

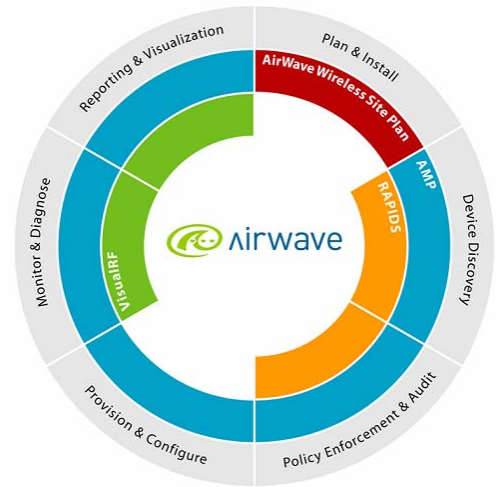


# AirWave Wireless Management Suite™ Solution Guide



## AirWave Wireless Management Suite™

As wireless networks expand and spread throughout your organization, the support burden grows for the entire IT staff, from the network engineers responsible for managing the infrastructure to the Help Desk staff who answer the phone when users cannot get connected. Supporting a growing Wi-Fi network without adding substantial IT headcount requires intelligent, flexible management tools. In fact, Gartner Group now reports that the need for wireless management is one of the top two barriers to wireless adoption in the enterprise. Wireless management solutions today must do far more than simply configure your access points and controllers – they need to provide a full range of operational capabilities ranging from real-time user and device monitoring to compliance management.



The **AirWave Wireless Management Suite™** is a comprehensive set of software applications that provide you a single console from which to monitor, configure and control your entire wireless network – whether you have 25 wireless access points or twenty-five thousand. Leading Fortune 500 corporations, universities, school districts, healthcare organizations, retailers and service providers use AirWave's intuitive software to manage and control their Aruba, Avaya, Cisco, Enterasys, ProCurve, Proxim, Symbol, LANCOM, 3Com and other WLAN hardware.

The core components of the suite include the *AirWave Management Platform™* (AMP) software for configuration, monitoring, and reporting; the *VisualRF™* module for location tracking and RF mapping (includes the AirWave Wireless Site Plan™ offline planning tool); and the *RAPIDS™* module for automated rogue access point detection. Organizations with large wireless networks with thousands of access points and controllers use the *AirWave Master Console™* to view their entire WLAN from a single web-based console.

Together, the components of the AirWave Wireless Management Suite deliver:

- *Manageability* to reduce operational costs through efficient automation of routine tasks
- *Visibility* to every user and device, for up to 75% reduction in problem resolution time
- *Security* through automated compliance audits and rogue AP detection
- *Usability* for the entire IT staff, enabling the Help Desk to handle most end-user support
- *Flexibility* to manage multiple WLAN architectures and vendors from a single console
- *Scalability* to handle even the largest and most distributed wireless networks in the world

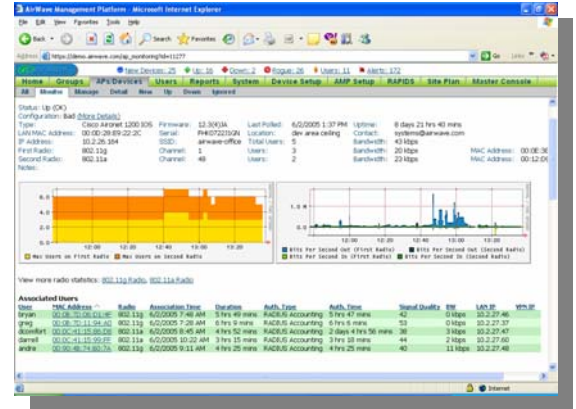
comprehensive



# Solution Components

## AirWave Management Platform (AMP)

The AMP software represents the core of the AirWave Wireless Management Suite, providing efficient centralized management of your wireless network. The AMP software is a Linux-based application that installs on standard PC server hardware, typically in your network operations center. The AMP software communicates with and controls your wireless infrastructure via standard protocols (SNMP, HTTP, etc.) across a LAN or WAN. Multiple IT staff members can access AMP's easy-to-use web-based interface simultaneously, each with a unique login and administrative privileges tailored to specific job responsibilities.



