

Emulex OCe14102-UX OneConnect 10Gb CNA Dual-port with Direct Attach Copper (DAC) Connectivity

Kod producenta: OCe14102-UX



Architektura	10GbE
Złącze	SFP+
Okablowanie	Twinaxial (Cu) do 5m
Ilość portów	2
Typ złącza magistrali	PCI Express 3.0 x8
Format	Low Profile
Chipset	XE100
Technologie	SR-IOV
iSCSI HW offload	Tak
FCoE HW offload	Tak
FCoE	Tak
RoCE	1.0

An adapter within the fourth generation of the OneConnect® product line, the OneConnect® OCe14102-UX is a dual-port 10GbE Converged Network Adapter (CNA) with Direct Attach Copper (DAC) connectivity. It provides multiple benefits for the enterprise cloud, including:

- Support for lowest cost 10GbE infrastructure using CAT 6/6A/7/7A twisted pair cabling
- 10GbE cabling support up to 100m for data center deployments using structured cabling
- Increasing data center IT agility and scalability through deployment of a secure multi-tenant cloud
- Driving scalability and flexibility in converged infrastructures
- Optimizing server hardware utilization by scaling high density virtualization

The OCe14102-UX CNA is designed for the high bandwidth and scalability demands of tier 1 enterprise applications with storage protocol (Fibre Channel over Ethernet (FCoE) and iSCSI) offloads, more scalable virtualization with support for RDMA over Converged Ethernet (RoCE), enhanced Single Root I/O Virtualization (SR-IOV) and Network Interface Card (NIC) port partitioning, and cloud optimization using overlay network technology.

Emulex Virtual Network Exceleration™ (VNeX) overlay network offloads for multi-tenant cloud networking

Scaling existing technologies, for private or public multi-tenant infrastructures, requires networking solutions that can enable virtual machine (VM)-to-VM communication and virtual workload migration across Layer 2 and Layer 3 boundaries without impacting connectivity or performance.

At the same time, these solutions need to ensure isolation and security for thousands or millions of tenant networks. However, with existing technology, the available 4094 virtual Local Area Network (VLAN) IDs are insufficient to isolate/secure each tenant in a data center (private cloud) or hybrid cloud environment.

Virtual Extensible Local Area Network (VXLAN), supported by VMware and Linux; and Network Virtualization using Generic Routing Encapsulation (NVGRE), supported by Microsoft, are next generation overlay networking solutions that address these requirements. These solutions are a frame-in-frame data packet encapsulation scheme enabling the creation of virtualized Layer 2 subnets that can span physical L3 IP networks. Traffic from each VM is tunneled to a specific virtual network; the packets are then routed transparently over the existing physical infrastructure.

Emulex VNeX offload technology powered by a multi-core adapter ASIC engine accelerates the performance of network virtualization by preserving legacy stateless TCP offloads and scaling methods on encapsulated packets, providing full native network performance in a virtual network environment.

Remote Direct Memory Access (RDMA) support

The OCE14102-UT CNA leverages RoCE, enabling server to server data movement directly between application memory without any CPU involvement. This provides high throughput and data acceleration on a standard Ethernet fabric without the need for any specialized infrastructure or management.

Flexible workload storage connectivity with FCoE and iSCSI offloads

The OCE14102-UT CNA supports FCoE hardware-based offload using the same enterprise-class Emulex drivers that work with Emulex LightPulse® Fibre Channel (FC) Host Bus Adapters (HBAs). The OCE14102-UT CNA also supports iSCSI hardware-based offload, providing performance that is superior to iSCSI solutions based on software initiators and standard NICs. Finally, the OCE14102-UT CNA also has the ability to support iSCSI and FCoE offloads on the same port (i.e. concurrent storage).

Optimized host virtualization density with SR-IOV support

SR-IOV optimizes I/O for VMs, enabling higher host server virtualization ratios in order to deliver maximum server return on investment (ROI). SR-IOV provides a more cost-effective solution than multiple, physical adapter ports.

SR-IOV enables multiple VMs to directly access the OCE14102-UX I/O resources, allowing VM networking I/O to bypass the host and take a path directly between the VM and the adapter. This eliminates redundant I/O processing in the hypervisor, which in turn, allows higher I/O performance, lower CPU utilization and significantly reduced latency as compared to the alternative of software-emulated NIC devices that are implemented in the hypervisor.

Optimized bandwidth allocation with Universal Multi-Channel port partitioning (also known as NIC partitioning or NPAR)

Emulex Universal Multi-Channel™ (UMC) is ideal for virtualized server environments because bandwidth allocation can be optimized to support VM migration, management and I/O intensive applications. UMC allows multiple Peripheral Component Interconnect (PCI) physical functions (PFs) to be created on each adapter port. Each port on the dual-port OCE14102-UX can be configured with up to eight functions.

Each port can support: eight NIC functions; seven NIC functions and a storage function (iSCSI or FCoE); or six NIC functions, an iSCSI function, and a FCoE function (concurrent mode).

Simplified management with OneCommand Manager application

The OneCommand® Manager application provides centralized management of Emulex OneConnect CNAs and LightPulse® HBAs throughout the data center from a single management console. The OneCommand Manager application provides a graphical user interface (GUI) and a scriptable command line user interface (CLI). OneCommand Manager for VMware is fully integrated with VMware vCenter to simplify management for virtual server deployments.

Fourth generation platform delivers enterprise-class reliability and performance

Leveraging generations of advanced, field-proven controller and adapter technology, the OCe14102-UX CNA meets the robust interoperability and reliability requirements of enterprise and scale-out data centers.

Key benefits

- Infrastructure compatibility with widely deployed 1000BASE-T (1GbE) networks
- Flexibility to support top-of-rack, middle-of-row, end-of-row or zone distribution data center architectures
- Maximizes total cost of ownership (TCO) (server hardware ROI) with high vm density
- Simplifies deployment of secure, scalable multi-tenant cloud infrastructures
- Minimizes TCO through deployment of heterogeneous workloads on converged infrastructure
- Accelerates applications and storage performance
- Provides the bandwidth needed for slot constrained server platforms
- Reduces complexity through the deployment of a common network platform
- Reduces management, infrastructure and energy costs

Key features

- Superior network convergence—storage and network traffic over a common 10GbE infrastructure
- SR-IOV
- Data acceleration with RoCE support
- Powerful hardware offloads for:
 - Overlay networks (NVGRE and VXLAN)
 - Storage protocols: iSCSI and FCoE
 - Stateless TCP
- Greater bandwidth with PCIe 3.0
- VMware vSphere NetQueue with RSS support
- Microsoft Windows Server VMQ, Dynamic VMQ, RSS and vRSS support

Strona firmowa produktu:

<https://www.superstorage.pl/emulex-oce14102-ux-oneconnect-10gb-cna-dual-port-with-direct-attach-copper-dac-connectivity-p-2096.html>