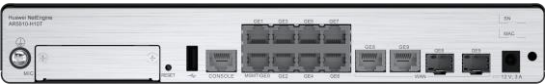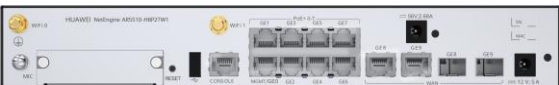# Huawei NetEngine AR5510-H Series Enterprise Routers

Huawei AR5510-H series enterprise routers are 1U fixed routers designed for use in small- and medium-sized business (SMBs) and small-sized enterprise branches. The AR5510-H integrates various service features such as SD-WAN, routing, switching, security, and WLAN, providing diversified services and high performance.

## Product Overview

Huawei's next-generation NetEngine AR5510-H series enterprise routers use multi-core processors and a non-blocking switching structure, helping to deliver three times the industry average performance. The NetEngine AR5510-H also integrates functions such as SD-WAN, cloud management, routing, switching, VPN, WLAN, and security, ensuring diversified and cloud-based services are fully supported.

Huawei NetEngine AR5510-H series enterprise routers can be deployed at branches of SMBs and small-sized enterprises as required to provide enterprise network egress capabilities. NetEngine AR5510 series consists of models such as the NetEngine AR5510-H10T1, NetEngine AR5510-H8P2TW1, NetEngine AR5510-H10T2XW1. Huawei provides various models which can meet networking requirements of enterprises of different scales.

| | |
|---|---|
|  NetEngine AR5510-H10T1 | • Forwarding Performance: 1 Gbps<br>• Fixed WAN ports: 2*GE Combo<br>• Fixed LAN ports: 8*GE RJ45(can be configured as WAN)<br>• Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm |
|  NetEngine AR5510-H8P2TW1 | • Forwarding Performance: 1 Gbps<br>• Fixed WAN ports: 2*GE Combo<br>• Fixed LAN ports: 8*GE RJ45(can be configured as WAN)<br>• Wi-Fi: 802.11ac/b/g/n<br>• PoE: compliance with IEEE 802.3af and 802.3at<br>• Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm |
|  NetEngine AR5510-H10T2XW1 | • Fixed WAN ports*: 2*10GE SFP+，2*GE RJ45<br>• Fixed LAN ports: 8*GE RJ45(can be configured as WAN)<br>• Wi-Fi: 802.11 ax/ac/b/g/n<br>• Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm |

## Features and Benefits

Features and Benefits

| Service Requirement | Features and Benefits |
|---|---|

| Service Requirement | Features and Benefits |
|---|---|
| High performance | • Multi-core processors and a non-blocking switching structure<br>• Three times the industry average performance, providing the lowest latency for key services |
| High reliability | • Link backup for enterprise services, improving reliability<br>• Fault detection and determination in milliseconds, minimizing service interruption time |
| 5G Wireless access | • AR5510-H series support RU-5G-201, provide high wireless bandwidth experience<br>• Support dual architecture, NSA/SA |
| Easy O&M | Multiple management modes, including SD-WAN management, SNMP-based network management, web-based network management, and cloud-based management, simplifying network deployment and reducing OPEX |
| Service convergence | Integration of functions such as routing, switching, VPN, security, and WLAN, meeting diversified enterprise service requirements, saving space, and reducing TCO |
| Security | Built-in firewall, IPS, URL filtering, and multiple VPN technologies, providing comprehensive security protection capabilities |
| SD-WAN Ready | • Built-in SD-WAN solution, building cost-effective and business-friendly connections over the Internet<br>• ZTP (email-, USB-, and DHCP-based deployment), minimizing skill requirements and provisioning devices in minutes<br>• First packet identification (FPI) for SaaS applications and service awareness for complex applications, identifying over 90% of applications<br>• Traffic steering based on bandwidth and link quality, ensuring experience of key applications and improving bandwidth utilization to up to 90% |

