

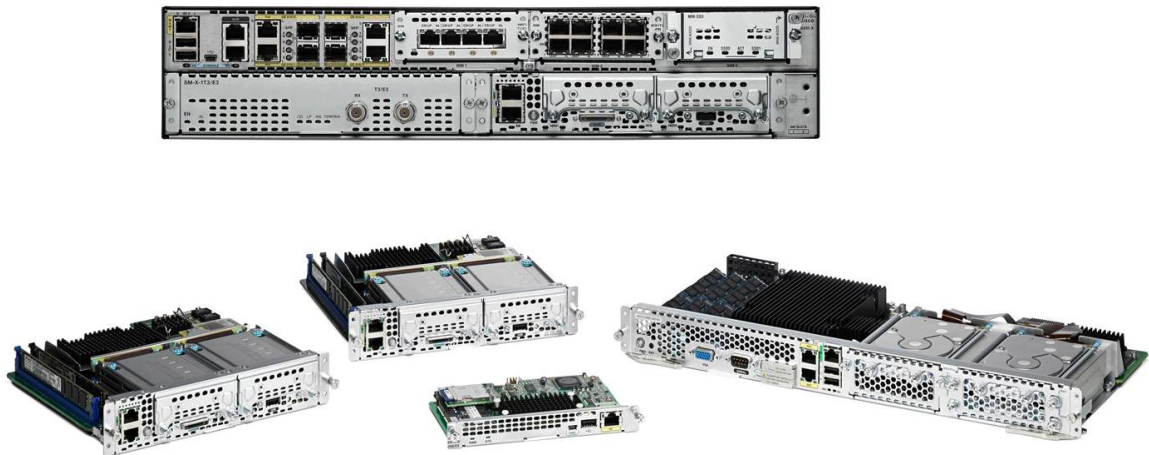
# Cisco UCS E-Series Servers and Network Compute Engines

With powerful, data center-class servers that are virtualization-ready, you can host business applications and network services right in your branch-office router.

## Product Overview

Cisco UCS<sup>®</sup> E-Series Servers and Cisco UCS E-Series Network Compute Engines (NCEs) bring data center-class blade servers to the branch office. These powerful, small-form-factor, x86 64-bit blade servers reside in Cisco branch-office routers: the Cisco 4000 Series Integrated Services Routers and Cisco Integrated Services Routers Generation 2 (ISR G2) networking platforms. The blades are virtualization ready and host essential infrastructure services and mission-critical business applications - all while you maintain a lean branch-office environment (Figure 1).

**Figure 1.** Cisco UCS E-Series Servers with Cisco 4451-X ISR



## Product Details

### Cisco UCS E-Series Servers

Cisco UCS E-Series Servers are available in two form factors: a single-wide module and a double-wide module. The single-wide version includes a four-core Intel Xeon processor E3-1105Cv2 and occupies a single service-module slot in the Cisco 4000 Series ISR and Cisco ISR G2 platforms. The double-wide module occupies two service-module slots side by side and includes a four-, six-, or eight-core Intel Xeon processor E5-2400v2 with more RAM and storage capacity than the single-wide module. The four- and six-core Cisco UCS E-Series M1 double-wide version also has a PCI Express (PCIe) card option for expanding external network and storage I/O.

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All the servers are high-density, single-socket blade servers. They balance simplicity, performance, and application density while operating in an energy-efficient environment. The servers deliver next-generation Intel Xeon processor E5-2400 and E3-1100 product family technology in combination with integrated remote lights-out management. They support multiple cores and threads in a reduced-power envelope, providing improved performance and better energy efficiency than preceding models.

They thus provide an excellent platform for introducing virtualization into the branch office and supporting mission-critical business applications. 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 lower total cost of ownership (TCO), increase business agility, and enhance reliability when compared to standalone rack-mount and tower servers.

Eight Cisco UCS E-Series Server models are available, with support for different amounts of CPU, memory, and storage capacity. Their part numbers follow:

- UCS-E140S M2
- UCS-E160D M2
- UCS-E180D M2
- UCS-E140S M1
- UCS-E140D M1
- UCS-E140DP M1
- UCS-E160D M1
- UCS-E-160DP M1

### **Cisco UCS E-Series Network Compute Engines**

The Cisco UCS E-Series NCEs are computing modules that are both price and power optimized. They come in three form factors: a single-wide service module, a double-wide enhanced high-speed WAN interface card (EHWIC) for the ISR G2 platform, and a network interface module (NIM) form factor for the 4000 Series ISR platform.

- The service module fits into the ISR G2 and 4000 Series ISR networking platforms. It delivers a high-performance, power-efficient Intel Pentium processor B925C (4-MB cache and 2.00 GHz) product family with two cores in combination with integrated remote lights-out management.
- The double-wide EHWIC fits in the ISR G2 networking platform only. It runs the Intel Atom processor C2358 (1-MB cache and 1.70 GHz) and is available in multiple versions with a variety of DRAM and hard-disk capacities.
- The NIM fits in the 4000 Series ISR only. It runs the Intel Atom processor C2518 (1-MB cache and 1.70 GHz) and is available in multiple versions with a variety of DRAM and hard-disk capacities.

The zero-footprint form factor of the NCEs make them excellent for hosting Cisco network applications and other lightweight applications in your branch offices.

