Cisco UCS E-Series Servers

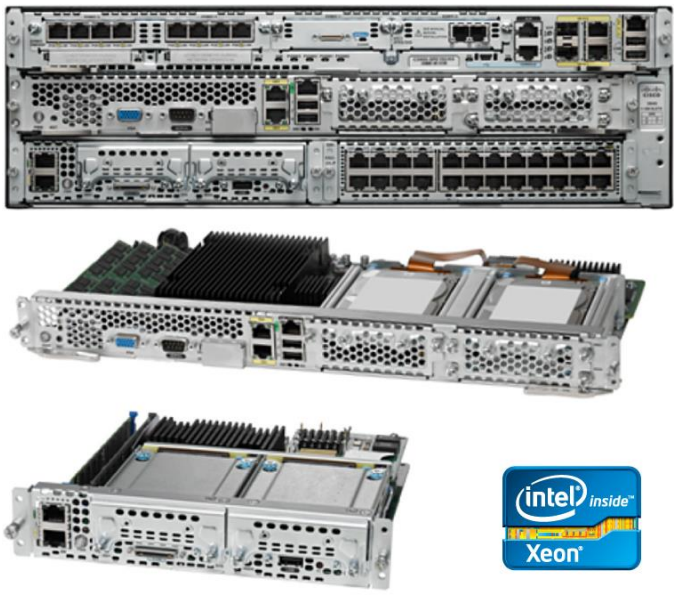
Product Overview

Cisco UCS® E-Series Servers, part of the Cisco Unified Computing System™ (Cisco UCS), are next-generation, power-optimized, general-purpose x86 64-bit blade servers designed to be deployed in Cisco® Integrated Services Routers Generation 2 (ISR G2; Figure 1 and ISR 4400 networking platforms).

These price-to-performance optimized single-socket blade servers balance simplicity, performance, reliability, and power efficiency and are well suited for applications and infrastructure services typically deployed in small and branch offices. By using the Cisco ISR G2 as the blade server chassis, customers can now deploy a single converged networking and computing platform designed specifically for remote- and branch-office infrastructure consolidation.

Cisco UCS E-Series Servers deliver next-generation Intel® Xeon® processor E5-2400 and E3-1100 product family technology in combination with integrated remote lights-out management in a blade server form factor. These powerful processors deliver multiple cores and threads in a reduced-power envelope, providing improved performance and better energy efficiency than preceding models, making them an excellent platform for introducing virtualization into the branch office. The innovative, zero-footprint form factor of the Cisco UCS E-Series Servers in conjunction with the Intel® Xeon® processor E5-2400 and E3-1100 product families 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 Servers with Cisco 3945 ISR



Applications

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

- Core Microsoft Windows services: Microsoft Active Directory Domain Services (AD DS), MicrosoftWindows print services, Dynamic Host Configuration Protocol (DHCP) server services, Domain NameSystem (DNS) server services, file services, and others
- Mission-critical business applications: Point-of-sale (POS) systems, bank teller in-office control points (IOCPs), electronic-medical-record (EMR) systems, inventory management systems, VDI 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- and branch-office applications

Features and Benefits

The Cisco UCS E-Series Servers 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 onsite visits to deploy new hardware or software.

The servers are available in two form factors: a singlewide blade and a doublewide blade. The singlewide blade includes a four-core Intel Xeon E3-1100 processor and occupies a single service-module slot in the Cisco ISR G2 device. The doublewide blade occupies two Cisco ISR G2 service-module slots side-by-side and includes either a four- or six-core Intel Xeon E5-2400 processor with more RAM and storage capacity than the singlewide module. The doublewide blade also has a PCI Express (PCIe) card option for expanding external network and storage I/O.

Table 1 summarizes the features and benefits of the Cisco UCS E-Series Servers.

Table 1: Features and Benefits

Feature	Benefit
Integrated networking	Two internal Gigabit Ethernet interfaces
Virtualization optimization	Intel®Xeon® processor E3-1100 and E5-2400 product families using Intel Hyper-Threading Technology as well as Intel Virtualization Technology (VT-x)
Four- or six-core Intel Xeon processors	Energy-efficient, high-performance processors, providing increased performance in a compact form factor
Hot-swappable SAS drives, SAS self-encrypting drives (SEDs), and SATA solid-state drives (SSDs)	Up to three front-accessible, hot-swappable, internal 2.5-inch server-class SATA, SAS drives, SAS SEDs, or SATA SSDs Balanced performance and capacity to best meet application needs: • SAS single-level cell (SLC) and enterprise multilevel cell (eMLC) SSDs • 10,000-rpm SAS drives for high performance and value with SED option for security for data at rest

