

Minutes

T11.3 FC-NVME ad hoc work group conference call

11 Jul 2017 – 11:00 AM to 01:00 PM PDT

The FC-NVME ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a conference call on 11 Jul 2017, hosted by QLogic. Attendance was 9 people from 6 organizations and is tabulated at the end of this document.

Roger Hathorn (IBM) took minutes. Please report any corrections by email to the T11.3 reflector at fc_protocol@standards.incits.org.

1 Opening Remarks

Introductions

Chairman Craig Carlson (QLogic) opened the regular meeting at 09:07 AM PDT and led a round of introductions.

2 Meeting Policy

2.1 Attendance and Membership

The chair explained that attendance is recorded electronically at standards.incits.org/apps/org/workgroup/t11.3/calendar.php, and explained the procedure. Attendance at this meeting does not count toward attendance at 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.

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>

3.0 Approval of Agenda

An agenda for the FC-NVME ad hoc work group meeting 11 Jul 2017 was posted as T11-2017-0217-v0000

Dave Peterson (Brocade) moved and Roger Hathorn (IBM) seconded to accept T11-2017-00217-v0000 as the agenda for this regular meeting. Approved by acclamation.

4.0 Past Business

4.1 Review of Minutes

Review of minutes for the previous meeting and conference calls will be done at a future meeting.

4.2 Review of Old Action Items

Action items carried forward from prior meetings:

16-1207-03: David Peterson to look at fixing RRQ requirements in FC-FS-5 – carry

17-0329-1: James to propose text regarding implicit vs. explicit termination of associations and connections that either says only one Disconnect NVMe_LS is sent (either for the association or one of the connections) or a Disconnect NVMe_LS is sent for all connections and the association. Check that... - We will explicitly terminate the association (scope=0). May need to say do this only once. – See T11-2017-00157-v000. Item remains open for further discussion. Will be simplified now disconnecting a connection has been removed from the Disconnect LS (06/07/17) - carry

17-0329-2: Dave Peterson to provide a proposal for moving discussion of first burst information from other sections (e.g. Data IU Format) to the First Burst section 4.6 to resolve Dell-DB62. – Carry

17-0418-2: Craig Carlson to propose text for resolution of IBM-r055 to better explain how in-capsule data is translated into offsets within the CMD IU referencing data within the data series. – Carry

17-0418-3; For IBM-r061, the clearing effects table “Power Cycle” changes to Link Offline or Link Failure – folks should review – Carry

17-0502: Dave Peterson (Brocade) to evaluate login options for applicability to FC-NVMe and propose text for resolution to IBM-r074. – Carry

17-0523-01: James Smart (Broadcom) to define error checking and reject codes for Create Association and Create I/O Connection. - carry

17-0607-02: James Smart (Broadcom) to provide text describing the limits of the usage of the parameters in the create association and create I/O connection in terms of when a NVMeoF connect command is used for creation of an Admin queue or an I/O queue, respectively, and to describe what corresponding reject reason codes are to be used for the errors that cause certain error status to be returned in a CQE to a connect command. (e.g. instead of using CQE status of X, an NVMeoFC LS_RJT with reason code Y is sent.) - carry

17-0607-03: Craig Carlson (QLogic) to draft an informative annex that explains how byte 0 and byte 1 are used to identify an unsolicited command IU with type code 08 as an NVME CMD IU rather than an FCP_CMD IU (re: comments ibm-r0120 and r0121). - carry

0627-01: Craig update agenda boiler plate to new web site.

0627-02: Dave Peterson to figure out what to do about transport specific error codes that were removed from the fabrics spec (removed March 8, 2016).

0627-03: James to propose text describing the Data IU format for section 9.4 in lieu of a table requested by the Viavi comment from Jason Roushe.

0627-04: James to propose text for 11.2 to cover sequence errors detected in both transmit and received directions to resolve comment IBM-r130.

New action items from this meeting:

0711-01: For IBM-r031, Resolution is to reference NVMe. Dave to research NVMe CQE status codes to ensure there is one that reflects this particular error.

Completed action items from prior meetings:

17-0607-04: Dave Peterson (Brocade) to open a letter ballot comment for new code point proposal for SGL type indicating offset length rather than Address/length coming out of NVMe group. – Complete

17-0607-01: Fred Knight (NetApp) to figure out what happened to the transport specific error code definitions in the base NVM Express spec (the codes in table 41 cannot be found in the base spec) and open an ECN, if appropriate. - complete

17-0418-1: Dave Peterson to post T11-2017-00020-0003 with comment resolutions to date. – Complete

For action items prior to 04/11/2017, see prior minutes of the 03/28/2017 regular meeting.

5. Old business

5.1 Letter Ballot Comment Resolution – (T11-2017-0020-v006, David Peterson, Brocade)

Dave Peterson (Brocade) mentioned that he posted version 0006 of the comment resolution database.

Resolution began IBM-r031.

Comment resolutions are documented in the comment resolution database.
New action items recorded in section 4.2 of these minutes.

Resolution ended at comment BRCM-L119 in 9.4.3.

6. Scheduled business

6.1 FC-NVMe lacking TRADDR string format ([T11-2017-00215-v000.pdf](#) Baldwin, Broadcom)

Based on current implementations, proposes to specify to add 0x before WWNs and space terminated and padded, Upper case only, not Null terminated (match what NVMe specifies) - group to consider the addition of the 0x.. Is it consistent with GS?

Roger Hathorn (IBM) asked to bring into next meeting for further awareness discussion with larger group.

6.2 Admin Command Determinism (T11-2017-00216-v000, Peterson, Brocade)

How do analytics determine admin commands vs r/w commands..
This proposal was not discussed. It is food for thought for FC-NVMe-2?

7. **Unscheduled business**

None

8. **Discussion of Progress and Plan**

No discussion

9 **Review of Action Items**

See 4.2


10 **Meeting Schedule**

The next work group meeting will be on August 8, 2017 in Providence, RI.
Interim conference calls will be held for two hours each on 6/27/17 and 7/11/17 from 8-10PST, on 7/13 from 9-11am PST, and on 7/18 from 8-10 PST.

11 **Attendance Check and Adjournment**

*Patty Driever (IBM) moved and Jason Rusch (Viavi) seconded to adjourn the meeting.
Approved by acclamation.*

The regular meeting was adjourned at 10:00 AM PDT.

Company 	Name	Role
Broadcom Limited	David Baldwin	Member
Broadcom Limited	James Smart	Member
Brocade	Howard Johnson	Member
Brocade	David Peterson	Member
IBM Corporation	Roger Hathorn	Member
IBM Corporation	Patty Driever	Member
QLogic Corporation	Craig Carlson	Group Chair
Viavi Solutions Inc	Jason Rusch	Member
Hewlett Packard Enterprise	Barry Maskas	Member