Undetected FDF Failure

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**Background**

- **12-007v3, Section 7.12.5.3**
  VA_Port to VA_Port Virtual Link maintenance is performed as for VE_Port to VE_Port Virtual Links.

- **12-007v3, Section 7.9.5.3**
  If unsolicited multicast Discovery Advertisements are not received within 2.5 * FKA_ADV_PERIOD, the VE_Port to VE_Port Virtual Link associated with that FCF-MAC shall be explicitly de-instantiated along with the associated VE_Port.

- **12-007v3, Section 7.12.5.2**
  A VA_Port capable FDF-MAC shall not initiate a FIP ELP Exchange with a VA_Port/VE_Port capable FCF-MAC.

- **What happens if the FDF fails and restarts in less than 2.5*FKA_ADV_Period?**
  - Failure is undetected by cFCF and the FDF is not allowed to instantiate a new link.
FDF Joins the Fabric and then Restarts

1. FDF joins the fabric and then restarts on April 13th, 2013.

2. FDF advertises Fabric_Name = 0.
   - FDF shall not instantiate first link, nor shall an FDF instantiate a link with a cFCF per 12-007v3, 7.12.5.2.
   - FDF becomes part of the fabric after link instantiation and it receives the DFMD with fabric name and NPRD from the cFCF.

3. cFCF is functional – advertises fabric.
   - cFCF continues to advertise the fabric. FDF monitors these for Virtual Link Maintenance.
   - FDF advertises Fabric_Name provided by cFCF on DFMD.

4. FDF crashes and restarts in less than 2.5*FKA_ADV_Period. cFCF does not detect this, but subsequent FDF adverts will contain 0 Fabric_Name.
   - Use null fabric name to detect failure.

Primary

FDF

1a. FIP MC Discovery Advert to All-FCF-MACs
1b. FIP MC Discovery Advert to All-FCF-MACs

2a. cFCF initiates link instantiation
2b. FDF becomes part of the fabric

3a. FIP MC Discovery Advert to All-FCF-MACs
3b. FIP MC Discovery Advert to All-FCF-MACs

4a. FIP MC Discovery Advert to All-FCF-MACs
4b. FIP MC Discovery Advert to All-FCF-MACs

cFCF
IBM Late Letter Ballot Comment

- Provide unique description of VA/VA virtual link maintenance
  - EMC-063 already documents this requirement
  - Can be derived from section 7.9.5.3
  - New sub-section in 7.9.5 or replace 7.12.5.3?

- IBM recommended specifics in new section:
  The FCoE Controller for a VA_Port capable FCF-MAC shall monitor the status of a VA_Port to VA_Port Virtual Link by verifying the reception of unsolicited multicast Discovery Advertisements. Unsolicited multicast Discovery Advertisements are expected to be received every FKA_ADV_PERIOD. If unsolicited multicast Discovery Advertisements are not received within 2.5 * FKA_ADV_PERIOD, the VA_Port to VA_Port Virtual Link associated with that FDF-MAC shall be explicitly de-instantiated along with the associated VA_Port. That FDF-MAC shall be removed from the FCF List (see 7.9.3.3). In addition, if, after reception of at least one Discovery Advertisement with the WWN present in the Fabric Name Descriptor, two consecutive Discovery Advertisements are received which contain zero for the WWN in the Fabric_Name Descriptor, the VA_Port to VA_Port Virtual Link associated with that FDF-MAC shall be explicitly de-instantiated along with the associated VA_Port. That FDF-MAC shall be removed from the FCF List (see 7.9.3.3).
FC-BB-6 Organization Inconsistent (Slide 1 of 2)

- IBM-022: “The distributed switch content should be integrated with the similar concepts in this document.”
- Distributed FCF documentation arranged inconsistently
  - Functional model described at end of chapter 7
    - Section 7.12.3
  - All other functional models (including new VN2VN) at beginning of chapter 7
    - Sections 7.3-7.5
- Answers to comments regarding this arrangement also inconsistent
  - EMC-029: put it in 7.12
    - Page 95 – There are no VA_Ports shown in the FCF functional model.
  - EMC-045: put it in 7.9
    - Page 103 – The 2nd paragraph from the bottom of the page is missing a description of what group addresses an FDF--MAC should listen to.
Existing link types (Enode to FCF, FCF to FCF VE_Port, VN_Port to VN_Port) have separate clauses describing:

- VLAN Discovery (Section 7.9.2)
- Fabric Discovery (Section 7.9.3)
- Link Instantiation (Section 7.9.4)
- Link Maintenance (Section 7.9.5)

Same information for FDF/FDF, cFCF/FDF VA_Port links is in separate section, 7.12.5:

- Fabric Discovery (Section 7.12.5.1)
- Virtual Link Instantiation (Section 7.12.5.2)
- Virtual Link Maintenance (Section 7.12.5.3)
Thank you
Backup
FDF Joins the Fabric

1. FIP ELP Request
2. FIP ELP Reply
3. FDRN
4. FDRN ACC
5. DFMD
6. ACC DFMD
7. NPRD
8. ACC NPRD

Primary cFCF sends DFMD per Note 1. **FDF/FCDF Learns Fabric WWN**

Primary cFCF sends NPRD. FDF knows how to route frames to cFCF.

7a. Include Fabric WWN in Adverts to All_FCF_MACs

7b. Advertise Fabric to All_ENode_MACs

ASL instantiated by ELP

FDRN sent to secondary cFCF per Note 1..