Aruba SD-WAN Data Sheet

Aruba SD-WAN simplifies branch operations and optimizes WAN management across the branch network to improve the overall branch experience.

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DATA SHEET

ARUBA SD-WAN

Improved visibility and control at the WAN edge

Software-defined WAN (SD-WAN) technology is the answer to growing bandwidth demands and tightening budget considerations. New solutions offer simplified WAN operations and reduced operational costs for those managing public and private WAN connections, and those shifting toward cloud-based services altogether.

Aruba SD-WAN is designed for all of this and more – optimizing routing decisions and improving visibility across the WAN edge. Full Layer 7 application awareness combines with unique in-branch visibility based on end-user roles, device type, and location context to make Aruba SD-WAN ideal for distributed enterprises.

In fact, organizations in the retail, hospitality and healthcare space – which typically have lean and centralized network teams – can improve the time to deploy, manage and maintain WAN connections, while enhancing the user experience and business operations. Aruba SD-WAN serves a key role in Aruba's overall SD-Branch solution.

INTELLIGENT WAN MANAGEMENT

Through simplified workflows, managing a WAN can be completely orchestrated to improve the speed of deployment, network performance, and ongoing configuration changes. Aruba Central, an AI-powered network operations, assurance, and security platform, provides SD-WAN, as well as WLAN and LAN visibility and controls. Cloud advantages make it easy to configure and deploy and see data from Aruba branch gateways, headend gateways, and virtual gateways from anywhere. There is no on-premises management equipment to update or maintain.

CLOUD-BASED SD-WAN ORCHESTRATION

Using cloud-scale best practices, Aruba SD-WAN provides end-to-end orchestration to easily distribute routes and build scalable and secure VPN tunnels on-demand. This is based on the data center preference configured in Aruba Central. The orchestrator also simplifies the deployment of virtual gateways within Amazon AWS and Microsoft Azure public cloud infrastructure by automating cloud discovery, onboarding, and management.

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KEY FEATURES

- Centralized cloud management
- High performance branch gateways with ZTP
- Licenses with unrestricted bandwidth for every SD-WAN gateway
- Policy-based routing for 3200+ applications
- Dynamic path optimization for high priority SaaS apps
- Optimized for Microsoft 365
- Virtual gateways and hub routing available for AWS and Azure
- Policy enforcement firewall, DPI, Web Filtering, and IDS/IPS

UNRESTRICTED BANDWIDTH

Unlike other SD-WAN vendors, Aruba's SD-WAN solution offers unrestricted bandwidth per every gateway license. This means you have access to full hardware performance capabilities right out of the box – no upgrade purchases required.

SD-WAN GATEWAYS

SD-WAN Gateways for Branch

Aruba's SD-WAN gateways are designed to support multiple WAN connections across broadband, MPLS, and LTE cellular links. The 9004-LTE gateway includes integrated hardware-based LTE. All other Aruba gateways support USB port-based LTE. Software features include the ability to route and prioritize traffic being sent to the data center, public cloud infrastructure or the Internet. Each gateway also supports High Availability (HA) requirements (e.g. active/active and active/standby), making it ideal for sites that need full redundancy.

SD-WAN Gateways for Headend

Aruba SD-WAN gateways deployed in headend/data center environments act as VPN concentrators (VPNCs) to terminate traffic from branch gateways. These gateways offer support for up to thousands of branch sites. In a typical dual hub-and-spoke model, one or more headend gateways can be used to terminate IPsec tunnels established from branch gateways.

SD-WAN Gateways for Public Cloud

Aruba virtual gateways are deployed in public cloud infrastructures, such as a Microsoft Azure Virtual Network (VNET) or Amazon Web Services virtual private cloud (AWS VPC). These gateways serve as a virtual instance of a headend gateway, and enable seamless and secure connectivity for all branch and data center locations connecting to public clouds. Virtual gateways support public Internet and private connections such as Direct Connect.

