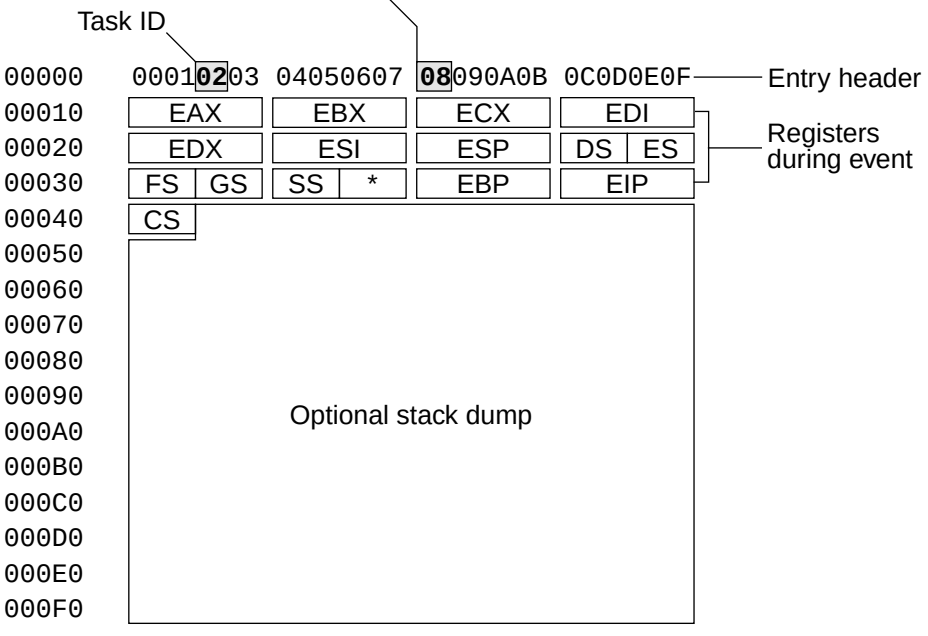
8B Bad Command Code for AspenTex



Offset	Label	Field Description
16-17	Reason for error	Reason the command was bad: 02 Bad distribution mailbox password 03 Bad command at type 41 main menu 04 Time-out at type 41 main menu 05 Error when collecting review mailbox number 06 Time-out when collecting review mailbox number 07 Invalid review mailbox number 08 Invalid review mailbox type 09 Invalid command received while waiting for message count confirmation 0A Time-out while waiting for message count confirmation 0B Invalid command while collecting message position for deletion 0C Time-out while collecting message position for deletion 0D Invalid command while waiting for deletion confirmation 0E Time-out while waiting for deletion confirmation 0F Invalid command while waiting for deposit confirmation 10 Time-out while waiting for deposit confirmation 12 Tried to deliver more than one message to ECP mailbox. Problem with review mailboxes. The system either tried to delete a nonexisting message or attempts to deposit new messages failed. 13 Disk full while trying to record message 14 Recording terminated by invalid keys, silence or maximum recording length allowed 1E Data module could not log onto the voice processing module due to a bad password 1F Password already in use
1B-1F	Mailbox #	Mailbox number as a decimal string. Do not transpose; this field can be read directly. The number of digits in the mailbox number is given in offset 1A.

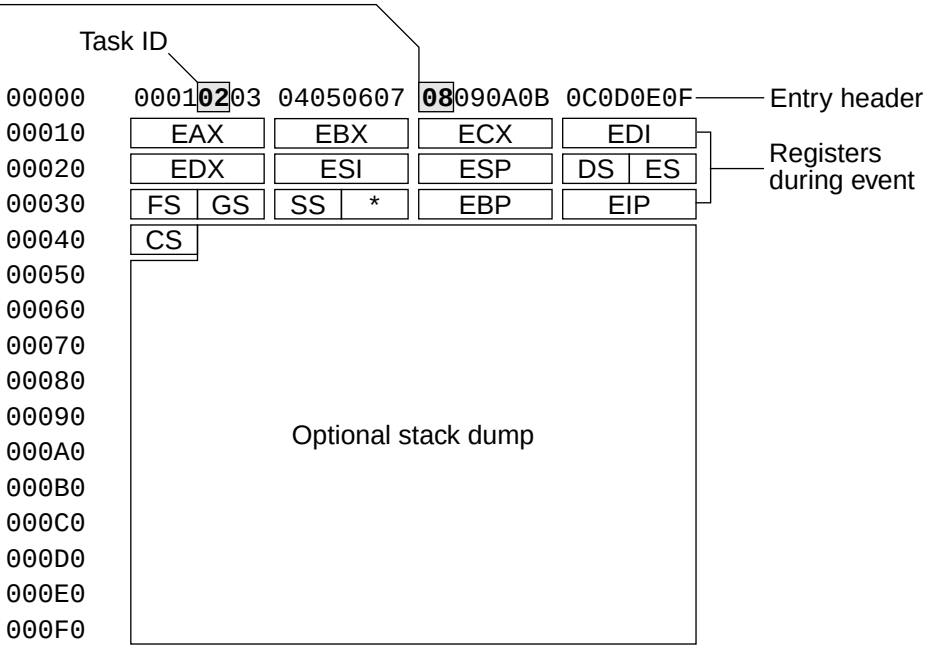
8C AMIS-Related Error

01	Phone number in unknown format.
02	Phone number length error.
03	Access phone number for AMIS not entered.
04	Access phone number for AMIS too long.
05	Could not add an AMIS EAR.
06	Could not delete an AMIS EAR.
07	Could not get dialing sequence from SST.
08	Tree parameter count error.
09	Internal coding error.
0A	Mailbox gone, could not return message.
0B	Data length in make_fr invalid.
0C	Function code in make_fr invalid.
0D	Frame length in make_fr invalid.
0E	Data in make_fr invalid.
0F	Checksum in make_fr invalid.
10	Error in received checksum.
11	Error in received frame length.
12	Error in time-out rules.
13	Error in received data.



*Unused

14	Error in received function code.
15	Disconnect received.
16	Start digit not received.
17	Transmitted frame three times but remote asked for it again.
1E	Could not get dialing sequence from dialing-sequence table.
1F	Error in message type.
20	Error in NDN field.
21	Error in sending-mailbox field.
22	Error in receiving-mailbox field.
23	Data longer than it should be.
24	Recording error at receiving end.

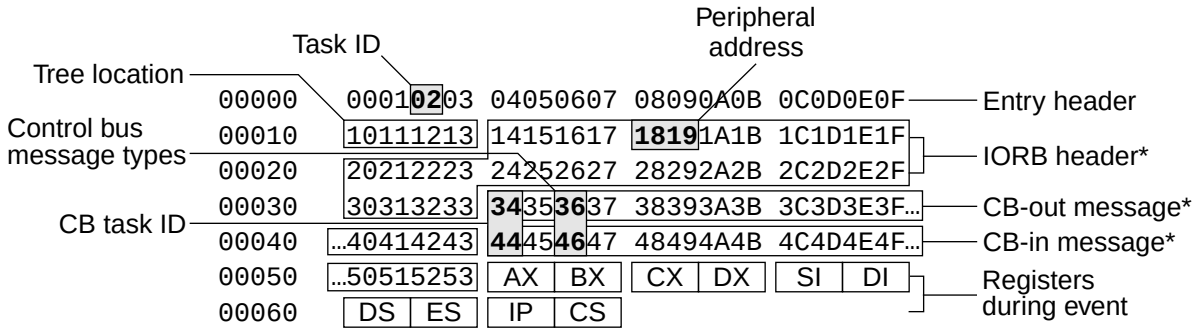


*Unused

8D AMIS EAR Array at Least 90% Full

8E AMIS Directory at Least 90% Full

8F Unknown Network Prefix in Group Number



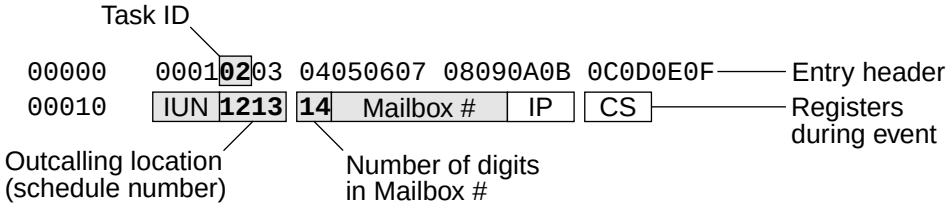
*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

90 Outcalling Attempted but No Outcalling Phone Number Found in User Record

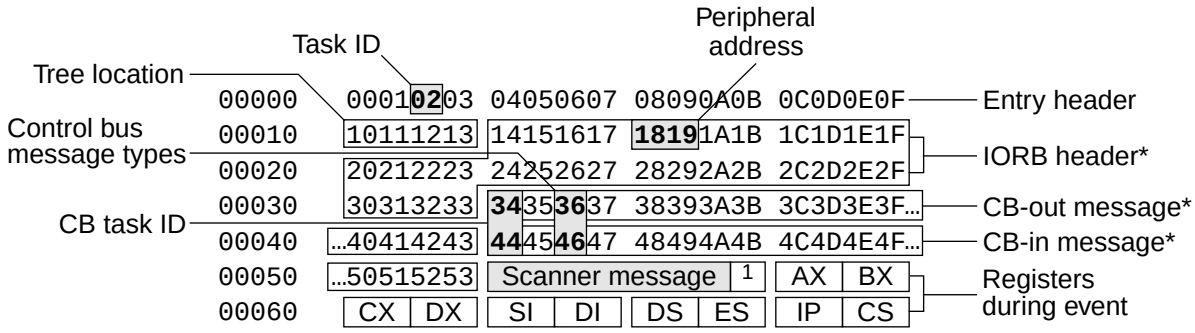
This error occurs when an outcalling command is generated, but no outcalling telephone number existed in menu 9.1. For example, if subscribers enable the outcalling feature in their mailboxes but the system manager has deleted the outcalling telephone number in menu 9.1, this error entry will appear.

To correct this problem, the following are possible solutions:

- Instruct the subscriber to disable outcalling in his/her mailbox.
- Instruct the subscriber to enter a telephone number for outcalling in the mailbox.
- Enter an outcalling number in menu 9.1 for the subscriber's mailbox.



91 Message Waiting on Denied Extension for DMID— COS Does Not Allow Message Waiting

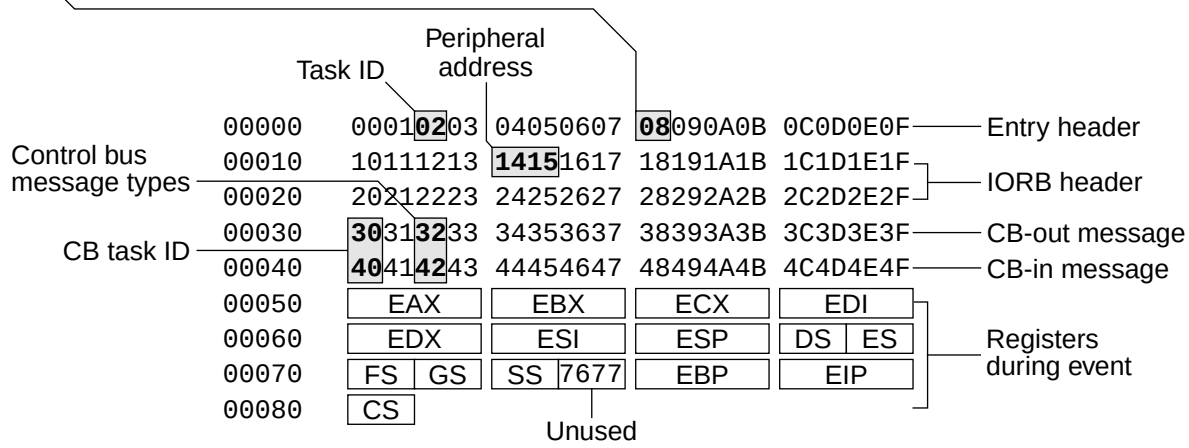


*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

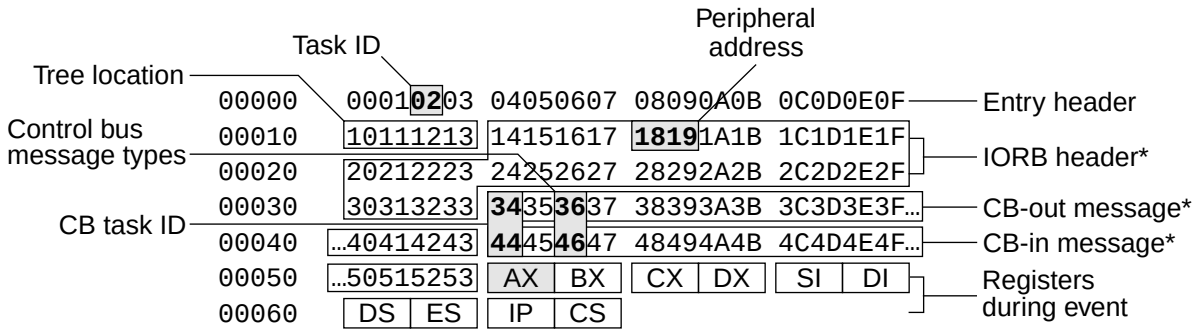
Offset	Label	Field Description
54-5A	Scanner message	Queued incoming scanner message. Check offsets 54 and 55 first for the message type and port. Since the field is only seven bytes long, a nine-byte message will be missing its checksum.
5B	[1]Scanner switches	Value is the sum of the following: 20 (Bit 5 set.) Bypass on-hook. 40 (Bit 6 set.) Off-hook issued for incoming call. 80 (Bit 7 set.) Incoming message queued.

92 AspenNet Scheduler Error

01	Error in update algorithm.
02	Interval is greater than four hours.
03	Window not defined.
04	Next evaluation time not set.
05	Could not get a semaphore.
06	Evaluation interval is zero.
0A	Bad input parameters.



93 Fax Queue is Full

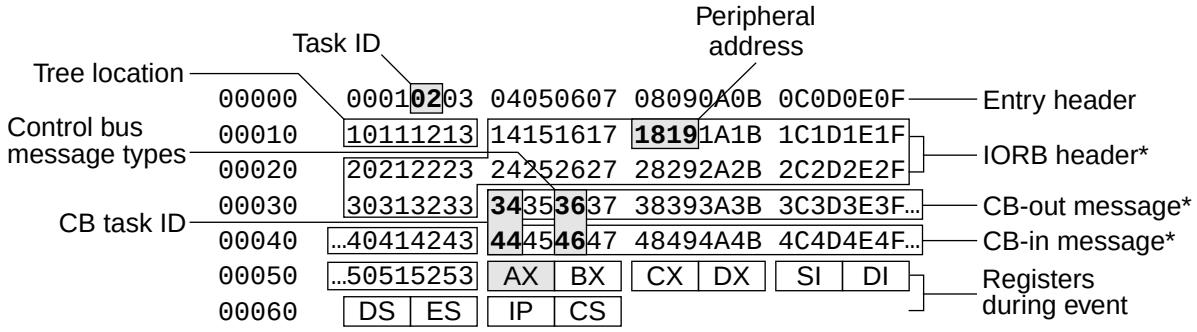


*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-55	AX	The AX register at the time of the event contains the print queue number.

94 Returned Fax—Sender's Mailbox is Full

95 Returned Fax—Sender's Mailbox Does Not Exist



*Note the unusual position of the IORB:
Header is in offset 14-33
CB-out message is in offset 34-43
CB-in message is in offset 44-53

Offset	Label	Field Description
54-55	AX	The AX register at the time of the event contains the IUN of the sender.

96 **FS/CP Software Error**

97 **Purge Task Internal Error**

98 **Bad User Record at Read**

99 **Bad User Record During Processing**

9A **Bad User Record at Write**

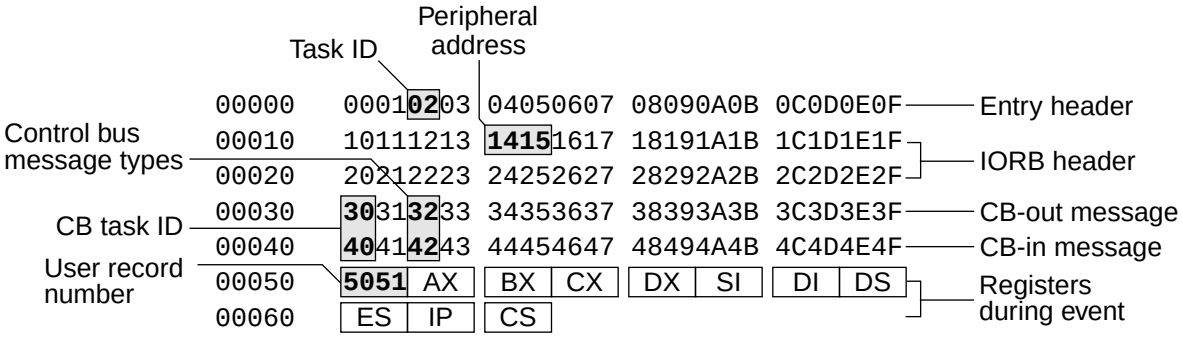
9B **File System Drive I/O Error**

9C **File System DMA Time-out**

9D **Data Checksum Mismatch**

9E **Data Bus Error Return Code**

9F **Scramble Code Error or I/O Error**



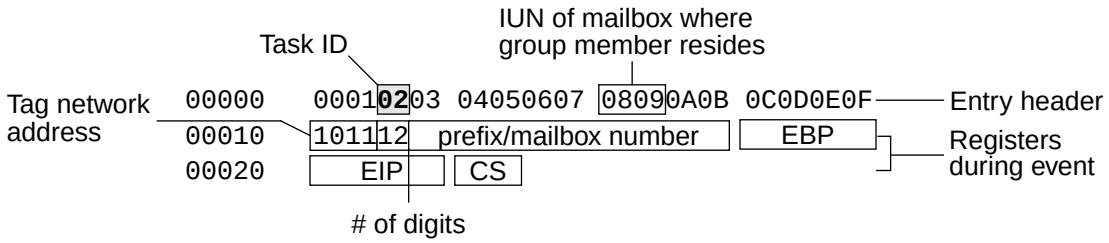
A0 SST Bad at Write

A1 User Record Message Directory Out of Order

A2 Invalid User Record Lock State

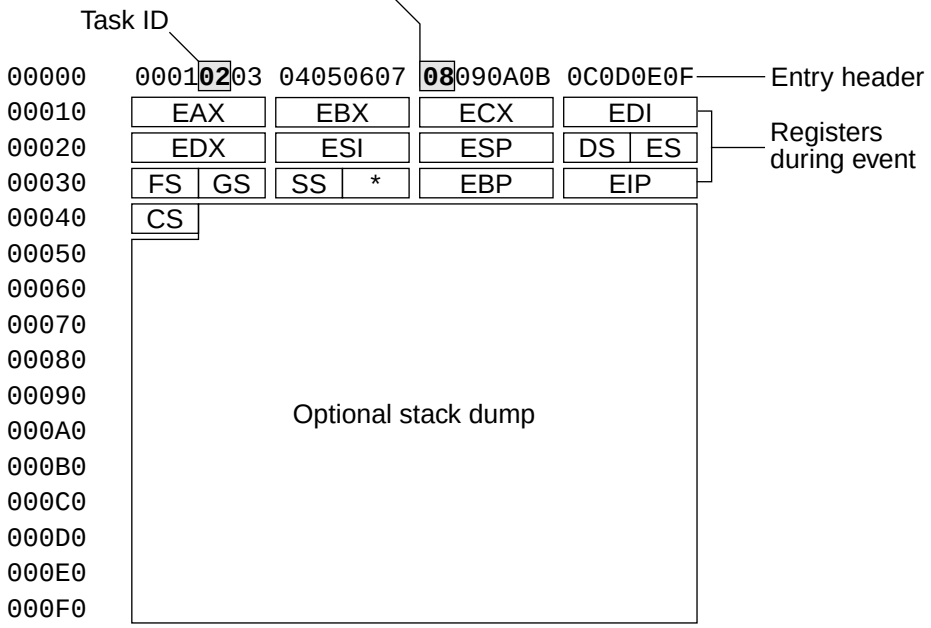
A3 Unknown Network Prefix in Group List Member

This error indicates that the prefix is not valid. If the prefix was deleted by accident, add it back to the original node. If the prefix is not valid in the system, an SMT garbage collect may clear up the problem.



A4 Purge Task Encountered an Error While Accessing the IVR Message Directory

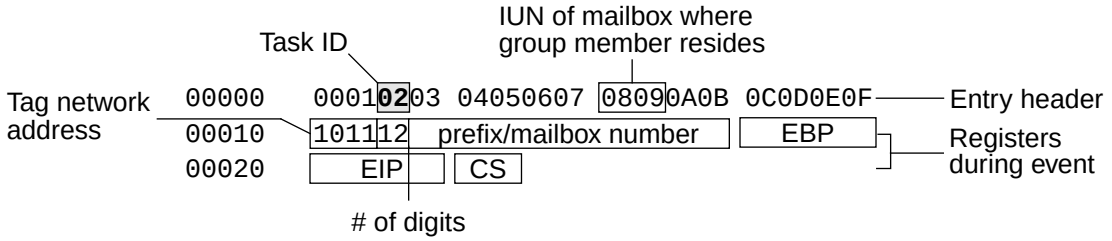
01	Unknown return code from sys_ent_imd_delete.
02	Unknown return code from sys_ent_imd_search.



*Unused

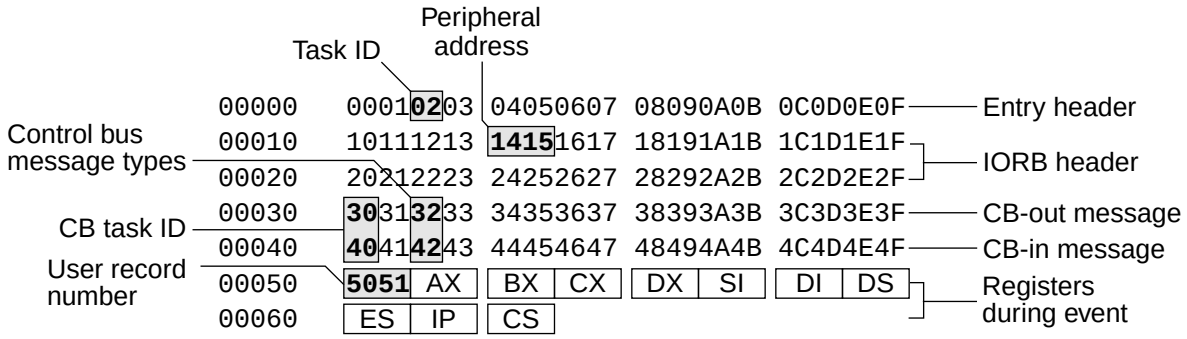
A5 Bad Member Found in Personal Group List

This status code is caused by an invalid IRN or incorrect length.



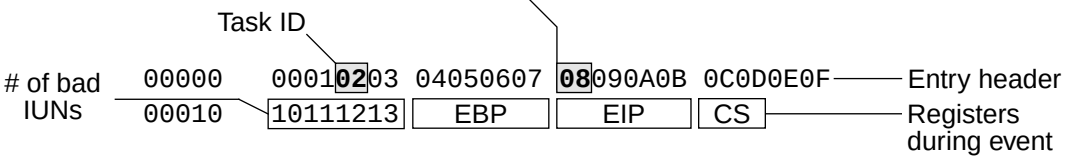
A6 Error Detected by MDS Functions

MDS detected an error code returned by a low-level routine. The node record to be purged might not have been deleted from the system. A “failed to remove network node” error will be returned.



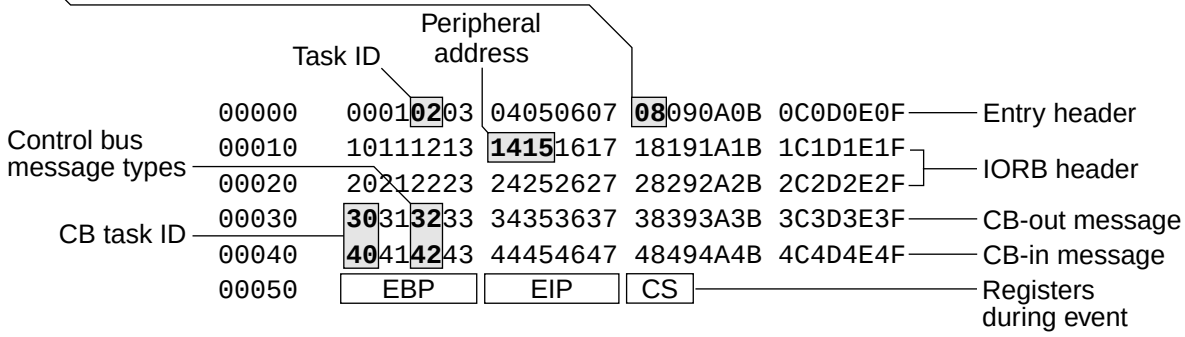
A8 SP General Error

00 Attempt to put invalid (zero) IUN on PT queue. Offsets 10 - 13 contains the number of zero entries that a task attempted to put onto the purge task queue.

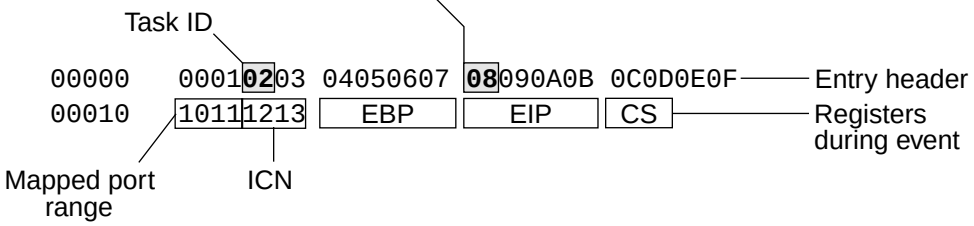


01 Error updating ACP statistics on ACP home station. While an ACP is used on a station, the software tracks the # of calls arriving with no RS232 integration (i.e., phone rings but switch does not say who is calling), the # of calls that get integration but no ringing (i.e., the switch indicates an incoming call but there is no ringing, the # of parity errors, framing errors, incomplete messages, overruns, and no responses from the ACP card to verify that the ACP card is functioning properly. This error is logged when in a cluster, a problem occurs in transmitting these statistics to the station which contains the ACP card. Hence, there is one of two possible situations: (1) it is not possible to determine which station contains the ACP card (very unlikely), or (2) there is an error in transmitting the message across the FDDI.

03 Mapped ports control bus error. Error occurred during transmission of a single control bus message between stations in a cluster. The station reporting the error was attempting to assign another station to perform an outcall.

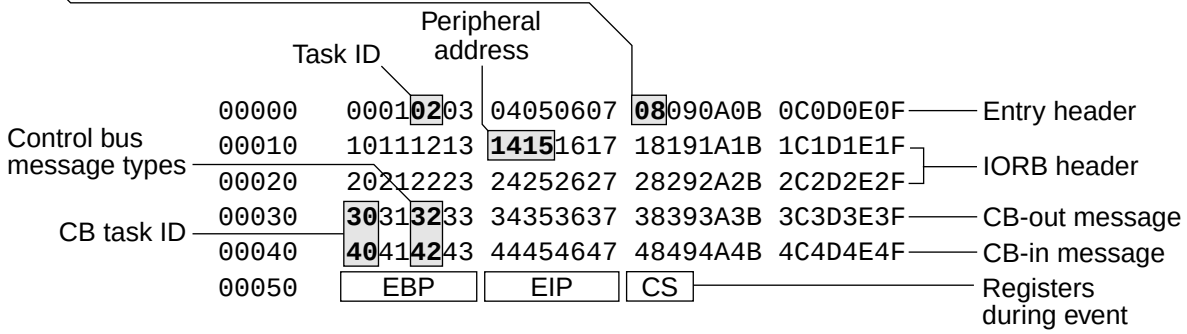


04 Outcalls have been mapped to nonexistent phone lines. With mapped ports, outcalls may be assigned to be performed by only a specific set of ports. This error is reported when a port has been assigned to a company for outcalls, but that port does not exist.

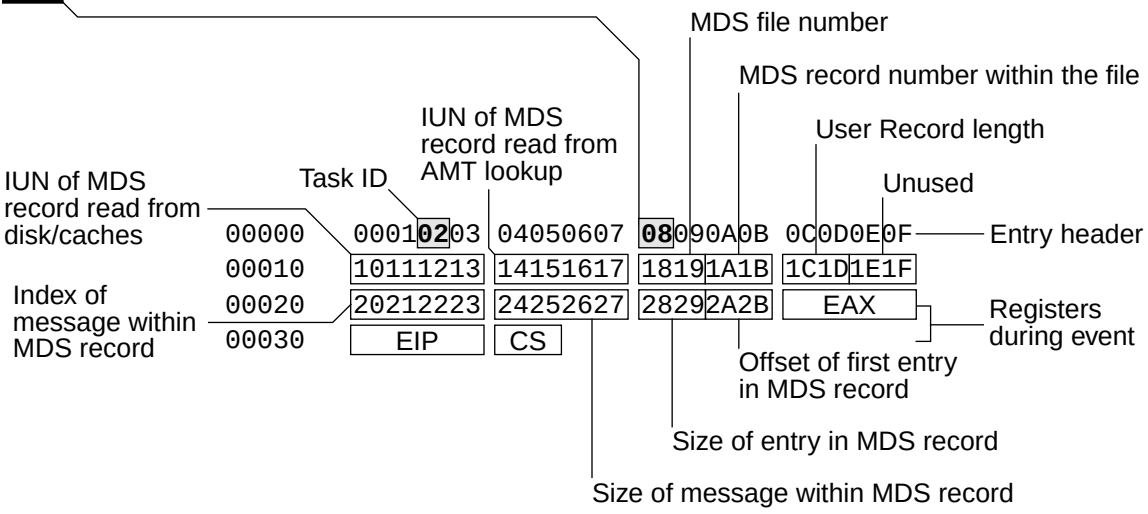


Offset	Label	Field Description
10-11	Mapped port range	Mapped port range that contains bad port assignment (range 0-3)
12-13	ICN	Company number (ICN) that contains bad port assignment

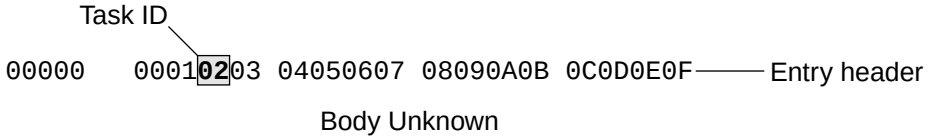
05 Mapped ports control bus error during DMA transmission. Error occurred during DMA transmission of data between stations. When a single station boots in a cluster, it must obtain the memory resident mapped ports database from a machine that is already up and running, since a single VPMOD does not have enough information to build the mapped ports database by itself. During the boot procedure, immediately after the AMT is built, the single booting station will request the mapped ports database from its backup VPMOD. This error is logged when the station is unable to successfully copy the mapped port database.



08	Error reading MDS record; computed address is beyond end of record. Probable cause: problem in allocated bit map.
09	Error writing to MDS record; computed addres is beyond end of record. Probable cause: problem in allocated bit map.
0A	Attempted MDS read/write on a non-MDS record.

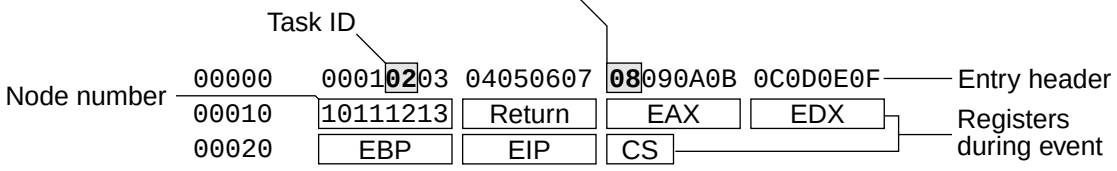


AA EDBN Directory Not Clean After Two Passes



B0 Error Detected by Batch Network Node Management Functions (BNR)

01	Failed to create MDS file.
02	BNR index out of range.
03	Failed to create an event.
04	Bad node prefix.
05	Bad node record data.
06	Synchronization error.
07	Duplicate BNR in cache.
08	Software error.
09	Error in scanning BN queue.
0A	Prefix table is full.
0B	Bad data for OS_NWOP.
0C	Failed to generate NRT.
0D	Node does not exist.
0E	Duplicate prefix in BNR.
0F	Failed to convert NR.
10	Failed to remove old NR.
11	Bad message table is full.
12	Failed to delete NR.
13	Failed to read node record.
14	Failed to save node record.
15	Bad BN message count.
16	Error putting in NDEL PQ.
17	Bad locking sequence.
40	Cluster error.

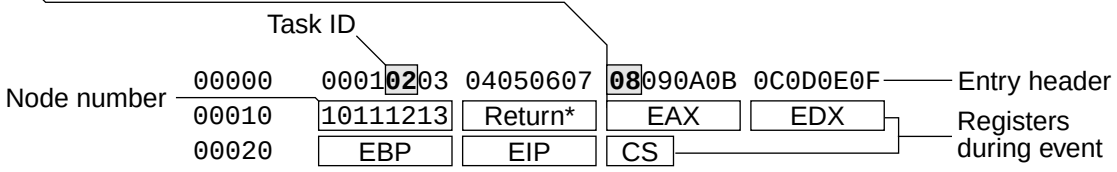


Offset	Label	Field Description
14-17	Return	Return code: 0000 No errors FFD0 AMT is full FFD1 Station is down FFD2 Failed to load FC messages FFD3 No such entry in MDS file (Return codes continue on next page.)

Offset	Label	Field Description
14-17	Return	Return code (continued): FFD4 No more space available FFD5 Error detected by priority queue FFD6 Node is disabled FFD7 Queue overflow FFD8 Unknown destination FFD9 Unknown message FFDA Error detected by CCC FFDB No destination in destination list FFDC Sequence error during retrieval FFDD Node is in service FFDE Error detected by FS FFDF Node is not under deletion FFE0 Node is under deletion FFE1 Bad forward message FFE2 Out of system buffers FFE3 Record is not in cache FFE4 Old NR is not in FC FFE5 Not a voice message FFE6 No more messages in queue FFE7 More destinations for message FFE8 Duplicate destination FFE9 Message is in 4k buffer FFEA Message is in buffer FFEB Message is in queue FFEC Message is not in 4k buffer FFED Message is not in buffer FFEE Message/entry is not in queue FFEF Message queue is full FFF0 Not allowed by error history FFF1 Task limit exceeded FFF2 CIP table is full FFF3 Task ID is not in CIP table FFF4 Task ID is in CIP table FFF5 Not home station of this node FFF6 Bad message is not in table FFF7 Bad message table is full FFF8 Prefix not found FFF9 Prefix table is full FFFA Duplicate prefix FFFB TX is always bad FFFC Node exists FFFD Node does not exist FFFE Error detected by MDS FFFF Bad input data

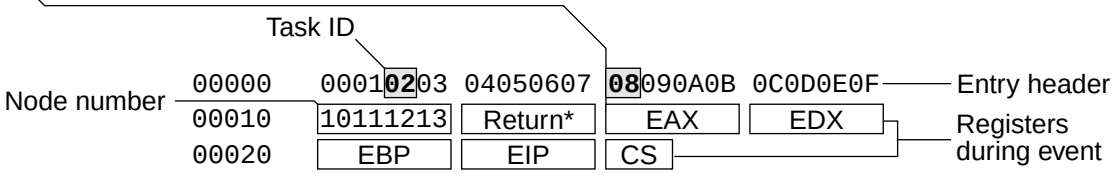
B1 Error Detected by Batch Network Node Management Functions (BNQ)

20	Failed to create an event.
21	Failed to read entry.
22	Failed to write entry.
23	Failed to put entry.
24	Failed to delete entry.
25	Failed to search an entry.
26	Failed to mark an entry.
27	Failed to unmark an entry.
28	Failed to lock file.
29	Failed to unlock file.
2A	Error in putting message.
2B	Error in getting message.
2C	Error in putting destination.
2D	Error in getting destination.
2E	No 4k buffer available.
2F	Software error.
30	Error in scanning destination.
31	Error in closing message.
32	Failed to get next entry.
33	Failed to delete a queue.
34	Bad sequence of entries.
35	Bad entry type.
36	Bad entry priority.
37	Error in scanning data.
38	Invalid entry address.
39	Failed to collect bad message.
3A	Failed to lock BN queue.
3B	Failed to get message length.



*See table with status code B0.

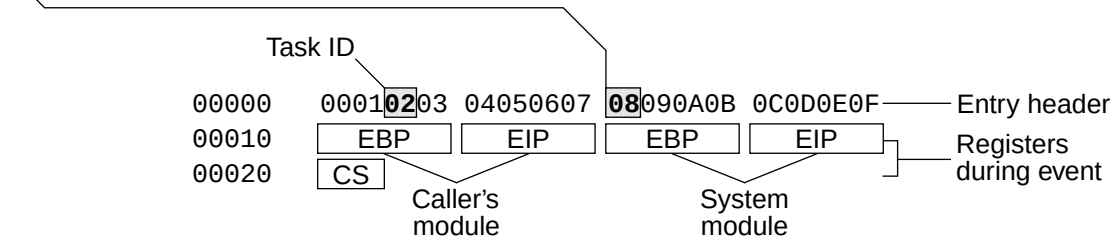
3C	Failed to mark (lock) message.
3D	Failed to seek an entry.
3E	Message conversion errors.
3F	NRT synchronization error.
41	Cluster error.



*See table with status code B0.

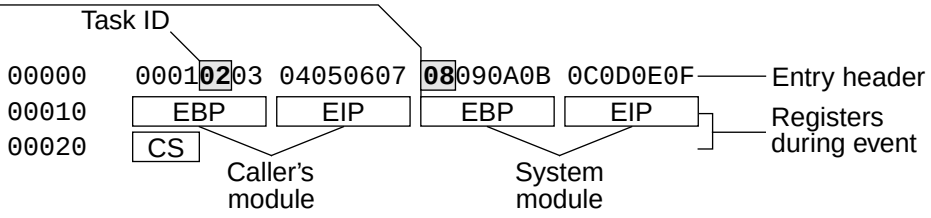
B2 Error with Bulletin Mailbox (IFS)

43	Failed to create an event.



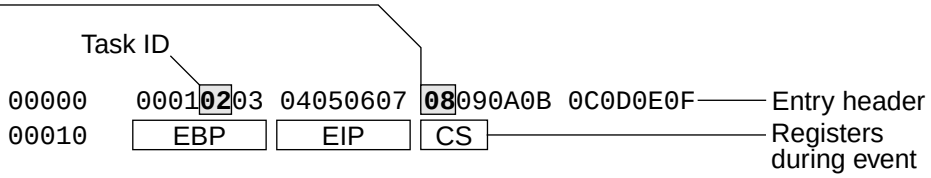
B3 Bad Mailbox Name Found or Software Error

40	Bad data for NMT entry.
41	Bad type in NMT entry.
42	Bad IRN in NMT entry.
43	Failed to create an event.
44	Bank address out of range.
45	Offset address out of range.
46	NMT index out of range.
47	Bad address to NMT entry.
48	Bad length for name string.
49	Bad digit in dial name.
4A	Too many index entries.
4B	No index entry to delete.
4C	Entry is in use.
4D	Entry not found in NMT.
4E	Duplicates names for NMT.
4F	No delimiter in name field.
50	NMT is full.
51	Too many NMT entries.
52	Bad dial name.
53	Infinite loop in NMT seek.



In Response to sys_nmt_ent_nxt

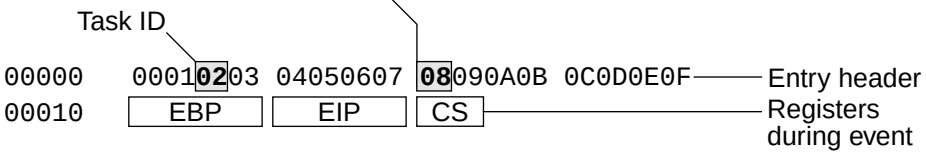
54	Returned error status from sys_nc_amt_lin_ser.
55	Error in return code of second control bus message.
56	AP for linear search returned an undefined status.



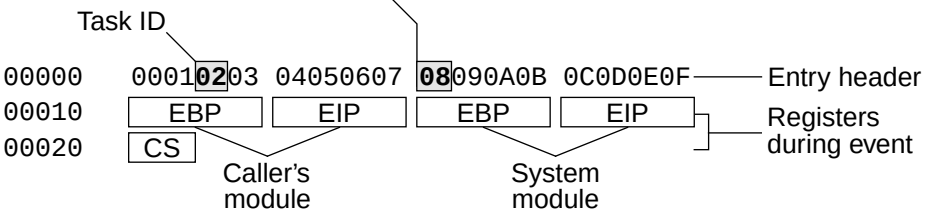
In Response to sys_nmt_addr_seek

57 Returned error status from sys_nc_amt_dbn_search.

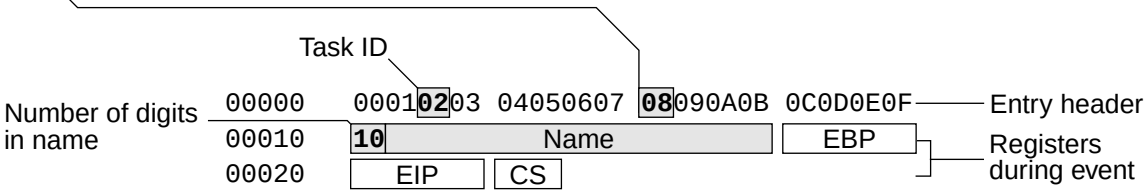
58 AP for binary search returned an undefined status.



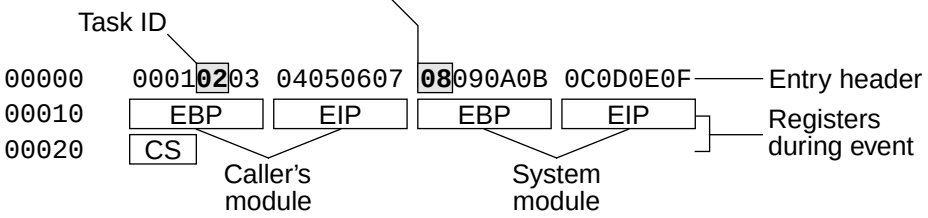
59 AP returned too many status values.



5A Too many matched entries.

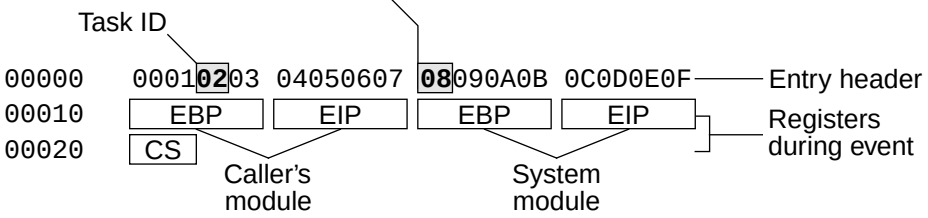


5B NMT index out of range in nmt_addr_seek.



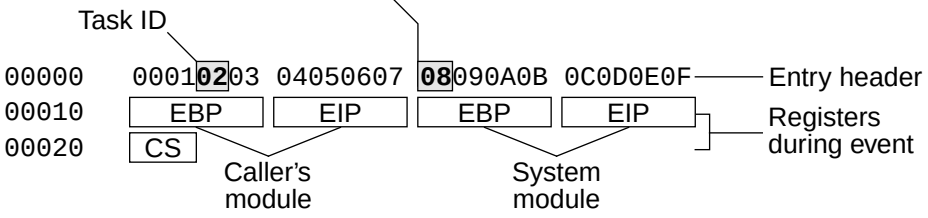
In Response to nmt_compare

5C Bad length.



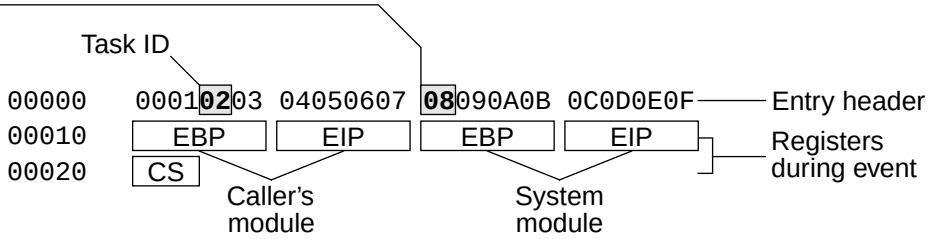
In Response to nmt_index_seek

5D Bad length.
5E Infinite loop.



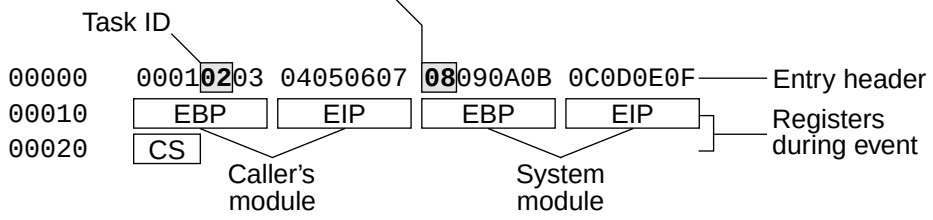
In Response to nmt_index_ins

5F NMT index out of range.



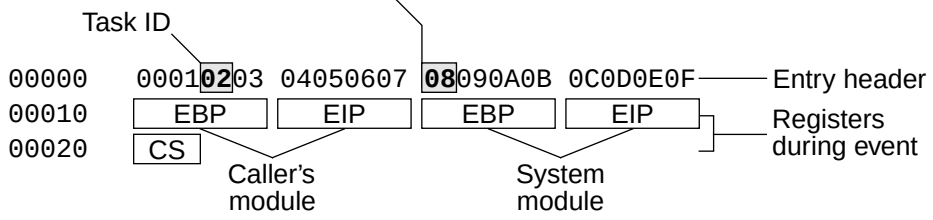
In Response to sys_nmt_seek

60	Name is not valid.
61	Type is not valid.
62	Bad digit in dial name.
63	Bad length for name string.
64	Index out of range.

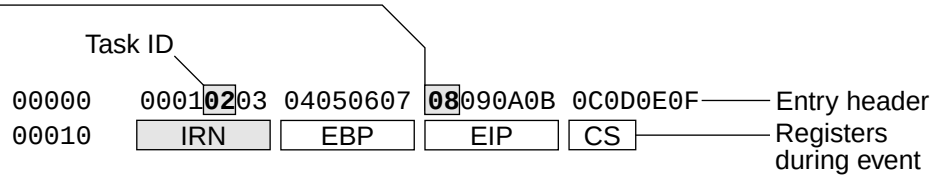


In Response to sys_nmt_put

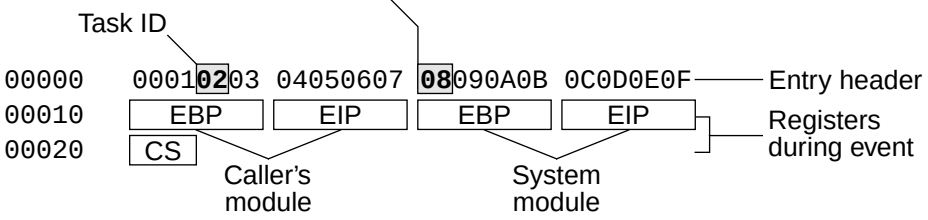
65	Name is not valid.
66	Type is not valid.



67	Bad IRN in NMT entry.

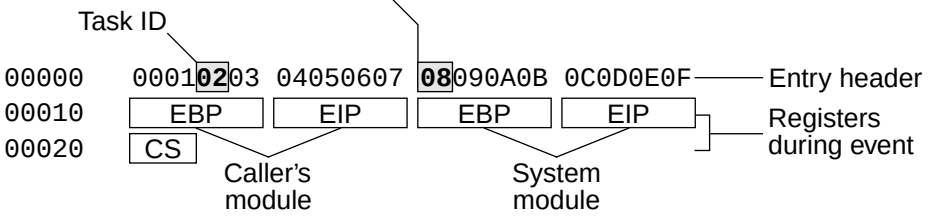


68	Bad digit in dial name.
69	Length of zero given for name string.
6A	Bad length for name string.
6B	Too many index entries.
6C	NMT is full.

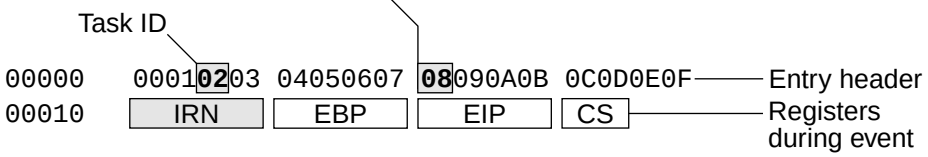


In Response to sys_nmt_add

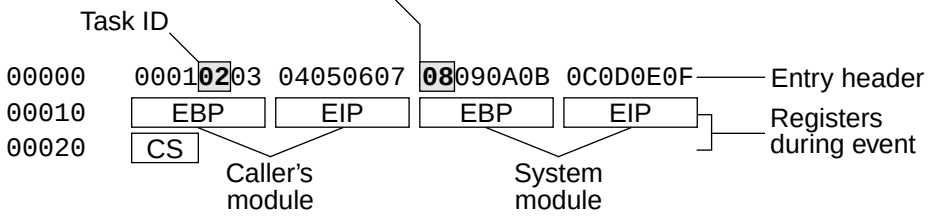
70	Name is not valid.
71	Type is not valid.



72	Bad IRN in NMT entry.

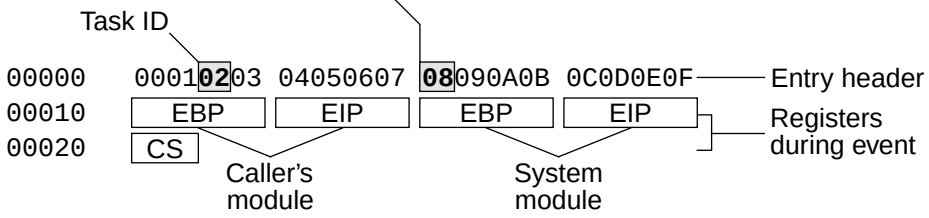


73	Bad digit in dial name.
74	Zero digits in name string.
75	Bad length for name string.
76	Index out of range.
77	Entry is in use.
78	Found name already in NMT. Not added.
79	Too many index entries.
7A	NMT is full.
7B	NMT on CC full.



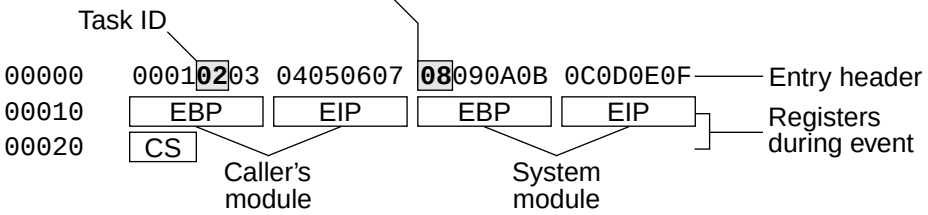
In Response to sys_nmt_del

80	Zero digits in name string.
81	Infinite loop in NMT seek.
82	No index entry to delete.
83	Entry not found. Cannot delete.
84	Entry not found. Cannot delete.

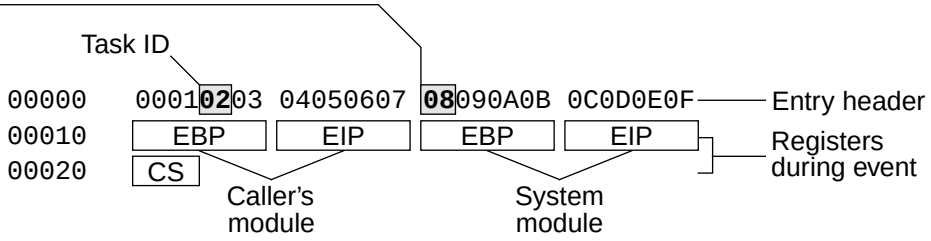


In Response to sys_nmt_match

90	Name is not valid.
91	Bad length for name string.
92	Bad digit in dial name.

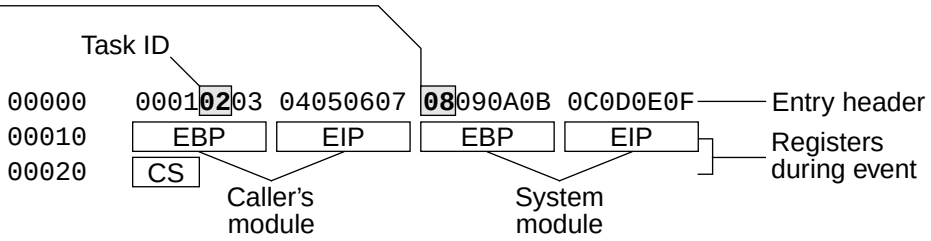


94	Entry not found after one match.



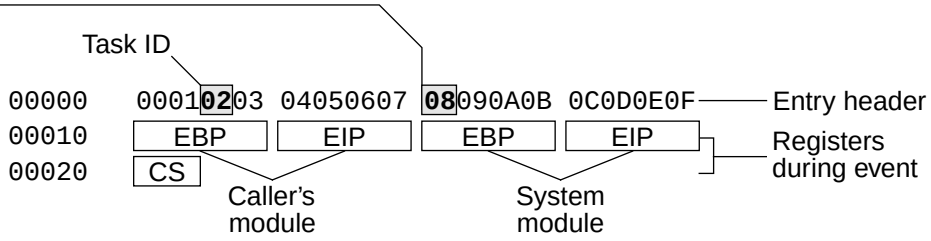
In Response to sysnmta.asm

A0	Bad address to NMT entry.
A1	Too many index entries.
A2	Bad address to NMT entry.
A3	No delimiter in name field.
A4	Entry is in use.
A5	Bad length for name string when comparing two entries.
A6	Bad length for name string when allocating a new entry.



B4 Bad Network Alias Found or Software Error

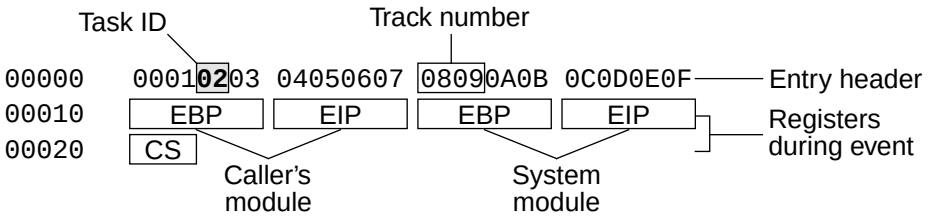
90	Bad alias super record.
91	Bad alias track for alias read/write.
92	Bad alias data file. Detected at low levels of alias processing.
93	Failed to read alias record.
94	Failed to write alias record.
95	Failed to open alias file.
96	Detected alias super record damage while checking for a power-failure recovery.
97	Failed to create a file for the node aliases.
98	Bad alias record number to write.
99	Bad alias record to de-allocate.
9A	Bad alias record to remove.
A0	Failed to add alias entry.
A1	Failed to remove alias entry.
A2	Bad data for ALS_INSERT.
A3	Invalid alias entry type.
A4	Cannot allocate alias record.
A5	Too many aliases to record.
A6	Cannot allocate alias record.
A7	Cannot load alias record.
A8	Cannot save alias record.
A9	Cannot locate alias record.
80	Bad data for AMT_INSERT.



B5 Failed to Read Network Alias Record from Disk

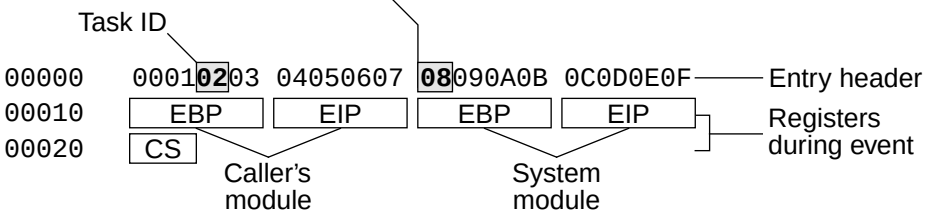
B6 Failed to Write Network Alias Record to Disk

Note that offset 08-09 holds a track number, **not** a subcode.



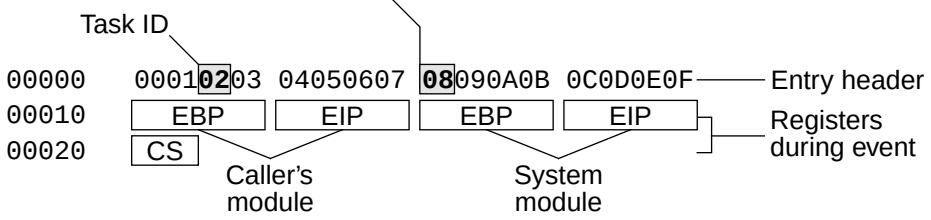
B7 System Restarted by Software—Failed to Allocate Memory for Alias Data

01	Restarted by software break.
02	Restarted by operator.
03	Out of free memory.

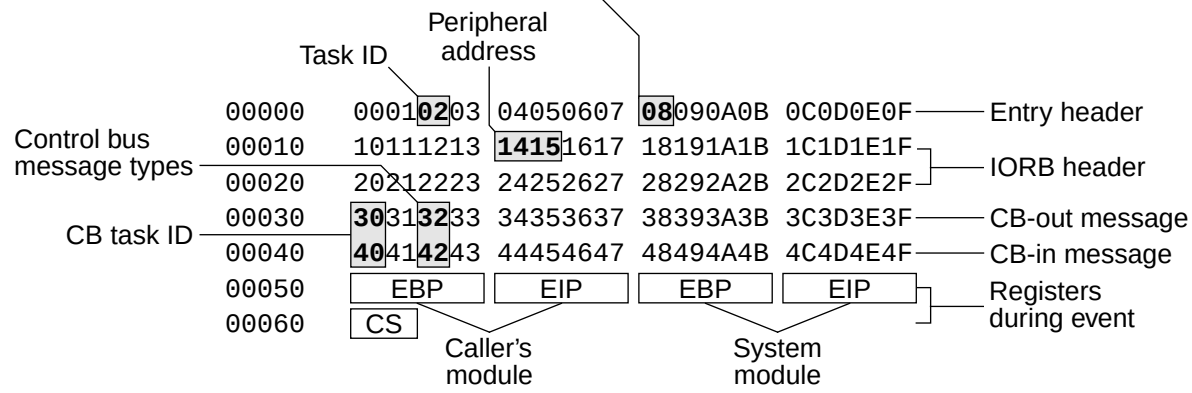


B8 Failed to Write Company Record to Disk

1B Bad ICN for company record write.



20 Failed to write company record to disk.



B9 Error in Notification Library

01 Not enough memory available to satisfy a request made by the Notification Subsystem. The CP may need more memory added or another task may need to reduce the amount of memory it uses.
Offset 20-23: the amount of memory requested, in bytes.

04 Problem creating the background queue. Possible coding error, or another task is using a large number of events or priority queues. The Subsystem can only be restarted by rebooting the voice module.
Offset 20-23: size value.

06 Unknown statistics function. Possible coding error.
Offset 20-23: unknown statistics function requested.

10 Unknown system type. Internal error or possible coding error.
Offset 20-23: system type from sys_sst_systype that was not recognized.

11 Unable to create broadcast RPC queue. Possible coding error, or another task is using a large number of events or priority queues.
Offset 20-23: size value.

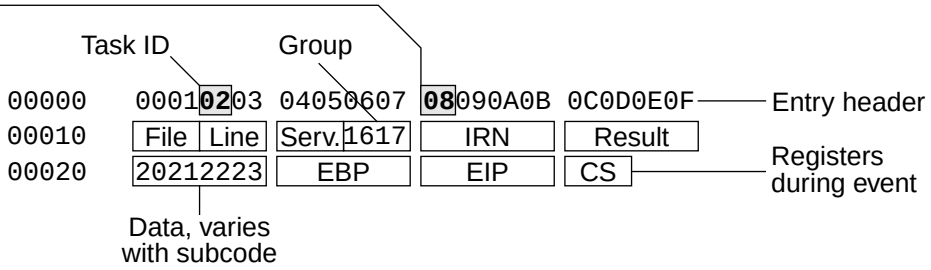
12 Error with the initialization of the statistics table lock. Possible coding error, or another task is using a large number of events or priority queues.
Offset 20-23: size value.

13 Error with the initialization of the task table lock. Possible coding error, or another task is using a large number of events or priority queues.
Offset 20-23: size value.

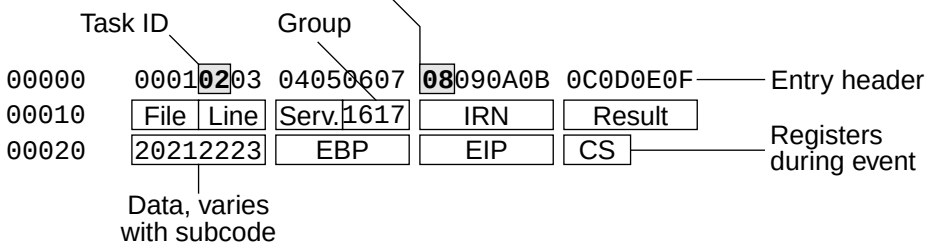
14 No task currently able to receive entries placed on a particular service queue. Each service queue logs one entry for each purge task cycle. This is usually the result of the system manager failing to configure at least one port to handle a specific service queue.

Offset 16-17: service queue/group number.
Offset 20-23: result flags of the queuing operation:
- 01 (Bit 0 set.) Entry placed in a service queue.
- 02 (Bit 1 set.) A station in the cluster is down.
- 04 (Bit 2 set.) Destination service queue is full.
- 08 (Bit 3 set.) No service queue of this type is on the local station.

15 Error with the initialization of the service base lock. Possible coding error, or another task is using a large number of events or priority queues.
Offset 20-23: size value.



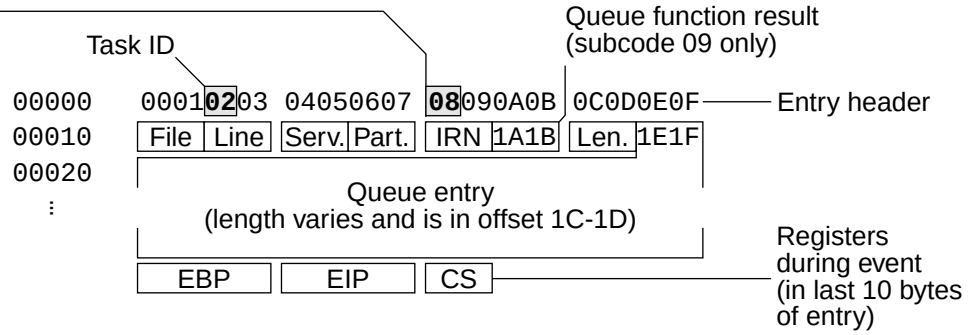
16	Error with the initialization of the table area lock. Possible coding error, or another task is using a large number of events or priority queues. Offset 20-23: size value.
18	Error with the initialization of the queue area lock. Possible coding error, or another task is using a large number of events or priority queues. Offset 20-23: size value.
19	Table control array overflow. This is usually logged once for each purge task cycle. Possible coding error. Offset 20-23: size value.
1A	Error with the initialization of the run state lock. Possible coding error, or another task is using a large number of events or priority queues. Offset 20-23: size value.
1B	Not enough memory to allocate a new table. Possible coding error or the CP needs more memory. Offset 20-23: size value.
1E	Notification subsystem detected the use of a full table operation code with a notification table ID that it cannot handle. Logged once for each purge task cycle. Possible coding error. Offset 20-23: the full table operation code: 00 Count non-zero values in table. 01 Set high bit in IRN port table. 02 Clear the values in the port table. 03 Search for IRNs using a port. 04 Clear all locks set at boot. 05 Get list of all ports in port table.



Offset	Label	Field Description
10-11	File	Source file ID: 01 notasm.c 02 notglob.c 03 notlock.c 04 notpmap.c 05 oetglob.c 06 notconf.c 07 notims.c 08 notmisc.c 09 notque.c 0A oetmain.c 0B noteval.c 0C notinit.c 0D notomap.c 0E notstat.c 0F notitbl.c 11 sysntask.c 12 sysntbl.c 13 sysncb.c 14 sysnckpt.c 15 sysnserv.c 16 sysnfut.c 17 sysnovfl.c 18 sysfaxq.c
12-13	Line	Source file line number.
14-15	Serv.	For subcodes 01-18 and 1A: service type: 00 Octel Integrated Messaging (IMS) 01 Fax outcall 02 Message waiting indication 03 Normal mailbox outcall 04 Pager outcall 05 AspenNet outcall 06 AMIS network outcall 07 Transact (IVR) outcall For subcodes 19, 1B and 1E: table ID for the new table: 00 Overflow table index 01 Future evaluation table index 02 IMS message count and flag table 03 Message waiting indicator table 04 Message waiting port used table 05 Message waiting time stamp table
16-17	Group	Service group number.
18-1B	IRN	Internal Reference Number. When not applicable to the subcode, this field holds 0000.

BA Error in Queuing Module of Notification Library

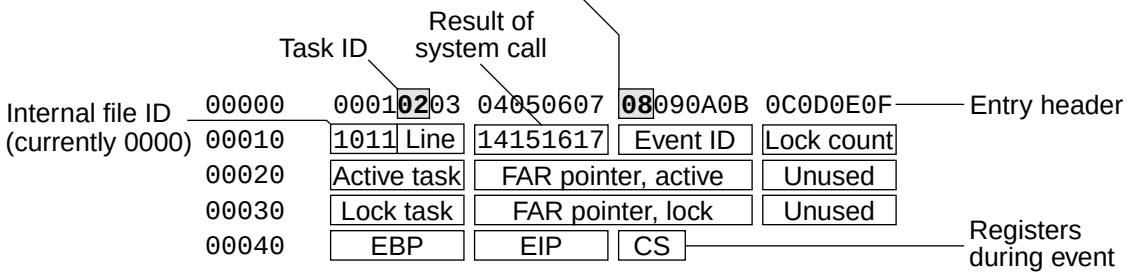
03	Unknown service.
07	Unknown partition number.
08	Attempt to add entry to non-existent queue.
09	Attempt to add entry to queue failed.



Offset	Label	Field Description
10-11	File	Source file ID: 01 notasm.c 02 notglob.c 03 notlock.c 04 notpmap.c 05 oetglob.c 06 notconf.c 07 notims.c 08 notmisc.c 09 notque.c 0A oetmain.c 0B noteval.c 0C notinit.c 0D notomap.c 0E notstat.c 0F notitbl.c
12-13	Line	Source file line number.
14-15	Serv.	Service number.
16-17	Part.	Partition number.
18-19	IRN	When not applicable to the subcode, this field holds 0000.
1A-1B	Queue function result	Used only in subcode 09, as the queue function result: FEFF PQERRUSR FDFF PQERROUT With other subcodes, this field holds 0000.

BC Error in the Lock Module of the Notification Library

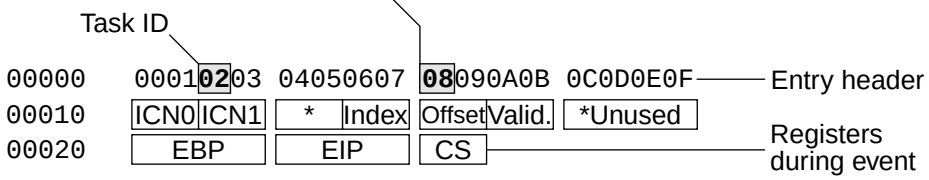
04	Time-out waiting for lock to clear. Possible deadlock condition.
05	Attempt to unlock another's lock. Possible coding error.
06	Bad return from OS_ENT_EVT_POST. Possible coding error in lock routines or possible problem in OS.
07	Bad return from OS_ENT_EVT_WAIT. Possible coding error in lock routines or possible problem in OS.
08	Magic number not correct (someone stomped on the structure?).



Offset	Label	Field Description
12-13	Line	Source file line number (currently 0000).
14-17	Result of system call	Result of system call it the system call caused the error.
18-1B	Event ID	Event ID used when tasks need to wait for the lock to be released.
20-23	Active task	ID of the active task that found the error.
24-2B	FAR pointer, active	FAR return pointer for the active task in offset 20-23. If the task returned to the calling code, this is the address it went to. This can be used to find where the routine was called from.
30-33	Lock task	ID of the task holding the lock.
34-3B	FAR pointer, lock	FAR return pointer for the lock task in offset 30-33. If the task returned to the calling code, this is the address it went to. This can be used to find where the routine was called from.

BD Bad Company Record Found During Start-up Process

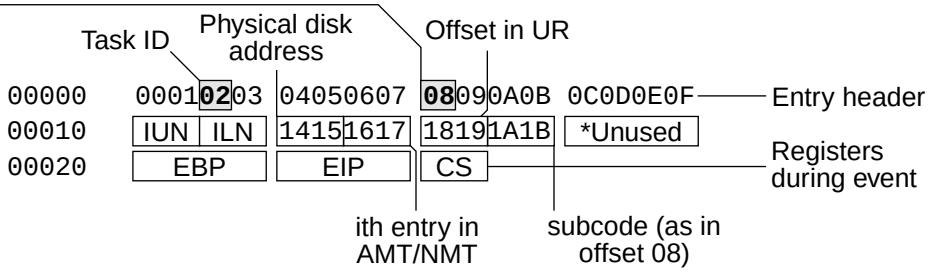
01	Bad company record length.
02	Bad company record level.
03	Bad internal company number (ICN).
04	Bad company number length.
05	Bad company name length.
06	Bad contact number length.
07	Bad phone number length.
08	Bad bulletin IUN.
09	Bad after hours IUN.
0A	Bad attendant schedule.
0B	Bad attendant extension number.
0C	Bad attendant phone number.
0D	Bad password length.
0E	Bad department name.
0F	Bad department bulletin IUN.
10	Bad department after hours IUN.
11	Bad department extension number.
12	Bad department attendant number.
13	Bad department attendant schedule.
B5	Bad digit in company number.



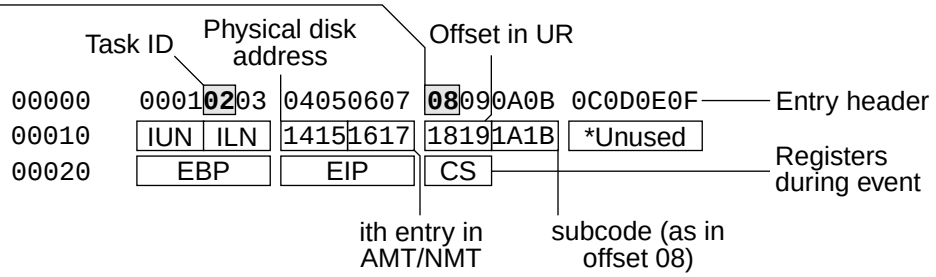
Offset	Label	Field Description
10-11	ICN0	ICN of damaged company record. This may be different from ICN1 in offset 12-13 due to corrupted data.
12-13	ICN1	ICN of damaged company record. Values may be from 4268-432F.
16-17	Index	Index of damaged company record within track. There are 10 company records per track.
18-19	Offset	Offset to damaged data field within the company record.
1A-1B	Valid.	Subcode from validity check. The value should be the same as the subcode in offset 08-09.

BE Bad User Records Found While Building AMT/NMT During System Start-up

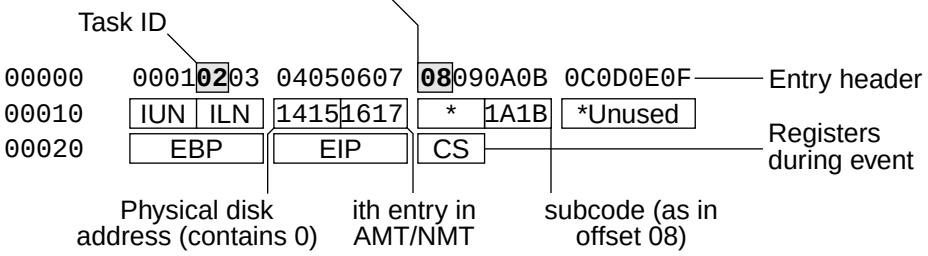
00	No error detected.
01	Mailbox number length is invalid.
02	User record is not assigned.
03	Bad internal logic number (ILN).
04	Bad prompt level.
05	Bad class of service.
06	Bad mailbox length.
07	Bad mailbox ASCII name.
08	Bad extension number length.
09	Bad password length.
0A	Bad group member index.
0B	Bad group member total.
0C	Conflict of message directory or record length.
0D	Bad user record revision level.
0E	Bad outcall phone number length.
0F	Bad department address length.
10	Bad attendant number.
11	Invalid from/to value in message directory entry.
12	Message directory entries out of chronological order.
13	Bad company number
14	Bad department number.
15	Bad abbreviated address length.
16	Bad mailbox alias length.
17	Invalid mailbox forwarding address.
18	Invalid FAX printer extension.
19	Bad attendant schedule number.
1A	Bad MDS record.
1B	Bad mailbox type.
29	Bad company record length of company record.
2A	Bad company record level of company record.



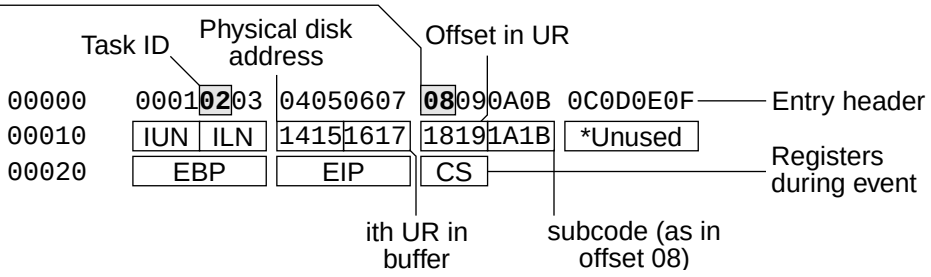
2B	Bad internal company number (ICN) of company record.
2C	Bad company number length of company record.
2D	Bad company name length of company record.
2E	Bad abbreviated address length of company record.
2F	Bad phone number length of company record.
30	Bad bulletin IUN of company record.
31	Bad after-hours IUN of company record.
32	Bad attendant schedule of company record.
33	Bad attendant extension number of company record.
34	Bad attendant phone number of company record.
35	Bad password length of company record.
36	Bad department name of company record.
37	Bad department bulletin IUN of company record.
38	Bad department after-hours IUN of company record.
39	Bad department extension number of company record.
3A	Bad department attendant number of company record.
3B	Bad department attendant schedule of company record.
3C	Bad user record level of company record.
3D	Bad company flag in company record.
3E	Bad UR flag in company record.
3F	Bad IUN peg count in company record.
51	Bad user record length of attendant record.
52	Bad user record level of attendant record.
53	Bad IUN of attendant record.
54	Bad length of attendant schedule number of attendant record.
B0	Bad digit in mailbox number.
B1	Bad digit in mailbox name.
B2	Bad digit in mailbox alias.
B3	Bad digit in abbreviated address.
B4	Bad abbreviated address length.
B5	Bad digit in company number.



B6	Duplicate mailbox number in AMT.
B7	Duplicate mailbox name in name table.

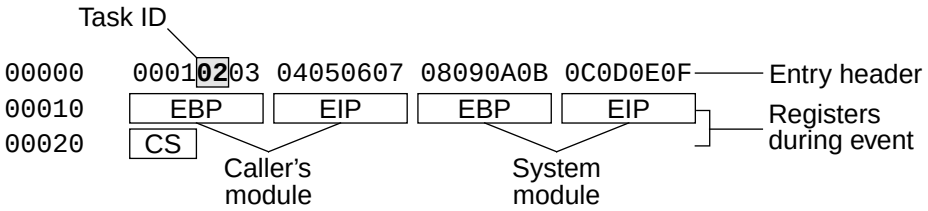


B8	AMT is full.
B9	NMT is full.
BA	Bad digit in attendant schedule number.
BE	Damaged user record.
C0	Bad network node prefix.



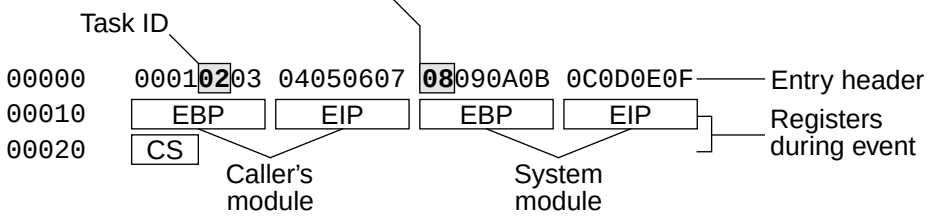
BF Bad INN or Function Code Found

The error was found while building network maps for node serial number and mailbox length.



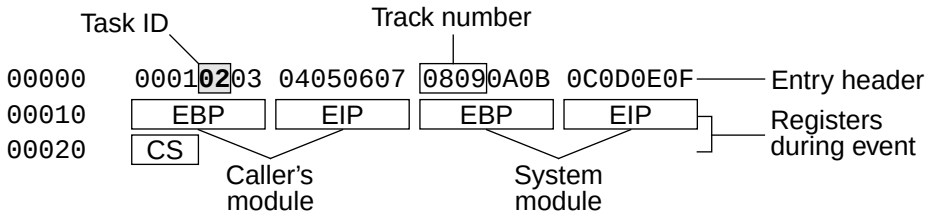
C1 Bad AMIS Transmission Table Found or Software Error

58	Failed to open ATXT file.
59	Failed to create a file for the AMIS Transmission Acceptance Table.
5A	Failed to read ATXT file.
5B	Failed to create an event.



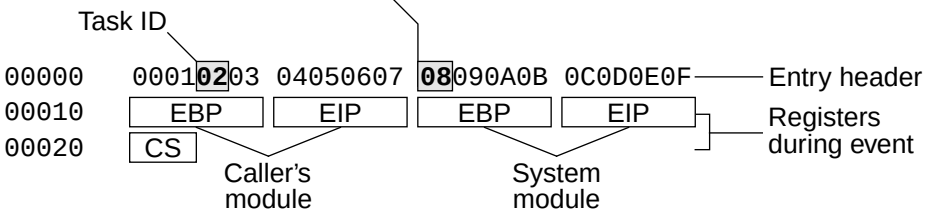
C2 Failed to Write AMIS Transmission Table to Disk

Note that offset 08-09 holds a track number, **not** a subcode.



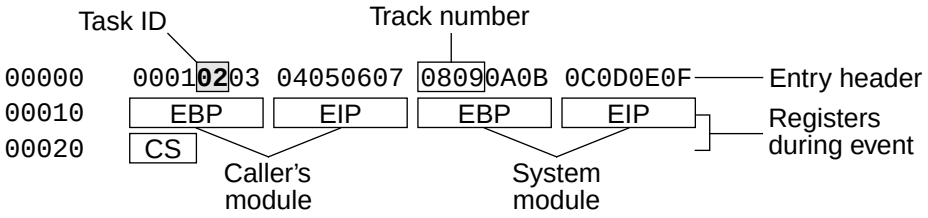
C3 Bad AMIS EAR Found or Software Problem

54	Failed to open AEAR file.
55	Failed to create a file for the AEAR.
56	Failed to read AEAR file.
57	Failed to create an event.



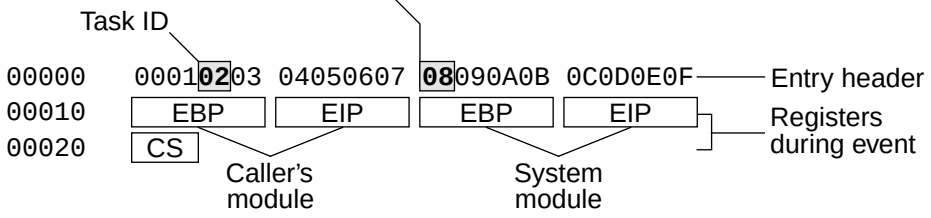
C4 Failed to Write AMIS EAR Record to Disk

Note that offset 08-09 holds a track number, **not** a subcode.



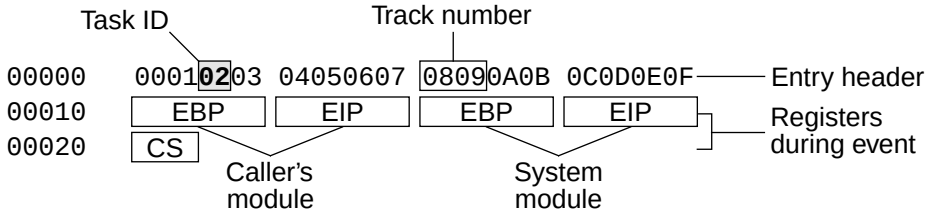
C5 Bad AMIS DIR Found or Software Error

5C	Failed to open AMIS_DIR file.
5D	Failed to create a file for the AMIS_DIR.
5E	Failed to read AMIS_DIR file.
5F	Failed to create an event.



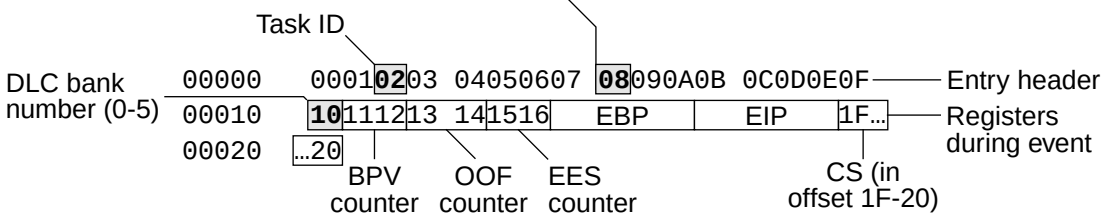
C6 Failed to Write AMIS DIR Back to Disk

Note that offset 08-09 holds a track number, **not** a subcode.

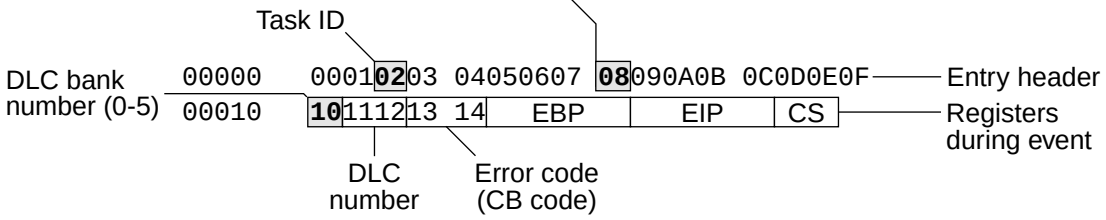


C7 T1 Error Counters

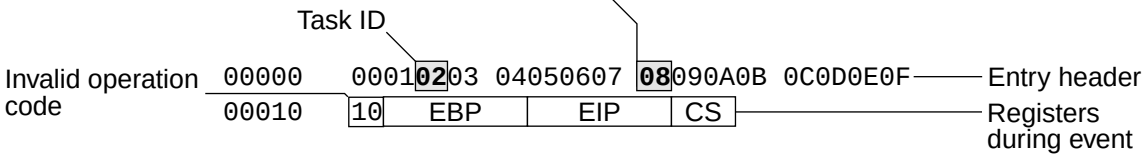
01 Report of error counters.



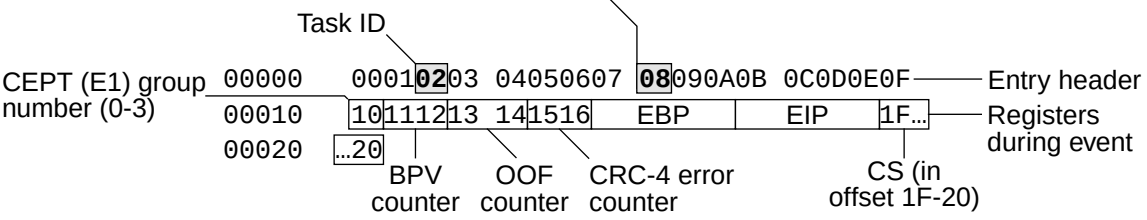
02 Error in control bus message to DLC. If the error code in offset 13-14 is **FF**, the DLC returned the wrong operation code.



03 Invalid operation code for MTT1_CODE.



41 Report of E1/CEPT error counters.



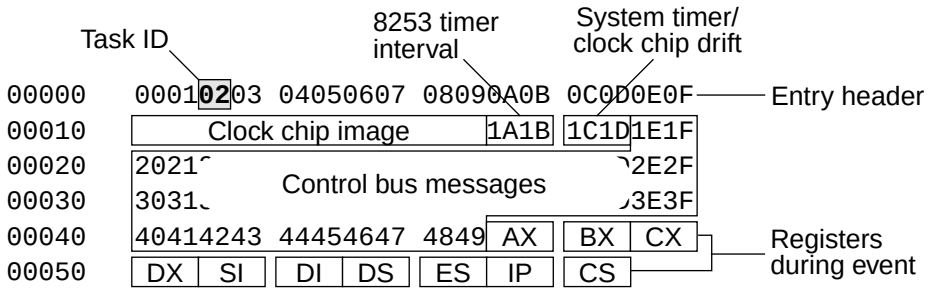
C8 Unable to Read Clock Chip (Continuous Ripple Status Set)

C9 Clock Chip Went Bad While Running (After Boot)

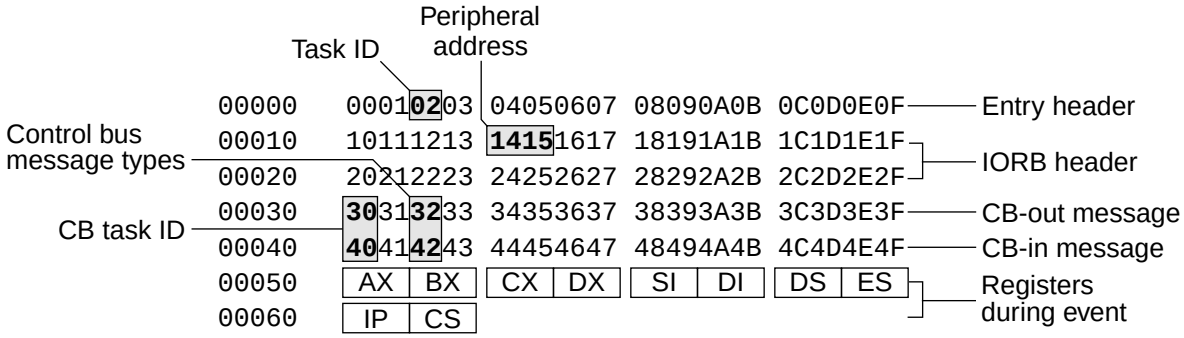
CA System Timer Drifted Too Far From Clock Chip Date/ Time

CB Clock Chip Bad or Too Different From SST Timer at Boot

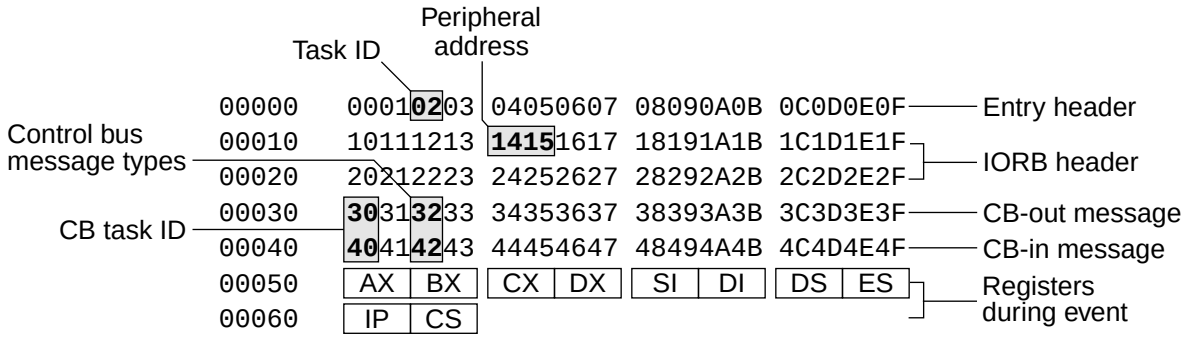
CC Minute Task Internal Error



CD Hard Error on Disk Detected by Minute Task Alarm



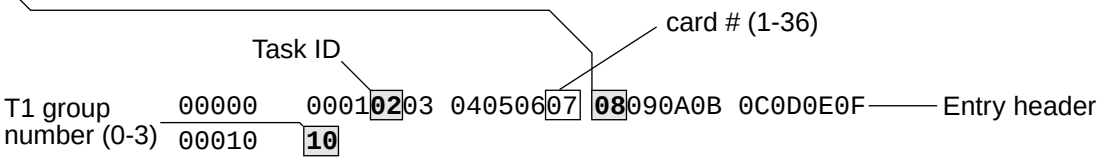
CE Drive Not Running Detected by Minute Task Alarm



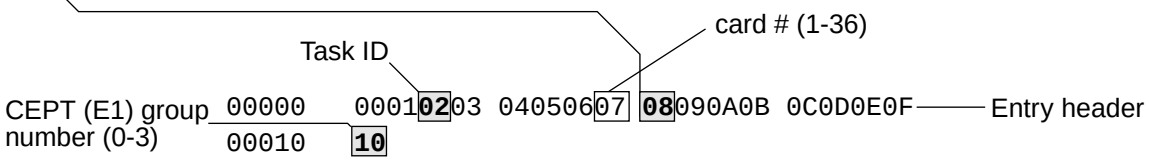
CF T1 Alarms

Alarms are handled by the Minute Task.

01	Received yellow alarm.
02	Received LOS (red) alarm.
03	Received OOF alarm.
04	Received FFER (blue) alarm.
05	Received AIS alarm.
06	Received EBPV alarm.
07	Received EES alarm.

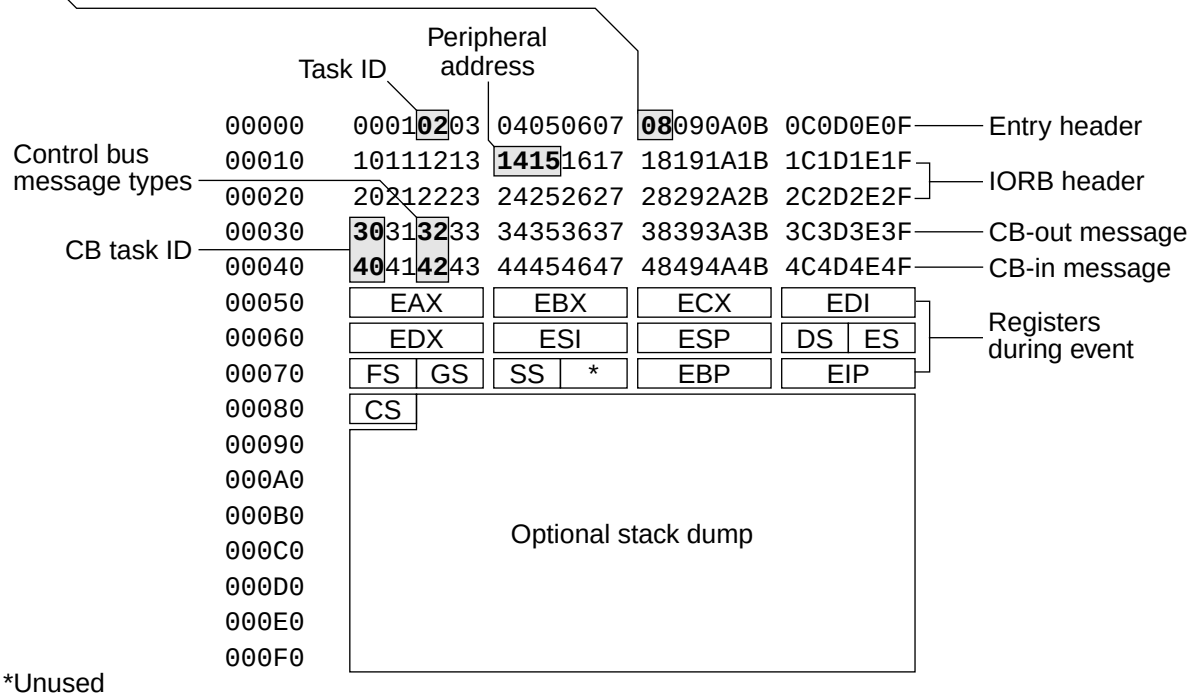


41	Loss of carrier on.
42	All 1s unframed on.
43	Loss of frame synchronization on.
44	All 1s TS 16 on.
45	Loss of CAS MF synchronization on.
46	One in 1,000 bit errors on.
47	Loss of CRC-4 frame synchronization on.
48	Remote alarm (framed) on.
49	Remote alarm (MF) on.
4A	One in 10,000 bit errors on.
4B	One in 100,000 bit errors on.
81	Yellow alarm cleared.
82	LOS (red) alarm cleared.
83	OOF alarm cleared.
84	FFER (blue) alarm cleared.
85	AIS alarm cleared.
86	EBPV alarm cleared.
87	EES alarm cleared.
C1	Loss of carrier off.
C2	All 1s unframed off.
C3	Loss of frame synchronization off.
C4	All 1s TS 16 off.
C5	Loss of CAS MF synchronization off.
C6	One in 1,000 bit errors off.
C7	Loss of CRC-4 frame synchronization off.
C8	Remote alarm (framed) off.
C9	Remote alarm (MF) off.
CA	One in 10,000 bit errors off.
CB	One in 100,000 bit errors off.



D0 CP/FS Protocol Out of Sequence

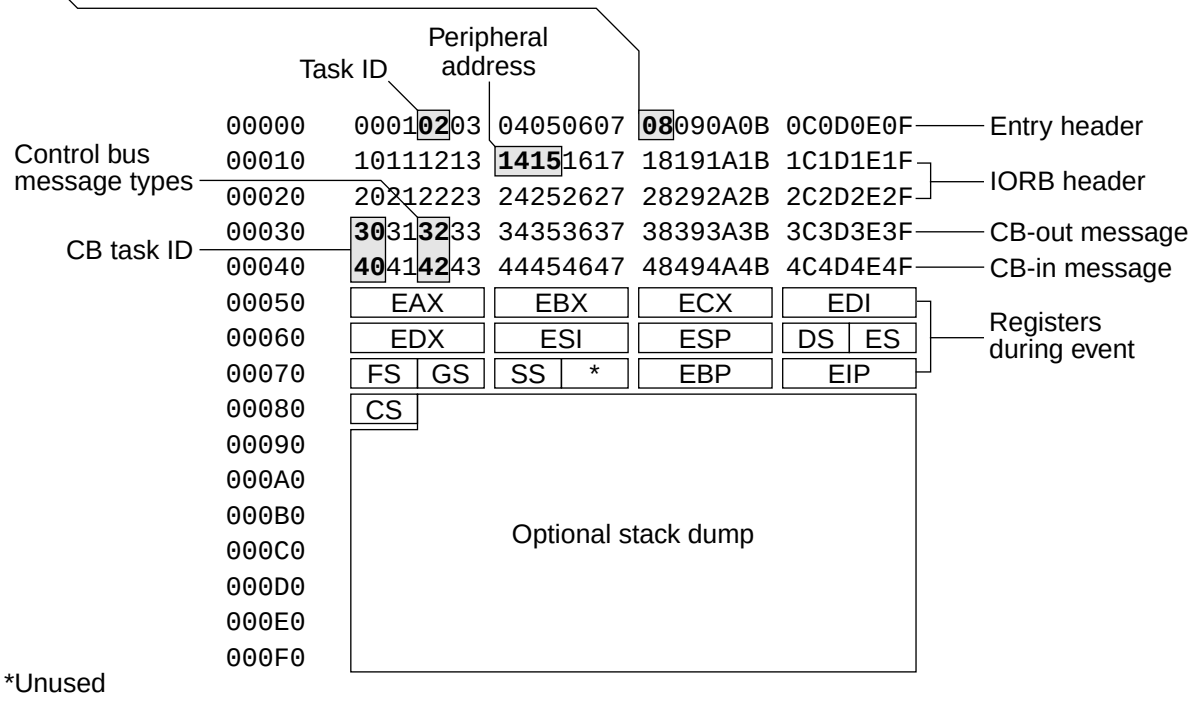
01	OS reported one or more lost control bus messages when attempting to read the control bus from the file system.
02	OS reported control bus operation cancelled when attempting to read the control bus from the file system.
03	OS received incoming message from the file system for a task, but the task was not expecting a message.
04	OS reported control bus operation cancelled when trying to read, then write, the control bus from the file system.
05	OS reported control bus operation cancelled when trying to read, then write, the control bus from the file system.
06	OS received an incoming message from the file system for a task, but the task was not expecting a message (send/receive routine).
07	Wrong response to file system message 28, Read Data.
08	Wrong response to file system message 34, Write Data.
09	Wrong response to a CP-to-file-system data bus DMA. File system message 35, Write Data Complete was expected.
0A	Wrong response to file system message A6, General Utility.
0B	Wrong response to a command.



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D1 Data Bus Operation With File System or Cluster Card Failed

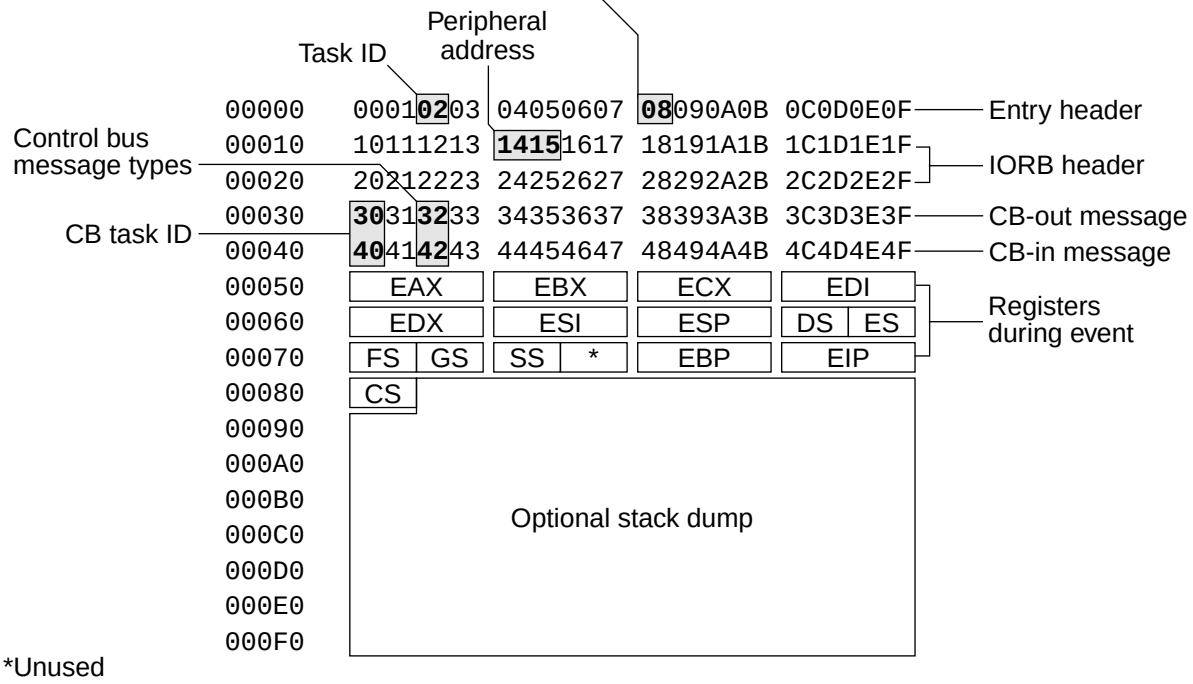
01	OS reported data bus DMA operation failed when reading data from the file system to the CP.
02	OS reported data bus DMA operation failed when writing data from the CP to the file system.
03	Data bus DMA operation failed when reading or writing between the CP and the cluster card.
04	Data bus DMA operation failed when reading or writing between a peripheral and the cluster card.



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D2 Data Bus Checksum Error Between CP and File System

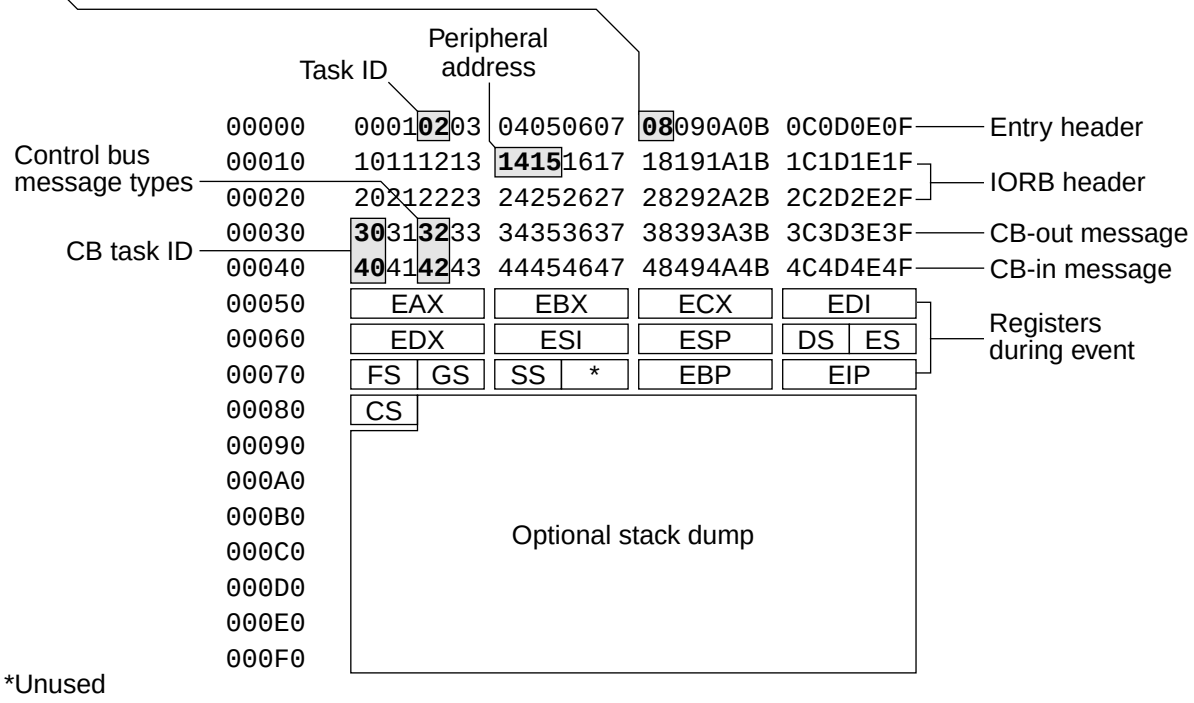
01	OS reported data checksum error when reading data from the file system to the CP.
02	OS reported data checksum error when writing data from the CP to the file system.



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D3 Control Bus Operation Failed While Preparing or Checking Data Bus Operation with File System or Cluster Card

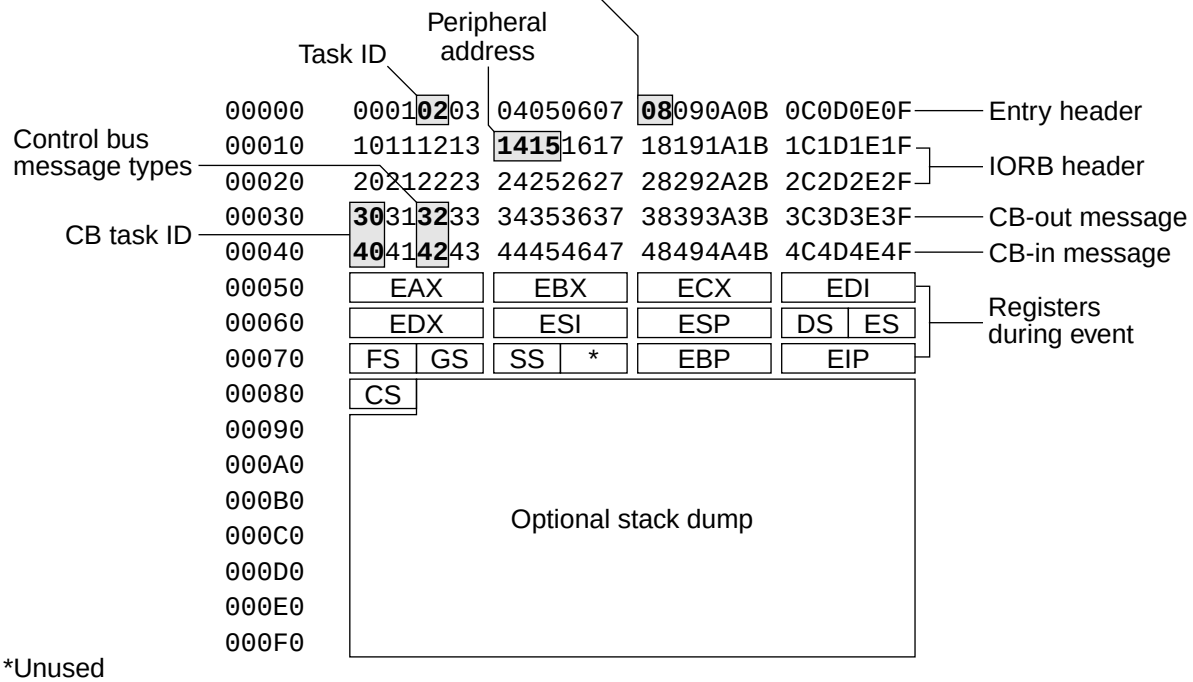
01	Control bus operation failed while attempting to set up file system for Data Read operation.
02	Control bus operation failed while setting up for Write Data operation (after sending file system message 34, Write Data).
03	Control bus operation failed while waiting for file system message 35, Write Data Complete during the Write Data operation.



