Brocade Mobility Wireless LAN Solutions

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Abstract

Brocade Mobility enterprise WLAN solutions provides best-in-class wireless networking technologies for enterprises that need to cost-effectively provide high-speed, reliable, and secure wireless access and applications anywhere, anytime. Until recently, enterprises have chosen to deploy Wi-Fi only as an adjunct to a wired network. The introduction of 802.11n provides enterprises with an opportunity for a holistic approach to upgrading the network edge.

Brocade Mobility enterprise WLAN solutions, featuring support for 802.11n-based wireless networking, can help enterprises meet these requirements and lay the foundation for future growth. Brocade offers a broad range of high-performance high-speed wireless 802.11n access points (APs) that deliver reliable wireless voice over wireless LAN (VoWLAN), video, and data inside buildings as well as throughout the campus grounds.

Introduction

Brocade Mobility WLANs deliver unmatched reliability and provide wireless connections that are as dependable as your wired connections. Adaptive APs intelligently adapt to the dynamic RF environment without intensive IT monitoring, and automatically route traffic around failures to ensure uninterrupted application access. SMART RF automatically adjusts power and channels as needed, in order to maintain a high quality and consistent connection. With a unique clustering architecture, Brocade Mobility WLAN controllers can be deployed with 1:N redundancy, providing network-wide virtual support for all your APs (see Figure 1).

Brocade Mobility offers comprehensive best-in-class wireless security that rivals that of the wired network. A tiered approach protects and secures every point in the network—wired and wireless. This complete suite of tools includes a role-based wired and wireless firewall that provides protection against attacks and unauthorized access right at the wireless edge—including Layer 2 and Layer 3—using advanced encryption and authentication technologies.

With the broadest wired and wireless networking portfolio in the industry, and a long history of delivering business-critical connectivity, Brocade offers all the pieces that are necessary to deploy wireless functionality in hospitals, schools and universities, government offices, branch offices, and all enterprises that require high-speed, reliable, and secure wireless access to the data, voice, and video services that are required to streamline business—and improve customer service. With superior return on investment (ROI), our products not only provide the most features for your investment dollars, but dramatically reduce IT management time.

Figure 1. The Brocade Mobility enterprise WLAN solutions include Mobility 802.11n adaptive access points, Mobility WLAN controllers, FastIron® Series switches, and Brocade Network Advisor for unified network management.

BROCADE MOBILITY WLAN SOLUTIONS

Brocade Mobility enterprise WLAN solutions are second to none in features and quality, with sensible pricing that helps ensure an exceptional ROI. Brocade delivers a fully featured best-in-class WLAN solution, with advanced functionality including mesh, high-availability, clustering, and end-to-end security—features that are often optional on competitive products. In addition, no AP or feature licenses are required; when organizations purchase Brocade solutions, they have access to all of the integrated, advanced functionality.

Best ROI…and Lowest Total Cost of Ownership (TCO)

Brocade Mobility WLAN solutions also set the bar for ease of implementation, operation, and integration with existing network technologies in the organization. Advanced troubleshooting further reduces support costs by eliminating onsite repair-related visits. Furthermore, Brocade dual-purpose APs provide wireless traffic and dedicated dual-band sensing. This eliminates the need to purchase and manage a dedicated sensing infrastructure while providing a greener and more cost-effective approach to 24/7 security.

(Read More: "The Brocade Mobility TCO Advantage":
www.brocade.com/forms/getFile?p=documents/solution_briefs/Mobility_TCO_Snapshot.pdf)

BROCADE MOBILITY WLAN CONTROLLERS

Brocade Mobility WLAN controllers provide the wireless network control, scalability, security, reliability, and manageability that are required to deliver cost-effective centralized wireless voice, video, and data for deployments of any size—from the largest distributed global enterprises to single building or branch offices (see Figure 2). Brocade Mobility WLAN controllers deliver advanced capabilities such as Layer 2 and Layer 3 networking services, including integrated Layer 2 switching with integrated Power over Ethernet (PoE) ports, onboard DHCP server, security services like wired and wireless firewall, wireless intrusion detection system (IDS) and IPS, onboard authentication, authorization, and accounting (AAA) server, IP Security (IPsec) VPN gateway, Wi-Fi and radio frequency identification (RFID) locationing, and quality of service (QoS) mechanisms for VoWLAN and video services for multimedia applications.