Virtual gateways are managed by Aruba Central and include full orchestration that completely automates VNET/VPC discovery, subnet management, gateway onboarding, HA configuration and status monitoring.

Virtual gateways support up to 4 Gbps of throughput, with 1, 3, and 5 year subscription options.

SD-WAN Integration with Public Cloud Network

Aruba SD-WAN provides orchestrated secure branch connectivity directly to public cloud provider global backbone networks. This greatly simplifies the SD-WAN overlay by connecting branch locations directly to regional points of presence (POPs) providing access to cloud resources within a region and across regions. The overlay also supports branch-to-branch communication without virtual gateways at each VPC. Aruba Cloud Connect, a service within Aruba Central, provides a single dashboard to streamline the management and operation of SD-WAN integrations with AWS Transit Gateway Network Manager and Microsoft Azure Virtual WAN.

MICROSOFT FEATURES

Office 365, Teams and Skype for Business

Aruba's integration with Microsoft enables unique application insight that detects Office 365, Teams and Skype for Business traffic and then prioritizes them over less critical applications. Aruba Central also includes specific call quality heuristics for additional visibility.

Microsoft preferred solution

Aruba Virtual Gateways are a Microsoft preferred solution on the Azure Marketplace. This means the gateway application has been validated by Microsoft experts as having proven competencies and capabilities that meet customer needs.

POLICY-BASED ROUTING AND SUPPORTED PROTOCOLS

With Policy-based Routing (PBR), traffic can be routed across multiple private or public WAN uplinks based on application type and link health, device profile, user role, and destination. Supported protocols include BGP, OSPF and static routes.

SAAS OPTIMIZATION

SaaS Express ensures high-priority SaaS applications such as Microsoft 365 (Office 365), Dropbox, and Slack are operating at the highest level of performance when transiting over multiple Internet provider links. SaaS Express connects users from a branch site to SaaS applications in a seamless and secure way, and constantly monitors the SaaS Quality of Experience (QoE). The interface includes a drill-down dashboard so the user can identify and perform root-cause analysis on SaaS performance-related issues. This feature requires the SD-WAN Advanced License. For more information, please refer to the latest Aruba Central documentation.

KEY WAN FEATURES

Overlay and Hybrid WAN Management

Aruba SD-WAN introduces a new architecture that provides a network overlay for WAN connections to improve visibility and control across private and public connections (hybrid WAN).

Hub-and-Spoke Topology

Secure connections can be established from a branch site to a headend site using public or private connections. This allows users to efficiently access corporate resources hosted in data centers.

Site-to-Site VPNs

Secure connections can also be established from one branch site to another over a public Internet connection. This allows users from different locations to access network resources hosted within the corporate network without going through the data center.

Dynamic Path Steering (DPS)

WAN traffic can be automatically routed over the best available uplink based on characteristics, such as WAN throughput, latency, jitter and packet loss.

WAN Visibility

With deep packet inspection technology, Aruba Central provides monitoring for application traffic that enters and exits a branch network – regardless of the uplink type. This makes it easy for IT to manage WAN environments that increasingly utilize public WAN connections.

