

## DATA SHEET

# ARUBA 8325 SWITCH SERIES

High Performance Enterprise Campus and Data Center Switch

## PRODUCT OVERVIEW

The Aruba 8325 Switch Series offers a flexible and innovative approach to addressing the application, security, and scalability demands of the mobile, cloud and IoT era. These switches serve the needs of the next generation core and aggregation layer, as well as emerging data center requirements at the Top of Rack (ToR) and End of Row (EoR). They provide over 6.4Tbps of capacity, with line-rate Gigabit Ethernet interfaces including 10Gbps, 25Gbps, 40Gbps, and 100Gbps.

The 8325 series includes industry-leading line rate ports 1/10/25GbE (SFP/SFP+/SFP28) and 40/100GbE (QSFP+/QSFP28) with connectivity in a compact 1U form factor. These switches offer a fantastic investment for customers wanting to migrate from older 1GbE/10GbE to faster 25GbE, or 10GbE/40GbE to 100GbE ports.

## PRODUCT DIFFERENTIATORS

The Aruba 8325 switch series is based on ArubaOS-CX, a modern, database-driven operating system that automates and simplifies many critical and complex tasks. The enhanced capabilities of ArubaOS-CX provide a unique set of differentiators for campus and data center switching.

### Modular Architecture with ArubaOS-CX

ArubaOS-CX is built on a modular Linux architecture with OVSDB, providing the following unique capabilities:

- Safe and powerful access to all state at all times allows unique visibility and analytics capabilities
- REST APIs and Python scripting provide fine-grained programmability
- Microservices architecture enables full integration with other workflow systems and services
- Continual state synchronization provides superior fault tolerance and high availability
- All software processes communicate with the database rather than with each other, ensuring high stability with minimal inter-process communication



## KEY FEATURES

- High performance 6.4Tbps with 2,000 Mpps
- Intelligent monitoring and visibility with Aruba Network Analytics Engine
- High availability with industry-leading VSX redundancy, and redundant power supplies and fans
- Designed for core/aggregation in the campus or Top of Rack or End of Row in the data center
- ArubaOS-CX automation and programmability using built-in REST APIs and Python scripts
- Advanced Layer 2/3 feature set includes BGP, OSPF, VRF, and IPv6
- Compact 1U switch with 1/10/25GbE and 40/100GbE connectivity

### Aruba Network Analytics Engine

ArubaOS-CX includes Aruba's Network Analytics Engine (NAE) for advanced telemetry and automation. The NAE framework is an industry-first monitoring and troubleshooting system, providing greatly improved network operations. NAE uniquely provides the ability to monitor and easily troubleshoot network health and congestion issues. The Time Series Database (TSDB) may be used to store configuration and operational state.

Customers can use data from the TSDB to write software modules to troubleshoot problems. This data may also be used to analyze trends, identify anomalies and predict future capacity requirements.

## Aruba Virtual Switching Extension

The ability of ArubaOS-CX to maintain synchronous state across dual control planes allows a unique high availability solution called Aruba Virtual Switching Extension (VSX). VSX is delivered through redundancy gained by deploying two chassis with an inter-switch link, with each chassis maintaining its independent control.

Designed using the best features of existing HA technologies such as Multi-chassis Link Aggregation (MC-LAG) and Virtual Switching Framework (VSF), Aruba VSX enables a distributed architecture that is highly available during upgrades or control plane events.

## PRODUCT CAPABILITIES

### Performance

- **High-speed fully distributed architecture**  
Provides 6.4Tbps for switching and 2,000 Mpps for forwarding. All switching and routing are wire-speed to meet the demands of bandwidth-intensive applications today and in the future
- **Scalable system design**  
Provides investment protection to support future technologies and higher-speed connectivity

### Connectivity

- **High-density port options**
  - 32 ports of 40GbE/100GbE (QSFP+/QSFP28), or
  - 48 ports of 1GbE/10GbE/25GbE (SFP/SFP+/SFP28) and 8 ports of 40GbE/100GbE (QSFP+/QSFP28) SFP+ ports (with an optional 10GBASE-T transceiver)
- **Jumbo frames**  
Supports high-performance backups and disaster-recovery systems; provides a maximum frame size of 9K bytes
- **Loopback**  
Supports internal loopback testing for maintenance purposes and increased availability; loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port or per-VLAN basis for added flexibility
- **Flexible port selection**  
Provides connectivity for 10GbE (SFP/SFP+, 10GBASE-T) and 40GbE (QSFP+)
- **Packet storm protection**  
Protects against unknown broadcast, multicast, or unicast storms with user-defined thresholds

