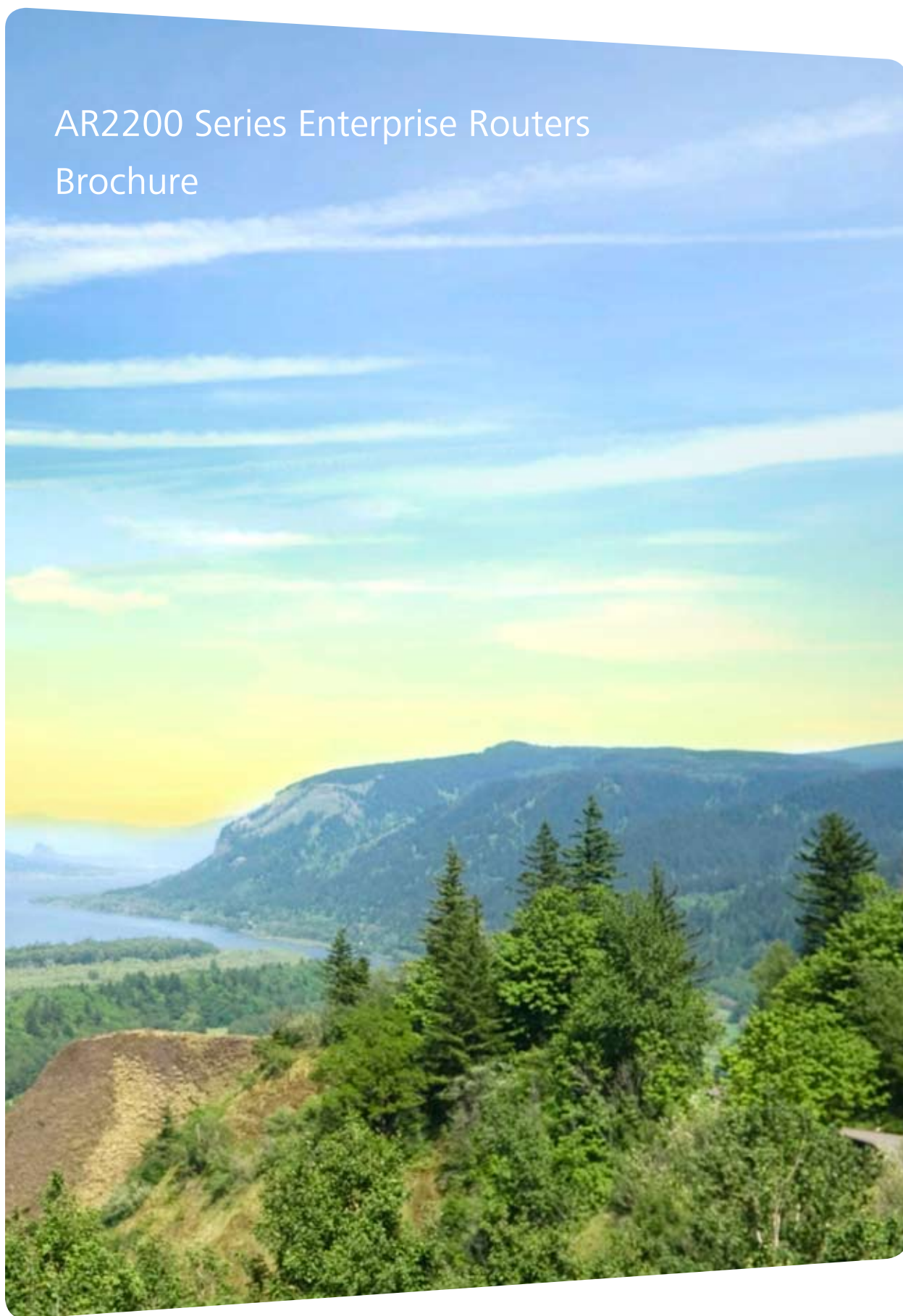


# AR2200 Series Enterprise Routers Brochure



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# AR2200 Series Enterprise Routers

Huawei AR2200 series enterprise routers (AR2200 for short) are next-generation enterprise-class routers based on the Huawei proprietary Versatile Routing Platform (VRP), which take advantage of Huawei long-term accumulation in data communication, wireless, access network, and core network fields. The AR2200 integrates routing, switching, 3G, voice, and security functions. It uses the multi-core CPU and non-blocking switching structure and provides industry-leading system performance and extensibility, meeting service development requirements in the future. The AR2200 provides an integrated solution for enterprise networks, speeds up multi-service provision, and protects customers' investments.

