Huawei AR100 and AR120 Series Enterprise Routers Datasheet

Huawei's next-generation routers, the AR100 and AR120 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 AR100 and AR120 series are fixed interface routers that provide a comprehensive platform for a variety of network topologies, including IMS, NGN, WAN and PSTN. The AR100 and AR120 also employ embedded hardware encryption for security as well as a voice Digital Signal Processor (DSP) for voice services.

The AR100 and AR120 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.

AR100s and AR120s 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 AR100 and AR120 series includes the following models:

- AR109, AR109W, AR109GW-L
- AR129CVW, AR129CGVW-L, AR129CV

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

Table1: AR100 Models

 AR109	• WAN speed with services (IMIX): 80 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 in.)
 AR109W	• WAN speed with services (IMIX): 80 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • WLAN: 802.11b/g/n • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 in.)

AR109GW-L	• WAN speed with services (IMIX): 80 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • LTE: LTE FDD • WLAN: 802.11b/g/n • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 in.)

Table2: AR120 Models

AR129CV	• WAN speed with services (IMIX): 100 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • Voice ports: 2 x FXS • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 in.)
AR129CVW	• WAN speed with services (IMIX): 100 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • Voice ports: 2 x FXS • WLAN: 802.11b/g/n/ac • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 in.)
AR129CGVW-L	• WAN speed with services (IMIX): 100 Mbps • Fixed ports: 4 x GE LAN(can be configured as WAN interfaces), 1 x VDSL2, 1 x GE WAN • Voice ports: 2 x FXS • LTE: LTE FDD • WLAN: 802.11b/g/n/ac • Dimensions (H x W x D): 30 mm x 230mm x 130 mm(1.18 in. x 9.1 in. x 5.1 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 AR100s and AR120s 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 AR100s and AR120s 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 AR100s and AR120s 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 AR100s and AR120s uses the Huawei VRP operating system and VSP voice platform. In addition, the AR100s and AR120s 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 AR100s and AR120s is only 3% of industry average. The AR100s and AR120s can be applied in the harsh environment.
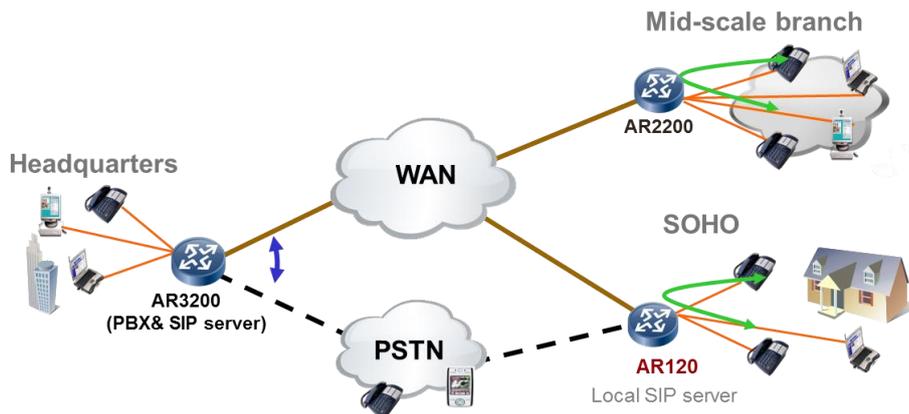
Sample Deployments

WAN Access
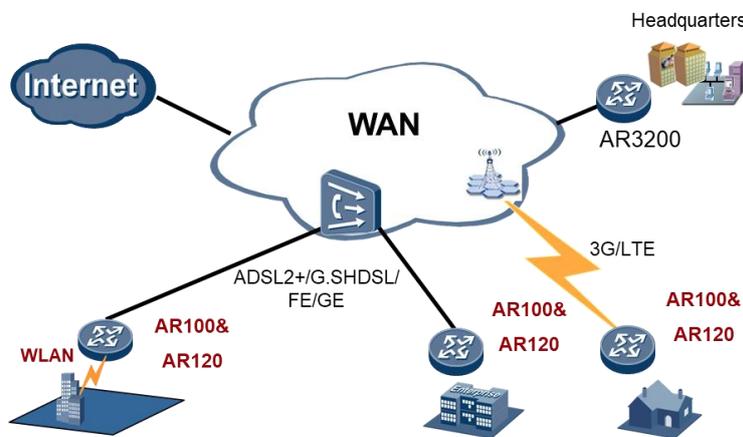
Example deployment in branch networks for WAN access. In this example, the AR100s and AR120s function as the egress routers on enterprise branch networks and provide multiple access methods, including Ethernet, xDSL, 3G, LTE and WLAN.

