



# H3C MSR1000 Series Router

## Branch Router

### 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, LTE CAT6, VDSL 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.

## Views

The MSR1000 series has the following models:

- MSR1004S-5G-GL
- MSR1104S-W
- MSR1104S-W-CAT6
- MSR1104S-W-5GGL
- MSR1008
- MSR1104-G
- MSR1104-G-DSL-CAT6

|                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| H3C MSR1004S-5G-GL router                                                           | H3C MSR1104S-W                                                                       | H3C MSR1104S-W-CAT6                                                                   |
|  |  |  |
| MSR1104S-W-5GGL                                                                     | H3C MSR1008 router                                                                   | MSR1104-G                                                                             |



MSR1104-G-DSL-CAT6

## Features and highlights

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

## Technical specifications

### Hardware specifications

| Item                                           | MSR1004S-5G-GL | MSR1104S-W-5GGL | MSR1104S-W | MSR1104S-W-CAT6 | MSR1008  | MSR1104-G | MSR1104-G-DSL-CAT6 |
|------------------------------------------------|----------------|-----------------|------------|-----------------|----------|-----------|--------------------|
| IP forwarding performance (IMIX)               | 1.8 Gbps       | 1.8 Gbps        | 1.8 Gbps   | 1.8 Gbps        | 7.5 Gbps | 1.6 Gbps  | 1.6 Gbps           |
| Forwarding performance with ACL+NAT+QoS (IMIX) | 1 Gbps         | 1.4 Gbps        | 1.4 Gbps   | 1.4 Gbps        | 4 Gbps   | 1.2 Gbps  | 1.2 Gbps           |
| IPsec forwarding performance (1400byte)        | 300 Mbps       | 900 Mbps        | 900 Mbps   | 900 Mbps        | 3 Gbps   | 1.2 Gbps  | 1.2 Gbps           |

| Item                                         | MSR1004S-5G-GL                                                                                                                                                                                                                                                                                    | MSR1104S-W-5GGL                                                                                                                                                                                                                                                    | MSR1104S-W                              | MSR1104S-W-CAT6                                                                                                                                     | MSR1008                                                                | MSR1104-G                                                            | MSR1104-G-DSL-CAT6                                                                                                                                 |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| AD-WAN typical encryption performance (IMIX) | 200 Mbps                                                                                                                                                                                                                                                                                          | 200 Mbps                                                                                                                                                                                                                                                           | 200 Mbps                                | 200 Mbps                                                                                                                                            | 400 Mbps                                                               | 300 Mbps                                                             | 300 Mbps                                                                                                                                           |
| 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                                                       | 4 cores, 1.8 GHz                                                     | 4 cores, 1.8 GHz                                                                                                                                   |
| Memory                                       | 1 GB                                                                                                                                                                                                                                                                                              | 2 GB                                                                                                                                                                                                                                                               | 1 GB                                    | 1 GB                                                                                                                                                | 2 GB                                                                   | 2 GB                                                                 | 2 GB                                                                                                                                               |
| Flash                                        | 512 MB                                                                                                                                                                                                                                                                                            | 512 MB                                                                                                                                                                                                                                                             | 256 MB                                  | 256 MB                                                                                                                                              | 4 GB                                                                   | 8 GB                                                                 | 8 GB                                                                                                                                               |
| Console port                                 | 1                                                                                                                                                                                                                                                                                                 | 1                                                                                                                                                                                                                                                                  | 1                                       | 1                                                                                                                                                   | 1                                                                      | 1                                                                    | 1                                                                                                                                                  |
| USB 2.0 port                                 | 1                                                                                                                                                                                                                                                                                                 | 1                                                                                                                                                                                                                                                                  | 1                                       | 1                                                                                                                                                   | 1                                                                      | 1                                                                    | 1                                                                                                                                                  |
| WAN Ethernet port                            | 1 × GE copper port<br>2 × GE fiber ports                                                                                                                                                                                                                                                          | 1 × GE copper port<br>1 × GE fiber port                                                                                                                                                                                                                            | 1 × GE copper port<br>1 × GE fiber port | 1 × GE copper port<br>1 × GE fiber port                                                                                                             | 2 × 10GE SFP+ ports<br>2 × GE combo interfaces                         | 2 × 2.5GE/GE fiber port<br>1 × GE copper port                        | 1 × 2.5GE/GE fiber port<br>1 × GE copper port                                                                                                      |
| LAN Ethernet port                            | 4 × GE copper ports                                                                                                                                                                                                                                                                               | 4 × GE copper ports                                                                                                                                                                                                                                                | 4 × GE copper ports                     | 4 × GE copper ports                                                                                                                                 | 8 × GE copper ports<br>(Four of them can be switched to routing mode.) | 4 × GE copper ports<br>(All of them can be switched to routing mode) | 4 × GE copper ports                                                                                                                                |
| xDSL                                         | N/A                                                                                                                                                                                                                                                                                               | N/A                                                                                                                                                                                                                                                                | N/A                                     | N/A                                                                                                                                                 | N/A                                                                    | N/A                                                                  | 1x ADSL2+/VDSL2                                                                                                                                    |
| 5G/4G *                                      | 3GPP R16<br>5G NR SA/NSA:<br>n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79<br>LTE FDD:<br>B1/B2/B3/B4/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71<br>LTE-TDD:<br>B34/B38/B39/B40/B41/B42/B43/B48<br>LAA:<br>B46<br>WCDMA:<br>B1/B2/B3/B4/B5/B6/ | 3GPP R16<br>5G NSA/SA:<br>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<br>LTE-FDD:<br>1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71<br>LTE-TDD:<br>34/38/39/40/41/42/43/48<br>LAA:<br>B46<br>WCDMA:<br>1/2/4/5/8/19 | N/A                                     | 3GPP R12<br>TDD LTE:<br>B38/B40/B41<br>FDD LTE:<br>B1/B3/B5/B7/B8/B20/B28/B32<br>WCDMA:<br>B1/B3/B5*/B8<br>CA:<br>B1+B3/B8,<br>B3+B1/B8,<br>B38+B38 | N/A                                                                    | N/A                                                                  | 3GPP R12<br>TDD LTE:<br>B38/B40/B41<br>FDD LTE:<br>B1/B3/B5/B7/B8/B20/B28/B32<br>WCDMA:<br>B1/B3/B5/B8<br>CA:<br>B1+B3/B8,<br>B3+B1/B8,<br>B38+B38 |

