

# Huawei NetEngine AR6000 Series Enterprise Routers

Huawei NetEngine AR6000 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 AR6000 integrates various service features such as SD-WAN, routing, switching, and security, providing diversified services and high performance.

## Product Overview

Huawei's next-generation NetEngine AR6000 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 AR6000 also integrates functions such as SD-WAN, routing, switching, VPN, security, and MPLS, ensuring diversified and cloud-based services are fully supported.

Huawei NetEngine AR6000 series enterprise routers can be deployed at enterprise headquarters or branches as required to provide enterprise network egress capabilities. The NetEngine AR6000 series consists of models such as NetEngine AR6120, NetEngine AR6140-9G-2AC, NetEngine AR6280, NetEngine AR6300, which can meet networking requirements of enterprises of different scales.

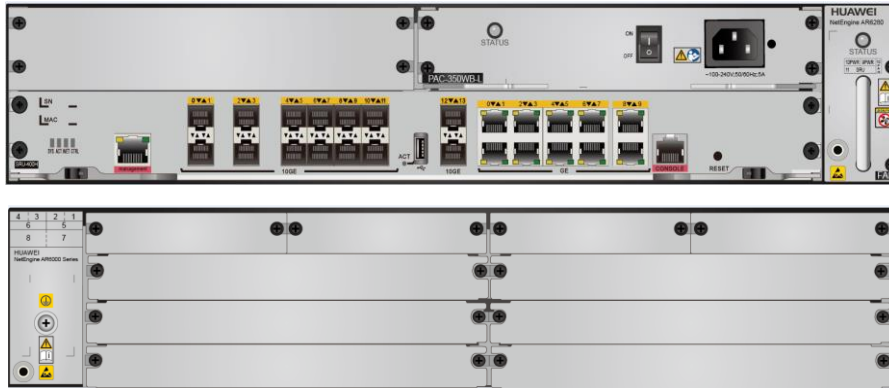
### Front and rear views of Huawei NetEngine AR6120



### Front and rear views of Huawei NetEngine AR6140-9G-2AC



Front and rear views of Huawei NetEngine AR6280



Front and rear views of Huawei NetEngine AR6300



## Features and Benefits

Features and Benefits

Service Requirement	Features and Benefits
High performance	<ul style="list-style-type: none"> <li>Multi-core processors and a non-blocking switching structure.</li> <li>Higher forwarding performance than the industry average, providing the low latency for key services</li> <li>NetEngine AR6280/6300: Unique hardware-based acceleration using CPUs and NP chips (hardware acceleration engines such as encryption, service awareness, and QoS), eliminating service processing bottlenecks</li> </ul>
High reliability	<ul style="list-style-type: none"> <li>Hot-swappable cards, ensuring service reliability and stability</li> <li>Link backup for enterprise services, improving reliability</li> <li>Fault detection and determination in milliseconds, minimizing service interruption time</li> <li>NetEngine AR6300: Redundant components such as service routing units (SRUs), power supplies and fan modules, ensuring service reliability and stability</li> </ul>
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 Requirement	Features and Benefits
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	<ul style="list-style-type: none"> <li>Built-in SD-WAN solution, building cost-effective and business-friendly connections over the Internet</li> <li>ZTP (email-, USB-, and DHCP-based deployment), minimizing skill requirements and provisioning devices in minutes</li> <li>First packet identification (FPI) for SaaS applications and service awareness for complex applications, identifying over 90% of applications</li> <li>Traffic steering based on bandwidth and link quality, ensuring experience of key applications and improving bandwidth utilization to up to 90%</li> </ul>

### Architecture Highlights

Architecture Feature	Benefits
Multi-core processor	<ul style="list-style-type: none"> <li>High-performance multi-core processors, supporting high-speed WAN connections, powerful route calculation capabilities, and enhanced L4-L7 service processing</li> </ul>
Independent NP chip (NetEngine AR6280/AR6300)	<ul style="list-style-type: none"> <li>Hardware-based forwarding engine, diverting more L1-L4 traffic and enhancing the forwarding capability</li> </ul>
High-density service routing unit (SRU): SRU-400H/SRU-600H	WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN)
Extensive network interfaces	<ul style="list-style-type: none"> <li>Hot swapping</li> <li>Extensive flexible interface cards such as LAN, WAN and 3G/LTE.</li> </ul>

