DATA SHEET

ARUBA MOBILITY MASTER

Enhanced scale and reliability for Aruba Mobility Controllers

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 Aruba Mobility Master delivers the full capabilities of the ArubaOS network operating system to scale to today's enterprise needs.

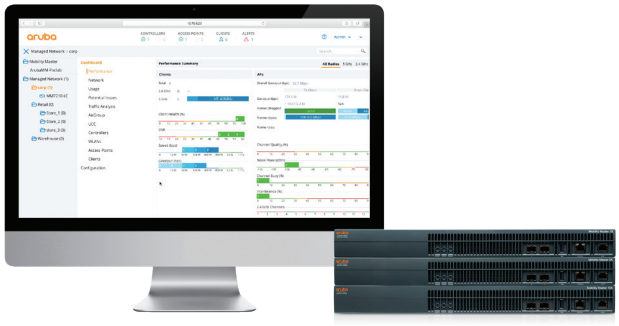
The Mobility Master enables high scale and reliability, managing up to 100,000 clients, 10,000 access points (APs) and 1,000 controllers/gateways. It also provides simplified deployment with dynamic license management, configuration hierarchy and a choice of virtual or x86 hardware appliances.

SIMPLE AND SECURE ACCESS

The Mobility Master serves a key role in Dynamic Segmentation, providing a single management layer for all controllers acting as policy enforcement agents. A user firewall and application visibility embedded within each controller can enforce policies based on role, device type, application and location to simplify and secure wired and wireless network access. This feature can be enabled with the ArubaOS 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 Master is deployed as a master controller for any combination of Aruba 7000 Series or 7200 Series Mobility Controllers and Mobility Controller Virtual Appliances. It is managed by Aruba AirWave for system-wide monitoring, reporting and Wi-Fi location services. Mobility Master increases scale by joining Aruba controllers to a Controller Cluster, improves reliability using enhanced high availability (HA), adopts configurations seamlessly based on hierarchy, and reduces or eliminates maintenance windows by enabling Live Upgrades.



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
- Deploy up to 10 controllers per cluster to maximize performance and availability

ArubaOS provides 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. RFProtect 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 Aruba's software features on the **ArubaOS** datasheet.

In Figure 1 we have 8 clients spread out evenly across 3 controllers. In Figure 2, in the event of a failure of the Controllers 1 and 2 all 8 clients move over to controller 3 – making sure users are not affected from the controller failure.

