

# Approved Minutes

## T11.3 FC-BB-6 ad hoc work group regular meeting

### 3 February 2010 - 9:00 AM to 5:30 PM CST

### San Antonio TX

version 2 corrected the document number for the presentation in 6.7

version 1 deleted an incomplete sentence at the end of 6.7.

The FC-BB-6 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at San Antonio TX on 3 February 2010, hosted by FCIA and Chris Lyon. Attendance was 25 people from 17 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, 3 February 2010 at 9:08 AM CST. He thanked our hosts, FCIA and Chris Lyon, 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](http://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.

Those responding are included in the attendance record. They were advised that by remaining in this meeting, they submit themselves and their organizations to INCITS policy for intellectual property, antitrust, and guest membership policy.

### 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](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 3 February 2010 has been posted as T11/10-059v0.

***Bob Nixon (Emulex) moved and Fred Knight (EMC) seconded to accept T11/10-059v0 as the agenda for this regular meeting. Approved unanimously.***

### 3.2 Review of Minutes

Minutes for the FC-BB-6 ad hoc work group regular meeting 9 December 2009 have been posted as T11/09-660v0.

***Bob Nixon (Emulex) moved and Landon Noll (Cisco) seconded to accept T11/09-660v0 as the minutes of the FC-BB-6 ad hoc work group meeting on 9 December 2009. Approved unanimously.***

## 4 Review of Old Action Items

091209-1 FC-BB-6 editor to incorporate T11/09-514v1 into FC-BB-6.  
(Carry)

## 5 Old Business

No old business was presented.

## 6 Scheduled Business

### 6.1 Distributed FCF functionality

T11/10-028v0

Gai (Cisco)

This presentation introduces a significant change in direction from its predecessor presentations on the topic, still introducing an architecture of distributed FCF functionality, but no longer focusing on the detection and application of level 2 (within the same Ethernet domain) shortcuts for traffic between the end devices.

He then introduced the primary issue in his company's experience with FCoE deployment was FC domain ID exhaustion. This is either numeric excess (hundreds of top-of-rack FCFs) or implementation capacity (FC[oE] switches today are limited to 40-50 domains).

Then he re-introduced shortcuts, but presuming that the shortcut relied on level 3 (FC-aware) bridging in the FCFs.

It was observed from the audience that the control protocol may architecturally be better approached in FC-SW-x as a set of new SW\_ILSs.

## **6.2 Protecting FPP / FCF Connections**

**T11/10-033v0**

**Noll (Cisco)**

The presenter recommended not to introduce IP-based security: this would also introduce other IP problems. It appears he was recommending that FIP be used, possibly with MACSec.

The presenter pointed out the need to introduce a key management service.

The presenter was complimented for having given a crypto-protection presentation without ever using the term "session key".

It was observed from the audience that, if control traffic were carried by FCoE traffic (e.g., CT or SW\_ILS), FC-SP-x could be leveraged.

## **6.3 Locally Unique N\_Port\_IDs**

**T11/10-060v0, T11/10-019v2**

**DeSanti (Cisco)**

The presentation (T11/10-060v0) was a tutorial on the operation of the technical proposal (T11/10-019v0). The technical approach was introduced at the prior meeting of this work group.

It was observed that 00x may be a better choice for the first byte of the VN2VN\_Port\_IDs than F0x. The presenter accepted the advice, adding that any prefix that was not available to FC switches would serve the basic intent.

It was observed that the Claim Response needed to be delayed by a random time, because it is very large and it is a reply to a multicast.

It was observed that the Claim Response pad should be the smaller of the Claim Request maximum size field valuesize and the maximum size supported by the responder. The claim response should include a maximum size attribute that expresses the size negotiated.

It was observed that requiring a claimer to see at least one Claim Response before using the claimed N\_Port\_ID solves certain problems that may result from a MAC with a functioning transmitter but a failing receiver.

Some members perceived the following problems with this proposed approach. Because time was short, discussion was limited:

- Use of domain IDs that are forbidden by FC-SW-x is seriously suspect of causing problems with existing equipment.
- It is limited to 256 addresses when operating within constraints of at least one established FC-4.
- The startup/recovery appears to be slow compared to the constraints of some system requirements.

- It requires significant changes to the ENodes.
- The interaction with FCFs seems incompletely specified.
- The security is incomplete (e.g., bogus address claims are not prevented).

**6.4 (Direct Mode) Adapter Based Shortcuts**                      **T11/10-041v0**      **Hufferd (Hufferd Ent.)**

This is a proposal for direct routing from one FCoE end device to another in absence of an FCF. It is intended to operate in the presence of one or more Ethernet bridges, and may lack capabilities that a Fabric would provide. It adopts some of the approaches of T11/10-019, and changes some things in attempt to resolve perceived problems in T11/10-019.

John and Claudio agreed their proposals were close, and they would try to develop a common proposal.

**6.5 Adapter Based Shortcuts**    **T11/10-040v0**      **Hufferd (Hufferd Ent.)**

This is a proposal for direct routing from one FCoE end device to another with assistance of an FCF.

