

## DATA SHEET

# ARUBA AIRWAVE

Visibility and management for multi-vendor access networks

Aruba AirWave is an easy-to-use network operations system that manages wired and wireless infrastructure from Aruba and a wide range of third-party manufacturers. It also includes visibility and controls that let you optimize how devices and apps perform on your network.

Through a centralized and intuitive user interface, AirWave provides real-time monitoring, proactive alerts, historical reporting, and fast, efficient troubleshooting. Dedicated dashboard views quickly help view potential RF coverage issues, unified communications and collaboration (UCC) traffic, application performance and network services health.

#### SINGLE PANE OF GLASS FOR LARGE ENVIRONMENTS

AirWave Glass, provides customers running multiple AirWave instances a single console that clearly displays network infrastructure data for visibility, reporting and troubleshooting. An advanced search engine enables IT administrators to efficiently get to the data they need without suffering through a "click" marathon. Built-in single sign-on (SSO) login security, lets IT staff safely go from Glass to individual AirWave consoles for efficient administration and privileges control. The same role-based access controls that are used in AirWave also manage who does what. Glass is available in physical and virtual appliance options.

#### **ARUBA CLARITY**

Clarity is an add-on module that proactively analyzes end-users' quality of experience by providing enhanced monitoring capabilities for critical network services, such as time and response failures for a device to associate with a Wi-Fi radio. Other services monitored include authentication times, gathering an IP address through DHCP, and DNS resolution.

This gives IT organizations end-to-end visibility into problems before they escalate as metrics are monitored in real-time, and also captured through on-demand or scheduled testing for predictive insight.

#### **REAL-TIME MONITORING AND VISIBILITY**

- Automatically see every user and device wireless and remote on the network.
- Measure response times and failures rates for client association with Wi-Fi radio, authentication with a RADIUS server, gathering IP address through DHCP, and resolving names for DNS services.
- Monitor wired infrastructure that connects wireless controllers and APs.
- View radio errors, including noise floor and channel utilization information, frequent causes of connectivity problems.
- Drill down rapidly from network-wide to device-level monitoring views.
- Store and easily view RF performance, capacity and application-level statistics, web traffic as well as network deviations over a 40-week period.

#### APPRF

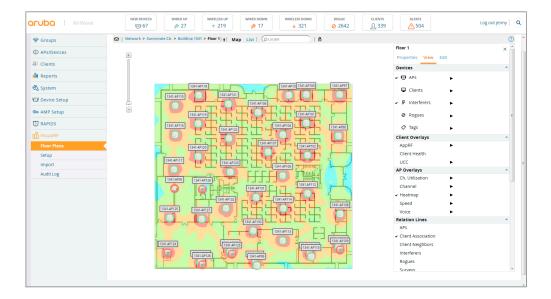
For deep visibility into common applications and web traffic, AppRF ensures mission-critical apps get priority, you can guage overall app usage, and have visibility into the heaviest users. A dedicated UCC dashboard provides granular visibility into Unified Communications applications such as Skype for Business and all Wi-Fi calls traversing your network.

#### VISUALRF

Location and mapping offers network-wide views for your entire RF environment. Maps of Wi-Fi coverage and the underlying wired topology show a clear and accurate picture of who is on the network, their location and how the network is performing. Overlays show client health and application performance to quickly diagnose issues specific to a client, a floor plan or specific location.

#### **WIPS/WIDS**

AirWave RAPIDS rogue detection works with Aruba RFProtect wireless intrusion protection software to collect data and mitigate issues with rogue APs, rogue clients and wireless intrusion events across wired and wireless networks. The wireless data collected is correlated with wired network data to identify the most significant and relevant threats, while greatly reducing false-positives and strengthening network security.



