Huawei NetEngine AR6500 Series Enterprise Routers

Huawei NetEngine AR6500 series enterprise routers are designed for headquarters of enterprises as well as branches of enterprises, providing the industry's most diversified service slot types. The NetEngine AR6500 integrates various service features such as SD-WAN, routing, switching, voice, and security, providing diversified services and high performance.

Product Overview

Huawei's next-generation NetEngine AR6500 series enterprise routers use high-performance multi-core processors and a non-blocking switching structure, helping to deliver higher forwarding performance than the industry average. The NetEngine AR6500 also integrates functions such as SD-WAN, 5G, routing, switching, VPN, security, and MPLS, ensuring diversified and cloud-based services are fully supported.

Huawei NetEngine AR6500 series enterprise routers can be deployed at enterprise headquarters or branches as required to provide enterprise network egress capabilities. The NetEngine AR6500 series can meet networking requirements of enterprises of different scales.

NetEngine AR6500-10

- Forwarding Performance: 12 Gbps (with SRU-600H)
- Fixed WAN ports: 14*10GE SFP+(compatible with GE SFP), 10*GE RJ45 (All WAN ports can be configured as LAN)
- Dimensions (H x W x D): 130.5 mm x 442 mm x 470 mm

Features and Benefits

Features and Benefits

Service Requirement	Features and Benefits
High performance	• Multi-core processors and a non-blocking switching structure. • Higher forwarding performance than the industry average, providing the low latency for key services • NetEngine AR6500: CPU + NP heterogeneous forwarding, eliminating service processing bottlenecks
High reliability	• Hot-swappable cards, ensuring service reliability and stability • Link backup for enterprise services, improving reliability • Fault detection and determination in milliseconds, minimizing service interruption time • NetEngine AR6500: Redundant components such as service routing units (SRUs), power supplies and fan modules, ensuring service reliability and stability
5G Wireless access	• AR6500 series support 5G SIC card and RU-201, provide high wireless bandwidth experience

Service Requirement	Features and Benefits
	• Support dual architecture, NSA/SA
Easy O&M	Multiple management modes, including SD-WAN management, SNMP-based network management, and web-based network management, simplifying network deployment and reducing OPEX
Service convergence	Integration of functions such as routing, switching, VPN, security, 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 • ZTP (email-, USB-, and DHCP-based deployment), minimizing skill requirements and provisioning devices in minutes • First packet identification (FPI) for SaaS applications and service awareness for complex applications, identifying over 90% of applications • 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
High-density service routing unit (SRU): SRU-600H	WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN)
Extensive network interfaces	• Hot swapping • Extensive flexible interface cards such as LAN, WAN and 3G/LTE.

Product Specifications

Item	NetEngine AR6500-10
Forwarding Performance (LAN - > WAN + WAN - > LAN, NAT + ACL + QoS, IMIX)	SRU-600H: 12 Gbps
IPsec performance (IMIX)	SRU-600H: 7.5 Gbps
IPsec performance (1400 bytes)	SRU-600H: 10 Gbps
Fixed WAN ports	SRU-600H: WAN: 14*10GE SFP+(compatible with GE SFP), 10*GE RJ45 (All WAN ports can be configured as LAN)

Item	NetEngine AR6500-10
5G uplink	Support 5G SIC
SIC slots	4
WSIC slots	2 (default)/8 (maximum)
XSIC slots	4 (default)/6 (maximum)
USB port	1 x USB
Auxiliary or console port	1 x RJ45 console port
Memory	SRU-600H: 16 GB
Flash memory	SRU-600H: 4 GB
Hot swapping	Supported
Router dimensions, With no mounting bracket installed (H x W x D)	130.5 mm x 442 mm x 470 mm
Router dimensions, With mounting bracket installed (H x W x D)	130.5 mm x 482.6 mm x 470 mm
Weight	11.00 kg
Rack	IEC
Occupied rack space	3U
Maximum input current (AC)	5A
Maximum output power (AC)	350W
Rated input voltage range (DC)	–48 V DC to –60 V DC
Maximum input voltage range (DC)	–38.4 V DC to –72 V DC
Maximum input current (DC)	9.6 A
Maximum output power (DC)	350 W

Item	NetEngine AR6500-10
Typical power consumption	130 W
Maximum power consumption	275W
Power supply redundancy	Hot-swappable dual power supplies
Fan module	Independent pluggable fan modules
Noise level	66.1 dB

