HPE Aruba Networking 9000 Series Gateway

Versatile, cost-effective branch networking, SD-WAN, and security

Key features

- Cloud-managed and purpose-built for branch SD-WAN requirements
- Unified policy enforcement for wired and wireless traffic with Dynamic Segmentation
- Visibility into over 3,800 applications with no added hardware
- Integrated LTE option available
- Flexible consumption with advanced subscription licenses

HPE Aruba Networking 9000 Series Gateways provide high-performance networking, SD-WAN and security functionality in compact and cost-effective form factors. Ideally suited for branch and small campus networks, the 9000 Series Gateways serve a key role within HPE Aruba Networking's SD-Branch solution, which unifies WLAN, LAN, SD-WAN and security for distributed enterprises.

The HPE Aruba Networking 9000 Series can be easily configured and managed using HPE Aruba Networking Central, a cloud-based network operations, assurance and security platform. On-site deployment is accomplished with a simple mobile installer application.

High performance and reliability

For distributed enterprises with increasing performance and bandwidth needs, the 9000 Series is designed with scale and flexibility, and equipped with plenty of horsepower at a competitive price-point.

This series provides connectivity for up to 2,048 users or client devices at up to 6 Gbps of firewall throughput.

For enhanced resiliency and high availability, the multiple HPE Aruba Networking 9000 Series can be clustered together at each branch.

Flexible consumption

The gateway supports WLAN and SD-WAN deployments with HPE Aruba Networking Central subscription licenses. HPE GreenLake for Networking can help with the transition to a subscription-based network consumption model.

IoT and integration ready

The HPE Aruba Networking 9000 Series includes flexible connectivity options:

- 4xGbE — 9004/9004-LTE
- 12xGbE (6xPoE+) — 9012
- USB 3.0 ports
- IoT Radio that supports BLE technologies
- Integrated LTE connectivity — 9004-LTE

The gateway also uses integrated device profiling to improve client visibility, and works with HPE Aruba Networking Central, ClearPass Policy Manager or ClearPass Device Insight to provide advanced user, device and IoT policy management and insights.

SD-WAN deployment

For organizations that are now managing multiple WAN connections, HPE Aruba Networking 9000 Series can be connected to HPE Aruba Networking's SD-WAN fabric right out of the box. SD-WAN is a rich WAN management solution that is used to simplify management of traffic entering and exiting branch sites.

Role-based intrusion detection and prevention (IDS/IPS), Dynamic Segmentation, and stateful firewall deliver integrated security requirements. Please refer to the SD-WAN data sheet for more information.

Branch and campus deployment

HPE Aruba Networking 9000 Series can also be re-purposed as mobility controllers to provide WLAN and LAN services such as Dynamic Segmentation, stateful firewall and Live Upgrades. In this mode, the HPE Aruba Networking 9000 Series cannot simultaneously be used for SD-WAN.

Integrated LTE

The 9004-LTE has an integrated LTE module that can use high speed LTE as a dedicated or redundant WAN uplink. The LTE operations are managed via HPE Aruba Networking Central.

Dynamic segmentation and policy enforcement

Protecting and delivering network access across enterprise branch and campus sites is critical and complex. To improve security and simplify management, Dynamic Segmentation eliminates the time consuming and error-prone task of managing complex and static VLANs, ACLs, and subnets by dynamically assigning policies and keeping traffic secure and separated. IT can centrally configure with automatic enforcement of role-based policies that define proper access privileges for employees, guests, contractors, and other user groups — no matter where users connect on wired and WLANs. Additionally, the HPE Aruba Networking 9000 Series relies on a built-in Layer 4–7 stateful firewall known as the policy enforcement firewall (PEF). It streamlines policy management by working across WLAN, LAN, and WAN and policies are automatically enforced to simplify SSID, VLAN and policy management.

Microsoft features

HPE Aruba Networking's integration with Microsoft enables unique application intelligence that detects Microsoft 365 (Office 365), traffic and prioritizes over less critical applications. IT can visualize call quality metrics such as MOS, latency, jitter, and packet loss for additional insights.