## Product Specifications

Item	NetEngine AR6120	NetEngine AR6140-9G-2AC	NetEngine AR6280	NetEngine AR6300
<b>System Parameters</b>				
Processor	4-Core	4-Core	16-core	16-core
Forwarding Performance (LAN - > WAN + WAN - > LAN, NAT + ACL + QoS, IMIX)	2 Gbps	2 Gbps	SRU-400H: 10 Gbps SRU-600H: 12 Gbps	SRU-400H: 10 Gbps SRU-600H: 12 Gbps
IPsec performance (IMIX)	2 Gbps	2 Gbps	SRU-400H: 6 Gbps SRU-600H: 7.5 Gbps	SRU-400H: 6 Gbps SRU-600H: 7.5 Gbps

Item	NetEngine AR6120	NetEngine AR6140-9G-2AC	NetEngine AR6280	NetEngine AR6300
Fixed WAN ports	1 x GE combo + 1 x GE RJ45 + 1 x 10GE SFP+ (compatible with GE SFP)	2 x GE RJ45 + 2 x GE SFP	SRU-400H: WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN) SRU-600H: WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN)	SRU-400H: WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN) SRU-600H: WAN: 14*10GE SFP+(compatible with GE SFP) +10*GE RJ45 (All WAN ports can be configured as LAN)
Fixed LAN ports	8 x GE RJ45 (can be configured as WAN)	2 x GE SFP + 3 x GE RJ45 (can be configured as WAN)	-	-
SIC slots	2	4	4	4
WSIC slots	0 (default)/1 (maximum)	0 (default)/2 (maximum)	2 (default)/4 (maximum)	2 (default)/4 (maximum)
XSIC slots	-	-	2 (default)/4 (maximum)	4 (default)/6 (maximum)
USB port	1 x USB 3.0 (compatible with USB 2.0) + 1 x USB 2.0	1 x USB3.0 (compatible with USB 2.0)	1*USB2.0	1*USB2.0
Auxiliary or console port	1 x RJ45 console port	1 x RJ45 console port	1 x RJ45 console port	1 x RJ45 console port
Memory	2 GB	2 GB	SRU-400H: 8 GB SRU-600H: 16 GB	SRU-400H: 8 GB SRU-600H: 16 GB
Flash memory	1 GB/ 512MB ***	1 GB	SRU-400H: 2 GB SRU-600H: 4 GB	SRU-400H: 2 GB SRU-600H: 4 GB
Hot swapping	Supported	Supported	Supported	Supported
<b>Dimensions and Weight</b>				
Router dimensions, With no mounting bracket installed (H x W x D)	44.5mm x 390mm x 232.5mm	44.5 mm x 442 mm x 420 mm	88.1 mm x 442 mm x 470 mm	130.5 mm x 442 mm x 470 mm
Router dimensions, With mounting bracket installed (H x W x D)	44.5mm x 482.6mm x 232.5mm	44.5 mm x 482.6 mm x 572.5 mm	88.1 mm x 482.6 mm x 470 mm	130.5 mm x 482.6 mm x 470 mm
Packaging dimensions (H x W x D)	125 mm x 373 mm x 510 mm	175 mm x 550 mm x 710 mm	160 mm x 570 mm x 725 mm	201 mm x 573 mm x 640 mm
Weight	2.9kg	7.6 kg	8.85 kg	11.00 kg
Rack	IEC	IEC	IEC	IEC

