



ARUBA MMC-6000 MULTI-SERVICE MOBILITY CONTROLLER

The Aruba MMC-6000 Multi-Service Mobility Controller is a fully-featured modular controller able to aggregate up to 2,048 campus-connected access points (APs). The MMC-6000 controller provides a truly user-centric network experience, delivering follow-me connectivity, identity-based access, and application continuity services. The MMC-6000 is designed to support large deployments in a scaleable manner and can be easily implemented as an overlay without any disruption to the existing wired network. Advanced voice-over-WLAN features such as Call Admission Control (CAC), voice-aware RF management and strict over-the-air QoS allow the MMC-6000 controller to deliver mobile VoIP capabilities. The MMC-6000 is managed via ArubaOS or the Aruba Mobility Management System.



The MMC-6000 controller can also be deployed as a user-centric security gateway to authenticate wired and wireless users, enforce role-based access control policies and quarantine unsafe endpoints from accessing the corporate network. Guest users can be easily and safely supported with the built-in captive portal server and advanced network services. The MMC-6000 can create a secure networking environment without requiring additional VPN/firewall devices using integrated site-to-site VPN and NAT capabilities, split-tunneling and an ICSA-certified stateful firewall. Site-to-site VPN support can be integrated with all leading VPN concentrators to provide seamless integration into existing corporate VPNs.

CONTROLLER PERFORMANCE AND CAPACITY

Campus-connected APs	Up to 2,048
Remote APs	Up to 8,192
Users	Up to 32,768
MAC addresses	Up to 256,000
VLAN IP interfaces	512
Fast Ethernet ports (10/100)	Up to 72
Gigabit Ethernet ports (GBIC or SFP)	Up to 40
10 Gigabit Ethernet ports (XFP)	Up to 8
Active firewall sessions	Up to 2,097,200
Concurrent IPsec tunnels	Up to 32,768
Firewall throughput	Up to 80 Gbps
Encrypted throughput (3DES)	Up to 32 Gbps
Encrypted throughput (AES-CCM)	Up to 16 Gbps

WIRELESS LAN SECURITY AND CONTROL FEATURES

- 802.11i security (WFA-certified WPA2 and WPA)
- 802.1X user and machine authentication
- EAP-PEAP, EAP-TLS, EAP-TTLS support
- Centralized AES-CCM, TKIP and WEP encryption
- 802.11i PMK caching for fast roaming applications
- EAP offload for AAA server scalability and survivability
- Stateful 802.1X authentication for standalone APs
- MAC address, SSID and location-based authentication
- Multi-SSID support for operation of multiple WLANs
- SSID-based RADIUS server selection
- Secure AP control and management over IPsec or GRE
- CAPWAP-compatible and upgradeable
- Distributed WLAN mode for remote AP deployments
- Simultaneous centralized and distributed WLAN support

IDENTITY-BASED SECURITY FEATURES

- Wired and wireless user authentication
- Captive portal, 802.1X and MAC address authentication
- Username, IP address, MAC address and encryption keybinding for strong network identity creation
- Per-packet identity verification to prevent impersonation
- Endpoint posture assessment, quarantine and remediation
- Microsoft NAP, Cisco NAC, Symantec SSE support
- RADIUS and LDAP-based AAA server support
- Internal user database for AAA server failover protection
- Role-based authorization for eliminating excess privilege
- Robust policy enforcement with stateful packet inspection
- Per-user session accounting for usage auditing
- Web-based guest enrollment with Aruba GuestConnect™
- Configurable acceptable use policies for guest access
- XML-based API for external captive portal integration
- xSec option for wired LAN authentication and encryption(802.1X authentication, 256-bit AES-CBC encryption)

CONVERGENCE FEATURES

- Voice and data on a single SSID for converged devices
- Flow-based QoS using Voice Flow Classification™
- SIP, Spectralink SVP, Cisco SCCP and Vocera ALGs
- Strict priority queuing for over-the-air QoS
- 802.11e support – WMM, U-APSD and T-SPEC
- QoS policing for preventing network abuse via 802.11e
- Diffserv marking and 802.1p support for network QoS
- On-hook and off-hook VoIP client detection
- VoIP call admission control (CAC) using VFC
- Call reservation thresholds for mobile VoIP calls