Enterprise Voice Services Deployment

IP PBX with WAN and PSTN Access

This illustration shows AR120 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. AR120s are deployed at enterprise branch offices to provide intelligent, integrated dialing across the network. When deployed as voice service gateways, AR120s can function as IP PBX boxes and SIP access gateways.

IP PBX. AR120s 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. AR120s 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.
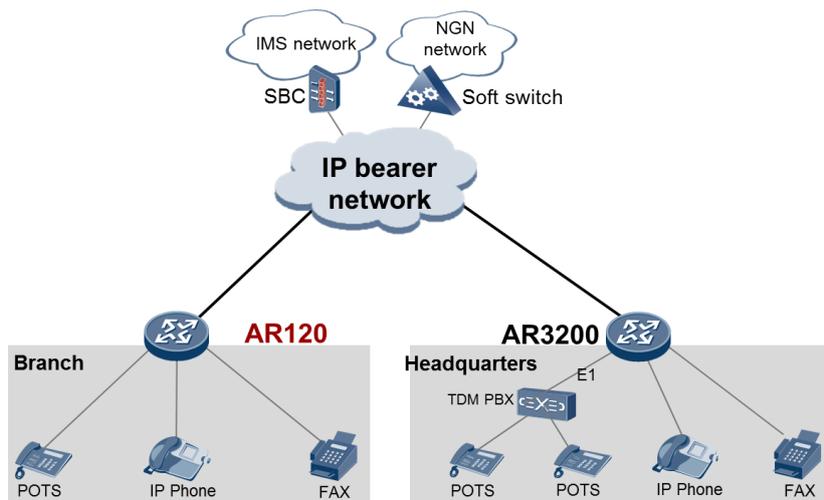
SIP Access Gateway

The AR120 series routers provide integrated voice, fax, and IP services. The AR120s can function as SIP access gateways for enterprise branch offices that transform traditional phone signals into Voice over IP (VoIP). Typically, AR120s 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
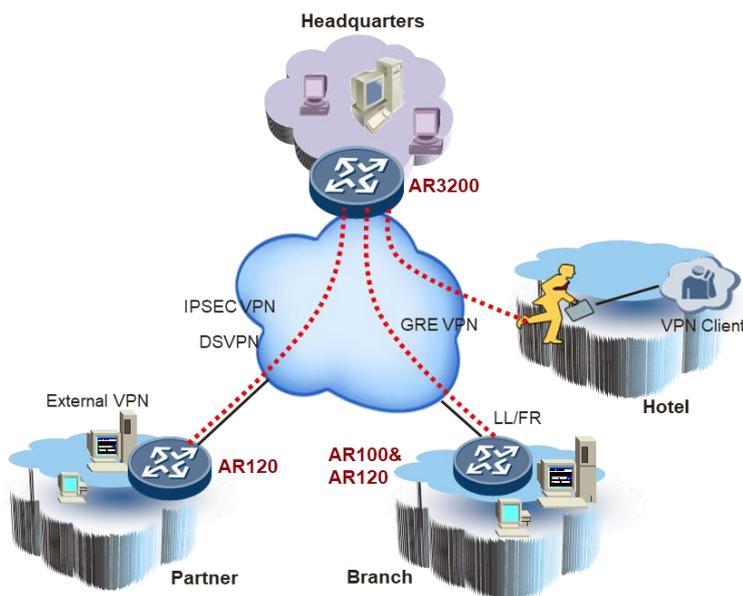
VPNs Connecting Branches and Partners to Headquarters

This illustration shows how to deploy AR100s and AR120s using VPNs to connect branches and partners to headquarters.

AR100s and AR120s provide various VPN tunnel protocols to ensure secure communications between:

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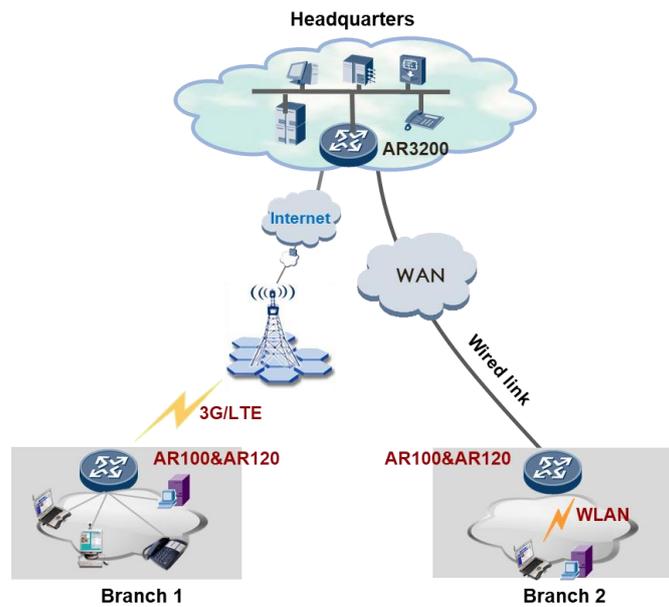- Partners and enterprise resources

AR100s and AR120s support the following VPN tunnel protocols:

- GRE VPN
- IPSEC VPN
- DSVPN

- L2TP VPN

AR100s and AR120s support fast tunnel set-up and authentication.

