Cisco UCS E-Series Network Compute Engine

Product Overview

Cisco UCS® E-Series Network Compute Engine, part of the Cisco Unified Computing System™ (Cisco UCS), are newest E-Series brand of products that are price and power-optimized general-purpose x86 64-bit compute modules designed to be deployed in Cisco® Integrated Services Routers Generation 2 (ISR G2; Figure 1) and 4400 series networking platforms.

These powerful, small form factor, x 86 64-bit blade modules are housed within Cisco Integrated Services Routers Generation 2 (ISR G2) and 4400 series networking platforms and are designed to host essential infrastructure services and mission-critical business applications in the lean branch office. By using the Cisco ISR G2 as the chassis, customers can now deploy a single converged networking and computing platform designed specifically for remote-office and branch-office infrastructure consolidation.

The Cisco UCS E-Series Network Compute engine is a series of compute modules in which are both price and power optimized. The first compute module in this series delivers a high-performance yet power-efficient Intel® Pentium® Processor B925C (4M Cache, 2.00 GHz) product family with two cores in combination with integrated remote lights-out management in a service module form factor. The innovative, zero footprint form factor of the Cisco UCS E- Series Network compute Engine in conjunction with the Intel® Pentium® processor B925C product family offer significantly lower total cost of ownership (TCO), increased business agility, and greater reliability when compared to standalone rack-mount and tower servers.

Figure 1: Cisco UCS E-Series Network Compute Engine with Cisco 3945 ISR

Applications

Cisco UCS E-Series Network Compute engine provide excellent performance and value for workloads including the following:

- Network Applications: vWaaS, vWLC, Unity Connection and a host of other network applications
- Core Microsoft Windows services: Microsoft Active Directory Domain Services (AD DS), Microsoft Windows print services, Dynamic Host Configuration Protocol (DHCP) server services, Domain Name System (DNS) server services, file services, and others

- Mission-critical business applications: Cloud Connectors to mission critical business applications and storage, Point-of-sale (POS) systems, bank teller in-office control points (IOCPs), electronic-medical-record (EMR) systems, inventory management systems, and others
- Client-management services: Configuration and operations management, monitoring services, update and patching services, backup and recovery services, terminal server gateways, and others
- Other remote-office and branch-office applications

Features and Benefits

The Cisco UCS E-Series Network Compute Engine extend the Cisco UCS product portfolio to meet the needs of customers who want to deploy a virtualization-ready computing infrastructure in a branch-office environment while maintaining a lean branch-office architecture. By combining virtualization with the servers, organizations can deploy new services incrementally on a schedule that best meets the organization's timing and budget while avoiding service- call costs for on-site visits to deploy new hardware or software.

The UCS EN120S is the first blade in the UCS E-Series Network Compute Engine series. This module is powered by a high-performance yet power-efficient Intel® Pentium® Processor B925C (4MB Cache, 2 GHz) product family with two cores and occupies a single service module slot in the Cisco ISR G2 device. The module can take up to 16 GB of RAM, and upto 2 terabytes (TB) of local storage.

Table 1 summarizes the features and benefits of the Cisco UCS E-Series Network Compute Engine.

Table 1: Features and Benefits

Feature	Benefit
Integrated networking	Two internal Gigabit Ethernet interfaces
Virtualization optimization	Intel®Pentium® processor B925C product families using Intel Hyper-Threading Technology as well as Intel Virtualization Technology (VT-x)
Two -core Intel Pentium processors	Energy-efficient, high-performance processors, providing increased performance in a compact form factor
Hot-swappable SAS drives and SATA drives	Up to two front-accessible, hot-swappable, internal 2.5-inch server-class SATA, SAS drives Balanced performance and capacity to best meet application needs: • 10,000-rpm SAS drives for high performance and value • 7200-rpm SATA II drives for high capacity and value
Hardware RAID 0 and 1support	Hardware RAID 0 and 1 support on single-wide blades LSI 2004 controller
Cisco Integrated Management Controller (IMC)	• Web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration • Virtual media support for remote CD and DVD drives as if local • Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems • Command-line interface (CLI) for server management • Integration with Cisco IOS® Software for optional management of the servers from within the router CLI and operating environment • One 10/100BASE-T out-of-band management interface

Feature	Benefit
Integrated external Gigabit Ethernet ports	Single-wide blades: 1 external Gigabit Ethernet port
Front-panel connectors	Front-panel VGA, 2 USB, and serial console connectors

Platform Support and Compatibility

Unlike the previous generation of Cisco UCS Express modules, Cisco UCS E-Series Network Compute Engines are designed to support multiple hypervisors, including:

- Operating systems
  - Microsoft Windows Server 2012 R2
- Hypervisors
  - Microsoft Hyper-V
  - VMware vSphere 5.5

Product Specifications

Table 2 lists the specifications for the Cisco UCS E-Series Network Compute Engine.