| Item                     | MSR1004S-5G-GL                                                                                                                      | MSR1104S-W-5GGL                                                                                                                     | MSR1104S-W                                                                                        | MSR1104S-W-CAT6                                                                                   | MSR1008                                                                               | MSR1104-G                                                                             | MSR1104-G-DSL-CAT6                                                                                      |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|                          | B8/B19                                                                                                                              |                                                                                                                                     |                                                                                                   |                                                                                                   |                                                                                       |                                                                                       |                                                                                                         |
| 5G/4G antenna            | 4                                                                                                                                   | 4                                                                                                                                   | N/A                                                                                               | 2                                                                                                 | N/A                                                                                   | N/A                                                                                   | 2                                                                                                       |
| SIM cards                | 2                                                                                                                                   | 2                                                                                                                                   | N/A                                                                                               | 2                                                                                                 | N/A                                                                                   | N/A                                                                                   | 2                                                                                                       |
| Wi-Fi                    | N/A                                                                                                                                 | 802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps<br>802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps                                                 | 802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps<br>802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps               | 802.11ax/n/b/g: 2.4 GHz 2*2 MIMO 575 Mbps<br>802.11ax/ac/a/n: 5G 2*2 MIMO 2400 Mbps               | N/A                                                                                   | N/A                                                                                   | N/A                                                                                                     |
| Wi-Fi antenna            | N/A                                                                                                                                 | 2                                                                                                                                   | 2                                                                                                 | 2                                                                                                 | N/A                                                                                   | N/A                                                                                   | N/A                                                                                                     |
| Dying gasp               | Supported                                                                                                                           | Supported                                                                                                                           | N/A                                                                                               | Supported**                                                                                       | N/A                                                                                   | Supported                                                                             | Supported                                                                                               |
| Max power consumption    | 24 W                                                                                                                                | 24 W                                                                                                                                | 18 W                                                                                              | 24 W                                                                                              | 36 W                                                                                  | 18 W                                                                                  | 18 W                                                                                                    |
| Power supply             | External power adapter<br>100 to 240 V, 50/60 Hz                                                                                    | External power adapter<br>100 to 240 V, 50/60 Hz                                                                                    | External power adapter<br>100 to 240 V, 50/60 Hz                                                  | External power adapter<br>100 to 240 V, 50/60 Hz                                                  | Internal power adapter<br>100 to 240 V, 50/60 Hz                                      | Internal AC power<br>External power adapter<br>100 to 240 V, 50/60 Hz                 | External power adapter<br>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)                                          | 44 × 210 × 140 mm (1.72 × 8.27 × 5.51 in)                                             | 35 × 220 × 149 mm (1.38 × 8.66 × 5.87 in)                                                               |
| Operating temperature    | -40°C to 70°C                                                                                                                       | 0°C to 45°C                                                                                                                         | 0°C to 45°C                                                                                       | 0°C to 45°C                                                                                       | 0°C to 45°C                                                                           | -20°C to 55°C                                                                         | 0°C to 45°C                                                                                             |
| Operating altitude       | < 5000m                                                                                                                             | < 5000m                                                                                                                             | < 5000m                                                                                           | < 5000m                                                                                           | < 5000m                                                                               | < 5000m                                                                               | < 5000m                                                                                                 |
| Operating humidity       | 5 to 95%, non-condensing                                                                                                            | 5 to 95%, non-condensing                                                                                                            | 5 to 95%, non-condensing                                                                          | 5 to 95%, non-condensing                                                                          | 5 to 95%, non-condensing                                                              | 5 to 95%, non-condensing                                                              | 5 % to 95%, noncondensing                                                                               |
| EMC standards compliance | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B<br>EN 55032 CLASS B<br>AS/NZS CISPR32 CLASS B | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B<br>EN 55032 CLASS B<br>AS/NZS CISPR32 CLASS B | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B<br>EN 55032 | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B<br>EN 55032 | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B | FCC Part 15 Subpart B CLASS B<br>ICES-003 CLASS B<br>VCCI CLASS B<br>CISPR 32 CLASS B<br>EN 55032 CLASS |

