Cisco UCS CNA M61KR-I Intel Converged Network Adapter

Cisco Unified Computing System Overview

The Cisco Unified Computing System™ is a next-generation data center platform that unites compute, network, storage access, and virtualization into a cohesive system designed to reduce total cost of ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10 Gigabit Ethernet unified network fabric with enterprise-class, x86-architecture servers. The system is an integrated, scalable, multi-chassis platform in which all resources participate in a unified management domain.

Product Overview

The Cisco® UCS CNA M61KR-I Intel Converged Network Adapter is a mezzanine card designed for use with Cisco UCS B-Series Blade Servers as part of the Cisco Unified Computing System (Figure 1). The adapter is based on the Intel 82599 10 Gigabit Ethernet controller, which is designed to meet the demanding needs of the next-generation data center by providing outstanding features for virtualization; flexibility for LAN, Fibre Channel over Ethernet (FCoE)*, and Small Computer System Interface over IP (iSCSI) SAN networking; and proven, reliable performance.

* Future availability

Figure 1.   Cisco UCS CNA M61KR-I Intel Converged Network Adapter

The Cisco UCS CNA M61KR-I provides a solution for data center environments that need energy-efficient 10 Gigabit Ethernet performance, I/O virtualization, and unified networking. Designed specifically for the Cisco UCS blades, the adapter provides a dual-port connection to the midplane of the blade server chassis (Figure 2).

The Cisco UCS CNA M61KR-I includes enhancements for virtualized I/O and unified data and storage networking. Intel Virtualization Technology for Connectivity, including Virtual Machine Device Queues (VMDq) and PCI-SIG Single-Root I/O Virtualization (SR-IOV), delivers near-native 10 Gigabit Ethernet throughput in virtualized servers while reducing CPU utilization and increasing virtual machine scalability. Hardware-based acceleration and support for native operating system FCoE and iSCSI initiators facilitate simple, scalable, unified networking performance.
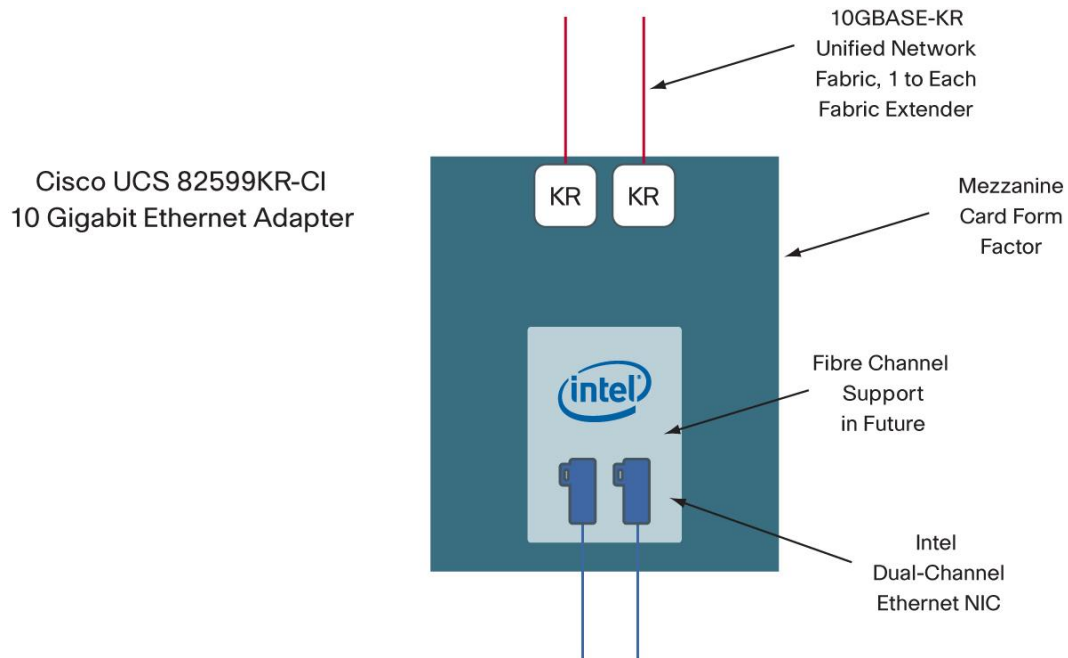
Figure 2. Cisco UCS CNA M61KR-I Intel Architecture