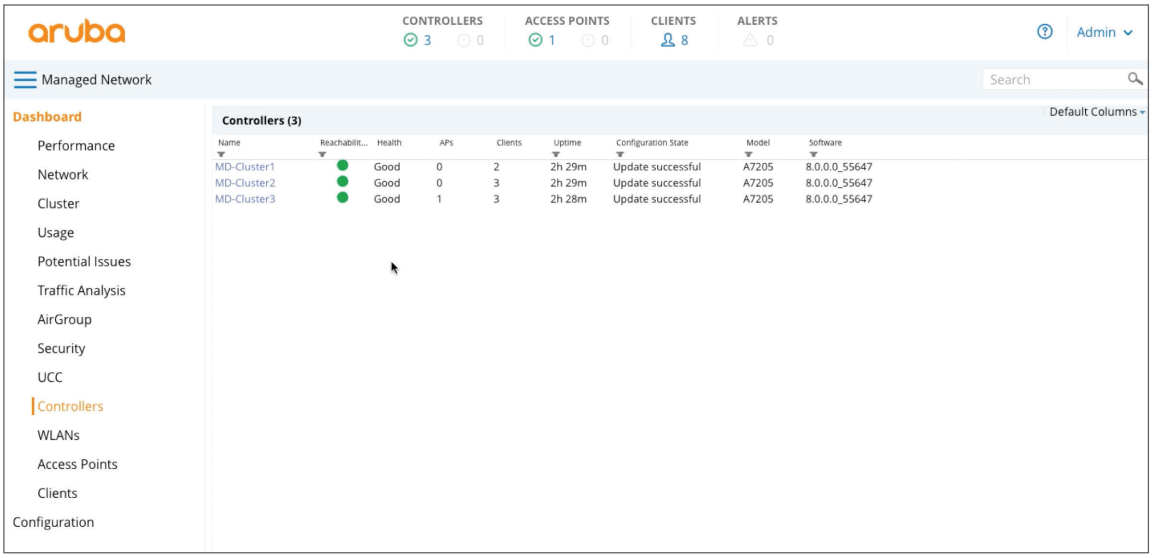


Figure 1: Clients are load balanced between controllers

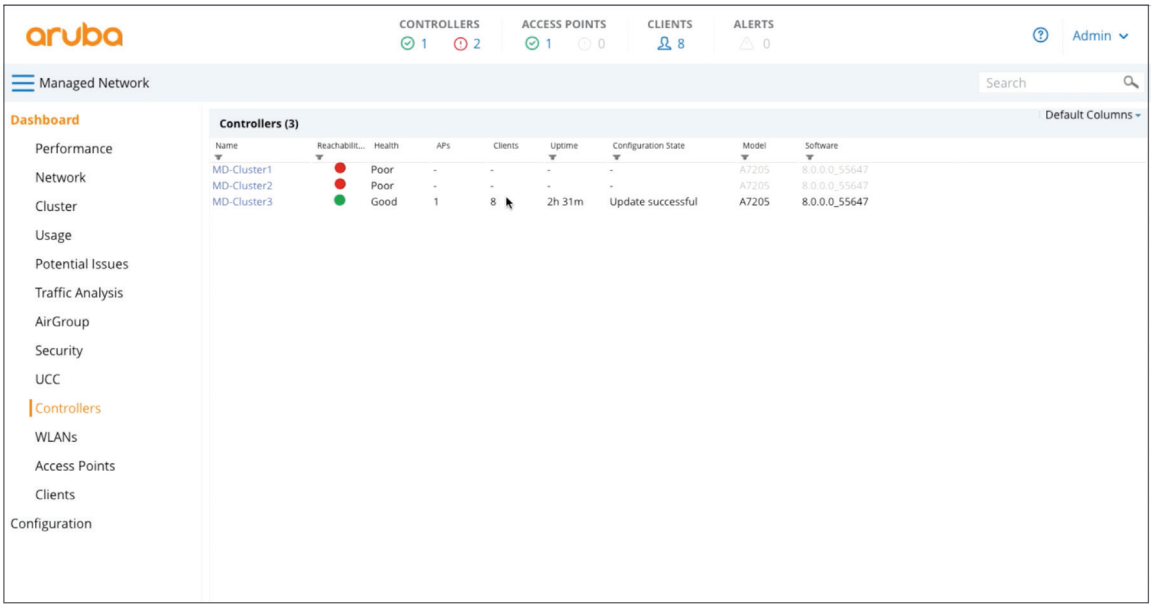


Figure 2: Clients failed over to one controller in the event of a failure

ENHANCED CAPABILITIES

AirMatch

As an enhancement of 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.

AirMatch Benefits:	
Even channel assignment	Provides even distribution of radios across available channels, interference mitigation and maximized system capacity
Dynamic channel width adjustment	Dynamically adjusts between 20 MHz, 40 MHz and 80 MHz to match the density of your environment
Automatic transmit power adjustment	Examines the entire WLAN coverage and automatically adjusts the transmit power of APs to ensure the best coverage and user experience

Hierarchical configuration and improved visibility

ArubaOS 8, running on the Mobility Master, uses a centralized, multi-tiered architecture that consolidates all deployment models (e.g. all-master, single-master/multiple-local, and multiple-master/local) with a single approach. Network configurations can be made and distributed from the Mobility Master automatically to all Mobility Controllers to eliminate onsite configuration (See Figure 3).

Licensing pools

The Mobility Master 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, ArubaOS also allows individual controllers access to a dedicated pool of licenses.

Live Upgrade and multiple version support

With Mobility Master, ArubaOS 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.

