Product Line Overview

October 2005

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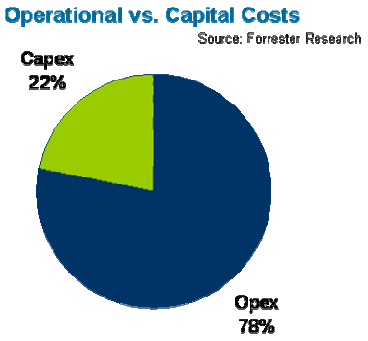
Introduction

Wi-Fi networks deliver enormous benefits to end users, enabling increased productivity by delivering fast, mobile network access. As Wi-Fi hardware costs continue to drop and employee demand increases, more and more large organizations are deploying wireless networks within their facilities. According to the META Group, more than 70% of large enterprises have already implemented Wi-Fi networks or are planning to install them within the next twelve to eighteen months.

While Wi-Fi networks give users unprecedented freedom and mobility, they present network administrators with a host of challenges that require new strategies and tools. In a typical large organization, the existing IT staff has strong LAN networking expertise and a wide range of applications to manage these Ethernet networks, but little knowledge of wireless, RF-based networks. Yet, when they implement Wi-Fi networks in their facilities, these over-worked network administrators immediately become responsible for delivering the same levels of performance and security on the wireless network as on the traditional wired network.



As a result, Forrester Research calculates that the cost of operating a WLAN and supporting its users for a single year can cost organizations almost four times as much as the Wi-Fi hardware itself. For the IT staff to succeed while controlling operating expenses, they need specialized solutions that automate critical tasks to enable them to manage and control their Wi-Fi infrastructure.

Customer Need

Network administrators have a clear need for a wireless management solution that delivers:

- Real savings through reduced network support costs
- Measurable improvement in wireless network performance
- Guaranteed implementation and enforcement of security policies.

To meet the customer need without locking them into proprietary solutions, Wi-Fi management software must be standards-based and provide the flexibility to manage hardware from any of the leading Wi-Fi vendors. Because wireless networks are almost always managed by Ethernet network administrators rather than RF specialists, the solution must also provide sophisticated RF network management capabilities without requiring deep RF expertise or expensive, time-consuming training. Finally, to the greatest extent possible, the solution must leverage the organization's existing investments in network infrastructure, management software and other critical network applications, rather than require the organization to replicate these solutions on the wireless network.

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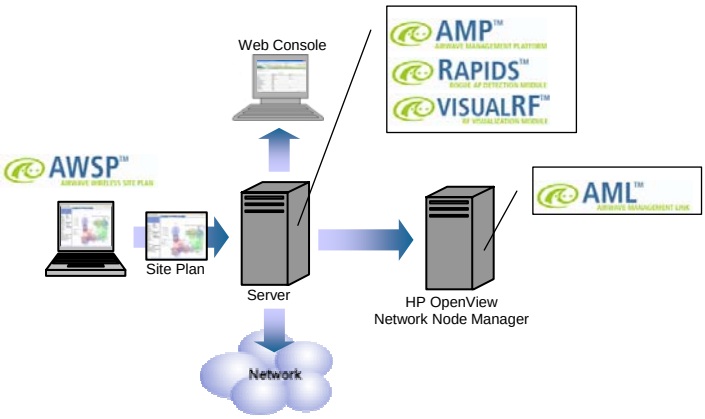
AirWave Wireless: Comprehensive WLAN Management Solutions

AirWave Wireless offers a complete, software-based life-cycle solution for managing wireless networks, from the design of the initial site plan all the way through the monitoring of global WLANs with thousands of wireless access points and end-users. The AirWave product line includes:



Sample AirWave Network Diagram

The **AirWave Wireless Site Plan™ (AWSP)** is a simple, easy-to-use Microsoft Visio-based software application that helps network engineers design a graphical RF site plan that provides the coverage they need while minimizing RF interference. Once the site design is finalized in AWSP, network engineers simply upload the design to the AirWave Management Platform, which automatically configures the wireless network infrastructure to match the plan.

AirWave Wireless' flagship **AirWave Management Platform™ (AMP)** is a 100% software solution that installs on standard PC server hardware, typically in one or more Network Operations Centers (NOC). The AMP software provides a web-based UI that gives users a single point of intelligent control for remotely monitoring and configuring multi-vendor wireless access points and other network devices. The AMP software offers device discovery, centralized policy definition, automated configuration management and audit, firmware distribution, real-time monitoring, diagnostics, and reporting. AMP supports hardware from leading enterprise-grade vendors, including Avaya, Cisco (Aironet and Airespace), Colubris, Enterasys, Funkwerk, HP ProCurve, Intel, LANCOM, Nomadix, Proxim, Symbol, and others.

