

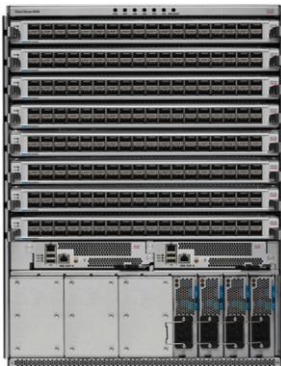
Cisco Network Convergence System 5500 Series

Cloud Scale for WAN Aggregation

The Network Convergence System 5500 Series offers industry-leading density of routed 100-GE ports for high-scale WAN aggregation. The NCS 5500 Series is designed to efficiently scale between data centers and large enterprise, web, and service provider WAN and aggregation networks.

Product Overview

Figure 1. The Cisco NCS 5508 Chassis

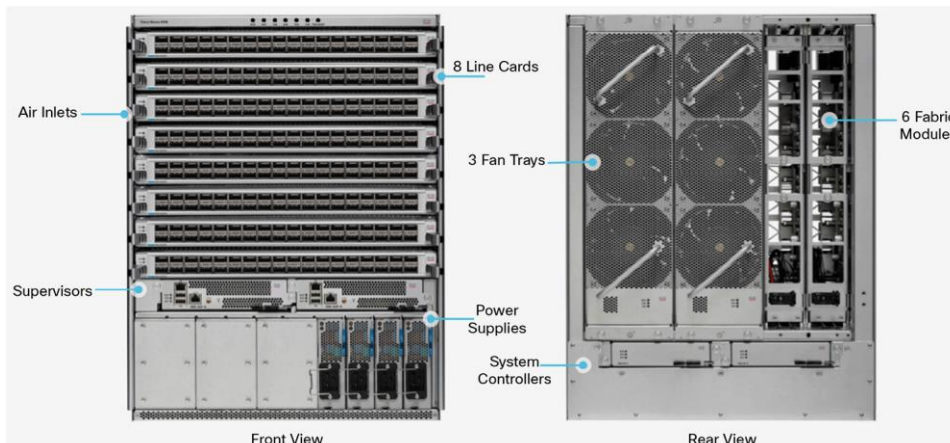


In its first phase, the Cisco Network Convergence System (NCS) 5500 Series includes the Cisco NCS 5508 modular chassis (Figure 1). It supports up to eight line cards, six switch fabric cards, two route processors, two system controllers, three fan trays, and eight power supplies. The router supports 100 Gigabit Ethernet ports.

Cisco NCS 5508 Chassis Components

The Cisco NCS 5508 chassis is built using the components illustrated in Figure 2, which are described in the following sections.


Figure 2. Cisco NCS 5508 Chassis Components



Cisco NCS 5500 Series Line Card

The NCS 5508 chassis supports a 36-port 100 Gigabit Ethernet Quad Small Form-factor Pluggable (QSFP) Cisco NCS 5500 Series line card, described in Table 1.


Table 1. Cisco NCS 5500 Series Line Card

<p>100G Gigabit Ethernet Line Card (Part Number: NC55-36X100G)</p> 	<ul style="list-style-type: none">• 36-port 100 Gigabit Ethernet QSFP line card• 6 forwarding application-specific integrated circuits (ASICs)• On-chip tables for 256K IPv4 or 64K IPv6 routes• On-chip tables for 750K IPv4 host routes, MAC, and labels• On-chip ternary content-addressable memory (TCAM) for network access control lists (ACLs) and QoS• Supports QSFP28 100G optics (SR4, LR4, coarse wavelength division multiplexing [CWDM])• Supports QSFP+ 40G optics (10G breakout)
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Cisco NCS 5500 Series Switch Fabric Cards

As part of the NCS 5500 Series, the Cisco NCS 5508 chassis has a Clos fabric design that interconnects the line cards with rear-mounted fabric modules. It supports up to six switch fabric cards, all fabric cards are directly connected to all line cards. With load balancing across fabric cards, the architecture achieves optimal bandwidth distribution within the chassis.


Table 2. Cisco NCS 5500 Series Switch Fabric Card

<p>NCS 5500 Series Switch Fabric Card</p> 	<ul style="list-style-type: none">• 6 fabric cards per chassis• N+1 redundancy• Graceful bandwidth reduction if more than two are down• Single stage• Direct mate to line cards – no midplane
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Cisco NCS 5500 Series Route Processor

A pair of redundant route processor cards manages all routing operations on the Cisco NCS 5508 chassis.


