

Huawei AR160 Series Enterprise Routers Datasheet



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Huawei's next-generation routers, the AR160 series are designed for enterprise branch offices and small businesses, delivering a comprehensive set of services, including routing, switching, voice, security, and wireless access.

Product Overview

The AR160 series are fixed interface routers that provide a comprehensive platform for a variety of network topologies, including IMS, NGN, WAN and PSTN. The AR160s also employ embedded hardware encryption for security as well as a voice Digital Signal Processor (DSP) for voice services.

The AR160 series are mature, stable and quiet routers that offer high performance functionality for small networks, enabling small businesses to greatly increase productivity at a lower cost.



AR160s are easy to deploy, configure and customize, greatly reducing cost of deployment and maintenance, while offering maximum value to customers. These models allow network administrators to expand their networks easily and quickly, saving time and costs. The routers support firewalls, call processing, and application program functionalities.

The AR160 series include the following models:

- AR161, AR161G-L, AR161W, AR169, AR169G-L, AR169W
- AR161F, AR161F-DGP, AR161FG-L, AR161FGW-L, AR161FW, AR161FV-1P, AR162F, AR168F, AR169F, AR169FVW, AR169FVW-8S, AR169FGW-L, AR169FGVW-L, AR168F-4P
- AR161EW, AR169EW, AR169EGW-L, AR161EW-LM1
- AR169CVW, AR169CVW-4B4S

The specifications for these models are shown in the following table.

Table1: AR160 Models

| | |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none">• WAN speed with services (IMIX): 150 Mbps• Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE WAN• Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) |
|  | <ul style="list-style-type: none">• WAN speed with services (IMIX): 150 Mbps• Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE WAN, FDD LTE• Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) |



AR161W

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE WAN, 802.11 b/g/n
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR169

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR169G-L

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, FDD LTE
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR169W

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 802.11 b/g/n
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)

Table2: AR160F Models



AR161F

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR161F-DGP

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR161FW

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 802.11 b/g/n
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR161FG-L

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, FDD LTE
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR161FGW-L

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, FDD LTE, 802.11 b/g/n
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR161FV-1P

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN
- Fixed Voice ports: 1 x VE1
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR162F

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 1 x SA
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



AR168F

- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x G.SHDSL 4-pair, 1 x GE Combo WAN
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 4 x E1, 1 x G.SHDSL , 1 x RS232
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2 with bonding, 1 x GE Combo WAN
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 1 x VDSL2 with bonding, 802.11 b/g/n
- Fixed Voice ports: 4 x FXS, 1 x FXO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 1 x VDSL2 with bonding, 802.11 b/g/n
- Fixed Voice ports: 8 x FXS, 1 x FXO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 1 x VDSL2 with bonding, LTE FDD, 802.11 b/g/n
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE Combo WAN, 1 x VDSL2 with bonding, LTE FDD, 802.11 b/g/n
- Fixed Voice ports: 4 x FXS, 1 x FXO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)

Table3: AR160E Models



- WAN speed with services (IMIX): 600 Mbps
- Fixed ports: 4 x GERJ45 LAN(can be configured as WAN interfaces), 1 x GE Combo WAN
- WLAN: 802.11a/b/g/n/ac/ac wave2, 4x4:4 MU-MIMO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 600 Mbps
- Fixed ports: 4 x GERJ45 LAN(can be configured as WAN interfaces), 1 x VDSL2 with Bonding, 1 x GE Combo WAN
- WLAN: 802.11a/b/g/n/ac/ac wave2, 4x4:4 MU-MIMO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 600 Mbps
- Fixed ports: 4 x GERJ45 LAN(can be configured as WAN interfaces), 1 x VDSL2 with Bonding, 1 x GE Combo WAN
- WWAN: LTE FDD
- WLAN: 802.11a/b/g/n/ac/ac wave2, 4x4:4 MU-MIMO
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)



- WAN speed with services (IMIX): 600 Mbps
- Fixed ports: 4 x GERJ45 LAN(can be configured as WAN interfaces), 1 x GE Combo WAN
- WLAN: 802.11a/b/g/n/ac/ac wave2, 4x4:4 MU-MIMO
- Hard disk: 2.5-inch hard disk (optional)
- Dimensions (H x W x D): 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.)

Table4: AR160C Models



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE SFP, 1 x VDSL2, 802.11 ac/b/g/n
- Fixed Voice ports: 4 x FXS, 1 x FXO
- Dimensions (H x W x D): 30 mm x 270 mm x 155 mm (1.18 in. x 11.4 in. x 6.1 in.)

AR169CVW-4B4S



- WAN speed with services (IMIX): 150 Mbps
- Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x GE SFP, 1 x VDSL2, 802.11 ac/b/g/n
- Fixed Voice ports: 4 x ISDN BRI, 4 x FXS, 1 x FXO
- Dimensions (H x W x D): 30 mm x 270 mm x 155 mm (1.18 in. x 11.4 in. x 6.1 in.)

Product Features and Benefits

Small Size and High Performance

- More applications: Huawei series routers use the dual-core processor that isolates the control plane from the forwarding plane and processes more enterprise applications. Huawei series routers improve user experience for multimedia service when streams overlap.
- Higher performance: The AR160s can process various enterprise applications, and its service processing capability is four times that in the industry.
- Greater potential: Huawei series routers provide the capability to migrate services to the 3G and LTE networks.