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Six Cisco UCS E-Series NCE blades are available, with different amounts of CPU, memory, and storage capacity. Their part numbers follow:

- UCS-EN120S M2
- UCS-EN140N M2
- UCS-EN120E-54
- UCS EN120E-58
- UCS EN120E-108
- UCS EN120E-208

### Applications for Cisco UCS E-Series Servers and NCEs

Cisco UCS E-Series Servers and NCEs provide excellent performance and value for these and other types of workloads:

- Network applications: Cisco Virtual Wide Area Application Services (vWAAS), Cisco Virtual Wireless LAN Controller (vWLC), Cisco Unity® Connection, Cisco ISR with FirePOWER™ Services, Cisco Energy Management and other Cisco applications
- Mission-critical business applications: Point-of-sale (POS) systems, bank teller in-office control points (IOCPs), electronic-medical-record (EMR) systems, inventory management systems, and cloud connectors
- 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, and file services
- Client-management services: Configuration and operations management, monitoring services, update and patching services, backup and recovery services, and terminal server gateways

Whereas the Cisco UCS E-Series Servers can virtualize multiple applications of higher workloads, the NCEs are most suited to host network applications and other lightweight applications at your branch-office location.

### Features and Benefits

The Cisco UCS E-Series Servers and NCEs easily extend the Cisco Unified Computing System™ (Cisco UCS) data center portfolio to branch-office environments. By adding virtualization to the servers, you can deploy new services incrementally on a schedule that best meets your timing and budget. Meanwhile, you avoid service-call costs for onsite visits to deploy new hardware or software.

Cisco UCS E-Series Servers and NCEs address your changing business needs in the following ways:

- **Reduced operational burden:** Through a consolidated, wire-free infrastructure, Cisco UCS E-Series Servers and NCEs make the addition of new services and infrastructure quick and easy.
- **Simplified system maintenance:** Cisco UCS E-Series Servers ease physical server provisioning and system maintenance.
- **Enhanced server management:** Built-in lights-out server management through the Cisco® Integrated Management Controller (IMC) runs on the same dedicated baseboard management controller hardware found in all Cisco UCS products. This feature provides standalone management consistency with Cisco UCS C-Series Rack Servers for both local and remote server monitoring and configuration management.

- **Stronger physical security:** The blades require no external network cables or physical keyboard, video, or mouse (KVM). They can therefore be easily secured in a wiring closet or other secure location without compromising manageability - which is difficult to do with traditional tower and rack-mount servers.
- **Small footprint:** Cisco UCS E-Series Servers include multicore x86 64-bit Intel Xeon processors. You can reduce your branch-office server footprint by incorporating high-performance, power-optimized blade servers directly into Cisco ISR G2 and 4000 Series branch-office routers. All are integrated and housed in a single Cisco ISR chassis, delivering an excellent all-in-one platform for the lean branch office.

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

**Table 1.** Features Summary: UCS E-Series Servers

Feature	Description
<b>Integrated networking</b>	<ul style="list-style-type: none"> <li>• 2 internal Gigabit Ethernet interfaces</li> </ul>
<b>Virtualization optimization</b>	<ul style="list-style-type: none"> <li>• Intel Xeon processor E3-1100 and E5-2400 product families using Intel Hyper-Threading Technology and Intel Virtualization Technology (VT-x)</li> </ul>
<b>4-, 6-, or 8-core Intel Xeon processors</b>	<ul style="list-style-type: none"> <li>• Energy-efficient, high-performance processors provide increased performance in a compact form factor</li> </ul>
<b>Hot-swappable SAS drives, SAS self-encrypting drives (SEDs), and SATA solid-state drives (SSDs)</b>	<ul style="list-style-type: none"> <li>• Up to 3 front-accessible, hot-swappable, internal 2.5-inch server-class SATA, SAS drives, SAS SEDs, or SAS SSDs</li> <li>• Balanced performance and capacity to best meet application needs</li> <li>• SAS single-level cell (SLC) and enterprise multilevel cell (eMLC) SSDs</li> <li>• 10,000-rpm SAS drives for high performance and value with SED option for security for data at rest</li> </ul>
<b>Hardware RAID 0, 1, and 5 support</b>	<ul style="list-style-type: none"> <li>• Hardware RAID 0 and 1 support on single-wide blades and double-wide blades with the PCIe card option</li> <li>• Hardware RAID 0, 1, and 5 support on double-wide blades without the PCIe card option</li> <li>• LSI 2004 controller</li> </ul>
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>• Web user interface for server management, remote KVM, virtual media, and administration</li> <li>• Virtual media support for remote CD and DVD drives and local Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems</li> <li>• 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</li> <li>• One 10/100BASE-T out-of-band management interface</li> </ul>
<b>PCIe card support for additional network and storage I/O</b>	<ul style="list-style-type: none"> <li>• 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 servers only)</li> </ul>
<b>Integrated external Gigabit Ethernet ports</b>	<ul style="list-style-type: none"> <li>• Single-wide servers: 1 external Gigabit Ethernet port</li> <li>• Double-wide servers: 2 external Gigabit Ethernet ports</li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>• Front-panel VGA, 2 USB, and serial console connectors</li> </ul>

Table 2 summarizes the features of the Cisco UCS E-Series NCE service module (EN120S).

