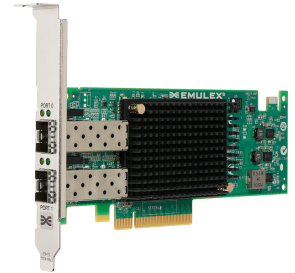CONNECT

OneConnect® OCe11102-I

High-performance 10Gb Ethernet iSCSI adapter

Simplified Networking, Maximum Performance and Increased Business Agility

The Emulex OCe11102-I is a single-chip, high-performance 10Gb Ethernet (10GbE) adapter that consolidates traffic for networking and iSCSI storage. A member of the Emulex OneConnect Universal Converged Network Adapter (UCNA) family, the OCe11102-I iSCSI adapter supports CPU offload for both network and storage I/O to optimize server performance and maximize server virtualization ratios.

Optimized Network and Storage Connectivity

10GbE
Traditional iSCSI solutions based on 1GbE have limited bandwidth that can be inadequate for virtualized servers and I/O intensive applications. The solution is 10GbE that provides the bandwidth needed for an enterprise-class iSCSI deployment. iSCSI storage providers are shipping 10GbE iSCSI storage arrays that enable an end-to-end high-performance solution.

iSCSI offload
The OCe11102-I iSCSI adapter presents a Network Interface Card (NIC) and an iSCSI adapter to the operating system (OS) or hypervisor. The OCe11102-I adapter supports full iSCSI protocol offload, providing performance that is superior to a NIC and iSCSI software initiator.

Enterprise iSCSI
The OneConnect enterprise iSCSI solution includes support for IEEE Data Center Bridging (DCB) standards for optimum performance. Priority Flow Control (PFC) is used to ensure a consistent stream of data between servers and storage arrays. Quality of Service (QoS) and Enhanced Transmission Selection (ETS) support protocol priorities and allocation of bandwidth for iSCSI and IP traffic.

Universal Multi-Channel

OneConnect Universal Multi-Channel (UMC) allows multiple PCI functions to be created on each adapter port. With the OCe11102-I adapter, each port can present one iSCSI function and three NIC functions to the operating system or hypervisor.

Simplified Management

Boot from SAN
OCe11102-I adapters support boot from SAN using an iSCSI hardware device. Boot targets and parameters are easily set with boot management software that runs on the OCe11102-I adapter.

Key Features

One platform for network and storage connection
- Simplifies I/O hardware choices for IT managers

Superior performance
- iSCSI offload performance exceeds NIC and software initiator
- Stateless TCP/IP offload

Energy-efficient design
- Industry-leading performance per watt
- Complements data center "green" initiatives

Easy to deploy and manage with OneCommand® Manager
- One management console for network and storage
- Integrated management of UCNAs and Host Bus Adapters (HBAs)
- More than 12 million ports administered with Emulex management software

Key Benefits

Maximum return on investment
- Converges network and storage I/O with high-performance 10GbE connectivity
- One network infrastructure reduces CAPEX
- One management console reduces OPEX

Optimized for server virtualization with Emulex vEngine™ technology
- Up to 50% more virtual machines (VMs) per server with iSCSI offload

Secure management
- Role-based administration integrated with Light Directory Access Protocol (LDAP) and Active Directory (AD) services

Enterprise-ready
- Hardware parity, CRC, ECC and other advanced error checking
- Backed by field-proven Emulex reliability and support

OneConnect®   OneCommand®

Powerful Management Software for Maximum Data Center Efficiency

The Emulex OneCommand® Manager enterpriseclass management application features a multiprotocol, cross-platform architecture that provides centralized management of all adapters provided by Emulex. This enables IT administrators to manage network connectivity with one tool for maximum efficiency. OneCommand Manager also features:

- OneCommand® Manager plug-in for VMware vCenter Server—enables comprehensive control of Fibre Channel Host Bus Adapters (HBAs) and network (FCoE, iSCSI and TCP/IP NIC) connectivity solutions provided by Emulex from VMware's vCenter Server management console. Emulex OneCommand Manager plug-in for VMware vCenter Server supports both the new VMware vSphere 5.1 Web Client and the VMware vCenter Server desktop client with an identical feature set regardless of the client

Highest Performance and Reliability

More VMs per server with vEngine technology
Protocol offloads for TCP/IP and iSCSI enable more VMs per server, providing greater cost savings for server virtualization. Emulex Lab tests showed iSCSI protocol offload can support I/O for 50% more VMs than a NIC and software initiator.