Figure 2. Brocade Mobility Wireless LAN controllers enable secure, real-time data access in environments ranging from remote offices to large enterprises.

Designed for large buildings and campuses, the Brocade Mobility RFS7000 Controller offers a comprehensive feature set. It supports 8,000 to 96,000 mobile client devices, and up to 256 Brocade Mobility 650 access ports or 1,024 Brocade Mobility 7131 access points. Designed for mid-sized facilities, the Brocade Mobility RFS6000 Controller offers a multicore, multithreaded architecture. It supports 2,000 to 20,000 mobile client devices, and up to 48 Brocade Mobility 650 access ports or 256 Brocade Mobility 7131 access points. The Brocade Mobility RFS4000 Controller cost-effectively extends 802.11n capabilities in branch offices and smaller enterprises, and supports up to 6 Brocade Mobility access points.

Maximum Deployment Flexibility

Brocade Mobility WLAN APs support a number of deployment modes to maximize network design flexibility. The Brocade Mobility WLAN APs can be dependent on the Brocade Mobility WLAN controllers for automatic discovery and automatic downloading of all configuration parameters and firmware (which greatly reduces configuration time), manual firmware maintenance, and troubleshooting costs for Layer 2 and Layer 3 deployments. Alternatively, the APs can be deployed as standalone APs so that they are independently configured and route traffic independently of the controller for non-blocking 802.11n performance.

The Brocade Mobility Adaptive APs combine the ease of implementation of dependent APs with the ability to intelligently direct routing of traffic to the next AP via the best-quality path with full QoS and security, minimizing wired traffic and accelerating applications. This delivers unsurpassed scalability by offloading the wireless controller and eliminating controller bottlenecks. Each element of the network is aware of the others and their status, and they work together to find the best routes through the network for maximum performance. While controllers are still used to manage, direct, and scale the network, individual transmissions can take place via the shortest path. By harnessing the power of the Brocade Mobility Adaptive APs, the network performs better and needs fewer wireless controllers.

Unmatched Reliability

The Brocade Mobility WLAN controllers provide hitless failover capabilities that ensure high availability and reliability. Wireless controller clustering enables 1:N redundancy, and active/active failover eliminates the need for a dedicated passive redundant wireless controller to handle failover, enabling wireless controller assets to be fully utilized. Organizations can share licenses within the cluster, adding capacity without the incremental cost. Multiple wireless controllers can be managed as a single virtual controller, dramatically simplifying operation and management.

Brocade puts the "smarts" right into the network with SMART RF technology to optimize and heal—all automatically. SMART RF continually and automatically tunes and heals virtually all network issues—including power, channels, load-balance, and even local and WAN network failures. The Brocade Mobility WLAN controllers support an ExpressCard slot, which enables a wireless WAN backhaul connection. This supports current and next-generation WAN technologies such as EVDO, HSDPA, and WiMax, and provides network resiliency for remote and branch offices in the event of wired backhaul failure. The result is the highly resilient and high-performance connection that is required to ensure continuity of service, no matter where users may roam in your facility.

Best-in-class Security

Innovative security features include an integrated role-based wired and wireless stateful firewall that is capable of stopping attacks at Layer 2 and Layer 3, AAA RADIUS Server, VPN, Network Address Translation (NAT) support. The security feature also includes DHCP server/client/relay and 24/7 rogue device protection and wireless IDS with more than 200 WLAN signatures. Four-factor access control includes identity, role, location, and policy compliance. No additional licenses or add-on costs are required. Our best-in-class AirDefense WLAN security and network management solutions assure Federal Information Processing Standard (FIPS) 140-2 and Common Criteria (CC) EAL4-validated, around-the-clock security for Peripheral Component Interconnect (PCI), Sarbanes-Oxley (SOX) Act, and Health Insurance Portability and Accountability Act (HIPAA) compliance. The result is true gap-free security that keeps your wireless infrastructure as secure as your wired infrastructure.

