

# Cisco 6000 Series Switches

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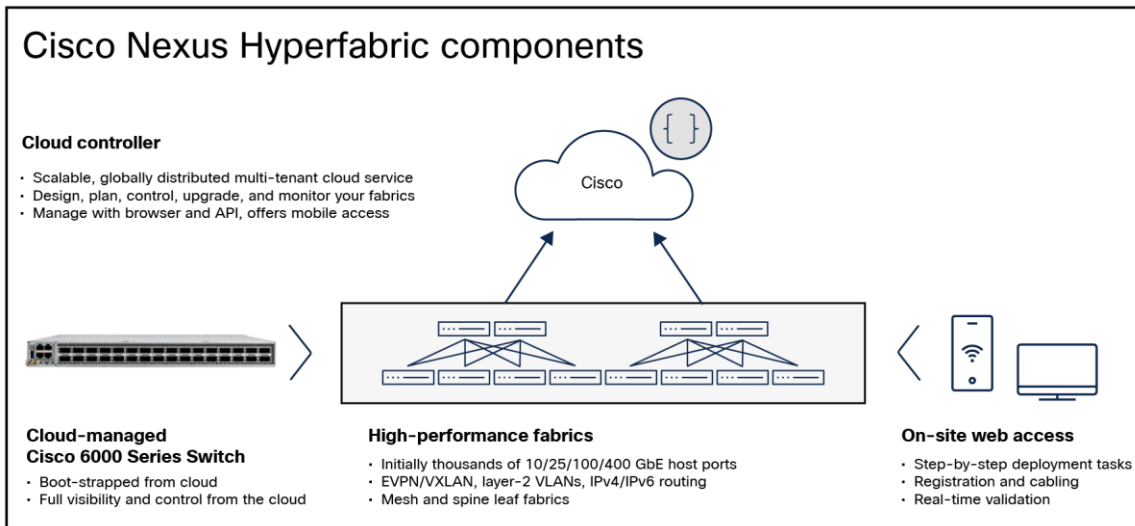
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## Product overview

Cisco 6000 Series Switches are cloud-managed network fabric switches. When paired with a [Cisco Nexus® Hyperfabric](#) subscription, they provide a network fabric delivered as a service data center offer that enables customers to easily design, deploy, manage, and scale multiple fabrics globally with a minimum of expertise. It reinvents and simplifies every step of IT operations, ensuring repeatable and predictable outcomes.

[Cisco Nexus Hyperfabric](#) is a cloud-managed vertical stack solution consisting of purpose-built hardware, software, a cloud controller, day-2 operations, automation, and Cisco support that eliminates complexity. IT, application and DevOps teams manage the full lifecycle of designing, ordering, deploying, validating, monitoring, and scaling fabrics without requiring deep networking or operational expertise.



**Figure 1.**

Cisco Nexus Hyperfabric vertical stack solution

When the Cisco 6000 switches arrive on-site and are deployed, they automatically connect to the cloud, to be claimed and provisioned by the cloud controller with a zero-touch plug-and-play approach. This process takes just minutes and results in a fully operational network fabric. When it comes time to change the capacity or shape of the design, customers can edit the design, approve the changes, and repeat the same process. The product guides all the physical changes needed to migrate the old topology to the new desired state, including cabling adjustments, and it reconfigures itself automatically.

## Cisco HF6100 switch models

At the heart of the Hyperfabric 6100 Series are Cisco's Q200 and G200 ASICs, built on 7-nm and 5-nm technology, respectively, which offer exceptional power efficiency and high performance without the need for High-Bandwidth Memory (HBM). These switches deliver bandwidth levels ranging from 12.8 Tbps to 51.2 Tbps, making them suitable for a wide variety of roles, from traditional data center Top-of-Rack (ToR) deployments to high-density IP fabric leaf and spine configurations. The compact form factors, ranging from 1 Rack Unit (1RU) to 2RU, offer flexibility for various network designs catering to different levels of network scaling and traffic demand.

The Cisco Silicon One Q200 ASIC:

- Is built on 7nm fabrication technology, capable of high performance while maintaining a low-power footprint
- Has up to 12.8 (switching ASIC capacity) Tbps switching capacity with 8 Bpps forwarding rate
- Has 80 MB of dedicated low-latency buffer, with up to 8 GB of HBM buffer for deep packet buffers
- Provides up to 60 native nonblocking 10/25/50 Gigabit Ethernet SFP56 ports
- Provides up to 32 native nonblocking 40/100/200/400 Gigabit Ethernet QSFP-DD ports
- Has ASIC tables for switching scale up to 256K MAC addresses and routing scale up to 2M routes

The Cisco Silicon One G200 ASIC:

- Is built on 5nm fabrication technology, capable of AI/ML workloads while maintaining an ultra-low-latency footprint
- Has up to 51.2 (switching ASIC capacity) Tbps switching capacity with 20 Bpps forwarding rate
- Provides up to 64 native nonblocking 100/200/400/800 Gigabit Ethernet OSFP ports
- Has ASIC tables for switching scale up to 512K MAC addresses and routing scale up to 2M routes