Key features of the AMP software include:

- Real-time monitoring of every wireless user and device connected to your network, with rapid drill-down from network-wide to device-level monitoring views. AMP even allows you to search for users by username, MAC address and IP address.
- Centralized configuration management of controllers and wireless access points to ensure that your policies are applied efficiently and uniformly across your entire network.
- Firmware distribution to eliminate time-consuming and error-prone manual software updates
- Automated compliance audits to verify the actual configuration of your APs and controllers against your policies. You can even configure AMP to automatically 'repair' misconfigured devices as soon as they are detected.
- Multi-architecture support to enable you to manage both autonomous ("thick") and lightweight centralized ("thin") AP infrastructure from the same console, with legacy device support dating back to the earliest days of wireless. AMP even allows you to manage and monitor mesh devices.
- Multi-vendor support for hardware from Aruba, Avaya, Cisco, Enterasys, ProCurve, Proxim, Symbol, LANCOM, 3Com, and many others.
- Historical trend reporting with up to two years of data. All reports are exportable and customizable, and can be distributed automatically via email.
- Alerting and diagnostics to let you know immediately when potential problems occur on the WLAN. Alerts can be sent via email or via SNMP traps to another fault management system.
- Automated device discovery as you add new WLAN infrastructure to your network.

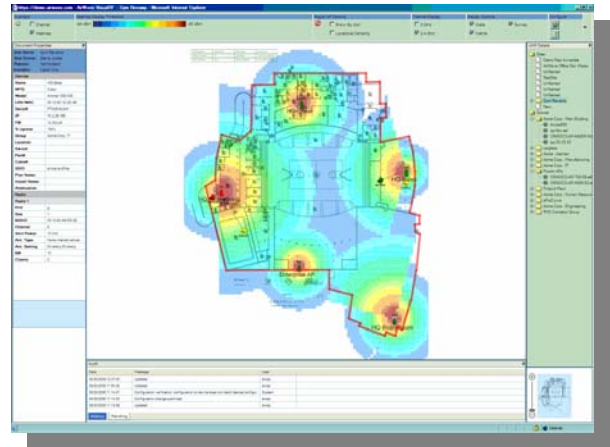
management



## VisualRF

To understand what is happening on your wireless network, you need to know *where* your users and devices are located – and to monitor the RF environment in those areas. The AirWave Wireless Management Suite's VisualRF module puts this information at your fingertips through integrated mapping and location data. VisualRF uses sophisticated RF fingerprinting to accurately display coverage patterns and calculate the location of every wireless device in range.

Better yet, VisualRF does not require dedicated RF sensors or a costly additional location appliance – all the necessary information is gathered from your existing wireless access points and controllers.



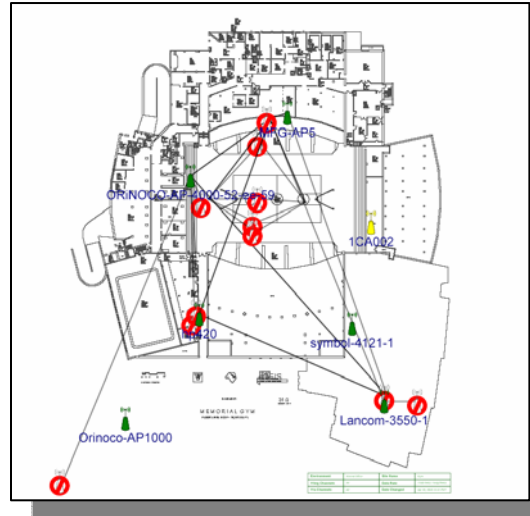
Key features of the VisualRF software include:

- Accurate calculation of the location of each wireless user and device, using RF data from your existing APs and controllers. Location accuracy increases with higher density, providing more data points to 'triangulate' the location of each device. Further improvements in accuracy can be achieved with local site surveys using the AirWave Management Client™ software.
- Heatmaps depict the strength of RF coverage in each location
- Color-coded channel maps help you reduce interference and detect potential problems early
- Integrates with the AirWave Management Platform for onscreen display of alerts and error conditions (i.e., an AP icon will display in red when a critical alert is active or when usage conditions exceed pre-defined thresholds)
- Automatically recalculates the RF attenuation grid and device locations based on real-time data from your wireless LAN, for increased accuracy
- Calibrates RF data from multiple vendors' APs (and across different product lines from the same vendor) for accurate display even in multi-vendor and multi-architecture environments.
- Direct import of JPEG and other files to serve as the basis for your VisualRF map
- Easy 'click-to-add' function to position newly discovered APs on your VisualRF map.
- Includes the AirWave Wireless Site Plan™ planning tool, with installation workflows and offline capabilities (so you do not need to give installation contractors access to your management solution).



## RAPIDS Rogue AP Detection

Unauthorized 'rogue' access points are one of the most common and serious wireless security threats. With RAPIDS, you can use your existing enterprise-grade access points to 'listen' for other unknown APs broadcasting within RF range – you do not need to buy or install additional RF sensors. Unfortunately, wireless techniques alone cannot detect all rogues. The sad truth is that rogue APs on your network are far more likely to have been installed by your own users than by a malicious intruder. Your users are much more likely to install their own access points where you do not yet have Wi-Fi coverage than they are to connect rogues right next to one of your own APs. The RAPIDS module uses a unique combination of discovery techniques across your wireless *and* wired network infrastructure to find rogues no matter where they are located.



Key features of the RAPIDS software include:

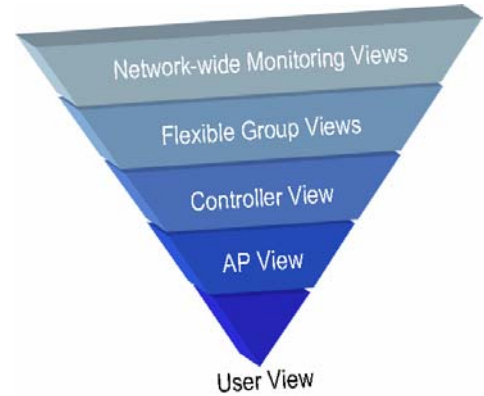
- Wireless rogue scanning using your existing access points (thick or thin) to detect and locate rogue devices within range.
- Displays rogue location on the appropriate VisualRF site map.
- Wireline discovery using SNMP and HTTP scans. Discovered devices are compared to RAPIDS' database of 9,000+ ranges to determine which are most likely to be access points.
- Correlates data from wired and wireless scans to assign a score to each unknown device on your network, reflecting the likelihood that the device is a rogue AP
- Generates a high-priority alert containing all known information about the rogue, including SSID, security settings, switch port, etc.
- Interrogates the OS of potential rogue devices to eliminate costly 'false positive' results
- Optional AirWave Management Client™ software allows you to use WiFi-enabled Windows devices to serve as additional 'sensors' for wireless discovery.
- Includes 'ignore AP' functionality to avoid reporting your neighbors' access points as rogues.
- Eliminates the need for time-consuming manual rogue scans with a wireless analyzer



# AirWave Wireless Management Suite Benefits

## Visibility

You can't manage what you can't see. The key to reducing wireless network support costs and improving performance is to make sure your IT staff can quickly and reliably get the information they need to diagnose and resolve problems. While some leading proprietary management solutions make this type of data available only through reports, the AirWave Wireless Management Suite's most important function is to put all the information you need at your fingertips – and to help you quickly locate a user or device anywhere on your network. *By making all this information readily available, AirWave customers reduce wireless problem resolution time by up to 75% and reduce wireless-related support calls by up to 40%* (AirWave Customer Survey, June 2006).