Item	NetEngine AR6120	NetEngine AR6140-9G-2AC	NetEngine AR6280	NetEngine AR6300
Occupied rack space	1U	1U	2U	3U
<b>Power Specifications, Power Consumption, and Heat Dissipation</b>				
Rated input voltage range (AC)	100 V to 240 V	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	50 Hz/60 Hz
Maximum input voltage range (AC)	90 V to 264 V	90 V to 264 V	90 V to 264 V	90 V to 264 V
Maximum input current (AC)	2 A	3 A	5 A	5 A
Maximum output power (AC)	60 W	150W	350 W	350 W
Power supply redundancy	-	Support	Hot-swappable dual power supplies	Hot-swappable dual power supplies
Typical power consumption	18W	18W	80 W	130 W
Maximum power consumption	20W	32W	160 W	275 W
Fan module	Built-in unpluggable fan modules	Built-in unpluggable fan modules	Independent pluggable fan modules	Independent pluggable fan modules
Airflow	Left to right	Left to right	Left to right	Left to right
Noise level	49.6 dB	54 dB	54.2 dB	66.1 dB
<b>Environment Parameters</b>				
Operating temperature	0°C to 45°C	0°C to 45°C	0°C to 45°C	0°C to 45°C
Operating humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Operating altitude	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Storage altitude	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)	< 5000 m (16404.2 ft.)

\*\*\*Note: For AR6120, the chipset of flash is 1GB, and 512MB is used for the users.

#### Software Features and Protocols

Item	NetEngine AR6000
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

Item	NetEngine AR6000
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)
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, IP accounting, NQA

#### Safety and Regulatory Standards

Item	NetEngine AR6000
EMC standards compliance	<ul style="list-style-type: none"> <li>• CISPR32 Class A</li> <li>• EN 55032 Class A</li> <li>• CISPR24</li> <li>• EN 55024</li> <li>• ETSI EN 300 386</li> <li>• AS/NZS CISPR32 Class A</li> <li>• FCC Part 15 Subpart B Class A</li> <li>• ICES 003 Class A</li> <li>• IEC 61000-3-2</li> <li>• EN 61000-3-2</li> <li>• IEC 61000-3-3</li> <li>• EN 61000-3-3</li> <li>• GB 9254</li> <li>• VCCI-CISPR32 Class A</li> </ul>
Environmental standards compliance	<ul style="list-style-type: none"> <li>• RoHS</li> <li>• REACH</li> <li>• WEEE</li> </ul>

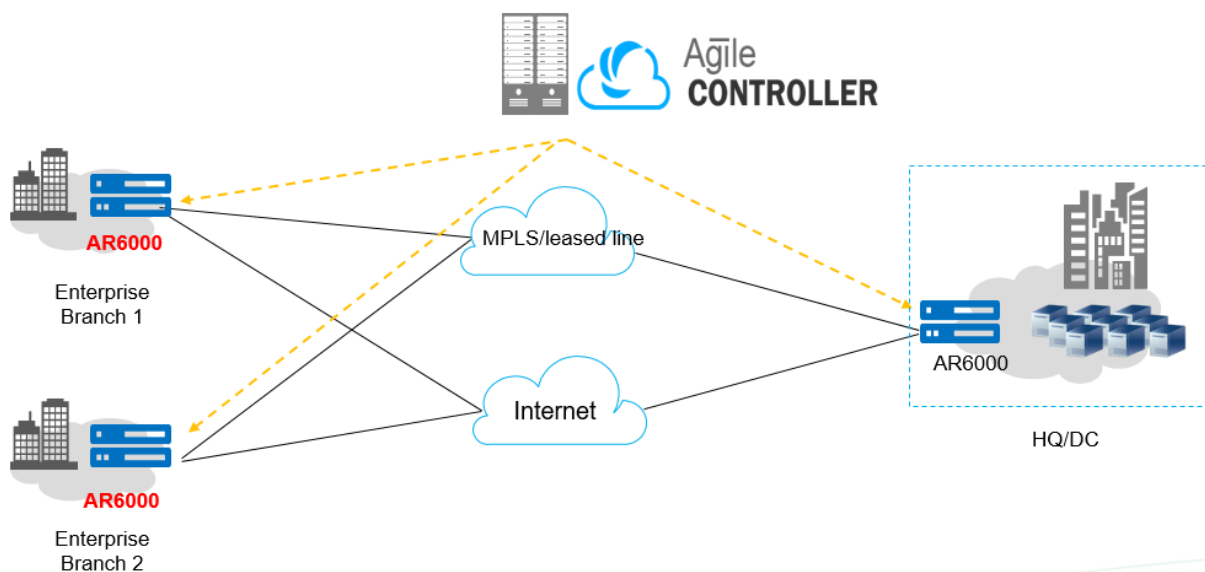
Item	NetEngine AR6000
Safety standards compliance	<ul style="list-style-type: none"> <li>• IEC 60950-1</li> <li>• EN 60950-1</li> <li>• UL 60950-1</li> <li>• CSA C22.2 No 60950-1</li> <li>• GB 4943.1</li> </ul>