**Table 2.** Features Summary: Cisco UCS E-Series NCE Service Module (EN120S)

Feature	Description
<b>Integrated networking</b>	<ul style="list-style-type: none"> <li>• 2 internal Gigabit Ethernet interfaces</li> </ul>
<b>Virtualization optimization</b>	<ul style="list-style-type: none"> <li>• Intel Pentium processor B925C product families using Intel Hyper-Threading Technology as well as Intel Virtualization Technology (VT-x)</li> </ul>
<b>2-core Intel Pentium processors</b>	<ul style="list-style-type: none"> <li>• Energy-efficient, high-performance processors provide increased performance in a compact form factor</li> </ul>
<b>Hot-swappable SAS and SATA drives</b>	<ul style="list-style-type: none"> <li>• Up to 2 front-accessible, hot-swappable, internal 2.5-inch server-class SATA and SAS drives</li> <li>• Balanced performance and capacity to best meet application needs: <ul style="list-style-type: none"> <li>◦ 10,000-rpm SAS drives for high performance and value</li> <li>◦ 7200-rpm SATA II drives for high capacity and value</li> </ul> </li> </ul>
<b>Hardware RAID 0 and 1 support</b>	<ul style="list-style-type: none"> <li>• Hardware RAID 0 and 1 support on single-wide blades</li> <li>• LSI 2004 controller</li> </ul>

Feature	Description
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>• Web user interface for server management; remote KVM, virtual media, and administration</li> <li>• Virtual media support for remote CD and DVD drives</li> <li>• Local IPMI 2.0 support for out-of-band management through third-party enterprise management systems</li> <li>• CLI for server management Integration with Cisco IOS Software for optional management of the servers from within the router CLI and operating environment</li> <li>• One 10/100BASE-T out-of-band management interface</li> </ul>
<b>Integrated external Gigabit Ethernet ports</b>	<ul style="list-style-type: none"> <li>• Single-wide blades: 1 external Gigabit Ethernet port</li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>• Front-panel VGA, 2 USB, and serial console connectors</li> </ul>

Table 3 summarizes the features of the Cisco UCS E-Series NCE double-wide EHWIC (EN120E) and NIM (EN140N).

**Table 3.** Features Summary: Cisco UCS E-Series NCE Double-Wide EHWIC and NIM

Feature	Benefit
<b>Integrated networking</b>	<ul style="list-style-type: none"> <li>• 2 internal Gigabit Ethernet interfaces</li> </ul>
<b>2-core Intel Atom processor</b>	<ul style="list-style-type: none"> <li>• Energy-efficient, high-performance processors, providing increased performance in a compact form factor</li> </ul>
<b>SSD drives for high performance</b>	<ul style="list-style-type: none"> <li>• SSD storage in the mSATA form factor for high performance and reliability is available in three sizes: 50, 100, and 200 GB</li> </ul>
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>• Web user interface for server management, remote KVM, virtual media, and administration</li> <li>• Virtual media support for remote CD and DVD drives and local IPMI 2.0 support for out-of-band management through third-party enterprise management systems</li> <li>• CLI for server management Integration with Cisco IOS Software for optional management of the servers from within the router CLI and operating environment</li> </ul>
<b>Integrated external Gigabit Ethernet ports</b>	<ul style="list-style-type: none"> <li>• 1 external Gigabit Ethernet port</li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>• USB and a mini USB port</li> </ul>
<b>Secure Digital (SD) cards</b>	<ul style="list-style-type: none"> <li>• 1 SD card available for additional storage</li> </ul>

## Platform Support and Compatibility

Cisco UCS E-Series Servers are designed to support multiple bare-metal operating systems and hypervisors, including:

- Operating systems
  - Microsoft Windows Server
    - Windows Server 2008 R2 Standard 64-bit
    - Windows Server 2008 R2 Enterprise 64-bit
    - Windows Server 2012 Standard 64-bit
    - Windows Server 2012 R2 Standard 64-bit
  - Red Hat Enterprise Linux (RHEL) Release 6.2 and later
  - SuSE Linux 11, Service Pack 2 and later
  - Oracle Enterprise Linux 6.0, Update 2 and later

- Hypervisors
  - Microsoft Hyper-V 2008 R2, 2012, and 2012 R2
  - VMware vSphere 5.0, Update 1, and Releases 5.1, 5.5 and 6.0
  - Citrix XenServer Release 6.0

Cisco UCS E-Series NCEs (service module and double-wide EHWIC) are designed to support a limited set of bare-metal operating systems and hypervisors:

- Operating systems
  - Microsoft Windows Server 2012 R2 Standard 64-bit
  - Red Hat Enterprise Linux (RHEL) Release 6.5 and later
- Hypervisors
  - Microsoft Hyper-V 2012 R2
  - VMware vSphere 5.5 and 6.0

