Overview

HPE Aruba Networking Mobility Conductor

Extended maintenance windows, network upgrades and unplanned outages can mean hundreds or even thousands of hours of lost productivity yearly. More than ever, network infrastructure is mission-critical, and to meet these demands, the HPE Aruba Networking Mobility Conductor delivers the full capabilities of the HPE AOS network operating system to scale to today's enterprise needs.

The Mobility Conductor delivers scale and reliability, managing up to 100,000 clients, 10,000 access points (APs), and 1,000 controllers. It also provides simplified deployment with dynamic license management, hierarchical configuration, and choice of virtual or x86 hardware appliances.

HPE Aruba Networking Mobility Conductor Controller

Overview

Key Features

- Manage up to 10,000 access points for large campus requirements
- Support for new 802.11ax (Wi-Fi 6), WPA3 and Enhanced Open—and existing standards
- Dynamic Segmentation enforces wired and wireless access policies to simplify and secure the network
- Application awareness for 3,000+ applications without additional hardware
- Built-in AI-powered wireless/RF optimization
- Automate deployment with Zero Touch Provisioning and hierarchical configuration

Standard Features

Simple and secure access

The HPE Aruba Networking Mobility Conductor serves a key role in **Dynamic Segmentation**, providing a single management layer for all controllers acting as policy enforcement agents. Policy enforcement is provided by the HPE Aruba Networking Policy Enforcement Firewall embedded within each controller, and utilizes information on user roles, device type, applications, and network location to simplify and secure wired and wireless network access. This feature can be enabled with the HPE AOS PEF license and eliminates the need to manually configure SSIDs, VLANs or ACLs for each new client on the network.

24/7 Mission-Critical Networking

The Mobility Conductor is deployed as a conductor controller for any combination of HPE Aruba Networking 7000 Series or HPE Aruba Networking 7200 Series Mobility Controllers, and Mobility Controller Virtual Appliances. It is managed by HPE Aruba Networking Management Software (AirWave) for system-wide monitoring, reporting, and Wi-Fi location services. Mobility Conductor, increases scale by joining HPE Aruba Networking controllers to a Controller cluster, improve reliability using enhanced high availability (HA), adopt configurations seamlessly based on hierarchy, and reduce or eliminate maintenance windows by enabling Live Upgrades.

HPE AOS includes unique, and patented AI-powered machine learning Adaptive Radio Management features, such as **AirMatch** and ClientMatch (now enhanced with 802.11ax grouping) for automatic RF optimization. These features improve the network's performance based on changing environmental conditions, noisy or congested RF and resolve sticky client issues during user roaming. **HPE Aruba Networking RFProtect (RFP)** provides advanced spectrum analysis and wireless intrusion protection (WIPS/WIDS) to help identify and mitigate Wi-Fi and non-Wi-Fi sources of interference to contain potential security risks. Learn more about HPE Aruba Networking software features in the **HPE AOS** datasheet.

Enhanced Capabilities

HPE Aruba Networking AirMatch

As an enhancement of HPE Aruba Networking Adaptive Radio Management, AirMatch automates network-wide RF channels, channel width, and transmits power to optimize the highest density environments. By utilizing AI-powered machine learning algorithms, AirMatch proactively learns and acclimates the network based on changing environmental conditions and system capacity.

Hierarchical configuration and improved visibility

HPE AOS 8, running on the Mobility Conductor, uses a centralized, multi-tiered architecture that consolidates all deployment models s (e.g. all-conductor, single-conductor/multiple-local, and multiple-conductor/local) with a single approach. Network configurations can be made and distributed from the Mobility Conductor automatically to all Mobility Controllers to eliminate onsite configuration.

Licensing Pools

The Mobility Conductor enables licensing pools to dynamically manage licenses based on site requirements. By default, all managed devices (e.g. controller) share a global pool of licenses, however HPE AOS also allows individual controllers access to a dedicated pool of licenses.

Live Upgrades and multiple version support

With Mobility Conductor, HPE AOS 8 can be upgraded alongside active user sessions – eliminating the need for planned maintenance windows or downtime. Each Controller Cluster or individual service modules (AppRF, AirGroup, ARM, etc.) can also be selectively upgraded without impacting the rest of the network.

Hitless Failover and automated load balancing

Within a Controller Cluster, user sessions and AP traffic are load balanced to optimize network utilization during peak periods and maximize availability during unplanned outages (Figure 2). This also means that users won't notice any impact to voice calls, video streaming, or data transfers in an unlikely event that a controller loses connectivity (Figure 3).

