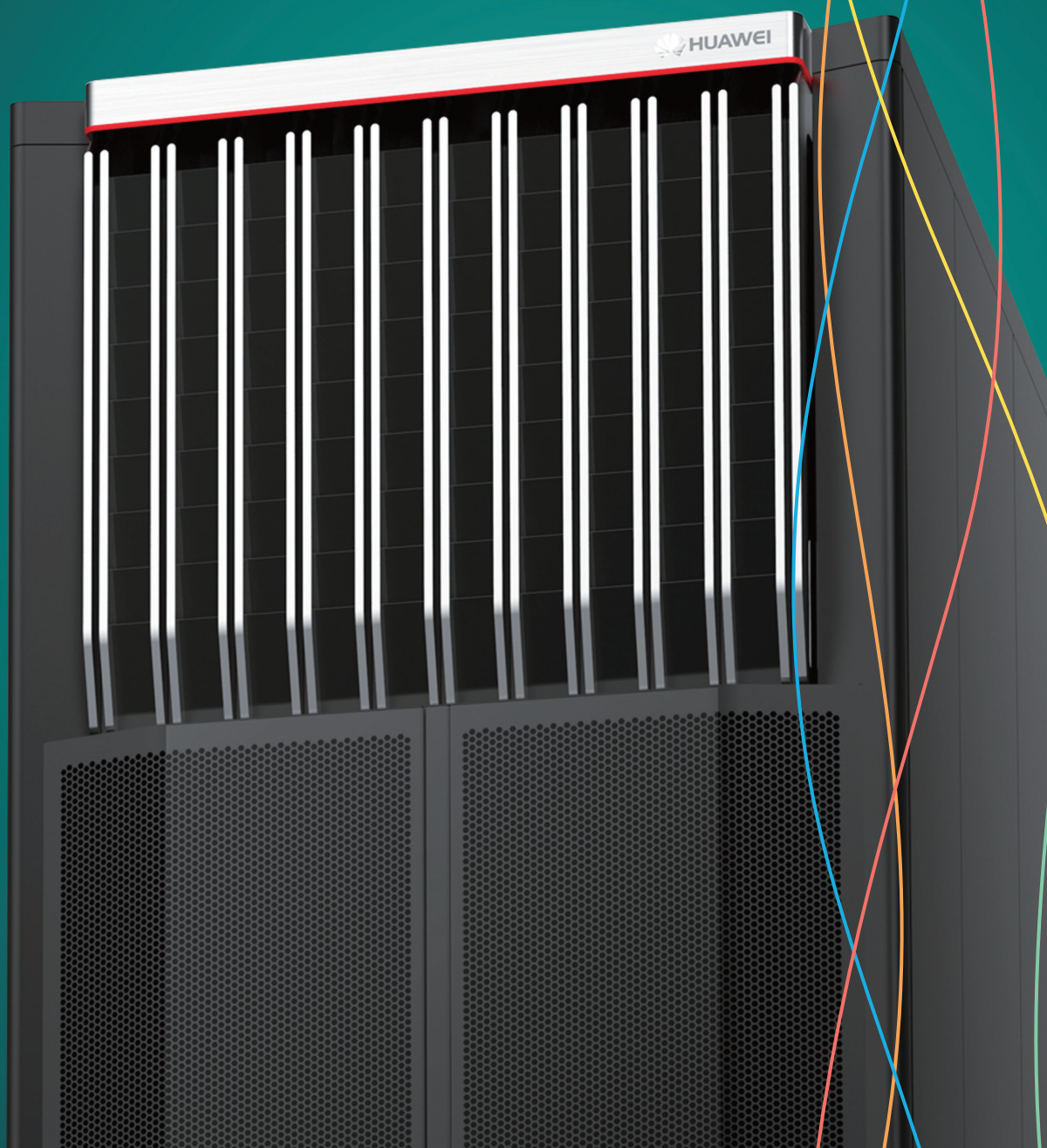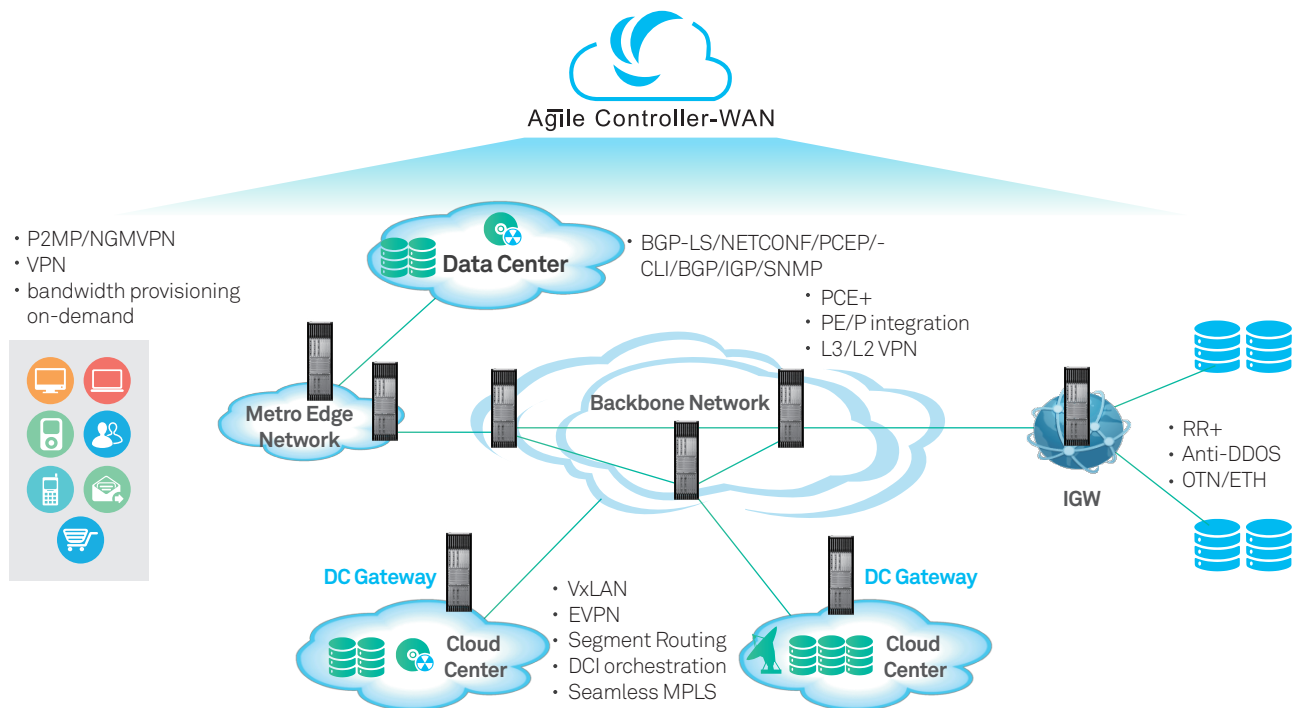# NetEngine9000 Series
Converged Core Router

