BROCADE MOBILITY RFS7000 CONTROLLER

CAMPUS NETWORK

Enabling a Secure and Reliable Wireless Enterprise for Campus, Data Center, and Large Deployments

HIGHLIGHTS

- Provides a reliable, high-performance wireless LAN switching and voice communications platform for demanding enterprise environments

- Helps reduce costs through centralized management

- Delivers enterprise-class performance with network resiliency

- Eliminates security gaps in wireless enterprises

- Enables toll-quality voice in wireless enterprises

- Utilizes Adaptive Mode for access points to increase network flexibility and site survivability

- Enhances end-to-end Quality of Service (QoS)

Designed for high-bandwidth Wireless LAN (WLAN) deployments, the Brocade® Mobility RFS7000 Controller provides highly scalable mobility in large enterprises, campuses, and data centers. The innovative architecture enables a comprehensive set of services, offering unmatched security, reliability, and mobility for high-performance 802.11n networks. Easy to deploy and manage, the Brocade Mobility RFS7000 provides a converged platform to deliver multimedia applications (data, voice, and video), wireless networking, and value-added mobility services such as secure guest access and locationing for multi-RF networks.

The Brocade Mobility RFS7000 provides the tools to simplify and minimize the costs associated with day-to-day management of mobility solutions. The underlying architecture helps unify management of network hardware, software configuration, and network policies—complete with built-in process monitors and troubleshooting tools.

HIGH PERFORMANCE AND SCALABILITY

The Brocade Mobility RFS7000 features a multicore, multithreaded architecture designed for large-scale, high-bandwidth enterprise deployments. It easily handles from 8000 to 96,000 mobile devices and 256 to 3000 802.11 dual-radio a/b/g/n access points or 1024 adaptive access points (Brocade Mobility 5181 a/b/g or Brocade Mobility 7131 a/b/g/n) per controller. The Brocade Mobility RFS7000

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provides the investment protection enterprises require: innovative clustering technology provides a 12X capacity increase, and smart licensing enables efficient, scalable network expansion.

ENTERPRISE-GRADE SECURITY

Comprehensive network security features keep wireless transmissions secure and provide compliance for HIPAA and PCI. The Brocade Mobility RFS7000 provides gap-free security for WLAN networks, following a tiered approach to protect data at every point in the network—wired or wireless.

This complete solution includes a wired/wireless firewall, an integrated IPsec VPN gateway, AAA Radius Server, and Secure Guest Access with a captive Web portal, reducing the need to purchase and manage additional infrastructure. Other security features include MAC-based authentication, comprehensive integrated IDS/IPS, anomaly analysis, and more.

TOLL-QUALITY VOICE FOR THE WIRELESS ENTERPRISE

Support for Voice over WLAN (VoWLAN) provides cost-effective voice services throughout the wireless enterprise, enabling push-to-talk and other capabilities for employees inside the building as well as in outside areas. The rich feature set provides granular control over the many wireless networking functions required to deliver high-performance, persistent, clear connections with toll-quality voice.

Quality of Service (QoS) provides superior performance for voice and video services. WMM Admission Control—including TSPEC and SIP Call Admission Control—helps

ensure dedicated bandwidth for voice calls as well as better control over active voice calls for a variety of VoIP handsets. Layer 3 hyper-fast secure roaming combines with readiness for external Fixed Mobile Convergence (FMC) solutions, enabling seamless voice services with true mobility across the enterprise.

HIGH AVAILABILITY AND RESILIENCY

The Brocade Mobility RFS7000 simplifies and reduces the cost of extending mobility to remote and branch offices as well as telecommuters. Organizations can deploy Brocade independent mesh access points (the Brocade Mobility 5181 a/b/g and Brocade Mobility 7131 a/b/g/n) at remote locations yet centrally manage them in the Network Operations Center (NOC) through the Brocade Mobility RFS7000 (single controller or a cluster for scalability).

