

To: Members of INCITS T10

From: Erich Oetting/STK, David Peterson/CNT

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Re: FCP-3 SPC-3 return check condition when FCP_DL too small

When an FCP data transfer is cut short due to incorrect setting of FCP_DL, the application client often is not informed of the error.

To solve this problem, I propose the following changes to FCP-3 and SPC-3.

Changes to FCP-3

In clause 9.3.2, replace the first paragraph, last sentence:

The command is completed normally except that data beyond the FCP_DL count shall not be transferred and that the appropriate overrun condition is presented (see 9.4.7).

With the following text:

The command should return Check Condition with a sense key of ILLEGAL REQUEST and an ASC/ASCQ of INVALID FIELD IN COMMAND INFORMATION UNIT. The C/D bit should be set to zero and the FIELD POINTER field of the Sense Key Specific data should contain the offset in the FCP_CMD_IU payload of the RDDATA, WRDATA, FCP_DL, or FCP_BIDIRECTIONAL_DL fields. Data beyond the FCP_DL count shall not be transferred and the appropriate overrun condition shall be presented (see 9.4.7).

In subclause 4.3, change the second paragraph to:

A device server that does not support bidirectional operation shall use the unidirectional FCP_RSP IU payload for presenting all status and error conditions. If a device server that does not support bidirectional operation receives a command that requests bidirectional operation by setting both the RDDATA and WRDATA bits to one, the device server shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of ~~ILLEGAL FIELD IN PARAMETER LIST~~ INVALID FIELD IN COMMAND INFORMATION UNIT.

Changes to SPC-3

Add a new ASC/ASCQ for INVALID FIELD IN COMMAND INFORMATION UNIT.

Subclause 4.5.2.4.2 paragraph 3:

From:

A command data (C/D) bit set to one indicates that the illegal parameter is in the CDB. A C/D bit set to zero indicates that the illegal parameter is in the data parameters sent by the application client in the Data-Out Buffer.

To:

A command data (C/D) bit set to one indicates that the illegal parameter is in the CDB. A C/D bit set to zero indicates that the illegal parameter is in the data parameters in the Data-Out Buffer or transport protocol specific information unit sent by the application client, depending on the additional sense code.

Subclause 4.5.2.4.2 paragraph 5:

From:

The FIELD POINTER field indicates which byte of the CDB or of the parameter data was in error. Bytes are numbered starting from zero, as shown in the tables describing the commands and parameters. When a multiple-byte field is in error, the field pointer shall point to the first byte (i.e., the left-most byte) of the field. If several consecutive bytes are reserved, each shall be treated as a single-byte field.

To:

The FIELD POINTER field indicates which byte of the CDB, transport protocol specific information unit, or parameter data was in error. Bytes are numbered starting from zero, as shown in the tables describing the commands, transport protocol specific information units, and parameters. When a multiple-byte field is in error, the field pointer shall point to the first byte (i.e., the left-most byte) of the field. If several consecutive bytes are reserved, each shall be treated as a single-byte field.

Table 25, Sense Key 05h - Illegal Request:

From:

d) There was an illegal parameter in the CDB; or
e) There was an illegal parameter in the additional parameters supplied as data for some commands (e.g., PERSISTENT RESERVE OUT).

To:

d) There was an illegal parameter in the CDB;
e) There was an illegal parameter in the additional parameters supplied as data for some commands (e.g., PERSISTENT RESERVE OUT); or
f) An error has been detected in a transport protocol specific information unit.