Low Investment with High Returns

- Easy to construct: The AR160s supports plug-and-play, intelligent configuration, and deployment using the USB flash drive. It can function immediately after being installed. Users do not need to configure an IP address manually. The PPP and VPN indicators show the status of corresponding services. The AR160s helps to quickly construct an enterprise IT network.
- Simplified solution: Huawei provides an all-around solution that integrates the routing, switching, voice, security, and wireless services. Customers can customize solutions as required.
- Easy to expand: Huawei series routers have four/eight FE/GE ports, can access more employee for small enterprises. The two uplink WAN ports implement load balancing and link protection, maximizing the return on investments.

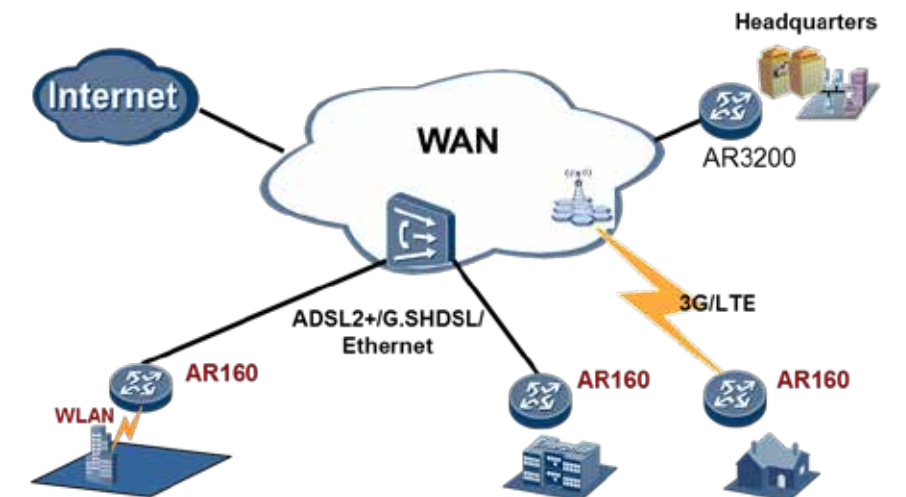
Small footprint on a Comprehensive Platform

Maturity and Stableness: The AR160s uses the Huawei VRP operating system and VSP voice platform. In addition, the AR160s uses modularized hardware design, which brings good user experience.

- Low-noise office: Huawei series routers have no fan, which brings low noise and good user experience.
- Secure environment: The lightning failure rate of AR160s is only 3% of industry average. The AR160s can be applied in the harsh environment.

Sample Deployments

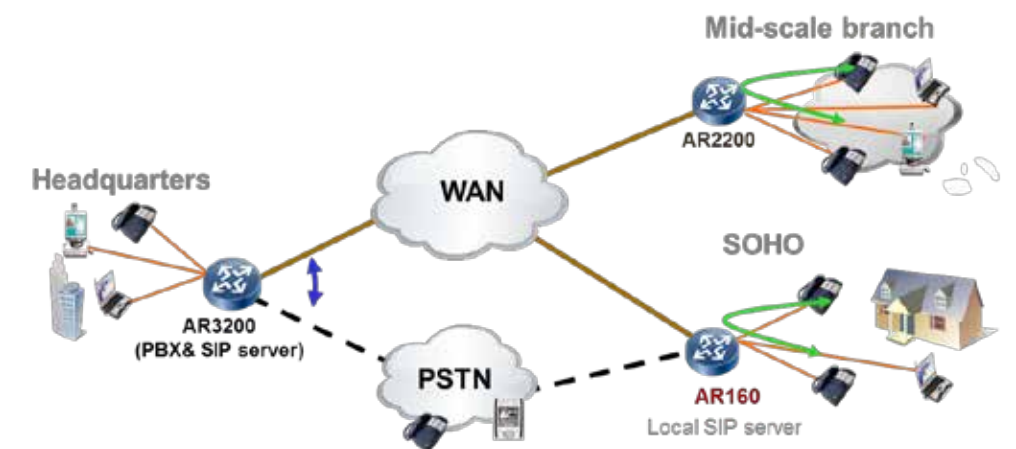
WAN Access



Example deployment in branch networks for WAN access. In this example, the AR160s function as the egress routers on enterprise branch networks and provide multiple access methods, including Ethernet, xDSL, 3G, LTE and WLAN.

