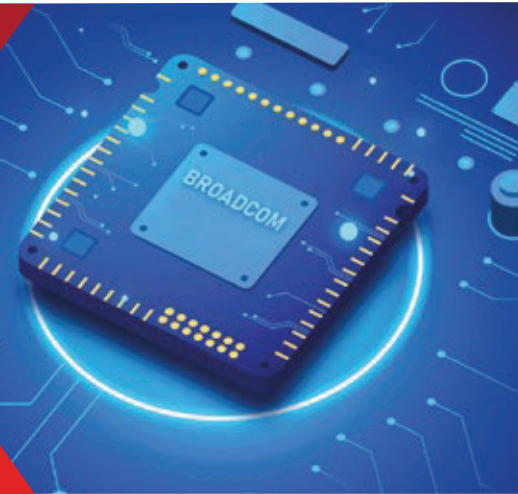# NX-6120 Series High Performance Intelligent Ethernet Switch

OVERVIEW

NX-6120 series is a new generation of high-performance, high-port density, high-security and easy-to-install intelligent managed Gigabit Ethernet switches developed by Nodexon using industry-leading ASIC technology, supporting IPv4/IPv6 dual-stack management and forwarding, supports static routing protocols and routing protocols such as RIP, OSPF, IS-IS, BGP, etc., and supports rich management and security features.

NX-6120 products are mainly positioned at the access layer and aggregation layer of enterprises and campuses, meeting high-density Gigabit access, fixed 10 Gigabit uplink ports, supporting PoE+, and building high-performance end-to-end IP network solutions with other NODEXON products.

NX-6120 series Ethernet switch includes the following models:

NX-6120S-28S: 24x10/100/1000BASE-T Ethernet ports, 4x1G/10G BASE-X SFP+ ports.

NX-6120S-54S: 48x10/100/1000BASE-T Ethernet ports, 6x1G/10G BASE-X SFP+ ports.

NX-6120S-28S-HPE: 24x10/100/1000BASE-T Ethernet ports (PoE+), 4x1G/10G BASE-X SFP+ ports.

NX-6120S-54S-PE: 48x10/100/1000BASE-T Ethernet ports (PoE+), 6x1G/10G BASE-X SFP+ ports.

FEATURES HIGHLIGHTS

> iSmartMC (Smart Management Center)

> Visualization Ability

> High-performance IPv4/IPv6 Service Capabilities

> Comprehensive Security Control Policies

> Intelligent Resilient Framework 2 (IRF2)

> Multiple Reliability Protection

> Abundant QoS Features

> Outstanding Management Capacity

> Application-Driven Campus

> Cloud Empowerment, Simplified Network

> Green Technology

> Fast PoE, Perpetual PoE

NX-6120S-28S

NX-6120S-54S

NX-6120S-28S-HPE

NX-6120S-54S-PE
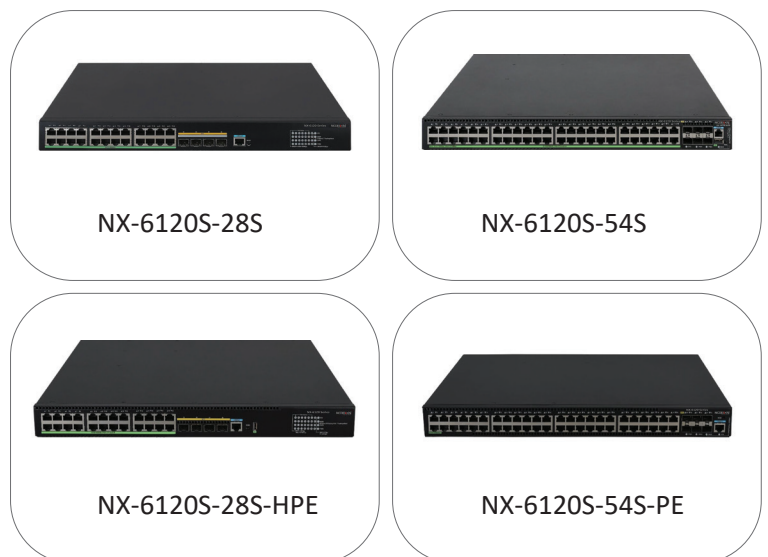
High Performance Intelligent Ethernet Switch NX-6120 Series

PRODUCT FEATURES

iSmartNMC (Smart Management Center)

As the network scale increases, a large number of access devices are required at the network edge, which makes the management of these devices very cumbersome. The main purpose of iSmartNMC is to solve the problem of centralized management of a large number of scattered network devices. It is designed to solve the switch-based operation and maintenance tasks of small enterprises. iSmartNMC provides unified operation, maintenance, and management of the network by built-in graphical operation platform.

iSmartNMC simplifies the operation, maintenance, and management of Small and Medium-sized campuses:

Smart management: includes device role selection, FTP server configuration, global configuration, and network management port configuration, etc.