Enhanced capabilities

Policy Enforcement Firewall
HPE Aruba Networking 9000 Series includes a Layer 4-7 stateful firewall with PEF to deliver a consistent user, device, and application awareness across WLAN,

LAN, and WAN. When deployed alongside HPE Aruba Networking ClearPass Policy Manager, policies are automatically enforced to simplify SSID, VLAN and policy management.

Threat Defense with IDS/IPS
To improve security against a growing attack surface, gateways deployed in SD-WAN mode add role and identity-based intrusion detection and prevention capabilities (IDS/IPS) on top of existing security features. The threat defense function is further augmented with one-click integration with third-party cloud-based security solutions.

Application visibility and control
Deep Packet Inspection (DPI) technology, which is a component of PEF, consistently evaluates and optimizes performance and usage policies for over 3,800 applications. This ensures the highest possible Quality of Service (QoS) — even for encrypted traffic.

High availability
This series can be deployed with N+1 or NxN redundancy, and can also join a controller cluster when deployed as a mobility controller managed by HPE Aruba Networking Mobility Conductor. This increases performance and scale for enhanced resiliency.

Simple to use, mobile provisioning
Allows on-site personnel to use a mobile app to onboard gateways. A central IT team can verify device location, licenses, and status with no additional steps required.

Unified Communications and Collaboration (UCC)
Visualize and troubleshoot networks based on call quality metrics such as MOS, latency jitter and packet loss. Supported applications include Teams, Wi-Fi Calling, FaceTime, SIP, Jabber, Spark and more.

Streaming API

Enables you to subscribe to a select set of topics, instead of polling the NB API to get continuous state and stats messages. Also enables you to write value-added applications based on the aggregated context.

Figure 1. 9004 Gateway

Figure 2. 9004-LTE Gateway

Figure 3. 9012 Gateway

HPE Aruba Networking Central NetConductor

Enables the creation of EVPN/VXLAN overlays with an intuitive, graphical user interface to streamline the adoption of role-based access policies and Dynamic Segmentation at global scale with distributed enforcement.

AIOps for IT efficiency

AI-powered HPE Aruba Networking Central insights for improved troubleshooting and optimization with AI Search, AI Insights, and AI Assist.

Technical specifications

	9004	9004-LTE	9012
Interfaces	4x GbE[1]	4x GbE + 4G cellular	12x GbE
Power over Ethernet	x	x	120W
Firewall throughput (Gbps)	4	4	6
Encrypted throughput GRE (Gbps)	4	4	6
Encrypted throughput AES-CBC-128 (Gbps)	4	4	4
Encrypted throughput AES-CBC-256 (Gbps)	4	4	4
Encrypted throughput AES-GCM-128 (Gbps)	4	4	6
Encrypted throughput AES-GCM-256 (Gbps)	4	4	6

[1] The 9004 was originally released (8.5) to operate in an Auto/Auto configuration. A software fix was introduced in 8.7.1.5, 8.8.0.2, 10.2.0.3, and SDWAN-2.3.0.2, which allows users to configure the speed and duplex of the interfaces on the 9004 to: Auto/Auto, 1000/Full, or 100/Full.

Speed Configuration

The 9004 Interface speed can now be set to Auto/1000/100.

Full Duplex Configuration

9004 Interface = Auto

Partnering Device Duplex Configuration = Full

Partnering Device Auto Negotiation = Enabled

AOS-10 specifications

	9004	9004-LTE	9012
Minimum supported software version		AOS 10.4	
Cluster size	4	4	4
Maximum clients (User MAC)	2K	2K	2K
Maximum clients per cluster	8K	8K	8K
Maximum devices (APs)	128	128	256
Maximum devices (APs) per cluster	512	512	768
Maximum datapath/firewall sessions	128K	128K	128K
Maximum bridge table	64K	64K	64K
Firewall session creation rate (1000 sessions per sec)	130	130	130
L2 VLANs	4K	4K	4K
L3 VLANs (IPv4 interfaces)	128	128	128
L3 VLANs (IPv6 interfaces)	128	128	128
Concurrent IPSec tunnels	2K	2K	2K
ARP	2K	2K	2K
Maximum DHCP clients	4K	4K	4K
IPv4 static routes	2K	2K	2K
IPv6 neighbors	7K	7K	7K
IPv6 static routes	577	577	577
Maximum OSPF routes	8K	8K	8K
ACLs	2678	2678	2678
Configurable bandwidth contracts	1024	1024	1024