Enterprise Voice Services Deployment

IP PBX with WAN and PSTN Access

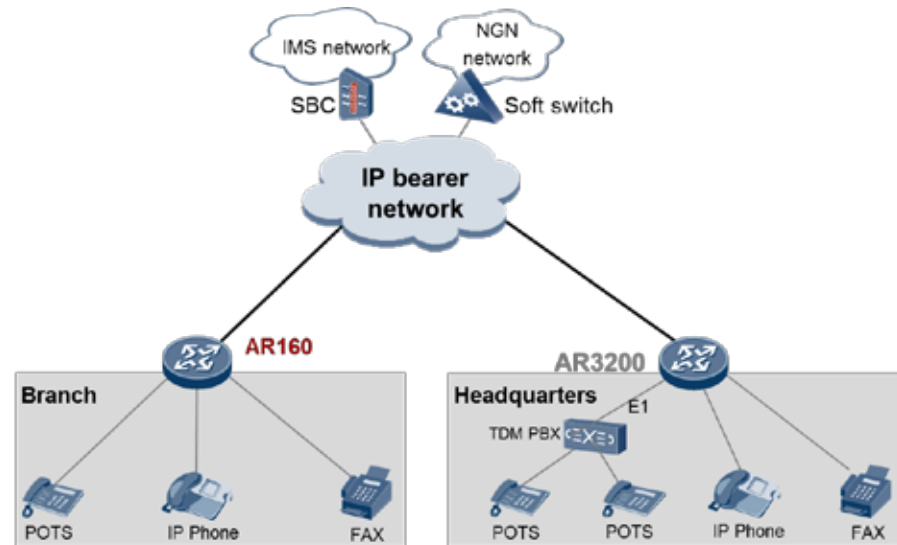


This illustration shows an AR160 series router deployed at an enterprise branch with access to a WAN and a PSTN. If a fault occurs on the WAN, the PSTN acts as a backup to the WAN and ensures that call services remain uninterrupted. AR160s are deployed at enterprise branch offices to provide intelligent, integrated dialing across the network. When deployed as voice service gateways, AR160s can function as IP PBX boxes and SIP access gateways.

IP PBX. AR160s have a built-in PBX, which supports the enterprise main number, interactive voice response (IVR), and billing query functions. These features help enhance the corporate image of small businesses by allowing them to look more professional to their customers, while simultaneously improving the efficiency of their enterprise communications.

SIP Server. AR160s have a built-in SIP server that ensures reliability of voice services. If the SIP server at the headquarters office becomes unreachable, the local built-in SIP server at the branch office ensures that communication remains uninterrupted between branch offices and the PSTN network.

SIP Access Gateway



The AR160 series routers provide integrated voice, fax, and IP services. The AR160s can function as SIP access gateways for enterprise branch offices that transform traditional phone signals into Voice over IP (VoIP). Typically, AR160s are connected upstream from the IMS and NGN networks to enable anytime voice communication on any media, such as phones, handsets, and computers.

VPN Deployment for Secure Enterprise Communications

VPNs Connecting Branches and Partners to Headquarters

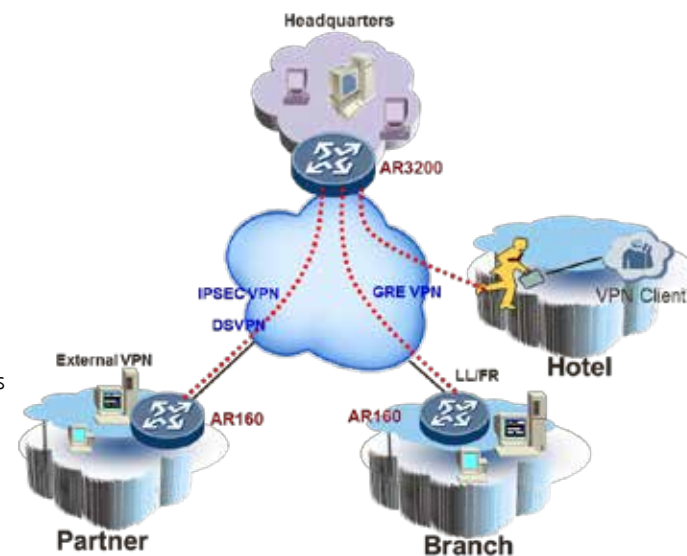
This illustration shows how to deploy AR160s using VPNs to connect branches and partners to headquarters.

AR160s provide various VPN tunnel protocols to ensure secure communications between:

- Enterprise branches and other branch offices
- Enterprise branches and headquarters
- Partners and enterprise resources

AR160s support the following VPN tunnel protocols:

- GRE VPN
- IPSEC VPN



- DSVPN
- L2TP VPN

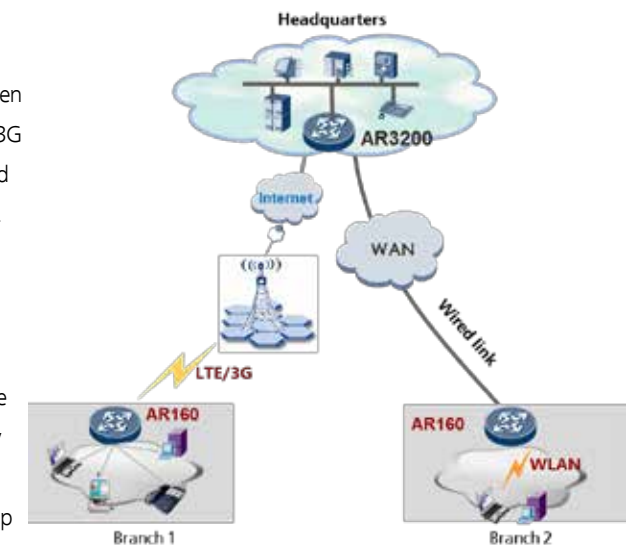
AR160s support fast tunnel set-up and authentication.