## Product Overview

The AR2200 uses the embedded hardware encryption technique and supports the voice Digital Signal Processor (DSP). It supports firewall functions, call processing, voice mail, and various application programs. The AR2200 supports various wired and wireless access modes, such as E1/T1, xDSL, CPOS and 3G.

The AR2200 provides two models: AR2220 and AR2240.

### AR2220



- Forwarding capacity: 1Mpps
- WAN speed with services: 75Mbps
- Fixed port: 3\*GE (one combo port)
- Slot: 4\*SIC + 2\*WSIC
- Dimensions (WxDxH): 442 mm x 420 mm x 44.5 mm

### AR2240



- Forwarding capacity: 2Mpps (standard), 3.5Mpps (enhanced)
- WAN speed with services: 150Mbps
- Fixed port: 3\*GE (two combo ports)
- Slot: 4\*SIC + 2\*WSIC + 2\*XSIC
- Dimensions (WxDxH): 442 mm x 470 mm x 88.1mm

The AR2200 supports various interface cards, including Ethernet interface cards, E1/T1/PRI/VE1/VT1 interface cards, synchronous/asynchronous interface cards, ADSL2+/G.SHDSL interface cards, FXS/FXO voice cards, ISDN interface cards, and CPOS interface cards. These cards can be classified into SIC (Smart Interface Card) cards, WSIC (Double-Width SIC) cards, and XSIC (Double-Height WSIC) cards depending on slot type. The following are the appearances and description of main interface cards.

### WSIC/XSIC card



L2/L3 Ethernet interface card

- Interfaces work in 10/100 Mbit/s or 10/100/1000 Mbit/s auto-sensing mode.
- Provides the Layer 2 and Layer 3 Ethernet switching function, and enables the AR2200 to communicate with other devices in a LAN network

SIC card



Channelized E1/T1/PRI/VE1/VT1 multifunctional interface card

- Sends, receives, and processes E1/T1 data traffic.
- Provides channelized E1/T1 access, and groups and binds channels.
- Provides the VoIP function over the E1/T1 line.
- Provides the ISDN PRI function.
- Provides the local and remote loopback functions for test and troubleshooting.

SIC card



FXS/FXO voice card

- Supports access and processing of AT0 loop trunk of analog phone, fax, and telephone exchange.
- Transmits voice signals over IP network.

## Features and Benefits

### 1 3rd Generation AR with Industry-Leading Performance

The AR2200 uses the multi-core CPU and non-blocking switching structure and provides industry-leading system performance, meeting network extension requirements and service development requirements of enterprises.

- Multi-core CPU  
The multi-core CPU improves the speed of concurrent processing of data and voice services, which makes it possible to deploy a large number of services.
- Non-blocking switching for service traffic  
The bus channel bandwidth of single slot is up to 10 Gbit/s.
- Independent protocol management, service processing, and data switching, ensuring high performance and improving service reliability
- Integrated routing and switching functions  
This feature improves the data switching efficiency between interface cards and simplifies device configurations and maintenance.
- Hot swappable interface cards and redundant components such as fan modules and power modules ensuring service reliability and stability

## 2 Dual-Mode Network, Supporting Flexible Access

### 1) Wireless Mode

Access Mode	Description
3G	<ul style="list-style-type: none"> <li>Compliance with 3G standards, including CDMA2000 EV-DO, WCDMA, and TD-SCDMA, providing flexible network access</li> <li>NQA, monitoring the link real-time status and ensuring SLA</li> <li>Link backup for enterprise services, improving reliability</li> <li>Security VPN over 3G links, ensuring reliable service transmission</li> </ul>
LTE	<ul style="list-style-type: none"> <li>Switching from 3G networks to LTE networks supported in future, protecting customers' investments</li> </ul>