## Platform benefits

**Table 1.** Hardware platform-supported capabilities

| Model                                        | HF6100-60L4D | HF6100-32D | HF6100-64ED |
|----------------------------------------------|--------------|------------|-------------|
| <b>Security</b>                              |              |            |             |
| <b>Trustworthy solutions</b>                 | Yes          | Yes        | Yes         |
| <b>Image signing</b>                         | Yes          | Yes        | Yes         |
| <b>Secure boot</b>                           | Yes          | Yes        | Yes         |
| <b>Cisco Trust Anchor module</b>             | Yes          | Yes        | Yes         |
| <b>MACsec encryption (256-bit AES-GCM)</b>   | No           | No         | No          |
| <b>Cisco WAN MACsec (256-bit AES-GCM)</b>    | No           | No         | No          |
| <b>Access Control Lists (ACLs IPv4/IPv6)</b> | Yes          | Yes        | Yes         |

| Model                                                | HF6100-60L4D     | HF6100-32D       | HF6100-64ED      |
|------------------------------------------------------|------------------|------------------|------------------|
| <b>Quality of service</b>                            |                  |                  |                  |
| QoS – class of service support (L2)                  | Yes              | Yes              | Yes              |
| QoS – type of service support (L3)                   | Yes              | Yes              | Yes              |
| Strict priority queuing                              | Yes              | Yes              | Yes              |
| Bandwidth policing                                   | Yes <sup>1</sup> | Yes <sup>1</sup> | Yes <sup>1</sup> |
| Bandwidth shaping                                    | Yes <sup>1</sup> | Yes <sup>1</sup> | Yes <sup>1</sup> |
| <b>IP routing</b>                                    |                  |                  |                  |
| Border Gateway Protocol Version 4 (BGPv4), and BGPv6 | Yes              | Yes              | Yes              |
| Unicast routing IPv4                                 | Yes              | Yes              | Yes              |
| Unicast routing IPv6                                 | Yes              | Yes              | Yes              |
| Multicast routing IPv4                               | Yes <sup>1</sup> | Yes <sup>1</sup> | Yes <sup>1</sup> |
| Multicast routing IPv6                               | Yes <sup>1</sup> | Yes <sup>1</sup> | Yes <sup>1</sup> |
| L3-routed subinterfaces                              | Yes              | Yes              | Yes              |
| L3 VRF address family                                | Yes              | Yes              | Yes              |
| <b>BGP Ethernet VPN (EVPN) VXLAN</b>                 |                  |                  |                  |
| Spine role                                           | No               | Yes              | Yes              |
| Leaf role                                            | Yes              | Yes              | Yes              |
| Mesh role                                            | Yes              | Yes              | Yes              |
| Border role                                          | Yes              | Yes              | Yes              |
| Standalone role                                      | Yes              | Yes              | Yes              |
| L2/L3 Virtual Network Interface (VNI)                | Yes              | Yes              | Yes              |
| Distributed anycast gateway (symmetric IRB)          | Yes              | Yes              | Yes              |
| ESI multihome support (backend)                      | Yes              | Yes              | Yes              |
| Multi-chassis port channel (frontend)                | Yes              | Yes              | Yes              |
| L3 border handoff                                    | Yes              | Yes              | Yes              |
| L2 border handoff                                    | Yes              | Yes              | Yes              |
| Virtual eXtensible LAN (VXLAN)                       | Yes              | Yes              | Yes              |

| Model                                                             | HF6100-60L4D                                | HF6100-32D                                  | HF6100-64ED                                 |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| <b>NetFlow</b>                                                    |                                             |                                             |                                             |
| NetFlow IPv4 flow records                                         | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            |
| NetFlow IPv6 flow records                                         | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            |
| NetFlow data export                                               | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            |
| NetFlow version 9 (NFv9) export                                   | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            |
| IPFIX export                                                      | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            | Yes <sup>1</sup>                            |
| <b>Programmability through Nexus Hyperfabric Cloud Controller</b> |                                             |                                             |                                             |
| API                                                               | Yes                                         | Yes                                         | Yes                                         |
| ZTP                                                               | Yes                                         | Yes                                         | Yes                                         |
| <b>Smart operations</b>                                           |                                             |                                             |                                             |
| Out-of-band device mgmt                                           | 1x USB-C<br>1x RJ45 RS-232<br>1x RJ45 1Gbps | 1x USB-C<br>1x RJ45 RS-232<br>1x RJ45 1Gbps | 1x USB-C<br>1x RJ45 RS-232<br>1x RJ45 1Gbps |

<sup>1</sup> Feature is not available at FCS but is hardware capable.

## Platform details

### Switch models and configurations

Figures 2 through 6 show the Cisco 6000 Series Switches.



**Figure 2.**  
HF6100-32D: Cisco 6000 Series switch with 32x400Gbps QSFP-DD – front



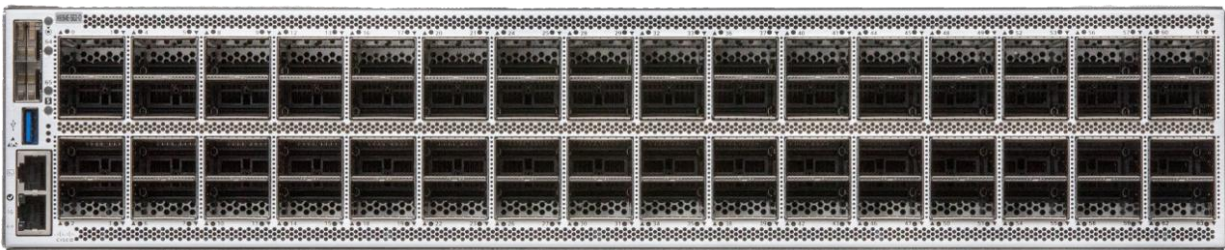
**Figure 3.**  
HF6100-32D: Cisco 6000 Series Switch with 32x400Gbps QSFP-DD – back