## Product Specifications

**Table 4 lists the specifications for the Cisco UCS E-Series M2 servers.**

**Table 4.** Product Specifications for Single-Wide and Double-Wide M2 Servers

Feature	Cisco UCS E140S M2 (Single-Wide)	Cisco UCS E160D and E180D M2 (Double-Wide)
<b>CPU</b>	<ul style="list-style-type: none"> <li>• Intel Xeon processor E3-1105C v2 (6-MB cache, 1.8 GHz, and 4 cores)</li> </ul>	<ul style="list-style-type: none"> <li>• Intel Xeon processor E5-2418Lv2 (10-MB cache, 2.0 GHz, and 6 cores)</li> <li>• Intel Xeon processor E5-2428Lv2 (15-MB cache, 1.8 GHz, and 8 cores)</li> </ul>
<b>DRAM</b>	<ul style="list-style-type: none"> <li>• 8 GB (default: one 8-GB DIMM) and up to 16 GB (two 8-GB DIMMs)</li> </ul>	<ul style="list-style-type: none"> <li>• 8 GB (default) and up to 96 GB (three 32-GB DIMMs)</li> </ul>
<b>HDD</b>	<ul style="list-style-type: none"> <li>• Up to 2:               <ul style="list-style-type: none"> <li>10,000-rpm SAS: 1.8TB</li> <li>◦ 7200-rpm SATA: 1 TB</li> <li>◦ 10,000-rpm SAS: 900 GB</li> <li>◦ 10,000-rpm SAS SED: 600 GB</li> <li>◦ SAS SSD SLC: 200 GB</li> <li>◦ SAS SSD eMLC: 200 and 400 GB</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Up to 3 (Cisco UCS E140D or E160D) or 2 (Cisco UCS E140DP or E160DP):               <ul style="list-style-type: none"> <li>• 10,000-rpm SAS: 1.8TB</li> <li>• 7200-rpm SATA: 1 TB</li> <li>• 10,000-rpm SAS: 900 GB</li> <li>• 10,000-rpm SAS SED: 600 GB</li> <li>• SAS SSD SLC: 200 GB</li> <li>• SAS SSD eMLC: 200 and 400 GB</li> </ul> </li> </ul>
<b>RAID options</b>	<ul style="list-style-type: none"> <li>• Hardware RAID 0 and 1</li> <li>• LSI 2004 controller</li> </ul>	<ul style="list-style-type: none"> <li>• Cisco UCS E160D M2 and E180D M2:               <ul style="list-style-type: none"> <li>◦ Hardware RAID 0, 1, and 5</li> </ul> </li> <li>• LSI 2004 controller</li> </ul>
<b>NICs</b>	<ul style="list-style-type: none"> <li>• 2 internal and 1 external Gigabit Ethernet ports</li> </ul>	<ul style="list-style-type: none"> <li>• 2 internal and 2 external Gigabit Ethernet ports</li> </ul>
<b>Supported Cisco ISR models</b>	<ul style="list-style-type: none"> <li>• Cisco 2911, 2921, 2951, 3925, 3925E, 3945, 3945E, 4331, 4351, and 4451 ISR</li> </ul>	<ul style="list-style-type: none"> <li>• Cisco UCS E160D M2: Cisco 2921, 2951, 3935, 3925E, 3945, 3945E, 4351, and 4451 ISR</li> <li>• Cisco UCS E180D M2: Cisco 3945, 3945E, 4351, and 4451 ISR</li> </ul>
<b>PCIe</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>

Feature	Cisco UCS E140S M2 (Single-Wide)	Cisco UCS E160D and E180D M2 (Double-Wide)
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>• Integrated Emulex Pilot-3 BMC</li> <li>• IPMI 2.0 compliant for management and control</li> <li>• One 10/100 Ethernet out-of-band management interface</li> <li>• CLI and WebGUI management tool for automated, lights-out management</li> <li>• KVM</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Emulex Pilot-3 BMC</li> <li>• IPMI 2.0 compliant for management and control</li> <li>• One 10/100 Ethernet out-of-band management interface</li> <li>• CLI and WebGUI management tool for automated, lights-out management</li> <li>• KVM</li> </ul>
<b>SD cards</b>	<ul style="list-style-type: none"> <li>• 2 SD cards: <ul style="list-style-type: none"> <li>◦ 1 for Cisco IMC and temporary storage of OS and hypervisor installation images comes standard</li> </ul> </li> <li>• 1 for a blank virtual drive on which you can install an OS or a hypervisor (optional).</li> </ul>	<ul style="list-style-type: none"> <li>• 2 SD cards: <ul style="list-style-type: none"> <li>◦ 1 for Cisco IMC and temporary storage of OS and hypervisor installation images comes standard</li> </ul> </li> <li>• 1 for a blank virtual drive on which you can install an OS or a hypervisor (optional).</li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>• 1 KVM console connector (supplies 1 VGA, 1 serial, and 1 USB connectors)</li> <li>• 1 Onboard USB Connector</li> </ul>	<ul style="list-style-type: none"> <li>• Front-panel VGA, 2 USB, and serial console connectors [[SHOULD THIS ENTRY BE THE SAME AS THE ONE FOR THE SINGLE-WIDE?]]</li> </ul>
<b>Physical dimensions (H x W x D)</b>	<ul style="list-style-type: none"> <li>• 1.58 x 7.44 x 7.5 in. (4 x 18.9 x 19.1 cm)</li> </ul>	<ul style="list-style-type: none"> <li>• 1.58 x 16.23 x 7.5 in. (4 x 41.2 x 19.1 cm)</li> </ul>
<b>Maximum weight</b>	<ul style="list-style-type: none"> <li>• 2.5 lb (1.1 kg)</li> </ul>	<ul style="list-style-type: none"> <li>• 7 lb (3.2 kg)</li> </ul>
<b>Temperature: Operating</b>	<ul style="list-style-type: none"> <li>• According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>◦ 32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>◦ 32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>
<b>Temperature: Nonoperating</b>	<ul style="list-style-type: none"> <li>• -4 to 149°F (-20 to 65°C)</li> </ul>	<ul style="list-style-type: none"> <li>• -4 to 149°F (-20 to 65°C)</li> </ul>
<b>Humidity: Operating</b>	<ul style="list-style-type: none"> <li>• According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>◦ 10 to 85% operating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>◦ 10 to 85% operating</li> </ul> </li> </ul>
<b>Humidity: Nonoperating</b>	<ul style="list-style-type: none"> <li>• 5 to 95%</li> </ul>	<ul style="list-style-type: none"> <li>• 5 to 95%</li> </ul>
<b>Altitude: Operating</b>	<ul style="list-style-type: none"> <li>• 104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>	<ul style="list-style-type: none"> <li>• 104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>
<b>Altitude: Nonoperating</b>	<ul style="list-style-type: none"> <li>• 15,000 ft (4600m)</li> </ul>	<ul style="list-style-type: none"> <li>• 15,000 ft (4600m)</li> </ul>

Table 5 lists the specifications for the Cisco UCS E-Series M1 servers.

