

NetEngine 8000 M1D Service Router

Overview

NetEngine 8000 M1D is a high-density compact router designed for the cloud era. It's featured with 1U height, 220 mm depth, and supports up to 880G port capacity. The compact design saves precious space resources. It supports flexible service access of 10GE and GE (optical and electrical ports) and supports features such as SRv6, EVPN, Telemetry, and 1588v2

high-precision clock, which is the best choice for multi-service high-density bearer in the future cloud era.

The product fully supports the future-oriented next-generation unified network SRv6 technology and can be used to build IP backbone, metro, mobile backhaul, and data center networks. It can be used for individual/enterprise cloud migration, inter-cloud interconnection, IoT, government and enterprise private lines, home broadband applications, and CDN. As a basic bearer protocol of the entire network, SRv6 implements end-to-end full-service bearer capabilities. SRv6 enables simplified protocols, large-scale networking, seamless integration, high reliability, integrated service chains, network and service programmability, and a full ecosystem.

- Support for the Deterministic IP (DIP) technology. The periodic scheduling mechanism prevents cross-period packet collisions and ensures deterministic delay when nodes are processing data.
- Support for data redundancy elimination (DRE) to compress and decompress data between WAN border routers, reducing bandwidth consumption of WAN links, reducing line costs, and accelerating the deployment of distributed data centers.

NetEngine 8000E series router integrates multiple functions, simplifies the network structure, provides rich service types, reliable service quality, and intelligent O&M. It leads the IP WAN to an intelligent network with self-driving, and continuously drives the business success of enterprise customers.



NetEngine 8000 M1D (DC)



NetEngine 8000 M1D (AC)

Product Highlights

Compact and high-densityGE

- volume: 220mm deep, 1U
- capacity : 880 Gbps, Up to 4*100GE/16*25GE/24*10GE

SRv6 Ready, Simplified network

- SRv6/EVPN: Simplified protocols
- Programmable NP, meeting future evolution requirements

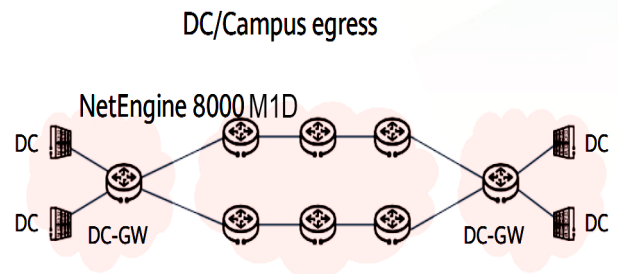
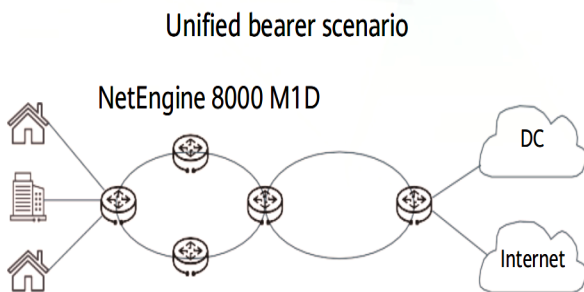
Energy saving

- -40°C ~ 65°C, Industrial wide temperature design
- 80W, Industry-leading low power consumption

Product Specifications

Item	Description
Switching Capacity	1.76 Tbps
Interface Type	100GE/50GE/40GE/25GE/10GE/GE/FE(o) /FE(e)
Main Control Board	Fixed-Box
Dimensions (W x D x H)	442 mm x 220 mm x 44.5 mm (1U)
Typical Power Consumption	125.1W
Temperature	-40°C ~ 65°C
Voltage	AC: 200V to 240V/100V to 127V dual live wires, support 240V HVDC; DC: -48 V/-60 V

Application Scenarios



Product Features

Features	Description
Layer 2	IEEE 802.1q, IEEE 802.1p, IEEE 802.3ad, IEEE 802.1ab, STP/RSTP/MSTP, EVC
Layer 3	OSPFv2/v3, RIPv2, IS-IS/IS-ISv6, BGPv4/BGPv4+, IPv4 ACL/Telnet, 6VPE and Static routing protocol, Dynamic ARP,static ARP,VLANIF interface and VXLAN
MPLS	LDP, RSVP-TE, SR MPLS, L2VPN (VPLS, HVPLS, VLL) , L3VPN, Seamless MPLS, MPLS-TP

