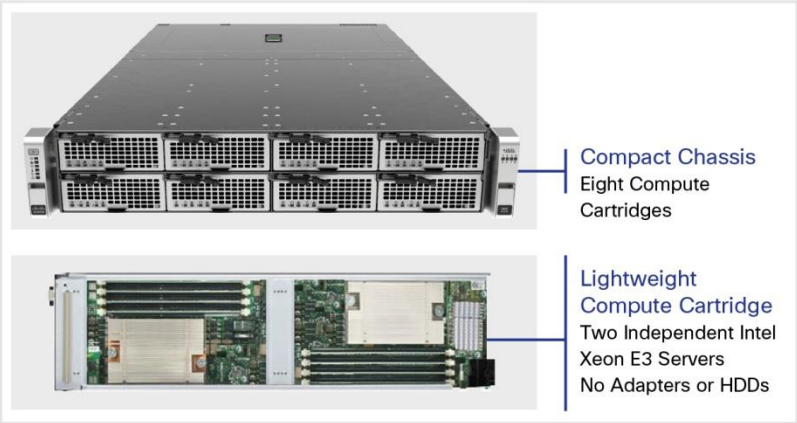
Cisco UCS M142 Compute Cartridge

Cisco UCS Compute Cartridge for Cisco UCS M-Series

Cisco UCS® M-Series Modular Servers are designed to meet the high-performance demands of massively parallelized, predominantly single-threaded applications. They combine Cisco® Virtual Interface Card (VIC) technology and server fabric management with x86 computing elements in a dense, modular architecture that delivers no-compromise application performance.

The Cisco UCS M142 Compute Cartridge (Figure 1) has two independent server nodes. Each server node has a single-socket Intel® Xeon® processor E3 series CPU with up to 64 GB of memory. The cartridge also features a baseboard management controller (BMC) on the server node. Meeting the density and power efficiency objectives of cloud-scale computing, the M142 supports low-power-consumption CPUs that provide optimal performance for specific applications. Applications that are suited to run on the M142 include online content delivery, dedicated hosting, financial modeling, and business analytics. The M142 also supports E3-1200 v4 CPUs, which are ideal for data center graphics. The E3-1200 v4 product family can help address the growing demand for high-quality video and complex 3D applications faster and at a lower total cost.

Figure 1. Cisco UCS M142 Compute Cartridge



Overview

The Cisco UCS M142 Compute Cartridge loads directly into the front of the Cisco UCS M4308 Modular Chassis. The M4308 chassis can hold up to eight M142 cartridges. The cartridges are hot pluggable and can be serviced without needing any tools. The system and domain discovery of all cartridges and the subsequent management is provided entirely by Cisco UCS Manager, which is embedded in the Cisco UCS fabric interconnects.

Cisco UCS with
Intel® Xeon® Processors

The Cisco UCS M142 Compute Cartridge includes:

- Two independent servers, each powered by one Intel Xeon processor E3 series CPU
- CPU options currently are:
  - E3-1200 v3 series processors
    - Intel Xeon processor E3-1275L v3 (8-MB cache, 2.7 GHz), 4 cores, and 45W
    - Intel Xeon processor E3-1240L v3 (8-MB cache, 2.0 GHz), 4 cores, and 25W
    - Intel Xeon processor E3-1220L v3 (4-MB cache, 1.1 GHz), 2 cores, and 13W
    - 32-GB memory (4 * 8 GB UDIMM DDR3 1600 MHz)
  - E3-1200 v4 series processors
    - Intel Xeon processor E3-1265L v4 (6-MB cache, 2.3 GHz), 4 cores, and 35W
    - Intel Xeon processor E3-1270L v4 (6-MB cache, 3.0 GHz), 4 cores, and 45W
    - 32 GB memory (4 * 8 GB UDIMM DDR3 1600 MHz)
    - 64 GB memory (4 * 16 GB UDIMM DDR3 1600 MHz)

The M4308 chassis is physically cabled to the Cisco UCS 6200 Series Fabric Interconnects. The fabric interconnects provide the management and communication backbone for the chassis and the installed computing cartridges. Up to 20 M4308 chassis and the associated cartridges can be attached to a pair of fabric interconnects and managed as part of a single domain. Centralized unified management is provided by Cisco UCS Manager, which comes embedded on the fabric interconnects at no additional charge.

Table 1 summarizes the features and benefits of the Cisco UCS M142 Compute Cartridge.

Table 1. Features and Benefits

Feature	Benefit
Unique architecture enabling 16 servers in a 2 RU footprint and up to 320 servers (1280 cores) in a single data center rack	The industry-leading server density offered by the Cisco UCS M-Series results in significant cost savings for data center customers deploying a large number of smaller server-to-host highly parallelized workloads.
Unified embedded management integrating servers, network, and storage provided by the proven Cisco UCS Manager	Single pane of glass to provision and manage all components in the rack without the need to switch from one console to another.
Policy-based provisioning and management enabled by Cisco UCS service profiles	Service profiles augmented with the newly unleashed storage profiles significantly enable the dynamic slicing of centralized resources and ensures quality of service (QoS) for the deployed workloads.
Modular chassis with hot-pluggable components	The Cisco UCS M-Series enhances serviceability by providing easy replacement options without tools for almost all the field-replaceable units (FRUs), and thereby minimizing or eliminating downtime.
Reduced power consumption per server	The Cisco UCS M-Series uses the latest low-power-consuming CPUs to deliver optimized performance per watt.

Main Features of the Cisco UCS M142 Compute Cartridge

Table 2 presents the main characteristics of the Cisco UCS M142 Compute Cartridge.

Table 2. Main Features

Processors per node (server)	1 Intel Xeon processor E3-1200 v3, two or quad core Or 1 Intel Xeon processor E3-1200 v4, quad core
Compute nodes (servers) per cartridge	2 independent nodes (servers) per cartridge
Memory per node	Up to 64 GB of memory per node
Compute cartridges per chassis	8 independent front-load cartridges per chassis
Disk drives	4 SSDs, scaling from 480-GB SATA to 6.40-TB SAS provided by Cisco UCS M4308 Modular Chassis
I/O	2 40-Gbps throughput provided by Cisco UCS M4308 Modular Chassis
Power	2 1400W power supplies provided by Cisco UCS M4308 Modular Chassis
Management	Stateless model-based management by Cisco UCS Manager provided by Cisco UCS 6200 Series Fabric Interconnect

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