AMP includes an efficient, high-speed data collector that gathers granular, real-time data from every wireless device and user connected to the network. This data is continuously monitored and analyzed by AMP's sophisticated analytical engine to alert IT whenever problems may impact wireless network users. Depending on the nature of the problem, AMP may automatically implement corrective actions or enable network administrators to remotely reconfigure the network as required.

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AMP's new **visualRF™** module provides real-time graphical reports on key aspects of WLAN performance. With visualRF, network administrators can view an up-to-date coverage map of any facility in their wireless network, for use in trouble-shooting or planning. VisualRF also provides graphical depictions of each wireless user's physical location on the network and generates visual reports identifying the location of potential rogue access points.

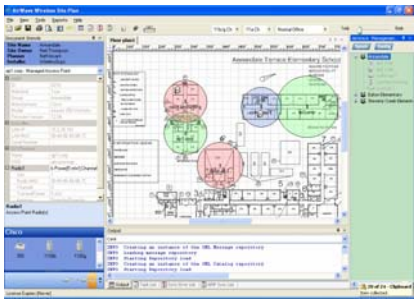
The **RAPIDS™ Rogue AP Detection Module** is a server-side software application that automatically detects and locates unauthorized access points through a combination of RF scanning and wireline "fingerprinting." RAPIDS uses authorized APs to scan the RF airspace for any rogue devices. It also scans the wired network to determine whether any unknown APs are connected outside the range of the authorized access points.

The **AirWave Management Link™ (AML)** is a Java application that facilitates integration and communication between the AirWave Management Platform and other network management solutions (such as HP OpenView Network Node Manager), enabling users to monitor and manage the wireless and wired networks as one.

Key Benefits

Efficient Planning & Automated Configuration

The AirWave Wireless Site Plan allows network engineers to import a CAD drawing of their facilities and use a simple drag-and-drop interface to place wireless access points on the map. Using AWSP, engineers can experiment with various RF settings (channel, transmission power, etc.) to ensure that they have achieved adequate coverage and have avoided assigning neighboring access points to overlapping channels. Once they are satisfied with the initial site plan, network engineers simply post the plan to the AirWave Management Platform. When AMP discovers access points on the network, it synchronizes with the site plan to automatically implement the specified RF settings, eliminating the need to manually configure network devices to conform with a site plan.



Typical AWSP Screenshot

Centralized Control

AirWave provides network administrators a centralized solution to monitor and configure even the largest global wireless networks, distributed across multiple campuses and office locations. Leveraging AMP's high-speed data collection capabilities, network administrators use a web-based user interface to view real-time information on every wireless infrastructure device and end user – including detailed data on RF signal quality, bandwidth utilization, authentication status, roaming history, transmission errors, and more.

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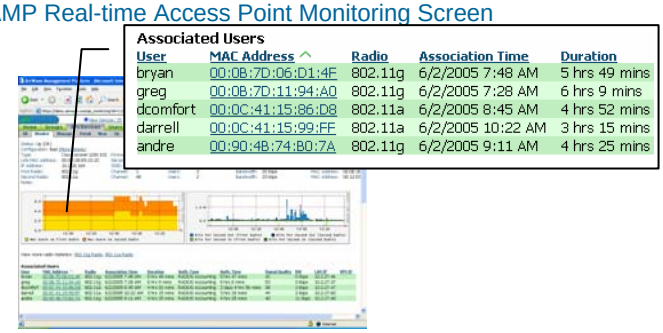
AMP Real-time Access Point Monitoring Screen



Enterprise-grade wireless access points and other infrastructure devices have hundreds of configurable settings related to network security, RF characteristics, etc. AMP eliminates human error by automatically configuring all wireless access points to conform to defined policies. AMP also enables administrators to quickly and easily implement changes individually to a single device, to a group of devices, or globally to all devices on the network.

Open, Vendor-agnostic Management

As Wi-Fi networks grow larger and more pervasive within the enterprise, they almost inevitably become heterogeneous networks that encompass hardware from multiple vendors, due to:

- Decentralized department or division-level purchasing processes
- Access points embedded in other devices (PC hardware, office equipment, specialized equipment, etc.)
- Product or architectural differences between vendors' products (i.e., "intelligent APs" vs. "thin APs and intelligent switches")
- Different rates of technology innovation
- Price competition between vendors
- Mergers and acquisitions.

