# Alcatel-Lucent OmniAccess Mobility Master

Next generation master WLAN controller

The Alcatel-Lucent OmniAccess® Mobility Master is a next generation master controller that can be deployed as a virtual machine (VM) or installed on an x86-based hardware appliance. The OmniAccess Mobility Master delivers an intelligent WLAN with advanced technologies that enable an always-on network providing a better user experience, flexible deployment, simplified operations and enhanced performance. Existing ALE customers can migrate their master controller configuration and licenses over to the OmniAccess Mobility Master and start taking advantage of these unique capabilities.
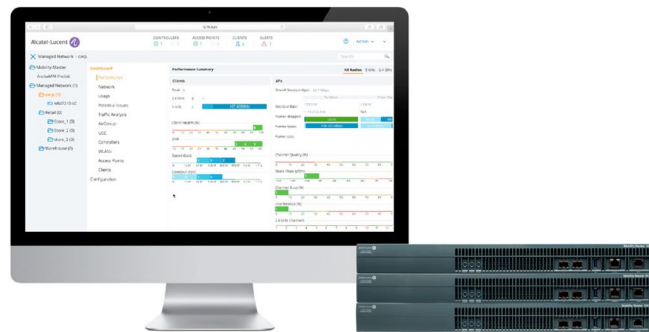
Flexible deployment

Customers have the flexibility of deploying a VM or an x86-based hardware appliance depending on their environment and needs. Customers who already have a VM environment can benefit from ease of operation and right-size their VM by adjusting their CPU or memory. Moving to a VM-based deployment that has more memory and compute allows you to manage more services on the network. The virtual OmniAccess Mobility Master can run on open source KVM or VMware ESXi hypervisor.

Simplified operations

The OmniAccess Mobility Master consolidates all master, single master multiple local, and multiple master local deployments into a single deployment model. AOS-W8 uses a centralized, multi-tier architecture under a new UI that provides a clear separation between management, control, and forwarding functions. The entire configuration for both the OmniAccess Mobility Master and managed devices is set up from a centralized dashboard, thereby simplifying and streamlining the configuration process.

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Figure 1. AOS-W dashboard
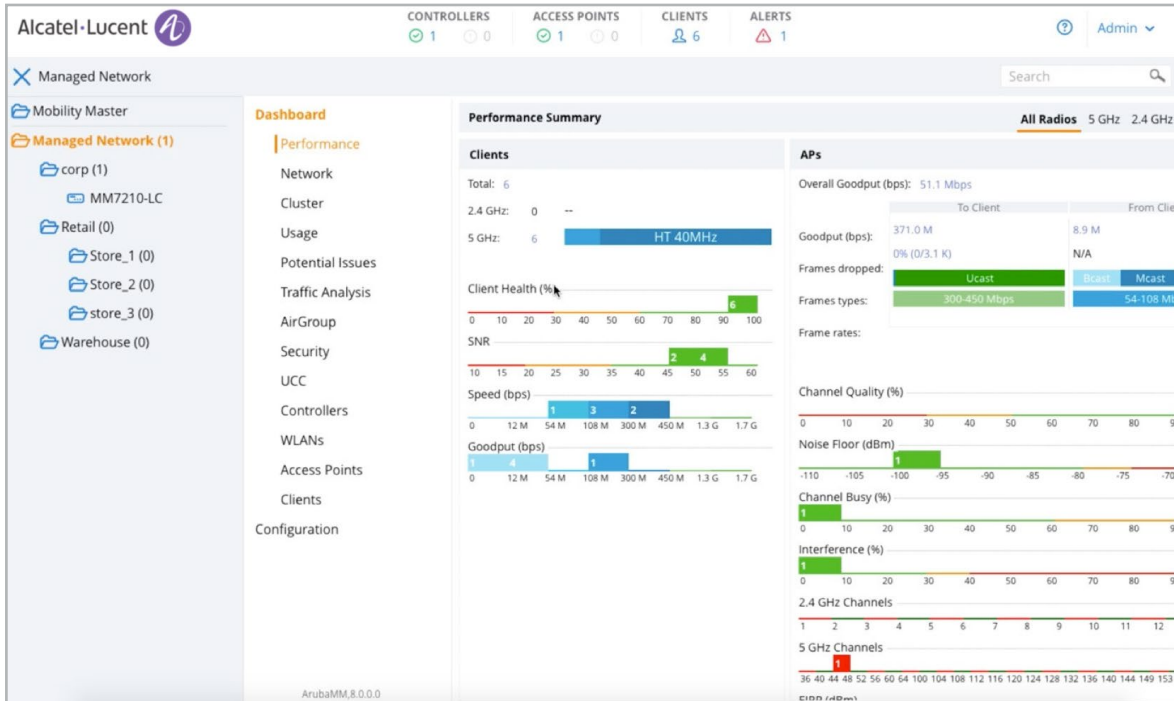
Simplified upgrades with a live upgrade *