## Networking and Application

### • SD-WAN Using Hybrid Links

In the SD-WAN Solution, the NetEngine AR6000 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 AR6000 provides extensive SD-WAN features and delivers optimal service experience for enterprises through intelligent application identification, intelligent traffic steering, and intelligent acceleration. For details about Huawei SD-WAN Solution, visit <https://e.huawei.com/en/solutions/business-needs/enterprise-network/sd-wan>.

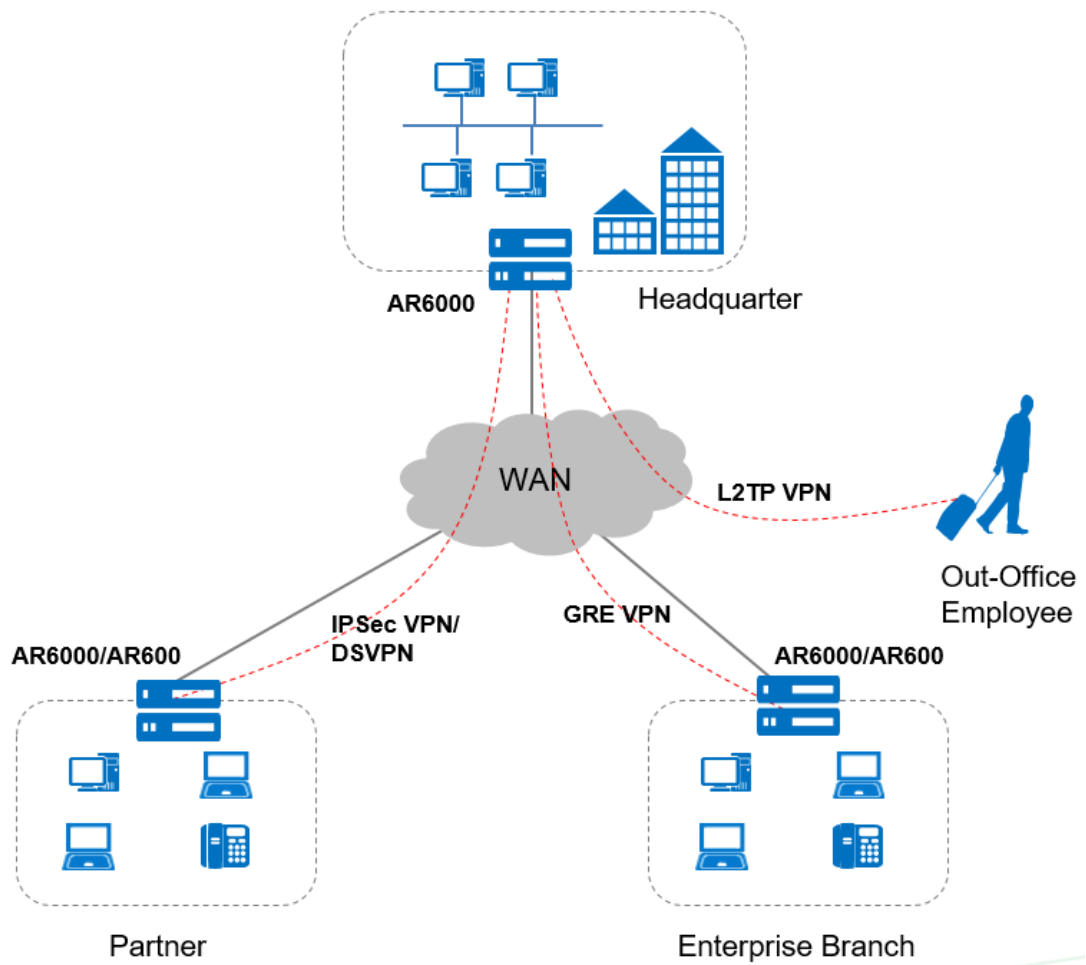
#### SD-WAN networking



### • Building Different Types of VPNs by Leveraging Internet Resources

The NetEngine AR6000 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 AR6000 supports quick tunnel deployment and authentication for branches. Furthermore, partners authenticated and authorized by the NetEngine AR6000 can remotely access the enterprise resources over these tunnels.