Feature	Benefit
Hardware RAID 0, 1, and 5 support	• Hardware RAID 0 and 1 support on singlewide blades and doublewide blades with the PCIe card option • Hardware RAID 0, 1, and 5 support on doublewide blades without the PCIe card option • 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
PCIe card support for additional network and storage I/O	Additional I/O performance and flexibility with four 1 Gigabit Ethernet or one 10 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) options (available in double-wide blades only)
Integrated external Gigabit Ethernet ports	Singlewide blades: 1 external Gigabit Ethernet port Doublewide blades: 2 external Gigabit Ethernet ports
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 Servers are designed to support multiple bare-metal operating systems and hypervisors, including:

- Operating systems
  - Microsoft Windows Server
  - Red Hat Enterprise Linux (RHEL)
  - SuSE Linux
  - Oracle Enterprise Linux
- Hypervisors
  - Microsoft Hyper-V
  - VMware vSphere
  - Citrix XenServer

Product Specifications

Table 2 lists the specifications for the Cisco UCS E-Series Servers.

Table 2: Product Specifications

Feature	Cisco UCS E140S M1 and M2 (singlewide blade)	Cisco UCS E140D, E140DP, E160D, and E160DP (doublewide blades)
CPU	Intel® Xeon® processor E3-1105C (6-MB cache, 1.00 GHz, and 4 cores) for M1 and Intel® Xeon® processor E3-1105C v2 (6-MB cache, 1.8 GHz, and 4 cores for M2)	• Intel® Xeon® processor E5-2418L (10-MB cache, 2.0 GHz, and 4 cores) • Intel® Xeon® processor E5-2428L (15-MB cache, 1.8 GHz, and 6 cores)
DRAM	8 GB (default: one 8-GB dual in-line memory module [DIMM]) and up to 16 GB (two 8-GB DIMMs)	8 GB (default) and up to 48 GB (three 16-GB DIMMs)
Hard-disk drive (HDD)	Up to two: • 7,200-rpm SATA: 1 TB • 10,000-rpm SAS: 900 GB • 10,000-rpm SAS SED: 600 GB • SAS SSD SLC: 200 GB • SAS SSD eMLC: 200 and 400 GB	Up to three (Cisco UCS E140D or E160D) or two (Cisco UCS E140DP or E160DP): • 7,200-rpm SATA: 1 TB • 10,000-rpm SAS: 900 GB • 10,000-rpm SAS SED: 600 GB • SAS SSD SLC: 200 GB • SAS SSD eMLC: 200 and 400 GB
RAID options	• Hardware RAID 0 and 1 • LSI 2004 controller	• Cisco UCS E140D and E160D: Hardware RAID 0, 1, and 5 • Cisco UCS E140DP and E160DP: Hardware RAID 0 and 1 • LSI 2004 controller
Network interface cards (NICs)	Two internal and one external Gigabit Ethernet ports	Two internal and two external Gigabit Ethernet ports
Supported Cisco ISRs	Cisco 2911, 2921, 2951, 3925, 3925E, 3945, 3945E and 4451-X	• Cisco UCS E140D and E140DP: Cisco 2921, 2951, 3925, 3925E, 3945, 3945E and 4451-X • Cisco UCS E160D and E160DP: Cisco 3925, 3925E, 3945, 3945E and 4451-X
PCIe	None	Cisco UCS E140DP and E160DP: Four 1 Gigabit Ethernet or one 10 Gigabit Ethernet and FCoE
Cisco UCS IMC	• 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	• Integrated Emulex Pilot-3 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 M1 and M2 (singlewide blade)	Cisco UCS E140D, E140DP, E160D, and E160DP (doublewide blades)
Secure digital (SD) cards	Two SD cards: one for the Cisco UCS Cisco IMC and temporary storage of OS and hypervisor installation images, and one for a blank virtual drive on which you can install an OS or a hypervisor	Two SD cards: one for the Cisco UCS Cisco IMC and temporary storage of OS and hypervisor installation images, and one for a blank virtual drive on which you can install an OS or a hypervisor
Front-panel connectors	One KVM console connector (supplies 1 VGA, 1 serial, and 2 USB connectors)	Front-panel VGA, 2 USB, and serial console connectors
Physical dimensions (H x W x D)	1.58 x 7.44 x 7.5 in. (4 x 18.9 x 19.1 cm)	1.58 x 16.23 x 7.5 in. (4 x 41.2 x 19.1 cm)
Maximum weight	2.5 lb (1.1 kg)	7 lb (3.2 kg)
Temperature: Operating	According to operating requirements of deployable platform: • 32 to 104°F (0 to 40°C) normal	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)	–4 to 149°F (–20 to 65°C)
Humidity: Operating	According to operating requirements of deployable platform: • 10 to 85% operating	According to operating requirements of deployable platform: • 10 to 85% operating
Humidity: Nonoperating	5 to 95%	5 to 95%
Altitude: Operating	104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m	104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: Nonoperating	15,000 ft (4600m)	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
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • EN50082-1 Part 1 • EN 61000 6-1

