



# Additions to Common HBA API to support FCoE Host Bus Adapter

**Giridhar Malavali**  
**Craig W. Carlson**

# HBA API additions



- **HBA API needs additions to support FCoE**
- **Proposing additions for:**
  - Adapter attributes
  - Nx\_Port attributes
  - Nx\_Port statistics

- **ENode MAC Address**

**MAC address used by the FCoE Controller on a ENode MAC for the FCOE Initialization protocol (FIP).**

- **VN\_Port MAC address**

The MAC address used by an ENode for a particular VN\_Port.

This MAC address can be same as ENode MAC address based on the MAC addressing mode.

- **VF\_Port MAC address**

The MAC address used by an VF\_Port of the FCF.

- **VLAN ID**

The Virtual Local Area Network ID used in FCoE VLANs.

- **MAC addressing mode**

The different addressing mode of an ENode.

**SPMA Only** – The ENode supports only Server provided MAC address

**FPMA Only** – The ENode supports only Fabric provided MAC address

**FCF Selected** – The FCoE forwarder will select either FPMA or SPMA addressing mode

**SPMA Preferred** – The ENode prefers only Server provided MAC address

**FPMA Preferred** – The ENode prefers only Fabric provided MAC address

- **FCoE Tx Frames :** Number of FCoE frames transmitted.
- **FCoE Rx Frames:** Number of FCoE frames received.
- **FCoE Tx Pause Frames:** Number of FCoE Pause frames transmitted.
- **FCoE Rx Pause Frames:** Number of FCoE Pause frames received.

# FCoE – Nx\_Port Statistics



- **Link Failure Count:** Indicates the number of link failures detected through detection of physical link transitions.
- **Virtual Link Failure Count:** Indicates the number of virtual link failures detected by the Virtual Link maintenance protocol.
- **Missing FIP Keep Alive or Discovery Advertisement Count:** Indicates the number of missing Virtual Link maintenance protocol frames.
- **Symbol Error During Carrier Count:** Indicates the number of reception errors at the PHY layer that occur during frame reception. The detection procedure is dependant on media and link speed

- **Errored Block Count:** Indicates the cumulative count of the events counted by the eight-bit errored blocks counter
- **Frame Check Sequence Error Count:** Indicates the number of Ethernet frames received that are an integral number of octets in length and do not pass the FCS check