## Quality of Service (QoS)

Supports the following congestion actions: strict priority (SP) queuing and weighted fair queuing

## Resiliency and high availability

- **Aruba Virtual Switching Extension (VSX)**  
VSX enables a distributed and redundant architecture by deploying two switches with each switch maintaining independent control yet staying synchronized during upgrades or failover
- **Virtual Router Redundancy Protocol (VRRP)**  
VRRP allows groups of two switches to dynamically back each other up to create highly available routed environments
- **Unidirectional Link Detection (UDLD)**  
Monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks
- **IEEE 802.3ad LACP**  
Supports up to 47 trunks, each with eight links per trunk, and provides support for static or dynamic groups and a user-selectable hashing algorithm
- **Redundant power supplies**  
Provides N+1 high reliability with hot swappable, redundant power supplies
- **Redundant and load-sharing fans and power supplies**  
Increases total performance and power availability while providing hitless, stateful failover
- **Hot swappable power supply and fan modules**  
Allows replacement of modules without any operational impact on other modules
- **Separate data and control paths**  
Separates control from services and keeps service processing isolated; increases security and performance

## Virtual Private Network (VPN) Capabilities

- **Generic Routing Encapsulation (GRE)**  
Enables tunneling traffic from site to site over a Layer 3 path

## Management

- **Management interface control**  
Enables or disables each of the following interfaces depending on security preferences: console port, or reset button
- **Industry-standard CLI with a hierarchical structure**  
Reduces training time and expenses, and increases productivity in multivendor installations

- **Management security**  
Restricts access to critical configuration commands; offers multiple privilege levels with password protection; ACLs provide SNMP access; local and remote Syslog capabilities allow logging of all access
- **IPSLA**
  - Monitors the network for degradation of various services, including voice
  - Monitoring is enabled via the NAE for history and for automated gathering of additional information when anomalies are detected
- **SNMP v2c/v3**  
Provides SNMP read and trap support of industry standard Management Information Base (MIB), and private extensions
- **sFlow (RFC 3176)**  
Provides scalable ASIC-based wire speed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **Remote monitoring (RMON)**  
Uses standard SNMP to monitor essential network functions and supports events, alarms, history, and statistics groups as well as a private alarm extension group
- **TFTP and SFTP support**
  - Offers different mechanisms for configuration updates; trivial FTP (TFTP) allows bidirectional transfers over a TCP/IP network
  - Secure File Transfer Protocol (SFTP) runs over an SSH tunnel to provide additional security
- **Debug and sampler utility**  
Supports ping and traceroute for IPv4 and IPv6
- **Network Time Protocol (NTP)**
  - Synchronizes timekeeping among distributed time servers and clients; keeps timekeeping consistent among all clock-dependent devices within the network
  - Can serve as the NTP server in a customer network
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**  
Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **Dual flash images**  
Provides independent primary and secondary operating system files for backup while upgrading

- **Multiple configuration files**  
Stores files easily to the flash image

## Layer 2 Switching

- **VLAN**  
Supports up to 4,096 port-based or IEEE 802.1Q-based VLANs; and supports MAC-based VLANs, protocol-based VLANs, and IP-subnet-based VLANs for added flexibility
- **VXLAN**  
Supports static VXLAN. Allows operators to manually connect two or more VXLAN tunnel endpoints (VTEP)
- **Port mirroring**  
Duplicates port traffic (ingress and egress) to a local or remote monitoring port; supports 4 mirroring groups, with an unlimited number of ports per group
- **STP**  
Supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Internet Group Management Protocol (IGMP)**  
Controls and manages the flooding of multicast packets in a Layer 2 network
- **Rapid Per-VLAN spanning tree plus (RPVST+)**  
Allows each VLAN to build a separate spanning tree to improve link bandwidth usage in network environments with multiple VLANs

## Layer 3 Services

- **Address Resolution Protocol (ARP)**
  - Determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses
  - Proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **IP Directed Broadcast**  
Supports directed broadcast on configured network subnets
- **Dynamic Host Configuration Protocol (DHCP)**
  - DHCP services are offered within a client network to simplify network management
  - DHCP Relay enables DHCP operation across subnets
- **Domain Name System (DNS)**  
Provides a distributed database that translates domain names and IP addresses, which simplifies network design; supports client and server