### 2) Wired Mode

Access Mode	Description
Fiber	<ul style="list-style-type: none"> <li>Support for GigabitEthernet and CPOS optical interfaces, allowing flexible network access</li> <li>1 Gbit/s bandwidth or higher bandwidth, meeting transmission requirements of bandwidth-thirsty services such as voice services</li> </ul>
Copper cable	<ul style="list-style-type: none"> <li>Support for various interfaces, including xDSL interfaces, E1/T1 interfaces, serial ports, and ISDN interfaces, protecting customers' investments</li> <li>Uplink access rates ranging from 64 kbit/s to 1 Gbit/s, which can be selected by customers</li> </ul>

## 3 Services Integrated on One Router

The AR2200 integrates routing, switching, 3G, voice, and security functions.

### Open Service Platform

The AR2200 interconnects with the third-party IT systems by using the Open Service Platform (OSP) to provide a unified communication solution for enterprise users. The customers, agents, third-party vendors, and manufacturers can develop and use the AR2200 as required.

- Fast service integration and customization, meeting customized requirements
- Service integration without deploying dedicated servers, saving investments and simplifying management
- Service synchronized with cloud-side services, and local services processed locally, which improves service quality and efficiency.

## Outstanding Voice Experience

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The AR2200 provides various voice functions for enterprise data networks, enabling the enterprises to communicate flexibly and efficiently.

- Basic voice functions provided by the built-in PBX, SIP server, and SIP access gateway
- Value-added voice services, including multi-party communication, IVR automatic connection, ring-back-tone, parallel ringing, sequential ringing, one number link you (ONLY), bill management, and subscriber management
- Intelligent call routing, ensuring high reliability of voice services
- Interconnection with the NGN/IMS/PBX/terminal of mainstream vendors
- QoE, detecting voice service quality in real time
- Jitter buffer, echo cancellation, and packet loss compensation, improving customer experiences

## Secure Service Access

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During service provision, the AR2200 ensures security of enterprise networks. It provides a complete security protection mechanism including user access control, packet detection, and active attack defense. This mechanism protects customers' investments.

- Built-in firewall
- Authentication technologies on ports, such as 802.1x authentication, MAC address authentication, and portal authentication
- Authentication methods, including RADIUS and HWTACACS
- VPN technologies, including IPSec VPN and GRE VPN

## Intelligent Service Deployment

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As the enterprise scale increases, enterprise users have high requirements on service deployment. The AR2200 provides the following service deployment functions:

- The AR2200 provides a mini-USB port. By using the mini-USB, users can configure the devices through GUI.
- Users can use the USB disk to deploy devices, and the devices are plug-and-play.
- The AR2200 supports the auto-config function. The auto-config function enables the AR2200 to automatically obtain configurations.

## Simplified Service Management

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Enterprise users require simply service management. The AR2200 provides the following functions to simplify service management:

- The AR2200 works with the iTec network management system to simplify device management.
- The AR2200 provides the NQA function to monitor links in real time.
- By using the NetStream function provided by the AR2200, users can view traffic characteristics and statistics clearly, which is basis for network optimization.