Upgrading to a new operating system includes downtime for the entire network. However, when running mission critical data on the network, finding a maintenance window becomes harder. With live upgrades, your entire network can be upgraded to the latest operating system in real-time – with zero downtime and no users being affected.

OmniAccess Mobility Master also introduces the ability to dynamically update individual service modules (AppRF, AirGroup, ARM, AirMatch, NBAPI, UCM, WebCC) that reside on the OmniAccess Mobility Master, without requiring an entire system reboot.

Multi-tenant wireless network with MultiZone

The new MultiZone feature in AOS-W8 allows IT organizations to have multiple, separate secure networks while using the same access point (AP). Historically, if there were two secure networks in one physical location there had to be two separate APs, which would create RF interference and be costly. With MultiZone enabled, one AP can terminate two different SSIDS on two different controllers. The data is encrypted from the client to the controller. When data is flowing through the AP it is still encrypted.

This means the networks are separate and secure even though the traffic runs through the same AP. This feature is very useful for federal, airport, retail or office buildings as it allows for easy policy implementation in environments where data privacy, separation and network security are critical.

In Figure 2 we show how MultiZone can be deployed in environments with multiple networks running from the same access point. In an airport for instance, there can be separate networks for the airlines, public and airport security that run off the same access point. The airport security Wi-Fi runs their network through their controller, while the airport public Wi-Fi runs through a public Wi-Fi controller – and all are using the same access point. In government use cases, you can run both classified and non-classified networks from one access point with complete separation of data passing through their own respective controllers.

Figure 2. Multi-Zone use cases


*Only available in AOS-W 8.1

Controller clustering for better stability and user experience

Mobile users expect a continuous experience regardless of the amount of traffic hitting the network from mobile devices, IoT and business critical applications. Controller clustering enables a seamless experience across giant campuses in the event of a failure or significant crowd density. Clustering provides the following benefits for a better user experience:

• **Hitless failover** – Users will not notice any issues in the rare event of a controller failure. Voice calls, video, data transfers would all continue without noticeable impact. User session information is shared across controllers in the cluster to ensure there is no single point of failure for any user.

• **Automatic user load balancing** – Users are distributed evenly across controllers to prevent congestion on a single controller. This ensures large throughput for each user even when massive crowds gather.

• **Automatic AP load balancing** - The access points automatically are load balanced across the controller cluster for better resource use and high availability when a controller goes down. AP load balancing is done in seamless fashion so users are not affected.

• **Seamless roaming** – No delays are experienced by users while moving through a large campus while on mission critical applications such as a Skype-for-Business call. All the controllers in a cluster work together to manage the users. A user can roam across 10,000 APs without ever getting a new IP address, re-authenticating, or losing firewall state information.

In Figure 3, eight clients spread out evenly across three controllers. In Figure 4, in the event of a failure of controllers 1 and 2, all eight clients are moved over to controller 3 – ensuring users are not affected by the controller failure.