Intelligent operation and maintenance: include group management, equipment, or group upgrade backup, monitoring and equipment failure replacement, etc.

Visualization: includes networking topology visualization and management, device list display, device ports display, etc.

Smart business: includes user management, etc. After network access users are created and successfully activated, these users can access the iSmartNMC network through the one-key-armed port.

The NX-6120 series switches can be used as the management device of iSmartNMC. You can log in to the iSmartNMC network through the NX-6120S to manage the entire network in a unified manner.

Visualization Ability

NX-6120 series switches support Telemetry technology, which can push real-time resource information and alarm information of the switch to the operation and maintenance platform through the gRPC protocol. Network quality backtracking, risk warning, architecture

High-performance IPv4/IPv6 Service Capabilities

NX-6120 series switches implement a hardware based IPv4/IPv6 dual-stack platform, support a variety of tunnel technologies, rich IPv4 and IPv6 Layer 3 routing protocols, multicast technologies and policy routing mechanisms, providing users with complete IPv4 /IPv6 solution.

Intelligent Resilient Framework 2 (IRF2)

Intelligent Resilient Framework 2 (IRF 2) virtualizes multiple NX-6120 switches into one virtual switch and provides the following benefits:

Scalability: IRF 2 allows you to add devices to the IRF 2 system easily. It provides a single point of management, enables switch plug-and-play, and supports software auto-update for software synchronization from the master to the new member devices. It brings business agility with lower total cost of ownership by allowing new switches to be added to the fabric without network topology change As business grows.

High availability: The NODEXON proprietary routing hot backup technology ensures redundancy and backup of all information on the control and data planes and non-stop Layer 3 data forwarding in an IRF 2 fabric. It also eliminates single point of failure and ensures service continuity.

Redundancy and load balancing: The distributed link aggregation technology supports load sharing and mutual backup among multiple uplinks, which enhances the network redundancy and improves link resources usage.

Flexibility and resiliency: The switch use standard GE ports instead of specialized ports for IRF links between IRF member devices. This allows customers to assign bandwidth as needed between uplink, downlink, and IRF system connections. In addition, an NX-6120 IRF fabric can span a rack, multiple racks, or multiple campuses.

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Comprehensive Security Control Policies

Endpoint Admission Defense (EAD), in conjunction with the backend system, integrates endpoint security (including anti-virus and patching) and network security (including network access control and access right control) into an inter-active security system. By checking, isolating, repairing, managing, and monitoring the endpoints, this system turns reactive single-point defense to proactive, all-round defense, and dispersed management to centralized policy manage-ment. This system enhances the overall network protection against numerous security threats and improves the responsiveness to new threats. The switch supports unified MAC address authentication, 802.1x authentication, and portal authentication;
dynamic or static binding of user identifiers such as user account, IP address, MAC address, VLAN, and port number; and dynamic application of user profiles or policies (such as VLAN, QoS, and ACL) on users. Using the switch in conjunction with NODEXON IMC, you can manage and monitor online users in real time and take prompt action on illegitimate behaviors.
The switch offers a large number of inbound and outbound ACLs and VLAN-based ACL assignment. The switch supports Unicast Reverse Path Forwarding (uRPF), which protects a network against source spoofing attacks, preventing DoS and Multiple Reliability Protection
The NX-6120 series switches have multiple reliability protections at the device level and link level. The NX-6120S series switches support the reliability design of dual pluggable AC and DC power modules, and can flexibly configure AC or DC power modules according to the needs of the actual environment. In addition, the whole machine also supports power supply and fan fault detection and alarms. These designs enable the equipment to have higher reliability. In addition to device-level reliability, the product also supports a wealth of link-level reliability technologies, including LACP/STP/RST-P/MSTP/Smart Link/RRPP fast ring network protection mechanisms and other protection protocols, and supports IRF2 intelligent elastic architecture, supports 1: N redundancy backup, supports ring stacking, which greatly improves network reliability. When the network carries multiple services and large traffic, it does not affect the network conver-gence time, ensuring the normal operation of services. It supports basic network protection mechanism functions, and supports various types of protection, such as ARP protection. When the ARP rate exceeds the attack threshold, users who have attack behaviors are isolated.