The NetEngine AR6000 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.





# Ordering Information

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

- **Chassis Options**

The device model is determined by the slot quantity, forwarding capacity and service features that you require.

- **Interface modules**

The interface modules, including SIC cards, WSIC cards and XSIC cards, are inserted into service card slots. Two SIC slots can be combined into one WSIC slot by removing the guide rail, and two WSIC slots can be used as one XSIC slot by removing the panel.

For more information about interface modules, refer to the product documentation in the Huawei support website.

<https://support.huawei.com/enterprise/en/category/routers-pid-1482607112869?submodel=23772831>

- **Software**

The basic software and licensed software are available. The basic software provides basic functions, such as routing, switching, and security. The licensed software provides additional functions, such as AC.

### License function and description

License Name	Description
Value-Added Data Package	Smart Policy Routing (SPR) and MPLS L2VPN are included
Value-Added Security Package	1. Efficient VPN (EVPN), DSVPN, Smart Application Control (SAC), Any to Any VPN, IPS and URL filtering are included. 2. IPS supports online update service, and update service needs extra license
Wireless Controller License	Local switching is supported by AC (AP Controller) Express (Value-Added Data Package License Function should be active), but Layer 3 roaming is not supported.
IPS Service Subscribe 1 Year	IPS update Service Subscribe 1 Year

### Ordering components

Chassis Configuration	Description
NetEngine AR6120	AR6120, 1*GE WAN, 1*GE combo WAN, 1*10GE SFP+, 8*GE LAN, 2*USB, 2*SIC
NetEngine AR6140-9G-2AC	AR6140-9G-2AC AC host, 5*GE RJ45, 4*GE SFP, 1*USB 3.0
NetEngine AR6280	AR6280 integrated chassis, 1*SRU slot, 4*SIC slot, 2*WSIC slot, 2*XSIC slot, 2*power slot
NetEngine AR6300	AR6300 integrated chassis, 2*SRU slot, 4*SIC slot, 2*WSIC slot, 4*XSIC slot, 2*power slot
Main Control Board	Description
SRU-400H	Service and Router unit 400H, 14 10GE(SFP+), 10 GE Copper, 1 USB2.0
SRU-600H	Service and Router unit 600H, 14 10GE(SFP+), 10 GE Copper, 1 USB2.0
License	Description
LAR0DATAE12	AR6300 Value-Added Data Package
LAR0AC12	AR6300 AC Express License
LAR0SECE12	AR6300 Value-Added Security Package

LAR0IPS12	AR6300 IPS Service Subscribe 1 Year
LAR0DATAE11	AR6200 Value-Added Data Package
LAR0AC11	AR6200 AC Express License
LAR0SECE11	AR6200 Value-Added Security Package
LAR0IPS11	AR6200 IPS Service Subscribe 1 Year
LAR0DATAE10	AR6100 Value-Added Data Package
LAR0AC10	AR6100 AC Express License
LAR0SECE10	AR6100 Value-Added Security Package
LAR0IPS10	AR6100 IPS Service Subscribe 1 Year

## More Information

For more information about Huawei next-generation AR enterprise routers, visit <http://e.huawei.com> or contact us in the following ways:


- Global service hotline: <http://e.huawei.com/en/service-hotline>
- Logging in to the Huawei Enterprise technical support website: <http://support.huawei.com/enterprise/>
- Sending an email to the customer service mailbox: [support\\_e@huawei.com](mailto:support_e@huawei.com)

---

**Copyright © Huawei Technologies Co., Ltd. 2019. All rights reserved.**

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

### Trademarks and Permissions

 HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

### Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

### Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base  
Bantian, Longgang Shenzhen 518129  
People's Republic of China  
Website: [e.huawei.com](http://e.huawei.com)