Figure 3. Clients are load balanced between controllers
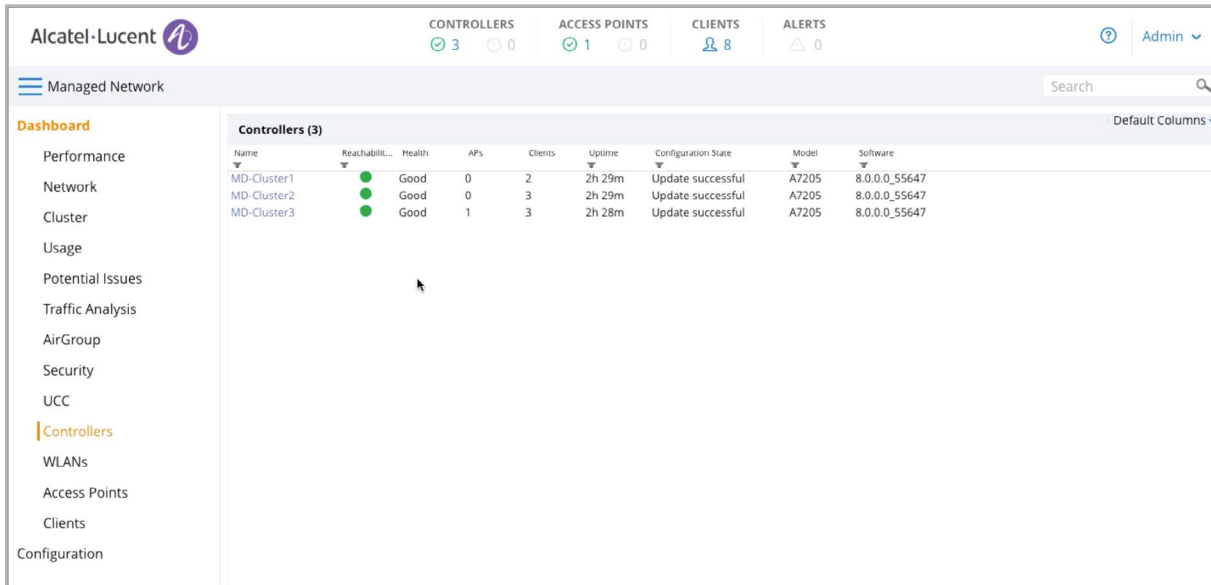
Figure 4. Clients move over to one controller in the event of a failure
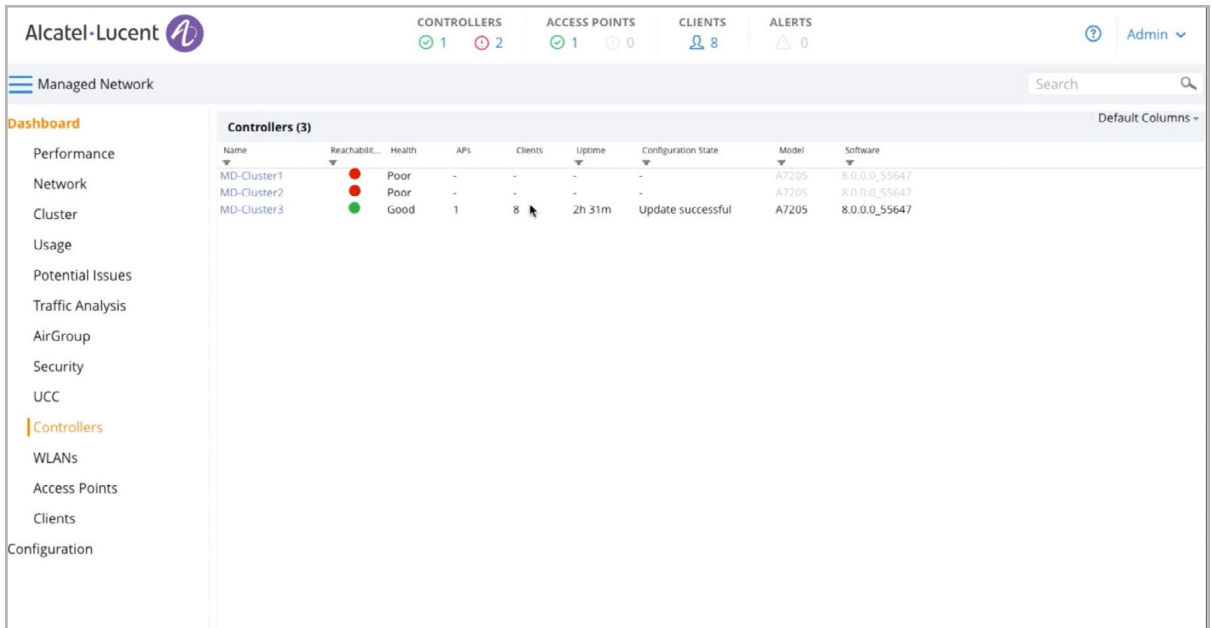
Enhanced WLAN performance

The OmniAccess Mobility Master with AOS-W8 expands OmniAccess WLAN capabilities to be more intelligent. AirMatch intelligently automates Wi-Fi tuning, while the northbound APIs provide unparalleled visibility to the network and AppRF customization brings better application user experience.

High performance Wi-Fi with AirMatch

AOS-W8 enhances the adaptive radio management (ARM) technology with AirMatch – the new RF optimization system.