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- Voice-aware RF management for ensuring voice quality
- Fast roaming support for ensuring mobile voice quality
- SIP early media and ringing tone generation (RFC 3960)
- Per-user and per-role rate limits (bandwidth contracts)

ADAPTIVE RADIO MANAGEMENT™ (ARM) FEATURES

- Automatic channel and power settings for controlled APs
- Simultaneous air monitoring and end user services
- Self-healing coverage based on dynamic RF conditions
- Dense deployment options for capacity optimization
- AP load balancing based on number of users
- AP load balancing based on bandwidth utilization
- Coverage hole and RF interference detection
- 802.11h support for radar detection and avoidance
- Automated location detection for active RFID tags
- Built-in XML-based Location API for RFID applications

WIRELESS INTRUSION PROTECTION FEATURES

- Integration with WLAN infrastructure
- Simultaneous or dedicated air monitoring capabilities
- Rogue AP detection and built-in location visualization
- Automatic rogue, interfering and valid AP classification
- Over-the-air and over-the-wire rogue AP containment
- Adhoc WLAN network detection and containment
- Windows client bridging and wireless bridge detection
- Denial of service attack protection for APs and stations
- Misconfigured standalone AP detection and containment
- 3rd party AP performance monitoring and troubleshooting
- Flexible attack signature creation for new WLAN attacks
- EAP handshake and sequence number analysis
- Valid AP impersonation detection
- Frame floods, Fake AP and Airjack attack detection
- ASLEAP, death broadcast, null probe response detection
- Netstumbler-based network probe detection

STATEFUL FIREWALL FEATURES

- Stateful packet inspection tied to user identity or ports
- Location and time-of-day aware policy definition
- 802.11 station awareness for WLAN firewalling
- Over-the-air policy enforcement and station blacklisting
- Session mirroring and per-packet logs for forensic analysis
- Detailed firewall traffic logs for usage auditing
- ICSA corporate firewall 4.1 compliance
- Application Layer Gateway (ALG) support for SIP, SCCP, RTSP, Vocera, FTP, TFTP, PPTP
- Source and destination Network Address Translation (NAT)
- Dedicated flow processing hardware for high performance
- TCP, ICMP denial of service attack detection and protection
- Policy-based forwarding into GRE tunnels for guest traffic
- External service interface for 3rd-party security integration for inline anti-virus, anti-spam and content filtering apps
- Health checking and load balancing for external services

VPN SERVER FEATURES

- Site-to-site VPN support for branch office deployments
- Site-to-site interoperability with 3rd-party VPN servers
- VPN server emulation for easy integration into WLAN
- L2TP/IPsec VPN termination for Windows VPN clients
- XAUTH/IPsec VPN termination for 3rd-party clients
- PPTP VPN termination for legacy VPN integration
- RADIUS and LDAP server support for VPN authentication
- PAP, CHAP, MS-CHAP and MS-CHAPv2 authentication
- Hardware encryption for DES, 3DES, AES, MPPE
- Secure point-to-point xSec tunnels for L2 VPNs

NETWORKING FEATURES AND ADVANCED SERVICES

- L2 and L3 switching over-the-air and over-the-wire
- VLAN pooling for easy, scalable network designs
- VLAN mobility for seamless L2 roaming
- Proxy mobile IP and proxy DHCP for L3 roaming
- Built-in DHCP server and DHCP relay
- VRRP-based N+1 controller redundancy (L2)
- AP provisioning-based N+1 controller redundancy (L3)
- Wired access concentrator mode for centralized security
- Etherchannel support for link redundancy
- 802.1d Spanning Tree Protocol (STP)
- 802.1Q VLAN tags

CONTROLLER-BASED MANAGEMENT FEATURES

- RF Planning and AP Deployment Toolkit
- Centralized AP provisioning and image management
- Live coverage visualization with RF heat maps
- Detailed statistics visualization for monitoring
- Remote packet capture for RF troubleshooting
- Interoperable with Ethereal and Airopeek analyzers
- Multi-controller configuration management
- Location visualization and device tracking
- System-wide event collection and reporting