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D4 Inconsistent or No Status from OS on Control Bus/ Data Bus Operation

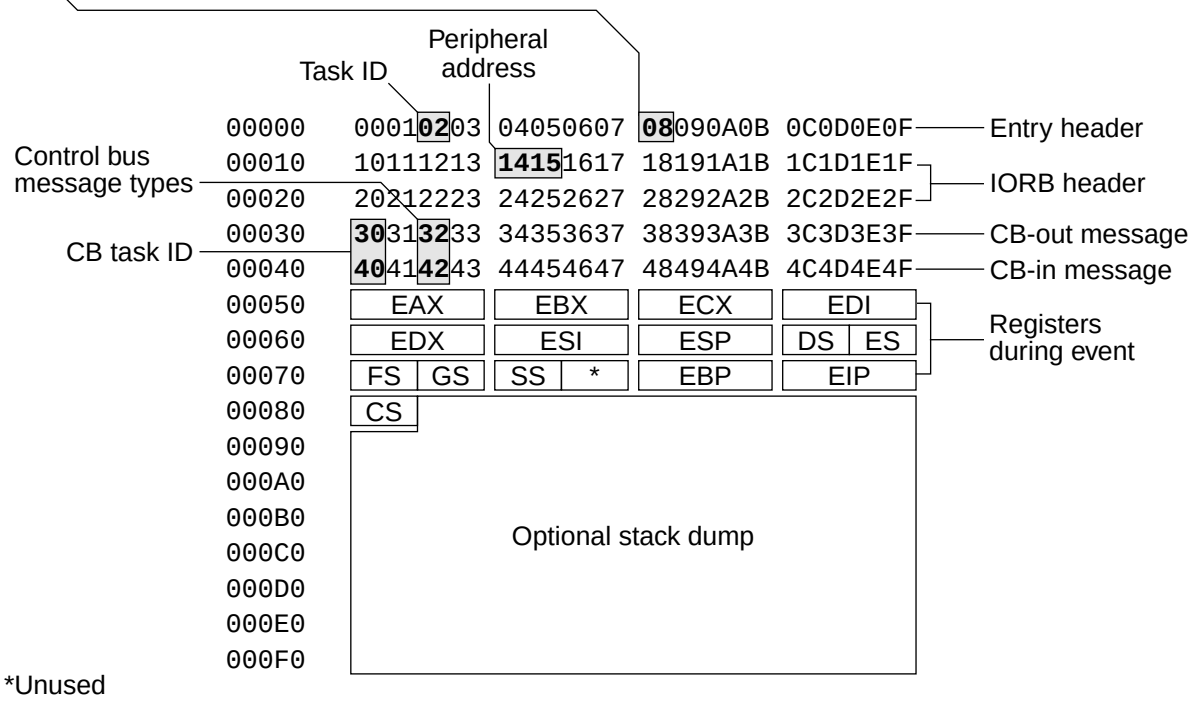
01	Inconsistent or no status from OS when attempting to read a control bus message from the file system.
02	Inconsistent or no status from OS when attempting to send, then read, a control bus message from the file system.
03	Inconsistent or no status from OS when attempting to send, then read a control bus message from a line card.
04	Inconsistent or no status from OS when attempting to send, then read with time-out, a control bus message from a line card.



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D5 OS Reported Control Bus Error

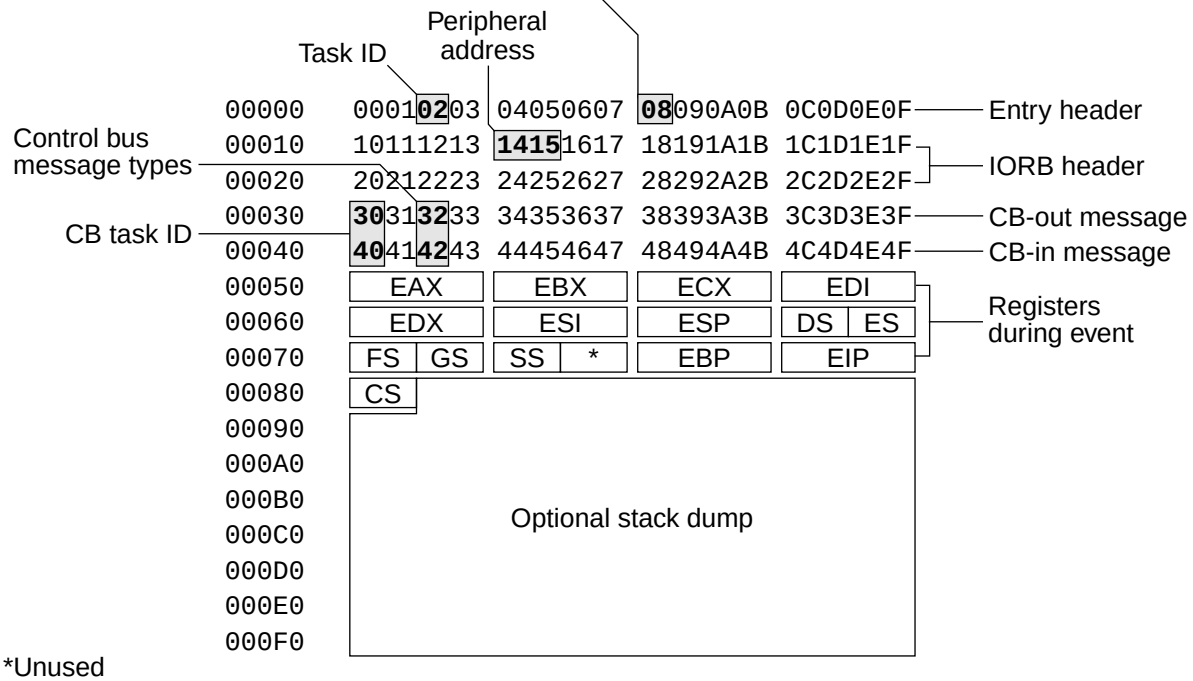
01	OS reported control bus failure when attempting to read a control bus message from the file system.
02	OS reported control bus failure when attempting to send, then read a control bus message from the file system.
03	OS buffering system reported control bus failure when attempting to send and then read a control bus message from a line card.



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D6 File System Returned Bad Status in Control Bus Message

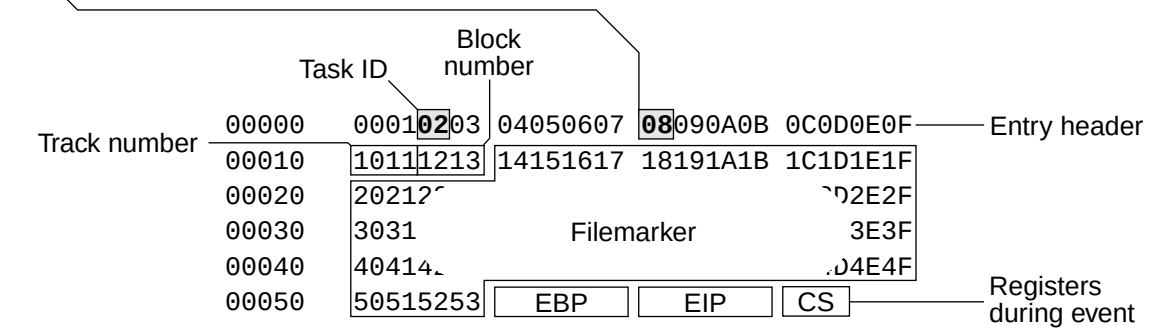
01	Bad return code in response to file system message 28, Read Data.
02	DMA byte count is greater than original CP byte count.
03	Bad return code in response to file system message 34, Write Data.
04	Bad return code in response to data bus DMA operation when attempting to write data from CP.
05	Bad return code in response to data directory size request during initial directory build.
06	File system returned a value of less than 10 in response to directory size check during initial directory build.



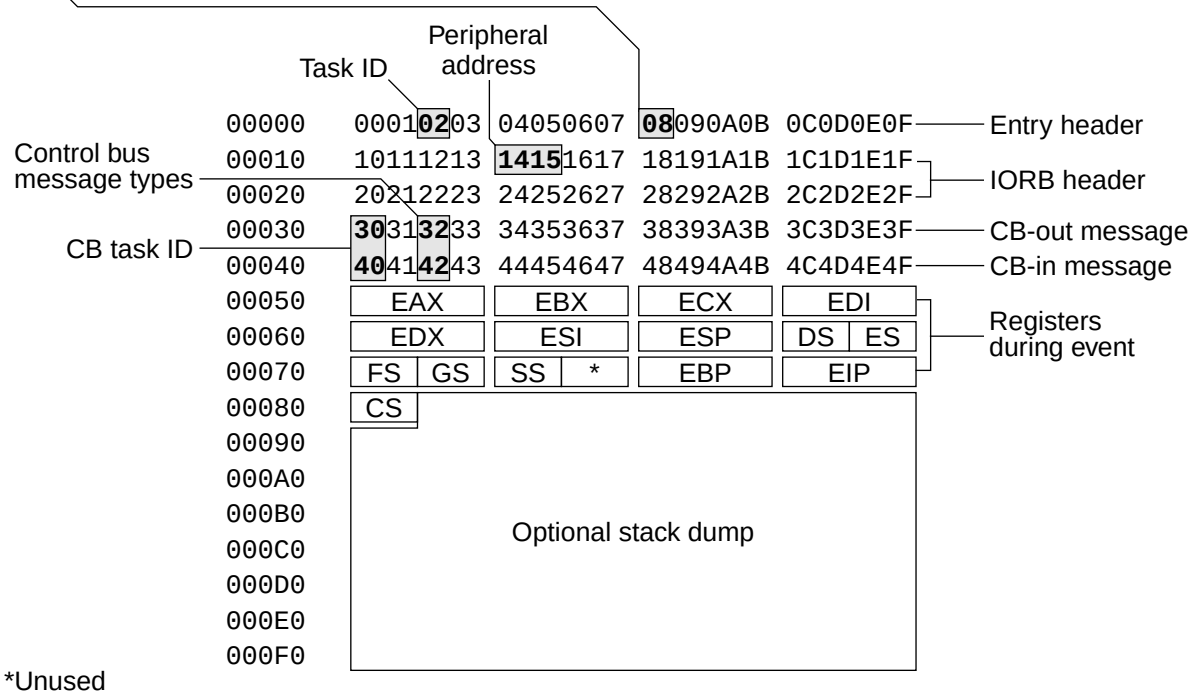
*Unused

07 File system accepted a read operation past the indicated end of the data directory during the initial build.

08 Directory entry found to be damaged during initial directory creation.

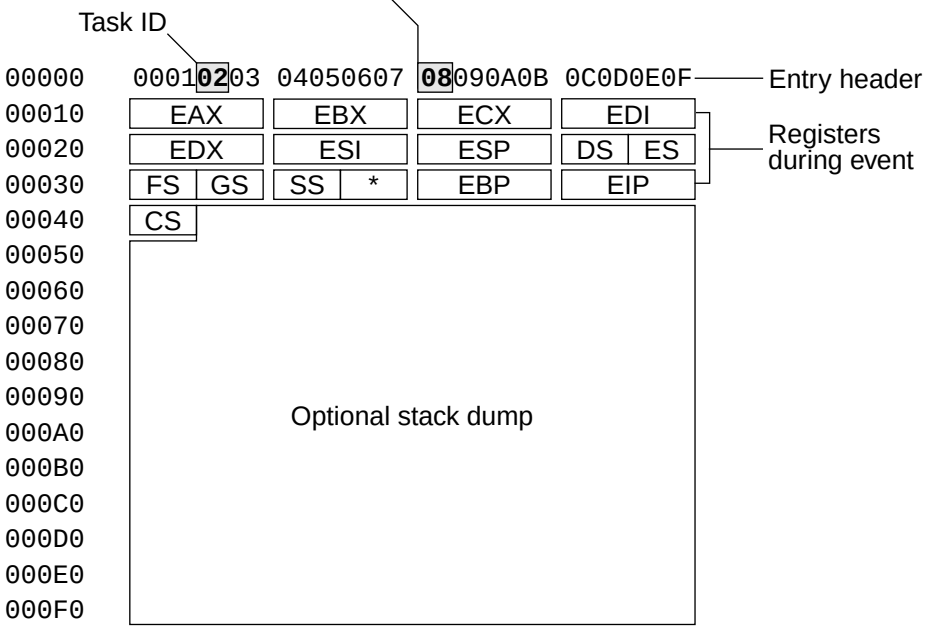


09 Bad return code in response to data directory size during a directory check.



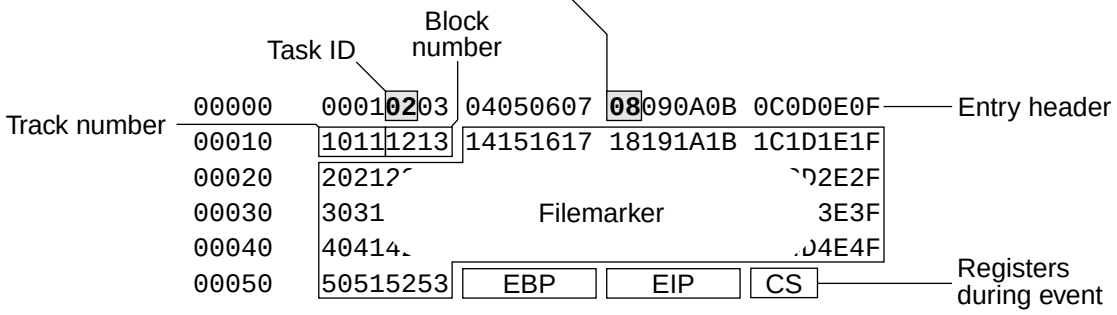
*Unused

0A File system inconsistency.
0B File system returned a value of less than 10 in response to directory size check during a directory check.

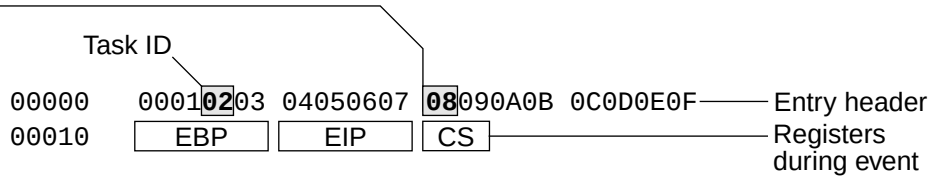


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0C File system accepted a read operation past the indicated end of the data directory during a directory check.
0D Damaged directory track found during data directory power-up check.



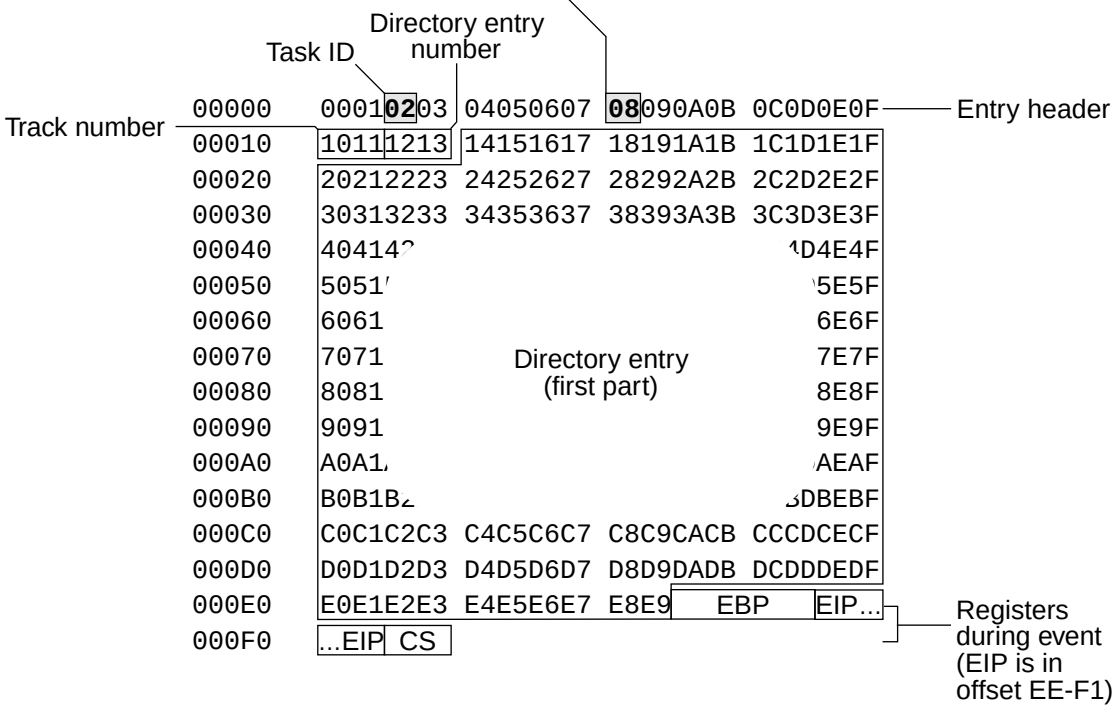
0E	Error while file system attempted to read a track from the data directory.
0F	Error while file system attempted to write a track to the data directory.



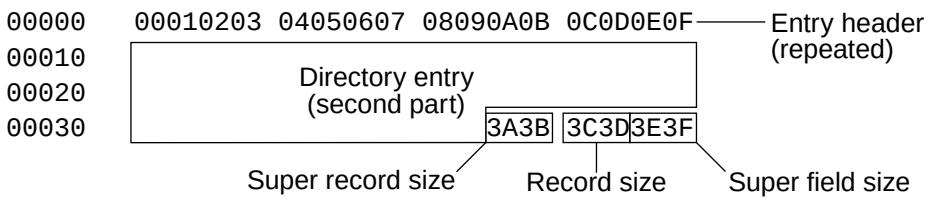
10	Damaged directory entry found while building data directory.
11	Damaged directory entry found during power-up directory check.

WHOLE "ENTRY" USES TWO STATUS LOG ENTRIES

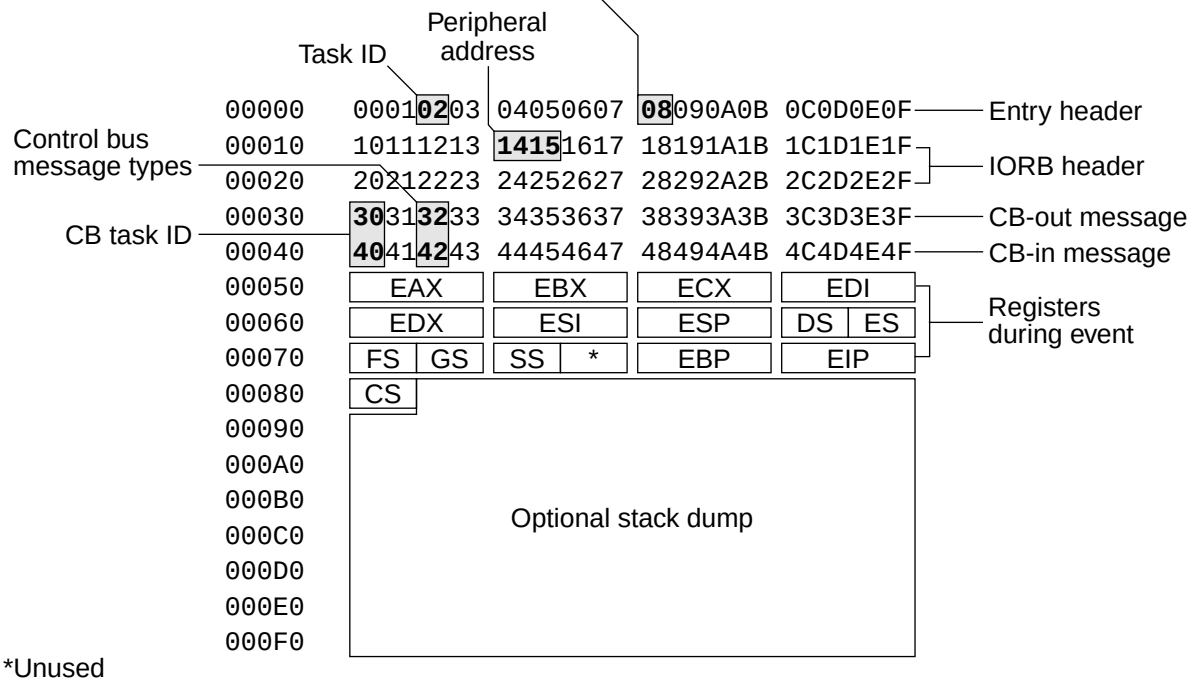
FIRST ENTRY



SECOND ENTRY

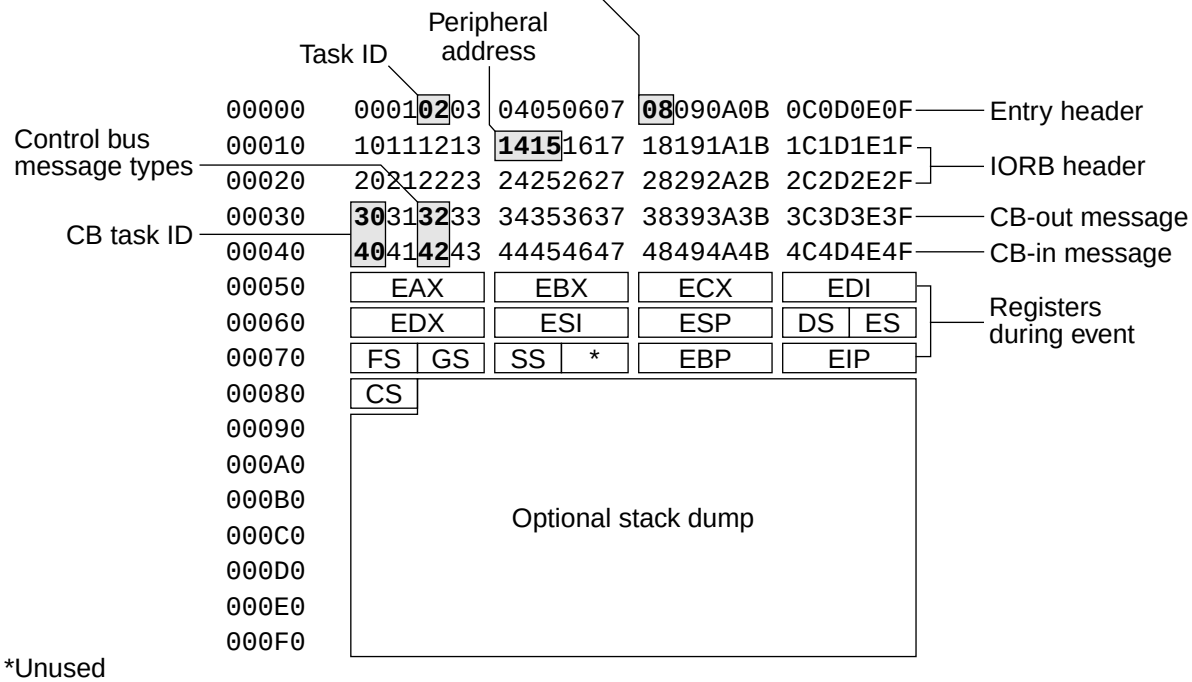


12	Bad return code in file system message 11, Abandon New Message Response.
13	Bad message ID according to file system message 11.
14	No new message according to file system message 11.
15	Bad return code in file system message 23, Open New Message Response.
16	Disk full according to file system message 23.
17	Message already open according to file system message 23.
18	Bad return code in file system message 15, Close New Message Response.
19	Bad message ID or scramble code according to file system message 15.
1A	No messages open according to file system message 15.
1B	Message length is 0 according to file system message 15.
1C	Bad return code in file system message 25, Open Old Message Response.
1D	Bad message ID or scramble code according to file system message 25.
1E	Message already open according to file system message 25.
1F	Use count at 0 according to file system message 25.



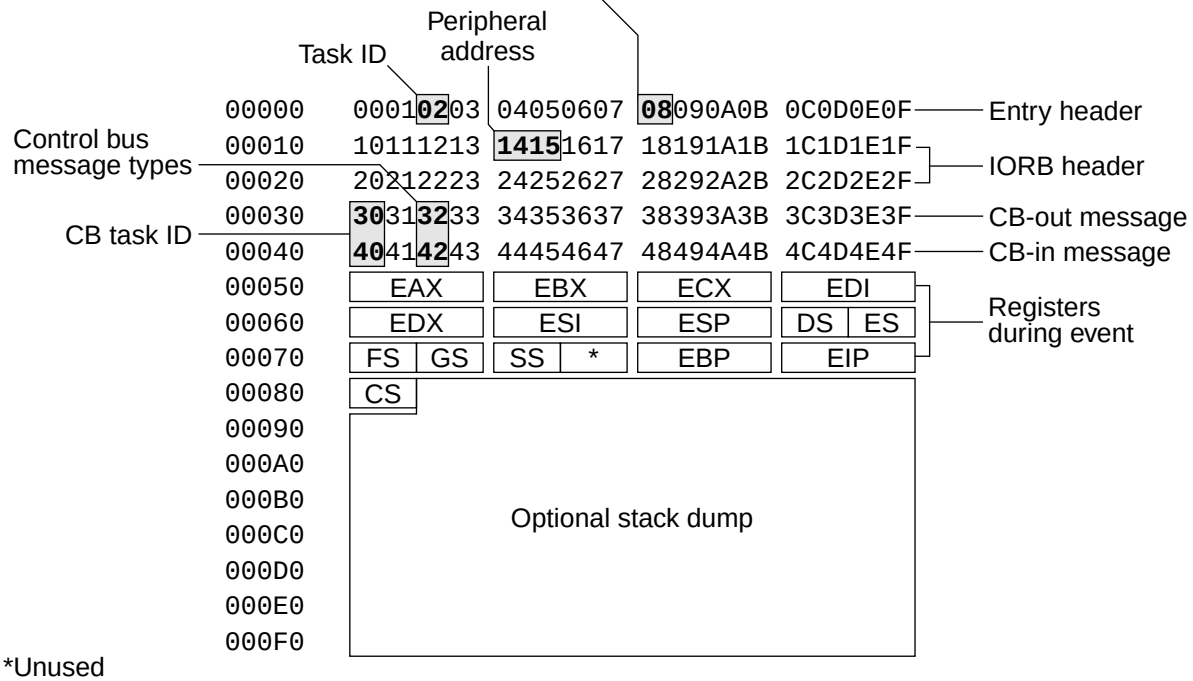
*Unused

20	Bad return code in file system message 17, Close Old Message Response.
21	Bad message ID or scramble code according to file system message 17.
22	No message open according to file system message 17.
23	Bad return code in file system message 1B, Decrement Use Count.
24	Bad scramble code or message ID according to file system message 1B.
25	Use count already at zero according to file system message 1B.
26	Bad return code in file system message 2B, Read Message Buffer Response.
27	Bad scramble code or message ID according to file system message 2B.
28	Past end of message according to file system message 2B.
29	Message not open according to file system message 2B.
2A	Position or length incorrect according to file system message 2B.
2B	Bad return code in file system message 39, Write Message Buffer Response.
2C	Bad scramble code or message ID according to file system message 39.
2D	Message not open according to file system message 39.
2E	Position past EOM according to file system message 39.
2F	Disk space full according to file system message 39.



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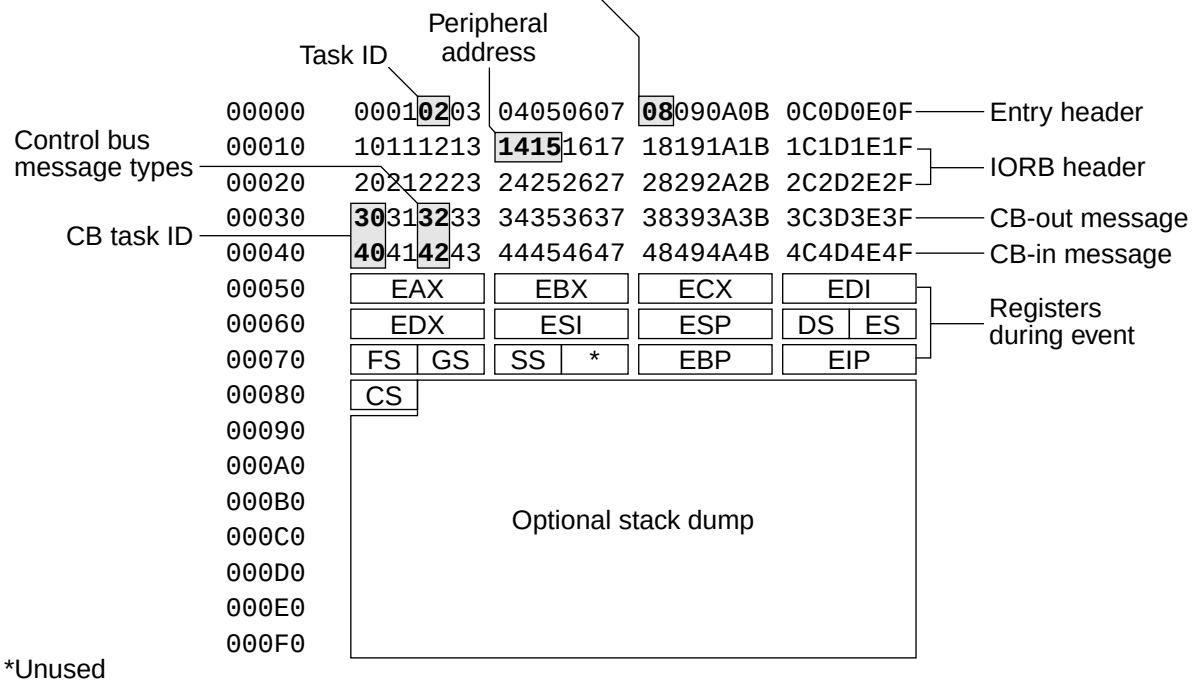
30	Bad return code in file system message 38, Write Message Buffer Complete.
31	Bad return code (bad ID, etc.) in file system message 1F, Load Prompt Response.
32	Unknown return code in file system message 1F.
33	Bad FPT entry according to file system message B6, General Utility Command Response.
34	Illegal phrase ID according to file system message B6.
35	Phrase not recorded according to file system message B6.
36	Illegal language area according to file system message B6.
37	Unknown return code in file system message B6.
38	Invalid action code according to file system message B6.
39	Invalid language code according to file system message B6.
3A	Uninitialized phrase table according to file system message B6.
3B	Invalid phrase number according to file system message B6.
3C	Phrase does not exist according to file system message B6.
3D	Unknown return code according to file system message B6.
3E	Phrase not recorded according to file system message 1F, Load Prompt Response.
3F	Bad return code; file system increment use count.
40	Bad scramble code or message ID; file system increment use count.
41	Use count already at zero; file system increment use count.



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D7 File System Reported Drive Error in Returned Control Bus Message

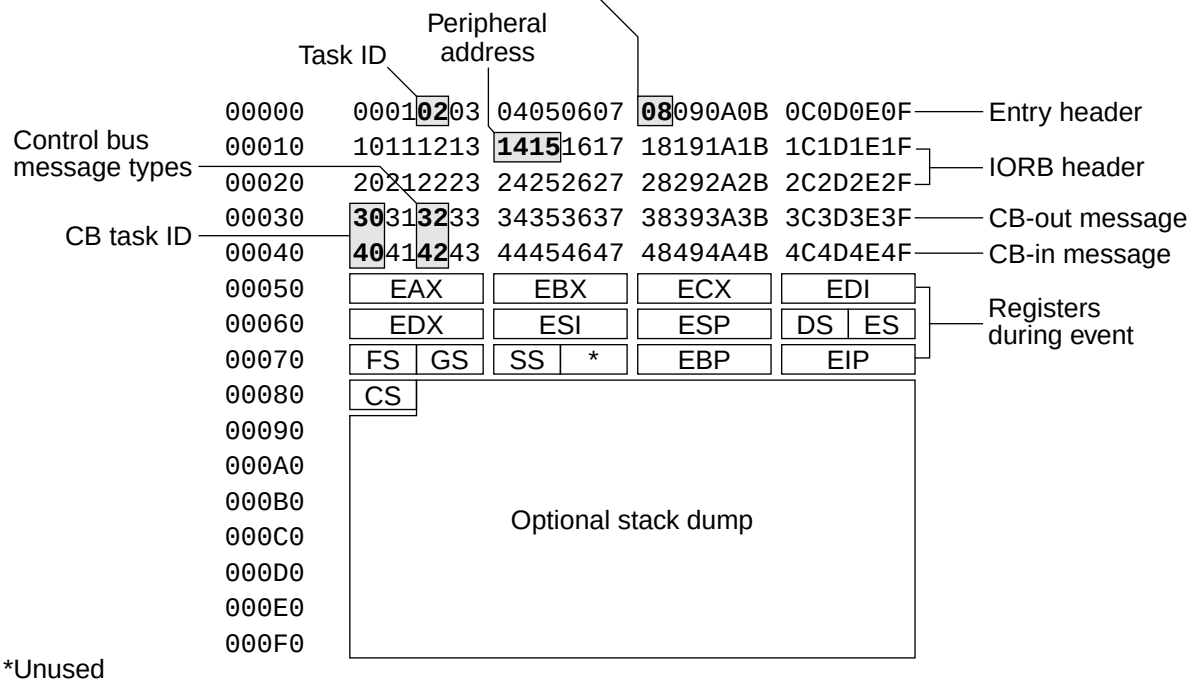
01	Bad drive reported in file system message 29, Read Data Response.
02	Bad drive reported in file system message 36, Write Data Response.
03	Bad drive reported in file system message 35, Write Data Complete.
04	Bad drive reported in file system message 1B, Decrement Use Count Response.
05	Bad drive reported in file system message 2B, Read Message Buffer Response.
06	Bad drive reported in file system message 39, Write Message Buffer Response.
07	Bad drive reported in file system message 38, Write Message Buffer Complete.
08	Bad drive reported in file system message 11, Abandon New Message Response.
09	Bad drive reported in file system message 25, Open Old Message Response.
0A	Bad drive reported in file system message 15, Close New Message Response.
0B	Bad drive reported in file system message B6, General Utility Response, for the delete phrase action.
0C	Bad drive reported in file system message B6, General Utility Response, for the update FPT action.
0D	Bad drive reported in file system message 1D, Increment Use Count Response.



*Unused

D8 File System Reported DMA Failure on Some Previous Operation

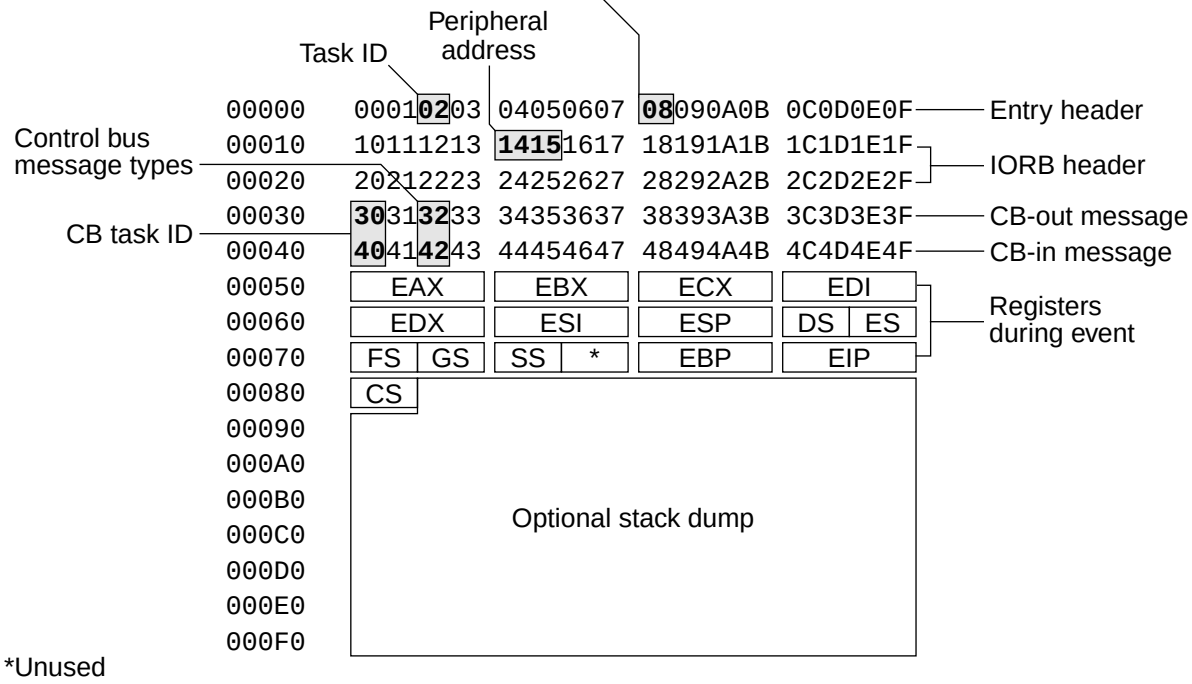
01	Previous DMA error reported in file system message 29, Read Data Response.
02	Previous DMA error reported in file system message 36, Write Data Response.
03	Previous DMA error reported in file system message 35, Write Data Complete.
04	Bad drive reported in file system message 1B, Decrement Use Count Response.
05	DMA error reported in file system message 2B, Read Message Buffer Response.
06	DMA error reported in file system message 39, Write Message Buffer Response.
07	DMA error reported in file system message 38, Write Message Buffer Complete.
08	DMA error reported in file system message 11, Abandon New Message Response.
09	DMA error reported in file system message 25, Open Old Message Response.
0A	DMA error reported in file system message 15, Close New Message Response.
0B	DMA error reported in file system message B6, General Utility Response.
0C	Bad drive reported in file system message 1D, Increment Use Count Response.



*Unused

D9 File System Failed to Respond Within Time-out Period

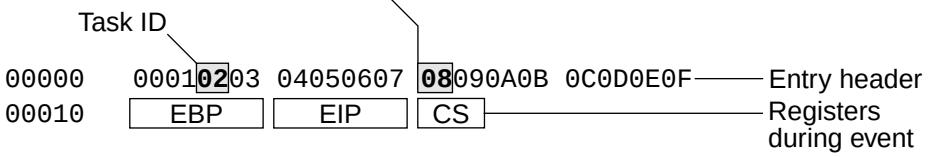
01	Time-out when attempting to read a control bus message from the file system.
02	Time-out when attempting to send, then read, a control bus message from the file system.



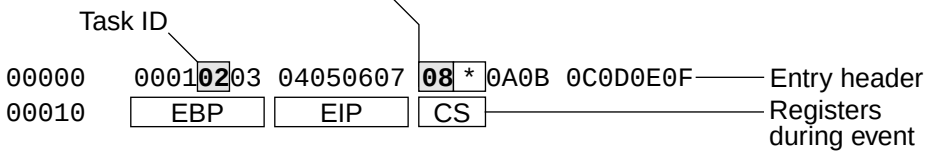
*Unused

DA General File System Control Bus Status Log

01	Control bus operation with file system failed while attempting to get the size of a data directory during initial directory creation.
02	Control bus operation with file system failed while attempting to get the size of a data directory during directory check.
03	Control bus operation failed with file system message B6, General Utility Command Response.
04	Control bus operation failed with file system message 1A, Decrement Use Count.
05	Control bus operation failed with file system message 37, Write Message Buffer.
06	Control bus operation failed with file system message 38, Write Message Buffer Complete.
07	Control bus operation failed with file system message 10, Abandon New Message.
08	Control bus operation failed with file system message 16, Close Old Message.
09	Control bus operation failed with file system message 22, Open New Message.
0A	Control bus operation failed with file system message 14, Close New Message.
0B	Control bus operation failed with file system message 2B, Read Message Buffer Response.
0C	Control bus operation failed with file system message 25, Open Old Message Response.
0D	Control bus operation failed with file system message, Load Phrase Response.
0E	Control bus operation failed with file system message, Receive Phrase Buffer Response.
0F	Control bus operation failed with file system message 74, Add Message Segment Response.
10	Control bus operation failed with file system message 1C, Increment Use Count.
11	Control bus operation with file system failed: FS Space Available Request.



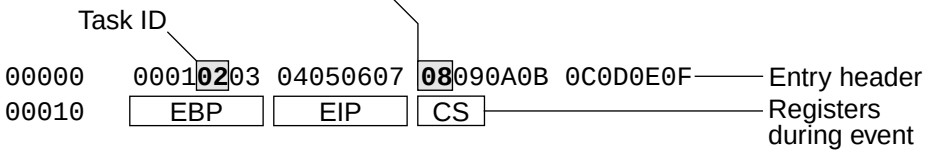
18	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FCP command.
19	Control bus operation error logged in the response from the file system for CB_TYPE_FCPR stat.
1E	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FLP command.
1F	Control bus operation error logged in the response from the file system for CB_TYPE_FLPR stat.
26	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FOP command.
27	Control bus operation error logged in the response from the file system for CB_TYPE_FOPR stat.
28	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FRD command.
29	Control bus operation error logged in the response from the file system for CB_TYPE_FRDR stat.
2E	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FRPB command.
2F	Control bus operation error logged in the response from the file system for CB_TYPE_FRPBR stat.
30	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FSPL command.
3A	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FWPB command.
3B	Control bus operation error logged in the response from the file system for CB_TYPE_FWPBR stat.
3C	Control bus operation error logged in the completion response from the file system for CB_TYPE_FWPBC stat.
A6	Control bus operation failed while attempting to get the response from the file system for CB_TYPE_FSGUC command.
B6	Control bus operation error logged in the response from the file system for CB_TYPE_FSGUCR stat.



*Subcodes 18-B6 have **CB** in offset 09.
It stands for **Control Bus**; ignore it.

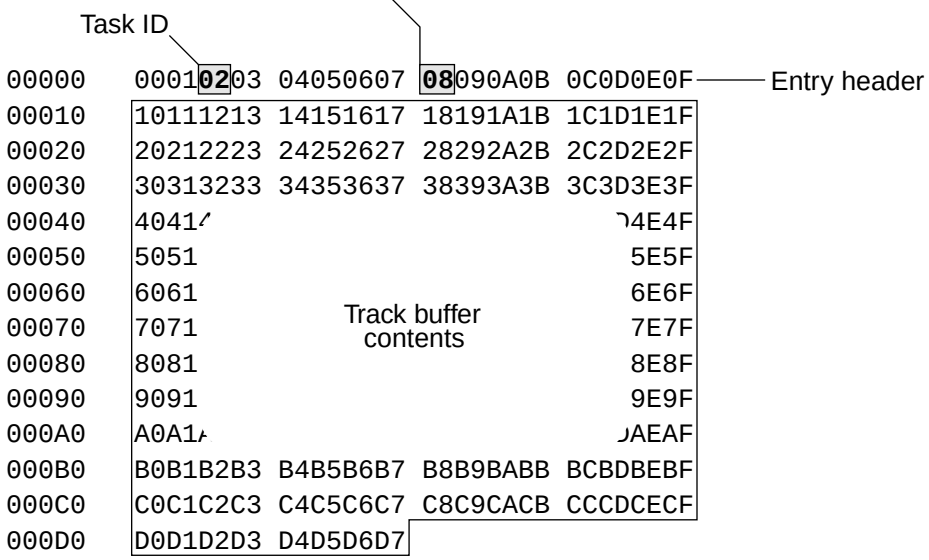
DB General File System Data Bus Status Log

01	Failed to write a track to the file system during the creation of a data directory.
02	Failed to read a track from the file system during the creation of a data directory.
03	Failed to read a track from the file system during a directory check.
04	Failed to write first directory track to the file system during directory revision setup.
05	Failed to write first directory track to the file system during directory revision setup.
06	Failed to write first directory track to the file system during a directory update or update check.
07	Failed to write first directory track to the file system during a directory update or update check.



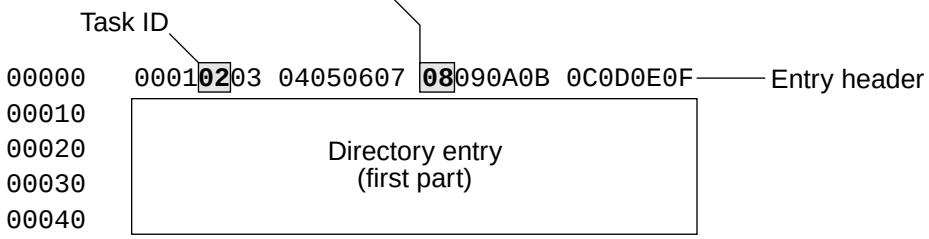
DC General Directory-Related Error

01 SST/data directory mismatch.



02 Directory internal error.

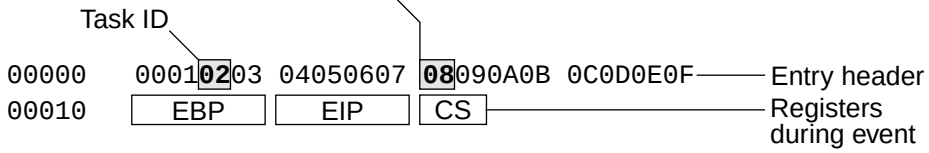
03 Directory internal error.



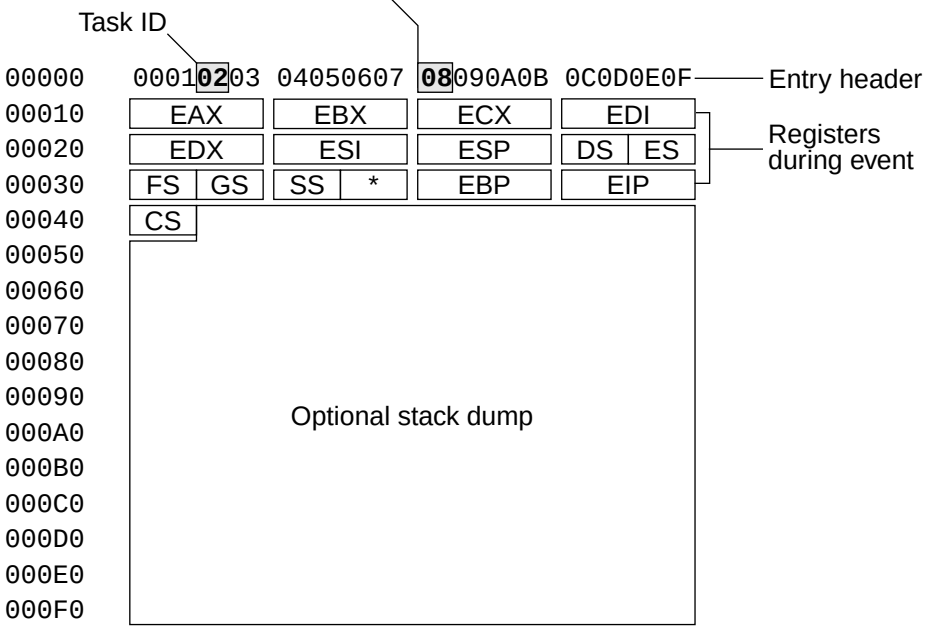
04 Internal damage to CP while processing directory algorithms.

05 Damage to internal (in-RAM) data tables used for directory processing was detected.

06 Negative or no confirmation to the request for an upgrade to the new directory and AMT.



07 Damaged directory. Directory entry bitmap/filemarker bitmap mismatch.



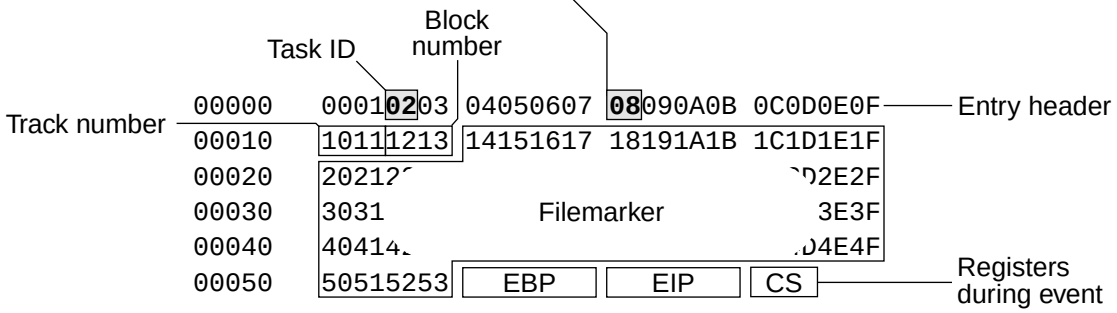
*Unused

08 Bad filemarker checksum detected at beginning of track before write operation.

09 Bad filemarker checksum detected at beginning of track after read operation.

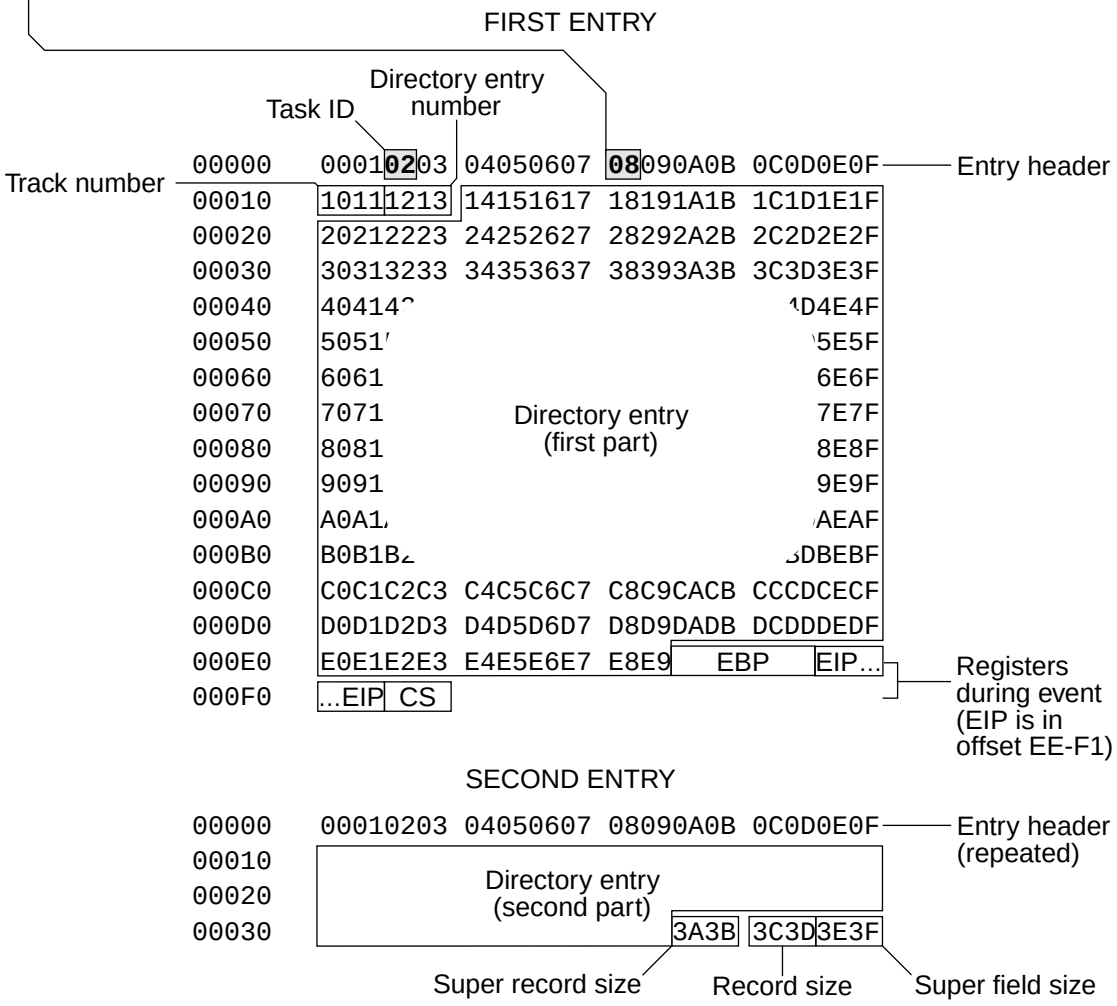
0A Bad file type detected in filemarker of a directory track before write operation.

0B Bad file type detected in filemarker of a directory track after read operation.

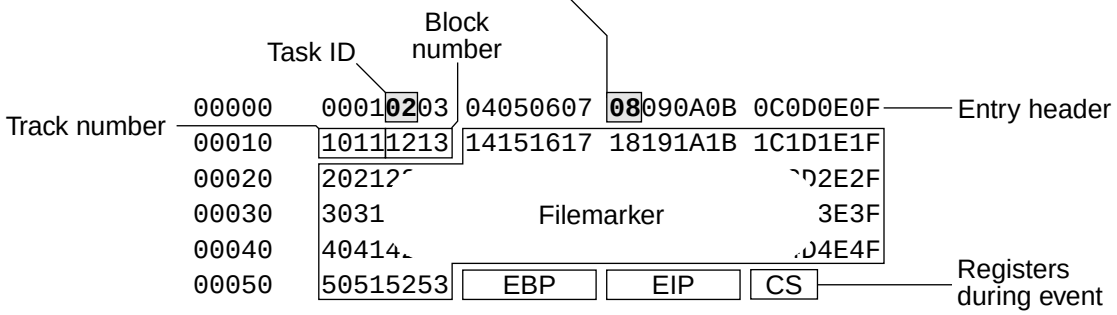


0C	Bad checksum for directory entry detected before write operation.
0D	Bad checksum for directory entry detected after read operation.
0E	Damaged directory node detected before write operation.
0F	Damaged directory node detected after read operation.

WHOLE "ENTRY" USES TWO STATUS LOG ENTRIES

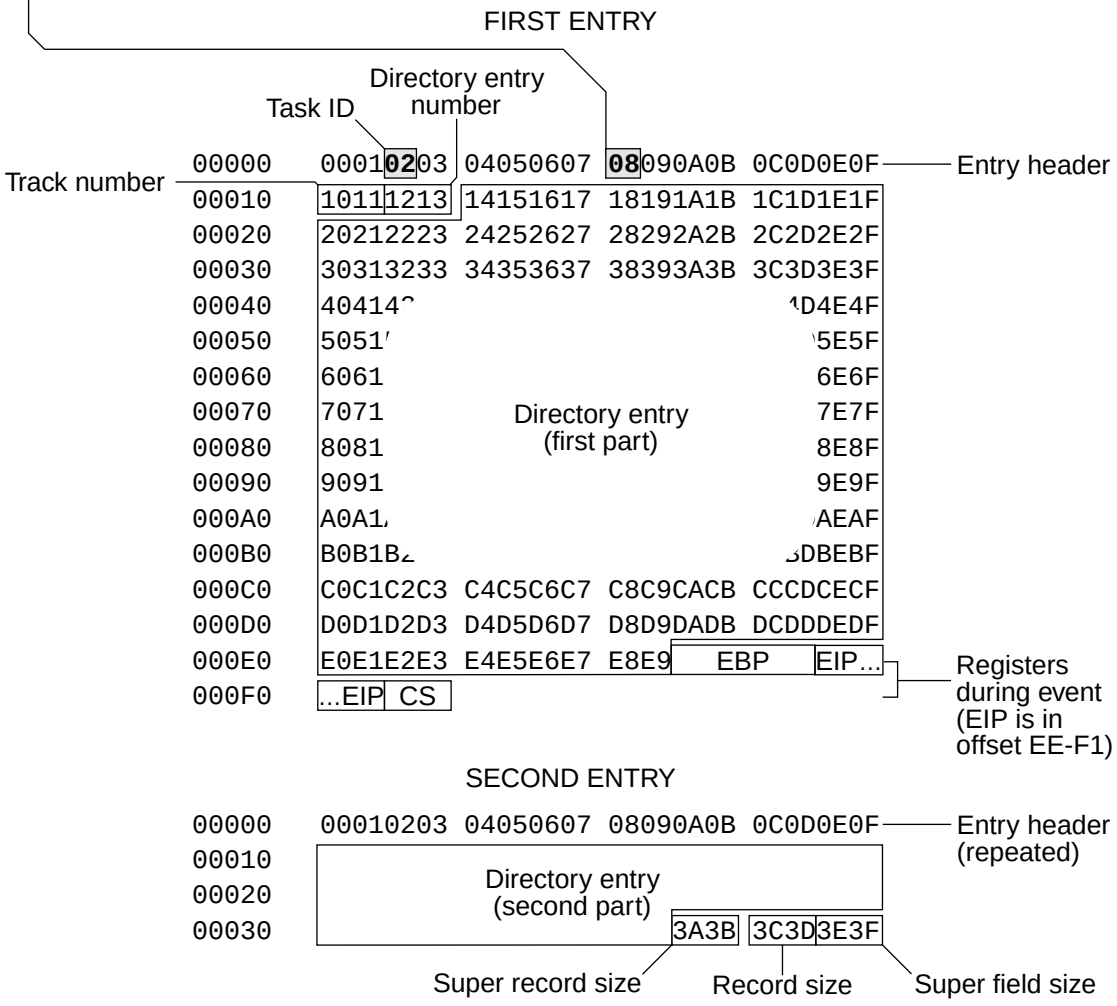


10	Bad checksum detected on filemarker (not first filemarker in track) before write operation.
11	Bad checksum detected on filemarker (not first filemarker in track) after read operation.
12	Bad block links detected in filemarker before write operation.
13	Bad block links detected in filemarker after read operation.



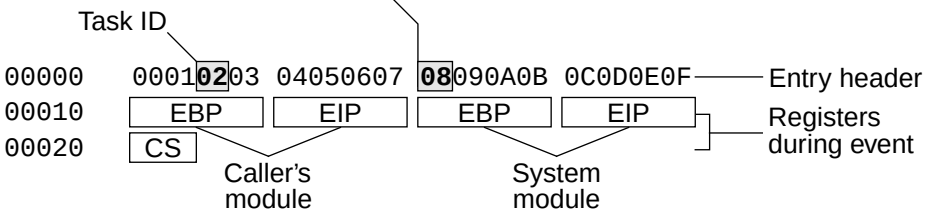
14	Damaged update record in directory track 1 detected during power-up.
15	Damaged update record in directory track 2 detected during power-up.
16	Failed in putting a request for file services on the queue. The queue should be deep enough to hold all possible requests.

WHOLE "ENTRY" USES TWO STATUS LOG ENTRIES

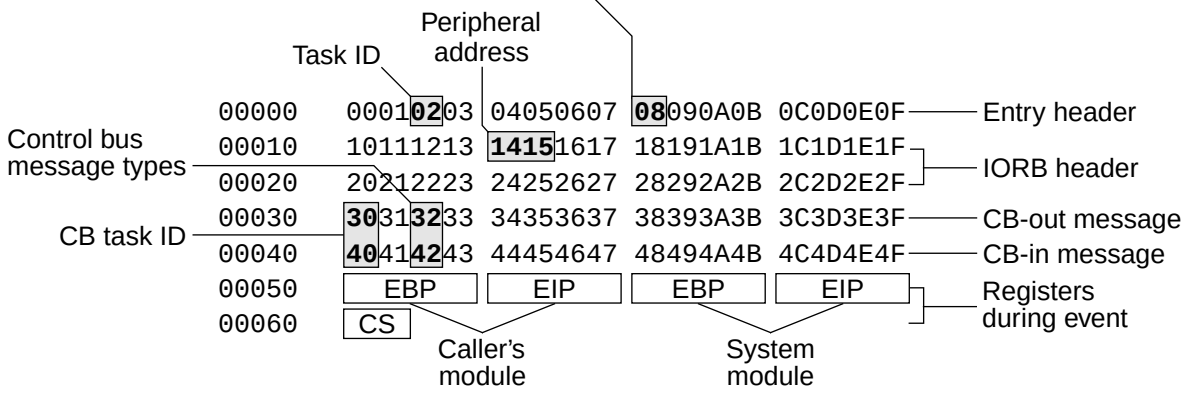


DD Failed to Read User Record from Disk

17	Too many bad user records on disk.
1A	Bad IUN for user record.

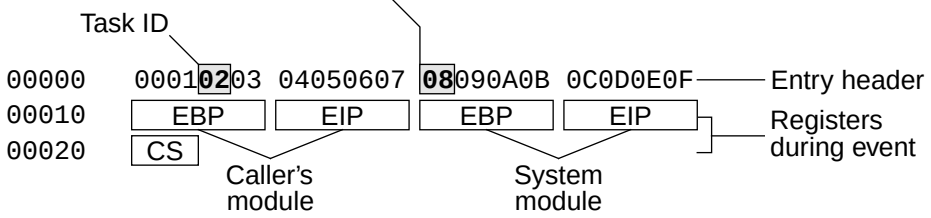


1D	Failed to read user record.

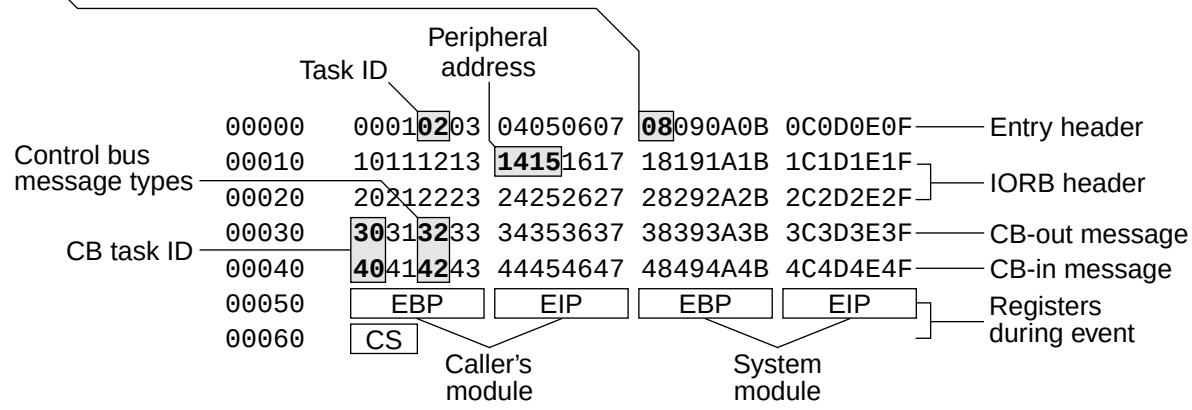


DE Failed to Read Company Record From Disk

1B Bad internal company record for company record read.

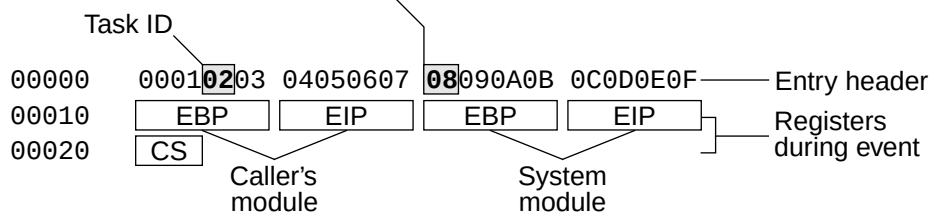


1C Failed to read company record from disk.

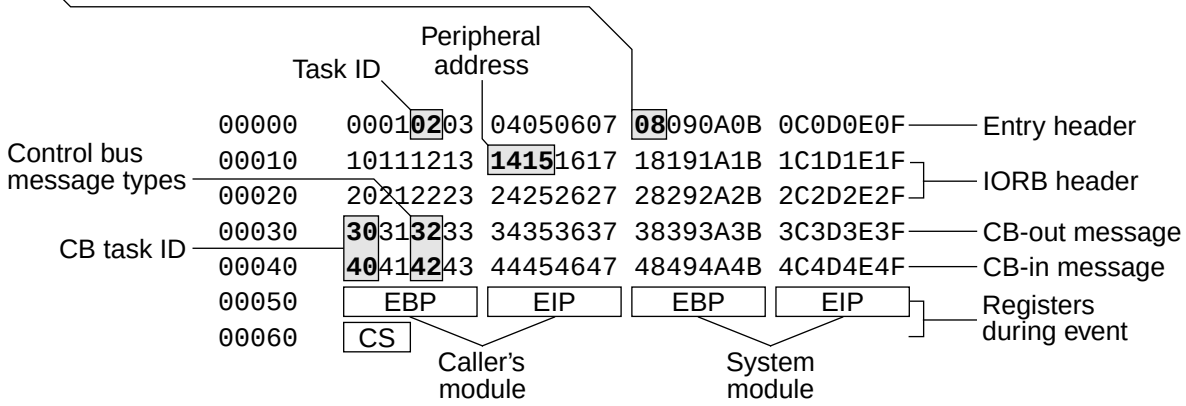


DF Failed to Write User Record to Disk

1A Bad IUN for user record write.

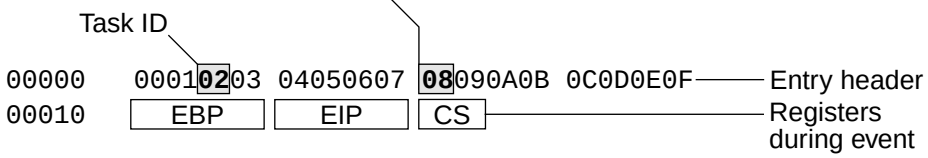


1E Failed to write user record to disk.

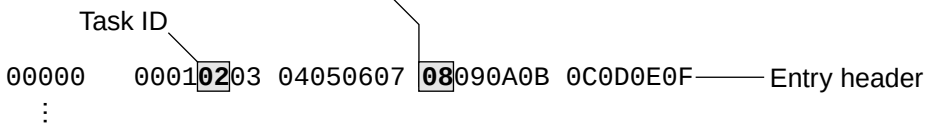


E0 System Error

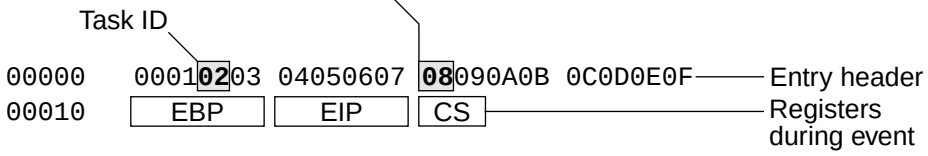
01	Stack expanded over threshold limit.



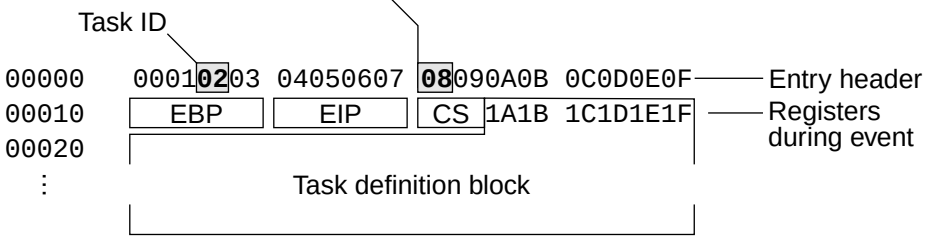
02	Stack overflow. Format varies and includes register information.



08	System failed to allocate event during Root Task start-up at system initialization.
09	File system 0 not found during Root Task start-up sequence.
0A	Failed to allocate queue during Root Task start-up sequence. Dumps the system.
0C	System failed to create queue during start-up of user support module in system partition.
10	System failed to allocate enough RAM for file/directory management during system start-up.

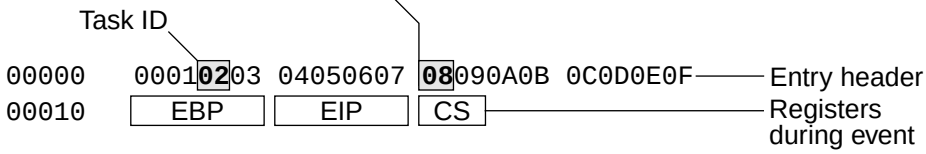


20	System could not create a task because that task was reported to be already active.
21	System could not create a task because the system is out of resources.
22	System could not create task because of an invalid creation request or parameter.
23	System could not create task because OS returned an unknown return code.
24	Could not get dial tone for batch network outcalling.
25	SST level higher than the software can recognize.
26	Number of bad user records is over the threshold (PT and LT are disabled).
27	CC not found during Root Task start-up sequence. Dumps the system.
28	Failed to perform SMT garbage collect.



E1 Failed to Start Application, Application Not Found, Partition Header Damaged or Cold Start Not Available

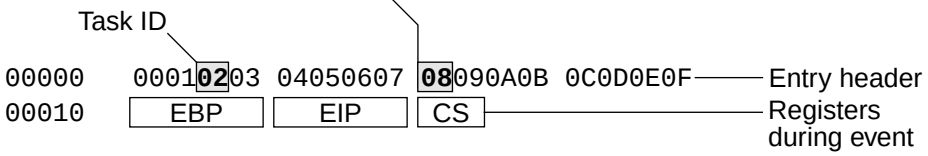
01	System failed to start AC partition.
02	System failed to start SMT partition.
03	System failed to start X.25 partition.
04	System failed to start OCL partition.
05	System failed to start ASA partition.
06	System failed to start IMS A->H partition.
07	System failed to start IMS H->A partition.
08	System failed to start OET partition.
09	System failed to start CST partition.



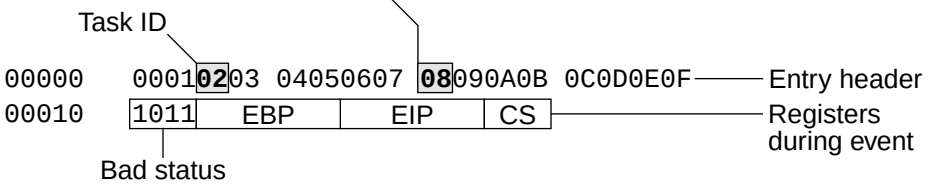
E2 AMT Error

Address Mapping Table error. Possible bad memory.

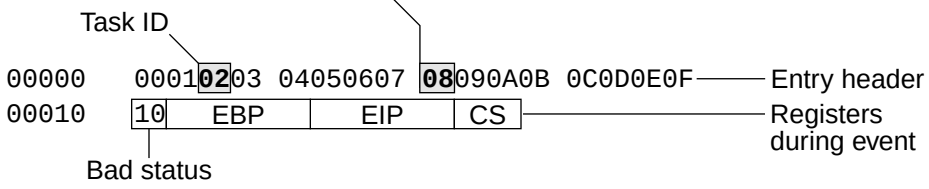
01	Bad address calculated when attempting to reference AMT entry in memory.
02	Bad index received by AMT in-RAM access routine.
03	Corrupted AMT in-RAM data tables.
04	System failed to read an AMT record.
05	System failed to write an AMT record.
06	System failed to create event for AMT during system start-up.
07	System failed to open the AMT file.
08	System detected damaged AMT super record while attempting power-fail recovery check.
09	A duplicate AMT entry found while building in-RAM tables.
0A	System failed to create a file for AMT during initial build.
0B	Cannot downrev the AMT.
0C	Unable to obtain file status for AMT while attempting to expand AMT's size.
0D	System detected damaged AMT super record while attempting to expand AMT.
0E	Digit count in AMT entry exceeds AMT_MAX_DIGITS.



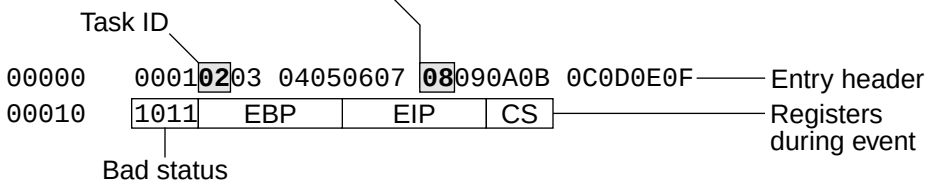
0F	Returned error status from sys_nc_amt_lin_ser.



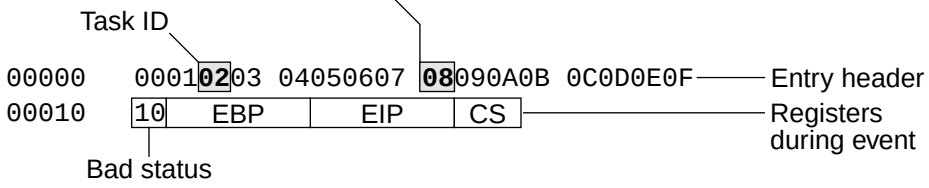
10 Bad return code in second control bus message.



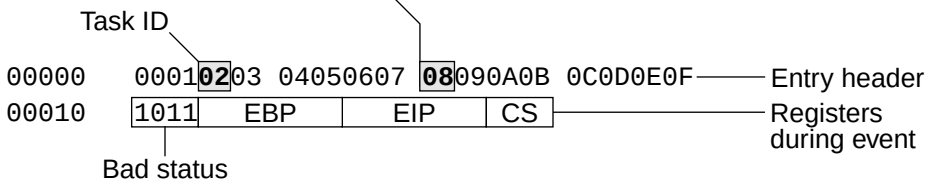
11 Undefined status returned by AP for linear search.
12 Returned error status from sys_nc_amt_lin_ser.



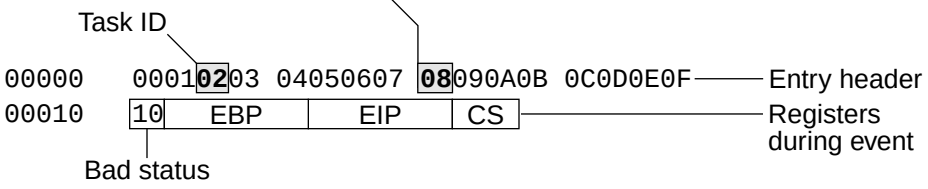
13 Bad return code in second control bus message.



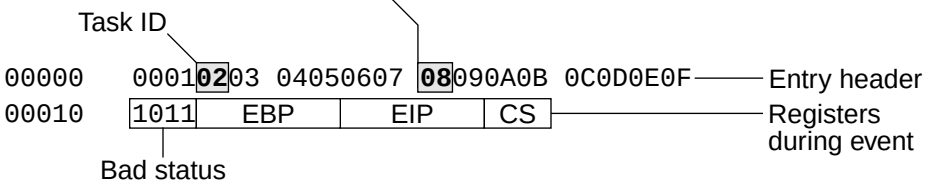
14 Undefined status returned by AP for linear search.
15 Returned error status from sys_nc_amt_lin_ser.



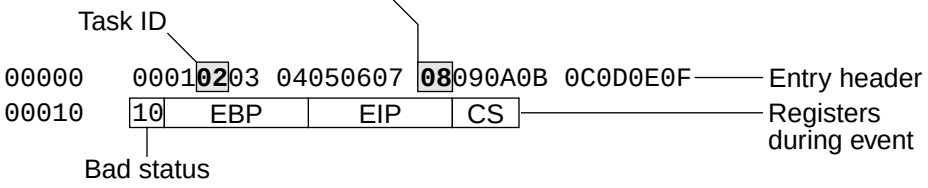
16 Bad return code in second control bus message.



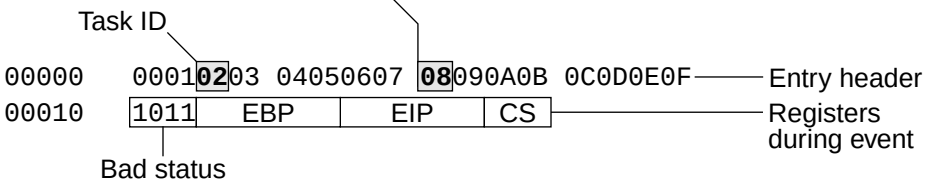
17 Undefined status returned by AP for linear search.
18 Returned error status from sys_nc_amt_lin_ser.



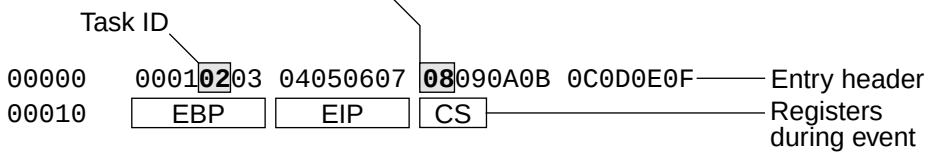
19 Bad return code in second control bus message.



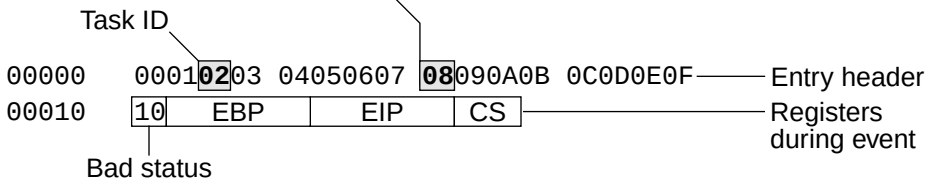
1A Undefined status returned by AP for linear search.



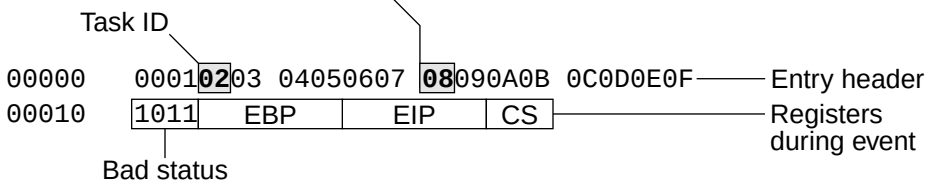
1B Returned error status from sys_nc_amt_dbn_search.



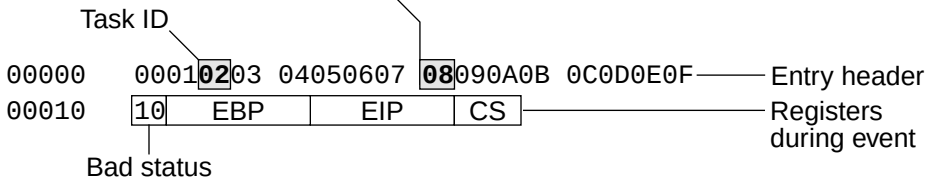
1C Bad return code.



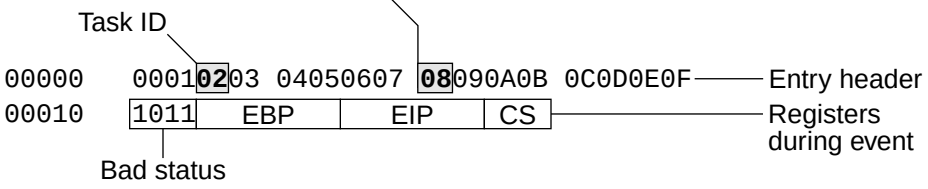
1D Undefined status returned by AP for ADD.
1E Undefined status returned by AP for REM.



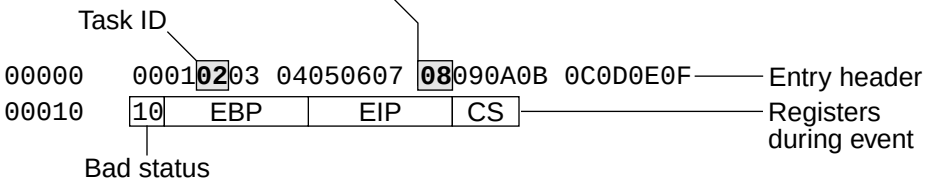
20 Undefined status returned by AP for sys_amt_addr_to_int.
22 Undefined status returned by AP for sys_amt_addr_seek.
23 Returned error status from sys_nc_irn_to_addr.



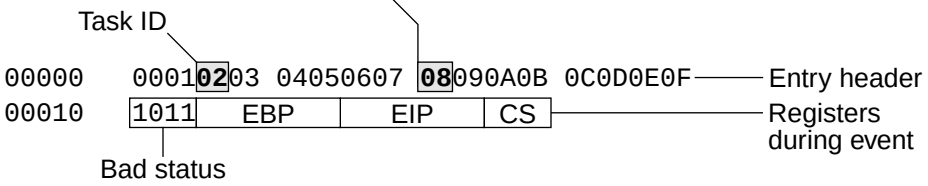
24 Returned error status from sys_nc_amt_lin_ser.



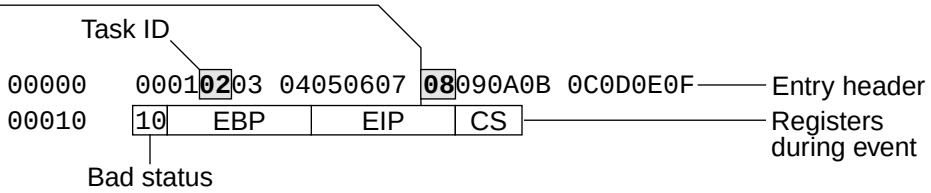
25 Bad return code in second control bus message.



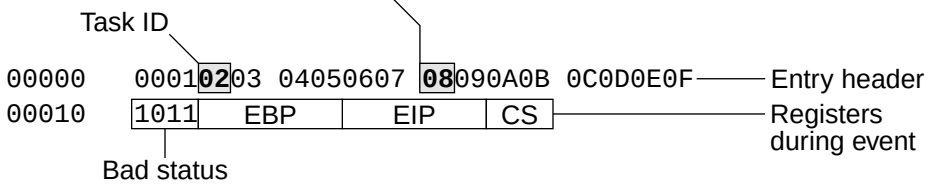
26 Undefined status returned by AP for sys_nc_amt_lin_ser.



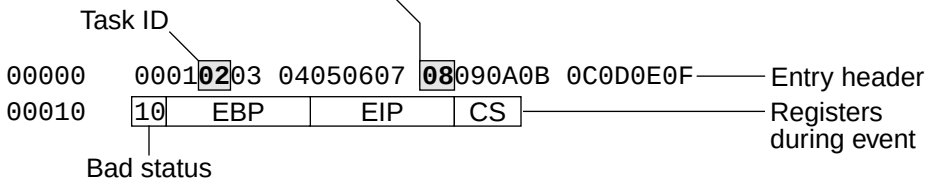
27 Returned error status from sys_nc_amt_dbn_search.
28 Undefined status returned by AP at sys_nc_amt_dbn_search.
29 Returned error status from sys_nc_amt_den_search.
2A Undefined status returned by AP at sys_nc_amt_dbn_search.



2B Returned error status from sys_nc_amt_lin_ser.

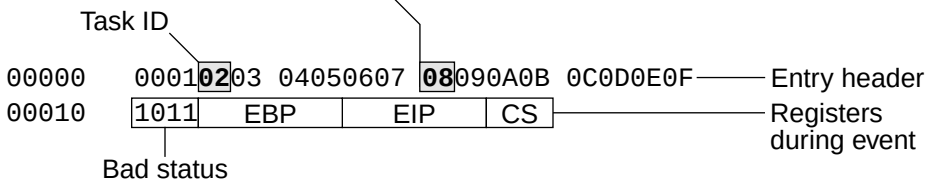


2C Bad return code in second control bus message.

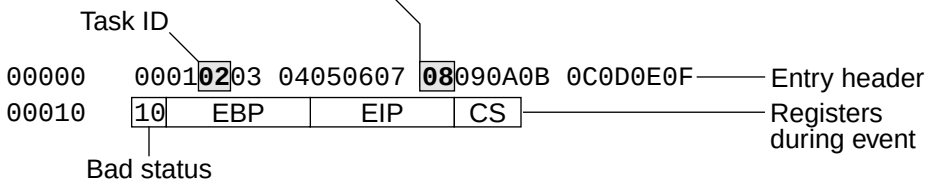


2D Undefined status returned by AP for linear search.

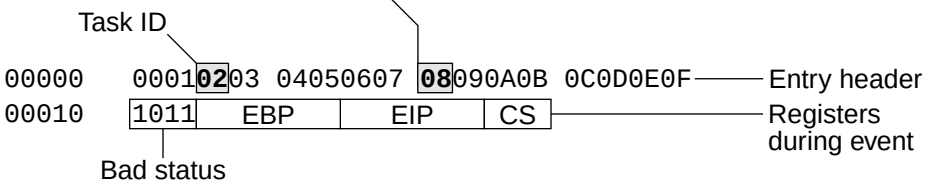
2E Returned error status from sys_nc_amt_lin_ser.



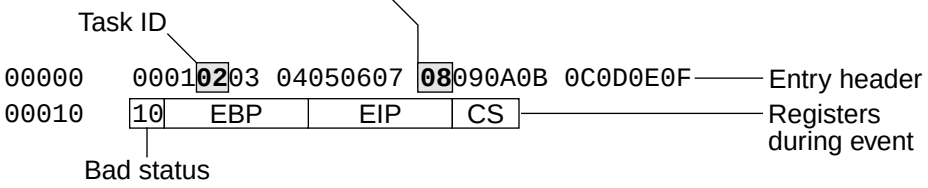
2F Bad return code in second control bus message.



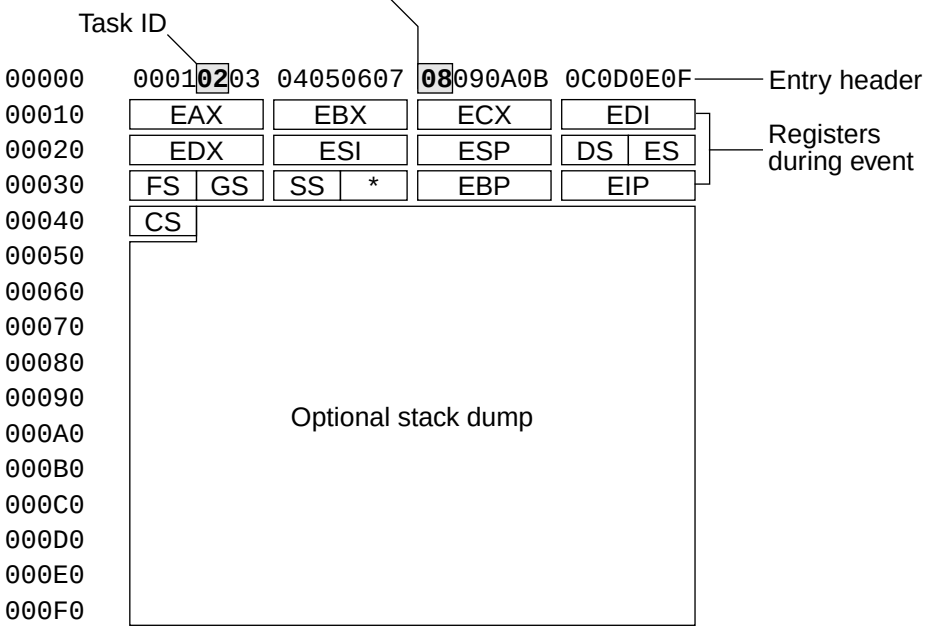
30 Undefined status returned by AP for linear search.



31 Undefined status returned by AP for binary search.

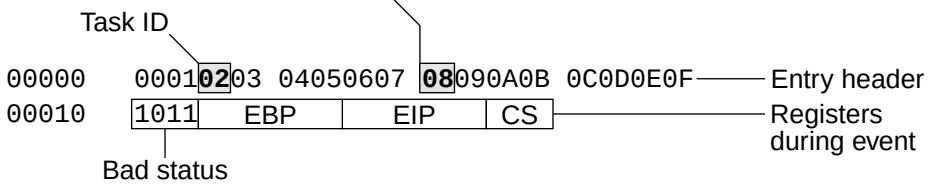


32 AMT is full.

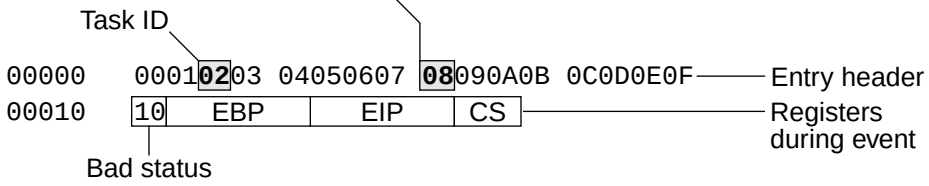


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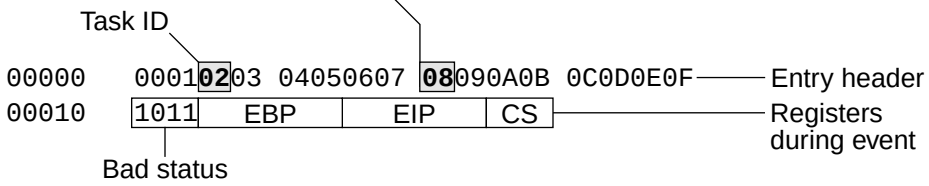
33 Returned error status from sys_nc_amt_lin_ser.



34 Bad return code in second control bus message.

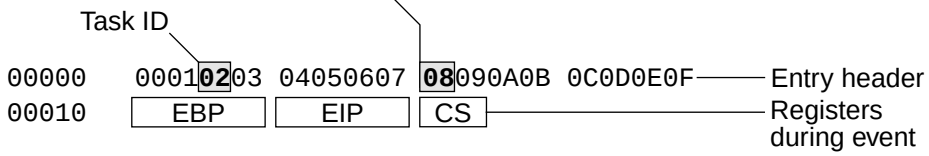


35 Undefined status returned by AP for linear search.

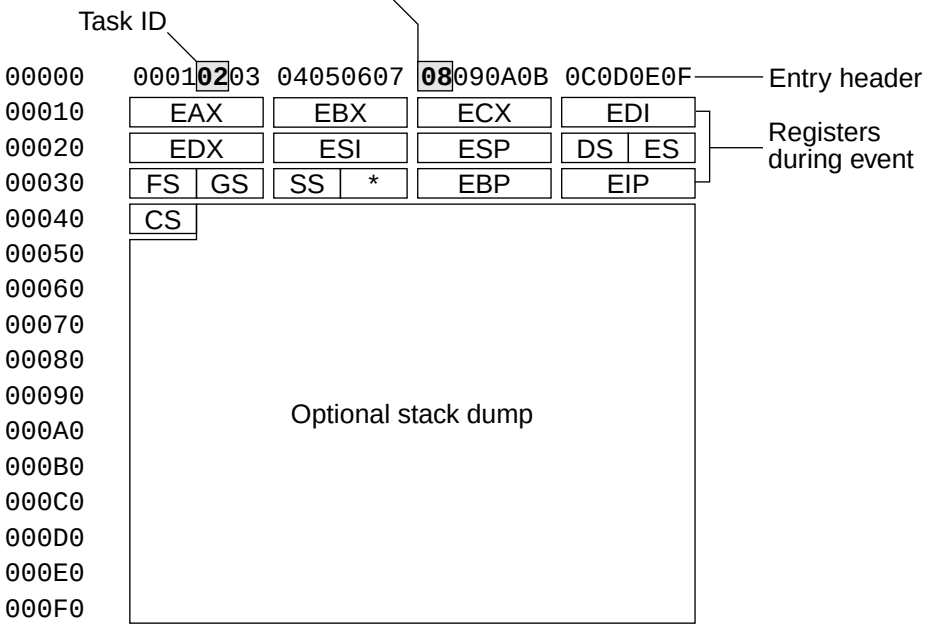


38 Error returned from os_malloc. Tried to allocate a temporary buffer for reading an AMT file for a PMOS upgrade.

39 Error returned from os_free. Tried to free a temporary buffer for reading an AMT file for a PMOS upgrade.

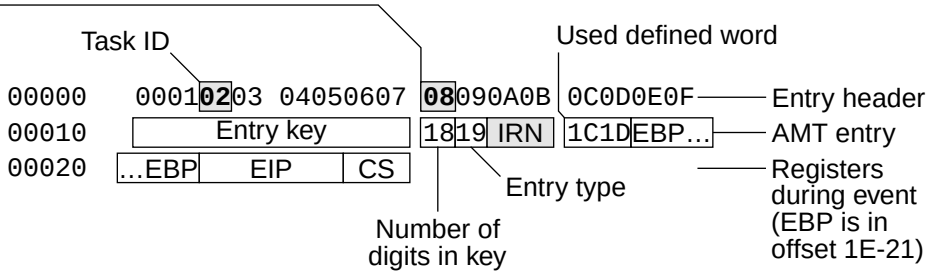


40	AMT on CC is full.
41	AMT on CC duplicate name.
42	AMT on CC entry not found.
43	AMT on CC is empty.
45	CC update ADD error.
46	Cannot delete entry on CC. The CC may have a problem.
47	Local AMT is full.
48	Local AMT, duplicate name.

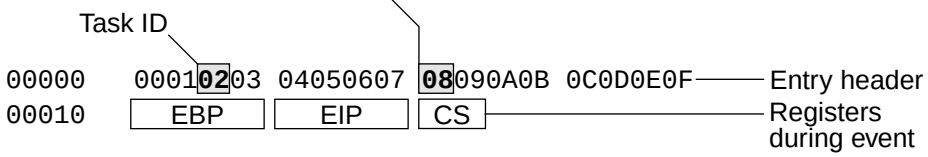


*Unused

49	Local AMT, delete bad IRN in entry. The IRN in the entry did not match the input prm to the routine.
4A	Local AMT, delete bad digit count in entry. The number of digits in the entry key and the total number of digits in the entry did not match the number of additional digits in the input prm to the routine.
4B	Local AMT, name not found.



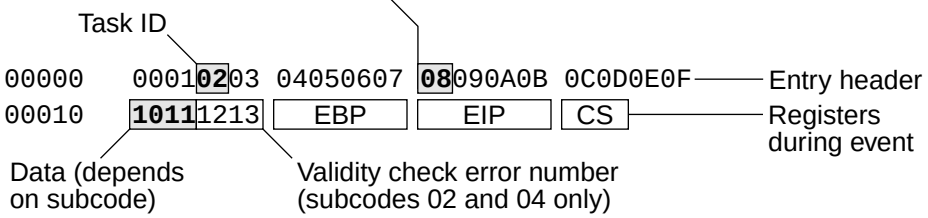
80	Bad data for amt_insert.
81	Invalid AMT entry type.
82	AMT is full.



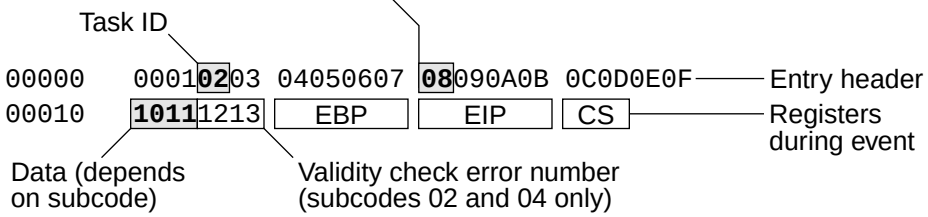
E4 ASA SP Routine General Error

The use of offsets 10-11 and 12-13 varies with the subcode.

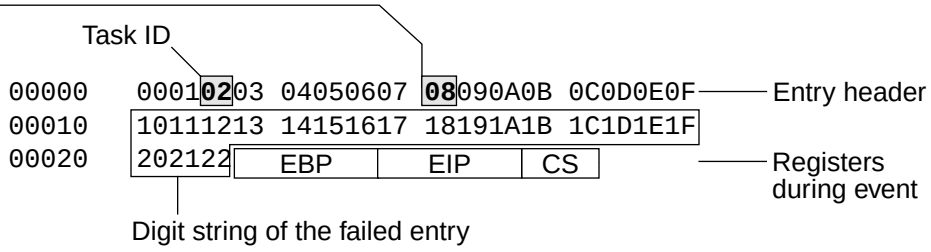
01	User record not active when reading. Offset 10-11: IUN of the user record. Offset 12-13: unused.
02	User record validity check error when reading. Offset 10-11: IUN of the user record. Offset 12-13: validity check error number.
03	IUN out of range when reading. Offset 10-11: IUN of the user record. Offset 12-13: unused.
04	User record validity check error when writing. Offset 10-11: IUN of the user record. Offset 12-13: validity check error number.
05	User record lock fails. Offset 10-11: IUN of the user record. Offset 12-13: unused.
06	IUN out of range when locking. Offset 10-11: IUN of the user record. Offset 12-13: unused.
07	System group number out of range when reading. Offset 10-11: system group number. Offset 12-13: unused.
08	System group number out of range when writing. Offset 10-11: system group number. Offset 12-13: unused.
09	ICN out of range when company reading. Offset 10-11: ICN. Offset 12-13: unused.
0A	Company validity check error when company writing. Offset 10-11: ICN. Offset 12-13: unused.
0B	No event. Offset 10-13: unused.



0C	No IORB. Offset 10-13: unused.
0D	Fail on waiting the critical region event. Offset 10-13: unused.
0E	Name table is full. Offset 10-13: unused.
0F	System is full and cannot add mailboxes. Offset 10-13: unused.
10	Abandon user record failed. Offset 10-11: IUN of the user record. Offset 12-13: unused.
11	Attendant schedule number out of range. Offset 10-11: Attendant schedule number. Offset 12-13: unused.
16	Error detected by priority queue Offset 10-11: IUN of the user record. Offset 12-13: unused.

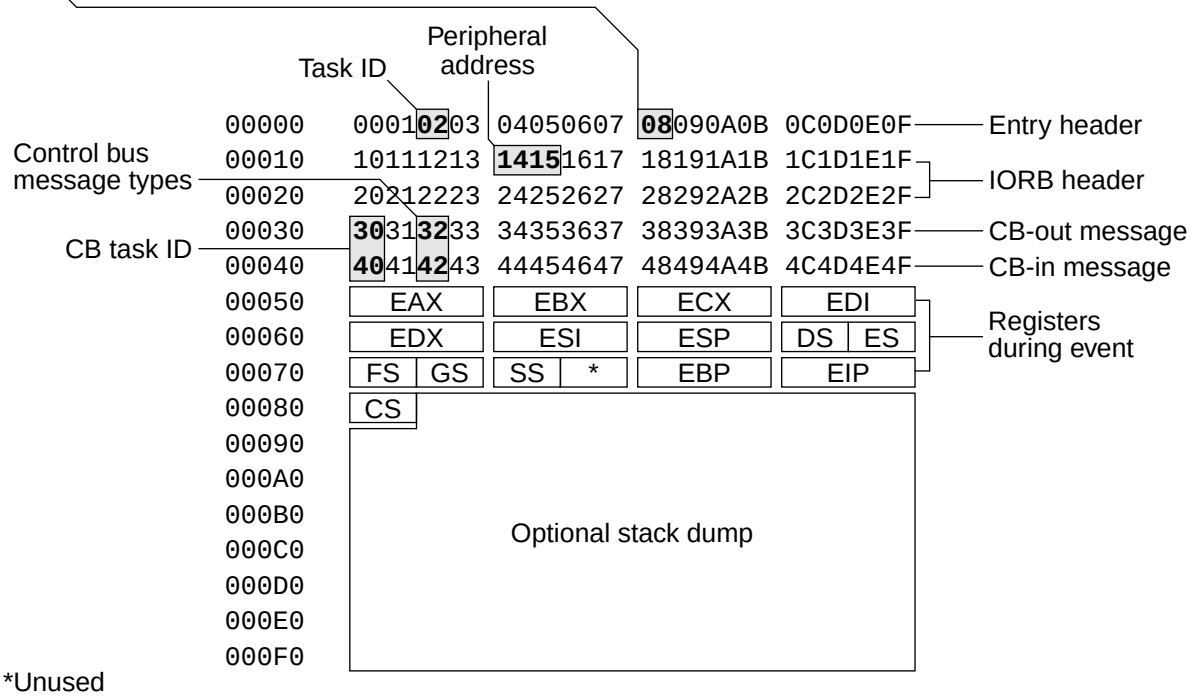


17	Failed to remove an entry from the AMT.



E5 ASA SP Routine I/O Error

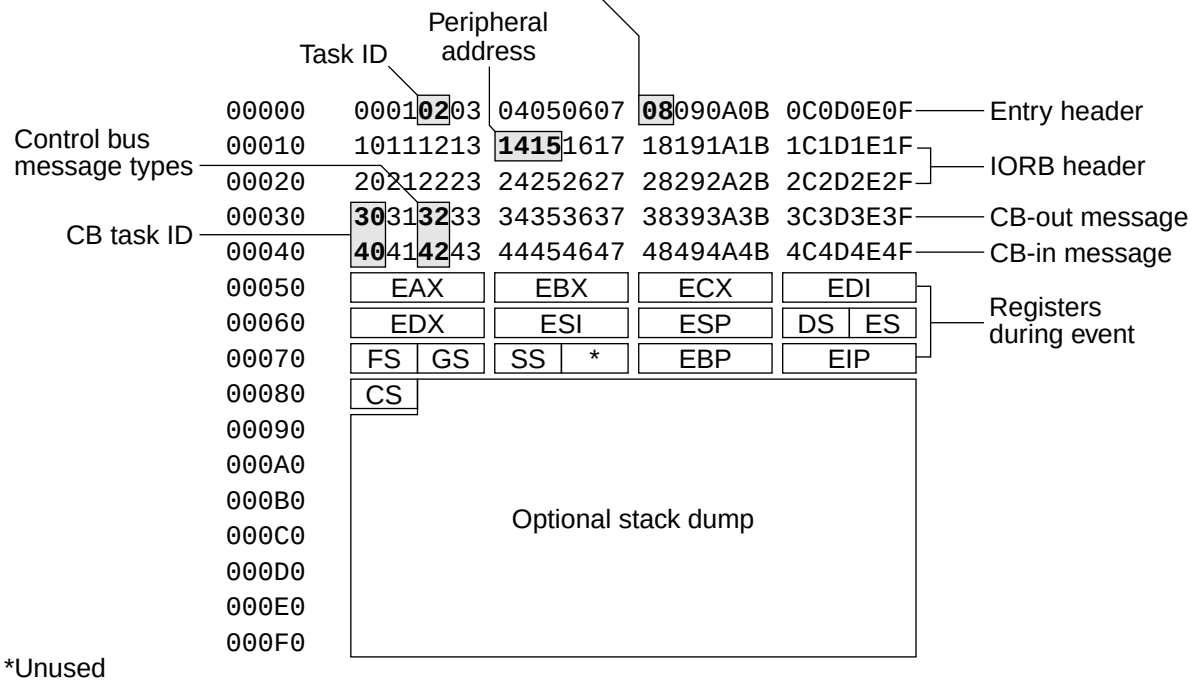
40	Control bus operation return code bad. The system dumped.
41	Bad return code for control bus message. The return code is in the IORB buffer.
42	I/O critical region was blocked for too long.



*Unused

E6 Line Card Control Bus Error

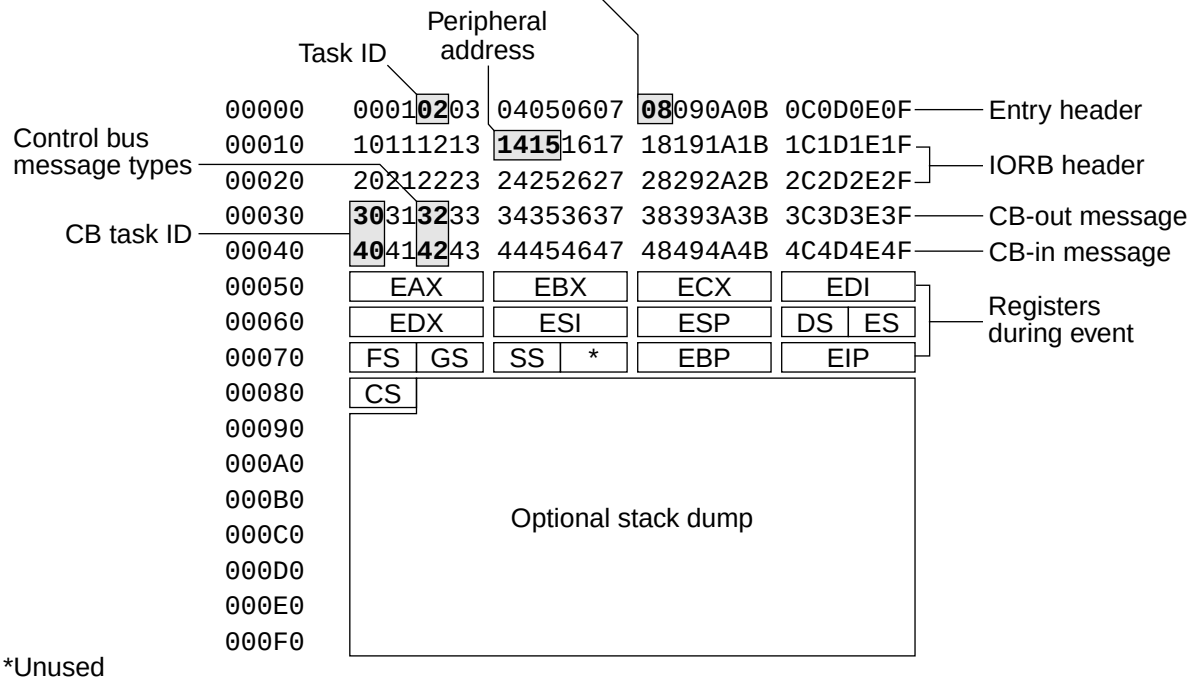
01	Return code bad or unknown.
02	Failed with line card message 85, Receive Speech.
03	Failed with line card message 83, Read Speech Buffer Response.
04	Failed with line card message 84, Read Speech Buffer Done.
05	Failed with line card message 86, Write Speech Buffer Response.
06	Failed with line card message 87, Write Speech Buffer Done.
07	Failed with line card message 94, Transmit Speech End.



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E7 Line Card Message Contains Unexpected Value

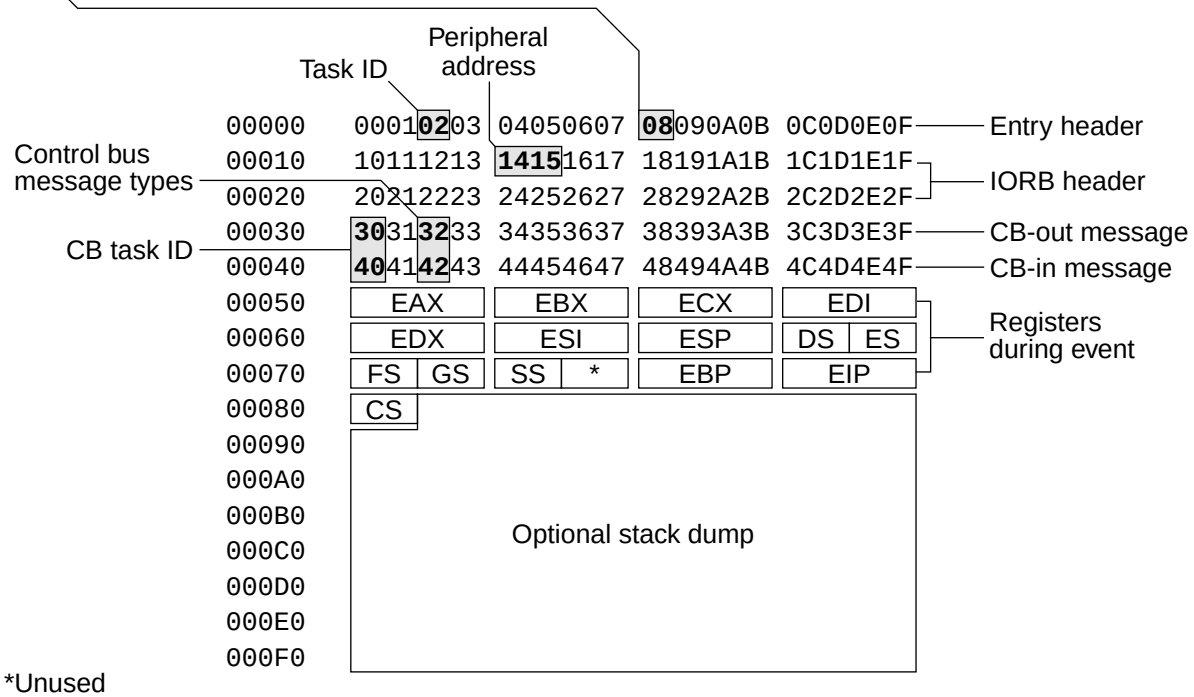
01	Bad return code in line card message 97, Receive Speech End.
02	Unexpected retry reported in line card message 92, Read Speech Buffer.
03	Bad return code in line card message 94, Transmit Speech End.
04	Damaged message reported in line card message 94, Transmit Speech End.
05	Message canceled reported in line card message 94, Transmit Speech End.
06	Flag error in line card message 92, Read Speech Buffer.