| Item                                | MSR1004S-5G-GL                                                                                                                                          | MSR1104S-W-5GGL                                                                                                                                                                                                          | MSR1104S-W                                                                                                                                                                                  | MSR1104S-W-CAT6                                                                                                                                                                                                  | MSR1008                                                                                                                              | MSR1104-G                                                                                                                            | MSR1104-G-DSL-CAT6                                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                     | CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>ETSI EN 301 489-1<br>ETSI EN 301 489-52<br>ETSI EN 301 489-19<br>GB/T 9254.1 | CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>ETSI EN 301 489-1<br>ETSI EN 301 489-52<br>ETSI EN 301 489-17<br>ETSI EN 301 489-52<br>ETSI EN 301 489-3<br>ETSI EN 301 489-19<br>GB/T 9254.1 | CLASS B<br>AS/NZS CISPR32 CLASS B<br>CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>ETSI EN 301 489-1<br>ETSI EN 301 489-17<br>ETSI EN 301 489-3<br>GB/T 9254.1 | CLASS B<br>AS/NZS CISPR32 CLASS B<br>CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>ETSI EN 301 489-1<br>ETSI EN 301 489-3<br>ETSI EN 301 489-17<br>ETSI EN 301 489-3<br>GB/T 9254.1 | EN 55032 CLASS B<br>AS/NZS CISPR32 CLASS B<br>CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>GB/T 9254.1 | EN 55032 CLASS B<br>AS/NZS CISPR32 CLASS B<br>CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>GB/T 9254.1 | B<br>AS/NZS CISPR32 CLASS B<br>CISPR 35<br>EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>GB/T 9254.1          |
| Safety standards compliance         | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                                             | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                                                                                                              | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                                                                                 | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                                                                                                      | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                          | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                          | FDA 21 CFR Subchapter J<br>GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1<br>EN 62368-1                    |
| Radio & health standards compliance | ETSI EN 301 908-1<br>ETSI EN 301 908-2<br>ETSI EN 301 908-13<br>ETSI EN 303 413<br>ETSI EN 301 908-25<br>EN 50665<br>EN IEC 62311                       | ETSI EN 301 908-1<br>ETSI EN 301 908-2<br>ETSI EN 301 908-13<br>ETSI EN 303 413<br>EN 300 328<br>EN 300 440<br>EN 301 893<br>EN 301 908-25<br>EN 50385<br>EN 62232                                                       | EN 300 328<br>EN 300 440<br>EN 301 893<br>EN 50385<br>EN 62232                                                                                                                              | ETSI EN 301 908-1<br>ETSI EN 301 908-2<br>ETSI EN 301 908-13<br>EN 300 328<br>EN 300 440<br>EN 301 893<br>EN 50385<br>EN 62232                                                                                   | N/A                                                                                                                                  | N/A                                                                                                                                  | ETSI EN 301 908-1<br>ETSI EN 301 908-2<br>ETSI EN 301 908-13<br>EN 300 328<br>EN 300 440<br>EN 301 893<br>EN 50385<br>EN 62232 |
| Environment standards               | IEC 60068-2-1                                                                                                                                           | IEC 60068-2-1                                                                                                                                                                                                            | IEC 60068-2-1                                                                                                                                                                               | IEC 60068-2-1                                                                                                                                                                                                    | IEC 60068-2-1                                                                                                                        | IEC 60068-2-1                                                                                                                        | IEC 60068-2-1                                                                                                                  |