**Figure 4.**  
HF6100-60L4D: Cisco 6000 Series Switch with 60x 50G SFP56+ 4x400G QSFP-DD – front



**Figure 5.**  
HF6100-60L4D: Cisco 6000 Series Switch with 60x 50G SFP56+ 4x400G QSFP-DD – back



**Figure 6.**  
HF6100-64ED: Cisco 6000 Series Switch with 64x800G OSFP – front

## Switch configurations and port density

**Table 2.** Cisco 6000 Series Switch port configurations.

| Model                                     | HF6100-60L4D                                                   |
|-------------------------------------------|----------------------------------------------------------------|
| Description                               | Cisco 6000 Hyperfabric switch with 60x50G SFP56 4x400G QSFP-DD |
| 1G port density (RJ45) Mgmt Ethernet      | 1                                                              |
| 1G port density (RJ45) RS-232             | 1                                                              |
| 1G/10G/25G/50G port density (SFP56)       | 60 <sup>1</sup> with 56Gb SerDes                               |
| 40G/100G/200G/400G port density (QSFP-DD) | 4                                                              |
| Breakout support                          | Yes                                                            |

| Model                                            | HF6100-32D                                            |
|--------------------------------------------------|-------------------------------------------------------|
| <b>Description</b>                               | Cisco 6000 Hyperfabric switch with 32x400Gbps QSFP-DD |
| <b>1G port density (RJ45) Mgmt Ethernet</b>      | 1                                                     |
| <b>1G port density (RJ45) RS-232</b>             | 1                                                     |
| <b>1G/10G/25G/50G port density (SFP56)</b>       | -                                                     |
| <b>40G/100G/200G/400G port density (QSFP-DD)</b> | 32 with 56Gb SerDes                                   |
| <b>Breakout support</b>                          | Yes                                                   |

| Model                                          | HF6100-64ED                                        |
|------------------------------------------------|----------------------------------------------------|
| <b>Description</b>                             | Cisco 6000 Hyperfabric switch with 64x800Gbps OSFP |
| <b>1G port density (RJ45) Mgmt Ethernet</b>    | 1                                                  |
| <b>1G port density (RJ45) RS-232</b>           | 1                                                  |
| <b>10G/25G port density (QSFP28) for PIE</b>   | 1 (for Punt Injection Ethernet "PIE" only)         |
| <b>100G/200G/400G/800G port density (OSFP)</b> | 64 with 112 Gb SerDes                              |
| <b>Breakout support</b>                        | Yes                                                |

<sup>1</sup> Support for 1G modules requires a specialized 10-to-1 PHY-enabled SFP.

## Platform support

The following table contains a list of Cisco 6000 Series Switches and their supported Cisco Nexus Hyperfabric subscription tiers.

**Table 3.** Cisco Nexus Hyperfabric switch platform support

| Product family    | Platforms supported | Subscription feature support                    |
|-------------------|---------------------|-------------------------------------------------|
| <b>Cisco 6000</b> | HF6100-60L4D        | Cisco Nexus Hyperfabric Essentials subscription |
|                   | HF6100-32D          | Cisco Nexus Hyperfabric AI Premier subscription |
|                   | HF6100-64ED         |                                                 |

## Software requirements

Each Cisco 6000 Series Switch is an appliance that is shipped with an embedded operating system. The operating system is updated remotely by the Cisco Nexus Hyperfabric Cloud Controller on a scheduled basis. No additional software licensing is required to operate a Cisco 6000 Series Switch in combination with an active Cisco Nexus Hyperfabric subscription. A Cisco 6000 Series Switch will continue to operate with the last-known configuration and embedded operating system if the Nexus Hyperfabric Cloud Controller is not accessible or the subscription expires. Recovery of the embedded operating system requires downloading a securely signed disk image from the Nexus Hyperfabric Cloud Controller. All Cisco 6000 Series Switches that are members of a fabric must use the same operating system release and subscription tier. Switches will be automatically updated to the same release when connected to an existing fabric.

## Platform subscriptions

A valid [Cisco Nexus Hyperfabric](#) subscription is required for every Cisco 6000 switch that is connected to the Nexus Hyperfabric Cloud Controller service. Subscriptions may be initially purchased for 36 to 84 months of operation to support co-term anniversary dates. Subscription renewals are supported for 12 to 84 months. The subscription feature tiers are based on fabric use-cases. At this time, there are two packages planned – one for standalone fabrics and the second for AI fabrics. All the switches in a fabric must use the same entitlement tier; however, an organization may concurrently manage multiple separate fabrics that each use different entitlement tiers.

**Table 4.** Subscription feature tiers

| Features                            | Essentials subscription | Premier subscription, only for Cisco Nexus Hyperfabric AI |
|-------------------------------------|-------------------------|-----------------------------------------------------------|
| Cisco support 8x5xNBD               | Yes                     | Yes <sup>1</sup>                                          |
| Software upgrades                   | Yes                     | Yes <sup>1</sup>                                          |
| Cloud controller                    | Yes                     | Yes <sup>1</sup>                                          |
| Designer (no purchase required)     | Yes                     | Yes <sup>1</sup>                                          |
| BOM generation with optics          | Yes                     | Yes <sup>1</sup>                                          |
| On-site deployment assist           | Yes                     | Yes <sup>1</sup>                                          |
| Plug-and-play deployment            | Yes                     | Yes <sup>1</sup>                                          |
| Spine-leaf topologies               | Yes                     | Yes <sup>1</sup>                                          |
| Super-spine topologies              | No                      | Yes <sup>1</sup>                                          |
| Data center interconnect topologies | No                      | Yes <sup>1</sup>                                          |
| Mesh (spineless) topologies         | Yes                     | Yes <sup>1</sup>                                          |
| EVPN/VXLAN underlay (opaque)        | Yes                     | Yes <sup>1</sup>                                          |
| Static and BGP routing              | Yes                     | Yes <sup>1</sup>                                          |

| Features                                     | Essentials subscription | Premier subscription, only for Cisco Nexus Hyperfabric AI |
|----------------------------------------------|-------------------------|-----------------------------------------------------------|
| Multi-chassis port channel                   | Yes                     | Yes <sup>1</sup>                                          |
| Real-time cloud-accessed telemetry           | Yes                     | Yes <sup>1</sup>                                          |
| IPv4 and IPv6                                | Yes                     | Yes <sup>1</sup>                                          |
| Assertion-based monitoring                   | Yes                     | Yes <sup>1</sup>                                          |
| Survivable data and local management plane   | Yes                     | Yes <sup>1</sup>                                          |
| Hardware-based attestation and security      | Yes                     | Yes <sup>1</sup>                                          |
| API for headless provisioning and monitoring | Yes                     | Yes <sup>1</sup>                                          |
| AI use-case support                          | No                      | Yes <sup>1</sup>                                          |

<sup>1</sup> This subscription tier is not available at FCS.

