# Cisco Outdoor Wireless Networking Solution

Enabling government, enterprise customers and service providers to deploy wireless mesh networks for ubiquitous data access in outdoor areas.

Why Should I Care About Cisco Outdoor Wireless Networking Solution?

Cisco® Outdoor Wireless Networking solution enables cost-effective, secure deployment of enterprise campus to metropolitan-scale outdoor Wi-Fi networks. Standards-based wireless access takes advantage of the growing popularity of inexpensive Wi-Fi clients, enabling new service opportunities and applications that improve user productivity and responsiveness.

The Cisco solution provides intelligent wireless routing, creating dynamic wireless links between access points and eliminating the need for a wired network connection to each access point. Using the Cisco patented Adaptive Wireless Path Protocol (AWPP), which was designed specifically for wireless, the network self-optimizes and self-heals, providing resiliency to changing network conditions, and minimizing deployment and management costs.
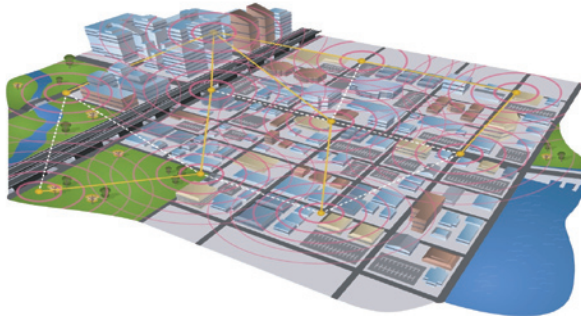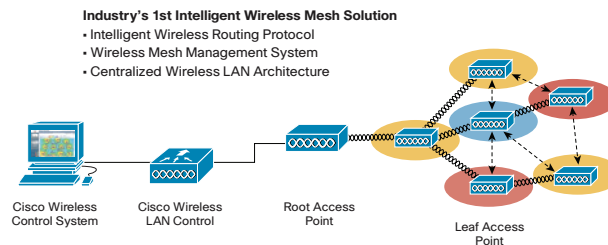
What Problems Need To Be Solved?

As the demand for outdoor wireless access has been increasing, customers faced with tight budgets and reduced resources must respond with WLAN solutions that take full advantage of existing tools, knowledge, and network resources to cost-effectively address ease of deployment and WLAN security issues. They need an outdoor wireless LAN solution that excels in the unique attributes of wireless mesh technology, effectively supports today's networking requirements, and lays the foundation for the integration of business applications.

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Easy to deploy, operate, and manage: Solutions can be deployed in the city infrastructure at government and public buildings, along the streets on lampposts, at intersections on traffic signal systems, and on cable strands integrated with the cable Hybrid Fiber Coax (HFC) network. Figure 1 lists some of the main features and architectural components of the solution.

Figure 1 Cisco Outdoor Wireless Mesh

Industry's 1st Intelligent Wireless Mesh Solution
• Intelligent Wireless Routing Protocol
• Wireless Mesh Management System
• Centralized Wireless LAN Architecture

Cisco Wireless Control System
Cisco Wireless LAN Control
Root Access Point
Leaf Access Point

Cisco Wireless Control System: The Cisco Wireless Control System provides a powerful foundation that allows IT managers to design, control, and monitor outdoor wireless networks from a centralized location, simplifying operations and reducing total cost of ownership.

Cisco wireless LAN controllers: Cisco wireless LAN controllers define an innovative Lightweight Access Point Protocol (LWAPP) architecture for large-scale wireless LANs. The Cisco Aironet 1520 Series wireless broadband platform is integrated with the controller and derives from it system-level management of device configuration, security policies, and RF parameters of the network while providing Layer 2 or Layer 3 mobility.

Outdoor wireless mesh access points: With dual-band and multi-band radios, simultaneous support for IEEE 802.11a and 802.11b/g standards, the Cisco Aironet 1520 Series platform employs AWPP to form a dynamic, wireless mesh network between remote access points, and delivers secure wireless access to any Wi-Fi-compliant client.

What Are the Benefits of a Cisco Outdoor Wireless Mesh Network?

With a Cisco outdoor wireless mesh network, customers can cost-effectively offer new services and mobile applications to standard, inexpensive Wi-Fi clients. Benefits and features include:

Intelligent Wireless Routing: Adaptive Wireless Path Protocol creates and maintains the wireless mesh, providing network self- healing, resiliency to interference and network outages, and reducing deployment and management costs.

Integrated, dual and multi-radio design: Single, cost-effective, and easy to manage platform enables pico-cellular design, minimizing interference and delivering high system capacity.

Multiple uplink and power options: Provides flexibility for deployment using either Gigabit Ethernet, fiber or cable and various power sources such as 480VAC, 12VDC, Power over Cable, Power over Ethernet, and internal backup battery.

Radio sensitivity: Improved radio performance and coverage with the 802.11b/g 3-channel Maximal Ratio Combining (MRC).

Centralized WLAN architecture: Centralized architecture based on LWAPP simplifies WLAN management and provides seamless integration between indoor and outdoor WLAN design.

Zero-configuration deployment: The controller automatically detects and configures the access point, enabling nodes to simply and securely join network, reducing deployment costs.

Secure Outdoor Access: Support for 802.11i security , WPA2, AES and various authentication Schemes.