



To: INCITS Technical Committee T10
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Subject: FCP-4: Enhanced Discovery bit in PRLI (08-365r2)

1) Revision history

- Revision 0 (Sep 7, 2008) First revision (r0)
- Revision 1 (Sep 8, 2008) Text edits from Dave Peterson (r1)
- Revision 2 (Sep 9, 2008) Revised based on FCP-4 meeting discussion (r2)

2) Overview

Work on Simplified Configuration and Management for Fibre Channel in Technical Committee T11 has identified a need for an enhancement to FCP discovery behavior. This document proposes using a bit in the PRLI ELS and the PRLI ACCEPT ELS for that purpose.

Proposed changes follow on the next two pages. Existing text is in **BLACK**, deleted text is struck through in **RED**, inserted text is in **BLUE**, and comments are in **GREEN**.

6.3.4 PRLI ELS request FCP Service Parameter page format

The FCP Service Parameter page for the PRLI ELS request is shown in table 1.

Table 1 - PRLI ELS request FCP Service Parameter page

FCP Service Parameter	Word	Bit
SCSI FCP (08h)	0	31–24
Reserved for TYPE code extension	0	23–16
ORIGINATOR PROCESS_ASSOCIATOR VALID	0	15
RESPONDER PROCESS_ASSOCIATOR VALID	0	14
ESTABLISH IMAGE PAIR	0	13
Reserved	0	12–0
ORIGINATOR PROCESS_ASSOCIATOR	1	31–0
RESPONDER PROCESS_ASSOCIATOR	2	31–0
Reserved	3	31–11
Reserved	3	31-12
ENHANCED DISCOVERY	3	11
REC_SUPPORT	3	10
TASK RETRY IDENTIFICATION REQUESTED	3	9
RETRY	3	8
CONFIRMED COMPLETION ALLOWED	3	7
DATA OVERLAY ALLOWED	3	6
INITIATOR FUNCTION	3	5
TARGET FUNCTION	3	4
OBSOLETE	3	3
OBSOLETE	3	2
READ FCP_XFER_RDY DISABLED (shall be one)	3	1
WRITE FCP_XFER_RDY DISABLED	3	0

Word 0, Bits 31–24: FCP specific code: The value of 08h in this byte indicates that this Service Parameter page is defined for the Fibre Channel Protocol. (See FC-FS-3.)

Word 0, Bit 15: ORIGINATOR PROCESS_ASSOCIATOR VALID: The ORIGINATOR PROCESS_ASSOCIATOR VALID bit is defined in FC-FS-3. For the Fibre Channel Protocol, the ORIGINATOR PROCESS_ASSOCIATOR VALID bit shall be zero, indicating that the ORIGINATOR PROCESS_ASSOCIATOR is not valid.

Word 0, Bit 14: RESPONDER PROCESS_ASSOCIATOR VALID: The RESPONDER PROCESS_ASSOCIATOR VALID bit is defined in FC-FS-3. For the Fibre Channel Protocol, the RESPONDER PROCESS_ASSOCIATOR VALID bit shall be zero, indicating that the RESPONDER PROCESS_ASSOCIATOR is not valid.

Word 0, Bit 13: ESTABLISH IMAGE PAIR: If the ESTABLISH IMAGE PAIR bit is set to zero, the PRLI ELS only exchanges service parameters as defined in FC-LS.

If the ESTABLISH IMAGE PAIR bit is set to one, the PRLI ELS exchanges service parameters and attempts to establish an image pair as defined in FC-LS.

Word 1: ORIGINATOR PROCESS_ASSOCIATOR: The ORIGINATOR PROCESS_ASSOCIATOR field is the Originator Process_Associator as defined by FC-FS-3.

Word 2: RESPONDER PROCESS_ASSOCIATOR: The RESPONDER PROCESS_ASSOCIATOR field is the Responder Process_Associator as defined by FC-FS-3.

Word 3, Bit 11: ENHANCED DISCOVERY: If the ESTABLISH IMAGE PAIR bit is set to zero, the ENHANCED DISCOVERY bit shall be ignored. If the ENHANCED DISCOVERY bit is set to one, the Originator is requesting, as an initiator FCP_Port, that an image pair be established only if the initiator FCP_Port has been authorized to access one or more logical units, not including default logical units, that are addressed through the target FCP_Port. If the initiator FCP_Port is not authorized to access one or more logical units, not including default logical units, the image pair shall not be established, the PRLI ELS accept response code shall be set to THE EXCHANGE RECIPIENT HAS A PREDEFINED CONFIGURATION THAT PRECLUDES ESTABLISHING THIS IMAGE PAIR (i.e., 0101b), and the IMAGE PAIR ESTABLISHED bit shall be set to zero. If the ENHANCED DISCOVERY bit is set to zero by either the Originator or the Responder to the PRLI ELS, then accessibility of logical units shall not affect establishment of the image pair.

<No changes to the remainder of Section 6.3.4>

6.3.5 PRLI ELS accept FCP Service Parameter page format

The FCP Service Parameter page for the PRLI ELS accept is shown in table 2.

Table 2 - PRLI ELS accept FCP Service Parameter page

FCP Service Parameter	Word	Bit
SCSI FCP (08h)	0	31–24
Reserved for TYPE Code Extension	0	23–16
ORIGINATOR PROCESS_ASSOCIATOR VALID	0	15
RESPONDER PROCESS_ASSOCIATOR VALID	0	14
IMAGE PAIR ESTABLISHED	0	13
Reserved	0	12
ACCEPT RESPONSE CODE	0	11–8
Reserved	0	7–0
Originator Process_Associator	1	31–0
Responder Process_Associator	2	31–0
Reserved	3	31–11
Reserved	3	31-12
ENHANCED DISCOVERY	3	11
REC_SUPPORT	3	10
TASK RETRY IDENTIFICATION REQUESTED	3	9
RETRY	3	8
CONFIRMED COMPLETION ALLOWED	3	7
DATA OVERLAY ALLOWED	3	6
INITIATOR FUNCTION	3	5
TARGET FUNCTION	3	4
OBSOLETE	3	3
OBSOLETE	3	2
READ FCP_XFER_RDY DISABLED (shall be one)	3	1
WRITE FCP_XFER_RDY DISABLED	3	0

With the following exceptions, the service parameter definitions are identical for the PRLI ELS request (see table 1) and accept FCP Service Parameter pages.

Word 0, Bit 13: IMAGE PAIR ESTABLISHED: The IMAGE PAIR ESTABLISHED bit is defined in FC-LS. If the IMAGE PAIR ESTABLISHED bit is set to zero, the image pair was not established. The ACCEPT RESPONSE CODE has additional information.

If the IMAGE PAIR ESTABLISHED bit is set to one, the image pair was established.

PRLI ELS ACCEPT RESPONSE CODE: The PRLI ELS ACCEPT RESPONSE CODE field is defined in FC-LS. The values of the PRLI ELS ACCEPT RESPONSE CODE field indicate whether the image pair was successfully created. If the image pair was not created, the value of the PRLI ELS ACCEPT RESPONSE CODE indicates why the request failed or was rejected.

Word 3, Bit 11: ENHANCED DISCOVERY: When the ENHANCED DISCOVERY bit is set to one, the Responder is indicating that it supports, as a target FCP_Port, enhanced discovery (i.e., an image pair is established only if the initiator FCP_Port is authorized to access logical units, other than default logical units, that are addressed through the target FCP_Port). When the ENHANCED DISCOVERY bit is set to zero, the Responder is indicating that it does not support, as a target FCP_Port, enhanced discovery.

<No changes to the remainder of Section 6.3.5.>