



The bridge to possible

[Data sheet](#)
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Cisco Nexus 3550-H High-density Layer 1 Switch

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High-density, low-latency, physical layer switching

The Cisco Nexus® 3550-H High-density Layer 1 Switch is purpose-built and optimized for enterprise network monitoring, patch and fanout connections to support high-speed applications.

The Cisco Nexus® 3550-H High-density Layer 1 Switch is unlike traditional network switches that operate at the data-link layer (Layer 2), the Cisco Nexus 3550-H operates at the physical network layer (Layer 1). Connections through the switch are made electrically through a matrix switch (see figure 3). This allows the switch to tap into connections (for network monitoring), patch connections between ports (for reconfiguration), and fanout connections from one port to many (for high-speed applications), at nearly zero latency (<5ns).

Introducing QSFP-DD

Cisco Nexus 3550-H High-density Layer 1 Switch

The Cisco Nexus 3550-H (160) is the first networking switch to use double-density QSFP-DD connectors. QSFP-DD connectors are 100 percent backward compatible with legacy QSFP connectors, enabling a smooth transition path from legacy network cabling/connectors to QSFP-DD high-density connectors. The Cisco Nexus 3550-H is also available in a QSFP-only option.

All-new management platform

Enterprise manageability features are core to the Cisco Nexus 3550-H.

The Cisco Nexus 3550-H features an all-new management platform based on the Nexus 3550-F Modular Layer 1 Matrix Switch.

The Cisco Nexus 3550-H features a powerful x86-based management CPU, dual (1G and 10G) Ethernet management interfaces, USB and RS232-based console access, and 10Gbps access from the management CPU to the data plane. It also offers high-quality PPS and GPS-based time synchronization options for inline packet timestamping.

Packet-aware statistics and monitoring

The Cisco Nexus 3550-H operates at the physical layer and is fully packet aware.

Every port on the Cisco Nexus 3550-H is monitored for vital packet statistics, including the number of packets/bytes transmitted/received, and transmit/receive errors. The switch also provides deep diagnostics on each of its 20 QSFP-DD ports including light levels, operating temperatures, transceiver capabilities, and more. All of these statistics are available at no latency cost on the critical path.

Transparent tapping

Replace 53 optical taps in a single 1RU switch

Network monitoring is vital for logging, debugging, and compliance. While optical taps can be used for low latency network inspection, they consume valuable rack space and cannot be remotely managed. The Cisco Nexus 3550-H replaces 53 optical taps (159 lanes) in a single 1RU switch. Taps through the 3550-H employ active signal regeneration so that the signal quality remains high while port-to-port latencies are as low as 3.2ns with nearly undetectable jitter. This makes it nearly transparent to other infrastructure devices in your network.



Figure 1.
Cisco Nexus 3550-H High-density Layer 1-144 Switch



Figure 2.
Cisco Nexus 3550-H High-density Layer 1-160 Switch

The Cisco Nexus 3550-H. A patch is configured between ports 1 and 3: all traffic from port 1 is directed to port 3, all traffic from port 3 is directed to port 1. Taps are configured from port 1 to ports 4 and 5: traffic from port 1 is replicated to ports 4 and 5 at latencies as low as 3.2ns.

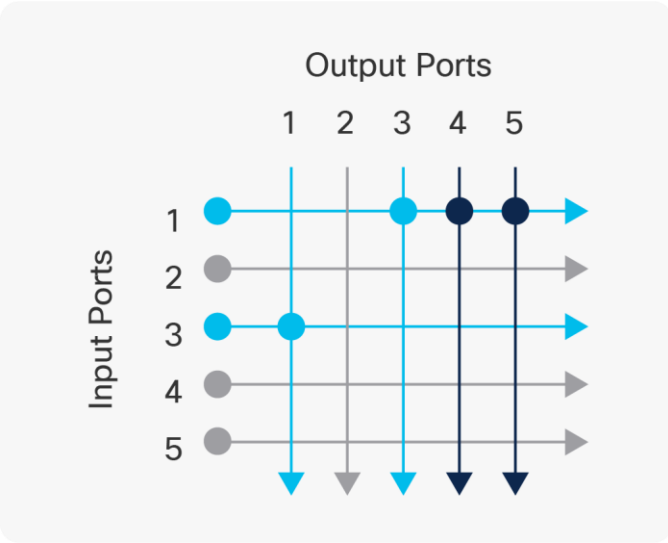


Figure 3.
Cisco Nexus 3550-H port matrix

Layer 1 features

- Tap, patch, and fanout. 1:1 and 1:N connectivity on all ports***
- 3.2ns (min) port latency
- 1G/10Gb/s connectivity on all ports
- I/O signal conditioning and regeneration

Statistics

- Packet counters (RX, TX, dropped, etc.)
- Per-port status LEDs
- tcpdump all ports
- QSFP(-DD) diagnostics (light levels, temps, etc.)
- SNMP, local, and remote syslog
- LLDP TX/RX
- Time series logging to InfluxDB

Connectivity

- 20 QSFP-DD ports, 160x 10G lanes (Cisco Nexus 3550-H Hydra 160) or 36 QSFP ports, for 144x 10G lanes (Cisco Nexus 3550-H Hydra 144)
- QSFP (-DD) 8x [10GBASE-SR, 10GBASE-LR, 10GBASE-LRM, 1000BASE-SX, 1000BASE-LX]
- QSFP (-DD) Copper Direct Attach
- RJ45/SFP+ management ports (1G/10G)
- RJ45 Industry standard serial port
- USB Micro serial port
- USB (for firmware upgrades)
- 2x SMA for GPS and PPS

Management

- x86-based management CPU
- CLI via serial, SSH, and telnet
- JSON RPC API for all CLI commands
- Automatic configuration via DHCP
- TACACS+ and multiuser support
- ACLs on management interface
- FW updates via SFTP, TFTP, HTTP and USB
- Onboard BASH and Python scripts
- Onboard Cron jobs
- Time sync via PPS, GPS, PTP and NTP, Low latency tapping, patching, and fan-out

General

- 19" 1RU, rack mount
- Weight: 15kg (24lbs)
- Dual, hot-swappable supplies
- Standard: AC 100-240 Vac, 50-60 Hz
- Optional: DC 40-72Vdc
- Maximum consumption: 750W
- 3 hot-swappable fan modules
- Optional airflow direction (FTB, BTF)
- Operating temperature: -5 °C to 45 °C
- Storage temperature: -40 °C to 70 °C
- Operating Relative Humidity: 5% to 90% (non-condensing)
- Storage Relative Humidity: 5% to 95% (non-condensing)
- Max Operating Altitude AC: 5000m
- Max Operating Altitude DC: 3048m (Mainland China 2000m)
- Class I Equipment

Product sustainability

Information about Cisco's environmental, social, and governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

Table 1. Cisco environmental sustainability information

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
	Operating and storage conditions	General
Power	Power supply	General
Material	Maximum power consumption	General
	Product packaging weight and materials	Contact: environment@cisco.com
	Dimension and weight	General

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