DATA SHEET

ARUBA CX 9300 SWITCH SERIES

High Performance Enterprise Data Center Switch

PRODUCT OVERVIEW

The Aruba CX 9300 Switch Series is a next-generation 25.6Tbps, 1U fixed configuration switch supporting 32-ports of 100/200/400GbE*. The switch is an ideal solution for flexible, cost-effective, high-density 400GbE connectivity server, storage, and intra-fabric connectivity. This solution helps protect enterprises investment as they transition server farms from 10GbE and 10/25GbE to 100GbE/400GbE EVPN-VXLAN leaf and/or spine configurations at reduced power and a smaller footprint.

The Aruba CX 9300 Switch Series supports large Data Center PODS of up to 6,000 x 25G servers or up to 2,000 x 100G servers. This is an 8x jump in scaling/density over current Aruba CX 8325-32C which scales to 700 x 25G servers.

Aruba CX 9300 Switch Series can be used as a 100G Leaf or 100/400G Spine switch (128 x 100G or 64 x 200G ports using breakouts).

When deployed as a Spine, the Aruba CX 9300 Switch Series flexibility connects to a range of leaf switches including Aruba CX 8325-48Y8C, Aruba CX 8360-48Y6C or Aruba CX 10000-48Y6C (Distributed Services Switch).

With Aruba's most recent AOS-CX release, the CX 9300-32D and CX 8325 switches provides an ideal solution for data center, cloud and storage use cases that support top-of-rack server/storage connectivity and scale-out leaf-spine fabric topologies. These innovative AOS-CX enhancements provide storage-optimization to ensure low-latency and "lossless" network QoS and connectivity characteristics that storage requires.

PRODUCT DIFFERENTIATORS

AOS-CX - a modern software system

The Aruba CX 9300 Switch Series is based on AOS-CX, a modern, database-driven operating system that automates and simplifies many critical and complex network tasks. A built-in time series database enables customers and developers to utilize software scripts for historical troubleshooting, as well as analysis of past trends. This helps predict and avoid future problems due to scale, security, and performance bottlenecks.

*25/50GbE will be supported in future

KEY FEATURES

- High performance 25.6Tbps with 5Bpps
- High Density 32 x 400G connectivity in 1RU form factor
- High availability with industry-leading VSX redundancy, and redundant power supplies and fans
- Designed for Spine, Core/Aggregation, Top of Rack or Leaf, or End of Row in the data center
- AOS-CX automation and programmability using built-in REST APIs and Python scripts
- Advanced Layer 2/3 feature set includes BGP, OSPF, VRF-Lite, and IPv6
- Dynamic VXLAN with BGP-EVPN for deep segmentation in data center and campus networks
- Intelligent monitoring, visibility, and remediation with Aruba Network Analytics Engine
- HPE Storage Networking Optimized
- Aruba NetEdit support for automated configuration and verification

The AOS-CX software also includes Aruba Network Analytics Engine (NAE) and support for Aruba NetEdit. Because AOS-CX is built on a modular Linux architecture with a stateful database, our operating system provides the following unique capabilities:

- Easy access to all network state information allows unique visibility and analytics
- REST APIs and Python scripting for fine-grained programmability of network tasks
- A micro-services architecture that enables full integration with other workflow systems and services
- Continual state synchronization that provides superior fault tolerance and high availability

- Supports Aruba Fabric Composer - a software-defined orchestration solution that simplifies and accelerates leaf-spine network provisioning and day-to-day operations across rack-scale compute and storage infrastructure.
- All software processes communicate with the database rather than each other, ensuring near real-time state and resiliency and allowing individual software modules to be independently upgraded for higher availability

Aruba Central - unified single pane of glass management

Flexible cloud-based or on-premises management for unified network operations of wired, WLAN, SD-WAN, and public cloud infrastructure. Designed to simplify day zero through day two operations with streamlined workflows. Switch management capabilities include configuration, onboarding, monitoring, troubleshooting, and reporting.

DHCP on any single VLAN and connection to Central without any password enable smooth onboarding. Aruba Central provides Rest API patch support for incremental updates in configuration. Multiple switch softwares can also be updated in a site by a single download.

Aruba Network Analytics Engine

For enhanced visibility and troubleshooting, Aruba's Network Analytics Engine (NAE) automatically interrogates and analyzes events that can impact a networks health. Advanced telemetry and automation provide the ability to easily identify and troubleshoot network, system, application and security related issues easily, through the use of python agents, CLI-based agents and REST APIs.