Architecture Highlights

| Architecture Feature | Benefits |
|---|---|
| Multi-core processor | High-performance multi-core processors, supporting high-speed WAN connections, powerful route calculation capabilities, and enhanced L4-L7 service processing |
| Extensive network interfaces | Extensive flexible interface cards such as LAN, WAN, 3G/LTE, and WLAN |

# Product Specifications

NetEngine AR5510-H Series Technical Specifications

| Item | NetEngine AR5510-H10T1 | NetEngine AR5510-H8P2TW1 | NetEngine AR5510-H10T2XW1 |
|---|---|---|---|
| Forwarding Performance (LAN - > WAN + WAN - > LAN, NAT + ACL + QoS, IMIX, Default) | 1 Gbps | 1 Gbps | 1 Gbps |
| Forwarding Performance (LAN - > WAN + WAN - > LAN, NAT + ACL + QoS, IMIX, Boost License) | 2 Gbps | 2 Gbps | 2 Gbps |
| IPsec performance (IMIX) | 2 Gbps | 2 Gbps | 2 Gbps |
| IPsec performance (1400 bytes) | 3.7 Gbps | 3.7 Gbps | 3.7 Gbps |

| Item | NetEngine AR5510-H10T1 | NetEngine AR5510-H8P2TW1 | NetEngine AR5510-H10T2XW1 |
|---|---|---|---|
| Fixed WAN ports | 2 x GE combo | 2 x GE combo | 2 x 10GE SFP+, 2 x GE RJ45 |
| Fixed LAN ports | 8 x GE RJ45(can be configured as WAN) | | |
| Service extension slot | 1 x MIC | 1 x MIC | 1 x MIC |
| Wi-Fi | - | Dual-band (2.4 GHz and 5 GHz), 802.11b/g/n/ac | Dual-band (2.4 GHz and 5 GHz), 802.11b/g/n/ac/ax |
| PoE | - | support PoE | - |
| PoE capability | - | GE0 to GE7 support PoE+ out, Maximum output power of 100 W | - |
| USB port | 1 x USB | 1 x USB | 1 x USB |
| Auxiliary or console port | 1 x RJ45 console port | | |
| Memory | 2 GB | 2 GB | 2 GB |
| Flash memory | 1 GB | 1 GB | 1 GB |
| Router dimensions, With no mounting bracket installed (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm | 44.0 mm x 300.0 mm x 216.4 mm | 44.0 mm x 300.0 mm x 216.4 mm |
| Packaging dimensions (H x W x D) | 155 mm x 455 mm x 280 mm | 155 mm x 455 mm x 280 mm | 155 mm x 455 mm x 280 mm |
| Weight | 1.9 kg | 1.9 kg | 1.9 kg |
| Rack | IEC | IEC | IEC |
| Occupied rack space | 1U | 1U | 1U |
| Rated input voltage range (AC) | 100 V to 240 V | 100 V to 240 V | 100 V to 240 V |
| Rated input frequency (AC) | 50 Hz/60 Hz | 50 Hz/60 Hz | 50 Hz/60 Hz |
| Maximum input voltage range (AC) | 90 V to 264 V | 90 V to 264 V | 90 V to 264 V |
| Maximum input current (AC) | 3 A | 5 A | 1.5 A |
| Maximum output power (AC) | 36 W | 60 W | 60 W |
| Typical power consumption | 24 W | 38 W | - |
| Maximum power consumption | 28 W | 43 W | 45 W |
| Airflow | Left to right | Left to right | Left to right |
| Noise level | 47.4dB | 47.4dB | 34dB |
| Operating temperature | 0 º C to 45 º C | | |
| Operating humidity | 5% to 95% (non-condensing) | | |
| Operating altitude | < 5000 m (16404.2 ft.) | | |