#### Figure 1: Network-wide visibility and location mapping.

ruba   AirWave	67	<i>ş</i> ⊉ 27 1	219	p 17 🔶 321	o 2642 ରୁ 279	53	14						Logout
R Clients	ATTACK .					LAST 2	HOURS		LAST 24 HOURS			TOTA	
Reports	Adhoc Network Using	Valid SSID				0			1			1	
	AP Flood Attack					230	230		2870	2870			
🖏 System	AP Spoofing Detected					0			۰			1	
Oevice Setup	Block ACK Attack					23			171			299	
8+ AMP Setup	Client Flood Attack					200			2132			3694	
	CTS Packets Rate Anomaly					5	5			33			
🕲 RAPIDS	Deauth Broadcast					0	0 1			1			
Overview	Disconnect Station At	tack				4			27			58	
Ust	FATA-Jack Attack					44			194			339	
IDS Events	Hotspotter Attack					1			7			13	
Setup	HT-40MHz Intolerano					26			110			178	
Rules	HT Greenfield suppor	τ				0			2			2	
Score Override	Information Element	Overflow				16			195			354	
Audit Log	Invalid Address Comb	ination				15			101			203	
🖞 VisualRF	Invalid MAC OUI					97			1044			1739	
	IP Spoofing					1			3			5	
	Malformed Associatio	in Request				15			155			282	
	Malformed Frame La	ge Duration				30			266			467	
	Malformed HT Inform	ation Element				7			33			49	
	Node Rate Anomaly					0			۰			1	
	Null Probe Response					1			4			6	
	Omerta Attack					0			1			2	
	Power Save DoS Attac	k .				58			288			556	
	RTS Packets Rate Anomaly						2			28			
	Station Associated to Rogue AP						6			62			
	Station Unassociated from Rogue AP						7			55			
	Unencrypted Data Fra	ime Detected				656			3892			7463	
	Valid Client Misassociation Detected						151		1029	1029			
	Valid SSID Violation					0			14			20	
	WEP Misconfiguration					0			14			14	
	Wireless Bridge Detected								391			650	
	31 Attack Types								13124			2392	
	1-25 + of 23,922 IDS Events Page 1 + of 957 > >1. Reset fitters. Choose columns. Export CSV SEVERITY - CATEGORY - SCOPE - ATTACK - DETAIL						ATTACKER ¥	TARGET T	TIME •	AP/DEVICE ¥	RADIO w	CONTROLLER w	SSID ¥
	Low			Wireless Bridge Detected	Wireless Bridge Detected		34:48:46:66:70:80	01:08:85:00:00:00	2/19/2016 4:33 PM PST	AP325-TE	802.11bgn	ethersphere-1322-porf	do -
	E High	Anomalous Behavior	Client	Unencrypted Data Frame Detected	Linearcounted Data Frame Comm	ed.	AC-42-10-55-90-00	0000-0000 AC-20	2/19/2016 4:33 PM PST	1241 40124	902.11/2	Ouchuston	

Figure 2: Detect more than 25 types of wireless attacks.

#### **DEVICE DISCOVERY**

- Automatically discover WLAN infrastructure devices.
- Operate in any network environment, including large distributed networks with multiple locations.

#### **TROUBLESHOOTING AND DIAGNOSTICS**

- View client device data from ArubaOS, Aruba Instant and Aruba ClearPass Policy Manager including device type, operating system, operating system details, manufacturer and model.
- Search for clients by user name or MAC address for a diagnostic view of device and network statistics along with indicators to evaluate overall health and performance.
- Overlay client health on a floor plan to diagnose issues specific to the client or to an area on a floor plan.
- Easily diagnose RF issues in the network for advanced RF troubleshooting.

#### **ROOT CAUSE ANALYSIS AND EVENT CORRELATION**

- Map upstream relationships between APs, controllers and switches to identify the root cause of downtime and performance problems.
- Correlate performance and downtime issues to send only a single alert in the event of an upstream device failure.

### **CONFIGURATION MANAGEMENT**

- Automatically configure APs, controllers, Aruba Instant, and Aruba Switches.
- Define configuration policies through a web user interface or by importing known-good configuration from an existing device.
- Configure Aruba Instant APs to provision a large number of branch locations with ease. Manage configurations across multiple locations with tools like adding notes, and overrides, as well as multi-edit and context-sensitivity support.
- Eliminate time-consuming and error-prone manual updates with efficient remote software distribution.
- Support advanced firmware image upgrades with features such as enforcing certified versions by group, splittingup image downloads and reboot processes, as well as support for scheduling of firmware upgrades or change configurations to occur during off hours.
- Archive device configurations for auditing and version control. Additionally, archive device configurations and flash backups to restore previous stat and configuration of Aruba controllers.
- Maintain detailed audit logs of changes made by all AirWave operators.

#### **BETTER NETWORK PLANNING AND PROVISIONING**

• VisualRF and the offline VisualRF Plan allow for quick planning of RF and wired coverage for new sites.

### MANAGE LATEST TECHNOLOGIES, ARCHITECTURES AND PRODUCTS

- A single management interface for multiple generations of devices.
- Support autonomous, controller-managed and mesh APs, including outdoor Aruba AirMesh.
- Monitor wired edge devices using standard MIB data.
- Generate reports on wired port utilization for capacity planning.
- Support latest ArubaOS and ArubaOS-Switch management capabilities.

#### **EASY-TO-USE WEB INTERFACE**

- Role-based access, viewing rights and administrative privileges tailored to job responsibilities.
- Custom graphs of key information allow for pan and zoom for visibility into specific periods of time.
- Identify and search for users by user name.
- Client overview summarizes the types of clients attached to the network and provides visibility into watched or VIP clients.
- Multiple dashboard views provide visibility into every aspect of RF, clients, apps and network services.