Abundant QoS Features

The NX-6120 series switches offer abundant QoS features, including:
› Packet filtering based on packet header fields from Layer 2 through Layer 4, including source MAC, desti-nation MAC, source IP, destination IP, TCP/UDP port number, protocol type, and VLAN.
› Flexible queuing and scheduling algorithms configured on a per-port or per-queue basis, including strict prior-ity (SP), weighted round robin (WRR), and SP+WRR.
› Committed access rate (CAR) with the minimum gran-ularity at 16 kbps.
› Port mirroring in both outbound and inbound direc-tions for network monitoring and trouble shooting.

Outstanding Management Capacity

The NX-6120 series switches provide a variety of management features and is easy to manage. It offers the following device management features:
› Provides multiple management interfaces, including the console port, USB port.
› Supports configuration and management from CLI or a general-purpose Web-based manager, including NODEXON IMC Intelligent Management Center and OpenView.
› Supports multiple access methods, including SNMPv1/v2c/v3, Telnet, and more secure SSH 2.0.

High Performance Intelligent Ethernet Switch NX-6120 Series

Application-Driven Campus

NX-6120 series switches support NODEXON Application-Driven Campus (AD-Campus) Solution. AD-Campus is innovative campus network solution which aims to achieve great integration and convergence to easily reflect intent to network operation. With full lifecycle, open architecture and deep intelligence, AD-Campus is along with partner to be committed to solve existing challenges and assist customers to accelerate digital innovation and transformation.

Cloud Empowerment, Simplified Network

NX-6120 series switches support NODEXON Cloudnet solution. Cloudnet empowers the network through unified operation and maintenance cloud, enabling minimal network deployment, achieving minute-level deployment, zero on-site operation and maintenance, and shortening the time for customer business to go online; AI empowerment enables minimal network operation and maintenance, intelligent network optimization, fault prediction, and provides customers with an excellent user experience; Cloudnet can also empower business, and provide customers with business innovation through strong data operation capabilities. Improve the effectiveness of corporate operations.

Green Technology

NX-6120 series switches use the latest energy-saving chips and innovative architecture design solutions to achieve the lowest power consumption of gigabit switches, bringing users green, environmentally friendly and energy-saving new network access products and reducing user maintenance costs.

At the same time, NX-6120 series switches adopt various green energy-saving designs, including autopower-down port automatic energy-saving). If the interface status is always down for a period, the system will automatically stop power supply to the interface and automatically enter the energy-saving mode. Support Energy Efficient Ethernet (EEE) energy-saving function on an Ethernet interface on the RJ-45 ports and low power operations for industry. If the port is idle for a period, the system will set the port to the energy-saving mode, and when there is a packet to be sent and received, it will wake up the port to resume services through the monitoring code stream sent regularly to achieve the effect of energy saving. Meet the EU RoHS standard for material environmental protection and safety.

Fast PoE, Perpetual PoE

Fast PoE: Typically, PIs (power interface) does not deliver power to PDs (powered device) the moment the PSE (power sourcing equipment) is powered on but wait until the PSE completes startup. Fast PoE enables PIs to deliver power to PDs within few seconds after power is supplied to the PSE.

Perpetual PoE: Perpetual PoE continuously monitors the PD states and ensures continued power supply to PDs even when the PSE device is hot rebooting.

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High Performance Intelligent Ethernet Switch NX-6120 Series