System Requirements

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

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-E140S-M1/K9	Cisco UCS E-Series Single-Wide Server Blades, Intel Xeon E3 1100 v1 Quad Core processor, 8GB RAM, 2 SD cards
UCS-E140S-M2/K9	Cisco UCS E-Series Single-Wide Server Blades, Intel Xeon E3 1100 v2 Quad Core processor, 8GB RAM, 2 SD cards
UCS-E140D-M1/K9	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Quad Core processor, 8GB RAM, 2 SD cards
UCS-E140DP-M1/K9	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Quad Core processor, 8GB RAM, 2 SD cards, PCIe card
UCS-E160D-M1/K9	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Six Core processor, 8GB RAM, 2 SD cards
UCS-E160DP-M1/K9	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Six Core processor, 8GB RAM, 2 SD cards, PCIe card
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-SSD200G	200 GB, SAS SLC SSD hard disk drive for SingleWide UCS-E
E100S-HDD-SSD200G=	200 GB, SAS SLC SSD hard disk drive for SingleWide UCS-E, Spare
E100S-SSD200-EMLC	200 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E
E100S-SSD200-EMLC=	200 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E, Spare
E100S-SSD400-EMLC	400 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E
E100S-SSD400-EMLC=	400 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E, Spare
E100S-HDD-SATA1T	1 TB, 7200 RPM SATA hard disk drive for SingleWide UCS-E
E100S-HDD-SATA1T=	1 TB, 7200 RPM SATA hard disk drive for SingleWide UCS-E, Spare
E100S-HDSASED600G	600 GB, SAS SED hard disk drive, for SingleWide UCS-E
E100S-HDSASED600G=	600 GB, SAS SED hard disk drive, for SingleWide UCS-E, Spare
E100D-MEM-RDIMM4G	4GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
E100D-MEM-RDIMM4G=	4GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
E100D-MEM-RDIMM8G	8GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
E100D-MEM-RDIMM8G=	8GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare

Part Number	Product Description
E100D-MEM-RDIM16G	16GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
E100D-MEM-RDIM16G=	16GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
E100D-HDD-SAS900G	900 GB, 10k RPM SAS hard disk drive for DoubleWide UCS-E
E100D-HDD-SAS900G=	900 GB, 10k RPM SAS hard disk drive for DoubleWide UCS-E, Spare
E100D-HDD-SSD200G	200 GB, SAS SLC SSD hard disk drive for DoubleWide UCS-E
E100D-HDD-SSD200G=	200 GB, SAS SLC SSD hard disk drive for DoubleWide UCS-E, Spare
E100D-SSD200-EMLC	200 GB, SAS eMLC SSD hard disk drive for DblWide UCS-E
E100D-SSD200-EMLC=	200 GB, SAS eMLC SSD hard disk drive for DblWide UCS-E, Spare
E100D-SSD400-EMLC	400 GB, SAS eMLC SSD hard disk drive for DblWide UCS-E
E100D-SSD400-EMLC=	400 GB, SAS eMLC SSD hard disk drive for DblWide UCS-E, Spare
E100D-HDD-SATA1T	1 TB, 7200 RPM SATA hard disk drive for DoubleWide UCS-E
E100D-HDD-SATA1T=	1 TB, 7200 RPM SATA hard disk drive for DoubleWide UCS-E, Spare
E100D-HDSASED600G	600 GB, SAS SED hard disk drive for DoubleWide UCS-E
E100D-HDSASED600G=	600 GB, SAS SED hard disk drive for DoubleWide UCS-E, Spare

Cisco Services

Cisco UCS E-Series Servers 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:

- United States and Canada: 800 553 6387
- Europe: +32 2 778 4242
- Australia: +612 9935 4107
- Other: 408 526 7209

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