H3C MSR1000

Series Router

Branch Router

Release Date: Jan 2025

New H3C Technologies Co., Limited

Product overview

As SDN, cloud computing, and AI technologies bring revolutionized changes to the networking landscape, a growing number of enterprises are driving digital business transformation, which requires enterprise WANs to provide the following capabilities:

- AD-WAN capacity - Provides visibility into link quality and business traffic on the WAN, and allows management, control, and scheduling of business traffic, and enables good use experience with enterprise businesses.
- Higher network performance - Increased complexity of traffic models driven by development of enterprise businesses requires more converged and diversified network services. Network devices must provide higher forwarding capacity to align with the growing needs.
- Simple, automated network management - Simplifies network device management and maintenance, improves efficiency, and reduces management costs.

To embrace these opportunities and challenges, H3C has developed new-generation MSR1000 router series based on ten years of experience in enterprise and carrier network construction and profound technology accumulation. The router delivers the following features:

- Provides rich access capabilities including 5G/FDD/TDD-LTE, Wi-Fi6, and Ethernet, meeting various access requirements at the branch site from a single device.
- Comprehensive support for AD-WAN features, including Netconf, Telemetry, Yang, GRPC, and zero configuration. In conjunction with the H3C SeerEngine-WAN controller, it offers an excellent AD-WAN wide area network management and user experience.
- Integrated with H3C IMC and Cloudnet, the router can provide centralized management and monitoring of devices, bulk software upgrade, automated configuration deployment, configuration rollback, and fault alarming, improving O & M efficiency and reducing the TCO significantly.
- Employs rich VPN interconnect technologies, including IPsec, L2TP, and ADVPN and robust encryption algorithms to provide secure VPN access in various scenarios.
- Identifies over 1000 common PC and mobile phone applications and offers granular control for application traffic.
- Logs detailed information about user online behaviors to meet wireless non-economic audit requirements.

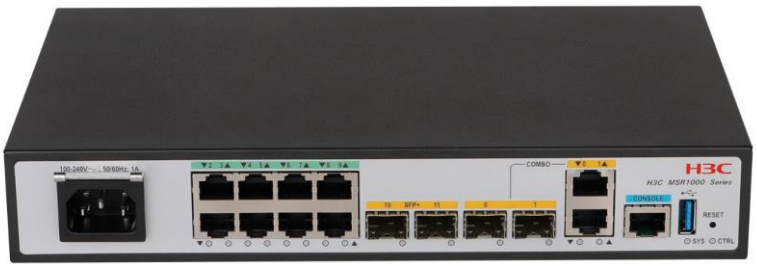
The MSR1000 series has the following models: MSR1004S-5G-GL, MSR1104S-W, MSR1104S-W-CAT6, MSR1104S-W-5GGL, MSR1008.

H3C MSR1004S-5G-GL router

H3C MSR1104S-W

H3C MSR1104S-W-CAT6

MSR1104S-W-5GGL



H3C MSR1008 router

Features and benefits

Full support for SDN

The router supports a full range of SDN features, including:

- Flexible management - Supports management and control protocols such as Netconf and Telemetry, and can be managed and controlled by the H3C SeerEngine-WAN controller and third-party controllers.
- Powerful forwarding capability - Supports forwarding services such as encrypted SD-WAN, Segment Routing, EVPN etc., allowing the definition of various forwarding models to meet different networking requirements.
- ZTP - Supports zero-touch deployment via URL, USB drive, and DHCP, fulfilling the needs for mass deployment, cost-effectiveness, and rapid start-up.
- DPI - Supports DPI application recognition capabilities for precise identification of network traffic, enabling network traffic visualization, customization, and flexible scheduling..
- SRv6 - Supports EVPN L2VPN over SRv6 policy/BE and EVPN L3VPN over SRv6 policy/BE networking.

Online behavior management and audit

- Granular application identification and control - Provides the capability to identify, filter, and rate limit over 1000 common PC and mobile phone applications such as IM applications, streaming media applications, stock and financing applications, game applications, and P2P applications.
- URL filtering - Allows you to use a website permit list and deny list that support fuzzy matching to ensure access to secure websites.
- Online behavior audit - Logs detailed information, including source IP addresses, timestamps, destination domain names, and URLs, about users' internet access behaviors, to meet wireless non-economic audit requirements.