Features	Description
SRv6/EVPN	IS-IS for SRv6、 OSPFv3 for SRv6、 SRv6 TE Policy、 SRv6 TE Policy Shortcut 、 SRv6 Flex-Algo、 SRv6 SRH Compression、 SRv6 Network Slicing、 G-SRv6、 SRv6 BGP、 SRv6 BE、 SRv6 BE SBFD、 SRv6 TI-LFA FRR、 SRv6 middle-node protection、 SRv6 micro-loop avoidance、 SRv6 OAM、 SRv6 SFC、 EVPN L3VPN、 EVPN VPWS、 EVPN VPLS
VAS	NAT/CGN、 IPSec
Multicast	IGMPv1/v2/v3、 IGMP Snooping、 Static multicast routing、 PIM-SM/SSM 、 MBGP、 NG MVPN、 BIERv6
QoS	5-level HQoS、 CAR
Reliability	IP FRR、 LDP FRR、 TE FRR、 VPN FRR TE-tunnel APS PW redundancy protection and PW APS Bit error-triggered protection switching
Security	URPF: used to prevent network attacks based on source IP address spoofing. Local attack defense: includes management and control plane protection, attack source tracing, and alarm generation in the event that the discarded packet threshold is crossed. Whitelist association at the application layer IPsec provides security services for IP packets mainly through encryption and authentication. AAA: Authentication, Authorization, and Accounting SSH (Secure Shell) ACL/Layer 2 ACL/ACL6
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 ITU-T Y.1564、 ITU-T Y.1731 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. IP FPM、 Seamless MPLS SNMPv1/v2c/v3 CLI、 NETCONF、 RMON

Features	Description
Synchronization	<p>The Device supports complete clock synchronization solutions to provide precise frequency or time synchronization. The following clock features are used:</p> <p>Physical-layer synchronization, including Ethernet clock synchronization</p> <p>Network Time Protocol (NTP)</p> <p>1588v2, which meets the LTE network's requirements for clock synchronization</p> <p>G8275.1</p>

Regulatory compliance

Item	Description
Regulatory compliance	<p>EMC</p> <ul style="list-style-type: none"> • ANSI C63.4 • AS/NZSPR 32 • CISPR 24 • CISPR 32 • EN 55024 • EN 55032 • ETSI EN 300 386 • 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 • 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 61000-6-1 • IEC 61000-6-3 • VCCI-CISPR 32 <p>Environment</p> <ul style="list-style-type: none"> • ETSI EN 300 019-1-1 • ETSI EN 300 019-1-2

项目	描述
Regulatory compliance	<ul style="list-style-type: none"> • ETSI EN 300 019-1-3 • ETSI EN 300753 • ETSI EN 300 019-2-1 • ETSI EN 300 019-2-2 • ETSI EN 300 019-2-3 • IEC 60068-2-1 • IEC 60068-2-2 • IEC 60068-2-14 • IEC 60068-2-30 • IEC 60068-2-64 • IEC 60068-2-27 • IEC 60068-2-6 • IEC 60068-2-31 • IEC 60068-2-78 • ISTA 2A • ISO 7779 • GB/T 2423.26-2008 <p>Safety</p> <ul style="list-style-type: none"> • IEC/EN/UL/CSA 60950-1 • IEC/EN 62368-1 <p>Environmental protection</p> <ul style="list-style-type: none"> • 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**

- Regarding the physical dimensions provided in the table, the width (W) does not take mounting ears into account.
- 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 an 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".

Product Specifications

NetEngine 8000 M1D AC

Item	Specification
n standards	ETSI(21-inch);IEC(19-inch); IMB(3U);F01M50 Outdoor Cabinet
Dimensions without packaging (H x W x D) [mm(in.)]	44.5 mm x 442 mm x 220 mm (1.75 in. x 17.40 in. x 8.66 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	255 mm x 585 mm x 390 mm (10.04 in. x 23.03 in. x 15.35 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	4.3 kg (9.48 lb)
Weight with packaging [kg(lb)]	5.0 kg (11.02 lb)
Typical power consumption (with configuration) [W]	132.2 W, visit Info-finder for more information
Typical heat dissipation (with configuration) [BTU/hour]	428.9 BTU/hour, visit Info-finder for more information
MTBF [year]	40 year
MTTR [hour]	0.5 hour
Availability	0.99999
CPU	8-core 1.5 GHz
Memory	8 GB x 1
Flash memory	64 MB
Storage	8 GB
Power supply mode	AC
Rated input voltage [V]	200 V–240 V/100 V–127 V dual-live wire, supporting 240 V HVDC
Input voltage range [V]	100 V to 240 V
Maximum input current [A]	4 A
Rated output power [W]	300 W
Maximum input cable size [mm ²]	Standard C13 cable
Front-end circuit breaker/fuse [A]	≥4A
Types of fans	Built-in
Heat dissipation mode	Air cooling
Airflow direction	From left to right
Noise at normal temperature (acoustic power) [dB(A)]	55 dB(A)