Wireless Access and Management in Branch

3G/LTE and Wi-Fi Wireless Access application

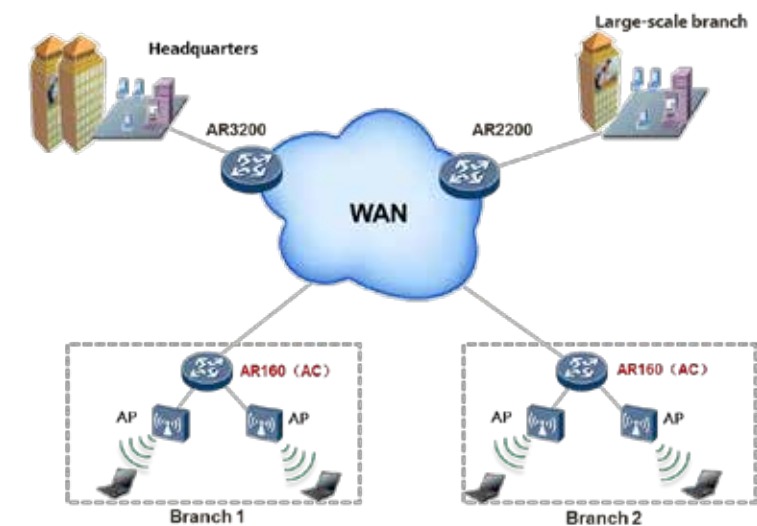
The AR160s routers comply with 3G and LTE standards including HSPA+ and FDD LTE, meeting the wireless communication requirements between branches and the headquarters. In addition, the 3G or LTE data link can be used as a backup for wired link to protect the xDSL, FE/GE, and ISDN uplinks. The backup link improves network stability and reduces network construction costs.

Some models of AR160s routers are dual SIM devices, providing dual SIM standby. The customers can switch the SIM card manually according to 3G/LTE network standards. In addition, the device can switch to the backup SIM card when signal is weak to avoid link interruption



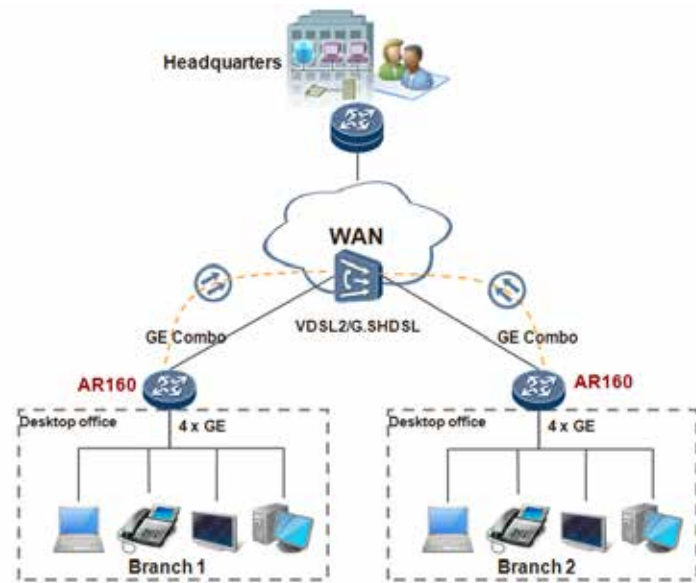
The AR160s routers integrated WLAN wireless access capabilities, support 802.11a/b/g/n standard communication, Built-in AC function make the deployment and management more conveniently. Its wireless features can meet users' demand for wireless access, and help enterprises to build a branch network flexibly.

Wireless AC Management application



The AR160s routers integrated AC (Access Controller, a wireless controller) functionality, which can manage the wireless AP (Access Point, Access Point) in wireless LAN. AR supported rich certification and flexible user access control, which can provide security access guarantee for Wi-Fi users. The rich wireless capabilities integrated in one device, this can realize centralized management of wired and wireless network, meet the customers' requirements of building different scale enterprises networks.

Copper and Fiber integration Access Solution



Huawei new generation AR160 routers integrated 4 GE LAN and 1 GE WAN ports, some models support VDSL2 access, which can provide 100M access bandwidth (800 meters). This new box device can bring a high bandwidth experience to the enterprise and carrier customers.

In the future, if the customers have optical access requirements, they don't need to replace the devices. As the GE WAN port supports Combo switch. The one box solution can meet the customers' requirements perfectly, thereby protect their investments.

Technical Specifications

Table 1: AR160s Technical Specifications

| Item | AR161 | AR161W | AR161G-L | AR169 | AR169W | AR169G-L |
|---------------------------------|---------------------------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Hardware | | | | | | |
| WAN speed with services* (IMIX) | 150Mbps | 150Mbps | 150Mbps | 150Mbps | 150Mbps | 150Mbps |
| Number of recommended users | 50 | 50 | 50 | 50 | 50 | 50 |
| Fixed WAN ports | 1 x GE | 1 x GE | 1 x GE | 1 x VDSL2 (compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring) | 1 x VDSL2 (compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring) | 1 x VDSL2 (compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring) |
| Fixed Ethernet switching ports | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) |
| Integrated LTE | - | - | FDD LTE | - | - | FDD LTE |
| Wi-Fi | - | 802.11 b/g/n | - | - | 802.11 b/g/n | - |
| USB 2.0 ports | 1 | 1 | 1 | 1 | 1 | 1 |
| Console ports | 1 | 1 | 1 | 1 | 1 | 1 |
| Memory size | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB |
| Flash memory | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB |
| Maximum power | 24W | 24W | 24W | 24W | 24W | 24W |
| Power supply (AC) | 100 V to 240 V | | | | | |
| Frequency | 50/60 Hz | | | | | |
| Dimensions (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) | | | | | |
| Operating temperature | 0°C to 45°C | | | | | |
| Relative humidity | 5% to 95% (non-condensing) | | | | | |
| Software | | | | | | |

| Item | AR161 | AR161W | AR161G-L | AR169 | AR169W | AR169G-L |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|-------|--------|----------|
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | | | | | |
| WLAN(AP) | AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features) | | | | | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | | | | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | | | | | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | | | | | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | | | | | |
| Multicast | IGMP version1/2/3, PIM SM, PIM DM, MSDP,MBGP | | | | | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | | | | | |
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | | | | | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI, | | | | | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2) | | | | | |