High security

The router employs the following advanced features to ensure high security:

- Rich security rules - Supports filtering rules based on 5-tuple, ASPF state, MAC address and URL,

domain-based firewall rules, and IPS rules.

- Diversified VPN technologies - Supports IPsec, L2TP, GRE, ADVPN, MPLS VPN, and combination of multiple VPN technologies.
- Endpoint access security - Provides strict access control for endpoints through 802.1X/portal authentication, endpoint admission defense (EAD) solution, and endpoint MAC address authentication.
- DDoS attack protection - Guards against SYN, ACK, RST, and UDP flood attacks.
- Secure device management - Provides flexible and secure control of permissions by managing permissions based on roles, assigning resources based on roles, and mapping users to roles.
- Traffic control on the control plane - Allows customization of protocol messages for traffic control and filtering.
- Robust firewall functionalities - Provides packet filtering firewall, stateful firewall, and security-zone based firewall functionalities.

5G/4G wireless communications

The router provides the following features to support 5G/4G wireless communications:

- Built with high speed, stable 5G/4G interfaces to support TDD/FDD 4G LTE networks of all carriers.
- SIM/USIM binding with devices.
- GPS.
- Device deployment, management, and maintenance through SMS.
- Basic GUI management on local web.

Intelligent network management

- The router supports multiple network management methods, including Telnet/SSH, SNMP, TR069*, and NETCONF.
- With EAA, the router allows you to define monitor policies with Tcl and Python scripts to monitor the internal events and status of the system's software and hardware components and execute the pre-defined actions in response to specific events automatically.

High Reliability

- Supports rapid Fault Detection technology (BFD) enables interaction with static routes/RIP/OSPF/BGP/ISIS dynamic routing, VRRP, and interface backup.
- Network Quality Analysis technology (NQA) allows interaction with static routes, VRRP, and interface

* Supports TR069 depend on the model.

backup.

- Supports redundant backup and load balancing across multiple devices (VRRP/VRRPE).
- Supports ECMP load balancing across multiple links.

Technical specifications

Hardware specifications

Item	Specifications				
	MSR1004S-5G-GL	MSR1104S-W-5GGL	MSR1104S-W	MSR1104S-W-CAT6	MSR1008
IP Forwarding Performance (IMIX)	1.8 Gbps	1.8 Gbps	1.8 Gbps	1.8 Gbps	7.5 Gbps
Forwarding Performance with ACL+NAT+QOS (IMIX)	1 Gbps	1.4 Gbps	1.4 Gbps	1.4 Gbps	4 Gbps
IPSec Forwarding Performance (1400byte)	300 Mbps	900 Mbps	900 Mbps	900 Mbps	3 Gbps
CPU	2 cores, 1.6 GHz	4 cores, 1.7 GHz	4 cores, 1.7 GHz	4 cores, 1.7 GHz	4 cores, 1.6 GHz
Memory	1 GB	1 GB	1 GB	1 GB	2 GB
Flash	512 MB	512 MB	256 MB	256 MB	4 GB
Console port	1	1	1	1	1
USB 2.0 port	1	1	1	1	1
WAN Ethernet port	1 × GE copper port 2 × GE fiber ports	1 × GE copper port 1 × GE fiber port	1 × GE copper port 1 × GE fiber port	1 × GE copper port 1 × GE fiber port	2 × 10GE SFP+ ports 2 × GE combo interfaces
LAN Ethernet port	4 × GE copper ports	4 × GE copper ports	4 × GE copper ports	4 × GE copper ports	8 × GE copper ports (Four of them can be switched to routing mode.)
5G/4G	5G NR SA/NSA: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12(B17)/B13/B	5G NSA/SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79 LTE-FDD:	N/A	TDD LTE: B38/B40/B41* FDD LTE: B1/B3/B5/B7/B8/B20/B28/B32 WCDMA:	N/A