| Item | NetEngine AR5510-H10T1 | NetEngine AR5510-H8P2TW1 | NetEngine AR5510-H10T2XW1 |
|---|---|---|---|
| Storage temperature | –40 º C to +70 º C | | |
| Storage altitude | < 5000 m (16404.2 ft.) | | |
| **Features and Protocols** | | | |
| Basic function | DHCP server/client/relay, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, and sub-interface management | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, VLAN aggregation, MAC management, STP/RSTP | | |
| 3G/LTE | By using LTE card,FDD LTE, TDD LTE, DC-HSPA+, HSPA+, HSPA, and WCDMA | | |
| WLAN (AP) | | WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/ key management), WLAN radio management (802.11b/g/n/ac), and WLAN user management | AP management, WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/key management), WLAN radio management (802.11b/g/n/ac/ax), and WLAN user management |
| IPv4 unicast routing | Routing policies, static routes, RIP, OSPF, IS-IS, BGP | | |
| IPv6 unicast routing | Static routes, routing policies, RIPng, OSPFv3, IS-ISv6, BGP4+ | | |
| Basic IPv6 function | IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, ICMPv6, DNSv6, DHCPv6 | | |
| IPv6 tunneling | Manual tunnel, automatic tunnel, GRE tunnel, IPv6 over IPv4 tunnel, 6 to 4 tunnel, ISATAP | | |
| Multicast | IGMP v1/v2/v3, PIM-SM, PIM-DM, MSDP, MBGP, IPv6 PIM, MLD | | |
| MPLS | LDP, MPLS L3 VPN, static LSP, dynamic LSP, MPLS TE, IP FRR, LDP FRR, TE FRR | | |
| VPN | IPsec VPN, GRE VPN, DSVPN, A2A VPN, L2TP VPN, L2TPv3 VPN, VxLAN | | |
| QoS | DiffServ mode, priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance, congestion management, MQC (traffic classifier, traffic behavior, and traffic policy), hierarchical QoS, WLAN QoS, FR QoS, Smart Application Control (SAC) | | |
| WAN Optimization | Multi-fed and Selective receiving, per-packet load balancing | | |
| Security | ACL (v4/v6), domain-based stateful firewall, 802.1X authentication, MAC address authentication, portal authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, PKI, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, attack source tracing, online behavior management, IPS, URL filtering | | |
| Management and maintenance | Upgrade management, device management, web-based network management, GTL, SNMP (v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, URL-based/USB-based/DHCP deployment, NETCONF/YANG, CLI, Netstream, IP FPM, TCP FPM, TWAMP Light, IP accounting, NQA | | |

# Networking and Application

- **SD-WAN Using Hybrid Links**

In the SD-WAN Solution, the NetEngine AR5510-H functions as the gateway of SMBs and small-sized enterprise branches and supports hybrid access using multiple physical links, such as Internet links, and LTE links. The solution also leverages Huawei's next-generation controller, the Agile Controller, which implements centralized and visualized management. The NetEngine AR5510-H provides extensive SD-WAN features and delivers optimal service experience for enterprises through intelligent application identification, intelligent traffic steering, and intelligent acceleration.