**Table 5.** Product Specifications for Single-Wide and Double-Wide M1 Servers

Feature	Cisco UCS E140S M1 Software (Single-Wide)	Cisco UCS E140D, E140DP, E160D, and E160DP M1 Software (Double-Wide)
<b>CPU</b>	<ul style="list-style-type: none"> <li>• Intel Xeon processor E3-1105C (6-MB cache, 1.00 GHz, and 4 cores) for M1 models</li> </ul>	<ul style="list-style-type: none"> <li>• Intel Xeon processor E5-2418L (10-MB cache, 2.0 GHz, and 4 cores)</li> <li>• Intel Xeon processor E5-2428L (15-MB cache, 1.8 GHz, and 6 cores)</li> </ul>
<b>DRAM</b>	<ul style="list-style-type: none"> <li>• 8 GB (default: one 8-GB dual in-line memory module [DIMM]) and up to 16 GB (two 8-GB DIMMs)</li> </ul>	<ul style="list-style-type: none"> <li>• 8 GB (default) and up to 48 GB (three 16-GB DIMMs)</li> </ul>
<b>Hard-disk drive (HDD)</b>	<ul style="list-style-type: none"> <li>• Up to 2: <ul style="list-style-type: none"> <li>◦ 7200-rpm SATA: 1 TB</li> <li>◦ 10,000-rpm SAS: 900 GB</li> <li>◦ 10,000-rpm SAS SED: 600 GB</li> <li>◦ SAS SSD SLC: 200 GB</li> <li>◦ SAS SSD eMLC: 200 and 400 GB</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Up to 3 (Cisco UCS E140D or E160D) or 2 (Cisco UCS E140DP or E160DP): <ul style="list-style-type: none"> <li>◦ 7200-rpm SATA: 1 TB</li> <li>◦ 10,000-rpm SAS: 900 GB</li> <li>◦ 10,000-rpm SAS SED: 600 GB</li> <li>◦ SAS SSD SLC: 200 GB</li> <li>◦ SAS SSD eMLC: 200 and 400 GB</li> </ul> </li> </ul>
<b>RAID options</b>	<ul style="list-style-type: none"> <li>• Hardware RAID 0 and 1</li> <li>• LSI 2004 controller</li> </ul>	<ul style="list-style-type: none"> <li>• Cisco UCS E140D and E160D: <ul style="list-style-type: none"> <li>◦ Hardware RAID 0, 1, and 5</li> </ul> </li> <li>• Cisco UCS E140DP and E160DP: <ul style="list-style-type: none"> <li>◦ Hardware RAID 0 and 1</li> <li>◦ LSI 2004 controller</li> </ul> </li> </ul>

Feature	Cisco UCS E140S M1 Software (Single-Wide)	Cisco UCS E140D, E140DP, E160D, and E160DP M1 Software (Double-Wide)
<b>Network interface cards (NICs)</b>	<ul style="list-style-type: none"> <li>2 internal and 1 external Gigabit Ethernet ports</li> </ul>	<ul style="list-style-type: none"> <li>2 internal and 2 external Gigabit Ethernet ports</li> </ul>
<b>Supported Cisco ISR models</b>	<ul style="list-style-type: none"> <li>Cisco 2911, 2921, 2951, 3925, 3925E, 3945, 3945E, 4331, 4351, and 4451 ISR</li> </ul>	<ul style="list-style-type: none"> <li>Cisco UCS E140D and E140DP: Cisco 2921, 2951, 3925, 3925E, 3945, 3945E, 4351, and 4451 ISR</li> <li>Cisco UCS E160D M1 and E160D M1: Cisco 3925, 3925E, 3945, 3945E and 4351, and 4451 ISR</li> </ul>
<b>PCIe</b>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Cisco UCS E140DP and E160DP: Four 1 Gigabit Ethernet or one 10 Gigabit Ethernet and FCoE</li> </ul>
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>Integrated Emulex Pilot-3 BMC</li> <li>IPMI 2.0 compliant for management and control</li> <li>One 10/100 Ethernet out-of-band management interface</li> <li>CLI and WebGUI management tool for automated, lights-out management</li> <li>KVM</li> </ul>	<ul style="list-style-type: none"> <li>Integrated Emulex Pilot-3 BMC</li> <li>IPMI 2.0 compliant for management and control</li> <li>One 10/100 Ethernet out-of-band management interface</li> <li>CLI and WebGUI management tool for automated, lights-out management</li> <li>KVM</li> </ul>
<b>SD cards</b>	<ul style="list-style-type: none"> <li>2 SD cards: <ul style="list-style-type: none"> <li>1 for Cisco IMC and temporary storage of OS and hypervisor installation images comes standard</li> </ul> </li> <li>1 for a blank virtual drive on which you can install an OS or a hypervisor (optional).</li> </ul>	<ul style="list-style-type: none"> <li>2 SD cards: <ul style="list-style-type: none"> <li>1 for Cisco IMC and temporary storage of OS and hypervisor installation images comes standard</li> </ul> </li> <li>1 for a blank virtual drive on which you can install an OS or a hypervisor (optional).</li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>1 KVM console connector (supplies 1 VGA, 1 serial, and 1 USB connectors)</li> <li>1 Onboard USB Connector</li> </ul>	<ul style="list-style-type: none"> <li>Front-panel VGA, 2 USB, and serial console connectors</li> </ul>
<b>Physical dimensions (H x W x D)</b>	<ul style="list-style-type: none"> <li>1.58 x 7.44 x 7.5 in. (4 x 18.9 x 19.1 cm)</li> </ul>	<ul style="list-style-type: none"> <li>1.58 x 16.23 x 7.5 in. (4 x 41.2 x 19.1 cm)</li> </ul>
<b>Maximum weight</b>	<ul style="list-style-type: none"> <li>2.5 lb (1.1 kg)</li> </ul>	<ul style="list-style-type: none"> <li>7 lb (3.2 kg)</li> </ul>
<b>Temperature: Operating</b>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>
<b>Temperature: Nonoperating</b>	<ul style="list-style-type: none"> <li>-4 to 149°F (-20 to 65°C)</li> </ul>	<ul style="list-style-type: none"> <li>-4 to 149°F (-20 to 65°C)</li> </ul>
<b>Humidity: Operating</b>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>10 to 85% operating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>10 to 85% operating</li> </ul> </li> </ul>
<b>Humidity: Nonoperating</b>	<ul style="list-style-type: none"> <li>5 to 95%</li> </ul>	<ul style="list-style-type: none"> <li>5 to 95%</li> </ul>
<b>Altitude: Operating</b>	<ul style="list-style-type: none"> <li>104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>	<ul style="list-style-type: none"> <li>104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>
<b>Altitude: Nonoperating</b>	<ul style="list-style-type: none"> <li>15,000 ft (4600m)</li> </ul>	<ul style="list-style-type: none"> <li>15,000 ft (4600m)</li> </ul>