## Platform specifications

### Physical specifications

**Table 5.** Specifications of the Cisco 6000 Series Switches

| HF6100-60L4D         |                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------|
| Mount type           | 1U rack mount                                                                                             |
| CPU                  | Intel Broadwell 2.3-GHz x86 CPU with 8 cores                                                              |
| Ram                  | 32 GB of DD4 memory                                                                                       |
| Weight               | 28.10 lbs (12.75kg), including power supplies and fans                                                    |
| Dimensions           | H = 1.73 in. (4.39 cm)<br>W = 17.5 in. (44.45 cm)<br>D = 21.8 in. (55.37 cm), including fan/ tray handles |
| Typical system power | 525W at 12.8 Tbps (does not include pluggable power load)                                                 |
| Power supply slots   | 2 (1+1 redundancy)                                                                                        |
| Fan slots            | 6 (5+1 redundant cooling)                                                                                 |
| AC power supply      | 1500W AC port intake                                                                                      |

| HF6100-60L4D              |                                         |
|---------------------------|-----------------------------------------|
| Mount type                | 1U rack mount                           |
| DC power supply           | 1500W DC port intake                    |
| Operating temperature     | 23 to 133° F (-5 to 45° C) at sea level |
| Non-operating temperature | -40 to 158° F (-40 to 70° C)            |
| Humidity                  | 5% to 95%                               |
| Altitude                  | 0 to 9842 ft (0 to 3000 m)              |
| MTBF                      |                                         |

| HF6100-32D                |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| Mount type                | 1U rack mount                                                                                          |
| CPU                       | Intel Broadwell 2.4 GHz x64 CPU with 4 cores                                                           |
| Ram                       | 16GB of DDR4 memory                                                                                    |
| Weight                    | 31 lbs (14.09 kg), including power supplies and fans                                                   |
| Dimensions                | H = 1.73 in. (4.40 cm)<br>W = 17.3 in. (43.9 cm)<br>D = 23.6 in. (59.9 cm), including fan/tray handles |
| Typical system power      | 288W at 12.8 Tbps (does not include pluggable power load)                                              |
| Power supply slots        | 2 (1+1 redundancy)                                                                                     |
| Fan slots                 | 6 (5+1 redundant cooling)                                                                              |
| AC power supply           | 1400W AC port intake<br>1400W AC port exhaust<br>2000W AC port intake<br>2000W AC port exhaust         |
| DC power supply           | 2000W DC port intake<br>2000W DC port exhaust                                                          |
| Operating temperature     | 32 to 104° F (0 to 40° C) at sea level                                                                 |
| Non-operating temperature | -40 to 158° F (-40 to 70° C)                                                                           |
| Humidity                  | 5% to 95%                                                                                              |
| Altitude                  | 0 to 9842 ft (0 to 3000 m)                                                                             |

| HF6100-32D        |                      |
|-------------------|----------------------|
| <b>Mount type</b> | <b>1U rack mount</b> |
| <b>MTBF</b>       |                      |

| HF6100-64ED                      |                                                                                                        |
|----------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Mount type</b>                | <b>2U rack mount</b>                                                                                   |
| <b>CPU</b>                       | Intel Broadwell 2.0 GHz x64 CPU with 8 cores                                                           |
| <b>Ram</b>                       | 64GB of DDR4 memory                                                                                    |
| <b>Weight</b>                    | 45.5 lbs (20.6 kg), including power supplies and fans                                                  |
| <b>Dimensions</b>                | H = 3.43 in. (8.76 cm)<br>W = 17.3 in. (44.0 cm)<br>D = 24.7 in. (62.7 cm), including fan/tray handles |
| <b>Typical system power</b>      | 995W at 51.2 Tbps (does not include pluggable power load)                                              |
| <b>Power supply slots</b>        | 2 (1+1 redundancy)                                                                                     |
| <b>Fan slots</b>                 | 4 (3+1 redundant cooling)                                                                              |
| <b>AC power supply</b>           | 3000W HV-AC port intake                                                                                |
| <b>DC power supply</b>           | 3000W HV-DC port intake                                                                                |
| <b>Operating temperature</b>     | 32 to 104° F (0 to 40° C) at sea level                                                                 |
| <b>Non-operating temperature</b> | -40 to 158° F (-40 to 70° C)                                                                           |
| <b>Humidity</b>                  | 5% to 95%                                                                                              |
| <b>Altitude</b>                  | 0 to 9842 ft (0 to 3000 m)                                                                             |
| <b>MTBF</b>                      |                                                                                                        |

## Power specifications

**Table 6.** HF6100-60L4D power supply specifications

| Power supply feature                             | AC                                               | DC                                               |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| <b>PIDs</b>                                      | <b>C9K-PWR-1500WAC</b>                           | <b>C9K-PWR-1500WDC</b>                           |
| <b>Power max rating</b>                          | 1500 Watts                                       | 1500 Watts                                       |
| <b>Input-voltage range and frequency</b>         | 90-264Vac 47-63Hz                                | -40Vdc to -72Vdc                                 |
| <b>Power supply efficiency</b>                   | 92% (115Vac 50% load)<br>94% (230Vac 50% load)   | 94% (-48Vdc to -60Vdc, 50% load)                 |
| <b>Input current</b>                             | 17A (max) at Vac 100V<br>7A (max) at Vac 240V    | 45A (max) at -40Vdc                              |
| <b>Output ratings</b>                            | Main output: 12V 125A<br>Standby output: 3.3V 5A | Main output: 12V 125A<br>Standby output: 3.3V 5A |
| <b>Output holdup time</b>                        | 12ms                                             | 2ms                                              |
| <b>Power-supply input receptacles</b>            | C221                                             | C10-638977-00 Amphenol connector                 |
| <b>Power cord rating</b>                         | 16A                                              | N/A                                              |
| <b>BTU output<br/>(Note: 1000 BTU/hr = 293W)</b> | 3412                                             | 3412                                             |
| <b>MTBF hours</b>                                | 300,000                                          | 300,000                                          |

