NetEngine 8000 F1A-8H20Q

1 U High-density Router Oriented to Cloud-era

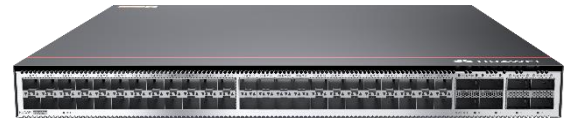
Overview

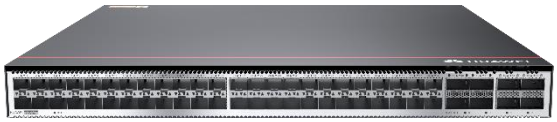
HUAWEI NetEngine 8000 F1A is a high-density compact box-shaped router oriented to the 5G and cloud era. It is mainly used in Internet DCI edge nodes and metropolitan area network aggregation layers, it builds a simple architecture, intelligent connection, and a highly available inter-cloud network and IP metropolitan area network.. The details are as follows:

- The NetEngine 8000 F1A is 1U high and 420 mm deep. It supports a maximum port capacity of 1.2 Tbit/s, 100GE/50GE/25GE/10GE/GE service ports, and up to 56 ports can be flexibly combined, delivering the highest density in the industry. Meets traffic growth and diversified service access requirements in the cloud era.
- NetEngine 8000 F1A supports SRv6 and enables intelligent connections. Based on IPv6, SRv6 provides a large number of continuous addresses and rich scalability capabilities, implements automatic cross-domain connection and minute-level service provisioning, and implements cloud scheduling network and one-hop to the cloud. SRv6 can identify applications and tenants and implement intelligent traffic steering such as latency and bandwidth based on customer requirements to ensure service SLA. The number of network protocols is reduced from 10+ to 2, simplifying network O&M.
- The NetEngine 8000 F1A supports intelligent O&M. Automation and intelligent technologies are introduced to implement intelligent O&M. Based on iMaster NCE, the In-situ Flow Information Telemetry (IFIT) technology accurately detects network SLAs in real time, visualizes service quality in real time, and supports minute-level fault locating. Unique ROAM algorithm, intelligent traffic steering and optimization; The intelligent algorithm reduces the number of displayed alarms by 99%.

The NetEngine 8000 F1A can be flexibly deployed at multiple locations on the network. It integrates multiple functions, simplifies the network structure, provides various service types, reliable service quality, and intelligent O&M, and leads the IP WAN towards an intelligent network with autonomous driving, providing continuous and surging power for enterprise customers' business success.

Product Highlights





NetEngine 8000 F1A(AC)

NetEngine 8000 F1A(DC)

Compact and Large-Capacity

- Size: 1U, Supports 600 mm deep cabinets
- Switching Capacity: 2.4 Tbps

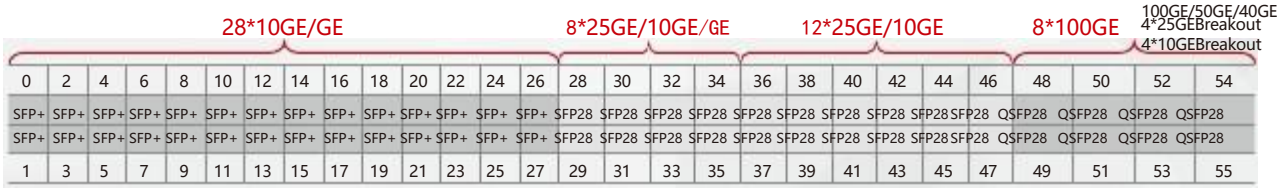
All-Scenario Platform

- 4-in-1 platform: Private line/IGW/ DC GW/BNG
- Sevice ports: GE~100GE

Leading Capabilities

- SRv6/EVPN: Simplified protocols
- NP Architecture, to meet future evolution

Ports Introduction



Product Specifications

Property	Description
Switching Capacity	2.4 Tbps
Interface types	100GE/50GE/40GE/25GE/10GE/GE
Dimensions (H x W x D)	43.6 mm (1U) x 442 mm x 420 mm
Typical Power Consumption	325 W
Voltage Range	DC：-40V ~ -72V; AC: 90V ~ 290V；HVDC: 190V ~ 290V
Clock	Synchronous Ethernet Clock, 1588v2, G.8275.1, G.8275.2, SMPTE-2059
Long-term operating temperature	-5 °C ~ 45 °C

NOTE For details, see the corresponding product manual.

Product Features

Features of Huawei NetEngine 8000 F1A Series Routers

Feature	Description
L2	IEEE 802.1q, IEEE 802.1p, IEEE 802.3ad, IEEE 802.1ab, STP/RSTP/MSTP, G.8032, STP/RSTP, MSTP, L2 protocol transparent transmission, BPDU, LACP, VLAN, Bridge domain, L2TPv3, QinQ, MTU per port 9600 bytes
L3	OSPF/OSPF3, RIP/RIPng, IS-IS/IS-ISv6, BGP/BGP+, ACL, IPv4/IPv6, 6VPE, ARP, VLANIF, VXLAN
MEF	• E-LINE: EPL, EVPL • E-LAN: EP-LAN, EVP-LAN
IPv4	TCP/IP, for example, ICMP, IP, TCP, UDP, Socket (TCP/UDP/RAW IP), ARP Static DNS, DNS Client FTP Server, FTP Client TFTP Client DHCP Relay, DHCP Server Ping, Tracert, NQA IP policy-based routing Forwarding next hop based on traffic IP policy-based route load balancing The QinQ interface (QinQ termination and dot1q termination) supports IPv4 load balancing. Enabling and disabling the rapid ping reply function based on interface boards Forcible fragmentation for packets with length greater than MTU and DF enabled MPLS-in-UDP tunnel egress
IPv6	IPv6 (ND) Path MTU (PMTU) TCP6 Ping IPv6 Tracert IPv6 Socket IPv6 DHCPv6 Relay Static IPv6 DNS TFTP IPv6 Client IP policy-based routing IPv6 ND fast reply

