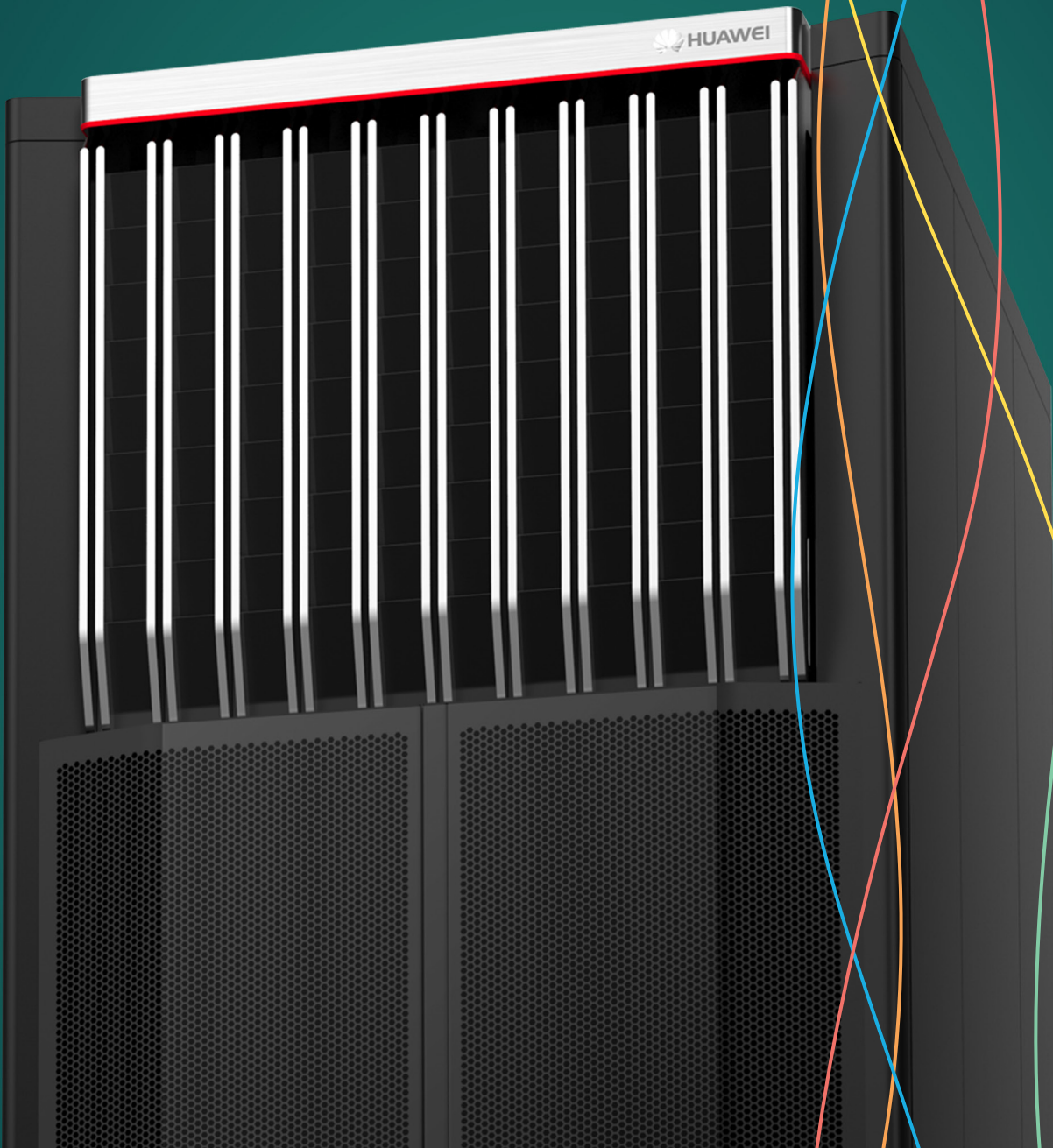




NetEngine9000 Series Converged Core Router



Huawei NetEngine9000 Series Converged Core Router

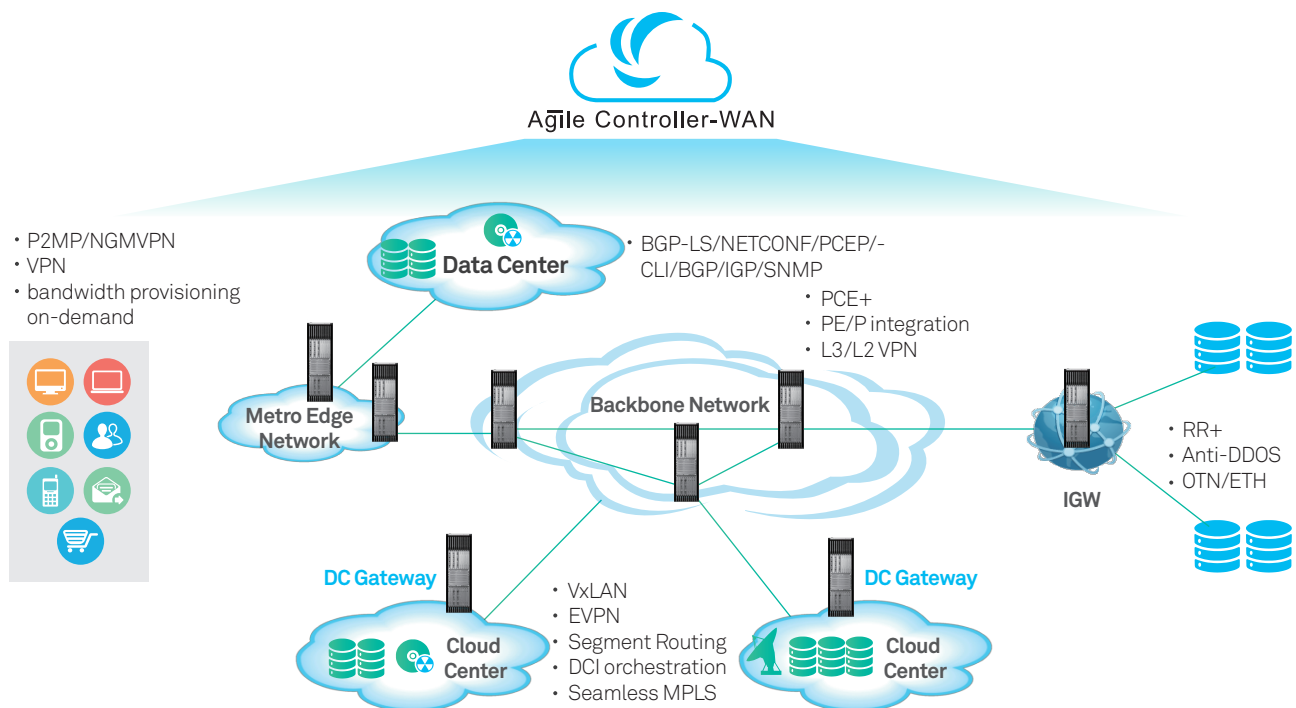
Product Overview

The NetEngine9000 (NE9000 for short) series converged core router is next-generation, high-performance core router design for data center Interconnect (DCI), backbone network, metro core and large-scale enterprise network.

The NE9000 series routers use Huawei's next-generation VRP8 software platform, NE9000 series routers provide on-demand traffic optimization and IP + Optical synergy technology.

The NE9000 series core routers use industry's first cable backplane and have the highest single-chassis performance among all core routers in the industry. The NE9000 series capacity is up to 8Tbps per slots, 160Tbps per chassis.

The NE9000 series routers use an industry-leading Clos architecture and provide industrial-grade reliability. Their front-to-back airflow design suits data center equipment rooms, and the innovative energy conservation technologies greatly reduce power consumption to 0.4W/G, half of core routers in the industry.