Table 3. Cisco NCS 5500 Series Route Processor Module

<p>NCS 5500 Series Route Processor</p> 	<ul style="list-style-type: none">• 6-core @ 2.2 GHz• 24 GB DRAM• 256 GB flash• 2 USB• Console• Management Ethernet• Clock inputs
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Cisco NCS 5500 Series System Controller

A pair of redundant system controllers offloads chassis management functions from the route processor cards. The controllers are responsible for managing power supplies and fan trays, trays and monitoring the environmental conditions in the chassis.

Table 4. Cisco NCS 5500 Series System Controller


<p>NCS 5500 Series System Controller</p> 	<ul style="list-style-type: none">• Dual-core @ 1.3GHz• Ethernet Out-of-Band Channel (EOBC) for internal connection between line cards, fabric cards, supervisors• Ethernet Protocol Channel (EPC) for traffic punted to the RP
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Cisco NCS 5500 Series Power Supply

The Cisco NCS 5500 Series supports up to eight hot-swappable, front-panel-accessible power supplies. A fully loaded chassis can operate with four 3000W AC power supplies. N+1 and N+N redundancy modes are supported. The 3000W AC power supply is 80 Plus Platinum rated, providing more than 92 percent efficiency across typical workloads.

The additional unused power-supply slots are not needed with existing line cards, but they offer headroom to support higher-bandwidth line cards in the future.

Table 5. Cisco NCS 5500 Series 3Kw AC Power Supply

<p>NCS 5500 Series 3Kw AC Power Supply</p> 	<ul style="list-style-type: none">• 3000W AC power supply, single 20A input – 220V• N+1 or N+N grid redundancy• Hot swappable• Front-panel-accessible• 50 to 60 Hz frequency• 92% or greater efficiency (20 to 100% load)• RoHS compliant
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Cisco NCS 5500 Series Fan Trays

Three hot-swappable fan trays are supported on the NCS 5508 chassis with front-to-back cooling. Each fan tray covers two fabric modules and can be removed for access.

Software Requirements

The Cisco NCS 5500 Series supports Cisco IOS® XR Software Release 6.0 and later.

For a complete list of supported features, refer to [Cisco Feature Navigator](#).

Specifications

Tables 6 through 16 list key specifications for the Cisco NCS 5500 Series. (Please check software release notes for feature support information).

Supported Optics Modules

Table 6. Cisco NCS 5500 Series Supported Optics

Optic Type	Product Description
QSFP-100G-SR4-S	QSFP 100GBASE SR4
QSFP-100G-LR4-S	QSFP 100GBASE LR4
QSFP-100G-CWDM4-S	QSFO 100GBASE CWDM4

Environment

Table 7. Environmental Properties

Property	Cisco NCS 5500 Series
Physical (H x W x D) <ul style="list-style-type: none">Cisco NCS 5508	<ul style="list-style-type: none">22.70 x 17.50 x 31.76 in. (57.78 x 44.50 x 80.67 cm)
Operating temperature	32 to 104°F (0 to 40°C)
Non-operating (storage) temperature	-40 to 158°F (-40 to 70°C)
Humidity	5 to 95% (noncondensing)
Altitude	0 to 9,842 ft (0 to 3000m)

Weight and Typical Power

Table 8. Weight and Power Consumption

Component	Weight	Typical Power	Maximum Power
Chassis <ul style="list-style-type: none">Cisco NCS 5508 chassis	<ul style="list-style-type: none">150 lb (68.2 kg)	-	-
Power supply <ul style="list-style-type: none">NCS 5500 AC 3KW Power Supply	<ul style="list-style-type: none">6.2 lb (2.8 kg)	-	-
Fan tray (3 maximum) <ul style="list-style-type: none">NCS 5508 Fan Tray	<ul style="list-style-type: none">8.25 lb (3.7 kg)	<ul style="list-style-type: none">75W	<ul style="list-style-type: none">290W Per Fan Tray
Switch Fabric card (6 maximum) <ul style="list-style-type: none">NCS 5508 Fabric Card	<ul style="list-style-type: none">9.59 lb (4.4 kg)	<ul style="list-style-type: none">240W	<ul style="list-style-type: none">250W Per Fabric Card
Route Processor (2 maximum) <ul style="list-style-type: none">NCS 5500 Route Processor	<ul style="list-style-type: none">6.00 lb (2.72 kg)	<ul style="list-style-type: none">35W	<ul style="list-style-type: none">90W Per Route Processor
System controller (2 maximum) <ul style="list-style-type: none">NCS 5500 System Controller	<ul style="list-style-type: none">1.91 lb (0.9 kg)	<ul style="list-style-type: none">15W	<ul style="list-style-type: none">35W Per System Controller
36-port 100 Gigabit Ethernet QSFP28 line card <ul style="list-style-type: none">NCS 5500 36X10GE Line card	<ul style="list-style-type: none">11.48 lb (5.2 kg)	<ul style="list-style-type: none">650W	<ul style="list-style-type: none">902W Per Line Card