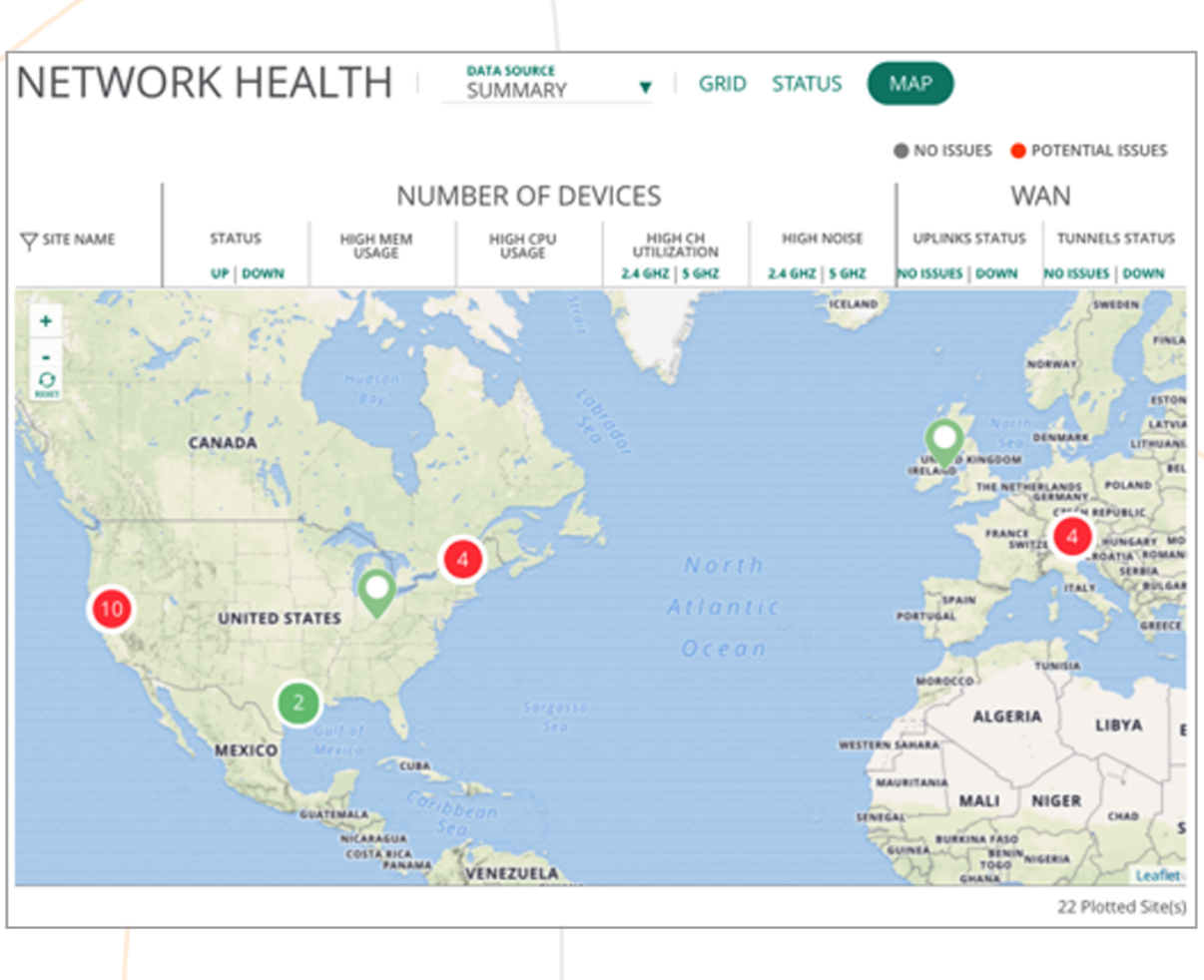


Figure 1: Aruba Central WAN Health Dashboard

WAN Compression

Ideal for use during periods of network congestion, this WAN compression feature allows IT to send more traffic through the same WAN circuit at any given moment or timeframe.

Unrestricted Bandwidth

Aruba SD-WAN licenses provide access to the full bandwidth specification for each gateway. No additional license upgrades required.

