

Benefits

Business Alignment

- Support for demanding voice/video/data applications to enhance mobile worker productivity and convenience
- Role-based grouping of users, devices, and applications to deliver priority, QoS, and security in accordance with business needs
- Integrated management, security, and QoS features reduce operating cost and ensure a consistent user experience regardless of location
- Key element of mobility solutions that enable VoWLAN and dual-mode devices

Operational Efficiency

- Centralized visibility and control to simplify management, accelerate problem resolution, optimize network utilization, and automate response to wireless threats
- Integrated wired and wireless management, and role-based access control greatly reduce administration time and effort
- Adaptive architecture reduces complexity and optimizes information flow for each application



ExtremeWireless™ Appliances

High-performance, enterprise-class WLAN appliances

- Scalable to over 2,000 access points per wireless appliance with unified management of ExtremeWireless Access Points
- Seamless roaming with centralized and distributed data forwarding
- Virtualized management and control planes for cloud deployments
- High-availability architecture for real-time voice/video/data applications
- Flexible platform automatically adapts to underlying virtual resources

Product Overview

The award-winning ExtremeWireless Appliance family provides a scalable range of solutions that are ideal for managed WLAN deployments supporting demanding voice/video/data applications. Our wireless appliances are simple to deploy and manage, yet provide advanced functionality to allow organizations to define how wireless voice/video/data traffic is processed without architectural constraints and in accordance with the business needs.

The ExtremeWireless Appliance portfolio includes:

- The C35 supporting up to 250 APs
- The V2110 supporting up to 1,050 APs (VMware)
- The C5210 and C5215 supporting up to 2,000 APs

The V2110 is available as a virtual appliance for easy deployment in VMware or Microsoft Hyper-V cloud environments. Scalable up to 1,050 APs with VMware, the V2110 extends all the cost savings, hardware independence, and resiliency benefits of data center virtualization to the wireless infrastructure.

Security

- Authentication and authorization functions include role-based access control using 802.1X, MAC authentication, and captive portal
- Standards-based encryption (WEP, TKIP, WPA, WPA2, WPA- PSK, WPA2- PSK, and AES)
- External captive portal allows full customization for guest access
- Integrated wired and wireless intrusion prevention
- Denial of Service (DoS) protection for management, control, and data traffic

Support and Services

- Industry-leading customer satisfaction and first-call resolution rates
- Personalized services, including site surveys, network design, installation, and training

ExtremeWireless appliances enable role-based management for users, devices, and applications with individualized services including quality of service (QoS), call admission control, secure access policies, network access control (NAC), captive portals, rate limiting, multicast, filtering, and traffic forwarding. These services are enabled by the unique and flexible ExtremeWireless Virtual Network Service (VNS) architecture and easily provisioned and managed by an intuitive web interface. Each appliance supports mixed mode deployments of 802.11ac, 802.11n and 802.11a/b/g APs along with the ability to seamlessly roam between wireless appliances and access points, providing scalability and ease of deployment.

For large deployments, ExtremeWireless further simplifies the management of thousands of APs by creating mobility zones that extend roaming across multiple subnets and wireless appliances. Mobility zones maintain the VNS definitions and the individual policies throughout the entire mobility zone, ensuring that policies follow the user regardless of physical location for up to 12,000 AP deployments. ExtremeWireless provides an easy, low-cost way to deploy 802.11ac/abgn solutions, delivering cost-effective pricing, wired/wireless integration, and low TCO while openly supporting a broad range of mobile voice, video, and location-based applications to drive enterprise productivity and reduce the overall cost of mobility. With the ability to deliver both centralized and distributed traffic forwarding by application, ExtremeWireless Appliances enable a flexible, cost-effective path to deploying 802.11ac/abgn for the enterprise. Backed by industry-leading global support and services, ExtremeWireless solutions enable customers to leverage existing investments and avoid forklift upgrades.

Virtual Network Service (VNS) - An Adaptive WLAN Architecture

Most WLAN solutions force network administrators to choose between a centralized or distributed architecture. A significant advantage of ExtremeWireless Appliances is that they can support both deployment models simultaneously, offering significant flexibility benefits over other solutions. Network administrators can select how traffic will be handled on a per-SSID basis, without any restrictions, so that the wireless LAN infrastructure can adapt to business requirements and applications.

A centralized architecture requires all traffic to be backhauled to a centralized appliance. With the higher data rates of 802.11ac and 802.11n APs, traffic loads on the wired network can be much greater than those created by legacy 802.11a/b/g APs. Depending on the size of the WLAN deployment and how much data is forwarded to the centralized appliance, significant congestion may result.

A fully distributed deployment eliminates backhauling traffic to a wireless appliance but increases the processing complexity for real-time mobile applications that require seamless cross-subnet roaming (e.g. VoWLAN). This can force IT managers to either create a large broadcast domain or apply many VLANs.

ExtremeWireless Virtual Network Services control traffic flow by allowing traffic to be backhauled to a wireless appliance or switched locally at the AP on a per SSID basis. With local switching, the AP is still managed centrally by the wireless appliance, but data is not backhauled to the wireless appliance. This improves responsiveness and ensures that traffic does not unnecessarily traverse costly WANs or contribute to bottlenecks at aggregating switches. A VNS also provides role-based policies providing security, NAC, mobility, and QoS priority that can be implemented on a per user and per application basis. The table below highlights this capability:

SSID	User Type	Security Role	Topology (data path)
Single	Multiple	Multiple	Single
Single	Multiple	Single	Multiple
Single	Multiple	Multiple	Multiple
Multiple	Multiple	Multiple	Single
Multiple	Multiple	Single	Multiple
Multiple	Multiple	Multiple	Multiple

Integrated Management and Control Across Wireless and Wired Networks

Web-based Centralized Management via Wireless Assistant

The Wireless Assistant provides network administrators with a centralized web-based interface designed to easily manage both infrastructure and services. Hosted on the wireless appliance, this interface allows network administrators to separately configure, enable, or disable each AP or group of APs. The wireless appliance consolidates data received from across the network to provide meaningful statistics in easy-to-read reports. Additionally, a number of standards-based management tools are available to facilitate integration of the WLAN infrastructure with enterprise management applications. For large networks with multiple wireless appliances the optional ExtremeControl Management Suite can be used to collect and manage data for a centralized view of the entire WLAN.