Software Features and Protocols

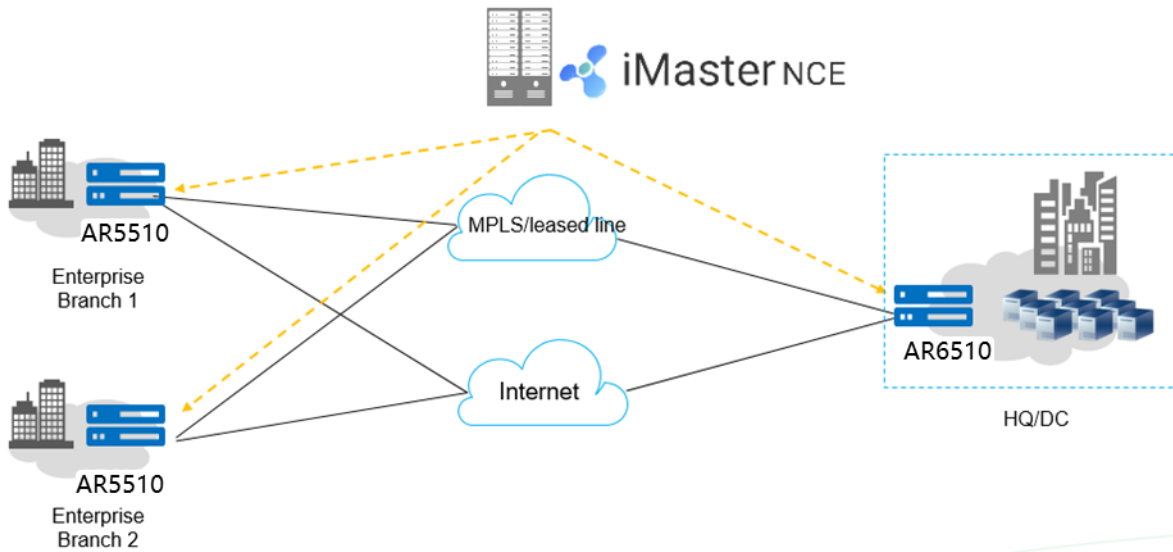| Item	NetEngine AR6500
Basic function	DHCP server/client/relay, PPPoE server/client, NAT, and sub-interface management
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, VLAN aggregation, MAC management, STP/RSTP
WLAN (AC)	AP management (AC discovery, AP access, and AP management), CAPWAP, WLAN user management, WLAN radio management (802.11a/b/g/n/ac), WLAN QoS (WMM), WLAN security (WEP, WPA, WPA2, key 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, VLL, PWE3, static LSP, dynamic LSP, MPLS TE, IP FRR, LDP FRR, TE FRR
VPN	IPsec VPN, GRE VPN, DSVPN, A2A VPN, L2TP VPN, L2TPv3 VPN
QoS	DiffServ mode, MPLS QoS, priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance, congestion management, MQC (traffic classifier, traffic behavior, and traffic policy), hierarchical QoS, Smart Application Control (SAC)
WAN Optimization	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 AR6500 functions as the hub of medium- to large-sized enterprises or gateway of large branches and supports hybrid access using multiple physical links, such as MPLS private lines and Internet links. The

solution also leverages Huawei's next-generation controller, the Agile Controller, which implements centralized and visualized management. The NetEngine AR6500 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

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

The NetEngine AR6500 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 AR6500 supports quick tunnel deployment and authentication for branches. Furthermore, partners authenticated and authorized by the NetEngine AR6500 can remotely access the enterprise resources over these tunnels.

The NetEngine AR6500 supports a wide selection of cards and meets the extended service security requirements. Data encryption and decryption is hardware-based, greatly improving data encryption and decryption performance and providing E2E security assurance for customers.

VPN networking
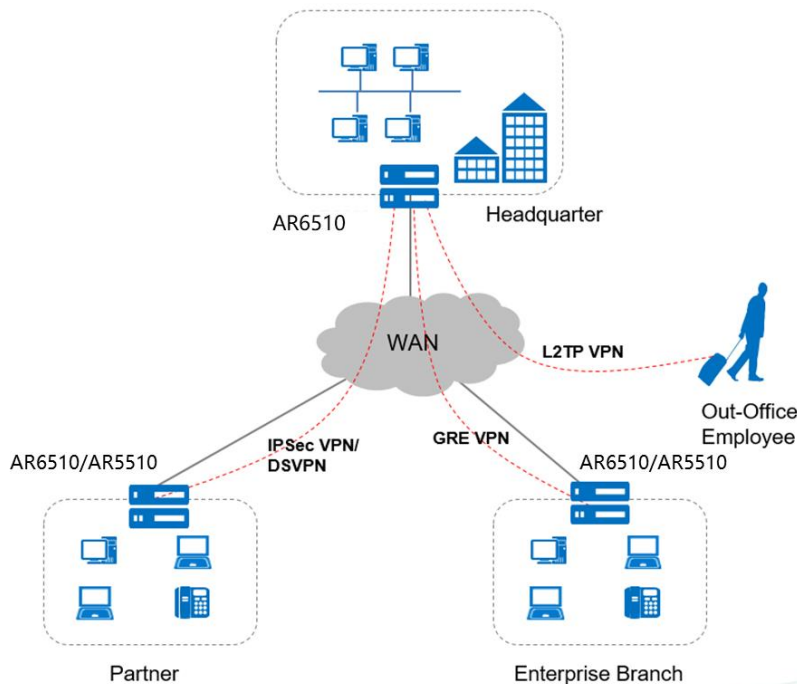
Ordering Information

Begin by ordering the chassis. Then select interface modules, any special licenses, and any desired accessories (SD card or USB disk).

Ordering components

Chassis Configuration	Description
NetEngine AR6500-10	AR6500-10 integrated chassis, 2*SRU slot, 4*SIC slot, 2*WSIC slot, 4*XSIC slot, 2*power slot
Main Control Board	**Description**
SRU-600H	Service and Router unit 600H,14 10GE(SFP+),10 GE Copper,1 USB2.0