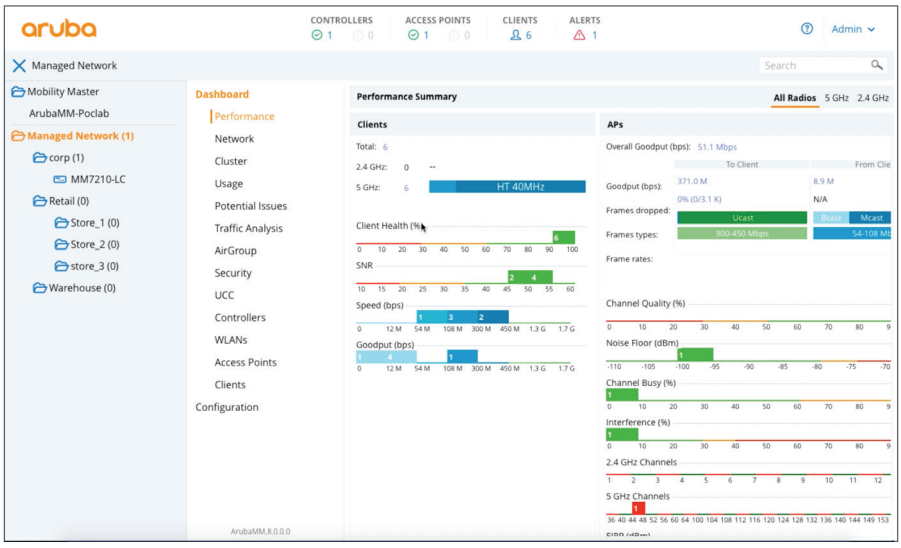


Figure 3: ArubaOS dashboard

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 1). 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 2).

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.

Application customization

AppRF brings rich application visibility and control with deep packet inspection into over 2,600+ applications. In ArubaOS 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 Master centrally maintains up-to-date policies from Aruba's 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 Aruba 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 (See Figure 4).

Northbound APIs (NBAPI)

The Mobility Master 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.

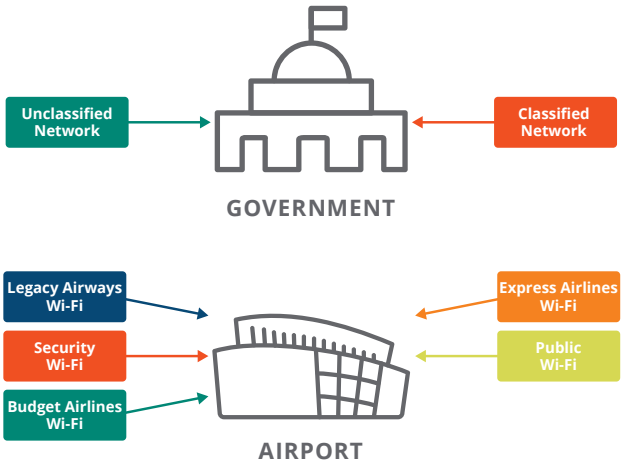


Figure 4: MultiZone use cases

In an airport where we have multiple tenants (e.g. an airline, airport security, and public network), each has deployed their own Aruba controller while sharing the same APs. Because each AP tunnels traffic to the appropriate controller, ArubaOS 8 maintains complete separation of data. This level of granularity extends to high security use cases, whereby multiple classified and non-classified networks can also utilize the same APs.

MOBILITY MASTER MODELS AND CAPACITIES

Mobility Master Virtual Appliance	MM-VA-50	MM-VA-500	MM-VA-1K	MM-VA-5K	MM-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				

Mobility Master Hardware Appliance	MM-HW-1K	MM-HW-5K	MM-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

Mobility Master hardware appliance is a x86-based hardware.

MOBILITY MASTER HARDWARE APPLIANCE TECHNICAL SPECIFICATIONS

Interfaces and Indicators

Mobility Master Hardware Appliance	MM-HW-1K	MM-HW-5K	MM-HW-10K
Form factor/footprint	1xRU		
Gigabit Ethernet ports (SFP or 10G SFP+)	2		
USB 3.0	Yes (1)		
Console port	Yes (RJ-45)		
Out-of-band management port	Yes		
Management/status LEDs	Yes		
LINK/ACT and status LEDs	Yes		

Dimensions and Weight

Mobility Master Hardware Appliance	MM-HW-1K	MM-HW-5K	MM-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

Environmental			
Mobility Master Hardware Appliance	**MM-HW-1K**	**MM-HW-5K**	**MM-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***		

[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]			
Mobility Master Hardware Appliance	**MM-HW-1K**	**MM-HW-5K**	**MM-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		

[2]Dual 400-watt load shared redundant configuration

REGULATORY AND SAFETY COMPLIANCE

Description	Specification
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	ARCNMMHW
Minimum ArubaOS Release	MM-HW-1K, AOS 8.1; MM-HW-5K, AOS 8.1; MM-HW-10K, AOS 8.1
	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