#### **SECURE COMMUNICATIONS**

 Government-grade, agency-validated information assurance validations including FIPS 140-2 (Certificate #2577). For more information, read detailed documentation.

#### HARDWARE AND VIRTUAL APPLIANCE OPTIONS

The following versions of AirWave are designed and tested to ensure compatibility and performance for different size requirements:

- Pro version supporting up to 1,500 managed devices.
- Enterprise version supporting up to 4,000 managed devices.

#### HARDWARE

- Glass and AirWave Enterprise will require the Enterprise Appliance
- Virtual Machines
- VMware and Hyper V supported

#### HARDWARE PLATFORMS

Category	Pro Appliance	Enterprise Appliance
Appliance Specifications		
CPU	8-core 2.6 Ghz HPE DL360 Gen9 E5-2640v3	2 8-core 2.6 Ghz HPE DL360 Gen9 E5-2640v3
Memory	48GB	96GB
Storage	6 300GB 12G SAS 15K 2.5in SC ENT HDD	8 300GB 12G SAS 15K 2.5in SC ENT HDD
Appliance Scalability		
Maximum Managed Devices	1,500	4,000
Power		
Power	500W FS Plat Hot Plug Power Supply	500W FS Plat Hot Plug Power Supply
Power Supply	Optional redundant power supply	Optional redundant power supply
AC Input Voltage	110/220 VAC Auto-Selecting	110/220 VAC Auto-Selecting
AC Input Frequency	50/60 Hz Auto-Selecting	50/60 Hz Auto-Selecting
Physical		
Rackmount	1U SFF Easy Install Rail 1U Cable Management Arm	1U SFF Easy Install Rail 1U Cable Management Arm
Dimensions (H x W x D)	1.7 x 17.1 x 27.5 inches (4.32 x 43.47 x 69.85 cm)	1.7 x 17.1 x 27.5 inches (4.32 x 43.47 x 69.85 cm)
Weight	33.3 lb. (15.31 kg) max	33.3 lb. (15.31 kg) max
HP SmartDrives	8 + 2 SFF/4 LFF max, HDD/SSD	8 + 2 SFF/4 LFF max, HDD/SSD
Networking	4 x 1GbE embedded + FlexibleLOM slot	4 x 1GbE embedded + FlexibleLOM slot
VGA/serial/USB ports	Front VGA opt, rear VGA standard, and serial opt., 5 USB 3.0	Front VGA opt, rear VGA standard, and serial opt., 5 USB 3.0
GPU support	Two single-wide and active to 9.5" in length, up to 150 W each	Two single-wide and active to 9.5" in length, up to 150 W each
Industry compliance	ASHRAE A3 and A4, lower idle power	ASHRAE A3 and A4, lower idle power
Warranty		
Hardware	1 year parts and labor (onsite repair)	1 year parts and labor (onsite repair)
Software	90 days	90 days

ORDERING INFORMATION				
Part Number	Description			
JW546AAE	Aruba LIC-AW Aruba Airwave with RAPIDS and VisualRF 1 Device License E-LTU			
JW558AAE	Aruba AW-25-FR AirWave 25 Device Failover License E-LTU			
JW559AAE	Aruba AW-50-FR AirWave 50 Device Failover License E-LTU			
JW560AAE	Aruba AW-100-FR AirWave 100 Device Failover License E-LTU			
JW561AAE	Aruba AW-200-FR AirWave 200 Device Failover License E-LTU			
JW562AAE	Aruba AW-500-FR AirWave 500 Device Failover License E-LTU			
JW563AAE	Aruba AW-1000-FR 1000 AirWave Device Failover License E-LTU			
JW564AAE	Aruba AW-2500-FR 2500 AirWave Device Failover License E-LTU			
JW565AAE	Aruba AW-EXF1-50 AirWave 50 Device Failover Expansion License E-LTU			
JW566AAE	Aruba AW-EXF1-2500 AirWave 2500 Volume Failover Expansion License E-LTU			
JW567AAE	Aruba AW-MASTER AirWave Master Console License E-LTU			
JX918A	Aruba AirWave DL360 Professional Edition Hardware Appliance			
JX919A	Aruba AirWave DL360 Enterprise Edition Hardware Appliance			
JZ075A	Aruba AW-HW-GLASS AirWave Hardware Appliance for Centralized Monitoring			
JZ076AAE	Aruba AW-VA-GLASS AirWave Virtual Appliance for Centralized Monitoring E-LTU			



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