An IPsec VPN tunnel secures all traffic between the access points and the controller. Moreover, Remote Site Survivability (RSS) mesh access points provide secure uninterrupted wireless service—delivering unparalleled resiliency that survives a WAN link outage.

The architecture includes SMART RF Management, which provides the dynamic RF tuning required for optimal network performance. This feature takes self-healing to the next level, dramatically reducing network monitoring IT costs by enabling the WLAN to intelligently adapt to the ever-changing RF environment.

The ability to dynamically adjust the power and channels on any access point automatically eliminates the gaps

in coverage that occur when an access point fails or there is a change in the environment—such as the introduction of an increased volume of liquid or metal—all without any physical intervention. This feature protects against under- or over-powering—scenarios that could reduce performance and network availability. And adjustments are completely transparent—there is no impact on voice calls and data sessions in progress—protecting the quality of service and user experience.

A FAST ROI

Enterprise-class services such as security, voice, performance, and resiliency are built into the modular operating system for the Brocade Mobility RFS7000. These comprehensive services come at no additional cost and are packaged together to make mobility work even better.

SERVICES FOR AN END-TO-END SOLUTION

Brocade Global Services offers comprehensive customer support for Brocade enterprise wireless LAN products, including hardware and 24×7 software support, along with software updates and new releases.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and its partners offer complete solutions that include education, support, and services. For more information, contact a Brocade sales partner or visit www.brocade.com.

BROCADE MOBILITY RFS7000 SPECIFICATIONS

Packet forwarding

802.1D–1999 Ethernet bridging; 802.11–802.3 bridging; 802.1Q VLAN tagging and trunking; proxy ARP; IP packet steering redirection

Wireless networking

Wireless LAN	Supports 256 WLANs; multi-ESSID/BSSID traffic segmentation; VLAN-to-ESSID mapping; auto assignment of VLANs (on RADIUS authentication); power save protocol polling; pre-emptive roaming; VLAN pooling and dynamic VLAN adjustment; IGMP snooping; Layer 3 mobility (inter-subnet roaming); radio frequency Automatic Channel Select (ACS); Transmit Power Control (TPC) management; country code-based RF configuration; 802.11b, 802.11g, 802.11a, and 802.11n
Bandwidth management	Congestion control per WLAN; per user based on user count or bandwidth utilization; dynamic load balancing of Brocade Mobility 300 access points and adaptive access points in a cluster
Access points	Supports 256 "thin" 802.11a/b/g Brocade Mobility 300 access points for Layer 2 or 3 deployment per controller and 3072 802.11a/b/g Brocade Mobility 300s per cluster; IPv6 client support
Adaptive access points	Supports adoption of 1024 Brocade Mobility 5181 802.11a/b/g and Brocade Mobility 7131 802.11a/b/g/n access points in Adaptive Mode per controller and 12,288 per cluster; multiple country configuration support

Network security

Features	Role-based wired/wireless firewall (Layer 2–7) with stateful inspection for wired and wireless traffic; active firewall sessions—205,000 per controller and 2,460,000 per cluster; protects against IP spoofing and ARP cache poisoning
Access Control Lists (ACLs)	Layer 2/3/4 ACLs
Wireless IDS/IPS	Multi-mode rogue AP detection, rogue AP containment, 802.11n rogue detection, ad-hoc network detection, Denial of Service (DoS) protection against wireless attacks, client blacklisting, and excessive authentication/association; excessive probes; excessive disassociation/de-authentication; excessive decryption errors; excessive authentication failures; excessive 802.11 replay; excessive crypto IV failures (TKIP/CCMP replay)
Geofencing	Add location of users as a parameter that defines access control to the network
WIPS sensor conversion	Supported on the Brocade Mobility 300 and the Brocade Mobility 5181 and Brocade Mobility 7131 in Adaptive Mode
Anomaly analysis	Source Media Access Control (MAC) = Dest MAC; illegal frame sizes; source MAC is multicast; TKIP countermeasures; all zero addresses