Wireless Access and Management in Branch

3G/LTE and Wi-Fi Wireless Access application

The AR100s, AR120s routers complied 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 uplinks. The backup link improves network stability and reduces network construction costs.

Some models of AR100s, AR120s 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 AR100s, AR120s 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.
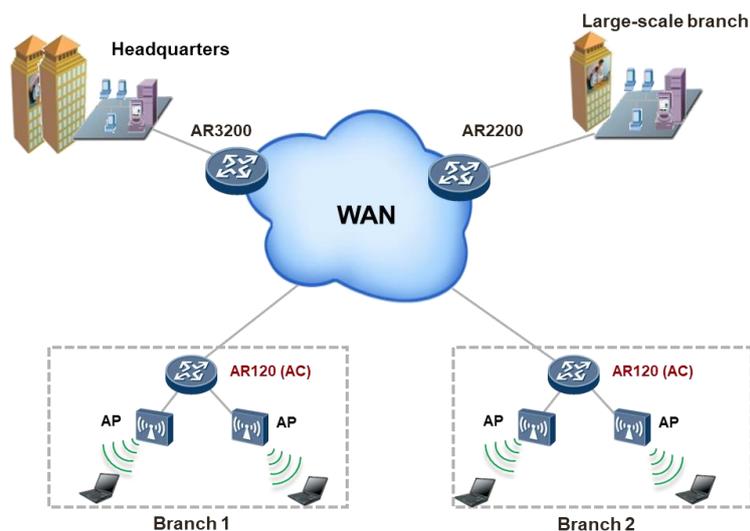
Wireless AC Management application

The AR120s routers integrated AC (Access Controller, a wireless controller) functionality, which can manage the wireless AP (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.

Technical Specifications

Table 1: AR100s Technical Specifications

Item	AR109	AR109W	AR109GW-L
System Parameters			
Processor	Dual-core		
Maximum WAN speed with services***	Up to 80 Mbps		
Number of recommended users	20		
Fixed WAN ports	1 x VDSL2(compatible with ADSL2+ Annex A/M, Annex B/J. Support Vectoring), 1 x GE		
Fixed Ethernet switching ports	4 x GE(can be configured as WAN interfaces)		
Integrated LTE	—	—	LTE FDD: Band 1/2/3/4/5/7/8/20
Wi-Fi	—	802.11 b/g/n	802.11 b/g/n
USB 2.0 ports	1		
console ports	1		
Memory size	256 MB		
Flash memory	256 MB		
Dimensions and Weight			
Dimensions (W x D x H)	230 mm x 130 mm x 30 mm (9.06 in. x 5.12 in. x 1.18 in.)		
Weight	0.6 kg (1.32 lb)		
Power Specifications			
Rated input voltage range (AC)	110 V AC to 220 V AC		
AC input frequency	50/60 Hz		
Maximum input voltage range (AC)	90 V AC to 270 V AC		
Maximum input current	2 A		
Maximum output power	24 W		
Typical power consumption	15 W		
Environment Parameters			
Operating temperature****	0°C to 45°C (32°F to 113°F)		
Storage temperature	-40°C to +70°C		
Operating relative humidity	5% to 95%, noncondensing		

Item	AR109	AR109W	AR109GW-L
Operating altitude	< 5000 m (16404.2 ft.)		
Software Features and Protocols			
Basic features	ARP , PBR, DNS, DHCP, NAT		
WLAN(AP)	—	AP management, WLAN QoS, WLAN security, WLAN radio management, WLAN user management	
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc.		
IPv4 routing	Routing policy, static route, RIP, BGP, OSPF, IS-IS, MP-BGP		
IPv6 routing	Routing policy, static route, RIPng, BGP4+, OSPFv3, IS-ISv6, MP-BGP		
Multicast	IGMP V1/V2/V3, PIM SM, PIM DM, MSDP, MBGP		
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP Client		
QoS	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)		
Security	ACL, firewall, AAA authentication, ICMP attack defense, URPF, HTTPS		
Management and maintenance	Upgrade management, device management, web-based GUI, RMON, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2)		
Safety and Regulatory Standards			
EMC standards	• CISPR32 Class A • EN 55032 Class A • CISPR24 • EN 55024 • ETSI EN 300 386 • ETSI EN 301 489-1 • ETSI EN 301 489-17 • ETSI EN 301 489-52		
Environmental standards	• RoHS • REACH • WEEE		
Safety standards	• IEC 60950-1 • EN 60950-1		