Seamless Layer 2 and Layer 3 Roaming

Users can roam between floors, buildings or across the entire network without any re-authentication, change to their IP address, or loss of firewall state.

Standard Features

AppRF Customization
AppRF brings rich application visibility and control with deep packet inspection into over 2,600+ applications. In HPE AOS 8, custom applications and categories can now be defined directly by the network administrator.

Enhanced Wi-Fi Security
Support for WPA3 brings stronger encryption and authentication methods, while Enhanced Open brings automatic encryption security to open networks. New WPA2-MPSK feature enables simpler passkey management for WPA2 devices – should the Wi-Fi password on one device need to be changed, no additional key changes are needed for other devices on the network.

Dynamic Segmentation
The Mobility Conductor centrally maintains up-to-date policies from HPE Aruba Networking ClearPass policy management system, which are then locally enforced by each controller cluster in the network. Policies are based on role and applied uniformly across WLAN and LAN – eliminating the need to configure per-switch ACLs, VLANs, and subnets.

MultiZone
The same AP infrastructure can now terminate two different SSIDs on two different HPE Aruba Networking controllers while maintaining complete separation and security for all networks, policies, management and visibility. This is ideal for multi-tenancy requirements where multiple companies or groups reside at a single site or for an enterprise that requires multiple, secure networks.

Northbound APIs (NBAPI)
The Mobility Conductor includes a full set of NBAPIs that enable deep visibility into the network. NBAPIs provide RF health metrics, app utilization, device type and user data in an easy-to-integrate format. 3rd party applications can receive this information for improved visibility and monitoring.

Configuration Information

BTO Models

HPE Aruba Networking Mobility Conductor is available as a license for a virtual machine, or as hardened hardware with the software pre-loaded.
Choose your virtual machine license based on the desired device capacity.

Remarks	Description	SKU
	HPE Aruba Networking Mobility Conductor HW Appliances	
	min=0 \ max=2 SFP/SFP+ Transceivers	
	HPE Aruba Networking MCR-HW-1K Mobility Conductor Hardware Appliance Support for upto 1K Devices	JY791A
	HPE Aruba Networking MCR-HW-5K Mobility Conductor Hardware Appliance Support for upto 5K Devices	JY792A
	HPE Aruba Networking MCR-HW-10K Mobility Conductor Hardware Appliance Support for upto 10K Devices	JY793A
Notes:	Bring in (Min 2 // Max 2) Localized power cord based on the HPE Aruba Networking Localization Menu for each unit ordered. Devices include APs and Controllers Each HW Appliance requires at least 1 SFP/SFP+ transceiver for connectivity. Each HW Appliance includes 2 Power Supplies.	
	HPE Aruba Networking Mobility Conductor HW Appliances	
	min=0 \ max=2 SFP/SFP+ Transceivers	
Notes:	Available in US and Canada Only	
	HPE Aruba Networking MCR-HW-1K-F1 FIPS/TAA Support for 1K Devices Mobility Conductor HW Appliance	JZ396A
	HPE Aruba Networking MCR-HW-5K-F1 FIPS/TAA Support for 5K Devices Mobility Conductor HW Appliance	JZ397A
	HPE Aruba Networking MCR-HW-10K-F1 FIPS/TAA Support for 10K Devices Mobility Conductor HW Appliance	JZ398A
	HPE Aruba Networking Mobility Conductor Virtual Appliances	
	HPE Aruba Networking MCR-VA-50 Support for 50 Devices Mobility Conductor Virtual Appliance E-LTU	JZ106AAE
	HPE Aruba Networking MCR-VA-500 Support for 500 Devices Mobility Conductor Virtual Appliance E-LTU	JY895AAE
	HPE Aruba Networking MCR-VA-1K Support up to 1K Devices Mobility Conductor Virtual Appliance E-LTU	JY896AAE
	HPE Aruba Networking MCR-VA-5K Mobility Conductor Virtual Appliance Support for 5K Devices E-LTU	JY897AAE
	HPE Aruba Networking MCR-VA-10K Support for 10K Devices Mobility Conductor Virtual Appliance E-LTU	JY898AAE
	HPE Aruba Networking MCR-VA-50-F1 Mobility Conductor Virtual Appliance FIPS/TAA 50 Devices E-LTU	JZ395AAE
	HPE Aruba Networking MCR-VA-500-F1 FIPS/TAA Support 500 Devs Mobility Conductor VR Appliance E-LTU	JZ376AAE
	HPE Aruba Networking MCR-VA-1K-F1 Mobility Condtr Virtual Appliance FIPS/TAA up to 1K Devices E-LTU	JZ377AAE
	HPE Aruba Networking MCR-VA-5K-F1 Mobility Condtr Virtual Appliance FIPS/TAA up to 5K Devices E-LTU	JZ378AAE
	HPE Aruba Networking MCR-VA-10K-F1 Mobility Conductor Virtual Appliance FIPS/TAA 10K Devices E-LTU	JZ379AAE

Configuration Information

Notes: These products are not further configurable with the options below.