SD-WAN networking
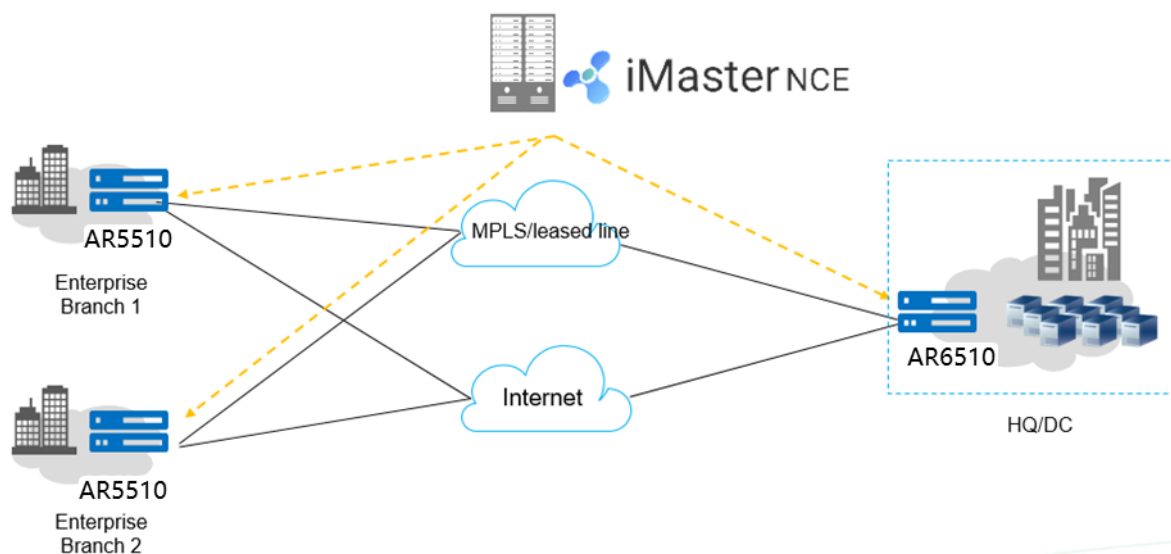


- **WAN Interconnection Scenario**

  In this scenario, the NetEngine AR5510-H series routers are used as enterprise branch egresses and provide flexible WAN access methods to support remote network connections. A single NetEngine AR5510-H router can satisfy different access requirements, for example, for the private line, Ethernet, 3G, LTE, and WLAN access, helping the customer reduce deployment and maintenance costs while helping them extract much value.