Table2: AR160Fs Technical Specifications

| Item | AR161F | AR161F-DGP | AR161FW | AR161FG-L | AR161FGW-L |
|---------------------------------|----------|------------|----------|-----------|------------|
| Hardware | | | | | |
| WAN speed with services* (IMIX) | 150 Mbps | 150 Mbps | 150 Mbps | 150 Mbps | 150 Mbps |
| Number of recommended users | 50 | 50 | 50 | 50 | 50 |

| Item | AR161F | AR161F-DGP | AR161FW | AR161FG-L | AR161FGW-L |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| Fixed WAN ports | 1x GE Combo | 1x GE Combo (Support Dying gasp) | 1x GE Combo | 1x GE Combo | 1x GE Combo |
| Fixed Ethernet switching ports | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) |
| Integrated LTE | - | - | - | FDD LTE | FDD LTE |
| Wi-Fi | - | - | 802.11 b/g/n | - | 802.11 b/g/n |
| USB 2.0 ports | 1 | 1 | 1 | 1 | 1 |
| Console ports | 1 | 1 | 1 | 1 | 1 |
| Memory size | 512 MB | 512 MB | 1 GB | 512 MB | 512 MB |
| Flash memory | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB |
| Maximum power | 24W | 24W | 24W | 24W | 24W |
| Power supply (AC) | 100 V to 240 V | | | | |
| Frequency | 50/60 Hz | | | | |
| Dimensions (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) | | | | |
| Operating temperature | 0°C to 45°C | | | | |
| Relative humidity | 5% to 95% (non-condensing) | | | | |
| Software | | | | | |
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | | | | |
| WLAN(AP) | AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features) | | | | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | | | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | | | | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | | | | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | | | | |
| Multicast | IGMP version1/2/3, PIM SM, PIM DM, MSDP,MBGP | | | | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | | | | |

| Item | AR161F | AR161F-DGP | AR161FW | AR161FG-L | AR161FGW-L |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|-----------|------------|
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | | | | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI, | | | | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2) | | | | |

Table3: AR160Fs Technical Specifications

| Item | AR161FV-1P | AR162F | AR168F | AR168F-4P | AR169F |
|--------------------------------|---------------------------------------------------------------|---------------------------------------------|---------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| WAN speed with services* | 150 Mbps | 150 Mbps | 150 Mbps | 150 Mbps | 150 Mbps |
| Number of recommended users | 50 | 50 | 50 | 50 | 50 |
| Fixed WAN ports | 1x GE Combo | 1 x SA 1x GE Combo | 1 xG.SHDSL 4-pair, 1x GE Combo | 1 x G.SHDSL 4-pair, 1x GE Combo, 4 xE1, 1 x RS232 | 1 x VDSL2 with bonding (compatible with ADSL2+ Annex A/M. Support Vectoring), 1x GE Combo |
| Fixed Ethernet switching ports | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) | 4 x GE(can be configured as WAN interfaces) |
| Fixed voice ports | 1xVE1 | — | — | — | — |
| USB 2.0 ports | 1 | 1 | 1 | 1 | 1 |
| Console ports | 1 | 1 | 1 | 1 | 1 |
| Memory size | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB |
| Flash memory | 512 MB | 512 MB | 512 MB | 512 MB | 512 MB |
| Maximum power | 24W | 36 W | 24W | 24W | 24 W |
| Power supply (AC) | 100 V to 240 V | | | | |
| Frequency | 50/60 Hz | | | | |
| Dimensions (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) | | | | |

| Item | AR161FV-1P | AR162F | AR168F | AR168F-4P | AR169F |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|-----------|--------|
| Operating temperature | 0°C to 45°C | | | | |
| Relative humidity | 5% to 95% (non-condensing) | | | | |
| Software | | | | | |
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | | | | |
| Voice | RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP, BEST, DISA, SBC(Only voice models support voice features) | | | | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | | | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | | | | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | | | | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | | | | |
| Multicast | IGMP version1/2/3, PIM SM, PIM DM, MSDP,MBGP | | | | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | | | | |
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | | | | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI | | | | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI,SSH (v1/v2) | | | | |