**6.6 FCoE Point to Point**    **T11/10-039v0**                      **Hathorn (IBM)**

The presentation proposes a protocol that is optimized toward a topology of exactly two N\_Ports supporting very fast bringup, very simple incremental implementation, and disabling operation upon discovery of noncompliant topologies. The group expressed interest in seeing this proposal integrated with proposal T11/10-019v2.

**6.7 VN\_Port to VN\_Port Virtual Links**                                      **T11/10-037v0**                      **Peterson (Brocade)**

This presentation returns to the FCF-controlled direct routing capability, offering other approaches to several of the issues. The technical approach includes assistance information maintained by a Generic Service, expected to be the Name\_Server.

**7 Unscheduled Business**

No unscheduled business was considered.

**8 Review of Action Items**

091209-1    FC-BB-6 editor to incorporate T11/09-514v1 into FC-BB-6.  
(Carry)

**9 Meeting Schedule**

Request 8 hours at the T11 plenary week hosted by FCIA in Pasadena CA, 29 March-2 April 2010.

**10 Adjournment**

*David Black (EMC) moved and Lou Ricci (IBM) seconded to adjourn. Approved unanimously.*

The regular meeting was adjourned at 5:13 PM CST on 3 February 2010.

## 11 Status of Open Proposals

Document Title	Number	Disposition	Author
Filling the Virtualization Swamp	T11/09-412	Carry for further consideration. Most recent version presented was T11/09-412v1	Crandall (Brocade)
FCoE Point to Point	T11/09-450	Close. Replaced by T11/09-450v2. Last presented version was T11/09-450v2	Hathorn (IBM)
Adapter Based Shortcuts presentation	T11/09-516	Close. Replaced by T11/10-040. Last version presented was T11/09-516v1	Hufferd (Hufferd Ent.)
Proxy Based Shortcuts text	T11/09-517	Carry for further consideration. Most recent version presented was T11/09-517v0	Hufferd (Hufferd Ent.)
Proxy Based Shortcuts presentation	T11/09-518	Carry for further consideration. Most recent version presented was T11/09-518v0	Hufferd (Hufferd Ent.)
VN_Port to VN_Port Virtual Links	T11/09-637	Close, replaced by T11/10-037. Most recent version presented was T11/09-637v0.	Peterson (Brocade)
Distributed FCF functionality	T11/09-648	Close. Replaced by T11/10-028v0.. Last version presented was T11/09-648v0	Gai (Cisco)
(Direct Mode) Adapter Based Shortcuts	T11/09-654	Close. Replaced by T11/10-041. Last version presented was T11/09-654v0	Hufferd (Hufferd Ent.)
FPMAs for VN_Port to VN_Port Virtual Links	T11/09-663	Close. Replaced by T11/10-019. Last presented version was T11/09-664v0.	DeSanti (Cisco)
Protecting FPP / FC-CMP Connections	T11/09-673	Close. Replaced by T11/10-033. Last version available was T11/09-673v0.	Noll (Cisco)
Distributed FCF functionality	T11/10-028	Carry. Most recent version presented was T11/10-028v0	Gai (Cisco)
Protecting FPP / FC-CMP Connections	T11/10-033	Close, tutorial. Most recent version presented was T11/10-033v0.	Noll (Cisco)
Locally Unique N_Port_IDs	T11/10-019	Most recent version presented was T11/10-019v1	DeSanti (Cisco)
VN_Port to VN_Port Virtual Links	T11/10-037	Carry. Most recent version presented was T11/10-037v0.	Peterson (Brocade)

<b>Document Title</b>	<b>Number</b>	<b>Disposition</b>	<b>Author</b>
(Direct Mode) Adapter Based Shortcuts	T11/10-041	Carry. Most recent version presented was T11/10-041v0	Hufferd (Hufferd Ent.)
Adapter Based Shortcuts presentation	T11/10-041	Carry for further consideration. Most recent version presented was T11/10-041v0	Hufferd (Hufferd Ent.)
FCoE Point to Point	T11/10-039	Carry for further consideration. Most recent version presented was T11/10-039v0	Hathorn (IBM)

## 12 Attendance

<b>Organization</b>	<b>Representative</b>
BROADCOM	Pat Thaler
BROCADE	David Peterson
BROCADE	Steven L. Wilson
CISCO SYSTEMS	Landon Noll
CISCO SYSTEMS	Silvano Gai
CISCO SYSTEMS, INC.	Claudio DeSanti
DELL	Gaurav Chawla
EMC	David Black
EMC	Erik Smith
EMC	Gary S. Robinson
EMULEX	Bob Nixon
ENDL TEXAS	Ralph Weber
FUJITSU AMERICA, INC.	Sandy Wilson
HUAWEI SYMANTEC	Michael Ko
IBM	Louis Ricci
IBM	Roger Hathorn
IBM	Scott Carlson
JDSU	Jason Rusch
MELLANOX TECHNOLOGIES	Diego Crupnicoff
NETAPP	Frederick Knight
QLOGIC CORP	Alan Spalding
QLOGIC CORP.	Craig W. Carlson
SOLUTION TECHNOLOGY	Robert Kembel
SUN MICROSYSTEMS	Roger Dickerson
TRUE FOCUS, INC	Horst Truedstedt