From its introduction in 2002, AMP has been designed to support hardware from all leading enterprise vendors, including Avaya, Cisco (Aironet and Airespace), Colubris, Enterasys, Funkwerk, HP ProCurve, Intel, LANCOM, Nomadix, Proxim, Symbol, and others. Using AMP's uniform web-based console, network administrators can efficiently manage products from all of these vendors rather than implementing separate, proprietary management tools for each.

Automated Monitoring & Reporting

Wireless networks are fundamentally different than wired networks because they utilize unlicensed spectrum that is freely available to other users – and that is impacted by usage and environmental conditions. This means that network administrators not only must monitor their own network (to ensure that no unauthorized users connect to their secure network) but also continuously monitor the airspace itself to identify potential security breaches or sources of RF interference.

AMP uses authorized wireless access points as RF sensors* to gather information on the RF environment, identifying other APs, channel usage, sources of interference, etc. This provides AMP and network administrators with invaluable real-time information to diagnose and correct RF problems, enabling AMP to dynamically reconfigure the network to optimize performance on an ongoing basis.

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* Available when AMP is used in conjunction with APs from vendors that support this functionality, such as Avaya, ProCurve Networking by HP, Cisco, Colubris, Intel, Proxim, Symbol, and others.

Enforcement of Security Policies

To secure a wireless network, administrators must carefully define and enforce security policies to ensure that:

(1) Wireless data is encrypted; and

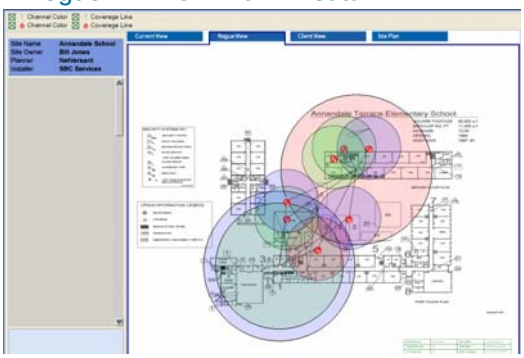
(2) Access to the network is strictly controlled; and

(3) No unauthorized "rogue" access points are connected to the network.

Since the introduction of the first 802.11-based wireless network equipment, numerous standards-based and proprietary solutions have emerged to address encryption (WEP, WPA, VPN-based solutions) and access control (VLAN tagging, gateway devices, 802.1x port-based access control, VPNs). No matter what security solution best fits the organization's budget and requirements, these policies must be uniformly implemented and enforced across the entire wireless network infrastructure. If the appropriate settings are not configured properly on every access point and network device, the organization's network may be exposed to unauthorized intruders.

AMP eliminates opportunities for human error by automatically configuring and continuously auditing security settings to ensure 100% compliance with the organization's policies. If wireless network security is ever breached, AMP provides administrators centralized control to immediately change security policies or even shut down the entire wireless network until the issue is addressed.

Rogue AP View within visualRF™



AMP's patent-pending RAPIDS™ rogue access point detection module automatically detects any unauthorized and unsecured wireless access points installed by employees or malicious intruders. The software uses a unique three-pronged approach to detect unauthorized rogue APs:

- ***AP-based wireless scans*** using existing, authorized access points to scan the RF spectrum for other radios within range. AMP also includes an API for integration with third-party RF-based intrusion detection systems (such as AirMagnet Enterprise).
- ***AP 'fingerprinting' over the wired network*** to identify and locate access points connected to the network, even if they are out of range of all other APs.
- ***Client-based wireless scans*** using the optional AirWave Management Client™ software that enables WiFi-enabled Windows devices to server as passive RF sensors to gather data wirelessly.

This unique combination of techniques allows AMP to efficiently detect almost any rogue AP connected to the network without requiring any proprietary hardware.

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Intelligent Automation

As wireless networks grow larger and more complex, it becomes prohibitively expensive for network administrators to constantly sit in front of a management console to monitor and control the network infrastructure. To deliver the levels of performance and security required for mission-critical applications without dramatically increasing the size of the IT staff, automated monitoring and configuration of the wireless network is required.

AMP provides sophisticated diagnostic capabilities to analyze the real-time monitoring data from the network to detect potential problems or vulnerabilities. Depending on the nature of the problem, AMP may either alert network administrators to the problem or automatically reconfigure the network.

Enterprise Scalability

In many Fortune 500 corporations and other large organizations, wireless networks will quickly grow to encompass thousands of wireless access points in multiple locations. AMP's flexible, distributed architecture supports the efficient centralized management of even the largest wireless networks. Organizations may deploy multiple copies of the AMP software in network operations centers around the globe, yet manage them centrally via the AirWave Master Console™. The Master Console allows policies to be defined centrally and distributed efficiently to tens of thousands of wireless access points, while generating valuable enterprise-wide reports and monitoring statistics for network administrators.