Table4: AR160Fs Technical Specifications

| Item | AR169FVW | AR169FVW-8S | AR169FGW-L | AR169FGVW-L |
|-----------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| WAN speed with services* | 150 Mbps | 150 Mbps | 150 Mbps | 150 Mbps |
| Number of recommended users | 50 | 50 | 50 | 50 |
| Fixed WAN ports | 1 x VDSL2 with bonding(compatible with ADSL2+ Annex A/ M. Support Vectoring), 1x GE Combo, | 1 x VDSL2 with bonding(compatible with ADSL2+ Annex A/ M. Support Vectoring), 1x GE Combo, | 1 x VDSL2 with bonding(compatible with ADSL2+ Annex A/ M. Support Vectoring), 1x GE Combo | 1 x VDSL2 with bonding(compatible with ADSL2+ Annex A/ M. Support Vectoring), 1x GE Combo |

| Item | AR169FVW | AR169FVW-8S | AR169FGW-L | AR169FGVW-L |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| Fixed Ethernet switching ports | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) | 4 x GE (can be configured as WAN interfaces) |
| Fixed voice ports | 4 x FXS, 1 x FXO | 8 x FXS, 1 x FXO | - | 4 x FXS, 1 x FXO |
| Integrated LTE | - | - | FDD LTE | FDD LTE |
| Wi-Fi | 802.11b/g/n | 802.11b/g/n | 802.11b/g/n | 802.11b/g/n |
| USB 2.0 ports | 1 | 1 | 1 | 1 |
| Console ports | 1 | 1 | 1 | 1 |
| Memory size | 1GB | 1GB | 1GB | 1GB |
| Flash memory | 512 MB | 512 MB | 512 MB | 512 MB |
| Maximum power | 24W | 24W | 24 W | 24 W |
| Power supply (AC) | 100 V to 240 V | | | |
| Frequency | 50/60 Hz | | | |
| Dimensions (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) | | | |
| Operating temperature | 0°C to 45°C | | | |
| Relative humidity | 5% to 95% (non-condensing) | | | |
| Software | | | | |
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | | | |
| Voice | RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP, BEST, DISA, SBC(Only voice models support voice features) | | | |
| WLAN(AP) | AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features) | | | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | | | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | | | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | | | |
| Multicast | IGMP version1/2/3, PIM SM, PIM DM, MSDP,MBGP | | | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | | | |

| Item | AR169FVW | AR169FVW-8S | AR169FGW-L | AR169FGVW-L |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|-------------|
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | | | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI, | | | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2) | | | |

Table5: AR160Es Technical Specifications

| Item | AR161EW | AR169EW | AR169EGW-L | AR161EW-M1 |
|---------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------|
| Hardware | | | | |
| WAN speed with services* (IMIX) | 600Mbps | 600Mbps | 600Mbps | 600Mbps |
| Number of recommended users | 50 | 50 | 50 | 50 |
| Fixed WAN ports | 1x GE Combo | 1 x VDSL2 over POTS with Bonding (support dying gasp. Support Vectoring) 1 x GE Combo | | 1 x GE Combo |
| Fixed Ethernet switching ports | 4 x GE RJ45(can be configured as WAN interfaces) | | | |
| Integrated LTE | - | - | FDD LTE Dual SIM slots, one active, one standby | - |
| Wi-Fi | 802.11a/b/g/n/ac/ac wave2,4x4:4 MU-MIMO | | | |
| USB | 1 USB3.0, compatible with USB2.0 | | | |
| Serial auxiliary/console ports | 1 | | | |
| Memory size | 1 GB | | | |
| Flash memory | 512 MB | | | |
| Hard disk | - | | | 2.5-inch hard disk (optional) |

| Item | AR161EW | AR169EW | AR169EGW-L | AR161EW-M1 |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|------------|
| Maximum power | 24W | 36W | 36W | 36W |
| Power supply (AC) | 100 V to 240 V | | | |
| Frequency | 50/60 Hz | | | |
| Dimensions (H x W x D) | 44.0 mm x 300.0 mm x 216.4 mm (1.73 in. x 11.8 in. x 8.5 in.) | | | |
| Operating temperature | 0°C to 45°C | | | |
| Relative humidity | 5% to 95% (non-condensing) | | | |
| Software | | | | |
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | | | |
| WLAN(AP) | AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features) | | | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | | | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | | | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | | | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | | | |
| Multicast | IGMP version 1/2/3, PIM SM, PIM DM, MSDP,MBGP | | | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | | | |
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | | | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI, | | | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2) | | | |

Table 6: AR160Cs Technical Specifications

| Item | AR169CVW | AR169CVW-4B4S |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Hardware | | |
| WAN speed with services* (IMIX) | 150 Mbps | 150 Mbps |
| Number of recommended users | 50 | 50 |
| Fixed WAN ports | 1 x VDSL2(compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring) 1 x GE SFP | 1 x VDSL2(compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring) 1 x GE SFP |
| Fixed Ethernet switching ports | 4 x GE RJ45 (can be configured as WAN interfaces) | 4 x GE RJ45 (can be configured as WAN interfaces) |
| Fixed voice ports | 4 x FXS, 1 x FXO | 4 x ISDN BRI 4 x FXS, 1 x FXO |
| Wi-Fi | 802.11b/g/n, 2.4GHz,2x2 MIMO 802.11ac, 5GHz, 2 x 2MIMO | 802.11b/g/n, 2.4GHz,2x2 MIMO 802.11ac, 5GHz, 2 x 2MIMO |
| USB | 1 USB3.0, compatible with USB2.0 | 1 USB3.0, compatible with USB2.0 |
| Console ports | 1 | 1 |
| Memory size | 512 MB | 512 MB |
| Flash memory | 512 MB | 512 MB |
| Maximum power | 24W | 24W |
| Power supply (AC) | 100 V to 240 V | |
| Frequency | 50/60 Hz | |
| Dimensions (H x W x D) | 30 mm x 270 mm x 155 mm (1.18 in. x 11.4 in. x 6.1 in.) | |
| Operating temperature | 0°C to 45°C | |
| Relative humidity | 5% to 95% (non-condensing) | |
| Software | | |
| Basic features | DHCP server/client, PPPoE server/client, PPPoA server/client, PPPoEoA server/client, NAT, Sub interface management | |
| Voice | RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP, BEST, DISA, SBC (Only voice models support voice features) | |

