VIAVI Solutions

This Former Spirent Business is Now Part of VIAVI

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Spirent **TestCenter**™

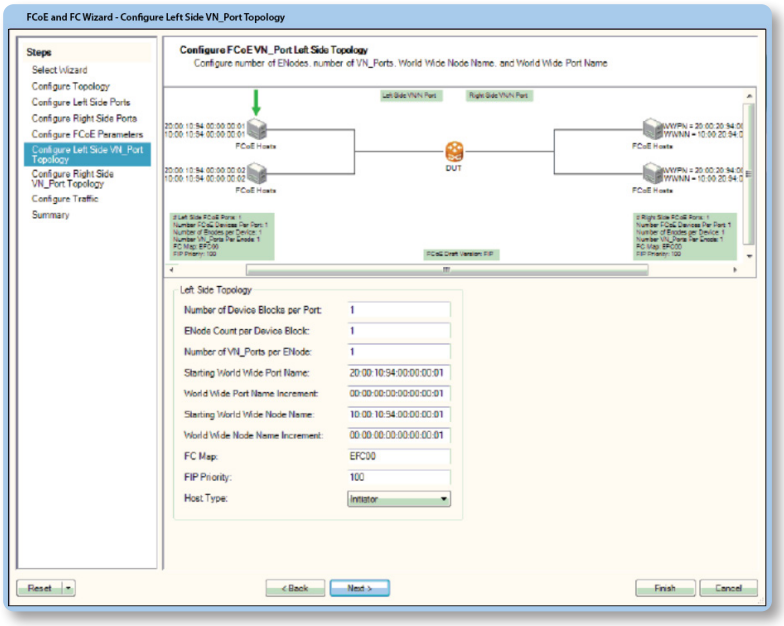
FCoE/FIP, DCBX Emulation

Fibre Channel over Ethernet (FCoE) provides a method of transporting Fibre Channel traffic over a physical Ethernet connection. The FCoE Initialization Protocol (FIP) allows the switch to discover and initialize FCoE-capable entities that are connected via Ethernet. The Data Center Bridging eXchange (DCBX) protocol is an extension of the LINK Layer Discovery Protocol (LLDP). DCBX endpoints exchange request and acknowledgement messages. FCoE, FIP and DCBX are enablers of data center consolidation and LAN and SAN convergence.

Features

- Report FCoE Queueput per latest IETF draft specification together with unicast and multicast LAN traffic utilizing the Spirent TestCenter data center bridging benchmarking package
- Test FCoE single-hop vs. multi-hop fabric redundancy and performance impact of possible head of line blocking (HLOB) with nanoseconds accurate data plane latency
- Verify no flooding, MAC learning and broadcasts on FCoE data plane VLANs and MAC address spoofing prevention capabilities of Fabric zones, VSANs and FIP snooping dynamic Access Control Lists (ACLs)
- Verify fabric support for 1000s of VM LAN MAC addresses as well as SAN NPIV FCIDs including line-rate traffic

With Spirent's FCoE/FIP emulation, hundreds to thousands of Virtual Machines can be emulated with Spirent TestCenter to test data center fabrics. It allows you to stress tests a virtual machine or storage array of FCoE/FIP initiators and targets emulating stateful Enode and VN_ports with PLOGI and FDISC control plane messaging. It can also generate line rate FCoE traffic measuring Queueput with nano second latency. Spirent's DCBX emulation provides you with data center bridging capabilities such as 802.1Qbb Priority Flow Control (PFC) and 802.1Qaz Enhanced Transmission Selection.



Applications

- Testing Converged Fabrics—end to end FCoE to FC performance emulating virtual machine initiators on Ethernet and storage array targets on native Fibre Channel test ports
- Testing High Speed Ethernet FCoE Fibre Channel Forwarder (FCF) switches—on Enode and VN_port control plane scale and combined LAN/SAN queueput
- Testing FIP Snooping and N-Port Virtualization (NPV) bridge switches—for FCoE pass-through capabilities by emulating server VN_ports as well as fabric FCF VF ports

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Technical Specifications

DCBX Emulation	• Full Link Layer Discovery Protocol (LLDP) emulation • Auto-negotiation of 802.1Qbb Priority Flow Control (PFC) and 802.1Qaz Enhanced Transmission Selection (ETS) • LLDP & DCBX port summary results with exchanged priority map • Detailed DCBX feature results with 25+ metrics including PFC, FCoE Priority and Bandwidth allocation • 20+ LLDP and DCBX TLVs with default or configurable parameters • Customizable TLVs • Push or pull link configuration options thru DCBX TLV willingness settings • Bring logical link up and down • Automatic start and stop with FCoE emulation • Configurable Tx interval, multiplier and delays	
FCoE Emulation	• FIP–FCoE Initialization Protocol emulation (FLOGI/FLOGO) • FCoE data plane protocol traffic generation • Automatic VLAN discovery • ENodes discovery of of VF_Port capable FCF-MACs • Login and out of FC Fabric (FCF) • Multiple ENode and VN_Port emulation to FCF switch • NPIV VN_Port emulation to FCF, NPV and FIP snooping bridge switches • N-Port Virtualization (NPV) VNP_Port emulation to FCF switch • VF_Port emulation to NPV and FIP Snooping bridge switches • FCoE port summary results with VN_port count • Detailed FCoE feature results with 15+ metrics including FIP counters, assigned FCID and granted MAC address • FIP Initiator and Target settings • FC Checksum • Server and Fabric Assigned MAC address (SPMA/FPMA) • Static WWN assignment (Port WWN) • Automatic traffic binding of FCID and assigned MAC	
Supported platforms	• Supported on the Spirent MX, MX2, FX, FX2, DX and DX2 Family modules • Supported on Spirent TestCenter Virtual • Supported on Spirent TestCenter C1 and C50	
Ordering information	• FCoE/DCBX Emulation • Data Center Bridging Test Package	BPK-1081A TPK-1059
Related	• EVPN Emulation • LISP Emulation • OpenFlow Compliance Test Suite • OpenFlow Controller Emulation • OpenFlow Switch Emulation • SPB Emulation • TRILL Emulation • VXLAN Emulation	BPK-1311A BPK-1181A VCS-KIT-01-1Y BPK-1193A BPK-1195A BPK-1182A BPK-1187A BPK-1310A

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