Ease of Use

AMP's intuitive, web-based UI is designed for ease of use for both network administrators and help desk personnel, eliminating the need for deep RF experience or expensive training. Instead of using several difficult-to-use, vendor-proprietary solutions, AirWave customers quickly and efficiently manage all of their network devices from the same user interface, while AMP efficiently handles all proprietary communications with the devices in the background. The AMP software typically installs in less than an hour and administrators are usually proficient with the solution within a single day.

"AirWave's AMP came away the clear victor for its ease of use and the flexibility it offers administrators thanks to its Web-based design…. Installation of the AirWave Management Platform was straightforward and easy. It also allows remote administration from any AP-reachable network. This, coupled with the easy, intuitive interface, made managing the test APs a breeze."

- Network Computing's Mobile Pipeline

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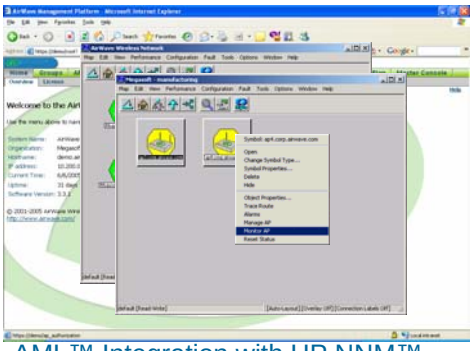
Integration with Existing Network Infrastructure

AMP's design reflects the fact that Wi-Fi networks are typically extensions of an organization's existing network infrastructure rather than separate, stand-alone networks. Fortune 500 corporations and large organizations have typically spent millions of dollars on their wired network infrastructure, including network management applications, routers and switches, intrusion detection systems, and more. Rather than requiring the organization to replicate this functionality with separate solutions for the wireless network, AMP integrates with and leverages the capabilities of these existing investments, including:



AML™ Integration with HP NNM™

- Certified interoperability with leading network management solutions (HP OpenView Network Node Manager)
- Monitoring of existing routers, switched, and RADIUS authentication servers
- Interoperability with VPN and IDS solutions.

Summary

As wireless networks in corporations and other organizations expand and as network usage grows, the need for specialized management solutions for wireless networks becomes more and more apparent.

AirWave Wireless provides a wide range of software solutions to address this critical need, giving Fortune 1000 corporations, educational institutions, healthcare providers, global service providers, and other large organizations the ability to:

- Centrally manage even the largest, most complex wireless networks
- Monitor real-time RF and network data to ensure high levels of network performance
- Automatically detect problems and implement corrective actions
- Enforce critical network security policies uniformly.

Unlike other wireless LAN management solutions, AMP is 100% vendor-agnostic, enabling organizations to manage heterogeneous networks and avoid proprietary vendor lock-in. AirWave's products are software-only and integrate seamlessly into the existing network environment, without requiring specialized hardware. The AirWave Management Platform is extremely easy to install and use, enabling even network administrators with little or no RF experience to take control of their wireless networks in a matter of hours.

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	AWSP™	AMP™	RAPIDS™	VISUALRF™	AML™
Import CAD Drawings	☑				
Drag-and-Drop RF Planning	☑				
Auto-Configuration of APs	☑				
Device Discovery		☑			
Centralized Policy Definition		☑			
Configuration Management		☑			
Configuration Audit & Auto-repair		☑			
Firmware Distribution		☑			
Real-time Performance Monitoring		☑			
User-based Monitoring Reports		☑			
Diagnostics & Alerting		☑			
Reporting (Historical & Real-time)		☑			
Wireline Rogue AP Scans			☑		
AP-based Rogue AP Scans			☑		
Client-based Rogue AP Scans			☑		
Integration with 3rd-party IDS			☑		
Real-time RF Coverage Maps				☑	
Graphical Rogue AP Reports				☑	
Graphical Client Location Reports				☑	
Integration with 3rd-party NMS					☑

About AirWave

Founded in August 2000, AirWave Wireless, Inc. is the leading developer of network management software solutions that provide administrators with a single point of intelligent control to monitor, analyze, and configure their wireless network infrastructure. The privately held company is headquartered in San Mateo, California, and is backed by investors Ignition Partners, Idealab, and Westbury Partners. The company's patent-pending AirWave Management Platform™ software is sold through a global network of value added resellers and systems integrators.

For More Information

Contact AirWave Wireless, Inc. at 866-802-1121 or sales@airwave.com to learn more about the AirWave family of network management solutions or for the name of a certified Value Added Reseller near you.

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