

# The Aruba 6000 Mobility Controller



The Aruba 6000 is a modular, full-featured wireless LAN mobility controller that aggregates up to 512 controlled Access Points (APs) and delivers mobility, centralized control, convergence services and security for wireless deployments. The Aruba 6000 is designed to support large deployments in a scaleable manner, and can be easily deployed as an overlay without any disruption to the existing wired network. The device

is managed using the Aruba Mobility Management System.

The Aruba 6000 can be deployed as an identity-based 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. Features that allow the Aruba 6000 to create a secure networking environment without requiring additional VPN/firewall devices include integrated site-to-site VPN, split-tunneling, ICSA-compliant stateful firewall and NAT. Site-to-site VPN can be integrated with all leading VPN concentrators to provide seamless integration into existing corporate VPNs. In addition, advanced convergence features such as Call Admission Control (CAC), voice-aware RF management and strict over-the-air QoS allow the Aruba 6000 to deliver mobile VoIP capabilities.

## Controller Performance and Capacity

|                                       |               |
|---------------------------------------|---------------|
| Controlled APs                        | Up to 512     |
| Users                                 | Up to 8192    |
| MAC addresses                         | Up to 128,000 |
| VLAN IP interfaces                    | 128           |
| Fast Ethernet ports (10/100)          | Up to 72      |
| Gigabit Ethernet ports (GBIC)         | Up to 6       |
| Active firewall sessions              | Up to 512,000 |
| Concurrent IPSEC tunnels              | Up to 8,192   |
| Firewall throughput                   | Up to 8 Gbps  |
| Encrypted throughput (3DES & AES-CCM) | Up to 7.2Gbps |

- Per-user session accounting for usage auditing
- Web-based guest enrollment with Aruba GuestConnect<sup>TM</sup>
- 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)

## 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 key binding 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

## Convergence Features

- Voice and data on a single SSID for converged devices
- Flow-based QoS using Voice Flow Classification<sup>TM</sup>
- 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
- 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<sup>TM</sup> (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
- Mobile edge client shim for roaming with RSA Tokens
- 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

#### 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, Airopeek and AirMagnet 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 200W of power
  - AC Input Voltage 90-132VAC, 170-264VAC
  - AC Input Frequency 47-63 Hz
  - AC input current 5A @ 110VAC
- 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: 5A @ 110VAC

#### 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
- CAN/CSA 22.2 #60950



**Ordering Information**

| Part number        | Description  |
|--------------------|--|
| 6000-BASE-2PSU-200 | Aruba 6000 Base System (Standard Power)                                      |
| 6000-BASE-2PSU-400 | Aruba 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)                                    |
| 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  |
| HW-CHAS            | Aruba 5000 & 6000 Series Base 4-Slot Chassis Excludes Fan Tray)              |
| HW-PSU-200         | Aruba 5000 & 6000 Series Power Supply 200 Watt                               |
| HW-PSU-400         | Aruba 5000 & 6000 Series Power Supply 400 Watt                               |
| HW-FT              | Aruba 5000 & 6000 Series Replacement Fan Tray                                |
| HW-SC-LC-BLANK     | Aruba 5000 & 6000 Series Supervisor / Line Card Slot Blank Panel             |
| HW-PSU-BLANK       | Aruba 5000 & 6000 Series Power Supply Unit Slot Blank Panel                  |
| AK-5000-NA         | Aruba 5000 & 6000 Accessory Kit (HW Installation Guide & 19" Rack Mount Kit) |
| HW-MNT-19          | Aruba 5000 & 6000 Series Replacement 19" Equipment Rack Mounting Kit         |
| SC-48-C1-UG-128    | Aruba Supervisor Card I System Upgrade (48 AP to 128 AP Support)             |
| LIC-SC1-SEC-48*    | Security Software Bundle for Supervisor Card I (48 AP License)               |
| LIC-SC1-ADV-48**   | Advanced Security Software Bundle for Supervisor card I (48 AP License)      |
| LIC-SC1-PEF-48     | Policy Enforcement Firewall Module for Aruba Supervisor Card I (48 AP)       |
| LIC-SC1-VPN-48     | VPN Server Module for Aruba Supervisor Card I (48 AP)                        |
| LIC-SC1-WIP-48     | Wireless Intrusion Protection Module for Aruba Supervisor Card I (48 AP)     |
| LIC-SC1-AAA-48     | Advanced AAA Module for Aruba Supervisor Card I (48 AP)                      |
| LIC-SC1-ESI-48     | External Services Interface Module for Aruba Supervisor Card I (48 AP)       |
| LIC-SC1-CIM-48     | Client Integrity Module for Aruba Supervisor Card I (48 AP)                  |
| LIC-SC1-XSC-48     | xSec Module for Aruba Supervisor Card I (48 AP)                              |
| LIC-SC1-SEC*       | Security Software Bundle for Supervisor Card I (128 AP License)              |
| LIC-SC1-ADV**      | Advanced Security Software Bundle for Supervisor Card I (128 AP License)     |
| LIC-SC1-PEF        | Policy Enforcement Firewall Module for Aruba Supervisor Card I (128 AP)      |
| LIC-SC1-VP         | VPN Server Module for Aruba Supervisor Card I (128 AP)                       |
| LIC-SC1-WIP        | Wireless Intrusion Protection Module for Aruba Supervisor Card I (128 AP)    |
| LIC-SC1-AAA        | Advanced AAA Module for Aruba Supervisor Card I (128 AP)                     |
| LIC-SC1-ESI        | External Services Interface Module for Aruba Supervisor Card I (128 AP)      |