The Time Series Database (TSDB) stores configuration and operational state data, making it available to quickly resolve network issues. The data may also be used to analyze trends, identify anomalies and predict future capacity requirements.

Aruba NetEdit – automated switch configuration and management

The entire Aruba CX portfolio empowers IT teams to orchestrate multiple switch configuration changes for smooth end-to-end service rollouts. Aruba NetEdit introduces automation that allows for rapid network-wide changes, and ensures policy conformance post network updates. Intelligent capabilities include search, edit, validation (including conformance checking), deployment and audit features. Capabilities include:

- Centralized configuration with validation for consistency and compliance.
- Time savings via simultaneous viewing and editing of multiple configurations.
- Customized validation tests for corporate compliance and network design.
- Automated large-scale configuration deployment without programming.
- Network health and topology visibility via Aruba NAE integration.

Note: A separate software license is required to use Aruba NetEdit.

HPE Ethernet Storage Fabric Optimized

Aruba CX 9300 provides an ideal solution for data center, cloud and storage use cases that support top-of-rack server and storage connectivity and scale-out leaf-spine fabrics. AOS-CX adds storage-optimization enhancements to ensure the low-latency, lossless network QoS and connectivity characteristics that storage requires.

Aruba Virtual Switching Extension

The ability of AOS-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. Features include:

- Continuous configuration synchronization via AOS-CX
- Flexible active-active network designs at Layers 2 and 3
- Operational simplicity and usability for easy configuration
- High availability by design during upgrades including support for VSX Live Upgrade with LACP traffic draining.

PRODUCT CAPABILITIES

Performance

High-speed fully distributed architecture

- Provides 25.6Tbps for bidirectional switching and 5Bpps 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

Choice of compact high density port 1U switches with airflow direction flexibility include model with:

- 32-ports of 100/200/400GbE. 400 Gbps port can be configured as 4x100GbE, 2x200GbE, or 1x400GbE.

Jumbo frames

- Allows high-performance backups and disaster-recovery systems; supports 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

Packet storm protection

- Protects against unknown broadcast, multicast, or unicast storms with user-defined thresholds

Quality of Service (QoS)

Strict priority (SP) queuing and Deficit Weighted Round Robin (DWRR)

- Enable congestion avoidance

Storage Features

- PFC priority (7 per port)
- Flow-Control Guard
  - Prevents accumulation of excessive congestion with periodic flushing. Avoids packets buffering for an extended time period
  - Pre-standard LLDP DCBX
  - Enables pre-standard IEEE 1.01 version of DCBX
  - ECN with slope
  - Marks packets as ECN-CE (Congestion Experienced. Helps TCP to reduce receive window size during congestion

Data Center Bridging (DCB)

- Supports lossless Ethernet networking standard Priority Flow Control (PFC), Enhanced Transmission Service (ETS) and DCB Exchange Protocol (DCBX) to eliminate packet loss due to queue overflow

Other Storage Features

- Advanced lossless pool configuration
- Global buffering statistics

Resiliency and high availability

Redundant and load-sharing fans and power supplies

- Increases total performance and power availability

Hot swappable power supply and fan modules

- Allows replacement of accessory modules without any operational impact on other modules or the switch operations

Separate data and control paths

- Separates control from services and keeps service processing isolated; increases security and performance

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. Also supports upgrades during live operation

Virtual Router Redundancy Protocol (VRRP)

- VRRP allows a group of switches to dynamically back each other up to create highly available routed environments
- It also supports route-leaking to/from default VRF

Bidirectional Forward Detection (BFD)

- Enable sub-second failure detection for rapid routing protocol re-balancing

Ethernet Ring Protection Switching (ERPS)

- Supports rapid protection and recovery in a ring topology.

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 128 LAGs, with up to 16 members per LAG (32 for a VSX pair), with a user-selectable L1- 4 hashing algorithm

Management

In addition to the Aruba CX Mobile App, Aruba NetEdit and Aruba Network Analytics Engine, the Aruba CX 9300 series offers the following:

Built-in programmable and easy to use **REST API interface**

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.
- Private VLAN (PVLAN) provides traffic isolation between users on the same VLAN. Typically a switch port can only communicate with other ports in the same community and/or an uplink port, regardless of VLAN ID or destination MAC address. This extends network security by restricting peer-peer communication to prevent variety of malicious attacks.