Multi-Appliance Management

ExtremeControl provides centralized management for the ExtremeWireless portfolio, consolidating management information from across the entire WLAN for a global network perspective. The solution is enhanced by the addition of ExtremeWireless Radar Intrusion Prevention

System (WIPS) option which provides sophisticated wireless intrusion prevention and location assessment capabilities. Wired and wireless network integration is further enhanced by the visibility of all the wireless elements through the ExtremeControl Management Suite. Integration between ExtremeControl and the ExtremeWireless portfolio provides end-to-end visibility of wireless access points, appliances, and wireless clients from the ExtremeControl Center Console. The integration delivers improved network management efficiency and wired/wireless infrastructure topology mapping and visibility for network administrators. Further integration with ExtremeControl Center Inventory Manager effectively centralizes distribution of software and tracking of configuration changes.

Integrated Security

Wireless IDS and IPS enhances security with embedded wireless intrusion prevention through ExtremeWireless Radar. When deployed in conjunction with the ExtremeSecurity Intrusion Prevention System (IPS), full packet inspection, adaptive signature pattern matching, protocol analysis, and behavioral anomaly detection are delivered for both wired and wireless users. Further, ExtremeControl's identity based policy privileges are unified across the wired and wireless infrastructure to deliver role-based access control - regardless of connectivity method.

The ExtremeControl policies ensure only the right users have access to the right information, from the right place, at the right time. Third party authentication systems can also be integrated with the use of the External Captive Portal interface.

High Performance and High Availability

ExtremeWireless delivers the perfect combination of high-performance and high-availability demanded by today's wireless applications. By combining unique voice optimization features and the latest in industry standards, ExtremeWireless provides enterprise grade reliability for all users.

High Scalability

The ExtremeWireless portfolio supports from a single AP to 2,000 APs per wireless appliance, providing linear scalability from small to large wireless deployments. In addition, wireless appliances can be networked to scale beyond the limits of a single appliance or availability pair to offer a multi-wireless appliance mobility zone. Mobility

zones enable seamless roaming across a large number of wireless appliances while still delivering real-time session-availability services without requiring the purchase of additional AP licenses for redundancy.

ExtremeWireless provides true end-to-end Quality of Service (QoS) with each appliance and AP supporting native IP prioritization (DiffServ, TOS, Precedence), Ethernet 802.1p, as well as 802.11e's WMM and TSPEC wireless QoS standards. ExtremeWireless devices support distinct queues on all interfaces, whether wired or wireless.

When voice and data traffic are running on the same AP, voice traffic can be prioritized to ensure minimal delay and jitter for optimal voice quality. The wireless appliances are able to translate WMM prioritized traffic to existing QoS prioritization schemes on the wired network (TOS, DSCP, etc.).

Fast and Secure Roaming for Seamless Voice and Data Mobility

ExtremeWireless Appliances manage sessions centrally to ensure fast, secure, and seamless roaming as users and devices move across the campus. Seamless roaming greatly improves productivity by providing true mobility across the enterprise, all transparent to the user.

The Wireless Appliances use industry standards to deliver fast and secure roaming. 802.11i pre-authentication

(Pre-Auth), 802.11r and 802.11k ensure that the user is authenticated to adjacent APs before entering their coverage range, preserving voice calls as users move throughout the enterprise. Opportunistic Key Caching (OKC) is also a supported mechanism which greatly improves device roaming times for legacy devices.

High Availability and Self-Healing

Redundant ExtremeWireless Appliances can be deployed across the network and operate in failover or load sharing mode. Access points can be configured for fast-failover mode to allow configuration and service restoration (in tunnel mode) in less than two seconds, thus enabling user sessions to continue uninterrupted. When switching traffic locally, APs continue to provide service even when the link to the wireless appliance is severed and can be configured to resume service should a power outage force them to restart.

ExtremeWireless APs also feature Dynamic Radio Management, which enables the network to automatically adapt to changes in the RF environment or failure of any individual APs, ensuring availability and performance to users. Each wireless AP continuously monitors channel use, signal to noise ratio (SNR) for interference, and the receive power of neighboring APs (ExtremeWireless or third party) to adjust their channel and transmit power.

ExtremeWireless Appliances



Supported Features	C35	C5210	C5215
Capacity			
Total APs supported per appliance	250	2,000	2,000
Total APs supported in standard mode	125	1,000	1,000
Additional APs supported in high-availability mode	125	1,000	1,000
Total simultaneous users per appliance	4,000	32,000	32,000
Total simultaneous users in standard mode	2,000	16,000	16,000
Additional simultaneous users in high-availability mode	2,000	16,000	16,000
Manageability			
Pre-standard (CAPWAP)	✓	✓	✓
Integrated VLAN-VNS	✓	✓	✓
Auto-discovery of new APs	✓	✓	✓
CDR/RADIUS accounting	✓	✓	✓
Visibility through Extreme Control Center	✓	✓	✓
Integration with Extreme Identity and Access Control	✓	✓	✓
Integration with ExtremeSecurity	✓	✓	✓