Authentication	Access Control Lists (ACLS); Pre-Shared Key (PSK); 802.1x/EAP—Transport Layer Security (TLS), Tunneled Transport Layer Security (TTLS), Protected EAP (PEAP); Kerberos integrated AAA/RADIUS server with native support for EAP-TTLS, EAP-PEAP (includes a built-in user name/password database; supports LDAP), and EAP-SIM
Transport encryption	WEP 40/128 (RC4), KeyGuard, WPA-TKIP, WPA2-CCMP (AES), WPA2-TKIP
IPsec VPN gateway	Supports DES, 3DES, and AES-128 and AES-256 encryption, with site-to-site and client-to-site VPN capabilities; supports 2048 concurrent IPsec tunnels per controller—24,576 per cluster
Secure guest access (hotspot provisioning)	Local Web authentication; URL redirection for user login; customizable login/welcome pages; support for external authentication/billing systems
Wireless RADIUS support	User-based VLANs (standard); MAC-based authentication (standard); user-based QoS; location-based authentication; allowed ESSIDs
NAC support	Integration with third-party systems from Microsoft and Symantec

Real-Time Locationing System (RTLS)

RSSI-based triangulation for Wi-Fi assets

Tags supported: Ekahau, Aeroscout, Newbury, Gen 2 tags

RFID support: Compliant with LLRP protocol

Built-in support for the following Motorola RFID readers: fixed (XR440, XR450, XR480); mobile (RD5000) and handheld (MC9090-G RFID)

Optimized wireless QoS

RF priority	802.11 traffic prioritization and precedence
Wi-Fi Multimedia (WMM) extensions	WMM-power save with TSPEC Admission Control; WMM U-APSD
IGMP snooping	Optimizes network performance by preventing flooding of the broadcast domain
SIP call admission control	Controls the number of active SIP sessions initiated by a wireless VoIP phone
Classification and marking	Layer 1–4 packet classification; 802.1p VLAN priority; DiffServ/TOS

System resiliency and redundancy

Active:Standby; Active:Active and N+1 redundancy with access point and MU load balancing; critical resource monitoring

SMART RF: Network optimization to help ensure user quality of experience by dynamic adjustments to channel and power (on detection of RF interference or loss of RF coverage/neighbor recovery)

Dual-firmware bank supports image failover capability

BROCADE MOBILITY RFS7000 SPECIFICATIONS (CONTINUED)

Management	
Features	Command line interface (serial, telnet, SSH); secure Web-based GUI (SSL) for the wireless controller and the cluster; SNMP v1/v2/v3; SNMP traps—40+ user-configurable options; Syslog; TFTP Client; Secure Network Time Protocol (SNTP); text-based controller configuration files; DHCP (client/server/relay), controller auto-configuration and firmware updates with DHCP options; multiple user roles (for controller access); MIBs (MIB-II, Etherstats, wireless controller-specific monitoring, and configuration); e-mail notifications for critical alarms; MU naming capability

Physical characteristics	
Form factor	1U rack mount
Dimensions	1.75 in. H × 17.32 in. W × 15.39 in. D (44.45 mm × 440.00 mm × 390.80 mm)
Weight	13.5 lbs. (6.1 kg)
Physical interfaces	Four 10/100/1000 Cu/SFP Ethernet interfaces
	One 10/100 OOB port
	One CF card slot
	Two USB slots
	One serial port (RJ45 style)
MTBF	Greater than 65,000 hours

Power requirements	
AC input voltage	90 to 264 VAC 50/60Hz
Maximum AC input current	6 A at 115 VAC, 3 A at 230 VAC
Input frequency	47 Hz to 63 Hz

Environmental	
Temperature	Operating: 32°F to 104°F (0°C to 40°C)
	Non-operating: −40°F to 158°F (−40°C to 70°C)
Humidity	Operating: 5% to 85% (without condensation)
	Non-operating: 5% to 85% (without condensation)

Regulatory	
Product safety	UL/cUL 60950-1, IEC/EN60950-1
EMC compliance	FCC (USA), Industry Canada, CE (Europe), VCCI (Japan), C-Tick (Australia/New Zealand)

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