### User & Device Monitoring

AirWave provides individual, real-time monitoring screens for every user and device on your network. AP-level views show you exactly how many users are connected to the access point, who those users are, how much bandwidth they are using – and even provides graphs depicting current usage patterns compared to the last day, week, month, and year. You can also examine RF statistics (“802.11 counters”) and QoS data (voice traffic vs. data) to better diagnose problems. Your Help Desk can drill down to an individual user view, checking the user's RF signal strength, bandwidth utilization, and up to two years of roaming history – even toggling over to a VisualRF map to check real-time usage and RF conditions in that facility.

### Historical Trend Reporting

To plan network capacity and diagnose user problems adequately, it is not enough to look at real-time data alone. You also need historical trend data dating back months or years to determine how current conditions compare to previous levels and how changing usage patterns may be impacting wireless network performance. Vendor-proprietary management solutions often provide only a few weeks of historical data; the AirWave Wireless Management Suite gives you up two years of historical data and user roaming patterns.

### Location Information

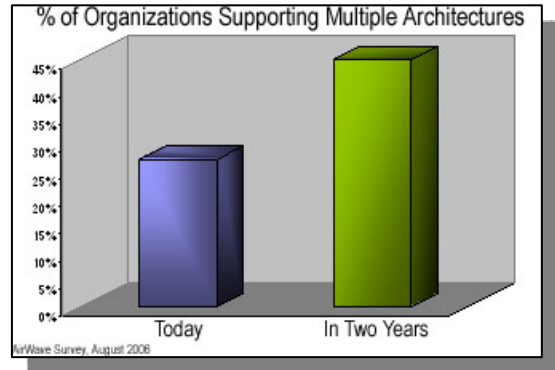
Sometimes, to accurately diagnose and resolve a wireless problem, you need to see what's really going on in the RF environment: Are too many users connected to an AP? Is the user in a dead spot? Is there interference from a neighboring AP? The AirWave Wireless Management Suite gives you all this information and more – without the costs of specialized sensors or location appliances.

visibility



## Flexibility

The wireless industry and technology change so quickly that you must maintain the flexibility to adapt to new architectures and even new hardware vendors. Typical organizations expect their wireless infrastructure to last at least 3-4 years. And in many industries, such as retail and K-12 education, hardware often remains in place even longer. Yet, in the wireless industry, 3-4 years represents several generations. Within that time, your company may be one of the 20,000+ organizations worldwide that merge with or acquire other companies – which may not have the same infrastructure you do. New wireless architectures will emerge. New, higher throughput radio technologies will be introduced. Vendors will discontinue support for certain product lines and introduce new ones – while other vendors will merge, disappear, or license one another's technology. If you are like most organizations, you cannot afford to 'rip and replace' your existing infrastructure every time wireless technology changes.



In this rapidly changing and environment, the AirWave Wireless Management Suite gives you a technology 'insurance policy', allowing you to extend the life of your wireless infrastructure by managing new and old hardware from a single console. *In fact, AirWave customers report that on average they can extend the life of their WLAN hardware by a year or more by using AMP* (AirWave Customer Survey, June 2006).

### Multi-Architecture Support

Many organizations who started building their wireless network infrastructure with autonomous ("thick") wireless access points are now switching to a centralized wireless LAN architecture with lightweight APs, especially in larger and more densely populated facilities. Others are beginning to install mesh networks in outdoor or large, complex indoor environments. As a result, 45% of IT organizations now expect to support complex multi-architecture wireless networks within the next two years. The AirWave Wireless Management Suite gives these organizations a single console from which to manage a their diverse infrastructure rather than using a patchwork of proprietary solutions.

### Multi-Vendor & Legacy Support

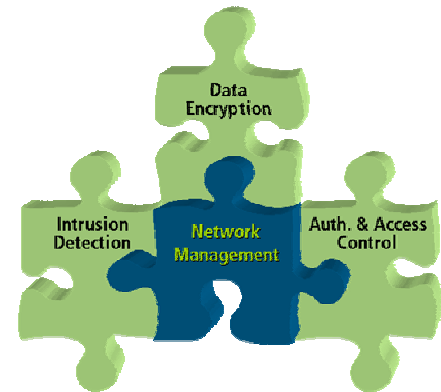
More than 65% of organizations already plan to evaluate new wireless hardware vendors within the next 18 months (AirWave Customer Survey, November 2005). Even those that currently plan to remain single-vendor may find that those plans change unexpectedly as a result of mergers and acquisitions or other unforeseen activities. Because the AirWave Wireless Management Suite supports hardware from the leading wireless vendors, you can easily control even a heterogeneous network from a single console.