| Item                                     | MSR1004S-5G-GL                                                                               | MSR1104S-W-5GGL                                                                              | MSR1104S-W                                                          | MSR1104S-W-CAT6                                                     | MSR1008                                                             | MSR1104-G                                                           | MSR1104-G-DSL-CAT6                                                  |
|------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| compliance                               | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14                          | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14                          | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14 | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14 | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14 | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14 | IEC 60068-2-2<br>IEC 60068-2-78<br>IEC 60068-2-30<br>IEC 60068-2-14 |
| Shock and vibration standards compliance | IEC 60068-2-64<br>IEC 60068-2-31<br>IEC 60068-2-6<br>IEC 60068-2-27<br>EN 61373<br>IEC 61373 | IEC 60068-2-64<br>IEC 60068-2-31<br>IEC 60068-2-6<br>IEC 60068-2-27<br>EN 61373<br>IEC 61373 | IEC 60068-2-64<br>IEC 60068-2-31                                    | IEC 60068-2-64<br>IEC 60068-2-31                                    | IEC 60068-2-64<br>IEC 60068-2-31                                    | IEC 60068-2-64<br>IEC 60068-2-31                                    | IEC 60068-2-64<br>IEC 60068-2-31                                    |

- \* Dependent upon specific regions supporting the 4G/5G bands listed.
- \*\* Need specified hardware version to support it, refer to the documentation.

## Software specifications

| Item                     | Description                                                                                                                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DSL(For DSL models only) | VDSL2 (ITU G9932), VDSL2 Vectoring (ITU G993.5);<br>VDSL2 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b profiles<br>VDSL support ATM and PTM<br>ITU G. 992.1 (ADSL), G.992.3 (ADSL2), and G.992.5 (ADSL2+);<br>ADSL2/ADSL2+ Annex A, B, M and J, T1.413, G992.2 (G.Lite); |
| 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<br>Policy-based routing, NetStream, sFlow<br>ECMP<br>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<br>Dynamic routing: RIPv1/v2, OSPFv2, BGP, IS-IS<br>Route iteration<br>Routing policy<br>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                                                                                                                                                                                                        |