Table 2: AR120s Technical Specifications

Item	AR129CVW	AR129CV	AR129CGVW-L
System Parameters			
Processor	Dual-core		
Maximum WAN speed with services***	Up to 100 Mbps		
Number of recommended users	20		

Item	AR129CVW	AR129CV	AR129CGVW-L
Fixed WAN ports	1 x VDSL2(compatible with ADSL2+ Annex A/M，Annex B/J. Support Vectoring), 1 x GE		
Fixed Ethernet switching ports	4 x GE(can be configured as WAN interfaces)		
Fixed voice ports	2 x FXS		
Integrated LTE	—	—	LTE FDD
Wi-Fi	802.11b/g/n, 2 x 2 MIMO 802.11ac, 2 x 2MIMO	—	802.11b/g/n, 2 x 2 MIMO 802.11ac, 2 x 2MIMO
USB 2.0 ports	1		
console ports	1		
Memory size	256 MB		
Flash memory	256 MB		
Dimensions and Weight			
Dimensions (W x D x H)	230 mm x 130 mm x 30 mm (9.06 in. x 5.12 in. x 1.18 in.)		
Weight	0.6 kg (1.32 lb)		
Rack height	1 U		
Power Specifications			
Rated input voltage range (AC)	100 V to 240 V		
AC input frequency	50/60 Hz		
Maximum input voltage range (AC)	90 V AC to 264 V AC		
Maximum input current	2 A		
Maximum output power	24 W		
Typical power consumption	13 W	10 W	18 W
Environment Parameters			
Operating temperature****	0°C to 45°C (32°F to 113°F)		
Storage temperature	-40°C to +70°C		
Operating relative humidity	5% to 95%, noncondensing		
Operating altitude	< 5000 m (16404.2 ft.)		
Software Features and Protocols			
Basic features	ARP , PBR, DNS, DHCP, NAT		
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)		

Item	AR129CVW	AR129CV	AR129CGVW-L
LAN	IEEE 802.1P, IEEE 802.1Q, IEEE 802.3, VLAN management, MAC address management, MSTP, etc.		
IPv4 routing	Routing policy, static route, RIP, BGP, OSPF, IS-IS, MP-BGP		
IPv6 routing	Routing policy, static route, RIPng, BGP4+, OSPFv3, IS-ISv6, MP-BGP		
Multicast	IGMP V1/V2/V3		
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN		
QoS	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)		
Security	ACL, firewall, 802.1x authentication, AAA authentication, RADIUS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, blacklist, IP source tracing, PKI, HTTPS		
Management and maintenance	Upgrade management, device management, web-bassed GUI, SNMP(v1/v2c/v3), RMON, NTP, CWMP, Auto-Config, site deployment using USB disk, CLI, SSH (v1/v2)		
Safety and Regulatory Standards			
EMC standards	•CISPR32 Class A • EN 55032 Class A • CISPR24 • EN 55024 • ETSI EN 300 386 • ETSI EN 301 489-1 • ETSI EN 301 489-17 • ETSI EN 301 489-52		
Environmental standards	• RoHS • REACH • WEEE		
Safety standards	• IEC 60950-1 • EN 60950-1		

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*** Note: Service performance depending on specific feature configuration.

****Note: When the altitude is between 1800 m and 5000 m, the highest operating temperature reduces by 1°C every time the altitude increases by 220 m.

Ordering Information

The AR100, AR120 series routers are configured by selecting and installing the appropriate configuration module. The configuration module ordering information and descriptions are shown in the following table1-3.

Table 1: Chassis Options

Chassis Configuration	Description

AR109	AR109,1 GE WAN,1 VDSL WAN,4 GE LAN,1 USB2.0
AR109W	AR109W,1 GE WAN,1 VDSL WAN,4 GE LAN,WIFI 2.4G,1 USB2.0
AR109GW-L	AR109GW-L,1 GE WAN,1 VDSL WAN,4 GE LAN,1 LTE,WIFI 2.4G,1 USB2.0
AR129CV	AR129CV,1 GE WAN,1 VDSL WAN,4 GE LAN,2 FXS, 1 USB2.0
AR129CVW	AR129CVW,1 GE WAN,1 VDSL WAN,4 GE LAN,2 FXS,WIFI 2.4G+5G,1 USB2.0
AR129CGVW-L	AR129CGVW-L,1 GE WAN,1 VDSL WAN,4 GE LAN,1 LTE,2 FXS,WIFI 2.4G+5G,1 USB2.0

Table 2: Power Module Options

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

Table 3: SD Card and USB Disk Options

SD Cards & USB Disks	Description
NUSBDSK16	USB Flash Disk,72mmX21.9mmX13mm,16GB,USB2.0,Alcor Micro MCU

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