CONTROLLER ADMINISTRATION FEATURES

- Web-based user interface access over HTTP and HTTPS
- Quickstart screens for easy controller configuration
- CLI access using SSH, Telnet and console port
- Role-based access control for restricted admin access
- Authenticated access via RADIUS, LDAP or Internal DB
- SNMPv3 and SNMPv2 support for controller monitoring
- Standard MIBs and private enterprise MIBs
- Detailed message logs with syslog event notification

CONTROLLER POWER SUPPLY OPTIONS

Power consumption Max. 466 Watts per PSU

HW-PSU-200: AC power supplies deliver 200 W of power
AC input voltage 90-132 VAC, 170-264 VAC
AC input frequency 47-63 Hz
AC input current 5 A @ 110 VAC

HW-PSU-400: AC power supplies deliver 400W of power
AC input voltage 85-264 VAC, Auto-sensing
AC input frequency 47-63 Hz
AC input current 5 A @ 110 VAC

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OPERATING SPECIFICATIONS AND DIMENSIONS

Operating temperature range	0° to 40° C
Storage temperature range	10° to 70° C
Humidity, non-condensing	5 to 95%
Height	5.75" (146 mm)
Width	17.4" (444 mm)
Depth	12.5" (317.5 mm)
Weight	30 lbs. (unboxed)

WARRANTY

Hardware	1 year parts/labor*
Software	90 days*

REGULATORY AND SAFETY COMPLIANCE

FCC part 15 Class A CE
 Industry Canada Class A
 VCCI Class A (Japan)
 EN 55022 Class A (CISPR 22 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, GS, CB, C-tick, Anatel, NOM, MIC, IQC

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
6000-BASE-2PSU-200	Aruba MMC-6000 Base System (Standard Power)
6000-BASE-2PSU-400	Aruba MMC-6000 Base System (SPOE Power)
SC-48-C1	Aruba Supervisor Card I (48 AP Support)
SC-128-C1	Aruba Supervisor Card I (128 AP Support)
SC-256-C2	Aruba Supervisor Card II (256 AP Support)
M3mk1-128-G10X-10G2X	Aruba Multi-Service Mobility Module Mark I, 10x 1000Base-X (SFP), 2x 10GBase-X (XFP), (128 AP Support)
M3mk1-G10X-10G2X	Aruba Multi-Service Mobility Module Mark I, 10x 1000Base-X (SFP), 2x 10GBase-X (XFP), (0 AP Support)

LC-2G	Aruba 2xGE Line Card
LC-2G24F	Aruba 2xGE/24FE Line Card
LC-2G24FP	Aruba 2xGE/24 FE Line Card SPOE
LC-GBIC-T	Aruba GBIC Interface Adapter - T
LC-GBIC-SX	Aruba GBIC Interface Adapter - SX
LC-GBIC-LX	Aruba GBIC Interface Adapter - LX
SFP-TX	Aruba SFP - 1000Base-T, RJ45
SFP-SX	Aruba SFP - 1000Base-SX, LC Connector
SFP-LX	Aruba SFP - 1000Base-LX, LC connector
XFP-SR	Aruba XFP - 850 nm serial pluggable XFP optic (LC), target range 300 m over MMF
XFP-LR	Aruba XFP - 1310 nm serial pluggable XFP optic (LC) for up to 10 km over SMF
HW-CHAS	Aruba MMC-5000 & MMC-6000 Series Base 4-Slot Chassis (Excludes Fan Tray)
HW-PSU-200	Aruba MMC-5000 & MMC-6000 Series Power Supply - 200 Watt
HW-PSU-400	Aruba MMC-5000 & MMC-6000 Series Power Supply - 400 Watt
HW-FT	Aruba MMC-5000 & MMC-6000 Series Replacement Fan Tray
HW-SC-LC-BLANK	Aruba MMC-5000 & MMC-6000 Series Supervisor / Line Card Slot Blank Panel
HW-PSU-BLANK	Aruba MMC-5000 & MMC-6000 Series Power Supply Unit Slot Blank Panel
AK-5000-NA	Aruba MMC-5000 & MMC-6000 Accessory Kit (HW Installation Guide & 19" Rack Mount Kit)
HW-MNT-19	Aruba MMC-5000 & MMC-6000 Series Replacement 19" Equipment Rack Mounting Kit

Please contact your Aruba Networks sales representative for more information on configuring and ordering this product.

* Extended with support contract



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