Green data centers
The OCe11102-I uses the BladeEngine 3 controller with integrated Network Controller Sideband Interface (NC-SI) and KR (Backplane Ethernet) Serializer/Deserializer (SerDes) interfaces to minimize power usage. Protocol offload enables efficient use of computing resources, supports more VMs per CPU and reduces the number of servers required to support data center demands.

Advanced error checking
End-to-end data protection with hardware parity, CRC, ECC and other advanced error checking and correcting ensure that data is safe from corruption.

Controller

· BladeEngine 3

Standards

· RFC 3720 iSCSI, RFC 4171 iSNS, RFC 4544 iSCSI MIB, RFC 4545 IP Storage User Identity
· PCI Express base spec 2.0
· PCI Bus Power Management Interface, rev. 1.2
· Advanced Error Reporting (AER)
· IEEE 802.3ae (10GBASE Ethernet ports)
· IEEE 802.1q (virtual LANs)
· IEEE 802.3ad (link aggregation)
· IEEE 802.3x (flow control)
· IEEE 802.1p (quality/class of service)
· IEEE 802.1Qaz (enhanced transmission selection)
· IEEE 802.1Qaz (data center bridging capabilities exchange)
· IEEE 802.1Qbb (priority-based flow control)
· IEEE 802.1ab (link layer discovery protocol)
· PHP hot plug-hot swap

Architecture

· Dual-channel, 10GbE Link speed
· PCIe Express 2.0 (x8, 5GT/s), MSI-X support
· Integrated data buffer and code space memory

Ethernet Features

· IPv4/IPv6 TCP, UDP checksum offload; Large Send Offload (LSO); Large Receive Offload; Receive Side Scaling (RSS); TCP Segmentation Offload (TSO)
· VLAN insertion and extraction
· Jumbo frames up to 9000 Bytes
· Preboot eXecution Environment (PXE) 2.0
· Interrupt coalescing
· Load balancing and failover support including adapter fault tolerance (AFT), adaptive load balancing (ALB), teaming support and IEEE 802.3ad

iSCSI Features

· Target discovery methods
· Authentication modes
· INT 13 Boot

Comprehensive OS Support

· Windows Server
· VMware ESX
· Red Hat Enterprise Linux Server
· Novell SUSE® Linux Enterprise Server
· CentOS

Hardware Environments

· x86, x64 processor family

Interconnect

· Optical
  - Optics: 10GBASE-SR short wave lasers with LC type connector
· Copper Direct Attach
  - SFP+ Direct Attached Twin-Ax Copper interface
  - Standards compliant passive copper cables up to 5m and active copper cables up to 10m
· Copper Twisted Pair
  - Connectors: IEC 60603-7 8 Position 8 Contact (8P8C), commonly known as RJ45
  - Cables: Cat 6 up to 55m, Cat 6a up to 100m

Physical Dimensions

· Low profile with standard bracket (low-profile bracket available)

Environmental Requirements

· Operating temperature: 0° to 55° C (32 to 131° F)
· Storage temperature: -40° to 70° C (-40° to 158° F)
· Relative humidity: 5% to 95% non-condensing

Agency Approvals

North America:
  - FCC Class A
  - UL/CSA Recognized
Europe:
  - CE Mark
  - EU RoHS compliant
  - TUV Bauart Certified
Japan:
  - VCCI Class A
Taiwan:
  - BSMI Class A
Korea:
  - MSIP (formally KCC/MIC) Class A
China:
  - China RoHS Compliant

(Please refer to the product page on www.emulex.com for further details)

Ordering Information

· OCe11102-IM
  - Dual-channel, 10GBASE-SR (short reach optical)

· OCe11102-IX
  - Dual-channel, 10GBASE-CR (direct attach copper)

· OCe11102-IT
  - Dual-channel, 10GBASE-T (twisted pair copper)

· OCe10100-OPT
  - Dual-channel transceiver kit

· OC-Storage-01A
  - FCoE/iSCSI enablement

Note: *Some of these products may not be available in the U.S. Please contact your supplier for more information.*

EMULEX®