**Table 7.** HF6100-32D power supply specifications

| Power supply feature                     | AC                                                | DC |
|------------------------------------------|---------------------------------------------------|----|
| <b>PID</b>                               | <b>PSU1.4KW-ACPI</b><br><b>PSU1.4KW-ACPE</b>      |    |
| <b>Power max rating</b>                  | 1450 Watts                                        | -  |
| <b>Input-voltage range and frequency</b> | 90-264Vac 47-63Hz                                 | -  |
| <b>Power supply efficiency</b>           | 92% (115Vac 50% load)<br>94% (230Vac 50% load)    | -  |
| <b>Input current</b>                     | 14A (max) at Vac 180Vac<br>14A (max) at Vac 90Vac | -  |
| <b>Output ratings</b>                    | Main output: 12V 121A<br>Standby output: 12V 3A   | -  |

| Power supply feature                     | AC                                                 | DC                                              |
|------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| Output holdup time                       | 5ms                                                | -                                               |
| Power-supply input receptacles           | C21                                                | -                                               |
| Power cord rating                        | 16A                                                | -                                               |
| MTBF hours                               | 1,000,000                                          | -                                               |
| Power supply feature                     | AC                                                 | DC                                              |
| <b>PID</b>                               | <b>PSU2KW-ACPI</b><br><b>PSU2KW-ACPIE</b>          | <b>PSU2KW-DCPI</b><br><b>PSU2KW-DCPIE</b>       |
| Power max rating                         | 2000 Watts                                         | 2000 Watts                                      |
| Input-voltage range and frequency        | 90-264Vac 47-63Hz                                  | -48Vdc to -72Vdc                                |
| Power supply efficiency                  | 94% (115Vac 50% load)<br>96% (230Vac 50% load)     | 94% (-48Vdc to -60Vdc, 50% load)                |
| Input current                            | 12A (max) at Vac 200Vac<br>12A (max) at Vac 100Vac | 60A (max) at -40Vdc                             |
| Output ratings                           | Main output: 12V 167A<br>Standby output: 12V 3A    | Main output: 12V 167A<br>Standby output: 12V 3A |
| Output holdup time                       | 12ms                                               | 5ms                                             |
| Power-supply input receptacles           | C21                                                | C10-747100-000 Amphenol connector               |
| Power cord rating                        | 13A                                                |                                                 |
| BTU output<br>(Note: 1000 BTU/hr = 293W) | -                                                  | 3,412                                           |
| MTBF hours                               | 300,000                                            | 300,000                                         |

**Table 8.** HF6100-64ED power supply specifications

| Power supply feature                     | AC                                                    | DC                                              |
|------------------------------------------|-------------------------------------------------------|-------------------------------------------------|
| <b>PID</b>                               | PSU3KW-HVPI                                           | PSU3KW-HVPI                                     |
| <b>Power max rating</b>                  | 3000 Watts                                            | 3000 Watts                                      |
| <b>Input-voltage range and frequency</b> | 90-264Vac 47-63Hz                                     | 240V - 380V DC                                  |
| <b>Power supply efficiency</b>           |                                                       |                                                 |
| <b>Input current</b>                     | 16A (max) at Vac 200-277Vac<br>16A (max) at Vac 90Vac | 14A (max) at Vdc 240-380Vdc                     |
| <b>Output ratings</b>                    | Main output: 12V 121A<br>Standby output: 12V 3A       | Main output: 12V 121A<br>Standby output: 12V 3A |
| <b>Output holdup time</b>                | 5ms                                                   | 5ms                                             |
| <b>Power-supply input receptacles</b>    | Saf-D-Grid T-latch                                    | -                                               |
| <b>Power cord rating</b>                 | 16A at 250 Vac<br>20A at 110 Vac<br>20A at 300 Vac    | 20A at 500 Vdc                                  |
| <b>MTBF hours</b>                        | 1,000,000                                             | 1,000,000                                       |

## Switch performance

**Table 9.** Performance of the Cisco 6000 Series Switches

| Switching performance numbers                         | HF6100-32D<br>HF6100-60L4D     | HF6100-64ED                  |
|-------------------------------------------------------|--------------------------------|------------------------------|
| ASIC                                                  | <u>Q200</u>                    | <u>G200</u>                  |
| <b>Switching capacity</b>                             | Up to 12.8 Tbps <sup>2</sup>   | Up to 51.2 Tbps <sup>2</sup> |
| <b>Forwarding rate</b>                                | 8 Bpps                         | 20 Bpps                      |
| <b>Total MAC addresses</b>                            | Up to 256,000 <sup>1</sup>     | Up to 512,000 <sup>1</sup>   |
| <b>Total IPv4 routes (indirect routes)</b>            | Up to 1,000,000 <sup>1,3</sup> |                              |
| <b>Total IPv4 host routes (direct routes and ARP)</b> | Up to 256,000 <sup>1,3</sup>   |                              |
| <b>Total IPv6 routes (indirect routes)</b>            | Up to 1,000,000 <sup>1,3</sup> |                              |
| <b>Total IPv6 host routes (direct routes and NDP)</b> | Up to 128,000 <sup>1,3</sup>   |                              |

| Switching performance numbers | HF6100-32D<br>HF6100-60L4D             | HF6100-64ED |
|-------------------------------|----------------------------------------|-------------|
| ASIC                          | <u>Q200</u>                            | <u>G200</u> |
| Total IPv4 multicast routes   | Up to 32,000 <sup>1,3</sup>            |             |
| Total IPv6 multicast routes   | Up to 16,000 <sup>1,3</sup>            |             |
| QoS ACL scale (v4/v6)         | Up to 8,000/4,000 <sup>1,4</sup>       |             |
| Security ACL scale (v4/v6)    | Up to 8,000/4,000 <sup>1,4</sup>       |             |
| DRAM                          | 16 GB HF6100-32D<br>32 GB HF6100-60L4D | 64 GB       |
| Flash                         | 32 GB                                  |             |
| VLAN IDs                      | 4094                                   | 4094        |
| Jumbo frame                   | 9,216 bytes                            | 9,216 bytes |

<sup>1</sup> Denotes hardware capably. All numbers are subject to entitlement and feature limitations. Varies based on selected flexible ASIC template and platform.