AOS-8 specifications

	9004	9004-LTE	9012
Minimum supported software version	AOS 8.5	Not supported	AOS 8.7
Cluster size	4		4
Maximum campus or Remote Access Points	32		64[1]
Maximum concurrent users	2K		2K
Maximum BSSIDs	512		512
Maximum datapath/firewall sessions	64K		64K
Maximum bridge table	64K		64K
IPv4 static routes	2K		2K
IPv6 neighbors	7K		7K
IPv6 static routes	577		577
Maximum VLANs	4K		4K
Concurrent IPSec sessions	2K		2K
Concurrent SSL sessions	2K		2K
Concurrent GRE tunnels	544		544
Maximum IAP-VPNs	129		129
Maximum DHCP clients	2K		2K

[1] On software versions lower than AOS 8.12, the 9012 will only support 32 APs

Interfaces and indicators

Features	9004/9004-LTE	9012
Form factor/footprint	Desktop/fanless[2] Optional mount rack tray	Rack mount
100/1000BASE-T	4	12 (6x PoE+ ports)
Bluetooth 5	Yes	Yes
USB 3.0 Type-A	1	2
System status LED	Yes	Yes
WAN ports status LED	Yes	Yes
LAN ports status LED	Yes	Yes
Gateway mode LED	Yes	Yes
Central connectivity status LED[1]	Yes	Yes
Cellular (LTE) status LED	Yes	Yes
Console port	micro-USB, RJ45	micro-USB, RJ45

[1] LED utilized by the SD-WAN solution

[2] 1RU can support two 9004 gateways side-by-side using an optional mount kit

Integrated LTE

Available on the 9004-LTE only

Downlink/uplink speed	600/150 Mbps
LTE category	12
Connectors	2xSMA connectors for main and diversity antenna 1xSMA connector for GPS antenna

Bands supported

Regions supported	Global Worldwide LTE-A and UMTS/HSPA+ coverage
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B21/B25/B26/B28/B29/B30/B32/B66
LTE-TDD	B38/39/B40/B41
2 x CA	B1+B3/B5/B18/B19/B20/B21/B26; B2+B2/B4/B5/B12/B13/B17/B29/B30/B66; B3+B3/B5/B7/B8/B19/B20/B28; B4+B4/B5/B12/B13/B17/B29/B30; B5+B7/B25/B30/B66; B7+B7/B20/B28; B12+B25/B30; B13+B66; B20+B32; B25+B25/B26/B41; B29+B30; B38+B38; B40+B40; B41+B41; B66+B66
3 x CA	DL inter-band 3CA: B1+B3+B7; B1+B3+B19; B1+B3+B20; B1+B19+B21; B2+B4+B5; B2+B4+B13; B2+B5+B30; B2+B12+B30; B2+B29+B30; B3+B7+B20; B3+B7+B28; B4+B5+B30; B4+B12+B30; B4+B29+B30; B5+B66+B2; B13+B66+B2 DL 2 contiguous plus inter-band 3CA: B2+B2+B5; B2+B2+B13; B3+B3+B7; B3+B7+B7; B3+B3+B20; B4+B4+B5; B4+B4+B13; B5+B66+B66; B13+B66+B66; B66+B66+B2; B66+B66+B66
UMTS	B1/B2/B3/B4/B5/B8/B19
Certifications	CE/FCC/IC/NCC/RCM/GCF/PTCRB/ICASA/WHQL AT&T, Verizon, T-Mobile

Physical

	9004/9004-LTE	9012
Dimensions (H x W x D)	3.82 cm x 19.85 cm x 15.31 cm (1.5" x 7.815" x 6.03")	4.37 cm x 39.5 cm x 26.00 cm (1.72" x 15.55" x 10.24")
Weight	1.143 kg (2.519 lbs)	3.42 kg (7.54 lbs)