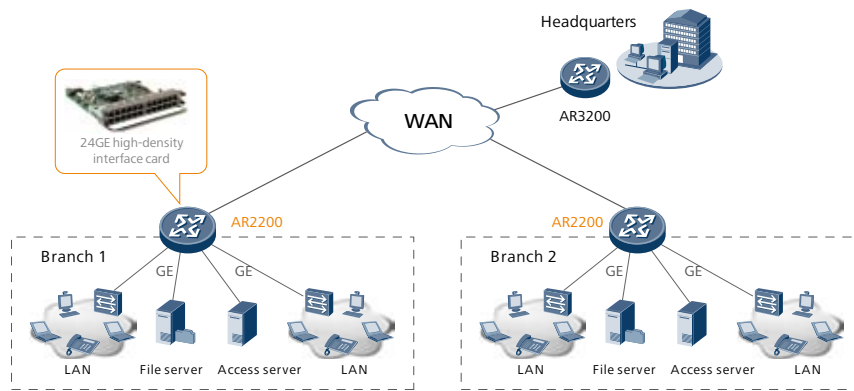




## Typical Application

### 1, High-Density GE Access

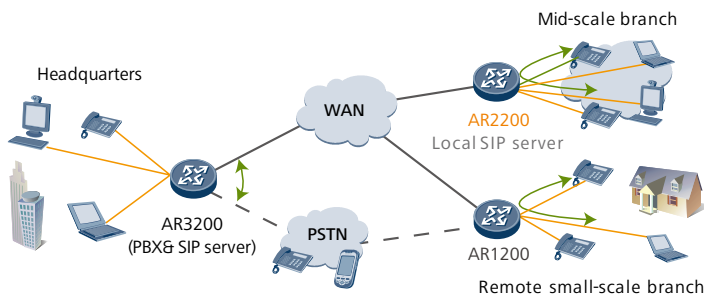
The AR2200 provides 24GE interface cards to implement high-density GE access. This interface card facilitates network operation and maintenance and protects customers' investment.



### 2, High-Quality Voice Service

As a voice gateway for enterprise networks, the AR2200 can function as an IP PBX or SIP gateway.

#### IP PBX application

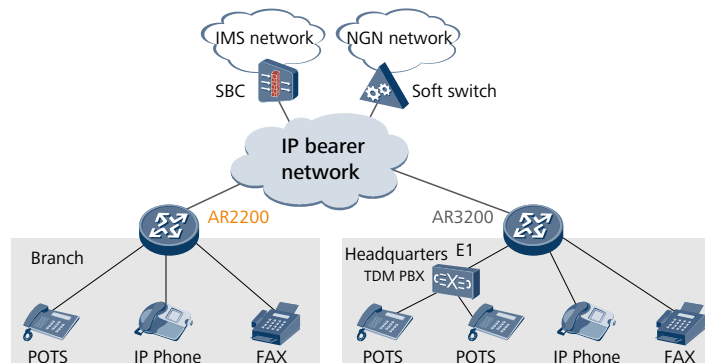


The AR routers have built-in PBX, which supports the enterprise main number, IVR, and bill query functions to enhance corporate image and improve enterprise communication efficiency. The AR2200 is located in a branch to provide the intelligent dialing function. When a fault occurs on the WAN, the PSTN network is

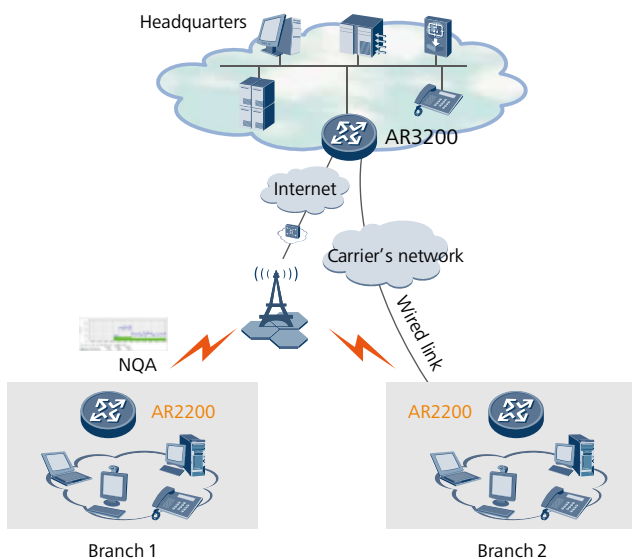
used as a backup for calls. When the SIP server at the headquarters is unreachable, the built-in local SIP server of the AR2200 implements communication between the branches and communication between branch and PSTN network. This ensures reliability of the voice service.

#### SIP gateway application

The AR2200 integrates voice, fax, and IP services. When providing voice services for enterprise users, the AR2200 functions as the SIP access gateway of a branch to transform phone signals into VoIP signals. The AR2200 uplink interfaces are connected to the IMS/NGN network to allow any media including phones, handsets, and computers to communicate at any time.



