

FC-BB-5: Multiple Fabric support via FIP (for FPMA)

08-450v2

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Problem Statement:

Currently FIP does not provide for the support for multiple virtual fabrics within a single VLAN using FPMA. Multiple virtual fabrics within a single VLAN works as is for VE_Port<->VE_Port and SPMA. Thus, a new FIP descriptor should be specified and used to replace the FC-MAP and Fabric_Name descriptors in the Discovery Advertisement.

Proposal: Add a new descriptor that contains an FC-MAP, Fabric_Name, associated VF_ID, and any desirable flags. The descriptor can be (A) a single TLV that may used multiple times in the Advertisement or (B) a list of descriptors.

Editor's Note: Fabric_Name descriptor may also be removed if the proposal is accepted.

Table 26 – FIP descriptor types

Value	FIP Descriptor	Reference
1	Priority	7.6.4.1.2.2
2	MAC address	7.6.4.1.2.3
3	FC-MAP	7.6.4.1.2.4
4	Name_Identifier	7.6.4.1.2.5
5	Fabric_Name	7.6.4.1.2.6
6	Max FCoE Size	7.6.4.1.2.7
7	FLOGI ^a	7.6.4.1.2.8
8	FDISC_NPIV ^a	7.6.4.1.2.9
9	LOGO ^a	7.6.4.1.2.10
10	ELP ^a	7.6.4.1.2.11
11	Fabric or Fabric List	7.6.4.1.2.x
All others	Reserved	
a The FC CRC, SOF, and EOF shall not be included in the FIP descriptor.		

(A) 7.6.4.1.2.x FIP Fabric descriptor

The FIP Fabric descriptor is used in Discovery Advertisements originated by an FCF.

The FIP Fabric descriptor format is specified in table 2

Table 1 – FIP Fabric descriptor format

Word	Bit	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1	0	
0	Type (11)											Length (4 words)											VF_ID									
1	Reserved											FC-MAP[0]						FC-MAP[1]						FC-MAP[2]								
2	MSB																															
3	Fabric_Name																LSB															

(B) 7.6.4.1.2.x FIP Fabric List descriptor

The FIP Fabric List descriptor is used in Discovery Advertisements originated by an FCF.

The FIP Fabric List descriptor format is specified in table 2

Table 2 – FIP Fabric List descriptor format

Word	Bit	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1	0	
0	Type (11)											Length (n words)											Number of Fabrics (y)									
Fabric(s)																																
1																																
4	Fabric descriptor [first] (see x.x)																															
.																																
.																																
.																																
n-4 or (y*4)-3	Fabric descriptor [last] (see x.x)																															
n-1 or (y*4)																																

The Fabric descriptor format is specified in table 3.

Table 3 – Fabric descriptor format

Word	Bit	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1	0	
0	Reserved																VF_ID															
1	Reserved											FC-MAP[0]						FC-MAP[1]						FC-MAP[2]								
2	MSB																															
3	Fabric_Name																LSB															

ENode

Current ENode<->FCF Virtual Fabric Support using FPMA

FCF

Step

Step

1 Enet=FIP, DA=All_FCF_MACS, SA=ENodeMAC: Discovery Solicitation (MAC=ENodeMAC, Node_Name, Max Receive Size)

Enet=FIP, DA=ENodeMAC, SA=FCF-MAC: Discovery Adv (Priority, MAC=FCF-MAC, FC-MAP=0EFC00h, Switch_Name, Fabric_Name=A)

3 Enet=FIP, DA=FCF-MAC, SA=ENodeMAC: FIP:F=1, MAC=00-00-00-00-00-00h; FC:D_ID=FFFFFFEh S_ID=000000h; FLOGI (VF=1)

Enet=FIP, DA=ENodeMAC, SA=FCF-MAC; FIP:F=1, MAC=0E-FC-00-00-00-00; FC:D_ID=000000h, SA=FFFFFFEh; FLOGI LS_ACC (VF=1, Fabric_Name=A)

5 Enet=FCoE, DA=FCF-MAC, SA=0E-FC-00-00-00-00: FC:D_ID=FFFFFFEh, S_ID=FFFFFF0h; EVFP_SYNC (T_ID, Core N_Port_Name, TAS, Port VF_ID, VF_ID List)

Enet=FCoE, DA=0E-FC-00-00-00-00, SA=FCF-MAC: FC:D_ID=FFFFFF0h, S_ID=FFFFFFEh; LS_ACC (T_ID, TAS, Port VF_ID, VF_ID List)

EVFP_COMMIT (T_ID)

8 SW_ACC (T_ID)

9 Enet=FCoE, DA=FCF-MAC, SA=0E-FC-00-00-00-00: FC:D_ID=FFFFFFEh, S_ID=000000h; FLOGI for VF-x ()

Enet=FCoE, DA=0E-FC-00-00-00-00, SA=FCF-MAC; FC:D_ID=10xxxxh, SA=FFFFFFEh; FLOGI LS_ACC (Fabric_Name=B)

11 Enet=FCoE, DA=FCF-MAC, SA=0E-FC-00-00-00-00: FC:D_ID=FFFFFFEh, S_ID=000000h; FLOGI for VF-y ()

Enet=FCoE, DA=0E-FC-00-00-00-00, SA=FCF-MAC; FC:D_ID=40xxxxh, SA=FFFFFFEh; FLOGI LS_ACC (Fabric_Name=C)

Questions:

1. Is the step 5 Enet SA value a problem in this context?