KEY CONFIGURATION FEATURES

Simplified Installation Wizard

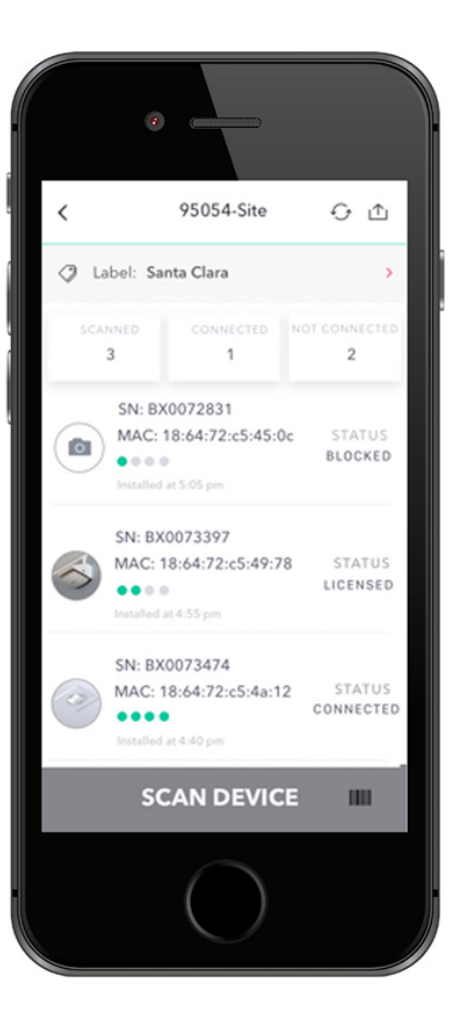
For easy configuration of SD-WAN gateways, Aruba Central provides users with a step-by-step navigation that simplifies provisioning of the network.

Configuration Hierarchy

Network settings can be pre-configured and customized in Aruba Central based on branch-specific requirements. Zero Touch Provisioning (ZTP) provides an easy and error-free deployment model.

Zero Touch Provisioning (ZTP)

Using Zero Touch Provisioning, the hardware gateways can be factory-shipped and deployed onsite using Aruba Activate™, a cloud-based activation service that seamlessly works with Aruba Central. Settings can be applied based on configuration and other network-specific requirements.



95054-Site

Label: Santa Clara

SCANNED	CONNECTED	NOT CONNECTED
3	1	2

SN: BX0072831 MAC: 18:64:72:c5:45:0c STATUS BLOCKED

SN: BX0073397 MAC: 18:64:72:c5:49:78 STATUS LICENSED

SN: BX0073474 MAC: 18:64:72:c5:4a:12 STATUS CONNECTED

SCAN DEVICE

Figure 2: Example of Aruba's mobile installer app for device onboarding.

Simple, mobile provisioning

Aruba's mobile installer app allows on-site personnel to easily onboard gateways. A central IT team can verify device location, licenses, and status with no additional steps required. This is available for iOS and Android.

KEY SECURITY AND VISIBILITY FEATURES

Dynamic Segmentation

To simplify and better secure wired and wireless network access, the branch gateway can automatically enforce per-user and per-device roles on wired and wireless networks. Integration with ClearPass Policy Manager allows for centralized role and policy management. This ensures consistent policy regardless of user role and device type, and eliminates the need to configure unnecessary SSIDs, ACLs, VLANs and subnets at every node in the network. For more information on Dynamic Segmentation, please refer to the solution overview.