### 3, 3G Wireless Access in Branch

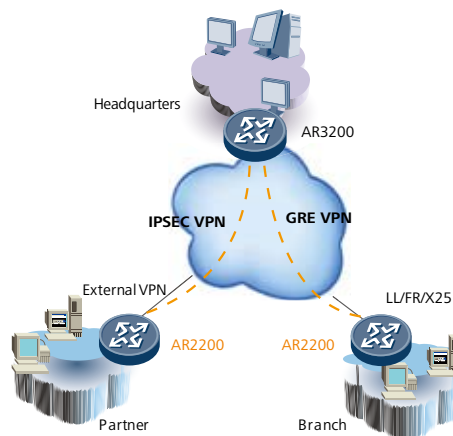


The AR2200 complies with 3G standards including CDMA2000 EV-DO, WCDMA, and TD-SCDMA, meeting the wireless communication requirements between branches and the headquarters. Users can use a 3G USB disk to deploy 3G services on the AR2200, saving service card slots. In addition, the 3G data link can be used as a backup for wired link to protect the xDSL, FE/GE, ISDN, and CPOS uplinks. The backup link improves network stability and reduces network construction costs. The AR2200 provides the NQA function to detect 3G link quality, ensuring the SLA.

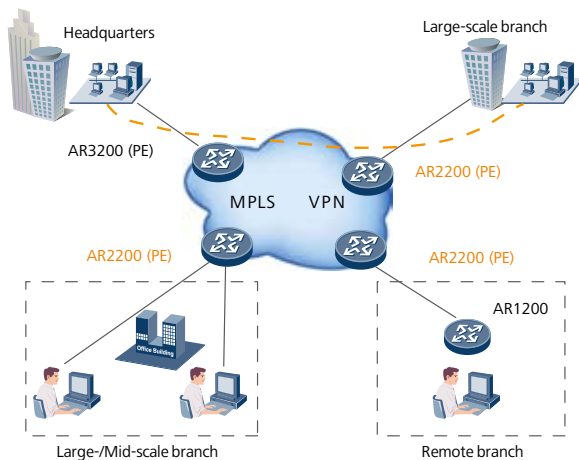
### 4, VPN in Branch

#### VPN over the Internet

The AR2200 provides various secure access functions to implement communication between enterprise branches and between branches and the headquarters, and to enable partners to access enterprise resources. Tunnels such as GRE VPN and IPSEC VPN are set up between the headquarters and branches to implement secure data access and transmission. The AR2200 implements fast tunnel deployment and authentication for branches. Using a tunnel, partners can access and share enterprise resources. The AR2200 provides authentication and authorization for users.



#### VPN over the MPLS network



As the PEs of an MPLS network, the AR2200s are located in the branches. Different types of services are separated by MPLS L3 VPN. The AR2200 implements flexible deployment, fast distribution, and secure transmission of VPN services, and supports enterprise service operation over networks.



## Technical Specifications

Item	AR2220	AR2240
Hardware		
Forwarding capacity	1 Mpps	2 Mpps (standard) 3.5 Mpps (enhanced)
WAN speed with services	75Mbps	150Mbps
Device switching capacity	32Gbps	80Gbps
Slot switching bandwidth	SIC & WSIC slots 2Gbps XSIC & EXSIC slots 20Gbps	
Fixed WAN ports	3*GE (one combo port)	3*GE (two combo ports)
SIC slots	4	4
WSIC slots (default/max**)	2/4	2/4
XSIC slots (default/max**)	0/2	2/4
EXSIC slot (shared with XSIC slots)	0	1
DSP slots	1	3
USB 2.0 ports	2	2
Mini-USB ports	1	1
Serial auxiliary/console port	1	1
Memory	2 GB	2 GB
Flash (default/max)	2 GB/4 GB	2 GB/4 GB
Max. power	150 W	350 W
AC voltage	100 V-240 V	100 V-240 V
Frequency	50 Hz/60 Hz	50 Hz/60 Hz
Dimensions (width x depth x height)	442 mm x 420 mm x 44.5 mm	442 mm x 470 mm x 88.1 mm
Weight	4.95KG (without power supply and interface cards)	8.85KG (without power supply and interface cards)
Ambient temperature	0°C-40°C	0°C-40°C
Relative humidity	5-90% (non-condensing)	5-90% (non-condensing)