Mean Time Between Failure (MTBF) Information

Table 9. MTBF Information

Component	MTBF
Chassis <ul style="list-style-type: none"> • Cisco NCS 5508 chassis 	<ul style="list-style-type: none"> • 928,910
Power supply <ul style="list-style-type: none"> • NCS 5500 AC 3KW Power Supply 	<ul style="list-style-type: none"> • 507,050
Fan tray (3 maximum) <ul style="list-style-type: none"> • NCS 5508 Fan Tray 	<ul style="list-style-type: none"> • 2,705,100
Fabric Card (6 maximum) <ul style="list-style-type: none"> • NCS 5508 Fabric Card 	<ul style="list-style-type: none"> • 524,820
Route Processor (2 maximum) <ul style="list-style-type: none"> • NCS 5500 Route Processor 	<ul style="list-style-type: none"> • 205,390
System controller (2 maximum) <ul style="list-style-type: none"> • NCS 5500 System Controller 	<ul style="list-style-type: none"> • 1,108,240
36-port 100 Gigabit Ethernet QSFP28 line card <ul style="list-style-type: none"> • NCS 5500 36X10GE Line card 	<ul style="list-style-type: none"> • 117,870

Regulatory Standards Compliance

Table 10. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Regulatory compliance	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	<ul style="list-style-type: none"> • UL 60950-1 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943
EMC: Emissions	<ul style="list-style-type: none"> • 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	<ul style="list-style-type: none"> • EN55024 • CISPR24 • EN300386 • 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.

Ordering Information

Table 11. Ordering Information

Part Number	Product Description
Hardware	
NCS-5508	NCS5500 8 Slot Single Chassis
NCS-5508=	NCS5500 8 Slot Single Chassis Spare
NC55-5508-FC	NCS 5508 Fabric Card
NC55-5508-FC=	NCS 5508 Fabric Card Spare
NC55-RP	NCS 5500 Route Processor
NC55-RP=	NCS 5500 Route Processor Spare
NC55-SC	NCS 5500 System Controller
NC55-SC=	NCS 5500 System Controller Spare
NC55-PWR-3KW-AC	NCS 5500 AC 3KW Power Supply
NC55-PWR-3KW-AC=	NCS 5500 AC 3KW Power Supply Spare
NC55-5508-FAN	NCS 5508 Fan Tray
NC55-5508-FAN=	NCS 5508 Fan Tray Spare
NC55-36X100G	NCS 5500 36x100G Line Card
NC55-36X100G=	NCS 5500 36x100G Line Card Spare
NC55-RP-BLNK	NCS 5500 Route Processor Blank Filler
NC55-RP-BLNK=	NCS 5500 Route Processor Blank Filler Spare
NC55-5500-LC-BLNK	NCS 5500 Line Card Blank Filler
NC55-5500-LC-BLNK=	NCS 5500 Line Card Blank Filler Spare
NC55-5508-FC-BLNK	NCS 5508 Fabric Card Blank Filler
NC55-5508-FC-BLNK=	NCS 5508 Fabric Card Blank Filler Spare
NC55-PS-BLNK	NCS 5500 Power Supply Blank Filler
NC55-PS-BLNK=	NCS 5500 Power Supply Blank Filler Spare
Line Cards	
NC55-36X100G-BA	NCS 5500 36x100G Base
NC55-36X100G-LIC	NCS 5500 36x100G Line Card Right to Use License
NC55-36X100G	NCS 5500 36x100G Line Card
Software	
XR-NC55-P-06.00	IOS-XR 6.0 Release Software License
XR-NC55-PK9-06.00	IOS-XR 6.0 Release Software License
Accessories	
NC55-5500-ACC-KIT	NCS 5500 Accessory Kit
NC55-5500-ACC-KIT=	NCS 5500 Accessory Kit Spare
NC55-5508-RMK	NCS 5508 Rack Mounting Kit
NC55-5508-RMK=	NCS 5508 Rack Mounting Kit Spare

Warranty

The Cisco NCS 5500 Series has a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a return materials authorization (RMA).

Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco NCS 5500 Series. These innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners, and they are focused on helping you increase operating efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet™ Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service, which offers proactive diagnostics and real-time alerts on your Cisco NCS 5500 Series. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

Cisco Capital

Financing to Help You Achieve Your Objectives

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For More Information

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