BROCADE MOBILITY WLAN ACCESS POINTS

The Brocade Mobility APs offer flexible deployment options, whether you are deploying in the largest installations, meshed networks, or a single site. The unique triple-radio design of the Brocade Mobility 7131 Indoor 802.11a/b/g/n Access Point can be deployed as a standalone or centrally managed device with two radios providing high-speed wireless data, voice, and video services for client access and self-healing meshed backhaul, while the third radio provides around-the-clock dedicated dual-band wireless IPS sensing (see Figure 3). This eliminates the need to purchase and manage a separate dedicated sensing infrastructure, for a greener and more cost-effective approach to 24/7 security. The third radio is in an expansion slot, which, in the future, can be field-upgraded to enable next-generation data and non-data applications such as WiMax and cellular backhauls. This built-in flexibility simplifies the mobility architecture—there is less equipment to purchase and manage, thus reducing your capital and operational expenditures.

Figure 3. Brocade offers a broad range of dependent and adaptive access points to support high-performance, reliable, and secure 802.11n-based wireless communications.

Faster Downloads—High Performance 802.11n

With the introduction of 802.11n, the field of WLANs is undergoing a paradigm shift as network managers view wireless and wired networking as peer campus networking options. Rich multimedia applications will be seamlessly streamed to every point in a facility, demonstrating better performance than legacy 802.11a/b/g technologies. Fully Dynamic Frequency Selection (DFS)-compliant, the Brocade Mobility 802.11n APs offer speeds of up to 600 Mbps per AP—six times the bandwidth of an 802.11a/g AP.

Reach Remote Locations—Mesh Access Points

Wireless networking has also evolved to include mesh technology. Mesh functionality enables the cost-effective wireless extension of the enterprise network to areas where Ethernet or fiber cabling is cost-prohibitive or otherwise impractical. A few nodes have to be connected directly to an Ethernet port, but the rest share a connection with one another over the air, negating the seemingly contradictory need to distribute wires for a wireless network.

Self-healing mesh ensures continuity of service in the event of a wired or wireless network failure. The self-forming, highly resilient VLAN and Wi-Fi Multimedia (WMM) QoS-aware mesh technology enables organizations to wirelessly extend reliable high-density data, voice, and video services to workers in remote and outdoor locations. Plug-and-play mesh provisioning significantly reduces deployment time and ongoing management.

Brocade Mobility 7131 Access Points support fast self-assembling and self-healing mesh capabilities. The Brocade Mobility WLAN portfolio is fully compatible with the industry-leading line of point-to-point and point-to-multipoint wireless Ethernet bridges that are available from Motorola, Brocade's strategic partner for wireless connectivity.

GIGABIT ETHERNET TO THE WIRED NETWORK EDGE

Since the transmit data rates of the 802.11n standard have increased significantly, for the first time it is possible that a wireless network could routinely outperform a 100-BaseT network. What results is a need to intelligently upgrade the wired network infrastructure to support Gigabit Ethernet (GbE) on backhaul connections for 802.11n WLANs. Brocade FastIron® Series switches provide enterprises with flexible and feature-rich Layer 2 and Layer 3 rack-mounted and modular GbE switching solutions for building a high-performance and secure network edge. Upgradeable with high-density Power over Ethernet Plus (PoE+), Brocade FastIron Series switches also eliminate the need for an electrical outlet and dedicated UPS (power source) near 802.11n APs.

AIRDEFENSE WIRELESS INTRUSION PREVENTION

AirDefense Enterprise Appliances for Brocade Mobility solutions provide an integrated management system that enables protection against wireless threats, policy compliance monitoring, robust performance monitoring and troubleshooting, and location tracking capabilities while greatly reducing management complexity, time, and costs. AirDefense Enterprise Appliances provide the most comprehensive detection of wireless intrusion attempts in the industry to proactively protect wireless networks, mobile devices, and traffic from attacks and unauthorized access.
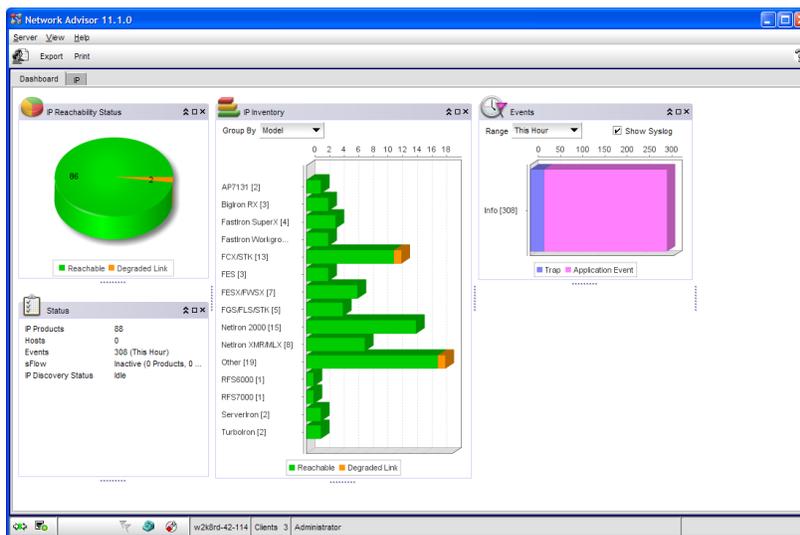