*Unused

E8 CP/LC Protocol (Low-Level) Error

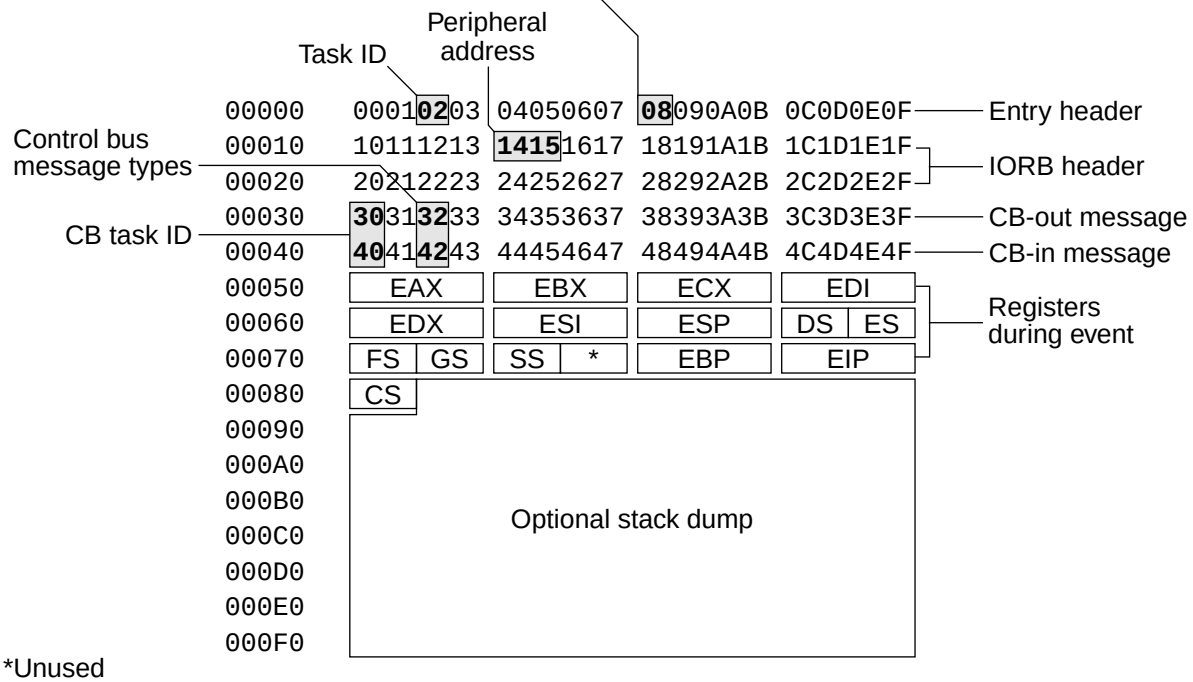
01	OS reported one or more lost control bus messages when attempting to read messages from a line card.
02	OS reported control bus operation cancelled when attempting to read control bus messages from a line card.
03	OS reported control bus operation cancelled when attempting to read control bus messages from a line card.
04	OS reported one or more lost control bus messages when attempting to read, then write, messages with a line card.
05	OS reported control bus operation cancelled when attempting to read, then write, control bus messages with a line card.
06	OS reported control bus operation cancelled when attempting to read, then write, control bus messages with a line card.



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E9 Line Card Failed to Respond Within Time-out Period

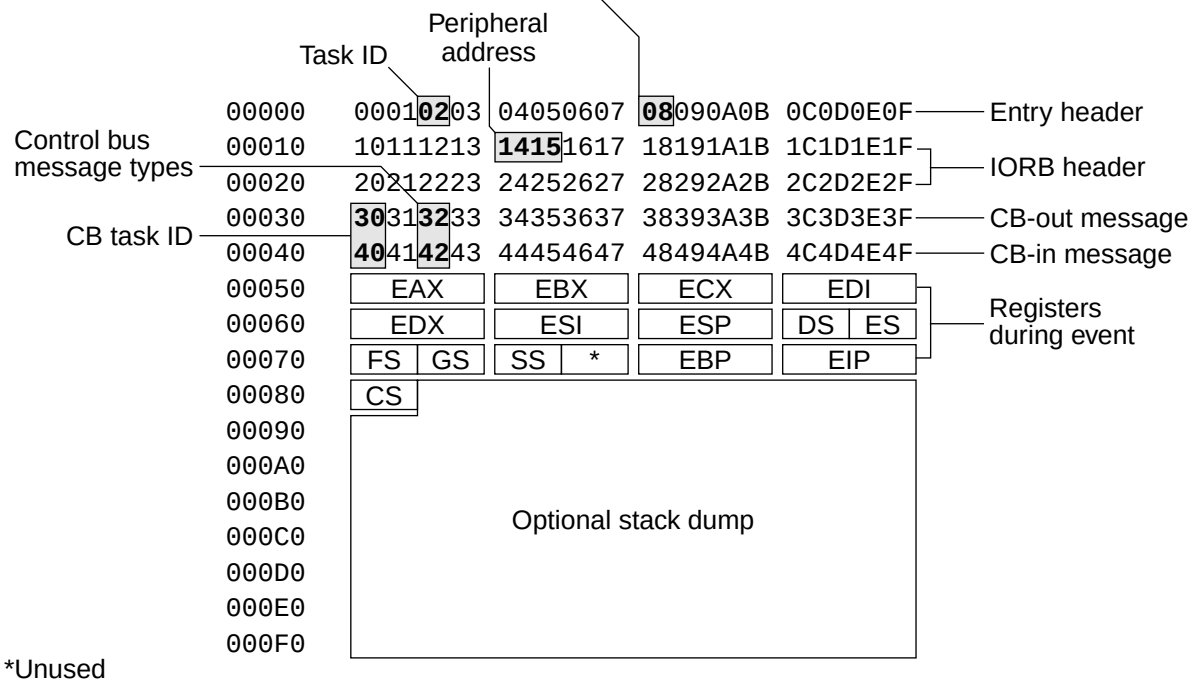
01	Time-out when attempting to send, then read, control bus messages with a line card. Time-out value is SYS_TIMEOUT_LC.
02	Time-out when attempting send, then read, control bus messages with a line card. Time-out value is user-defined.



*Unused

EA Line Card Data Bus Error

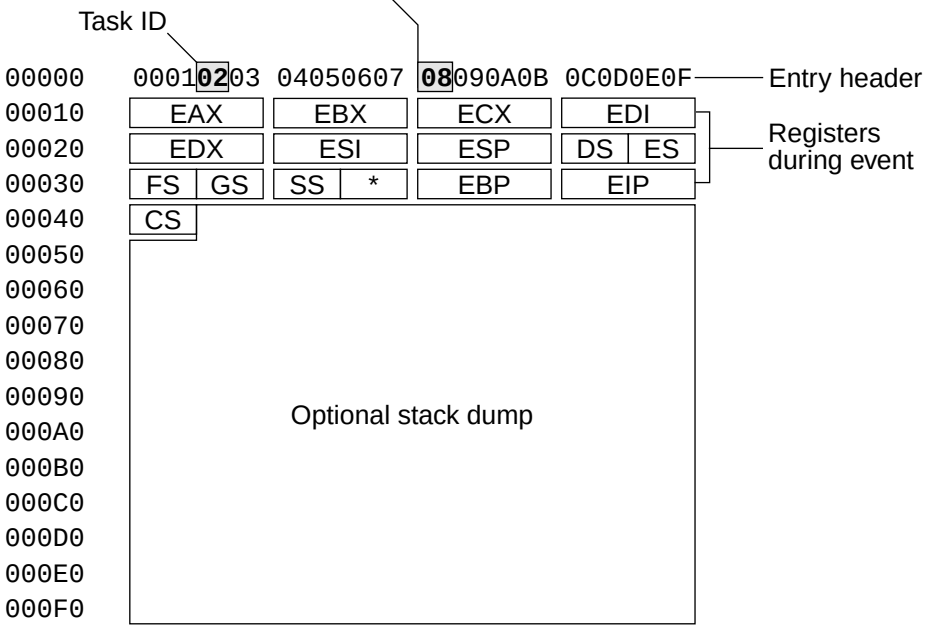
01 Data bus operation with a line card failed. Maximum number of retries has occurred.



*Unused

EB Message Library Failure

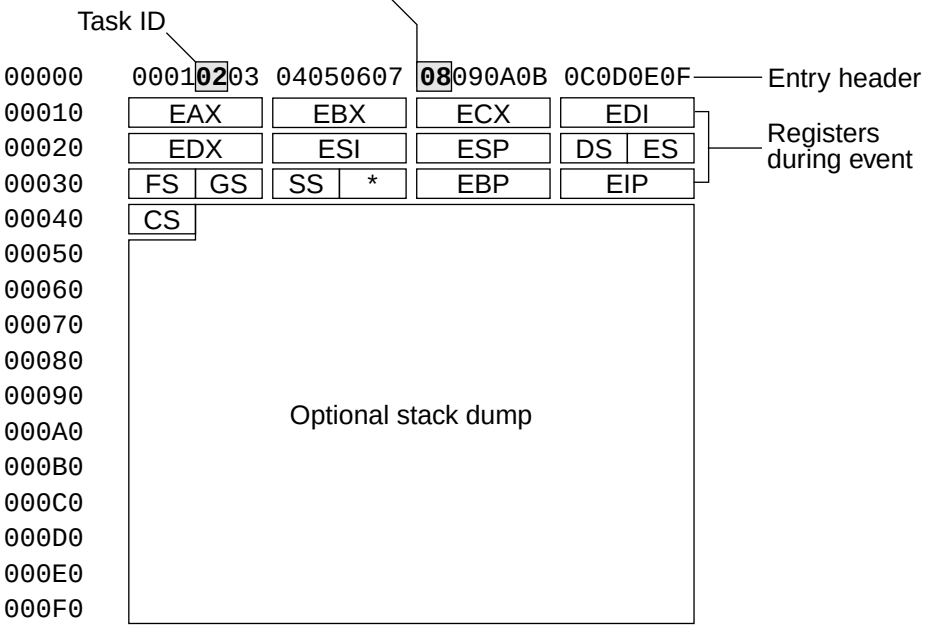
01	Message record library error—unexpected state.
02	Message open library error—message ID is out of range.
03	Decrement use count.
04	Play message.
05	Record message.
06	Save message.
07	Open message.
08	Initialize message.
09	Abandon message.
0A	Close message.
0B	Increment use count.
0C	Send message.
0D	Wrong state.
0E	Send destination.



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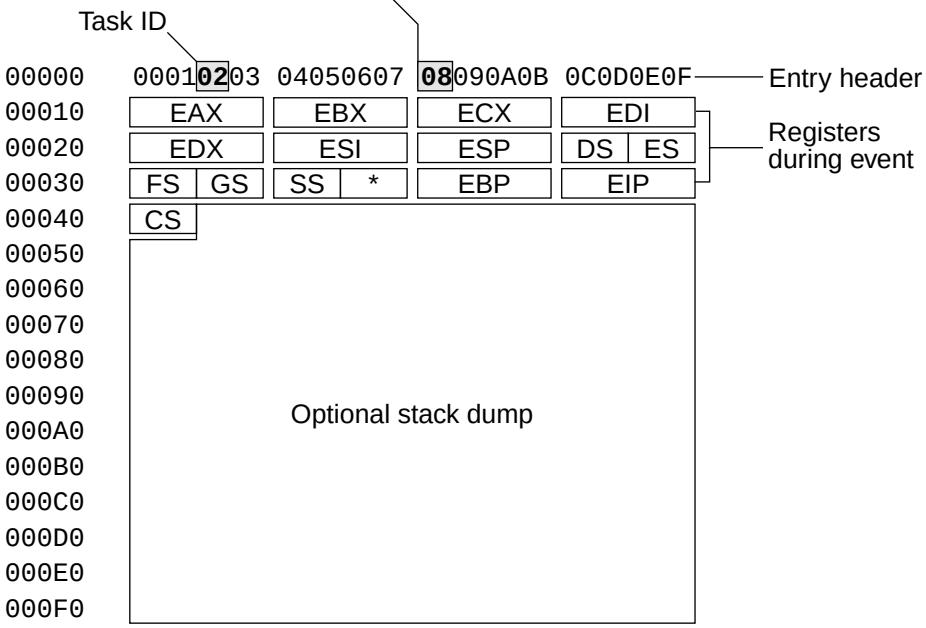
EC IVR Message Directory Error

01	Delete message.
02	Read message.
03	Write message.
04	Failed to create event semaphore for IMD.
05	Failed to create IMD file.
06	Failed to open IMD file.
07	Failed to read IMD file.
08	Failed on write to IMD file.
09	Illegal operation attempted.
0A	Conflict on bitmap write table.
0B	Bad return code while trying to determine file status.
0C	Not enough memory for IMD data area.
0D	Not enough memory for “old” IMD directory.
0E	Creation of the IVRMD file.
10	Creation of the IVRMD file.
11	Unsuccessful return code from MDS file_create.
12	Unsuccessful return code from MDS get_usr_data.
13	Unsuccessful return code from MDS upd_usr_data.



*Unused

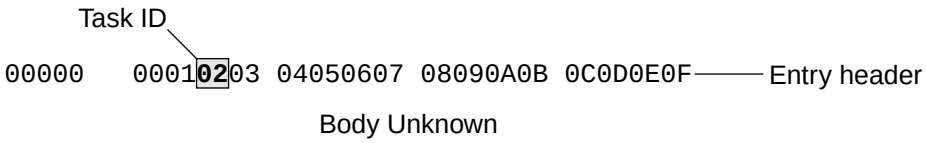
14	Unsuccessful return code from MDS get_direct.
15	Unsuccessful return code from MDS write_entry.
16	Unsuccessful return code from MDS update_entry.
17	Unsuccessful return code from MDS del_entry.
18	Unsuccessful return code from MDS scan_entry.
19	Unsuccessful return code from MDS entries full.



*Unused

ED Phrase Library Error

EE Mailbox Library Error



F0 Drive Test Error—Wrong Response

This entry is logged during the IPL start-up test period when CB messages are returned. Specifically this entry occurs when a CB-in message other than 53 (Drive Test Response) is returned from the file card.

F1 Drive Test Error—Soft Disk Error

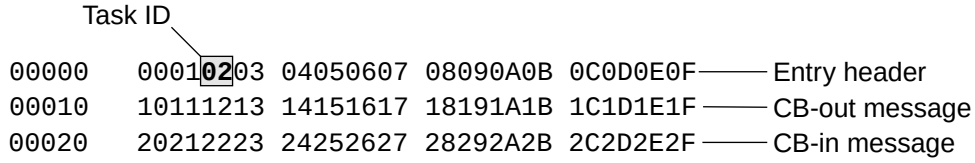
This entry is logged during the IPL start-up test period when CB messages are returned. Specifically this entry occurs when offset 03 of the CB -in equals 11, and offsets 04 and 05 are zeros. This error indicates a soft disk error.

F2 Drive Test Error—Hard Disk Error

This entry is logged during the IPL start-up test period when CB messages are returned. Specifically this entry occurs when the value in offset 03 of the CB-in message is not 11. This error indicates a hard disk error.

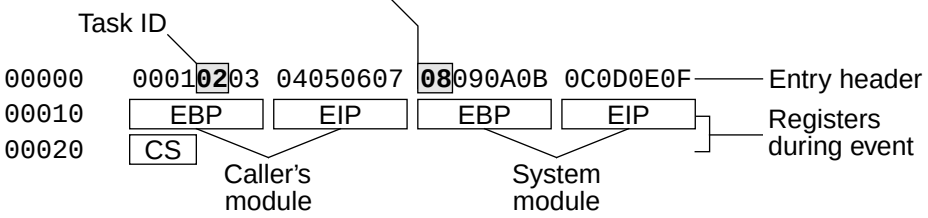
F3 Drive Test Error—ECC Error

This entry is logged during the IPL start-up test period when CB messages are returned. Specifically this entry occurs when offset 03 of the CB-in equals 11, and offsets 04 and 05 is the number of ECC retries. This error is the most common soft disk error.



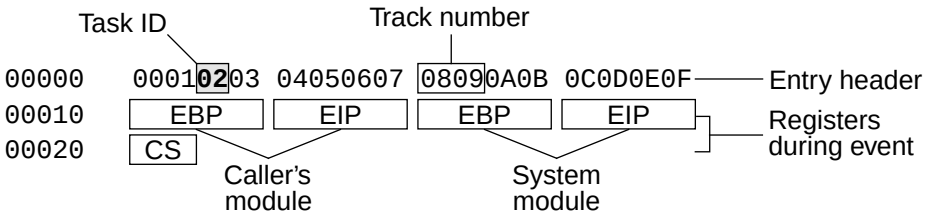
F4 Bad AMIS Message Array Found or Software Error

60	Failed to open AEAR file.
61	Failed to create a file for the AEAR.
62	Message not found.
63	Failed to read AEAR file.
64	Failed to create an event.



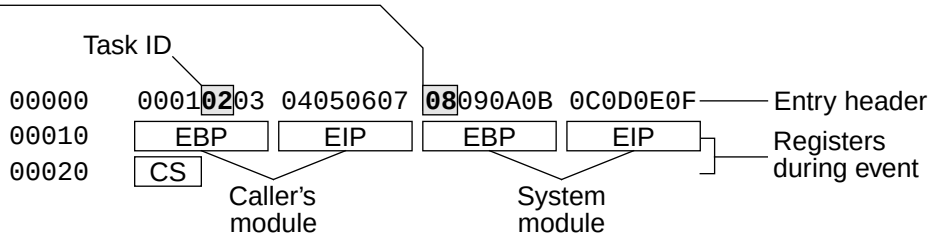
F5 Failed to Write AMIS Message Array Back to Disk

Note that offset 08-09 holds a track number, **not** a subcode.



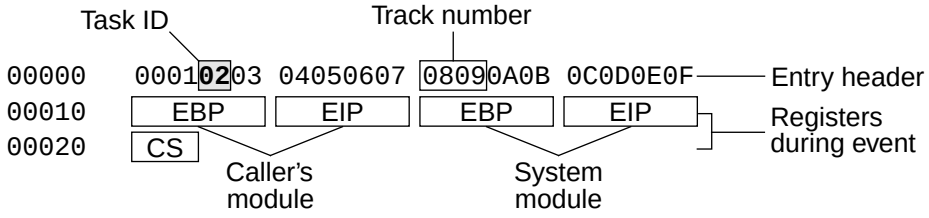
F6 Bad AMIS Dialing Sequence Table Found or Software Error

65	Failed to open ADST file.
66	Failed to create a file for the ADST.
67	Failed to read ADST file.
68	Failed to create an event.



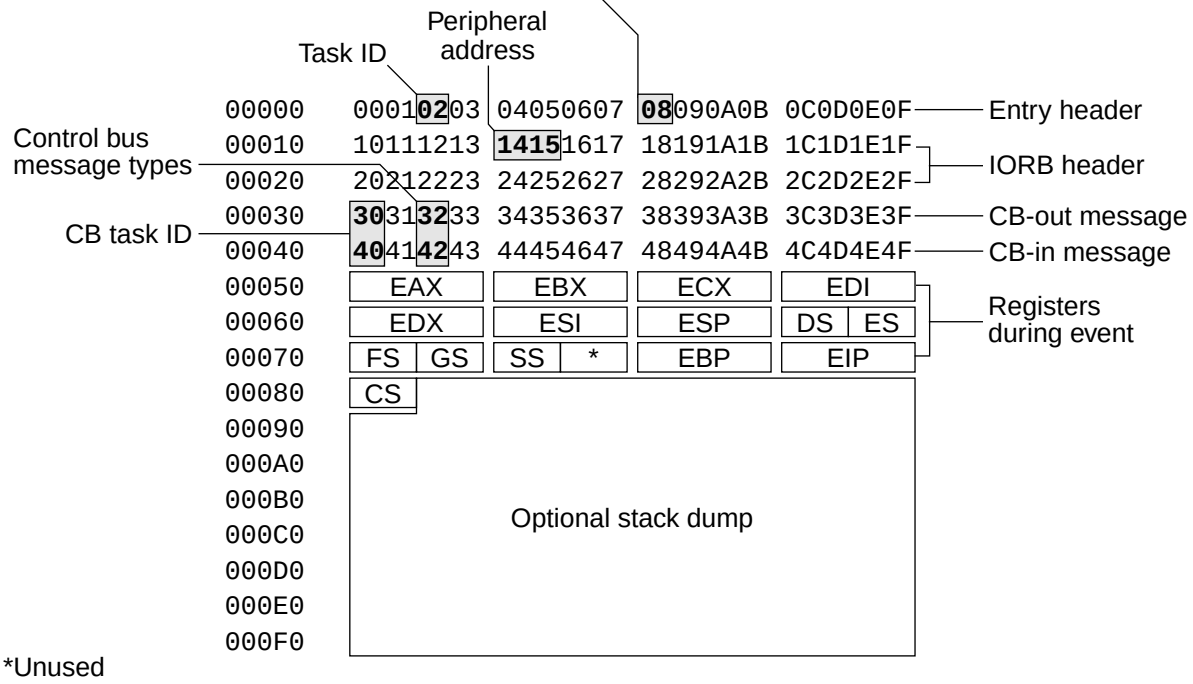
F7 Failed to Write AMIS Dialing Sequence Table Back to Disk

Note that offset 08-09 holds a track number, **not** a subcode.



F8 SP AMIS I/O Error

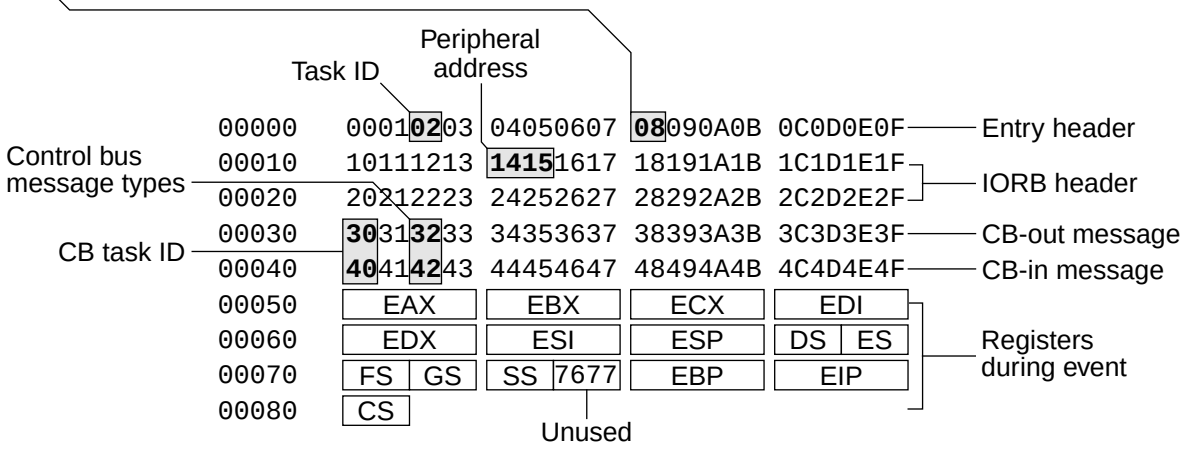
69	Control bus operation return code bad. System dumped.
6A	Control bus message return code bad. The return code is in the IORB buffer.



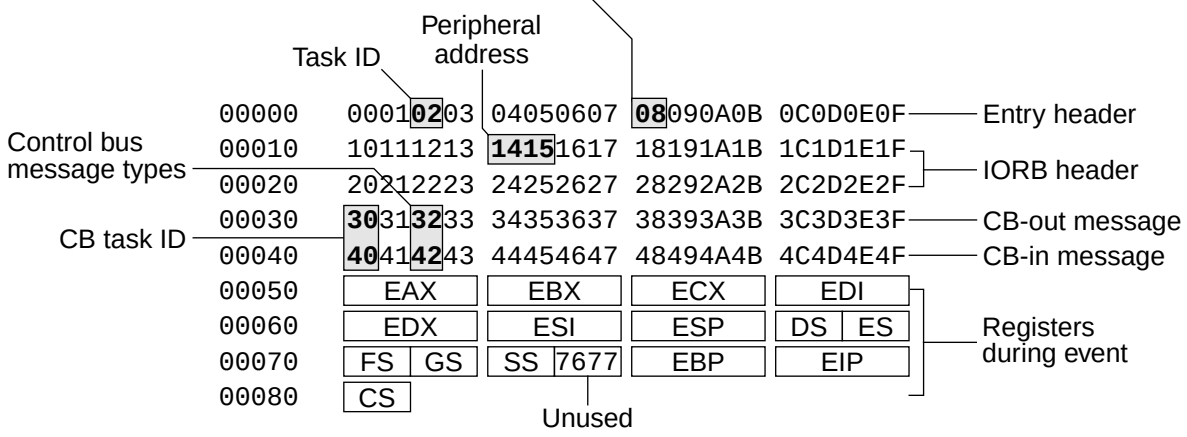
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F9 Integration General Error

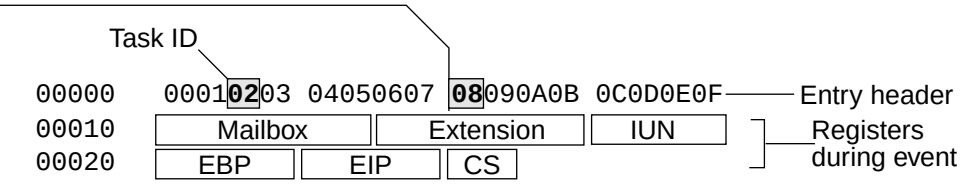
01	Error reported by DLC.
02	Unrecognized response from DLC.
03	Wrong incoming message.
04	Bad digit in ACP message.
05	Error code in IORB from OS.
06	Unexpected message received.
07	Bad return from ACIO.
08	No dial tone detected for PID/R.
09	Time-out waiting for response.
0A	Continuous incoming message.
0B	Incoming queue overflow.
0C	Too many digits in dial request.
0D	Non-zero return code in CIP message.
0E	Incoming integration message on port marked “NO” for incoming calls in Menu 4.
0F	Incoming integration message on non-integrated port (non-integrated line type).
10	Bad return from line card.
11	Error writing to line card.
12	APID 85 failed to send incoming call after sending alerting message.
13	APID 85 message waiting queue failure.
14	Failed to get inband dial tone.
15	Wrong response to configuration message.
16	Unrecognizable response to configuration message.
17	Error returned from DLC for special on-hook.



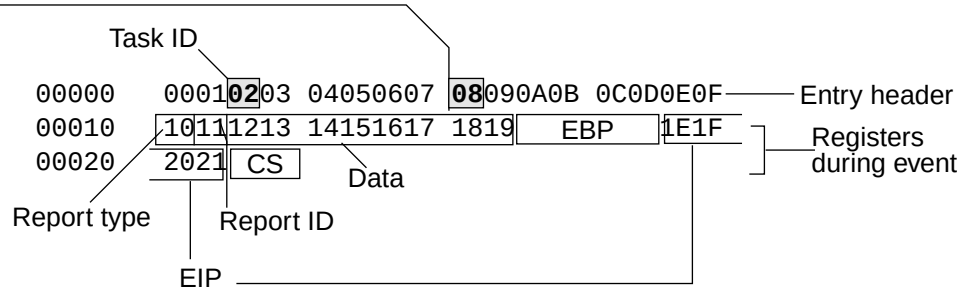
18	Error returned from DLC for special off-hook.
19	Unrecognized return from special on-hook.
1A	Unrecognized return from special off-hook.
1B	No buffer available.
1C	Seize line failed.
1D	Time-out collecting inband digit.
1E	Invalid digit count for inband digits.
1F	Invalid return from digit collect.
20	Error collecting inband digits.
21	Failed message waiting retry.
22	Message waiting resumes operational.



23 Maximum error retry count reached.



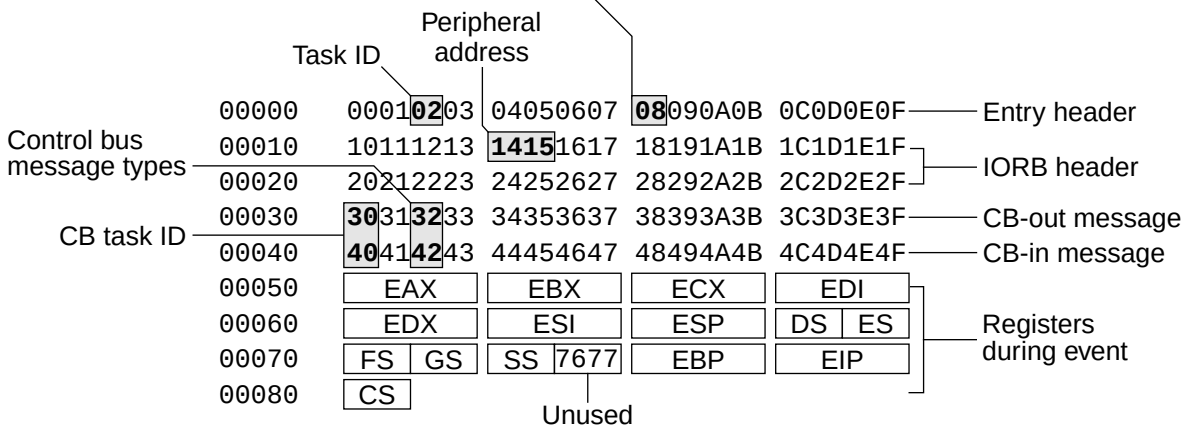
25 VTIC/MTIC line status/error report.



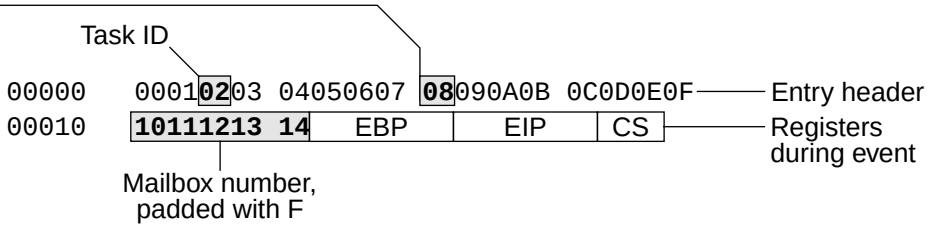
Offset	Label	Description
10	Report type	01 = Line Status Report. Meaning of value at offset 11 (Report ID): 00 Link/line idle/up/connected. 01 Link/line make set busy (MSB—NT only). 02 Link/line disable/down/disconnected. 03 Link/line not ready (NRDY—NT only). 02 = Error Report. Meaning of value at offset 11 (Report ID): 00 Protocol converter error report. 01 Link processor error report. 02 MITIC error report. 03 DLC error report.

I

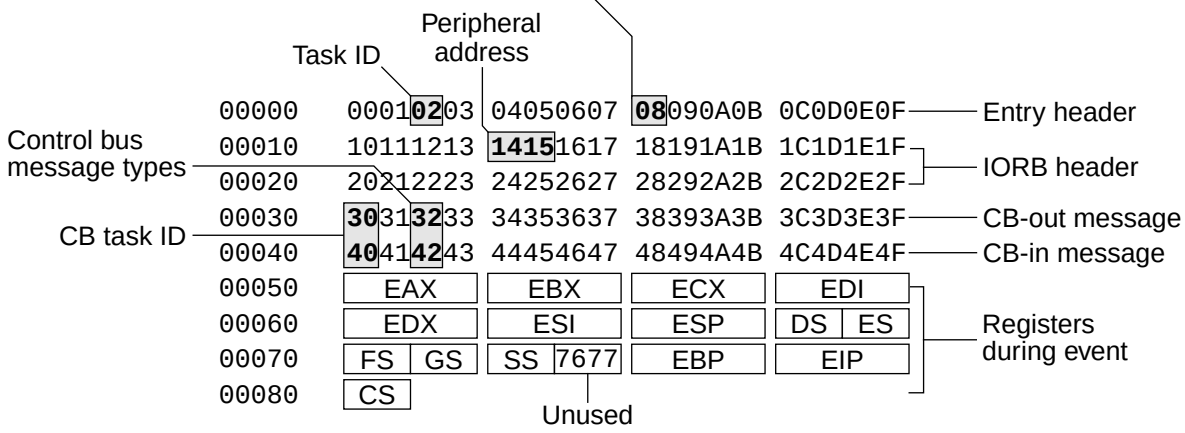
30	Error code in INT response.
31	ACP card time-out.
32	Unexpected message.
51	Length of variable error.
60	Unexpected integration message.
61	Time-out waiting for poll response.
62	Unknown return code from ACIO routine.
63	Continuous incoming message.
64	Operating system error.
65	Integration status message.
66	Error code in INT response message.
67	Queue overflow.
68	Line status error from MID.
69	Line disabled by MID.



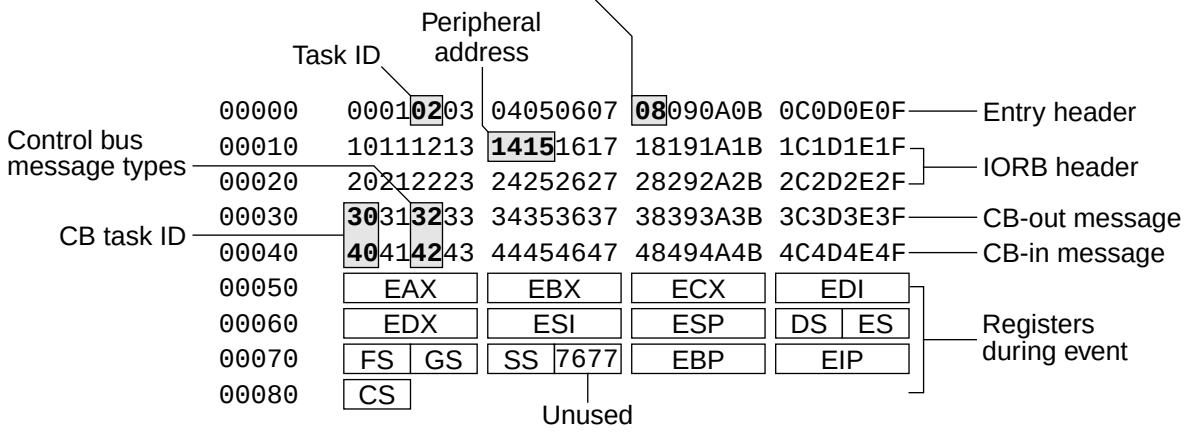
6A	Link number in user record does not exist. Invalid SMDI port number for mailbox.



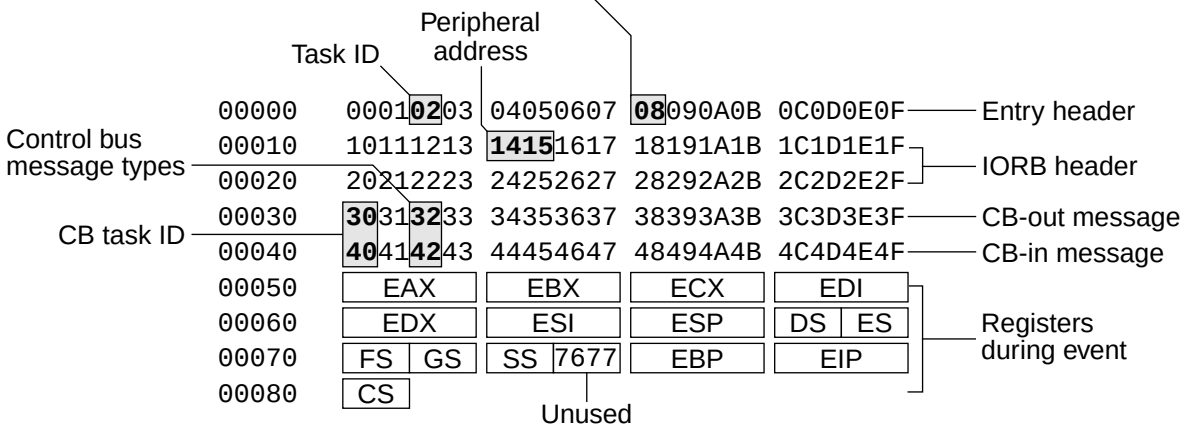
6B	Stack error. The primary, secondary or active stack does not match the primary, secondary or active stack in the system partition.
90	Invalid link number passed to SP.
91	Invalid serial port number passed to SP.
92	ACP board is not responding.
93	Illegal request.
94	Error creating integration file.
95	Error in integration file status.
96	Error creating event for port request.
97	Unknown table operation type.
98	Error creating an event for SS7 buffer locking.
99	Error creating MDS record.
9A	Error getting user data from MDS record.
9B	Reading or writing non-existent MDS record.



C0	Abort signaled from OS.
C1	Invalid return code from SP.
C2	Bad return code from OS.
D0	Cannot create an event.
D1	Cannot create timer.
D2	Cannot start timer.
D3	Failed to send batched messages.
D4	Failed to get buffers from OS.
D5	Error setting task ID.
D6	Unexpected return in IORB status word.
D7	Error stopping timer.
D8	Error in return from multiple wait.
D9	Invalid message waiting queue length.
DA	Invalid serial port message from OS driver.
DB	Invalid CIP message received from another task.
DC	Invalid port ID received from PIDR.
DD	Control bus response message with wrong message type or the return code was not OK.
DE	Length for DMA from cluster card to local segment is too big.
DF	DMA failure.



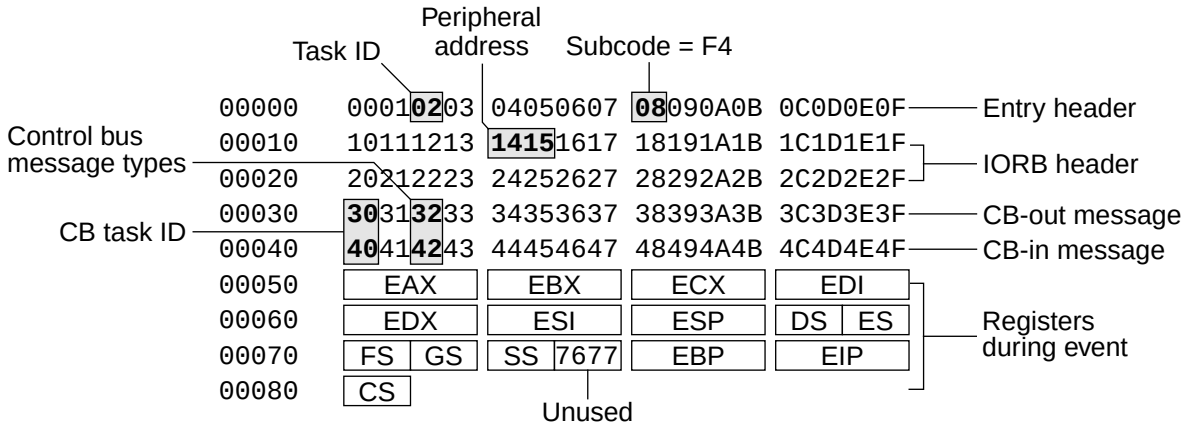
E0	A CIP message for the local station was sent to the wrong station.
E1	Exceeds maximum number of messages in the ACP buffer.
E2	Failed to pass an event to the OS. Return code not OK.
E3	Checksum mismatch on batch of CIP messages.
E4	Invalid station number received.
E5	Out-of-sequence buffer received.
E6	Time-out waiting for DMA request from receive task.
E7	Error on getting DMA buffer.
E8	Error reading MDS (PIC configuration) record.
E9	Time-out receiving message from cluster receive task.
EA	Unrecognized return code from AC.
EB	SS7 error during DMA to PIC.
EC	Invalid peripheral address for PIC. The PIC is configured in software but no card is actually present.
ED	DMA request queue overflow. DMA request lost.
EE	Time-out waiting for response from PIC.
EF	Error getting DMA request from queue.
F0	Error verifying lock on DMA buffer.
F1	The DMA length is greater than the DMA buffer or is zero.
F2	Not able to access PIC. Card dead.
F3	Invalid information in CIP message from PIC.



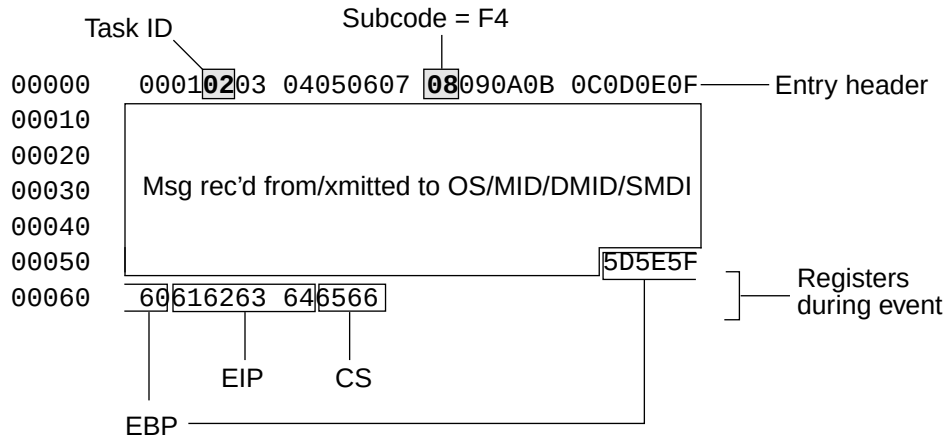
F4 Invalid integration message.

There are 3 message formats: a 0x82 byte format, a 0x67 byte format, and a variable length format.. Compare entry size to pick a format.

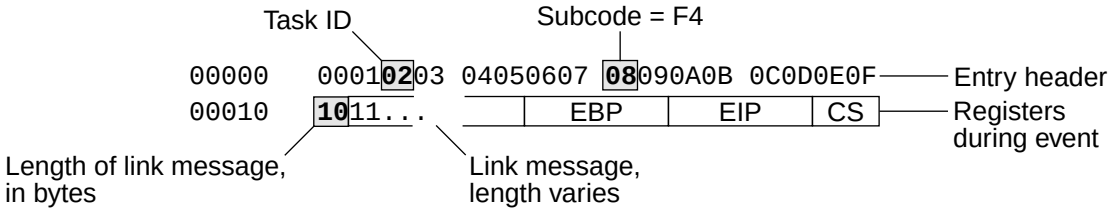
0x82 Byte Format



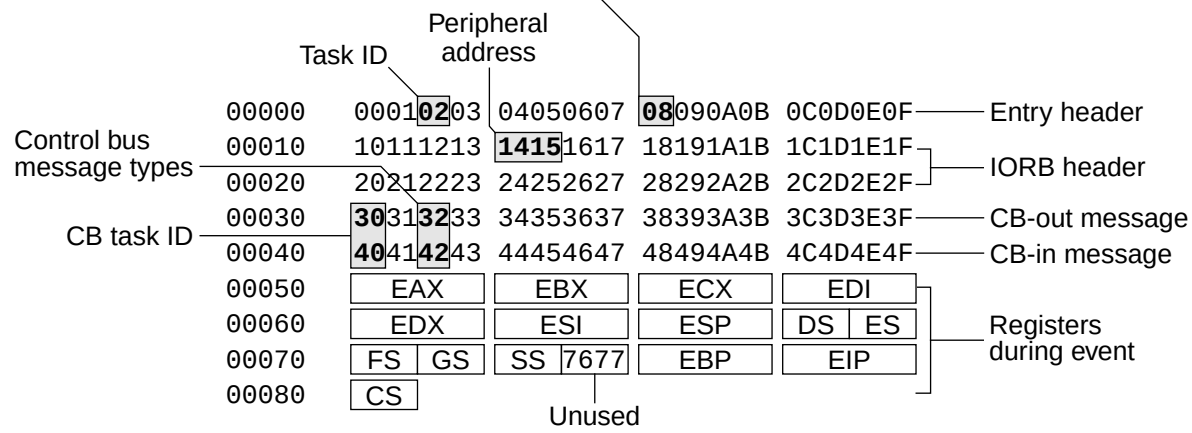
0x67 Byte Format



Variable Length Format

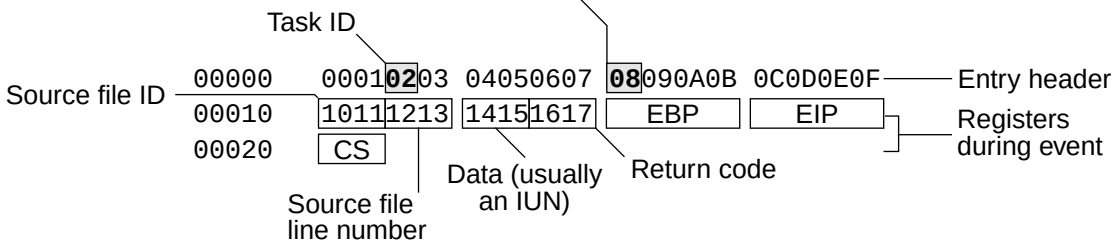


F5 Serial port transmit error.
F6 Error queuing message for transmit.



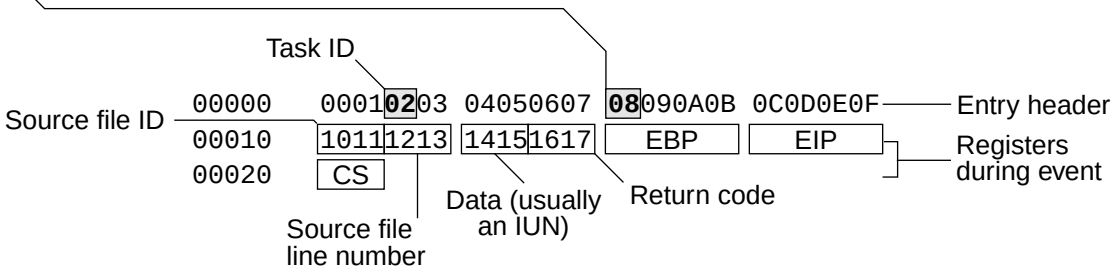
FA IMS Error—Voice Processor-to-Host Task

11	Failure on ACL_INIT call.
12	Virtual circuit already open on ACL_OPEN call.
13	Failure on ACL_OPEN call.
14	Failure on ACL_READ call.
15	Failure on ACL_WRITE call.
19	Problem with user record update.
1A	EAP requested update for non-host-to-voice processor user record.
1B	Failure on PQ_INIT call.



Offset	Label	Field Description
10-11	Source file ID	01 IMS_FID_IMSIMAIN (imsimain.c) 02 IMS_FID_IMSITBL (imsitbl.c) 03 IMS_FID_IMSOMAIN (imsomain.c) 04 IMS_FID_PQ (imsopq.c)
14-15	Data	Usually an IUN if non-zero.
16-17	Return code	Usually an OCL library return code: C2FF Operation aborted. C3FF Application number does not exist. C4FF OCL is not up. C5FF OCL interface routine internal error. C6FF All LUNs for requested application number are busy. C7FF No LUNs for requested application number. C8FF Buffer overflow. LUN will be cleared. C9FF LUN cleared. CAFF Operation time-out. LUN will be cleared. CBFF LUN already open. ACL_CLOSE must be called first. CCFF ACL_INIT already performed. CDFF Successful ACL_OPEN call not performed. CEFF ACL_INIT call not performed.

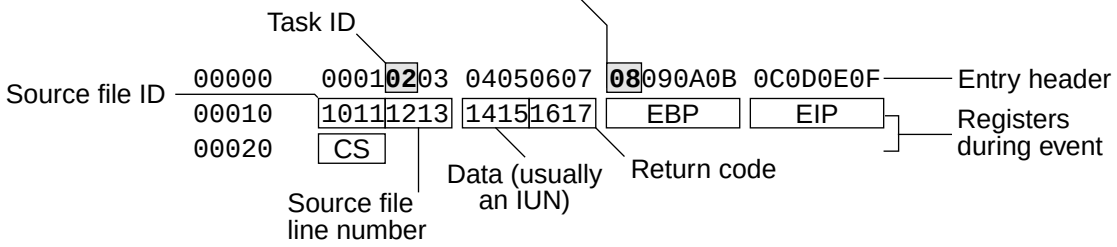
1C	Priority queue overflow.
1D	Problem with priority queue receive.
1E	Problem with IMS priority queue.
1F	Problem with voice processor-to-host OCL command header.
20	Failure on UR lock.
22	Failure on UR write.
24	Problem with entry from queue.
25	Problem registering task with notify.
26	Problem monitoring service group.
27	Problem accepting service type.



Offset	Label	Field Description
10-11	Source file ID	01 IMS_FID_IMSIMAIN (imsimain.c) 02 IMS_FID_IMSITBL (imsitbl.c) 03 IMS_FID_IMSOMAIN (imsomain.c) 04 IMS_FID_PQ (imsopq.c)
14-15	Data	Usually an IUN if non-zero.
16-17	Return code	Usually an OCL library return code: C2FF Operation aborted. C3FF Application number does not exist. C4FF OCL is not up. C5FF OCL interface routine internal error. C6FF All LUNs for requested application number are busy. C7FF No LUNs for requested application number. C8FF Buffer overflow. LUN will be cleared. C9FF LUN cleared. CAFF Operation time-out. LUN will be cleared. CBFF LUN already open. ACL_CLOSE must be called first. CCFF ACL_INIT already performed. CDFF Successful ACL_OPEN call not performed. CEFF ACL_INIT call not performed.

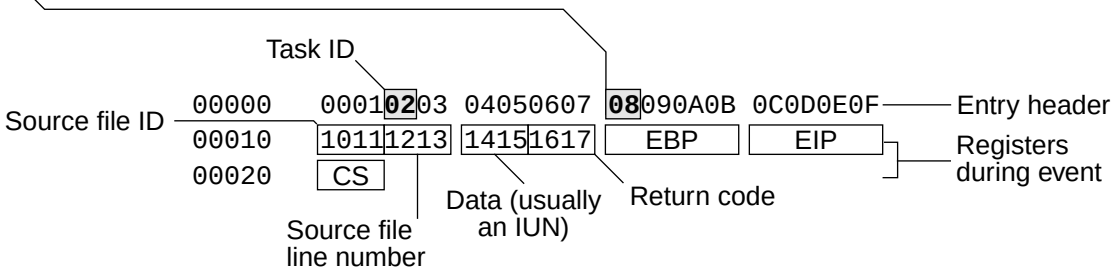
FB IMS Error—Host-to-Voice Processor Task

11	Failure on ACL_INIT call.
12	Virtual circuit already open on ACL_OPEN call.
13	Failure on ACL_OPEN call.
14	Failure on ACL_READ call.
15	Failure on ACL_WRITE call.
16	Problem with host-to-voice processor OCL command header.
17	Too many host-to-voice processor updates—exceeds maximum.
18	IUN out of range.
19	Problem with user record update.



Offset	Label	Field Description
10-11	Source file ID	01 IMS_FID_IMSIMAIN (imsimain.c) 02 IMS_FID_IMSITBL (imsitbl.c) 03 IMS_FID_IMSOMAIN (imsomain.c) 04 IMS_FID_PQ (imsopq.c)
14-15	Data	Usually an IUN if non-zero.
16-17	Return code	Usually an OCL library return code: C2FF Operation aborted. C3FF Application number does not exist. C4FF OCL is not up. C5FF OCL interface routine internal error. C6FF All LUNs for requested application number are busy. C7FF No LUNs for requested application number. C8FF Buffer overflow. LUN will be cleared. C9FF LUN cleared. CAFF Operation time-out. LUN will be cleared. CBFF LUN already open. ACL_CLOSE must be called first. CCFF ACL_INIT already performed. CDFF Successful ACL_OPEN call not performed. CEFF ACL_INIT call not performed.

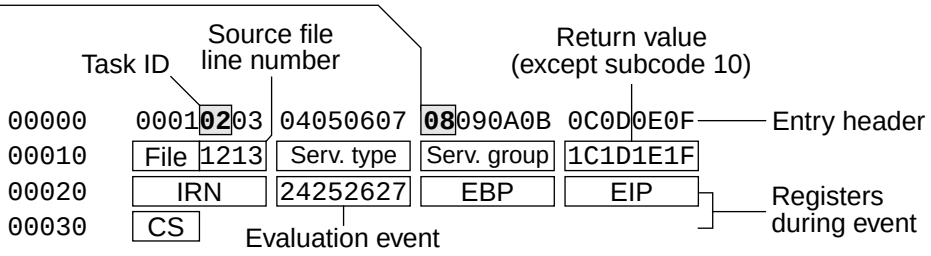
1A	EAP requested update for non-host-to-voice processor user record.
1B	Failure on PQ_INIT call.
1C	Priority queue overflow.
1D	Problem with priority queue receive.
20	Failure on UR lock.
21	Failure on UR read.
22	Failure on UR write.
23	Problem with message waiting evaluation.



Offset	Label	Field Description
10-11	Source file ID	01 IMS_FID_IMSIMAIN (CYP_ASP.C) 02 IMS_FID_IMSITBL (IMSITBL.C) 03 IMS_FID_IMSOMAIN (IMSOMAIN.C) 04 IMS_FID_PQ (IMSIPQ.C)
14-15	Data	Usually an IUN if non-zero.
16-17	Return code	Usually an OCL library return code: C2FF Operation aborted. C3FF Application number does not exist. C4FF OCL is not up. C5FF OCL interface routine internal error. C6FF All LUNs for requested application number are busy. C7FF No LUNs for requested application number. C8FF Buffer overflow. LUN will be cleared. C9FF LUN cleared. CAFF Operation time-out. LUN will be cleared. CBFF LUN already open. ACL_CLOSE must be called first. CCFF ACL_INIT already performed. CDFF Successful ACL_OPEN call not performed. CEFF ACL_INIT call not performed.

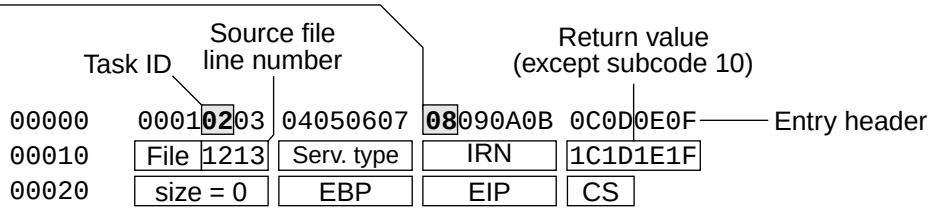
FC Error in Overflow Event Task

03	Unable to get background evaluation priority queue ID. Possible coding error.
04	Unexpected result when getting IRN type. Possible coding error.
05	Write failed or returned an unexpected value. Possible bad value in the record, station in a cluster down, timing problem or coding error.
06	Read failed or returned an unexpected value. Possible bad value in the record, station in a cluster down, timing problem or coding error.



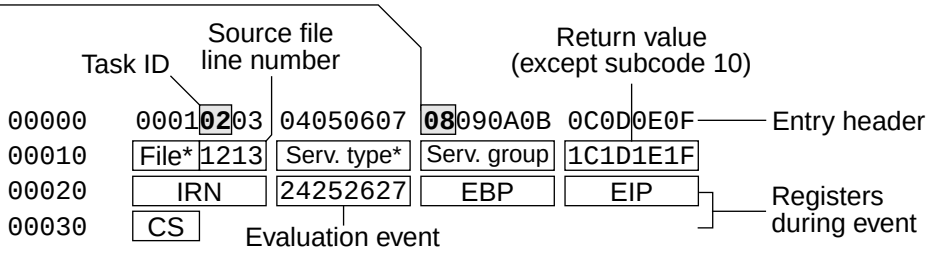
Offset	Label	Field Description
10-11	File	File ID (from oetlog.h): 01 oetmain.c 02 oetmisc.c 03 oetbg.c 04 oetfut.c 05 oeteval.c 06 oetovfl.c 07 oetlog.c
14-17	Serv. type	Service type/limit (from sysnequ.inc): 00 Octel integrated messaging 01 Fax outcall 02 Message waiting indication 03 Normal mailbox outcall 04 Pager outcall 05 AspenNet outcall 06 AMIS network outcall 07 Transact (IVR) outcall
18-1B	Serv. group	Service queue/group number.

09 Attempt to add entry to queue failed



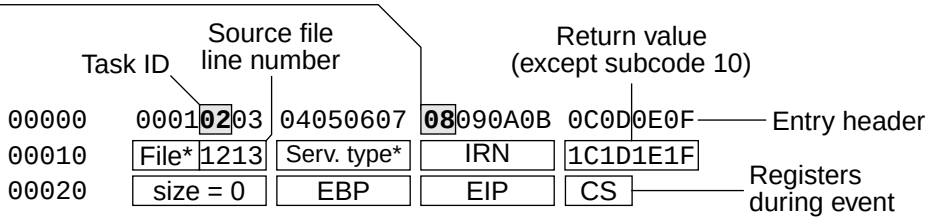
Offset	Label	Field Description
10-11	File	File ID (from sysnottyp.h): 01 notasm.c 02 notglob.c 03 notlock.c 04 notpmap.c 05 oetglob.c 06 notconf.c 07 notims.c 08 notmisc.c 09 notque.c 0A oetmain.c 0B noteval.c 0C notinit.c 0D notomap.c 0E notstat.c 0F notitbl.c 11 sysntask.c 12 sysntbl.c 13 sysncb.c 14 sysnckpt.c 15 sysnserv.c 16 sysnfut.c 17 sysnovfl.c 18 sysfaxq.c
14-17	Serv. type	Service type/limit (from sysnequ.inc): 00 Octel integrated messaging 01 Fax outcall 02 Message waiting indication 03 Normal mailbox outcall 04 Pager outcall 05 AspenNet outcall 06 AMIS network outcall 07 Transact (IVR) outcall

0D	Error from CREATEVT.
0E	Unable to get broadcast priority queue ID. Possible coding error.
0F	Unexpected return code from WAITM call. Possible coding error.
10	Unknown queue entry type on the BG queue. Logged on first occurrence and every fifth occurrence thereafter. Possible coding error or failure to recompile all of the notification subsystem. Offset 1C-1F: queue type code that caused the error.
11	Unexpected return code from search of future evaluation table. Possible coding error or the notification subsystem suspended operations.
12	Problem forcing time stamp onto future evaluation table. Possible coding error or a station is down in a cluster.
13	Evaluation call failed. Possible coding error.
14	Abandoned record failed or returned an unexpected value. Possible coding error or a station in a cluster is down.
15	Evaluation requested on an MDS record that is not the primary record. Possible coding error.
16	Problem getting the MDS record number. Possible coding error or timing problem (the file may have been deleted before the evaluation request was processed).



* Refer to subcodes 01-06 for specific values

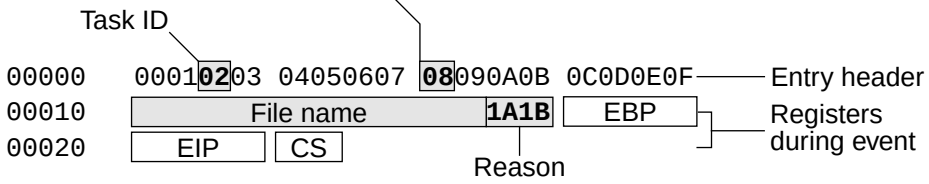
1C	Error in MDS search function.



* Refer to subcode 09 for specific values

FD File Access Error

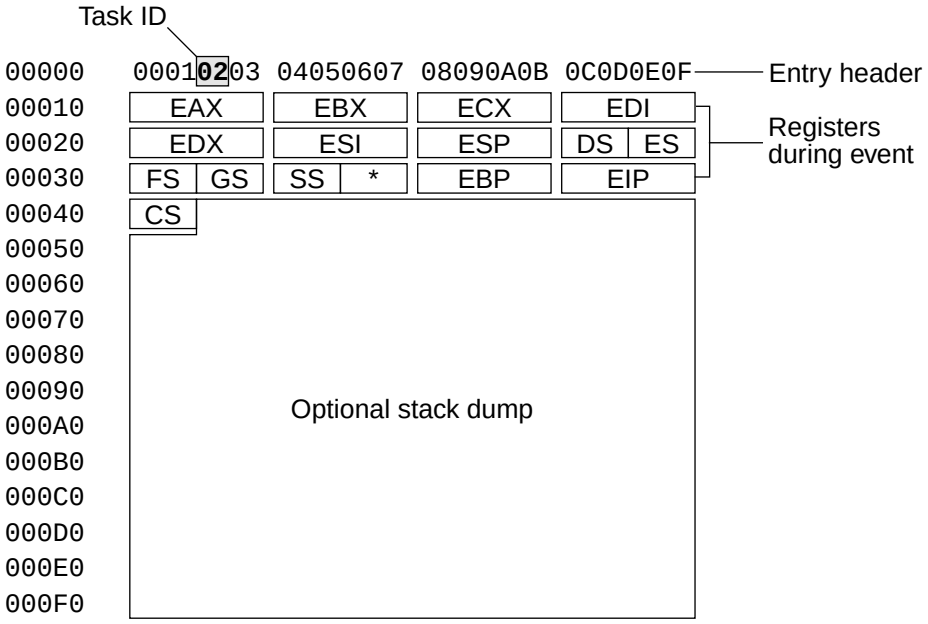
01	File open error.
02	File close error.
03	File read error.



Offset	Label	Field Description
1A-1B	Reason	Reason for the error: FFFC File does not exist. FFFD Illegal request. FFFE For subcodes 01 and 02: directory fragmented. For subcode 03: illegal request. FFFF For subcodes 01 and 02: not enough disk/directory space. For subcode 03: insufficient buffer.

100 CDR RAM Buffer Overflowed

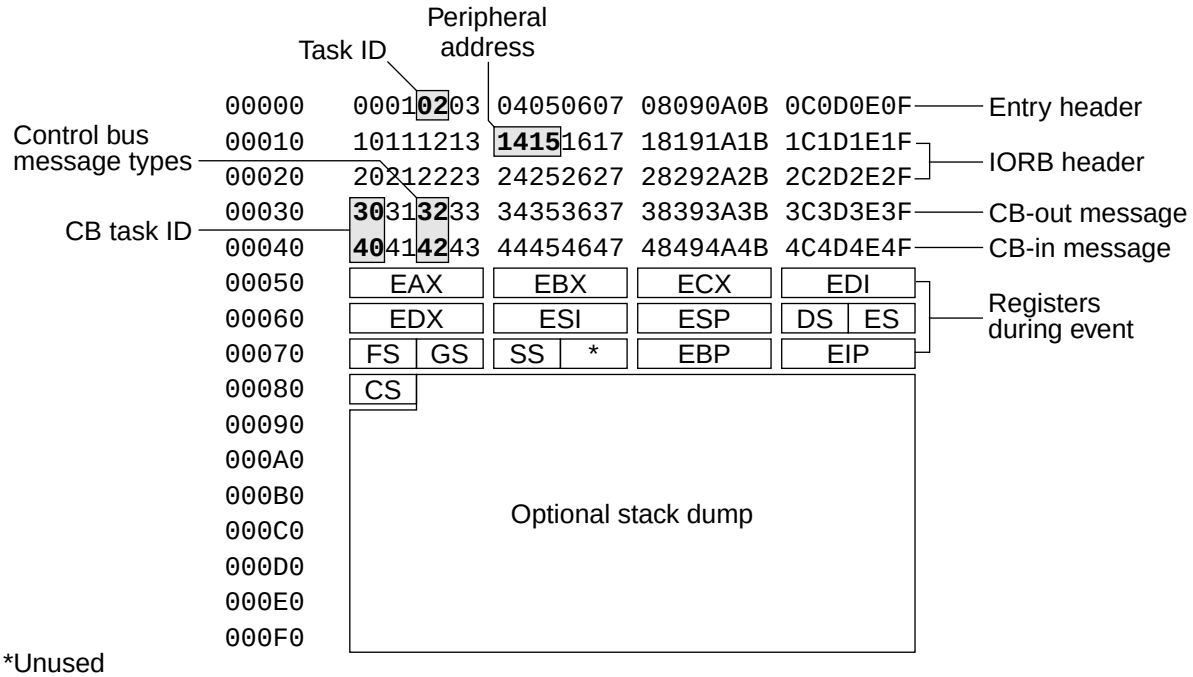
Can be caused by tasks logging events faster than the purge task can write them to disk. Possible solutions include decreasing the system load, a faster CPU and selecting fewer events for logging.



*Unused

101 CDR Disk Write Error

Can be caused by a drive write error when trying to write CDR information from the RAM buffer to disk. Check the system drives.



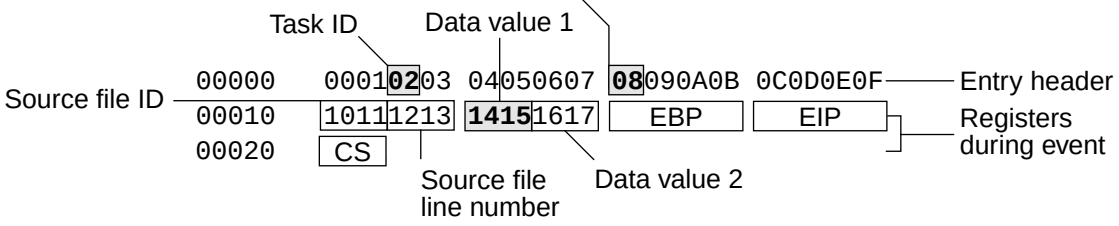
*Unused

102 Short Message Service (SMS) Error

The following information applies to all the subcodes.

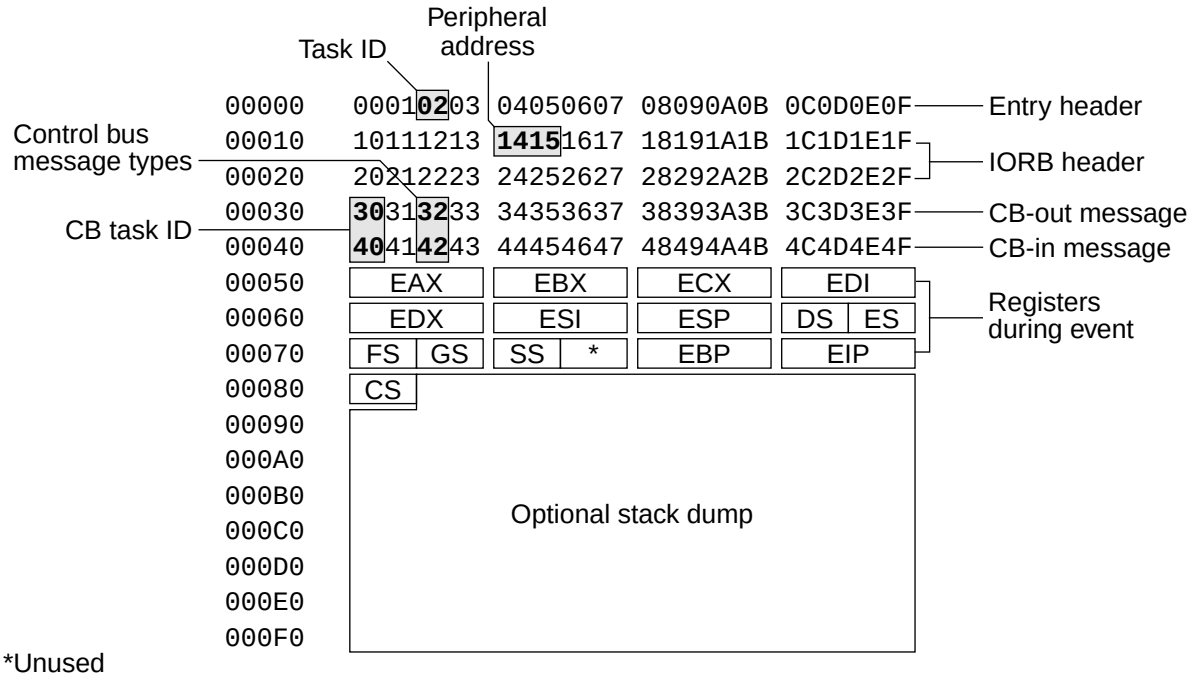
Offset	Label	Field Description
10-11	Source file ID	IMS file that logged the status entry: 01 smsmain.c: start up and main loop. 02 smsnotq.c: notification subsystem queue. 03 syssmcfg.c: SMS configuration file handling.
14-15	Data value 1	Typically an IUN. Zero otherwise.
16-17	Data value 2	Typically a return code.

90	Relay layer open attempt failed.
91	Relay layer close attempt failed.
92	Relay layer read attempt failed.
A0	Register with Notification Subsystem failed.
A1	Notification Subsystem monitor request failed.
A2	Notification Subsystem acceptance request failed.
A3	Attempt to receive queue entry failed.
B0	Attempt to read SMS configuration file failed.
B1	Attempt to write SMS configuration file failed.
B2	Attempt to create SMS configuration file failed.
C0	Transport library received invalid subfunction code in CIP (compact interface protocol).
C1	Transport library received invalid function code in CIP (compact interface protocol).



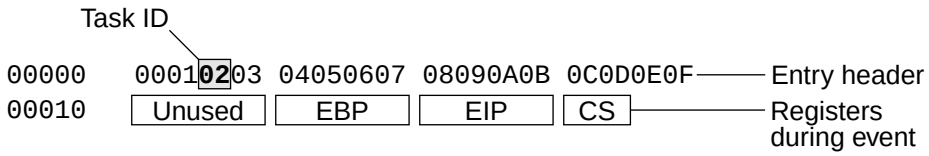
110 Control Bus Error in Getting New IUN

When a MDS (Message Delivery System) file is created or expanded, MDS requests a new IUN from the file system. This error is logged when the CP --> FS control bus command fails.



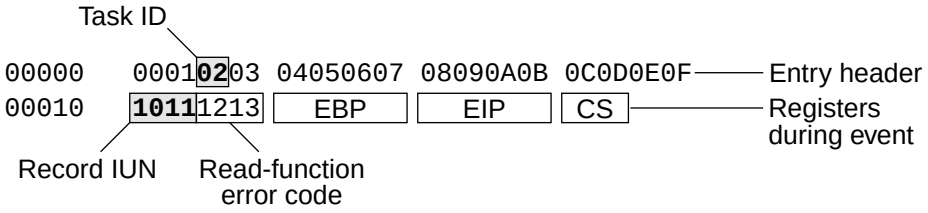
*Unused

111 No IUN Available



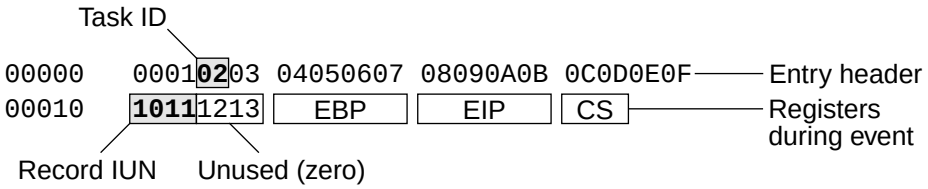
112 Error Reading MDS Record

The disk-read function failed while trying to read an MDS record via the MDS cache buffer. The system will restart.



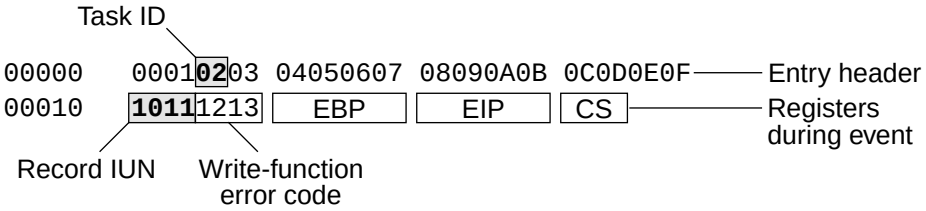
113 MDS-Record Validity Check Error

The validity check failed after reading an MDS record from the disk. The validity check looks at only the record header and the mailbox type. Examine the mailbox's user record for a corrupted field.



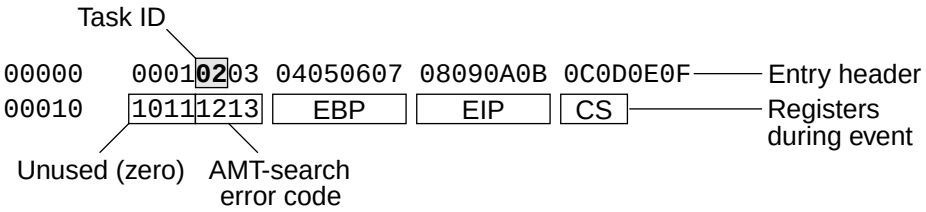
114 Error Writing MDS Record

The disk-write function failed while trying to write an MDS record via the MDS cache buffer. The system will restart.



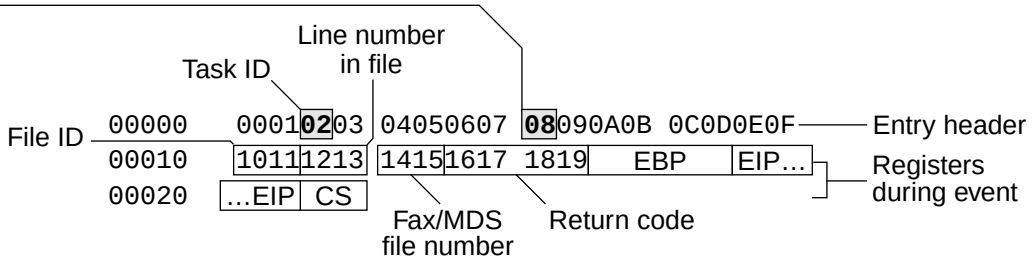
115 Error in AMT Search for MDS

The CS:EIP instruction pointer should tell which AMT search function failed. The error code in offset 12-13 tells how the search failed.



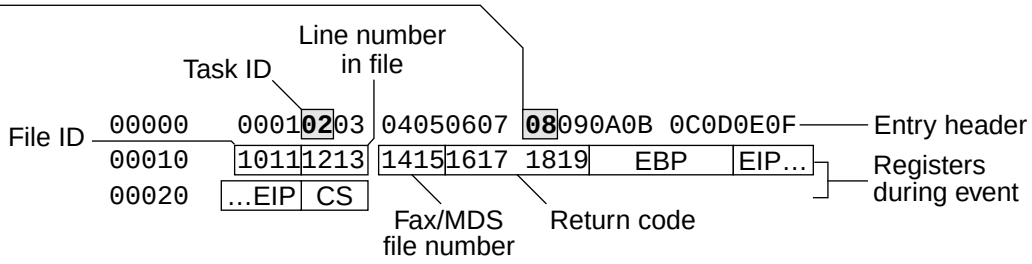
11B Fax Queue Error

01 MDS error.



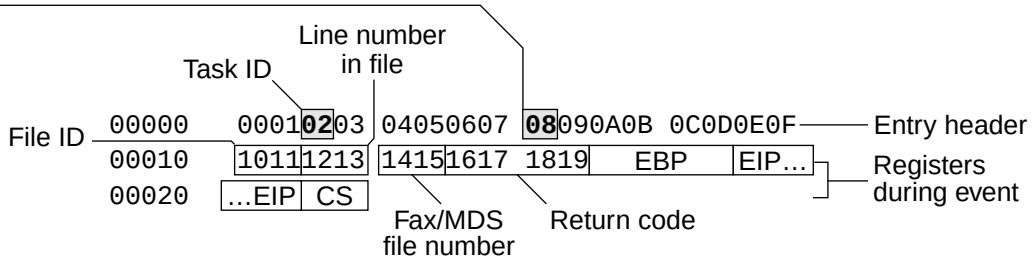
Offset	Label	Field Description
10-11	File ID	01 = ltnfaxq.c
18-1B	Return Code	02 Entry number exceeds maximum. 03 Area supplied by user is too big. 08 Can't get a new IORB. 0F Can't lock the user record. 10 Can't unlock file. 11 User record read error. 13 Can't abandon the record. 16 Too many signature errors during search. 18 AMT search error. 19 No entry available for retrieval. 1A Record deleted. 1B Empty user record cannot be deleted. 1C Can't remove MDS record entry from AMT. 20 Current entry is not allocated. 22 File is not direct access type.

02 Notification subsystem error.



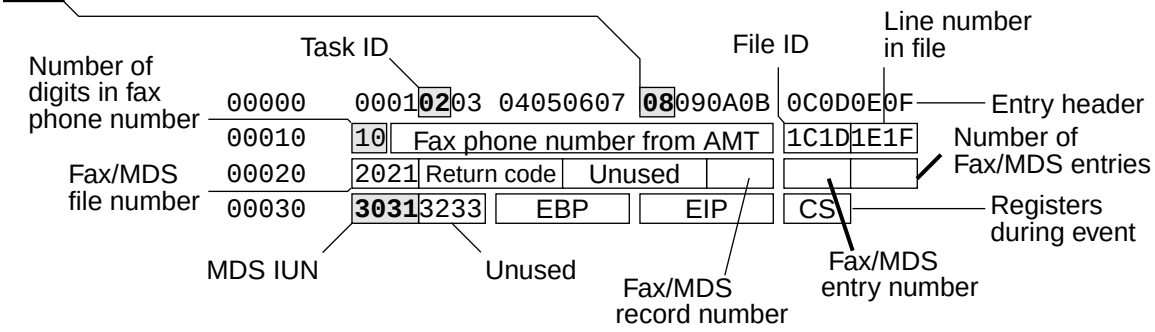
Offset	Label	Field Description
10-11	File ID	01 = ltnfaxq.c
18-1B	Return Code	FD Bad service type. F3 IRN cannot be used. E9 Wrong state to try operation. D9 Invalid event code.

03 Action error: fatal software error.



Offset	Label	Field Description
10-11	File ID	01 = ltnfaxq.c

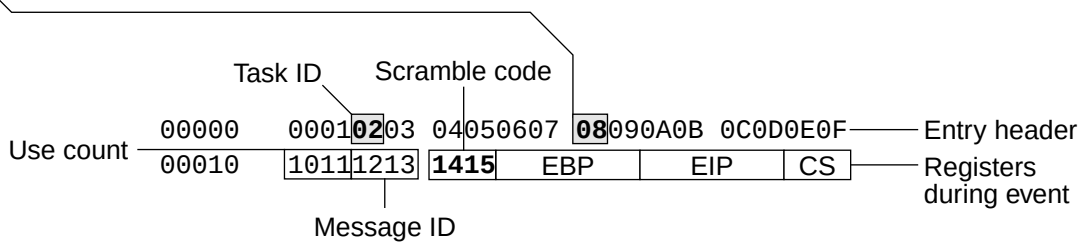
04
14 AMT error.



Offset	Label	Field Description
1C-1D	File ID	01 = ltnfaxq.c
22-25	Return code	00 IUN mismatch, entry not in AMT or mismatch in additional number of digits. FE AMT is full. FD Input parameter error.

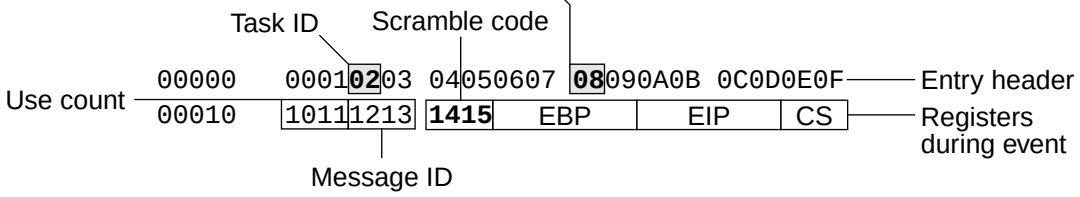
120 DMD Entry Read Error

00	OK.
08	Pool of IORBs exhausted.
0F	Cannot lock the file or user record.
10	Cannot unlock the file or user record.
11	Error reading user record.
12	Error writing user record.
13	MDS file could not abandon user record.
14	MDS file doesn't exist.
15	End of AMT reached when searching for an entry.
17	Reached MDS end of file in AMT when searching for an entry.
19	No entry available inside MDS record.
1A	MDS record does not exist.
1B	Cannot delete user record.
1C	Cannot remove MDS entry from AMT.
22	File is not a direct access type.



121 DMD Entry Write Error

00	OK.
02	Maximum number of records is too big.
03	User area size does not fit.
04	Number of messages does not fit.
05	Size of messages does not fit.
06	File exists; do not create a new one
07	Could not get new IUN.
08	Pool of IORBs exhausted.
09	Pool of buffers exhausted.
0A	AMT address insert error.
0E	All record numbers within the MDS file are allocated; cannot create new record.
0F	Cannot lock the file or user record.
10	Cannot unlock the file or user record.
11	Error reading user record.
12	Error writing user record.
13	MDS file could not abandon user record.
14	MDS file doesn't exist.
15	End of AMT reached when searching for an entry.
16	AMT signature error time-out while searching MDS file.
17	Reached MDS end of file in AMT when searching for an entry.
18	Error in AMT entry search.
21	Entry cannot be stored because entry size equals zero.
24	File number too big.
26	Cannot insert MDS record because AMT is full.



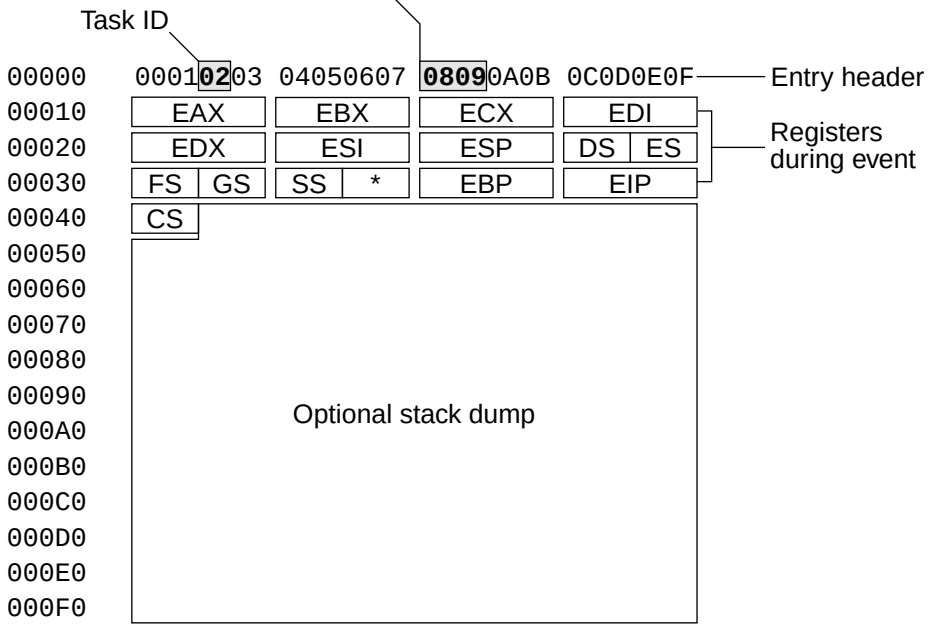
130 SBP/SCSI Security Checksum Bad

There are two likely causes for the security check to fail:

- One, a problem reading the hardware serial number. This status code combined with file system errors indicates a problem with the file card.
- Two, corruption of the system configuration data. This may indicate an attempt to get more features or capacity than the operator is entitled to.

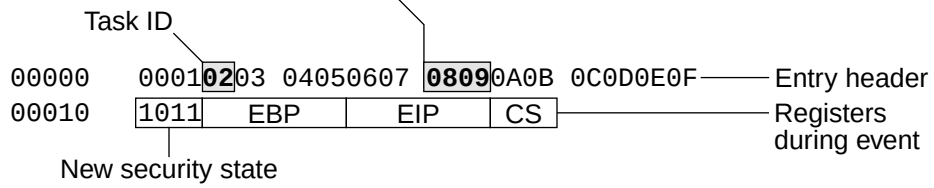
The subcodes use two bytes and are presented below as seen in a printout (that is, without transposing).

0000 The security check failed during bootup. The system was dumped and restarted.



*Unused

0001 The calculated checksum did not match the expected value.
0100 Could not read the hardware serial number.



Offset	Label	Field Description
10-11	New security state	The security state of the voice processor was updated based on its previous state and the results of the check. Possible states are: 00 Security valid. 01-0F The number of days before the system switches to read-only unless the security is revalidated. FF Read-only state. All features except playing messages are blocked until the system security is revalidated.

131 SBP/SCSI Configuration Checksum Revalidated

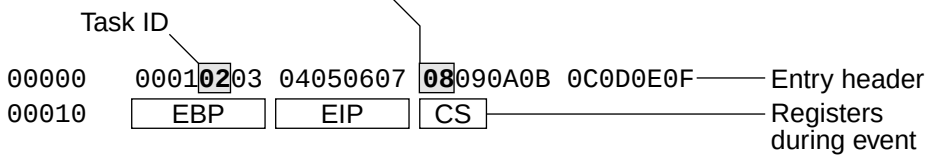
The configuration was changed to valid.

Check why the change occurred. It should occur only when Octel Communications acts to revalidate the configuration of a system.

There are two zero subcodes. If offset 08 is 00, check the entry size.

26-Byte Entry

00 Configuration check succeeded either during bootup or during a midnight check. The configuration had been invalid.

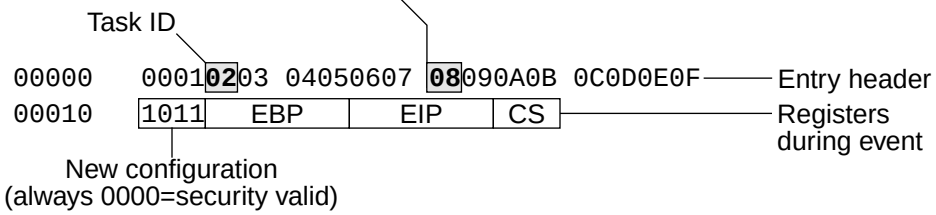


28-Byte Entry

00 The configuration checksum was updated with a new value.

01 Either the configuration chip is missing or a read command sent to the chip failed.

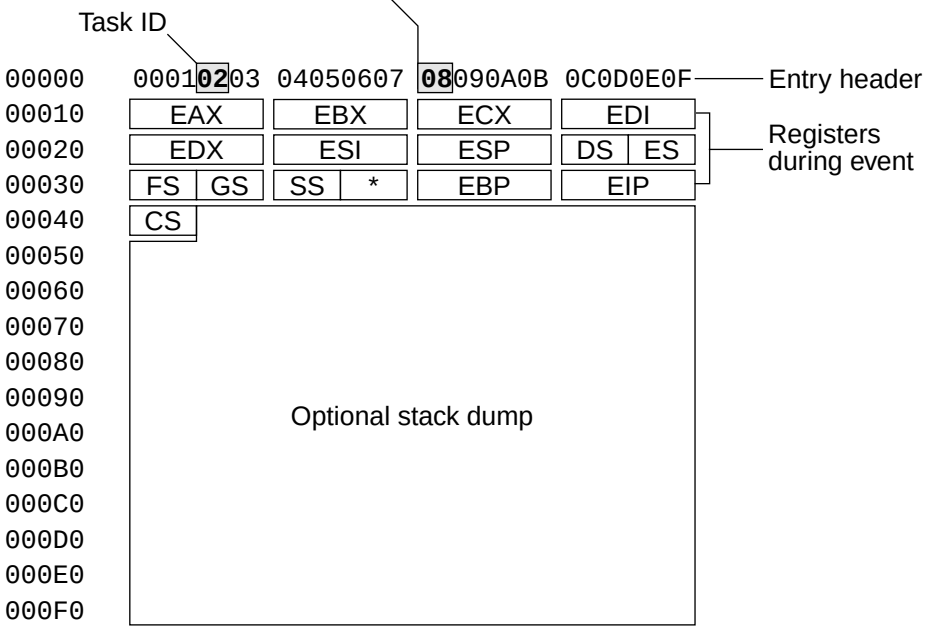
02 The system is a non-SCSI system and does not have the hardware for Software Based Pricing.



Offset	Label	Field Description
10-11	New configuration	The configuration of the voice processor was updated based on its previous state and the results of the check. Possible states are: 00 Configuration valid. 01-0F The number of days before the system switches to read-only unless the configuration is revalidated. FF Read-only state. All features except playing messages are blocked until the system configuration is revalidated.

132 SBP Internal Error

01	Type of information does not exist in Authorized Used Table.
02	Requested COS from Authorized Used Table is out of range.

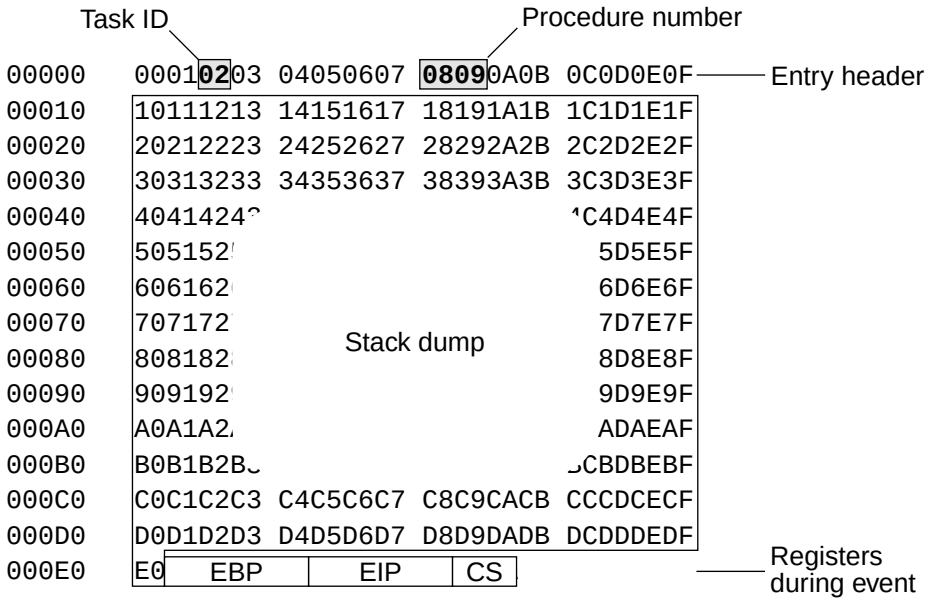


*Unused

141 System Backup and Recovery (SBR) General Error

The format depends on the software release.

Aria 1.1

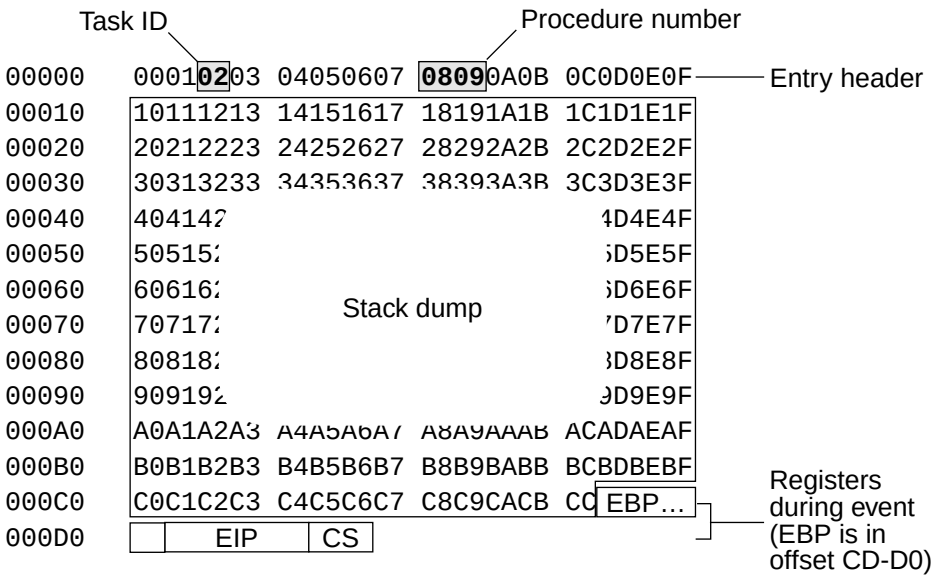


Offset	Label	Field Description
08-09	Procedure number	SBR procedure that logged the error. See table on page 280.
10-E0	Stack dump	Individual fields are described below.
10	which_proc	Flag that indicates if process is backup or restore
11-14	response	Driver -> OS return code
15-18	rflags	Driver -> OS return flags
19-1C	status	Status code
1D	sense_key	SCSI drive sense code
1E-1F	sbr_rc	System backup return code
20-21	scsi_rc	SCSI driver return code
22-23	fcp_rc	Filecard primitives return code
24-25	cif_rc	Client interface return code
26-27	bmi_rc	Backup media interface return code
28-29	fsi_rc	File system return code
2A-2B	vfs_rc	Voice file error return code
2C-2D	mfc_rc	Message conversion return code
2E-2F	drc_rc	Data conversion return code
30-31	fnc_rc	Function layer return code

Offset	Label	Field Description
32-33	ivr_rc	IVR phrase backup/restore return code
34-35	tape_rc	Tape device return code 00 OK. 02 Tape not ready. 03 No tape in device. 04 Tape is unusable. 05 Tape is full. 06 Tape drive error. 07 Tape or tape drive problem. 08 Tape internal error. (This is the default error.) FE Process cancelled. FF Process never completed.
36	bus	SCSI bus ID
37	devID	Backup device ID
38-39	reqID	I/O request sequence number
3A	a_scode	Additional sense code
3B	a_scode_quaf	Additional sense code qualifier
3C-41	FAR *sense	Pointer to SENSE buffer
42-43	proc_num	Current procedure number
44-45	fun_num	Current function flag
46-49	msgid	Message ID and scramble code (backup)
4A-4D	rmsgid	Message ID and scramble code (restore)
4E-4F	msgoff	Message offset within the user record
50	msgtyp	Message type name/greeting/vmsg/etc.
51	msgdsize	Message descriptor size
52-93	msgdir	Message descriptor (directory)
94-95	mbxirn	Mailbox IRN containing the message
96-9B	mbxnum	Mailbox number (tree digit string)
9C-9D	mbxtyp	Mailbox type
9E-9F	mbxcnt	Mailbox count
A0-A1	mdscnt	MDS count
A2-A3	mds_ent_cnt	MDS entry count
A4	systbl_num	System table count
A5-A6	fileno	MDS file number
A7-A8	usect	Message use count
A9-AA	sysvfcnt	System voice files count
AB-AE	namecnt	Name/greeting message count
AF-B0	nmdscnt	MDS name count
B1-B2	nmbxcnt	Name/greeting mailbox count
B3-B6	vmsgcnt	Total destinations message count
B7-B8	mmbxcnt	Voice and fax mailbox count

Offset	Label	Field Description
B9-BA	bad_sysvf	Total bad system table voice files
BB-BC	bad_nname	Total number of bad node name
BD-BE	bad_name	Total number of bad name/greeting
BF-C0	bad_msgs	Total number of bad user messages
C1-C2	bad_mbx	Number of bad mailboxes (I/O error)
C3-C4	bad_mds	Number of bad MDS (I/O error)
C5-C6	bad_mds_ent	Number of bad MDS entries (I/O error)
C7-C8	ivr_lang_area	IVR phrase language area
C9-CA	ivr_phrase_num	IVR phrase number
CB-CC	bad_phr_cnt	Number of bad phrases per language area
CD-CE	tot_bad_phr_cnt	Total number of bad phrases
CF-D0	map_tbl_entry	Phrase map table entry number
D1-D2	map_tbl_lang	Phrase map table language area
D3-D4	mbxcos	Mailbox class of service
D5-D6	node	IDBN node number
D7-D8	edbn_name_ct	Namenet name count
D9-DA	bad_edbn_name	Number of bad EDBN name entries
DB-DC	cos_min	Minimum class of service value
DD-DE	cos_max	Maximum class of service value
DF-E0	sbr_opt	Process option: 00 Partial backup or restore 01 Full backup or restore

Aria 1.0



Offset	Label	Field Description
08-09	Procedure number	SBR procedure that logged the error. See table on page 280.
10-CC	Stack dump	Individual fields are described below.
10	which_proc	Flag that indicates if process is backup or restore
11-14	response	Driver -> OS return code
15-18	rflags	Driver -> OS return flags
19-1C	status	Status code
1D	sense_key	SCSI drive sense code
1E-1F	sbr_rc	System backup return code
20-21	scsi_rc	SCSI driver return code
22-23	fcp_rc	Filecard primitives return code
24-25	cif_rc	Client interface return code
26-27	bmi_rc	Backup media interface return code
28-29	fsi_rc	File system return code
2A-2B	vfs_rc	Voice file error return code
2C-2D	mfc_rc	Message conversion return code
2E-2F	drc_rc	Data conversion return code
30-31	fnc_rc	Function layer return code
32-33	ivr_rc	IVR phrase backup/restore return code
34	bus	SCSI bus ID
35	devID	Backup device ID
36-37	reqID	I/O request sequence number
38	a_scode	Additional sense code
39	a_scode_quaf	Additional sense code qualifier

Offset	Label	Field Description
3A-3F	FAR *sense	Pointer to SENSE buffer
40-41	proc_num	Current procedure number
42-43	fun_num	Current function flag
44-47	msgid	Message ID and scramble code (backup)
48-4B	rmsgid	Message ID and scramble code (restore)
4C-4D	msgoff	Message offset within the user record
4E	msgtyp	Message type name/greeting/vmsg/etc.
4F	msgdsize	Message descriptor size
50-91	msgdir	Message descriptor (directory)
92-93	mbxirn	Mailbox IRN containing the message
94-99	mbxnum	Mailbox number (tree digit string)
9A-9B	mbxtyp	Mailbox type
9C-9D	mbxcnt	Mailbox count
9E-9F	mdscnt	MDS count
A0-A1	mds_ent_cnt	MDS entry count
A2	systbl_num	System table count
A3-A4	fileno	MDS file number
A5-A6	usect	Message use count
A7-A8	sysvfcnt	System voice files count
A9-AA	namecnt	Name/greeting message count
AB-AC	nmdscnt	MDS name count
AD-AE	nmbxcnt	Name/greeting mailbox count
AF-B0	vmsgcnt	Total destinations message count
B1-B2	mmbxcnt	Voice and fax mailbox count
B3-B4	bad_sysvf	Total bad system table voice files
B5-B6	bad_nname	Total number of bad node name
B7-B8	bad_name	Total number of bad name/greeting
B9-BA	bad_msgs	Total number of bad user messages
BB-BC	bad_mbx	Number of bad mailboxes (I/O error)
BD-BE	bad_mds	Number of bad MDS (I/O error)
BF-C0	bad_mds_ent	Number of bad MDS entries (I/O error)
C1-C2	ivr_lang_area	IVR phrase language area
C3-C4	ivr_phrase_num	IVR phrase number
C5-C6	bad_phr_cnt	Number of bad phrases per language area
C7-C8	tot_bad_phr_cnt	Total number of bad phrases
C9-CA	map_tbl_entry	Phrase map table entry number
CB-CC	map_tbl_lang	Phrase map table language area

First, transpose the procedure number and convert it to decimal. Decimal

numbers 901-912 have two definitions; be careful interpreting them.

Procedure Number (offset 08-09)		
Number	**Procedure**	**Area**
501	FNC_BACKUP_DATA_PN	**Functional Layer**
502	FNC_BACKUP_PROCESS_PN	
503	FNC_INIT_MEDIA_PN	
504	FNC_WRITE_DB_HDR_PN	
505	FNC_BACKUP_GET_RCB_PN	
506	FNC_BLD_BKP_HDR_PN	
507	FNC_BACKUP_SYS_TBLS_PN	
508	FNC_MBX_NM_GRTG_REQUEST_PN	
509	FNC_MBX_MSG_REQUEST_PN	
510	FNC_BITMAP_SET_PN	
511	FNC_TEST_BMI_OVERFLOW_PN	
512	FNC_BACKUP_MBOXS_PN	
513	FNC_BACKUP_MDS_PN	
514	FNC_BACKUP_SYS_VFILES_PN	
515	FNC_BACKUP_MBOXS_VFILES_PN	
516	FNC_INIT_DATA_PN	
517	FNC_ERRORLOG_PN	
518	FNC_SET_FSI_PN	
519	FNC_RESET_FSI_PN	
520	FNC_OPEN_MEDIA_PN	
521	FNC_CLOSE_MEDIA_PN	
522	FNC_GLOBAL_RESTORE_PN	
523	FNC_GLOBAL_RESTORE_PROCESS_PN	
524	FNC_READ_DB_HDR_PN	
525	FNC_RESTORE_SYS_TBLS_PN	
526	FNC_RESTORE_MBOXS_PN	
527	FNC_RESTORE_MDS_PN	
528	FNC_RESTORE_SYS_VFILES_PN	
529	FNC_RESTORE_MBOXS_VFILES_PN	
530	FNC_RESTORE_GET_RCB_PN	
531	FNC_RESTORE_FREE_BUF_PN	
532	FNC_PROC_BKP_HDR_PN	

Procedure Number (offset 08-09) (Continued)		
Number	**Procedure**	**Area**
533	FNC_BACKUP_MBOXS_NAME_PN	**Functional Layer**
534	FNC_BACKUP_MBOXS_MSGS_PN	
535	FNC_RESTORE_MBOXS_NAME_PN	
536	FNC_RESTORE_MBOXS_MSGS_PN	
537	FNC_BACKUP_MBOXS_APPL_MSGS_PN	
538	FNC_RESTORE_MBOXS_APPL_MSGS_PN	
700	SBR_MAIN_PN	**Client Interface**
701	CIF_COMM_CHNLS_GET_PN	
702	CIF_PROCESS_CMD_PN	
703	CIF_START_COMMAND_PN	
704	CIF_ACTION_COMMAND_PN	
705	CIF_SET_COMMAND_PN	
706	CIF_SUSPEND_COMMAND_PN	
707	CIF_ABORT_COMMAND_PN	
708	CIF_RESUME_COMMAND_PN	
709	CIF_READ_COMMAND_PN	
710	CIF_DELETE_COMMAND_PN	
711	CIF_CANCEL_COMMAND_PN	
712	CIF_SYS_ADMIN_COMMAND_PN	
713	CIF_INIT_PN	
714	CIF_POLL_CLIENT_REQUEST_PN	
715	CIF_SND_RCV_MSG_PN	
716	CIF_SEND_RESPONSE_PN	
717	CIF_VALIDATE_BACKUP_PARMS_PN	
718	CIF_VALIDATE_RESTORE_PARMS_PN	
719	CIF_VALIDATE_BKUP_DEVICES_PN	
720	CIF_VALIDATE_MB_PROFILES_PN	
721	CIF_RUN_BACKUP_PN	
722	CIF_FILL_IN_PROFILE_PN	
723	CIF_FILL_IN_DEFAULTS_PN	
724	CIF_GET_HISTORY_PN	
725	PSC_SET_SCHEDULED_PROC_PN	
726	PSC_CLEAR_SCHEDULE_PN	
727	PSC_SCHEDULED_TIME_PN	

Procedure Number (offset 08-09) (Continued)		
Number	**Procedure**	**Area**
728	PSC_RESCHEDULE_JOB_PN	**Client Interface**
729	PSC_GET_DEFAULT_RESP_PN	
730	CIF_PARSE_PARMS_PN	
731	CIF_BUILD_PARMS_PN	
732	CIF_BUILD_RESPONSE_PN	
733	CIF_BUILD_PARM_ERROR_RESP_PN	
734	CIF_MAP_Q_ERROR_TO_SBR_PN	
735	CIF_LOG_ERROR_PN	
736	CIF_CHECK_WHATS_RUNNING_PN	
737	CIF_TOGGLE_PT_PN	
738	CIF_SAVE_PROC_HISTORY_PN	
739	CIF_LOCK_SMT_PN	
740	CIF_UNLOCK_SMT_PN	
741	CIF_LOCK_ASA_PN	
742	CIF_UNLOCK_ASA_PN	
743	CIF_CHECK_ASA_STATUS_PN	
744	SBR_ATOI_PN	
745	SBR_CHECK_MDS_FILE_EXIST_PN	
800	SBR_DRC_MFC_TEST_PN	**Data Representation Converter**
801	SBR_DRC_MFC_TEST_ONE_PN	
802	SBR_DRC_MFC_TEST_TWO_PN	
803	SBR_DRC_GET_NEXT_ASPEN_INTERVAL_PN	
804	SBR_DRC_INSERT_SIERRA_INTERVAL_PN	
805	SBR_DRC_CONVERT_ASPEN_TO_SIERRA_INTERVAL_PN	
806	SBR_DRC_ASPEN_TO_SIERRA_VOICE_PN	
807	SBR_DRC_INIT_VFCCB_PN	
808	SBR_DRC_INIT_SIERRA_VOISEG_PN	
809	SBR_DRC_CHECK_VOISEG_FOR_AVALIABLE_PN	
810	SBR_DRC_GET_NEXT_SIERRA_VOISEG_PN	
811	SBR_DRC_INSERT_SIERRA_VOICE_PN	
812	SBR_DRC_SIERRA_TO_SIERRA_VOICE_PN	
813	SBR_DRC_CHECK_IF_MSGID_PRESENT_PN	
814	SBR_DRC_UPDATE_MSGID_TABLE_PN	
815	SBR_DRC_ADD_MSGID_TO_TABLE_PN	

Procedure Number (offset 08-09) (Continued)		
Number	**Procedure**	**Area**
Decimal numbers 901-912 have two definitions; be careful interpreting them.		
901	VFS_BACKUP_SYS_TBLS	**Voice Files Backup**
902	VFS_BACKUP_NNAME	
903	VFS_BACKUP_NAME	
904	VFS_BACKUP_MSGS	
905	VFS_BMSG_RCBS	
906	VFS_RMSG_RCBS	
907	VFS_RESTORE_SYS_TBLS	
908	VFS_RESTORE_NNAME	
909	VFS_RESTORE_NAME	
910	VFS_RIVR_MSG_RCBS	
911	VFS_BACKUP_EDBN_NAME	
912	VFS_RESTORE_EDBN_NAME	
900	SBR_MFC_SETUP_FILE_CONVERSION_PN	**Message File Conversion**
901	SBR_MFC_INIT_SIERRA_VOISEG_PN	
902	SBR_MFC_INIT_SIERRA_FAXSEG_PN	
903	SBR_MFC_CHECK_VOISEG_FOR_AVALIABLE_PN	
904	SBR_MFC_CHECK_SIERRA_FOR_AVALIABLE_FAXSEG_PN	
905	SBR_MFC_GET_NEXT_SIERRA_VOISEG_PN	
906	SBR_MFC_GET_NEXT_SIERRA_FAXSEG_PN	
907	SBR_MFC_GET_NEXT_ASPEN_INTERVAL_PN	
908	SBR_MFC_GET_NEXT_ASPEN_FAX_INTERVAL_PN	
909	SBR_MFC_INSERT_SIERRA_INTERVAL_PN	
910	SBR_MFC_INSERT_SIERRA_FAX_INTERVAL_PN	
911	SBR_MFC_CONVERT_ASPEN_TO_SIERRA_FAX_INTERVAL_PN	
912	SBR_MFC_CONVERT_ASPEN_TO_SIERRA_INTERVAL_PN	
913	SBR_MFC_ASPEN_TO_SIERRA_FAX_PN	
914	SBR_MFC_ASPEN_TO_SIERRA_VOICE_PN	
915	SBR_MFC_SIERRA_TO_SIERRA_FAX_PN	
916	SBR_MFC_SIERRA_TO_SIERRA_VOICE_PN	
917	SBR_MFC_ASPEN_TO_ASPEN_FAX_PN	
918	SBR_MFC_ASPEN_TO_ASPEN_VOICE_PN	

Procedure Number (offset 08-09) (Continued)		
Number	**Procedure**	**Area**
1000	FNC_BACKUP_IVR_PHR_PN	**Interactive Voice Response**
1001	FNC_RESTORE_IVR_PHR_PN	
1002	FNC_BACKUP_IVR_MAP_TBL_PN	
1003	FNC_RESTORE_IVR_MAP_TBL_PN	

150 MDS File Access Failure for Port Testing

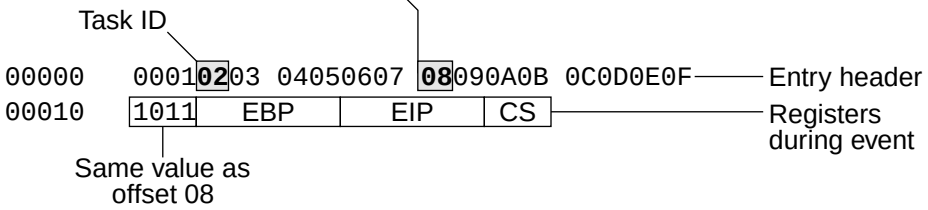
This error is logged every time the port test utility fails to access or create its MDS file. A Service Affecting (SA) alarm is triggered.