Power Cords

Requires 2 AC power cords for the dual power supplies

Remarks	Description	SKU
	HPE Aruba Networking PC-AC-ARG 250V/10A 1.8m C13 to IRAM 2073 (AR) AC Power Cord	JW113A
	HPE Aruba Networking PC-AC-AUS 250V/10A 1.8m C13 to AS3112 (AU) AC Power Cord	JW114A
	HPE Aruba Networking PC-AC-BR 250V/10A 1.8m C13 to NBR 14136 (BR) AC Power Cord	JW115A
	HPE Aruba Networking PC-AC-CHN 250V/10A 1.8m C13 to GB2099 (CH) AC Power Cord	JW116A
	HPE Aruba Networking PC-AC-DEN 250V/10A 1.8m C13 to AFSNIT 107-2-D1 (DK) AC Power Cord	JW117A
	HPE Aruba Networking PC-AC-EC 250V/10A 1.8m C13 to CEE7/7 (EU) AC Power Cord	JW118A
	HPE Aruba Networking PC-AC-IN 250V/6A 1.8m C13 to IS1293 (IN) AC Power Cord	JW119A
	HPE Aruba Networking PC-AC-IL 250V/10A 1.8m C13 to SI32 (IL) AC Power Cord	JW120A
	HPE Aruba Networking PC-AC-IT 250V/10A 1.8m C13 to CEI 23-50 (IT) AC Power Cord	JW121A
	HPE Aruba Networking PC-AC-JPN 125V/12A 1.8m C13 to JISC 8303 (JP) AC Power Cord	JW122A
	HPE Aruba Networking PC-AC-KOR 250V/7A 1.8m C13 to KSC 8305 (KR) AC Power Cord	JW123A
	HPE Aruba Networking PC-AC-NA 125V/10A 1.8m C13 to NEMA 5-15P (NA) AC Power Cord	JW124A
	HPE Aruba Networking PC-AC-SWI 220V/10A 1.8m C13 to SEV 1011 (SW) AC Power Cord	JW125A
	HPE Aruba Networking PC-AC-TW 125V/7A 1.8m C13 to CNS 10917 (TW) AC Power Cord	JW126A
	HPE Aruba Networking PC-AC-UK 250V/10A 1.8m C13 to BS1363 (UK) AC Power Cord	JW127A

Notes: HPE Aruba Networking Mobility Conductor Hardware Appliance ships with dual power supplies. Must order region specific power cords from this list.

Transceivers

For SFP/SFP+ ports (optional)

Remarks	Description	SKU
2	HPE Aruba Networking 1G SFP LC LX 10km SMF Transceiver	J4859D
1	HPE Aruba Networking 1G SFP LC SX 500m OM2 MMF Transceiver	J4858D
	HPE Aruba Networking 1G SFP LC LH 70km SMF Transceiver	J4860D
	HPE Aruba Networking 1G SFP RJ45 T 100m Cat5e Transceiver	J8177D
1	HPE Aruba Networking 10G SFP+ LC SR 300m OM3 MMF Transceiver	J9150D
1	HPE Aruba Networking 10G SFP+ LC LR 10km SMF Transceiver	J9151E
1	HPE Aruba Networking 10G SFP+ LC LRM 220m OM2 MMF Transceiver	J9152D
1	HPE Aruba Networking 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
1	HPE Aruba Networking 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D
1	HPE Aruba Networking 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285D
	Configuration Rules	
1	Default minimum HPE AOS software version is 6.5.3.0 and 8.1.0.0	
2	Minimum HPE AOS software version is 6.5.4.7 and 8.4.0.0	

Accessories

Select spares (optional)
Std (Min 0 // max 99) User Selection (min 0 // max 99)

Remarks	Description	SKU
	HPE Aruba Networking SPR-RK-MNT 7200 / S3500 / S1500-24/48 / S2500 Spare Front or Mid Mount	JW107A
	HPE Aruba Networking MCRPSU-400-AC 400W AC Spare PSU for Mobility Conductor Hardware Appliance	JY986A