## Layer 3 Routing

- **Policy Based Routing (PBR)**  
Enables using a classifier to select traffic that can be forwarded based on policy set by the network administrator
- **Static IPv4 routing**  
Provides simple manually configured IPv4 routing
- **Open shortest path first (OSPF)**  
Delivers faster convergence; uses link-state routing Interior Gateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Border Gateway Protocol 4 (BGP-4)**  
Delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors; uses TCP for enhanced reliability for the route discovery process; reduces bandwidth consumption by advertising only incremental updates; supports extensive policies for increased flexibility; scales to very large networks
- **Multiprotocol BGP (MP-BGP) with IPv6 Address Family**  
Enables sharing of IPv6 routes using BGP and connections to BGP peers using IPv6
- **IPv6 Multicast Routing**  
Provides capability to enable routing of IPv6 multicast traffic. Supports multicast listener discovery (MLD), MLD Snooping, and PIM-SM IPv6 routing
- **6in4 tunnels**  
Supports the tunneling of IPv6 traffic in an IPv4 network
- **IP performance optimization**  
Provides a set of tools to improve the performance of IPv4 networks; includes directed broadcasts, customization of TCP parameters, support of ICMP error packets, and extensive display capabilities
- **Static IPv6 routing**  
Provides simple manually configured IPv6 routing
- **Dual IP stack**  
Maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
- **OSPFv3**  
Provides OSPF support for IPv6
- **Equal-Cost Multipath (ECMP)**  
Enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth

## Security

- **TAA Compliance**  
The Aruba 8325 with ArubaOS-CX, a TAA compliant product, uses FIPS 140-2 validated cryptography for protection of sensitive information
- **Access control list (ACL) Features**
  - Supports powerful ACLs for both IPv4 and IPv6. Supports creation of object groups representing sets of devices like IP addresses. For instance, IT management devices could be grouped in this way
  - ACLs can also protect control plane services such as SSH, SNMP, NTP or web servers
- **Remote Authentication Dial-In User Service (RADIUS)**  
Eases security access administration by using a password authentication server
- **Terminal Access Controller Access-Control System (TACACS+)**  
Delivers an authentication tool using TCP with encryption of the full authentication request, providing additional security
- **Management access security**
  - ArubaOS-CX provides for both on-box as well as off-box authentication for administrative access. RADIUS or TACACS+ can be used to provide encrypted user authentication
  - Additionally, TACACS+ can also provide user authorization services
- **Secure shell (SSHv2)**  
Uses external servers to securely log in to a remote device; with authentication and encryption, it protects against IP spoofing and plain-text password interception; increases the security of Secure FTP (SFTP) transfers

## Multicast

- **IGMP Snooping**  
Allows multiple VLANs to receive the same IPv4 multicast traffic, lessening network bandwidth demand by reducing multiple streams to each VLAN
- **Protocol Independent Multicast (PIM)**  
Defines modes of IPv4 multicasting to allow one-to-many and many-to-many transmission of information; supports PIM Sparse Mode (PIM-SM)
- **Internet Group Management Protocol (IGMP)**  
Utilizes Any-Source Multicast (ASM) to manage IPv4 multicast networks; supports IGMPv1, v2, and v3

### Additional information

- **Green initiative support**

Provides support for RoHS (EN 50581:2012) regulations

### Warranty and support

- **5-year Warranty**

See [hpe.com/networking/warrantysummary](https://hpe.com/networking/warrantysummary) for warranty and support information included with your product purchase.

- **Software releases**

To find software for your product refer to [hpe.com/networking/support](https://hpe.com/networking/support); for details on the software releases available with your product purchase, refer to [hpe.com/networking/warrantysummary](https://hpe.com/networking/warrantysummary).