Table 6 lists the specifications for the Cisco UCS E-Series NCEs.

**Table 6.** Product Specifications for Cisco UCS E-Series NCEs

Feature	Cisco UCS EN120E (Double-Wide EHWIC)	Cisco UCS EN140N (NIM)	Cisco UCS EN120S (Single-Wide Blade)
<b>CPU</b>	<ul style="list-style-type: none"> <li><a href="#">Intel Atom processor C2358 (1-MB cache and 1.70 GHz)</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Intel Atom processor C2518 (2-MB cache and 1.70 GHz)</a></li> </ul>	<ul style="list-style-type: none"> <li>Intel Pentium processor B925C (4-MB cache and 2 GHz)</li> </ul>
<b>DRAM</b>	<ul style="list-style-type: none"> <li>8 GB (default) RAM DIMM on all except the Cisco UCS E-Series NCE double-wise EHWIC (part number UCS-EN120E-54/K9), which has 4 GB of RAM standard</li> </ul>	<ul style="list-style-type: none"> <li>8 GB (default) DIMM</li> </ul>	<ul style="list-style-type: none"> <li>4 GB (default: one 4-GB DIMM) and up to 16 GB (two 8-GB DIMMs)</li> </ul>



Feature	Cisco UCS EN120E (Double-Wide EHWIC)	Cisco UCS EN140N (NIM)	Cisco UCS EN120S (Single-Wide Blade)
<b>HDD</b>	<ul style="list-style-type: none"> <li>1 mSATA SSD drive <ul style="list-style-type: none"> <li>50 GB</li> <li>100 GB</li> <li>200 GB</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>1 mSATA SSD drive <ul style="list-style-type: none"> <li>50 GB</li> <li>100 GB</li> <li>200 GB</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Up to 2: <ul style="list-style-type: none"> <li>7200-rpm SATA: 500 GB</li> <li>7200-rpm SATA: 1 TB</li> <li>10,000-rpm SAS: 900 GB</li> </ul> </li> </ul>
<b>RAID options</b>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>Hardware RAID 0 and 1 LSI 2004 controller</li> </ul>
<b>NICs</b>	<ul style="list-style-type: none"> <li>2 internal and 1 external Gigabit Ethernet ports</li> </ul>	<ul style="list-style-type: none"> <li>2 internal and 1 external Gigabit Ethernet ports</li> </ul>	<ul style="list-style-type: none"> <li>2 internal and 1 external Gigabit Ethernet ports</li> </ul>
<b>Supported Cisco ISR models</b>	<ul style="list-style-type: none"> <li>Cisco 1921, 1941, 2901, 2911, 2921, 2951, 3925, 3925E, 3945, and 3945E ISR</li> </ul>	<ul style="list-style-type: none"> <li>Cisco 4321, 4331, 4351, 4431, and 4451 ISR</li> </ul>	<ul style="list-style-type: none"> <li>Cisco 2911, 2921, 2951, 3925, 3925E, 3945, 3945E, 4331, 4351, and 4451 ISR</li> </ul>
<b>Cisco IMC</b>	<ul style="list-style-type: none"> <li>Integrated Emulex Pilot-3 BMC</li> <li>IPMI 2.0 compliant for management and control</li> <li>CLI and WebGUI management tool for automated, lights-out management</li> <li>KVM</li> </ul>	<ul style="list-style-type: none"> <li>Integrated Emulex Pilot-3 BMC</li> <li>IPMI 2.0 compliant for management and control</li> <li>CLI and WebGUI management tool for automated, lights-out management</li> <li>KVM</li> </ul>	<ul style="list-style-type: none"> <li>Integrated Emulex Pilot-3 BMC</li> <li>IPMI 2.0 compliant for management and control</li> <li>One 10/100 Ethernet out-of-band management interface</li> <li>CLI and WebGUI management tool for automated, lights-out management</li> <li>KVM</li> </ul>
<b>SD cards</b>	<ul style="list-style-type: none"> <li>1 SD card: One 2-GB card for Cisco UCS</li> <li>Cisco IMC and temporary storage of OS and hypervisor installation images</li> <li>Optional 4- and 8-GB SD cards</li> </ul>	<ul style="list-style-type: none"> <li>1 SD card: One 2-GB card for Cisco UCS</li> <li>Cisco IMC and temporary storage of OS and hypervisor installation images</li> <li>Optional 4- and 8-GB SD cards</li> </ul>	<ul style="list-style-type: none"> <li>2 SD cards: <ul style="list-style-type: none"> <li>1 for Cisco IMC and temporary storage of OS and hypervisor installation images comes standard</li> <li>1 for a blank virtual drive on which you can install an OS or a hypervisor (optional).</li> </ul> </li> </ul>
<b>Front-panel connectors</b>	<ul style="list-style-type: none"> <li>1 USB and 1 mini USB port</li> </ul>	<ul style="list-style-type: none"> <li>1 KVM console connector (supplies 1 VGA, 1 serial, and 2 USB connectors)</li> <li>1 USB connector</li> </ul>	<ul style="list-style-type: none"> <li>1 KVM console connector (supplies 1 VGA, 1 serial, and 2 USB connectors)</li> </ul>
<b>Physical dimensions (H x W x D)</b>	<ul style="list-style-type: none"> <li>4.14 x 5.92 x 0.5 in. (10.35 x 14.8 x 1.25 cm)</li> </ul>	<ul style="list-style-type: none"> <li>1.25 x 3.5 x 6.787 in. (3.175 x 8.89 x 17.23 cm)</li> </ul>	<ul style="list-style-type: none"> <li>1.58 x 7.44 x 7.5 in. (4 x 18.9 x 19.1 cm)</li> </ul>
<b>Maximum weight</b>	<ul style="list-style-type: none"> <li>8.1 oz (230 g)</li> </ul>	<ul style="list-style-type: none"> <li>10.22 oz (290g)</li> </ul>	<ul style="list-style-type: none"> <li>2.5 lb (1.1 kg)</li> </ul>
<b>Temperature: Operating</b>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>32 to 104°F (0 to 40°C) normal</li> </ul> </li> </ul>
<b>Temperature: Nonoperating</b>	<ul style="list-style-type: none"> <li>-4 to 149°F (-20 to 65°C)</li> </ul>	<ul style="list-style-type: none"> <li>-4 to 149°F (-20 to 65°C)</li> </ul>	<ul style="list-style-type: none"> <li>-4 to 149°F (-20 to 65°C)</li> </ul>
<b>Humidity: Operating</b>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>10% to 85% operating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>10% to 85% operating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>According to operating requirements of deployable platform: <ul style="list-style-type: none"> <li>10% to 85% operating</li> </ul> </li> </ul>
<b>Humidity: Nonoperating</b>	<ul style="list-style-type: none"> <li>5% to 95%</li> </ul>	<ul style="list-style-type: none"> <li>5% to 95%</li> </ul>	<ul style="list-style-type: none"> <li>5% to 95%</li> </ul>
<b>Altitude: Operating</b>	<ul style="list-style-type: none"> <li>104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>	<ul style="list-style-type: none"> <li>104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>	<ul style="list-style-type: none"> <li>104°F (40°C) at sea level to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m</li> </ul>
<b>Altitude: Nonoperating</b>	<ul style="list-style-type: none"> <li>15,000 ft (4600m)</li> </ul>	<ul style="list-style-type: none"> <li>15,000 ft (4600m)</li> </ul>	<ul style="list-style-type: none"> <li>15,000 ft (4600m)</li> </ul>