One of the following operations failed during port testing:

- Failed SMT operation while creating an MDS file, or
- Failed SMT or LT operation while updating the user area in the MDS file, or
- Failed SMT or LT operation while reading the user area in the MDS file.

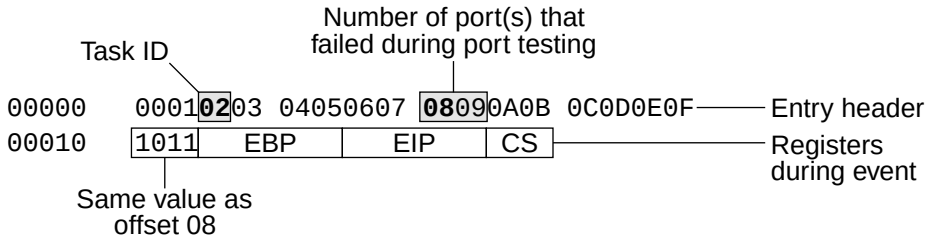
The following subcodes define specifically what failed in the previous operation during port testing.

03	User area specified does not exist/fit.
06	Cannot create an MDS file; already exists.
07	Cannot get a new IUN record allocated from the file system.
0A	New MDS record address cannot be added to AMT tab.
0C	Cannot write primary user record to disk.
0F	Cannot lock the MDS user record file.
10	Cannot unlock the MDS user record file.
12	User record write I/O error.
13	Cannot abandon the user record.
14	File does not exist for this user record number.
26	Cannot add new entry to the AMT; AMT full.



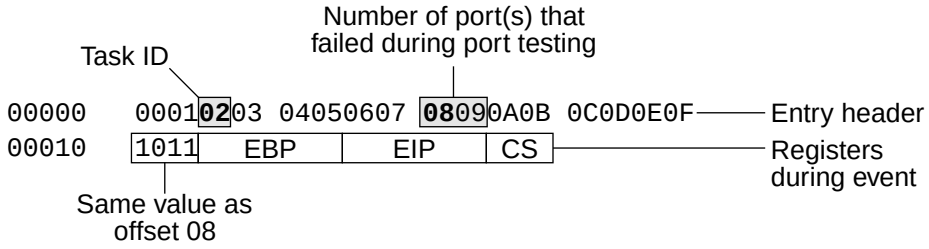
151 Possible Bad Port(s) Found during Port Testing—NSA

This error is logged if bad port(s) were detected during port testing. Also, the SA/NSA alarm in the Port Testing Administration Menu is equal to 1 (NSA). A Non-Service Affection (NSA) alarm is triggered.



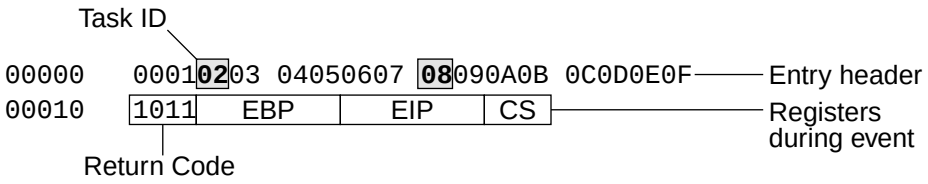
152 Possible Bad Port(s) Found during Port Testing—SA

This error is logged if bad port(s) were detected during port testing. Also, the SA/NSA alarm in the Port Testing Administration Menu is equal to 2 (SA). A Service Affecting (SA) alarm is triggered.



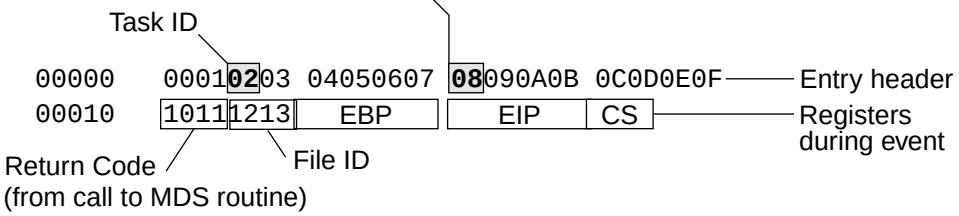
154 CDR Review Utility Error

The subcode byte (08) and the field at bytes 10-11 contain the non-zero return code (see table below) from calls to functions that handle MDS files. These functions are called by routines for CDR record/event handling.



155 CIP MDS File Error

01	Could not create CIP MDS file.
02	Could not put user data to MDS file.
03	Could not get user data from MDS file.



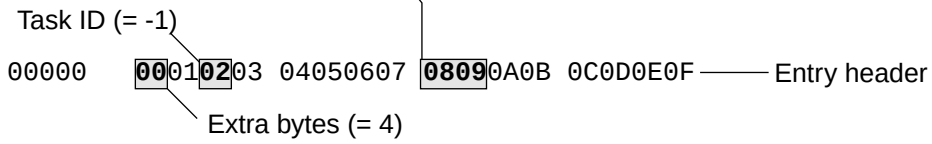
Offset	Label	Description
10-11	Return Code	2 = Maximum number of records exceeded.
		3 = User area size too big.
		4 = Number of messages won' t fit.
		5 = Size of messages too big.
		6 = MDS file exists.
		7 = Could not get new IUN.
		8 = IORB pool depleted.
		9 = Buffer pool depleted.
		0A = AMT address insert error.
		0B = FS protocol error.

Offset	Label	Description
10-11	Return Code	0C = IUNs exhausted. 0D = CB I/O error. 0E = Can’t create new record. 0F = Can’t lock the file. 10 = Can’t unlock the file or the user record. 11 = MDS Read error. 12 = MDS Write error. 13 = Can’t abandon error. 14 = File doesn’t exist for this file number. 15 = Ran outside AMT. 16 = AMT signature error timeout. 17 = Passed the last entry in AMT belonging to this file. 18 = AMT entry search error. 19 = No entry available for retrieval. 1A = Input record number is not in the AMT. 1B = Empty user record cannot be deleted. 1C = Can’t remove MDS record entry from AMT. 1D = No field to convert to, or, conversion overflow. 1E = Number does not fit in field length. 1F = Entry is already marked. 20 = Current entry is not allocated. 21 = Entry cannot be stored. 22 = File is not Direct Access type. 23 = AMT backsearch failed. 24 = File number too big. 25 = User supplied buffer is smaller than message area.

1C0 OPI SP Error

Error transmitting or receiving a control bus message using the OPI bus.

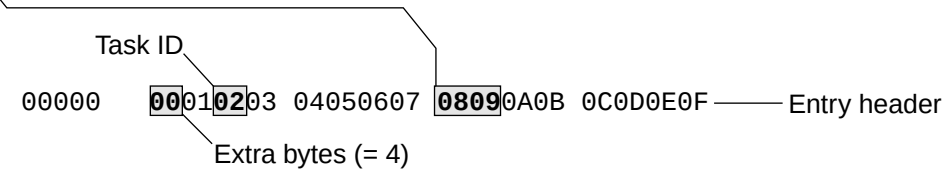
00	Receive count threshold reached (not an error).
01	Receive byte count error.
02	Receive header CRC error.
03	Receive information CRC error.
04	Receive software timeout reached (not an error).
05	Receive FIFO overrun; FIFO is full. May be a performance issue.
06	Receive bus timeout. Check flow control.
07	Receive transmitter bus timeout. Caused by transmitting card.
08	Receive buffer nearly full (not an error).
09	Transmit buffer empty (not an error).
0A	Transmit header error; CRC or byte count error.
0B	Transmit information CRC error.
0C	Transmit FIFO underrun. FIFO is empty.
0D	Alcatel destination slot is out of range (not an error).
0E	Transmit receiver bus timeout. Caused by receiving card.
0F	Transmit transmitter bus timeout. Caused by this card.



1C1 OPI LP Error

Error transmitting or receiving a data bus message using the OPI bus.

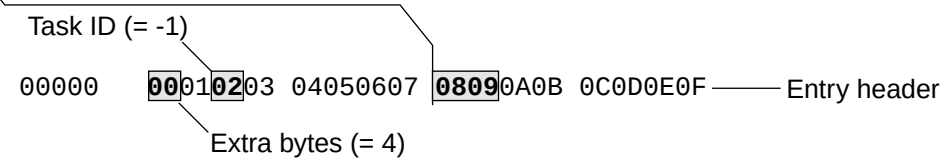
00	Receive byte count error.
01	Receive or transmit header error.
02	Receive or transmit information CRC error.
03	Transmit FIFO underrun; FIFO is empty.
04	Receive FIFO overrun; FIFO is full. May be a performance issue.
05	Receiver bus timeout. Caused by receiving card.
06	Transmitter bus timeout. Caused by transmitting card.



1C2 OPI Arbitration Master Error

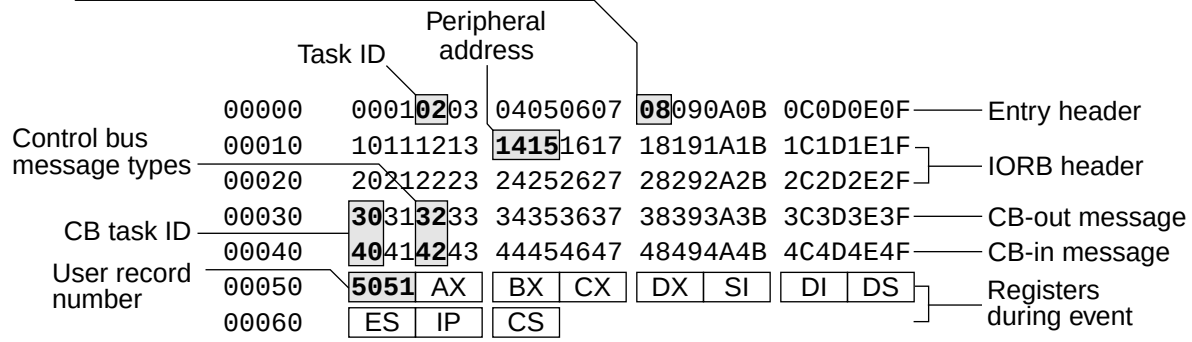
Error detected by the arbitration master when using the OPI bus.

00	SP receive error. Receiving card caused bus timeout.
01	SP transmit error. Transmitting card caused bus timeout
02	LP receive error. Receiving card caused bus timeout.
03	LP transmit error. Transmitting card caused bus timeout.

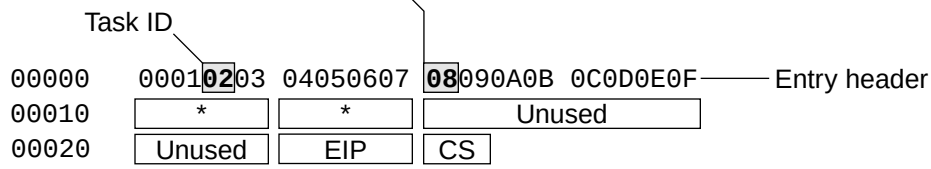


1E0 Network Directory Error

01 Failed to create Network Directory on the disk.

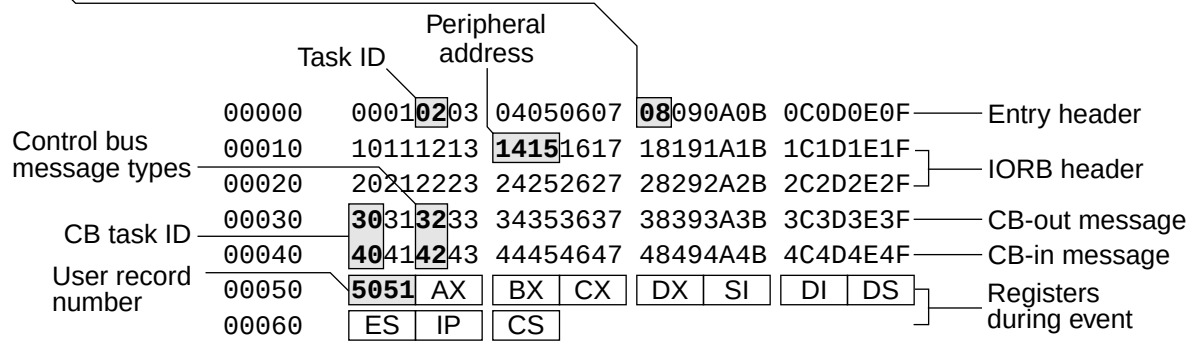


02 Failed to delete an entry from MDS file.
Offsets 10-13: MDS address.
Offsets 14-17: return code - see following table.

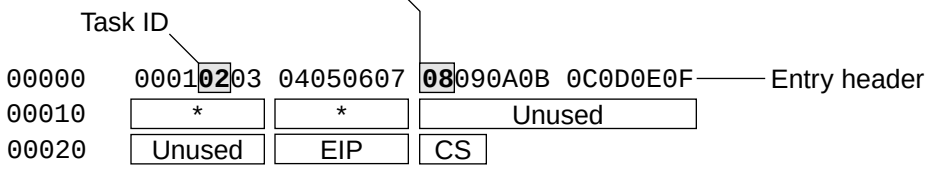


* Content depends on subcode

03 Network directory full.

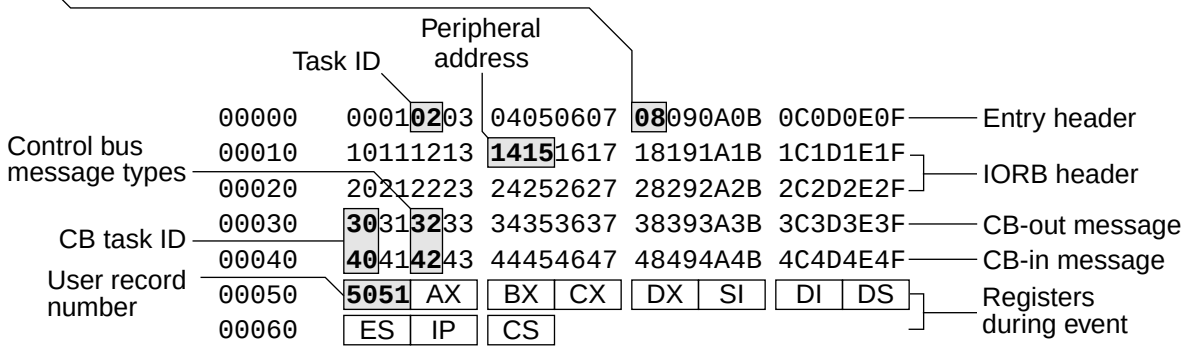


04	Failed to put EDBN entry in MDS file. Offsets 10-13: node number. Offsets 14-17: return code—see following table.
05	Failed to write EDBN entry to MDS file. Offsets 10-13: MDS address. Offsets 14-17: return code—see following table.
06	Failed to read EDBN entry from MDS file. Offsets 10-13: MDS address. Offsets 14-17: return code—see following table.
07	Failed to read Network Directory date from MDS primary record. Offsets 10-13: zeros. Offsets 14-17: return code—see following table.
08	Failed to write Network Directory date to MDS primary record. Offsets 10-13: zeros. Offsets 14-17: return code—see following table.
09	Software error. Offsets 10-13: node number. Offsets 14-17: zeros.

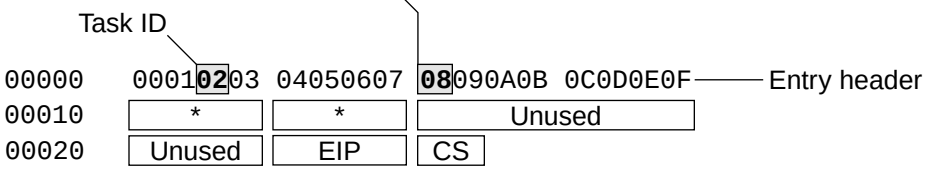


* Content depends on subcode

0A	More than 9 same DTMF names exist in the NMT.



0B	Failed to put administrative message in node queue. Offsets: node number. Offsets: return code—see following table.
0C	Failed to close administrative message. Offsets: node number. Offsets: return code—see following table.
0D	Failed to run Garbage Collect. Offsets: MDS address. Offsets: return code—see following table.
10	Failed to purge usage-based entries. Offsets: zeros. Offsets: return code—see following table.



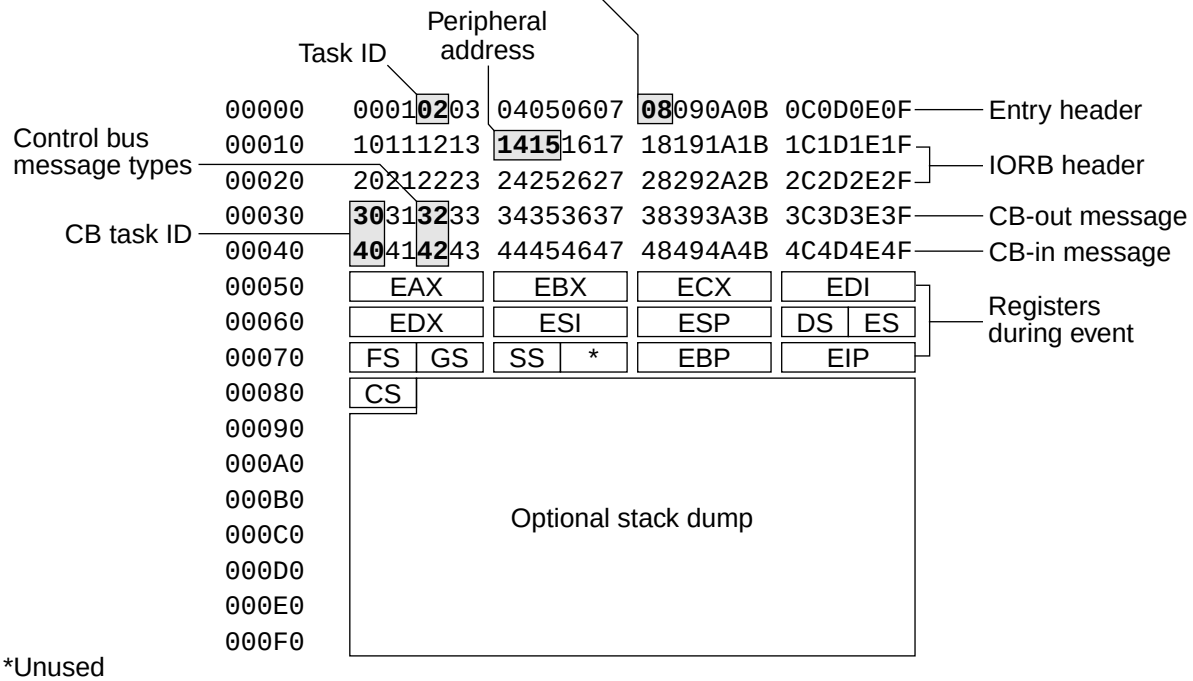
* Content depends on subcode

Offset	Label	Field Description
14-17	Return	Return codes for all subcodes except 0B and 0C: 02 Maximum number of records too big. 03 User area specified does not fit. 04 Number of messages does not fit. 05 Size of messages too big for this many entries. 06 Cannot create; already exists. 07 Cannot create new secondary record. 08 Pool of IORBs exhausted. 09 Pool of buffers exhausted for primary record. 0A AMT address insert error. 0B File system protocol error. 0C IUNs exhausted. 0D Control bus I/O error. 0E Cannot add more records. 0F Cannot lock the user record. 10 Cannot unlock the file. 11 User record read error 12 User record write error 13 Cannot abandon the record.

Offset	Label	Field Description
14-17	Return	Return codes for all subcodes except 0B and 0C—continued: 14 File does not exist for this filename. 15 Ran outside AMT. 16 AMT signature error time-out. 17 Passed the last entry in AMT belonging to this file. 18 AMT entry search error. 19 No entry available for retrieval. 1A Input record number non-existent. 1B Empty user record cannot be deleted. 1C Cannot remove MDS record entry from AMT. 1D MDS internal error. 1E MDS internal error. 1F MDS entry marked. 20 MDS entry not allocated. 21 Entry cannot be stored. 22 File is not direct access type; for direct access only. 23 AMT backsearch failed. 24 File number too big (> 9999) 25 User buffer area less than message area. 26 Cannot add new entry to AMT. Return codes for subcodes 0B and 0C: see sysbnerr.c

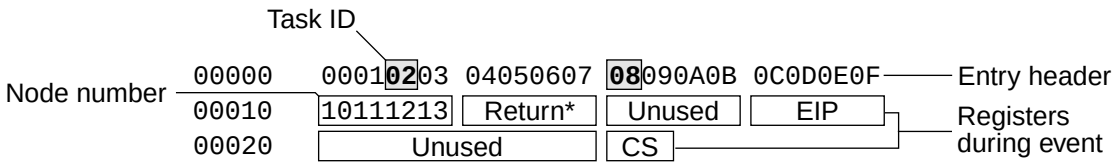
1E1 Network Directory Input/Output Error

0E	Control bus message return code not OK; system dump.
0F	Control bus message return code not OK; return code is in IORB buffer.



*Unused

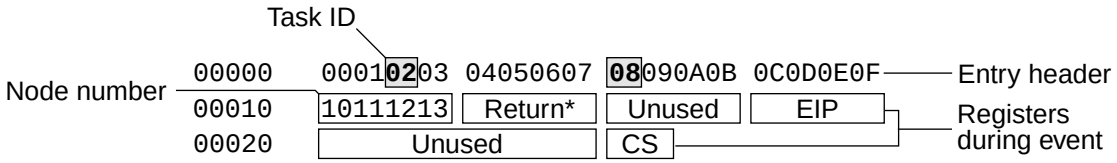
1E2 Number of Network Directory Entries Exceeds Critical Space Threshold



*See table on following page.

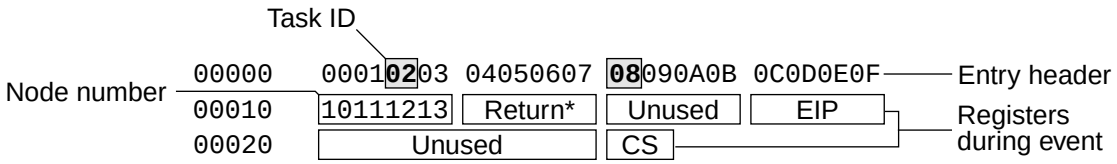
Offset	Label	Field Description
14-17	Return	Return code: 0000 No errors FFD6 Queue overflow FFD7 Unknown destination FFD8 Unknown message FFD9 Error detected by CCC FFDA No destination in destination list FFDB Sequence error during retrieval FFDC Node is in service FFDD Error detected by FS FFDE Node is not under deletion FFDF Node is under deletion FFE0 Bad forward message FFE1 Out of system buffers FFE2 Record is not in cache FFE3 Old NR is not in FC FFE4 Not a voice message FFE5 No more messages in queue FFE6 More destinations for message FFE7 Duplicate destination FFE8 Message is in 4k buffer FFE9 Message is in buffer FFEA Message is in queue FFEB Message is not in 4k buffer FFEC Message is not in buffer FFED Message/entry is not in queue FFEE Message queue is full FFEF Not allowed by error history FFF0 Task limit exceeded FFF1 CIP table is full FFF2 Task ID is not in CIP table FFF3 Task ID is in CIP table FFF4 Not home station of this node FFF5 Bad message is not in table FFF6 Bad message table is full FFF7 Prefix not found FFF8 Prefix table is full FFF9 Duplicate prefix FFFA TX is bad FFFB Node exists FFFC Node does not exist FFFD Error detected by MDS FFFE Bad input data

1E3 Number of Network Directory Entries Exceeds Directory Full Alarm Threshold



*See table for 1E2 error.

1E4 Network Directory Full

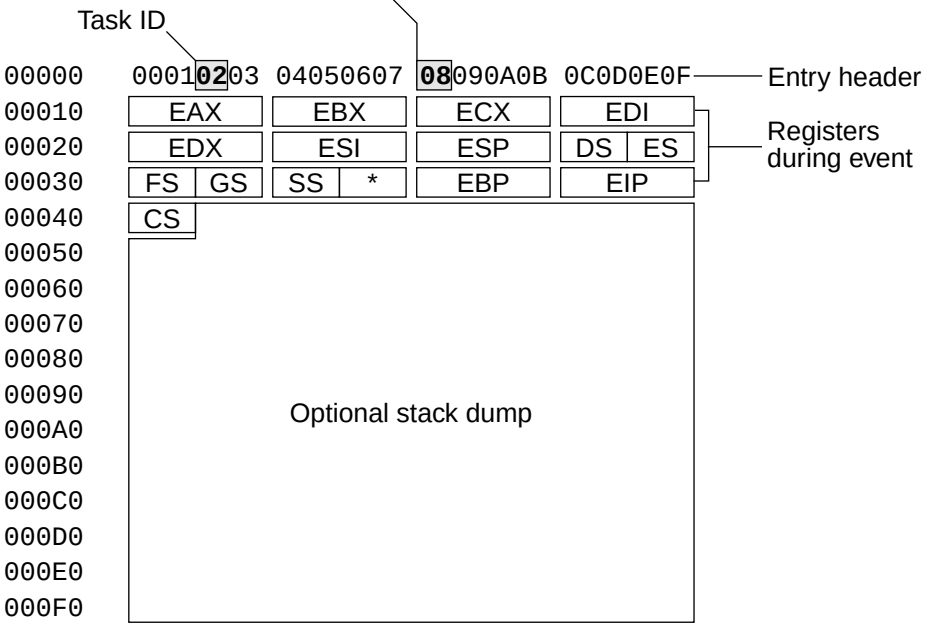


*See table for 1E2 error.

1E5 Aspenet Admin Protocol Error

Usually caused by a bad line condition, a line disconnect or a data format error. In the cases of subcodes 01 and 02, the system should automatically adapt to the appropriate signalling level. Subcodes 03 and 04 indicate software errors.

01	Aspenet transmit error.
02	Aspenet receive error.
03	Aspenet encoding error.
04	Aspenet decoding error.

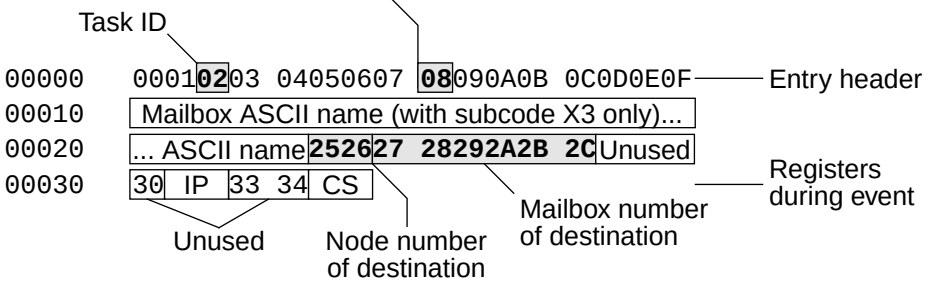


*Unused

1E6 EDBN Administrative Message Status

The subcode for these status log entries consists of the combined high and low nibbles (digits), as defined below:

	High nibble (left-most digit): Message type
1	Administrative retrieval of ASCII spoken name, transmit.
2	Administrative retrieval of full name, transmit.
3	Administrative retrieval of ASCII spoken name, receive.
4	Administrative retrieval of full name, receive.
5	Administrative change mode.
6	Administrative name confirmation
7	Administrative retrieval of full name from the hub.
	Low nibble (right-most digit): Error reason
0	OK.
1	Mailbox type in not allowed in Network Directory.
2	Mailbox does not exist.
3	Mailbox exists, but ASCII name does not match. Offset 10-24: mailbox ASCII name.
4	Mailbox exists, but has no ASCII name.
5	Spoken name not recorded.
6	Cannot access Network Directory.
7	Feature not supported.
8	Spoken name is corrupted.
9	Name added to Network Directory.
A	Syntax error in name; name not added.
B	More than nine same names in NMT; name not added.
C	Cannot update Network Directory.
D	Stop protocol; name already exists.
E	System full.



Offset	Label	Field Description
10-24	Mailbox ASCII name	Used with subcode X3 only. Otherwise, the content is garbage.

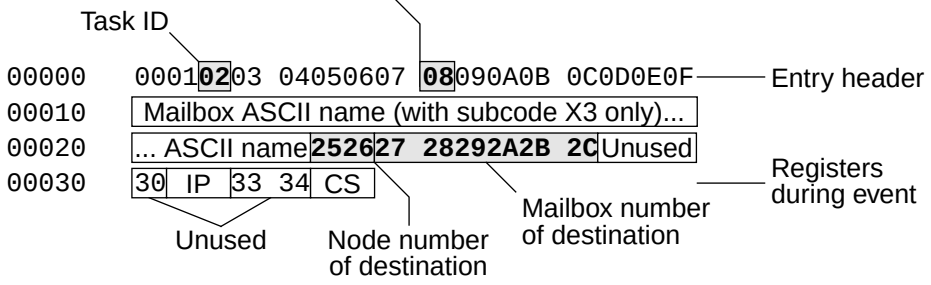
1E7 EDBN Network Directory Access Error

This error is logged when an administrative message fails to access the Network Directory (i.e., while the ASCII name or spoken name is updated) or to inform the system administrator of the deletion of a permanent entry in the Network Directory.

If the subcode's high nibble is 2 or 3, refer to the subcode's low nibble to determine the actual problem; refer to the rest of the status log entry to determine the specific mailbox causing the error.

If the subcode's high nibble is 1, then nothing needs to be done because the logged entry is informational only.

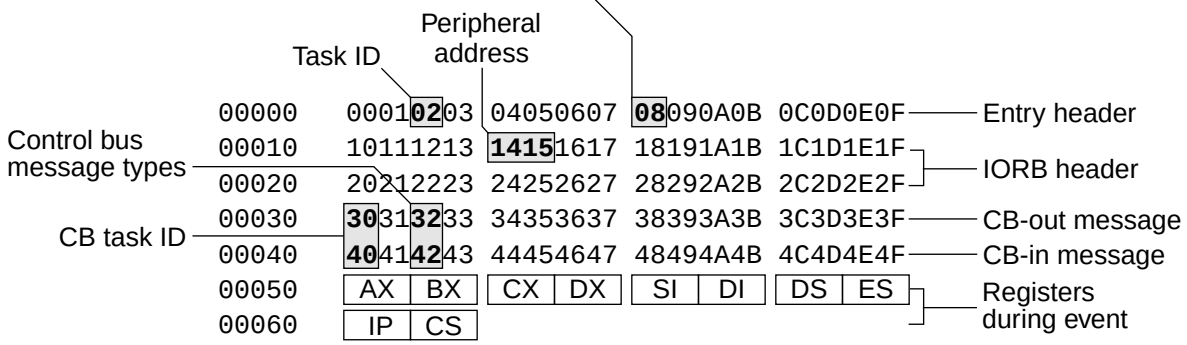
	High nibble (left-most digit): Message type
1	Delete a permanent entry. This is a routine information only operation.
2	Update ASCII name in Network Directory.
3	Update spoken name in Network Directory.
	Low nibble (right-most digit): Error reason
0	OK.
1	Mailbox type in not allowed in Network Directory.
2	Mailbox does not exist.
3	Mailbox exists, but ASCII name does not match. Offset 10-24: mailbox ASCII name.
4	Mailbox exists, but has no ASCII name.
5	Spoken name not recorded.
6	Cannot access Network Directory. Call service.
7	Feature not supported.
8	Spoken name is corrupted.
9	Name added to Network Directory.
A	Syntax error in name; name not added.
B	More than nine same names in NMT; name not added.
C	Cannot update Network Directory.
D	Stop protocol; name already exists.



Offset	Label	Field Description
10-24	Mailbox ASCII name	Used with subcode X3 only. Otherwise, the content is garbage.

1E8 Debug Logs Snapshot

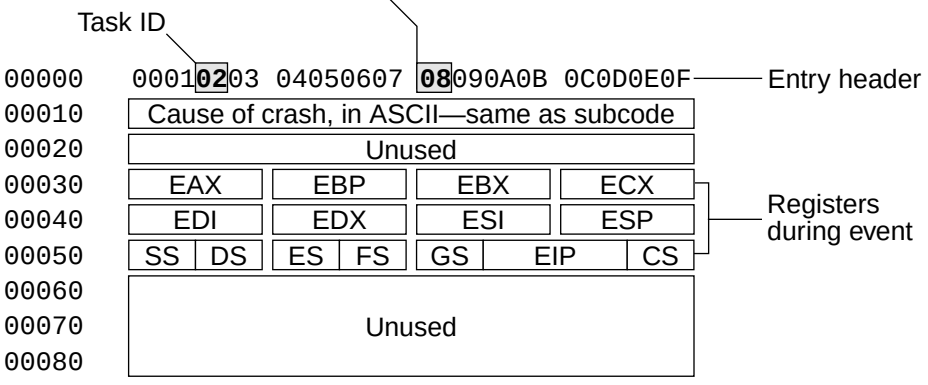
01	Snapshot of CP beginning.
02	Snapshot of CP ending.
03	Previous snapshot incomplete; ignore the current snapshot.
04	Control bus error between CP and CC.
05	Control bus error between CP and SFC.
06	Control bus error between CP and MFC.
07	Invalid request to gate call send_snp.
08	Error while writing the debug file.
09	Error while reading the debug file.
0A	Error while reading the MFC debug file.



Offset	Label	Field Description
10	Flag	Possible bit values: 0 Not used 1 Missing cable 2 Local readback failed 3 Bad latch value 4 Short cable 5 Remote station bypassed the latch test 6 Remote communication failure

200 Abnormal System Shutdown

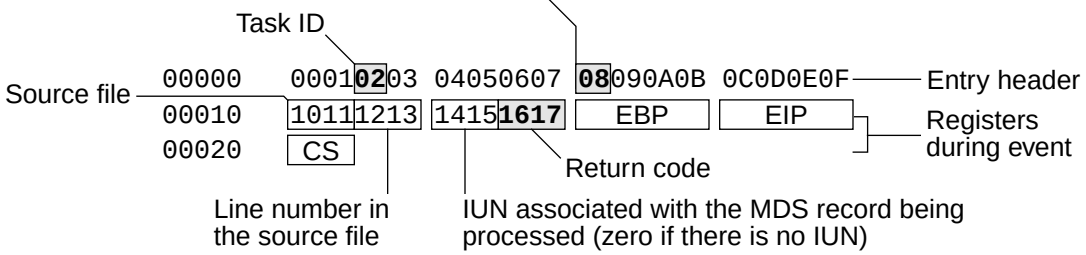
00	System shutdown.
01	Interrupt 3.
02	Divide error.
03	Overflow fault.
04	Bounds check.
05	Illegal Instruction.
06	No co-processor.
07	Double fault.
08	Co-processor segment overrun.
09	Invalid TSS.
0A	Segment not present.
0B	Stack fault.
0C	General protection fault.
0D	Page fault.
0E	Task crash.
0F	Watchdog timer.
10	DRAM parity error.
11	Privilege violation.
12	System crash.
13	Debug register breakpoint.
14	Software breakpoint.
15	Task breakpoint.
16	Snapshot breakpoint.
17	Single-step breakpoint.



202 R2 Control Table Error

There was a problem with the MDS file used to store the R2 control table.

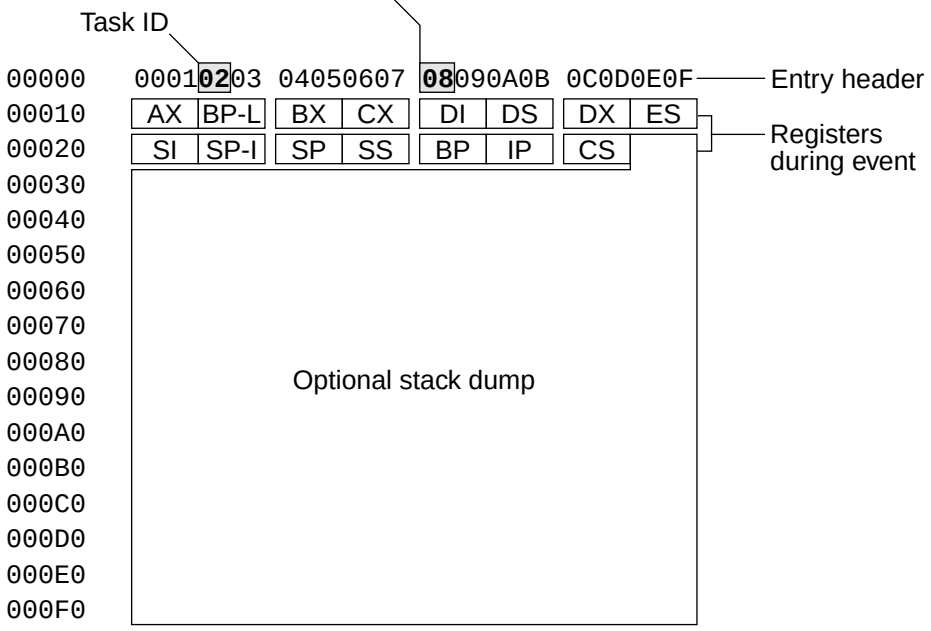
01	File could not be created.
02	File could not be read from.
03	File could not be written to.
04	File could not be deleted.



Offset	Label	Field Description
10-11	Source file	The source file in which the error occurred. Currently, this is always 0001=sysr2mds.c.
12-13	Line number in the source file	The line in the source file in which the error occurred.
16-17	Return code	The return code from the MDS function that failed: 02 Maximum number of records too big. 03 User area size does not fit. 04 Number of messages would not fit. 05 Size of messages would not fit. 06 File already exists. 07 Could not get new IUN. 08 Out of IORBs. 09 Out of buffers. 0A AMT address insert error. 0B File system protocol error. 0C Out of IUNs. 0D Control bus I/O error. 0E File full. 0F Could not lock file or user record. 10 Could not unlock file or user record. 11 Read error. 12 Write error. 13 User record abandon error. 14 File does not exist. 15 End of AMT. 16 AMT signature error. 17 AMT end-of-file. 18 AMT search error. 19 No entry available. 1A Record does not exist. 1B Could not delete user record. 1C Could not remove from AMT. 1D Field size error. 1E Number too big for field. 1F Entry marked. 20 Entry not allocated. 21 Entry size was zero. 22 File was not DA type. 23 AMT backsearch could not find the IUN. 24 File number too big. 25 User buffer was smaller than the message area. 26 AMT full.

228 Background Task Error

01	Error in creating node queue.
02	Error in waiting on waitm.
03	Error in returned node PQID.
04	Error in getting IVR/BGT privilege.
05	Error in returned mailbox PQID.
06	Invalid request for send to node queue.
07	Node queue full, could not send.
08	Unknown response to send node queue.
09	Error in returned mailbox change PQID.



Offset	Label	Field Description
12-13	BP-L	BP register during status log processing.
22-23	SP-I	The task's initial SP register.

CHAPTER 3: FILE SYSTEM MESSAGES

This chapter provides descriptions of all control bus messages used with file cards. For information on reading these descriptions, see “Control Bus Messages” on page 34. All values in the illustrations are the bytes’ offsets, not sample data.

Request and response messages are grouped together and organized by the message type of the request. These can be found by checking the numbers in the upper-outer corners of the pages while flipping through the chapter. Or, message descriptions can be found by checking the index below.

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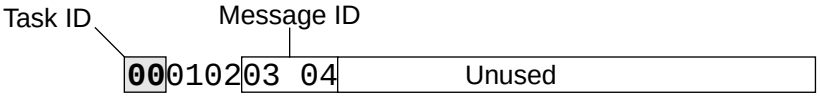
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3.1 MESSAGE DESCRIPTIONS

10 Abandon New Message CP➤FS

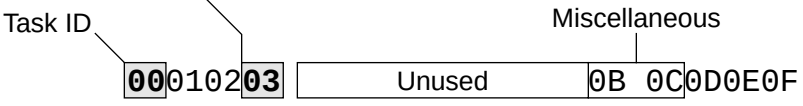
Requests the file system to delete the new message and return to the high-level message protocol.



Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 22, Open New Message.

11 Abandon New Message Response CP◄FS

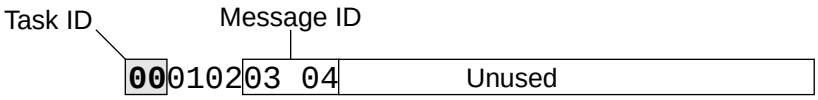
00	OK.
01	Unrecoverable drive error. The message's state is unchanged.
02	Scramble code or message ID mismatch (software error). Message state is unchanged.
03	No new message open.
06	DMA time-out on prior operation. System reboot required.



Offset	Label	Field Description
0B-0C	Miscellaneous	Scramble code (least-significant byte of the message ID).

12 Close Name/Announcement

CP➤FS

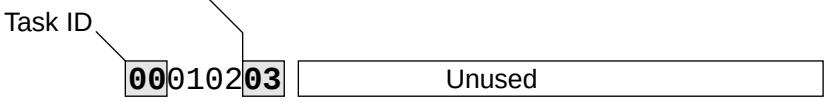


Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 20, Open Name/Announcement.

13 Close Name/Announcement Response

CP◄FS

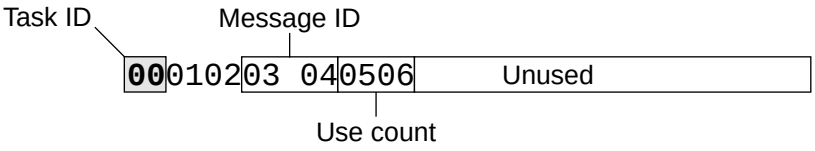
00	OK.
02	Scramble code or message ID mismatch (software error). Name/ announcement state is unchanged.
03	No name/announcement open.



14 Close New Message

CP➤FS

Requests the file system to permanently store the new message (that is, enter it into the message chain and set its use count) and return to the high-level message protocol.

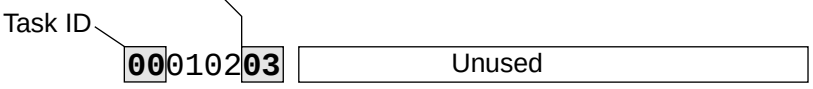


Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 22, Open New Message.
05-06	Use count	Use count to set for message. Must be greater than zero.

15 Close New Message Response

CP◄FS

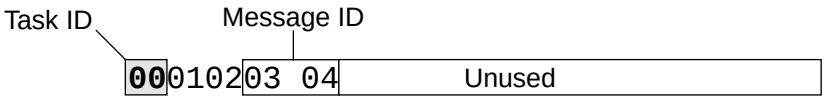
00	OK.
01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error). Message state is unchanged.
03	No new message open.
04	No data written.
06	DMA time-out on prior operation. System re-boot required.



16 Close Old Message

CP➤FS

Requests termination of the Read Old Message protocol and return to the high-level message protocol.

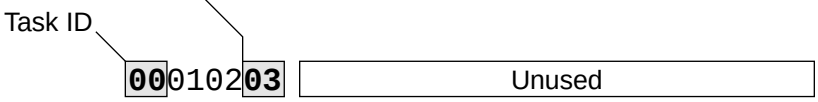


Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 24, Open Old Message.

17 Close Old Message Response

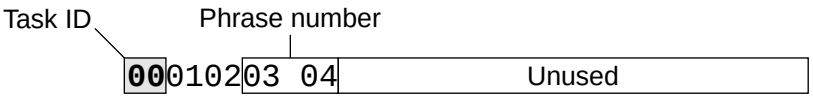
CP◄FS

00	OK.
01	Unrecoverable drive error (FS386 only)
02	Scramble code or message ID mismatch (software error). Message state is unchanged.
03	No old message open.



18 Close Phrase

CP➤FS

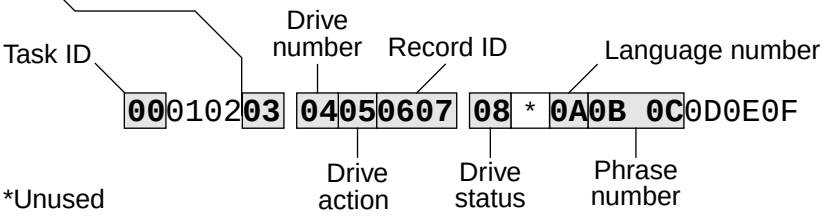


Offset	Label	Field Description
03-04	Phrase number	Redundant here. It must match the phrase number given in file system message 26, Open Phrase.

19 Close Phrase Response

CP◄FS

00	OK. Offset 04-0C are unused.
01	Unrecoverable drive error. Phrase state is unchanged.
02	Phrase ID mismatch (software error). Phrase state is unchanged.
03	No phrase open.
04	No data written. Next phrase operation must be file system message 26, Open Phrase.
06	DMA time-out on prior operation. System re-boot required. Offset 04-0C are unused.
07	Incorrect phrase table.

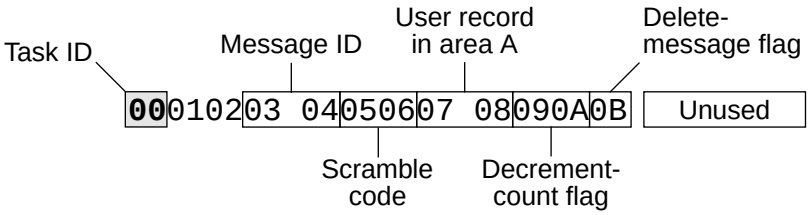


Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

1A Decrement Use Count

CP➤FS

Causes the file system to decrement the use count of a message and, if the use count becomes zero, delete the message from the system. The scramble code is included for verification.

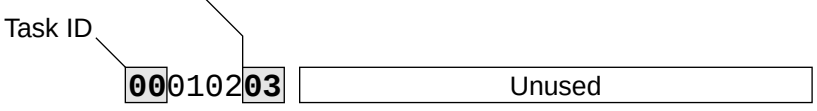


Offset	Label	Field Description
07-08	User record in area A	Number of the user record in area A, if any. This field is only used for troubleshooting.
09-0A	Decrement-count flag	If greater than zero, the file system will decrement the use count.
0B	Delete-message flag	If greater than zero, the file system will delete the message when its use count becomes zero.

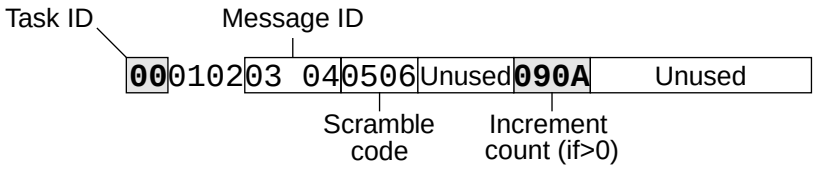
1B Decrement Use Count Response

CP◄FS

00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch (software error or deleted message).
04	Use count is zero (software error or deleted message).
06	DMA time-out on prior operation. System re-boot required.

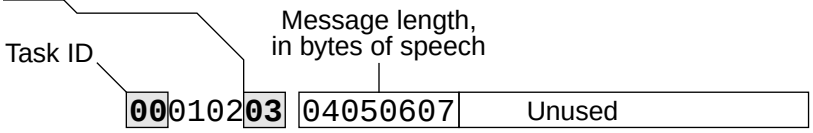


1C Increment Use Count CP➤FS



1D Increment Use Count Response CP◄FS

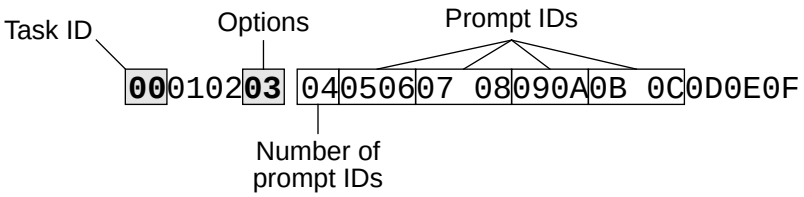
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch (software error or deleted message).
04	Use count is zero (software error or deleted message).
06	DMA time-out on prior operation. System reboot required.



1E Load Prompt IDs

CP➤FS

Adds up to four prompt IDs to the list of prompts to be retrieved.



Offset	Label	Field Description
03	Options	A flag field, the value is a sum of: 01 (Bit 0 set.) Clear prompt ID list before adding the IDs in this request. This is the beginning of a prompt request sequence. 02 (Bit 1 set.) Last load. The next request will be file system message 2E, Read Prompt Buffer. 04 (Bit 2 set.) “Prompt IDs” are really phrase numbers.

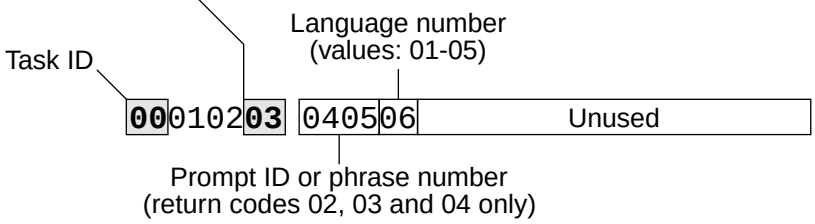
1F Load Prompt IDs Response

CP◄FS

Return codes 00-06 are used with prompt IDs (in the request message, bit 2 of offset 03 is zero). Return codes 00 and 0A-0F are used with phrase numbers (in the request message, bit 2 of offset 03 is one).

If there is a problem, run phrase verify/garbage collect to determine which language area is involved.

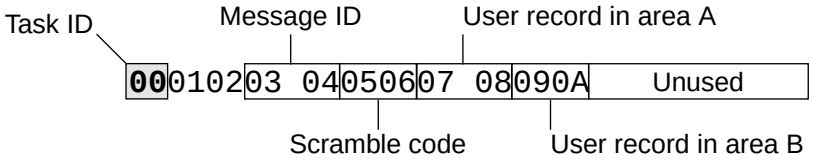
00	Meaning depends on bit 2 in offset 03 of the request message. Bit 2=0: OK. Bit 2=1: Phrase on disk. Continue playback sequence.
01	Too many prompt ID's (list overflow).
02	Bad prompt ID.
03	Phrase not recorded.
04	Obsolete phrase.
05	Null phrase, cancel playback.
06	Invalid phrase ID in formatted play table.
0A	Phrase is in RAM. Continue playback sequence.
0B	Phrase not stored. Cancel playback sequence.
0C	Phrase is obsolete. Cancel playback sequence.
0D	Bad record, full. Cancel playback sequence.
0E	Bad record, first half. Cancel playback sequence.
0F	Bad record, second half. Cancel playback sequence.



20 Open Name/Announcement

CP➤FS

Initiates processing of an old message as a name/announcement (that is, one which will not be repositioned during reading).

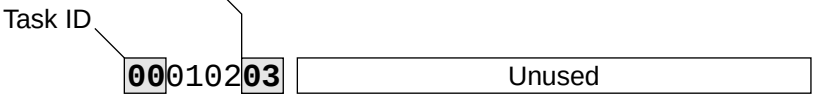


Offset	Label	Field Description
07-08	User record in area A	Number of the user record in area A, if any. This field is only used for troubleshooting.
09-0A	User record in area B	Number of the user record in area B, if any. This field is only used for troubleshooting.

21 Open Name/Announcement Response

CP◄FS

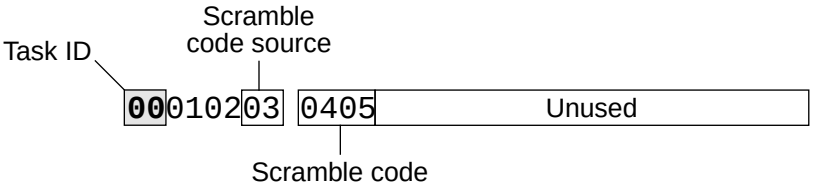
00	OK.
01	Unrecoverable drive error. Name/announcement state is unchanged.
0 2	Scramble code or message ID mismatch (software error or deleted message). Name/announcement state is unchanged.
03	Name/announcement is already open. Previous one is left open.
04	Use count is zero (software error or deleted message). Name/announcement state is unchanged.
06	DMA time-out on prior operation. System re-boot required.



22 Open New Message

CP➤FS

Initiates the recording of a user message.



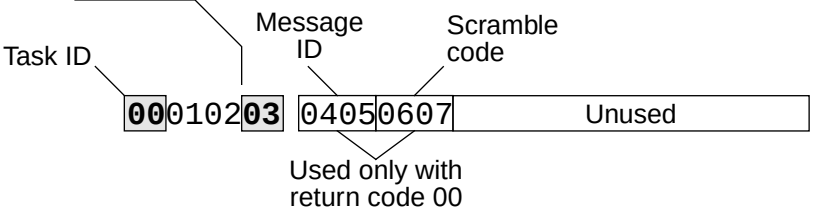
Offset	Label	Field Description
03	Scramble code source	00 Generate new scramble code. 01 Use scramble code in offset 04-05.
04-05	Scramble code	Scramble code for new message. Used only when offset 03 holds 01.

23 Open New Message Response

CP◄FS

If the return code is 00 (OK), the Write New Message protocol is initiated. Otherwise, control remains in the high-level message protocol.

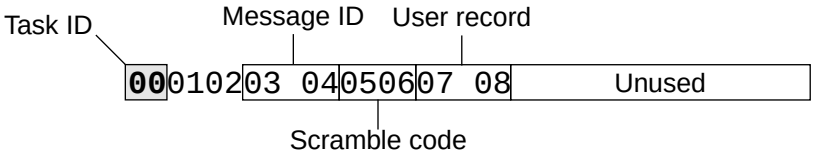
00	OK.
01	Unrecoverable drive error. Message is not opened.
03	Message is already open. Message state is unchanged.
04	No space left on disk. Message is not opened.
12	Free space table corrupted.



24 Open Old Message

CP➤FS

Initiates processing of an old (pre-existing) message.



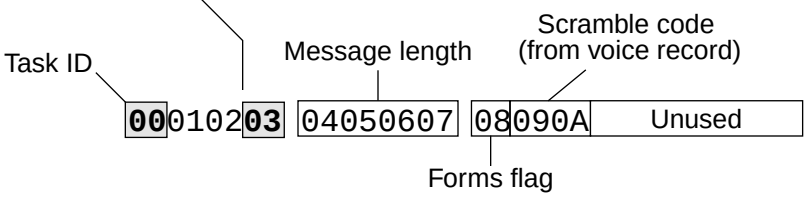
Offset	Label	Field Description
07-08	User record	Number of the user record which contains the message, if known. This field is only used for troubleshooting.

25 Open Old Message Response

CP◄FS

If the return code is 00 (OK), the Read Old Message protocol is initiated. Otherwise, control remains in the high-level message protocol.

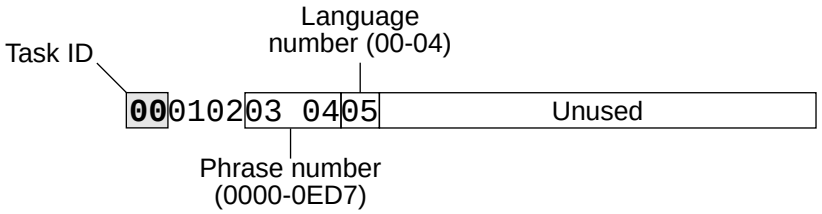
00	OK.
01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error or deleted message.) Message state is unchanged.
03	Message already open. Message state is unchanged.
04	Use count is zero (software error or deleted message). Message state is unchanged.
06	DMA time-out on prior operation. System re-boot required.



Offset	Label	Field Description
04-07	Message length	Length of message, in bytes of speech.
08	Forms flag	00 Not a forms message 01 Forms message

26 Open Phrase

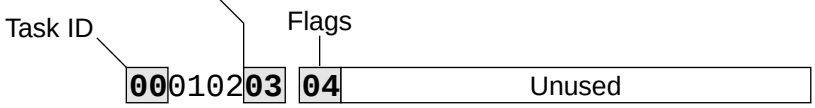
CP➤FS



27 Open Phrase Response

CP◄FS

00	OK.
01	Illegal language number. Phrase state is unchanged.
02	Illegal phrase number. Phrase state is unchanged.
03	Phrase already open. Phrase state is unchanged.
04	Drive error.
05	Drive full.



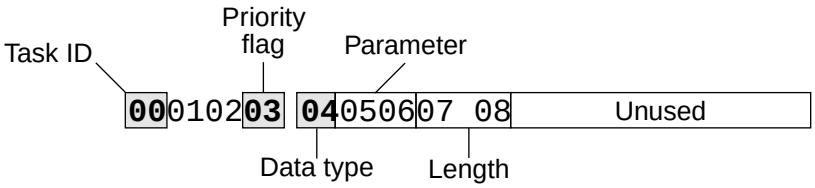
Offset	Label	Field Description
04-05	Flags	Value is sum of: 01 (Bit 0 set.) Phrase is obsolete and is not being stored. 02 (Bit 1 set.) Phrase is duplicate and is not being stored.

28 Read Data

CP➤FS

Sent by the CP to request reading of non-speech information. For multiple record requests, as many complete records as will fit on a track are read, starting with the record specified by offset 05-06, which must be on a track boundary.

For data types 15, 16, and 17, the message will show FFFF instead of 2800 at offsets 02 and 03. You can tell that the message type should be interpreted as 28 because it will be followed by message type 29.



Offset	Label	Field Description
03	Priority flag	00 High priority 01 Low priority
04	Data type	See Section 3.2.2, “Read and Write Data Types,” on page 478.
05-06	Parameter	Depends on the data type in offset 04. See Section 3.2.2, “Read and Write Data Types,” on page 478.
07-08	Length	Maximum number of bytes to read (that is, size of CP buffer): 15 Community number—1k byte 16 Attendant schedule—512 bytes 17 Multiple community—10k bytes

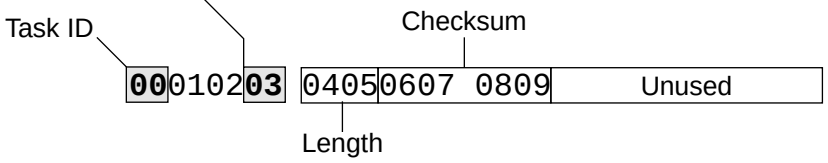
29 Read Data Response

CP◄FS

Sent by the file system when it is ready for DMA after reading data, or to indicate an error.

If the data type in offset 04 of the request message is 18 (raw phrase), the return code will indicate the last buffer of the phrase (state of phrase is closed) by setting the high-order digit to 8. For example, 80 would indicate the last buffer and OK.

00	OK.
01	Unrecoverable drive error.
02	Illegal data type.
03	No changed user record, node not assigned, or not an opened phrase.
04	Bad user or node number.
05	Obsolete data file.
06	DMA time-out on prior operation. System re-boot required.
07	Went past end of file.
08	Invalid length.
09	Sequence number earlier than current block.
0A	Not first block to be read.
0B	Bad block.

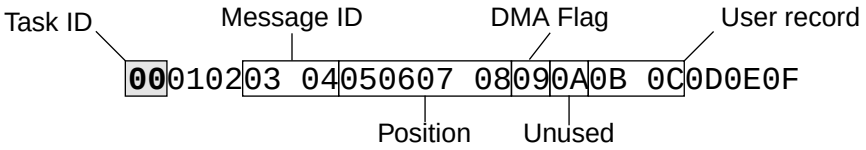


Offset	Label	Field Description
04-05	Length	Length of data read, or length of phrase in bytes of speech.
06-09	Checksum	Checksum of data read. Checksum is 4-byte end-around carry add starting with CA410ABE. The 4-byte words are in Intel order; incomplete ones are filled with high-order zeroes.

2A Read Message Buffer

CP➤FS

Sent by the CP when a line card is ready to receive a buffer of speech.



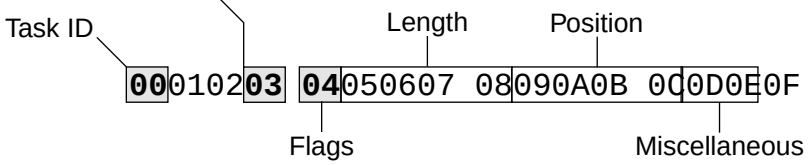
Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 22, Open Old Message or returned by file system message 23, Open New Message Response.
05-08	Position	Position to read, relative to beginning of message, in bytes of speech.
09	DMA Flag	00 Perform DMA to line task. 01 Do not perform DMA to line task.
0B-0C	User record	Number of the user record with the message, if known. This field is used only for troubleshooting.

2B Read Message Buffer Response

CP◄FS

Sent by the file system when it is ready for DMA to send a speech buffer or to indicate that an error occurred in reading a speech buffer. The buffer may begin before the position specified by the request message, but the requested position must be in the buffer. The position of the beginning of the buffer is returned so that the offset of the requested position may be determined.

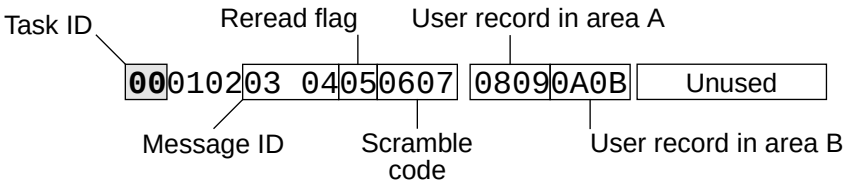
00	OK.
01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error or deleted message). Message state is unchanged.
03	Requested position is past end of message. Message state is unchanged.
07	Line card checksum error.
11	Drive unavailable.



Offset	Label	Field Description
04	Flags	01 (Bit 0 set.) Last buffer in message. 02 (Bit 1 set.) Forms-marked message buffer.
05-08	Length	Length of speech in buffer, in bytes of speech.
09-0C	Position	Position of beginning of buffer, relative to beginning of message, in bytes of speech.
0D-0E	Miscellaneous	Scramble code (LSB of message ID).

2C Read Name/Announcement Buffer CP➤FS

Sent to the file system when a line card is ready to receive a speech buffer with a name or announcement.



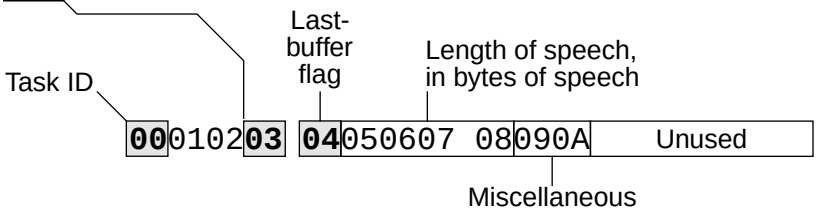
Offset	Label	Description of Packet Data
03-04	Message ID	Redundant here. It must match the ID given in file system message 20, Open Name/Announcement.
05	Reread flag	00 Read next buffer. 01 Reread previous buffer.
06-07	Scramble code	This is here only for troubleshooting; it is not used by the system.
08-09	User record in area A	Number of the user record in area A, if any. This field is used only for troubleshooting.
0A-0B	User record in area B	Number of the user record in area B, if any. This field is used only for troubleshooting.

2D Read Name/Announcement Buffer Response

CP◄FS

Sent by the file system when it is ready for DMA to send a speech buffer with a name or announcement to a line card.

00	OK.
01	Unrecoverable drive error. Name/announcement state is unchanged.
02	Scramble code or message ID mismatch (software error or deleted message). Name/announcement state is unchanged.
03	Name/announcement not open.
06	DMA time-out on prior operation. System reboot required.
07	Line card checksum error.

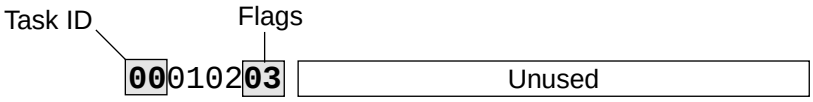


Offset	Label	Description of Packet Data
04	Last-buffer flag	00 This is **not** the last buffer. 01 This is the last buffer.
09-0A	Miscellaneous	Scramble code (least-significant byte of the message ID).

2E Read Prompt Buffer

CP➤FS

Sent to the file system when a line card is ready to receive a speech buffer.



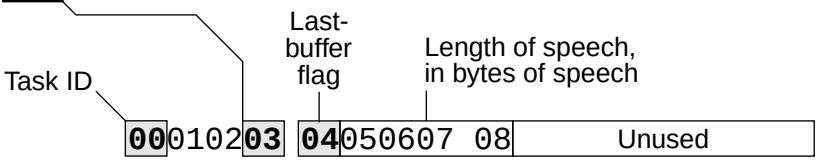
Offset	Label	Field Description
03-04	Flags	00 Read next buffer. 01 Reread last buffer.

2F Read Prompt Buffer Response

CP◄FS

Sent by the file system when it is ready for DMA to send a speech buffer to a line card.

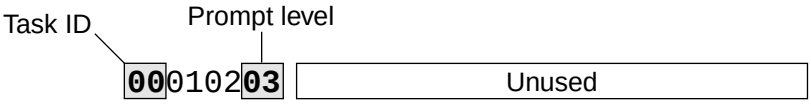
00	OK.
01	Unrecoverable drive error. Prompt state is unchanged.
02	Past end of prompt list.
03	No prompt list built.
06	DMA time-out on prior operation. System re-boot required.



Offset	Label	Field Description
04-05	Last-buffer flag	00 Not the last buffer. 01 Last buffer for all prompts in list.

30 Set Prompt Level

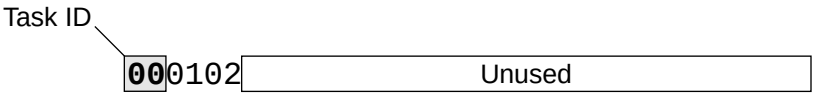
CP➤FS



Offset	Label	Field Description
03	Prompt level	00 Language 1, rapid prompts 01 Language 1, standard prompts 02 Language 1, extended prompts 03 Language 2, rapid prompts 04 Language 2, standard prompts 05 Language 2, extended prompts 06 Language 3, rapid prompts 07 Language 3, standard prompts 08 Language 3, extended prompts 09 Language 4, rapid prompts 0A Language 4, standard prompts 0B Language 4, extended prompts 0C Language 5, rapid prompts 0D Language 5, standard prompts 0E Language 5, extended prompts

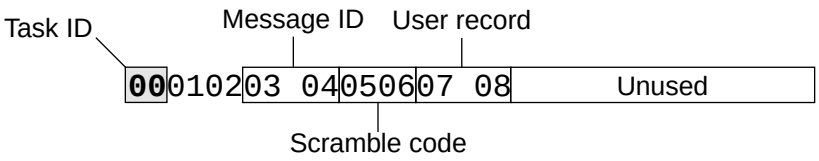
31 Set Prompt Level Response

CP◄FS



32 Skip to Old Message End

CP➤FS

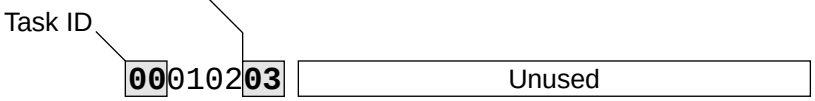


Offset	Label	Field Description
03-04	Message ID	Redundant here. It must match the ID given in file system message 24, Open Old Message.
07-08	User record	Number of the user record which contains the message, if known. This field is only used for troubleshooting.

33 Skip to Old Message End Response

CP◄FS

01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error or deleted message). Message state is unchanged.
03	No old message open.
04	Use count is zero (software error or deleted message). Message state is unchanged.
06	DMA time-out on prior operation. System re-boot required.

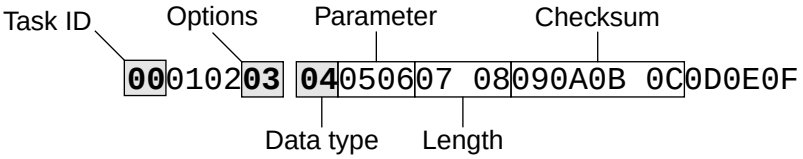


34 Write Data

CP➤FS

Sent by the CP to request writing of non-speech information.

Following this request message will be a response message indicating that the file system is ready to start writing. Following that will be a “complete” message indicating that the writing is finished.



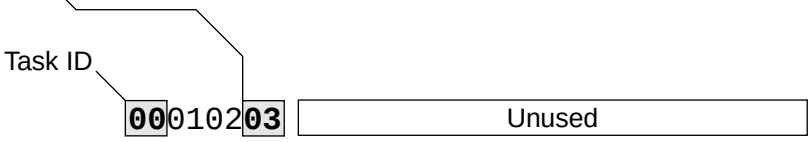
Offset	Label	Field Description
03	Options	Bit 0 sets the priority. Bit 1 sets the writing method. 00 High priority, standard data write 01 Low priority, standard data write 02 High priority, special XDLD data write 03 Low priority, special XDLD data write
04	Data type	See Section 3.2.2, “Read and Write Data Types,” on page 478.
05-06	Parameter	Depends on the data type in offset 04. See Section 3.2.2, “Read and Write Data Types,” on page 478.
07-08	Length	Maximum number of bytes to read (that is, size of CP buffer): 15 Community number—1k byte 16 Attendant schedule—512 bytes 17 Multiple community—10k bytes
09-0C	Checksum	Checksum of data.

36 Write Data Response

CP◄FS

Sent by the file system when it is ready for DMA transfer of data to be written.

00	OK.
01	Unrecoverable drive error.
02	Illegal data type.
03	Write changed user record or node not assigned error.
04	Bad user or node record number.
06	DMA time-out on prior operation. System re-boot required.
07	Went past end of file.
08	Invalid length.

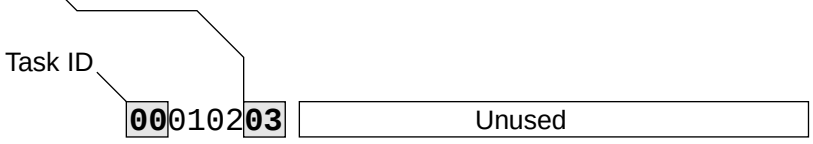


35 Write Data Complete

CP◄FS

Sent by the file system at the end of a data transfer and data write.

00	OK.
01	Unrecoverable drive error.
02	Checksum error on data transferred from CP.
03	Not an opened phrase.
04	No more space.
06	DMA time-out on prior operation. System re-boot required.
10	Attempted to write a record 0 or 1 with data of the incorrect format.
11	Illegal attempt to write data on cylinder 0.
12	RAM error was detected when write attempted to get a new record.
13	RAM format was incorrect when attempting to write record 0 or 1.
70	Validity check error.
E1	Invalid data in fifth user record of track.
E2	Invalid data in fourth user record of track.
E3	Invalid data in third user record of track.
E4	Invalid data in second user record of track.
E5	Invalid data in first user record of track.
E7	Invalid SST data.

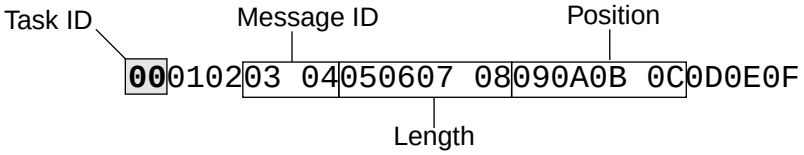


37 Write Message Buffer

CP➤FS

Sent by the CP when a line card is ready to send a buffer of recorded speech.

Following this request message will be a response message indicating that the file system is ready to start writing. Following that will be a “complete” message indicating that the writing is finished.



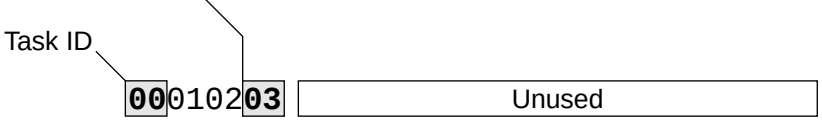
Offset	Label	Field Description
03-04	Message ID	The message ID is redundant. It must match the message ID returned by file system message 23, Open New Message Response.
05-08	Length	Length of buffer, in bytes of speech. The upper (MSB) byte of the length of speech indicates “forms-marked” message buffer. Zero indicates that it is not forms-marked; any other value indicates that it is forms-marked.
09-0C	Position	Position to write, relative to beginning of message, in bytes of speech. A position prior to the end of the message implies erasure of the remainder of the message before writing. The position must be on a speech buffer boundary.

38 Write Message Buffer Complete

CP◄FS

Sent when a buffer of speech has been written to disk.

00	OK.
01	Unrecoverable drive error. Message state is unchanged.
06	DMA time-out on prior operation. System re-boot required.
08	Line card checksum error.
10	Attempted to write a record 0 or 1 with data of the incorrect format.
11	Illegal attempt to write data on cylinder 0.
12	RAM error was detected when write attempted to get a new record.
13	RAM format was incorrect when attempting to write record 0 or 1.

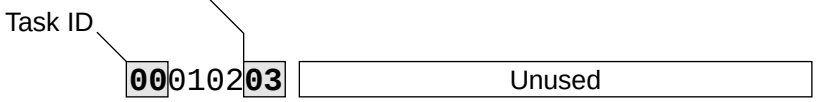


39 Write Message Buffer Response

CP◄FS

Sent when the file system is ready for DMA to receive a buffer of speech.

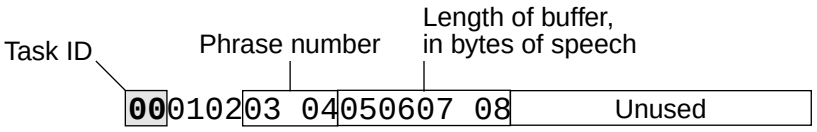
00	OK.
01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error). Message state is unchanged.
03	No new message open.
04	Bad position. Message state is unchanged.
05	Disk is full after the current write. Further writes will get return code 07.
06	DMA time-out on prior operation. System re-boot required.
07	Disk full. Current write cannot be done.
08	System is full after the current write.



3A Write Phrase Buffer

CP➤FS

Following this request message will be a response message indicating that the file system is ready to start writing. Following that will be a “complete” message indicating that the writing is finished.



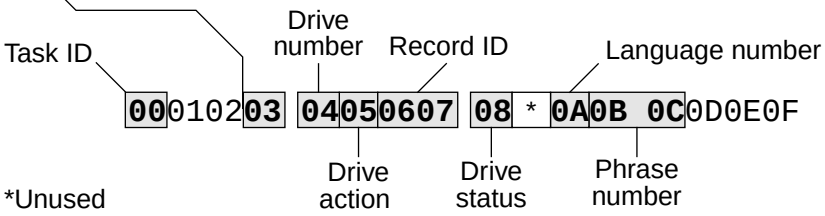
Offset	Label	Field Description
03-04	Phrase number	Must match that given in file system message 26, Open Phrase.

3B Write Phrase Buffer Complete

CP◄FS

Sent when a buffer of speech has been written to disk.

00	OK.
01	Unrecoverable drive error.
06	DMA time-out on prior operation. System re-boot required.
10	Attempt to write a record 0 or 1 with data of the incorrect format.
11	Illegal attempt to write data on cylinder 0.
12	RAM error was detected when write attempted to get a new record.
13	RAM format was incorrect when attempting to write record 0 or 1.
2F	Out of space.

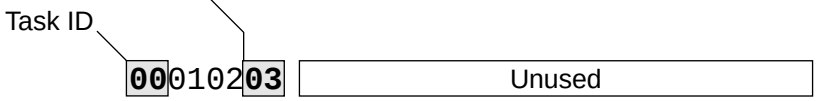


Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

3C Write Phrase Buffer Response

CP◄FS

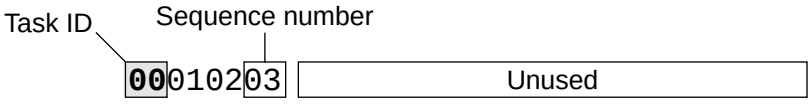
00	OK.
02	Phrase number mismatch. Phrase state unchanged.
03	No phrase open.
04	Half buffer last time (file system software error).
06	DMA time-out on prior operation. System re-boot required



3D Reset A Channel

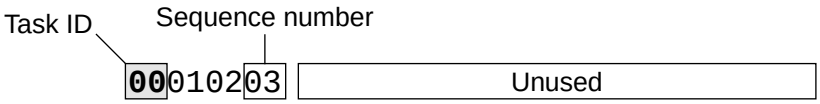
CP➤FS

The sequence number will be returned in the response message to coordinate multiple reset messages (that is, if response is slow).



3E Reset A Channel Response

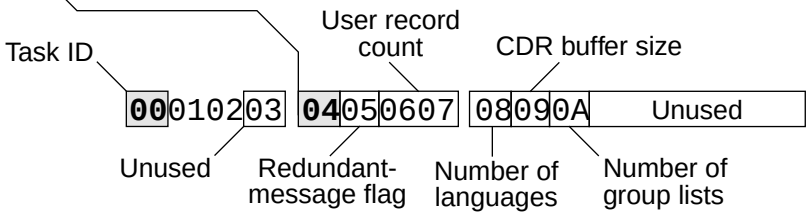
CP◄FS



3F Install Drive

CP➤FS

80	Install drive 0.
⋮	
97	Install drive 23.
98	De-install drive 0.
⋮	
AF	De-install drive 23.
B0	System initialization (de-install all drives and reinstall 0 and M0).
B1	Install drive 1 for redundant data only.
B2	Make message space available on drive 1 (previously installed for redundant data).
B3	Recover record 0 (same as B0 except that database is not altered).
B4	Replace message drive 0.
⋮	
C3	Replace message drive 15.



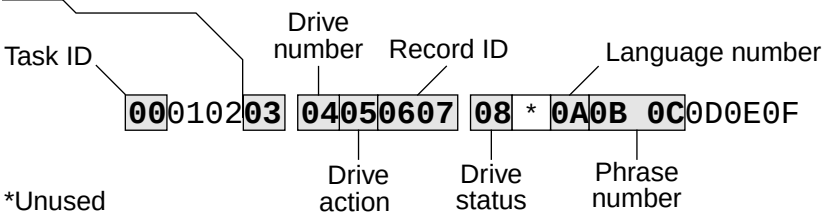
Offset	Label	Field Description
05	Redundant-message flag	Used with actions 80-97 and B0. 00 No redundant messages 01 Redundant messages
06-07	User record count	Used with action B0.
08	Number of languages	Set number of languages: 01-05. Used with actions B0 and B3. Must have Maxtor drive for more than one language.
09	CDR buffer size	Set CDR buffer size. Used with actions B0 and B3. 01 2 records 02 202 records 03 7020 records (assumed)
0A	Number of group lists	Set number of group lists. Used with actions B0 and B3. 01 50 02 2060 (assumed)

40 Install Drive Response

CP◄FS

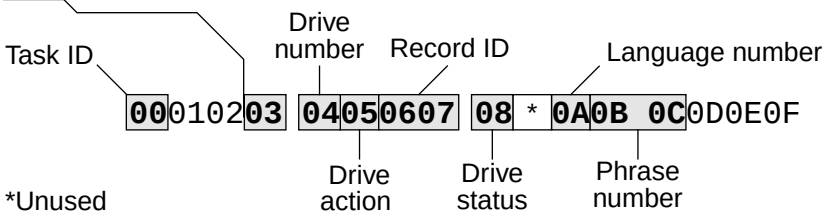
Offsets 04-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases. References to primary and secondary drives are about redundant pairs.

00	OK.
01	Unrecoverable drive error.
02	Illegal drive number.
03	Drive already installed on attempt.
04	Illegal parameter.
05	Attempt to install odd drive as redundant.
06	Could not select primary drive to be installed.
07	Could not read serial number of primary drive.
08	Validity check error on record 1 of primary drive.
09	Insufficient spares on primary drive.
0A	Error when writing new spares on record 1 of primary drive.
0B	Serial number from primary drive matches serial number of a drive already installed.
0C	Could not select secondary drive to be installed.
0D	Could not read serial number of secondary drive.
0E	Validity check error on record 1 of secondary drive.
0F	Insufficient spares on secondary drive.
10	Error when writing new spares on record 1 of secondary drive.
11	Serial number from secondary drive matches serial number of a drive already installed.
14	Attempt to de-install odd drive, which is redundant.
15	Number of users is incorrect.
16	Attempt to de-install drive that is not installed.
17	Write to record 0 or 1 failed.



Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

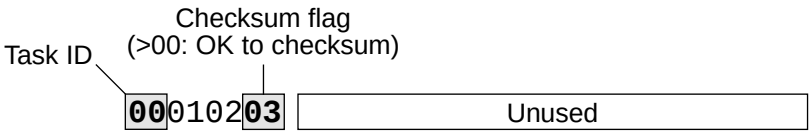
18	Failed on clearing data base 4 = track, 6 = alternate track.
19	(0) Could not get buffer.
1A	(1) Illegal qualifier in data type.
1B	(2) Copy from 0 to 1 failed—read.
1C	(3) Copy from 0 to 1 failed—write.
1D	Drive 1 msg control bits invalid.
1E	Drive 1 not now installed as data only.
1F	No select.
20	Could not read record 0.
21	Could not read used phrase list.
22	Could not read full phrase.
23	Phrase number is wrong—full phrase.
24	Format error—full phrase.
25	Could not write full phrase.
26	Could not write used phrase list.
27	(34) for first half record short phrase.
28	(35) for first half record short phrase.
29	(36) for first half record short phrase.
2A	(37) for first half record short phrase.
2B	(34) for second half record short phrase.
2C	(35) for second half record short phrase.
2D	(36) for second half record short phrase.
2E	(37) for second half record short phrase.
2F	Out of space.



Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

42 Checkpoint

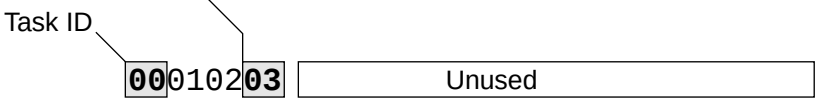
CP➤FS



43 Checkpoint Response

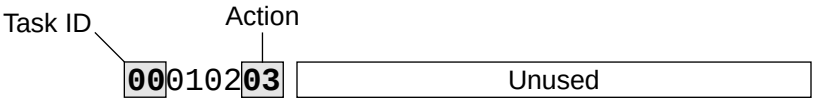
CP◄FS

01	Unrecoverable drive error.
02	File card RAM fail. Re-boot required.
06	DMA time-out on prior operation. System re-boot required.



44 Space Available Request

CP➤FS

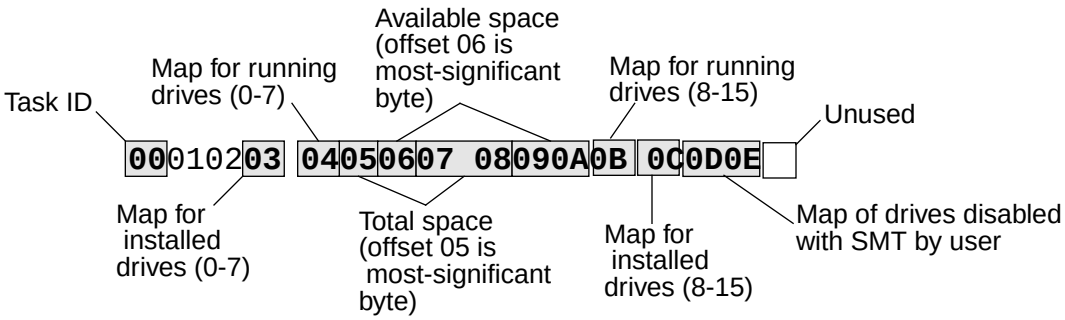


Offset	Label	Field Description
03	Action	00 Get space for messages (pre-FCP command). 02 Get space for phrases. 03 Get used message space. 04 Get drive state.

45 Space Available Request Response CP◄FS

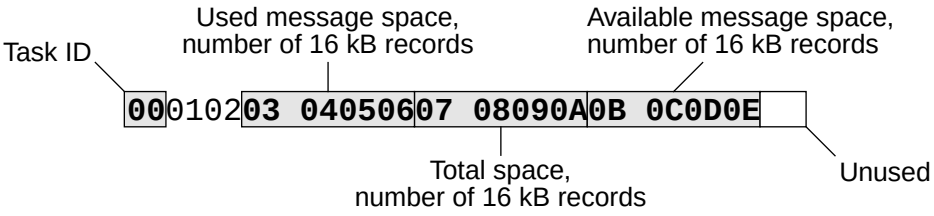
The format depends on the option setting in offset 03 of the request message.

Actions 00 and 02



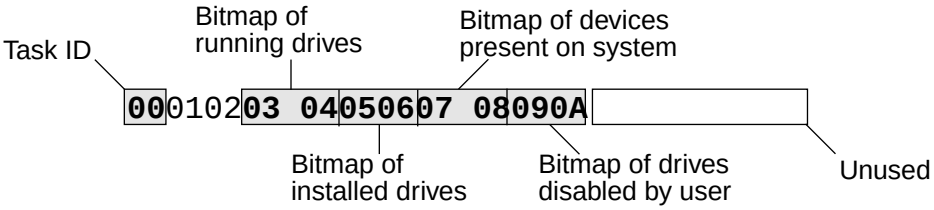
Offset	Label	Field Description
03	Map for drives installed (drives 0-7)	Bitmap of installed drives. Bits 0-7 indicate the status of drives 0-7 respectively. To read, convert to binary. Set bits indicate installed drives.
04	Map for drives running (drives 0-7)	Bitmap of running drives. Bits 0-7 indicate the status of drives 0-7 respectively. To read, convert to binary. Set bits indicate running drives.
05, 07-08	Total space	Total number of 16-kilobyte records in file system, including overhead. To read, arrange the bytes in the following order: 05 08 07.
06, 09-0A	Available space	Number of 16-kilobyte records available for new messages or phrases (depending on the option setting). To read, arrange the bytes in the following order: 06 0A 09.
0B	Map for drives installed (drives 8-15)	Bitmap of installed drives. Bits 8-15 indicate the status of drives 8-15 respectively. To read, convert to binary. Set bits indicate installed drives.
0C	Map for drives running (drives 8-15)	Bitmap of running drives. Bits 8-15 indicate the status of drives 8-15 respectively. To read, convert to binary. Set bits indicate running drives.
0D-0E	Map of drives disabled by user	Bitmap of drives disabled via SMT by the user.

Action 03



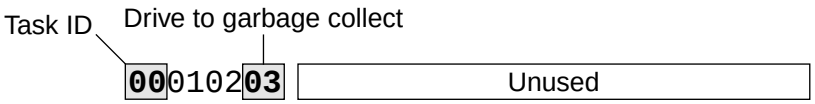
Offset	Label	Field Description
03-06	Used message space	Number of 16-kilobyte records currently used for messages.
07-0A	Total space	Total number of 16-kilobyte records in file system, including overhead.
0B-0E	Available message space	Number of 16-kilobyte records available for new messages.

Action 04



46 Garbage Collect Begin

CP➤FS

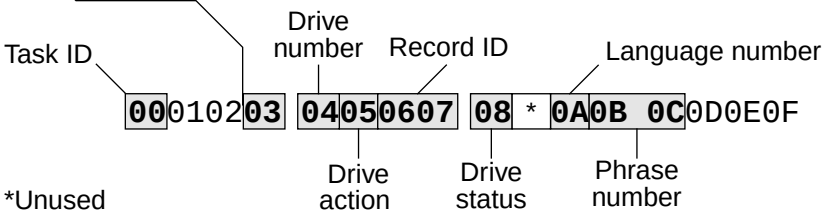


47 Garbage Collect Begin Response

CP◄FS

The format varies with the return code in offset 03. For return code 01 or return codes involving phrases, use the format below. For all other return codes, use the format on the next page.

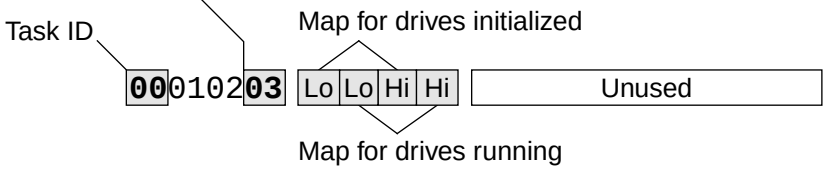
01	Unrecoverable drive error.
04	Invalid language number.
05	Verify failed.



Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

If offsets 04 and 05 do not match, or if the return code is not 00, the operation did not start.

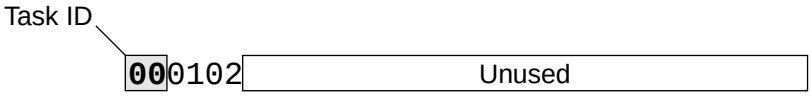
00	OK.
06	DMA time-out.
07	Installed drives not equal running drives or incorrect free space table.
08	Drive 0 of this file card not installed.
09	Drive 1 of this file card not installed.
0A	M2 not installed.
0B	M3 not installed.
0C	M4 not installed.
0D	M5 not installed.
0E	M6 not installed.
0F	M7 not installed.
10	M8 not installed.
11	M9 not installed.
12	M10 not installed.
13	M11 not installed.
14	M12 not installed.



Offset	Label	Field Description
04, 06	Map for drives initialized	Bit map of the drives that have been initialized. Offset 04 (Lo), bits 0-7 indicate the status of drives 0-7 respectively. Offset 06 (Hi), bits 0-3 indicate the status of drives 8-11 respectively. To read, convert to binary. Set bits indicate initialized drives.
05, 07	Map for drives running	Bit map of the drives that the system considers to be installed and usable. Offset 05 (Lo), bits 0-7 indicate the status of drives 0-7 respectively. Offset 07 (Hi), bits 0-3 indicate the status of drives 8-11 respectively. To read, convert to binary. Set bits indicate running drives.

48 Garbage Collect End

CP➤FS

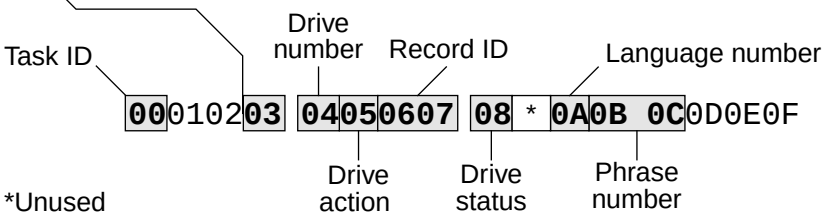


49 Garbage Collect End Response

CP◄FS

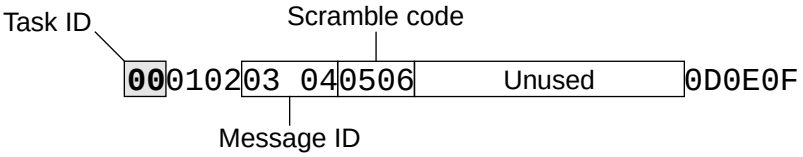
Offsets 04-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases.

00	OK.
01	Unrecoverable drive error.



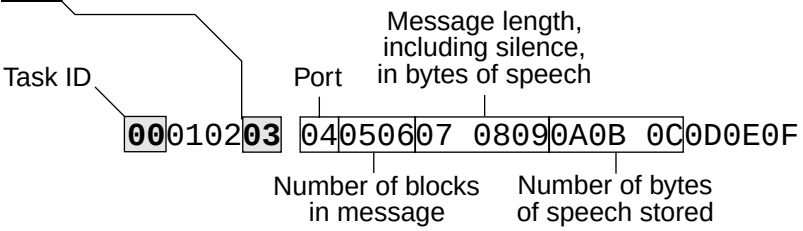
Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

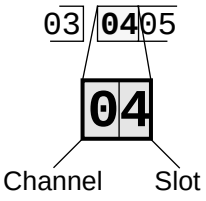
4A Garbage Collect Mark Message CP➤FS



4B Garbage Collect Mark Message Response CP◄FS

00	OK.
01	Unrecoverable drive error. Message is not marked.
02	Scramble code or message ID mismatch.
03	Scramble code or message ID mismatch. Message is not marked.
04	Use count is zero. Message is not marked.
05	Message was already marked—should not be counted again.



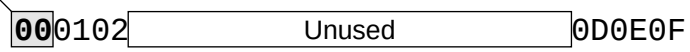
Offset	Label	Field Description
04	Port	Port on which the message was recorded. The port is identified with two 4-bit numbers:  **Channel**. Port on a line card. Interpret with Table 1-9, “Channel of the Peripheral Address,” on page 31. **Slot**. Card within a bank. Interpret with Table 1-8, “Bank and Slot of the Peripheral Address,” on page 30. Since the bank is not identified, check the peripheral address in offset 04-05 of the IORB header and the task ID of the message for help in identifying the card.

4C Check RAM Status

CP➤FS

Checks location 2D00 in static RAM for the value 5ABC. Then it computes a checksum for data stored in static RAM and checks it with the value stored there in power down.

Task ID

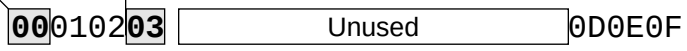


4D Check RAM Status Response

CP◄FS

00	OK.
02	Bad static RAM: bad checksum or not enough power to hold data.

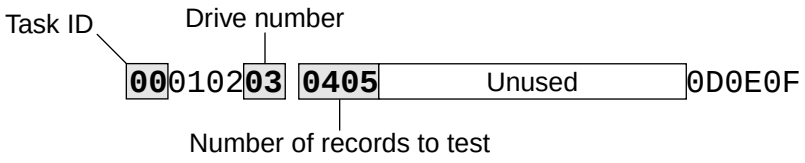
Task ID



52 Drive Test

CP➤FS

Tests only the free spaces on the drive by writing and reading random patterns to the record.

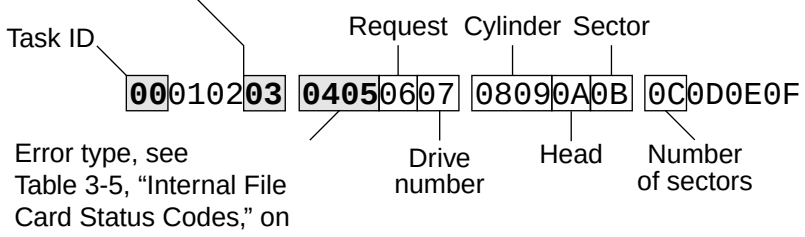


53 Drive Test Response

CP◄FS

The format of this control bus message depends on the system type and whether the error is a hard or soft disk error.

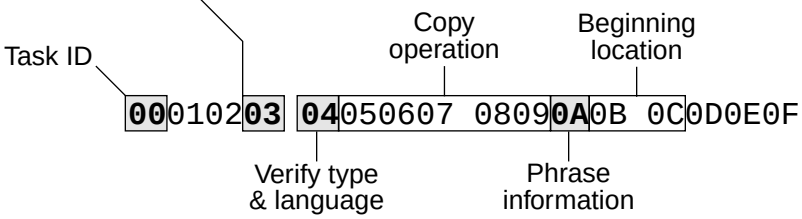
00	OK.
>00	Valid entry present.

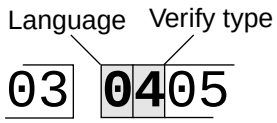
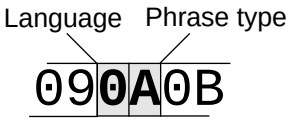


54 Drive Verify

CP➤FS

80	Verify software.
81	Verify phrases.
82	Verify system data tables.
83	Verify entire system.



Offset	Label	Field Description
04	Verify type & language	This field is actually two. Each is expressed as a four-bit number (one hex digit) as shown below.  **Language.** Valid values are 1-5, and F means all languages**.** **Verify type**: 0 Pre-copy verify 1 Post-copy (integrity) verify
05-09	Copy operation	No longer used.
0A	Phrase information	This field is actually two. Each is expressed as a four-bit number (one hex digit) as shown below.  **Language.** Valid values are 0, meaning no continuation, and 1-5 for the language area. **Phrase type**: 0 Both system and IVR application phrases 1 System phrases only 2 IVR application phrases only
0B-0C	Beginning location	Beginning track address for verify. Zero indicates an initial verify. For phrases, the phrase number to start with upon continuation.

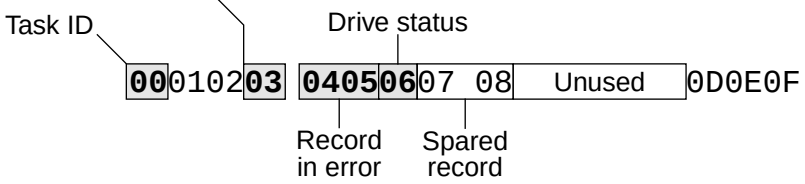
55 Drive Verify Response

CP◄FS

The format depends on the action code in offset 03 of the request.

Action Codes 80 and 82

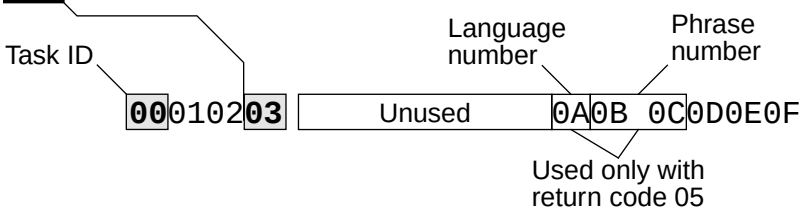
00	All copies good.
0X	Bad copy. The first four bits of the code indicate which copies are bad: Bit 0: Copy on 1st half of record of source bad. Bit 1: Copy on 2nd half of record of source bad. Bit 2: Copy on 1st half of record of destination bad. Bit 3: Copy on 2nd half of record of destination bad. On a post-copy verify, only bits 0 and 1 could be returned on an error, since only a single drive can be specified for verification.
18	Need to clear bad write table.



Offset	Label	Field Description
04-05	Record in error	Number of the record in error.
06	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
07-08	Spared record	Spared record number. Valid if record number in error is spared (data).

Action Code 81

01	Unrecoverable drive error.
02	Unknown.
03	Unknown.
04	Invalid language number.
05	Verify failed.
06	DMA time-out.
07	Incorrect free space table.

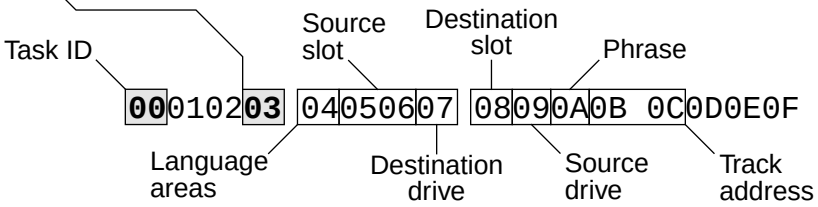


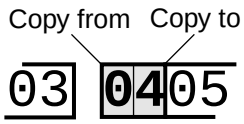
56 Drive Copy

CP➤FS

The format depends on the action code in offset 03.

80	Copy software.
81	Copy phrases.
82	Copy system data tables.
83	Copy entire system.



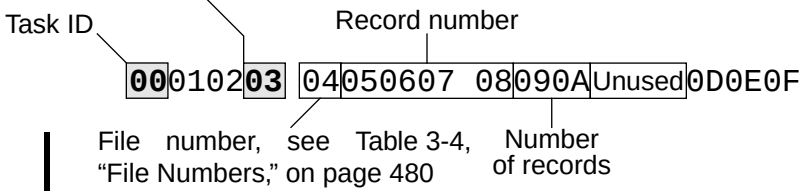
Offset	Label	Description of Packet Data
04	Language areas	Which language area to copy from and which to copy to. Each is expressed as a four-bit number (one hex digit) as shown below. Valid values are 1-5, and F means all languages. 
05-06	Source slot	Physical location of the source drive. Valid values: 00 - 0B.
07	Destination drive	Logical number of the destination drive.
08	Destination slot	Physical location of the destination drive.
09	Source drive	Logical number of the source drive.
0A	Phrase	Which phrases to copy: 00 Both system and IVR application phrases. 01 System phrases only. 02 IVR application phrases only.
0B-0C	Track address	Track to begin copy at. Zero indicates an initial copy.

57 Drive Copy Response

CP◄FS

Return codes 00-03 and 8B are for action codes 80 and 82. Return codes 00, 05-0A are for action codes 86 and 87. Return codes 80-82 are for action codes 84, 85 and 88. Return codes 01, 12 and 2F are for action code 81.

00	OK. Offsets 04-0C are not used.
01	Depends on the action code in offset 03 of the request (file system message 56, Drive Copy): Action code = 80 or 82: error on first half. Action code = 81: unrecoverable drive error.
02	Error on second half.
03	Cannot select drive.
05	Cannot select source drive.
06	Error on first half (source drive).
07	Error on second half (source drive).
08	Cannot select destination drive.
09	Error on first half (destination drive).
0A	Error on second half (destination drive).
12	Bad free space table when trying to get new record.
2F	Out of space.
80	Invalid message system drive number.
81	No more record left for substitution.
82	Full substitute table.
8B	Invalid file length.

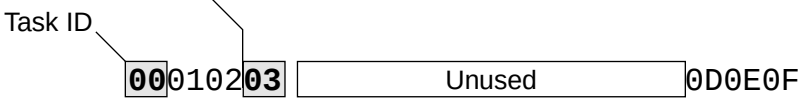


58 Return Error Counters

CP➤FS

Sent to the file system to retrieve the respective counters or error entries. The counters or error entries are cleared after being returned to the CP.

10	Return system wide hard error counters.
12	Return hard error entries from buffer.

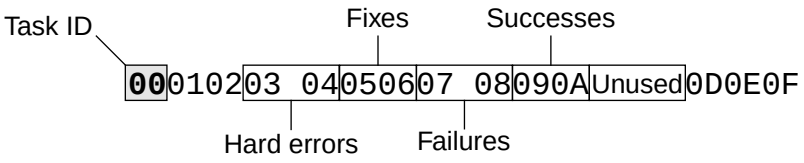


59 Return Error Counters Response

CP◄FS

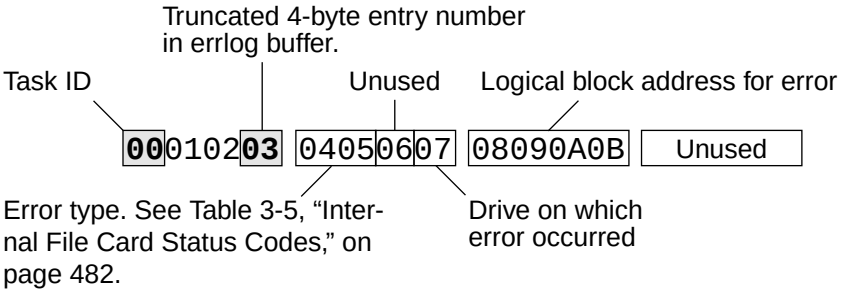
The format depends on the function code in offset 03 of the request (file system message 58, Return Error Counters).

Function Code 10 (Hard Error Counters)



Offset	Label	Field Description
03-04	Hard errors	Total number of hard errors on all drives.
05-06	Fixes	Number of automatic fixes of bad records.
07-08	Failures	Number of failures at automatic fixable attempts.
09-0A	Successes	Number of successful ECC fixes for read failures.

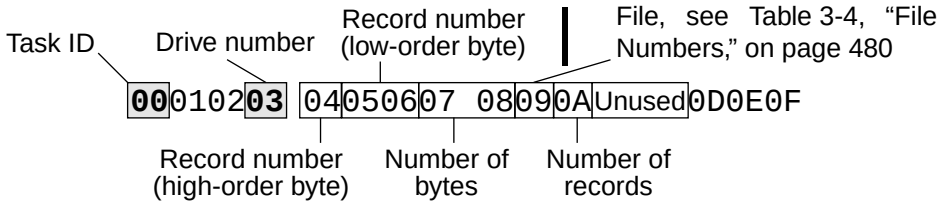
Function code 12



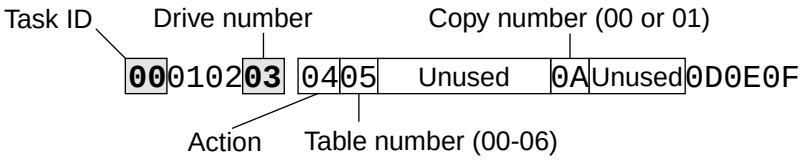
5A Read Half Record

CP➤FS

For file reads



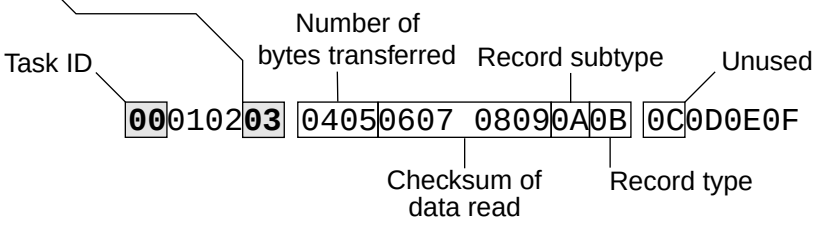
For system table reads



5B Read Record Response

CP◄FS

00	OK.
01	Unrecoverable drive error.
07	Track is flagged.



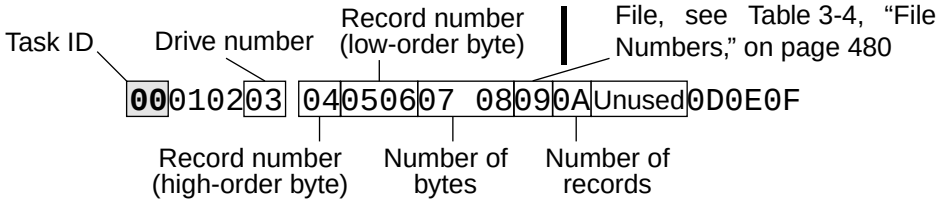
Offset	Label	Field Description
06-09	Checksum of data read	Checksum is a 4-byte end-around carry add starting with CA410ABE. The 4-byte words are in Intel order; incomplete ones are filled with high-order zeroes.