IPSLA

- Monitors the network for degradation of various services, including voice.
- Monitoring is enabled via the NAE for history and for immediate 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
- It supports STP TCN Trap, STP New Root and SNMP-Write-Set-Description on Interface.

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 4,040 port-based or IEEE 802.1Q-based VLANs

VLAN Translation

- Remaps VLANs during transit across a core network

Bridge Protocol Data Unit (BPDU) tunneling

- Transmits STP BPDUs transparently, allowing correct tree calculations across service providers, WANs, or MANs

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)

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

Internet Group Management Protocol (IGMP)

- Controls and manages the flooding of multicast packets in a Layer 2 network

Static VXLAN

- Allows operators to manually connect two or more VXLAN tunnel endpoints (VTEP)

Dynamic VXLAN with BGP-EVPN

- Deep segmentation for Spine/Leaf data center networks or Layer 3 campus designs with centralized gateway and symmetric Integrated Routing and Bridging (IRB) based distributed gateways VXLAN tunnels.
- EVPN and VXLAN features include inbound and outbound route map support, matching L3VNI matching, local-preference setting, ip next-hop, as-path prepend, ip/ipv6 address prefix-list matching.
- VXLAN DC multi-fabric DCI support.

Multicast

- PIM Multicast Boundary (v4)
- VSX Graceful shutdown for IGMP/MLD
- Multicast NSF

IPv4 Multicast in VXLAN/EVPN Overlay

- Enable PIM-SM/IGMP snooping in the VXLAN Overlay

IPv6 VXLAN/EVPN Overlay Support

- Enables IPv6 traffic over the VXLAN overlay

VXLAN distributed anycast gateway

- Addressing mechanism that enables the use of the same gateway IP addresses across all the leaf switches part of a VXLAN network.
- It supports VSX active forwarding for VXLAN underlay.

VXLAN ARP/ND suppression

- Allows minimization of ARP and ND traffic flooding within individual VXLAN segments, thus optimizing the VXLAN network

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

DHCP Server

- Supports DHCP Smart Relay services (for IPv4 and IPv6) in customer networks
- DHCP relay coexistence with server
- Allows DHCP relay coexistence with DHCP server for both IPv4 and IPv6

Domain Name System (DNS)

- Provides a distributed database that translates domain names and IP addresses, which simplifies network design; supports client and server
- It also supports mDNS Gateway.

Generic Routing Encapsulation (GRE)

- Enables tunneling traffic from site to site over a Layer 3 path

Layer 3 Routing

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.
- Enhanced features include configurable OSPF distance for type-5 LSA and configurable default-metric for OSPF default-information guide.

Loopback IP redistribution in OSPF

- Allows redistribution of IPv4 and IPv6 addresses of loopback interface in OSFPv2/v3

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

Routing Information Protocol version 2 (RIPv2)

- Easy to configure routing protocol for small networks relying on User Datagram Protocol (UDP)

Routing Information Protocol Next Generation (RIPng)

- Extension of RIPv2 for support of IPv6 networking

Multiprotocol BGP (MP-BGP) with IPv6 Address Family

- Enables sharing of IPv6 routes using BGP and connections to BGP peers using IPv6

Policy Based Routing (PBR)

- Enables using a classifier to select traffic that can be forwarded based on policy set by the network administrator

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

Generic Routing Encapsulation (GRE)

- Enables tunneling traffic from site to site over a Layer 3 path

Security

TAA Compliance

- The Aruba CX 8325 with AOS-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

Enrollment over Secure Transport (EST)

- Enables secure certificate enrollment, allowing for easier enterprise management of PKI.

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

RadSec

- Enable RADIUS authentication and accounting data to be passed safely and reliably across insecure networks such as the internet

Management access security

- AOS-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

Internet Group Management Protocol (IGMP)

- Enables establishing multicast group memberships in IPv4 networks; supports IGMPv1, v2, and v3

Multicast Listener Discovery (MLD)

- Enable discovery of IPv6 multicast listeners; supports MLDv, v2.

Multicast Service Delivery Protocol (MSDP) for Anycast RP

- MSDP used for Anycast RP is an intradomain feature that provides redundancy and load-sharing capabilities.