Table 7 lists regulatory standards compliance information.

**Table 7.** Regulatory Standards Compliance: Safety and EMC

Specification	Description
<b>Safety</b>	<ul style="list-style-type: none"> <li>• UL 60950-1 Second Edition</li> <li>• CAN/CSA-C22.2 No. 60950-1</li> <li>• IEC 60950-1 Second Edition</li> <li>• EN 60950-1 Second Edition</li> <li>• AS/NZS 60950-1</li> </ul>
<b>EMC: Emissions</b>	<ul style="list-style-type: none"> <li>• 47CFR Part 15 (CFR 47) Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• CISPR2 2 Class A</li> <li>• EN55022 Class A</li> <li>• ICES003 Class A</li> <li>• VCCI V-3 Class I</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• EN300386 Class A</li> <li>• CNS13438, Class A</li> </ul>
<b>EMC: Immunity</b>	<ul style="list-style-type: none"> <li>• EN55024</li> <li>• CISPR24</li> <li>• EN300386</li> <li>• EN50082-1 Part 1</li> <li>• EN 61000 6-1</li> </ul>

## System Requirements

- For Cisco UCS E-Series Servers and NCEs, Cisco IOS Software Release 15.2(4)M is required for Cisco 2911, 2921, 2951, 3925, 3925E, 3945, and 3945E ISR models.
- For Cisco UCS E-Series NCE (double-wide EHWIC), Cisco IOS Software Release 15.4(3)M is required for Cisco 1921,1941,2901, 2911, 2921, 2951, 3925, 3925E, 3945, and 3945E ISR models.
- For all Cisco UCS E-Series Servers and the Cisco UCS E-Series NCE service module, Cisco IOS XE Software Release 3.13 is required for the Cisco 4000 Series ISR platform.
- For the Cisco UCS E-Series NCE NIM, Cisco IOS XE Release 3.15S is required for the Cisco 4000 Series ISR platform.

## 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, refer to Table 8 and visit the [Cisco Ordering homepage](#). To download software, visit the [Cisco Software Center](#).

