Dual-Port 10GbE Onload Mezzanine Adapter for HP BladeSystem c-Class

Solarflare® SFN5802K dual-port 10G Ethernet Onload mezzanine server adapter delivers the industry’s best application performance, lowest power consumption, and most scalable virtualization, enabling unmatched performance and scalability for HP BladeSystem c-Class.

The SFN5802K server adapter enhances the benefits of HP BladeSystem c-Class by reducing complexity and increasing performance. The server adapter optimizes application networking performance in c-Class mezzanine form factor, supporting HP’s high-speed daughter card slot with c-Class blade servers in BladeSystem chassis. This product provides unmatched performance scaling for high-density blade server deployment, while utilizing a single driver across all Solarflare server adapter products. The SFN5802K supports data networking with concurrent support of iSCSI and NAS traffic.

Application Performance Leadership

SFN5802K delivers the industry’s lowest latency at the highest message rates to customers with leading edge enterprise data center deployments. SFN5802K also delivers the industry’s highest message rate and lowest latency jitter, with full 40 Gbps bidirectional line-rate performance. Featuring a rich set of stateless offloads, it provides efficient acceleration of the most demanding network protocol tasks.

SFN5802K supports Solarflare’s Open-Onload® application accelerator, a full-featured, high-performance user-level network stack for Linux. OpenOnload provides unprecedented performance with application compatibility and protocol compliance, bypassing kernel and networking overheads, while featuring binary compatibility with standard APIs and applications.

Scalable, Hardware-Assisted Virtualization

The SFN5802K is designed to optimize virtualized application performance and maximize the use of network resources. With 10x the number of vNICs and virtual PCIe functions than the competition, I/O performance scales as the number of CPU cores and virtual machines increase resulting in enhanced application performance supporting more applications per physical server.

The SFN5802K accelerates guest applications in leading hypervisors, supporting NetQueue and VMQ in VMware and Hyper-V, and SR-IOV in KVM and XenServer. SFN5802K relieves network I/O bottlenecks hidden in virtualized environments, allowing IT managers to allocate full network resources directly to virtualized applications. SFN5802K enables the highest performance and lowest CPU utilization in virtualized servers.

Lowest Power

At less than 4 watts per port, the SFN5802K consumes less than half the power of the leading competitors’ products, and delivers 5-10x the efficiency of 1G Ethernet (Gbps/watt). This not only makes a power efficient 10G network possible, it can save thousands of dollars of operating costs for a typical data center. The SFN5802K is also compatible with the Energy Star® guideline for power consumption.
Specifications

Product Number
SFN5802K
Dual-Port 10GBASE-KR

Standards & Compliance
IEEE 802.3ae
IEEE 802.3ad
IEEE 802.1Q
IEEE 802.1p
IEEE 802.3x
RoHS Compliant

Power (typical)
SFN5802K: 7.8W

Operating Range
0º to 55º C
0 LFM, Min.

Physical Dimensions
L: 10.08 cm (3.97 in)
W: 11.33 cm (4.46 in)
c-Class Type I or Type II form factor

Advanced Features

Server Compatibility
c-Class Type I or Type II mezzanine form factor

Chassis Compatibility
c-Class family of servers – c7000, c3000

I/O Virtualization
2048 guest OS protected vNICs per port; 254 Virtual Functions

PCI Express
PCIe x8 Gen 2.0 compliant @ 5.0 GT/s for full, 40 Gbps bi-directional bandwidth

SFC9020 10G Ethernet Controller
Supports high-performance 10GbE

10GBASE-KR
Two 10GBASE-KR ports for backplane transmission

Low Latency
Cut-through architecture/intelligent interrupt coalescing

Receive Side Scaling (RSS)
Distributes IPv4/IPv6 loads across all CPU cores; MSI-X minimizes interrupt overhead

Hardware Offloads
LSO, LRO, GSO; IPv4/IPv6; TCP, UDP checksums

Adapter Teaming / Link Aggregation
LACP for redundant links & increased bandwidth

Enhanced Tuning
Adaptive interrupt moderation

IP Flow Filtering
Hardware directs packets based on IP, TCP, UDP headers

Advanced Packet Filtering
256 multicast filters; 4096 VLANs/port; adaptive TCP/UDP/IP, MAC, VLAN, RSS, RPS, RFS filtering; Accelerated Receive Flow Steering (RFS)

Jumbo Frames
9000 byte MTU for performance

Intel QuickData™
Uses host DMA engines to accelerate I/O

Remote Boot
PXE, iSCSI boot; unattended installation

Management
ACPI v3.0, SNMP, SMBus, IPMI

Virtualization Support
ESX 3.5, vSphere 4.x, 5.0; Hyper-V; XenServer 5.6, 6.0; KVM; NetQueue; VMQ; SR-IOV

Operating Systems
RHEL 5, 6; MRG; SLES 10, 11; SLERT; other Linux; Windows Server 2003, 2008, 2008R2; OS X v10.6.x, v10.7; Solaris 10 (x86)

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