Data sheet




# HPE Networking 9000 Gateway Series

## 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 Networking 9000 Gateway Series 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 gateway series serve a key role within the SD-Branch solution from HPE Networking, which unifies WLAN, LAN, SD-WAN, and security for distributed enterprises.

The HPE Networking 9000 Gateway Series can be easily configured and managed using HPE Aruba 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 gateway 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, multiple 9000 Gateway Series devices 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 Networking NaaS can help with the transition to a subscription-based network consumption model.

## Internet of Things (IoT) and integration ready

The HPE Networking 9000 Gateway Series includes flexible connectivity options:

— 4xGbE — 9004/9004-LTE

— 12xGbE (6xPoE+) — 9012

— USB 3.0 ports

— IoT Radio that supports Bluetooth® low energy technologies

— Integrated LTE connectivity — 9004-LTE

The gateway also uses integrated device profiling to improve client visibility, and works with HPE Aruba Central, HPE Networking ClearPass Policy Manager or HPE Networking 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, the 9000 gateway series can be connected to the SD-WAN fabric from HPE Networking 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.

## Branch and campus deployment

HPE Networking 9000 Gateway 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 Networking 9000 Gateway 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 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 Networking 9000 Gateway 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'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 Networking 9000 Gateway Series includes a Layer 4-7 stateful firewall with policy enforcement firewall to deliver a consistent user, device, and application awareness across WLAN, LAN, and WAN. When deployed alongside HPE 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 Networking Hardware 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.** HPE Networking 9004 Gateway



**Figure 2.** HPE Networking 9004-LTE Gateway



**Figure 3.** HPE Networking 9012 Gateway

## HPE Aruba Central

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.

## Agentic AIOps for IT efficiency

AI-powered HPE Aruba Central insights for improved troubleshooting and optimization with AI search, AI insights, and AI assist.

## Technical specifications

| | HPE Networking 9004 Gateway | HPE Networking 9004-LTE Gateway | HPE Networking 9012 Gateway |
|---|---|---|---|
| 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

## HPE Aruba Networking Wireless Operating System 10 specifications

| | HPE Networking 9004 Gateway | HPE Networking 9004-LTE Gateway | HPE Networking 9012 Gateway |
|---|---|---|---|
| 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 |

## HPE Aruba Networking Wireless Operating System 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 | HPE Networking 9004 Gateway/HPE Networking 9004-LTE Gateway | HPE Networking 9012 Gateway |
|---|---|---|
| Form factor/footprint | Desktop/fanless[2]<br>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<br>1xSMA connector for GPS antenna |
| **Bands supported** | |
| Regions supported | Global<br>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:<br>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<br><br>DL 2 contiguous plus inter-band 3CA:<br>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<br>AT&T, Verizon, T-Mobile |

## Physical

| | HPE Networking 9004 Gateway/HPE Networking 9004-LTE Gateway | HPE Networking 9012 Gateway |
|---|---|---|
| Dimensions (H x W x D) | 3.82 cm x 19.85 cm x 15.31 cm<br>(1.5" x 7.815" x 6.03") | 4.37 cm x 39.5 cm x 26.00 cm<br>(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 | HPE Networking 9004 Gateway/HPE Networking 9004-LTE Gateway | HPE Networking 9012 Gateway |
|---|---|---|
| **Minimum supported software version** | | |
| OS-10 | OS 10.3.1.1 (SSR)<br>OS 10.3.1.1 (SSR) | OS 10.3.1.1 (SSR)<br>OS 10.3.1.1 (SSR) |
| OS-8<br>(WLAN gateway mode) | 9004: 8.5.0.5<br>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<br><br>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 |

# Ordering information

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

# Accessories

| Part number | Description |
|---|---|
| HPE Networking 9004 Gateway | |
| R1B30A[1] | HPE Networking 9004-MNT-19 Rack Mount Kit |
| R3K00A | 12V/36W AC/DC spare power adapter type B |
| HPE Networking 9004-LTE Gateway | |
| R3W17A | HPE Networking 9004-LTE-MNT-19 Rack Mount Kit |
| R4Y91A | HPE Networking 90xx-LTE Indoor Ant Ext Kit-20ft |
| R4Y92A | HPE Networking 90xx-LTE Indoor Ant Ext Kit-40ft |
| R4Y93A | HPE Networking 90xx-LTE Outdoor Ant Ext Kit-35ft |
| R4Y94A | HPE Networking 90xx-LTE Spare Indoor Antenna |
| R4Y95A | HPE Networking 90xx-LTE Spare SIM Tray Kit |
| R6M37A | HPE Networking 90xx-LTE Spare Outdoor Antenna |
| R3K00A | 12V/36W AC/DC spare power adapter type B |
| HPE Networking 9012 Gateway | |
| R4X13A | HPE Networking 9012-MNT-19 Spare Rack Mount Kit |

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

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

— 9000 series ordering guide
— HPE Networking Edge Connect SD-Branch data sheet
— HPE Aruba Networking Central ordering guide

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