**Table 8.** Ordering Information

Part Number	Product Description
<b>UCS-EN120E-54/K9</b>	Cisco UCS E-Series NCE DW-EHWIC, 2C Atom, 4GB RAM, 50GB HDD, 2GB SD card
<b>UCS-EN120E-58/K9</b>	Cisco UCS E-Series NCE DW-EHWIC, 2C Atom, 8GB RAM, 50GB HDD, 2GB SD card

Part Number	Product Description
<b>UCS-EN120E-108/K9</b>	Cisco UCS E-Series NCE DW-EHWIC, 2C Atom, 8GB RAM, 100GB HDD, 2GB SD card
<b>UCS-EN120E-208/K9</b>	Cisco UCS E-Series NCE DW-EHWIC, 2C Atom, 8GB RAM, 200GB HDD, 2GB SD card
<b>UCS-EN140N-M2/K9</b>	Cisco UCS E-Series NCE NIM, 4C Atom, 8GB RAM, 2GB SD card
<b>UCS-EN120S-M2/K9</b>	Cisco UCS E-Series NCE Single-Wide Blade, Intel Pentium B925C Dual Core processor, 8GB RAM, 2 SD cards
<b>UCS-E140S-M2/K9</b>	Cisco UCS E-Series Single-Wide Server Blades, Intel Xeon E3 1100 v2 Quad Core processor, 8GB RAM, 2 SD cards
<b>UCS-E160D-M2/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 v2 Six Core processor, 8GB RAM, 2 SD cards
<b>UCS-E180D-M2/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 v2 Eight Core processor, 8GB RAM, 2 SD cards
<b>UCS-E140S-M1/K9</b>	Cisco UCS E-Series Single-Wide Server Blades, Intel Xeon E3 1100 v1 Quad Core processor, 8GB RAM, 2 SD cards
<b>UCS-E140D-M1/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Quad Core processor, 8GB RAM, 2 SD cards
<b>UCS-E140DP-M1/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Quad Core processor, 8GB RAM, 2 SD cards, PCIe card
<b>UCS-E160D-M1/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Six Core processor, 8GB RAM, 2 SD cards
<b>UCS-E160DP-M1/K9</b>	Cisco UCS E-Series Double-Wide Server Blades, Intel Xeon E5-2400 Six Core processor, 8GB RAM, 2 SD cards, PCIe card
<b>E100S-MEM-UDIMM8G</b>	8GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E
<b>E100S-MEM-UDIMM8G=</b>	8GB 1333MHz VLP UDIMM/PC3-10600 2R for SingleWide UCS-E, Spare
<b>E100S-HDD-SAS18T</b>	1.8TB, 10k RPM SAS hard disk drive for SingleWide UCS-E
<b>E100S-HDD-SATA18T=</b>	1.8TB, 10k RPM SAS hard disk drive for SingleWide UCS-E, Spare
<b>E100S-HDD-SAS900G</b>	900 GB, 10k RPM SAS hard disk drive for SingleWide UCS-E
<b>E100S-HDD-SAS900G=</b>	900 GB, 10k RPM SAS hard disk drive for SingleWide UCS-E, Spare
<b>E100S-HDD-SSD200G</b>	200 GB, SAS SLC SSD hard disk drive for SingleWide UCS-E
<b>E100S-HDD-SSD200G=</b>	200 GB, SAS SLC SSD hard disk drive for SingleWide UCS-E, Spare
<b>E100S-SSD200-EMLC</b>	200 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E
<b>E100S-SSD200-EMLC=</b>	200 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E, Spare
<b>E100S-SSD400-EMLC</b>	400 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E
<b>E100S-SSD400-EMLC=</b>	400 GB, SAS eMLC SSD hard disk drive for SingleWide UCS-E, Spare
<b>E100S-HDD-SATA1T</b>	1 TB, 7200 RPM SATA hard disk drive for SingleWide UCS-E
<b>E100S-HDD-SATA1T=</b>	1 TB, 7200 RPM SATA hard disk drive for SingleWide UCS-E, Spare
<b>E100S-HDSASED600G</b>	600 GB, SAS SED hard disk drive, for SingleWide UCS-E
<b>E100S-HDSASED600G=</b>	600 GB, SAS SED hard disk drive, for SingleWide UCS-E, Spare
<b>E100D-MEM-RDIMM4G</b>	4GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
<b>E100D-MEM-RDIMM4G=</b>	4GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
<b>E100D-MEM-RDIMM8G</b>	8GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
<b>E100D-MEM-RDIMM8G=</b>	8GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
<b>E100D-MEM-RDIM16G</b>	16GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
<b>E100D-MEM-RDIM16G=</b>	16GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
<b>E100D-MEM-RDIM32G</b>	32GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E
<b>E100D-MEM-RDIM32G=</b>	32GB 1333MHz RDIMM/PC3-10600 2R for DoubleWide UCS-E, Spare
<b>E100D-HDD-SAS18T</b>	1 8 TB, SAS HDD for DoubleWide UCS-E
<b>E100D-HDD-SAS18T=</b>	1 8 TB, SAS HDD for DoubleWide UCS-E, Spare
<b>E100D-HDD-SAS900G</b>	900 GB, 10k RPM SAS hard disk drive for DoubleWide UCS-E

Part Number	Product Description
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 DoubleWide UCS-E
E100D-SSD200-EMLC=	200 GB, SAS eMLC SSD hard disk drive for DoubleWide UCS-E, Spare
E100D-SSD400-EMLC	400 GB, SAS eMLC SSD hard disk drive for DoubleWide UCS-E
E100D-SSD400-EMLC=	400 GB, SAS eMLC SSD hard disk drive for DoubleWide 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
E100-SD-2G=	2 GB SD Card for UCS-EN only, Spare
E100-SD-4G=	4 GB SD Card for UCS-EN only, Spare
E100-SD-8G=	8 GB SD Card for UCS-E, Spare

## Cisco Services

Cisco UCS E-Series Servers hardware support is covered by the Cisco SMARTnet<sup>®</sup> 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. 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>

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Cisco Capital can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. [Learn more.](#)

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## For More Information

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




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