flexibility



## Security

If your wireless network is not centrally managed, it cannot be secure. Network management is the “missing piece” in many organizations’ wireless security strategies – without it, you cannot know that your encryption, authentication, and other security policies are being implemented and enforced uniformly across your entire network. With today’s stricter regulatory compliance standards (Sarbanes-Oxley, HIPAA, PCI, etc.), strong centralized wireless network management is absolutely essential to protecting your organization and its data.



### Compliance Audits & Policy Enforcement

Good security requires that you regularly audit all your controllers and access points to ensure that their configuration settings (WEP vs. WPA vs. WPA2, VLAN configuration, etc.) match your policies. Yet, in a large network with hundreds or thousands of APs and controllers, manual configuration audits are too time-consuming and error-prone. They simply do not get done. As a result, *AirWave customers found that an average of 32% of their wireless APs were misconfigured* by the time they installed AMP. This represents an enormous security risk, since Gartner Group estimates that as many as 90% of wireless security incidents will result from improperly configured infrastructure and devices. AirWave addresses this by automatically auditing your entire infrastructure on a schedule you determine – alerting you whenever a configuration error is detected and giving you an onscreen side-by-side report showing exactly how the current configuration varies from your policy. You can even configure AMP to automatically ‘repair’ configuration errors as soon as detected.

### Rogue Access Point Detection

Rogue access points are perhaps the next most common security threat. AirWave’s RAPIDS software module is designed to detect unauthorized access points no matter where they are on your network – even if they are in a remote office without Wi-Fi hundreds of miles from your office (See the more in-depth discussion of AirWave’s RAPIDS module above). Best of all, RAPIDS doesn’t require costly hardware sensors or manual scans with a portable RF analyzer.

### Role-based Administrative Access

Good security policy dictates that only those with a ‘need to know’ have access to your management system and information about your network. Yet, in a large IT organization, literally dozens of individuals – ranging from Help Desk support staff to your most senior network administrators – may need access to your management system to do their jobs. AMP’s role-based administrative access feature allows you to assign different privileges (read-only, read-write, audit-only) to each individual and to restrict their access to certain segments of the network (one employee may be granted visibility only to North American access points while another is given access to only those devices installed in retail store locations).

security

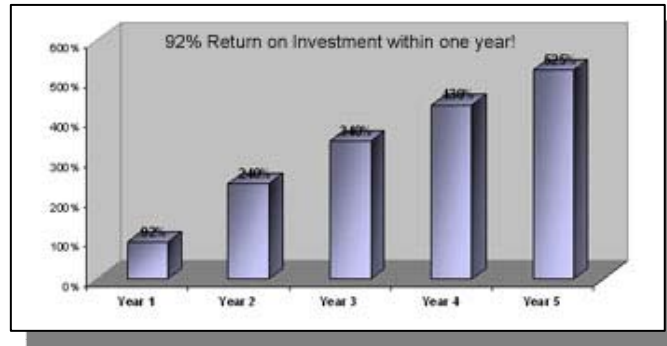


manageability

## Manageability

As your wireless network gets larger and more complex, you will probably find that seemingly simple tasks – like pushing a new configuration setting to all your access points or controllers – are taking up an unacceptable amount of your time. The AirWave Management Platform is specifically designed to automate these types of

routine tasks and to free up your time to pursue higher-priority activities. *By making themselves more efficient, most AirWave customers report that they are able to save their organizations from having to hire at least one more employee.* In fact, more than 90% of AirWave customers report earning a positive return on investment (ROI) on the software within two years (AirWave Customer Survey, June 2006).