MSDP Mesh Groups

- Allows to avoid SA messages flood to other mesh group peers.

PIM-Dense Mode

- Floods multicast traffic to every corner of the network (push-model). Method is for delivering data to receivers without receivers requesting the data. Can be efficient in certain deployments in which there are active receivers on every subnet in the network. Branches without downstream receivers are pruned from the forwarding trees.

FastLeave (FL) and Forced-FastLeave (FFL)

- FL and FFL for IGMP/MLD speed up the process of blocking unnecessary Multicast traffic to a switch port that is connected to end nodes for IGMP. They help to eliminate the CPU overhead of having to generate an IGMP/MLD Group- Specific Query message.

Protocol Independent Multicast (PIM)

- Protocol Independent Multicast for IPv4 and IPv6 supports one-to-many and many-to-many media casting use cases such as IPTV over IPv4 and IPv6 networks. Support for PIM Sparse Mode (PIM-SM, IPv4, IPv6), Source-Specific Multicast (SSM), and Dense Mode (DM).

Additional information

- Green initiative support
- Provides support for RoHS (EN 50581:2012) regulations

Korea Government Security Features

- Ensure configuration integrity
- Limit concurrent users for web access
- Platforms: All CX platforms

Analytics

- AIOPS - NAE Agent & Engine Improvements – Unicast Routing
- AIOPS - NAE Agent & Engine Improvements – Client Services

Customer first, customer last support

When your network is important to your business, then your business needs the backing of Aruba Support Services. Partner with Aruba product experts to increase your team productivity, keep pace with technology advances, software releases, and obtain break-fix support.

Foundation Care for Aruba support services include priority access to Aruba Technical Assistance Center(TAC) engineers 24x7x365, flexible hardware and onsite support options, and total coverage for Aruba products. Aruba switches with assigned Aruba Central subscriptions benefit with option for additional hardware support only.

Aruba Pro Care adds fast access to senior Aruba TAC engineers, who are assigned as a single point of contact for case management, reducing the time spent addressing and resolving issues.

For complete details on Foundation Care and Aruba Pro Care, please visit: https://www.arubanetworks.com/supportservices/

Warranty, services and support

Limited Lifetime Warranty

- See https://www.arubanetworks.com/support-services/product-warranties/ for warranty and support information included with your product purchase.

For **Software Releases** and Documentation, refer to https://asp.arubanetworks.com/downloads

For **support and services** information, visit https://www.arubanetworks.com/support-services/arubacare/

SPECIFICATIONS

	R9A29A Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Front-to-Back 6 Fans 2 AC PSU Bundle	R9A30A Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Back-to-Front 6 Fans 2 AC PSU Bundle
Description	The Aruba CX 9300-32D is a next-generation 25.6Tbps, 1U fixed configuration switch supporting 32-ports of 100/200/400GbE. The switch is an ideal solution for flexible, cost-effective, high-density 10-400GbE connectivity server, storage, and intra-fabric connectivity. This solution helps protect enterprises investment as they transition server farms from 10GbE and 25GbE to 100GbE/400GbE EVPN-VXLAN spine configurations at reduced power and a smaller footprint.	
Power supplies	Field-replaceable, hot-swappable, and up to 2 power supplies.	
Fans	Field-replaceable, hot-swappable, and up to 6 fans.	
Physical characteristics		
Dimensions	17.26" x 23.23" x 1.71" (43.84 x 43.84 x 4.35 cm)	
Full configuration weight	26.12 lb (11.85 kg)	
Additional specifications		
CPU	D-1537 1.7GHz	
Memory, Drive and Flash	128GB m.2 SSD, 4GB mSATA, 16MB SPI Flash, 16GB x2 SODIMM	
Packet Buffer	132MB	
Performance*		
Switching Capacity	25.6Tbps	
IPv4 Host Table	163,840	
IPv6 Host Table	81,920	
IPv4 Unicast Routes	65,536 (1,269,760 Unidimensional for Spine)	
IPv6 Unicast Routes	32,768 (624,640 Unidimensional for Spine)	
MAC Table Size	81,920 (32,768 Unidimensional for Spine)	
IGMP Groups	8,192	
MLD Groups	8,192	
IPv4 Multicast Routes	8,192	
IPv6 Multicast Routes	4,096	

*Some of these scaling numbers assume shared tables and uni-dimensional traffic.

