LREC9804BF-4SFP+ PCI Express x8 4xSFP+ 10 Gigabit Server Adapter (Intel XL710 Based)

Key Features

Quad Port 10 GbE adapters

PCI Express* (PCIe) 3.0, x8

Exceptional Low Power Adapters

Network Virtualization offloads including Geneve, VXLAN, and NVGRE

Intel® Ethernet Flow Director for hardware-based application traffic steering

Intel® Data Plane Developer Kit (DPDK) optimized for efficient packet processing

Excellent small packet performa

Description:

Product Overview

Intel continues its legacy of Ethernet leadership by introducing a 40 gigabit family of adapters powered by, the Intel® Ethernet XL710 Controller, codenamed Fortville.

The XL710 adapter family addresses the demanding needs of the next-generation agile data center by providing unmatched features for both server and network virtualization, flexibility for L AN and SAN networks,and proven, reliable performance.

Leading 10/40 GbE Performance

Optimized performance vectors (and key uses) include:
Small Packet Performance: Maintains wire-rate throughput on smaller payload sizes (>128 Bytes for 40 GbE and >64 Bytes for 10 GbE
Bulk Transfer Performance: Delivers line-rate performance with low CPU usage for large application buffers
Virtualized Performance: Alleviates hypervisor I/O bottlenecks by providing flow separation for Virtual Machines (VMs)
Network Virtualization: Network virtualization overlay offloads including Geneve, VXLAN, and NVGRE
Storage Performance: Enables competitive performance with native OS drivers and intelligent offload for NAS (NFS, SMB), and SAN (iSCSI and FCoE)

A Complete, Unified Networking Solution

Converging data and storage onto one fabric eliminates the need for multiple adapters, cables, and switches. Furthermore both 10 and 40 gigabit Ethernet provides the bandwidth to converge these multiple fabrics onto a single wire. A key capability that makes all this possible is traffic class separation provided by Data Center Bridging (DCB)[1]—providing a one-wire solution with virtual pipes for the different classes of traffic:

Data: Best effort delivery of standard L AN traffic
Storage: Losslessnetwork for FCoE and iSCSI
Management: Guaranteed connectivity of data center
IP management

One Adapter, One Price

With the Intel adapters, iSCSI and FCoE support are included in the price of an adapter. There is no need to purchase multiple adapters or additional licensing for an XL710 adapter. It's simple and easy. Everything you need to unify your networking is included in a single SKU. One adapter, one price.

Power Savings

Power efficiency is critical to IT specialists as energy consumption is a real OpEx concern.

Lowest Power Consumption: The new generation of XL710 adapters are power misers. They deliver double the throughput with only half the power of the previous X520 generation.

Energy Efficient Ethernet (EEE): Reduces power consumption during periods of low data activity. Energy is used to maintain the physical layer transmitters in a "ready state" to transmit data on the wire. During periods of low data traffic, EEE sends a low-power-idle signal to putthe transmitters into a "low power state" saving power and cost. When data needs to be

sent, EEE sends a normal idle signal to wake up the transmit system before data is due to be sent so there is no degradation of performance.

Server Virtualization

With Intel® Virtualization Technology (Intel® VT), the XL710 family of adapters deliver outstanding I/O performance in virtualized server environments. They reduce I/O bottlenecks by providing intelligent offloads for networking traffic per virtual machine (VM), enabling near-native performance and VM scalability. The host-based virtualization technologies supported by Intel VT include:

VMDq for Emulated Path: Adapter-based VM Queue sorting enabling efficient hypervisor-based switching

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SR-IOV for Direct Assignment: Adapter-based isolation and switching for various virtual station instances enabling optimal CPU usage in virtualized environments

Additionally,XL710 adapters provide Virtual Bridging[1] support that delivers both host-side and switch-side control and management of virtualized I/O as well as the following modes of virtualized operation:
VEPA[1]:IEEE 802.1Qbgsupport for Virtual Ethernet Port Aggregator[1]
VEB: Virtual Ethernet Bridge support via Intel VT

Network Virtualization

Network virtualization is the next big trend in creating an agile data center. The family of XL710 adapters are ready to help you take that next step.

VXLAN, NVGRE, Geneve Offloads: These stateless offloads preserve applicationperformance for overlay networks. With these offloads it is possible to distribute network traffic across CPU cores.

At the same time XL710 offloads LSO, GSO, and checksum from the host software reducing CPU overhead.

Intel®Ethernet Flow Director

Flow Director is an advanced traffic steering capability built into the XL710 controller. It consists of a large number of flow affinity filters that direct received packets by their flows to queues for classification, load balancing, and matching between flows and CPU cores. It eliminates context switchingrequiredwithin the CPU. As a result, Flow Director significantly increases the number of transactions per second and reduces latency for cloud applications like Memcached.

