

Quidway® ARx9 Series Routers

Overview

The Quidway® ARx9 Series Multiple Service Routers are a brand new product portfolio oriented to multi-service applications, delivering wire speed and concurrent services of data, voice and video. To meet various demands of different industries, the ARx9 series provides customers with unique experience of network flexibility and agility. The ARx9 router series integrates adaptive services into a single platform with high security and reliability, thus lowering network cost and uncertainty.

The ARx9 router series adopts optimized hardware and software structure to guarantee embedded security and high performance while providing the services covering Voice over IP (VoIP), business video and network analysis, etc. By supporting more types of modules, the ARx9 features higher interface density and more services availability. In addition, the ARx9 adopts the most advanced VRP V5 software platform, providing abundant mainstream functions such as IPv6, MPLS TE, etc.

With newly developed modules of high performance and fully compatible with interface modules of AR28 and AR46, the ARx9 series gives more modern and novel applications while protecting customers' investment in an all-round way.

Currently, the ARx9 series comprises three sub-series: AR19, AR29 and AR49, meeting the demands of small and medium sized enterprises to large scale corporations in every industry.





AR29-21



AR29-41



AR49-45

AR19 serves as low end access router and comprises AR19-1X series routers and AR19-61. AR19-1X series routers include six models, which are AR19-10, AR19-10-W, AR19-13-I, AR19-13-IW, AR19-15-I and AR19-15-IW. AR19-1X series routers are business-class routers providing high bandwidth access, wireless, VoIP, VPN, QoS and firewall services, etc. for customers. With embedded hardware-based encryption chip, the AR19-61 greatly improves the security performance. In addition, the AR19 series support enhanced voice functions, further reducing customers' investment. Compatible with SIC (Smart Interface Card) modules of AR28 series, the AR19 series support enhanced newly developed SIC modules (LSW, GE, VE1, etc.) to meet more networking requirements.

AR29 serves as middle to low end access router and comprises three models: AR29-01, AR29-21 and AR29-41. The AR29-01 supports two types of abundant service modules, SIC and DSIC (Double-width SIC), while AR29-21/41 supports four types of abundant service modules, SIC, DSIC, MIM and DMIM (Double width double height), which help AR29 to realize convergence of routing and switching functions on a unified platform. Furthermore, with scalable voice processing modules, the AR29-21/41 can give much flexibility while protecting customers' investment.

AR49 comprises one model: AR49-45. The AR49-45 supports four types of abundant service modules, SIC, DSIC (Double-width SIC), FIC and DFIC (Double width FIC), which help to realize convergence of routing and switching on a unified platform. Furthermore, with scalable voice processing modules, the AR49-45 can give much flexibility while protecting customers' investment.

Key Features

◆ Advanced Hardware Architecture

- Embedded Service Modules for Security and Voice

The ARx9 adopts brand new hardware structure to support enhanced security and voice functions. By using embedded modules of VCPM (Voice Co-Processing Module) and VPM (Voice Processing Module), the voice functions have been greatly improved. VCPM achieves local TDM (Time Division Multiplexing) while VPM serves as a Digital Signal Processor (DSP) to provide voice communication. The voice module supports mainstream voice protocols such as SIP, etc. Moreover, different VPMs are available in according to the number of supported telephone lines. Therefore, it is quite flexible for the users to configure voice functions, thus reducing the investment. For security, embedded hardware encryption modules are provided. The ARx9 supports two types of encryption card for users to select: SNDE (Standard Network Data Encryption) card and ANDE (Advance Network Data Encryption) card.

- CF Card & USB Interface

Considering security and future application, the ARx9 adopts Compact Flash (CF) card and Universal Serial Bus (USB) interface. CF card is used to replace built-in FLASH. CF card features high speed, large capacity, light weight, low power consumption, easy upgrade, etc. USB is a universal standard interface, with which routers will enjoy many powerful functions. The ARx9 supports USB memory disk to download and upload configuration files. In the future, the ARx9 will support e-token and other more advanced and practical applications such as USB console, etc.

◆ Brand New Software Architecture

The ARx9 adopts the VRP V5 network operating platform, on which ARx9 fully supports the previous software features of AR18, AR28 and AR46 Series. In addition, this unified platform provides the backup solution based on the backup center technology and VRRP, supports MPLS L3/L2 VPN and ADSL access, PPPoE Server/Client and IP multicast and offers abundant Quality of Service (QoS) features, etc. Meanwhile, the VRP V5 operating platform supports IPv6, MPLS TE and other abundant features.