ORDERING INFORMATION

Part Number	Description
Aruba Mobility Master Virtual Appliance	
JZ106AAE	Aruba MM-VA-50 Mobility Master Virtual Appliance with Support for up to 50 Devices E-LTU
JY895AAE	Aruba MM-VA-500 Mobility Master Virtual Appliance with Support for up to 500 Devices E-LTU
JY896AAE	Aruba MM-VA-1K Mobility Master Virtual Appliance with Support for up to 1,000 Devices E-LTU
JY897AAE	Aruba MM-VA-5K Mobility Master Virtual Appliance with Support for up to 5,000 Devices E-LTU
JY898AAE	Aruba MM-VA-10K Mobility Master Virtual Appliance with Support for up to 10,000 Devices E-LTU
JZ395AAE	Aruba MM-VA-50-F1 Mobility Master Virtual Appliance FIPS/TAA with Support for 50 Devices E-LTU
JZ376AAE	Aruba MM-VA-500-F1 Mobility Master Virtual Appliance FIPS/TAA with Support for 500 Devices E-LTU
JZ377AAE	Aruba MM-VA-1K-F1 Mobility Master Virtual Appliance FIPS/TAA with Support for 1,000 Devices E-LTU
JZ378AAE	Aruba MM-VA-5K-F1 Mobility Master Virtual Appliance FIPS/TAA with Support for 5,000 Devices E-LTU
JZ379AAE	Aruba MM-VA-10K-F1 Mobility Master Virtual Appliance FIPS/TAA with Support 10,000 Devices E-LTU
Aruba Mobility Master Hardware Appliance and Accessories	
JY791A	Aruba MM-HW-1K Mobility Master Hardware Appliance with Support for up to 1,000 Devices
JY792A	Aruba MM-HW-5K Mobility Master Hardware Appliance with Support for up to 5,000 Devices
JY793A	Aruba MM-HW-10K Mobility Master Hardware Appliance with Support for up to 10,000 Devices
JZ396A	Aruba MM-HW-1K-F1 Mobility Master Hardware Appliance FIPS/TAA with Support for up to 1,000 Devices
JZ397A	Aruba MM-HW-5K-F1 Mobility Master Hardware Appliance FIPS/TAA with Support for up to 5,000 Devices
JZ398A	Aruba MM-HW-10K-F1 Mobility Master Hardware Appliance FIPS/TAA with Support for up to 10,000 Devices
JY986A	MMPSU-400-AC 400W AC Spare Power Supply for Mobility Master Hardware Appliance – Order region specific power cord
JZ072A	MM-FT Spare Fan Tray for Mobility Master Hardware Appliance
JW107A	Aruba SPR-RK-MNT Spare Rack Mount

Aruba Mobility Master Hardware Appliance Transceivers		
Part Number	**Description**	**MM-HW-xK**
JW087A	Aruba 1000BASE-LX LC Connector SFP XCVR	X
JW088A	Aruba 1000BASE-SX LC Connector SFP XCVR	X
JW089A	Aruba 1000BASE-T RJ45 Connector SFP XCVR	X
J4859D	Aruba 1G SFP LC LX 10km SMF Transceiver	X[1]
J4858D	Aruba 1G SFP LC SX 500m OM2 MMF Transceiver	X[1]
J4860D	Aruba 1G SFP LC LH 70km SMF Transceiver	X[2]
J8177D	Aruba 1G SFP RJ45 T 100m Cat5e Transceiver	X[1]
JW092A	Aruba 10GBASE-LR LC Connector SFP+ XCVR	X
JW091A	Aruba 10GBASE-SR LC Connector SFP+ XCVR	X
JW090A	Aruba 10GBASE-LRM LC Connector SFP+ XCVR	X
JW100A	SFP+ Direct Attach 0.5M Cable	X
JW101A	SFP+ Direct Attach 1M Cable	X
JW102A	SFP+ Direct Attach 3M Cable	X
JW104A	SFP+ Direct Attach 7M Cable	X
J9150D	Aruba 10G SFP+ LC SR 300m OM3 MMF Transceiver	X[1]
J9151D	Aruba 10G SFP+ LC LR 10km SMF Transceiver	X1
J9152D	Aruba 10G SFP+ LC LRM 220m OM2 MMF Transceiver	X[1]
J9281D	Aruba 10G SFP+ to SFP+ 1m DAC Cable	X[1]
J9283D	Aruba 10G SFP+ to SFP+ 3m DAC Cable	X[1]
J9285D	Aruba 10G SFP+ to SFP+ 7m DAC Cable	X[1]

Note:
X: Supported transceiver
[1]Default minimum ArubaOS software version is 8.1.0.0
[2]Minimum ArubaOS software version is 8.4.0.0

For additional information on Aruba WLAN products, please refer to:

- ArubaOS network operating system Data Sheet (and licenses) – **https://www.arubanetworks.com/assets/ds/DS_ArubaOS.pdf**
- Mobility Master and Controllers – **https://www.arubanetworks.com/products/networking/controllers/**
- Access Points – **https://www.arubanetworks.com/products/networking/access-points/**

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