WAN interconnection networking
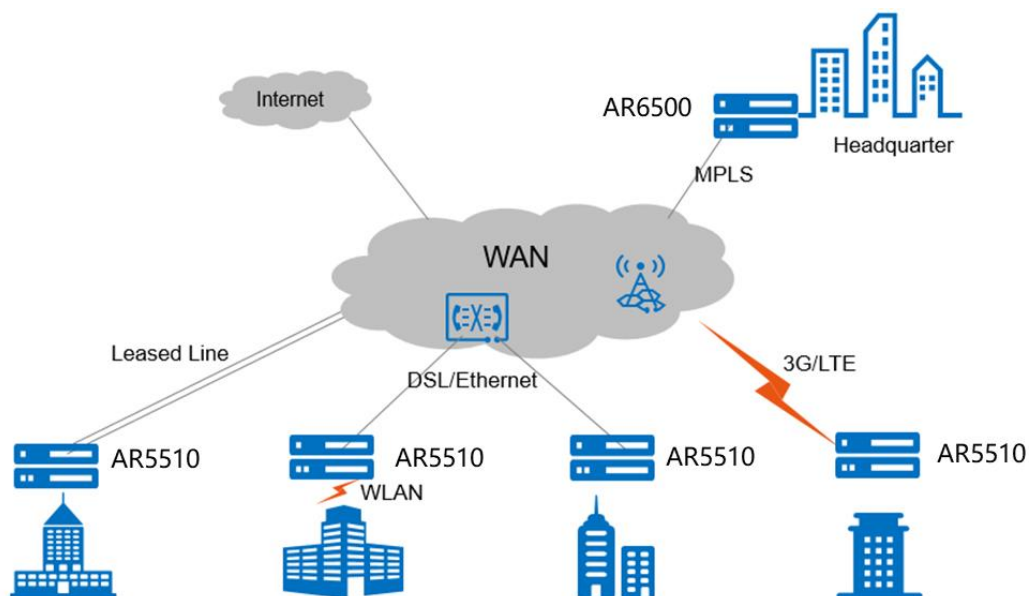


- **Building Different Types of VPNs by Leveraging Internet Resources**

  The NetEngine AR5510-H provides various secure access functions for communication between enterprise branches and between branches and headquarters. These functions also allow an enterprise's partners to access its resources. Secure tunnels such as GRE VPN, IPSec VPN, DSVPN, L2TP VPN, and EVPN tunnels can be set up between the headquarters and branches for secure data access and transmission. The NetEngine AR5510-H supports quick tunnel deployment and authentication for branches. Furthermore, partners authenticated and authorized by the AR5510-H can remotely access the enterprise resources over these tunnels.
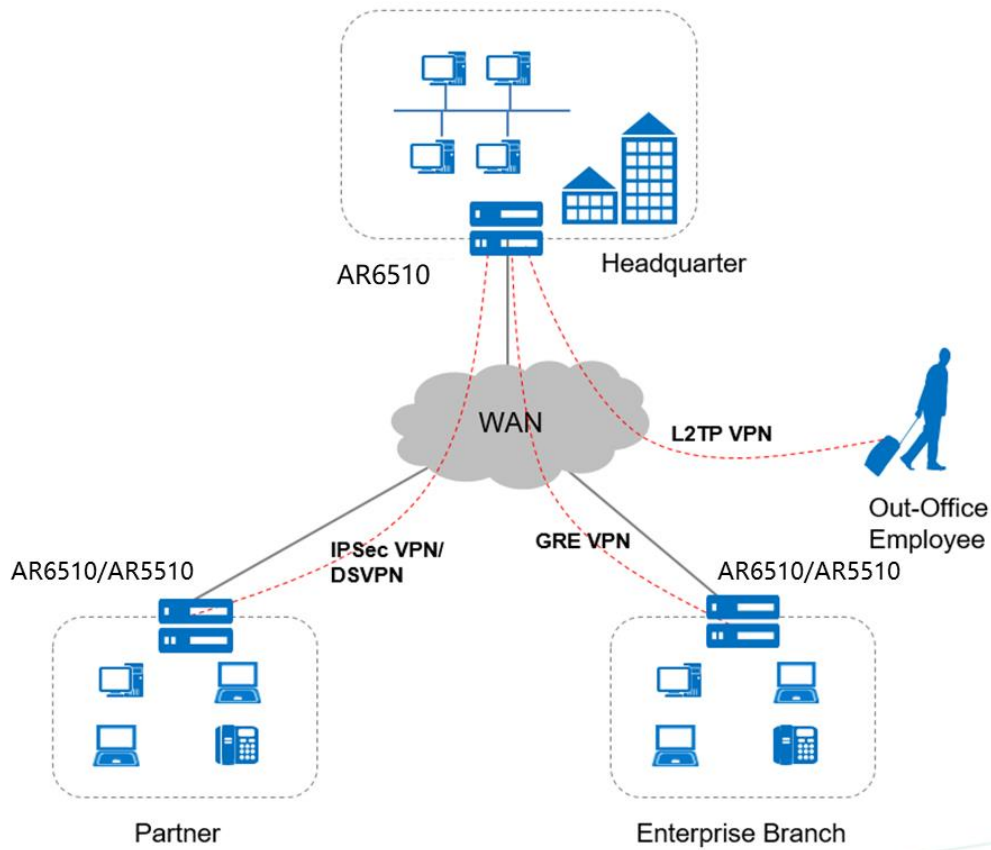
# Ordering Information

The NetEngine AR5510-H series routers are configured by selecting and installing the appropriate configuration module. The configuration module ordering information and descriptions are shown in the following tables.

Ordering components

| Chassis Configuration | Description |
|---|---|
| NetEngine AR5510-H10T1 | AR5510-H10T1,2*GE combo WAN,8*GE LAN,1*USB2.0,1*MIC slot |
| NetEngine AR5510-H8P2TW1 | AR5510-H8P2TW1,2*GE combo WAN,8*GE LAN (PoE+),1*USB2.0,802.11b/g/n/ac,2*2MIMO,1*MIC slot |
| NetEngine AR5510-H10T2XW1 | AR5510-H10T2XW1,2*10GE SFP+,10*GE LAN,1*USB,802.11b/g/n/ac/ax,2*2MIMO,1*MIC slot |

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