Environmental range

Specification	9004/9004-LTE	9012
Operating temperature	0°C to 40°C (32°C to 104°F)	0°C to 40°C (32°C to 104°F)
Storage temperature	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)
Operating humidity	10% to 90% (RH), non-condensing	10% to 90% (RH), non-condensing
Storage humidity	10% to 95% (RH), non-condensing	10% to 95% (RH), non-condensing
Operating altitude	10,000 feet	10,000 feet
Acoustic noise	0 dBA (fanless)	29.1–63.5 dBA
Cooling	Conduction cooling	Forced cooling
Maximum power consumption	25W (with USB)	160W (with 120W of PoE)
Power source	12v DC, 2.5A AC-to-DC power adapter	Internal Power Supply 90VAC–264VAC 47-63Hz 3A at 100Vrms

Power adapter specifications

Features	9004/9004-LTE
Input voltage range	90 VAC to 264 VAC
Output voltage	+12VDC, 2.5A
Input frequency	47–63 Hz
AC line input current (steady state)	1.0A
Operating temperature	-0° to +40°C
Cooling	–
Weight	0.28 kg (.61 lbs)

Regulatory and safety compliance

Description	9004/9004-LTE	9012
Minimum supported software version		
AOS-10	AOS 10.3.1.1 (SSR) AOS 10.3.1.1 (SSR)	AOS 10.3.1.1 (SSR) AOS 10.3.1.1 (SSR)
AOS-8 (WLAN gateway mode)	9004: 8.5.0.5 9004-LTE: Not Supported	8.7.1.1 or 8.8.0.0
SD-Branch	9004: SD-WAN R1.7 and Central 2.5.x in SD-WAN mode 9004-LTE: SD-WAN R2.2.0.2 or R2.3.0.0 and Central 2.51.x in SD-WAN mode	SD-WAN R2.2.0.2 or R2.3.0.0 and Central 2.5.x in SD-WAN mode
Regulatory SKU information	ARCN9004/ARCN9004LTE	ARCN9012
Safety certifications	UL 60950-1 Second Edition	UL 60950-1 Second Edition
	CAN/CSA-C22.2 No. 60950-1 Second Edition	CAN/CSA-C22.2 No. 60950-1 Second Edition
	EN 60950-1 Second Edition	EN 60950-1 Second Edition
	EN 60950:2005	EN 60950:2005
	IEC 60950-1 Second Edition	IEC 60950-1 Second Edition
	EN/IEC 62368-1 2nd Edition	EN/IEC 62368-1 2nd Edition
	NOM (obtained by partners and distributors)	NOM (obtained by partners and distributors)
Electromagnetic emissions certifications	FCC Part 15 Class B	FCC Part 15 Class A
	CISPR32 Class B	CISPR32 Class A
	EN55032 Class B	EN55032 Class A
	ICES-003 Class B	ICES-003 Class A
	EN61000-3-2	EN61000-3-2
	EN61000-3-3	EN61000-3-3
	EN55024, EN301 489-1/-17, EN301 489-52 (9004-LTE)	EN55024, EN301 489-1/-17
	KN32 Class B, KN35, KN301 489-1/-17, KN301 489–52 (9004-LTE)	KN32 Class A, KN35, KN301 489-1/-17
	CNS13438 Class B	CNS13438 Class A
Telco	Common Language Equipment Identifier (CLEI) Code	Common Language Equipment Identifier (CLEI) Code
Wireless certifications	FCC/ISED	FCC/ISED
	RED Directive 2014/53/EU	RED Directive 2014/53/EU
	Others: MIC, NCC, ANATEL, COFTEL, CCC	Others: MIC, NCC, ANATEL, COFTEL, CCC

Service and warranty information

- Hardware: 1-year parts/labor, can be extended with support contract
- WLAN Gateway Software: 90 days, can be extended with support contract

