

Fabric Extension Study Group Draft minutes 03-605v0
August 13, 2003 10:00 AM – 12:00 PM
August 14 9:00 AM – 12:00 PM
Cambridge, MA

Introductions

John Scheible opened the meeting at 10:20 AM. The group began with introductions. John thanked the host for the facilities

The agenda was approved as modified (03-475v1).

Approval of minutes

There were no previous minutes.

Review of Action items

- None

Fabric Partitioning and Routing (03-525v0) Claudio DeSanti

Claudio presented a view of what is required for VSAN tagging. There is no new protocol required inside each virtual fabric. While there is no additional administration within the virtual fabrics, there is new administration for the VSAN. Fabric routing is done via a gateway, which Claudio defined. There was significant discussion about the similarities between VLANs/VSANs and LAN routing/Fabric routing. While there was acceptance that VLAN/VSAN could be compared, there was not agreement on the routing issue.

There was significant discussion about the example. One issue revolved around whether the information about the virtual fabrics was known by all switches or only by the gateways. The functionality of the gateway was not fully specified in the presentation and this presented issues related to understanding the example. Part of the issue was whether the routing was hierarchical or flattened. Address translation is required if you are connecting legacy switches, but may not be required for future fabrics. This function is independent of other aspects of the gateway. There was a desire to break out the functionalities that are required, and in the future we need to clarify the nomenclature of these functions.

The conclusion that Claudio drew was that a modular approach to the header to accommodate the different required functions.

Tagged Frame Specification (03-353v0) Claudio DeSanti

This was a detailed specification of the previous presentation. It was determined that this would be more appropriate after a decision about the approach to be taken.

Inter-Fabric Addressing (03-504V0) Steve Wilson

This was a review of the motivations for extending fabrics from the June meeting. This proposal presents an architecture, which handles interconnecting fabrics, extending end point connectivity, and better isolation. This proposal allows for backwards compatibility, extension of addressing, and fault isolation. There were questions about how multiple transports were important. The reason for this was to show that the interconnection was independent of the transport over which the frames are transmitted.

The mechanism proposed was to allow multiple, fixed sized, extended Fibre Channel headers, which are indicated in R_CTL. It was pointed out that with this proposal that the maximum size frame with the additional header must adhere to the current Fibre Channel maximum frame size. There was discussion of the use of the timestamp in the header as far as solving both stale frame issues and looping issues.

A question was raised about the use of the Network Header, and there was consensus that this functionality was too far into the frame, and not sufficient for the problem that we are attempting to define here. An additional question was what legacy switches do with unknown R_CTL values. It was contended that this had been tried with success in a number of configurations. An additional issue was if switches looked further than two words into the frame header to determine what they do with frames (in particular F_CTL may determine what is done with a frame). An additional concern was whether X_ID is used as part of the routing.

The meeting was recessed until August 14 at 9:00

FC Fabric Extension Issues (03-499v1) Charles Monia

This presentation raised the desire to have a common extended frame format, which allowed for Fabric Extension and VSAN. It was agreed that this is the goal of this group. He proposed that VSAN is a subset of the fabric extension architecture. There was a desire to ensure that the gateway routing protocol not be as complex as FSPF.

There was significant discussion about whether the addressing scheme of VSAN and Fabric Extension could be merged. The issue is whether “Fabric Identifier” and VSAN Identifier” can be the same. This issue needs to be addressed as this group moves forward. Discussion continued over the functionality required by a Gateway device, which led back to a discussion of the differences in addressing, and whether a switch could do the tagging vs. the gateway doing the tagging.

Gateway Functionality (03-507v0) Scott Kipp

Scott proposed CT commands for management of the proxied devices. Scott proposes that the proxy be assigned to the gateway device and the gateway device would be responsible for generation of appropriate SW_RSCNs. There are limitations on the address space in the gateway devices. While there were zones on slide 4 of the presentation, this had nothing to do with the proxying of devices. This generated some confusion, which was dispelled when it was noted

that zoning did not affect proxying, except for determining which devices could communicate, not what the proxied devices are.

From the simplest case of a single gateway, Scott moved to a backbone description. The backbone configuration has to deal with the routing between multiple gateway devices. The proposal is that the backbone would only carry traffic for proxied devices. There is no extended header required. There is no zone administration in the backbone.

The issue of redundant backbones was briefly presented but this will be presented at the next meeting.

Comparisons of various proposals (03-487v0) Silvano Gai

Silvano presented his view of how the various proposals meshed. There was significant discussion and clarification of the proposals and their associated formats. As the proposals gel, there will be continued discussions as to how they can complement each other.

Project status:

The project is still in the Study Group stage.

Next meetings

The group discussed an interim meeting, but could not agree on a time, so the next meeting will be in Oklahoma City, OK during the next T11 plenary week.

Action Items

Old Action Items

None

New Action Items

- Switch vendors need to determine if the format proposed in 03-504v0 causes problems because F_CTL is moved later in the frame. If it does, then what is required to be at the head of the frame.

Meeting adjourned at 12:00 due to the beginning of the T11.3 plenary.

Attendance

Name	Company
Roy Elsbernd	AGILENT
Claudio DeSanti	ANDIAMO SYSTEMS, INC.
Murali Rajagopal	BROADCOM
William R. Martin	BROCADE COMMUNICATIONS
Edward McClanahan	BROCADE COMMUNICATIONS
Robert Snively	BROCADE COMMUNICATIONS
Steven L. Wilson	BROCADE COMMUNICATIONS
Vijay Ahuja	Cipher Solutions
Keith McCloghre	Cisco

Name	Company
Silvano Gai	CISCO SYSTEMS, INC.
Stephen Cortese	CNT
Harry V. Paul	CNT CORPORATION
Bret Ketchum	COMPUTER NETWORK TECHNOLOGY
David Black	EMC
Jack Harwood	EMC
Ron Stern	EMC
Fred Oliveira	EMC
Bob Nixon	EMULEX
Ralph Weber	ENDL TEXAS
Mike Fitzpatrick	FUJITSU COMPUTER PRODUCTS OF AMERICA
Mark Hamel	HEWLETT PACKARD
John Scheible	IBM AUSTIN
George Penokie	IBM TIVOLI SYSTEMS
Neil Wanamaker	JNI
Alex Goral	Light Sand
Glenn Heinle	Light Sand
John Lohmeyer	LSI LOGIC
David Weber	LSI Logic
Bill Krieg	LUCENT TECHNOLOGIES
Larry Hofer	MCDATA
Scott Kipp	MCDATA
Michael O'Donnell	MCDATA
Anil Rijhsiaphsai	McData
Stu Soloway	McData
Carl Zeitler	NEWISYS, INC.
Charles Monia	NISHAN SYSTEMS
Ed McGlaughlin	QLOGIC
Craig Carlson	QLOGIC CORP.
Tim Sheehan	SAN DIAL
Joe Pelissier	Sanera Systems
James Coomes	SEAGATE TECHNOLOGY
Paul Suhler	SEAGATE TECHNOLOGY
Matt Gaffney	STORAGETEK
Joe Gruba	STORAGETEK
Steve Sletten	SUN MICROSYSTEMS
Horst Truestedt	TRUE FOCUS, INC
Ken Hirata	VIXEL