Feature	Description
MPLS	LDP, RSVP-TE, seamless MPLS, Segment Routing MPLS, MPLS-TP
Multicast	IGMP, Static Multicast Routing, PIM-SM, PIM-SM/SSM, MBGP, MG MVPN, IPv4 Multicast, IPv6 multicast, BIERv6
SRv6	IS-IS for SRv6, OSPFv3 for SRv6, SRv6 TE Policy, SRv6 TE Policy Shortcut, SRv6 Flex-Algo, SRv6 SRH compression, SRv6 network slicing BGP for SRv6, SRv6 BE, SBFD for SRv6 BE, SRv6 TI-LFA FRR, SRv6 middle-node protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, G-SRv6
EVPN	EVPN E-LAN/E-Line/E-Tree, EVPN L3VPN, EVPN VXLAN, PBB EVPN
L2VPN	PWE3/VLL, VPLS, VXLAN, VPWS, L2TPv3, BGP/MPLS IPv4/IPv6 VPN, PBB-EVPN, PBB VPLS, GRE
L3VPN	CE routers can access the L3VPN through L3 interfaces. Support static routes between CE and PE, BGP, RIPv1/v2, OSPF and IS-IS Inter-AS VPN, including RFC2547bis option A Inter-AS VPN, including RFC2547bis option B Inter-AS VPN, including RFC2547bis option C NG MVPN IPv6 VPN HoVPN Seamless MPLS BGP LSP entropy label Redirect to VPN L3VPN PIPE/Uniform mode L3VPN statistics
Value added service	BNG/BRAS (IPoE/PPPoE), NAT/CGN, IPsec, MACsec, service awareness (SA)
Clock	NTP, Physical layer synchronization (SynE), 1588v2 ACR/ATR, G.8275.1, SMPTE-2059-2, CES ACR, Atom GPS 3.0
QoS	QPPB, DiffServ, 5-level HQoS, redirection, traffic classification & re-marking & scheduling
Reliability	IP FRR, LDP FRR, TE FRR, VPN FRR, BGP FRR, mLDP FRR, Bit-error-triggered protection switching
Maintainability	• A network management system (NMS) with a graphical user interface, which simplifies NE management, improves O&M capabilities, and facilitates network-wide or end-to-end performance monitoring and fault diagnosis. • Plug-and-play based on DHCP or DCN. The NMS can automatically detect and configure the newly connected devices, which helps to implement remote batch commissioning. • Directional Forwarding Detection (BFD), Ethernet OAM, MPLS OAM, and MPLS-TP OAM

Feature	Description
	• Bandwidth association with microwave devices is supported. Bandwidth association simplifies QoS configurations and requirements on the microwave device, and the complex QoS logic is implemented on the NetEngine 8000 device. • Seamless MPLS • SNMP (v1/v2c/v3) • CLI • NETCONF • RMON • YANG • Telnet • AAA RADIUS and TACACS • IFIT, IP FPM, NQA, TWAMP, telemetry • BFD, VRRP • Ethernet OAM, IEEE 802.3ah, IEEE 802.1ag, Y.1731, ITU-T Y.1564 • Ethernet LPT • Syslog

Regulatory Compliance

Item	Description
Regulatory compliance	**EMC** · ANSI C63.4 · AS/NZS CISPR 32 · CISPR 24 · CISPR 32 · EN 55024 · EN 55032 · ETSI EN 300 386 · ETSI ES 201 468 · FCC CFR47 Part 15 Subpart B · ICES-003 Issue 6 · ICES-GEN Issue 1 • IEC 61000-3-2 • IEC 61000-3-3 • IEC 61000-4-11

Item	Description
	• IEC 61000-4-2 • IEC 61000-4-29 • IEC 61000-4-3 • IEC 61000-4-4 • IEC 61000-4-5 • IEC 61000-4-6 • IEC 61000-6-2 • IEC 61000-6-4 • VCCI-CISPR 32 **Environment** • IEC 60068-2-30 • IEC 60068-2-78 • IEC 60068-2-14 • IEC 60068-2-1 • IEC 60068-2-2 **Safety** • IEC/EN/UL/CSA 60950-1 • IEC/EN 62368-1 **Environmental protection** • 2011/65/EU & (EU)2015/863 (EU RoHS) • Regulation (EC) No.1907/2006 (REACH) • 2012/19/EU (WEEE) • 2006/66/EC & 2013/56/EU on batteries and accumulators

NOTE

- In the physical dimensions shown in the table, the width (W) does not include the rack-mounting ears.
- Temperature and humidity are measured at 1.5 m (4.92 ft.) above the ground and 0.4 m (1.31 ft.) in front of the cabinet. There should be no protection board on the front or back of the cabinet.
- "Short-term" refers to continuous working time that does not exceed 96 hours and accumulated working time per year that does not exceed 15 days. If the working time exceeds either of these values, it is considered "long-term".

Software Upgrade Paths

Visit Software Upgrade Paths to get VRP software release version or patches.

For More Information

For more information about the NetEngine 8000 series router, visit https://e.huawei.com or contact us in the following ways:

- Global service hotline: https://e.huawei.com/en/service-hotline
- Logging in to the Huawei Enterprise technical support web: https://support.huawei.com/enterprise/
- Sending an email to the customer service mailbox: support_e@huawei.com

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