Ordering information

Part number	Description
HPE Aruba Networking 9004 Gateway	
R1B20A	HPE Aruba Networking 9004 (US) Gateway – 4xGbE, 2K Clients, 32 APs
R1B21A	HPE Aruba Networking 9004 (RW) Gateway – 4xGbE, 2K Clients, 32 APs
R1B22A	HPE Aruba Networking 9004 (JP) Gateway – 4xGbE, 2K Clients, 32 APs
R1B23A	HPE Aruba Networking 9004 (IL) Gateway – 4xGbE, 2K Clients, 32 APs
R1B24A	HPE Aruba Networking 9004 (EG) Gateway – 4xGbE, 2K Clients, 32 APs
R1B25A	HPE Aruba Networking 9004 (US) TAA Gateway – 4xGbE, 2K Clients, 32 APs
R1B26A	HPE Aruba Networking 9004 (RW) TAA Gateway – 4xGbE, 2K Clients, 32 APs
R1B27A	HPE Aruba Networking 9004 (JP) TAA Gateway – 4xGbE, 2K Clients, 32 APs
R1B28A	HPE Aruba Networking 9004 (IL) TAA Gateway – 4xGbE, 2K Clients, 32 APs
R1B29A	HPE Aruba Networking 9004 (EG) TAA Gateway – 4xGbE, 2K Clients, 32 APs
HPE Aruba Networking 9004-LTE Series Gateway	
R3V91A	HPE Aruba Networking 9004 (US) 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V90A	HPE Aruba Networking 9004 (RW) 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V89A	HPE Aruba Networking 9004 (JP) 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V88A	HPE Aruba Networking 9004 (IL) 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V87A	HPE Aruba Networking 9004 (EG) 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V96A	HPE Aruba Networking 9004 (US) TAA 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V95A	HPE Aruba Networking 9004 (RW) TAA 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V94A	HPE Aruba Networking 9004 (JP) TAA 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V93A	HPE Aruba Networking 9004 (IL) TAA 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
R3V92A	HPE Aruba Networking 9004 (EG) TAA 4-Port GbE Branch Gateway, 2K Clients - CAT 12 LTE
HPE Aruba Networking 9012 Series Gateway	
R1B31A	HPE Aruba Networking 9012 (US) Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B32A	HPE Aruba Networking 9012 (RW) Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B33A	HPE Aruba Networking 9012 (JP) Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B34A	HPE Aruba Networking 9012 (IL) Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B35A	HPE Aruba Networking 9012 (EG) Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B36A	HPE Aruba Networking 9012 (US) TAA Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B37A	HPE Aruba Networking 9012 (RW) TAA Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B38A	HPE Aruba Networking 9012 (JP) TAA Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B39A	HPE Aruba Networking 9012 (IL) TAA Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs
R1B40A	HPE Aruba Networking 9012 (EG) TAA Gateway – 12xGbE (6xPoE+), 2K Clients, 32 APs

Accessories

Part number	Description
HPE Aruba Networking 9004 Gateway	
R1B30A[3]	HPE Aruba Networking 9004-MNT-19 Rack Mount Kit
R3K00A	12V/36W AC/DC spare power adapter type B
HPE Aruba Networking 9004-LTE Gateway	
R3W17A	HPE Aruba Networking 9004-LTE-MNT-19 Rack Mount Kit
R4Y91A	HPE Aruba Networking 90xx-LTE Indoor Ant Ext Kit-20ft
R4Y92A	HPE Aruba Networking 90xx-LTE Indoor Ant Ext Kit-40ft
R4Y93A	HPE Aruba Networking 90xx-LTE Outdoor Ant Ext Kit-35ft
R4Y94A	HPE Aruba Networking 90xx-LTE Spare Indoor Antenna
R4Y95A	HPE Aruba Networking 90xx-LTE Spare SIM Tray Kit
R6M37A	HPE Aruba Networking 90xx-LTE Spare Outdoor Antenna
R3K00A	12V/36W AC/DC spare power adapter type B
HPE Aruba Networking 9012 Gateway	
R4X13A	HPE Aruba Networking 9012-MNT-19 Spare Rack Mount Kit

[3] 1RU can support two 9004 gateways side-by-side using an optional mount kit.

For additional information on the HPE Aruba Networking 9000 Series Gateways, please refer to:

- 9000 Series ordering guide
- SD-WAN data sheet
- HPE Aruba Networking Central ordering guide

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