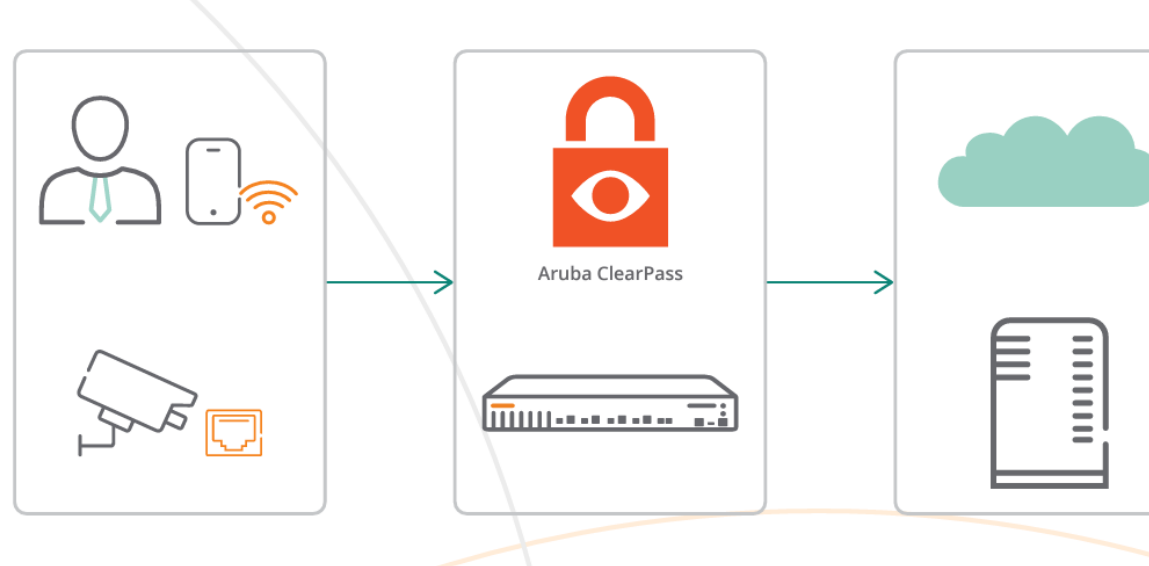


Figure 3: Segment mobile and IoT traffic using Aruba

Policy Enforcement Firewall

Included within the Foundation license, PEF allows for wired and wireless user and application traffic to be sent to a branch gateway through GRE tunnels for inspection. Enforcement of policies based on user role, device type, application and location is accomplished through Aruba Dynamic Segmentation.

Application visibility and control

Also included in the Foundation license is an application visibility feature that uses Deep Packet Inspection (DPI) technology to evaluate and optimize performance and QoS policies for over 3200+ applications, including encrypted and hidden traffic.

Web content filtering

The Web Content Classification (WebCC) bundle is also part of the Foundation license. This classifies websites by content category and rates them by reputation. It can also block, apply QoS, bandwidth-limit, mirror, and log web content.

Firewall Logging

The Aruba Central firewall logging dashboard provides graphical and tabular displays of the effectiveness of gateway-enforced firewall rules across the corporate network. It starts with a global view of gateways with most blocked sessions. From there, drill-down for detailed blocked session information by source and destination IP address, and policy rule being enforced. Firewall Logging is also included in the Foundation license.

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. An advanced security dashboard provides IT Teams with network-wide visibility, multi-dimensional threat metrics, threat intelligence data, correlation and incident management. This feature requires the appropriate Aruba Central security subscription license.

Third-party security gateway and firewall support

For cloud security threat protection, Aruba gateways can assume the role of an on-premises agent of centrally-hosted firewalls such as those provided by Palo Alto Networks and Check Point Software, or web security gateways such as Zscaler and Symantec.

Unified Communications and Collaboration (UCC)

Measure and troubleshoot networks based on call quality metrics such as Mean Opinion Score, latency, jitter and packet loss. Supported applications include: Teams, Skype for Business®, Wi-Fi Calling, Facetime, SIP, Jabber, Spark and more.

TECHNICAL SPECIFICATIONS*

BRANCH GATEWAYS (SMALL AND MEDIUM)

Features	9004/9012	7005	7008	7010	7024
Deployment mode	Small/Medium	Small	Small	Medium	Medium
Maximum clients	Up to 2,048**	Up to 1,024**	Up to 1,024**	2,048	2,048
Maximum VLANs	4096	4096	4096	4096	4096
Firewall throughput	3 Gbps	2 Gbps	2 Gbps	8 Gbps	8 Gbps
Encrypted throughput (AES-CBC)	3 Gbps	1.2 Gbps	1.2 Gbps	2.6 Gbps	2.6 Gbps
Active firewall sessions	64K	64K	64K	32K	32K
IDS/IPS throughput	Up to 1.1 Gbps[2]	N/A	N/A	N/A	N/A
WAN/LAN Interfaces	4	4	8	16	24
PoE in/out	–	In; E0	Out; 100W	Out; 150W	Out; 400W
USB (WAN)	Yes (1); USB 3.0	Yes (1); USB 2.0	Yes (2); USB 2.0	Yes (2); USB 2.0	Yes (1); USB 2.0
Form factor/footprint	Desktop/1RU[1]	Desktop/1RU	Desktop/1RU	1RU	1RU