| Item     | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <p>IPv6 tunnel: manually configured IPv6 tunnel, automatic IPv6 tunnel, GRE tunnel, 6to4 tunnel, ISATAP tunnel</p> <p>Static routing</p> <p>Dynamic routing protocols: RIPng, OSPFv3, IS-ISv6, BGP4+</p> <p>IPv6 multicast protocols: MLDv1/v2, PIM-DM, PIM-SM</p>                                                                                                                                                             |
| QoS      | <p>LR, port-based mirroring, priority trust mode on a port, and port priority</p> <p>Committed access rate (CAR)</p> <p>FIFO, WFQ, CBQ</p> <p>Generic Traffic Shaping (GTS)</p> <p>Traffic classification</p>                                                                                                                                                                                                                  |
| 5G/4G    | 5G NR, TDD/FDD LTE, WCDMA/HSPA+                                                                                                                                                                                                                                                                                                                                                                                                |
| Security | <p>Portal, 802.1X</p> <p>Local authentication, RBAC authentication, RADIUS authentication, TACACS+ authentication</p> <p>ASPF, ACL, filter, security zone-based firewall, connection limit, IPS</p> <p>IKE/IPsec VPN, ADVPN, GDVPN, L2TP VPN, GRE VPN</p> <p>NAT/NAPT, PKI, RSA, URPF</p> <p>DDoS attack prevention, ARP attack prevention, URL filtering</p> <p>EAD</p> <p>DPI</p> <p>SM2, SM3, SM4 encryption algorithms</p> |
| SDN      | <p>NETCONF, OpenFlow, telemetry</p> <p>VXLAN, EVPN</p> <p>Segment routing</p> <p>ZTP through USB drive, URL, and DHCP</p> <p>SRv6:</p> <p>OSPFv3 for SRv6</p> <p>IS-IS for SRv6</p> <p>SRv6 policy</p> <p>SRv6 policy-based traffic steering</p> <p>EVPN L3VPN over SRv6</p> <p>EVPN L3VPN over SRv6 policy</p> <p>SRv6 policy-based traffic statistics</p> <p>SRv6 OAM</p> <p>BFD for SRv6</p> <p>SRv6 TI-LFA</p>             |
| MPLS     | <p>LDP, Static LSP</p> <p>L3VPN: Inter-domain MPLS VPN (Option1/2/3), nested MPLS VPN, hierarchy PE (HoPE), CE dual homing, MCE, and multi-role host</p>                                                                                                                                                                                                                                                                       |

| Item                       | Description                                                                                                                                                                                                                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | L2VPN: Martini, Kompella, CCC and SVC<br>MPLS TE, RSVP TE                                                                                                                                                                                                                                          |
| High availability          | VRRP, VRRPv3<br>Multi-link load balancing and backup<br>Network quality analyzer (NQA), supporting collaboration with routing, VRRP, and interface backup                                                                                                                                          |
| Management and maintenance | SNMP v1/v2c/v3, TR069, syslog, RMON<br>Telnet, SSHv1.5/2.0, FTP<br>EAA<br>CLI management, file system management, dual image<br>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 |

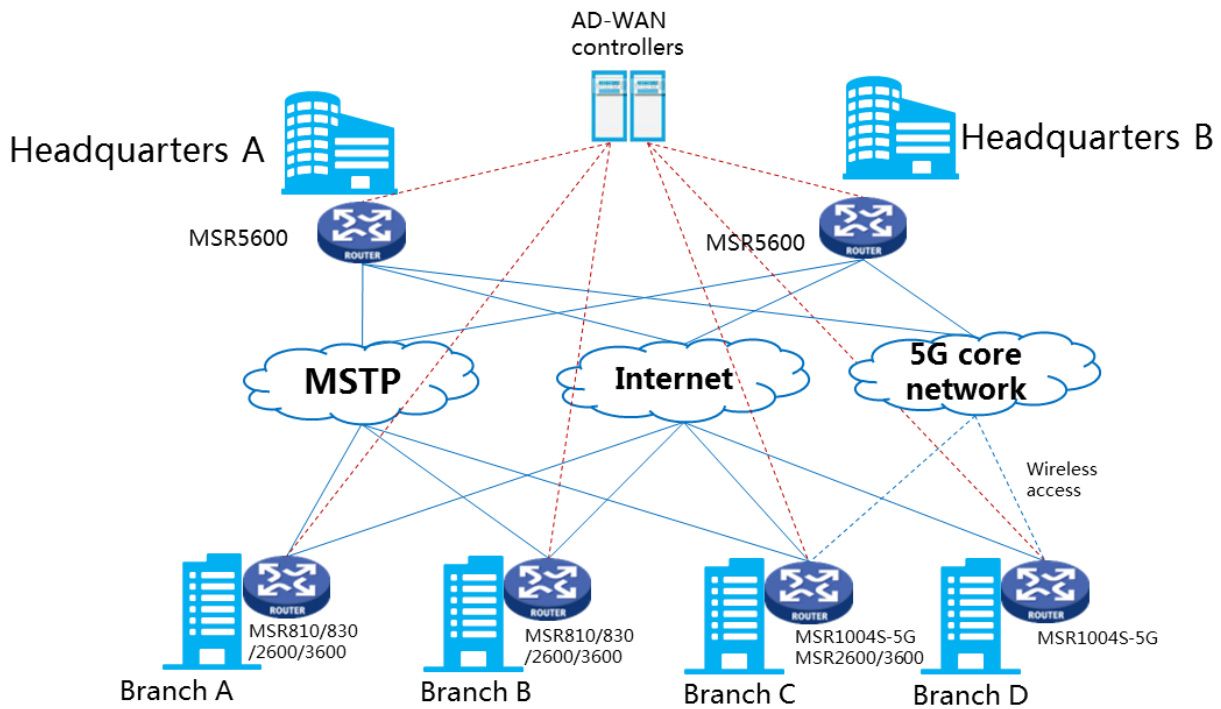
- The options may be different depending on the specific requirement. Restrictions and limitations may apply. To confirm availability, refer to related user guide or visit H3C website <https://www.h3c.com/en/home/htb/>.