| Item | AR169CVW | AR169CVW-4B4S |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| WLAN(AP) | AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management(Only WLAN models support WLAN AP features) | |
| WLAN(AC) | AP management(AC discovery/AP access/AP management),CAPWAP,WLAN user management , WLAN radio management (802.11a/b/g/n) ,WLAN QoS (WMM), WLAN security (WEP/WPA/WPA2/Key management) | |
| LAN | IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc. | |
| IPv4 unicast routing | Routing policy, static route, RIP, OSPF, IS-IS, BGP | |
| IPv6 unicast routing | Routing policy, static route, RIPng, OSPFv3, IS-ISv6, BGP4+ | |
| Multicast | IGMP version1/2/3, PIM SM, PIM DM, MSDP,MBGP | |
| VPN | IPSec VPN, GRE VPN, DSVPN, L2TP VPN | |
| QoS | Diffserv mode, Priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (based on IP precedence/DSCP WRED), congestion management (LAN interface: SP/WRR/SP+WRR; WAN interface: PQ/CBWFQ), MQC (traffic classification, traffic behavior, and traffic policy), HierarchicalQoS, Smart Application Control (SAC) | |
| Security | ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, CPCAR, blacklist, IP source tracing, PKI, | |
| Management and maintenance | Upgrade management, device management, web-based GUI, GTL, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2) | |

*Service performance depending on specific feature configuration.

How to Configure the Modular AR160 Routers

The AR160 series routers require 2 types of configuration modules:

- Basic software configuration
- Software license configuration

The basic software configuration modules provide functions such as routing, switching, voice, and security. The software license configuration modules provide additional functions such as AC.

Ordering Information

The AR160 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.

Table 1: Chassis Options

| Chassis Configuration | Description |
|-----------------------|------------------------------------------------------------------------------------|
| AR161 | AR161, 1GE WAN, 4GE LAN |
| AR161F | AR161F, 1GE COMB WAN, 4GE LAN, 1 USB |
| AR161FG-L | AR161FG-L, 1GE COMB WAN, LTE FDD, 4GE LAN, 1 USB |
| AR161FGW-L | AR161FGW-L, 1GE COMB WAN, LTE FDD, 4GE LAN, 802.11b/g/n AP, 1 USB |
| AR161FW | AR161FW, 1GE COMBO WAN, 4GE LAN, 1 USB, 1 WLAN |
| AR161G-L | AR161G-L, 1GE WAN, 4GE LAN, LTE |
| AR161W | AR161W, 1GE WAN, 4GE LAN, WIFI 2.4G |
| AR161FV-1P | AR161FV-1P, 1GE COMBO WAN, 4GE LAN, 1 USB, 1 VE1 |
| AR162F | AR162F, 1SA, 1GE COMBO WAN, 4GE LAN, 1 USB |
| AR168F | AR168F, 4 copper pair G.SHDSL WAN, 1GE COMBO WAN, 4GE LAN, 1 USB |
| AR168F-4P | AR168F-4P, 4 copper pair G.SHDSL WAN, 1GE COMBO WAN, 4GE LAN, 4 E1, 1 RS232, 1 USB |
| AR169 | AR169, 1VDSL WAN, 4GE LAN |
| AR169F | AR169F, VDSL over POTS with bonding WAN, 1GE COMB WAN, 4GE LAN, 1 USB |
| AR169FVW | AR169FVW, 1GE COMBO WAN, 4GE LAN, 1 USB, 4 FXS, 1 FXO, 1 WLAN |
| AR169FVW-8S | AR169FVW-8S, 1GE COMBO WAN, 4GE LAN, 1 USB, 8 FXS, 1 FXO, 1 WLAN |
| AR169FGW-L | AR169FGW-L, 1GE COMBO WAN, 4GE LAN, 1 USB, 4 1 WLAN |
| AR169FGVW-L | AR169FGVW-L, 1GE COMBO WAN, 4GE LAN, 1 USB, 4 FXS, 1 FXO, 1 WLAN |
| AR169G-L | AR169G-L, 1VDSL WAN, 4GE LAN, LTE |

| Chassis Configuration | Description |
|-----------------------|--------------------------------------------------------------------------------------------|
| AR169W | AR169W,1VDSL WAN,4GE LAN,WIFI 2.4G |
| AR169CVW | AR169CVW,1 VDSL WAN,1 GE SFP WAN,4 GE LAN,4 FXS,1 FXO,WIFI 2.4G+5G,1 USB2.0 |
| AR169CVW-4B4S | AR169CVW-4B4S,1 VDSL WAN,1 GE SFP WAN,4 GE LAN,4 FXS,1 FXO,4 ISDN,WIFI 2.4G+5G,1 USB3.0 |
| AR161EW | AR161EW,1*GE Combo WAN,4*GE LAN,4*4 MIMO WIFI,1*USB |
| AR169EW | AR169EW,1*GE Combo WAN,VDSL over POTS with bonding WAN,4*GE LAN,4*4 MIMO WIFI,1*USB |
| AR169EGW-L | AR169EGW-L,1*GE Combo WAN,VDSL over POTS with bonding WAN,4*GE LAN,4*4 MIMO WIFI,FDD,1*USB |
| AR161EW-M1 | AR161EW-M1,1*GE Combo WAN,4*GE LAN,4*4 MIMO WIFI,1*USB,1*HDD |