5C Write File Record

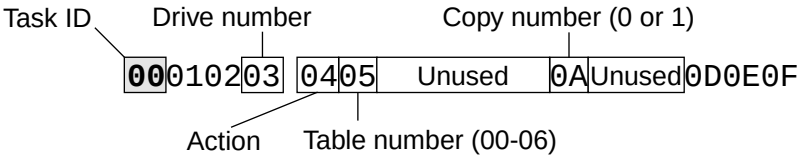
CP➤FS

Following this request message will be a response message indicating that the file system is ready to start writing. Following that will be a “complete” message indicating that the writing is finished.

For file writes



For system table writes

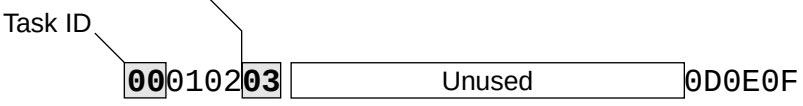


5D Write Record Response

CP◄FS

Sent by the file system when it is ready for DMA transfer of the record to be written.

00	OK.
01	Unrecoverable drive error.
07	Illegal function code.

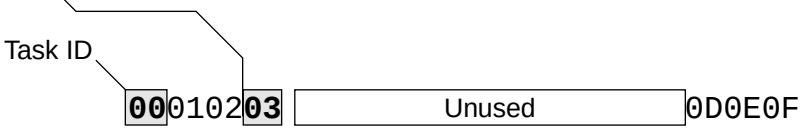


5E Write Record Complete

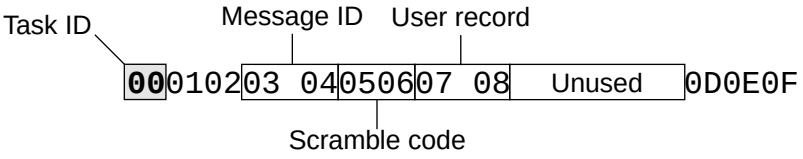
CP◄FS

Sent by the file system at the end of a record transfer and record write.

00	OK.
01	Unrecoverable drive error.
02	Checksum error on data transferred from CP.
06	DMA time-out on prior operation. System re-boot required.
10	Attempt to write a record 0 or 1 with data of the incorrect format.
11	Illegal attempt to write data on cylinder 0.
12	RAM error was detected when write attempted to get a new record.
13	RAM format was incorrect when attempting to write record 0 or 1.



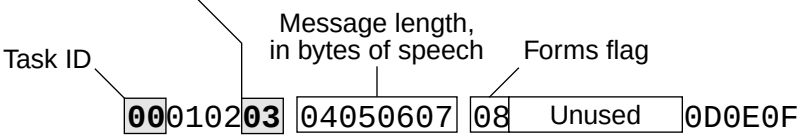
5F Get Length Of Old Message CP➤FS



Offset	Label	Field Description
07-08	User record	Number of the user record which contains the message, if known. This field is only used for troubleshooting.

60 Get Length Of Old Message Response CP◄FS

00	OK.
01	Unrecoverable drive error. Message state is unchanged.
02	Scramble code or message ID mismatch (software error or deleted message). Message state is unchanged.
03	Message already open. Message state is unchanged.
04	Use count is zero (software error or deleted message). Message state is unchanged.
06	DMA time-out on prior operation; system re-boot required.

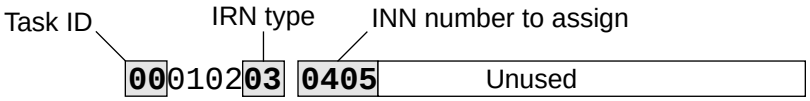


Offset	Label	Field Description
08	Forms flag	00 Not a forms message 01 Forms message

61 Assign Internal Record Number

CP➤FS

There are two file system message 61s, varying with direction. This is 61 as a CB-out message.



Offset	Label	Description of Packet Data
03	IRN type	00 IUN (Internal User Number) 01 INN (Internal Node Number)

62 Assign IRN Response

CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid type.
03	Invalid INN number.
04	No record available.
05	Node already assigned.
06	DMA time-out on prior operation. System reboot required.

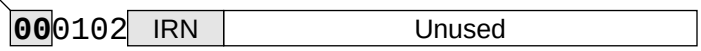


Offset	Label	Description of Packet Data
04-05	IRN	IUN or INN. IUNs range from 0080-3B17. INNs range from 4000-4200.
06-07	IUN	This will be the same as the IRN field if the request message specified IRN type 00.

63 Release IRN

CP➤FS

Task ID



Offset	Label	Description of Packet Data
03-04	IRN	IUN or INN. IUNs range from 0080-3B17. INNs range from 4000-4200.

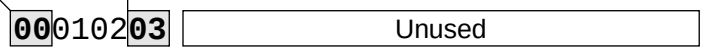
64 Release IRN Response

CP◄FS

In the case of an INN, the file system releases all of the EARs corresponding to that node.

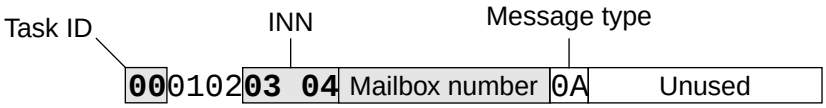
00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid IRN.
03	IRN is not assigned before. State is unchanged.
04	Type on record header mismatch (example, try to delete a user record that is assigned to node record).
05	Messages pending in that node. State is unchanged.
06	DMA time-out on prior operation. System reboot required.

Task ID



65 Assign EAR

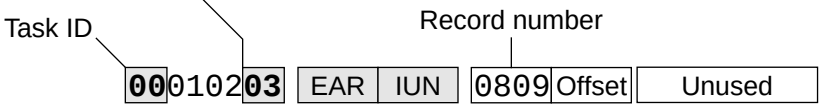
CP➤FS



66 Assign EAR Response

CP◄FS

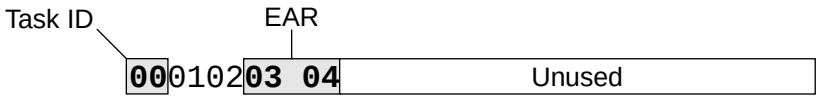
00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid INN.
03	INN is not assigned before.
04	No record available.
05	No EAR available.
06	DMA time-out on prior operation. System reboot required.
07	Mismatch header on EAR record.
08	Internal file card error.



Offset	Label	Description of Packet Data
04-05	EAR	External Address Reference number. EARs range from 4EA0-FFFF.
06-07	IUN	IUN corresponding to this EAR.

67 Return EAR

CP➤FS



68 Return EAR Response

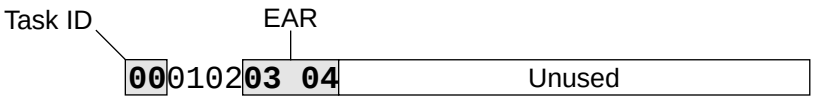
CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid or erased EAR (assigned before).
03	EAR is not assigned before. State is unchanged.
04	Invalid user record, node or EAR
06	DMA time-out on prior operation. System reboot required.



69 Release EAR

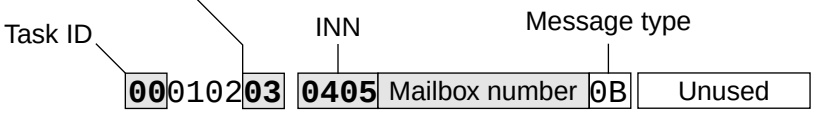
CP➤FS



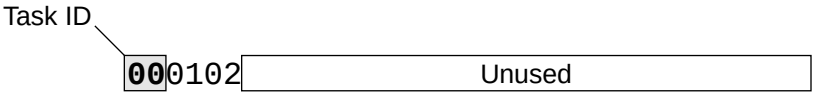
6A Release EAR Response

CP◄FS

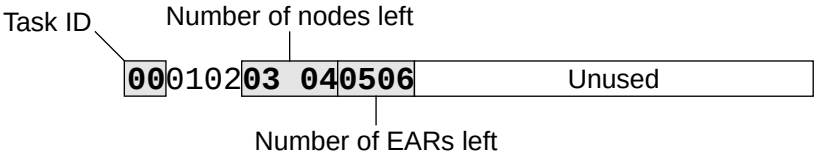
00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid EAR number.
03	EAR is not assigned before. State is unchanged.
06	DMA time-out on prior operation. System reboot required.



6B Return NODE and EAR Counter CP➤FS



6C Return NODE & EAR Counter Response CP◄FS

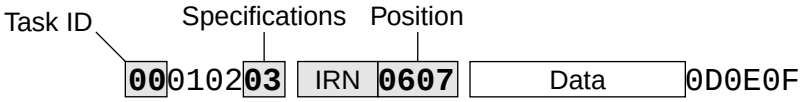


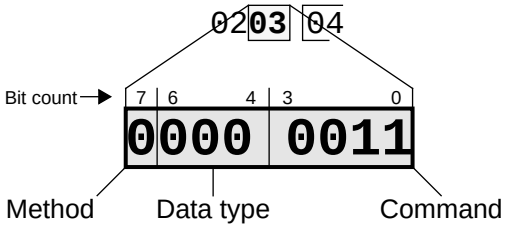
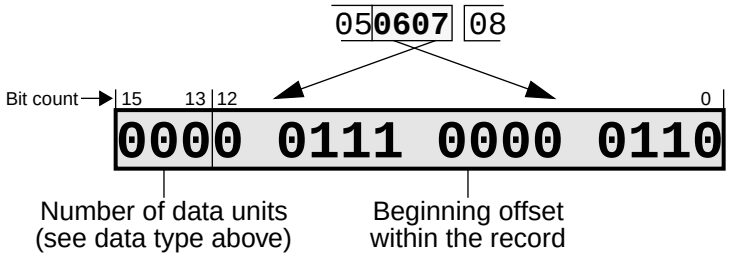
6D Update IUN/INN Record

CP➤FS

The format depends on whether the data is being passed in the control bus message or through a DMA operation. This is indicated in bit 7 of offset 03.

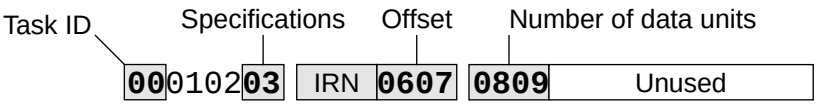
Control Bus Message (offset 03, bit 7 = 0)

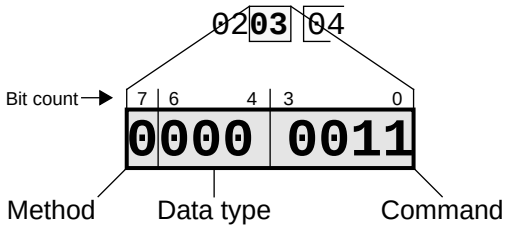


Offset	Label	Description of Packet Data
03	Specifications	This byte has three fields, as shown below. To read, convert to binary.  **Method.** How the data is being passed: 0 In the control bus message. 1 Through a DMA operation. **Data type.** Units of measure for the data: 0 Byte 1 Word (2 bytes) 2 Doubleword (4 bytes) **Command.** How to apply the data to the area specified by the position field: 0 Change data 1 Add 2 Subtract 3 Mask (AND) 4 Subtract and return the result 5 Mask (OR)
04-05	IRN	IUN or INN of the record. IUNs range from 0080-3B17. INNs range from 4000-4200.
06-07	Position	The location in the record to be updated. To read, transpose the two bytes and convert to binary as shown: 

DMA (offset 03, bit 7 = 1)

This request is followed by a response message, 6E, and an operation-complete message, 6F.

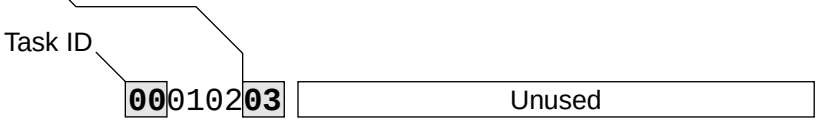


Offset	Label	Description of Packet Data
03	Specifications	This byte has three fields, as shown below. To read, convert to binary.  **Method.** How the data is being passed: 0 In the control bus message. 1 Through a DMA operation. **Data type.** Units of measure for the data: 0 Byte 1 Word (2 bytes) 2 Doubleword (4 bytes) **Command.** How to apply the data to the area specified by the position field: 0 Change data 1 Add 2 Subtract 3 Mask (AND) 4 Subtract and return the result 5 Mask (OR)
04-05	IRN	IUN or INN of the record. IUNs range from 0080-3B17. INNs range from 4000-4200.
06-07	Offset	The beginning offset of the area in the record to be updated.
08-09	Number of data units	Size of the area to be updated, using the units specified in the data type field, offset 03, bits 4-6.

6E Update IUN/INN Record Response

CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid number.
03	IUN or INN is not assigned before. State is unchanged.
04	Invalid offset. Try to modify message area for node.
06	DMA time-out on prior operation. System reboot required.

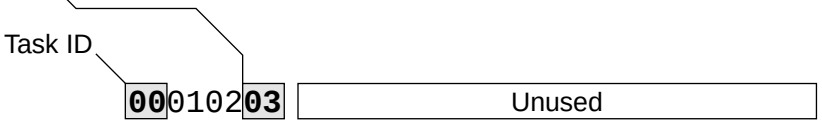


6F Update IUN/INN Record Complete

CP◄FS

This message is sent to the CP after DMA is complete and data has been written to disk.

00	OK.
01	Unrecoverable drive error. State is unchanged.
06	DMA time-out on prior operation. System reboot required.

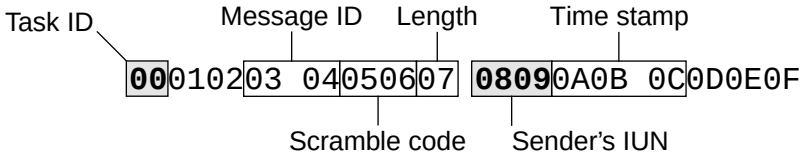


71 New Message

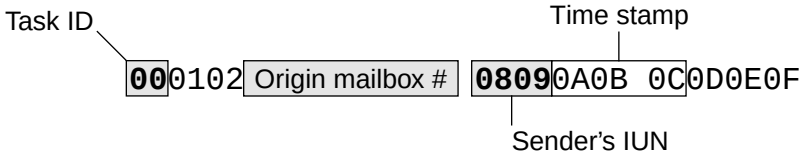
CP➤FS

The format depends on whether the message is part of a remote-notification operation as specified by a preceding file system message 75, Send/Update Message.

Non-Remote-Notification



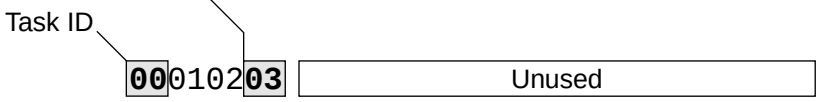
Remote-Notification



72 New Message Response

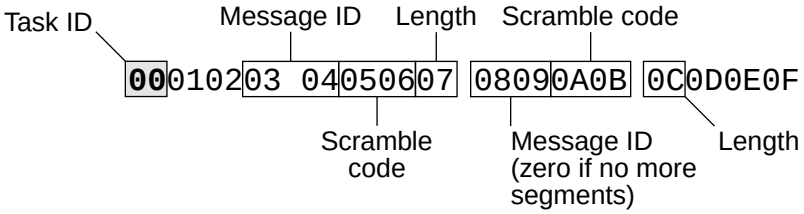
CP◄FS

00	OK.
01	Message pending. State of message unchanged.
02	Empty message ID, scramble code and length fields in request message. State of message unchanged.
06	DMA time-out on prior operation. System reboot required.
07	Open message for that channel.



73 Additional Message Segment

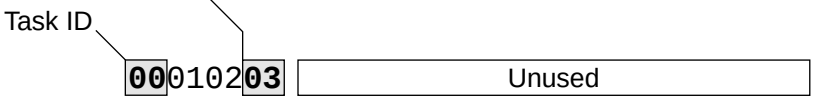
CP➤FS



74 Additional Message Response

CP◄FS

00	OK.
01	New message (primary) missing.
02	Message ID already assigned.
03	No segment available (max = 86).
06	DMA time-out on prior operation. System reboot required.
07	Open message for that channel.

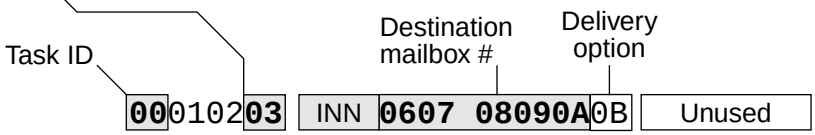


75 Send/Update Message

CP➤FS

The format depends on the message type specified in offset 03, bits 4-7.

0X Voice.

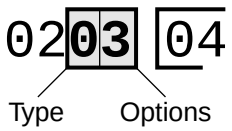


1X Remote notification.

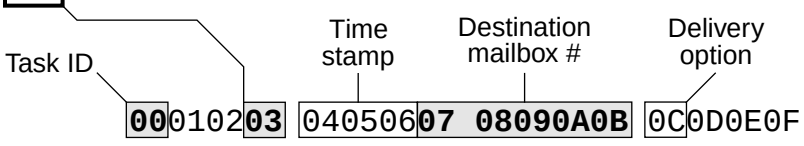


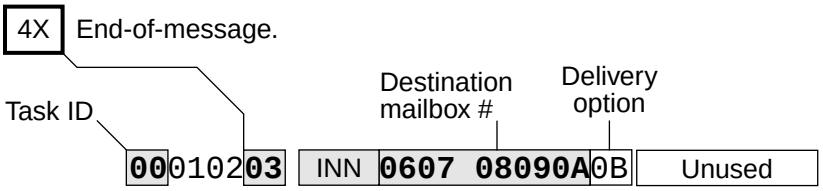
2X Special.

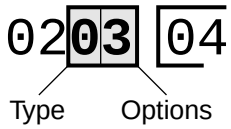


Offset	Label	Description of Packet Data
03	Message type	The type is defined with two 4-bit numbers, as shown below:  **Type.** Specifies the action and the message format. **Options:** 1 Standard, normal 2 Standard, urgent 3 Priority, normal 4 Priority, urgent

3X Time stamp change.



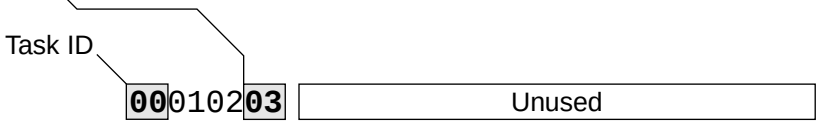


Offset	Label	Description of Packet Data
03	Message type	The type is defined with two 4-bit numbers, as shown below:  **Type.** Specifies the action and the message format. **Options:** 1 Standard, normal 2 Standard, urgent 3 Priority, normal 4 Priority, urgent

76 Send/Update Message Response

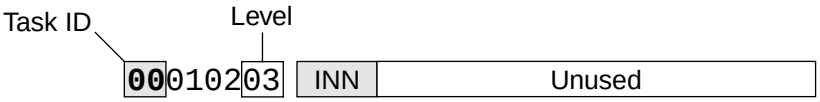
CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid INN number.
03	INN is not assigned before. State is unchanged.
04	Destination is already assigned.
05	Node is full.
06	DMA time-out on prior operation. System reboot required.
07	Bad node record header.
08	Invalid type.
09	Invalid previous destination.
0A	Sequence error.



77 Start Message Search

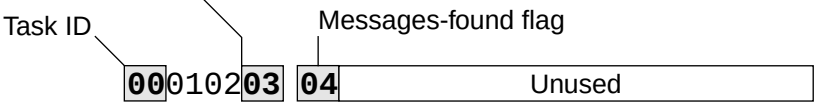
CP➤FS



78 Start Message Search Response

CP◄FS

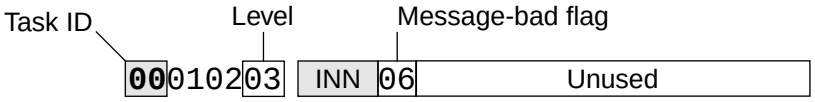
00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid INN.
03	INN is not assigned before. State is unchanged.
04	Invalid level.
06	DMA time-out on prior operation. System reboot required.
07	Open message for that channel.



Offset	Label	Field Description
04	Messages-found flag	Indicates if messages were found in the specified level (offset 03 of the request message) or higher: 00 No messages found. 01 One or more messages found.

79 Return Next Message

CP➤FS

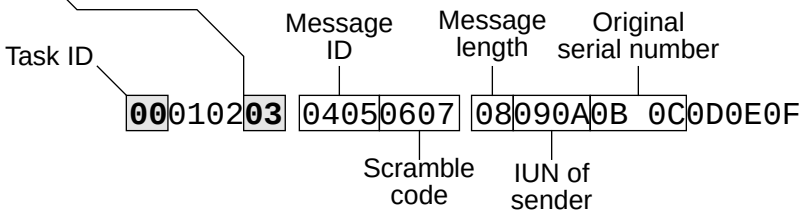


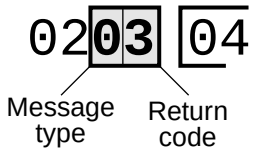
Offset	Label	Field Description
03	Level	Must be the same as or greater than the level specified in offset 03 of file system message 77, Start Message Search.
04-05	INN	Must be the same as in file system message 77, Start Message Search.
06	Message-bad flag	If equal to 01, the file system is to mark the previous message as bad (priority 5) by setting offset 23 in the node record (bad message in the node).

7A Return Next Message Response CP◄FS

Offset 03 is split so that the return code is just the least-significant digit.

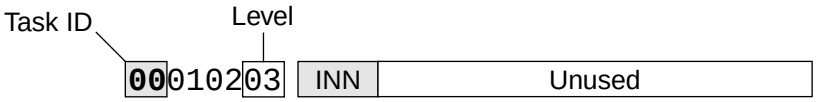
X0	OK.
X1	Unrecoverable drive error. State is unchanged.
X2	Mismatch INN.
X3	Segment or destination pending.
X4	Start message search needed or invalid level.
X5	No more messages left.
X6	DMA time-out on prior operation. System reboot required.
X7	Open message for that channel.



Offset	Label	Field Description
03		Offset 03 carries two 4-bit values:  **Message type.** 0 Voice, last segment 1 Remote notification 2 Special 3 Voice, more segments to come **Return code.** See list above figure.
0B-0C	Original serial number	In case of remote notification.

7B Return Next Segment

CP➤FS

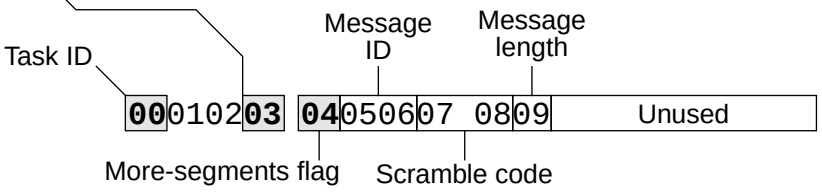


Offset	Label	Field Description
03	Level	Must be the same as the level specified in offset 03 of file system message 77, Start Message Search, or file system message 79, Return Next Message.
04-05	INN	Must be the same as in file system message 77, Start Message Search.

7C Return Next Segment Response

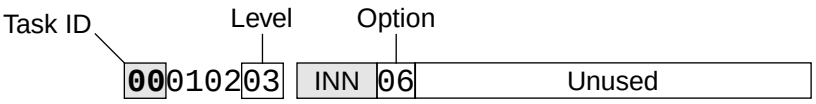
CP◄FS

00	OK.
02	Mismatch level or INN.
03	Primary message pending.
04	Start message needed.
05	No more segments left.
06	DMA time-out on prior operation. System reboot required.
07	Open message for that channel.



Offset	Label	Field Description
04	More-segments flag	00 This is the last segment of the message. 01 There is at least one more segment to come.

7D Return Destinations of the Message CP➤FS



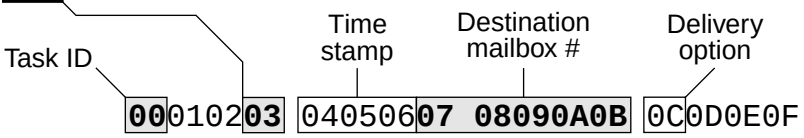
Offset	Label	Field Description
03	Level	Must be the same as the level specified in offset 03 of file system message 77, Start Message Search, or file system message 79, Return Next Message.
04-05	INN	Must be the same as in file system message 77, Start Message Search.
06	Option	Option: 00 Delete previous destination. If old destination was the last one, close message and remove it from node. 01 Do not change state of message. The file system returns the first destination with return code 5 (no more left).

7E Return Destination Response

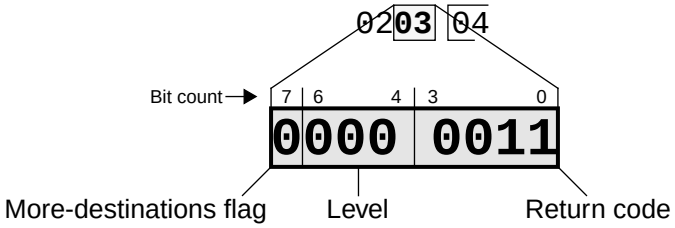
CP◄FS

Offset 03 is split so that the return code is just the least-significant digit.

X0	OK. More destinations to come.
X1	Unrecoverable drive error. State is unchanged.
X2	Mismatch level or INN.
X3	Message or segment pending.
X4	Start message search needed.
X5	No more left. The file system closed the message.
X6	DMA time-out on prior operation. System reboot required.
X7	Already send first destination—flag is set.
X9	No more destinations.
XE	Sequence error.
XF	Empty destination.

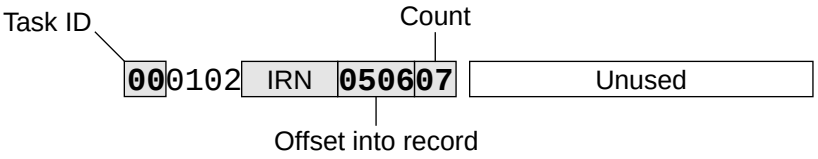


Offset	Field Description
03	This byte has three fields, as shown below. To read, convert to binary.



More-destinations flag. Set if there are more destinations.
Level. Level of the message.
Return code. See list above figure.

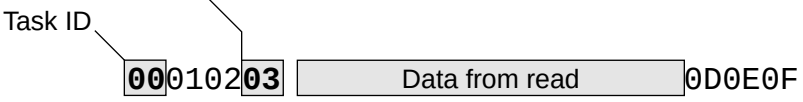
7F Partial Read IUN/INN Record CP➤FS



Offset	Label	Field Description
03-04	IRN	IUN or INN. IUNs range from 0080-3B17. INNs range from 4000-4200.
05-06	Offset into record	The offset to start reading at. For an INN, the value may be up to 03FF.
07	Count	The number of data to read, a maximum of 09.

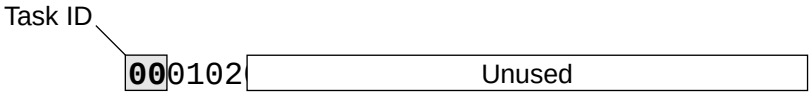
80 Partial Read IUN/INN Record Response CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid count.
03	IUN or INN is not assigned before. State is unchanged.
04	Invalid offset: tried to read message area for node.
05	Invalid IRN.
06	DMA time-out on prior operation. System reboot required.



81 Build XREF Tables

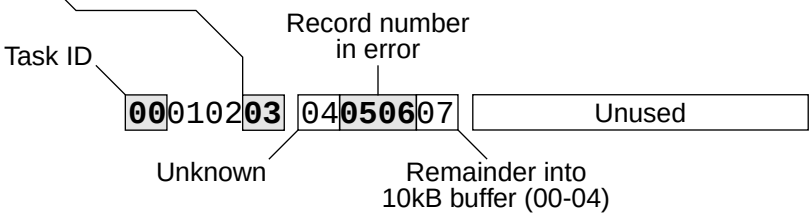
CP➤FS



82 Build XREF Tables Response

CP◄FS

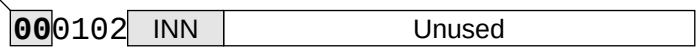
00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid type.
03	Invalid INN.
04	No record available.
05	Node already assigned.
06	DMA time-out on prior operation. System reboot required.
07	Invalid record header.
08	I/O error on disk name table.
09	Invalid disk name table.



83 Check INN

CP➤FS

Task ID



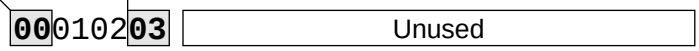
Offset	Label	Description of Packet Data
03-04	INN	INNs range from 4000-4200.

84 Check INN Response

CP◄FS

00	OK.
02	Invalid INN.
03	INN is not assigned.
06	DMA time-out on prior operation. System reboot required.

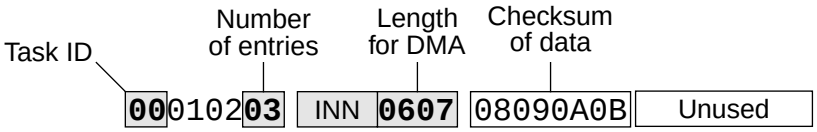
Task ID



85 Update Node Field

CP➤FS

Following this request message will be a response message indicating that the file system is ready to start writing. Following that will be a “complete” message indicating that the writing is finished.

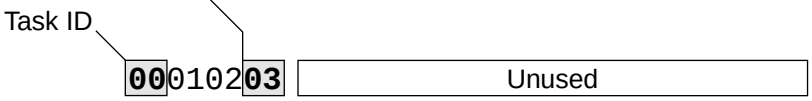


Offset	Label	Description of Packet Data
04-05	INN	INNs range from 4000-4200.

86 Update Node Field Response

CP◄FS

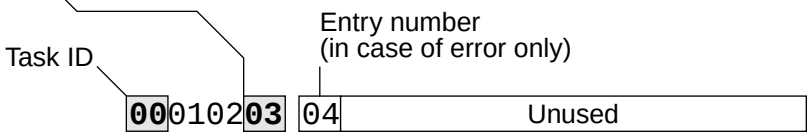
00	OK.
02	Invalid INN.
03	INN is not assigned.
06	DMA time-out on prior operation. System reboot required.



87 Update Node Field Complete

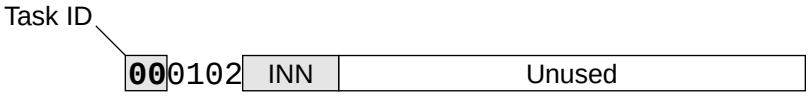
CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Mismatch checksum.
03	Invalid type.
04	Invalid offset.
06	DMA time-out on prior operation. System reboot required.



88 Return Number of Messages in Node

CP➤FS

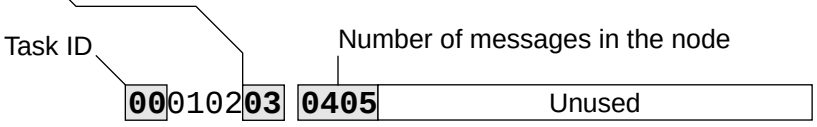


Offset	Label	Description of Packet Data
04-05	INN	INNs range from 4000-4200.

89 Return Number of Messages in Node Response

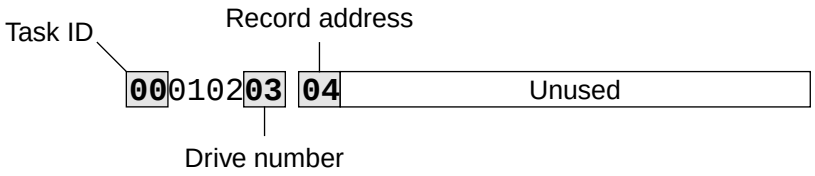
CP◄FS

00	OK.
01	Unrecoverable drive error. State is unchanged.
02	Invalid INN.
03	INN is not assigned.
06	DMA time-out on prior operation. System reboot required.



90 Add Bad Track

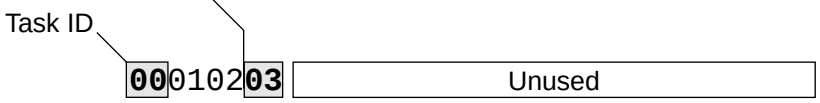
CP➤FS



91 Add Bad Track Response

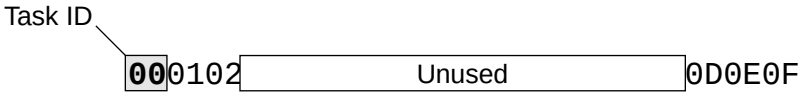
CP◄FS

00	OK.
01	Unrecoverable drive error.
02	New bad track already in bad track list.
03	No spare record left.
04	Spare record selected.



A1 General Configuration Status Request CP➤FS

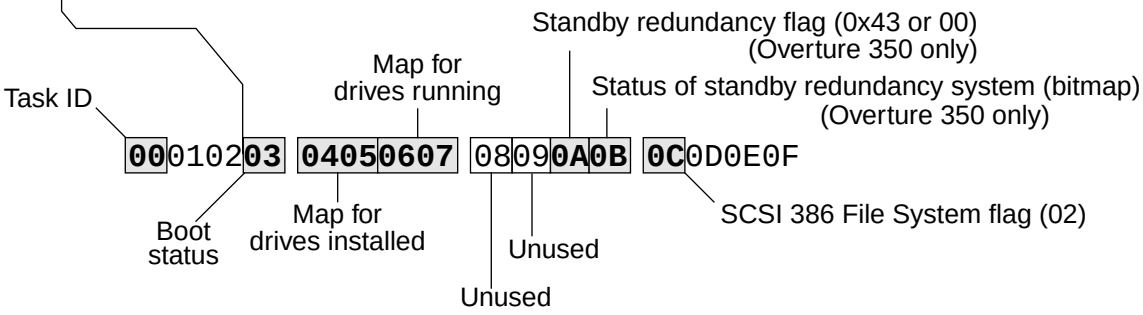
Used at power-up for all file cards. This message is also sent to line cards.



41 General Configuration Response for Primary Card CP◄FS

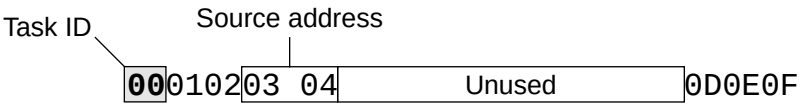
61 General Configuration Response for Secondary File Card CP◄FS

03	System running drives error.
20	Fatal error detected.
22	Drive serial number mismatch.

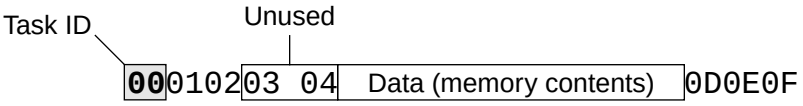


Offset	Label	Field Description
0A	System redundancy flag (Overture 350 only)	00 Not standby redundancy. 43 System is standy redundancy.
0B	Status of standby redundancy system (Overture 350 only)	Bit 0: 1 = card is active; 0 = card is standby. Bit 2: 1 = redundant; 0 = non-redundant. Bit 6: 1 = termination error (card is not properly configured for standby redundancy). (Bits 1, 3, 4, 5, and 7 are unused).
0C	Flag for SCSI 386 File System	Set to 02 to indicate SCSI 386 FIle System.

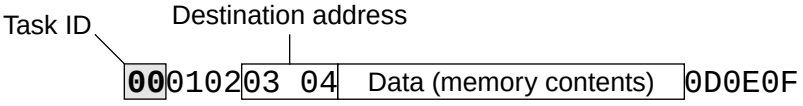
A2 General Read Memory CP➤FS



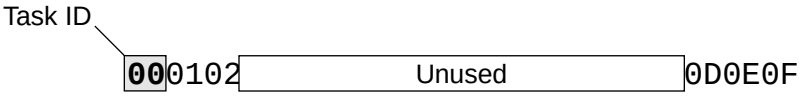
B2 General Read Memory Response CP◄FS



A3 General Write Memory CP➤FS



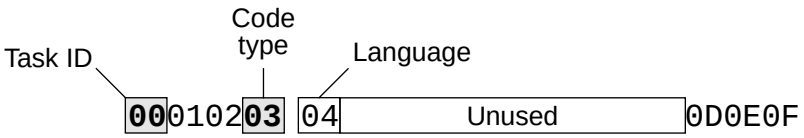
B3 General Write Memory Response CP◄FS



A4 Return Code Level

CP➤FS

This message is also used with the line card.



Offset	Label	Field Description
03	Code type	01 Line card EPROM code level (lineop) 02 Line card tone processing code level (toneop) 03 File card EPROM code level (fileop) 04 File card disk program code level (cbhand) 05 Phrase table code level and language information 06 In-RAM phrase table code level 07 Prompt table code level 0A Number of languages installed
04	Language	Language number (01-05) used by code types 05 and 07.

B4 Return Code Level Response

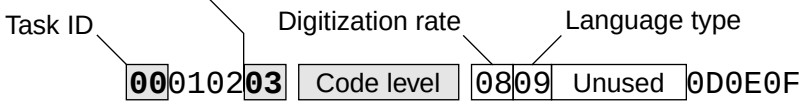
CP◄FS

This message is also used with the line card.

The format varies with the code type specified in offset 03 of the request message.

Code Types 01-09

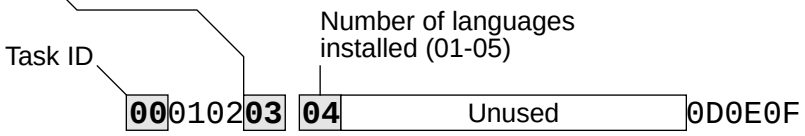
00	OK.
01	Invalid type for this card.
02	Phrase table of this language not initialized.



Offset	Label	Field Description
08	Digitization rate	Used only by code type 05. In ASCII: 30 (**0**) Indeterminate 31 (**1**) 25k 32 (**2**) 32k
09	Language type	Used only by code type 05. Valid values are 01-FF. Zero means the field is not used.

Code Type 0A

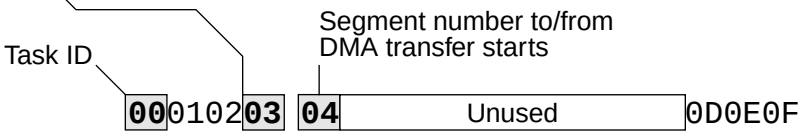
00	OK.
01	Invalid type for this card.



A5 Set DMA Test

CP➤FS

00	Return status of DMA complete.
01	DMA to this card.
02	DMA from this card.

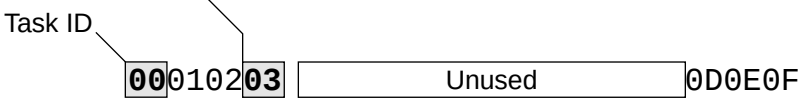


B5 Set DMA Test Response

CP◄FS

Offset 03 is used only if offset 03 of the request message held 00.

00	DMA complete.
01	DMA in progress.

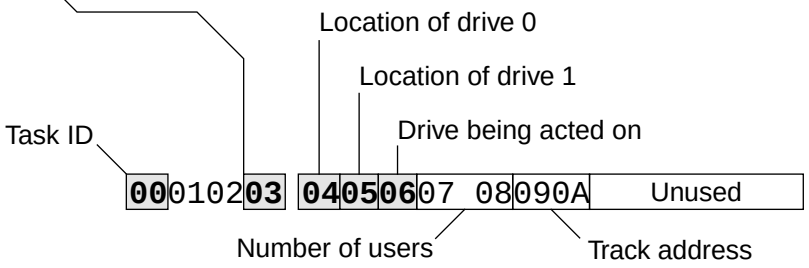


A6 General Utility Command

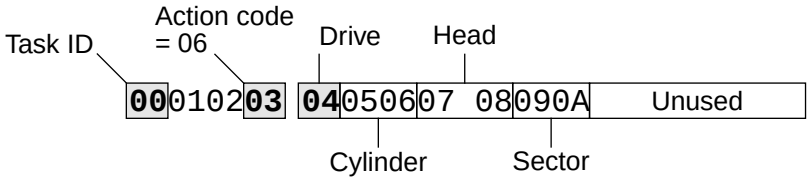
CP➤FS

For any of the actions, a drive location of 0xFF indicates that the drive is not present.

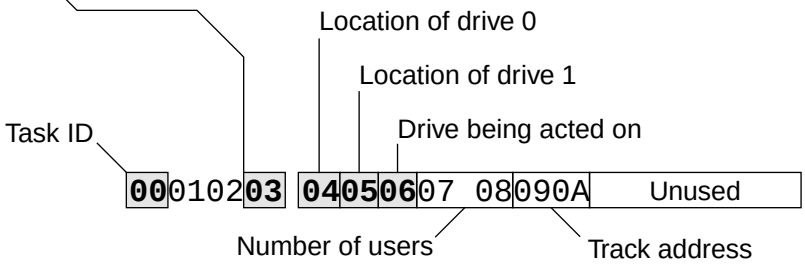
02	Repair record 0 using backup record.
03	Repair record 1 using backup record.
04	Build backup record.
05	Prepare to add track to bad track table.



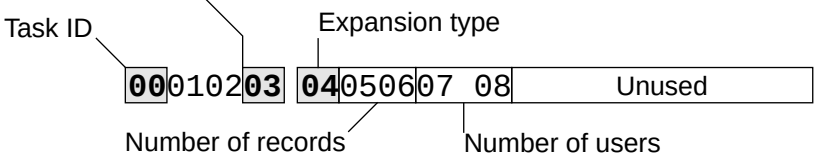
06	Add sector to bad sector table.



07	Get drive serial number from record 1.
08	Makespace for release 8.
09	Clear bad read table.

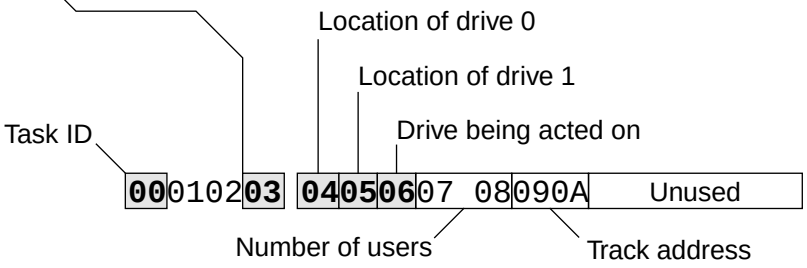


0A Increase number of users to N.



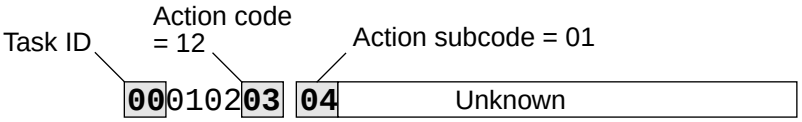
Offset	Label	Field Description
04	Expansion type	01 CDR expansion 02 System group list expansion
05-06	Number of records	Used with expansion type 01 only. In ASCII. 32 (**2**) Expand to 2020 records. 33 (**3**) Expand to 7020 records.
07-08	Number of users	Number of users (500, 1000, 2000, 3000).

0B Phrase squash.
0C Prepare for intelligent message copy.
0D Get physical drive level.
0E Get user record status.
0F Check system redundancy.
10 Get system status.
11 Make drive read only.



12 Phrase utility. The format depends on the action subcode in offset 04.

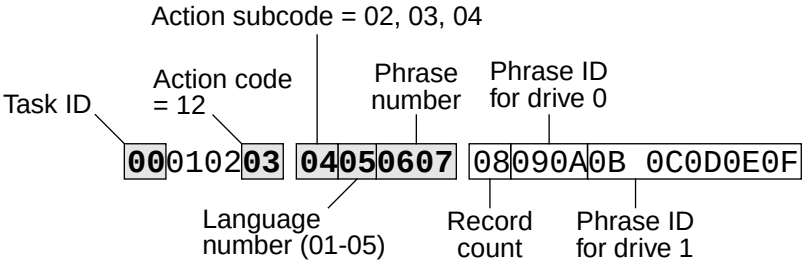
Offset 04 = 01



Offset	Label	Field Description
04	Action subcode	01 Convert phrase format.

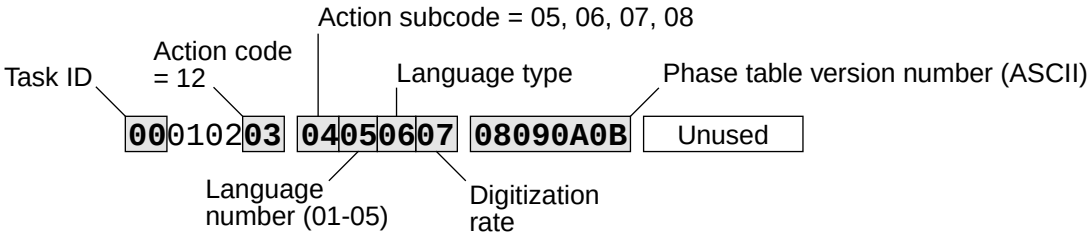
Offset 04 = 02, 03, 04

Offset 08-0C is used with action subcode 04 only.



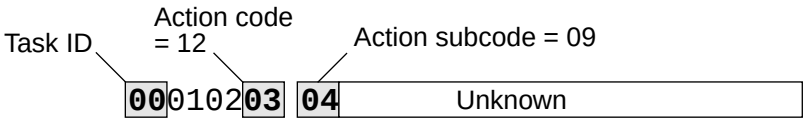
Offset	Label	Field Description
04	Action subcode	02 Delete a phrase. 03 Read phrase ID from phrase table. 04 Write phrase ID into phrase table.
06-07	Phrase number	Valid values are 0001-0ED7.

Offset 04 = 05, 06, 07, 08

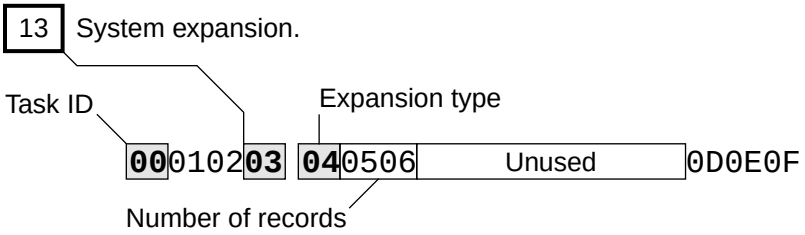


Offset	Label	Field Description
04	Action subcode	05 Initialize entire phrase table. 06 Set phrase table version number. 07 Set language type. 08 Set digitization rate.
06	Language type	Valid values are 01-FF.
08 - 0B	Version number	ASCII code.

Offset 04 = 09

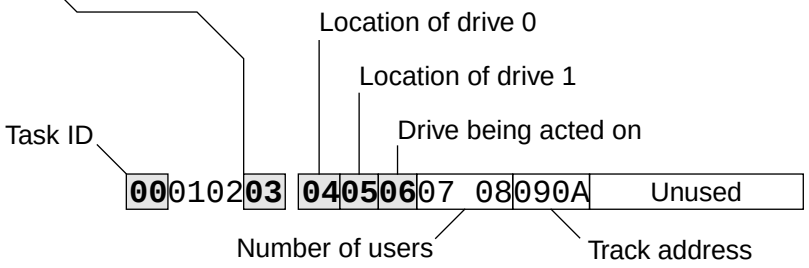


Offset	Label	Field Description
04	Action subcode	09 Get phrase table information.

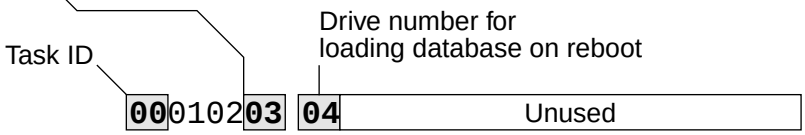


Offset	Label	Field Description
04	Expansion type	01 CDR expansion 02 System group list expansion
05-06	Number of records	Used with expansion type 01 only. In ASCII. 32 (**2**) Expand to 2020 records. 33 (**3**) Expand to 7020 records.

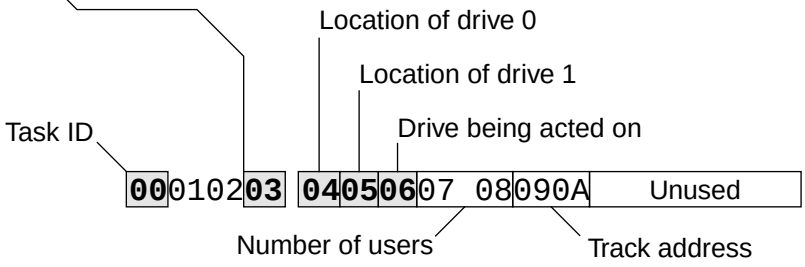
14	Get drive status.
15	Reset CDR pointers.
16	Fix spare table.
17	Intelligent phrase copy.
18	Single/multiple phrase copy.
19	Get ready for download.



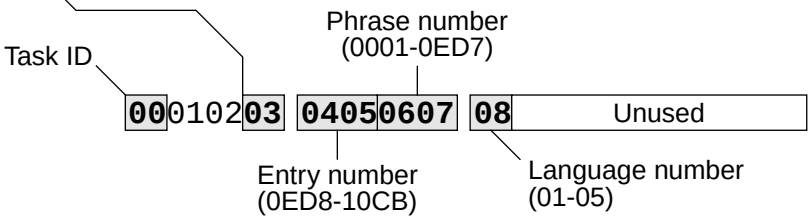
1A	End of download.



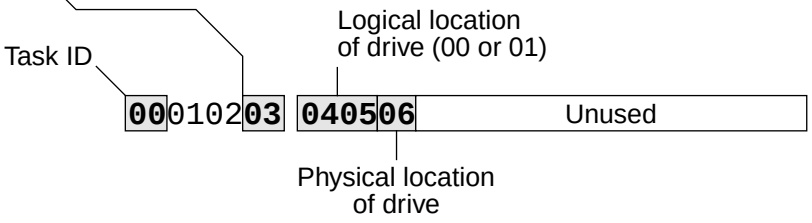
1B	Status of download.
1C	Clear seek time-out count for hard errors on drive.



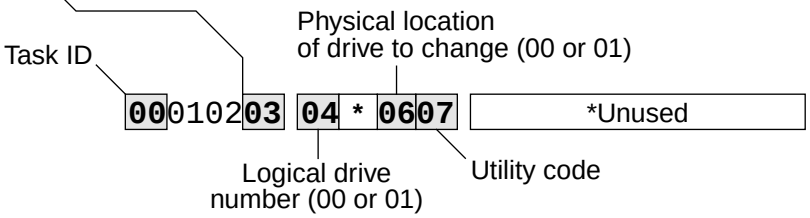
1D Update IVR formatted play table.



1E Verify drive in physical location is in installed position. Action 1E gets the serial number of the physical drive (offset 06) and compares it against the serial number stored in record 0 of the logical drive (offset 04).



1F Change drive in physical location to phrase management level. Action 1F will mark the designated drive as a phrase management drive and make a null phrase table for the drive. Action 1F also creates a new free space table, without messages, for the drive.

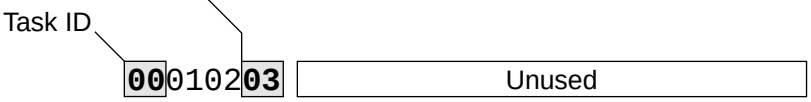


Offset	Label	Field Description
07	Utility code	00 Backup utility 01 Upgrade utility

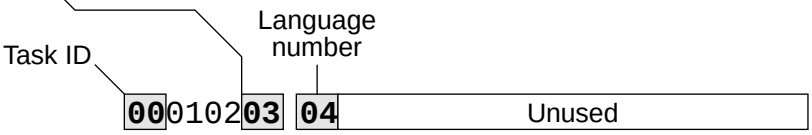
20 Clear records. This action will zero-out the desired records

21 Get system drive's redundant status. This action will get the status byte from RAM (record 0) and send it back to the CP.

22 Check if D0 and D1 (if present) are a matched pair. This action will pick up serial numbers in record 1 from both drives and then compare them against serial numbers in record 0.



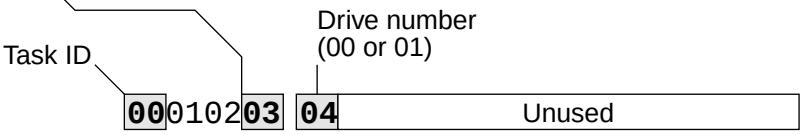
23 Make phrases on target file-card-independent. Action 23 first clears the pointers that point to D1's phrases on D0, and then clears the pointers that point to D0's phrases on D1. This includes the pointers in the phrase table and in the phrase itself. This action also zeroes-out half-record pointers of the opposite drive in the phrase table.



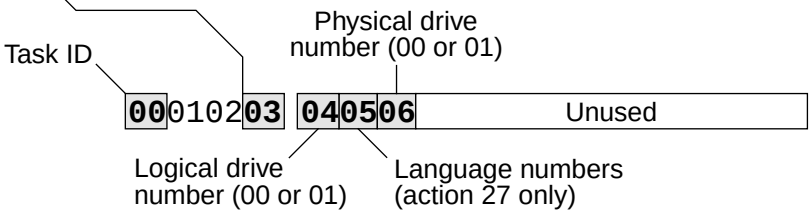
Offset	Label	Field Description
04	Language number	Valid values are 01-05 and FF for all languages.

24 Set to boot with target drive's phrases. Action 24 marks the corresponding bit in the system status to inform IPL which phrase set (D0 or D1) should be used to boot the system.

25 Set to boot with target drive's software. Action 25 marks the corresponding bit in the system status to inform IPL which software set (D0 or D1) should be used to boot the system.

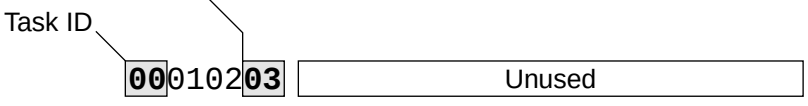


26	Move system's free space table to record 8. Action 26 copies the free space table of the designated drive from another drive's record 0 to D8 position in both drive's record 0.
27	Change drive in physical location to phrase management level. Action 27 marks the designated drive as a phrase management drive and makes a null phrase table for the drive. This action also releases the records used by the old phrases. Action 27 leaves those spaces used by messages unchanged.

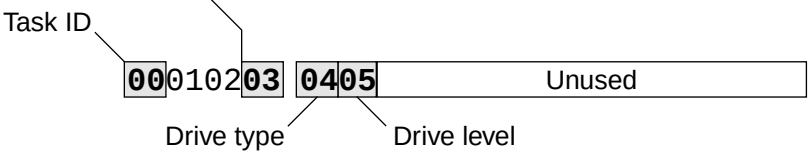


Offset	Label	Field Description
05	Language numbers	Source and destination language numbers. Each is expressed as a four-bit number (one hex digit) as shown below. Valid values are 1-5, and F means all languages. Source Destination 040506

28	Ensure D0 and D1 are installed pair and is booted with no errors. In addition to comparing serial number between records 0 and 1, this action checks to see if the system booted up properly.
29	Prepare for redundant software copy.
2A	Redundant software copy.
2B	End of redundant software copy. Action 2B sets a bit in the status byte to indicate redundant software/phrases.
2C	Prepare for redundant phrase copy.
2D	Redundant phrase copy.
2E	End of redundant phrase copy. Action 2E sets a bit in the status byte to indicate redundant software/phrases.



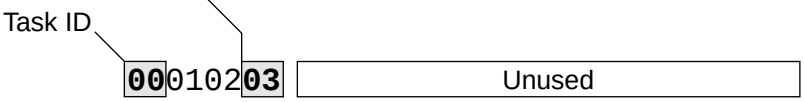
2F Set drive in physical location to be a master drive. Action 2F sets the target drive as either a normal drive or a master drive.



Offset	Label	Field Description
04	Drive type	56 Normal drive A1 Master drive
05	Drive level	To make first phrase management level drive.

30 Make free space table on D0 and D1 become an installed pair. This action merges the free space table of D0 and D1 and writes it back to both drives.

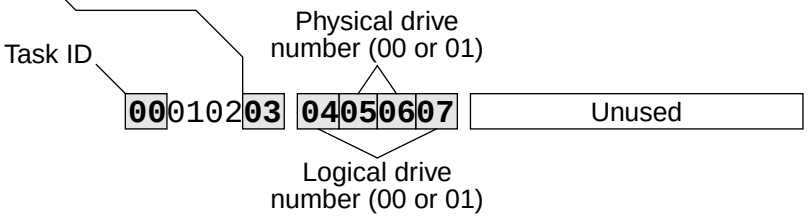
31 Upgrade message drives to phrase management level. This action changes the drive level of messages drives to phrase management level.



32 Prepare destination drive as a replacement drive.
Offset 04: logical drive number of replacement drive.
Offset 05: physical drive number of original drive.
Offset 06: physical drive number of replacement drive.
Offset 07: logical drive number of original drive.

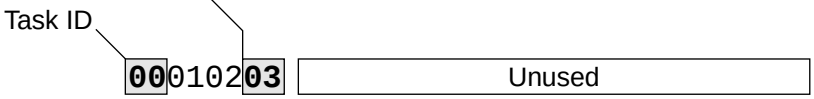
33 Recover record 0 if drive replacement fails.
Offset 05: physical drive number of the drive to recover record 0 on.
Offsets 04, 05 and 06: unused.

34 Recover drive level on destination drive if upgrade utilities fail.
Offset 04: logical drive number of the drive to recover drive level on.
Offset 06: physical drive number.
Offsets 05 and 07: unused.

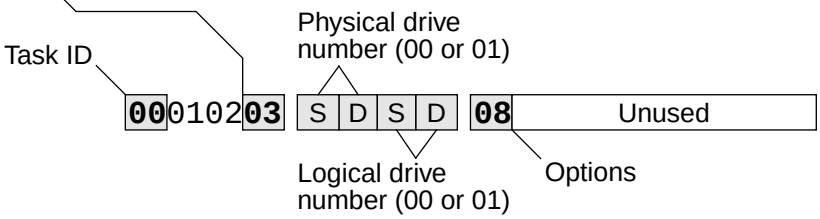


36 Rebuild free space table during the “upgrade to new drive” or “replace drive” utility.

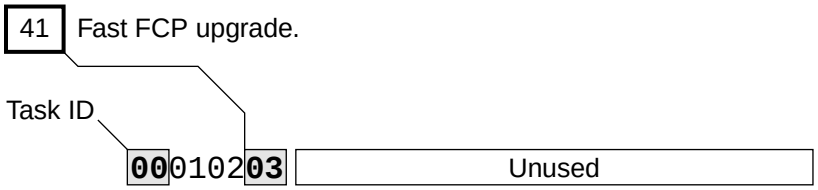
37 Prepare new drive for the “upgrade to new drive” utility.

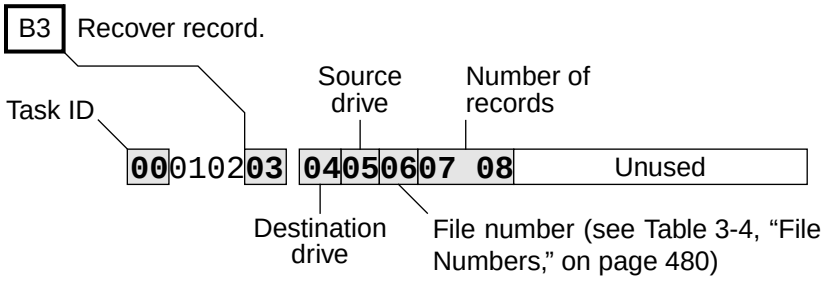


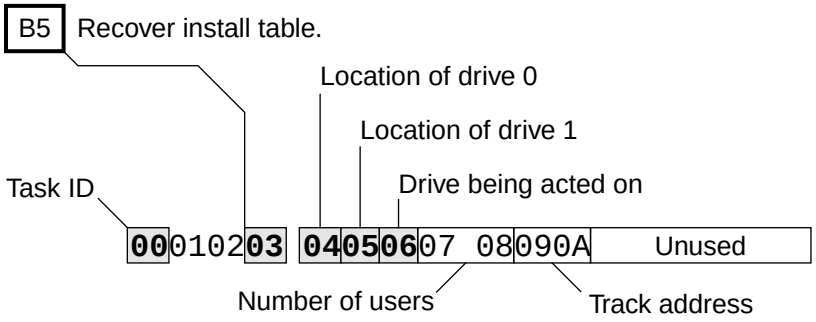
38 Copy record 0 from source (S) to destination (D) after system data table copy.



Offset	Label	Field Description
08	Options	00 Install. 01 From backup to D0 or D1.







B6 General Utility Command Response CP◄FS

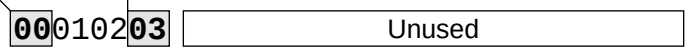
The format and meaning depends on the action code in offset 03 of the request message, A6. With action 12, the format and meaning also depend on the action subcode in offset 04.

Action 02

Repair record 0 using backup response.

00	Successful.
01	Cannot read backup record.
02	Drive number not installed on backup record.
03	Cannot select write drive when writing record 0.
04	Cannot write 0.
05	Cannot write 2.

Task ID

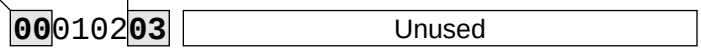


Action 03

Repair record 1 using backup response.

00	Successful.
01	Cannot read backup record.
02	Drive number not installed on backup record.
03	Cannot select destination drive.
04	Cannot write record 1 on drive.

Task ID

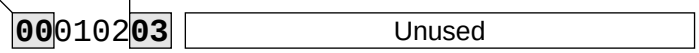


Action 04

Build backup record response.

00	Successful.
01	Bad boot.
02	No gen buffer.
03	Cannot select drive 0.
⋮	
12	Cannot select drive 15.
13	Cannot read serial number from drive 0.
⋮	
22	Cannot read serial number from drive 15.
23	Error on write.

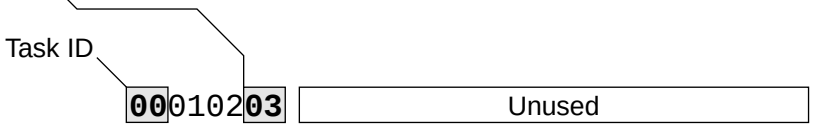
Task ID



Action 05

Prepare to add bad track status response.

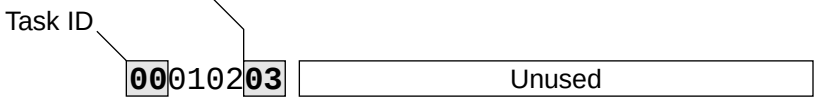
00	Record can be updated.
01	System boot is no good (fatal).
02	Drive can not be selected (fatal).
03	Cannot read record 1 from selected drive (fatal).
04	No more room for bad track addition (fatal).
05	Track is already in list (fatal).
06	No spare available and have data track (fatal).
07	Track is a data track.
08	Track is a spare data track.



Action Code 06

Add track/sector to bad track/sector table response.

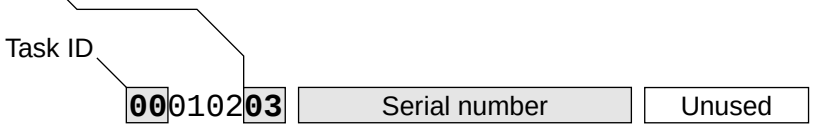
00	Track added successfully.
05	Track is already in list (fatal).
09	Failure attempting to write record 1 (fatal).
0A	Checkpoint on file card RAM failed.



Action 07

Get serial number response.

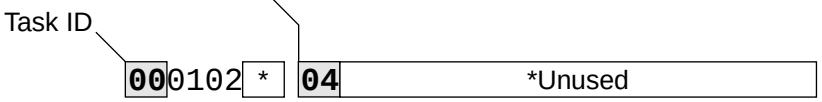
00	Successful.
01	Bad boot.
02	Cannot select.
03	Cannot read.



Action 08

Makespace response. Note that the return code is in offset 04.

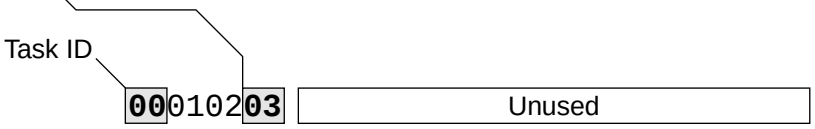
04	Record 0 offset 03 is 01 (old message type).
0A	Drive 0 not running.
0B	Drive 1 not running.
0C	Drive 2 not running.
0E	Drive 0 serial number mismatch.
0F	Drive 0, spares messed up.
10	Drive 1, spares messed up.
80	Drive 0, not enough space.
81	Drive 1, not enough space.
82	Illegal request.
83	Validity check on record 1 of drive 0 and drive 1 failed.
84	Illegal request to expand an area that has already been expanded or a request to expand backwards.
85	Unable to update record 3 of drive 0 or drive 1.
86	Unable to update record 0 on drive 0 or drive 1.
87	Error while attempting to clear expansion records.



Action 0A

Increase number of users response.

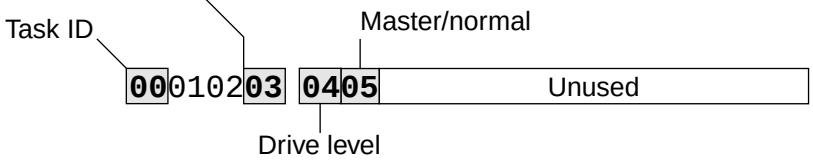
00	Successful.
80	Not enough space on drive 0.
81	Not enough space on drive 1.
82	Parameter error (not implemented yet).
83	Damage record 1.
84	No need to expand.
85	Cannot write record 3.
86	Cannot update record 0.
87	Disk error on clearing record (CB contents address).



Action 0D

Get drive level response.

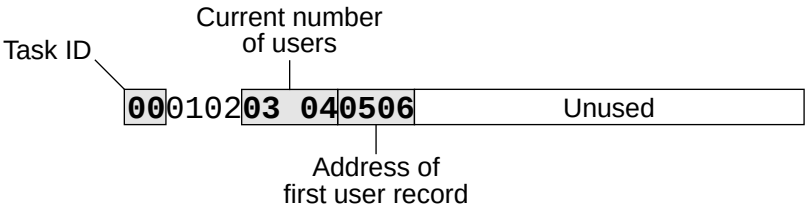
00	OK.
02	Drive is not running.



Offset	Label	Field Description
04	Drive level	01 Pre-8.0 02 Pre-11.0 03 11.0
05	Master/normal	56 Normal drive A1 Master drive

Action 0E

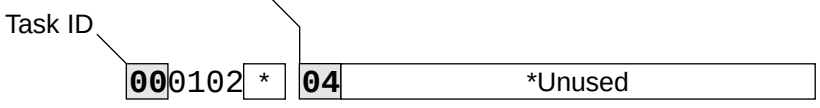
Get user record status response.



Action 0F

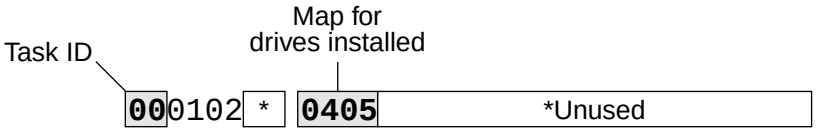
Check system redundancy response. Note that the return code is in offset 04.

00	Not a redundant drive.
01	Drive is currently redundant.



Action 10

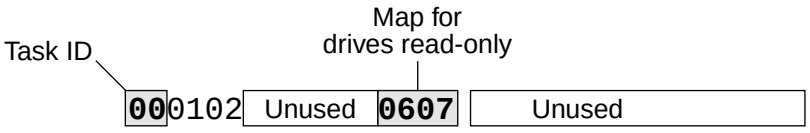
Get system status response.



Offset	Label	Field Description
04-05	Map for drives installed	Bit map of the drives that the system expects to have. Bits 0-15 indicate the status of drives 0-15 respectively. To read, transpose the bytes and convert to binary. Set bits indicate installed drives.

Action 11

Make drive read-only response.



Offset	Label	Field Description
06-07	Map for drives read-only	Bit map of the drives that are read-only. Bits 0-15 indicate the status of drives 0-15 respectively. To read, transpose the bytes and convert to binary. Set bits indicate read-only drives.

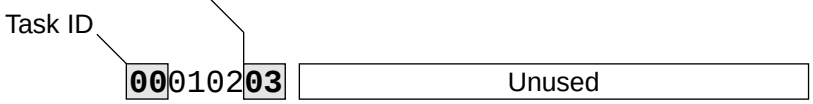
Action 12

Phrase utility response. The format and meaning depend on the action sub-code in offset 04 of the request message, A6.

Action 12, Subcode 01

Convert phrase format response.

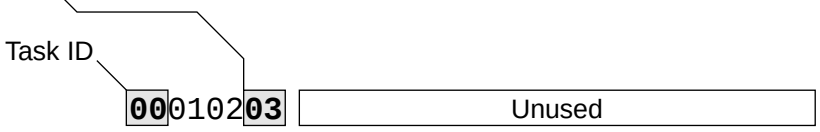
00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid format of old phrase table.
05	Verification failed.
06	Get buffer time-out.



Action 12, Subcode 02

Delete a phrase response.

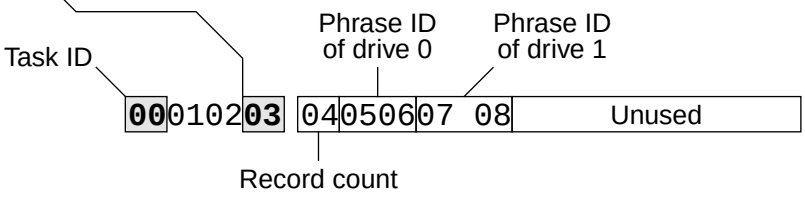
00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid language number.
05	Phrase table of this language not initialized.
06	Invalid phrase number.
07	Phrase does not exist.



Action 12, Subcodes 03 and 04

Read phrase ID from phrase table response (subcode 03). Write phrase ID into phrase table response (subcode 04).

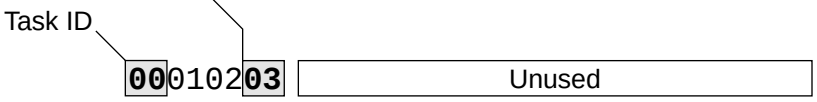
00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid language number.
05	Phrase table of this language not initialized.
06	Invalid phrase number.



Action 12, Subcode 05

Initialize entire phrase table response.

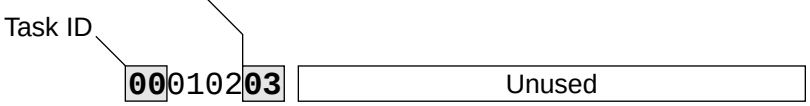
00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid language number.



Action 12, Subcodes 06, 07 and 08

Set: phrase table version number (subcode 06), language type (subcode 0 or digitization rate (subcode 08).

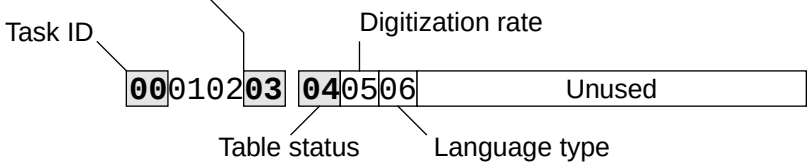
00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid language number.
05	Phrase table of this language not initialized.



Action 12, Subcode 09

Get phrase table information response.

00	OK.
01	Drive error.
02	Boot not OK.
03	Invalid action code.
04	Invalid language number.
05	Phrase table of this language not initialized.

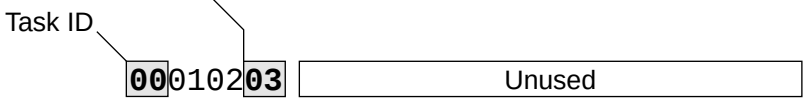


Offset	Label	Field Description
04	Table status	00 Good phrase table 01 Bad phrase table
05	Digitization rate	Used only if the table status is good.
06	Language type	Used only if the table status is good.

Action 13

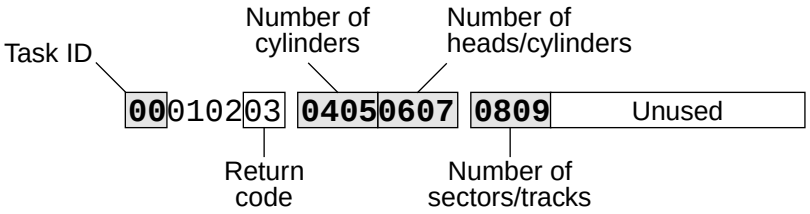
System expansion response.

00	Successful.
80	Not enough space on drive 0.
81	Not enough space on drive 1.
82	Parameter error (not implemented yet).
83	Damage record 1.
84	No need to expand.
85	Cannot write record 3.
86	Cannot update record 0.
87	Disk error on clearing record (CB contents address).



Action 14

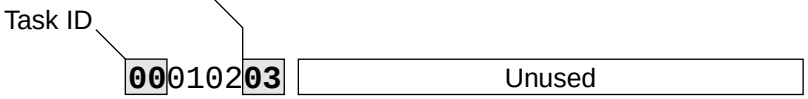
Get drive status response. The format for action code 14 depends on the system type.



Action 19

Get ready for download response.

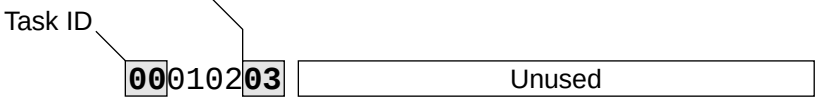
00	Successful.
80	Not a two-drive system.
81	All drives installed are not running.



Action 1A

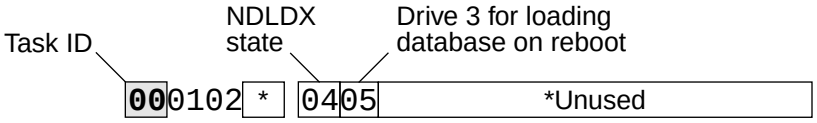
End of download response.

00	Successful.
84	Invalid drive number.



Action 1B

Status of download response.



Action 1C

Clear seek time-out count for hard errors on drive response.



Actions 1D-20

Action 1D: Update IVR formatted play table response.

Action 1E: Verify drive in physical location is in installed position response.

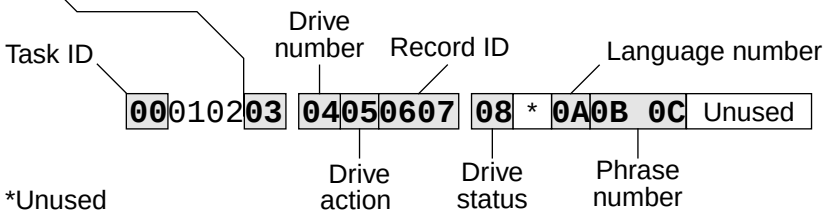
Action 1F: Change drive in physical location to phrase management response.

Action 20: Clear records response.

The meaning of some of the return codes varies with the action code of the request message.

Offsets 04-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases.

00	Successful.
01	Unrecoverable drive error.
02	Action 1D: Illegal entry number. Action 1E-20: Invalid action code.
03	Action 1D: Illegal phrase number. Action 1E: Drive not in correct position. Action 1F: Not enough spare records for bad tracks.
04	Action 1D: Illegal language number. Action 1F: Bad record 1.
05	Action 1D: Phrase not recorded.

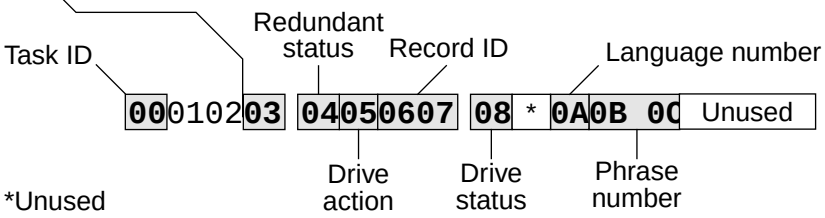


Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

Action Code 21

Get system drive's redundant status response. Offsets 05-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases.

00	OK.
01	Unrecoverable drive error.
02	Invalid action code.



Offset	Label	Field Description
04	Redundant status	If the return code in offset 03 is 00 (OK), offset 04 holds the system drives' redundant status as a set of flags. The value is a sum of: 01 (Bit 0 set.) If bit 2 = 1, drive used for phrases. 02 (Bit 1 set.) If bit 3 = 1, drive used for software. 04 (Bit 2 set.) Set if phrases are different on D0 and D1. 08 (Bit 3 set.) Set if software is different on D0 and D1. 10 (Bit 4 set.) Set if phrases on D0 are good. 20 (Bit 5 set.) Set if phrases on D1 are good. 40 (Bit 6 set.) Set if software on D0 is good. 80 (Bit 7 set.) Set if software on D1 is good. If the return code is 01 (unrecoverable drive error) or involves phrases, offset 04 holds the drive number.
05	Drive action	See Table 3-1, "Drive Action Codes," on page 477.
08	Drive status	See Table 3-2, "Drive Status Codes," on page 477.
0A	Language number	Used only if it is a phrase record.
0B-0C	Phrase number	Used only if it is a phrase record.

Actions 22-2D

Action 22: Check for matched pair response.

Action 23: Make phrases on target file-card-independent response.

Action 24: Set to boot with target drive's phrases response.

Action 25: Set to boot with target drive's software response.

Action 26: Move free space table response.

Action 27: Change drive in physical location to phrase management response.

Action 28: Ensure D0 and D1 are installed pair response.

Action 29: Prepare for redundant software copy response.

Action 2A: Redundant software copy response.

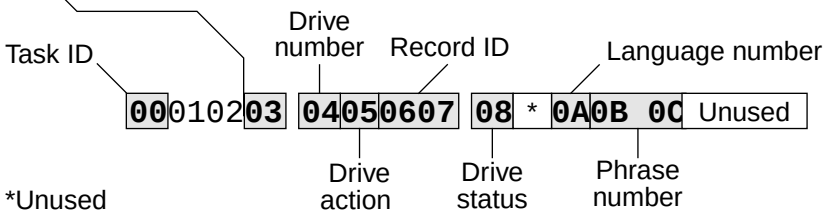
Action 2B: End of redundant software copy response.

Action 2C: Prepare for redundant phrase copy response.

Action 2D: Redundant phrase copy response.

The meaning of some of the return codes varies with the action code of the request message. Offsets 04-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases.

00	OK.
01	Unrecoverable drive error.
02	Invalid action code.
03	Action 22 or 28: Drives are not a pair. Action 27, 2C or 2D: Not enough space on destination drive for phrases.
04	Action 27: Invalid language number. Action 28: System boot not OK.
05	Action 2C: Bad phrase. Check free space table.



Offset	Label	Field Description
05	Drive action	See Table 3-1, "Drive Action Codes," on page 477.
08	Drive status	See Table 3-2, "Drive Status Codes," on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

Actions 2E-38

Action 2E: End of redundant phrase copy response.

Action 2F: Set drive in physical location to be a master drive response.

Action 30: Make free space table on D0 and D1 become an installed pair response.

Action 31: Upgrade message drives to phrase management level response.

Action 32: Prepare destination drive as a replacement drive response.

Action 33: Recover record 0 if drive replacement fails response.

Action 34: Recover drive level on destination drive if upgrade utilities fail response.

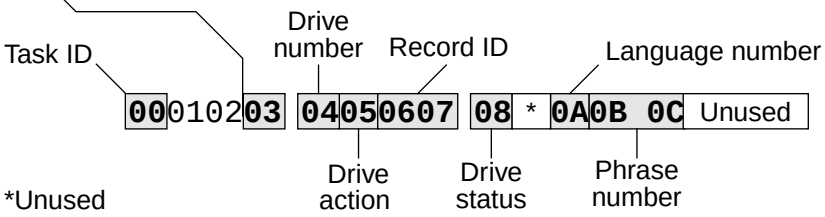
Action 36: Rebuild free space table during the “upgrade to new drive” or “replace drive” utilities response.

Action 37: Prepare new drive for the “upgrade to new drive” utility response.

Action 38: Copy record 0 from source to destination after copying system data tables response.

Offsets 04-0C are used only if the return code in offset 03 is 01 (unrecoverable drive error) or involves phrases. Return codes 03-2F apply only to action code 32.

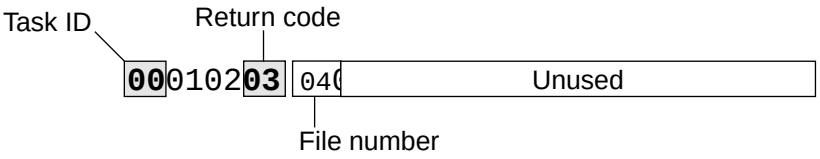
00	OK.
01	Unrecoverable drive error.
02	Invalid action code.
03	Not enough spare records for bad tracks.
04	Bad record 1.
2E	Replacement drive is smaller than the original drive.
2F	Out of space.



Offset	Label	Field Description
05	Drive action	See Table 3-1, “Drive Action Codes,” on page 477.
08	Drive status	See Table 3-2, “Drive Status Codes,” on page 477.
0A	Language number	Used only when working on a phrase record.
0B-0C	Phrase number	Used only when working on a phrase record.

Action 41

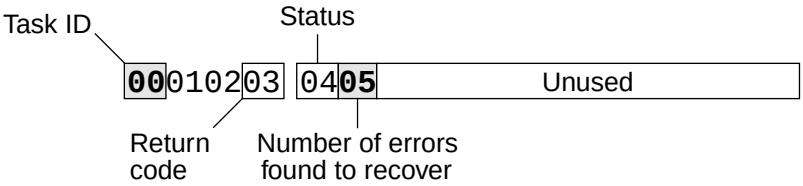
Fast FCP upgrade.



Offset	Label	Field Description
03	Return code	Values: 0 - OK 9D - File not found 85 - I/O error 95 - Source files not the same length as destination files
04	File number	File number in which the error occurred.

Action B3

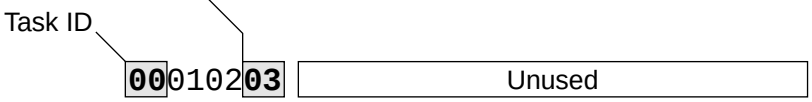
Recover record response.



A7 CDR Utility Command

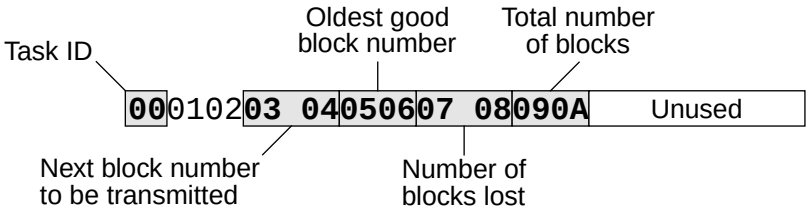
CP➤FS

<02	Go to next CDR block.
02	Clear total number of lost CDR counters.
>02	Get next block.



B7 CDR Utility Command Response

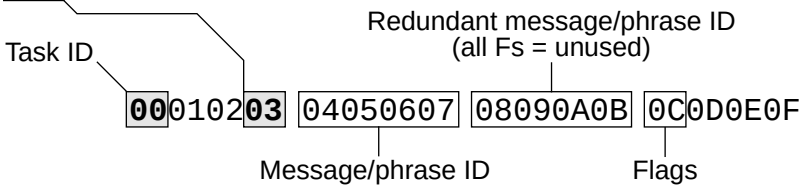
CP◄FS



C0 New Message Primitives

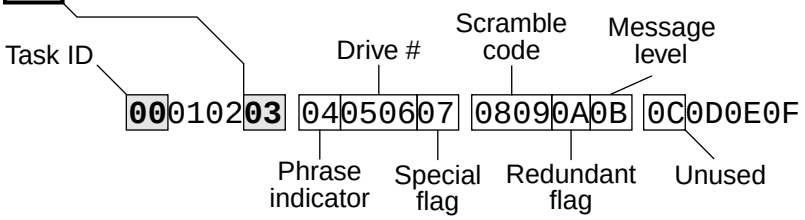
CP➤FS

00 Open old message.



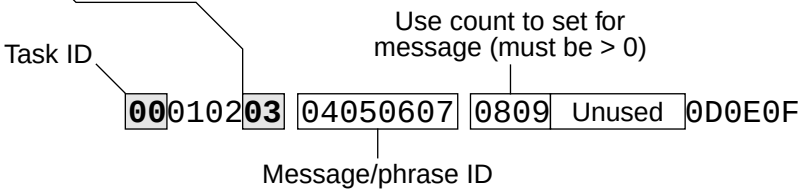
Offset	Label	Field Description
0C	Flags	Bits 0 - 6: Message type 0 Message/new style phrase. 2 Old phrase-management style phrase. 3 Pre-phrase-management style phrase. Bit 7: Sequential read flag 0 Read message using positional data. 1 Read message sequential, as per name/announcement.

01 Open new message.

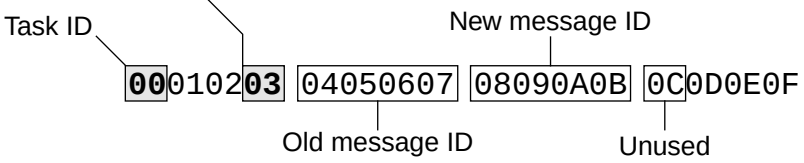


Offset	Label	Field Description
04	Phrase indicator	This byte indicates whether the message is a phrase or not, and if so, what type of phrase: 00 Message is not a phrase. 01 Message is a phrase. 02 Old phrase management style phrase. 03 Pre-phrase management style phrase.
05-06	Drive #	16-bit identifier specifying which drives to use for message (bit 0 = drive 0...bit 15 = drive 15).
07	Special flag	bit 0: use count is > 1. bit 1: used by Z80 to indicate short phrase.
08-09	Scramble code	Unused.
0A	Redundant flag	00 Message/phrase is not redundant. 01 Write message/phrase to two separate drives.
0B	Message level	This value will be 00 - FF, depending on the message format structure version level. It is a software release level controlled value.

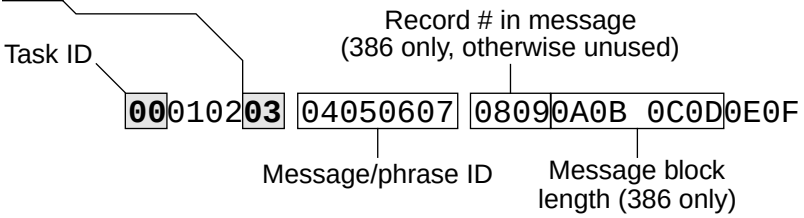
02 Close new message.



03 Read/write message block.



04 Get message data block.
05 Get message ID physical address.

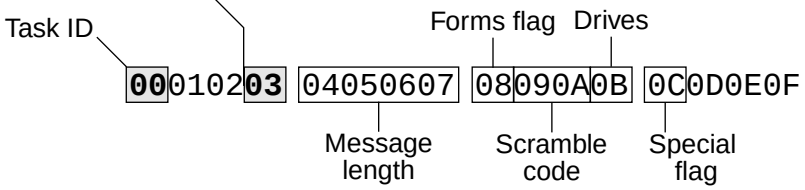


C1 New Message Primitives Response CP◄FS

The format varies with the action specified in offset 03 of the request message (C0).

Action 00

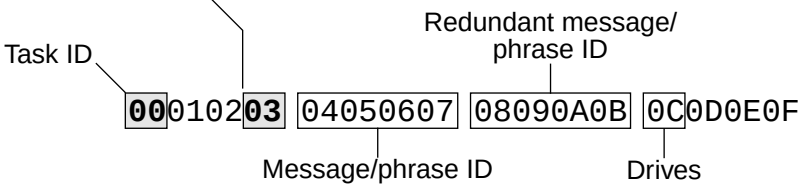
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
04	Use count is zero.
06	DMA time-out on prior operation.
07	Invalid message/phrase format.



Offset	Label	Field Description
04-07	Message length	Message length in bytes of speech.
08	Forms flag	00 Not a forms message 01 Forms message.
0B	Drives	Drive number of where the message exists: bits 0 - 3: drive number (0-15) where message exists. bits 4 - 7: drive number (0-15) where redundant message exists.
0C	Special flag	bit 0: use count is > 1. bit 1: used by Z80 to indicate short phrase.

Action 01

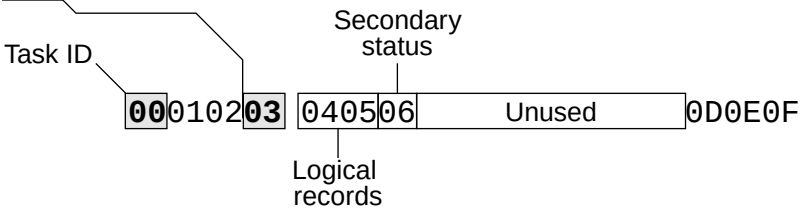
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
04	No space left on disk
06	DMA time-out on prior operation.
07	Invalid message/phrase format.



Offset	Label	Field Description
0C	Drives	Drive number of where the message exists: bits 0 - 3: drive number (0-15) where message exists. bits 4 - 7: drive number (0-15) where redundant message exists.

Action 02

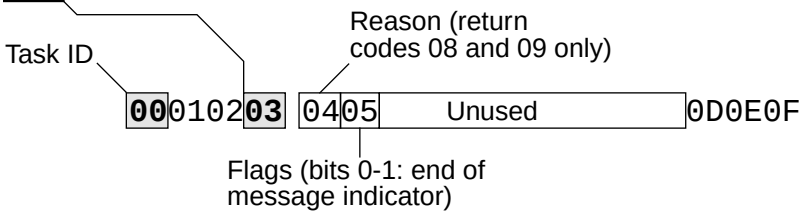
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
06	DMA time-out on prior operation.
07	Invalid message/phrase format.



Offset	Label	Field Description
04-05	Logical records	Number of logical records in message/phrase.
06	Secondary status	Secondary status of redundant operations: 00 Operation OK. 01 Failure on primary drive. 02 Failure on secondary drive.

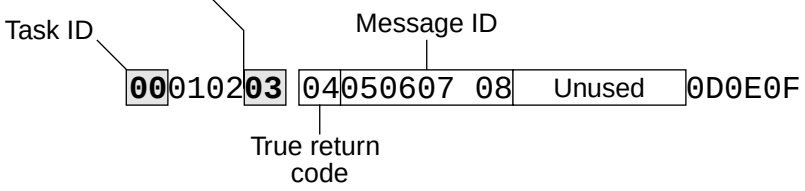
Action 03

00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
06	DMA time-out on prior operation.
07	Invalid message/phrase format.
08	Read error on read/write message block.
09	Write error on read/write message block.



Action 04

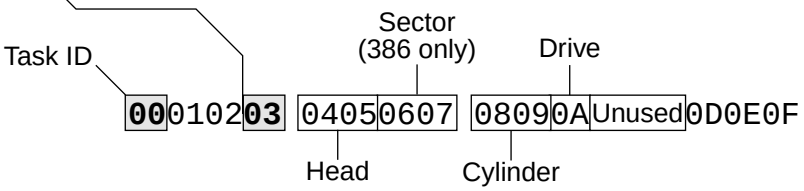
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
06	DMA time-out on prior operation.
07	Invalid message/phrase format.
0A	Past end of message.



Offset	Label	Field Description
04	True return code	A secondary return code if data is a message block, consisting of one of the values listed for offset 03, but not necessarily the same value in offset 03.
05-08	Message ID	Message ID of next block in message (Z80 only): 00000000 = End of message or not a valid message block.

Action 05

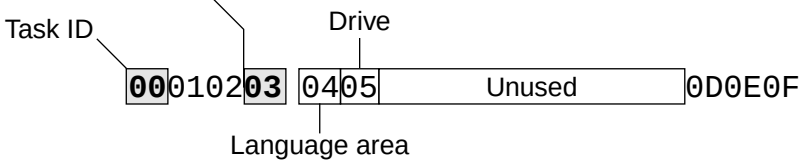
00	OK.
01	Unrecoverable drive error.
02	Scramble code or message ID mismatch.
03	Message already open.
06	DMA time-out on prior operation.
07	Invalid message/phrase format.



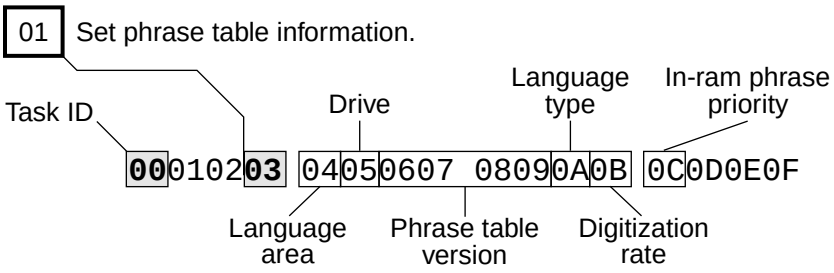
C2 Phrase Table Primitives

CP➤FS

00 Initialize phrase table.

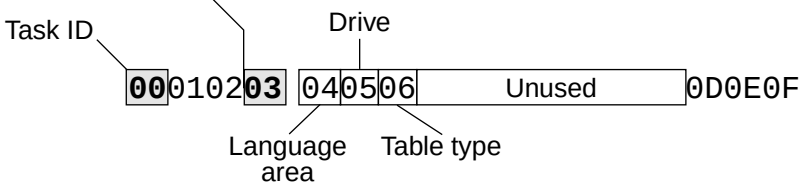


Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)



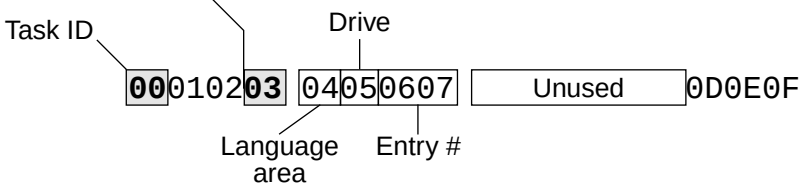
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06-09	Phrase table version	Version number of phrase table.
0A	Language type	As of 6/21/93, the following language types are available (cvxphrase.inc): 01 American English (Jane) 02 Australian English 03 American Spanish 04 Canadian English 05 American English (Marsha) 06 Special English/Spanish 07 Canadian French 08 British English 09 New Zealand English 0A European English 0B European French 0C American English (US West) 0D American English (Nynex) 0E European German 0F European Italian 10 Cantonese 11 Mandarin 12 Malay 13 Brazilian Portuguese 14 Dutch 15 Japanese 16 Arabic 17 European Portuguese 18 Mercury English
0B	Digitization rate	00 Indeterminate 01 25K phrase digitization 02 32K phrase digitization
0C	In-ram phrase priority	A value from 1-9 designating phrase priorities.

02 Get language table information.



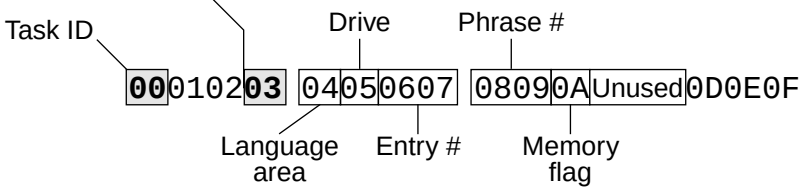
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06	Table type	00 Phrase table. 01 Prompt table. 02 In-ram table.

03 Get formatted play table entry.



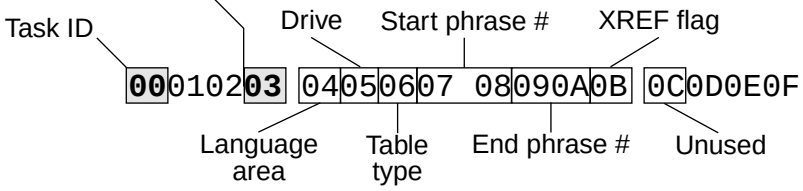
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06-07	Entry number	Play table entry number (0-499)

04 Put formatted play table entry.



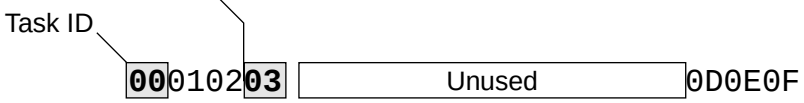
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06-07	Entry number	Play table entry number (0-499)
08-09	Phrase number	Phrase number from 0-5699.
0A	Memory flag	00 Do not apply change to memory copy. 01 Apply change to memory copy.

05 Load table.

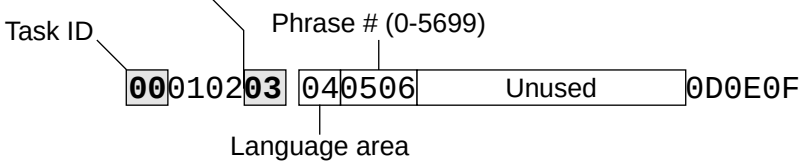


Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06	Table type	00 Phrase table. 01 Prompt table.
07-08	Start phrase #	Phrase table only, 0-5699; otherwise, unused area.
09-0A	End phrase #	Phrase table only, 0-5699; otherwise, unused area.
0B	XREF flag	Load XREF table flag (phrase table only; otherwise, unused area): 00 Do not load XREF table. 01 Load XREF table.

06 Clear in-ram phrase table.

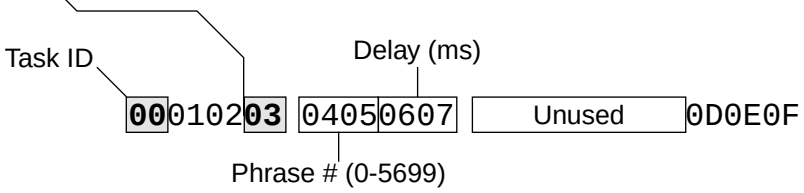


07 Load in-ram phrase.

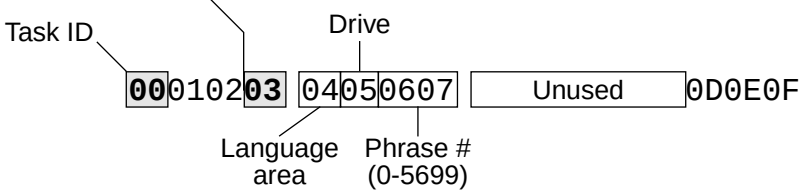


Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)

08 Load delay phrase.

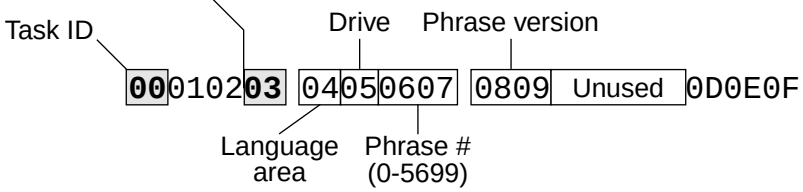


09 Get phrase information.



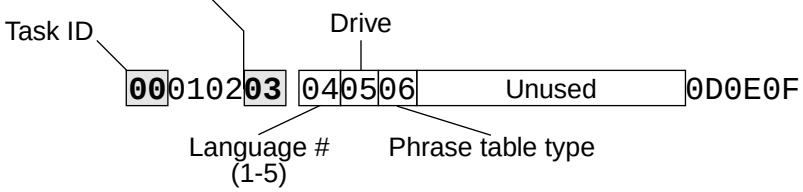
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)

0A Put phrase version.



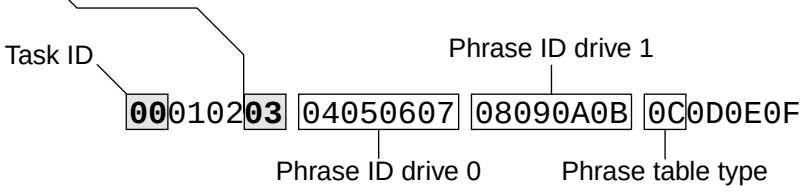
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)

0B Move old phrase table.



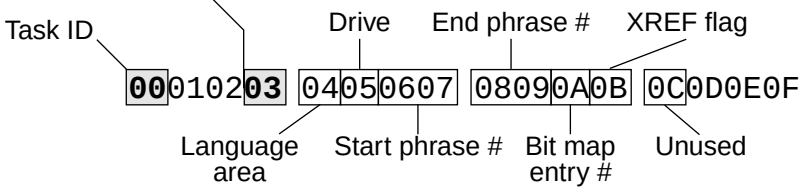
Offset	Label	Field Description
06	Phrase table type	02 Old phrase management table. 03 Pre-phrase management table.

0C Delete phrase.



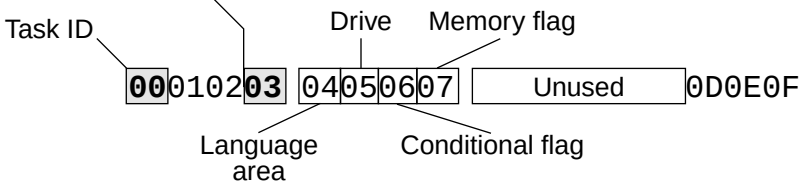
Offset	Label	Field Description
06	Phrase table type	02 Old phrase management table. 03 Pre-phrase management table.

0D Clear phrase table entry.



Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06-07	Start phrase #	0-5699.
08-09	End phrase #	0-5699.
0A	Bit map entry #	bit 0: entry 1 bit 1: entry 2
0B	XREF flag	Search XREF table flag (phrase table only; otherwise, unused area): 00 Do not search XREF table. 01 Search XREF table.

0E Reset phrase XREF table.



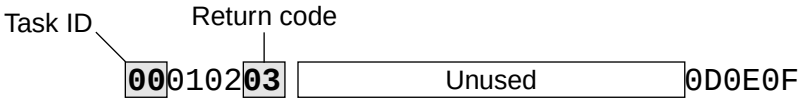
Offset	Label	Field Description
04	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)
06	Conditional flag	00 Reset table unconditionally. 01 Reset table if default.
07	Memory flag	00 Do not apply changes to memory copy. 01 Apply changes to memory copy.

C3 Language Area Primitives Response CP◄FS

The format varies with the action specified in offset 03 of the request message (C2). The following return codes (offset 03) apply to all actions.

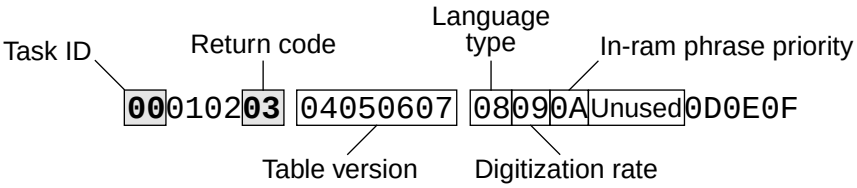
Offset	Label	Field Description
03	Return code	00 OK. 20 Invalid area. 21 Invalid drive number. 22 Invalid phrase number. 23 Phrase table not initialized. 24 Invalid table type. 25 Invalid language area number. 26 Phrase entry empty. 27 End of active phrases. 28 Phrase length discrepancy. 29 Formatted play table entry empty. 2A Invalid prompt table. With action 0E: Invalid in-ram table. 2B Invalid phrase ID 2C Invalid phrase entry number. 2D Phrase table empty. 2E Error Initializing phrase table. 2F FPT not initialized.

Actions 00 and 01



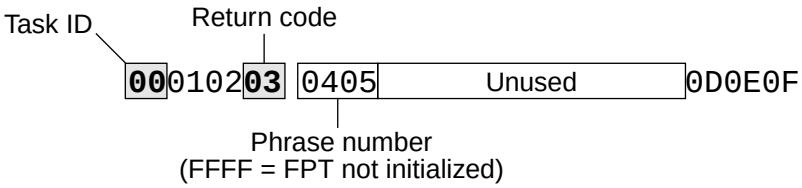
Action 02

Offsets 08-0A are used only with phrase tables.

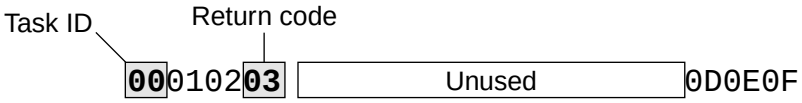


Offset	Label	Field Description
08	Language type	As of 6/21/93, the following language types are available (cvxphrase.inc): 01 American English (Jane) 02 Australian English 03 American Spanish 04 Canadian English 05 American English (Marsha) 06 Special English/Spanish 07 Canadian French 08 British English 09 New Zealand English 0A European English 0B European French 0C American English (US West) 0D American English (Nynex) 0E European German 0F European Italian 10 Cantonese 11 Mandarin 12 Malay 13 Brazilian Portuguese 14 Dutch 15 Japanese 16 Arabic 17 European Portuguese 18 Mercury English
09	Digitization rate	00 Indeterminate 01 25K phrase digitization 02 32K phrase digitization
0A	In-ram phrase priority	A value from 1-9 designating phrase priorities.

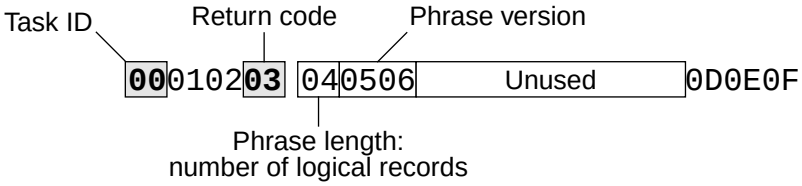
Action 03



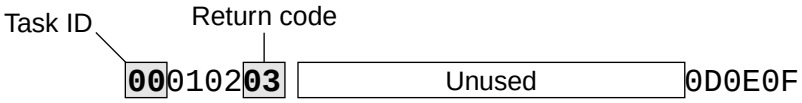
Actions 04-08



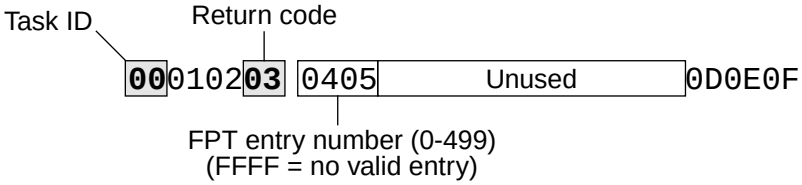
Action 09



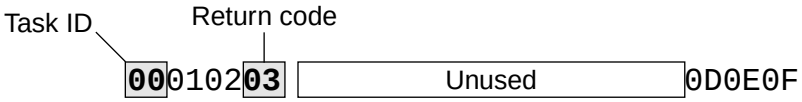
Actions 0A-0C



Action 0D



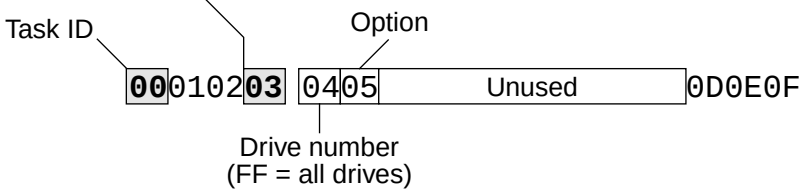
Action 0E



C4 New Garbage Collect Primitives

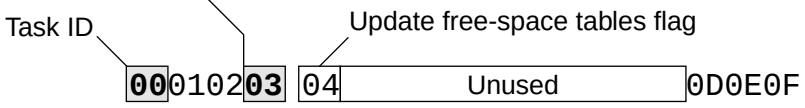
CP➤FS

00 Prepare for garbage collect.



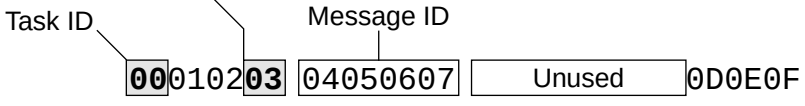
Offset	Label	Field Description
05	Option	00 Short garbage collect 01 Long garbage collect 02 Makespace 04 Phrase verify

01 End of garbage collect.



Offset	Label	Field Description
04	Update free-space tables flag	00 Do not update 01 Update

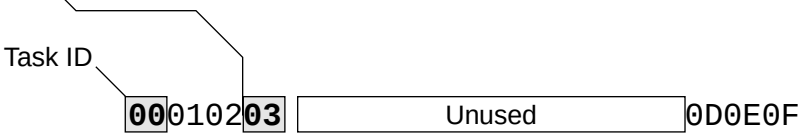
02 Read check message.