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-6120-28S	NX-6120-54S	NX-6120S-28S-HPE	NX-6120S-54S-PE
Port switching capacity	128Gbps	216Gbps	128Gbps	216Gbps
Packet forwarding rate	96 Mpps	161 Mpps	96 Mpps	161 Mpps
System switching capacity	598Gbps			
Dimensions (W × D × H)	440×460×43.6mm (17.32 x 18.11 x 1.71 in)	440×460×43.6 mm (17.32 x 18.11 x 1.71 in)	440×460×43.6 mm (1.72×17.32×10.24 in)	440×460×43.6 mm (1.72×17.32×10.24 in)
Weight	≤ 8.7 kg	≤ 8.8 kg	≤ 10 kg	≤ 10 kg
	wo Cores, 1GHz			
Flash/SDRAM	512M/1GB			
Packet buffer	2M			
USB port	/	/	/	1
Console ports	1 Console Port (RJ45)			
Service ports	24*10 /100/1000Base-T adaptive Ethernet ports, 4*10G SFP+ ports	48*10 /100/1000Base-T adaptive Ethernet ports, 6*10G SFP+ ports	24*10 /100/1000Base-T adaptive Ethernet ports, 4*10G SFP+ ports	48*10 /100/1000Base-T adaptive Ethernet ports, 6*10G SFP+ ports
Expansion slots	1	1	1	1
Weight	≤5.6kg	≤6.0kg	≤7.5kg	≤7.5kg
Input voltage	AC • Rated voltage range: 100V ~ 240V AC , 50/60Hz • Maximum voltage range: 90V ~ 264V AC , 47 ~ 63Hz DC • Rated voltage range: -48V～ -60V DC • Maximum voltage range: -36V～-72V DC		• Rated voltage range: 100V～ 240V AC, 50/60Hz • Maximum voltage range: 90V～290V AC, 47～63Hz	

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High Performance Intelligent
Ethernet Switch NX-6120 Series

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-6120-28S	NX-6120-54S	NX-6120S-28S-HPE	NX-6120S-54S-PE
80 PLUS (80 PLUS Certified)	-		Y (80 PLUS Platinum)	
Power consumption (static)	Single AC: 16W Single DC: 22W Dual AC: 18W Dual DC: 27W	Single AC: 18W Single DC: 23W Dual AC: 23W Dual DC: 29W	Single: 42W Dual: 50W	Single: 42W Dual: 50W
Power consumption (at full load)	Single AC: 37W Single DC: 41W Dual AC: 39W Dual DC: 45W	Single AC: 55W Single DC: 56W Dual AC: 57W Dual DC: 61W	Single: 965W(PoE is 840W) Dual: 960W(PoE is 840W)	Single: 1668W(PoE is 1530W) Dual: 1935W(PoE is 1680W)
Fan	2	2	2	2
MTBF(Year)	96.94	79.5	55.25	74.5
MTTR(Hour)	1	1	1	1
Working temperature	-5℃～45℃			
Storage temperature	-40～+70℃			
Relative humidity of working environment (non-condensing)	5%～95%			

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High Performance Intelligent Ethernet Switch NX-6120 Series

SOFTWARE SPECIFICATIONS

SPECIFICATIONS	NX-6550 Series
Port Aggregation	GE/10GE port aggregation Dynamic aggregatio Static aggregation Cross-device aggregation
Port Characteristics	Support IEEE 802.3x flow control (full duplex) Supports storm suppression based on port rate percentage Supports PPS-based storm suppression Support bps-based storm suppression
IRF2	Distributed device management, distributed link aggregation, and distributed resilient routing Stacking through standard Ethernet interfaces
MAC Address Table	Local device stacking and remote device stacking Static MAC address Blackhole MAC address
VLAN	Port-based VLAN MAC-based VLAN Protocol-based VLAN QinQ and selective QinQ VLAN mapping Voice VLAN GVRP
DHCP	DHCP Client DHCP Snooping DHCP Snooping option82 DHCP Relay DHCP Server DHCP auto-config
IP Routing	IPv4 routing table Static routing RIPv1/v2 and RIPng OSPFv1/v2 and OSPFv3 BGP/BGP4+ for IPv6 IS-IS/IS-ISv6 Equal-cost multi-path routing (ECMP) and policy routing
Multicast	IGMP Snooping V2/V3

High Performance Intelligent Ethernet Switch NX-6120 Series

SOFTWARE SPECIFICATIONS

SPECIFICATIONS	NX-6550 Series
	PIM-SM/PIM-SSM/PIM-DM MSDP MLD Snooping Multicast VLAN
Layer 2 Ring Network Protocol	STP, RSTP, MSTP PVST (Compatible with PVST+/RPVST+) Smart Link RRPP G.8032 ERPS (Ethernet Ring Protection Switching) LLDP/LLDP-MED
ACL	Packet filtering at Layer 2 through layer 4 Traffic classification based on source MAC addresses, destination MAC addresses, source IPv4/IPv6 addresses, Time range-based ACL VLAN-based ACL Bidirectional ACL
QoS	Port rate limit (receiving and transmitting) Packet redirection Committed access rate (CAR) Eight output queues on each port Flexible queue scheduling algorithms based on ports and queues, including SP, WRR and SP+WRR 802.1p DSCP remarking ToS(Type of Service) Best-effort service/ IntServ/DiffServ 802.1p, DSCP, EXP
Traffic statistic	Sflow
Forwarding	Wire-speed/Line-rate architecture
Mirroring	Port mirroring RSPAN mirror session quantity: 4 mirror group
Security	Hierarchical user management and password protection AAA authentication support RADIUS authentication