- IPv6

By using VRP V5 software platform, the ARx9 supports the cutting edge technology of IPv6. As a fundamental of the next-generation network, IPv6 is widely recognized with its striking technical advantages. Major IPv6 features of ARx9:

- ✓ Support the IPv6 addresses
- ✓ Support IPv6 Neighbor Discovery
- ✓ Support IPv6 Path MTU
- ✓ Support the IPv6 ACL
- ✓ Support the IPv6 routing protocols
- ✓ Support evolution from IPv4 to IPv6
- ✓ NAT-PT (Network Address Translation-Protocol Translation)
- ✓ Packet and message translation
- ✓ IPv6-IPv4 tunnel

- MPLS TE

MPLS TE is a QoS technology based on the Int-Serv model. By integrating the traffic engineering and MPLS technologies, it can establish the LSP tunnel to a specified path, make resources reservation and enable the network traffic to bypass the congestion nodes, thus balancing the network traffic. Therefore, ARx9 makes more flexible use of the QoS technology in the MPLS network.

- Powerful Forwarding Performance & Encryption Capacity

The IP packet forwarding performance is a key parameter for evaluating a router. The ARx9 adopts advanced technologies to ensure rapid forwarding in the multiple concurrent services situation. The ARx9 not only provides fast forwarding on various high-speed link interfaces, but forwards packets rapidly in collaboration with the QoS and firewall functions. The ARx9 uses ESM (Enhanced Service Module) security module to improve encryption performance. ESM is a built-in card, which doesn't occupy service slot.

- ◆ **Multi-Service Integration & Concurrence**

For enterprises of different sizes, the ARx9 can be used to build the network that integrates data, video and VoIP services on a single platform. The single platform offers a higher integrated density of data and voice, developing the enterprise IP voice application into a new stage. Compared with the routers of same level, ARx9 improves dramatically in terms of the forwarding performance, security performance and voice performance.

- **Voice Services**

The ARx9 supports the mainstream VoIP protocols such as SIP, etc. By adopting scalable embedded voice processing modules, the ARx9 provides high density multiple interface modules for the VoIP applications, such as FXS/FXO/E&M/E1 digital voice, etc.

- **Complete Convergence of Routing and Switching**

The newly developed modules support high density switching. In particular, the ARx9 supports the 4/9-port SIC switching modules. The Ethernet switching modules support relatively sound L2 Ethernet switch features and relevant protocols, for instance, VLAN, MAC address management, STP, port trunking LACP, 802.1X, QoS/ACL, etc.

- **Comprehensive VPN and Security Features:**

In addition to the traditional VPN and security features such as L2TP VPN, GRE VPN, RADIUS, ASPF (Application Specific Packet Filtering), Portal, etc, the VRP V5 software platform further expands and improves VPN and security features such as Firewall, IPsec VPN, MPLS VPN, CA, Secure Shell (SSH) protocol 2.0, intrusion protection, SNMPv3, etc.

- **WLAN Supported**

In addition to providing network access for small-sized enterprises and branches, AR 19-1X series routers also support WLAN access. They conform to 802.11b/g and can meet diversified network access requirements of wireless users. With the presence of AR 19-1X routers, the comprehensive access capability of this series of routers is improved dramatically.

- ◆ **Investment Protection**

Considering customers' investment and based on the concept of investment protection, the ARx9 is designed with high performance price ratio. While compatible with the former SIC modules of AR28, users can achieve significant and smooth upgrade with relatively cost-effective investment. In addition, the ARx9 provides high default hardware configuration, for example, the memory, the CF card capacity, etc.

- ◆ **High Reliability**

The ARx9 provides the Backup Center and VRRP technologies, ensuring the provision of the backup scheme in case of communication line failure or equipment failure. In this way, smooth data communication is ensured and the robustness, reliability of the network is enhanced. The backup center supports the backup load sharing function.

◆ Easy Maintenance and Efficient Deployment

- Auto-config

Can automatically detect and configure all interfaces upon their first use and starts Telnet, FTP, or Web service.

- Easy deployment

Based on Auto-config and Serial Number for each router, ARx9 can realize the branch devices zero-touch and centralized management by the central management system.

- Configuration rollback

If any error occurs during the configuration deploying process, the device will inform the NMS and the configuration file will get rollback, which ensures the reliability of configuration deployment.

- NetStream

Can provide the packet statistics function. It differentiates traffic flows through the destination IP address, source IP address, destination port Number, source port Number, protocol ID, ToS, input/output interface of packets and makes independent data statistics for different flows.