Table 1. Features and Benefits

Feature	Benefit
Load balancing on multiple CPUs	Increases performance on multiprocessor systems by efficiently balancing network loads across CPU cores when used with RSS for Microsoft or scalable I/O on Linux systems
VMDq	Offloads the data-sorting function from the hypervisor to the Intel Ethernet controller, improving data throughput and CPU use
PCI-SIG SR-IOV	Provides dedicated I/O to virtual machines, bypassing the software virtual switch in the virtual machine manager to deliver native 10 Gigabit Ethernet throughput with lower CPU utilization, data isolation among virtual machines, and greater virtual machine scalability
IEEE Data Center Bridging (DCB)	Supports IEEE DCB standards, providing congestion notification and enhanced flow control to deliver lossless Ethernet
iSCSI acceleration	Provides intelligent, hardware-based acceleration that supports native iSCSI initiators and accelerates iSCSI traffic while improving data processing on multicore processor-based servers
Preboot execution environment (PXE) boot	Provides faster provisioning of compute nodes

Platform Support and Compatibility

The Cisco UCS CNA M61KR-I is designed specifically for Cisco UCS blades and works in a dedicated environment with Cisco UCS Manager.

Table 2. Specifications

Item	Specification
Standards	10-Gbps Ethernet, IEEE 802.3ae (XAUI), IEEE 802.3, IEEE 802.1Q (VLAN), IEEE 802.1p, 1000BASE-BX, and jumbo frames up to 16 KB
Components	Intel 82599 10 Gigabit Ethernet controller
Ports	2X 10 Gigabit Ethernet mezzanine connectors

Item	Specification
Connectivity	1000BASE-BX, KR, Cisco Unified Computing System midplane
Performance	Latency 10 to 12 microseconds
Network Management	Cisco UCS Manager v1.3.1
Network (or programming or other) interfaces	2X 10 Gigabit Ethernet
Physical dimensions	• Length: 7.25 in. (18.4 cm) • Width: 3.65 in. (9.3 cm)
Typical power	6 watts (W)
Inlet operating temperature range	50 to 95°F (10 to 35°C)

System Requirements

The Cisco UCS CNA M61KR-I mezzanine card is designed for use only on Cisco UCS B-Series Blade Servers. Each half width server including the Cisco UCS B200 M1and M2 and UCS B230 M1 supports one mezzanine adapter, and each full width server including the Cisco UCS B250 M1 or M2 and UCS B440 M1 supports up to two adapters. The adapter is not designed or intended for other purposes.

Find warranty information at Cisco.com on the Product Warranties page.

Cisco Unified Computing Services

Using a unified view of data center resources, Cisco and our industry-leading partners deliver services that accelerate your transition to a unified computing architecture. Cisco Unified Computing Services help you quickly deploy your data center resources, simplify ongoing operations, and optimize your infrastructure to better meet your business needs. For more information about these and other Cisco Data Center Services, visit http://www.cisco.com/go/unifiedcomputingservices.

Why Cisco?

The Cisco Unified Computing System continues Cisco's long history of innovation in delivering integrated systems for improved business results based on industry standards and using the network as the platform. Recent examples include IP telephony, LAN switching, unified communications, and unified I/O. Cisco began the unified computing phase of our Data Center 3.0 strategy several years ago by assembling an experienced team from the computing and virtualization industries to augment our own networking and storage access expertise. As a result, Cisco delivered foundational technologies, including the Cisco Nexus® Family, supporting unified fabric and server virtualization. The Cisco Unified Computing System completes this phase, delivering innovation in architecture, technology, partnerships, and services. Cisco is well-positioned to deliver this innovation by taking a systems approach to computing that unifies network intelligence and scalability with innovative application-specific circuits (ASICs,) integrated management, and standard computing components.

For More Information

For more information about the Cisco UCS CNA M61KR-I Intel Converged Network Adapter, visit http://www.cisco.com/en/US/products/ps10265/index.html or contact your local Cisco representative.

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