

## Cisco Transaction Encryption Device IV

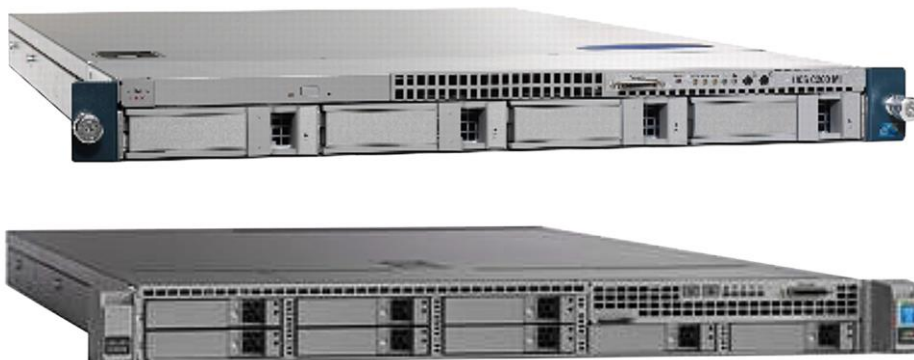
Now you can allow selective access to secured services such as broadcast video, impulse pay-per-view (IPPV), reservation pay-per-view (RPPV), and video-on-demand (VOD). The Cisco® Transaction Encryption Device IV (TED IV) server provides PowerKEY® Conditional Access, a security feature for the Cisco Digital Network Control System (DNCS) that helps ensure the delivery of secure and authenticated services within service provider networks. Using the Cisco TED IV and PowerKEY encryption techniques, service providers can secure the transmission of the content throughout the network and allow only authorized subscribers to access the service.

PowerKEY is initialized on the Cisco DNCS and the Cisco TED IV server to validate access to secured services. Platform and application security are enhanced by the following features:

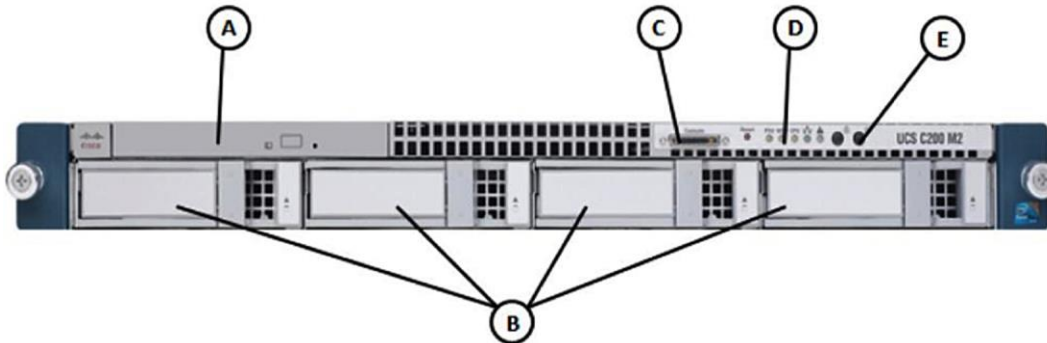
- Cisco TED IV does not deploy with a keyboard or monitor.
- It is directly connected to the Cisco DNCS because Cisco TED IV has no network access.
- It is not designed as a multiuser platform.
- It is accessible only by gaining an administrator or security role on the Cisco DNCS. At power up, the Cisco TED IV boots and runs its application without user intervention.

The Cisco TED IV is built from a Cisco Unified Computing System™ (Cisco UCS®) C200 M2 or C220 M4 server and includes the nCipher nShield 6000e hardware security module (HSM). Cisco TED IV servers run on the Red Hat Enterprise Linux operating system (Figures 1 through 3).

**Figure 1.** Cisco TED IV on Cisco UCS C200 M2 and Cisco UCS C220 M4 (Image May Vary from Actual Product and Specification)