C5 New Garbage Collect Primitives Response CP◄FS

If the request message, C4, specified action 02 in its offset 03, the format of the response varies depending on the return code and the kind of garbage collect operation in process. If the return code in offset 03 is 03 (end of message), see the following section.

00	OK.
01	Invalid drive.
02	Drive error.
03	End of message. If the request message had action 02 in offset 03, the format varies; see below.
04	Message already checked.
05	Message error.
06	Message has to be moved (makespace only).
07	Makespace complete.
08	Inconsistent messages (short garbage collect only).
09	Out of space (makespace only).

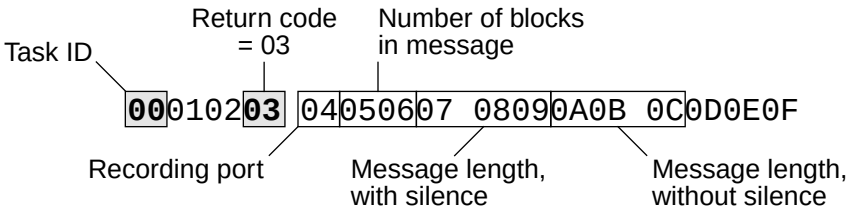


Action 02 with Return Code 03

The format depends on the kind of garbage collect operation in process. This was specified by a preceding file system message C4 with action 00, Prepare for Garbage Collect. If the option field, offset 05, of that message held:

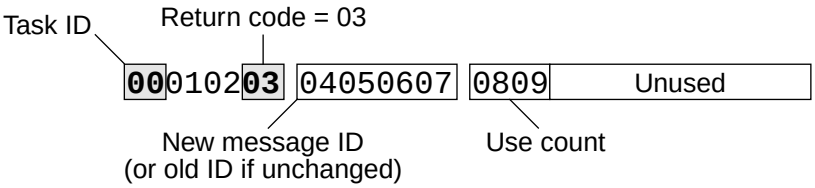
- 00 or 01, short or long garbage collect, use the first format below.
- 02 or 03, makespace or message ID convert, use the second format below.
- 04, phrase verify, use the format above (that is, there is no packet data).

During Short or Long Garbage Collect:



Offset	Label	Field Description
04	Recording port	Channel and slot on which the message was recorded. Read like offset 04 of the IORB header, see Section 1.5.2, “IORB Header,” on page 28.

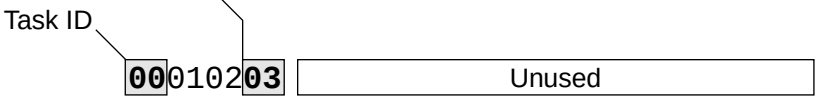
During Makespace or Message ID Convert:



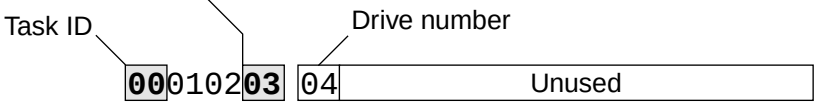
C6 Miscellaneous Commands

CP➤FS

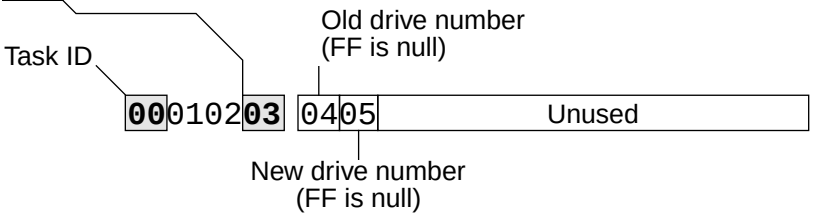
00 Start new file card operations.
01 End new file card operations.



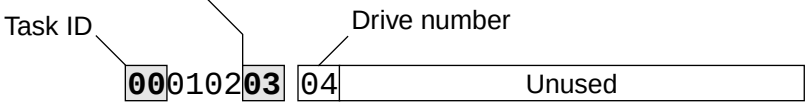
02 Get drive message mask.



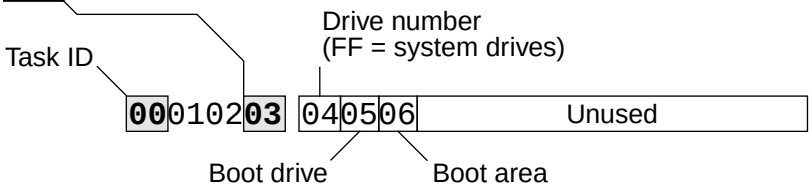
04 Replace drive.



05 Get physical drive serial number.
06 Get system boot area.

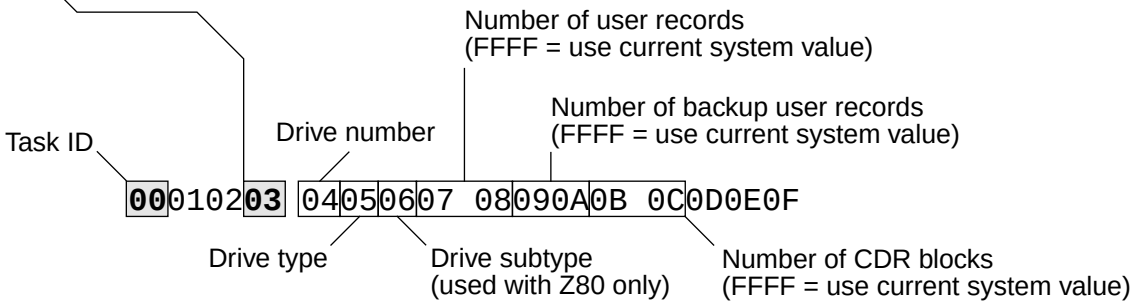


07 Set system boot area.



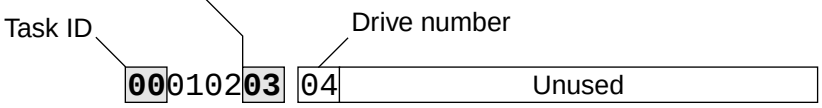
Offset	Label	Field Description
05	Boot drive	Bit map showing new boot drive: 01 Drive 0 02 Drive 1 03 Both drives
06	Boot area	Bit map showing new boot area: 01 Area A 02 Area B 03 Both areas

08 Initialize drive.

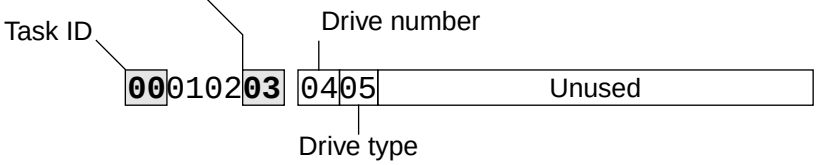


Offset	Label	Field Description
05	Drive type	01 System drive 02 Phrase drive 03 System and phrase drive 04 Message drive 07 System, phrase and message
06	Drive subtype	Used only with Z80-based file card. 01 Drive is a copy. 02 Drive is to be installed as 0 or 1 on this system

09 Get drive type.

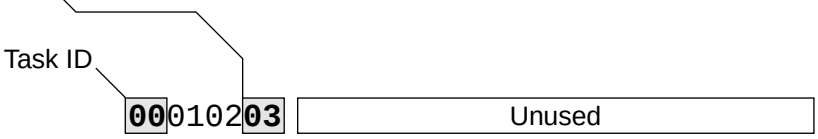


0A Change drive type.

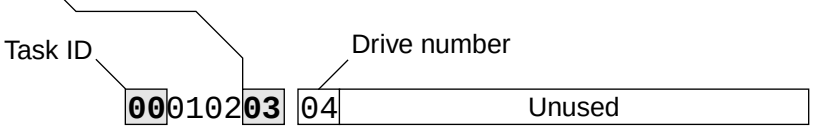


Offset	Label	Field Description
05	Drive type	01 System drive 02 Phrase drive 03 System and phrase drive 04 Message drive 07 System, phrase and message

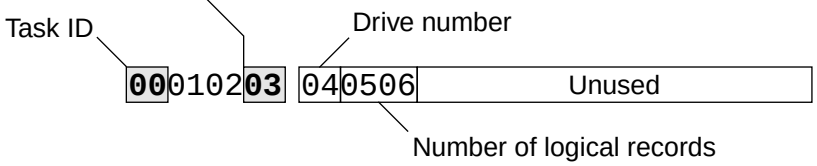
0B Get file card type.



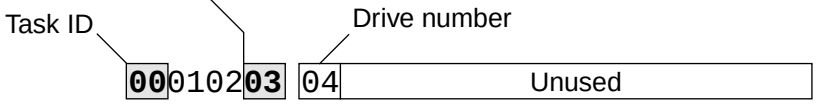
0C Get drive message space.



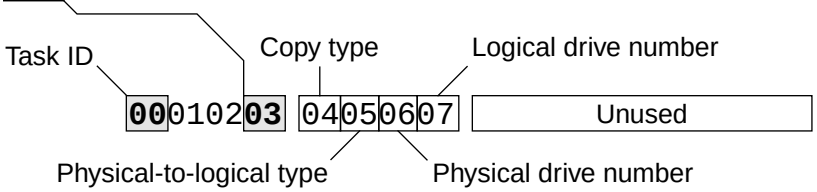
0D Allocate message space.



0E Free message space.

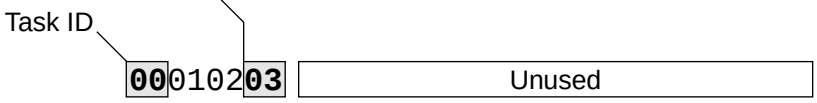


0F Start copy.

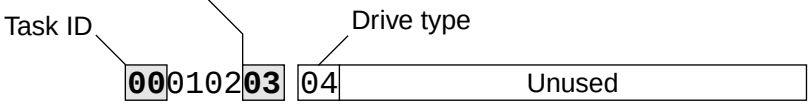


Offset	Label	Field Description
04	Copy type	01 Message 02 Phrase 03 System data files FF Drive
05	Physical-to-logical type	00 Source 01 Destination

10 End copy.

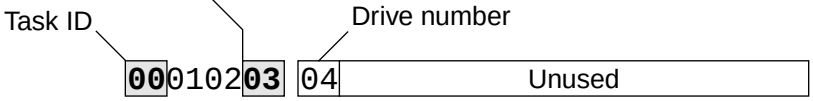


11 Upgrade drive.

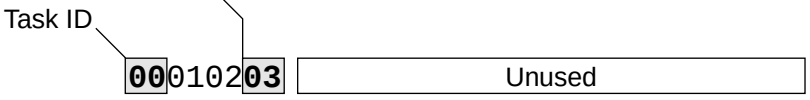


Offset	Label	Field Description
04	Drive type	01 System drive 02 Phrase drive 03 System and phrase drive 04 Message drive 07 System, phrase and message

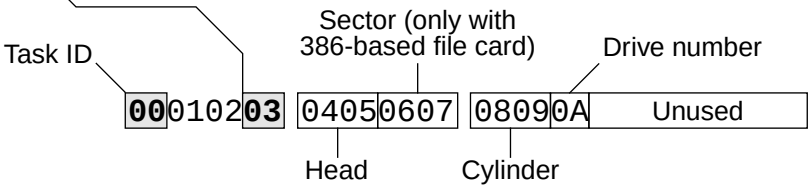
13 Spin up drive.
14 Spin down drive.



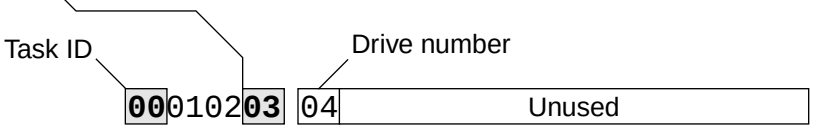
15 Get drive status.



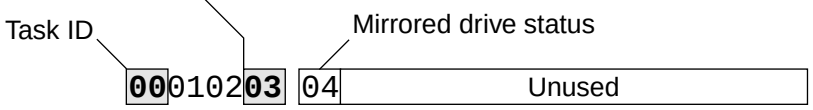
16 Physical to logical translation.



17 Get drive mirrored status (386 file card only).

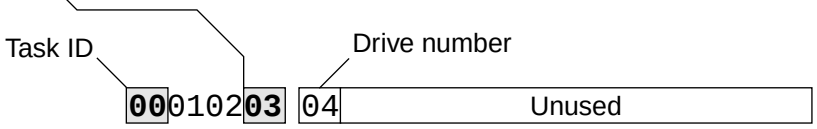


18 Set mirrored drive status (386 file card only).

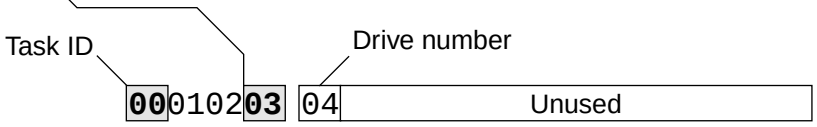


Offset	Label	Field Description
04	Mirrored drive status	00 Reset mirrored drives 01 Set mirrored drives

19 Get new message open count (386 file card only).



22 Request File Card for status of a specific drive.

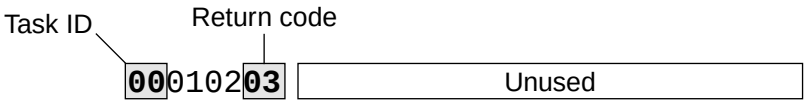


C7 Miscellaneous Commands Response CP◄FS

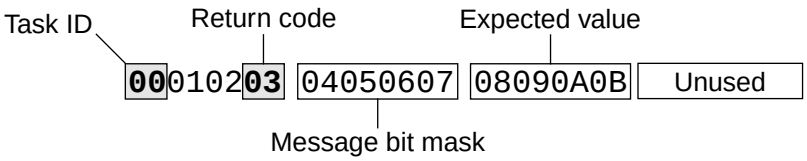
The format varies with the action specified in offset 03 of the request message (C6). The following return codes (offset 03) apply to all actions.

Offset	Label	Field Description
03	Return code	00 OK. 20 New operations in use. 21 Invalid drive. 22 Invalid parameter. 23 Copy drive already active. 24 Copy operation active. 25 No active copy. 26 Error on record 0 (Z80 only). 27 Varies with card type: 386: Invalid drive type Z80: Error on record 1 28 Error on record 1. 29 Error in I/O of DDR. 2A Error in bld of DDR. 2B Drive not installed. 2C Drive already installed. 2D Varies with file card type: 386: Serial number mismatch. Z80: Error building free space table. 2E Serial number not found at Start Copy (Z80 only). 2F Drive too small to be installed in this pair (Z80 only). 3B Cannot checkpoint installed drives (Z80 only). 3C Cannot build backup record (Z80 only). A7 Drive does not exist.

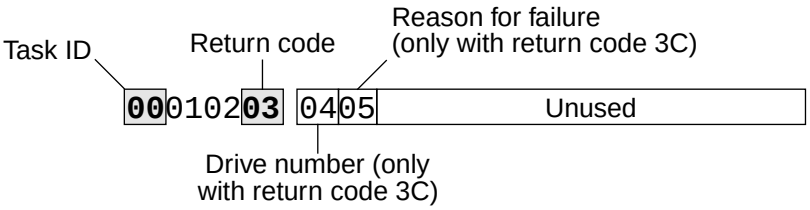
Actions 00 and 01



Action 02

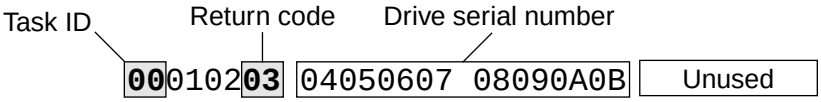


Action 04



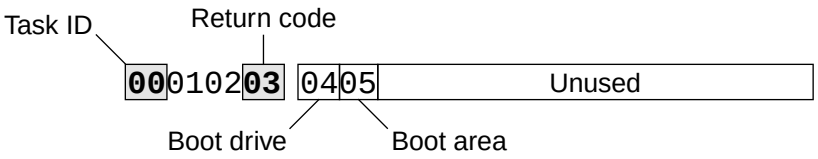
Offset	Label	Field Description
05	Reason for failure	Gives more detail when the return code (offset 03) equals 3C, “Cannot build backup record.” 01 Cannot select drive. 02 Cannot read record 1. 03 Cannot write record 1. 04 Failed on write backup record.

Action 05



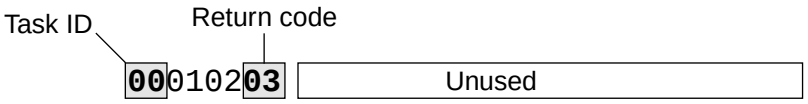
Offset	Label	Field Description
03	Return code	Values: 02 = Drive error 21H = Invalid drive

Action 06



Offset	Label	Field Description
04	Boot drive	Bit map showing boot drive: 01 Drive 0 02 Drive 1 03 Both drives
05	Boot area	Bit map showing boot area: 01 Area A 02 Area B 03 Both areas

Action 07

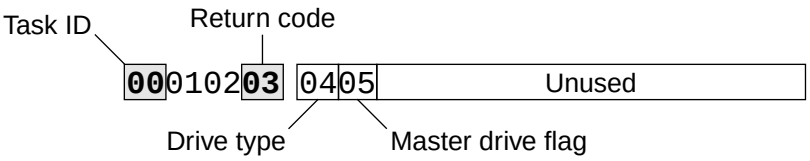


Action 08



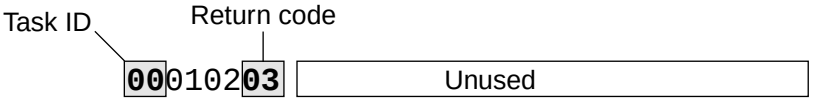
Offset	Label	Field Description
03	Return code	Values: 02 = Drive error 27H = Invalid drive type

Action 09

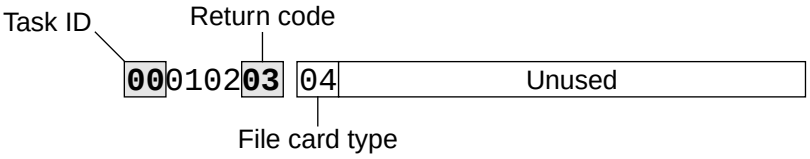


Offset	Label	Field Description
04	Drive type	01 System drive 02 Phrase drive 03 System and phrase drive 04 Message drive 07 System, phrase and message
05	Master drive flag	00 Not a master drive 01 Is a master drive

Action 0A

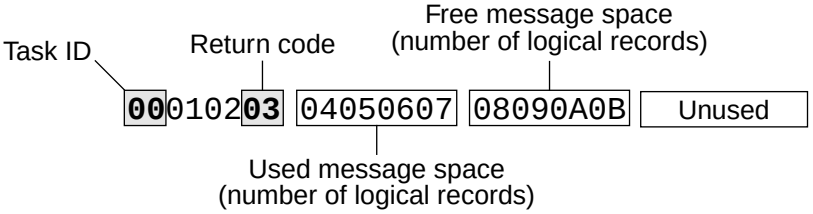


Action 0B

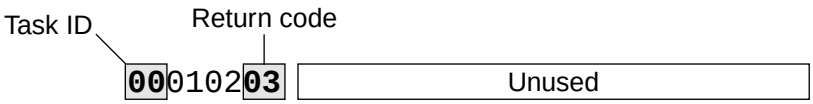


Offset	Label	Field Description
04	File card type	The file card's CPU: 00 Z80 01 386

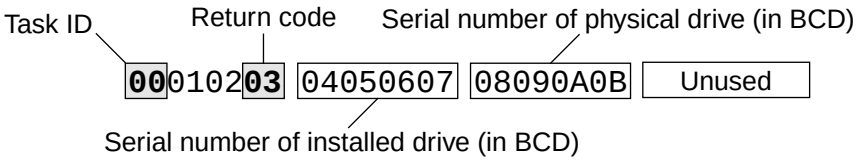
Action 0C



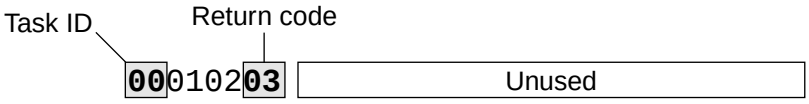
Actions 0D-11



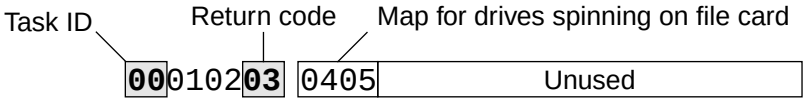
Action 13



Action 14

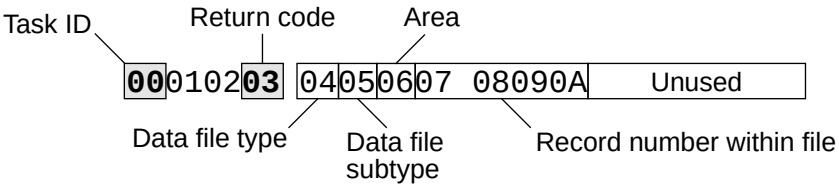


Action 15



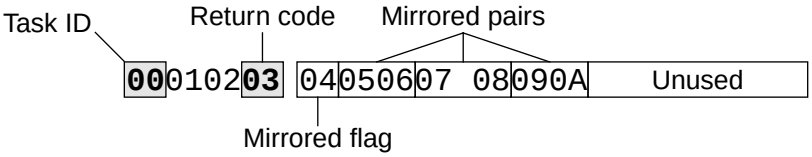
Offset	Label	Field Description
04-05	Map for drives spinning on file card	Bit map of the drives spinning on the file card, both installed and not installed. Bits 0-15 indicate the status of drives 0-15 respectively. To read, transpose the bytes and convert to binary. Set bits indicate spinning drives.

Action 16



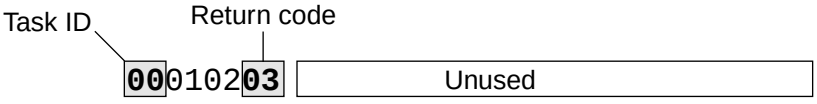
Offset	Label	Field Description
06	Area	Depends on the data file type. Software file: software area 00 or 01 Phrase file: language area (in two parts): Bit 0: phrase area 0 or 1 Bits 1-3: language number 1-5 Other files: unused

Action 17

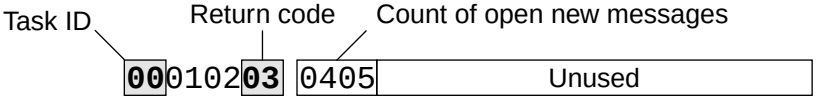


Offset	Label	Field Description
04	Mirrored flag	Mirrored status: 00 Not mirrored 01 Mirrored
05-06, 07-08, 09-0A	Mirrored pairs	Each two-byte field defines a mirrored drive pair. FFFF = end of mirrored pairs.

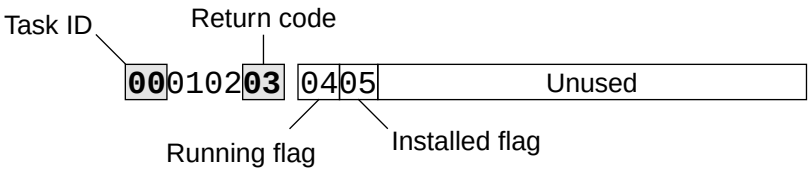
Action 18



Action 19



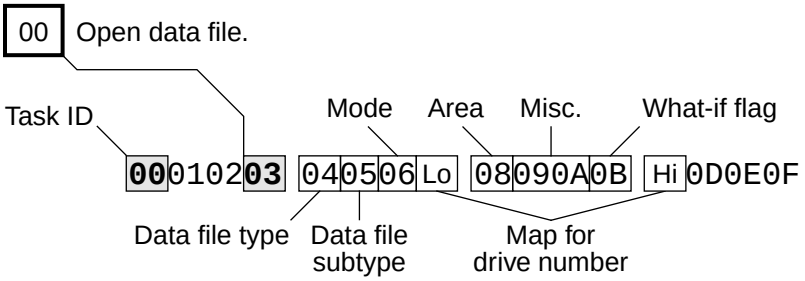
Action 22



Offset	Label	Description
3	Return Code	value = 00
4	Running flag	00 = Not running 01 = Running
5	Installed flag	00 = Not installed 01 = Installed

C8 New Data File Primitives

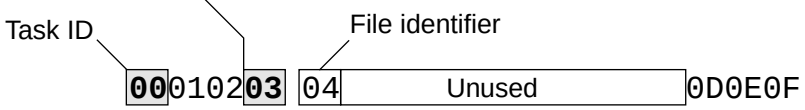
CP➤FS



Offset	Label	Field Description
04	Data file type	00 Software 01 Phrase 02 System data file 03 System utilities 04 Message (386 file card only) FF Drive (Z80 file card only)
05	Data file subtype	Depends on data file type in offset 04. See the table on the next page.
06	Mode	00 Read 01 Read/write 02 Write 03 Write/verify 80 Use relative positioning
07, 0C	Map for drive number	Bit map of the drives. Offset 07 (Lo), bits 0-7, indicate the status of drives 0-7 respectively. Offset 0C (Hi), bits 0-7, indicate the status of drives 8-15 respectively. To read, convert to binary. Set bits indicate the selected drives.
08	Area	Depends on the data file type in offset 04. Software file: software area 00 or 01 Phrase file: language area (in two parts): Bit 0: phrase area 0 or 1 Bits 1-3: language number 1-5 Other files: unused
09-0A	Misc.	Depends on the subtype. Subtypes 09 and 0A: Number of records Subtype 0D: Record number Other subtypes: Unused
0B	What-if flag	Used with subtypes 09 and 0A only. 00 Actual request 01 Space released/used request

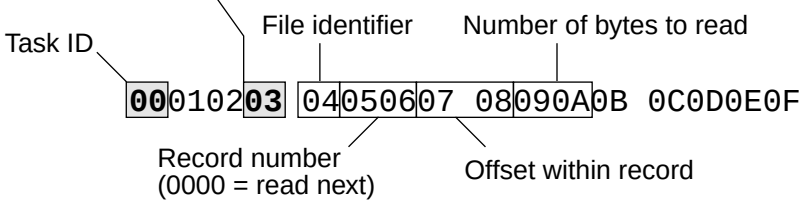
Data File Subtypes					
	00—Software	**01—Phrase**	**02—System Data File**	**03—System Utilities**	**04—Message**
00	File card	Phrase table	System Status Table	Dump records	Messages
01	IPL	Prompt table	Class of Service table	Drive parameters	Message Information File
02	System software	In-ram phrase table	Report selection parameters	Filecard Configuration File (Z80 record 0 and 2)	
03	Miscellaneous software		Statistic segments	Disk Information File (Z80 record 1)	
04	VRTX (386 only)		User records		
05	IPL1 extension (386 only)		CDR		
06			CPU data files		
07			Backup user records		
08			Port configuration file		
09			Bad user record file		
40				Z80 DDR	
41				Z80 Message Information File	
42				Z80 Backup record	
43				Z80 Write-through record	
44				Z80 Spare List	
80				386 RAT File	
81				386 RAT Backup File	
82				386 Filecard Error Log	
83				386 Network Error Log	

01 Close data file.

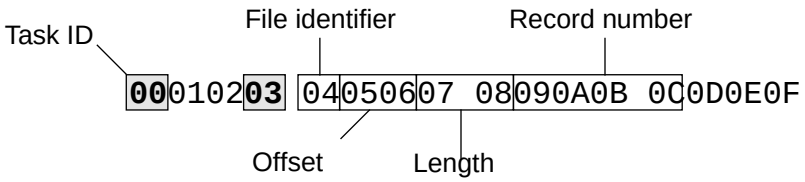


02 Read next.

Format 1 (Z80)

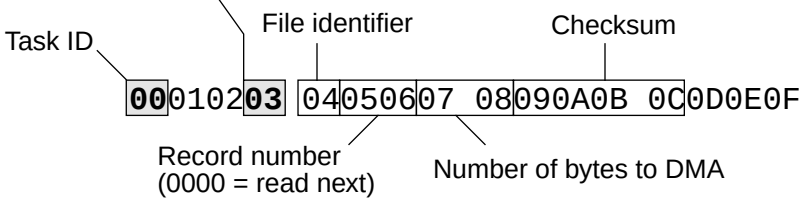


Format 2 (SYS_TYPE_SIERRA)

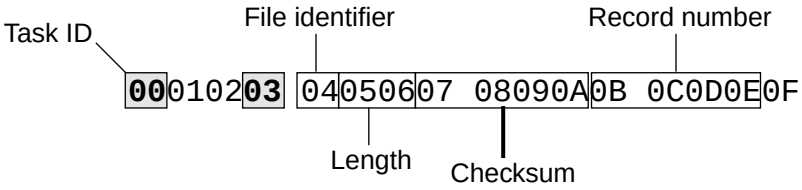


03 Write next.

Format 1 (Z80)

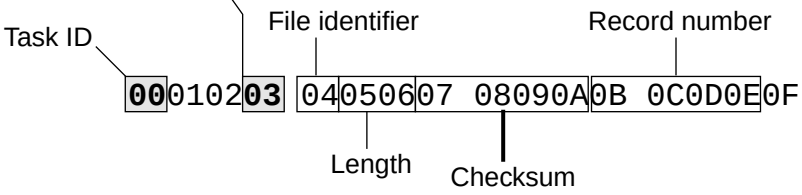


Format 2 (SYS_TYPE_SIERRA)

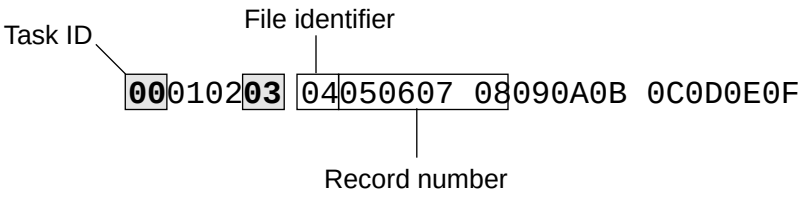


04 Zero next.

Format 1 (Z80)

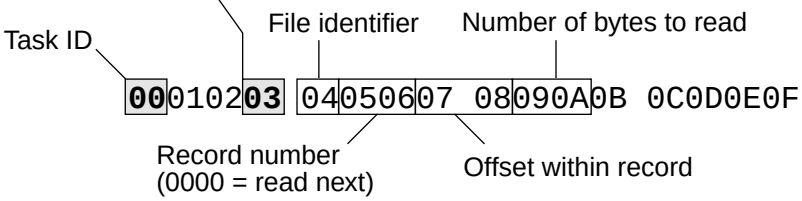


Format 2 (SYS_TYPE_SIERRA)

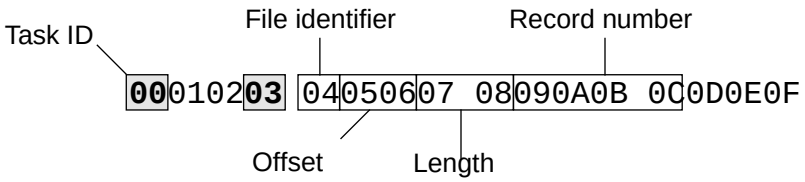


05 Read logical record.

Format 1 (Z80)

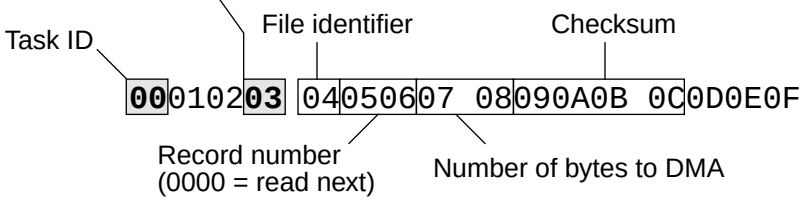


Format 2 (SYS_TYPE_SIERRA)

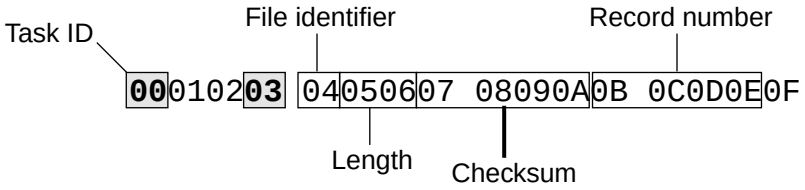


06 Write logical record.

Format 1 (Z80)

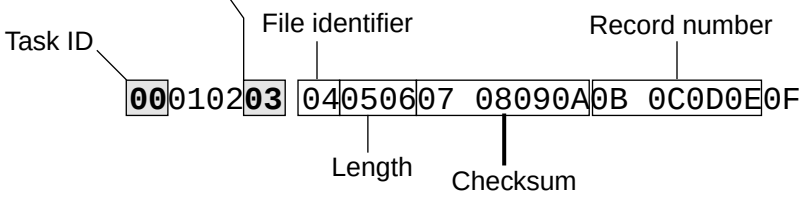


Format 2 (SYS_TYPE_SIERRA)

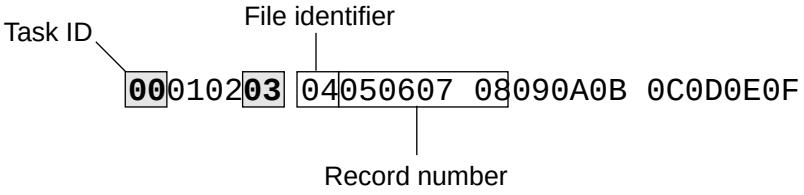


07 Zero logical record.

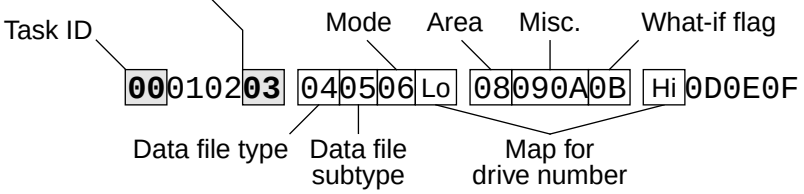
Format 1 (Z80)



Format 2 (SYS_TYPE_SIERRA)

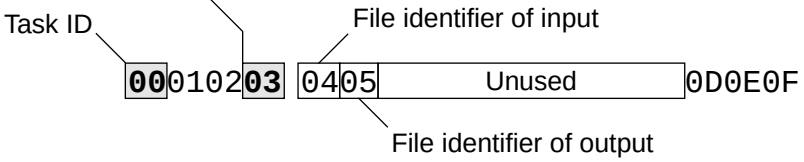


08	Get data file size.
09	Expand data file size.
0A	Decrease data file size.

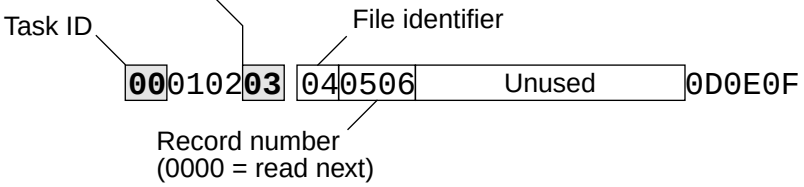


For field descriptions, see tables with action 00 on page 452.

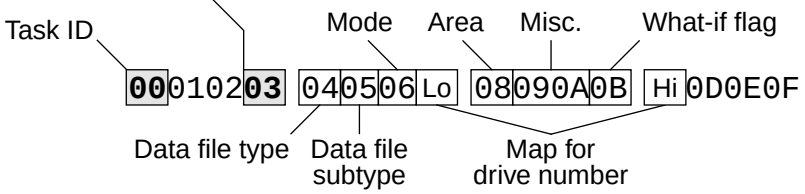
0B	Read/write next.



0C	Zero user record on all installed system drives.



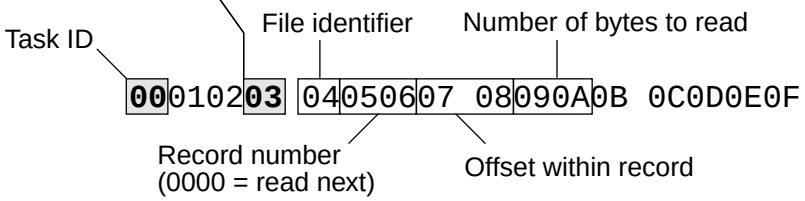
0D Translate to physical address.



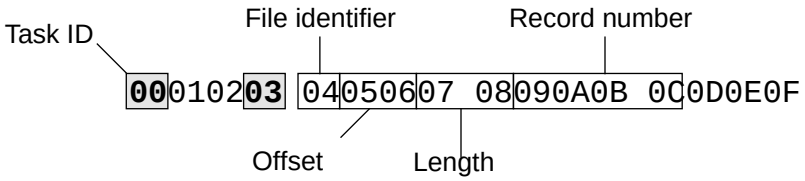
For field descriptions, see tables with action 00 on page 452.

0E Read record, first half (Z80 file card only).
0F Read record, second half (Z80 file card only).

Format 1 (Z80)

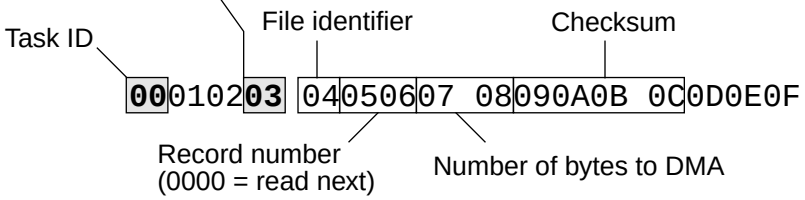


Format 2 (SYS_TYPE_SIERRA)

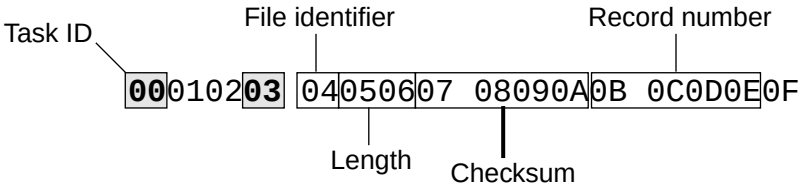


10 Write record, first half (Z80 file card only).
11 Write record, second half (Z80 file card only).

Format 1 (Z80)

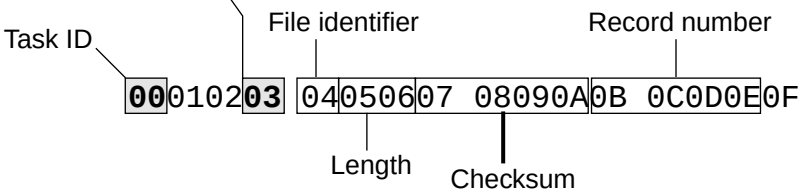


Format 2 (SYS_TYPE_SIERRA)

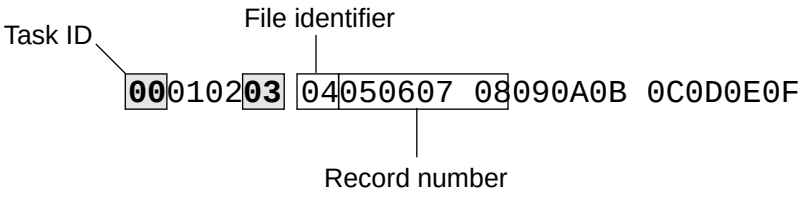


12	Zero multiple logical records.
13	Zero multiple next records.

Format 1 (Z80)



Format 2 (SYS_TYPE_SIERRA)

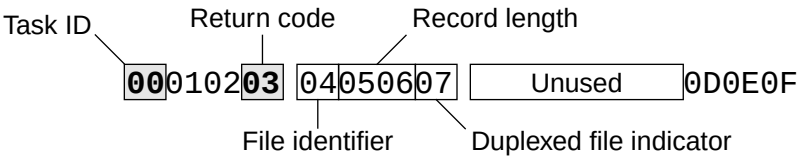


C9 New Data File Primitives Response CP◄FS

The format varies with the action specified in offset 03 of the request message (C8). The following return codes (offset 03) apply to all actions except as noted.

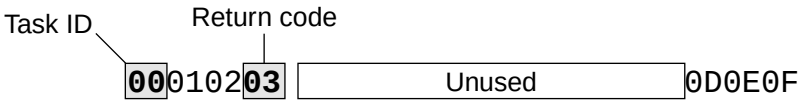
Offset	Label	Field Description
03	Return code	00 OK. 09 Out of space (action 09, Z80). 0A Cannot read record 1, drive 0 (action 09, Z80). 0B Cannot generate spares drive 0 (action 09, Z80). 0C Cannot read record 1, drive 1 (action 09, Z80). 0D Cannot generate spares drive 1 (action 09, Z80). 20 Invalid file type. 21 Invalid subtype. 22 Invalid drive number. 23 Invalid copy number. 24 Invalid language number. 25 Read/write past end of file. 26 Drive error. 27 Move messages. 28 Out of file descriptors. 29 Invalid file mode. 2A Invalid file. 2B File not open. 2C Invalid task ID. 2D File too fragmented. 2E Read error on read/write command. 2F Write error on read/write command. 3C Cannot write backup record (Z80).

Action 00

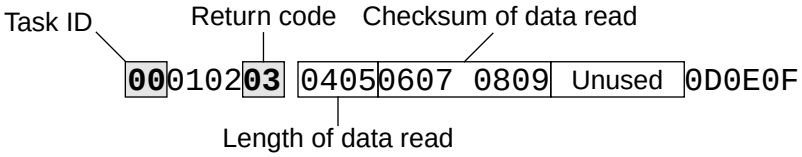


Offset	Label	Field Description
07	Duplexed file indicator	0-simplex file, 1-duplex file (Z80 only) 0-386

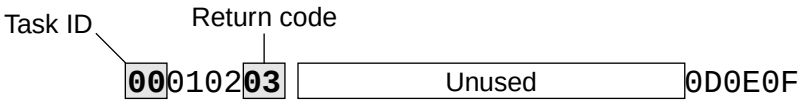
Action 01



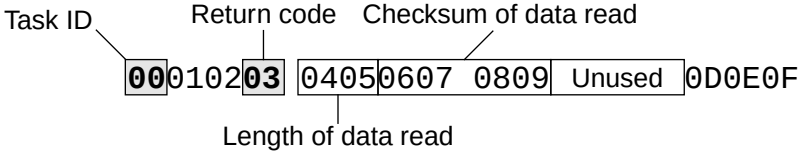
Action 02



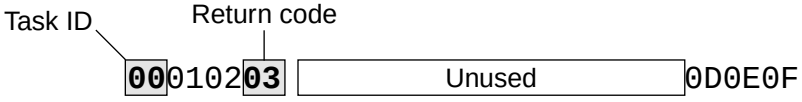
Actions 03 and 04



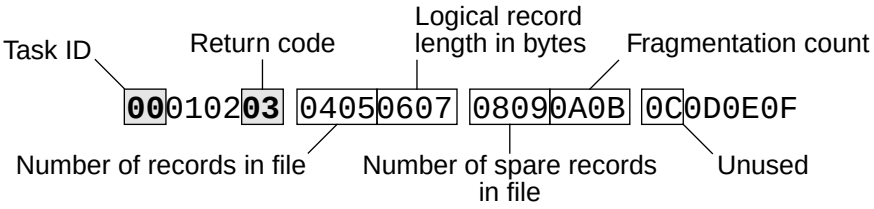
Action 05



Actions 06 and 07

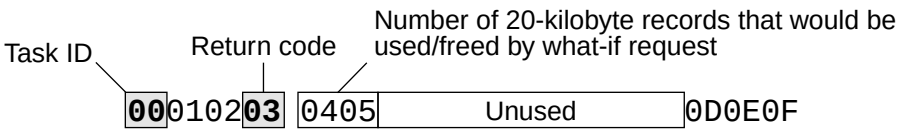


Action 08

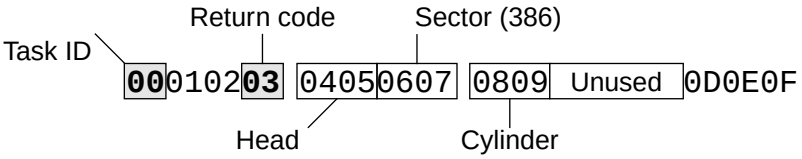


Actions 09 and 0A

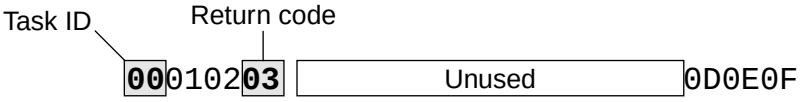
What-if flag set.



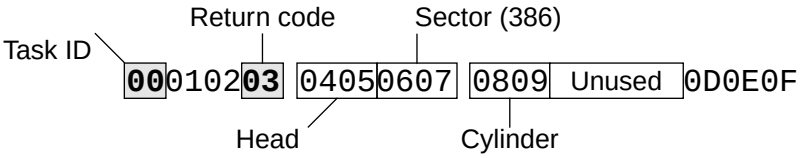
Action 0B



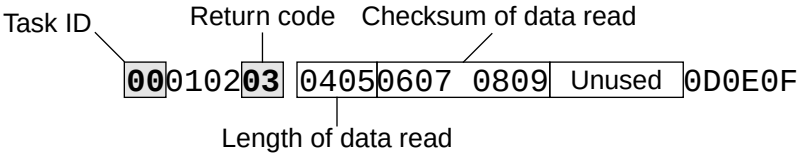
Action 0C



Action 0D



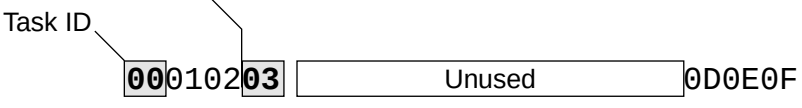
Actions 0E and 0F



CA New Data File Primitives Write Complete CP◄FS

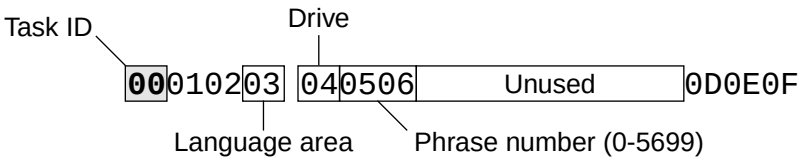
This message is sent when a file system message C8 data transfer and data write operation is done.

00	OK.
01	Drive error.
02	Checksum error.
03	No more space.
04	DMA time-out.



CB Get Phrase Table Pointers

CP➤FS

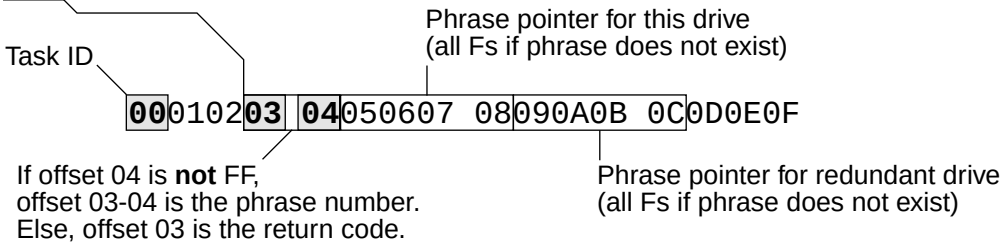


Offset	Label	Field Description
03	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)

CC Get Phrase Table Pointers Response CP◄FS

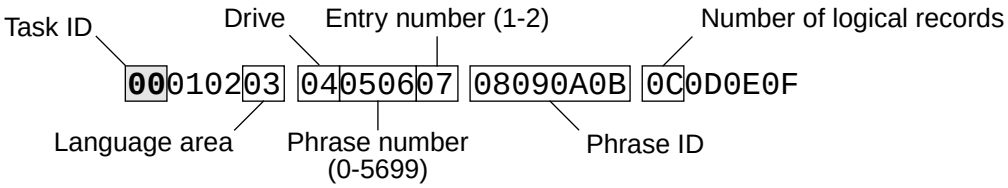
First, check the value of offset 04. If offset 04 = FF, offset 03 holds a return code from the following list. If offset 04 does not equal FF, offset 03-04 holds the phrase number.

00	OK.
20	Invalid area.
21	Invalid drive number.
22	Invalid phrase number.
23	Phrase table not initialized.
24	Invalid table type.
25	Invalid language area number.
26	Phrase entry empty.
27	End of active phrases.
28	Phrase length discrepancy.
29	Formatted play table entry empty.
2A	Invalid prompt table.
2B	Invalid phrase ID.
2C	Invalid phrase entry number.
2D	Phrase table empty.
2E	Error Initializing phrase table.



CD Put Phrase Table Pointer

CP➤FS

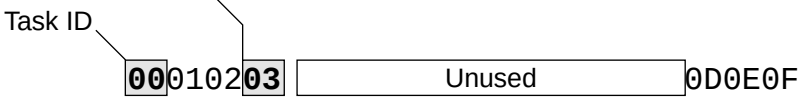


Offset	Label	Field Description
03	Language area	bit 0: phrase area (0-1) bits 1-3: language number (1-5)

CE Put Phrase Table Pointer Response

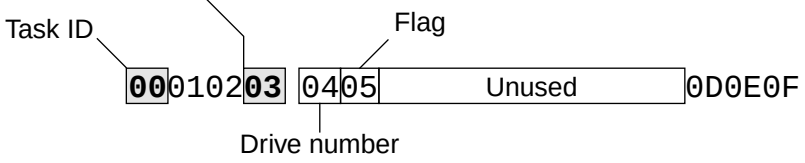
CP◄FS

00	OK.
20	Invalid area.
21	Invalid drive number.
22	Invalid phrase number.
23	Phrase table not initialized.
24	Invalid table type.
25	Invalid language area number.
26	Phrase entry empty.
27	End of active phrases.
28	Phrase length discrepancy.
29	Formatted play table entry empty.
2A	Invalid prompt table.
2B	Invalid phrase ID.
2C	Invalid phrase entry number.
2D	Phrase table empty.
2E	Error Initializing phrase table.



D0 Message Information File Operation CP➤FS

00	Open file for read.
01	Open file for write.
02	Clear file.
03	Get next entry.
04	Get next phrase entry.
05	Close file.



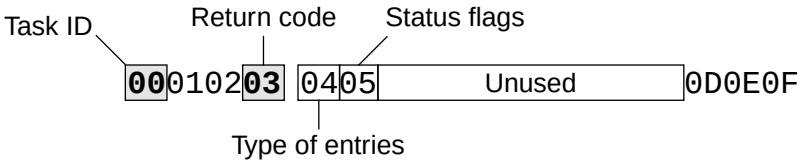
Offset	Label	Field Description
05	Flag	Meaning when set (01) varies with the action in offset 03: Action 00, open file for read: Open file with random access. Action 05, close file: Do not reset file position.

D1 Message Information File Operation Response CP◄FS

The format varies with the action specified in offset 03 of the request message (D0). The following return codes (offset 03) apply to all actions except as noted.

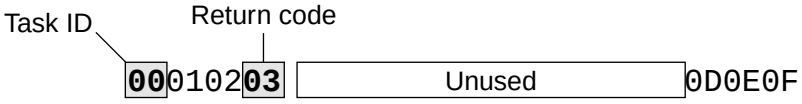
Offset	Label	Field Description
03	Return code	00 OK. 01 Invalid drive. Used with actions 03 and 04 only. 02 Drive error. Used with actions 03 and 04 only. 03 No more entries. Used with actions 03 and 04 only. 30 Invalid mode. 31 File already open. 32 File not open. 33 Bad MIF record address. 34 End of file. 35 Invalid use count. 36 Invalid drive. 37 Bad MIF file. 38 No active MIF.

Action 00



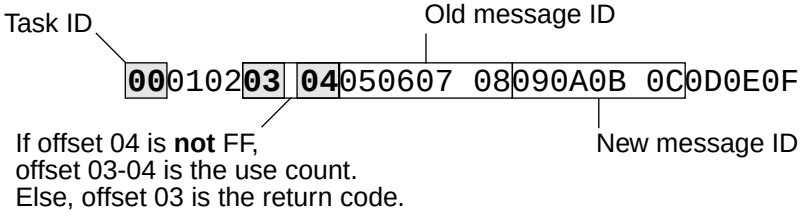
Offset	Label	Field Description
04	Type of entries	00 None 01 Messages 02 Old phrase-management phrase pointers 03 Pre-phrase-management phrase pointers
05	Status flags	Bit 0: File not closed. Bit 1: Not at beginning of file.

Actions 01 and 02



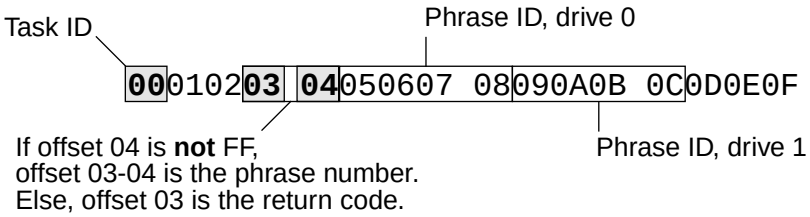
Action 03

First, check the value of offset 04. If offset 04 = FF, offset 03 holds a return code. If offset 04 does not equal FF, offset 03-04 holds the use count.

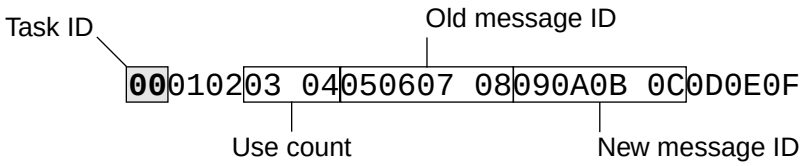


Action 04

First, check the value of offset 04. If offset 04 = FF, offset 03 holds a return code. If offset 04 does not equal FF, offset 03-04 holds the phrase number.

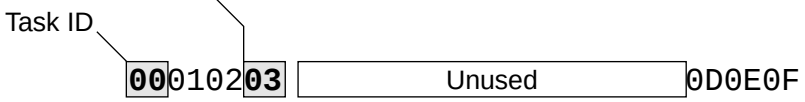


D2 Put Message Information File Entry CP➤FS



D3 Put Message Information File Entry Response CP◄FS

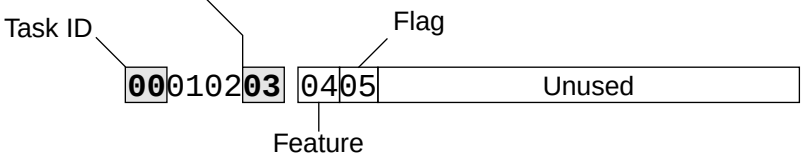
00	OK.
30	Invalid mode.
31	File already open.
32	File not open.
33	Bad MIF record address.
34	End of file.
35	Invalid use count.
36	Invalid drive.
37	Bad MIF file.
38	No active MIF.



D4 Miscellaneous Security Functions

CP➤FS

00	Allow/disallow message recording.
01	Get security serial number.

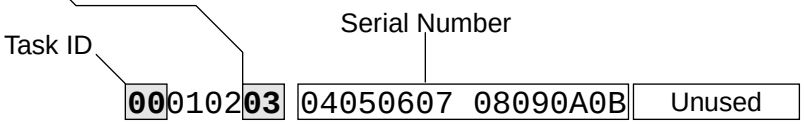


Offset	Label	Field Description
04	Feature	0 = Software based pricing Message Hours 1 = SCSI security
05	Flag	0 = Allow record 1 = Disallow record

D5 Miscellaneous Security Functions Response

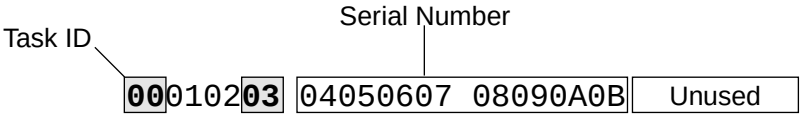
CP◄FS

00	OK.
01	Not OK.



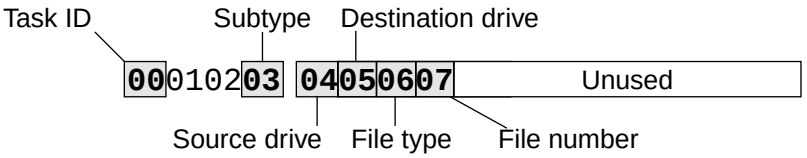
D6 Fast Disk Copy Intra-Filecard

CP ➤ FS



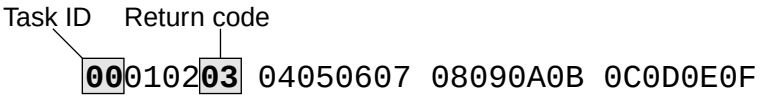
This command can be used to install a drive, to create a backup drive, to replace a drive on the same filecard, or to copy a file or a set of files (software, phrase, etc.) from one drive to another on the same filecard.

When installing, replacing and creating a backup drive, the filecard will also initialize the destination drive before copying the files, and set/reset the DCM/MF bits if necessary after all of the files have been copied.



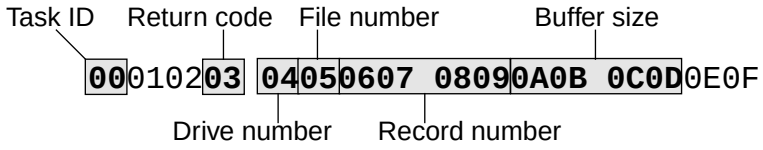
Offset	Label	Field Description
03	Subtype	00 Install drive 01 Backup drive 02 Replace drive 03 Copy files 04 unused 05 unused 06 unused 07 Read error buffer
06	File type	Applies to subtype 03 only: bit 0: software files bit 1: phrase files bit 2: system data files bit 3: message files 0xFF: single file
07	File number	Applies to subtype 03, file type 0xFF only

D7 Fast Disk Copy Intra-Filecard Response CP ◄ FS



Offset	Label	Field Description
03	Return code	00 Okay 02 Errors detected; read error buffer

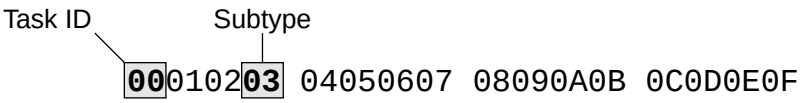
If return code is not 00 and not 02:



D8 Fast Disk Copy Across Filecard

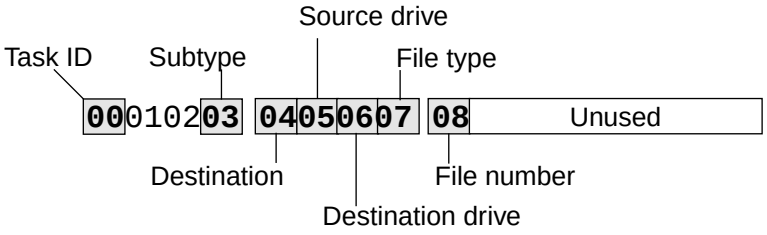
CP ➤ FS

This command can be used to replace a message drive, to convert an ESDI system to a SCSI system, or to copy a file or a set of files from one drive to another on a different filecard.



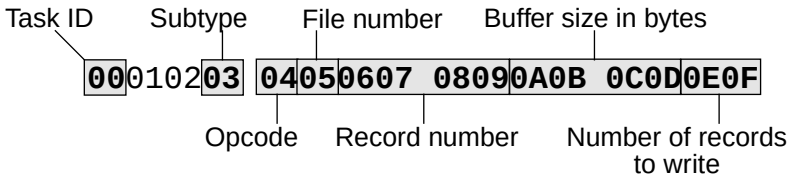
Offset	Label	Field Description
03	Subtype	00 Start replace message drive 01 Start ESDI to SCSI conversion for system drive 02 Start ESDI to SCSI conversion for message drive 03 Start copy file(s) 04 Read data 05 Write data 06 End operations 07 Read error buffer

If subtype = 0, 1, 2 or 3:

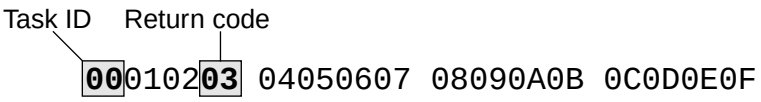


Offset	Label	Field Description
04	Destination	00 Source filecard 01 Destination filecard
07	File type	Applies to subtype 03 only: bit 0: software files bit 1: phrase files bit 2: system data files bit 3: message files 0xFF: single file
08	File number	Applies to subtype 03, file type 0xFF only

If subtype = 5 (Write Data) or 8 (Write Verify):

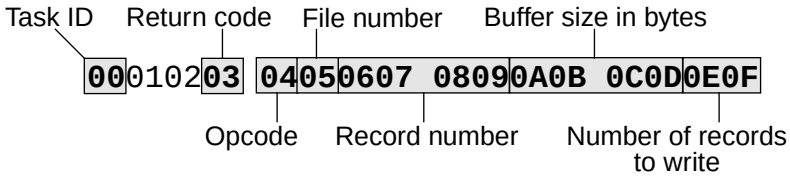


D9 Fast Disk Copy Across Filecard Response CP◄ FS



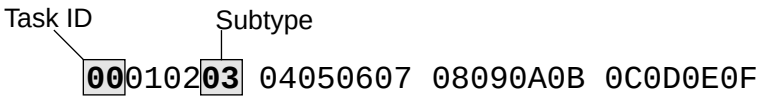
Offset	Label	Field Description
03	Return code	00 Okay 01 End of data 02 Errors detected. Read error buffer (applies to command subtype 6 only) 2D Serial number mismatch

If command subtype = 4:



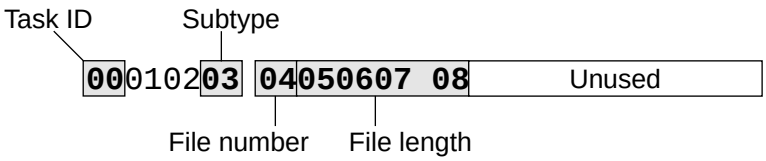
DA Read File Characteristic

This command will tell the destination drive the file (one file per command) whose length needs to be adjusted.



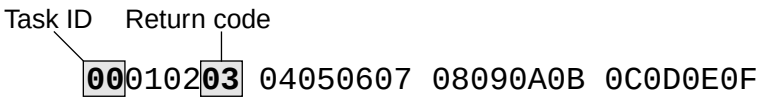
Offset	Label	Field Description
03	Subtype	00 Read file characteristic 01 Configure file characteristic

If subtype = 1:



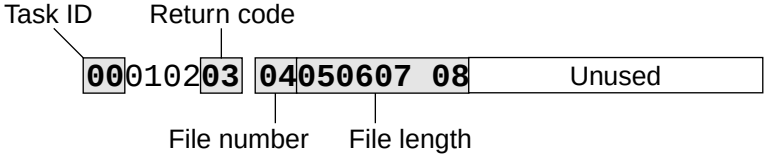
DB Read File Characteristic Response

CP ◄ FS



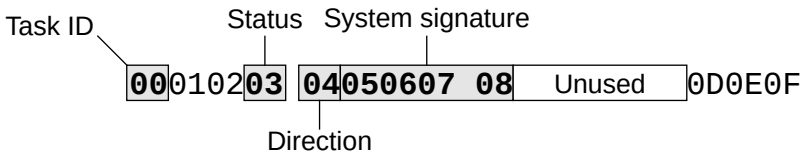
Offset	Label	Field Description
03	Return code	00 Okay 01 End of directory

If command subtype = 0:



FE CP Software Synchronization CP◄►FS

This message can be either CB-in or CB-out. The direction is indicated in offset 04. There is no response message. This message is also used with digital line cards.



Offset	Label	Field Description
03	Status	00 Software initialized FF Initializing, not ready
04	Direction	00 CP to slave FF Slave to CP
05-08	System signature	System serial number.

3.2 COMMON CODES

Several codes used in multiple file system messages are described here:

- Drive action and status codes
- Read and write data types
- File numbers
- Internal file card status codes
- File card return codes

3.2.1 Drive Action and Status Codes

Table 3-1. Drive Action Codes

Action Code	Description
05	Read duplexed record from selected drive.
06	Write duplexed record on selected drive.
08	Write half record on second half of selected drive.
09	Read half record from second half of selected drives.
10	Write half record on first half of D0 and D1.
11	Read half record from first half of D0 or D1.
12	Write record on D0 and D1.
13	Read record from D0 and D1.
15	Read duplexed record on D0 and D1.
16	Write duplexed record on D0 and D1.
18	Write half record on second half of D0 and D1.
19	Read half record from second half of D0 or D1.
20	Write half record on first half of selected drive.
21	Read half record from selected drive.
22	Write record on selected drive.
23	Read record from selected drive.

Table 3-2. Drive Status Codes

Status Code	Description
0A	Seek time out.
0B	Step time out.
0C	Cannot home the drive.
0D	Operation time out.
0E	Address verify error.
0F	ECC error.
10	Address verify sequence.
11	Drive fault error.

3.2.2 Read and Write Data Types

These codes are used in file system messages 28, Read Data, and 34, Write Data. They appear in offset 04 and describe not only the data type, but the type of parameter in offset 05-06.

Table 3-3. Data and Parameter Types

Data Type (offset 04)		Parameter Description—depends on data type (offset 05-06)
Code	**Description**	
00	Any data on track	Track number
01	Available user number bit map	Unused
02	Local AMT table, third track	Unused
03	Local user or node record, single	User record number or node number
04	Local user or node records, multiple	First user record number of group (0080, 0085, 008A, …)
05	System group lists, multiple	System group number (0, 20, 40)
06	Local AMT table, first track	Unused
07	Local AMT table, last track	Unused
08	Program overlays	Number of records within base
09	Class-of-service tables	Unused
0A	Statistics segments (256 byte entries)	Starting record number
0B	Local AMT table, second track	Unused
0C	System status table	Unused
0D	System group list	System group number (0-49)
0E	Menus	Menu number, 0 - ?
0F	Download code or phrase table	The field holds two 1-byte values: Offset 05: record number Offset 06: data sub-type: 00 OS - 3 01 AC - 7 02 Trees - 7 03 SMT - 7 04 RPT OVLY MGR - 2 05 IPL - 6 06 Phrase tables 07 In-RAM phrase list 08 File card code (two records) 09 Used phrase list (Data sub-types continue on next page.)

Table 3-3. Data and Parameter Types (Continued)

Data Type (offset 04)		Parameter Description—depends on data type (offset 05-06)
Code	**Description**	
0F	Download code or phrase table (continued)	80 Z80 CBB (FS 16 only) 81 Z80 CBO (FS 16 only) 82 FS 386 83 CP IPL2x 84 CP IPL3 85 EPU 86 TCAP 87 Menus 88 VRTX 32 89 RTSCOPE 8A VMM 8B NMI (IPL4) 8C Global software 8D DLC 8E FS IPL1 91 T1 software
10	Report selection parameters	Starting record number
11	Record type	Unused
12	CDR	Block number to be retrieved
13	New addition to CPU data records (AMT, …)	Record number within the data area
14	New addition to CPU software area	Record number within the software area
15	Community number	Valid values are: 00-C7
16	Attendant schedule number	Valid values are: 00-C7
17	Multiple community number	00, 0A, 14, … BE
18	Raw phrase	Phrase number
26	Record 50	Record number within the data area: 0000-0063

3.2.3 File Numbers

File numbers appear in some of the file system messages.

Table 3-4. File Numbers

File Number	Description
00	Users
01	Company records
03	Attendant records
04	System status table (SST)
05	Class of service (COS)
06	Statistics
07	Call detail record (CDR)
08	System groups
09	Name table
0A	Software file system 386
0B	Software Z80 control bus overlays (CBO)
0C	Software Z80 control bus base (CBB)
0D	Software menus
0E	Software overlays
0F	Software central processor initial program load 2 (IPL2)
10	Software central processor initial program load 3 (IPL3)
11	Software central processor operating system
12	Software central processor system manager task (SMT)
13	Software central processor application code (AC)
14	Software central processor trees
15	Software extended processing unit (EPU)
16	Software VRTX32 operating system
17	RTSCOPE
18	Termcap (TCAP)
19	Record 3 (REC3)
1A	Phrase record numbers
1B	Phrase record number allocation bitmap
1C	Prompt master list
1D	Prompt-to-phrase table, language 0
1E	Prompt-to-phrase table, language 1
1F	Prompt-to-phrase table, language 2
20	Phrase in-RAM list, language 0
21	Phrase in-RAM list, language 1
22	Phrase in-RAM list, language 2
23	Phrase used list, language 0

Table 3-4. File Numbers (Continued)

File Number	Description
24	Phrase used list, language 1
25	Phrase used list, language 2
26	Z80 prompt table file
27	CPU file system data area
28	CPU file system software area
29	System configuration file
2A	Software virtual machine monitor (VMM) file
2B	Software non-maskable interrupt (NMI) handler file
2C	Global software (SP)
2D	CP dump record (record 50)
2E	Report parameters
2F	File system status log
30	System performance log
31	Record allocation table
32	Message file space
33	Translation tables
34	Software DLC
35	Record allocation table backup
36	Network card application software
37	FDDI software
38	T1 software
39	ISDN software
3A	Network card error log file
3B	16 nodes, 16 AMT’s
4B	16 nodes, 16 NMT’s
5C	ACP 386 file
5D	ACP 188 file
5E	Temporary file
5F	Port configuration

3.2.4 Internal File Card Status Codes

These codes are reported in certain file system messages. These codes are also logged into file 2F, the file system status log.

Table 3-5. Internal File Card Status Codes

Area	Code	Description
	0000	Old assert type
	0FFF	ASM assertion
SRAM and IPL	**1000**	'Assert' failed
	1001	Error type not found in error table
	1101	SRAM validity error
	1102	SRAM I/O status read error
	1103	SRAM I/O status write error
	1104	SRAM I/O status recovery error
	1201	IPL system table error
	1202	IPL system table warning
	1203	IPL boot error
	1204	IPL disk level error
DCM	**2001**	DCM I/O error
	2002	DCM drive error
	2003	DCM write verify error
	2004	DCM system table write warning
	2005	DCM system table write error
	2008	DCM tempfile failure
AT	**3001**	AT bad drive
	3002	AT RAM full
	3003	AT record validity check

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
MF	4000	Update of primary copy of RAT (record allocation table) to disk failed
	4001	Update of backup copy of RAT failed
	4002	RAT could not be read from disk at initialization time
	4003	RAT backup could not be read from disk at initialization time
	4004	Recovery of primary RAT from backup copy failed
	4005	Speech buffer write failed, must allocate a new record
	4006	Record appears to be already allocated: a locking problem in record allocation mapping
	4007	Translated error to one that the CP understands: not all file card internal errors can be sent directly to the CP
	4008	SRAM check-byte corrupted: SRAM may have been cleared. Error occured while recovering record space after a crash.
	4009	SRAM entry count corrupted: SRAM may have been overwritten
	400A	RAT/SRAM reconciliation encountered an error and aborted
	400B	SRAM cleared by MF code after error or reconciliation. After reconcilliation, the SRAM data is no longer needed.
	400C	MF bit-set failed: locking problem with setting alloc bits
	400D	MF bit-reset failed: locking problem with resetting alloc bits
	400E	MF de-allocation of unneeded records failed
	400F	MF writing failed
	4010	MF reset channel
Network	5000	Batch network message with no destination
	6000	Batch network message with invalid EAR (extended address record)

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
General System Hardware	**A000**	Exception: divide error
	A001	Exception: debug exception
	A002	Exception: ??
	A003	Exception: breakpoint
	A004	Exception: overflow
	A005	Exception: bounds check
	A006	Exception: invalid opcode
	A007	Exception: coprocessor not available
	A008	Exception: double fault
	A009	Exception: coprocessor segment overrun
	A00A	Exception: invalid TSS
	A00B	Exception: segment not present
	A00C	Exception: stack exception
	A00D	Exception: General protection
	A00E	Exception: page fault
	A00F	Exception: ???
	A010	Exception: coprocessor error
General System	**A020**	Invalid interrupt occurred
	A021	ISR_BAD encountered
	A022	NMI with no source
	A023	The watchdog barked
	A024	Parity error NMI
	A025	Power fail NMI occurred
	A026	Received a NULL segment selector
	A027	Software problem—data structure misaligned
	A028	NVRAM status log vars messed up, re-initialized the log
	A029	DRAM pointer to status logging area/size was wrong
	A02D	Default interrupt occurred
	A030	Drive 5V power fault
	A031	Drive write violation
	ADDD	File card warm boot performed, restart software procedure executed
	AEEE	File card initialization occurred
	AFFF	General error

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
SBI-Related	**B000**	SBI in wrong mode
	B002	SBI DMA buffer not within data segment
	B004	I380's DMA byte count for SBI not expired
	B005	Bad SBI INT source bits
	B006	SBI DMA data under range
	B007	SBI DMA data over range
	B008	SBI CRC error
	B009	CB checksum calculation failed
	B00A	CRC error in transmitted control packet
	B00B	CRC error in received control packet
	B00C	SBI DMA byte count is MAX_SBI_DMA
	B00D	SBI DMA not allowed at present
	B00E	SBI DMA error, alf not zero, but byte count not zero
	BEEE	SBI re-initialization occurred
	BEEF	SBI clear occurred
SCSI Disk-Related	**C000**	SCSI mode select data mismatch in boot table
	C001	SCSI drive failed security test
SCSI Drive	**C101**	Device present but failed to execute command
	C102	Device present but timed out while trying to execute a command
	C130	Check-condition status received from drive
	C131	Requested drive module does not exist
	C132	Requested drive module does not exist (informational only)
	C141	No spare blocks available
	C142	Unknown G-list format
	C143	Information-only disk error
	C144	Serious disk error
	C145	G-list exceeds the threshold
	C146	Tempfile-A not recoverable
	C147	Tempfile-B not recoverable. Crash protection disabled.
	C148	Error reassigning the bad block
	C149	Error reading G-list
	C150	Write/verify miscompare

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
SCSI Firmware	C201	SCSI driver not ready: initialization has not been completed
	C230	Data underrun: data received was less than expected
	C231	Data overrun: data received was more than expected
	C232	CDB underrun: command bytes sent to target were less than expected
	C233	CDB overrun: command bytes sent to target were more than expected
	C234	Status underrun: status bytes received were less than expected
	C235	Status overrun: status bytes received were more than expected
	C236	Illegal command: target rejected the command
SCSI Bus	C330	Parity error
	C331	Unexpected bus free
	C332	Cannot communicate with requested device
	C333	Unexpected SCSI-bus reset
	C334	Illegal phase detected
	C335	Message rejected by target
	C336	Reselection aborted
	C337	Reselection from target has selected a non-existant initiator, target or logical unit number
	C338	Reset command failed
	C339	Selection aborted
	C33A	Unknown message bytes
SCSI Chip	C401	SCSIchip initialization failed
	C402	SCSI chip malfunction
	C430	Selected device not busy but command timed out.
	C431	Received check-condition status while performing request sense

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
SCSI Request	C501	Request queue full
	C502	Invalid bus ID specified
	C503	Invalid target ID specified
	C504	Invalid LUN specified
	C505	Invalid LBA specified
	C506	Invalid LBA length specified
	C507	Invalid request code specified
	C508	Invalid request flag specified
	C509	Invalid data buffer specified
	C50A	Specified buffer size too small
	C50B	Invalid event ID specified
	C50C	Invalid event ID flag specified
	C50D	Request is invalid for device type at specified ID
	C50E	Device at specified ID is present but offline
	C50F	NULL DIOS pointer encountered
	C510	Wrong special request
	C511	Invalid queue element pointer
	C512	Invalid queue name
	C513	Invalid type of queue operation
	C514	Queue is empty
	C515	Queue head/tail pointer is NULL
	C516	Queue element was not found
	C517	Invalid queue element number specified
	C518	Wrong queue element found during search
	C519	RRQ error: unable to reset bus
	C520	RRQ error: bus device reset failed
	C521	RRQ error: test unit ready failed
	C522	RRQ error: inquiry failed
	C523	RRQ error: request sense failed
	C524	RRQ error: rezero unit failed
	C525	RRQ error: enable drive failed
	C526	RRQ information: log of reset and requeue data
	C527	Queue warning: queued with no req in sim
	C530	Request aborted
	C531	Request aborted due to reset
	C532	Auto request sense failure

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
SCSI Drive Module	**C630**	False alarm from remote terminator fail hardware
	C631	Remote terminator failed
	C632	Remote terminator setup failed
	C633	False alarm from local terminator fail hardware
	C634	Local terminator failed
	C635	Local terminator setup failed
	C636	False alarm from logic violation hardware
	C637	Hardware logic vialation
	C638	Hot plug error
	C639	Drive module 5V error
	C640	Hot plug interrupt notification
	C641	Open online command complete
	C642	Drive module 5V failed int notification
	C643	Drive module removed from service
SCSI Miscellaneous	**CF00**	Unknown result
	CF01	DMA initialization failed
	CF02	NULL CCB pointer found
	CF03	Cannot allocate memory for a CCB
	CF04	Host basher error
	CF05	Host basher entry number exceeded the limit
ESDI Disk-Related	**E001**	Disk was not present
	E002	Request DRB not in initial state upon entry
	E003	Aborted seek command
	E004	Before seek command the ESDIC got an SRQ status bit=1
	E005	Read or write completion error
	E006	DMA byte count did not expire after read/write
	E007	CMD-complete received after seek completion
	E008	DMA channel release error
	E009	Request DMA byte count greater than 24 bits
	E00A	Could not convert logical to physical address
	E00B	Seek operation unsuccessful
	E00C	.Chk1 or .Chk2—bad check bytes
	E00D	.STATE—not in proper state
	E00E	.LMEM_Ptr address not doubleword aligned
	E00F	Utility command execution failed
	E010	Bad value for .REQUEST field
	E011	Seek address out of bounds
	E012	Read/write failure; cannot find specified sector
	E013	Sector count field in the DRB is greater than maximum sector count

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
ESDI Disk-Related	**E014**	DMA data overrun error
	E015	Bad drive number or status record
	E016	DRB's .SCT field exceeds allowed size
	E017	Function can only be performed on a format station
	E018	Buffer not contained in data segment
	E019	ECC error on single sector corrected
	E01A	Requested drive is out of service
	E01B	This drive caused previous reset request
	E01C	Command response took longer than allowed
	E01D	DRB linked list is full for this drive
	E01E	DRB's .SCT (sector count) field is equal to zero
	E01F	Seek failure: drive busy
	E020	Read/write failure: ID/data error (STR=24)
	E021	Read/write failure: Missing byte sync pattern
	E022	ESDI command failure: drive attention asserted. No retries after this error because the drive is locked up. But a reset EDIC and restart will occur.
	E023	Verify failure
	E024	ECC error, correctable
	E025	Request returned because the drive is out of service
	E026	Reset-request logic had a problem, request returned
	E027	ESDIC command locked up. Reset ESDIC and restart drive chain will occur. This request probably did not cause the problem. It is often caused by a drive power-supply failure.
	E028	ESDIC reset request
	E029	Spinup failed
	E02A	Drive 5V-power flt detected during this request. Reset ESDIC and restart drive chain will occur. This request probably did not cause the problem, so it will be restarted.
	E080	Servicing of this request has not started

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
ESDI General	E100	Last request was already retried after RRQ. Logged when a request causes a RRQ a second time.
	E101	Bad software state
	E102	Cannot have more than one non-VRTX operation outstanding
	E103	Bad logical to physical conversion
	E104	Drive number parameter passed is zero or greater than MAX
	E105	Excessive command parameters in cmd_array_buf
	E106	Motor control option is not enabled (buf = drive stat)
	E107	Aborted seek command is being processed anyway
	E108	Disk DMA size greater than 65 kilobytes
	E109	DRBptrs_tobe_requeued structure is full
	E110	DMA buffer not doubleword aligned
ESDI Drive and DRB	E200	ESDIC busy when new ESDIC command being sent
	E201	Posting response to an already posted DRB
	E202	Command response indicated drive busy
	E203	LDRB_Ptr pointing to unposted DRB
	E27A	Incorrect drive number
	E27B	DRBQ was about to dequeue over existing requests in LLB
	E27C	Drive's statistics invalid, bad ChkbytN
	E27D	Attempt to read DRB pointer past end of LLbuffer
	E27E	DRB pointer has been corrupted
	E27F	DRB being serviced as been 'reused'
	E280	Bad event flag address/mask
	E281	Error setting drive select map
	E282	Drive stat error: null .LDRB_Ptr
	E283	DRB at .LDRB is bad
	E284	Bad start_request, .LDRB_Ptr not loaded
	E285	Drive init from statistics fails
	E286	Cylinder number is bad
	E287	No drives found during error recovery
	E288	Attempts to group-assign failed in error recovery
	E289	Failure occurred in error recovery routine
ESDI Disk VRTX	E300	Bad VRTX return code
	E301	Bad return from event flag posting

Table 3-5. Internal File Card Status Codes (Continued)

Area	Code	Description
ESDI Drive Monitoring	**E401**	High soft error rate
	E402	Log the drive status that caused RRQ to be done
	E403	Group assignment failed
	E404	Drive should be ready
	E405	Spinup request restarted after being requeued from RnR
	E410	Information collected during new error recovery
ESDI Setup_Next_Request	**E500**	Trying to 'lose' a request. May be caused by .RCODE set to error without RNC-bit before finished.
	E501	Switched buffer, but no requests are in it
ESDI Drive Execution	**E600**	ESDIC command execution fails
	E601	Time-out on wait for INT from ESDIC command
	E602	Time-out on completion of INT from ESDIC seek command
	E603	Both copies of heads' defect list were bad. May occur during formatting of a bad drive.
	E604	ESDIC command time-out took more than one second
	E605	Spinup taking too long; drive taken OOS
	E606	More than three drive varieties
	E607	Drive init from statistics fails
	E608	Recalibration taking too long
	E609	Seek taking too long
	E60A	Seek command execution failed
	E60B	Bad seek status
	E60C	Bad response from Rd command
	E60D	80380's DMA byte count did not expire
	E60E	ESDIC busy for too long
	E60F	Drive should be ready and is not
	E610	Wait_for_return_from_isr waited more than one second
	E611	Received a reset request as response from ESDIC
	E612	Isr_tick (Disk_WDog) found a hung disk command
	E613	Drive has been taken out of service, all requests returned
	E614	Drive gave a bad response to a Sense Unit Status
	E615	Too many consecutive hard disk errors. Causes an ESDIC reset. The reset and requeue may clear the problem.
	E616	Spurious ESDIC INT when no commands or seeks in progress
	E617	More than three drive varieties during spinup
ESDI Drive I/O	**EFFF**	For testing ERRHAND

3.2.5 File Card Return Codes

These codes are reported in most file system messages.

Table 3-6. File Card Return Codes

Return Code	Description
81	End of file
82	Extent not found
83	Request too long
84	Not implemented
85	I/O error
86	Invalid record number
87	Invalid transfer length
88	Invalid buffer pointer
89	No free buffer
8A	Invalid file allocation
8B	Invalid file length
8C	Invalid file attribute
8D	File already exists
8E	Bad record
8F	Table limit reached
90	Invalid drive number
91	Invalid file number
92	Not found
93	Record already exists
94	Invalid record
95	Fatal error
96	Static RAM validity error
97	Invalid drive state
98	Drive error
99	Drive not formatted
9A	Drive not installed
9B	Drive already installed
9C	Serial number mismatch
9D	File not found
9E	Drive not initialized
9F	Write verify error
A0	System table error
A1	DCM invalid parameter list
A2	DCM invalid request
A3	DCM invalid disk address

Table 3-6. File Card Return Codes (Continued)

Return Code	Description
A4	Invalid drive type
A5	Drive 0 error
A6	Invalid file record size
F1	Attempt to set message position beyond EOM.
F2	Consistency check failed.
F3	AT_Get_Buffer failed.
F4	Message IDs (less stn #) mismatch.
F5	System signature mismatch.
F6	Message header checksum mismatch.
F7	Use count 0 in message header.
FF	Bug in message file software.

3.3 FILE CARD STATUS FOR OVERTURE 250 AND OVERTURE 350

The status of the primary file card is conveyed in a 10-byte string that appears at the end of the power-on sequence, as shown in Figures 3-1 and 3-2, and in file system messages 41 and 61 (General Configuration Response for File Cards). In general, the file card status shows the results of the booting process. Fields in the file card status string are identified in Figure 3-3.

```
PIPL ROOT VERSION 2005
Board type is: CCF
System Type: 250
Looking for Combo File System...

    SYSTEM FILE STATUS: 00 01 00 01 00 00 00 00 00 02
    SYSTEM FILE RAM: 00
    SYSTEM BOOT AREA B

ENTER BOOT COMMAND:
```

Figure 3-1. Screen at End of Power-On for Overture 250

```
IPL ROOT VERSION 910000.0
System Type: 350
   PRIMARY FILE CARD STATUS: 00 03 00 03 00 00 00 00 00 00
   BOOTED FROM SYSTEM DRIVE PAIR
   FILE SYSTEM RAM: 00

ENTER BOOT COMMAND:
```

Figure 3-2. Screen at End of Power-On for Overture 350

3.3.1 File Card Status Fields

Byte 0 contains boot status; Table 3-7 describes valid boot status values. Byte 7 is set to 0x43 if the system is a standby redundancy system, otherwise it is set to 0 (Overture 350 only). Byte 8 indicates the status of the standby redundancy system; Table 3-8 identifies the bits that map to standby redundancy status (again, only applies to Overture 350). Byte 09 is set to 02, indicating a SCSI 386 file system.

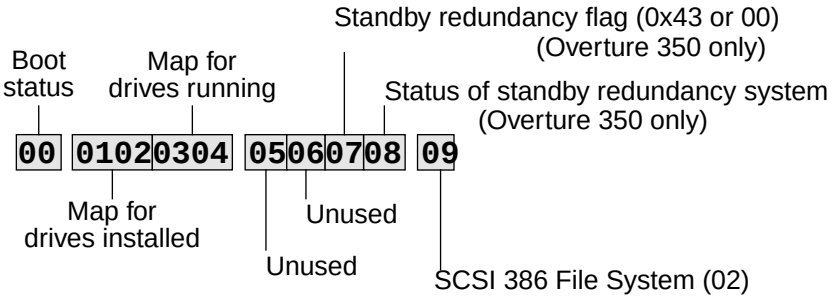


Figure 3-3. File Card Status Fields

Table 3-7. Boot Status Codes

Code	Description
0x03	System running drives error.
0x20	Fatal error detected.
0x22	Drive serial number mismatch.

Table 3-8. Standby Redundancy Status Bits (Overture 350)

Bit	Status
0	1 = card is inactive
	0 = card is standby
2	1 = redundant
	0 = non-redundant
6	1 = termination error (card is not properly configured for standby redundancy)

CHAPTER 4: LINE CARD MESSAGES

This chapter provides descriptions of all control bus messages used with line cards. For information on reading these descriptions, see “Control Bus Messages” on page 34. All values in the illustrations are the bytes’ offsets, not sample data.

Request and response messages are grouped together and organized by the message type of the request. These can be found by checking the numbers in the upper-outer corners of the pages while flipping through the chapter. Or, message descriptions can be found by checking the index below.

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D5 DLC Monitor Call Response, 572

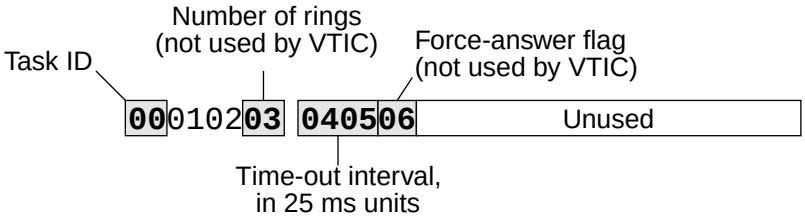
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01 DLC Answer Call

CP➤DLC

Tells the DLC to go off-hook to answer an incoming call, if any, on this channel; requests VTIC to report an incoming call.

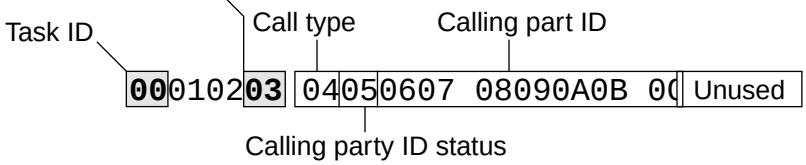


Offset	Label	Field Description
03	Number of rings	Number of rings (only on trunks that provide the ring-down indication). DLC answers incoming call when the desired number of rings are detected (unless “force answer” is in effect).
06	Force-answer flag	Bit 0: 00 Do not force answer. 01 Force answer. Bit 1: 01 Reset ring counter

41 DLC Answer Call Response

CP◄DLC

00	Enough rings detected, incoming call answered.
01	None or not enough rings detected, but call answered due to forced answer.
10	None or not enough rings detected—timeout.
F0	Call not answered—line error, no line.

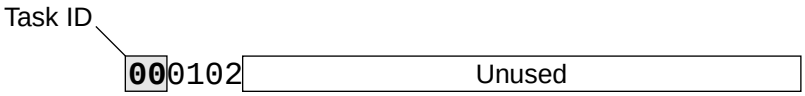


Offset	Label	Field Description
04	Call type	00 No incoming call 01 Direct 02 Ring-no-answer 03 Busy 04 Forward FF Unknown
05	Calling party ID status	00 OK 10 No incoming call F0 Bad

02 DLC Answer Supervision

CP➤DLC

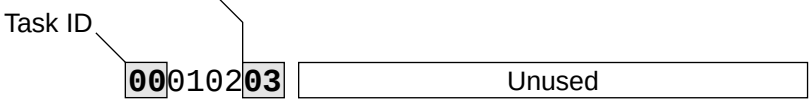
Tells the DLC to return answer supervision to a trunk (E&M and T1).



42 DLC Answer Supervision Response

CP◄DLC

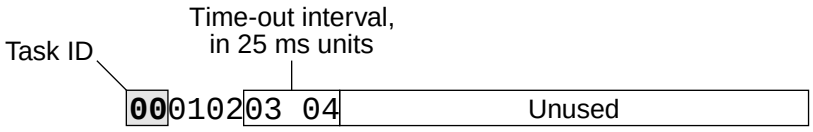
00	OK.
01	DLC not answering an incoming call—disconnect.
F0	No line.



03 DLC Go On-Hook

CP➤DLC

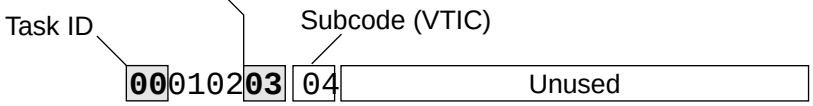
Tells the DLC or VTIC to go on-hook on this channel.



43 DLC Go On-Hook Response

CP➤DLC

00	OK.
10	Near-end on-hook time-out.
F0	Line error, no line.

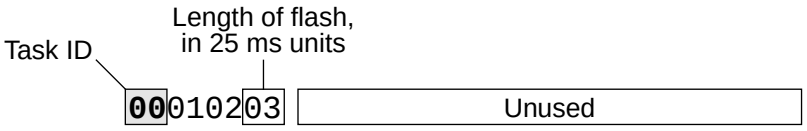


Offset	Label	Field Description
04	Subcode	VTIC subcodes: 00 Link up 01 MSB 02 Link down 03 Link not ready

04 DLC Flash Hook

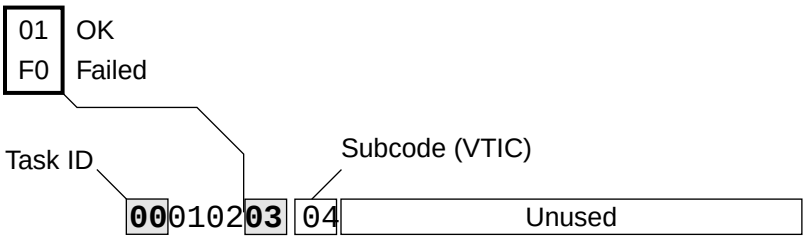
CP➤DLC

Tells the DLC or VTIC to flash on this channel.



44 DLC Flash Hook Response

CP◄DLC

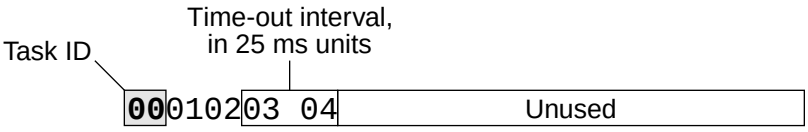


Offset	Label	Field Description
04	Subcode	VTIC subcodes: 00 Link up 01 MSB 02 Link down 03 Link not ready

05 DLC Seize Line

CP➤DLC

Tells the DLC or VTIC to seize the line for outcall or for message waiting.



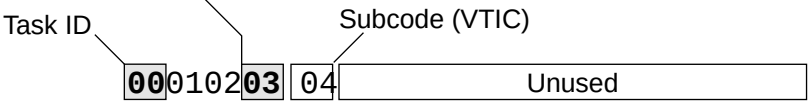
Offset	Label	Field Description
03-04	Time-out interval	Time-out interval, in 25 ms units. Time to wait until either the line is seized or a “glare” is detected.

45 DLC Seize Line Response

CP◄DLC

Tells the CP that the line is either secured or there is an incoming call.

00	OK.
01	Glare (call collision); CP will send 0x03 (on-hook).
02	Glare (call collision); CP will no send 0x03 (on-hook).
10	Timeout.
F0	Line error, no line.

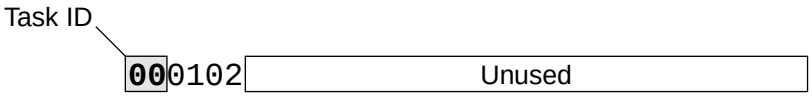


Offset	Label	Field Description
04	Subcode	VTIC subcodes: 00 Link up 01 MSB 02 Link down 03 Link not ready

06 DLC Return TIC Port Type

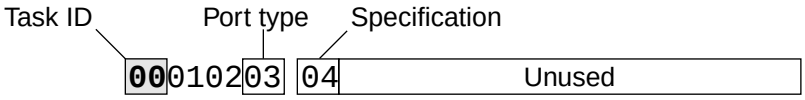
CP➤DLC

This message gets the type of a TIC port from the DLC if possible.



46 DLC Return TIC Port Type Response

CP◄DLC



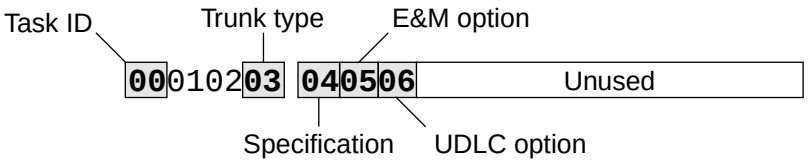
Offset	Label	Field Description
03	Port type	TIC port type: 0H Loop-start trunk 1H Ground-start trunk 2H DID trunk 3H E&M trunk 4H T1 trunk, E&M signalling 5H T1 trunk, loop-start 6H T1 trunk, ground-start 7H CEPT trunk, R2 signalling 8H LS/GS ATIC, port ignores signalling (MID) 0E VTIC F0H No hybrid/TIC present

Offset	Label	Field Description
04	Specification	If loop-start or ground-start analog trunk: 0H 600 ohm 1H 900 ohm If DID trunk: 00H Normal use, short loop 01H Loopback mode, short loop 02H Normal use, long hoop 03H Loopback mode, long hoop If E&M analog trunk: 00H 600 ohm, 4 wire voice 01H 900 ohm, 4 wire voice 02H 600 ohm, 2 wire voice 03H 900 ohm, 2 wire voice If T1 trunk (E&M, LS or GS): Not used If VTIC 01 VTIC/A for AT&T 02 VTIC/N for NT 03 VTIC/R for ROLM

07 DLC Configure TIC Port

CP➤DLC

Configures a TIC through the DLC.



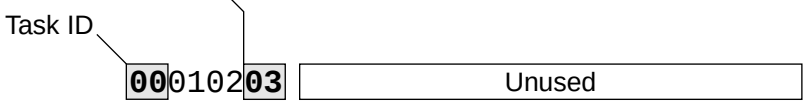
Offset	Label	Field Description
03	Trunk type	Trunk type: 0H Loop-start trunk 1H Ground-start trunk 2H DID trunk 3H E&M trunk 4H T1 trunk, E&M signalling 5H T1 trunk, loop-start 6H T1 trunk, ground-start 7H CEPT trunk, R2 signalling 8H LS/GS ATIC, port ignores signalling (MID) F0H Illegal trunk
04	Specification	If loop-start or ground-start analog trunk: 0H 600 ohm 1H 900 ohm If DID trunk: 00H Normal use, short loop 01H Loopback mode, short loop 02H Normal use, long hoop 03H Loopback mode, long hoop If E&M analog trunk: 00H 600 ohm, 4 wire voice 01H 900 ohm, 4 wire voice 02H 600 ohm, 2 wire voice 03H 900 ohm, 2 wire voice If T1 trunk (E&M, LS or GS): Not used If E1 (CEPT) R2: 00H Do not use CRC4 01H Use CRC4
05	E&M option	If DID or E&M trunk (analog or T1): 00 Pulse input, immediate start 01 Pulse input, wink start 02 DTMF input, immediate start 03 DTMF input, wink start 04 MF input, immediate start 05 MF input, wink start (MF input is supported on E&M only. Both DID and E&M may use DTMF or Pulse input.)

Offset	Label	Field Description
06	UDLC option	UDLC only: 0 Selects u-law PCM encoding for ATIC 1 Selects A-law PCM encoding for ATIC

47 DLC Configure TIC Port Response

CP◄DLC

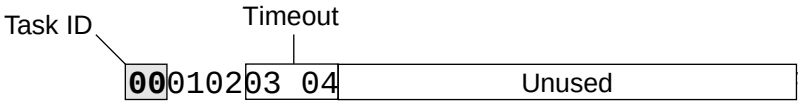
00	OK.
01	Illegal/conflicting parameters.
F0	No TIC.



08 DLC Get Pulse Digit

CP➤DLC

This message gets the pulse digit from DID and E&M trunks.

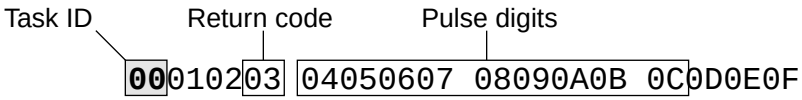


Offset	Label	Field Description
03-04	Timeout	Timeout interval in 25 msec units. Time to wait for incoming dial pulses.

48 DLC Get Pulse Digit Response

CP◄DLC

This message returns the incoming dial pulse digits (if any).

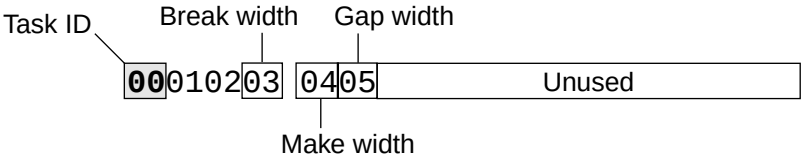


Offset	Label	Field Description
03	Return code	Return codes: 1H-9H Length of pulse digits in the following digits field 10H Timeout (no pulse digits were received)
04-0C	Pulse digits	Incoming pulse digits (up to 9 digits) 00H-09H = ‘0’ - ‘9’ FFH = Padding character

09 DLC Set Incoming Dial Pulses

CP➤DLC

This message sets the widths of the incoming dial pulse and inter-digit gap (valid only on DID and E&M trunks). The default or current settings will be changed to the new values indicated in the message.

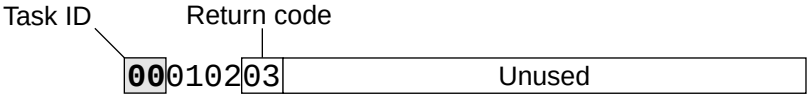


Offset	Label	Field Description
03	Break width	Minimum width of break in 5 ms units. Default = 60 ms.
04	Make width	Minimum width of make in 5 ms units. Default = 40 ms.
05	Gap width	Minimum width of inter-digit gap in 5 ms units. Default = 300 ms.

49 DLC Set Dial Pulses Response

CP◄DLC

This message returns the result of setting the dial pulse.

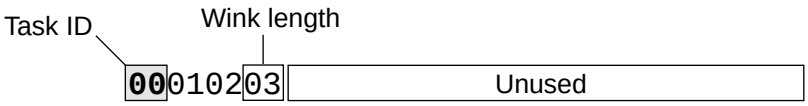


Offset	Label	Field Description
03	Return code	Return codes: 0H Okay 1H Illegal or conflicting parameter(s)

0A DLC Set Outgoing Wink

CP➤DLC

This message changes the length of the outgoing wink from the default or current setting to the new value.

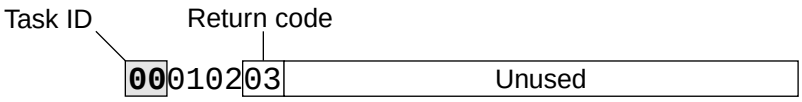


Offset	Label	Field Description
03	Wink length	Length of wink in 5 msec units. Default = 180 msec.

4A DLC Set Outgoing Wink Response

CP◄DLC

This message returns the result of setting the wink.

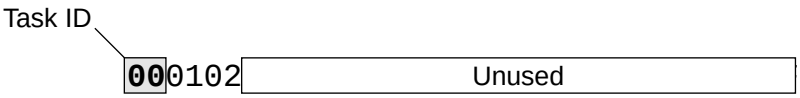


Offset	Label	Field Description
03	Return code	Return code: 0H Okay 1H Illegal or conflicting parameter(s)

0C DLC Begin MTEST

CP➤DLC

Tells the DLC to begin execution of the manufacturing test (MTEST).

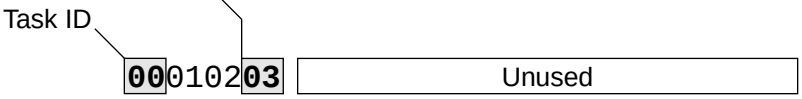


4C DLC Begin MTEST Response

CP◄DLC

Acknowledges receipt of the Begin MTEST command.

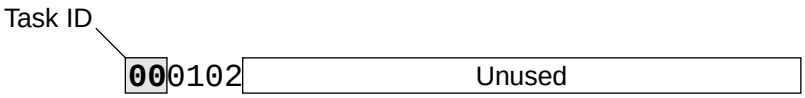
00	OK.
XX	Other than 00—error.



0D DLC End MTEST

CP➤DLC

Tells the DLC to terminate the manufacturing test (MTEST).

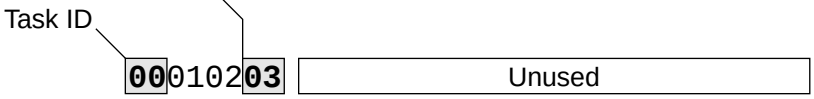


4D DLC End MTEST Response

CP◄DLC

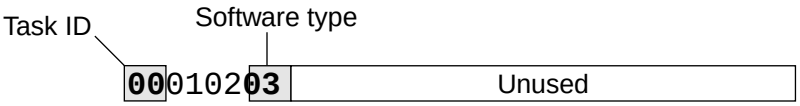
Acknowledges receipt of the End MTEST command.

00	OK.
XX	Other than 00—error.



10 Second Level SW Download Query CP➤DLC

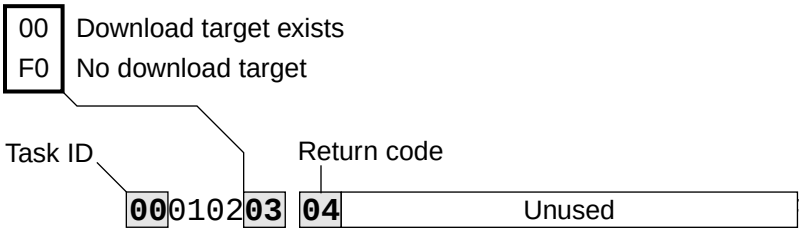
This message asks the DLC whether it wishes to get software downloaded for an intelligent TIC card or for DSP cells.



Offset	Label	Field Description
03	Software type	Type of downloaded software: 00 (Reserved) 01 Converter 02 LCA Module 03 VTG Module

50 Second Level SW Download Response CP◄DLC

The DLC responds that it does or does not want any second level software (such as T1 TIC, DSP, or VTG code) to be downloaded.

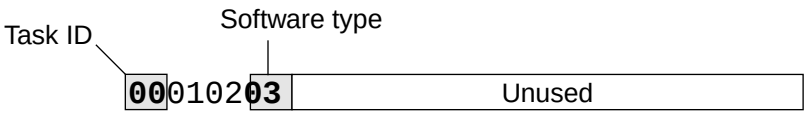


Offset	Label	Field Description
04	Return code	Return code: 00 No second level software download is required. 01 Download T1 TIC software. 02 Download E1 TIC software. 03 Download converter software. 04 Download LCA module software. 05 Download VTG module software.

11 DLC TIC Diagnostics

CP➤DLC

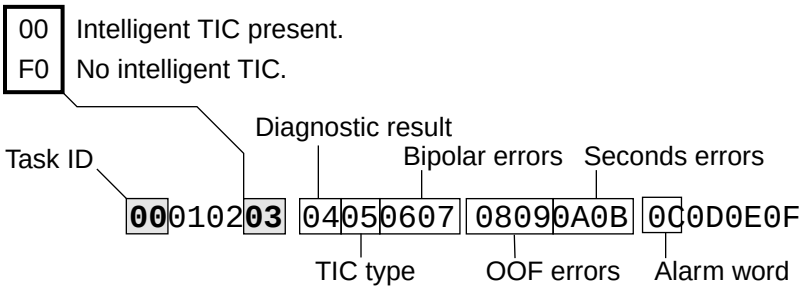
Requests the DLC to report the diagnostic results of an intelligent TIC card.