	14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B48 LAA: B46 WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71 LTE-TDD: 34/38/39/40/41/42/43/48 WCDMA: 1/2/4/5/8/19		B1/B3/B5*/B8 CA: B1+B3/B8, B3+B1/B8, B38+B38	
5G/4G antenna	4	4	N/A	2	N/A
SIM cards	2	2	N/A	2	N/A
Wi-Fi	N/A	802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps 802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps	802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps 802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps	802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps 802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps	N/A
Wi-Fi antenna	N/A	2	2	2	N/A
Dying gasp	Supported	Supported	N/A	N/A	N/A
Max power consumption	24 W	24 W	18 W	24 W	36 W
Power supply	External power adapter 100 to 240 V, 50/60 Hz	External power adapter 100 to 240 V, 50/60 Hz	External power adapter 100 to 240 V, 50/60 Hz	External power adapter 100 to 240 V, 50/60 Hz	Internal power adapter 100 to 240 V, 50/60 Hz
Dimensions (H × W × D)	52.4 × 150 × 127 mm (2.06 × 5.91 × 5 in)	43.6 × 266 × 161 mm (1.72 × 10.47 × 6.34 in)	43.6 × 266 × 161 mm (1.72 × 10.47 × 6.34 in)	43.6 × 266 × 161 mm (1.72 × 10.47 × 6.34 in)	43.6 × 266 × 161 mm (1.72 × 10.47 × 6.34 in)
Operating temperature	-40°C～70℃	0°C to 45°C	0°C to 45°C	0°C to 45°C	0°C to 45°C
Ambient relative temperature	5 % to 95%, noncondensing	5 % to 95%, noncondensing	5 % to 95%, noncondensing	5 % to 95%, noncondensing	5 % to 95%, noncondensing

Software specifications

Item	Specifications
Layer 2 switching	Ethernet, Ethernet II, VLAN, 802.3x, 802.1p, 802.1q, 802.1X, STP (802.1D), RSTP (802.1w), MSTP (802.1s), PPP, PPPoE client, PPPoE server
IP services	TCP, UDP, IP option, IP unnumbered Policy-based routing, NetStream, sFlow ECMP UCMP

IP applications	Ping, Tracert, ICMP, DHCP server, DHCP relay, DHCP client, DNS client, DNS proxy, DDNS, UDP Helper, NTP, SNTP
IPv4 routing	Static routing
	Dynamic routing: RIPv1/v2, OSPFv2, BGP, IS-IS
	Route iteration
	Routing policy
	Multicast routing protocols: IGMPv1/v2/v3, PIM-DM, PIM-SM, MBGP, MSDP
IPv6	IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, NAT-PT, 6PE, DS-LITE
	IPv6 tunnel: manually configured IPv6 tunnel, automatic IPv6 tunnel, GRE tunnel, 6to4 tunnel, ISATAP tunnel
	Static routing
	Dynamic routing protocols: RIPng, OSPFv3, IS-ISv6, BGP4+
	IPv6 multicast protocols: MLDv1/v2, PIM-DM, PIM-SM
QoS	LR, port-based mirroring, priority trust mode on a port, and port priority
	Committed access rate (CAR)
	FIFO, WFQ, CBQ
	Generic Traffic Shaping (GTS)
	Traffic classification
5G/4G	5G NR, TDD/FDD LTE, WCDMA/HSPA+
Security	Portal, 802.1X
	Local authentication, RBAC authentication, RADIUS authentication, TACACS+ authentication
	ASPF, ACL, filter, security zone-based firewall, connection limit, IPS
	IKE/IPsec VPN, ADVPN, GDVPN, L2TP VPN, GRE VPN
	NAT/NAPT, PKI, RSA, URPF
	DDoS attack prevention, ARP attack prevention, URL filtering
	EAD
	DPI
	SM2, SM3, SM4 encryption algorithms
SDN	NETCONF, OpenFlow, telemetry
	VXLAN, EVPN
	Segment routing
	ZTP through USB drive, URL, and DHCP
	SRv6:
	OSPFv3 for SRv6
	IS-IS for SRv6
	SRv6 policy
	SRv6 policy-based traffic steering
	EVPN L3VPN over SRv6
	EVPN L3VPN over SRv6 policy
	SRv6 policy-based traffic statistics
	SRv6 OAM
	BFD for SRv6
	SRv6 TI-LFA
MPLS	LDP, Static LSP
	L3VPN: Inter-domain MPLS VPN (Option1/2/3), nested MPLS VPN, hierarchy PE (HoPE), CE dual homing, MCE, and multi-role host