Software	
Voice	RTP, SIP, SIP AG, IP PBX/TDM PBX, FXO/FXS, VoIP/conference call
3G	CDMA 2000 EV-DO Rev A, WCDMA, TD-SCDMA, individual 3G uplink/backup link
LAN	IEEE 802.1, IEEE 802.3, VLAN management, MAC address management, MSTP
IPv4 unicast routing	Routing policy, static route, RIP, OSPF, IS-IS, BGP
Multicast	IGMP version 1/2/3, IGMP-Snooping version 1/2/3, PIM SM, PIM DM, MSDP
MPLS	LDP, MPLS L3 VPN, static LSP, dynamic LSP
VPN	IPSec VPN, GRE VPN
QoS	MPLS 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 classifier, traffic behavior, and traffic policy), H-QoS, FR QoS
Security	ACL, firewall, 802.1x authentication, MAC address authentication, Web authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, URPF, IP Source Guard, DHCP snooping, CPCAR, blacklist, IP source tracing
Management and maintenance	Upgrade management, device management, Web network management system, GTL, SNMP, RMON, RMON2, NTP, CWMP, Auto-Config, deployment using USB disk, NetConf

\*\*Note: The maximum number of slots includes the number of combined slots.

## How to Configure

Before choosing an AR2200, determine the device model, cards, and software configurations.

- [Device model](#)

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

- [Card](#)

The AR2200 cards are classified into interface cards and DSP cards. The interface cards, 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 combined into one XSIC slot by removing the panel. The DSP card is inserted into the DSP slot and works together with the FXO/FXS/ISDN/VE1 voice card.

- [Software](#)

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

## Ordering Information



Model	Description
Host Configuration	
AR0M0022BA00	AR2220 Basic Configuration (Includes AR2220 Chassis, AC Power, with Basic Software and Document), 2GE WAN, 1GE Combo WAN, 2USB,2GB SD,4SIC, 2WSIC
AR0M0024BA00	AR2240 Basic Configuration (Includes AR2240 Chassis, AC Power, Service and Router Unit 40,with Basic Software and Document), 1GE WAN, 2GE Combo WAN, 2USB,2GB SD,4SIC, 2WSIC, 2XSIC
SIC Interface Module	
AR0MSDME1A00	1-Port Channelized E1/T1/PRI/VE1 Multiflex Trunk Interface Card
AR0MSDME2A00	2-Port Channelized E1/T1/PRI/VE1 Multiflex Trunk Interface Card
AR0MSDSA1A00	1-Port Sync/Async Serial WAN Interface Card
AR0MSEF2TA00	2-Port FE WAN Interface Card
AR0MSLA1XA00	1-port ADSL2+ ANNEX A/M WAN Interface Module
AR0MSLB1XA00	1-Port ADSL2+ ANNEX B WAN Interface Module
AR0MSLS1XA00	1-Port 4 Pair G.SHDSL WAN Interface Module
WSIC Interface Module	
AR0MWMF9TT00	8-Port 10/100BASE(RJ45) and 1-Port 10/100/1000BASE(RJ45)-L2/L3 Ethernet Interface Card
XSIC Interface Module	
AR0MXEGFTA00	24-Port 10/100/1000BASE(RJ45)-L2/L3 Ethernet Interface Card
SD Card & USB Disk	
N0MSD1G00	Storage Medium, Micro SD Card,2GB,2.7~3.6V,English SPEC, Support the Interface of the SD 1.1 Standard,11mm*15mm*1mm (L*W*T),No Adapter and Bar Code, Independence Box, Terminal Dedicated
N0MSD4G00	Micro SD card,4G CLASS6,2.7~3.6V,English SPEC, Compatible with SD Specification Ver.2.0,11mm*15mm*1mm (L*W*T),No Adapter and Bar Code, Independence Box, Terminal Dedicated
NUSBDSK01	Storage USB DISK,4GB,USB 2.0
Power Module	
AR01PSAC3500	350W AC Power Module

For more information, visit [www.huawei.com](http://www.huawei.com) or contact Huawei local sales office.

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