<sup>2</sup> Line rate for 187byte packet size and above

<sup>3</sup> Table maximum. The exact percentage of allocation will depend on specific IP/mask combinations.

<sup>4</sup> Table maximum. Shared hardware resource. The maximum number of ACEs depends on the number and type of ACLs configured across various interface types.

## Safety and compliance

**Table 10.** Cisco 6000 Series Switch safety and compliance list

| Description                  | Specification                                                                                                                                                                                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HF6100-60L4D</b>          |                                                                                                                                                                                                                                                                                        |
| <b>Safety certifications</b> | <ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• CAN/CSA-C22.2 No. 60950-1</li> <li>• IEC 60950-1</li> <li>• AS/NZS 60950-1</li> <li>• EN 62368-1</li> <li>• UL 62368-1</li> <li>• CAN/CSA-C22.2 No. 62368-1</li> <li>• IEC 62368-1</li> <li>• AS/NZS 62368-1</li> </ul> |

| Description                   | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EMI and EMC compliance</b> | <ul style="list-style-type: none"> <li>• CNS13438: 2006 Class A</li> <li>• EN 300 386 V1.6.1</li> <li>• EN61000-3-2: 2014</li> <li>• EN61000-3-3: 2013</li> <li>• ICES-003 Issue 6: 2016 Class A</li> <li>• KS C 9832:2019</li> <li>• CISPR32:2015:Ed:2</li> <li>• EN 55032:2012/ AC:2013 Class A</li> <li>• EN 55032:2015 Class A</li> <li>• CISPR 32 Edition 2 Class A</li> <li>• VCCI/CISPR 32 2016</li> <li>• CISPR24: 2010 + A1: 2015</li> <li>• EN 300 386 V1.6.1</li> <li>• EN55024: 2010 + A1: 2015</li> <li>• KS C 9835:2019</li> <li>• EN 55035:2017+A11:2020</li> <li>• 47 CFR Part 15:2016</li> </ul> |
| <b>HF6100-32D</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Regulatory compliance</b>  | Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Safety certifications</b>  | <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</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      |
| <b>EMI and EMC compliance</b> | <ul style="list-style-type: none"> <li>47 CFR 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>KN32 Class A</li> <li>CNS13438 Class A</li> <li>EN55024</li> </ul>                                                                                                                                                                                                                                                                                     |

| Description | Specification                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------|
|             | CISPR24<br>EN300386<br>KN 61000 4 Series                                                                              |
| RoHS        | The product is RoHS 6 compliant with exceptions for leaded Ball Grid Array (BGA) balls and lead press fit connectors. |

## System requirements

### Host system requirements

Cisco 6000 Series Switches are cloud-managed and do not require dedicated software to manage the devices. The Cisco Nexus Hyperfabric Cloud Controller portal requires a web browser to interact with connected devices.

**Table 11.** Supported web browsers

| Supported Browser | Versions            |
|-------------------|---------------------|
| Google Chrome     | Version 70 or later |
| Mozilla Firefox   | Version 62 or later |
| Microsoft Edge    | Version 94 or later |

## Ordering information

The high-level hardware components are listed below. For full ordering information, refer to the ordering documentation or speak with a Cisco reseller for assistance.

### Fulfillment modes

Drop-Ship Orders are hardware orders that are shipped directly from Cisco's manufacturing facility to the customer installation site. Drop-Ship Orders will occur when configurable hardware PIDs are used or when there is insufficient stock available for a Static Hardware Order through a distributor. Static Orders are hardware orders that are eligible for fulfillment through a Cisco distributor in a regional location.

### Ways to order

Cisco Nexus Hyperfabric components may be ordered in the following ways:

- **Hardware-only orders**
  - Hardware-only orders are used where the Cisco 6000 Series hardware is purchased independently of a Cisco Nexus Hyperfabric Subscription. When hardware is ordered separately, it is covered by Cisco's hardware warranty terms for a limited time. A hardware-only order may be performed using any of the Cisco 6000 Series hardware PIDs.

- **Hardware and subscription linked orders**

- Hardware and subscription linked orders are used where the Cisco 6000 Series hardware is purchased along with a Cisco Nexus Hyperfabric subscription. A hardware and subscription linked order may be purchased using any of the Cisco 6000 Series hardware PIDs. When the hardware is purchased together with a linked subscription, an embedded Cisco hardware support agreement is included for the duration of the subscription.

- **Subscription-only orders**

- Subscription-only orders are used where the Cisco Nexus Hyperfabric Subscription is purchased independently of the Cisco 6000 Series hardware. A subscription-only order includes an embedded Cisco hardware support agreement for the duration of the subscription.

