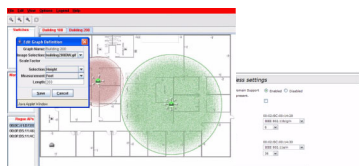




FASTPATH® UWS/UAP

Production-Ready Mobility for Enterprise OEMs

SOFTWARE BRIEF



Unified Wireless Switching (UWS) Software

Unified Access Point (UAP) Software

BUILT ON A SOLID FOUNDATION

Broadcom's FASTPATH® software enables original equipment manufacturers (OEMs) to bring innovative Ethernet systems to market faster and at lower cost than ever before. Broadcom relies on a powerful combination of software features, silicon integration, a comprehensive testing and certification process, and industry relationships with contract and design manufacturers to deliver production-ready networking software to OEMs.

With FASTPATH Unified Wireless Switching (UWS) and Unified Access Point (UAP) software, Broadcom has extended that value proposition to address one of the more dynamic network spaces in the Enterprise marketplace—the wireless domain. FASTPATH UWS and FASTPATH UAP software products represent fully integrated solutions for wireless LAN controllers, unified switches, and access points.

UNIQUE DIFFERENTIATORS FOR OEMS

FASTPATH UWS/UAP software leverages many of the key attributes of the current FASTPATH (wireline Ethernet) product portfolio and adds new capabilities—such as stackable WLAN switches and unified APs—that deliver a compelling wireless business case for OEMs. With FASTPATH UWS/UAP software, manufacturers can create solutions that are:

- **Converged:** Delivering truly combined wireless + wireline switching capabilities. FASTPATH UWS/UAP software complements the extensive L2/3/4+ features found in the

current FASTPATH software modules for switching, routing, multicast, and more. Enhancements to the portfolio address the added requirements of wireless mobility, security, quality of service, and RF management. The combination enables new product solutions for OEMs and simplifies the deployment and management of unified networks for the Enterprise user community.

- **Scalable:** Delivering the industry's only truly stackable WLAN switch software and offering products suitable for building a variety of systems in fixed, stackable, and chassis-based configurations. Broadcom matches the diversity typically found in small to large enterprise environments.
- **Upgradeable:** Enabling OEMs to add Wireless LAN capabilities to existing FASTPATH-powered systems or their existing software base. With the integrated FASTPATH software portfolio, manufacturers can extend their current switching and routing software investment into the wireless realm for new systems and even customer-deployed equipment in the field.
- **Flexible:** Fitting enterprise customer network preferences and timetables. The FASTPATH APs are based on a unified model, so they can function as stand-alone access points in any network or be combined with a FASTPATH-enabled WLAN switch for enhanced performance. Additionally, FASTPATH UWS systems can be deployed as an edge switch in Direct Connect mode, or via an indirect connection to create a wireless overlay network.

FASTPATH® UWS/UAP SOFTWARE BRIEF



- *Priced-Right:* Bringing full-featured WLAN switches and APs to the marketplace at an unbeatable price-performance ratio. Based on pricing for sophisticated WLAN solutions currently available from other suppliers, OEMs can use the combination of FASTPATH UWS/UAP software and new switching and 802.11 silicon to reduce prices by up to 70% without compromising margins or preferred customer discounts. With enterprise solutions more affordable, OEMs can maintain and capitalize on the growing market demand for WLANs.

DESIGNED FOR ENTERPRISE APPLICATIONS

Due to evolving standards, cost considerations, and the size disparity between Enterprise and Small Business networks, there are multiple types and configurations of WLANs available today. The design approach selected for FASTPATH UWS/UAP software matches needs and preferences—both current ones and those anticipated for the future—common to the Enterprise marketplace. Based on those requirements, FASTPATH UWS/UAP software supports models with:

- Dual-mode data forwarding, allowing for centralized or distributed data forwarding on a per-VAP/SSID basis. This approach is more secure, enables lower cost APs and WLAN upgrades, and delivers reduced operating costs from a network that is easier to configure and manage. It also enables OEMs to tailor the deployment to each customer's network architecture.
- Single Point of management based on Broadcom's Cluster Controller Feature. This allows enterprise to take control of the management of their entire network of APs, Unified Switches and WLAN Controller from a single switch, thus simplifying management of large deployments.
- 802.11n Ready. Fully compatible with Broadcom's latest 802.11n enterprise AP silicon solutions. Can support both legacy 802.11 gear as well as the extra bandwidth demands of 802.11n.

VALUE-ADDED FEATURES AND CAPABILITIES

Similar to other FASTPATH software products, the new WLAN offerings leverage the latest silicon advancements from the industry's leading suppliers. Initial deployments of FASTPATH UWS/UAP switching software will rely on new Broadcom StrataXGS III™ switching and Intensi-fi™ 802.11n radio silicon. Integration options will expand to match market needs and OEM requirements.

From a performance standpoint, FASTPATH UWS/UAP software, combined with the right silicon, delivers a host of sophisticated features and capabilities that empower enterprise operations. The full feature set supports advanced data path connectivity, mobility control and location tracking, security safeguards, control over radio and power parameters, and management features for both network and element control.