- NQA

Delivers network quality analysis function, detecting the state and service type of DHCP, FTP, HTTP or SNMP servers, realizing the service status monitoring and network quality analysis.

Specification

Item	AR19	AR29-01	AR29-21	AR29-41	AR49-45
Number of Fixed Ethernet Ports	2 10/100M FE		2 GE	2 GE Combo	
Modular Slots	2 SIC slots (AR19-61) 1 SIC/DSIC (AR19-1X)	4 SIC slots	4 SIC slots 2 MIM slots	4 SIC slots 4 MIM slots	4 SIC slots 4 FIC slots
ESM Slots	1 (AR19-61)	2			
VPM Slots	1 (AR19-13-IW/15-IW)	2		3	4
WLAN	AR19-10-W/13-IW/ 15-IW Support	Not support			

Fixed USB Ports	1 (AR19-61 USB1.1) 1 (AR19-1X USB2.0)	1 (USB1.1)	2 (USB1.1)		
Auxiliary Port	1				
Console Port	1				
Hardware Encryption	AR19-61(SNDE/ANDE)	Support (SNDE/ANDE)			
Memory Capacity (default/maximum)	256MB/384MB (SDRAM)		256MB/1GB (DDR)		512MB/1GB (DDR)
CF (default/maximum)	256MB/1GB				
Forwarding Performance	110~160 Kpps	130~160 Kpps	180~200 Kpps	220~240 Kpps	600 Kpps
AC Input Voltage	100~240V AC; 50/60 Hz				
DC Input Voltage	-	-	-	-	-48 ~ -60V DC
Dimension (mm) (WxDxH)	360x287.1x44.2 (AR19-61) 300x240x44.2 (AR19-1X)	442x407.1x44.2	442x441.8x44.2	442x422.3x88.2	442x424x130.7
Weight	3kg	6kg	6.5kg	8kg	18kg
Max. Power Consumption	54W (AR19-61) 25W (AR19-1X)	100W	125W	210W	350W
Operating Temperature	32 to 104°F (0~40°C)				
Operating Humidity	5~90% (non-condensing)				
EMC	ETSI EN 300 386 V1.3.1 (2001-09) EN 55022(1998) EN 55024 (1998) FCC Part15 ICES-003 VCCI V-3 AZ/NZS CISPR22 CNS 13438				
Security specification	UL 60950 3rd Edition CSA 22.2#950 3rd Edition 1995 EN 60950: 2000 + ZB & ZC deviations for European Union LVD Directive IEC 60950:1999 + corr. Feb. 2000, modified + all National deviations				
IPv4	Static routing, RIP, IS-IS, OSPF, BGP				
IPv6	RIPng, OSPFv3, BGP4+, IS-ISv6, IPv6-IPv4 tunnel				
Multicast	Static multicast routing, PIM, MSDP, IPv6 Multicast				
MPLS	MPLS TE, RSVP TE, MPLS L2 VPN(Martini/Kompella), MPLS/BGP VPN				
QoS	CAR, GTS, MPLS QoS, PQ, WFQ, CBQ, DS-TE, WRED				