Configuration Information

Notes:	Bring in (Min 1 // Max 1) Localized power cord based on the HPE Aruba Networking Localization Menu for each Spare PSU ordered	
	HPE Aruba Networking MCR-FT Spare Fan Tray for Mobility Conductor Hardware Appliance	JZ072A
Notes:	– MM-HW ships with rack mount kit – MM-HW ships with dual PSUs and 3 fan trays installed	

Licenses

Remarks	Description	SKU
	Available individual AP licenses	
	HPE Aruba Networking LIC-AP Controller per AP Capacity License E-LTU	JW472AAE
	HPE Aruba Networking LIC-PEF Controller Policy Enforcement Firewall Per AP License E-LTU	JW473AAE
	HPE Aruba Networking LIC-RFP Controller RFProtect Per AP License E-LTU	JW474AAE
	HPE Aruba Networking LIC-ACR Controller Advanced Cryptography 1 Session License E-LTU	Q9B90AAE
	HPE Aruba Networking Controller Web Content Classification 1-year Subscription E-STU	JY028AAE
	HPE Aruba Networking Controller Web Content Classification 3-year Subscription E-STU	JY029AAE
	HPE Aruba Networking Controller Web Content Classification 5-year Subscription E-STU	JY030AAE
	HPE Aruba Networking Controller Web Content Classification 7-year Subscription E-STU	JY031AAE
	HPE Aruba Networking Controller Web Content Classification 10-year Subscription E-STU	JY032AAE
	HPE Aruba Networking LIC-VIA Per VIA Client Controller VPN License E-LTU	JZ148AA
Notes:	For each AP attached to the controller the minimal configuration is 1xLIC-AP per AP.	
	Bundled AP license	
	HPE Aruba Networking LIC-ENT Enterprise (LIC-AP LIC-PEF LIC-RFP and LIC-AW) License Bundle E-LTU	JW471AAE
Notes:	– Configure these as at least one per AP connected to the controller – LIC-ENT (JW471AAE) is equivalent to 1 each of LIC-AP, LIC-REF, LIC-RFP, and LIC-AW – LIC-AW is a device license for AirWave Management system	

Software

Remarks	Description	
	On-Prem Services / Gateway and Controller Foundation Government Subscriptions	
3	HPE Aruba Networking COP Controller Foundation 1-year Government Subscription E-STU	S1P61AAE
3	HPE Aruba Networking COP Controller Foundation 3-year Government Subscription E-STU	S1P62AAE
3	HPE Aruba Networking COP Controller Foundation 5-year Government Subscription E-STU	S1P63AAE
3	HPE Aruba Networking COP Controller Foundation 7-year Government Subscription E-STU	S1P64AAE
3	HPE Aruba Networking COP Controller Foundation 10-year Government Subscription E-STU	S1P65AAE
	Configuration Rules	
Rule #	**Description**	
3	Add the Central On-Prem SKUs to the HPE Aruba Networking Catalog as Standalone: HPE Aruba Networking > Network Management > Central > On-Prem Services	

Technical Specifications

HPE Aruba Networking Mobility Conductor Models And Capacities

HPE Aruba Networking Mobility Conductor Virtual Appliance	MCR-VA-50	MCR-VA-500	MCR-VA-1K	MCR-VA-5K	MCR-VA-10K
Number of Devices	50	500	1,000	5,000	10,000
Number of Clients	500	5,000	10,000	50,000	100,000
Number of Controllers	5	50	100	500	1,000
Supported Platforms	VMWare ESXi, Microsoft Hyper-V, or open source KVM				

HPE Aruba Networking Mobility Conductor Hardware Appliance	MCR-HW-1K	MCR-HW-5K	MCR-HW-10K
Number of Devices	1,000	5,000	10,000
Number of Clients	10,000	50,000	100,000
Number of Controllers	100	500	1,000

Notes: HPE Aruba Networking Mobility Conductor Hardware Appliance is based on x86 hardware appliance

HPE Aruba Networking Mobility Conductor Hardware Appliance Technical Specifications

Interfaces and Indicators			
HPE Aruba Networking Mobility Conductor Hardware Appliance	**MCR-HW-1K**	**MCR-HW-5K**	**MCR-HW-10K**
Form factor/footprint	1xRU		
Gigabit Ethernet ports (SFP or 10G SFP+)	2		
USB 3.0	Yes (1)		
Console port	Yes (RJ45)		
Out-of-band management port	Yes		
Management/status LEDs	Yes		
LINK/ACT and status LEDs	Yes		