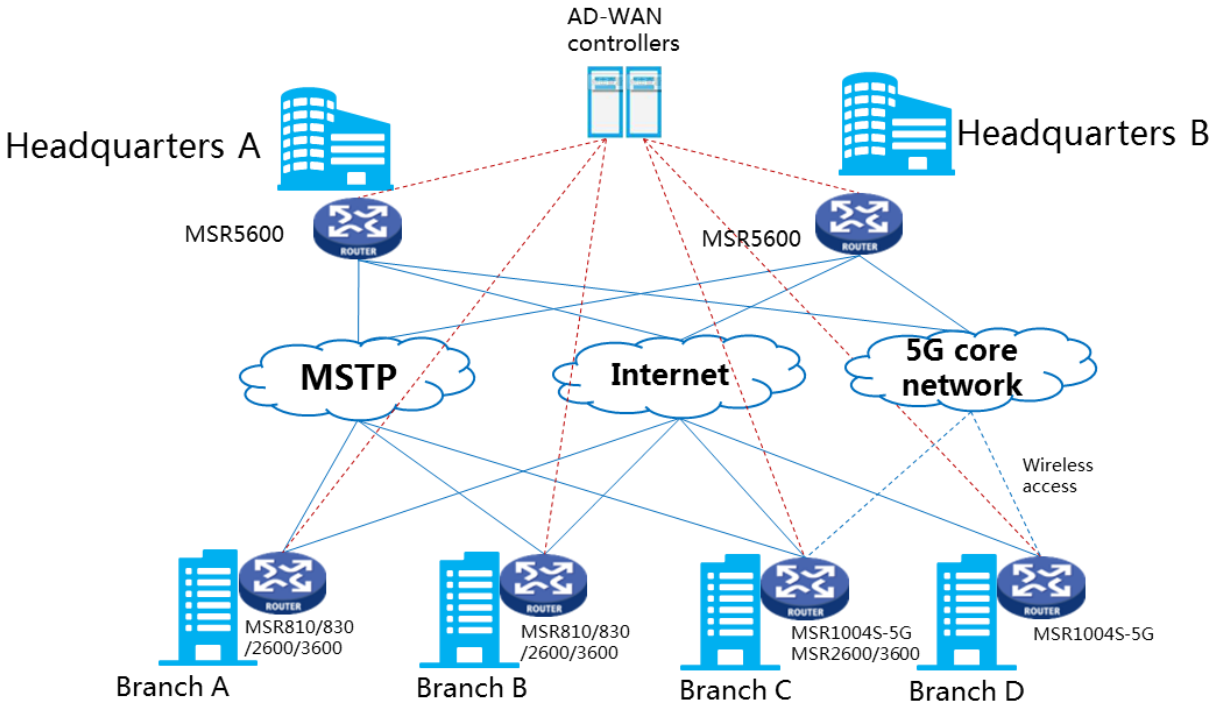
High availability	L2VPN: Martini, Kompella, CCC and SVC MPLS TE, RSVP TE VRRP, VRRPv3 Multi-link load balancing and backup Network quality analyzer (NQA), supporting collaboration with routing, VRRP, and interface backup
Management and maintenance	SNMP v1/v2c/v3, TR069, syslog, RMON Telnet, SSHv1.5/2.0, FTP EAA CLI management, file system management, dual image NQA DHCP test, NQA FTP test, NQA HTTP test, NQA ICMP test, NQA UDP public test, NQA UDP private test, NQA TCP public test, NQA TCP private test, and NQA SNMP test

Application scenarios

Deployment in an AD-WAN headquarters-branch network

In an AD-WAN headquarters-branch network, you can deploy MSR5600 routers as aggregation devices at headquarters or access devices at medium and large branches, MSR810/830/2600/3600 routers as access devices at branches, and MSR1000 routers as backup access devices at medium and large branches or access devices at small branches.

These routers, working in conjunction with H3C AD-WAN controllers, allow MSTP, Internet, and 5G core hybrid networking, enables unified device management, offers link quality and traffic visibility and intelligent traffic scheduling, and delivers good use experience with enterprise businesses.