Offset	Label	Field Description
03	Software type	Type of downloaded software: 00 (Reserved) 01 Converter 02 LCA Module 03 VTG Module

51 DLC TIC Diagnostics Response

CP◄DLC

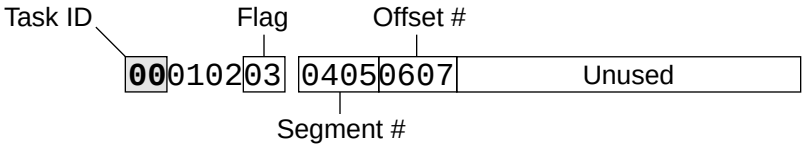


Offset	Label	Field Description
04	Diagnostic result	Result codes: 00H OK - no failures. XXH Diagnostics failures detected.
05	TIC type	Type codes: 00 ATIC 01 E&M 02 T1 TIC 03 CEPT (E1) TIC 04 PIC_T1 TIC 05 PIC_CEPT (E1) TIC F0 No TIC
06-07	Bipolar errors	For T1: Bipolar Violation error count
08-09	OOF errors	For T1: Out Of Frame error count

Offset	Label	Field Description
0A-0B	Seconds errors	For T1: Excessive Errored Seconds error count
0C	Alarm word	For T1: Alarm summary word

12 Begin Second Level Download CP➤DLC

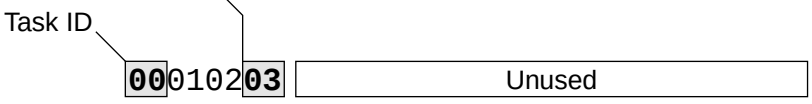
This message tells the DLC to prepare to receive the first packet of the download software for an intelligent TIC card. It specifies the start address for program execution.



Offset	Label	Field Description
03	Flag	Flags: FFH - A valid starting address follows XXH - Use the default starting address
04-05	Segment #	Starting address segment number
06-07	Offset #	Starting address offset number

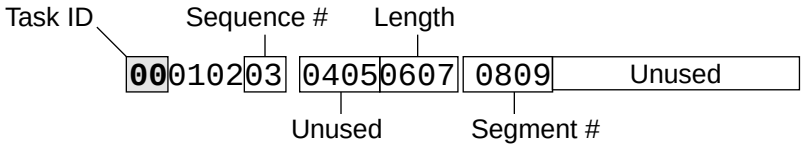
52 Begin Second Level Download Response CP◄DLC

00	OK.
F0	DLC was not expecting a software download; abort.



13 Second Level Download DMA Setup CP➤DLC

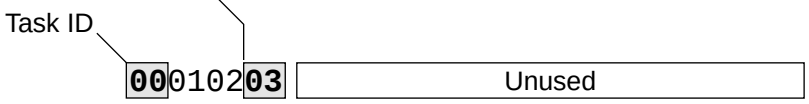
This message specifies the target address of where the software is to be downloaded and the length of the download software DMA packet.



Offset	Label	Field Description
03	Sequence #	Download packet sequence number
06-07	Length	Length (in bytes) of DMA packet
08-09	Segment #	Segment number of target address

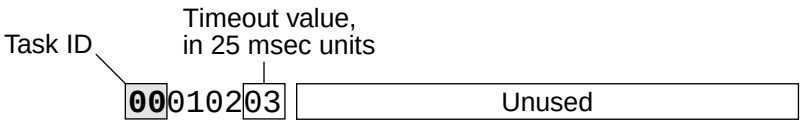
53 Second Level Download DMA Setup Response CP◄DLC

00	OK.
01	DMA packet number sequence error.
F0	DLC was not expecting a DMA transfer; abort.



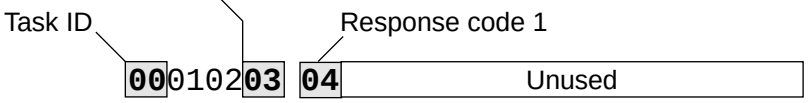
14 Second Level Download DMA Done CP➤DLC

This message asks the DLC if it is done downloading the last packet and is ready to receive the DMA transfer of the next packet.



54 Second Level Download DMA Done Response CP◄DLC

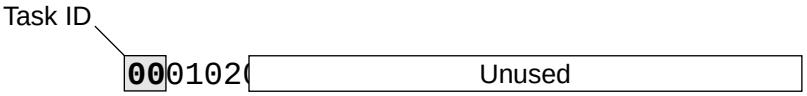
00	OK.
01	Retransmit requested - SBI/OPI checksum error.
F0	Not downloading.



Offset	Label	Field Description
04	Response code 1	Status response code 1: 0H OK; ready for next packet 1H Download is still in progress F0H Download has failed. Possible packet sequence number is out of order, second level card failure; abort.

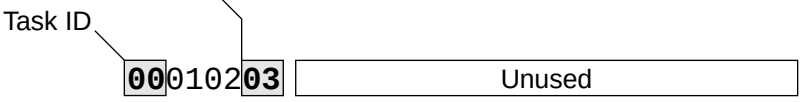
15 Second Level Download Complete CP➤DLC

This message tells the DLC that the software download is complete.



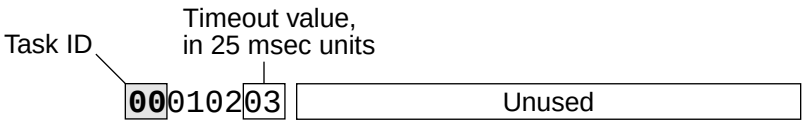
55 Second Level Download Complete Response CP◄DLC

00	OK.
F0	DLC was not doing a software download—error.



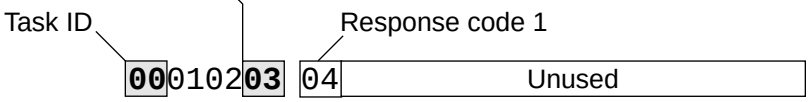
16 Second Level SW Download Sync CP➤DLC

This message asks the DLC if the second level software download worked.



56 Second Level SW Download Sync Response CP◄DLC

00	OK.
01	Checksum failed.
10	Timeout response (probably not a good thing).
F0	No target, no download.

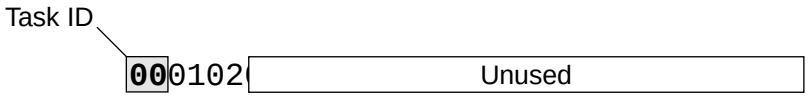


Offset	Label	Field Description
04	Response code 1	Sync response code 1: 00H OK; success F0H Download failed.

17 Clear Second Level Alarms

CP➤DLC

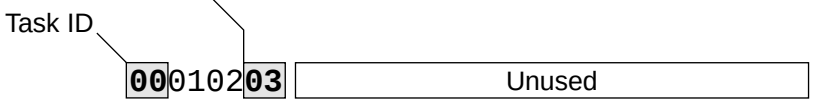
This message initializes the error counts and alarm status in the second level TIC card.



57 Clear Second Level Alarms Response

CP◄DLC

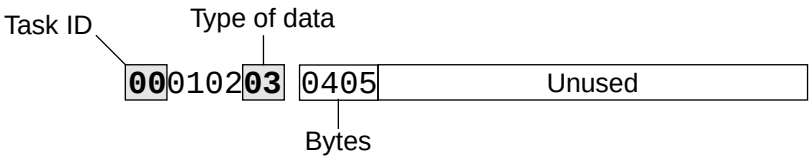
00	OK.
F0	Command not supported by this TIC card.



18 Download Data Start

CP➤DLC

This message tells the DLC to set up to receive a DMA transfer of some configuration data.

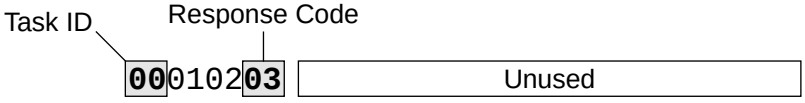


Offset	Label	Field Description
03	Type of data	Type of data to be downloaded: 0H R2 configuration data
04	Bytes	Number of bytes to be DMAed

58 Download Data Start Response

CP◄DLC

This message tells the CP that the DMA is set up and that the DLC is ready to receive data.

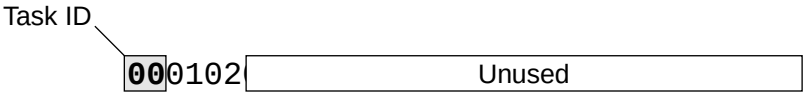


Offset	Label	Field Description
03	Response code	Possible values: 00 OK 01 Number of DMA bytes is incorrect F0 Command failed

19 Download Data Done Query

CP➤DLC

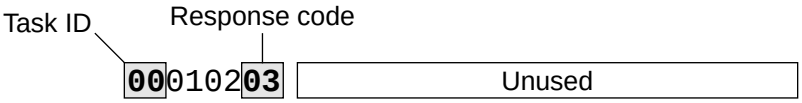
The CP uses this message to ask the DLC for the status of the data download operation.



59 Download Data Done Response

CP◄DLC

The DLC returns the status of the download.

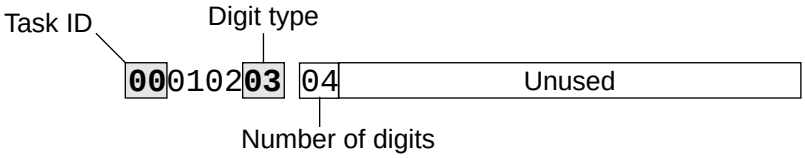


Offset	Label	Field Description
03	Response code	Possible values: 00 Download complete F0 Download was unsuccessful

1A Set Number of Digits

CP➤DLC

This message tells the DLC the number of digits to expect in an incoming call.

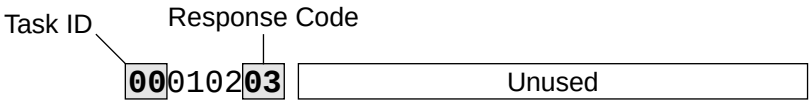


Offset	Label	Field Description
03	Digit type	Type of collected digits: 01 called party digits 02 calling party digits

5A Set Number of Digits Response

CP◄DLC

The DLC responds, indicating whether the Set Digits command was properly received.

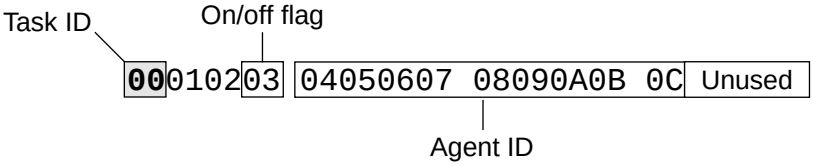


Offset	Label	Field Description
03	Response code	Possible values: 00 OK 01 Digits type error This type not supported on this DLC; unrecognized type. F0 Error

20 Auto Answer Command

CP➤DLC➤VTIC

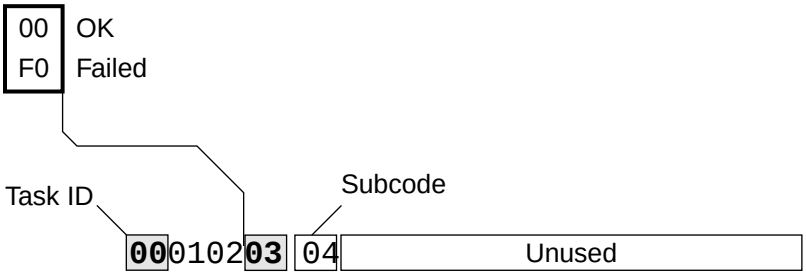
Tells the VTIC port to be in auto answer on or auto answer off mode.



Offset	Label	Field Description
03	On/off flag	00 Auto answer OFF 01 Auto answser ON
04-0C	Agent ID	Each byte initialized to 0xFF

60 Auto Answer Command Response

CP◄DLC◄VTIC

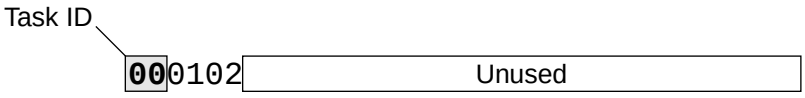


Offset	Label	Field Description
04	Subcode	VTIC subcodes: 00 Link up 01 MSB 02 Link down 03 Link not ready

21 Go Off Hook

CP➤DLC➤VTIC

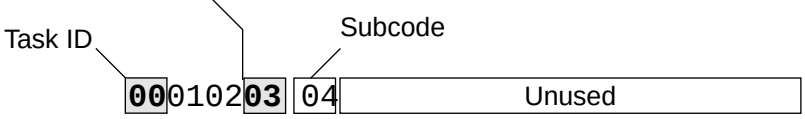
Tells the VTIC to go off hook on this channel for answering incoming call.



61 Go Off Hook Response

CP◄DLC◄VTIC

00	OK.
F0	Line error; no line.

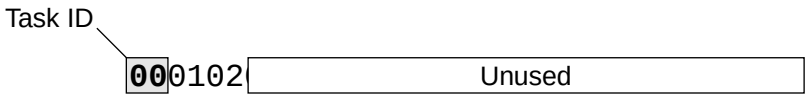


Offset	Label	Field Description
04	Subcode	VTIC subcodes: 00 Link up 01 MSB 02 Link down 03 Link not ready

22 Return Called Party ID

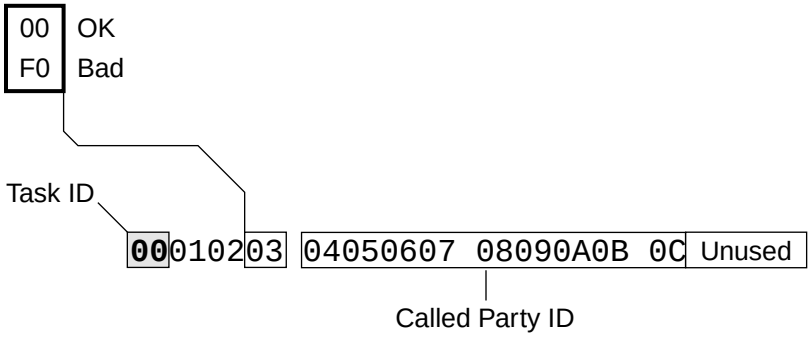
CP➤DLC➤VTIC

Requests VTIC to return Called Party ID.



62 Return Called Party ID Response

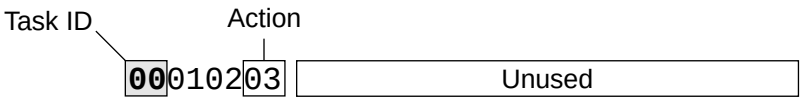
CP◄DLC◄VTIC



23 TIC Event Poll Command

CP➤DLC➤VTIC

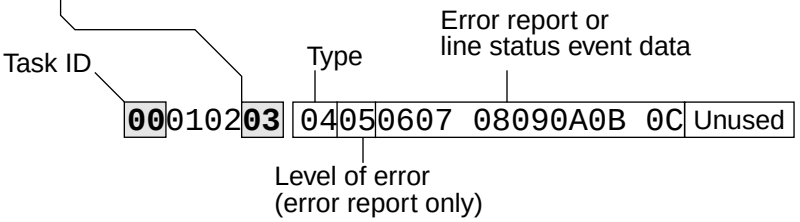
CP polls for VTIC asynchronous event.



Offset	Label	Field Description
03	Action	00 Disconnect event poll 01 Link up event poll FF All events poll

63 TIC Event Poll Command Response CP◄DLC◄VTIC

00	Disconnect event
01	Line status event
02	Error report event
03	Raw display of information
04	Frame sync path selection
FF	No event

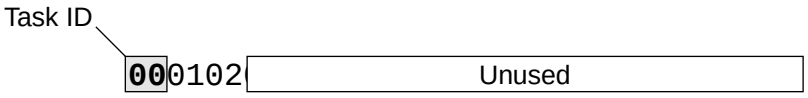


Offset	Label	Field Description
04	Type	Line status event: 00 Link idle (line up) 01 Link (line) make set busy (N.T. only) 02 Link disable (line down) 03 Link (line) not ready (N.T. only) Error report event: 00 Converter 01 VTG 02 Mitic 03 DLC Raw display of information: 00 Start or display 01 Middle of display 03 End of display Frame sync: 00 OK F0 Fail
05	Level of error	For error report only: 00 Level 0 01 Level 1 02 Level 2 03 Level 3

24 Reconnect Call Command

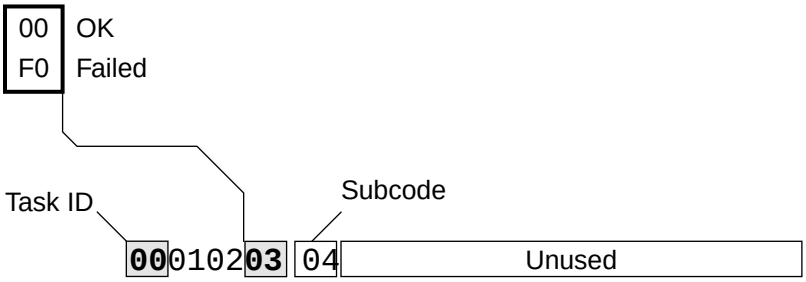
CP➤DLC➤VTIC

Asks the VTIC to reconnect the call that was on hold during a transfer.



64 Reconnect Call Response

CP◄DLC◄VTIC

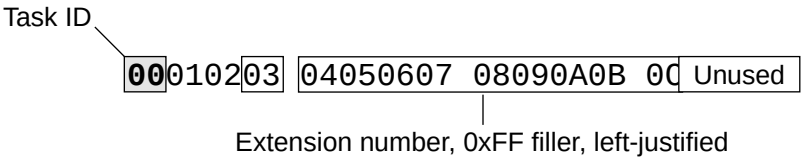


Offset	Label	Field Description
04	Subcode	00 Link up 01 MSB 02 Link down 03 Link not ready

25 Message Waiting Command

CP➤DLC➤VTIC

Tells the VTIC to set message waiting on an extension.

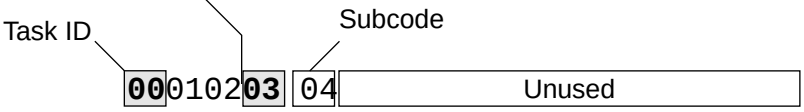


Offset	Label	Field Description
03	Type	00 Clear MWI 01 Set MWI
04	Extension number	Each byte initialized to 0xFF; number is left-justified.

65 Message Waiting Response

CP◄DLC◄VTIC

00	OK
01	MWI denied/blocked; CP wil not retry.
10	MWI invalid extension number; CP will not retry.
F0	MWI failed; CP will retry.

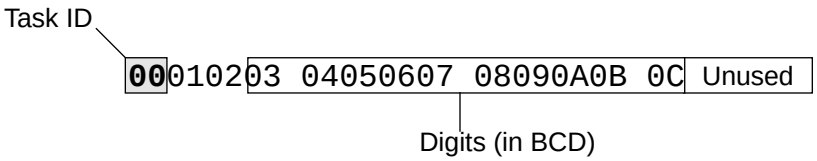


Offset	Label	Field Description
04	Subcode	00 Link up 01 MSB 02 Link down 03 Link not ready

26 Dial Digit Command

CP➤DLC➤VTIC

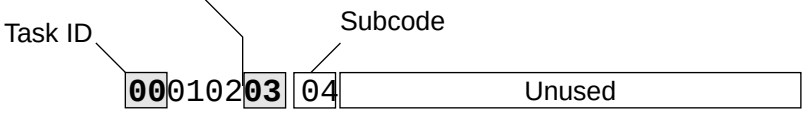
Tells the VTIC to dial digit on this channel.



66 Dial Digit Command Response

CP◄DLC◄VTIC

00	OK
F0	Failed

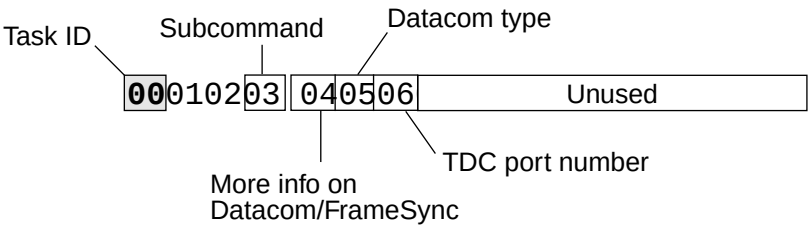


Offset	Label	Field Description
04	Subcode	00 Link up 01 MSB 02 Link down 03 Link not ready

27 Datacom & Error Command

CP➤DLC➤VTIC

Requests the VTIC to start datacom on this channel/card.

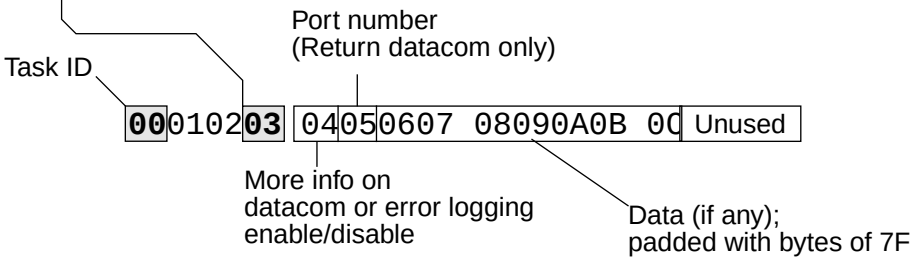


Offset	Label	Field Description
03	Subcommand	00 Start datacom 01 Return datacom 02 End datacom 03 Enable error logging 04 Disable error logging 05 Write memory 06 Read memory 07 Frame sync
04	More info on datacom/frame sync	If return datacom: 00 Transmitted datacom 01 Received datacom 02 Both transmitted and received datacom If frame sync: 00 Disable primary and secondary sync 01 Enable primary sync 02 Enable secondary sync 03 Enable primary and secondary sync
05	Datacom type	00 Host I/F datacom 01 VTG trace datacom

67 Datacom & Error Response

CP◄DLC◄VTIC

00	Start datacom
01	Return datacom
02	End datacom
03	Enable error logging
04	Disable error logging
05	Write memory
06	Read memory

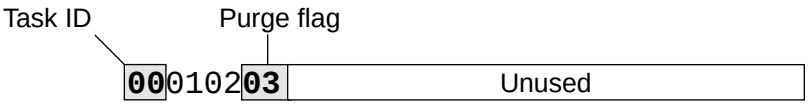


Offset	Label	Field Description
04	Datacom/error logging info	If datacom, upper nibble is flag for xmit or receive: 00 Transmit 01 Receive Lower nibble is data field length: 00 No data nn Number of bytes in data field If error logging enable/disable: 00 OK F0 Invalid

80 Purge Event Queue

CP➤DLC

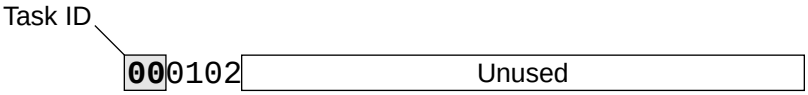
This command does a normal purge or a complete purge on the DLC.



Offset	Label	Field Description
03	Purge flag	Possible values: 00 Normal purge. Purge messages (except disconnect messages) in the event queue to the CP. 01 Complete purge. Purge all messages in the event queue.

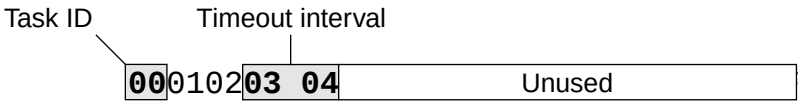
90 Purge Event Queue Response

CP◄LC



81 Get Input Event

CP➤LC

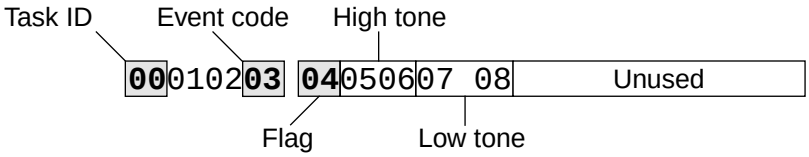


Offset	Label	Field Description
03-04	Timeout interval	Time to wait for an event (key or disconnect), in 25 msec units.

91 Get Input Event Response

CP◄LC

Returns the first message in the event queue if the queue is not empty.



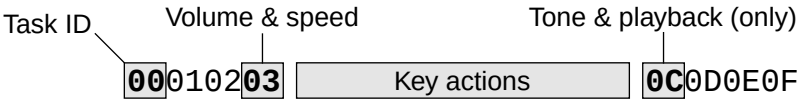
Offset	Label	Field Description
03	Event code	Event code: 00-09 Keys 0-9 0A ✻ 0B # 0C-0F Keys A-D 10 Disconnect 11 Timeout 12 R1 MF KP 13 R1 MF ST 14 Fax calling tone CNG (fax cards only)
04	Flag	Bit 0: 0 Not double key 1 Double key
05-06	High tone	High tone energy level during DTMF detect (not valid on fax cards).
07-08	Low tone	Low tone energy level during DTMF detect (not valid on fax cards).

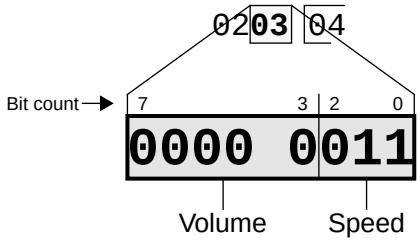
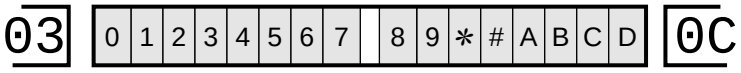
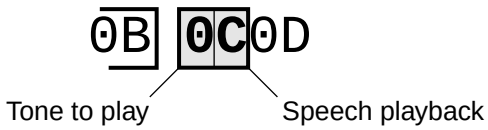
82 Transmit Speech

CP➤LC

This message indicates the beginning of the transmission of system prompts, pre-recorded subscriber personal greetings, or recorded voice messages to the DLC.

Normal speech and system special phrases use the same playback message sequence. The flags in the messages tell the DLC how to treat this speech buffer.

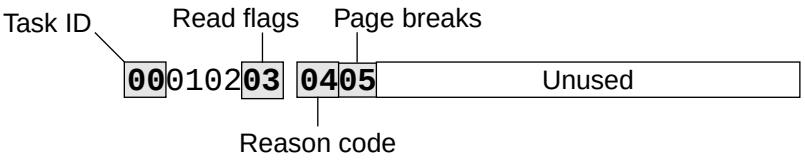


Offset	Label	Field Description
03	Volume & speed	The speech traits are set with two fields..  **Volume.** Zero is normal. Other values call for increasingly louder play. **Speed.** Read as a signed number. 0 Normal >0 Faster <0 Slower
04-0B	Key actions	The value of a nibble indicates how the key is to be handled during the transmit operation:  0 Ignore the key (do not pass to CP). 1 Cut off transmit, pass key to CP. 2 Raise volume of speech, do not pass key to CP. 3 Lower volume of speech, do not pass key to CP. 4 Raise speed of speech, do not pass key to CP. 5 Lower speed of speech, do not pass key to CP. 6 Reset speed of speech to normal, do not pass key to CP.
0C	Tone & playback	This byte has two 4-bit fields:  **Speech playback:** 0 Play normal speech. Bit 0: Play special phrase. The following is valid only if Bit 0 is set: Bit 1: Play tone only. Repeat every second. Bit 2: Play tone after playing phrase once. Repeat tone every second. Bit 3: Play tone only. Repeat every two second (0 = every second).

92 Read Speech Buffer

CP◄DLC

This message tells the CP (and FS) to send the next speech buffer.



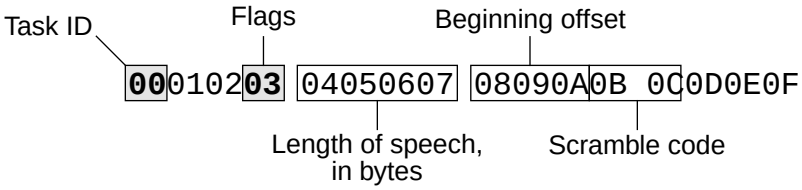
Offset	Label	Field Description
03	Read flags	Bit 0: 00 Read next buffer. 01 Reread last buffer. Bit 1 (fax): 01 Resend last command. Reason code will be set to slow fax data.
04	Reason code	Reason for reread. This field is significant only if offset 03 is set. 00 Checksum error Fax: 01 Slow fax data 02 Skipping fax buffer for fax start page positioning
05	Page breaks	If Reason Code is 2, this field contains the number of page breaks in the skipped buffer.

Note: If the DLC is asked to start at a fax page beyond the end of the current fax image buffer, it will skip the current buffer and request the next image buffer. It will subtract the skipped pages from its internal start page, and continue skipping through buffers until it finds the requested start page number. When a buffer is skipped, the reason code (above) is set to 2, and offset 05 contains the number of page breaks that were skipped. If the DLC encounters the end of the fax data before finding the desired page, it terminates fax playback with the “page limit exceeded” code. Using the DLC-DMA to search through the fax image data for the desired start page is not recommended for system performance reasons.

83 Read Speech Buffer Set

CP➤LC

This message tells the DLC to set up the DMA channel for data transfer for the next speech buffer.



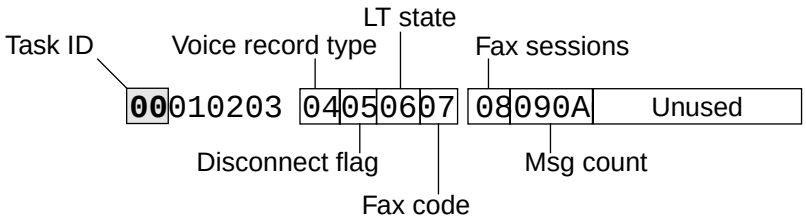
Offset	Label	Field Description
03	Flags	Flags: Bit 0: the very last buffer Bit 1: cancel transfer, abort playback
08-0A	Beginning offset	Position in buffer to begin transmission or recording, in bytes of speech.

93 Read Speech Buffer Set Response

CP◄DLC

This message indicates that the DLC has set up its DMA channel for data transfer and is ready for the next speech buffer.

The information supplied in this message is provided for debug purposes only. It is not intended that this information be used by the CP, but simply that it be visible in the SMT error log.

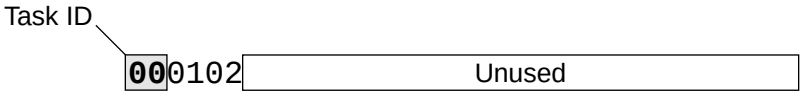


Offset	Label	Field Description
04	Voice record type	Voice record type (lt_vr_type): 0 SBC 1 EDLC SBC 2 CVSD 4 Fax
05	Disconnect flag	Line task disconnect flag (lt_2disc): 0 Line task state is off hook 1 Line task is on hook or about to go on hook
06	LT state	LIne task state (lt_state): 0 Idle 1 Active 2 Tone generation 3 MF detection 4 Begin playback (voice or fax) 5 Playback (voice or fax) 6 Finish playback (voice or fax) 7 Begin record (voice or fax) 8 Initialize record (voice only) 9 Record (voice or fax) 10 Finish record (voice or fax) 11 Special phrase 12 Play special phrase 13 Finish special phrase 14 Call progression (C5 command active) 15 Call progression + special phrase 16 Call progression + finish special phrase 17 Tone finish
07	Fax code	Fax return code: 0 Fax completed, OK 1 Fax completed with DCN 2 Fax aborted by operator 3 Partial fax 4 No response from fax machine 5 Too many transmission errors 6 Page limit (attempt to read past end of data) Defaults to 3 if no fax in current call.
08	Fax sessions	Bit mask (lt_fax_session) showing last DSP sessions that included fax operations. Note that a DSP session starts with a DLC offhook or channel reset (DSP get Begin Active command).
09-0A	Msg count	16 bit count of 84 messages from CP for current message.

84 Read Speech Buffer Done

CP➤LC

This message indicates the end of the current system prompts, subscriber personal greeting or voice messages buffer.

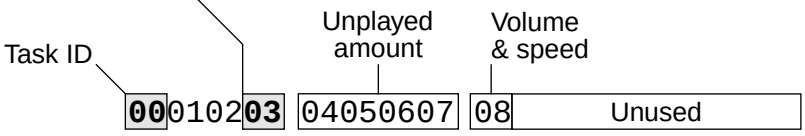


94 Transmit Speech End Response

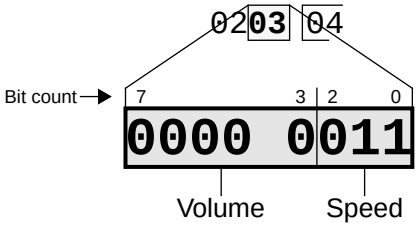
CP◄LC

Response format for Voice:

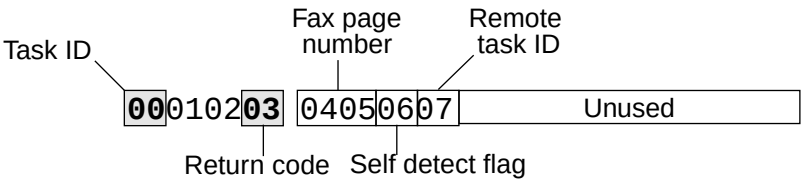
00	OK.
01	Speech was cut off by a key.
02	Speech was cut off by disconnect.
04	Speech was terminated by cancel flag in control bus message 83, LC Read Speech Buffer Response.
08	Last block bad.



Offset	Label	Field Description
04-07	Unplayed amount	Position of termination, in bytes of speech. Position is distance prior to **end** of last buffer transmitted at which speech transmission ended. That is, it is the amount of speech that was sent over the data bus but was not played—0 = complete playout. NOTE: Due to double buffering, the value can be greater than the size of the last buffer transferred.

Offset	Label	Field Description
08	Volume & speed	The speech traits are set with two fields:  **Volume.** Zero means normal. Other values call for increasingly louder play. **Speed.** Read as a signed number. 0 Normal >0 Faster <0 Slower

Response format for Fax:



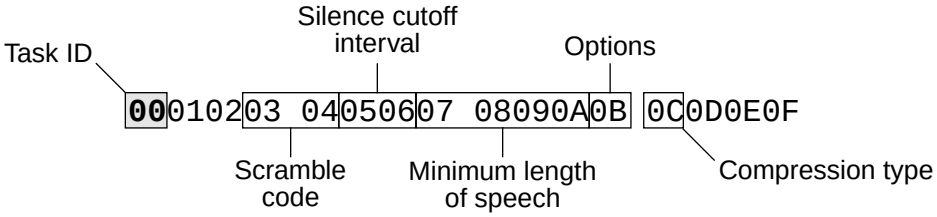
Offset	Label	Field Description
03	Return code	Fax return code: 0 Fax completed, OK 1 Fax completed with DCN 2 Fax aborted by operator 3 Partial fax 4 No response from fax machine 5 Too many transmission errors 6 Page limit (attempt to read past end of data)
04-05	Fax page number	If return code = 3 or 5, this field contains the fax page number at which the failure occurred. If the failure occurred during the first page, this field will contain 1. Note that if the document includes a cover sheet, the cover sheet will be included in the failure page count (that is, the cover page is considered to be page 1, the first physical page that is transmitted).
06	Self detect flag	Set to 1 to indicate aspen-to-aspen self detect has occurred. This is set even when aspen-to-aspen self detect is inhibited.
07	Remote task ID	If aspen-to-aspen detect has occurred, this field contains the CP source (task) ID of the remote port.

85 Receive Speech

CP➤LC

This message indicates the beginning of the transmission of recorded voice messages from the DLC. Recording terminates upon detection of an input event (key or disconnect), of silence of the duration specified in this message or upon reaching the specified recording time limit.

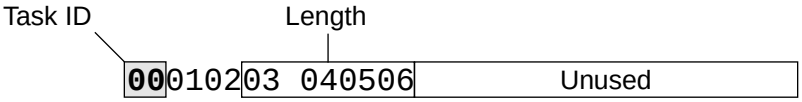
If the “initialize buffer before recording” flag is set, line card message 92, Read Speech Buffer, follows to initialize the buffer. Recording then begins at the position in the buffer indicated in line card message 83, Read Speech Buffer Response. In this case, at least one buffer **must** be written to the file system, even if the buffer is empty and silence occurs.



Offset	Label	Field Description
03-04	Scramble code	Scramble code to be stored in the private area (no XOR operation).
05-06	Silence cutoff interval	Voice: Silence cutoff interval in 25 ms units. Silence of this length is to terminate recording. Fax: Maximum page count
07-0A	Minimum length of speech	Minimum length of recorded speech to transfer to file system, in bytes of speech. If termination of recording occurs before this much speech has been sent to the file system, the speech must be padded with silence to this length.
0B	Options	Flags: Bit 0: Initialize buffer before recording. (Default: no buffer initialization). Bit 1: Do not play tone before recording. (Default: play tone). Bit 2: Record fax Bit 3: Reserved (used by analog linecard) Bit 4: Self detect flag 0 = DLC perform fax aspen-to-aspen self detect 1 = Inhibit DLC fax aspen-to-aspen self detect
0C	Compression type	Compression type: 0 16 kbps sub-band coder 1 25 kbps CVSD

95 Write Speech Buffer Response CP◄LC

This message tells the CP (and file system) that the next recorded voice message is ready and the size of the message.

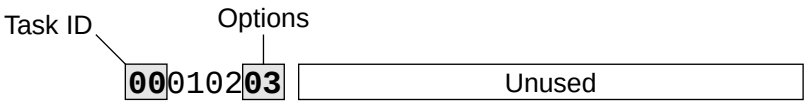


Offset	Label	Field Description
03-06	Length	Length of speech buffer in bytes of speech Fax: length = 0 means resend last command

86 Write Speech Buffer Set

CP➤LC

This message indicates that the CP (and the file system) is ready to receive the next recorded voice message buffer. It also tells the DLC to set up the DMA channel for the data transfer.



Offset	Label	Field Description
03	Options	Value is a sum of: Bit 0: Terminate record after completing the current buffer transfer. Bit 1: Sound warning tone.

96 Write Speech Buffer Set Response

CP◄LC

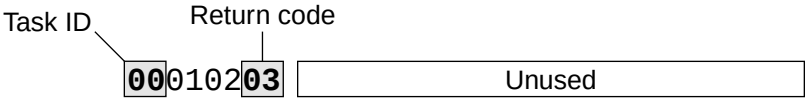
This message indicates that the DLC has set up its DMA channel for the data transfer and is ready to transmit the next speech buffer.



87 Write Speech Buffer Done

CP➤LC

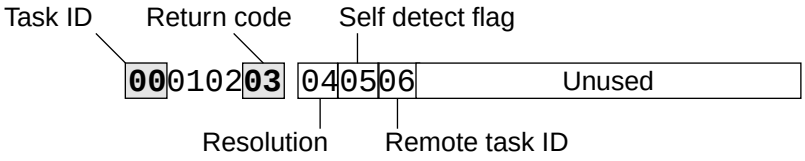
This message indicates the end of the current voice message buffer.



Offset	Label	Field Description
03	Return code	Return code from write operation. Values to be determined, depending on error handling in FS.

97 Receive Speech End Response CP◄LC

This message indicates the end of the transmission of recorded voice messages to the CP (actually, to the file system). It closes the “open” message record/receive loop.

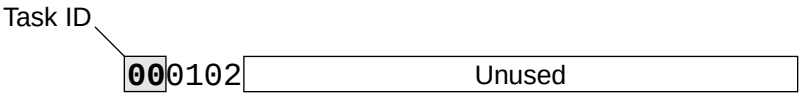


Offset	Label	Field Description
03	Return code	For receive speech operation: 0 Completed normally (by key or disconnect) 1 Silence cut-off detected For a fax operation: 0 Fax completed, OK 1 Fax completed with DCN 2 Fax aborted by operator (not used) 3 Partial fax 4 No response from fax machine 5 Too many tranmission errors 6 Page limit reached
04	Resolution	Resolution: 0 standard (3.85 line/mm) 1 fine (7.7 line/mm)
05	Self detect flag	Set to 1 to indicate aspen-to-aspen self detect has occurred. This is set even when aspen-to-aspen self detect is inhibited.
06	Remote task ID	If aspen-to-aspen detect has occurred, this field contains the CP source (task) ID of the remote port.

88 Reset Channel

CP➤DLC

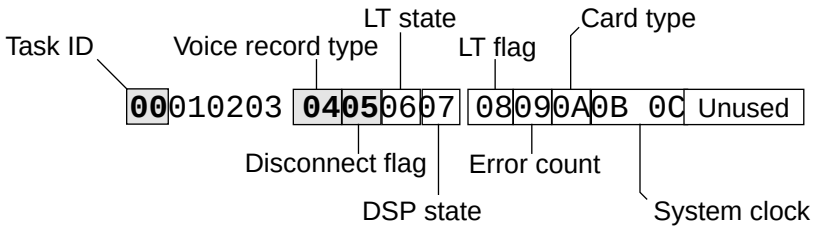
This message tells the DLC to reset this channel.



98 Reset Channel Response

CP◄DLC

The information supplied by this response is provided for debug purposes only. It is not intended that this information be used by the CP, but simply that it be visible in the SMT error log.



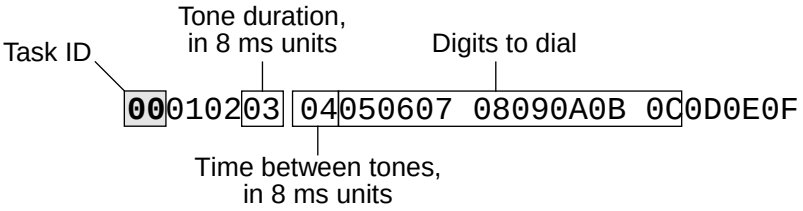
Offset	Label	Field Description
04	Voice record type	Voice record type (lt_vr_type): 0 SBC 1 EDLC SBC 2 CVSD 4 Fax
05	Disconnect flag	Line task disconnect flag (lt_2disc): 0 Line task state is off hook 1 Line task is on hook or about to go on hook

Offset	Label	Field Description
06	LT state	LIne task state (lt_state): 0 Idle 1 Active 2 Tone generation 3 MF detection 4 Begin playback (voice or fax) 5 Playback (voice or fax) 6 Finish playback (voice or fax) 7 Begin record (voice or fax) 8 Initialize record (voice only) 9 Record (voice or fax) 10 Finish record (voice or fax) 11 Special phrase 12 Play special phrase 13 Finish special phrase 14 Call progression (C5 command active) 15 Call progression + special phrase 16 Call progression + finish special phrase 17 Tone finish
07	DSP state	The state the line task thinks the DSP is in (dsp_state): 0 Idle 1 Active 2 Playback 3 Record 4 MF detection 5 Digital loopback 6 Boot loader Fax only: 7 Fax active 8 Fax playback 9 Fax record 10 Modem test state 254 Abort (DSP halted)
08	LT flag	Line task DMA flag (lt_dmafl): 0 DMA_NONE (idle) 1 DMA_EXCBM (exchange cb msgs with cp prior to dma) 2 DMA_SETUP 3 DMA_TX
09	Error count	Line task internal timer mechanism error count (lt _tmout_err).
0A	Card type	Type of DLC: 1 DLC 2 UDLC (DLC1231s) 3 DLC431A (Aspen fax DLC) 4 EDLC
0B-0C	System clock	Lower 16 bits of DLC internal 32 bit system clock (system_clock). Units are 25 ms; time runs from DLC initial boot.

89 Dial

CP➤LC

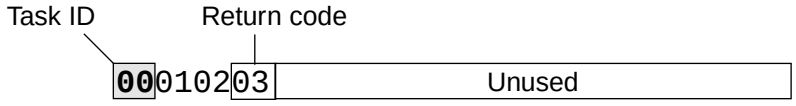
This message dials the specified DTMF or MF tone on this channel. The dial MF digit mode is initiated by a dial KP digit command, and is terminated by a dial ST digit command.



Offset	Label	Field Description
05-0C	Digits to dial	Each digit is coded as a one-byte value: 00-09 are 0-9 respectively. 0A ✻ 0B # 0C A 0D B 0E C 0F D 11 MF KP digit 12 MF ST digit FF is the padding character

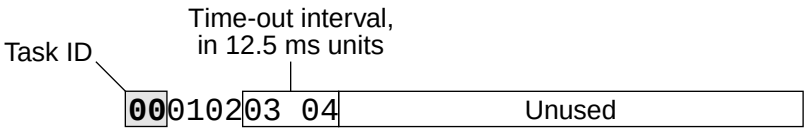
99 Dial Response

CP◄LC



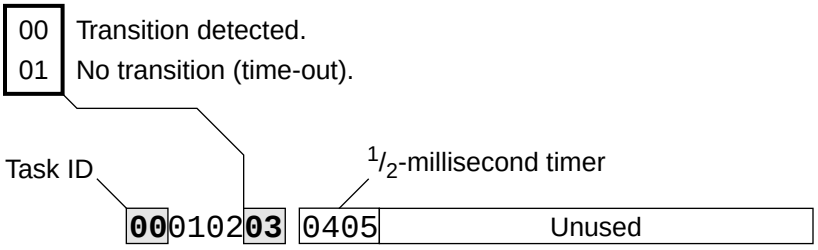
Offset	Label	Field Description
03	Return code	Return code 0 Okay 1 Disconnect detected

8A Get Signal Transition CP➤LC



Offset	Label	Field Description
03-04	Time-out interval	Maximum time to wait for signal transition, in 12.5 millisecond units.

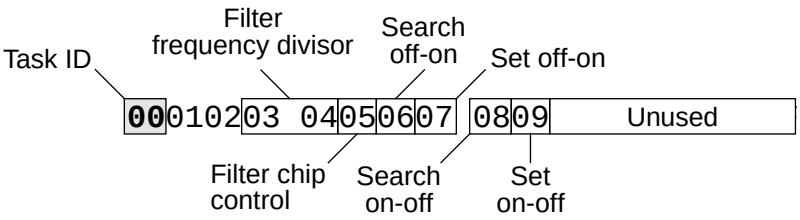
9A Get Signal Transition Response CP◄LC



Offset	Label	Field Description
04-05	$^1/_2$-millisecond timer	Value of line card's $^1/_2$-millisecond timer at time of transition.

8B Signal Detect Begin

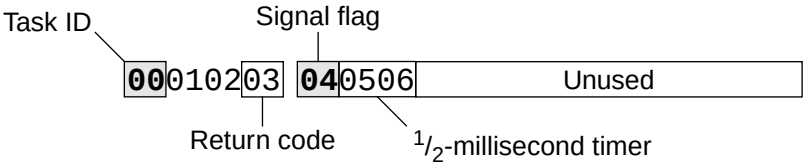
CP➤LC



Offset	Label	Field Description
06	Search off-on	Number of samples to take when looking for off-to-on transition.
07	Set off-on	Number of on samples required to set off-to-on transition.
08	Search on-off	Number of samples to take when looking for on-to-off transition.
09	Set on-off	Number of off samples required to set on-to-off transition.

9B Signal Detect Begin Response

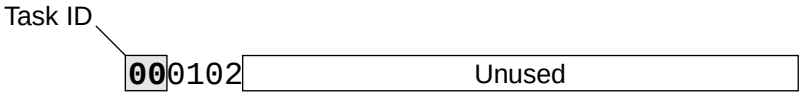
CP◄LC



Offset	Label	Field Description
03	Return code	Reserved for return code.
04	Signal flag	Current state of detected signal: 00 Off 01 On
05-06	$^1/_2$-millisecond timer	Current value of line card's 1/2 millisecond timer.

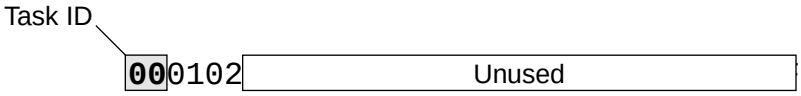
8C Signal Detect End

CP➤LC



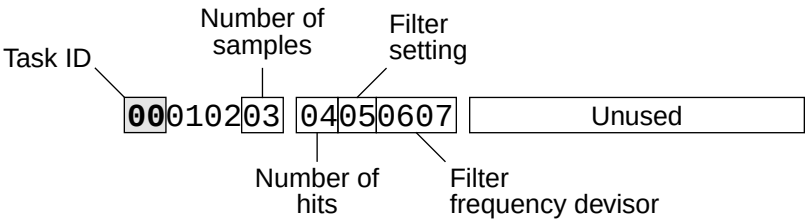
9C Signal Detect End Response

CP◄LC



8D Set Dial Tone

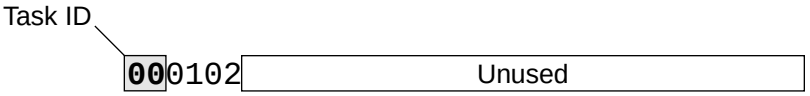
CP➤LC



Offset	Label	Field Description
03	Number of samples	Number of samples to take.
04	Number of hits	Number of positive hits for tone presence.

9D Set Dial Tone Response

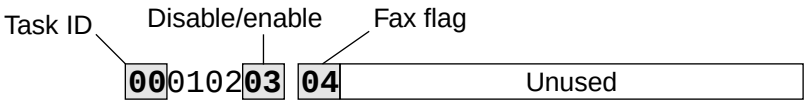
CP◄LC



8E Enable Autovon Keys

CP➤DLC

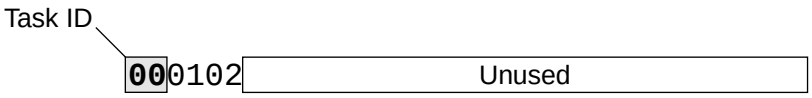
This message tells the DLC to enable or disable the autovon tone detect.



Offset	Label	Field Description
03	Disable/enable	Flag: 00 Disable autovon key detection. 01 Enable autovon key detection.
04	Fax flag	Fax only: 0 Disable fax calling tone CNG detect 1 Enable fax calling tone CNG detect

9E Enable Autovon Keys Response

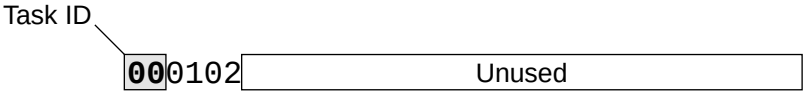
CP◄LC



8F Stop Special Phrase

CP➤LC

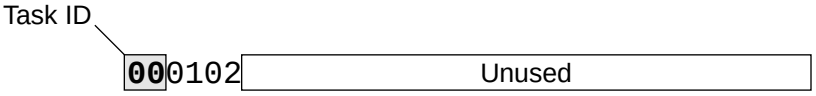
This message tells the DLC to stop playing the special phrase.



9F Stop Special Phrase Response

CP◄LC

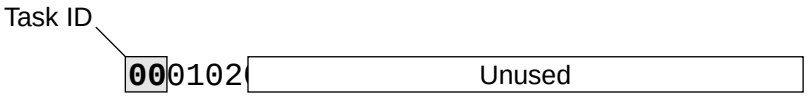
This message indicates that the special phrase playback is stopped.



A0 TIC Detect

CP➤LC

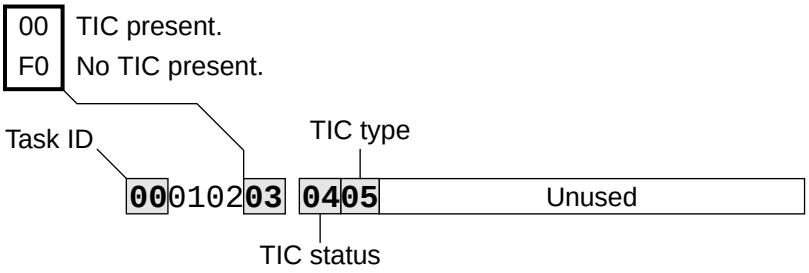
DLC TIC Detect is sent by the CP to detect the existence of a TIC, and to get the type and result of a sanity check, if possible, of the TIC.



B0 TIC Detect Response

CP◄LC

Reports the DLC TIC check/detect result.

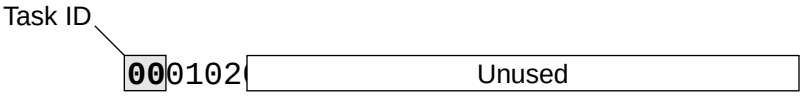


Offset	Label	Field Description
04	TIC status	Error status of TIC, if present: 00 TIC diagnostics OK. 0X other than 00: intelligent TIC errors.
05	TIC type	TIC board type: 00 ATIC 01 E&M 02 T1 TIC 03 CEPT (E1) TIC 04 PIC_T1 TIC 05 PIC_CEPT (E1) TIC 06 VTIC F0 No TIC

A1 DLC Set ID Request

CP➤LC

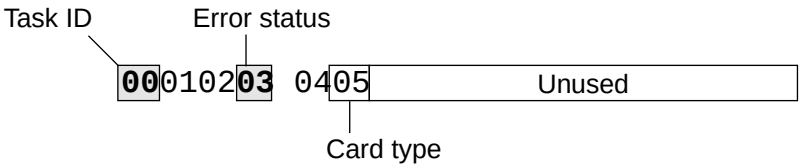
The CP uses this message to check the existence and sanity of a DLC.



A1 DLC Set ID Response

CP◄LC

This message announces the DLC's presence and reports the result of the sanity check of the DLC.

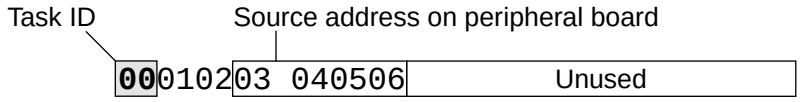


Offset	Label	Field Description
03	Error status	Error status: 00 Bootup diagnostics OK. 0X 386SX diagnostics errors 1X DSP diagnostics errors 2X PCM ASIC errors (DLC only) 3X Other peripherals' errors.
04		Must be zero
05	Card type	Card type (used by fax): 4 DLC431A 5 DLC1231S This field is valid only if message return code is A1.

A2 General Read Memory

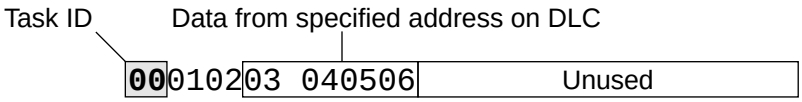
CP➤LC

Reads four bytes of memory for diagnostics/debugging.



E2 General Read Memory Response

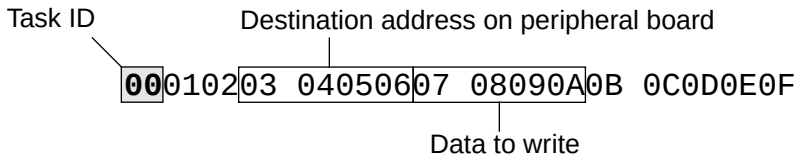
CP◄LC



A3 General Write Memory

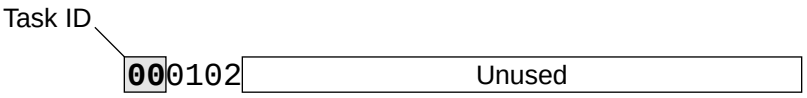
CP➤LC

Writes four bytes of memory for diagnostics/debugging.



E3 General Write Memory Response

CP◄LC

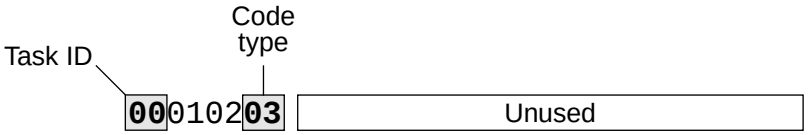


A4 Return Code Level

CP➤LC

This message tells the DLC or VTIC to return its code level. The DLC code level should be able to identify both the code versions of 386SX and DSP chips.

This message is also used with the file system and the EPU.

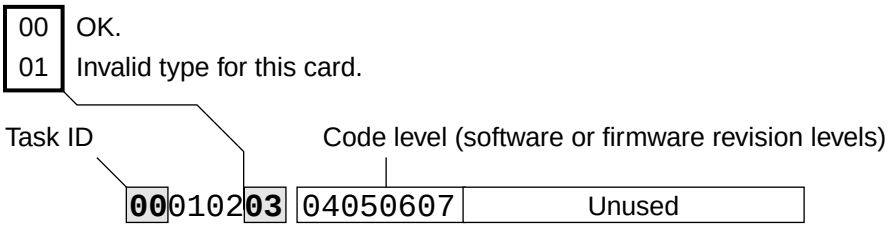


Offset	Label	Field Description
03	Code type	Type indicating the desired component: 01 DLC x86 (CPU A) run-time code 02 DLC DSP (CPU B) code VTIC code levels: 10 T1 EPROM 11 T1 software 17 Converter EPROM 18 Converter software 19 VTG EPROM 1A VTG software

B4 Return Code Level Response

CP◄LC

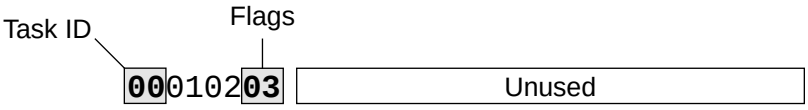
This message is also used with the file system and the EPU.



A9 Read Fax Buffer Set

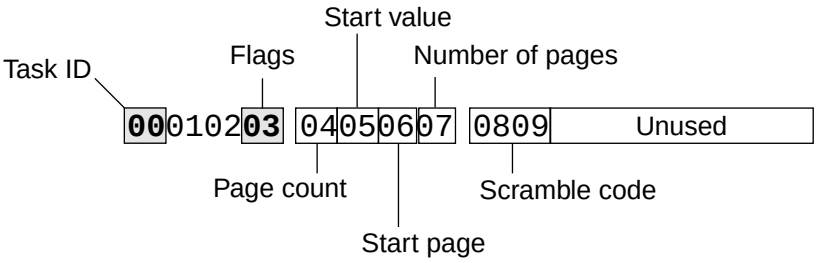
CP➤LC

This message sets up the DMA channel for a fax data buffer transfer.



Offset	Label	Field Description
03	Flags	Bit 0: 0 More buffers to follow 1 Last buffer Bit 1: 0 No action 1 Cancel Bit 2 (the remainder of message structure is determined by the state of this flag bit): 0 Respond with 0x93H (no cover sheet) 1 Respond with 0xCAH (cover sheet follows) Bit 3: 0 At end of fax, send DCN (disconnect) to receiving fax machine (this is last document). 1 At end of fax, send EOM (end of message) to receiving fax machine (more documents are coming). Bit 4: 0 DLC performs Aspen-to-Aspen self detect 1 Inhibits DLC Aspen-to-Aspen self detect

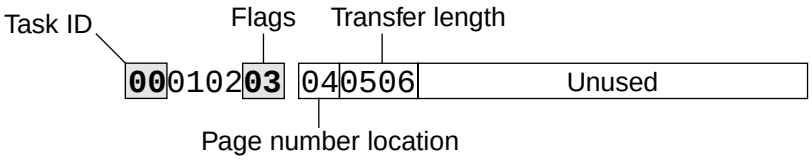
Message format when flag bit 2 is reset (fax message structure):



Offset	Label	Field Description
04	Page count	Total page count (DLC does not use this data).
05	Start value	Start page count (0 = default. DLC does not use this data.)

Offset	Label	Field Description
06	Start page	Start at page (1-based; 0 is treated as 1). This field is only valid for the first (image) buffer of a fax document.
07	Number of pages	Number of pages to transmit (255 = transmit all). This field is only valid for the first (image) buffer of a fax document.

Message format when flag bit 2 is set (cover sheet structure):



Offset	Label	Field Description
04	Page number location	Page number location in top line (0 = no page number required).
05-06	Transfer length	DMA transfer length (max = 10K)

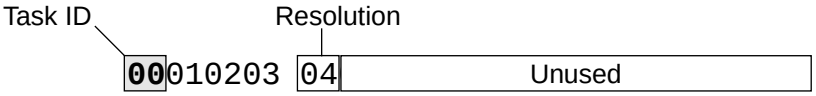
Read Fax Buffer Set response varies depending upon type of processing:

- 93H is returned if processing fax image data.
- CAH is returned if processing cover sheet.

AA Read Cover Sheet Done

CP➤LC

This message, which is the CP reply to a CA response code, indicates the completion of the cover sheet DMA.

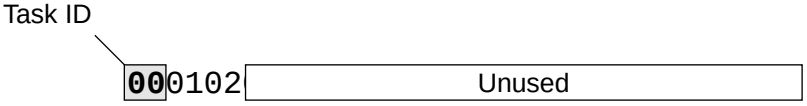


Offset	Label	Field Description
04	Resolution	If only a cover sheet is being transmitted with no image following (prior A9 command had last buffer flag set), this field controls the cover sheet transmission resolution: 0 standard (3.85 line/mm) resolution 1 fine (7.7 line/mm) resolution If image follows, the resolution is determined by the image.

CA Read Cover Sheet Done Response

CP◄LC

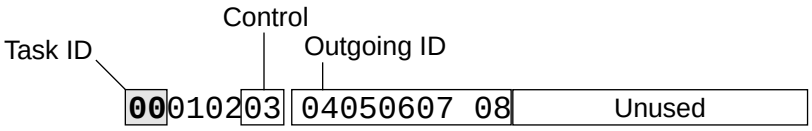
The DLC acknowledges receipt of the A9 command with bit 2 set. Ready to DMA cover sheet.



AB Get Fax ID

CP➤LC

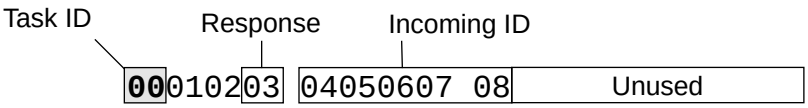
The CP uses this message to read or set five characters of the fax ID.



Offset	Label	Field Description
03	Control	Control values: 0 Set first 5 characters of outgoing fax ID (TSI/CSI). This clears the other 15 characters (set to spaces). 1 Set second 5 characters of outgoing fax ID. 2 Set third 5 characters of outgoing fax ID. 3 Set last 5 characters of outgoing fax ID. 4 Read first 5 characters of incoming fax ID. 5 Read second 5 characters of incoming fax ID. 6 Read third 5 characters of incoming fax ID. 7 Read last 5 characters of incoming fax ID.
04-08	Outgoing ID	If control is 0, 1, 2, or 3, this field contains five characters of the outgoing ID. Note: Data is actually ASCII format, but the CCITT formally allows only the following codes: 25H ASCII '+' 20H ASCII ' ' (space) 30H-39H ASCII '0' through '9' In practice, some fax machines support the full ASCII set.

CB Get Fax ID Response

CP◄LC



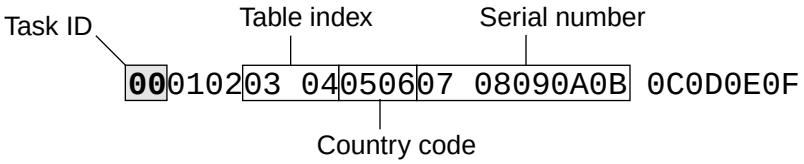
Offset	Label	Field Description
03	Response	Response code: 0 OK. 1 No ID received yet during this call.
04-08	Incoming ID	If control is 4, 5, 6, or 7, this field contains five characters of the incoming ID. Note: Data is actually ASCII format, but the CCITT formally allows only the following codes: 25H ASCII '+' 20H ASCII ' ' (space) 30H-39H ASCII '0' through '9' In practice, some fax machines support the full ASCII set.

A DLC offhook clears both the incoming and outgoing fax IDs. Once set, the outgoing fax ID will remain in use until either an offhook occurs or the fax ID is explicitly changed by the CP.

C4 DLC Set Dial Tone

CP➤DLC

Tells the DLC to start to detect the disconnect tone using the passed call progress setup table index.

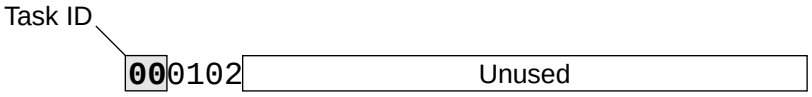


Offset	Label	Field Description
03-04	Table index	Index to the Call Progress Setup Table. (Setup = zero disables cadence checker.)
05-06	Country code	Country code (effective with DLC Release 1xx): 00 North America (default) 01 Australia 02 New Zealand 03 United Kingdom 04 France 05 Germany
07-0B	Serial number	BCD serial number—fax transmissions

D4 DLC Set Dial Tone Response

CP◄DLC

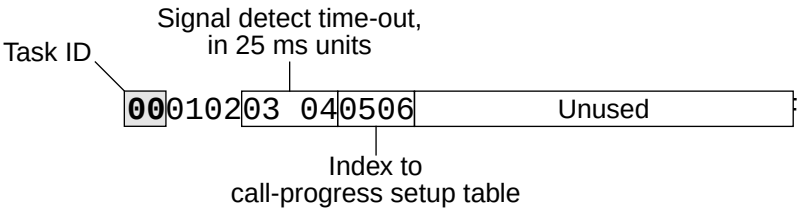
Indicates the DLC will detect disconnect tone and the event will be put in the event queue.



C5 DLC Monitor Call

CP➤DLC

Tells the DLC to either monitor the call progression for this channel or detect the presence of dial tone or special tone on this channel.

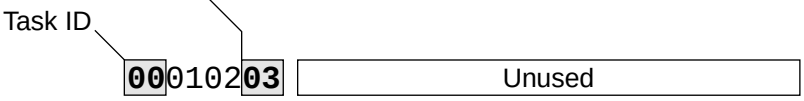


D5 DLC Monitor Call Response

CP◄DLC

Returns the result of call monitoring or tone detection on this channel.

00	Voice detected, call answered.
01	Busy tone detected.
02	No answer, time-out.
03	Re-order tone detected.
04	DTMF key detected.
05	Dial tone detected.
06	Disconnect detected.
07	Ring back detected.
08	Pager initialize low detected.
09	Pager low confirmation detected.
0A	Pager initialize high detected.
0B	Pager high confirmation detected.

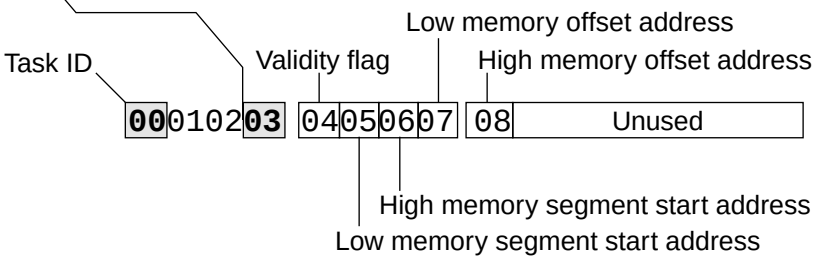


FD DSP Second Level Download

CP➤DLC

NOTE: The DLC responses also use status code FD. The response descriptions follow the CP commands.

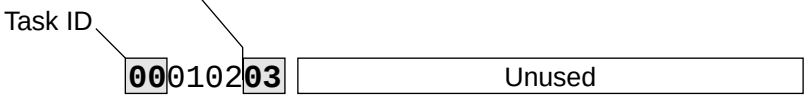
00 Tells the DLC to prepare to receive the first packet of the download software for the DSP.



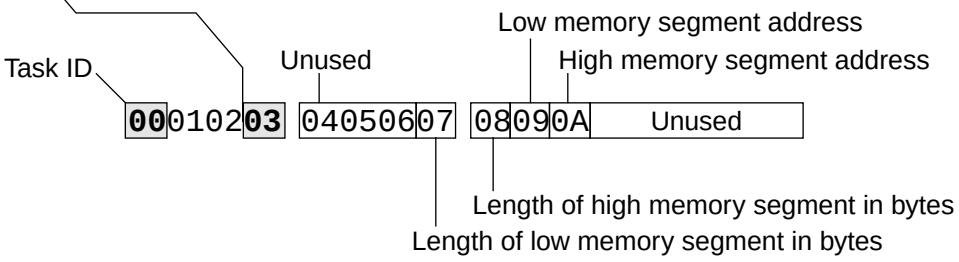
Offset	Label	Field Description
04	Validity flag	The addresses in the following four bytes are valid if this field = FFH

01 CP tells the DLC that the download of the DSP is complete.

02 CP asks the DLC if it is done downloading the last packet and is ready to receive the DMA transfer of the next packet.

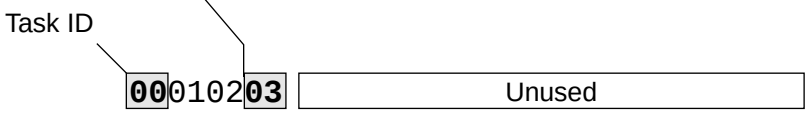


04 DMA setup command specifies the length of the download software DMA packets and the target addresses of where the software is to be downloaded.



FD DSP Second Level Download Response CP◄DLC

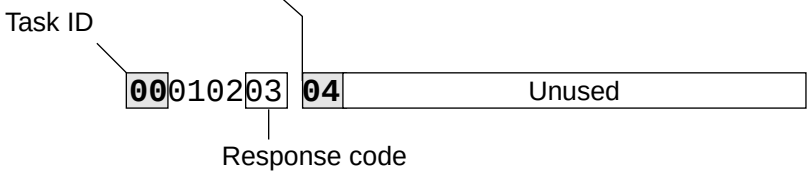
00 Acknowledges receipt of the begin DSP download message.



01 DLC acknowledges receipt of DSP download complete message.

02 DLC responds with the status of the download of the last packet of software.

04 DLC DMA setup is complete.



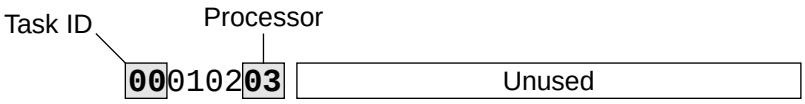
Offset	Label	Field Description
03	Response code	**All FD response codes are zero.** If an error occurs, the DLC does not send the response message, which causes a CB timeout.

FE DLC or DSP Ready

CP ➤DLC

After the 386 DLC or DSP code has been downloaded, the CP asks whether the downloaded processor has successfully started operation.

This message is also used with the file system.



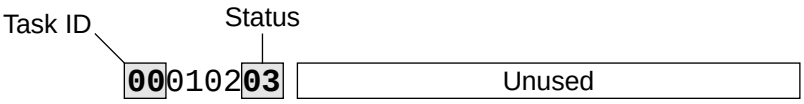
Offset	Label	Field Description
03	Processor	Processor type: 0 DLC Processor 1 DSP Processor

FE DLC or DSP Ready Response

CP◄DLC

The DLC acknowledges that it is up and running and has completed its search for TIC cards; the DSP simply acknowledges that it is up and running.

This message is also used with the file system.



Offset	Label	Field Description
03	Status	Processor status: 00 Ready 01 Not ready

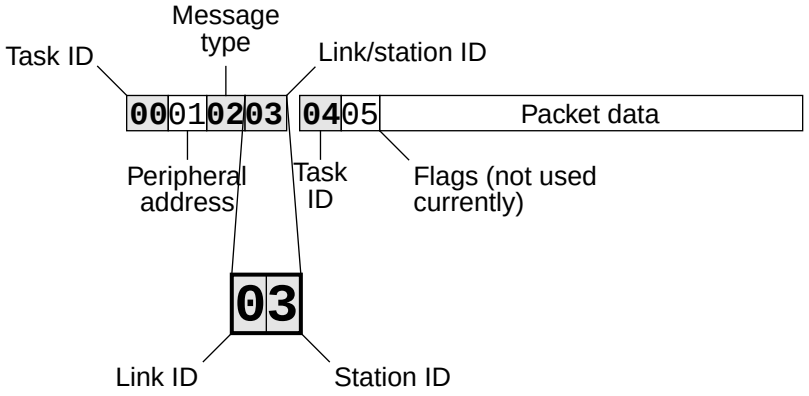
CHAPTER 5: ACP MESSAGES

This chapter provides descriptions of all control bus messages used with ACP cards. For information on reading these descriptions, see “Control Bus Messages” on page 34. All values in the illustrations are the bytes’ offsets, not sample data.

Request and response messages are grouped together and organized by the message type of the request. These can be found by checking the numbers in the upper-outer corners of the pages while flipping through the chapter. Or, message descriptions can be found by checking the index on the next page.

ACP Message Format

The ACP control bus messages are a little different from other types. The Asynchronous Communications Processor (ACP) communicates with other cards with CIP messages. To communicate with the CP, these messages are converted into control bus form by adding the three bytes of the control bus message header. The resulting format is shown below:



Offset 03 is actually two 4-bit fields. Each hex digit represents one of the ID numbers.

The CIP message’s task ID, in offset 04, is usually the same as the control bus message’s task ID, in offset 00, but not always. These are normally the SMT or a background task.

Even though a stand-alone system may not actually contain an ACP card, the ACP applications code still converts integration-related messages to the CIP format.

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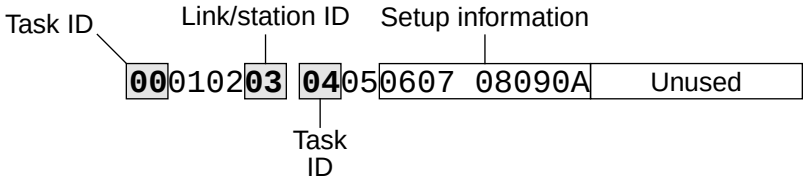
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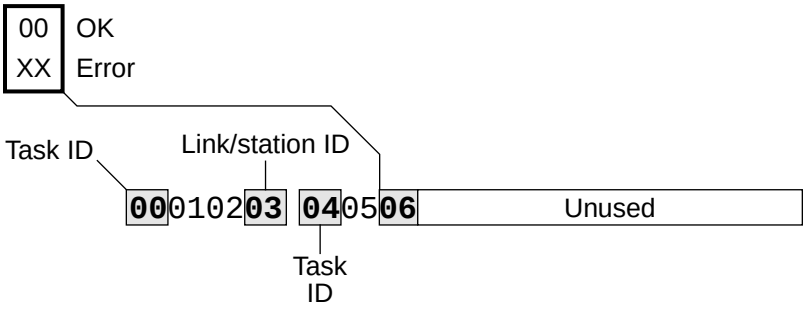
01 Asynchronous Port Configuration CP➤ACP

The asynchronous port configuration command is used to configure the DUART's on the ACP for various links.



Offset	Label	Field Description
06-0A	Setup information	Data bits, stop bit, parity.

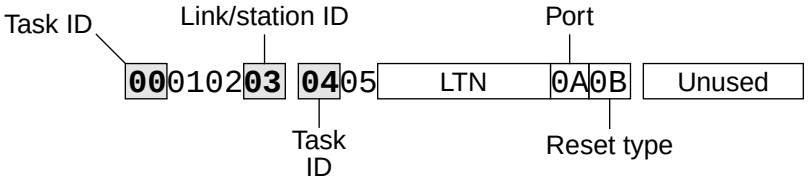
91 Asynchronous Port Configuration Response CP◄ACP



02 Set LTN

CP➤ACP

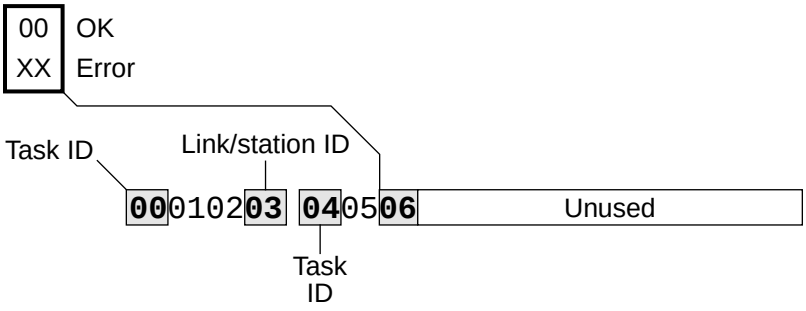
Informs the ACP of the correlation of LTN's (Menu 4) to ports/tasks.



Offset	Label	Field Description
0B	Reset type	02 Link reset 03 Power-up

92 Set LTN Response

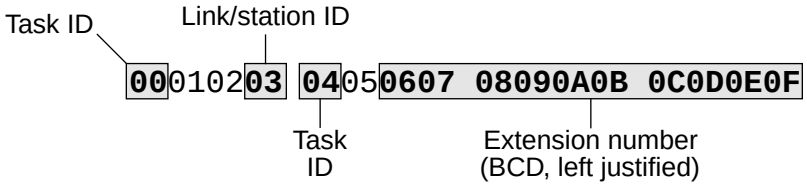
CP◄ACP



03 Dial Digits

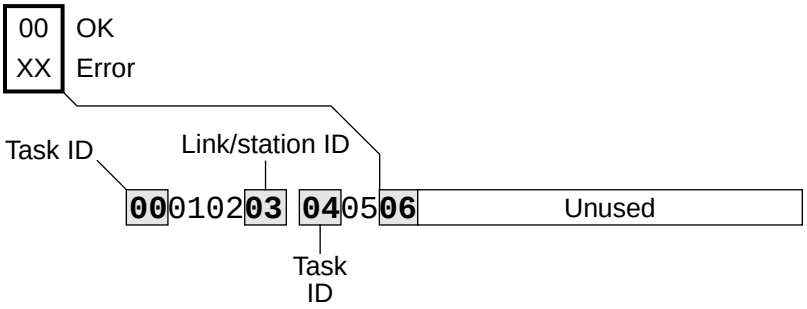
CP➤ACP

The dial digits command tells the MID to dial digits for outcalling.



89 Dial Digits Response

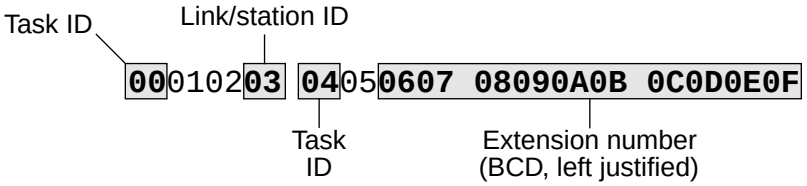
CP◄ACP



04 Transfer Call

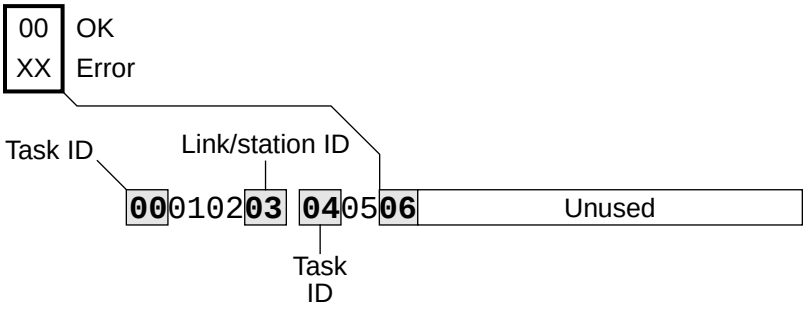
CP➤ACP

Initiates a transfer on the MID.



8B Transfer Response

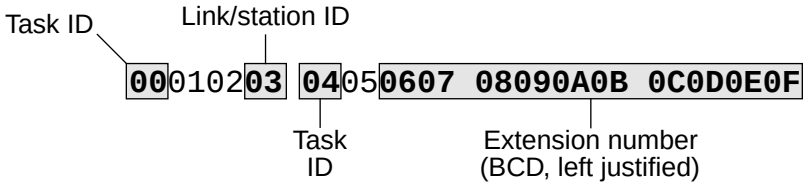
CP◄ACP



05 Set Message Waiting

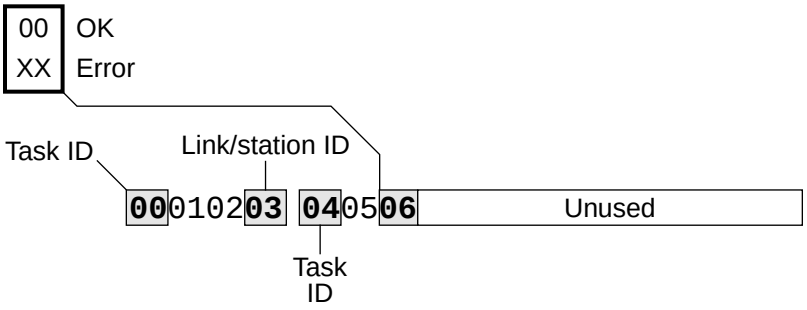
CP➤ACP

Sent by the CP to have message waiting set on the extension specified.



8C Set Message Waiting Response

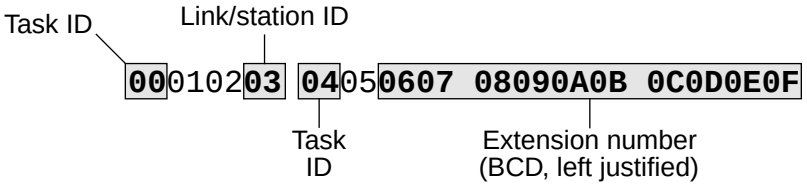
CP◄ACP



06 Clear Message Waiting

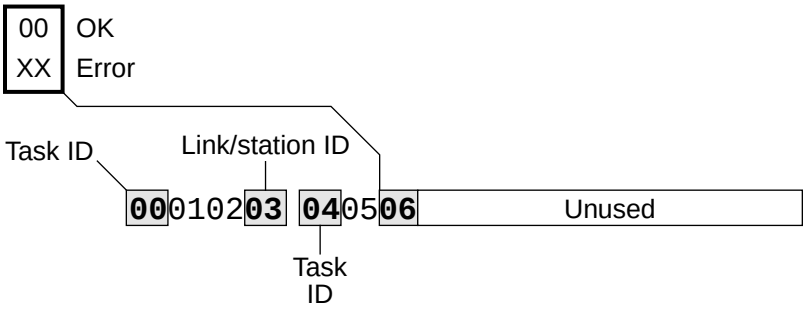
CP➤ACP

Sent by the CP to have message waiting turned off on the extension specified.



8D Clear Message Waiting Response

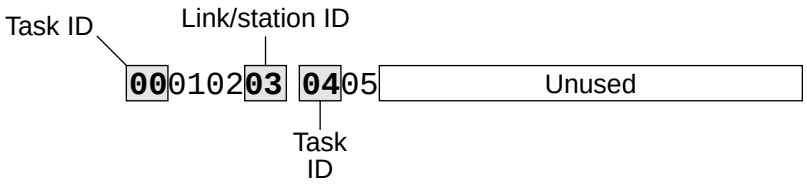
CP◄ACP



07 Reconnect to Call on Hold

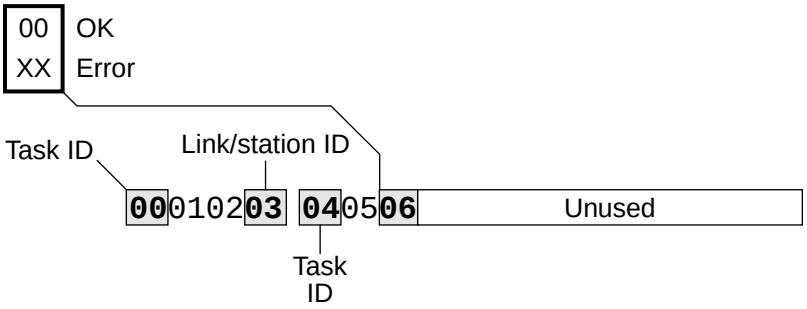
CP➤ACP

Sent by the CP to reconnect with a failed transfer.



8A Reconnect Response

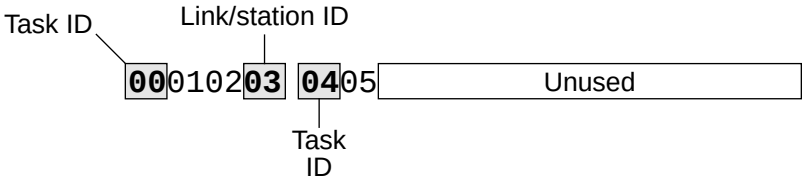
CP◄ACP



08 Seize Line

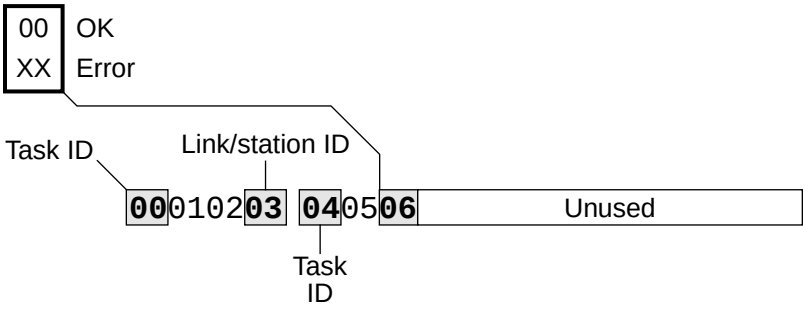
CP➤ACP

The seize line command is used for outcalling. It tells the MID to go off-hook and seize the line.



88 Seize Line Response

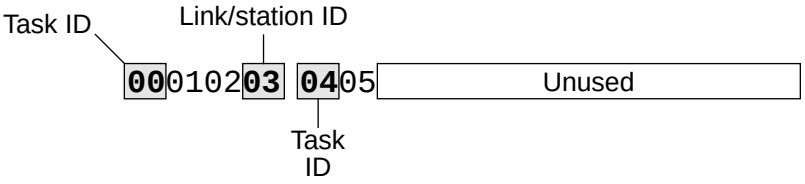
CP◄ACP



09 Start Data Communication

CP➤ACP

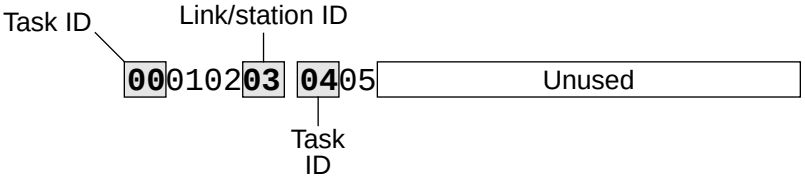
Tells the ACP to collect data for a particular link. This data is stored in a buffer.



0A End Data Communication

CP➤ACP

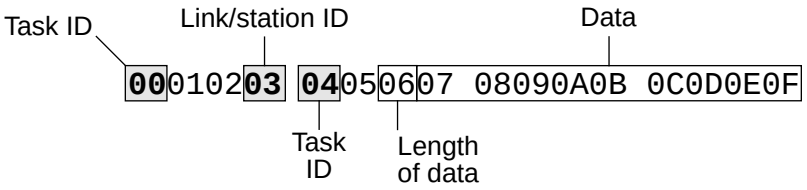
Sent by the CP to end data collection.



0B Return Data Communication

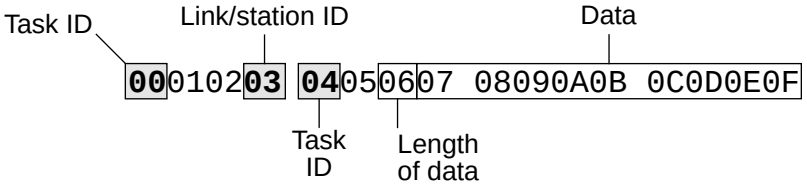
CP➤ACP

Used to return whatever data is in the buffer.



85 Data Communication Response

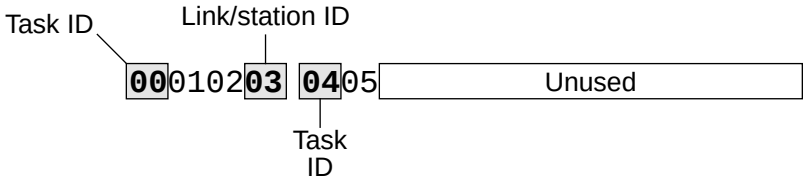
CP◄ACP



0C Go On-Hook

CP➤ACP

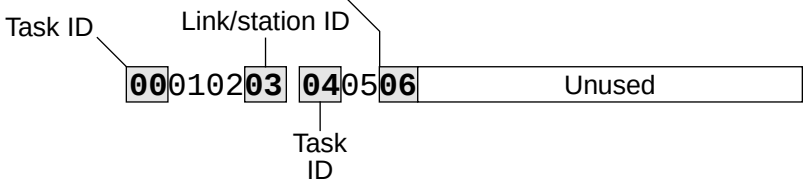
Tells the MID to go on-hook and end the call.



8E On-Hook Response

CP◄ACP

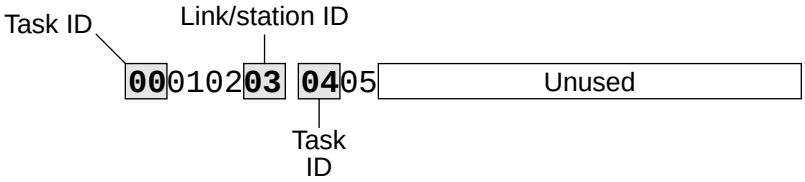
00	OK
XX	Error



0D Go Off-Hook

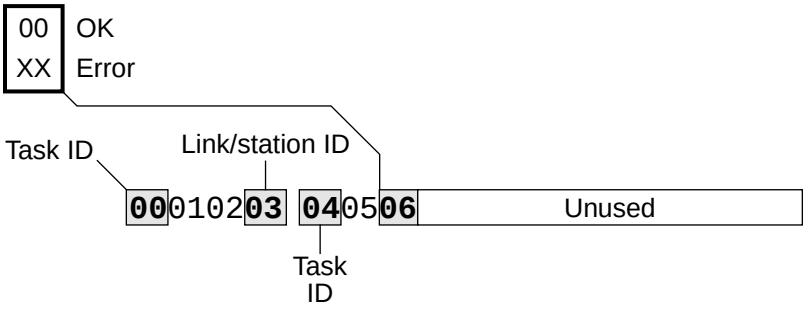
CP➤ACP

The off-hook command is used to answer the call once the call is detected.



8F Off-Hook Response

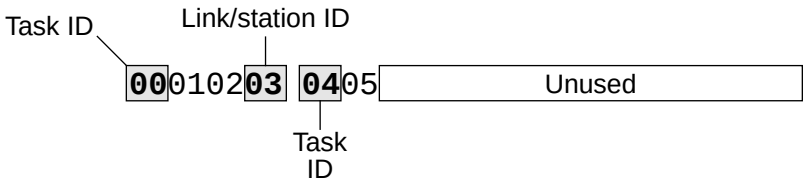
CP◄ACP



0E Reset Channel on ACP

CP➤ACP

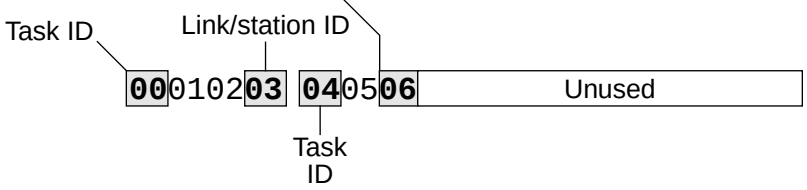
Resets the channel to the idle state.



90 Reset Response

CP◄ACP

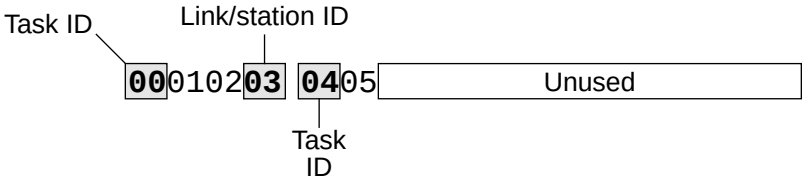
00	OK
XX	Error



10 Call Picked (PID/R)

CP➤ACP

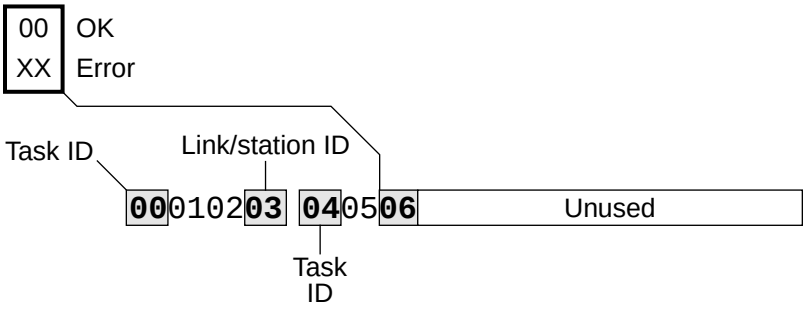
Tells the PID/R that the CP has picked the call and the call should go off the PID/R. There is no response message.



11 Error Logging On/Off

CP➤ACP

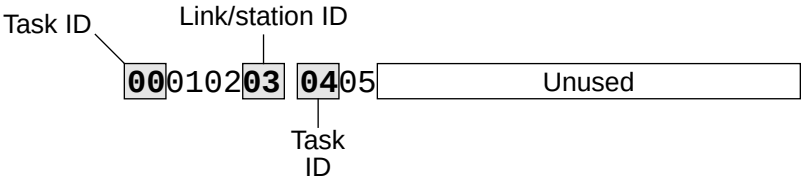
Turns error logging on or off. When error logging is turned on, the status log entries will be logged. There is no response message.



12 Poll Message to ACP

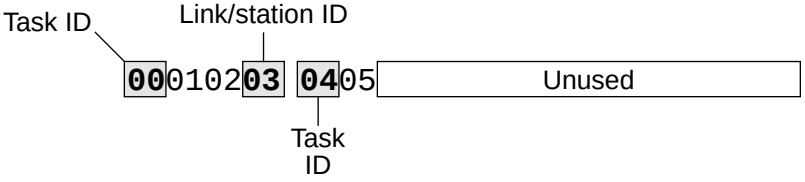
CP➤ACP

Basically checks to see if the ACP is still there. This message is sent approximately every 30 seconds.



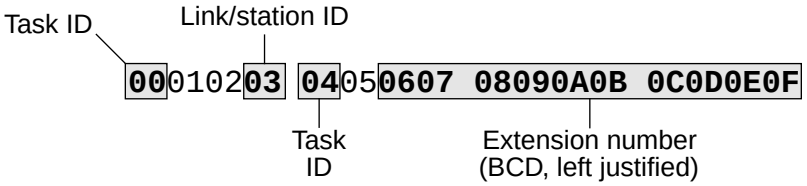
93 Polling Response

CP◄ACP

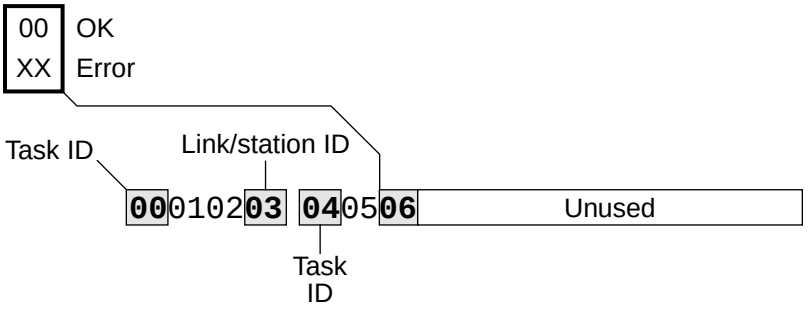


13 Set Message Waiting Extension on ACP CP➤ACP

Checks for invalid message waiting.



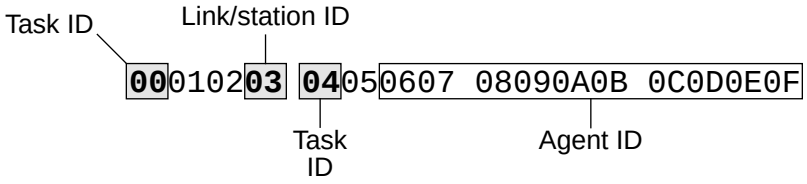
96 Set Message Waiting Extension Response CP◄ACP



15 Log-in Agent ID on MID

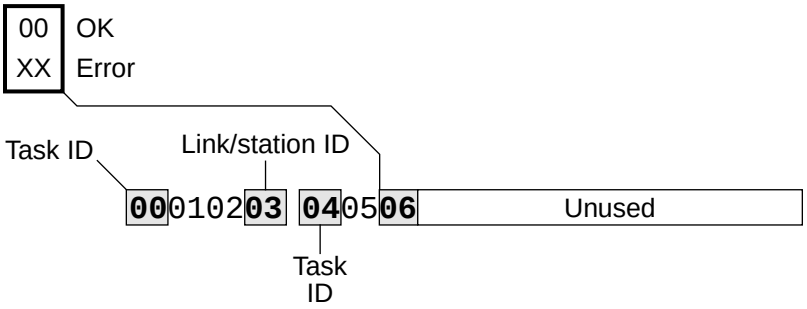
CP➤ACP

At initialization, the log-in agent ID command gets the port logged in by getting the agent ID established in Menu 4.



97 Log-in Agent ID Response

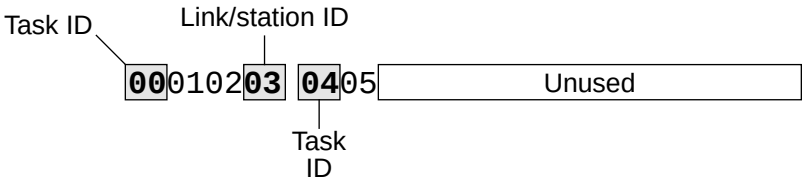
CP◄ACP



16 Set LTN Internal

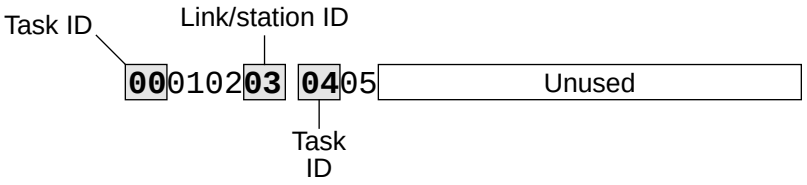
CP➤ACP

Resets a link. Before, this was accomplished via the SMT—it is now accomplished via a background task. This is an internal post, where one task sends the message to another.



98 Set LTN Internal Response

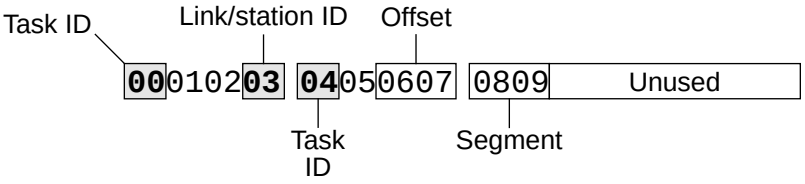
CP◄ACP



17 Return Memory from ACP

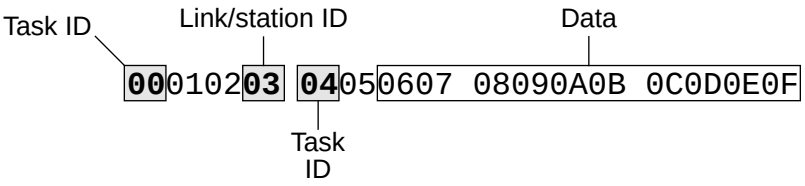
CP➤ACP

Returns memory off the ACP board so that the contents can be examined.



99 Return Memory Response

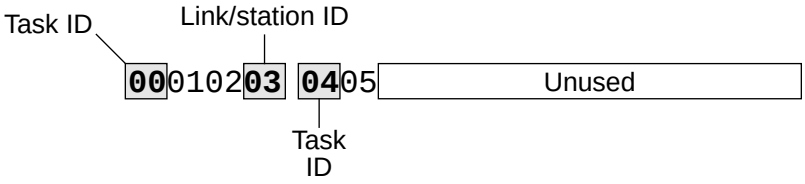
CP◄ACP



19 Ready to Dial Last Digit for PID/R

CP➤ACP

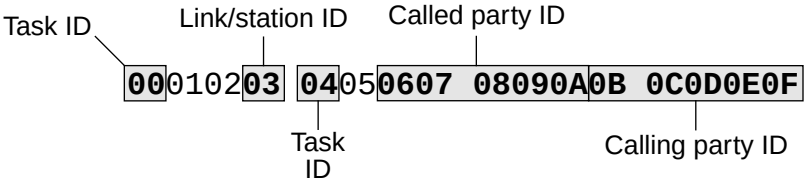
Used as part of the PID/R call progression. There is no response message.



80 Ring No Answer Incoming Call

CP◄ACP

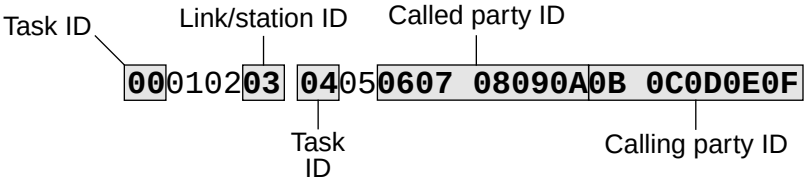
This command is one of several that establishes an incoming call. It provides the ID's of both the called and calling party. There is no response message.



81 Busy Incoming Call

CP◄ACP

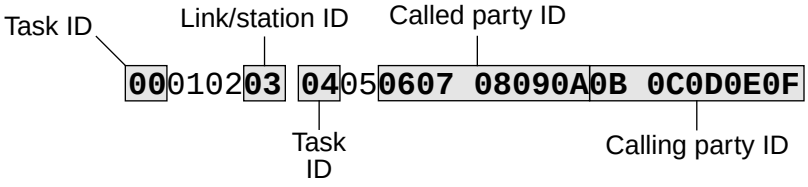
This command is one of several that establishes an incoming call. It provides the ID's of both the called and calling party. There is no response message.



82 All Calls Forwarded Incoming Call

CP◄ACP

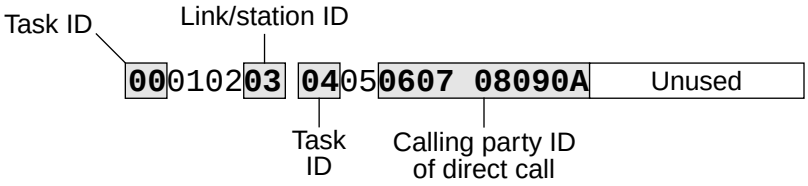
This command is one of several that establishes an incoming call. It provides the ID's of both the called and calling party. There is no response message.



83 Direct Incoming Call

CP◄ACP

This command is one of several that establishes an incoming call. There is no response message.



86 Error

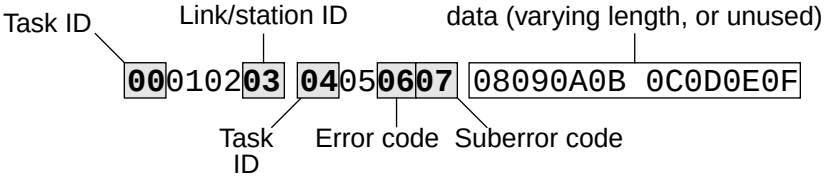
CP◄ACP

Shows error information from the PID. Interpretation depends on the error type, which is identified in offset 06:

01 ACP internal error
02 Blocked message waiting
03 Illegal message waiting
04 APID/75 error
05 APID/85 error
06 PID/R error
07 AMID error
08 DMID error
80 Parity error
81 Framing error
82 Overrun error
83 Incomplete message error
84 Link status from ACP
85 False LTN from ACP
86 Line status message from MID
87 XON/XOFF message waiting

The meaning of the remaining bytes depends on the error code. In general, byte 7 is the suberror code field; bytes 8 through 15 may be used for data.

General Format

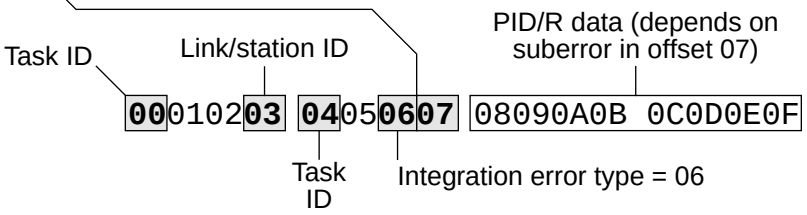


Definitions of suberror codes and data fields for errors 06, 07, and 08 are described below. Also found below are descriptions of data fields for errors 84 through 87.

PID/R Error (06)

The PID/R data field in offset 08-0F varies with the error in offset 07.

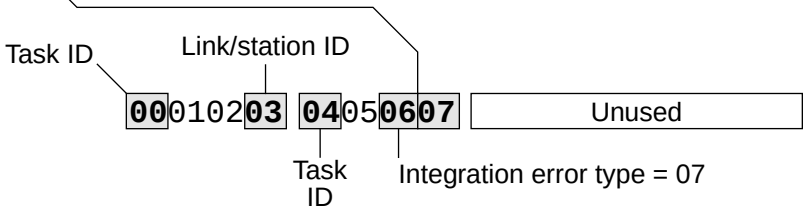
01	Time-out for port request. Offset 08-0D holds the PID/R extension number with ringing.
04	Time-out for call picked message. Offset 08-0D holds the PID/R extension number with ringing.
08	Peg counters: Offset 08: message buffer overflow. Offset 09: no extension at ringing port. Offset 0A: not used. Offset 0B: incomplete message time-outs.
09	Pick failed. Offset 08-0D holds the LTN of the VPS doing the pick.
0A	Time-out from ready to dial last digit. Offset 08-0D holds the PID/R extension number with ringing.
0B	Pick exceeded maximum retries. Offset 08-0F is unused.
20	Report EPROM revision. Offset 08-0D holds the revision number (ASCII).
21	Message waiting already on. Offset 08-0D holds the message waiting extension.
22	Message waiting already off. Offset 08-0D holds the message waiting extension.
23	One of the PID/R phones is reset. Offset 08 identifies which phone: **00** for phone 0; **01** for phone 1.



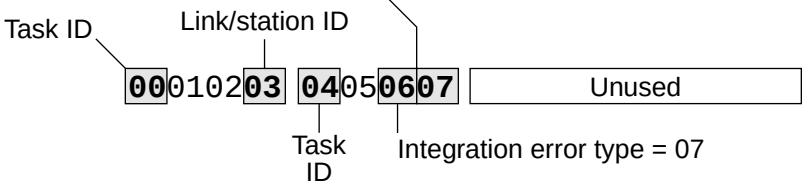
AMID Error (07)

The errors reported in offset 07 are the same as the subcodes of the 1E status log entry for the MID.