### Automated Configuration Management

Whether you use autonomous access points or wireless controllers, the AirWave Management Platform makes it easy for you to define your configuration policies using AMP's web-based interface or by pulling a 'known good' configuration from an existing device. You can then efficiently push the appropriate configuration to a single device, a specified group of devices, or to every device on your network.

### Firmware Distribution

Most hardware vendors issue updated software for their devices several times a year, often containing important security patches and bug fixes. Yet, few organizations today keep up with these updates, simply because the process of distributing the software across a large wireless network is so cumbersome. With AMP, when you need to update the firmware on your WLAN devices, you simply define a 'minimum acceptable' firmware version for each make and model of device. AMP automatically distributes the new software to any devices with down-rev versions of software. Whenever configuration changes or firmware updates are implemented, AMP automatically verifies that the change was applied successfully to every device.

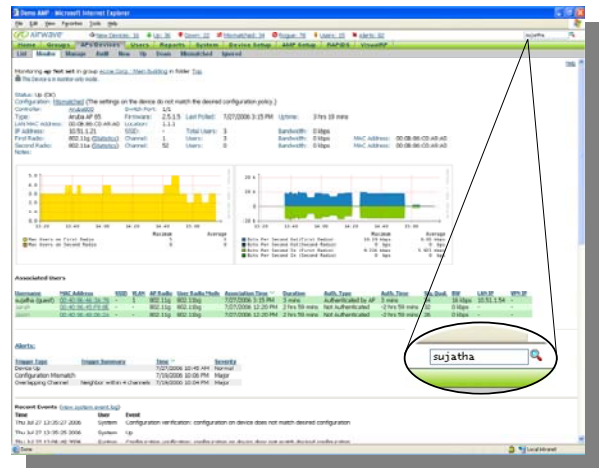
### Scheduling

Configuration changes and firmware updates can often disrupt user sessions and require a significant amount of network overhead. To minimize disruption to your critical business processes, AMP allows you to schedule these actions to occur during a specified maintenance window, often late at night when network usage is low.



## Usability

Proprietary network management solutions are notorious for becoming 'shelfware' – too difficult to use for any but the most skilled and most highly trained IT staff. Usability is key to effective management, for network engineers but especially for the front-line Help Desk staff responsible for supporting end users. The AirWave Wireless Management Suite's web-based interface is designed for ease-of-use. In fact, in a recent survey of users who evaluated both the AirWave Management Platform and the leading proprietary management package, 100% agreed that the AirWave software was easier to use (AirWave Customer Survey, June 2006).



Usability is not simply a 'nice-to-have' feature: it translates into significant cost savings and time savings for your organization. Training costs are reduced when solutions are easier to use. Even more important, when management software is easy enough for the Help Desk to handle support calls without escalating to network engineers, the engineers' time is freed to focus on higher-priority network issues. This efficient division of labor saves organizations a significant amount of money – especially considering that Help Desk support staff typically earn 25-50% less than skilled network administrators. Every time your Help Desk can resolve problems themselves, your organization saves money.

### Help Desk Views & Dashboard

The AirWave Wireless Management Suite includes a Help Desk dashboard that provides a summary view of overall network performance, including the total number of up/down devices, alerts, misconfigured devices, etc. The page provides quick links to commonly used reports and monitoring screens, enabling even novice users to easily navigate through the system to get the information they need right away.

### User Search

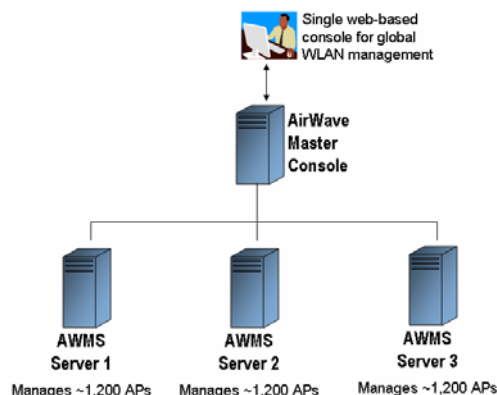
To provide the level of support your end users require, the Help Desk must first be able to find those users and determine how the network is performing where they are located. AirWave's search feature allows the Help Desk to find users by their username (rather than having to look up the MAC address of their device or attempt to determine the IP address), clicking on a web link to see accurate real-time information on the users' session, roaming history and more. For the Help Desk, speed and simplicity matter – and AirWave's efficient, easy-to-use interface puts all the information they need at their fingertips.

usability

## Scalability

With the introduction of new mobile devices and applications, one thing is certain: your wireless network will be significantly larger in the future than it is today. As your network grows, your need for centralized wireless management will only increase.