Differentiated features available elevate the FASTPATH UWS/UAP solution to enhanced performance levels. Capabilities include:

- Simplified Plug and Play radio management that automatically assigns channels and radio range settings
- Control for end-to-end Quality of Service (QoS) across the switch and access point elements for each client or user group.
- Continuous and adaptive radio monitoring and security to detect and secure rogue clients and APs as well as to optimize signal throughput
- Seamless mobility and high availability for all traffic types, including multimedia and voice.
- Advanced Denial of Service protection that stops malicious users at the point of attack
- Fast roaming between WLAN switches via peer-to-peer WLAN switching

FASTPATH UWS/UAP software is available in both binary and source code software packages. Broadcom will continue to update and enhance FASTPATH software as WLAN standards evolve and new technologies are introduced.

FASTPATH® UWS/UAP

SOFTWARE BRIEF



Software Features

FASTPATH UWS Software

In addition to core features available through current FASTPATH Software modules, the Unified Wireless Switching software offers the following features:

- IEEE 802.11 Standards 802.11a, 802.11b, 802.11d, 802.11e (WMM & UAPSD), 802.11g, 802.11h, 802.11i (WPA2), 802.11j, 802.11n (draft 2.0)
- Plug and Play
 - Autodetection and configuration of APs
 - AP/switch authentication
- RF management and control
 - Self-healing around failed APs
 - Coverage hole and interference detection
 - Dynamic power adjustment
 - Dynamic channel assignment
 - Client load balancing
- Security, AAA, and encryption
 - Centralized 802.1X Client Authentication
 - Encryption types: WEP, dynamic WEP, TKIP WPA, WPA-2, 802.11i, DES, 3DES, AES-CCMP, EAP, PEAP, TLS, TTLS
 - MAC address authentication
 - RADIUS and MS-NAP support
 - Security and authentication settings per SSID
- Mobility
 - Layer 2 and Layer 3 fast roaming
 - Dynamic key caching/forwarding
 - Centralized and distributed data forwarding modes
 - Peer-to-peer WLAN switch roaming
- Wireless Intrusion Detection and Prevention
 - Rogue AP detection and mitigation
 - Rogue client detection
 - Station blacklisting and white-listing
 - Wireless client Denial of Service (DoS) attack detection
- Guest Services
 - Per SSID Captive Portal page
 - Up to 64 unique Captive Portal web pages
 - Fully customizable Web pages per portal
- Network Management
 - SNMP v1, v2c, v3
 - CLI
 - SYSLOG
 - Java®-based WLAN monitoring suite
 - FASTPATH UWS private MIB
- Up to 16 Virtual APs per radio (32 on a dual radio AP)
- Centralized and Distributed data forwarding modes for fast roaming and unified QoS
- AP RF Monitoring displayed graphically
 - AP transmit power, channel, security, and interference
 - Load, throughput, and performance metrics
- Cluster Management—single point of management of multiple wireless switches for items such as Statistics, RF Monitoring, Network Management, as well as Configuration, and firmware upload/download

FASTPATH® UWS/UAP SOFTWARE BRIEF



FASTPATH UAP Software

The Unified Access Point software capabilities vary depending on whether the AP is deployed in a stand alone mode or aligned with a FASTPATH UWS switch.

- WLAN and IEEE standards
 - IEEE 802.11a
 - IEEE 802.11b
 - IEEE 802.11d
 - IEEE 802.11e (WMM & U-APSD)
 - IEEE 802.11g
 - IEEE 802.11h
 - IEEE 802.11i (WPA2)
 - IEEE 802.11j
 - IEEE 802.11n (draft 2.0)
 - IEEE 802.1X
 - IEEE 802.3af PoE Support
 - DFS II support
- WLAN RF features
 - Transmit power control
 - Dynamic Channel Planning
 - Plug and Play AP support (through wireless switch)
 - Load balancing
 - Multi-radio support
 - TELEC 4.9-GHz 802.11a modes
 - Wireless Stats
 - Virtual AP with Multiple BSSIDs/SSIDs
 - Wireless Distribution System (WDS)
- WLAN AP management
 - Broadcom's AP Clustering Feature (for standalone mode management only)
 - CLI Management (SSH (console support))
 - Web Management (SSL support)
 - SNMP v1/v2
 - SNMP v3
- WLAN QoS and networking
 - WMM (802.11e)
 - L2 - L4 ACLs (per client or per SSID)
 - Rate-Limiting (per client or per SSID)
 - DiffServ policies (per client or per SSID)
 - 802.1p (MAC layer QoS support)
 - Spanning tree
 - RADIUS-assigned VLANs
 - Local and RADIUS-based ACLs, DiffServ Policies, or Rate Limits (per client or SSID)
 - 802.1X supplicant for network access
 - NTP client
- WLAN encryption and security
 - WEP
 - TKIP
 - AES and CCMP
 - Rogue AP detection
 - Inhibit/ignore SSID broadcast
 - Weak IV avoidance
 - MAC address filtering
 - RADIUS support
 - EAP
 - PEAP
 - TLS and TTLS
 - Preconfigured SSID for guest access
 - WPA (Personal, Enterprise)
 - WPA2 (Personal, Enterprise) 802.11i
 - Station Isolation

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