**Table 12.** Cisco 6000 Series Switch ordering information

| Part #                           | Product description                                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Drop-ship PIDs</b>            |                                                                                                                          |
| HF6100-32D-D                     | Cisco 6000 Hyperfabric switch, 32x400Gbps QSFP-DD, configurable hardware only                                            |
| HF6100-32D-SVC-D                 | Cisco Nexus Hyperfabric switch HF6100-32D subscription linked bundle                                                     |
| HF6100-60L4D-D                   | Cisco 6000 Hyperfabric switch, 60x50G SFP56 4x400G QSFP-DD, configurable hardware only                                   |
| HF6100-60L4D-SVC-D               | Cisco Nexus Hyperfabric switch HF6100-60L4D subscription linked bundle                                                   |
| HF6100-64ED-D                    | Cisco 6000 Hyperfabric switch, 64x800Gbps OSFP, configurable hardware only                                               |
| HF6100-64ED-SVC-D                | Cisco Nexus Hyperfabric switch HF6100-64ED subscription linked bundle                                                    |
| <b>Static configuration PIDs</b> |                                                                                                                          |
| HF6100-32D-S                     | Cisco 6000 Hyperfabric switch, 32x400Gbps QSFP-DD, fixed hardware only<br>Port exhaust airflow, AC power supply          |
| HF6100-32D-SVC-S                 | Cisco Nexus Hyperfabric switch HF6100-32D subscription linked bundle                                                     |
| HF6100-60L4D-S                   | Cisco 6000 Hyperfabric switch, 60x50G SFP56 4x400G QSFP-DD, fixed hardware only<br>Port exhaust airflow, AC power supply |
| HF6100-60L4D-SVC-S               | Cisco Nexus Hyperfabric switch HF6100-60L4D subscription linked bundle                                                   |
| HF6100-64ED-S                    | Cisco 6000 Hyperfabric switch, 64x800Gbps OSFP, fixed hardware only                                                      |
| HF6100-64ED-SVC-S                | Cisco Nexus Hyperfabric switch HF6100-64ED subscription linked bundle                                                    |
| <b>Subscription-only PIDs</b>    |                                                                                                                          |
| HF6100-32D-SVC                   | Cisco Nexus Hyperfabric switch HF6100-32D subscription only                                                              |
| HF6100-60L4D-SVC                 | Cisco Nexus Hyperfabric switch HF6100-60L4D subscription only                                                            |

| Part #            | Product description                                          |
|-------------------|--------------------------------------------------------------|
| HF6100-64ED-SVC-S | Cisco Nexus Hyperfabric switch HF6100-64ED subscription only |

**Table 13.** Cisco 6000 Series Switch accessories ordering information

| Part #                               | Product description                                                                                                                                                                                      |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HF6100-32D</b>                    |                                                                                                                                                                                                          |
| <b>Pluggable transceiver modules</b> | Please refer to Cisco's TMG matrix for the list of supported Cisco® pluggable transceiver modules <a href="https://tmgmatrix.cisco.com/?si=HF6100-32D">https://tmgmatrix.cisco.com/?si=HF6100-32D</a>    |
| HF6100-32D-NOS                       | Cisco Nexus Hyperfabric switch HF6100-32D software image                                                                                                                                                 |
| PSU2KW-DCPI                          | 2000 Watt DC power supply, port intake airflow                                                                                                                                                           |
| PSU2KW-DCPE                          | 2000 Watt DC power supply, port exhaust airflow                                                                                                                                                          |
| PSU1.4KW-ACPI                        | 1450 Watt AC power supply, port intake airflow                                                                                                                                                           |
| PSU1.4KW-ACPE                        | 1450 Watt AC power supply, port exhaust airflow                                                                                                                                                          |
| PSU2KW-ACPE                          | 2000 Watt AC power supply, port exhaust airflow                                                                                                                                                          |
| PSU2KW-ACPI                          | 2000 Watt AC power supply, port intake airflow                                                                                                                                                           |
| FAN-1RU-PI-V2                        | 1RU Fan with Port-side Air Intake                                                                                                                                                                        |
| FAN-1RU-PE-V2                        | 1RU Fan with Port-side Air Exhaust                                                                                                                                                                       |
| N9K-ACC-KIT-1RU-L                    | 19" rackmount 4-post kit, long                                                                                                                                                                           |
| N9K-ACC-KIT-1RU-S                    | 19" rackmount 4-post kit, short                                                                                                                                                                          |
| <b>HF6100-60L4D</b>                  |                                                                                                                                                                                                          |
| <b>Pluggable transceiver modules</b> | Please refer to Cisco's TMG matrix for the list of supported Cisco pluggable transceiver modules <a href="https://tmgmatrix.cisco.com/?si=HF6100-60L4D">https://tmgmatrix.cisco.com/?si=HF6100-60L4D</a> |
| HF6100-60L4D-NOS                     | Cisco Nexus Hyperfabric switch HF6100-60L4D software image                                                                                                                                               |
| C9K-PWR-1500WAC                      | 1500 Watt AC power supply                                                                                                                                                                                |
| C9K-PWR-1500WDC                      | 1500 Watt DC power supply                                                                                                                                                                                |
| HF-ACC-RM2-4P19L                     | 19" rackmount 4-post kit                                                                                                                                                                                 |
| PWR-C6-BLANK                         | Power-supply blank cover                                                                                                                                                                                 |
| C9500X-FAN-1U-R                      | Port Intake cooling fan                                                                                                                                                                                  |
| C9500X-FAN-1U-F                      | Port exhaust cooling fan                                                                                                                                                                                 |

| Part #                               | Product description                                                                                                                                                                                    |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HF6100-64ED</b>                   |                                                                                                                                                                                                        |
| <b>Pluggable transceiver modules</b> | Please refer to Cisco's TMG matrix for the list of supported Cisco pluggable transceiver modules <a href="https://tmgmatrix.cisco.com/?si=HF6100-64ED">https://tmgmatrix.cisco.com/?si=HF6100-64ED</a> |
| <b>HF6100-64ED-NOS</b>               | Cisco Nexus Hyperfabric switch HF6100-64ED software image                                                                                                                                              |
| <b>PSU3KW-HVPI</b>                   | 3000 Watt High Voltage AC / DC power supply                                                                                                                                                            |
| <b>8K-2RU-KIT-SB</b>                 | 19" rackmount 4-post kit                                                                                                                                                                               |
| <b>FAN-PI-V4</b>                     | Port Intake cooling fan                                                                                                                                                                                |

## Support and warranty

### Cisco standard hardware warranty

The Cisco 6000 Series Switches have a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a Return Materials Authorization (RMA).

