SOLARFLARE®

10GbE Onload Mezzanine Adapters for IBM BladeCenter

The Solarflare® SFN5812H dual-port and SFN5814H quad-port 10G Ethernet Onload mezzanine server adapters (CFFh form factor) deliver the industry's best application performance, lowest power consumption and most scalable virtualization – enabling unmatched performance and scalability for IBM BladeCenter.

The SNF5812H/SFN5814H server adapters enhance the benefits of IBM BladeCenter by reducing complexity and increasing performance. The server adapter family optimizes application networking performance in CFFh form factor, supporting IBM's high-speed daughter card slot with HS22 blade servers in BladeCenter chassis. This product family provides unmatched performance scaling for high-density blade server deployments, supporting four 10GbE ports and two PCIe buses, while utilizing a single driver across all Solarflare server adapter products. The SFN5812H/5814H server adapters support data networking with concurrent support of iSCSI and NAS traffic.

Application Performance Leadership

SFN5812H and SFN5814H deliver the industry's lowest latency at the highest message rates to customers with leading edge enterprise data center deployments. SFN5812H/5814H also deliver the industry's highest message rate and lowest latency jitter, with full 80 Gbps bidirectional line-rate performance. Featuring a rich set of stateless offloads, it provides efficient acceleration of the most demanding network protocol tasks.

SFN5812H and SFN5814H both support Solarflare's OpenOnload® 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 SFN5812H/5814H server adapters are 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 SFN5812H/5814H server adapters also accelerate guest applications in leading hypervisors, supporting NetQueue and VMQ in VMware and Hyper-V, and SR-IOV in KVM and XenServer. SFN5812H/5814H relieve network I/O bottlenecks hidden in virtualized environments, allowing IT managers to allocate full network resources directly to virtualized applications. SFN5812H/5814H both enable the highest performance and lowest CPU utilization in virtualized servers.

Lowest Power

At less than 2 watts per port, the SFN5812H and SFN5814H server adapters consume less than half the power of the leading competitors' products and deliver 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 SFN5812H/5814H server adapters are also compatible with the Energy Star® guideline for power consumption.

SolarflareSFN5812H/5814H

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SFN5812H
SFN5814H

Solarflare SFN5812H/5814H

Specifications

Product Number
SFN5812H
Dual-Port 10GBASE-KX4
SFN5814H
Quad-Port 10GBASE-KX4

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

Power (typical)
SFN5812H: 3.9W
SFN5814H: 7.9W

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

Physical Dimensions
L: 13.7 cm (5.4 in)
W: 15.9cm (6.25in)
IBM CFFh form factor

Advanced Features

Server Compatibility
HS22 family of servers - HS22, HS22V

Chassis Compatibility
IBM BladeCenter E, H, S

I/O Virtualization
1024 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-KX4
Two or four 10GBASE-KX4 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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