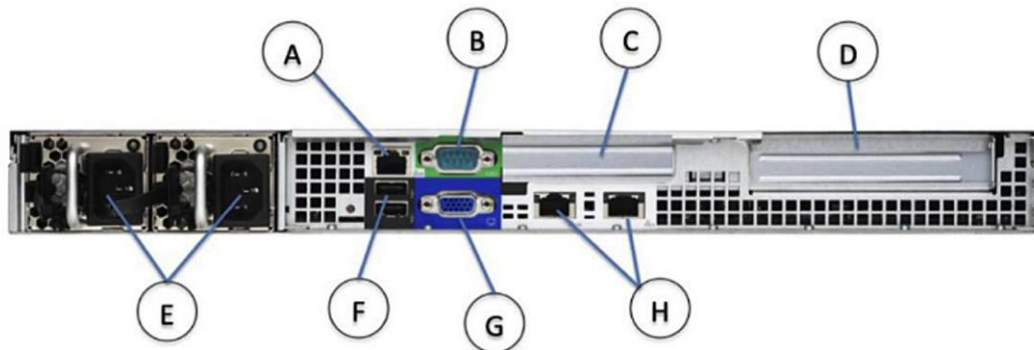


**Figure 2.** Cisco UCS C200 M2 Model Front Panel (Image May Vary from Actual Product and Specification)



Front-Panel Features			
A	Slim-line 24x SATA DVD-RW	D	System Status LED Panel
B	3 x SAS/SATA 3.5-inch Hard-Disk Drive	E	Operator Indicator Panel
C	Keyboard, video, monitor (KVM) Console Connector (not used)		

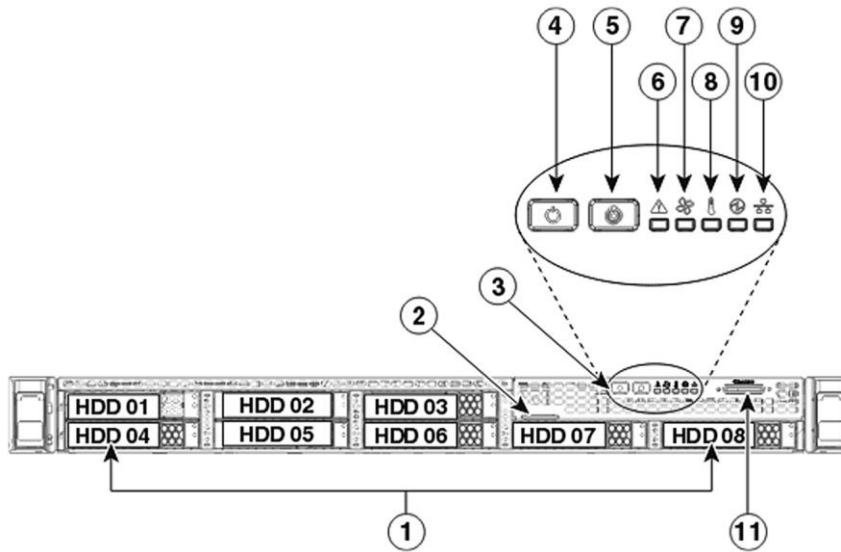
**Figure 3.** Cisco UCS C200 M2 Model Back Panel (Image May Vary from Actual Product and Specification)



Back-Panel Features			
A	10/100 Management Port (RJ-45)	E	2 x Power Supplies
B	Serial Port (DB9)	F	2 x USB 2.0 Ports
C	PCIe Low-Profile Slot (nShield 6000e HSM)	G	VGA Port
D	PCIe Standard Profile Slot	H	2 x 1GE (1000BASE-T)

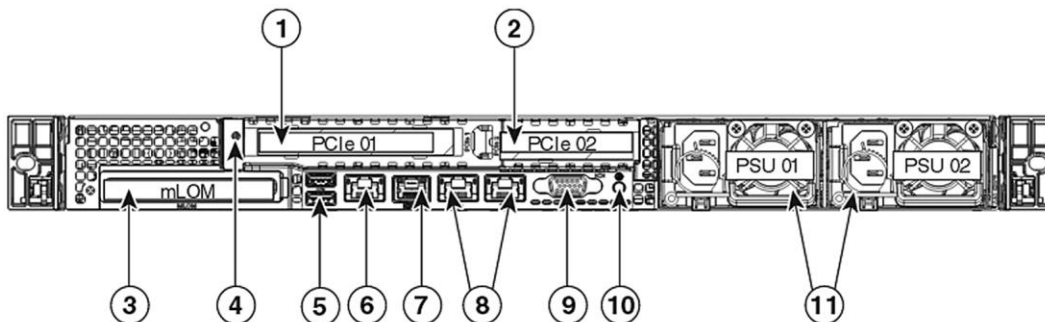
Figures 4 and 5 show the front and back panels, respectively, of the Cisco UCS C220 M4 model.