### Cisco hardware and software Level 1: Success Track support

The Cisco 6000 Series Switches that are associated with an active Cisco Nexus Hyperfabric subscription come with Cisco Return Materials Authorization (RMA) for warranty and hardware support. This warranty coverage includes Next-Business-Day (NBD) delivery of replacement hardware, as well as Cisco Technical Assistance Center (Cisco TAC) support. Your RMA support is conditional to maintaining a Cisco Nexus Hyperfabric subscription, which includes the Level 1: Success Track contract. We encourage you to carefully review the warranty and hardware returns agreement for your specific product before use. For further information about hardware RMA and warranty terms, visit <https://www.cisco.com/go/warranty>.

**Table 14.** Hardware warranty options

| Warranty Topics             | Standard hardware warranty                                                                                                                                                               | Hardware and software Level 1: Success Track support                                                                                                                                                                                                             |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Devices covered</b>      | Applies to all Cisco 6000 Series Switches                                                                                                                                                |                                                                                                                                                                                                                                                                  |
| <b>Warranty duration</b>    | 12 Months from date of purchase                                                                                                                                                          | The duration of a Cisco Nexus Hyperfabric subscription with the hardware serial number associated with the subscription contract.                                                                                                                                |
| <b>End-of-life policy</b>   | In the event of discontinuance of product manufacture, Cisco warranty support is limited to 2 years from the announcement of discontinuance.                                             |                                                                                                                                                                                                                                                                  |
| <b>Hardware replacement</b> | A replacement will be shipped within 10 working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times might vary depending on customer location. | Cisco or its service center will use commercially reasonable efforts to ship a replacement for NBD delivery, where available after receipt of the Return Materials Authorization (RMA) request. Actual delivery times might vary depending on customer location. |

| Warranty Topics          | Standard hardware warranty                                                                                                                                                                                                                                                                                                                                                                                 | Hardware and software Level 1: Success Track support                                                                                                                                                                                                                                                                                                                                |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Effective date</b>    | Hardware warranty commences from the date of shipment to the customer (and in case of resale by a Cisco reseller, not more than 90 days after the original shipment by Cisco).                                                                                                                                                                                                                             | Hardware warranty commences from the date of subscription contract creation for the customer (and in case of resale by a Cisco reseller, not more than 60 days after the contract subscription creation date).                                                                                                                                                                      |
| <b>Cisco TAC support</b> | Cisco will provide, during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to 90 days from the date of shipment of the originally purchased Cisco 6000 Series Switch product. This support includes basic connectivity to the cloud or internet connectivity support beyond the specific device under consideration. | Cisco will provide, during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to 90 days from the date of shipment of the originally purchased Cisco 6000 Switch Series product. This support does not include solution or network-level support beyond the specific device under consideration. |
| <b>Cisco.com access</b>  | The warranty allows guest access only to Cisco.com.                                                                                                                                                                                                                                                                                                                                                        | Warranty allows authorized access to Cisco.com to open a Cisco TAC case and create a Return Materials Authorization (RMA) request based on a registered serial number and support contract.                                                                                                                                                                                         |

For further information about Cisco Nexus Hyperfabric offer terms, visit <https://www.cisco.com/c/en/us/about/legal/cloud-and-software/software-terms.html>.

## Platform sustainability

Information about Cisco’s Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco’s CSR and sustainability [reporting](#).

**Table 15.** Cisco environmental sustainability information

| Sustainability topic |                                                                                                        | Reference                                                                     |
|----------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>General</b>       | Information on product-material-content laws and regulations                                           | <a href="#">Materials</a>                                                     |
|                      | Information on electronic waste laws and regulations, including our products, batteries, and packaging | <a href="#">WEEE Compliance</a>                                               |
|                      | Information on product takeback and reuse program                                                      | <a href="#">Cisco Takeback and Reuse Program</a>                              |
|                      | Sustainability inquiries                                                                               | Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a> |
|                      | Countries and regions supported                                                                        | <a href="#">Table 10: Regulatory Compliance</a>                               |
| <b>Power</b>         | Power (Including pluggables)                                                                           | <a href="#">Table 5: Card Specifications</a>                                  |
| <b>Material</b>      | Product packaging weight and materials                                                                 | Contact: <a href="mailto:environment@cisco.com">environment@cisco.com</a>     |
|                      | Weight                                                                                                 | <a href="#">Table 5: Card Specifications</a>                                  |

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## Cisco and partner services

Cisco and our global partners offer a wide range of services to help accelerate your success in connecting Cisco 6000 Series Switches to the Nexus Hyperfabric Cloud Controller. Our innovative services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operational efficiency and improve your network control.

Cisco Nexus Hyperfabric subscriptions include proactive support from Cisco Services to help you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. Spanning the entire network lifecycle, our service offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

For more information on Cisco Services, visit <https://www.cisco.com/go/services>.

For more information about Cisco partner services in your area, visit <https://locatr.cloudapps.cisco.com/WWChannels/LOCATR/openBasicSearch.do>

## Cisco Capital

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Cisco Capital® makes it easier to get the right technology to achieve your objectives, enable business transformation, and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services, and complementary third-party equipment in easy, predictable payments.

[Learn more.](#)

## Document history

**Table 16.** Document history

| New or Revised Topic | Described In                          | Date            |
|----------------------|---------------------------------------|-----------------|
| Limited Availability | Cisco 6000 Series Hardware Data Sheet | October 28 2024 |
| General Availability | Cisco 6000 Series PID updates.        | March 2025      |
| G200 switch added    | Cisco 6100-64ED inclusion             | July 2025       |

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