Table 2: Product Specifications

Feature	Cisco UCS EN120S M2 (Single-Wide Blade)
CPU	Intel® Pentium® Processor B925C (4MB Cache, 2 GHz)
DRAM	4 GB (default: one 4-GB DIMM) and up to 16 GB (two 8-GB DIMMs)
Hard-disk drive (HDD)	Up to two: • 7200-rpm SATA: 500 GB • 7200-rpm SATA: 1 TB • 10,000-rpm SAS: 900 GB
RAID options	Hardware RAID 0 and 1 LSI 2004 controller
Network interface cards (NICs)	Two internal and one external Gigabit Ethernet ports
Supported Cisco ISRs	Cisco 2911, 2921, 2951, 3925, 3925E, 3945, 3945E, and 4451-X
PCIe	None
Cisco Integrated management Controller (CIMC)	• Integrated Emulex Pilot-3 baseboard management controller (BMC) • IPMI 2.0 compliant for management and control • One 10/100 Ethernet out-of-band management interface • CLI and WebGUI management tool for automated, lights-out management KVM

Feature	Cisco UCS E140S (Single-Wide Blade)
Secure Digital (SD) cards	Upto two SD cards. Ships defaults with 8GB Sd that is preloaded with the Cisco IMC and can be used as temporary storage of OS and hypervisor installation images
Front-panel connectors	One KVM console connector (supplies 2 USB, 1 VGA, and 1 serial connector)
Physical dimensions (H x W x D)	1.58 x 7.44 x 7.5 in. (4 x 18.9 x 19.1 cm)
Maximum weight	2.5 lb (1.1 kg)
Temperature: Operating	According to operating requirements of deployable platform: • 32 to 104°F (0 to 40°C) normal
Temperature: Nonoperating	-4 to 149°F (-20 to 65°C)
Humidity: Operating	According to operating requirements of deployable platform: • 10 to 85% operating
Humidity: Nonoperating	5 to 95%
Altitude: Operating	104°F (40°C) at sea level to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: Nonoperating	15,000 ft (4600m)

Product Specifications

Table 3 lists regulatory standards compliance information.

Table 3: Regulatory Standards Compliance: Safety and EMC

Specification	Description
Safety	• UL 60950-1 Second Edition • CAN/CSA-C22.2 No. 60950-1 • IEC 60950-1 Second Edition • EN 60950-1 Second Edition • AS/NZS 60950-1
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI V-3 Class I • EN61000-3-2 • EN61000-3-3 • EN300386 Class A • CNS13438 Class A

Specification	Description
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • EN50082-1 Part 1 • EN 61000 6-1

System Requirements

Cisco IOS Software Release 15.2(4)M for Cisco 2911, 2921, 2951, 3925, 3925E, 3945, and 3945E ISRs and 15.3(3)S (XE 3.10) on ISR 4400.

Warranty Information

Cisco UCS-E Series Servers are covered by a 90-day warranty. Find warranty information on Cisco.com on the Product Warranties page.

Ordering Information

To place an order, visit the Cisco Ordering homepage and refer to Table 4. To download software, visit the Cisco Software Center.

Table 4: Ordering Information

Part Number	Product Description
UCS-EN120S-M2/K9	UCS E-Series Network compute engine 2-Core Service Module, 4-16GB RAM, 1-2 HDD, 1-2 SD Cards
E100S-MEM-UDIMM4G	4GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E
E100S-MEM-UDIMM4G=	4GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E, Spare
E100S-MEM-UDIMM8G	8GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E
E100S-MEM-UDIMM8G=	8GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E, Spare
E100S-HDD-SAS900G	900 GB, 10k RPM SAS hard disk drive for SingleWide UCS-E
E100S-HDD-SAS900G=	900 GB, 10k RPM SAS hard disk drive for SingleWide UCS-E, Spare
E100S-HDD-SATA1T	1 TB, 7200 RPM SATA hard disk drive for SingleWide
E100S-HDD-SATA1T=	1 TB, 7200 RPM SATA hard disk drive for SingleWide UCS-E, Spare
E100S-HDDSATA500G	500GB, SATA hard disk drive for SingleWide UCS E-Series
E100S-HDDSATA500G=	500GB, SATA hard disk drive for SingleWide UCS E-Series, Spare

Cisco Services

Cisco UCS E-Series Network Compute Engine hardware support is covered by the Cisco SMARTnet® contract for the router in which the module resides. Cisco SMARTnet technical support is available on a one-time or annual contract basis. Support options range from help-desk assistance to proactive, onsite consultation.

All support contracts include:

- Major Cisco IOS Software updates for protocol, security, bandwidth, and feature improvements
- Full access rights to Cisco.com technical libraries for technical assistance, electronic commerce, and product information
- Access to the industry's largest dedicated technical support staff 24 hours a day

For more information about Cisco services, refer to Cisco Technical Support Services or Cisco Advanced Services.

Cisco and Partner Services for the Branch Office

Services from Cisco and our certified partners can help you transform the branch-office experience and accelerate business innovation and growth in Cisco Borderless Networks. Cisco has the depth and breadth of expertise to create a clear, replicable, optimized branch-office footprint across technologies. Planning and design services align technology with business goals and can increase the accuracy, speed, and efficiency of deployment. Technical services help improve operation efficiency, save money, and mitigate risk. Optimization services are designed to continuously improve performance and help your team succeed with new technologies. For more information, visit http://www.cisco.com/go/services.

For More Information

For more information about Cisco UCS E-Series Servers, visit http://www.cisco.com/go/ucse/ or contact your local Cisco account representative.

For more information about Cisco products, contact:

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