

FIP Errors

The FIP Protocol defined in FC-BB-5 encapsulates FLOGI, FDISC, LOGO, LS_RJT, and LS_ACC in it in order to initialize FCoE Virtual Links. FIP does this to augment the negotiating capabilities of these ELSs, but this creates also new possibilities for errors. Specifically:

- a) Encapsulated ELS frames are Classless; and
- b) MAC address types are negotiated.

Being these new error conditions specific to FIP, it makes sense to define a new Reason Code as 'FIP Error' and add new Reason Code Explanations to be used with it.

Modify the following FC-LS-2 tables as follows:

Table 1 – LS_RJT Reason Codes

Encoded Value (Bits 23-16)	Description	Explanation
01h	Invalid ELS_Command code	The ELS_Command code in the Sequence being rejected is invalid.
03h	Logical error	The request identified by the ELS_Command code and Payload content is invalid or logically inconsistent for the conditions present.
05h	Logical busy	The Link Service is logically busy and unable to process the request at this time.
07h	Protocol error	This indicates that an error has been detected that violates the rules of the ELS Protocol that are not specified by other error codes.
09h	Unable to perform command request	The Recipient of a Link Service command is unable to perform the request at this time.
0Bh	Command not supported	The Recipient of a Link Service command does not support the command requested.
0Eh	Command already in progress	
XXh	FIP Error	See FC-BB-5.
FFh	Vendor specific error (See bits 7-0)	The Vendor specific error bits may be used by Vendors to specify additional reason codes.
Others	Reserved	

Table 2 – LS_RJT Reason Code Explanations

Encoded Value (Bits 15-8)	Description	Applicable ELSs
00h	No additional explanation	ADVC, ESTS, FLOGI, PLOGI, LOGO, RCS, REC, RLS, RTV, RSI, PRLI, PRLO, TPLS, TPRLO, GAID, FACT, FFACT, NACT, NDACT, PDISC, FDISC, ADISC, RNC, CSR, RNFT
01h	Service Parm error - Options	FLOGI, PLOGI
03h	Service Parm error - Initiator Ctl	FLOGI, PLOGI
05h	Service Parm error - Recipient Ctl	FLOGI, PLOGI
07h	Service Parm error - Rec Data Field Size	FLOGI, PLOGI
09h	Service Parm error - Concurrent Seq	FLOGI, PLOGI
0Bh	Service Parm error - Credit	ADVC, FLOGI, PLOGI
0Dh	Invalid N_Port/F_Port_Name	FLOGI, PLOGI
0Eh	Invalid node/Fabric Name	FLOGI, PLOGI
0Fh	Invalid Common Service Parameters	FLOGI, PLOGI
11h	Invalid Association_Header	RRQ, RSI
13h	Association_Header required	RRQ, RSI
15h	Invalid Originator S_ID	REC, RRQ, RSI
17h	Invalid OX_ID-RX_ID combination	REC, RRQ, RSI
19h	Command (request) already in progress	PLOGI, RSI
1Eh	N_Port Login required	see table 3
1Fh	Invalid N_Port_ID	RCS, RLS
21h	Obsolete	
23h	Obsolete	
25h	Obsolete	
27h	Obsolete	

Table 2 – LS_RJT Reason Code Explanations (Continued)

Encoded Value (Bits 15-8)	Description	Applicable ELSs
29h	Insufficient resources to support Login	FLOGI, PLOGI, FDISC
2Ah	Unable to supply requested data	ADVC, ESTS, RCS, RLS, RTV
2Ch	Request not supported	ADVC, ESTS, PRLI, PRLO, TPLS, TPRLO, GAID, FACT, FFACT, NACT, NDACT, PDISC, FDISC, ADISC, RNC, RNFT
2Dh	Invalid Payload length	FLOGI, PLOGI
30h	No Alias_IDs available for this Alias_ID Type	Get Alias_ID
31h	Alias_ID not activated (no resources available)	Fabric Activate Alias ID, N_Port Activate Alias ID
32h	Alias_ID not activated (invalid Alias_ID)	Fabric Activate Alias ID, N_Port Activate Alias ID
33h	Alias_ID not deactivated (doesn't exist)	Fabric Deactivate Alias ID, N_Port Deactivate Alias ID
34h	Alias_ID not deactivated (resource problem)	Fabric Deactivate Alias ID, N_Port Deactivate Alias ID
35h	Service Parameter conflict	N_Port Activate Alias ID
36h	Invalid Alias_Token	Get Alias_ID
37h	Unsupported Alias_Token	N_Port Activate Alias ID
38h	Alias Group cannot be formed	Get Alias ID
40h	Obsolete	

Table 2 – LS_RJT Reason Code Explanations (Continued)

Encoded Value (Bits 15-8)	Description	Applicable ELSs
41h	Obsolete	
42h	Obsolete	
44h	Invalid Port/Node_Name	LCLM
46h	Login Extension not supported	PLOGI, FLOGI
48h	Authentication required (see FC-SP)	PLOGI, FLOGI
50h	Periodic Scan Value not allowed	SRL
51h	Periodic Scanning not supported	SRL
YYh	Class of Service not supported	FIP specific (see FC-BB-5)
ZZh	MAC address type not supported	FIP specific (see FC-BB-5)
Others	Reserved	

Add the following table to FC-BB-5:

Table 3 shows the use of Reason Codes and Reason Code Explanations under some error conditions.

Table 3 – LS_RJT Reason Codes

Error Condition	Reason Code (see FC-LS-2)	Reason Code Explanation (see FC-LS-2)
The Class of Service requested in the FLOGI/FDISC Service Parameters is not supported	FIP Error	Class of Service not supported
The MAC address type in the FLOGI/FDISC Request is not supported	FIP Error	MAC address type not supported