Order Information

Name	Description
AR19 Host	
RT-AR1910-AC-OVS	AR 19-10 Router Host(AC), 1 FE,4 LSW,1 DSIC, Overseas Version
RT-AR1910-AC-OVS-W	AR 19-10 Router Host(AC) with 802.11b/g, 1 FE, 4 LSW, 1 DSIC, Overseas Version
RT-AR1913-AC-OVS-I	AR 19-13 Router Host(AC), 1 FE, 4 LSW, 1 G.SHDSL(4-wire), ISDN BRI S/T Backup, 1 DSIC, Overseas Version
RT-AR1913-AC-OVS-IW	AR 19-13 Router Host(AC) with 802.11b/g, 1 FE, 4 LSW, 1 G.SHDSL(4-wire), ISDN BRI S/T Backup, 1 DSIC, Overseas Version
RT-AR1915-AC-OVS-I	AR 19-15 Router Host(AC), 1 FE, 4 LSW, 1 ADSLoPOTS, ISDN BRI S/T Backup, 1 DSIC, Overseas Version
RT-AR1915-AC-OVS-IW	AR 19-15 Router Host(AC) with 802.11b/g, 1 FE, 4 LSW, 1 ADSLoPOTS, ISDN BRI S/T Backup, 1 DSIC, Overseas Version
RT-AR1961-AC-OVS	AR19-61 Router Host (AC), 2FE, 2SIC, Overseas Version
AR29 Host	
RT-AR2901-AC-OVS	AR29-01 Router Host (AC), 2FE, 4SIC, Overseas Version
RT-AR2921-AC-OVS	AR29-21 Router Host (AC), 2GE, 2MIM, 4SIC, Overseas Version
RT-AR2941-AC-OVS	AR29-41 Router Host (AC), 2GE, 4MIM, 4SIC, Overseas Version
AR49 Host	
RT-AR4945-AC-OVS	AR49-45 Router Chassis (w/One AC Power), 4FIC, Overseas Version
RT-AR4945-DC-OVS	AR49-45 Router Chassis (w/One DC Power), 4FIC, Overseas Version
RT-MPUF	AR49-45 Main Processing Unit, 2GE, 4SIC
RT-MSCA	AR49-45 Multiple Service Module
AC-PSR350-A10-OVS	Redundant AC Power for AR49-45
DC-PSR350-D10	Redundant DC Power for AR49-45
Embedded Security & Voice Module	
RT-ESM-ANDE	Advanced Network Data Encryption ESM Module
RT-ESM-SNDE	Standard Network Data Encryption ESM Module
RT-VCPM	Voice Co-processing Module
RT-VPM32	32-Channel Voice Processing Module
RT-VPM24	24-Channel Voice Processing Module
RT-VPM16	16-Channel Voice Processing Module
RT-VPM8	8-Channel Voice Processing Module
SIC & DSIC Module	
RT-SIC-2BSV	2-Port ISDN-S/T Voice Interface SIC Module
RT-SIC-2FXS1FXO	2FXS+1FXO Voice Interface SIC Module

RT-SIC-1FEF	1-Port 100M SFP Interface SIC Module
RT-SIC-1BS-V2	1-port ISDN-BRI Card, S/T V2
RT-SIC-2BS-V2	2-port ISDN-BRI Card, S/T V2
RT-SIC-1BU-V2	1-port ISDN-BRI Card, U V2
RT-SIC-1FEA	1-port 10/100BASE-TX Ethernet Interface Card
RT-SIC-1GEC	1-port Gigabit Ethernet SIC (Combo)
RT-SIC-4FSW	4-port 10/100M Ethernet Switch SIC Interface Module
RT-DSIC-9FSW	9-port 10/100M Ethernet Switch SIC Interface Module (Double Width)
RT-SIC-1VE1	1-port E1 Voice SIC Interface Module
RT-SIC-1FXS-V2	1-port Analog Trunk Interface Card, FXS-V2
RT-SIC-2FXS-V2	2-port Analog Trunk Interface Card, FXS-V2
RT-SIC-1FXO-V2	1-port Analog Line Interface Card, FXO-V2
RT-SIC-2FXO-V2	2-port Analog Line Interface Card, FXO-V2
RT-SIC-1SAE	1-port Enhanced Sync/Async Interface Card
RT-SIC-EPRI	1-port E1/CE1/PRI Interface Card
RT-SIC-1E1-F	1-port E1 Interface Card-Fractional
RT-SIC-1ADSL-I	1-Port ADSL2+ over ISDN Interface Module
RT-SIC-1ADSL	1-Port ADSL2+ over POTS Interface Module
RT-SIC-1AM-V3	1-Port Analog Modem Interface Module
RT-SIC-2AM-V3	2-Port Analog Modem Interface Module
MIM & DMIM Module	
RT-MIM-1VE1	1-port E1 Voice MIM Interface Module
RT-MIM-2VE1	2-port E1 Voice MIM Interface Module
RT-MIM-16FSW	16-port 10/100M Ethernet Switch MIM Interface Module
RT-MIM-1FE-V2	1-Port 10/100M Ethernet Electrical Interface MIM Module (RJ45)
RT-MIM-2FE-V2	2-Port 10/100M Ethernet Electrical Interface MIM Module (RJ45)
RT-1GBE	1-port 10/100/1000BASE-T Ethernet Electrical Interface Module, RJ45
RT-1GEF	1-port 1000BASE-X Optical Interface Module (SFP, LC)
RT-2SAE	2-port Enhanced Sync/Async Interface Module
RT-4SAE	4-port Enhanced Sync/Async Interface Module
RT-8SAE	8-port Enhanced Sync/Async Interface Module
RT-8ASE	8-port Asynchronous Serial Interface Module, RJ45
RT-16ASE	16-port Asynchronous Serial Interface Module, RJ45
RT-MIM-1E1-V2	1-Port CE1/PRI Interface Module
RT-MIM-2E1-V2	2-Port CE1/PRI Interface Module

