Product Brief

Professional suppier of NIC

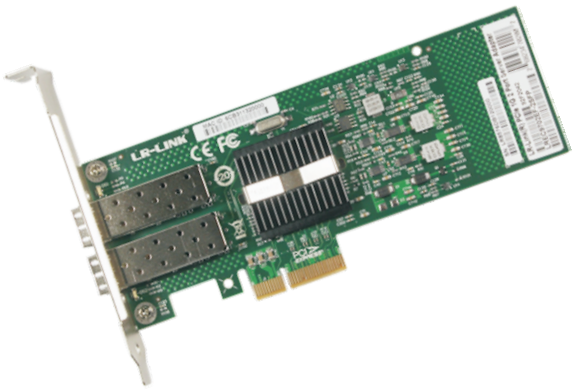
LR-LINK®
Link your world to everywhere

LREC9702EF-2SFP

PCI Express x4 Dual Port SFP Gigabit Server Adapter (Intel 82576 Based)

Description

The LREC9702EF-2SFP Dual-Port Server Adapter is PCIe GbE network adapters. Built with the Intel 82576 Gigabit Ethernet Controller, these new adapters showcase the next evolution in GbE networking features for the enterprise network and data center. These features include support for multi-core processors and optimization for server virtualization.



Designed for Multi-Core Processors

These dual-port adapters provide high-performing, dual-port Gigabit connectivity in a multi-core platform as well as in a virtualized environment. In a multi-core platform, the adapters support different technologies such as multiple queues, receive-side scaling, MSI-X, and Low Latency Interrupts, that help in accelerating the data across the platform, thereby improving application response times. The I/O technologies on a multi-core platform make use of the multiple queues and multiple interrupt vectors available on the network controller. These queues and interrupt vectors help in load balancing the data and interrupts amongst themselves in order to lower the load on the processors and improve overall system performance. For example, depending upon the latency sensitivity of the data, the low level latency interrupts feature can bypass the time interval for specific TCP ports or for flagged packets to give certain types of data streams the least amount of latency to the application.

Optimized for Virtualization

The LREC9702EF-2SFP Multi-Port Server Adapter showcase the latest virtualization technology called Intel® Virtualization Technology for Connectivity (Intel VT for Connectivity). Intel VT for Connectivity is a suite of hardware assists that improve overall system performance by lowering the I/O overhead in a virtualized environment. This optimizes CPU usage, reduces system latency, and improves I/O through- put. Intel VT for Connectivity includes:

- Virtual Machine Device Queues (VMDq)
- Intel I/O Acceleration Technology

Use of multi-port adapters in a virtualized environment is very important because of the need to provide redundancy and data connectivity for the applications/workloads in the virtual machines. Due to slot limitations and the need for redundancy and data connectivity, it is recommended that a virtualized physical server needs at least six GbE ports to satisfy the I/O requirement demands

Virtual Machine Device queues (VMDq)

VMDq reduces I/O overhead created by the hypervisor in a virtualized server by performing data sorting and coalescing in the network silicon.2 VMDq technology makes use of multiple queues in the network controller. As data packets enter the network adapter, they are sorted, and packets traveling to the same destination (or virtual machine) get grouped together in a single queue. The packets are then sent to the hypervisor, which directs them to their respective virtual machines. Relieving the hypervisor of packet filtering and sorting improves overall CPU usage and throughput levels.

LR-LINK LREC9702EF-2SFP PCIe Gigabit adapter provides improved performance with the next-generation VMDq technology, which includes features such as loop back functionality for inter-VM communication, priority-weighted bandwidth management, and doubling the number of data queues per port from four to eight. It now also supports multicast and broadcast data on a virtualized server..

Sales : lrlink@lr-link.com
Support: support@lr-link.com
OEM & ODM: info@lr-link.com

Intel I/O Acceleration Technology

Intel I/O Acceleration Technology (Intel I/OAT) is a suite of features that improves data acceleration across the platform, from networking devices to the chipset and processors, which help to improve system performance and application response times. The different features include multiple queues and receive-side scaling, Direct Cache Access (DCA), MSI-X, Low-Latency Interrupts, Receive Side Scaling (RSS), and others. Using multiple queues and receive-side scaling, a DMA engine moves data using the chipset instead of the CPU. DCA enables the adapter to pre-fetch data from the memory cache, thereby avoiding cache misses and improving application response times. MSI-X helps in load-balancing I/O interrupts across multiple processor cores, and Low Latency Interrupts can provide certain data streams a non-modulated path directly to the application. RSS directs the interrupts to a specific processor core based on the application's address.

End-to-end Wired Security

The LR-LINK LREC9702EF-2SFP Multi-Port Server Adapter is PCIe adapters to provide authentication and encryption for IPsec and LinkSec. LinkSec is already designed into the network adapter hardware. These adapters are future-proof and prepared to provide LinkSec functionality when the ecosystem supports this new technology.
IPsec provides data protection between the end-point devices of a network communication session. The IPsec offload feature is designed to offload authentication and encryption of some types of IPsec traffic and still delivers near line-rate throughput and reduced CPU utilization.
LinkSec is an IEEE industry-standard feature that provides data protection in the network. The IEEE 802.3ae and IEEE 802.3af protocols provide hop-to-hop data protection between two network devices in the transaction line between the host and destination. The two network devices must support the LinkSec technology. The network devices could be servers, switches, and routers.

