

Draft Minutes

T11.3 FC-BB-6 ad hoc work group regular meeting 20/10/2010 - 9:00 AM to 5:30 PM PDT Seattle WA

The FC-BB-6 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Seattle WA on 20/10/2010, hosted by Microsoft, Brocade, and FCIA. Attendance was 36 people from 25 organizations and is tabulated at the end of this document.

Minutes were taken by Bob Nixon (Emulex) (bob.nixon@emulex.com). Please report any corrections by email to the T11.3 reflector at T11_3@mail.T11.org.

1 Opening remarks

1.1 Introductions

Chairperson Claudio DeSanti (Cisco) opened the regular meeting Wednesday, 20/10/2010 at 9:10 AM PDT. He thanked our hosts, Microsoft, Brocade, and FCIA, and led a round of introductions.

2 Meeting Policy

2.1 Attendance and Membership

The chair explained that attendance is recorded electronically at www.t11.org/att, and explained the procedure. Attendance at this meeting does not count toward attendance at the plenaries of T11 and its task groups (i.e., being here will not get you out or keep you out of membership jeopardy).

The chair stated that all persons present are considered members of this meeting and may vote on questions, limited to one vote per company present. He advised that although T11 does not limit participation in the activities of its work groups to representatives of T11 member organizations, it requires nonmembers to identify themselves as such. Nonmembers that expect they may participate in the activities of T11 regularly were encouraged to become members.

No person identified himself as a member of an organization that is not a member of T11.

2.2 Patents

The chair indicated that among the rules and policies under which this working group operates are the ANSI intellectual property policies as specified in pages 1-3 of http://www.incits.org/pat_slides.pdf. He displayed these pages without comment or explanation, and directed that questions about the policy should be referred to the questioner's legal counsel or the ANSI General Counsel.

2.3 Antitrust

The chair indicated that among the rules and policies under which this working group operates are the INCITS Antitrust Guidelines. Any member of the meeting is responsible for objecting if he believes discussion in the

meeting violates those guidelines. As examples, there should never be discussion of the following topics at any INCITS or INCITS subgroup meeting:

- Any company's prices or pricing policies;
- Specific R&D, sales and marketing plans;
- Any company's confidential product, product development or production strategies;
- Whether certain suppliers or customers will be served;
- Prices paid to input sources; or
- Complaints about individual firms or other actions that might tend to hinder a competitor in any market.

If such discussion is not immediately terminated, it is the chairperson's responsibility to terminate the meeting. The INCITS Antitrust Guidelines are available at

<http://www.incits.org/inatrust.htm>

3 Administrivia

3.1 Approval of Agenda

An agenda for the FC-BB-6 ad hoc work group regular meeting 20/10/2010 has been posted as T11/10-434v0.

Landon Noll (Cisco) moved and Roger Hathorn (IBM) seconded to accept T11/10-434v0 as the agenda for this regular meeting. Approved by acclamation.

3.2 Review of Minutes

Minutes for the FC-BB-6 ad hoc work group regular meeting 4 August 2010 have been posted as T11/10-362v0.

Bob Nixon (Emulex) moved and Sandy Wilson (Fujitsu) seconded to accept T11/10-362v0 as the minutes of the FC-BB-6 ad hoc work group meeting on 4 August 2010. Approved by acclamation.

4 Review of Old Action Items

- 100609-3 FC-BB-6 editor to incorporate T11/10-019v3 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010 into FC-BB-6.
(Completed in FC-BB-6 version 1.02, T11/10-212v2)
- 100804-1 FC-BB-6 editor to incorporate T11/10-313v0 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.
(Completed in FC-BB-6 version 1.02, T11/10-212v2)
- 100804-2 FC-BB-6 editor to incorporate T11/10-252v2 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.
(Completed in FC-BB-6 version 1.02, T11/10-212v2)

5 Old Business

No old business was presented.

6 Scheduled Business

6.1 FC-BB-6: Virtual Domain

T11/10-345v1

Peterson (Brocade)

The presentation started from a diagram of a configuration that exhibited routes in which traffic flowed from an FDF to another FDF via an intermediate FDF without passing through an FCF (termed "multihop"). The mechanism for this includes the key concepts "Virtual Domain/Virtual Domain_ID" and "subdomain ID".

The presentation elaborated the protocol for setting up a single virtual domain. Several questions related to the scoping of a "single virtual domain" among a collection of interconnected devices that may be desired to become multiple virtual domains. The presenter made clear that this presentation focussed on the interactions within a single virtual domain.

Another question was raised about the circumstance of a virtual domain being constructed from a set of devices not all on the same L2 Ethernet domain. A member pointed out there were established techniques for resolving the equivalent problem for DHCP. The techniques rely on careful configuration. Careful configuration is within scope of the presenter's intended approach.

Subdomains are assigned to each FDF and FCF. A subdomain is a set of N_Port_IDs within the set of addresses in a virtual domain. To route a frame, the D_ID is mapped to its containing subdomain and routed based on its subdomain. The mapping is not necessarily a segment of the D_ID. Routing among FDFs is determined by subdomain based on their participation in FSPF routing discovery, with an extended payload.

Issue was taken with the performance impact of introducing a mapping step into the frame routing logic. (Roger Hathorn was fined \$5 for using the word "only" with respect to the impact of introducing a change in the frame routing logic.) A member pointed out that established techniques used for Classless InterDomain Routing may be applicable.

The presenter was asked to summarize the changes that would be needed in FC-SW-x, in order for the group to understand the impact to existing implementations.

The presenter was asked to elaborate on operation in more complicated configurations that were deferred from this introductory presentation.

6.2 FDF Routing

T11/10-465v0

DeSanti (Cisco)

This presentation was intended to clarify the details of the FDF routing method based on the routing maintenance protocol by the same presenter at the prior meeting in T11/10-271v2.