Dimensions and Weight			
HPE Aruba Networking Mobility Conductor Hardware Appliance	**MCR-HW-1K**	**MCR-HW-5K**	**MCR-HW-10K**
Dimensions (H x W x D)	4.4 cm (H) x 44.2 cm (W) x 40.1 cm (D) (1.73” x 17.40” x 15.79”)		
Weight	7.2 kg (15.87 lbs)		
MTBF (hours, @ 45C)	238,020	235,835	229,445

Technical Specifications

Environmental			
HPE Aruba Networking Mobility Conductor Hardware Appliance	**MCR-HW-1K**	**MCR-HW-5K**	**MCR-HW-10K**
Operating Temperature	0°C to 40°C (-40°F to 104°F)		
Storage Temperature	-40°C to 70°C (-40°F to 158°F)		
Operating Humidity	10% to 90% (RH) non-condensing		
Storage Humidity	10% to 95% (RH) non-condensing		
Operating Altitude	Up to 10,000 feet		
Maximum Power Consumption	120W*		
Acoustic Noise – Sound Pressure[1]	57 dBA**		
Acoustic Noise – Sound Power[1]	64.4 dBA***		

Notes:

- [1]Sound power per ETSI 300 753; Sound pressure per ISO 7779
- *Ubuntu running all cores, memory test, 10G traffic, this may vary by 10% based on software configuration
- **Measured at rear center
- ***Nominal fan speed at room temperature

Power Supply Specifications[2]			
HPE Aruba Networking Mobility Conductor Hardware Appliance	**MCR-HW-1K**	**MCRHW-5K**	**MCR-HW-10K**
Input voltage range	100-240V AC		
Output Voltage	+12V DC		
Input frequency	50-60 Hz		
AC line input current (steady state)	6.0A max		

Notes: [2]Dual 400-watt load shared redundant configuration

Technical Specifications

Regulatory and Safety Compliance	
Descriptions	**Specifications**
Certifications	• FCC Part 15 Class A CE • Industry Canada Class A • VCCI Class A (Japan) • EN 55032 Class A (CISPR 32 Class A), EN 61000-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN 55024, AS/NZS 3548 • UL 60950, EN60950 • CAN/CSA 22.2 #60950 • CE mark, cTUVus, CB, C-tick, Anatel, NOM, MIC
Regulatory SKU information	ARCNMCRHW
Minimum HPE AOS Release	MCR-HW-1K, AOS 8.1; MCR-HW-5K, AOS 8.1; MCR-HW-10K, AOS 8.1
WI-FI Certified	WI-FI CERTIFIED WPA3, AOS 8.4; WI-FI CERTIFIED Enhanced Open, AOS 8.4; Wi-Fi 6 (802.11ax), AOS 8.4; WI-FI CERTIFIED 802.11ad, AOS 8.4

Service and Warranty Information

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

Summary of Changes

Date	Version History	Action	Description of Change
16-Dec-2024	Version 11	Changed	Overview, Standard Features, Configuration Information and Technical Specification sections were updated.
26-Feb-2024	Version 10	Changed	Series name was updated
16-Oct-2023	Version 9	Changed	Configuration Information Section was updated.
16-Aug-2021	Version 8	Changed	Configuration Information section was updated, obsolete SKUs were deleted.
18-Jan-2021	Version 7	Changed	Overview, Standard Features, Configuration Information and Technical Specification sections were updated.
06-Apr-2020	Version 6	Changed	Configuration Information Section was updated. Obsolete SKUs were removed.
03-Dec-2018	Version 5	Changed	Complete document updated (software feature update)
15-Jan-2018	Version 4	Added	SKUs added: JW538AAE, JW539AAE, JW540AAE, JW541AAE, JW542AAE, JW543AAE, JW544AAE, JY028AAE, JY029AAE, JY030AAE, JY031AAE, JY032AAE, JZ148AA
08-Jan-2018	Version 3	Added	SKU added: Q9B90AAE
04-Dec-2017	Version 2	Changed	SKUs added: JZ106AAE, JY895AAE, JY896AAE, JY897AAE, JY898AAhellE, JZ395AAE, JZ376AAE, JZ377AAE, JZ378AAE, JZ379AAE Document name updated to HPE Aruba Networking Mobility Conductor Controller
08-May-2017	Version 1	New	New QuickSpecs

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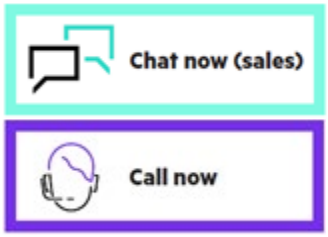

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