Item	Specification
Switching capacity	1.76 Tbit/s(Bidirectional). The maximum allowed error is 0.01%. To be specific, 99.99% of the line rate is guaranteed.
Maximum number of physical ports on the entire device	28
Maximum number of 100GE ports	4
Maximum number of 50GE ports	4
Maximum number of 40GE ports	4, visit Info-finder for more information
Maximum number of 25GE ports	16
Maximum number of 10GE ports	24
Maximum number of GE ports	24
Maximum number of FE ports	24
Maximum number of electrical ports	0
Redundant power supply	1+1
Redundant fans	Three built-in fans. If one fan fails, the system can run at a maximum ambient temperature of 50°C for a short period of time.
Long-term operating temperature [°C(°F)]	-40°C to +65°C (-40°F to +149°F)
Restriction on the operating temperature variation rate [°C(°F)]	≤ 0.5°C/min (32.9°F/min), non-condensing
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158 °F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Short-term operating relative humidity [RH]	5% RH to 95% RH, non-condensing
Storage relative humidity [RH]	5% RH to 100% RH, non-condensing
Long-term operating altitude [m(ft.)]	≤ 4000 m (13123.2 ft.) (For the altitude in the range of 1800 m to 4000 m [5905.44 ft. to 13123.2 ft.], the operating temperature of the device must decrease by 1°C [1.8°F] for every 220 m [721.78 ft.]
Storage altitude [m(ft.)]	< 5000 m
Breakout supported	Yes, visit Info-finder for more information
Interface rate auto-sensing supported	Yes, visit Info-finder for more information
FlexE supported	Yes, visit Info-finder for more information
MACsec supported	No
RTU supported	Yes, visit Info-finder for more information

NetEngine 8000 M1D DC

Item	Specification
Cabinet installation standards	ETSI(21-inch);IEC(19-inch);IMB(3U);
Dimensions without packaging (H x W x D) [mm(in.)]	44.5 mm x 442 mm x 220 mm (1.75 in. x 17.40 in. x 8.66 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	255 mm x 585 mm x 390 mm (10.04 in. x 23.03 in. x 15.35 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	4.2 kg (9.26 lb)
Weight with packaging [kg(lb)]	4.9 kg (10.8 lb)
Typical power consumption (with configuration) [W]	124.5 W, visit Info-finder for more information
Typical heat dissipation (with configuration) [BTU/hour]	403.8 BTU/hour, visit Info-finder for more information
MTBF [year]	45.54 year
MTTR [hour]	0.5 hour
Availability	0.99999
CPU	8-core 1.5 GHz
Memory	8 GB x 1
Flash memory	64 MB
Storage	8 GB
Power supply mode	DC
Rated input voltage [V]	-48 V/-60 V
Input voltage range [V]	-40 V to -72 V
Maximum input current [A]	10 A
Rated output power [W]	260 W
Maximum input cable size [mm ²]	4 mm ²
Front-end circuit breaker/fuse [A]	≥6 A
Types of fans	Built-in
Heat dissipation mode	Air cooling
Airflow direction	From left to right
Noise at normal temperature (acoustic power) [dB(A)]	55 dB(A)

Item	Specification
Switching capacity	1.76 Tbit/s (Bidirectional)
Maximum number of physical ports on the entire device	28
Maximum number of 100GE ports	4
Maximum number of 50GE ports	4
Maximum number of 40GE ports	4
Maximum number of 25GE ports	16
Maximum number of 10GE ports	24
Maximum number of GE ports	24
Maximum number of FE ports	24
Maximum number of electrical ports	0
Redundant power supply	1+1
Redundant fans	Three built-in fans. If one fan fails, the system can run at a maximum ambient temperature of 50°C for a short period of time.
Long-term operating temperature [°C(°F)]	-40°C to +65°C (-40°F to +149°F)
Restriction on the operating temperature variation rate [°C(°F)]	≤ 0.5°C/min (32.9°F/min), non-condensing
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158 °F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Short-term operating relative humidity [RH]	5% RH to 95% RH, non-condensing
Storage relative humidity [RH]	5% RH to 100% RH, non-condensing
Long-term operating altitude [m(ft.)]	≤ 4000 m (13123.2 ft.) (For the altitude in the range of 1800 m to 4000 m [5905.44 ft. to 13123.2 ft.], the operating temperature of the device must decrease by 1°C [1.8°F] for every 220 m [721.78 ft.]
Storage altitude [m(ft.)]	< 5000 m
Breakout supported	Yes, visit Info-finder for more information
Interface rate auto-sensing supported	Yes, visit Info-finder for more information
FlexE supported	Yes, visit Info-finder for more information
MACsec supported	No
RTU supported	Yes, visit Info-finder for more information

Software Upgrade Paths

Visit [Software Upgrade Paths](#) or contact local Huawei engineers for more detailed information.

For More Information

For more information about the NetEngine 8000 M1D service 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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