Figure 4. Brocade Network Advisor offers comprehensive network management solutions that help organizations simplify management to improve efficiency and reduce costs.

BROCADE NETWORK ADVISOR

Brocade Network Advisor provides the first unified network management solution in the industry for data, storage, and converged networks. Brocade Network Advisor features a very fine-grain role-based access control (RBAC) mechanism, which gives different network administrators complete control over their environments (see Figure 4). Organizations can manage wired and wireless networks within a single management application—propagating security and access policies across the entire enterprise and quarantining any malicious activity immediately. Brocade Network Advisor is an easy-to-use management solution for discovering, managing, and deploying configurations to groups of devices. Using the Brocade Network Advisor Device Configuration Manager tool, organizations can configure VLANs within the network, manage wireless access point realms, group WLAN switches into domains for Layer 3 mobility support, or execute command-line interface (CLI) commands on specific devices or groups of devices. Brocade Network Advisor centralizes management of the entire family of Brocade Mobility wireless products, including APs and wireless controllers.

BROCADE MOBILITY WLAN PORTFOLIO

Product	Description
Brocade Mobility 7131	Tri-radio, dual-band, 802.11n indoor AP wall- or ceiling-mounted with two dual Gigabit Ethernet ports (PoE 802.3af/on GE1 port).
Brocade Mobility 7131-GR	Tri-radio, dual-band, 802.11n indoor AP wall- or ceiling-mounted with two dual Gigabit Ethernet ports (PoE 802.3af/on GE1 port). FIPS 140-2 validation and CC EAL2 certification in process.
Brocade Mobility 650	Single radio, dual-band, 802.11n indoor AP wall- or ceiling-mounted with one PoE 802.3af port.
Brocade Mobility RFS7000 Controller	WLAN controller supports 8,000 to 96,000 mobile devices or users, and up to 256 802.11a/b/g access ports or Adaptive 802.11a/b/g and 802.11a/b/g/n APs.
Brocade Mobility RFS7000-GR Controller	WLAN controller supports 8,000 to 96,000 mobile devices or users, and up to 256 802.11a/b/g APs or Adaptive 802.11a/b/g and 802.11a/b/g/n APs.
Brocade Mobility RFS6000 Controller	WLAN controller supports 2,000 to 20,000 mobile devices and up to 48 dual-radio 802.11a/b/g APs or Adaptive 802.11a/b/g and 802.11a/b/g/n APs.
Brocade Mobility RFS4000 Controller	WLAN controller supports 8,000 to 96,000 mobile devices or users, and up to 256 802.11a/b/g access ports or Adaptive 802.11a/b/g and 802.11a/b/g/n APs.
AirDefense Enterprise 4250 Appliance for Brocade Mobility	AirDefense 4250 accommodates an Intel 2.33 GHz Xeon 5140 dual-core processor and provides 500 GB of storage in RAID 1 configurations for large to very large WLAN deployments.
AirDefense Enterprise 3650 Appliance for Brocade Mobility	AirDefense 3650 appliance uses an Intel Core duo 2.13 GHz processor and provides 250 GB of storage in RAID 1 configurations for medium-sized to large WLAN deployments.
AirDefense Enterprise 1250 Appliance for Brocade Mobility	AirDefense 1250 utilizes an Intel Pentium4 3.4 GHz processor and provides 250 GB of storage for small WLAN deployments.
Brocade Network Advisor	First unified network management solution in the industry for data, storage, application delivery, wireless, and converged networks.

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