High Performance Intelligent Ethernet Switch NX-6120 Series

SOFTWARE SPECIFICATIONS

SPECIFICATIONS	NX-6550 Series
	HW TACACS+ Authentication SSH2.0 Port isolation 802.1X authentication, centralized MAC authentication Port security IP Source Guard HTTPs EAD Support BPDU guard, Root guard Dynamic ARP inspection
Management and Maintenance	Loading and upgrading through XModem/FTP/TFTP Zero Touch Provisioning Configuration through CLI, Telnet, and console port SNMPv1/v2c/v3 and Web-based NMS Restful Python RMON (Remote Network Monitoring) and groups 1,2,3 and 9, alarm event, and history recording. IMC NMS System log, alarming based on severities, and output of debugging information NTP Ping, Tracert Virtual cable test (VCT) Device link detection protocol (DLDP) Loopback-detection Port auto power down Energy Efficient Ethernet
EMC	FCC Part 15 Subpart B CLASS A ICES-003 CLASS A VCCI-CISPR 32 CLASS A EN 55032 CLASS AS/NZS CISPR32 CLASS A CISPR 24 EN 55024 EN 61000-3-2

## High Performance Intelligent Ethernet Switch NX-6120 Series

SOFTWARE SPECIFICATIONS

SPECIFICATIONS	NX-6550 Series
	EN 61000-3-3 ETSI EN 300 386 GB/T 9254 YD/T 993
Safety	CAN/CSA C22.2 No 60950-1 IEC 60950-1 EN 60950-1 AS/NZS 60950-1 FDA 21 CFR Subchapter J GB 4943.1

PoE Power Capacity

| Power supply 1	Power supply 2	NX-6120S-28S-HPE		NX-6120S-54S-PE	
		Total PoE power capacity	PoE Ports Quantity	Total PoE power capacity	PoE Ports Quantity
PSR600-54A-B	/	530W	15.4W (802.3af): 24 30W (802.3at): 17 35W: 15	530W	15.4W (802.3af): 34 30W (802.3at): 17 35W: 15
PSR920-54A-B	/	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	850W	15.4W (802.3af): 48 30W (802.3at): 28 35W: 25
PSR1600-54A-B (Input Voltage: 90V AC~176V AC)	/	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	850W	15.4W (802.3af): 48 30W (802.3at): 28 35W: 25
PSR1600-54A-B (Input Voltage:176V AC~290V AC or 180V DC~320V DC)	/	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	1530W	15.4W (802.3af): 48 30W (802.3at): 48 35W: 43
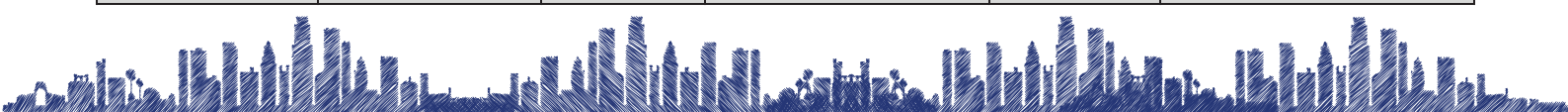
Multi-Gigabit 10GE Switches
NX-6550 Series