Huawei NetEngine9000 Series Convergence Core Routers

Product Overview

The NetEngine9000 (NE9000) series are high-performance, next-generation converged backbone routers that can be deployed on IP/MPLS backbone, DCI, and large-scale enterprise networks. The NE9000 series offers more flexible capacity and more integrated and intelligent functions. These features address the evolving service demands driven by the cloud, LTE/5G, video. They help carriers and enterprises maintain profitable growth in an increasingly competitive and constantly changing market.

The NE9000 series uses the programmable Solar 5.0 NP chipset developed by Huawei and features the industry's first high-speed cable backplane. A capacity of 80 Tbit/s is provided in a single chassis, which can be upgraded to 160Tbit/s in the future. NE9000 routers also feature an innovative green design that reduces power consumption to 0.4 W/G, half of the industry average. In addition to all of the functions of P and PE nodes, NE9000s also provide complete SDN and virtual system capabilities to simplify network architecture, converge the bearing of multiple services, and enable high reliability and easy O&M.

NE9000 Application Scenarios

The NE9000 Family

The NE9000 family now has two members: the NE9000-20 and NE9000-8.

NE9000-20

NE9000-8

NE9000 series Appearance

NE9000-20 suited for deployment on large-scale backbone networks or DCI networks. The router has 20 slots and a capacity of 80Tbit/s, which can be upgraded to 160Tbit/s in the future.

NE9000-8 suited for deployment on small-scale backbone, metro edge, or DCI networks. The router has 8 slots and a capacity of 32Tbit/s, which can be upgraded to 64Tbit/s in the future.

40*100GE

8*400GE

Product Characteristics

Scalability

Four times higher capacity than the industry average, supporting growth over the next 5 to 10 years

- 80Tbit/s per chassis, upgradable to 160Tbit/s in the future
- 40*100GE ports, the highest density in the industry
- 8*400GE ports, the highest density in the industry

Convergence

Support for all services and all scenarios

- Full all the functions of P and PE nodes, allowing deployment in any scenario
- Multi-domain system (MDS) technology allows division into multiple virtual systems for converged bearing of different services
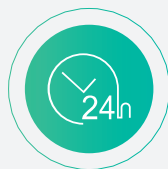- IP+optical synergy for improved network efficiency

Intelligence

Intelligent SDN architecture featuring three programmable planes and real-time adjustment and delivery

- Programmable networks, enabling end-to-end SDN solutions
- Programmable services, enabling real-time traffic optimization and BOD
- Programmable chipsets, enabling service customization and delivery in minutes

High quality

Secure, reliable, and green

- Redundant key components with intelligent fault detection and recovery
- Variety of reliability-related features, including comprehensive NSx and protection switching
- Green design for 0.4 W/G power consumption, half of the industry average

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、10GE OTN、10GE DWDM、1000M	
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)
CR9P9KBASD84	NE9000-20 Basic Configuration(Include NE9000-20 48V DC Chassis,2*MPUN1,8*SFU4T-B,4*16G Memory,2*32G SSD Card,9*DC Power Module)
CR9P9KBASD82	NE9000-8 Basic Configuration(Include NE9000-8 48V DC Chassis,2*MPUP1,8*SFU4T-A,4*32G Memory,2*32G SSD Card,6*DC Power Module)
4T Line Card	
CR9D00EKNB8P	40-Port 100GBase-QSFP28 Integrated Line Process Unit CM(NE9000 LPUI-4T-CM)
CR9D00EKNB80	40-Port 100GBase-QSFP28 Integrated Line Process Unit(NE9000 LPUI-4T)
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)
CR9D00DDNC80	16-Port 100G ETH/DWDM-CFP2 Integrated Line Process Unit(NE9000 LPUI-2T)
CR9D00EENC80	20-Port 100GBase-QSFP28 Integrated Line Process Unit(NE9000 LPUI-2T)
CR9D00EENC8P	20-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)
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)

NE9000 Line Cards

4T Line cards	40*100GE/40GE-QSFP28 Support Break out to 10GE	8*400G-CFP8	
2T Line cards	20*100GE/40GE-QSFP28 Support Break out to 10GE	16-Port 100G ETH/ DWDM-CFP2	16*100GE/40GE-QSFP28 Support Break out to 10GE
1T Line cards	8*100GE ETH/DWDM-CFP2	60*10GE-SPF+	

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