AirMatch is designed with the modern RF environment in mind: Noisy and high-density environments with scarce clean or free air space. It gathers RF statistics for the past 24 hours and proactively optimizes the network for the next day. With automated channel, channel widths and transmit power optimization, AirMatch ensures even channel use, assists in interference mitigation and maximizes system capacity.

The capacity optimization is not just co-channel interference mitigation. AirMatch will also dynamically adjust channel width. This ensures the best network capacity whether you are in a high-density environment like a lecture hall (20 MHz channels) or low-density environments (80 MHz channels).

Client devices often make mistakes. AirMatch will minimize EIRP variances across the network to give clients the best chances to make the right decisions. ClientMatch will step in to help the clients that may still behave poorly.

Northbound APIs (NBAPI) for increased network intelligence

The OmniAccess Mobility Master has a full set of northbound APIs that enable deep visibility into the network. The NBAPIs provide RF health metrics, app utilization, device type and user data in an easy to integrate format. Third-party applications can receive information from the controller and analyze all these metrics for better visibility and monitoring.

AppRF Customization

AppRF brings application awareness to WLANs. It uses deep packet inspection to identify enterprise, cloud and mobile apps. It also enables IT to prioritize applications per user and device. Now in AOS-W8 we are extending the App RF capabilities by adding the capability for customers to define custom application and application categories to get a better user experience.

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 the 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

OmniAccess Mobility Master models and capacities					
OmniAccess Mobility Master virtual appliance	MM-VA-50	MM-VA-500	MM-VA-1K	MM-VA-5K	MM-VA-10K
Number of devices	50	500	1000	5000	10,000
Number of clients	500	5000	10,000	50,000	100,000
Number of controllers	5	50	100	500	1000

OmniAccess Mobility Master hardware appliance	MM-HW-1K	MM-HW-5K	MM-HW-10K
Number of devices	1000	5000	10,000
Number of clients	10,000	50,000	100,000
Number of controllers	100	500	1000

OmniAccess Mobility Master Hardware Appliance is based on an x86 hardware appliance

OmniAccess Mobility Master hardware appliance specifications

Interfaces and indicators

- Two 10 GBase-X (SFP+) ports
- One 1 GBase-T Management port
- One USB 3.0
- One RJ-45 console port
- Port LINK/ACT and status LEDs
- Front panel LEDs – power, status, peer

Dimensions and weight

- 4.4 cm (H) x 44.2 cm (W) x 40.1 cm (D) (1.73 in x 17.40 in x 15.79 in)
- Weight: 7.2 kg (15.87 lbs)

Environmental

- Operating temperature range: 0°C to 40°C (-40°F to 104°F)
- Operating humidity: 10% to 90% (RH) non-condensing
- Storage temperature range: -40°C to 70°C (-40°F to 158°F)
- Storage humidity: 10% to 95% (RH) non-condensing
- Operating altitude: Up to 10,000 feet

Acoustic noise

- Sound pressure: 57 dBA*
- Sound power: 64.4 dBA**
- Sound power per ETSI 300 753; Sound pressure per ISO 7779

* Measured at rear center

** Nominal fan speed at room temperature

Power consumption

- 120W (Ubuntu running all cores, memory test, 10 G traffic, this may vary by 10% based on software config)

Power supply specifications

- Dual 400-watt load shared redundant configuration
- Input: 100-240V AC
- Output: 12V DC
- AC input current: 6.0 A max
- AC input frequency: 50-60 Hz

Regulatory and safety compliance

- 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

- Regulatory model: ARCNMMHW

Minimum AOS-W release

- AOS 8.1

Warranty

- Hardware: 1 year parts/labor*
- Software: 90 days*

* Extended with support contract

Ordering information

OmniAccess Mobility Master Virtual Appliance

Part number	Description
OAW-MM-VA-50	OmniAccess MM-VA-50 Virtual Mobility Master software with support for up to 50 devices E-LTU
OAW-MM-VA-500	OmniAccess MM-VA-500 Virtual Mobility Master software with support for up to 500 devices E-LTU
OAW-MM-VA-1K	OmniAccess MM-VA-1K Virtual Mobility Master software with support for up to 1000 devices E-LTU
OAW-MM-VA-5K	OmniAccess MM-VA-5K Virtual Mobility Master software with support for up to 5000 devices E-LTU
OAW-MM-VA-10K	OmniAccess MM-VA-10K Virtual Mobility Master software with support for up to 10,000 devices E-LTU

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