NE9000 Application Scenarios

Product Family

The NE9000 series is available in two models: NE9000-20 and NE9000-8.

NE9000-20 focus on the super core or DCI networks. The NE9000 supports 20 slots, 160Tbps per chassis. The NE9000 presents a single-cabinet design for a cabinet-free installation.

NE9000-8 focus on smaller core/regional or DCI network. NE9000-8 supports 8 slots, 64Tbps per chassis.



NE9000 series Appearance

NE9000 Series routers family overview

	NE9000-20	NE9000-8
Interface slots	20	8
Max. Chassis capacity	160Tbps	64Tbps
Physical Dimensions(H x W x D)	2200mm x 600mm x 1000mm	1016mm x 442mm x 945mm
Chassis Weight(empty loaded)	231KG	123KG

Product Characteristics

Next-Generation Core Router with Highest Performance

160Tbps Chassis Capacity

- The NE9000 use the industry's advanced cable backplane with 28Gbps transmission rate. It can scale to 56Gbps, even up to 112Gbps transmission rate in the future.
- The NE9000 currently support 4Tbps per slot and single-chassis capacity can be up to 80Tbps, is the industry's 4 times. It can be up to 8Tbps per slot, single-chassis capacity can be up to 160Tbps in the future.

4T High-Density Line Cards

- The forwarding capacity of a line card can reach up to 4Tbit/s.
- The NE9000 supports 40*100GE, 24*40GE, 60*10GE, 8*100GE, LPUF-480G line card which provide line rate.

Intelligent architecture, converge all services on one platform

Carrier SDN integration

- The NE9000 support monitoring global network and traffic optimization according to the bandwidth and latency, improve the 50% bandwidth utilization.
- The NE9000 support IP + Optical synergy to achieve Multi-layer planning and restoration to save 40% CTO.
- The NE9000 implements DCI and DCN collaboration and end-to-end rapid service provisioning, shortening TTM to a matter of minutes.

Converge all services

- Complete P/PE functionalities include IPv4/IPv6 solutions.
- The NE9000 supports improved Quality of Service (QoS) capabilities.

Innovative Energy-Saving Design

Board energy saving design

- The NE9000 Line card adopt self-development Solar 5.0 chipset which highly integrated, algorithmic Search Engine, 3-level Frequency Scaling, Auto Activate/Deactivate ATOMs technologies. The power consumption of 4Tbps line cards is 0.4W/G, half of the industry.
- The Line card support floating cooling technology, cooling efficiency up 30%.
- Carbon fiber thermally conductive materials, increasing heat conductivity efficiency 10 times.

Chassis energy saving design

- Unified front-back airflow make best balance and no thermal cascade between different modules.
- Pull air architecture, not push air.

Reliable Design

System Architecture

- Separation architecture design to ensure data plane, control plane and monitoring plane are not interfere.

Key Components redundancy

- All the key components eg. MPU, SFU and FAN and etc. are redundancy. All components support hot swap to ensure system stable and reliable.

Rich Reliability features

- The NE9000 support comprehensive NSx(NSS, NSR, NSB, NSF) which provides fast convergence of IGP/LDP rerouting, VRRP, hardware BFP detection, TRUNK and etc. protect technology.