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

[2] IDS/IPS throughput results based upon iMix traffic with zero loss input for AOS SD-WAN image 2.3 or AOS 10.2

[3] 9012 can be deployed as branch gateway or Headed Gateway with IDS/IPS (with appropriate license)

BRANCH GATEWAYS (LARGE)

Features	7030	7210	7220	7240XM
Deployment mode	Large	Large	Large	Large
Maximum clients	4096	16K	24K	32K
Maximum VLANs	4096	4096	4096	4096
Firewall throughput	8 Gbps	20 Gbps	40 Gbps	40 Gbps
Encrypted throughput (AES-CBC)	2.6 Gbps	6 Gbps	20 Gbps	30 Gbps
Active firewall sessions	64K	2M	2M	2M
WAN/LAN Interfaces	8 (combo)	2 (combo)	2 (combo)	2 (combo)
USB (WAN)	Yes (1); USB 2.0	Yes (1); USB 2.0	Yes (1); USB 2.0	Yes (1); USB 2.0
Form factor/footprint	1 RU	1 RU	1 RU	1 RU

HEADEND GATEWAYS

Features	7010/7024	7030	7210	7220	7240XM	7280
Deployment mode	VPN Concentrator (VPNC)	VPNC	VPNC	VPNC	VPNC	VPNC
Encrypted throughput (3DES)	2.4 Gbps	2.4 Gbps	7 Gbps	25 Gbps	28 Gbps	53 Gbps
Encrypted throughput (AES-CBC)	2.6 Gbps	2.6 Gbps	7 Gbps	22 Gbps	30 Gbps	45 Gbps
WAN compression performance	2.5 Gbps	2.5 Gbps	10 Gbps	10 Gbps	10 Gbps	10 Gbps
Maximum tunnels	512	512	1,024	4,096	6,144	8,192
Route scale	3,000	6,000	6,000	20,000	30,000	30,000
Form factor/footprint	1RU	1RU	1RU	1RU	1RU	1RU

*For complete hardware specifications, please see the 9004 Gateway and 7000/7200 Mobility Controller datasheets.

**The 9004 and 7005/7008 offers a base capacity license for up to 75 clients.

VIRTUAL GATEWAYS	PUBLIC CLOUD INFRASTRUCTURE	
Features	Amazon Web Services (AWS)	Microsoft Azure
Deployment mode	EC2 instance in VPC	Linux VM instance in VNET
Virtual Gateway models	500 Mbps, 2 Gbps, 4 Gbps	500 Mbps, 2 Gbps, 4 Gbps
Firewall throughput	500 Mbps, 2 Gbps, 4 Gbps	500 Mbps, 2 Gbps, 4 Gbps
Virtual CPUs	4, 8 and 16 vCPU	4, 8 and 16 vCPU
Memory	7.5 GB, 15 GB and 30 GB	14 GB, 16 GB and 32 GB
Storage	15 GB, 30 GB and 60 GB	15 GB, 30 GB and 60 GB
Number of interfaces	4 (including a Management interface)	
Maximum tunnels (per model)	1600, 4096 and 8192	1600, 4096 and 8192
Infrastructure costs	BYOL + hosted service costs including compute, storage and egress data.	

For additional information on ordering and full gateway hardware specifications, please refer to:

- SD-WAN Ordering Guide
- 7000 Series Mobility Controller Data sheet
- 7200 Series Mobility Controller Data sheet
- 9004 Series Gateways Data sheet
- Aruba Central Virtual Gateway Deployment Guide

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