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Environmental		
Operating temperature	0°C to 40°C (32°F to 104°F) at sea level	
Operating relative humidity	5% to 95% non-condensing	
Non-Operating	-40°C to 80°C (-40°F to 158°F) at sea level	
Non-Operating/Storage relative humidity	5% to 90% non condensing	
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	
Electrical characteristics		
Frequency	50-60Hz	
AC Voltage	100-127 / 220-240 VAC 220-240V required to support 8-32 port production configuration	
Current	12A/8A	
Power consumption (230VAC)	Max: 600W; Idle 210W	Max: 615W; Idle: 221W
Safety		
	Safety-EU EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 + A2:2013 EN 62368-1:2014 +A11:2017 EN 62368-1:2018+A11:2020 **Safety-Worldwide** IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2: 2013 IEC 62368-1:2014 (Second Edition) IEC 62368-1:2018 (Third Edition) **Safety-North America** UL 62368-1 3rd, Ed. CAN/CSA-C22.2 N. 62368-1.19 3rd. Ed.	
EMC		
	Environmental Drop, Vibration, Shock: IEC 17025, ISTA 3C Immunity EN55024:2015 / CISPR 24:2015 ESD: EN 61000-4-2 Radiated: EN 61000-4-3 EFT/Burst: EN 61000-4-4 Surge: EN 61000-4-5 Conducted: EN 61000-4-6 Power frequency magnetic field: IEC 61000-4-8 Voltage dips and interruptions: EN 61000-4-11 Harmonics: EN 61000-3-2, IEC 61000-3-2 Flicker: EN 61000-3-3, IEC 61000-3-3 Emissions EN 55032:2015 / CISPR 32:2015, Class A VCCI-32:2016 Class A CNS 13483 AS/NZS ICES-003 Issue 5 FCC CFR 47 Part 15:2010, Class A RoHS-6 Compliant (EN 50581:2012)	

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	R9A29A Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Front-to-Back 6 Fans 2 AC PSU Bundle	**R9A30A Aruba 9300-32D 32p 100/200/400G QSFP-DD 2p 10G SFP+ Back-to-Front 6 Fans 2 AC PSU Bundle**
Lasers		
	EN60825-1:2014/IEC 60825-1: 2014 Class 1 Class 1 Laser Products/Laser Klasse 1	
Management		
	SNMP RJ-45 serial Micro USB console port RJ-45 OOBM Port	
Mounting and enclosure		
	Mounts in an EIA standard 19-inch rack or other equipment cabinet; horizontal surface mounting only; order 2-post or 4-post mounting kit separately	

STANDARDS AND PROTOCOLS

The following standards and protocols are supported.

- IEEE 802.1AB-2009
- IEEE 802.1ak-2007
- IEEE 802.1t-2001
- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering
- 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 802.3x Flow Control
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE 802.3by 25 Gigabit Ethernet
- IEEE 802.3ba 40 and 100 Gigabit Ethernet Architecture
- 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 1657 Definitions of Managed Objects for BGP-4 using SMIv2
- RFC 1772 Application of the Border Gateway Protocol in the Internet
- 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 2401 Security Architecture for the Internet Protocol
- RFC 2402 IP Authentication Header
- RFC 2406 IP Encapsulating Security Payload (ESP)
- RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
- RFC 2545 Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- RFC 2710 Multicast Listener Discovery (MLD) for IPv6
- 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 3484: Default Address Selection for Internet Protocol version 6 (IPv6)
- RFC 3509 Alternative Implementations of OSPF Area Border Routers
- RFC 3623 Graceful OSPF Restart
- RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
- RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
- RFC 4251 The Secure Shell (SSH) Protocol
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4273 Definitions of Managed Objects for 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)
- RFC 4360 BGP Extended Communities Attribute
- RFC 4486 Subcodes for BGP Cease Notification Message
- RFC 4552 Authentication/Confidentiality for OSPFv3
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 4760 Multiprotocol Extensions for BGP-4
- RFC 4940 IANA Considerations for OSPF
- RFC 5095: Deprecation of Type 0 Routing Headers in IPv6
- RFC 5187 OSPFv3 Graceful Restart
- RFC 5701 IPv6 Address Specific BGP Extended Community Attribute
- RFC 6987 OSPF Stub Router Advertisement
- RFC 7047 The Open vSwitch Database Management Protocol
- RFC 7059 A Comparison of IPv6-over-IPv4 Tunnel Mechanisms
- RFC 7313 Enhanced Route Refresh Capability for BGP-4
- RFC 8201 Path MTU Discovery for IP version 6