The AirWave Wireless Management Suite's flexible architecture allows you to select a software license that meets your needs today, while giving you the comfort that you can use the same solution even as your network expands. The AirWave Wireless Management Suite is available in multiple packages, ranging from small versions for organizations with 25 or fewer APs and controllers up to 20,000+ devices.



### AirWave Master Console

For organizations with up to ~1,200 wireless access points or controllers, all the software modules comprising the AirWave Wireless Management Suite are typically installed on a single server. Organizations with larger WLANs usually install the AirWave software on multiple servers, using the AirWave Master Console to monitor the entire network. The AirWave Master Console software gives these organizations the ability to monitor global wireless networks with up to 20,000 or more wireless access points and controllers from a single web-based console. Instead of viewing your wireless network as multiple, independent 'silos,' the Master Console helps you see it as one network with integrated reports, alerts, and monitoring views.

### Executive Views

In a large enterprise, the IT organization usually owns the responsibility for supporting the wireless network and the end users, but many other business groups feel they "own" the network itself. And, in many cases, these organizations actually do fund the wireless network through their budgets. These business owners demand accountability, including information on usage rates and network performance. The AirWave Master Console provides "executive views" that permit these business owners to use your intranet to monitor wireless network usage and performance data without having secure access privileges to the management software itself – enabling IT to respond to their demands for visibility without having to spend your manpower generating manual reports.

### Failover Server

In large organizations, the wireless network quickly becomes 'mission critical' as with thousands of users reliant on their wireless-enabled applications. In this type of environment, IT cannot afford to lose visibility to the network. AirWave's many-to-one failover server continuously communicates with and maintains backup data for all the servers running AirWave software. It automatically assumes management responsibility for the appropriate devices whenever one of those servers fails to respond – maintaining visibility and control until the server can be restored.

scalability



## Results: Return on Investment

In the end, the true measure of any management solution is the return on the investment you make in the software. Does the solution reduce your support costs and extend the life of your WLAN infrastructure? Are you able to improve network performance and reliability, resulting in a decrease in the number of wireless-related user support calls? Are you able to implement security measures to prevent your wireless network from being breached by intruders?

An astonishing 92% of AirWave customers expect to achieve a positive return on investment (“ROI”) within two years – and a significant number see a positive return within six months or less through:

- *Reduced user support costs* through faster problem resolution and a reduction in the number of wireless support calls
- *Time savings* through automation of routine tasks like configuration changes, firmware updates, rogue AP scans, compliance audits, and more.
- *Hardware savings* by extending the life of existing WLAN infrastructure and deferring upgrades until they are truly required
- *Enhanced security enforcement* prevents costly incidents and repeated audits.

### Additional Resources

AirWave Document Library (whitepapers, etc.): [www.airwave.com/docs/doc\\_lib.html](http://www.airwave.com/docs/doc_lib.html)

Online Demo: [www.airwave.com/airwave\\_demo/](http://www.airwave.com/airwave_demo/)

Schedule Live Web Demo: [www.airwave.com/demosignup.html](http://www.airwave.com/demosignup.html)

### AirWave Wireless, Inc.

1700 South El Camino Real  
Suite 500  
San Mateo, CA 94041

+1.650.286.6100  
+1.650.286.6101 (fax)

info@airwave.com  
[www.airwave.com](http://www.airwave.com)

AirWave, the AirWave Wireless Management Suite, AirWave Management Platform, AMP, VisualRF, and RAPIDS are trademarks of AirWave Wireless, Inc. All other trademarks are the property of their respective owners.