00	Display rev numbers of 651/751 EPROM's.
03	751 internal RAM error—bad 751. Replace the 751.
04	751 overwrote its incoming message buffers. Service affecting, but not fatal. Notify engineering.
05	751 detected a checksum error while communicating with the 652. Not fatal, unless occurring repeatedly.
06	751 detected an interrupt on the IIC bus. Service affecting, but not fatal. If more than a few occurrences, replace MID (all 6 channels associated with the particular bus will be bad).
07	751 detected a line input overrun. Service affecting, but not fatal. Notify engineering.
08	751 detected an unrecognized command. Notify engineering.
30	652 detected an incorrect message from a 751. Service affecting, but not fatal.
31	652 detected an unmatched message from a 751. Service affecting, but not fatal.
32	652 detected a checksum error on the IIC bus from a 751. Service affecting, but not fatal.
33	652 detected no response from a 751. Service affecting, but not fatal.
40	652 internal RAM error—bad 652. Replace the 652.
41	652 external RAM error—bad 652. Replace the 652.
42	652 detected that 188 sent wrong message. Service affecting, but not fatal.
43	652 detected that 188 sent a bad checksum. Service affecting, but not fatal.
44	652 detected that 188 sent bad serial number. Service affecting, but not fatal.
45	652 detected that 188 sent unmatched message. Service affecting, but not fatal.
46	652 detected that 188 sent unmatched general message. Service affecting, but not fatal.
47	652 detected that 188 sent a message that was too long.



49	652 detected that 188 message not processed.
50	652 detected no digits in buffer during incall. Service affecting, but not fatal.
51	652 detected too few digits in buffer during incall. Service affecting, but not fatal.
52	652 detected more than 16 digits in buffer during incall. Service affecting, but not fatal.
53	652 detected a condition where state is longer than 60 seconds. Service affecting, but not fatal.
54	652 big transmit buffer overrun error. Service affecting, but not fatal.
55	Bad or blocked extension for transfer. Service affecting, but not fatal.
56	No message waiting indication DN found. Service affecting, but not fatal.
57	No message waiting clear DN found. Service affecting, but not fatal.
58	No digit echo during message waiting indication. Service affecting, but not fatal.
59	No digit echo during message waiting clear. Service affecting, but not fatal.
5A	Bad or blocked extension for message waiting indication. Service affecting, but not fatal.
5B	Bad or blocked extension for message waiting clear. Service affecting, but not fatal.
5C	Outcall failed. Service affecting, but not fatal.
5D	During transfer, no digits found.
5E	During transfer, no message from SL-1 for approximately 12 seconds.
5F	During incall, no volume message from SL-1 for approximately 12 seconds.
60	No digit information received from PBX on incoming call. Check if ADD feature in SL1 programming is enabled for that particular TN.
61	No dial digit message from VPM.
80	Display rev numbers of 188 EPROM.
81	652 processor bad. Fatal error. Replace MID.

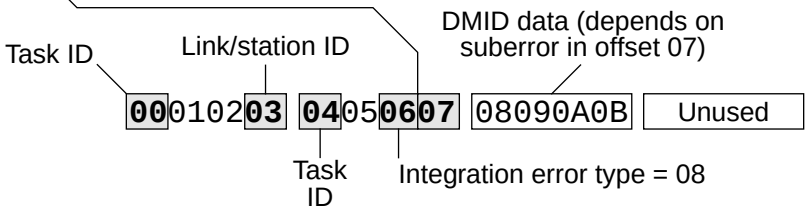


DMID Error (08)

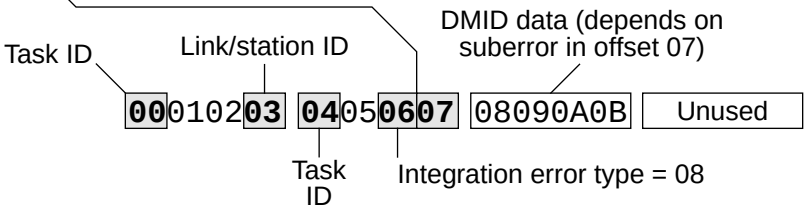
The errors reported in offset 07 are the same as the subcodes of the 1E status log entry for the DMID.

The DMID data field in offset 08-0B varies with the error in offset 07.

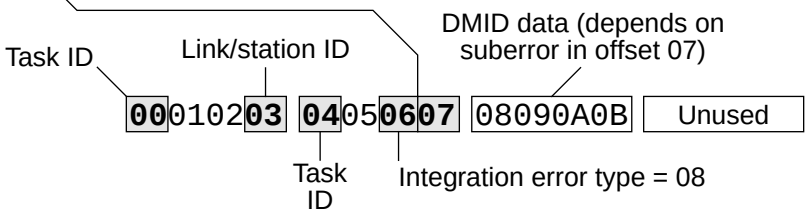
00	DMID firmware revision number. Logged when the DMID is powered up, even if error logging is disabled. DMID data is: Offset 08-09: firmware revision number. Offset 0A-0B: unused.
01	RS-232 serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 08: no RS-232 buffer error counter. Offset 09: bad RS-232 message length error counter. Offset 0A: RS-232 message time (100 ms) expired error counter. Offset 0B: bad RS-232 header error counter.
02	Interrupt 0 or 1 error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 08: interrupt 0 error counter. Offset 09: interrupt 1 error counter. Offset 0A: watchdog interrupt error counter. Offset 0B: unused.
03	MPDA-A serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 08: MPDA I/F parity error counter. Offset 09: MPDA I/F overflow error counter. Offset 0A: MPDA I/F bad header error counter. Offset 0B: MPDA I/F message time (100 ms) expired error counter.



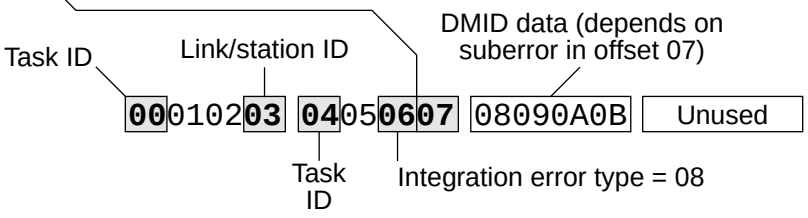
04	MPDA-B serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 08: MPDA I/F parity error counter. Offset 09: MPDA I/F overflow error counter. Offset 0A: MPDA I/F bad header error counter. Offset 0B: MPDA I/F message time (100 ms) expired error counter.
05	MPDA-C serial interface error. Service affecting, fatal. Notify Product Support Engineering. DMID data is: Offset 08: MPDA I/F parity error counter. Offset 09: MPDA I/F overflow error counter. Offset 0A: MPDA I/F bad header error counter. Offset 0B: MPDA I/F message time (100 ms) expired error counter.
06	DMID received unknown transparency message. Service affecting, fatal. Resets phone and re-establishes transparency. When the PBX initialized, it sent this message. DMID data is: Offset 08-09: received message. Offset 0A-0B: unused.
07	DMID received unknown transparency message. Service affecting, fatal. Resets phone and re-establishes transparency. When the PBX initialized, it sent this message. DMID data is: Offset 08-09: received message. Offset 0A-0B: unused.
15	Pilot number download time-out. DMID data is unused.
16	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 08: MPDA A, B or C. Offset 09: A/B/C state. Offset 0A: A/B/C timer. Offset 0B: data.
17	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 08: MPDA A, B or C. Offset 09-0B: data.
18	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 08: MPDA A, B or C. Offset 09: A/B/C state. Offset 0A: A/B/C timer. Offset 0B: data.



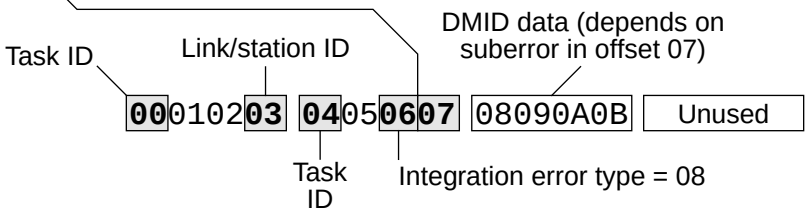
19	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 08: MPDA A, B or C. Offset 09: A/B/C state. Offset 0A: A/B/C timer. Offset 0B: data.
1A	MPDA-A/B/C power up warning. Not service affecting. DMID data is: Offset 08: MPDA A, B or C. Offset 09: A/B/C state. Offset 0A: A/B/C timer. Offset 0B: data.
20	DMID received LED Wink message and did not know what to do with it. Not service affecting. Notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.
22	DMID received LED Flash message when the channel was in the wrong state. Not service affecting. PBX can send multiple lamp flash message. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.
27	DMID received a digit but the channel was in the wrong state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.



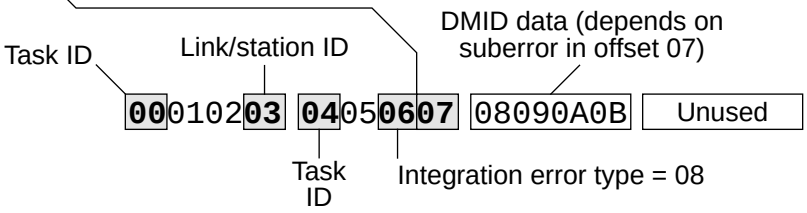
29	DMID received an ASCII message but the channel was in the wrong state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.
2C	Bad LTN message from scanner. Service affecting, non-fatal. If too many errors logged, notify Product Support Engineering. DMID data is: Offset 08: message type from scanner. Offset 09-0A: LTN number. Offset 0B: unused.
2D	Got off-hook response message from scanner when the channel was in the wrong state. Service affecting. Notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.
2E	Off-hook response from scanner expired. Service affecting, non-fatal. Caller might get open tree greeting or get dropped. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: A/B counter.
30	Bad RS-232 message from scanner. Service affecting, non-fatal. If too many errors logged, notify Product Support Engineering. DMID data is: Offset 08: message type from scanner. Offset 09-0A: LTN number. Offset 0B: unused.



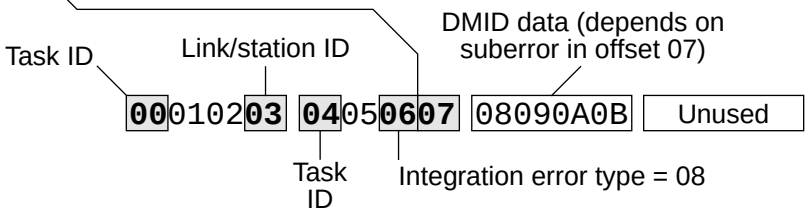
31	Off-hook or Call ID message pending expired. Service affecting, non-fatal. Caller gets open tree greeting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: unused.
32	Timed-out after 18 seconds in answer pending state. Service affecting, non-fatal. Caller gets open tree greeting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: A/B state.
35	MPDA-A/B/C response time-out for idle poll message. Service affecting, fatal. Transparency is re-established. Check DMID channels A, B and C connections, and check internal cables. Notify Product Support Engineering. DMID data is: Offset 08: A, B or C. Offset 09: A/B/C state. Offset 0A: A/B/C timer. Offset 0B: unused.
36	Timed-out after five seconds in Phone Session state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: A or B. Offset 09: A/B state. Offset 0A: A/B timer. Offset 0B: processing LTN.
37	DSP enable time expired. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: A or B. Offset 09: A/B state. Offset 0A: A/B timer. Offset 0B: processing LTN.



38	DSP enable time expired. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: A or B. Offset 09: A/B state. Offset 0A: A/B timer. Offset 0B: processing LTN.
39	Scanner sent non-digit extension for message waiting. Service affecting, can be fatal. Message waiting will have problems. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: LTN number. Offset 09: LTN state. Offset 0A: LTN timer. Offset 0B: received digit.
3A	DMID received MIK LED on message when not in this state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08-0B: received message.
3B	DMID received MIK LED on message when not in this state. Not service affecting. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08-0B: received message.
3C	MIK/MCK release expired. Service affecting, non-fatal. Transparency mode will be re-established. Message waiting will not work until transparency is re-established. If too many errors are logged, notify Product Support Engineering. DMID data is: Offset 08: C. Offset 09: C state. Offset 0A: C timer. Offset 0B: C counter.
3D	Received type 1 off-hook message from PBX. Not service affecting. May log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.

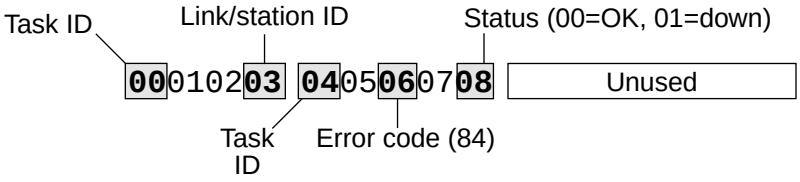


3E	Received type 2 off-hook message from PBX. Not service affecting. May log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.
3F	Received type 3 off-hook message from PBX. Not service affecting. May log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.
40	Received type 1 on-hook message from PBX. Not service affecting. May log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.
41	Received type 2 on-hook message from PBX. Not service affecting. May log this if the phone is being programmed in overlay 11 or if the hook switch is toggled. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.
42	Received unknown message from MPDA. Emulates Meridian Tele-center Software and re-establishes transparency mode. Service affecting and fatal. Notify Product Support Engineering. Unknown MPDA interface messages will not cause this error. DMID data is: Offset 08-09: received message. Offset 0A: A,B or C. Offset 0B: unused.
43	Received MSB LED-on message.

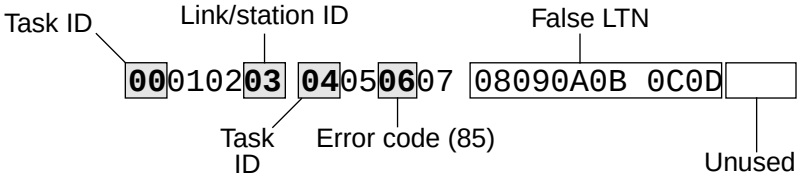


Link Status from ACP (0x84)

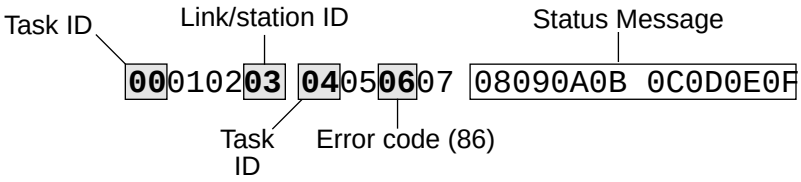
Up/down status of link in byte 8 (00 = OK, 01 = down).



False LTN from ACP (0x85)

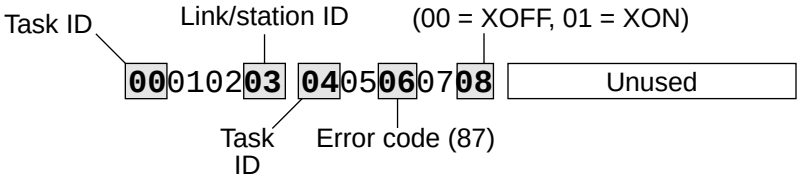


Line Status Message from MID (0x86)



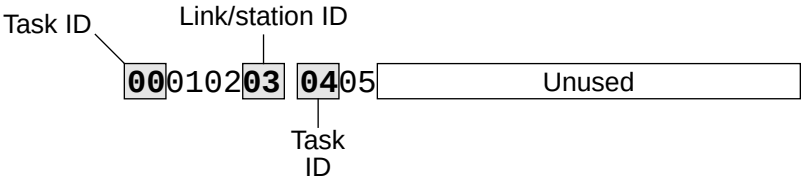
XON/XOFF Message Waiting (0x87)

Byte 8: 00 = XOFF, 01 = XON

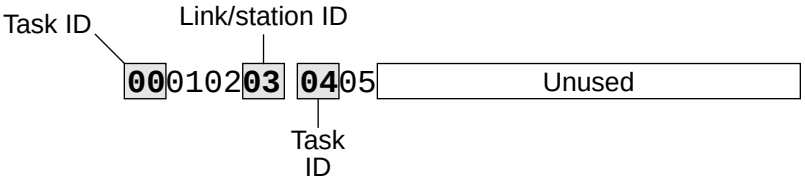


87 APID,PID/R,DMID Alerting Message CP◄ACP

Sends an alert that there is a call ringing on one of the peripheral integration devices.



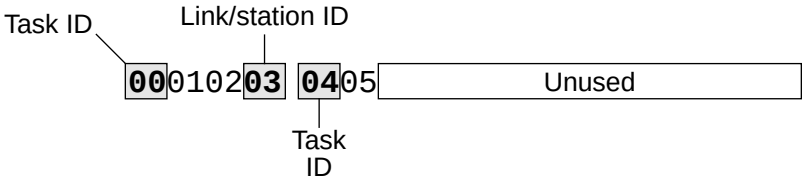
0F Alerting Response for APID, PID/R, DMID CP►ACP



94 Disconnect Detected

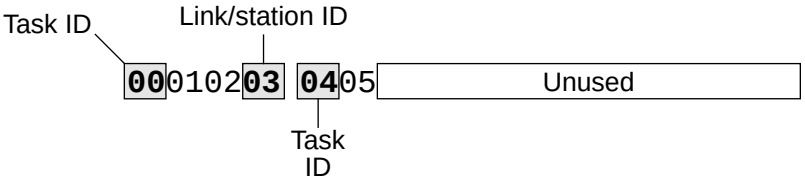
CP◄ACP

Closes a calling session. There is no response message.



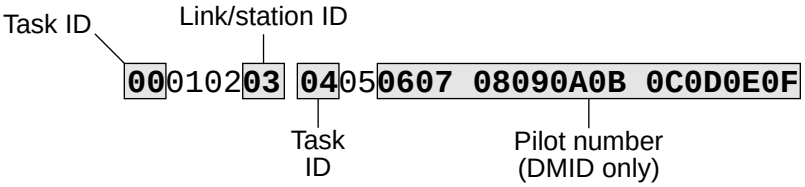
9B Pilot Number Download Request

Used with DMID integration and gets the pilot number as entered in Menu 1.1.



1A Pilot Number Download Response

CP➤ACP



Offset	Label	Field Description
06-0F	Pilot number	For DMID, the pilot number as shown in Menu 1.1. For others, not used.

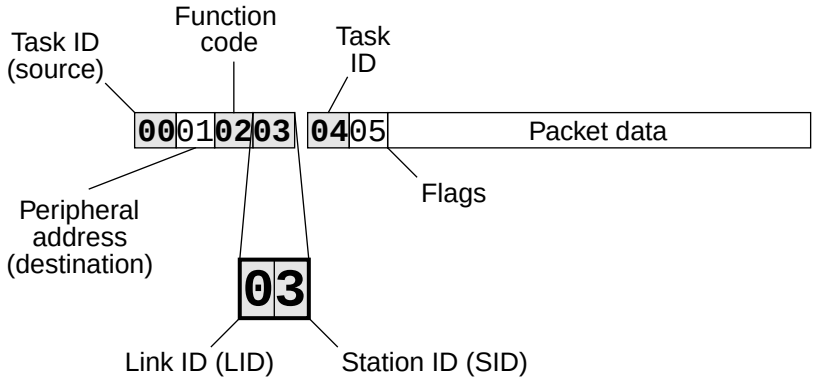
CHAPTER 6: PIC MESSAGES

This chapter provides descriptions of all control bus messages used with PICs (Primary Interface Cards), which are sometimes referred to as PTICs (Primary Telephone Interface Cards). PICs are able to communicate directly to the system control/data bus using an SBI (Serial Bus Interface—Octel's proprietary bus interface ASIC).

For information on reading these descriptions, see the PIC Message Format description below. All values in the illustrations are the bytes' offsets, not sample data. Request and response messages are grouped together, when appropriate.

PIC Message Format

PICs communicate directly to the system control/data bus using an SBI with CIP (Compact Interface Protocol) messages. To communicate with the CP, these messages are converted into control bus form by adding the three bytes of the control bus message header. The resulting format follows:



Destination: Contains channel number to alert PIC about what kind of control bus message to expect. Channel number 01 designates a CIP message; channel number 00 designates a DMA start message.

Function code: This code tells the PIC what to do, and defines the kind of information will be in the cb message packet data.

LID/SID: Two 4-bit fields. Each hex digit represents one of the ID numbers. The Link ID is the link number that the message is from, or being sent on. The value will always be between 0 and 5 for T1, or between 0 and 3 for CEPT. The station ID is the station number that the message is for, or from, will always be between 0 and 15.

Task ID: The CP task ID that the message is for, or from.

Flags: Bit 0 is set if there are other messages to follow that contain additional information. Bit 0 is cleared if there are no other messages to follow.

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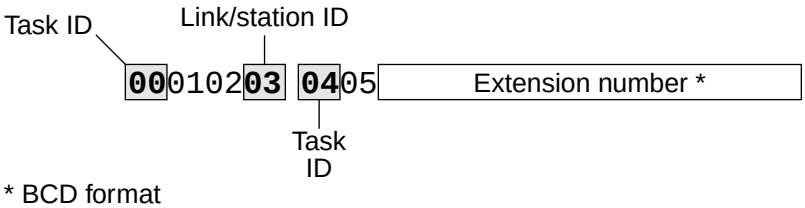
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03 Dial Digits Request

CP➤PIC

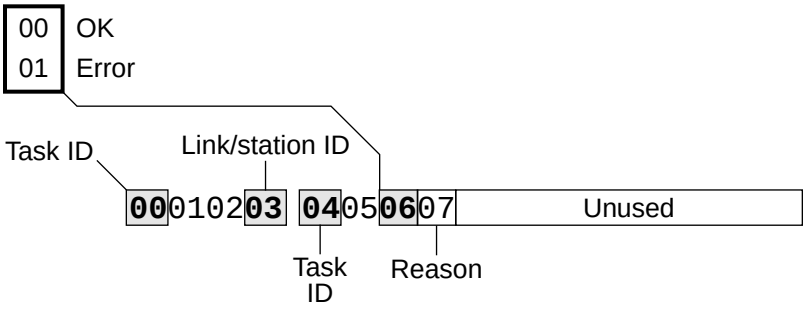
Message to pass dialing information for outcalls.



* BCD format

89 Dial Digits Response

CP◄PIC

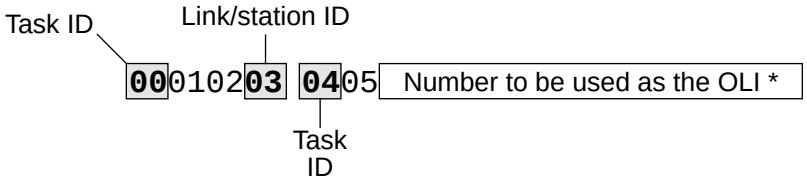


Offset	Label	Field Description
07	Reason	00 Outcall OK
		01 MTP paused
		02 Outcall Blocked
		04 Called number fail
		05 Call fail (from network)
		06 Ring no answer
		09 Circuit not seized
		10 Circuit reset

08 Seize Line Request

CP➤PIC

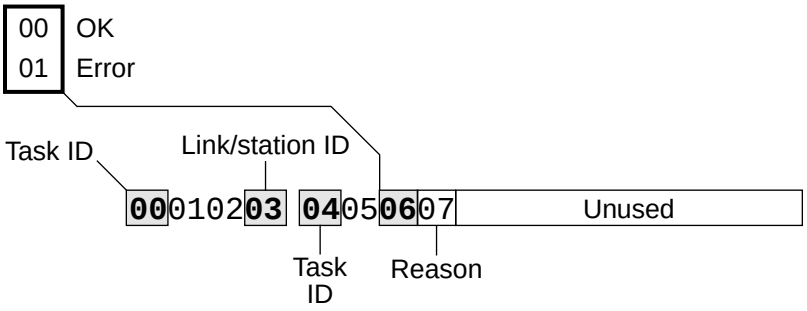
Message to come off-hook for outcall.



*BCD format; fill spare field with FF. OLI means originating line identity which is the phone number of the calling party (i.e., the voice mail system).

88 Seize Line Response

CP◄PIC

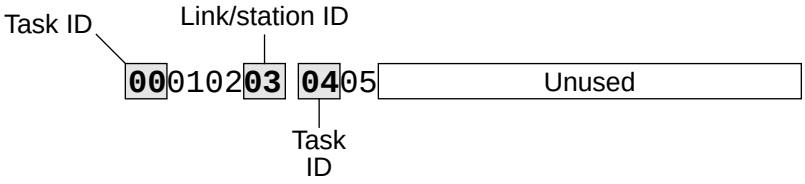


Offset	Label	Field Description	
07	Reason	00	Outcall OK
		01	MTP paused
		02	Outcall Blocked
		03	Originating number fail
		08	Outgoing not allowed
		09	Circuit not seized
		10	Circuit reset
		11	Parameter error

0C On-Hook Request

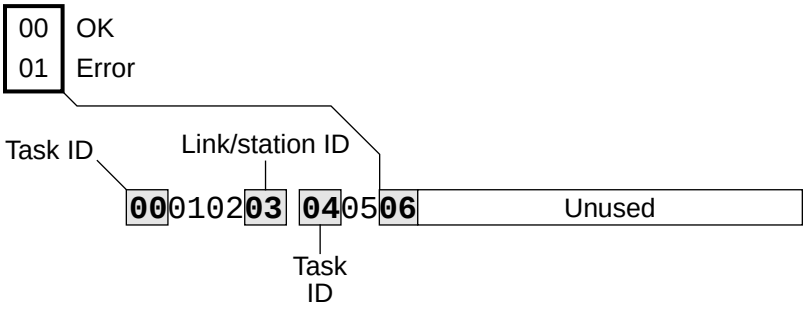
CP➤PIC

Message to put circuit back into an idle condition.



8E On-Hook Response

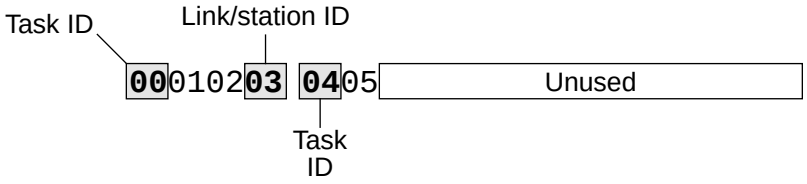
CP◄PIC



0D Off-Hook (Call Answered) Request

CP➤PIC

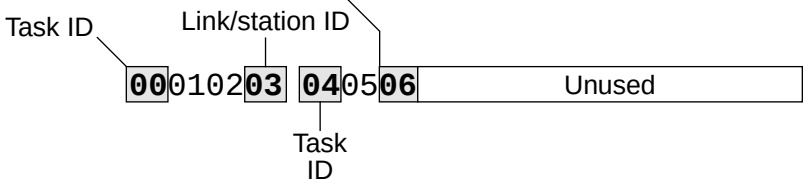
Message to tell the PIC to accept the incoming call.



8F Off-Hook Response

CP◄PIC

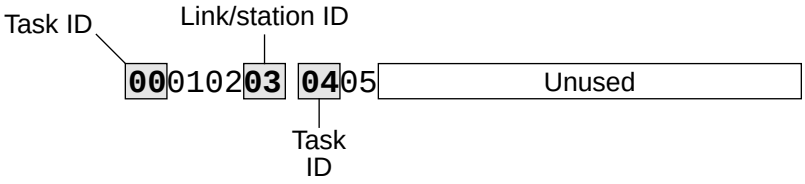
00	OK
01	Error



12 Idle Polling Request

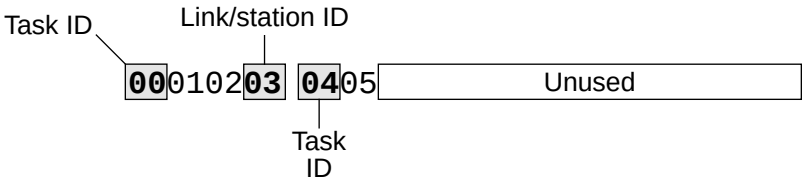
CP➤PIC

Message sent approximately every 30 seconds to see if the PIC is still alive.



93 Idle Polling Response

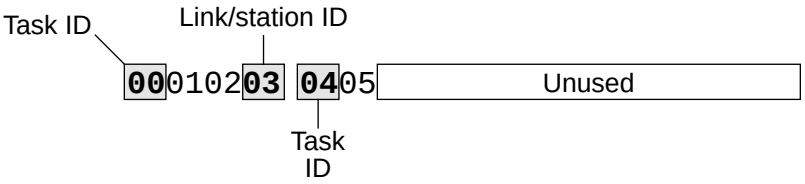
CP◄PIC



94 Disconnect Detected

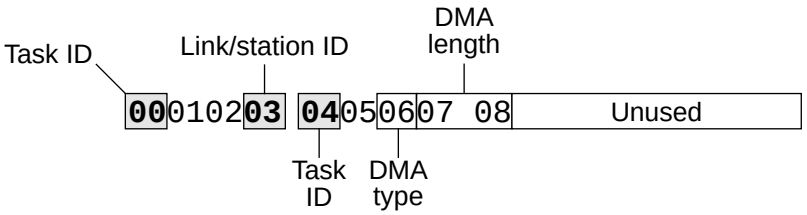
CP◄PIC

Closes a calling session. There is no response message.



9D DMA from PIC to CP Request

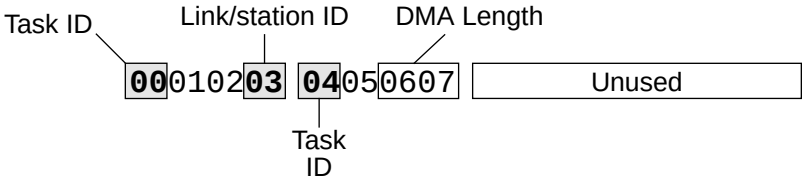
CP◄PIC



Offset	Label	Field Description
06	DMA type	04 PIC_TCAP_ROUTE (pic to pic TCAP transfer) 05 PIC_SCCP_DB (pic to pic SCCP transfer) 06 PIC_MTP_DB (pic to pic MTP transfer)

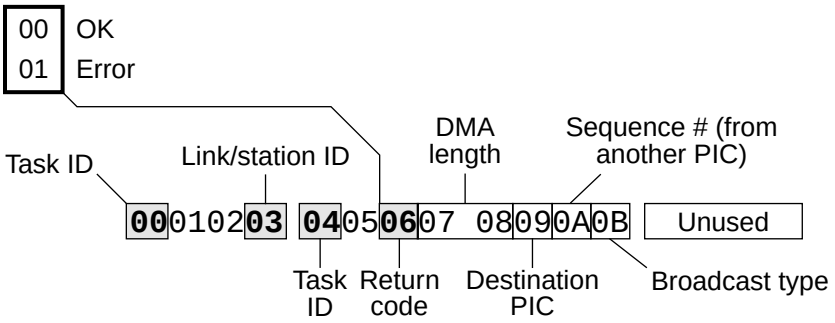
1E DMA from CP to PIC Response

CP➤PIC



9E DMA from PIC to CP Ready

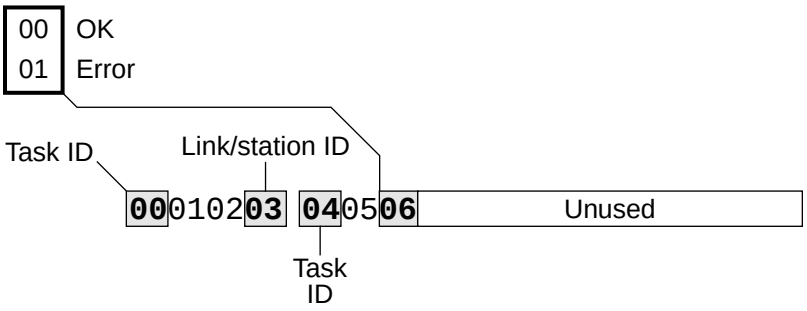
CP◄PIC



Offset	Label	Field Description
09	Destination PIC	FF, if broadcast.
0B	Broadcast type	01 Point to point (or, not broadcast). 02 Broadcast to all PICs. 03 To active stack (or, not broadcast).

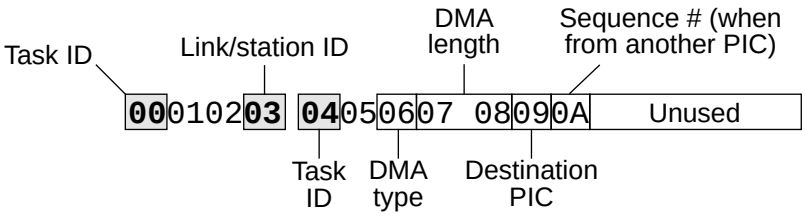
A5 Broadcast DMA Response

CP◄PIC



1F Initiate DMA from CP to PIC Request

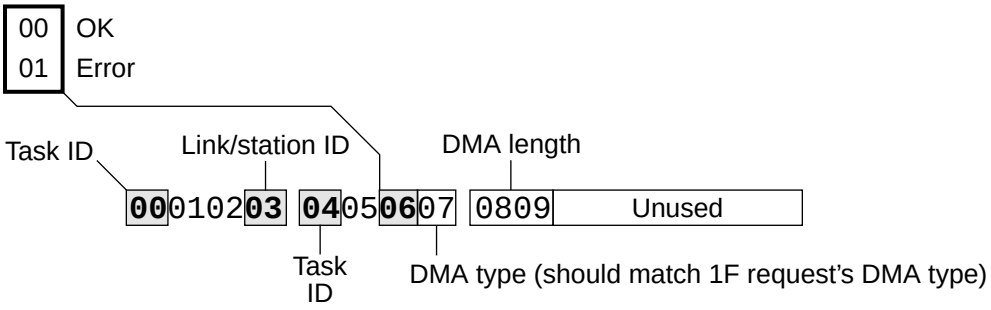
CP➤PIC



Offset	Label	Field Description
06	DMA type (its7.h)	01 PIC_SS7_CONFIG (pic config DMA 1) 02 PIC_MAP_CONFIG (pic config DMA 2) 03 PIC_CIC_CONFIG (pic config DMA 3) 04 PIC_TCAP_ROUTE (pic to pic TCAP transfer) 05 PIC_SCCP_DB (pic to pic SCCP transfer) 06 PIC_MTP_DB (pic to pic MTP transfer) 07 SMS_TO_PIC (SMS data to CP) 0C PIC_XLT_CONFIG1 0D PIC_XLT_CONFIG2 0E PIC_XLT_CONFIG3 0F PIC_XLT_CONFIG4

9F Initiate DMA from CP to PIC Ready

CP◄PIC

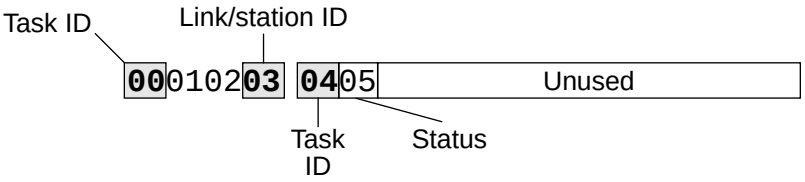


24 Get PIC Status Request

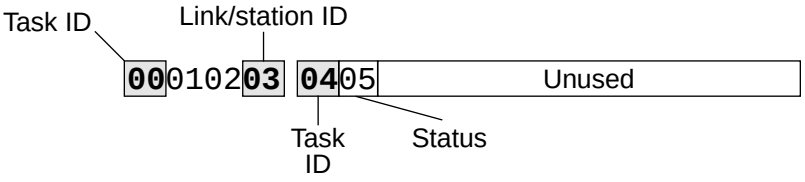
CP➤PIC

The 24/A6 message pair will always be sent in a group of two control bus message sets, one right after the other.

First 24 message format; status = 00 (get measurements status):



Second 24 message format; status = 01 (get PIC status):

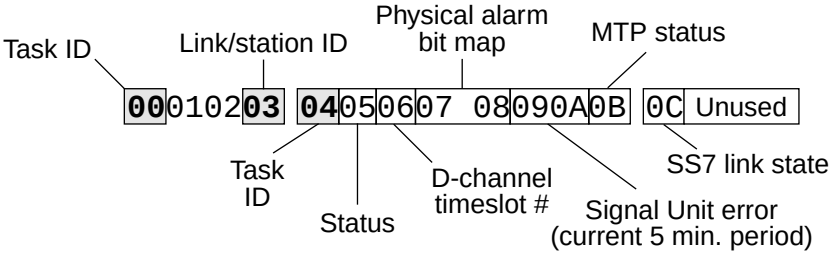


A6 Get PIC Status Response

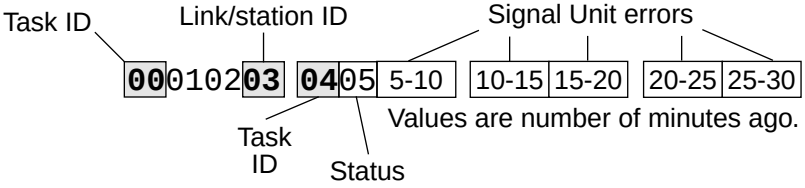
CP◄PIC

The 24/A6 message pair will always be sent in a group of two control bus message sets, one right after the other.

First A6 message format; status = 00 (get measurements status):



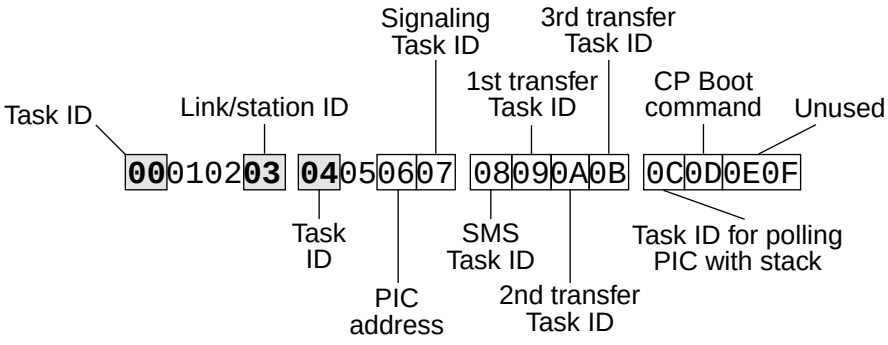
Second A6 message format; status = 01 (get PIC status):



20 SS7 Configuration Request

CP➤PIC

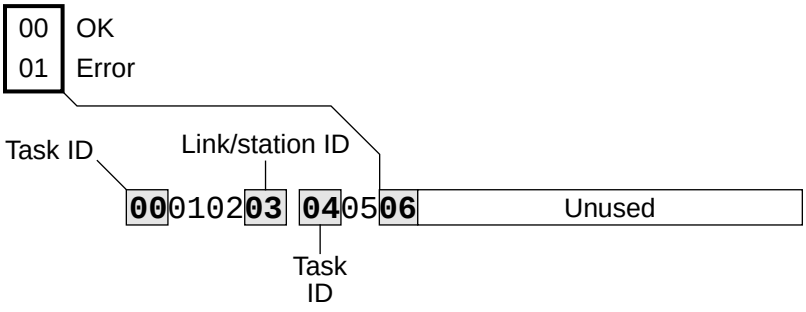
Message to start the configuration of the PIC.



Offset	Label	Field Description
06	PIC Address	PIC number | station number format
0D	CP boot command	0 Boot system once 1 Debug boot A Auto boot, even after a power outage M Manufacturing test

A1 SS7 Configuration Response

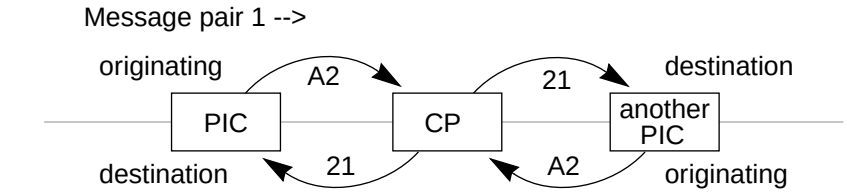
CP◄PIC

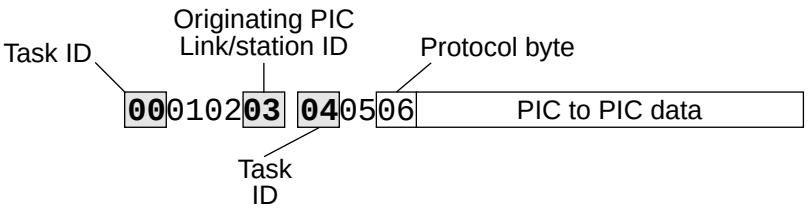


A2 Data Transfer Request To Another PIC

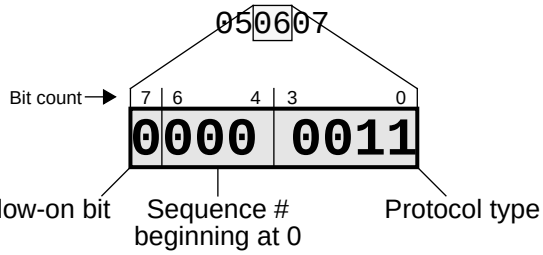
CP◄PIC

This message will pass up to 10 bytes of data (offsets 06 through 0F) from another PIC. The data within the A2/21 control bus message pairs will be identical. The PICs communicate through the CP as depicted in the following illustration.





Offset	Label	Field Description
03	Destination PIC Link/station ID	Link and station ID of the destination PIC.
05	Originating PIC Link/station ID	Link and station ID of the originating PIC.
06	Protocol byte	This byte is split into two parts, as shown below. To read, convert to binary.

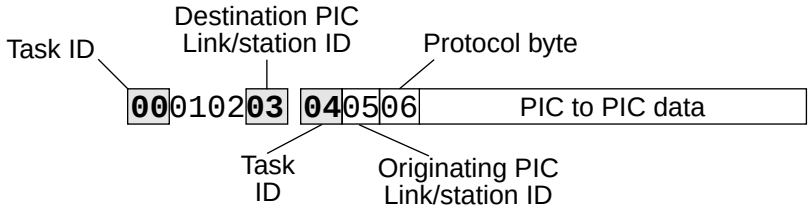


Protocol type:

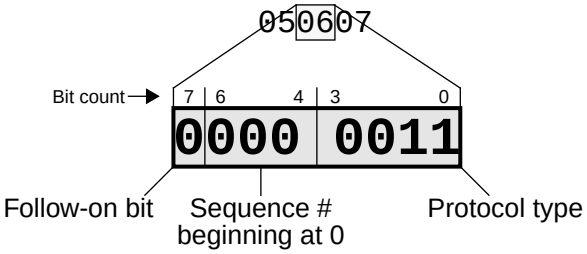
0	Echo data Send (Requester_Recipient)
1	Echo data Ack (Recipient_Requester)
2	SS7 TUP message
3	DMA Ack message
4	System parameter message
5	Debug message
6-8	Spare

21 Data Transfer Response from Another PIC CP➤PIC

This message will pass up to 10 bytes of data (offsets 06 through 0F) from another PIC. The data within the A2/21 control bus message pair will be identical. The Originating PIC enables the Destination PIC to distinguish received CIP messages from multiple sources (see A2 message for more information).



Offset	Label	Field Description
03	Destination PIC Link/station ID	Link and station ID of the destination PIC.
05	Originating PIC Link/station ID	Link and station ID of the originating PIC.
06	Protocol byte	This byte is split into two parts, as shown below. To read, convert to binary.

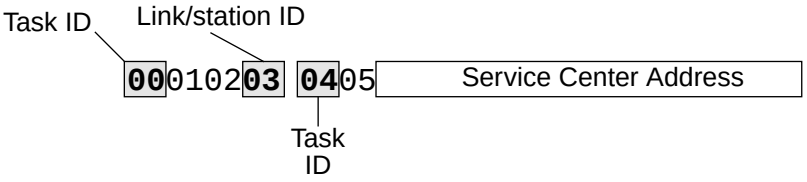


Protocol type:

0	Echo data Send (Requester_Recipient)
1	Echo data Ack (Recipient_Requester)
2	SS7 TUP message
3	DMA Ack message
4	System parameter message
5	Debug message
6-8	Spare

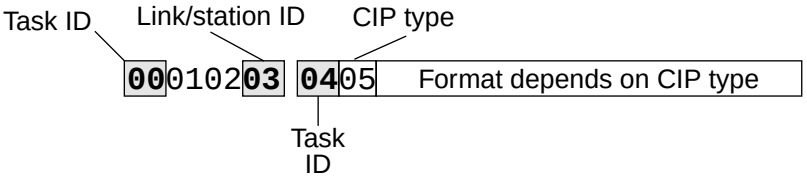
22 SMS to PIC Request

CP➤PIC



A3 SMS to PIC Response

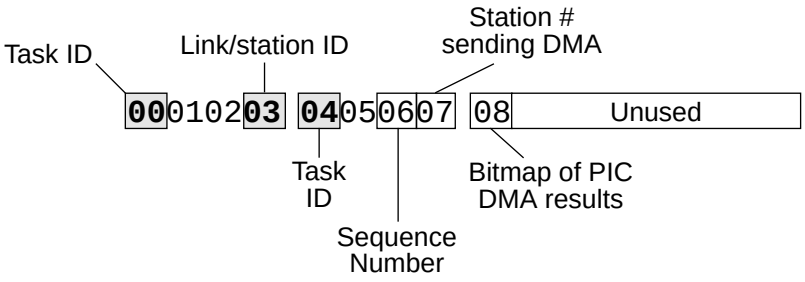
CP◄PIC



Offset	Label	Field Description
05	CIP types and extra formats	03 ACK message (acknowledgement to previous outgoing SMS message) *offset 06*: Message reference (SMS ref. to the SM) *offsets 07-0F*: Unused 04 Error message (protocol error to a previous outgoing SMS message) *offset 06*: Message reference (SMS ref. to the SM) *offset 07-08*: Major error code *offset 08-09*: Minor error code *offset 0A*: Message waiting data set (marks whether the service center is contained in a HLRs message waiting data) *offset 0B-0F*: Unused 05 Alert message (incoming alert info to SMS server) *offset 06*: MSISDN (subscriber's identifier that the SM is addressed to.) *offset 07-0F*: Unused 06 Open/close response (final result code of SMS server's open or close requests) *offset 06*: Result (00 = success; 01 = error) *offset 07-oF*: Unused

23 Broadcast DMA from CP to PIC Response

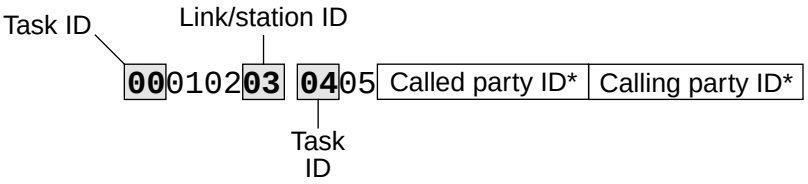
CP➤PIC



80 Ring No Answer Incoming Call

CP◄PIC

This message is to send the called party and calling party ID to the CPU when a call is forwarded because of ring no-answer. There is no response message.

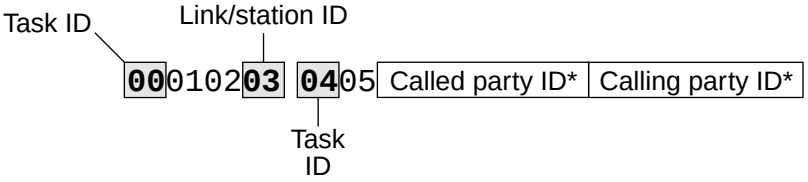


* BCD Format

81 Busy Incoming Call

CP◄PIC

This message is to send the called party and calling party ID to the CPU when a call is forwarded because the extension is busy. There is no response message.

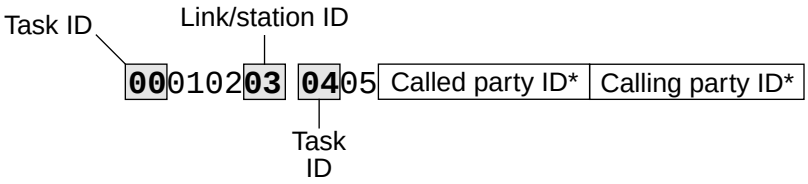


* BCD Format

82 All-Calls-Forwarded Set in Incoming Call

CP◄PIC

This message is to send the called party and calling party ID to the CPU when a call is forwarded because the extension is in all-calls-forward mode. There is no response message.

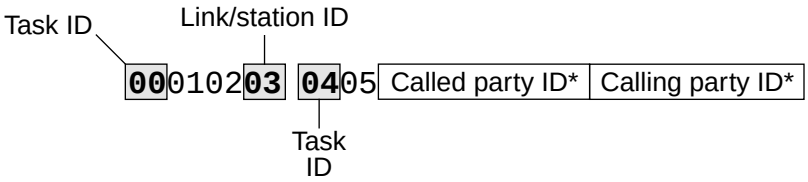


* BCD Format

83 Direct Incoming Call

CP◄PIC

This message is to send the calling party ID to the CPU when the call is a direct call.There is no response message.



* BCD Format

86 PIC Internal Error

CP◄PIC

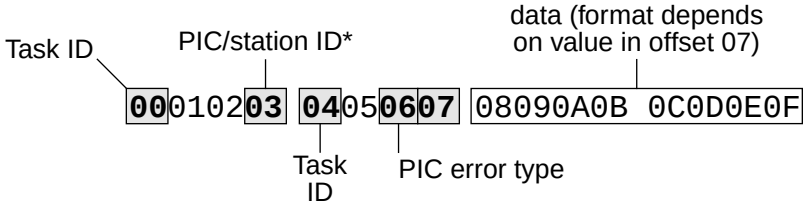
A PIC detected an internal system error or an integration error. Interpretation depends on the integration type, which is identified in offset 06:

09 Non-Service Affecting

0A SCCP/TCAP/MAP stack failed

0B Service Affecting

The structure of offsets 00 through 0F is dependant on whether the error is being logged by a PIC 286 or PIC 386. Offset 07 determines which type of PIC, and the rest of the CB message format.



* refer to the PIC Messages Index page for breakdown of this byte.

PIC 286 error (if offset 07 = 0)

Offset	Label	Field Description
06	PIC error type	09 Non-Service Affecting 0A Stack error (SCCP/TCAP/MAP) 0B Service Affecting
07	Task ID	Task ID = 0 identifies a PIC 286 error.
08	Error type	For PIC 286 errors, this offset defines the type of error which defines the remainder bytes of the error log entry: 01 Obituary alarms 02 Trouble alarms 03 Physical alarms 04 Link alarms 05 Link status
09-0A *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Module ID (values follow): 0402 *ath_utl.c*: This module contains routines for the Application Trouble Handler (ATH). 0405 *ath_ss7.c*: This module contains routines for the ATH which are unique to the SS7 routine. 0602 *ss7_md.c*: This module contains the Message Dispatching (MD) primitives for a SS7 build.

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09-0A *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Module ID (values follow - continued): 0603 *ss7_l3md.c*: This module contains the functions to insert messages into the level-3 signalling network management queue and then get messages from this queue and send the message to the correct level-3 application. 0701 *adl_ss7.c*: This module contains the SS7 Application Data Loader (ADL) functions. 0702 *adl_utls.c*: This module contains utility routines for the ADL in assisting in downloading and updating the SS7 database. 0801 *ss7_pmtc.c*: This module contains the routines that process messages for appl_id_pmtc (Peripheral Maintenance). These messages include SS7 management messages received from the admin. subsystem. 1001 *ss7_mgmt.c*: This module contains the routines that process messages for appl_id_ss7_mgmt (SS7 Management). 1201 *bip_ss7.c*: This module processes the Board ID Prom messages sent to the SS7 CAP card (appl_id_bip). 2001 *mmd_mgr.c*: This module contains the topmost layer of Message Monitor Debug (MMD) and serves as an interface between the internals of MMD and other applications. 2A01 *ss7_tlac.c*: This module contains the routines that process messages for appl_id_tlac. 2B01 *ss7_tsfc.c*: This module contains the routines that process messages for appl_id_tsfc. 2C01 *ss7_tcoc.c*: This module contains the routines that process messages for appl_id_tcoc. 2E01 *ss7_tcbc.c*: This module contains the routines that process messages for appl_id_tcbc. 3201 *ss7_tcrc.c*: This module contains the routines that process messages for appl_id_tcrc. 3301 *ss7_tsfc.c*: This module contains the routines that process messages for appl_id_tsfc. 3401 *ss7_llsc.c*: This module contains the routines that process messages for appl_id_llsc. 3501 *ss7_lsac.c*: This module contains the routines that process messages for appl_id_lsac. 3601 *ss7_lsla.c*: This module contains the routines that process messages for appl_id_lsla. 3701 *ss7_lslr.c*: This module contains the routines that process messages for appl_id_lslr.

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09-0A *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Module ID (values follow - continued): 3801 *ss7_rtpc.c*: This module contains the routines that process messages for appl_id_rtpc. 3901 *ss7_rtac.c*: This module contains the routines that process messages for appl_id_rtac. 3A01 *ss7_rsrt.c*: This module contains the routines that process messages for appl_id_rsrt (SS7 Routing Management, Signalling Route-Set Test). 3B01 *ss7_rtcc.c*: This module contains the routines that process messages for appl_id_rtcc. 3D01 *ss7_rtrc.c*: This module contains the routines that process messages for appl_id_rtrc. 3E01 *ss7_hmrt.c*: This module contains the routines that process messages for appl_id_hmrt (Signalling Link Message Handling, Message Routing). 4801 *ss7_hmdt.c*: This module contains the routines that process messages for appl_id_hmdt (Message Distribution). 4802 *ss7_h0h1.c*: This file has routines that deal with the conversion of messages from external-to-internal format and internal-to-external format. An external message is one received from the remote level-3 node which has been passed up to Message Distribution (HMDT). An internal message is one that can be sent to a named entity using the Message Dispatcher facilities. When an external message is converted, the raw data is repackaged and then put into a system buffer to be sent to the proper level-3 application. 4803 *ss7_hmdc.c*: This file contains the routines for SS7 level-3 Message Discrimination. 4901 *timedmsg.c*: This module contains the routines for timed messages and is the only module that should access the global variable g_tmsg_ctrl[] by name. 4902 *ss7_mgr.c*: This module processes the messages for appl_id_ss7. 4903 *ss7signl.c*: This module contains routines that sends signals to applications. 4904 *ss7_isr.asm*: This module contains some of the Interrupt Service Routines and the Interrupt Vector Initialization routine. 4905 *ss7_dr.asm*: This module contains the routines to handle DMA Receive Interrupts.

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09-0A *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Module ID (values follow - continued): 4906 *ss7_rc.asm*: This module contains the routines for the Receive Control of the low level driver for MTP. 4907 *ansiss7.c*: This module contains routines that are unique to the ANSI version of the SS7 protocol. 4908 *ccittss7.c*: This module contains routines that are unique to the CCITT version of the SS7 protocol. 4909 *ss7_rtbl.c*: This module contains routines that deal with the SS7 routing table. 490A *ss7_txc.asm*: This module contains the routines for the Transmit Control of the low level driver for MTP. 490B *ss7_ds1.c*: This module contains the routines that will program the DS1 and CEPT interfaces. 490C *ss7_hwc.c*: This module contains the routines for hardware initialization. 4C01 *ss7_ddl.c*: This module contains the routines that process messages for appl_id_ddl. The Dynamic Data Loader (DDL) provides two main functions: 1) cross-loads a remote SS7 card, upon request, with dynamic data, and 2) hunts for an SS7 card to receive its dynamic data from. Dynamic data is the portion of the routing_table[ ], linkset_table [ ], and link_table[ ] that can not be loaded by the AMS-CAP at power-on. The dynamic portions of these tables change as the network incurs and recovers from failures. As each SS7 card powers up, it needs to receive a copy of another SS7 card's dynamic data. Once the system is initialized, it can operate normally. While operating normally, DDL can receive requests to cross-load another SS7 card. 4E01 *ss7_sltc.c*: This module contains the routines that process messages for appl_id_sltc (Signalling Link Test Control). 4F01 *ss7_rcc.c*: This module implements the MTP remote congestion control (RCC) software. This consists of receipt of TFCs and the signalling route set congestion test; these procedures are based on U.S. Networks congestion control using multiple congestion levels with message priorities. 5201 *meas_ss7.c*: This module contains the SS7 measurement slave code. This includes the allocation of local/module data structures and any functions needed to locally manage these measurements and access the data structures. 5202 *meas_s7d.c*: This module allocates the global SS7 measurement data structures that must be accessed by other applications (to peg and time).

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09-0A *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Module ID (values follow - continued): 5E01 *snoop.c*: This module implements a background data-sanity check on SS7 cards to determine when the databases on SS7 cards become different. Note that each SS7 card's database must be exactly the same as another's database. The snooping is implemented using the System-Debug-Service's-Dump-Memory command.
0B *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Statement ID
0C-0D *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Error code (the most common values follow - if error code is incurred other than what is defined, refer to module ID coding): 0101 Unexpected error code. 0102 MTP failed to get updated information from another PIC. 0103 Failed to recover transmit message from bad link on change over. 0104 MTP was loaded with static application data twice. 0105 Timed out waiting for static application data. 0106 Static application data table number is too large. 0107 Originating card or transaction ID changed during the static application data load. 0108 Inconsistency in loading 286 operating code. 0109 A destination point code has become alternate-restricted. 010A A destination point code has become normal-restricted. 010B A destination point code has become inaccessible. 010C A destination point code has allowed for traffic. 010D Cannot determine the status of a point code. 010E A route had become prohibited. 010F A route has allowed for traffic. 0110 A route has become restricted. 0112 Routing failed to find the requested point code for transmission. 0113 Link/linkset/reroute on-hold has caused a loss of messages. 0114 Failed to create timer linked-block element. 0115 Link is in change over, change back, or is running MTP. 0116 PIC 286 has been instructed to reboot itself.

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
0C-0D *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Error code (the most common values follow - if error code is incurred other than what is defined, refer to module ID coding - continued): 0117 Level 2 queue has overflowed. 0118 Level 3 receive queue has overflowed. 0119 Too many destination point codes have become congested. 011A Watchdog expiration. 011B Transfer congestion status is in error. 011C Unexpected error code. 011D Static application data link number is too large. 011E Unexpected error code. 011F Unexpected error code. 0120 Routing table search algorithm error. 0121 Configuration error: too many routes have been created. 0122 Invalid timer value or user part routing data, deleting an active link, or general update message error. 0123 Configuration error: static data routing table is not in sorted in numerical order. 0124 PIC 286 has been instructed to reboot itself. 0125 Lost too many system buffers to keep link in service. 0126 Level 2 transmission buffer has message signal units stuck in it. 01B1 Invalid case selector. 01B2 Invalid else condition. 01B3 Bad code reached. 01B4 Null pointer. 01B5 Invalid pointer. 01B6 Table boundary exceeded. 01B7 Table checksum invalid. 01B8 Invalid card address. 01B9 Invalid subsystem directory. 01BA Invalid application ID. 01BB Invalid function ID. 01BC Invalid application data.

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
0C-0D *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Error code (the most common values follow - if error code is incurred other than what is defined, refer to module ID coding - continued): 01BD Invalid message length. 01BE Inconsistent queue status. 01BF Queue elements overwritten. 01C0 Corrupted list. 01C1 Unexpected timer expired. 01C2 Unexpected count value. 01C3 Unexpected value because of lack of memory resources. 01C4 Out of system buffers. 01C5 Read failed. 01C6 Read invalid in AMT. 01C7 Write failed. 01C8 Write invalid in AMT. 01C9 Open failed. 01CA Close failed. 01CB Delete failed. 01CC Invalid buffer state. 01CD Table entry missing. 01CE Invalid buffer address. 01CF Out of resources. 01D0 Unexpected message. 01D1 Card's MTC (peripheral maintenance terminal) disabled (286 shutdown). 0400 - 04FF Unexpected fatal interrupts.
0E-0F *	* Data depends on type in offset 08.	**For error type = 1 or 2** (obituary or trouble) Unused (zeros).

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09 *	* Data depends on type in offset 08.	**For error type = 3** (physical alarms) Alarm condition: 01 Receive carrier has been lost. 02 Receiving unframed all 1's. 03 Receiving all 1's in time slot 16. 04 Receive frame synchronization has been lost. 05 Receive CRC4 frame synchronization has been lost. 06 Receiving a bit error rate of 1 bad bit in 1,000 bits. 07 Receiving a bit error rate of 1 bad bit in 10,000 bits. 08 Receiving a bit error rate of 1 bad bit in 100,000 bits. 09 Receiving an alarm from the far end.
0A *	* Data depends on type in offset 08.	**For error type = 3** (physical alarms) Alarm switch: 00 An alarm condition abatement. 01 An alarm condition onset.
0B *	* Data depends on type in offset 08.	**For error type = 3** (physical alarms) Fail count: This number indicates how many times the condition occurred in the 5 seconds prior to alarm onset.
0C-0F *	* Data depends on type in offset 08.	**For error type = 3** (physical alarms) Unused (zeros)
09-0A *	* Data depends on type in offset 08.	**For error type = 4** (link alarms) Link alarm values: 00CC SLTM failed or did not run. 00F8 Link will not come into service. 00F9 Incorrect PC from adjacent node. 00FA Incorrect SLS received. 00FB SLTM acknowledgment time-out. 00FC Incorrect data received. 00FD Management inhibit denied. 00FE Inhibit acknowledgment time-out. 00FF Management uninhibit denied. 0100 Uninhibit acknowledgment time-out.
0B-0F *	* Data depends on type in offset 08.	**For error type = 4** (link alarms) Unused (zeros)

PIC 286 error (if offset 07 = 0)		
Offset	**Label**	**Field Description**
09 *	* Data depends on type in offset 08.	**For error type = 5** (link status) Previous state code: 00 Internal error. 01 In service. 02 Locally inhibited. 03 Remotely inhibited. 04 Remotely blocked. 05 Run signalling test. 06 Deactivated. 07 No signalling link. 08 Abnormal service. 09 Locally uninhibited.
0A *	* Data depends on type in offset 08.	**For error type = 5** (link status) Current state code: 00 Internal error. 01 In service. 02 Locally inhibited. 03 Remotely inhibited. 04 Remotely blocked. 05 Run signalling test. 06 Deactivated. 07 No signalling link. 08 Abnormal service. 09 Locally uninhibited.
0B-0F *	* Data depends on type in offset 08.	**For error type = 5** (link status) Unused (zeros)

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
05	Error severity	For PIC 386 errors, this offset defines the error severity which in turn will define bytes 08 through 0F of the 86 control bus message: 01 Fatal error: the PIC will restart. 02 Error log: an error has occurred which will be entered in the CP status log. 03 Pack count: a threshold for non-serious errors has been exceeded; error will be entered in the CP status log.
06	PIC error type	09 Non-Service Affecting 0A Stack error 0B Service Affecting
07	Task ID	Task ID > 0 identifies a PIC 386 error. The possible *hexadecimal* values are as follows: 01 Idle task. 02 On-line debug task. 03 Control bus receive task (CBIN). 04 Control bus transmit task (CBOUT). 05 DMA transmit and receive task. 06 PCM highway task. 07 Provisioning task. 10 System buffer handler task. 11 L3 and L4 router task. 12 Queue to MTP L3. 13 System Trouble Handler (STH) task. 14 System download task. 20-3F Telephone User Part (TUP) tasks 0 - 31. 40 Call Control task 50 Signalling Connection Control Part (SCCP) task. 51 GMSC task -- Mobile Application Part (MAP) protocol.
08 *	* Module ID - data depends on error severity and Task ID in offsets 05 and 07, respectively.	**For error severity = 01...** Module ID = 0. **For error severity > 01...** ... and Task ID = 03 (CB-IN): 01 *cbin.c*: This task will receive CB messages from the CP and verify that the checksums are correct. The task will then post the CB message(s) to the required task based on the information in the CB header (CBIN_MAIN). 02 *cbinlib.c*: Control bus input library (CBIN_LIB). ... and Task ID = 04 (CB-OUT): 01 *cb_send.c*: This task will receive CB messages from tasks and then have the SBI verify transmission to the CP (CB_SEND_MAIN).

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
08 *	* Module ID - data depends on error severity and Task ID in offsets 05 and 07, respectively.	**For error severity > 01...** ...and Task ID = 05 (DMA_SEND): 01 *DMA_interf.c*: This module hides all VRTX details from the rest of the DMA task. It performs all high level steps required to perform I/O DMA operations (DMA_INTERF). 02 *DMA_state.c*: This module encapsulates the DMA state machine. The state machine is used to determine which action to take in response to a DMA command from the CP and other tasks on the PIC TIC. Also, this module contains all details concerning CIP messages sent to and from the CIP (DMA_ST_MACH). 03 *DMA_send_req.c*: This module performs all queuing of DMA send requests made by PIC tasks to other PICs in the system. DMA send requests that are waiting to be transmitted are stored on the sendQ, while DMA send requests that are waiting for the result of their previous DMA transfer are stored on the wait_list (DMA_QUEUES). 04 *DMA_bcast.c*: This module encapsulates all details regarding DMA broadcasts. Also, this module completely hides the DMA Send Request module from higher layer modules be providing nearly identical interface to the DMA Send Request module (DMA_BCAST). ...and Task ID = 06 (PCM): 01 *pcm.c*: This task will receive the PCM messages from the PCM ASIC and verify that the addressing is correct. Next, the task will post the PCM message to the required task based on the information in the header (PCM_MAIN). ...and Task ID = 07 (PROVISION): 01 *prov.c*: PROV_MAIN 02 *provmisc.c*: PROV_MISC 03 *prov.c*: PROV_DMA 04 *prov_sccp.c*: This module is designed for provision and reprovision of the SCCP task with details of the remote point codes and subsystem numbers that the VPS will be communicating with (PROV_SCCP). 05 *prov_stack.c*: This module provides the functionality to respond to a CP poll inquiring about the state of the PIC and Stack. In addition it provides the functionality to move the stack from one PIC to another, that is, turn the stack on or off (PROV_STACK). 06 *prov_updglb.c*: PROV_UPDGLB

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
08 *	* Module ID - data depends on error severity and Task ID in offsets 05 and 07, respectively (continued).	**For error severity > 01...** ...and Task ID = 10 (SYSTEM_BFR): 01 *system_bfr.c*: This module defines the system buffer task of informing the system of initialization completion and when the system buffer should start processing (SYSTEM_BFR_MAIN). ...and Task ID = 11 (ROUTER): 01 *router.c*: This module defines the router task of informing the system of initialization completion and when the router should start processing (ROUTER_MAIN). 02 *routermisc.c*: This module defines miscellaneous router task functions (ROUTER_MISC). ...and Task ID = 12 (SEND_286): 01 *send_task.c*: This task will receive the system buffer messages from various tasks and will put the messages into the dual port ram and interrupt the 286 (SEND_286_MAIN). ...and Task ID = 13 (SYS_TRBL): 01 *trbl_interf.c*: This module hides all VRTX details from the rest of the System Trouble Handler (STH) task by 1) placing all PIC error logs onto the CP error log, 2) shutting down the entire PIC board when a fatal error occurs, and 3) de-allocating all memory buffers with unrecognizable message type IDs (SYS_TRBL_MAIN) 02 *286_hdlr.c*: This module hides all details concerning the 286 processor and MTP code from the rest of the STH task. Specifically, it encapsulates knowledge of the structure for 286 trouble and obituary reports (TRBL_HDLR_286). ...and Task ID = 14 (SW_DNLD): 01 *sw_dnld.c*: SW_DNLD_MAIN 02 *sw_sldr_mgr.c*: This file is the System Loader module for the Eagle Platform which controls loading of application software and data to a peripheral CAPx card and the MASCAM (SW_SLDR_MGR). 03 *sw_adl_mgr.c*: This module contains the SS7 Application Data Loader functions (SW_ADL_MGR). 04 *sw_adl_loads.c*: This module contains routines for software Application Data loads (SW_ADL_LOADS). 05 *sw_adl_util.c*: This file consists of variable definitions and software download utility routines (SW_ADL_UTIL). 06 *sw_misc.c*: SW_MISC 07 *sw_adl_dnld.c*: SW_ADL_DNLD

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
08 *	* Module ID - data depends on error severity and Task ID in offsets 05 and 07, respectively (continued).	**For error severity > 01...** ...and Task ID = 14 (SW_DNLD): 08 *sw_adl_lkmgr.c*: SW_ADL_LKMGR ...and Task ID = 20 - 3F (TUPs): 01 *btup.c*: This function is a finite state machine to process TUP messages and internal events. It responds to those events with appropriate action and an outgoing message according to current state and received incoming message or internal events. The statement is then translated from SDL progression charts (TUPMAIN). 02 *btupin.c*: All the incoming state functions are defined in this module. The incoming state of Mercury personal communication L4 TUP will conform to BTNR167 (TUPIN). 03 *btupout.c*: All the outgoing state functions are defined in this module. The incoming state of Mercury personal communication L4 TUP will conform to BTNR167 (TUPOUT). 04 *btupmsg.c*: The message handler provides primitive functions call to other modules to send and receive queue messages (TUPMSG). 05 *btupbld.c*: This module contains the functions to build required TUP messages (TUPBUILD). 06 *btuplib.c*: This library provides the CIP interface between TUP task and CP line tasks (TUPLIB). ...and Task ID = 40: 01 *cc_main.c*: Call control task main. 02 *cc_lib.c*: This module is the call control library which has the following functions: bcd_cpl, get_tup_qid, cc_qpost, cc_alloc_tup_prim_buf, and cc_alloc_tup_int_buf. 03 *cc_trace.c*: This module performs routines to trace events. 04 *cc_prim.c*: This module is the call control primitive which contains the CIP to primitive function: cc_cip_2_tup_prim. 05 *cc_prov.c*: This module is the call control task provision update. ...and Task ID = 40: 06 *cc_sprc.c*: This library contains the following functions: cc_wait_for_msg, cc_await_sys_complete, cc_send_msg.

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
08 *	* Module ID - data depends on error severity and Task ID in offsets 05 and 07, respectively (continued).	**For error severity > 01...** ...and Task ID = 50 (TO_SCCP_REQ): 01 *sysmem.c*: SYSMEM 02 *sysmsg.c*: This module defines porting routines for SCCP IPC and it hides the VRTX details from the SCCP task concerning sending and receiving messages between SCCP and all other tasks on the 386 PIC (SYSMSG). 03 *sysgtt.c*: This module, for SCCP only, performs the translation of MSC addresses to DPC values, both of which are unique to the Mercury PCN network (SYSGTT). ...and Task ID = 51 (TO_GMSC): 01 *GMSC_io.c*: This module contains the GMSC task input/output functions. In addition, it hides most details concerning the interaction with tasks on the PIC TIC and on the CP. It drives all actions of the GMSC application procedure by checking the TO_GMSC_Q for requests and indications (GMSC_IO). 02 *GMSC_app.c*: This module contains the functions to support Short Message Service, including the intelligence of how to send a short message to a destination MSC (GMSC_APP). 03 *HLR_req.c*: This module encapsulates all details involving HLRS, including all possible HLRs that a system can communicate with as maintained in the HLR_table database. Also, this module contains all MAP functionality for sending HLRs requests for service (HLR_REQ). ...and Task ID = 51 (TO_GMSC): 04 *in_traffic.c*: This module contains all TCAP indication protocol handling. All TCAP indications are passed and translated into MAP layer indications. MAP layer indications can take form of ACKs, protocol errors, protocol aborts, and alerts (IN_TRAFF). 05 *out_traffic.c*: This module contains the functionality required to send a SM to a destination MSC via TCAP primitives. It contains no database (OUT_TRAFF). 06 *tcap_interf.h*: This file contains a macro interface to the purchased TCAP protocol layer (TCAP_INTERF).

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
09 *	* Data depends on offset 05.	**For error severity > 01...** Statement ID **For error severity = 01...** Statement ID = 0; this means that the error was in the library and was a result of a system exception (the system is about to crash). Module ID = LIB_EXCEPTION = 0
0A *	* Data depends on offset 05.	**For error severity = 01...** 0A - 0B Intel order checksum. **For error severity > 01...** Offset 0A is an error code. The following error codes are *generic* possibilities, regardless of the Task ID value (offset 07): 01 Internal bug; task ID error. 02 Internal bug; no TCBs available. 03 Internal bug; no memory available. 04 Internal bug; not a memory block. 05 Internal bug; mailbox in use. 06 Internal bug; zero message. 07 Internal bug; buffer full. 08 Internal bug; WAITC in progress. 09 Internal bug; invalid system call. 0A Internal bug; time-out. 0B Internal bug; no message present. 0C Internal bug; queue ID error. 0D Internal bug; queue full. 0E Internal bug; partition ID error. 0F Internal bug; fatal initialization error. 10 Internal bug; no character present. 11 Internal bug; invalid configuration parameter during INIT. 12 Internal bug; invalid input parameter, PCREATE/PEXTEND. 20 Internal bug; component vector table not present. 21 Internal bug; undefined component. 22 Internal bug; undefined op code for component. 30 Internal bug; no control blocks available. 31 Internal bug; event flag group or semaphore ID error. 32 Internal bug; tasks pending on event flag group/semaphore.

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
0A *	* Data depends on offset 05.	**For error severity > 01...** Offset 0A is an error code. The following error codes are *generic* possibilities, regardless of the Task ID value (offset 07): 33 Internal bug; event flag group or semaphore is deleted. 34 Internal bug; event flag already set/semaphore overflow. F8 Internal bug; not provisioned. F9 Internal bug; not implemented. FA Internal bug; switch default. FB Internal bug; bad pointer. FC Internal bug; PIC message type. FD System overloaded or internal bug; TCAP buffer problem. FE System overloaded or internal bug; CB message buffer problem. FF System overloaded or internal bug; no system buffers. ...and Task ID = 03 (CBIN): 41 Internal bug; PIC board failed on start up due to task initialization failure or CIP transfer (ERR_CBIN_TASK_INIT_FAIL or ERR_CBIN_CIP_XRF). ...and Task ID = 05 (DMA_SEND): 41 Internal bug; system not properly configured (ERR_BAD_CONFIG). 42 Send DMA queue overloaded (ERR_SEND_DMA_QFL). 43 Internal bug (ERR_NO_DEQ). 44 Internal bug; no add wait (ERR_NO_ADD_WAIT). 45 Internal VRTX error (ERR_BAD_FLAGS). 46 In DMA time-out; information only (ERR_IN_DMA_TIMEOUT). ...and Task ID = 05 (DMA_SEND): 47 Out DMA time-out; information only (ERR_OUT_DMA_TIMEOUT). 48 Internal bug; invalid state (ERR_INVALID_STATE). 4A Internal bug; invalid buffer (ERR_INVALID_BUFTYPE). 4B Internal bug; no match (ERR_NOMATCH). 4C Internal bug; DMA overloaded (ERR_GEN_FAILURE). 4D Internal bug; invalid ACK with the DMA or CP (ERR_INVALID_ACK).

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
0A *	* Data depends on offset 05.	**For error severity > 01...** Offset 0A is an error code. The following error codes are *specific* possibilities, depending on the Task ID value (offset 07): ...and Task ID = 05 (DMA_SEND): 4E Internal bug; DMA to self (ERR_DMA_TO_SELF). 4F Transmit abort due to PIC to CP communication failure (ERR_ABORT_TRANSMIT). ...and Task ID = 07 (PROV): 40 ERR_PCDB_OFL 41 ERR_PROV_DMA_TYPE 42 ERR_PROV_CBIN_MSG 43 ERR_PROV_UPDATE 51 ERR_SCCP_PROV_NACK 52 ERR_NOREADER_SYNCH 53 ERR_INVALID_STACK ...and Task ID = 11 (ROUTER): 41 ERR_BAD_SCCP_FUNCID 42 ERR_BAD_TUP_FUNCID ...and Task ID = 13 (SYS_TRBL): 41 ERR_FAIL_SEND_MSG 42 ERR_NOTA_BUFFER ...and Task ID = 14 (SW_DNLD): 41 ERR_ROUTE_ENTRY ...and Task ID = 20-3F (TUP): 41 Invalid IRC (ERR_TUP_MSG_ACI_IRC). 42 Invalid ICC (ERR_TUP_MSG_ACI_ICC). 43 Invalid ASCI message info (ERR_TUP_MSG_ASUI_INFO). 44 Cannot build IFAM message (ERR_TUP_BUILD_IFAM_MSG). 45 Cannot build SASUI message (ERR_TUP_BUILD_SASUI_MSG). 46 Cannot build ASUI1 message (ERR_TUP_BUILD_ASUI1_MSG). 47 Cannot find CIC code (ERR_TUP_CIC_ACCESS). 48 ERR_TUP_DIR_STATE

PIC 386 error (if offset 07 > 0)		
Offset	**Label**	**Field Description**
0A *	* Data depends on offset 05.	**For error severity > 01...** Offset 0A is an error code. The following error codes are *specific* possibilities, depending on the Task ID value (offset 07): ...and Task ID = 20-3F (TUP): 49 Internal bug (ERR_TUP_TIMER_OP). ...and Task ID = 50 (TO_SCCP_REQ): 41 Internal bug (ERR_GT_FORMAT). 42 Internal bug (ERR_NO_IBLK_DEST). ...and Task ID = 51 (TO_GMSC): 41 ERR_GEN_GMSC_BUG 42 ERR_INVALID_HANDLE 43 ERR_INVALID_COMPONENT 44 ERR_UNI_IND 45 ERR_CONTINUE_IND 46 ERR_INVALID_INVOKEID 47 ERR_ILLEGAL_LENGTH 48 ERR_BAD_SCADR 49 ERR_BAD_MSISDN 4A ERR_NOT_VALID_SC 4B ERR_INVALID_CANCEL 4C ERR_BAD_HLR_TABLE 4D ERR_PREMATURE_CLOSE
0B-0F*	* Data depends on offset 05.	**For error severity = 01...** 0C - 0F EIP **For error severity > 01...** Additional error information, currently unused.

APPENDIX: OTHER CODES

This appendix describes a variety of codes that, while not appearing in the status log, are helpful in troubleshooting:

- ASCII code set
- Hex/binary conversion
- Drive test status codes
- Test ID numbers of the start-up diagnostics
- IPL/PIPL codes

A.1 STANDARD ASCII CODE SET

Table A-1. ASCII Code Set

ASCII Code	Character	ASCII Code	Character	ASCII Code	Character	ASCII Code	Character
32	blank	**56**	8	**80**	P	**104**	h
33	!	**57**	9	**81**	Q	**105**	i
34	“	**58**	:	**82**	R	**106**	j
35	#	**59**	;	**83**	S	**107**	k
36	$	**60**	<	**84**	T	**108**	l
37	%	**61**	=	**85**	U	**109**	m
38	&	**62**	>	**86**	V	**110**	n
39	‘	**63**	?	**87**	W	**111**	o
40	(	**64**	@	**88**	X	**112**	p
41	)	**65**	A	**89**	Y	**113**	q
42	*	**66**	B	**90**	Z	**114**	r
43	+	**67**	C	**91**	[	**115**	s
44	,	**68**	D	**92**	\	**116**	t
45	-	**69**	E	**93**	]	**117**	u
46	.	**70**	F	**94**	^	**118**	v
47	/	**71**	G	**95**	_	**119**	w
48	0	**72**	H	**96**	‘	**120**	x
49	1	**73**	I	**97**	a	**121**	y
50	2	**74**	J	**98**	b	**122**	z
51	3	**75**	K	**99**	c	**123**	{
52	4	**76**	L	**100**	d	**124**	|
53	5	**77**	M	**101**	e	**125**	}
54	6	**78**	N	**102**	f	**126**	~
55	7	**79**	O	**103**	g		

Codes 00 to 31 and 127 (decimal) represent special control characters that are not printable.

A.2 HEX/BINARY CONVERSION TABLE

Table A-2. Hex/Binary Conversion

Hex	Binary
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
A	1010
B	1011
C	1100
D	1101
E	1110
F	1111

A.3 DRIVE TEST STATUS CODES

These codes are reported during the drive test utility.

Table A-3. Drive Test Status Codes

Status	Description
F0	Invalid response to drive test message
F1	Soft error status returned
F2	Hard error status returned
F3	ECC soft error

A.4 START-UP DIAGNOSTICS

When the system starts up it runs a set of diagnostics. These tests are displayed on the monitor as they are run along with whether they passed or failed. These results are not entered in the status log. Systems run only those tests appropriate to the configuration and in the order appropriate to the configuration. Not running a specific test or running tests out of numerical order are not failures.

Following is a list of the test ID numbers and a brief description of the test.

Table A-4. Start-Up Diagnostics

ID #	Description
00	Display self-test status
01	Watchdog timer
02	Dynamic RAM address/data
03	Dynamic RAM data uniqueness
04	CPU cache RAM uniqueness
05	CPU cache RAM address stress
06	System control registers
07	Dynamic RAM parity good
08	Dynamic RAM parity forced bad
09	Execute from dynamic RAM
0A	Test DRAM executing from DRAM
0B	82370/380 DMA byte transfer
0C	82370/380 DMA block transfer
0D	SBI controller RAM
0E	SBI controller loopback
0F	SBI controller threshold
10	SBI controller<->RAM DMA
11	8530 SCC DMA with loopback
12	Inter-card SBI DMA communications
13	Drive autoconfigure
14	Recalibrate all drives
15	Read bad track list on all drives
16	Validate diagnostic cylinders on all drives
17	Format track 0 on all drives
18	Format all tracks on all drives
19	Seek to all tracks on all drives

Table A-4. Start-Up Diagnostics (Continued)

ID #	Description
1A	Verify Sector IDs on all drives
1B	Write/verify track 0 on all drives
1C	Write/verify tracks on all drives
1D	PCM ASIC registers
1E	PCM ASIC intra-card
1F	7132/42 dual port RAM
20	TI C25 DSP
21	Non-volatile serial RAM
22	SBI inter-card buffer echo
23	SBI inter-card ping-pong
24	SBI inter-card termination
2C	ACP dual port RAM tests
2D	ACP SCC2698 octal-UART test
2E	ACP 80188 cell test
2F	Write/verify miscellaneous registers
32	DRAM 3-partition doubleword test
33	DRAM walking 1s doubleword test
36	DRAM data march tests
37	DRAM parity good
38	DRAM parity forced bad
39	30-second timer test

A.5 IPL/PIPL STATUS CODES

The following codes may be reported by IPL (Overture 350) or PIPL (Overture 250) systems. They will normally be reported as:

FATAL ERROR x

and the system will reboot.

Table A-5. IPL/PIPL Status Codes

Status (decimal)	Description
1	Time-out on CB card ready
2	Time-out on CB card response
3	Checksum error on CB packet
4	Error code in received CB packet
5	Wrong response code in packet
6	Time-out on DB transfer
7	Checksum error on DB transfer
8	Data error on download receive
9	Memory block compare error
14	Error during card probe
19	SST failed validity check
22	No primary file card configured
24	Error handling termcap table
25	No message file card
28	Slave responds with a NAK because the previous CB message sent was either incorrect or it was damaged in shipment.
29	DMA errors
30	CRC error in last control packet sent by master
31	CRC error in last control packet received by the master
32	SBI receives DMA data with CRC errors
35	DLC could not find any TIC
38	DMA Data FIFO overrun
39	DMA Data FIFO underrun
40	Invalid card ID
43	Invalid software alarm
44	Disk error
45	S/W image checksum error

The most common errors reported will be codes 1, 2 and 22. For released boards these will normally be hardware problems (bad or missing boards

etc.). However if new boards are being tested especially with updated (faster) processors then the problem may more likely be software. Both IPL & PIPL use processor loops for time-outs so a change of processor may effect system card synchronization.

If the problem is with a file card the system will restart. In general for a line card the system will attempt to complete the boot process. IPL loads the 350 line cards, for the 250 the line TIC cards are downloaded by the OS later in the boot sequence. With Aria 1.20 PIPL will download updated diagnostics to all cards in the system.

For CB in/out printouts use the appropriate control bus description from Chapters 3-6.

For SCSI drive test results use the **Service Manual** description. Test results are returned from the file card as an ASCII text buffer which is simply output to the terminal.

GLOSSARY

Symbols and Numbers

>. **1.** The end-of-entry character displayed as an ASCII character. **2.** Command prompt in Debug.

250. See **Octel Overture 250**.

350. See **Octel Overture 350**.

3E. The end-of-entry character displayed as a hexadecimal number.

A

ACP. (Asynchronous Communications Processor) **1.** Application supporting communication with PBXs or Centrex switches, and with multiple system manager terminals. **2.** Card that supports the ACP application by providing RS-232 ports, and translating and rerouting the information packets.

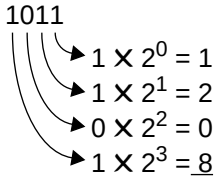
Aria. The Octel Aria™ user interface software for the Octel Overture 250 and 350 message servers. Aria 1.0 was previously known as GBS Software Release 5.0.

ASCII. (American Standard Code for Information Interchange) Standard method of coding letters, numbers, punctuation and other characters in binary. Each ASCII code is one byte long.

B

Bank. Part of the peripheral address, the low-order 4-bits of offset 05 of the IORB header identifies which set of slots the CP is exchanging control bus messages with. To interpret the bank value, see Table 1-8, “Bank and Slot of the Peripheral Address,” on page 30.

Binary. Base-2 numbering system. Each digit in a binary number is limited to values 0 and 1, and is worth twice as much as the digit before it. For example, the binary number 1011 translates to the usual decimal form by:

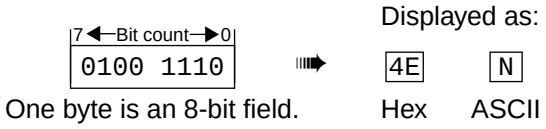


11 (in decimal, or base-10, numbering)

Since binary numbers can be represented by switches turned on or off, binary is the natural system for digital computers. A binary digit equals one bit, four binary digits equal one hexadecimal digit and eight binary digits equal one byte. Convert between binary and hexadecimal numbers with Table A-2, “Hex/Binary Conversion,” on page 657.

Bit. The smallest unit of data, equal to one binary digit.

Byte. Group of eight bits, the most common unit of measurement for data and memory space in a digital computer. Byte-sized data is usually displayed as either two hexadecimal digits or one ASCII character.



C

CB. See **Control bus**.

CB-in message. Control bus message going into the CP from another card. This is usually the response to the accompanying CB-out message and has the same three-byte header.

CB-out message. Control bus message going out from the CP to another card. This is usually a request for some action by the other card.

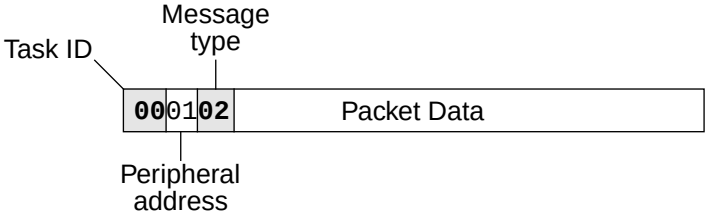
CCF. (Combo CP and File card) Provides similar functions as the CP and file cards while occupying only one slot. The CCF still uses the file system control bus messages, even though the file card portion is not acually on the control bus.

Channel. Part of the peripheral address, the high-order 4-bits of offset 04 of the IORB header identifies which line card port the CP is exchanging control bus messages with. Interpret the channel value with Table 1-9, “Channel of the Peripheral Address,” on page 31.

Checksum. A standard error-detection technique for messages. Both the sender and the receiver add up the values in a message. If the sums do not match, there has been an error in transmission. The system responds by trying to send the message again.

Control bus. (CB) Data and instruction path connecting the CP to the other parts of the message server. Requests are sent from the CP and responses received by it in the form of control bus messages.

Control bus message. Carries instructions and data between the CP and other parts of the message server using a 16-byte format:



The messages always appear in the status log as request/response pairs. For more information, see Section 1.5.3, “Control Bus Messages,” on page 34. The message types are described in Chapters 3-6.

CP. (Central Processor card) The master processor in the message server. The CP runs the operating system and applications software, directing the operations of the rest of the system through the control bus.

D

Data structure. A collection of data fields with a defined organization. While the locations of fields within a structure are fixed relative to each other, the structure as a whole can be moved and repeated. Data structures can be nested within other data structures. For example, the entry header is a data structure within a status log entry, which is a data structure within the status log which is also a data structure.

Disk utilities. Allow reading and writing the disk drives of the message servers. They are part of the system utilities available at the **ENTER BOOT COMMAND:** prompt. The service option must be activated first. For instructions in reading the status log with the disk utilities, see Section 1.3.3, “Display from Disk Utilities,” on page 12.

DLC. (Digital Line Card) **1.** Any of several line cards that process telephone signals with software instead of hardware. **2.** One specific type of digital line card.

Dump. A record of the message server’s recent operations that is printed out as part of a system shutdown. For instructions in reading the status log from the dump, see Section 1.3.5, “Display from Dump,” on page 16.

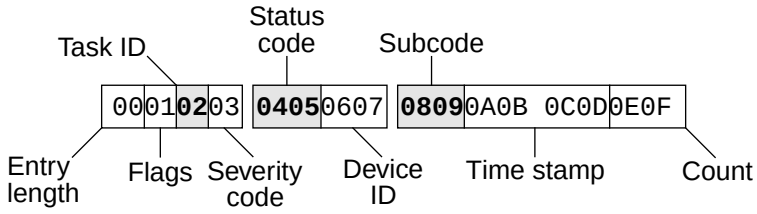
E

End-of-entry character. A byte-sized code used to separate entries in the status log: **3E** (**>** in ASCII). This character is also permanently located at offset 05 of the status log to separate the status log header from the entries.

English status code. A simple, English description of a status log entry. The English status code is based entirely on the status code in offset 04-05 and so is only the beginning of interpreting the entry. However, the English status code may be enough to decide if further interpretation is needed. The English status code is available only when the status log is displayed with Menu 13.2, Menu 13.3 or Menu 20’s Display Status Log option.

Entry. A collection of data about an event that is recorded in the status log. While the format of entries varies depending on the status codes and subcodes, all entries start with a 16-byte entry header and are from 16 to 255 bytes long. Because of the space limit, a few events with very extensive descriptions use two or three consecutive entries. Entry formats are described in Chapter Two.

Entry header. The first 16 bytes of every status log entry holds standard data in the following format:



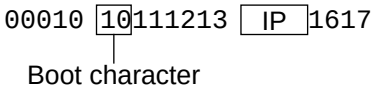
This is officially known as the error control block common header. For more information, see Section 1.5.1, “Entry Header,” on page 22.

Error control block common header. See **Entry header.**

Event. Any occurrence that logs a status log entry.

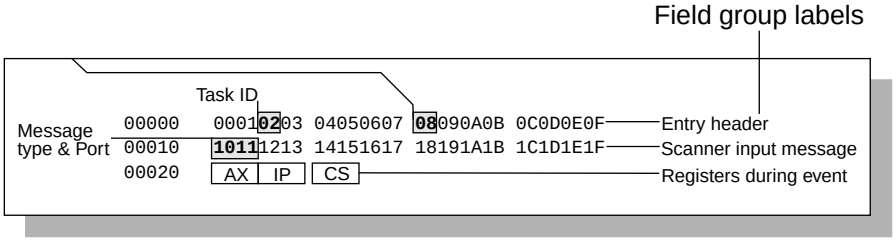
F

Field. A specified part of a data structure that holds a particular kind of data. The illustrations identify a field by boxing and labelling it:



Whether the label is inside or outside the box is just a matter of convenience. The value shown in the field is the offset of that byte, not any kind of sample data.

Field group. The fields of status log entries can usually be grouped together logically. In the illustrations, these groups are labelled on the right:



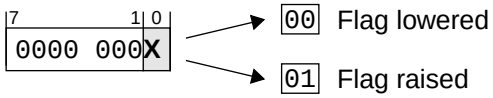
There are four standard groups: entry header, IORB header and control bus message. There is also one commonly occurring group that does not have a standard format: registers during event. For more information, see Section 1.5, “STANDARD FIELD GROUPS,” on page 21.

File. A portion of the disk drives. The file numbers and contents are listed in Section 3.2.3, “File Numbers,” on page 480.

File card. Manages storing and retrieving data on the message server’s disk drives.

Flag. **1.** A single bit used to indicate whether or not a certain thing has happened or a certain condition exists. Usually the flag bit starts with zero and is set to one (the flag is raised) when the thing or condition happens. A

larger field (one or two bytes, for instance) can have several flags in it or just one. These fields can be read by converting them to binary or by identifying the hex numbers that add up to the field's value. For example, 06 is the sum of 02 (bit 1 set) and 04 (bit 2 set). **2.** A field containing nothing but one flag bit (usually the lowest-order bit, bit 0). The flag bit can be checked by checking the whole field. There is no need to convert to binary and separate the bits:



Flag bit in a 1-byte flag field

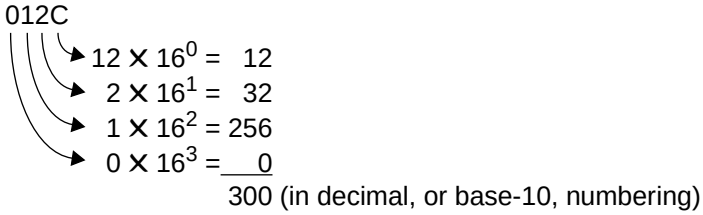
FS. (File System) Portion of a message server including disk drives and the associated file card.

H

Header. A data structure that is always placed at the beginning of another data structure. Headers hold data that are always (or at least often) needed in the larger structure.

Hex. See **Hexadecimal**.

Hexadecimal. Base-16 numbering system. Each digit can have values from 0 to 15, using digits 0-9 and then A (10), B (11), C (12), D (13), E (14) and F (15). Each hexadecimal digit is worth 16 times as much as the digit before it. For example, the hexadecimal number 012C translates to the usual decimal form by:



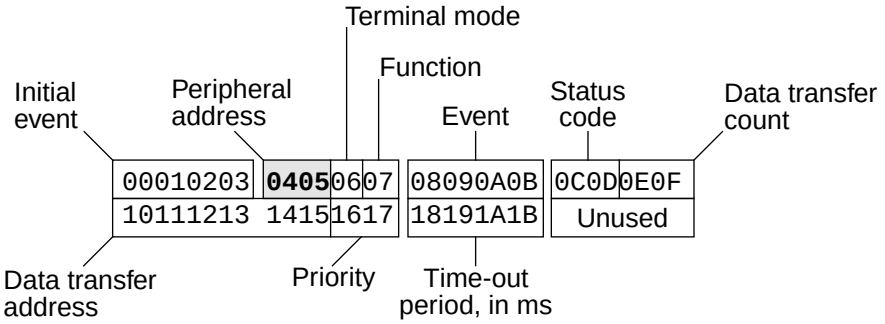
A hexadecimal digit equals four bits and two hexadecimal digits equal one byte. Hexadecimal is the most popular way of displaying binary data because it converts so easily with bits and bytes while keeping the number of symbols at a manageable level. Convert between binary and hexadecimal numbers with Table A-2, "Hex/Binary Conversion," on page 657.

I

Input/output request block. (IORB) A data structure that holds information about an exchange of control bus messages. The IORB consists of the IORB header followed by the CB-out message and the CB-in message.

Intel order. The most-significant byte of a field displayed at the right and the least-significant byte at the left, the opposite of the normal ordering of digits in a number. This is a side-effect of the way the Intel microprocessor operates. These values need to be transposed before they are interpreted.

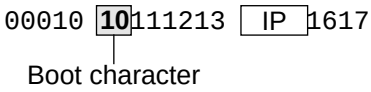
IORB header. (Input/Output Request Block header) A data structure that supplies standard information about an exchange of control bus messages:



For more information, see Section 1.5.2, “IORB Header,” on page 28.

K

Key field. A field with data that is frequently referred to. It should be one of the first fields checked when interpreting a data structure. In the illustrations, key fields are shaded:



L

LC. See **Line card**.

Line card. (LC) Any of several cards that analyze and process telephone signals coming into or going out of the message server.

Line TIC. Combination line card and telephone interface card.

Log. **1.** See **Status log**. **2.** The act of adding an entry to the status log.

M

Main Menu. The first screen displayed on the system manager terminal after the correct password has been entered. The Main Menu is a directory for all terminal-based system-management functions.

Menu 13. The System Maintenance menu offers several functions dealing with the status of system operations. It is reached by entering **13** in the Main Menu. For instructions in reading the status log with Menu 13, see Section 1.3.1, “Display from Menu 13,” on page 8 and Section 1.3.5, “Display from Dump,” on page 16.

Menu 13.1. (Shut Down with Dump) Shuts down the message server and prints a dump of recent system activities, including the status log. It is reached by entering **1** in Menu 13. For instructions in reading the status log with Menu 13.1, see Section 1.3.5, “Display from Dump,” on page 16.

Menu 13.2. (Review Status Log) Displays the status log and an inventory of the message server's software. Menu 13.2 is the easiest way to read the status log because the entries are separated from each other, ordered from oldest to newest, and partially translated. Menu 13.2 also supports printing and clearing the status log. It is reached by entering **2** in Menu 13. For instructions in reading the status log with Menu 13.2, see Section 1.3.1, "Display from Menu 13," on page 8.

Menu 13.3. (Scroll Status Log) Displays status log entries as they are logged. Menu 13.3 is used to watch the status log while the system operates. It is reached by entering **3** in Menu 13. For instructions in reading the status log with Menu 13.3, see Section 1.3.1, "Display from Menu 13," on page 8.

Message server. Equipment designed primarily for processing voice information, including: Octel Overture 250 and 350.

Message type. Field in a control bus message indicating the meaning of the message and how to interpret its packet data. The field is in offset 03 and the messages types are described in Chapters 3-6.

N

Non-printable character. ASCII code that does not correspond to any of the standard characters on the system manager terminal or printer: 00-1F and 7F-FF. In ASCII displays, non-printable characters are shown as periods.

O

Octel Overture 250. Octel Overture™ 250 message server.

Octel Overture 350. Octel Overture™ 350 message server. Previously known as Octel XC1000.

Offset. A count of bytes from the beginning of some data structure. The offset is used to identify the location of a field. The count begins with zero and is always given as a hexadecimal number. Since the offset value depends on where the count begins, it is very important to be clear on which data structure is being referred to. In the figures, the values shown are the offsets of each byte, instead of real data.

Offset of next entry. Pointer to where the next entry will go. Located at offset 02-03 of the status log, the value is an offset within the status log. The offset of the next entry can also be thought of as the end of the ring buffer and as a pointer to the most recent entry. The most recent entry is the one preceding this point.

Offset of oldest entry. Pointer to where the oldest entry is. Located at offset 00-01 of the status log, the value is an offset within the status log. This value is always 06 unless the status log has overflowed and wrapped around. Then it will point to somewhere above the offset of the next entry. The offset of the oldest entry can also be thought of as the beginning of the ring buffer.

Overflow. Entries exceeding the space in the status log. After this happens, new entries are written over the oldest entries.

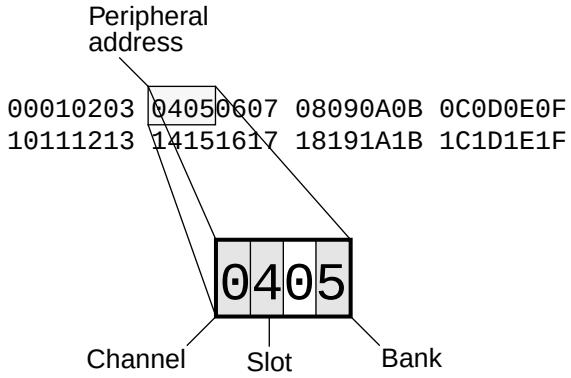
Overflow flag. Located at offset 04 of the status log, it indicates whether or not the status log has overflowed. Zero is the normal condition; **01** indicates overflow.

Overwrite. To write new data in memory space that already has data in it. The old data is erased in the process. This happens when the status log overflows: new entries overwrite old ones and the old entries are lost.

P

Packet data. The data carried by a control bus message. The format of the data depends on the message type. The packet data is 10 bytes long and the formats are described in Chapters Three-Six.

Peripheral address. Identifies the card that the CP was communicating with through control bus messages. The peripheral address is located in offset 04-05 of the IORB header. Offset 04 is duplicated in offset 01 of the control bus message. The peripheral is identified in terms of a bank, slot and channel:



Translate the peripheral address with Table 1-8, “Bank and Slot of the Peripheral Address,” on page 30 and Table 1-9, “Channel of the Peripheral Address,” on page 31.

Pointer. A field that points to another location in memory. The field usually holds the offset of the location within a data structure. Alternatively, the field can hold the distance (number of bytes) from the pointer to the other location or the actual address of the other location.

Port. A connection for a communication channel into the message server, usually for one of the telephone lines.

R

Record 50. A file holding a copy of the message server’s most recent operations, similar to that produced by the shutdown dump. However, Record 50 is only updated during a system crash. Record 50 is located in file 2D. For instructions in reading the status log from Record 50, see Section 1.3, “DISPLAYING THE STATUS LOG,” on page 7.

Register. A special-purpose memory space in a processor. Uses of registers include: holding values for a calculation, flags defining the state of the processor, pointer to the current instruction and pointers to special memory spaces.

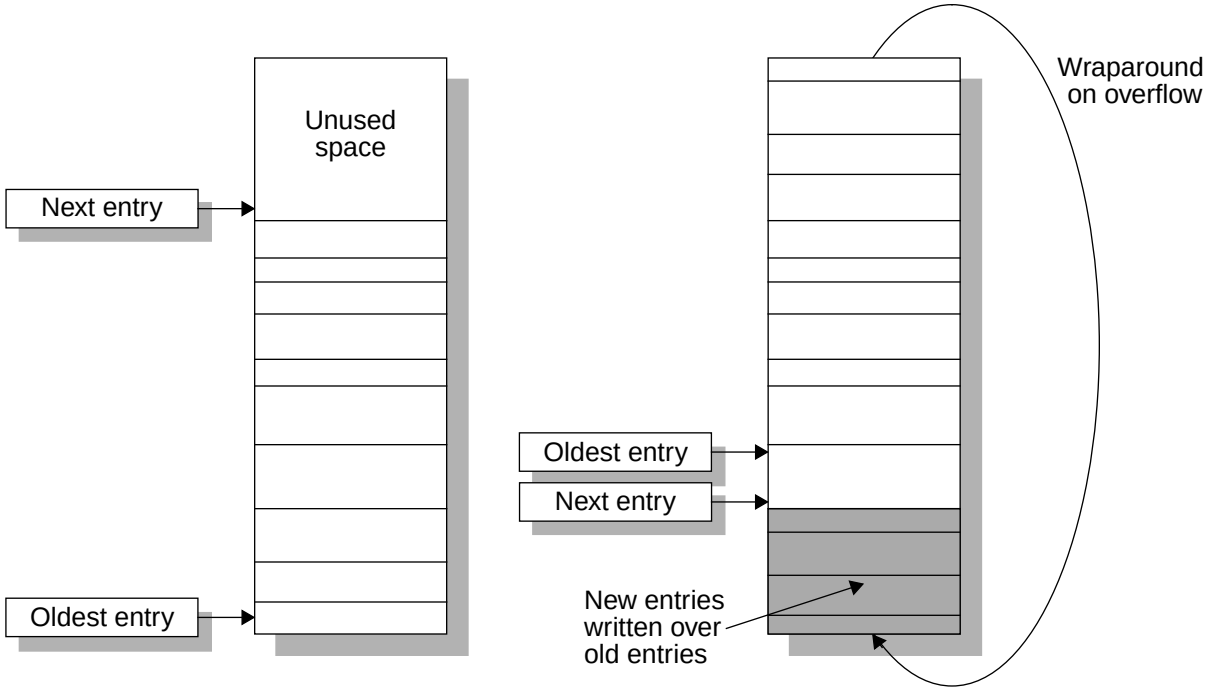
Registers during event. A group of fields in many status log entries holding selected values from the registers of the CP's microprocessor. The values are used for high-level troubleshooting.

Request message. See **CB-out message**.

Response message. See **CB-in message**.

Return code. Code showing the result of an operation. Control bus response messages usually have a return code in offset 03. Control bus messages are described in Chapters Three-Six.

Ring buffer. A memory space operated so that when entries overflow the top of the space, they continue being written at the bottom, working their way up again:



In this process, the oldest entries are sacrificed to make room for the newest. Ring buffers normally have a beginning (where the oldest entry is) and an end (where the next entry will go). The status log is operated as a ring buffer.

S

Service option. Allows use of the system utilities and Debug on the message servers. The service option can only be activated by an Octel Communications Response Center using remote system access.

Shutdown. Process of “gracefully” stopping the message server’s functions. Current operations are finished and databases are updated. New operations are not allowed to start. The system also does a dump of records of recent operations, including the status log. A shutdown is done with Menu 13.1. For instructions, see Section 1.3.5, “Display from Dump,” on page 16.

Sierra. Octel Sierra™ message server.

Slot. A part of the peripheral address, the slot value indicates the card within a bank. Slot is in bits 0-3 of offset 04 of the IORB header. Translate the slot value with Table 1-8, “Bank and Slot of the Peripheral Address,” on page 30.

SST. See **System status table**.

Status code. **1.** Identifies the event or class of events that logged the status log entry. Located in offset 04-05 of the entry header. The status codes are described in Chapter Two. **2.** See **English status code**. **3.** Field in offset 0C-0D of the IORB header. The meaning depends on the kind of operation that was involved. Translate the IORB’s status code with Table 1-10, “IORB Function and Status Codes,” on page 32.

Status log. A running record of exceptional events occurring throughout the message server. The status log is a key troubleshooting tool. For more information, see Section 1.1, “OVERVIEW OF THE STATUS LOG,” on page 1.

Subcode. When used, it identifies the event that logged the status log entry. The subcode works as an extension of the status code, giving more specific information. It is in offset 08-09 of the entry header. The subcodes are described in Chapter Two under their status codes.

System manager. Person responsible for operating and maintaining the message server.

System manager terminal. Terminal the system manager uses to monitor and control the message server.

System status table. (SST) Holds data concerning the system configuration and system-level activities, including the status log. For instructions in using the SST, see Section 1.3, “DISPLAYING THE STATUS LOG,” on page 7.

T

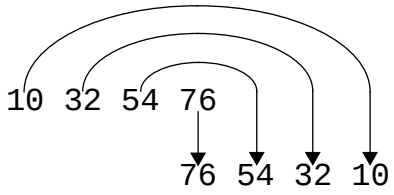
Task ID. Identifies a software task. Task IDs for line tasks also indicate a particular port. Task IDs are found in:

- Offset 02 of entry headers, identifying the task that generated or found the status event.
- Offset 00 of control bus messages, identifying the task that produced the request message.

Translate the task ID with Table 1-5, “Task IDs,” on page 24; and Table 1-6, “Task ID to Port,” on page 25.

Time stamp. **1.** Generally, a field recording when something happened. In the message servers, time stamps are usually coded as the number of minutes since 12:01 AM January 1, 1984 (the beginning of the “Octel era”). Additional space may be used for the number of seconds within the minute and fractions of a second within the second. **2.** In an entry header, the time stamp records when the entry was logged. Offset 0B-OD holds the count of minutes and offset 0A holds the count of seconds. For instructions in decoding the time stamp, see “Reading the Time Stamp” on page 26.

Transpose. To convert Intel-ordered data to normal, numerical order. Transposing is done by reversing the order of the bytes:



Transposing must be done with **full bytes**, not individual hexadecimal digits.

V

Voice processor. See **Message server**.

W

Wraparound. What happens when a ring buffer overflows: the buffer continues writing at the bottom of its memory space, overwriting old entries as it works upward again.

X

XC1000. See **Octel Overture 350**.