Table 2: Power Module Options

| Power Module | Description |
|--------------|----------------------------------------------|
| W0ACPSE03 | Adapter,0degC,40degC,90V,264V,12V/3A,C8/4pin |

Table 3: License Options

| License | Description |
|--------------|------------------------------------------------------|
| LARODATAE01 | AR160&200 Value-Added Data Package |
| LAROAC01 | AR160&200 AC Express License |
| LAROCMBEST01 | AR CM&BEST License-5 telephones |
| LAROCMBEST02 | AR CM&BEST License-25 telephones |
| LAROCT01 | AR CT(Call Trunk) License-5 sessions |
| LAROCT02 | AR CT(Call Trunk) License-25 sessions |
| LAROIVR01 | AR IVR(Interactive Voice Response) License-1 session |
| LAROSECE01 | AR160&200 Value-Added Security Package |

Table 4: SD Card and USB Disk Options

| SD Cards & USB Disks | Description |
|----------------------|------------------------------|
| NUSBDSK01 | Storage USB DISK,4GB,USB 2.0 |

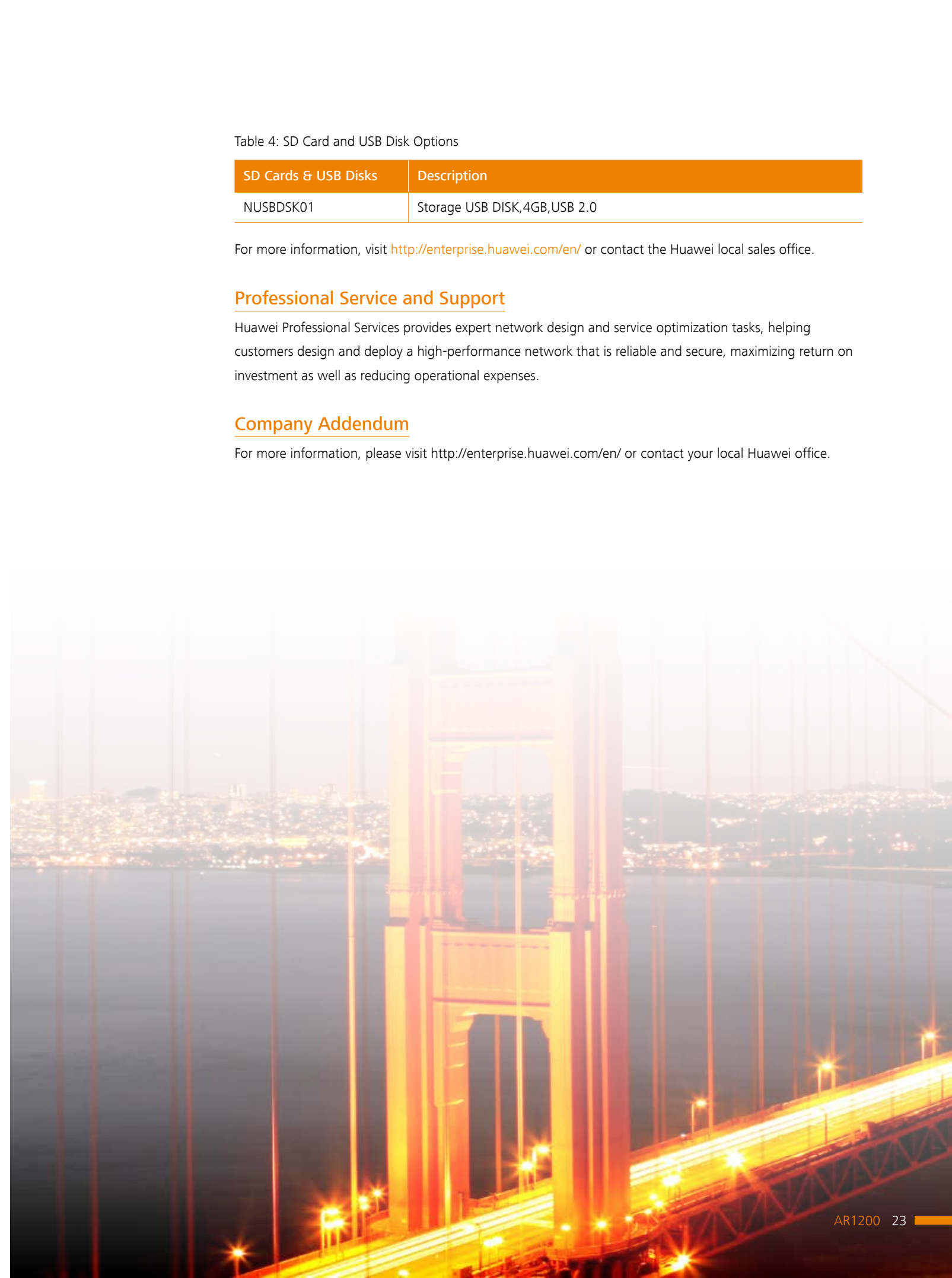
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