**Figure 4.** Cisco UCS C220 M4 Model Front Panel (Image May Vary from Actual Product and Specification)



Front-Panel Features	
1	3 x 300GB SAS 15K RPM SFF HDD
2	Pull-out asset tag
3	Operations panel buttons and LEDs
4	Power button/Power status LED
5	Unit identification button/LED
6	System status LED
7	Fan status LED
8	Temperature status LED
9	Power supply status LED
10	Network link activity LED
11	KVM connector (not used)

**Figure 5.** Cisco UCS C220 M4 Model Back Panel (Image May Vary from Actual Product and Specification)



Back-Panel Features	
1	PCIe riser 1/slot 1
2	PCIe riser 2/slot 2 (nShield 6000e HSM)
3	Modular LAN-on-motherboard (mLOM) card slot
4	Grounding-lug hole (for DC power supplies)
5	USB 3.0 ports (two)
6	1-GE dedicated management port
7	Serial port (RJ-45 connector)
8	Two embedded (on the motherboard) Intel i350 GE Ethernet controller ports
9	VGA video port (DB-15)
10	Rear unit identification button/LED
11	Power supplies (up to two, redundant as 1+1)

## Product Specifications

Table 1 lists the specifications of the Cisco TED IV, and Table 2 gives ordering information.

**Table 1.** Cisco TED IV Product Specifications

Specification	Cisco UCS C200 M2-Based TED IV	Cisco UCS C220 M4-Based TED IV
<b>Platform</b>	Cisco UCS C200 M2 Server w/2 650W PSU, DVD-RW	Cisco UCS C220 M4 Server w/2 770W PSU
<b>Memory/Storage</b>		
<b>RAM</b>	16 GB (4 x 4 GB DDR3-1333 MHz RDIMM/PC3-10600/single rank/Low-Dual voltage)	16 GB (2 x 8 GB DDR4-2133-MHz RDIMM/PC4-17000/single rank/x4/1.2v)
<b>Hard Drive</b>	3 x 450GB SAS 15K RPM 3.5in HDD, hot plug, 2 disk RAID + hot spare	3 x 300GB 6Gb SAS 15K RPM SFF HDD/hot plug, 2 disk RAID + hot spare
<b>Processors</b>		
<b>CPU</b>	Intel Xeon X5675 3.06GHz /6 core/95W/12MB cache/DDR3-1333MHz	Intel E5-2600 v3, 2x 2.40 GHz E5-2620 v3/85W 6C/15MB Cache/DDR4 1866MHz
<b>Mechanical Specifications</b>		
<b>Product Dimensions (HxWxD)</b>	1RU: 1.7 x 16.92 x 27.8 in. (4.32 x 43.0 x 70.60 cm)	1RU: 1.7 x 16.89 x 29.8 in. (4.32 x 43.0 x 75.60 cm)
<b>Mounting Rail Kit</b>	Cisco R2XX-G31032RAIL rail kit works in racks with square holes or 10-32 round holes and measures 23.5 inches to 36 inches in length.	Cisco UCSC-RAILF-M4 Friction rail kit with optional reversible cable management arm
<b>Product Weight</b>	33 lb (14.97 kg)	35 lb (15.88 kg)
<b>Environment Specifications</b>		
<b>Power Dissipation</b>	<p>For configuration-specific power specifications, use the Cisco UCS Power Calculator: <a href="https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx">https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx</a>.</p> <p>As an example, using the calculator, we can determine the approximate power for the following C200 M2 server configuration:</p> <ul style="list-style-type: none"> <li>• Voltage = 115 VAC</li> <li>• Power Supplies = 2</li> <li>• Processors = 1 CPU (Intel Xeon X5675 3.06GHz)</li> <li>• Memory DIMMs = 4 x 4 GB</li> <li>• Disk Drives = 3 x 450GB</li> <li>• RAID Card = 1</li> <li>• PCIe Cards = Hardware Security Module (add 10W)</li> </ul> <p>The resulting power calculations are:</p> <ul style="list-style-type: none"> <li>• Idle Power = 172 W</li> <li>• 50-percent-Load Power = 245 W</li> <li>• Max Power = 326 W</li> </ul>	<p>For configuration-specific power specifications, use the Cisco UCS Power Calculator: <a href="https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx">https://mainstayadvisor.com/Go/Cisco/Cisco-UCS-Power-Calculator.aspx</a>.</p> <p>As an example, using the calculator, we can determine the approximate power for the following C220 M4 server configuration:</p> <ul style="list-style-type: none"> <li>• Voltage = 115 VAC</li> <li>• Power Supplies = 2 x 770W</li> <li>• Processors = 2 CPU (Intel E5-2600 v3 2.4GHz)</li> <li>• Memory DIMMs = 2 x 8 GB</li> <li>• Disk Drives = 3 x 300GB</li> <li>• RAID Card = 1</li> <li>• PCIe Cards = Hardware Security Module (add 10W)</li> </ul> <p>The resulting power calculations are:</p> <ul style="list-style-type: none"> <li>• Idle Power = 95 W</li> <li>• 50-percent-Load Power = 175 W</li> <li>• Max Power = 256 W</li> </ul>
<b>Temperature operating</b>	10 to 35°C (50 to 95°F)	5 to 35°C (41 to 95°F)
<b>Temperature nonoperating</b>	-40 to 65°C (-40 to 149°F)	-40 to 65°C (-4F to 149°F)
<b>Altitude operating</b>	0 to 3,000 m (0 to 10,000 ft.); maximum ambient temperature decreases by 1°C per 300m	0 to 3,000 m (0 to 10,000 ft.)
<b>Humidity nonoperating</b>	5 to 93 percent, noncondensing	5 to 93 percent, noncondensing
<b>Safety</b>	<ul style="list-style-type: none"> <li>• UL 60950-1 No. 21CFR1040</li> <li>• CAN/CSA-C22.2 No. 60950-1</li> <li>• IRAM IEC60950-1</li> <li>• CB IEC60950-1</li> <li>• EN 60950-1</li> <li>• IEC 60950-1</li> <li>• GOST IEC60950-1</li> </ul>	<ul style="list-style-type: none"> <li>• UL 60950-1 Second Edition</li> <li>• CAN/CSA-C22.2 No. 60950-1 Second Edition</li> <li>• EN 60950-1 Second Edition</li> <li>• IEC 60950-1 Second Edition</li> <li>• AS/NZS 60950-1</li> <li>• GB4943 2001</li> </ul>