Product Specifications

	NE9000-20	NE9000-8
Main Processor Slots	2	2
Switching Fabric Slots	8	8
Service Slots	20	8
Slot Capacity	4T, scale to 8T	4T, scale to 8T
System Capacity	80Tbps, scale to 160Tbps	32Tbps, scale to 64Tbps
Forwarding Performance(Mpps)	36,160Mpps	14,464Mpps
Power Consumption	0.4W/G	0.4W/G
Physical Dimensions(H x W x D)	2200mm x 600mm x 1000mm	1016mm x 442mm x 945mm
Chassis Weight(empty loaded)	231KG	123KG
Interface Type	100GE\100GE DWDM\40GE\10GE\1000M\10GE OTN\10GE DWDM	
Airflow Design	Strict front-to-back airflow design	
IPv4	UCMP, ECMP, fragment, MAC Accounting RIP, OSPF, IS-IS, BGPv4	
IPv6	IPv4/IPv6 dual stack, IPv6(ND), Path MTU, IPv6 DNS, IPv6 police routing IPv6 over IPv4 Tunnel, 6PE&6vPE RIPng, OSPFv3, IS-ISv6, BGP4+	
Multicast	IGMP, PIM-DM, PIM-SM, MSDP, MBGP, PIM-SSM, Anycast RP PIM-IPv6-DM, PIM-IPv6-SM, PIM-IPv6-SSM/MLD Multicast VLAN, routing Policy, DUMMY, IGMP/MLD snooping Layer2 multicast CAC, multicast shaping, multicast FRR, multicast VLAN	
VPN	IPv4/IPv6 dual stack MPLS/BGP L3VPN, MPLS/BGP L3VPN LSP tunnels, GRE tunnels, IPv6 GRE tunnels, TE tunnels PWE3/VLL, VPLS, EVPN	
Clock	Clock synchronization, NTPv4, Atom GPS G.8275.1, G.8265.1, G.8264, G.8273.2 1588v2, 1588v2 ACR	
Reliability	GR, NSR, BFD, FRR, MPLS TE Backup	
Security	IPv4/IPv6 Protocol encryption and authentication, URPF, Attack source, remote/local mirror, GTSM, ARP Attack Defense, SSHv2, BGP flowspec, APS	
QoS	Routing Policy, QPPB, Differ-Serv, HQoS, Ethernet QoS	

NE9000 Ordering Information

Model Number	Description
Base Unit	
CR9P9KBASD80	NE9000-20 Basic Configuration(Include NE9000-20 48V DC Chassis,2*MPUN1,8*SFUI-F,4*16G Memory,2*8G SSD Card,9*DC Power Module)
CR9P9KBASA80	NE9000-20 Basic Configuration(Include NE9000-20 220V AC Chassis,2*MPUN1,8*SFUI-F,4*16G Memory,2*8G SSD Card,12*Power Module)
CR9P9KBASD81	NE9000-20 Basic Configuration(Include NE9000-20 240V/380V DC Chassis,2*MPUN1,8*SFUI-F,4*16G Memory,2*8G SSD Card,12*Power Module)
CR9P9KSMKA80	NE9000-20 integrated cabinet door and engineering installation kit
2T Line Card	
CR9D00EDNB80	16-Port 100GBase-QSFP28 Integrated Line Process Unit(NE9000 LPUI-2T)
CR9D00EDNB8P	16-Port 100GBase-QSFP28 Integrated Line Process Unit CM(NE9000 LPUI-2T-CM)
1T Line Card	
CR9D00E8NC80	8-Port 100GBase-CFP2 Integrated Line Process Unit(LPUI-1T)
CR9D00E8NC8P	8-Port 100GBase-CFP2 Integrated Line Process Unit CM(LPUI-1T-CM)
CR9D00D8NC80	8-Port 100GBase CFP DWDM Integrated Line Process Unit(LPUI-1T)
CR9D00EFMB80	24-Port 40GBase-QSFP+ Integrated Line Process Unit(LPUI-1T)
CR9D00EPXF80	60-Port 10GBase LAN/WAN-SFP+ Integrated Line Process Unit(LPUI-1T)
CR9D00EPXF8P	60-Port 10GBase LAN/WAN-SFP+ Integrated Line Process Unit CM(LPUI-1T-CM)
CR9D00EPXF8P	60-Port 10GBase LAN/WAN-SFP+ Integrated Line Process Unit CM(LPUI-1T-CM)
480G Line Card and PICs	
CR9DLPUFK080	480G Flexible Card Line Processing Unit(NE9000 LPUF-480,2 sub-slots)
CR9D00LFXF80	24-Port 1000M/10GBase LAN/WAN-SFP+ Flexible Card
CR9D00NBXF80	12-Port 10G OTN/ETH-SFP+ Flexible Card



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