BROCADE

FC-BB-6 Functionality

John Crandall

Dave Peterson

Steve Wilson

11-024v0

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The Elephant in the Back of the Room

- T11 has spent a great deal of time discussing FCF/FDF protocols
- However, very little time has been spent defining what an FDF actually is
- This has implications on BB-6, SW-6, and GS-7
- Here are some questions that have different answers depending on who you talk to

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FDF Questions

- Does an FDF contain a Domain Controller? If so, how is it addressed from an ILS perspective?
- How much FC control plane functionality is provided by an FDF? What SW_ILSs are forwarded to the FDF as a destination. ESC, ESS, Distributed Services?
- What does an FDF look like in a topology map?
- What about the reliability and scalability of the FDF piece of the network?

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FDF Model Definition

- In order to answer these questions an FDF and its ports (VA_Port) need to be rigorously defined just as other FC entities are defined
- Since the FDF is an end-point for some SW_ILS's, this model needs to be defined in SW-6
- Once we have the model and agree upon the amount of FC functionality (control plane), we can have meaningful detailed discussions

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FDF Model & Routing

- Concept of an FDF is good
- Centralized model will work, but…
  - VA_Port model is not clear
  - Targeted as a TOR & EOR solution
- cFCF collects and distributes topology information for all cFCF and FDFs
  - This is not the model that is in wide use today e.g., OSPF, IS-IS
  - Only cFCFs perform route calculation and associated processing
  - Links from the cFCF to other cFCF/FDFs carry more traffic
  - If the cFCF fails, other cFCF/FDFs do not receive route updates until other cFCF takes over…

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Scalability

- cFCF is responsible for all Logins, NS updates, (SW_)RSCN generation, etc…
- Example – FDF reboot
  - New Reachable & Unreachable SW_ILSs sent to the cFCF
    - cFCF is responsible for sending appropriate RSCNs and SW_RSCNs, N_Port_ID & Zoning SW_ILSs, Route SW_ILSs
    - How does the FC addressing work?

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What's in a box?

	FSB	FDF	FC-BB-5 FCF	FC-BB-6 FCF	
				Virtual Domain	*Native FC*
Port Type	n/a	VA_Port VF_Port	VE_Port VF_Port	VA_Port VE_Port VF_Port?	VE_Port VF_Port?
Domain_ID	No	No	Yes	No	Yes
Fabric Controller	No	?	Yes	Yes	Yes
Domain Controller	No	?	Yes	?	Yes
Path Selection	L2	L2	FSPF	L2	FSPF
Name Server	No	No	Yes	Yes	Yes
Fabric Configuration Server	No	No	Yes	Yes	Yes
Zoning	Yes (ACL)	Yes	Yes	Yes	Yes
FCoE Controller	No	Yes	Yes	Yes	No
Routes on N_Port_ID	No	Yes	No	Yes	No

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Architecture

- Are FDF's supposed to forward FCoE traffic in a topology independent manner like FC-SW-5 protocols provide today?
- Why is the control plane entity tied to an FCF?
  - Can the control plane entity be independent of the FCF?

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Architecture

- Controlling FCF
  - VF_Ports?
- FDF
  - FC-BB-5 VN_Ports, VF_Ports, VE_Ports?
  - Why no VE_Ports?
- What ethernet forwarding protocols does an FDF need to co-exist with?
  - FIP forwarding reliability?
- How are accidental/transient loops avoided amongst the FDFs during link failures?

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Management GS-7

- FDF
  - FDF Name
- VA_Ports
- Virtual Links between:
  - Controlling FCFs and Controlling FCFs (VE_Port to VE_Port)
  - FCFs and FDFs (VA_Port to VA_Port)
  - FDFs and FDFs (VA_Port to VA_Port)
  - FDFs and End Device (VF_Port to VN_Port)
- Virtual Domain
  - Virtual Domain ID

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Switch Fabric SW-6

- Details need to be provided for
  - FDF Model (similar to the Basic Switch Model in SW-5 clauses 4 and 5)
  - VA_Port
  - New ILSs
  - Modifications to existing SW_ILSs to support the FDF, if any
  - Table depicting which SW_ILSs are allowed or prohibited by the VA_Port

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Summary

- Require the same reliability as in native Fibre Channel today!
  - Centralized model is new functionality for Fibre Channel
    - Debug
    - Qualification

Thank You !