PoE POWER CAPACITY

MODEL		Product Description			
Power supply 1	**Power supply 2**	**NX-6120S-28S-HPE**		**NX-6120S-54S-PE**	
		Total PoE power capacity	**PoE Ports Quantity**	**Total PoE power capacity**	**PoE Ports Quantity**
PSR920-54A-B	PSR920-54A-B	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	1680W	15.4W (802.3af): 48 30W (802.3at): 48 35W: 48
PSR920-54A-B (Input Voltage: 90V AC~176V AC)	PSR1600-54A-B (Input Voltage: 90V AC~176V AC)	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	1340W	15.4W (802.3af): 48 30W (802.3at): 44 35W: 38
PSR920-54A-B (Input Voltage: 176V AC~290V AC or 180V DC~320V DC)	PSR920-54A-B (Input Voltage: 176V AC~290V AC or 180V DC~320V DC)	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	1680W	15.4W (802.3af): 48 30W (802.3at): 48 35W: 48
PSR1600-54A-B	PSR1600-54A-B	840W	15.4W (802.3af): 24 30W (802.3at): 24 35W: 24	1680W	15.4W (802.3af): 48 30W (802.3at): 48 35W: 48

NOTE: Do not mix PSR600-54A-B power supply with PSR1600-54A-B power supply.

Ordering Information

Product ID	Product Description
NX-6120S-28S	**NX-6120S-28s L3** Ethernet Switch with 24*10/100/1000BASE-T Ports and 4*1G/10G BASE-X SFP Plus Ports, Without Power Supplies
NX-6120S-54S	**NX-6120S-54S** L3 Ethernet Switch with 48*10/100/1000BASE-T Ports and 6*1G/10G BASE-X SFP Plus Ports, Without Power Supplies
NX-6120S-28S-HPE	**NX-6120S-28S-HPE** L3 Ethernet Switch with 24*10/100/1000BASE-T Ports and 4*1G/10G BASE-X SFP Plus Ports, Without Power Supplies, POE+
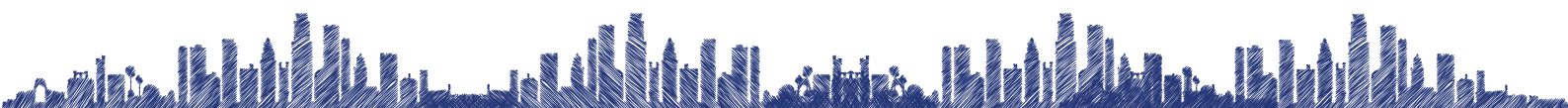
Multi-Gigabit 10GE Switches
NX-6550 Series

ORDERING INFORMATION

MODEL	Product Description
NX-6120S-54S-PE	NX-6120S-54S-PE L3 Ethernet Switch with 48*10/100/1000BASE-T Ports and 6*1G/10G BASE-X SFP Plus Ports, Without Power Supplies, POE+
CA-70A12	Pluggable 70W AC Power Supply
NX-PSR75-12A-GL	75W AC Pluggable Power Module
NX-PSR150-D1-GL	150W Asset-manageable DC Power Module
NX-PSR600-54A-B	NX-PSR600-54A-B,600W/56V PoE Power Supply
NX-PSR920-54A-B	NX-PSR920-54A-B,920W/56V PoE Power Supply
NX-PSR1600-54A-B	NX-PSR1600-54A-B,1600W/56V PoE Power Supply
NX-PSR1110-56A	1110W PoE AC Power Supply Module
NX-PSR720-56A	720W PoE AC Power Supply Module
NX-PSR360-56A	360W PoE AC Power Supply Module
NX-PSR560-56D	560W DC Pluggable Power Module
NX-SFP-GE-T	1000BASE-T SFP
NX-SFP-GE-SX-MM850-A	1000BASE-SX SFP Transceiver, Multi-Mode (850nm, 550m, LC)
NX-SFP-GE-LX-SM1310-A	1000BASE-LX SFP Transceiver, Single Mode (1310nm, 10km, LC)
NX-SFP-GE-LH40-SM1310	1000BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
NX-SFP-GE-LH40-SM1550	1000BASE-LH40 SFP Transceiver, Single Mode (1550nm, 40km, LC)
NX-SFP-GE-LH80-SM1550	1000BASE-LH80 SFP Transceiver, Single Mode (1550nm, 80km, LC)
NX-SFP-GE-LH100-SM1550	1000BASE-LH100 SFP Transceiver, Single Mode (1550nm, 100km, LC)
NX-SFP-XG-LX-SM1310-E	SFP+ Module(1310nm,10km,LC)
NX-SFP-XG-SX-MM850-E	SFP+ Module(850nm,300m,LC)
NX-WM1STK	SFP+ Cable 0.65m
NX-WM2STK	SFP+ Cable 1.2m
NX-WM3STK	SFP+ Cable 3m
NX-TM1STK	SFP+ Cable 5m

NX-6120S-54S-PE