PRODUCT SKUS AND DESCRIPTION

SKU	SKU Description
R9A29A	Aruba 9300-32D 32-port 100/200/400G QSFP-DD 2-port 10G SFP+ Front-to-Back 6 Fans 2 AC PSU Bundle
R9A30A	Aruba 9300-32D 32-port 100/200/400G QSFP-DD 2-port 10G SFP+ Back-to-Front 6 Fans 2 AC PSU Bundle
R8Z96A	Aruba 9300-32D 32-port 100/200/400G QSFP-DD 2-port 10G Switch
R8Z99A	Aruba 9300 Front-to-Back Fan
R9A00A	Aruba 9300 Back-to-Front Fan
R8Z97A	Aruba 9300 1500W 100-240VAC Front-to-Back AC Power Supply
R8Z98A	Aruba 9300 1500W 100-240VAC Back-to-Front AC Power Supply

9300-32D TRANSCEIVERS, CABLES, SWITCHES AND NICS EXCLUDES 400G DACS, LEGACY 100G AND BELOW LIKE 25G (PHASE 2)[1]

SKU	SKU Description
R9B63A	Aruba 100G QSFP28 LC FR1 SMF 2km Transceiver
R9B41A	Aruba 400G QSFP-DD MPO-16 SR8 100m MMF Transceiver
R9B42A	Aruba 400G QSFP-DD MPO-12 eDR4 2km SMF Transceiver
R9B45A	Aruba 400G QSFP-DD to QSFP-DD 3m Active Optical Cable
R9B43A	Aruba 400G QSFP-DD to QSFP-DD 7m Active Optical Cable
R9B47A	Aruba 400G QSFP-DD to QSFP-DD 15m Active Optical Cable
R9B46A	Aruba 400G QSFP-DD to QSFP-DD 30m Active Optical Cable
R9B44A	Aruba 400G QSFP-DD to QSFP-DD 50m Active Optical Cable
R9B60A	Aruba 200G QSFP-DD to 2x QSFP28 100G 3m Active Optical Cable
R9B58A	Aruba 200G QSFP-DD to 2x QSFP28 100G 7m Active Optical Cable
R9B62A	Aruba 200G QSFP-DD to 2x QSFP28 100G 15m Active Optical Cable
R9B61A	Aruba 200G QSFP-DD to 2x QSFP28 100G 30m Active Optical Cable
R9B59A	Aruba 200G QSFP-DD to 2x QSFP28 100G 50m Active Optical Cable
R9B55A	Aruba 400G QSFP-DD to 2x QSFP56 200G 3m Active Optical Cable
R9B53A	Aruba 400G QSFP-DD to 2x QSFP56 200G 7m Active Optical Cable

9300-32D TRANSCEIVERS, CABLES, SWITCHES AND NICS EXCLUDES 400G DACS, LEGACY 100G AND BELOW LIKE 25G (PHASE 2)[1]	
SKU	**SKU Description**
R9B57A	Aruba 400G QSFP-DD to 2x QSFP56 200G 15m Active Optical Cable
R9B56A	Aruba 400G QSFP-DD to 2x QSFP56 200G 30m Active Optical Cable
R9B54A	Aruba 400G QSFP-DD to 2x QSFP56 200G 50m Active Optical Cable
R9B50A	Aruba 400G QSFP-DD to 4x QSFP56 100G 3m Active Optical Cable
R9B48A	Aruba 400G QSFP-DD to 4x QSFP56 100G 7m Active Optical Cable
R9B52A	Aruba 400G QSFP-DD to 4x QSFP56 100G 15m Active Optical Cable
R9B51A	Aruba 400G QSFP-DD to 4x QSFP56 100G 30m Active Optical Cable
R9B49A	Aruba 400G QSFP-DD to 4x QSFP56 100G 50m Active Optical Cable

1. QSFP-DD MSA supports QSFP28 (100G), QSFP+ (40G), and QSA28 to support 50G, 25G, and 10G XCVRs. QSA28 supported in future software release
2. eDR consolidates DR4 (500m) and eDR (2Km). Likewise, 100G FR1 works with DR and eDR as breakout.

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