



FCoE: MIB Concerns and Recommendations Update

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Introduction

- **Cisco has proposed a MIB module to support FCoE**
See T11/08-458v0 and T11/08427v0
- **Brocade raised several concerns about the MIB Module**
See T11/08-570v0
- **This original version of this presentation (T11/08-729v0) attempted to address each of the concerns raised in T11/08-570v0**
- **This presentation summarizes the changes made to the proposed MIB (now 09-067v0)**

MIB Scope

- **Concern:**

The MIBs appears to be oriented to a switch and not an HBA (the conformance table requires VFCs which exist only in a switch). But the MIB description states “This MIB module is for configuring and monitoring Fibre Channel over Ethernet (FCoE) related entities.” implying HBAs. Some subtle changes in the MIB could accommodate HBAs.

- **Background:**

The MIBs were proposed by a switch company and thus the focus. However, they are constructed such that they may be easily extended to cover HBAs.

Initial analysis by Brocade indicates that some minor modifications to the compliance section is all that is required

Analysis ongoing

- **Recommendation:**

HBA companies bring forward a proposal to extend the MIB proposal to cover HBAs.

- **Current Status:**

No change: no input received

Per VLAN FIP Snooping

- **Concern:**

Do we have the right controls for enabling/disabling snooping? Appears to be only controlled at the full switch level. Basically, there should be control for enabling FIP-snooping on a per-VLAN basis rather than just globally. That's what is allowed, in for example, IGMP snooping switches.

- **Recommendation:**

Keep the global setting

Add a new table or bitmask that allows enabling per VLAN

If global setting is enabled, then snooping is enabled for all VLANs

Else if table / bitmask exists, then it controls

Else snooping is disabled for all VLANs

- **Current Status:**

New table added allowing VLANs to be added with individual enable / disable. Global settings retained as indicated above.

Terminology Clarification

- **Concern:**

The MIB states that Terminologies used in this MIB are defined by the T11 FCoE standard, as defined in the FC-BB-5 specification. Is the following term in the appropriate T11 standard?

Virtual FC (VFC) Interface as an object that represents either a VF_Port or a VE_Port on a FCoE Forwarder (FCF).

- **Background:**

In the high level “DESCRIPTION” for the MIB module, the term “Virtual FC (VFC) Interface” is defined.

After that, a statement is made that the terminology is defined in the FC-BB-5 specification

The intent was that all other terminology (i.e. other than VFC Interface) is defined in the FC-BB-5 standard

- **Recommendation:**

Change “Terminologies used in this MIB are defined by the T11 FCoE standard, as defined in the FC-BB-5 specification.” to “Other terminologies...”

- **Current Status:**

Changed as proposed

FCoE in non-VLAN Fabrics

- **Concern:**

The MIB implies that Virtual Fabrics are part of implementing FCoE. Specifically it states that “VLAN is used to transport FCoE traffic for a particular Virtual Fabric.”

This is a common but not a necessary implementation.

- **Background:**

The current text states:

"This table facilitates configuration of VLAN and Virtual Fabric associations in an FCoE network. FCoE forwarding for a fabric is over a VLAN in a (Layer-2) Ethernet network. That is, reachability between the ENode/remote-FCF and an FCF for a given fabric is determined by the reachability provided by the Ethernet network on the corresponding VLAN.

An active entry in this table indicates which VLAN is used to transport FCoE traffic for a particular Virtual Fabric.

- **Recommendation:**

Change text to:

"In fabrics in which VLANs are deployed, this table facilitates configuration of VLAN and Virtual Fabric associations in an FCoE network. In such fabrics, FCoE forwarding for a fabric is over a VLAN in a (Layer-2) Ethernet network. That is, reachability between the ENode/remote-FCF and an FCF for a given fabric is determined by the reachability provided by the Ethernet network on the corresponding VLAN.

An active entry in this table indicates which VLAN is used to transport FCoE traffic for a particular Virtual Fabric. If VLANs are not deployed or not enabled, entries in this table are ignored by the bridge.

- **Current Status:**

Changed as proposed

Port Binding

- **Concern:**

T11FCoEVfcBindType variable currently defines only 2 binding methods. We think that “WWN” binding method also needs to be included to specify ENODE by its WWN. When adding this new binding then the same should be extended to T11fcoeStaticVfcTable.

- **Background:**

The intent of this object is to indicate what the VxPort is to use to validate that the frames received are indeed from the VxPort on the other end of the virtual link.

WWN is insufficient for this purpose since it does not appear in every frame.

However, it would be useful for the MIB to express the port WWN of the far end of the link

- **Recommendation:**

Add a new MIB object to this table that provides the far end port WWN

- **Current Status:**

Changed as proposed.

T11fcoeStaticVfcTable Indexing

- **Concern:**

One of the columns in T11fcoeStaticVfcTable is t11FCoEStaticVfcIfIndex which will be a unique value. In that case why can't we use the same as table index instead of declaring one more variable called t11FCoEStaticVfcIndex?

- **Background:**

t11FCoEStaticVfcIfIndex essentially indicates a port number on a multiport device.

Large bridges may have thousands of these (virtual) ports.

Many (or most) of these ports may be unpopulated at any given time.

A sparsely populated table can result if t11FCoEStaticVfcIfIndex is used as the index.

This is inconvenient for the management applications.

Using an independent index enables the table to be densely populated.

This is common practice in MIB module design.

- **Recommendation:**

No change

- **Current Status:**

No change

VLAN to VF_Port(VFC) Association

- Concern:

Currently there is a table for configuring VLAN to Virtual Fabric associations. Do we need to have one more table which can be used to configure the associations between VLAN to VF_Port(VFC)?

- Background

The relationship between a VF_Port and the VLAN it uses is controlled by the FIP Controller

Prior to VF_Port creation, there is nothing for such a MIB object to reference

After VF_Port creation, its too late

- Recommendation:

Waiting for feedback from Brocade; possibly add a read-only object to obtain the VLAN in use by an existing VF_Port.

- Current Status:

New read-only table added for dynamically created ports providing MAC address, VLAN, and WWN of far end.

VLAN added to the static port table

One other thing

- **t11FCoECfgDynamicVfcAgeTimer removed**

Originally thought necessary to age out dynamically created ports

FIP link keep alive mechanism eliminates need for this



Thank you!