RT-MIM-4E1-V2	4-Port CE1/PRI Interface Module
RT-MIM-8E1(75)	8-Port E1/CE1/PRI Module (75ohm)
RT-MIM-1E1-F-V2	1-Port E1 & Fractional E1 Interface Module
RT-MIM-2E1-F-V2	2-Port E1 & Fractional E1 Interface Module
RT-MIM-4E1-F-V2	4-Port E1 & Fractional E1 Interface Module
RT-MIM-8E1(75)-F	8-Port E1 Module-Fractional (75ohm)
RT-MIM-2FXS-V2	2-Port Analog Line Interface Module,FXS-V2
RT-MIM-4FXS-V2	4-Port Analog Line Interface Module,FXS-V2
RT-MIM-4FXO-V2	4-Port Analog Trunk Interface Module,FXO-V2
RT-MIM-4BSE	4-port Enhanced ISDN-BRI Module, S/T
RT-MIM-HNDE	High Performance Network Data Encryption Module
RT-MIM-1POS	1-Port Packet over SDH/SONET Interface Module
RT-1CPOS(E)	1-Port Channelized POS 155M to E1 Interface Module (SFP)
RT-1G.SHDSL	1-Port G.SHDSL Interface Module,RJ11
RT-MIM-2EM	2-Port Analog Trunk Interface Module, E&M
RT-MIM-4EM	4-Port Analog Trunk Interface Module, E&M
RT-DMIM-24FSW	24-port 10/100M Ethernet Switch MIM Interface Module (Double Width)
FIC & DFIC Module	
RT-FIC-1VE1	1-port E1 Voice FIC Interface Module
RT-FIC-2VE1	2-port E1 Voice FIC Interface Module
RT-FIC-16FSW	16-port 10/100M Ethernet Switch FIC Interface Module
RT-FIC-1FE-V2	1-Port 10/100M Ethernet Electrical Interface FIC Module(RJ45)
RT-FIC-2FE-V2	2-Port 10/100M Ethernet Electrical Interface FIC Module(RJ45)
RT-FIC-1GBE-V2	1-Port 1000M Ethernet Electrical Interface FIC Module(RJ45)
RT-FIC-2GBE-V2	2-Port 1000M Ethernet Electrical Interface FIC Module(RJ45)
RT-FIC-1GEF-V2	1-port 1000BASE-X Optical Interface Module (SFP, LC)
RT-FIC-2GEF-V2	2-port 1000BASE-X Optical Interface Module (SFP, LC)
RT-FIC-2SAE-V2	2-port Enhanced Sync/Async Interface Module
RT-FIC-4SAE-V2	4-port Enhanced Sync/Async Interface Module
RT-FIC-8SAE-V2	8-port Enhanced Sync/Async Interface Module
RT-FIC-8ASE-V2	8-port Asynchronous Serial Interface Module (RJ45)
RT-FIC-16ASE-V2	16-port Asynchronous Serial Interface Module (RJ45)

RT-FIC-1E1-V3	1-Port CE1/PRI Interface Module
RT-FIC-2E1-V3	2-Port CE1/PRI Interface Module
RT-FIC-4E1-V3	4-Port CE1/PRI Interface Module
RT-FIC-8E1(75)-V2	8-port E1/CE1/PRI Module (75ohm)
RT-FIC-2E1-F-V3	2-port E1 Module-Fractional
RT-FIC-4E1-F-V3	4-port E1 Module-Fractional
RT-FIC-8E1(75)-F-V2	8-port E1 Module-Fractional (75ohm)
RT-FIC-1CE3-V2	1-port E3/CE3 Compatible Interface Module
RT-FIC-4FXS-V3	4-port Analog Line Interface Module, FXS
RT-FIC-4FXO-V3	4-port Analog Trunk Interface Module, FXO
RT-FIC-1POS-V2	1-Port Packet over SDH/SONET Interface Module
RT-FIC-1CPOS(E)-V2	1-Port Channelized POS 155M to E1 Interface Module (SFP, LC)
RT-FIC-1ATM-OC3MM-V2	1-Port OC-3 ATM FIC Module (Multi-Mode, SC, 2km)
RT-FIC-1ATM-OC3SML-V2	1-Port OC-3 ATM FIC Module (Single Mode, SC, 30km)
RT-FIC-1ATM-OC3SM-V2	1-Port OC-3 ATM FIC Module (Single Mode, SC, 15km)
RT-FIC-1AE3-V2	1-Port ATM over E3 Interface FIC Module
RT-DFIC-24FSW	24-port 10/100M Ethernet Switch FIC Interface Module (Double Width)