## 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.



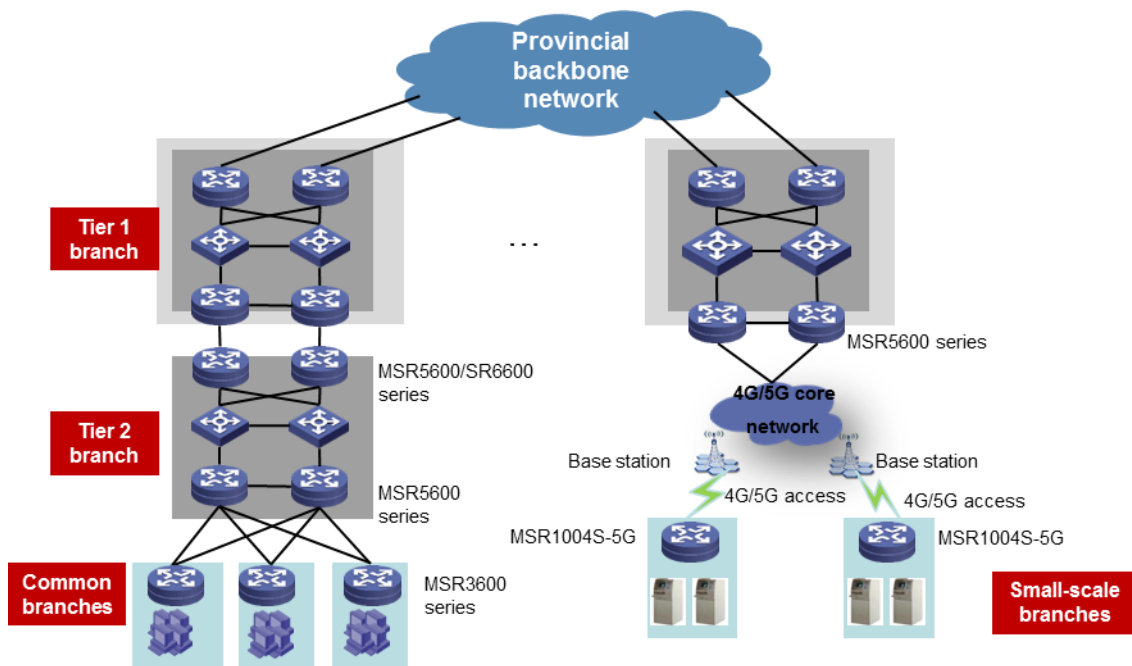
AD-WAN headquarters-branch network

## 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 code          | 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))                                                                                    |
| RT-MSR1104-G          | H3C MSR1104-G Router (2*2.5GE/GE SFP+ 1*GE WAN, 4*GE LAN/WAN)                                                                               |
| RT-MSR1104-G-DSL-CAT6 | H3C MSR1104-G-DSL-CAT6 Router (1*2.5GE/GE SFP+1*GE WAN, 4*GE LAN/WAN, 1*VDSL, 4G LTE CAT6, Global Version)                                  |



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