Specification	Cisco UCS C200 M2-Based TED IV	Cisco UCS C220 M4-Based TED IV
	<ul style="list-style-type: none"> <li>• SABS/CB IEC6095-1</li> <li>• CCC /CB GB4943-1995</li> <li>• CNS14336</li> <li>• CB IEC60950-1</li> <li>• AS/NZS 60950-1</li> <li>• GB4943</li> </ul>	
<b>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>• CISPR22 Class A</li> <li>• EN55022 Class A</li> <li>• ICES003 Class A</li> <li>• VCCI Class A</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• KN22 Class A</li> <li>• CNS13438 Class A</li> </ul>	<ul style="list-style-type: none"> <li>• 47CFR Part 15 (CFR 47) Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• CISPR22 Class A</li> <li>• EN55022 Class A</li> <li>• ICES003 Class A</li> <li>• VCCI Class A</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• KN22 Class A</li> <li>• CNS13438 Class A</li> </ul>
<b>Immunity</b>	Verified to comply with EN55024, CISPR 24, KN 61000-4 Series, KN 24	<ul style="list-style-type: none"> <li>• EN55024</li> <li>• CISPR24</li> <li>• EN300386</li> <li>• KN24</li> </ul>
<b>Acoustic</b>	<ul style="list-style-type: none"> <li>• Sound power: 54.7 dBA (5.7 Bels) at ambient temperature 23° C measured using the Dome Method</li> <li>• GOST MsanPIN 001-96</li> </ul>	<ul style="list-style-type: none"> <li>• Sound Pressure level, Measure: 37 dBA (A-weighted per ISO7779 LpAm (dBA), Operation at 73°F (23°C))</li> <li>• Sound Power level, Measure: 5.4 Bels (A-weighted per ISO7779 LWAd (Bels) Operation at 73°F (23°C))</li> </ul>
<b>Additional info</b>	Additional specs for the Cisco UCS platform can be found at: <a href="http://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/index.html">http://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/index.html</a> .	

## Ordering Information

**Table 2.** Cisco TED IV Ordering Information

Model	Description	Part Number
<b>Cisco TED IV</b>	Transaction Encryption Device IV for PowerKEY	DBDS-4042136

### Notes:

1. Compatible with Cisco DNCS environments. Cisco TED IV requires SR 4.2 SP3 or later for North American Digital Broadcast Delivery Systems, and i4.4.0.7p4 or i4.4.1.4p1 or later for International PowerKEY DVB systems.
2. Initialization of a new or replacement Cisco TED IV server requires that a Cisco employee must be on site to complete initialization procedures. Contact your account representative for charges or fees associated with this service.



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