Features

General
Intel 82576 Gigabit Ethernet Controller
Low-profile
iSCSI remote boot support
Load balancing on multiple CPUs
Compatible with x4, x8, and x16 standard and low-profile PCI Express slots
Multi-port design
Support for most network operating systems (NOS)
Intel PROSet Utility for Windows Device Manager
RoHS-compliant3
.

I/O Features for Multi-Core Processor Servers

Multiple queues & receive-side scaling
MSI-X support
Low Latency Interrupts
Header splits and replication in receive
Multiple queues: 8 queues per port
Tx/Rx IP, SCTP, TCP, and UDP checksum offloading (IPv4, IPv6) capabilities
Tx TCP segmentation offload (IPv4, Ipv6)
Receive and Transmit Side Scaling for Windows* environment and Scalable I/O for Linux* environments (IPv4, IPv6, TCP/UDP)
IPsec Offload
LinkSec

Virtualization Features

Virtual Machine Device queues2 (VMDq)
Next-generation VMDq
IPv6 offloading
Advanced packet filtering
VLAN support with VLAN tag insertion, stripping and packet filtering for up to 4096 VLAN tags
PC-SIG SR-IOV Implementation (8 virtual functions per port)

Manageability Features

On-board microcontroller
Advanced filtering capabilities
Preboot execution Environment (PXE) Support
Simple Network Management Protocol (SNMP) and Remote Network Monitoring (RMON) Statistic Counters
Wake-on-LAN support
iSCSI boot
Watchdog timer
IEEE 1588 precision time control protocol

Network Operating Systems (NOS) Software Support

Windows 2000
Windows XP
Windows Vista 32-bit (64-bit)
Windows 7 32-bit (64-bit)
Windows 8 32-bit (64-bit)
Windows Server 2003 32-bit (64-bit)
Windows Server 2008 32-bit (64-bit)
Windows Server 2008 R2 32-bit (64-bit)
Windows Server 2012 R2 32-bit (64-bit)
Novell Netware 5.x、6.x
Linux kernel version 2.6.30 or greater (x86_64) (w/ SR-IOV support)
FreeBSD 7.x OR laster
DOS
Novell ODI
OS 8 or laster
SCO Open Server
UnixWare / OpenUnix 8
Sun Solaris x86
OS Independent

PCI EXPRESS®

Order Information:

M/N	Description
LREC9702EF-2SFP	PCI Express x4 Dual Port SFP Gigabit Server Adapter (Intel 82576 Based)

PS: The above details are only for reference, if there is any change, no inform will have.

ORDER CODES

LREC9702EF-2SFP

COMPANION PRODUCTS

LR-LINK PCI 100FX Desktop Adapter
LR-LINK PCIe 100FX Desktop Adapter
LR-LINK PCI 1000BASE-SX/LX Desktop Adapter
LR-LINK PCIe 1000BASE-SX/LX Desktop Adapte
LR-LINK PCIe 1000BASE-SX/LX Server Adapter
LR-LINK PCIe 10GBASE-SR/LR Server Adapter
opper NIC
LR-LINK® PCI 10/100Mbps Desktop Adapter
LR-LINK® PCIe 10/100Mbps Desktop Adapter
LR-LINK® PCI 10/100/1000Mbps Desktop Adapter
LR-LINK® PCIe 10/100/1000Mbps Desktop Adapter
LR-LINK® PCIe 10/100/1000Mbps Server Adapter
LR-LINK® PCIe 100/1Gbps/10Gbps Server Adapter

ONLINE DOCUMENTS

For the latest product information, visit us Web at http://www.lr-link.com/

DRIVERS AND PRODUCT LIST

To get the lastest product list and drivers,please visit us at http://www.lr-link.com/ProductDriver/index1.shtml

FOR PRODUCT INFORMATION

To know the network card basic knowledge to choose the suitable card you need,please visit us at http://www.lr-link.com/product.html
To get the product datesheet,please contact the sales in Shenzhen Lianrui Electronics CO.,LTD.

CUSTOMER SUPPORT

LR-LINK customer Support Services offers a broad selection of programs including phone support and warranty service. For more information, contact us at http://www.lr-link.com/service.shtml Service and availability.

LR-LINK®
Link your world to everywhere

Professional suppier of NIC

LianRui Electronic Co.LTD
A professional supplier of high-quality NIC: PCI,PCI-X,PCI-E;SC,ST,LC,SFP,SFP+; 100M,1G,10G;single,dual,quad ports.all series fiber and copper NIC with nearly 100 specifications which can meetdemands of various applications, continuouslycreates value for customers and partners as well as OEM/ODM services provided.

Shenzhen Lianrui Electronics CO.,LTD
ADD:C4 Bldg., Xintang Industry Zone, Baishixia Fuyong Town, Bao'an District
Shenzhen China 518103
www.lr-link.com
Tel:86-755-33671531 Fax: 86-755-29082065
Product sales: lrlink@lr-link.com
Technical Support: support@lr-link.com
OEM & ODM service: info@lr-link.com