SPECIFICATIONS				
	JL624A: 8325-48Y8C, 6 fans, front-to-back, 2 power supplies	JL625A: 8325-48Y8C, 6 fans, back-to-front, 2 power supplies	JL626A: 8325-32C, 6 fans, front-to-back, 2 power supplies	JL627A: 8325-32C, 6 fans, back-to-front, 2 power supplies
<b>I/O ports and slots</b>				
	Supports 48 ports of 1G/10G/25GbE (SFP/SFP+/SFP28) and 8 ports of 40G/100GbE (QSFP+/QSFP28) SFP+ ports (with an optional 10GBASE-T transceiver)	Supports 48 ports of 1G/10G/25GbE (SFP/SFP+/SFP28) and 8 ports of 40G/100GbE (QSFP+/QSFP28) SFP+ ports (with an optional 10GBASE-T transceiver)	Supports 32 ports of 40G/100GbE (QSFP+/QSFP28)	Supports 32 ports of 40G/100GbE (QSFP+/QSFP28)
<b>Additional ports and slots</b>				
Module VoQ	32MB			
Power supplies	Field-replaceable, hot-swappable, and up to 2 power supplies. Bundles (JL624A, JL625A, JL626A, and JL627A) include 2 power supplies.			
Fans	Field-replaceable, hot-swappable, and up to 6 fans. Bundles (JL624A, JL625A, JL626A, and JL627A) include 6 fans.			
<b>Physical characteristics</b>				
Dimensions	(H) 4.35 cm x (W) 43.84 cm x (D) 53.6 cm (1.71" x 17.26" x 21.1")	(H) 4.35 cm x (W) 43.84 cm x (D) 53.6 cm (1.71" x 17.26" x 21.1")	(H) 4.395 cm x (W) 44.25 cm x (D) 47.3 cm (1.73" x 17.42" x 18.62")	(H) 4.395 cm x (W) 44.25 cm x (D) 47.3 cm (1.73" x 17.42" x 18.62")
Full configuration weight	10 kg (22.05 lb)	10 kg (22.05 lb)	10.87 kg (23.96 lb)	10.87 kg (23.96 lb)
<b>Memory and processor</b>				
CPU	2.2GHz			
Memory, Drive and Flash	16GB RAM, SSD: 64GB, Flash: 8GB			
<b>Performance</b>				
Switching capacity	6.4Tbs			
MAC address table size	128K			
<b>Environment</b>				
Operating temperature	0°C to 40°C (32°F to 104°F) up to 3.0 km (10,000 ft.)			
Operating relative humidity	5% to 95% at 40°C (104°F) non-condensing			
Non-Operating	-40°C to 70°C (-40°F to 158°F) up to 4.6 km (15,000 ft.)			
Non-Operating/Storage relative humidity	5% to 95% @ 65°C (149°F)			
Max operating altitude	Up to 10,000ft (3.048 km)			
Max non-operating	Up to 15,000ft (4.6km)			
Primary airflow	Front-to-Back or Back-to-Front			

SPECIFICATIONS				
	JL624A: 8325-48Y8C, 6 fans, front-to-back, 2 power supplies	JL625A: 8325-48Y8C, 6 fans, back-to-front, 2 power supplies	JL626A: 8325-32C, 6 fans, front-to-back, 2 power supplies	JL627A: 8325-32C, 6 fans, back-to-front, 2 power supplies
<b>Electrical characteristics</b>				
Frequency	50-60Hz			
AC Voltage	100-240 volts			
Current	6A (low voltage) – 3A (high voltage)			
Power consumption	Max: 550W	Max: 550W	Max: 550W	Max: 550W
<b>Safety</b>				
	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 IEC 60950-1:2005 Ed.2; Am 1:2009+A2:2013 UL 60950-1, CSA 22.2 No 60950-1 EN 60825-1:2007/IEC 60825-1:2007 Class 1			
<b>EMC</b>				
	EN 55032:2012, Class A EN 55024:2010 EN 61000-3-2:2014, Class A EN 61000-3-3:2013 FCC CFR 47 Part 15:2010, Class A VCCI Class A CNS 13438			
<b>Lasers</b>				
	EN60825-1:2014/IEC 60825-1: 2014 Class 1 Class 1 Laser Products/Laser Klasse 1			
<b>Management</b>				
	SNMP RJ-45 serial USB micro USB console RJ-45 Ethernet port			
<b>Mounting and enclosure</b>				
	Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only			

## STANDARDS AND PROTOCOLS

The following standards and protocols are supported.

- 802.1AB-2009
- 802.1ak-2007
- 802.1t-2001
- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3ae 10-Gigabit Ethernet
- IEEE 802.3by 25 Gigabit Ethernet
- IEEE 802.3ba 40 and 100 Gigabit Ethernet Architecture
- IEEE 802.3z 1000BASE-X
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 768 User Datagram Protocol
- RFC 813 Window and Acknowledgement Strategy in TCP
- RFC 815 IP datagram reassembly algorithms
- RFC 879 TCP maximum segment size and related topics
- RFC 896 Congestion control in IP/TCP internetworks
- RFC 917 Internet subnets
- RFC 919 Broadcasting Internet Datagrams
- RFC 922 Broadcasting Internet Datagrams in the Presence of Subnets (IP\_BROAD)
- RFC 925 Multi-LAN address resolution
- RFC 1215 Convention for defining traps for use with the SNMP
- RFC 1256 ICMP Router Discovery Messages
- RFC 1393 Traceroute Using an IP Option
- RFC 1591 Domain Name System Structure and Delegation
- RFC 1981 Path MTU Discovery for IP version 6
- RFC 1997 BGP Communities Attribute
- RFC 1998 An Application of the BGP Community Attribute in Multi-home Routing
- RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
- RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol
- RFC 2918 Route Refresh Capability for BGP-4
- RFC 2934 Protocol Independent Multicast MIB for IPv4
- RFC 3137 OSPF Stub Router Advertisement