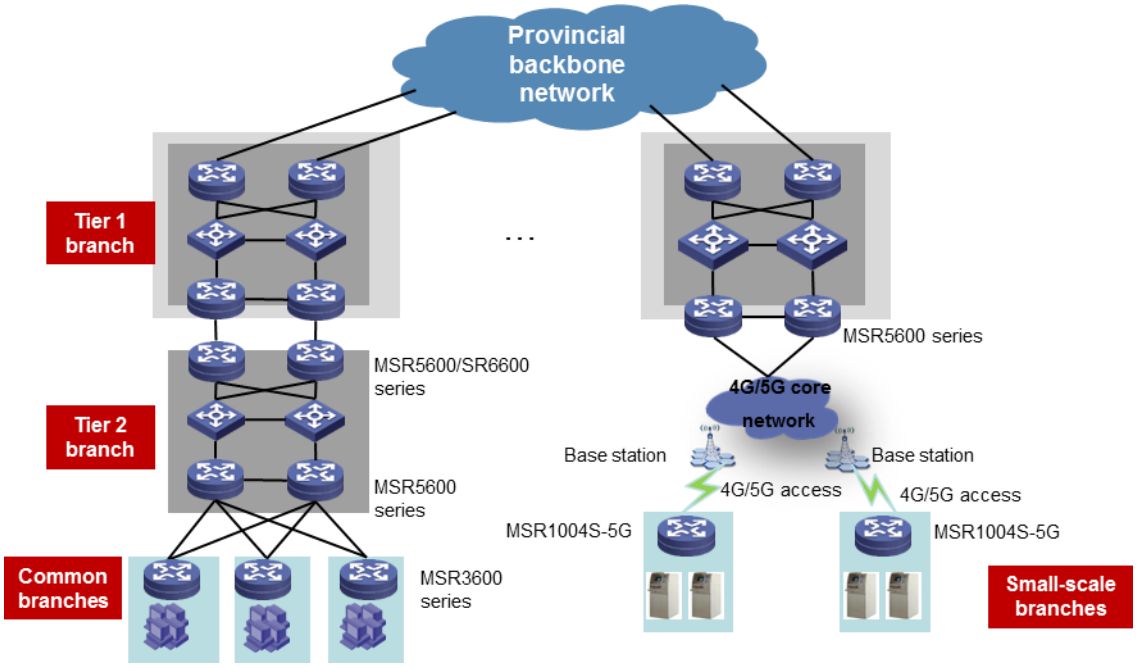
AD-WAN headquarters-branch network

Deployment in a typical WAN

In a typical WAN, you can deploy MSR routers as follows:

- Deploy MSR1000 routers as access devices at small branches or branches where wired connection can hardly reach.
- Deploy MSR2600 or MSR3600 routers as access devices at common branches.
- Deploy MSR5600 routers at tier-2 branches as aggregation devices or devices connecting to the upper layer.

With outstanding concurrent service processing capability and high availability solutions such as IRF, BFD, and link aggregation, MSR routers ensure stable and smooth services at branches. Support of remote secure access technologies such as ADVPN, IPSec VPN, and L2TP VPN in combination with robust encryption algorithms ensures security of sensitive businesses. This topology is widely used in finance, transport, and enterprise verticals.



Typical WAN network

Ordering information

Product ID	Description
RT-MSR1004S-5G-GL	H3C MSR1004S-5G Router(2*GE(SFP),5*GE(RJ45),5G NR(NSA/SA,4G FDD/TDD LTE-A,3G WCDMA,Sub6,GNSS))
RT-MSR1104S-W-5GGL	H3C MSR1104S-W-5GGL Router (1GE+1SFP WAN,4GE LAN/WAN, Dual-Radio Wi-Fi 6,5G NR(NSA/SA,4G FDD/TDD LTE-A,3G WCDMA,Sub6,GNSS), Global Version)
RT-MSR1104S-W-CAT6	H3C MSR1104S-W-CAT6 Router (1GE+1SFP WAN, 4GE LAN/WAN, Dual-Radio Wi-Fi 6, 4G LTE CAT6)
RT-MSR1104S-W	H3C MSR1104S-W Router (1GE+1SFP WAN, 4GE LAN/WAN, Dual-Radio Wi-Fi 6)
RT-MSR1008	H3C MSR1008 Router (2*10GE(SFP+),2*GE(Combo),8*GE(RJ45))

The Leader in Digital Solutions

New H3C Technologies Co., Limited

Beijing Headquarters

Tower 1, LSH Center, 8 Guangshun South Street, Chaoyang District, Beijing, China

Zip: 100102

Hangzhou Headquarters

No.466 Changhe Road, Binjiang District, Hangzhou, Zhejiang, China

Zip: 310052

Tel: +86-571-86760000

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