Intelligent Offloads

The Intel® Xeon® processor family has demonstrated increased computing performance and increased integration of key server subsystems generation after generation.
To offload is to leverage the ever-escalating computing power of the Intel Xeon processor where appropriate and implement complementary accelerations in the network controller—this is what Intel refers to as “intelligent offloads.” By employing a balanced hybrid of compute and offload, intelligent offloads are able to achieve the optimized point of performance and efficiency. This is most notably observed in the following usage models:

TCP Stateless Offloads: Demonstrates leading performance vs. TOE solutions without restricting feature usage (TOE usage usually requires that key features be disabled). Supported stateless offloads include Checksum, TSO, VMDq, and RSS.

Host iSCSI/FCoE Initiators: Providing exceptional performance without the need for full-offload HBA methods.

Flow Classification: Trafficking data flows across multiple consumers and connections

Manageability

The XL710 family of adapters also incorporate the manageabilityrequiredby IT personnel for remote control and alerting.
Communication to the Board Management
Controller (BMC) is available either through an on-board SMBus port or the DMTF-defined NC-SI, providing a variety of management protocols, including IPMI, BMC Pass-thru, OS2BMC, and MCTP/SMBus and MCTP/PCIe.

World-Class Intel Support

IntelCustomer Support Servicesoffers a broad selection oftechnical and customer support programs. For more information, contact your local Intel representative. Service and availability may vary by country.

Features

General

Intel® XL710 10/40 Gigabit Ethernet Controller

QSFP+ Connectivity

Low-profile

Load balancing on multiple CPUs

iSCSI remote boot support

Fibre Channel over Ethernet (FCoE) Support

Support for most network operating systems (NOS)

RoHS-compliant

Intel® PROSet Utility for Windows* Device Manager

Time Sync (IEEE 1588, 802.1as)

I/O Features for Multi-core Processor Servers

Intel® Flow Director

MSI-X support

Multiple Queues: 1,536 Tx and Rx queues per port

Tx/Rx IP, SCTP, TCP, and UDP checksum offloading (IPv4, IPv6) capabilities

Virtualization Features

Next-Generation VMDq

PC-SIG SR-IOV Implementation (128 per device)

Virtual Machine Load Balancing (VLMB)

Advanced Packet Filtering

VLAN support with VLAN tag insertion, stripping and packet filtering for up to 4096 VLAN tags

VXLAN and NVGRE Support

Manageability Features

Preboot eXecution Environment (PXE) Support

Simple Network Management Protocol (SNMP) and Remote Network Monitoring (RMON) Statistic Counters

iSCSI Boot1

Watchdog Timer

Advanced Software Feature

Adapter fault tolerance (AFT)

Switch fault tolerance (SFT)

Adaptive load balancing (ALB)

Teaming support

IEEE 802.3ad (link aggregation control protocol)

PCIe Hot Plug*/Active Periphera component interconnect (PCI)

IEEE 802.1Q* VLANs

IEEE 802.3 2005* flow control support

Tx/Rx IP, TCP, & UDP checksum offloading (IPv4, IPv6) capabilities (Transmission control protocol(TCP), user datagram protocol (UDP), Internet protocol (IP))

IEEE 802.1p*

TCP segmentation large send offload

MSI-X supports Multiple Independent Queues

Interrupt moderation

IPv6 offloading — Checksum and segmentation capability

TECHNICAL FEATURES:

Controller-processor: Intel® Ethernet Controller XL710

Network Standards: IEEE 802.3

Physical Layer Interface: 40GBASE-SR4
40GBASE-LR4

Operating temperature: 0 °C to 55 °C (32 °F to 131 °F)

Air Flow: Minimum of 150 LFM required

Storage temperature: -40 °C to 70 °C (-40 °F to 158 °F)

Storage humidity: Maximum: 90% non-condensing relative humidity at 35 °C

LED Indicators: LINK (solid) and ACTIVITY (blinking)

LINK SPEED (green=10 Gbps; yellow=1Gbps)

Data rate supported per port: Optical: 10GbE/40GbE
Direct Attach: 40 GbE

Bus type: PCI Express 3.0 (8 GT/s)

Bus width: 4-lane PCI Express* and 8-lane PCI Express

Interrupt levels: INTA, MSI, MSI-X

Network Operating Systems (NOS) Software Support

Windows Server 2012 R2*

Windows Server 2012 R2 Core

Windows Server 2012

Windows Server 2012 Core

Windows Server 2008 R2*

Windows Server 2008 R2 Core

Linux* Stable Kernel version 2.6.32/3x

Linux RHEL 6.5 and RHEL 7.0

Linux SLES 11 SP3 and SLES 12

FreeBSD* 9 and FreeBSD* 10

UEFI* 2.1

UEFI* 2.3

VMware ESXi 5.11 (Limited Functionality)

VMware ESXi 5.51

Ordering Information:

M/N	Description
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PS: Above details are only for reference, if there are any changes, no inform will have.