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|--------------------|---|
| LIC-SC1-CIM        | Client Integrity Module for Aruba Supervisor Card I (128 AP)                |
| LIC-SC2-SEC*       | Security Software Bundle for Supervisor Card II (256 AP License)            |
| LIC-SC2-ADV**      | Advanced Security Software Bundle for Supervisor Card II (256 AP License)   |
| LIC-SC2-PEF        | Policy Enforcement Firewall Module for Aruba Supervisor Card II (256 AP)    |
| LIC-SC2-VPN        | VPN Server Module for Aruba Supervisor Card II (256 AP)                     |
| LIC-SC2-WIP        | Wireless Intrusion Protection Module for Aruba Supervisor Card II (256 AP)  |
| LIC-SC2-AAA        | Advanced AAA Module for Aruba Supervisor Card II (256 AP)                   |
| LIC-SC2-ESI        | External Services Interface Module for Aruba Supervisor Card II (256 AP)    |
| LIC-SC2-CIM        | Client Integrity Module for Aruba Supervisor Card II (256 AP)               |
| LIC-SC1-SEC-UG-1*  | Security Software for Supervisor Card I (Upgrade 48 AP to 128 AP)           |
| LIC-SC1-ADV-UG-1** | Advanced Security Software for Supervisor Card I (Upgrade 48 AP to 128 AP)  |
| LIC-SC1-PEF-UG-1   | Policy Enforcement Firewall for Supervisor Card I (Upgrade 48 AP to 128 AP) |
| LIC-SC1-VPN-UG-1   | VPN Server Module for Supervisor Card I (Upgrade 48 AP to 128 AP)           |
| LIC-SC1-WIP-UG-1   | Wireless Intrusion Protection for Sup. Card I (Upgrade 48 AP to 128 AP)     |
| LIC-SC1-AAA-UG-1   | Advanced AAA Module for Supervisor Card I (Upgrade 48 AP to 128 AP)         |
| LIC-SC1-ESI-UG-1   | External Services Interface for Supervisor Card I (Upgrade 48 AP to 128 AP) |
| LIC-SC1-CIM-UG-1   | Client Integrity Module for Supervisor Card I (Upgrade 48 AP to 128 AP)     |
| LIC-1-RAP          | Remote Access Point License (Single AP License)                             |
| LIC-4-RAP          | Remote Access Point License (4 AP License)                                  |
| LIC-6-RAP          | Remote Access Point License (6 AP License)                                  |
| LIC-8-RAP          | Remote Access Point License (8 AP License)                                  |
| LIC-16-RAP         | Remote Access Point License (16 AP License)                                 |
| LIC-24-RAP         | Remote Access Point License (24 AP License)                                 |
| LIC-48-RAP         | Remote Access Point License (48 AP License)                                 |
| LIC-64-RAP         | Remote Access Point License (64 AP License)                                 |
| LIC-128-RAP        | Remote Access Point License (128 AP License)                                |
| LIC-256-RAP        | Remote Access Point License (256 AP License)                                |

\*Includes Policy Enforcement Firewall (PEF) and Wireless Intrusion Protection (WIP)

\*\*Includes Policy Enforcement Firewall (PEF), Wireless Intrusion Protection (WIP) and VPN Server (VPN)

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