- RFC 3176 InMon Corporation's sFlow: A Method for Monitoring Traffic in Switched and Routed Networks
- RFC 3509 Alternative Implementations of OSPF Area Border Routers
- RFC 3623 Graceful OSPF Restart
- RFC 4486 Subcodes for BGP Cease Notification Message
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 4940 IANA Considerations for OSPF
- RFC 5187 OSPFv3 Graceful Restart
- RFC 6987 OSPF Stub Router Advertisement
- RFC 7047 The Open vSwitch Database Management Protocol
- RFC 4251 The Secure Shell (SSH) Protocol
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4292 IP Forwarding Table MIB
- RFC 4293 Management Information Base for the Internet Protocol (IP)

## BUNDLES AND ACCESSORIES

### Aruba 8325 Bundles

- JL624A Aruba 8325-48Y8C Bundle includes: 48 x 25Gb ports (SFP+/28), 8 x 100Gb ports (QSFP+/28), 6 Front-to-Back Fans and 2 PSU's
- JL625A Aruba 8325-48Y8C Bundle includes: 48 x 25Gb ports (SFP+/28), 8 x 100Gb ports (QSFP+/28), 6 Back-to-Front Fans and 2 PSU's
- JL626A Aruba 8325-32C Bundle includes: 32 x 100Gb ports (QSFP+/QSFP28), 6 Front-to-Back Fans and 2 PSU's
- JL627A Aruba 8325-32C Bundle includes: 32 x 100Gb ports (QSFP+/QSFP28), 6 Back-to-Front Fans, and 2 PSU's

### Accessories

- JL628A Aruba 8325-48Y8C Front-to-Back Fan
- JL629A Aruba 8325-48Y8C Back-to-Front Fan
- JL630A Aruba 8325-32C Front-to-Back Fan
- JL631A Aruba 8325-32C Back-to-Front Fan

### Power supply

- JL632A Aruba 8325 650W 100-240VAC Front-to-Back Power Supply
- JL633A Aruba 8325 650W 100-240VAC Back-to-Front Power Supply

### Mounting kit (required when ordering a bundle)

- JL482B 2-post Rack Kit
- JL483B4-post Rack Kit



### Console Cable

- Aruba X2C2 RJ45 to DB9 Console Cable (JL448A)

### Transceivers

- Aruba 1G SFP LC SX 500m MMF XCVR (J4858D)
- Aruba 1G SFP LC LX 10km SMF XCVR (J4859D)
- Aruba 1G SFP LC LH 70km SMF XCVR (J4860D)
- Aruba 1G SFP RJ45 T 100m Cat5e XCVR (J8177D)
- Aruba 10G SFP+ LC SR 300m MMF XCVR (J9150D)
- Aruba 10G SFP+ LC LR 10km SMF XCVR (J9151D)
- Aruba 10G SFP+ LC ER 40km SMF XCVR (J9153E)
- Aruba 10GBASE-T SFP+ RJ-45 30m Cat6A XCVR (JL563A)<sup>1</sup>
- Aruba 10G SFP+ to SFP+ 1m DAC Cable (J9281D)
- Aruba 10G SFP+ to SFP+ 3m DAC Cable (J9283D)
- Aruba 40G QSFP+ LC BiDi 150m MMF XCVR (JL308A)
- Aruba 40G QSFP+ LC ER4 40km SMF XCVR (Q9G82A)
- Aruba 40G QSFP+ LC ER4 40km SMF XCVR
- Aruba 100G QSFP28-QSFP28 3m DAC Cable (JL307A)
- Aruba 100G QSFP28 MPO SR4 MMF XCVR (JL309A)
- Aruba 100G QSFP28 LC LR4 SMF XCVR (JL310A)
- HPE X142 40G QSFP+ MPO SR4 Transceiver (JH231A)
- HPE X142 40G QSFP+ LC LR4 SM Transceiver (JH232A)
- HPE X142 40G QSFP+ MPO eSR4 300M XCVR (JH233A)
- HPE X242 40G QSFP+ to QSFP+ 1m DAC Cable (JH234A)
- HPE X242 40G QSFP+ to QSFP+ 3m DAC Cable (JH235A)
- HPE X242 40G QSFP+ to QSFP+ 5m DAC Cable (JH236A)

Note: 8325 Series Switches do not support the use of 10G LRM (J9152D), nor 7M 10G DAC (J9285D)

<sup>1</sup> Maximum of 12 10GBASE-T in Model JL624A/JL625A (n/a to other 8325 models)