A change introduced by this presentation is to make mandatory the previously optional Ethernet bridge component of an FDF. Under questioning, the presenter clarified that the bridge was not essential to his FC routing method, but was in his opinion exceedingly likely in effective implementations. The group expressed a strong preference that the bridge remain optional.

He distinguished between centrally controlled and distributed routing maintenance protocols, and asserted that centrally controlled routing was more appropriate to routing maintenance within a hierarchy of FDFs below a controlling FCF; allowing simpler routing maintenance logic in the FDFs.

It was questioned whether the proposal supported an FDF hierarchy of more than one level below a controlling FCF. The presenter advised that the protocol he proposes does not currently support this, but could easily be enhanced to do so.

It was observed that this approach assigns one or more ranges of FC_IDs to each FDF, and questioned how this impacts routing logic. The presenter pointed out that the ranges are representations of segments of the FC_ID bit string, not completely general numeric limits.

The presentation adds an acknowledgement to the protocol elements that distribute routing and zoning information. This intends to resolve a concern about assuring consistency of this information prior to its use.

Zoning information relevant to a newly logged in N_Port is distributed along with the acknowledgement and announcement of its login. A question led to observing that the acknowledgement needed to be gated by the acknowledgements to all the announcements.

ACTION Claudio DeSanti to post a presentation detailing the extension of the routing method described in T11/10-465v0 to multilevel FDF hierarchies.

6.3 VA_Ports: FDF / Controlling FCF Protocols T11/10-271v3 DeSanti (Cisco)

The presentation updated the introduction and details of the FCF/FDF discovery and initialization method for the “centralized routing maintenance” approach.

The first technical statement in the presentation led to an active discussion of how to deal with a circumstance of more than two FCFs. Opinions included that it needed to be supported fully (including redundancy pairing), supported partially, or errored. The conversation was less than conclusive, but leaned toward that in FC-BB-6, only one pair may control FDFs. Administrative configuration may be an allowable way to support more exotic arrangements.

7 Unscheduled Business

No unscheduled business was presented.

8 Review of Action Items

101020-1 Claudio DeSanti to post a presentation detailing the extension of the routing method described in T11/10-465v0 to multilevel FDF hierarchies.

9 Meeting Schedule

Request 8 hours at the T11 plenary week hosted by FCIA and Chris Lyon in Jacksonville FL, 6-10 December 2010.

10 Adjournment

Roger Hathorn (IBM) moved and Erik Smith (EMC) seconded to adjourn. Approved unanimously.

The regular meeting was adjourned at 3:50 PM PDT on 20/10/2010.

11 Status of Open Proposals

Document Title	Number	Disposition	Author
Distributed FCF functionality	T11/10-028	Carry. Most recent version presented was T11/10-028v0	Gai (Cisco)
VN_Port to VN_Port Virtual Links	T11/10-037	Carry. Most recent version presented was T11/10-037v0	Peterson (Brocade)
Jet Assist for FCoE P2P N_Port_ID Selection	T11/10-119	Carry for further consideration. Most recent version presented was T11/10-119v0	Weber (ENDL Texas)
Harmonized (Direct Mode) Adapter Based Shortcut	T11/10-133	Carry for further development. Most recent version presented was T11/10-133v0.	Hufferd (Hufferd Ent.)
The sFCF	T11/10-131	Carry for further development. Most recent version presented was T11/10-131v0.	Hufferd (Hufferd Ent.)
VA_Ports: FDF / Controlling FCF Protocols	T11/10-271	Carry for further development. Version presented was T11/10-271v2	DeSanti (Cisco)
VN_Port WWPN to Fabric association	T11/10-224	Carry for further development. Version presented was T11/10-224v1	Smith (EMC)
FC-BB-6 FDF Requirements	T11/10-343	Carry for further development. Version presented was T11/10-343v0.	Hathorn (IBM)
Virtual Domain	T11/10-345	Carry for further development. Version presented was T11/10-345v0.	Peterson (Brocade)

12 Attendance

Organization	Representative
BLADE NETWORK TECHNOLOGIES	Chetan Yaliwal
BROADCOM	Niranjan Vaidya
BROADCOM	Pat Thaler
BROCADE	David Peterson
CISCO	J Metz
CISCO	Joe Pelissier
CISCO SYSTEMS	Landon Noll
CISCO SYSTEMS	Silvano Gai
CISCO SYSTEMS, INC.	Claudio DeSanti
DELL	Gaurav Chawla
EMC	David Black
EMC	Erik Smith
EMULEX	Bob Nixon
EMULEX	William R. Martin
ENDL TEXAS	Ralph Weber
FORCE10 NETWORKS	T Sridhar
FUJITSU AMERICA, INC.	Sandy Wilson
HEWLETT-PACKARD COMPANY	Nadaraha (Nava) Navaruparajah
HUAWEI SYMANTEC	Michael Ko
HUFFERD ENTERPRISES	John Hufferd
IBM	Louis Ricci
IBM	Roger Hathorn
IBM	Scott Carlson
INTEL CORPORATION	Prafulla Deuskar
JUNIPER	Joseph White
LSI CORP.	John Lohmeyer
MELLANOX TECHNOLOGIES	Diego Crupnicoff
NETAPP	Frederick Knight
ORACLE	Roger Dickerson
QLOGIC	Ed McGlaughlin
QLOGIC CORP	Alan Spalding
QLOGIC CORP.	Craig W. Carlson
SOLUTION TECHNOLOGY	Robert Kembel

Organization	Representative
TRUE FOCUS, INC	Horst Truedstedt
UNIVERSITY OF NEW HAMPSHIRE INTEROPERABILITY LAB	Mikkel Hagen
VMWARE	Lawrence Lamers