Cisco Wireless Location Appliance

Product Overview

The Cisco® Wireless Location Appliance is part of the Cisco Location Solution, the industry's first location solution that simultaneously tracks thousands of 802.11 wireless devices from directly within a WLAN infrastructure, increasing asset visibility and control of the RF environment. Additionally, the appliance provides location-based alerts for business policy enforcement and records rich historical location information that can be used for location trending, rapid problem resolution, and RF capacity management. By enabling the deployment of powerful location-based applications such as Enhanced 911 (E911) services, asset management, and workflow automation through integration with the Cisco Wireless Location Appliance API, the appliance becomes a critical solution for customers ranging from enterprises to vertical industries such as healthcare, finance, retail, manufacturing, and federal organizations. Figure 1 shows the Cisco 2700 Series Wireless Location Appliance.

Figure 1. Cisco 2700 Series Wireless Location Appliance

By design, the Cisco Wireless Location Appliance provides native location services in the WLAN infrastructure to lower customers' total cost of ownership and extend the value and security of the existing WLAN infrastructure by making it "location ready." As a component of the Cisco Unified Wireless Network, the Cisco Wireless Location Appliance uses Cisco wireless LAN controllers and Cisco Aironet® lightweight access points to track the physical location of wireless devices to within a few meters. For areas requiring very high fidelity and deterministic location, Cisco Compatible Extensions Wi-Fi tags support chokepoint-based notifications. The centralized WLAN management capabilities and intuitive GUI of the Cisco Wireless Control System (WCS) are extended for managing and configuring the Cisco Wireless Location Appliance, making setup fast and intuitive.

Product Architecture

The Cisco Location Solution is comprised of the Cisco Wireless Location Appliance in conjunction with the Cisco Wireless Control System (WCS), Cisco wireless LAN controllers, and Cisco Aironet lightweight access points. The Cisco Wireless Location Solution uses the same Cisco lightweight access points that deliver traffic as location "readers" for 802.11 wireless clients and Wi-Fi tags (see Figure 2).

Figure 2. Cisco Location Solution Architecture

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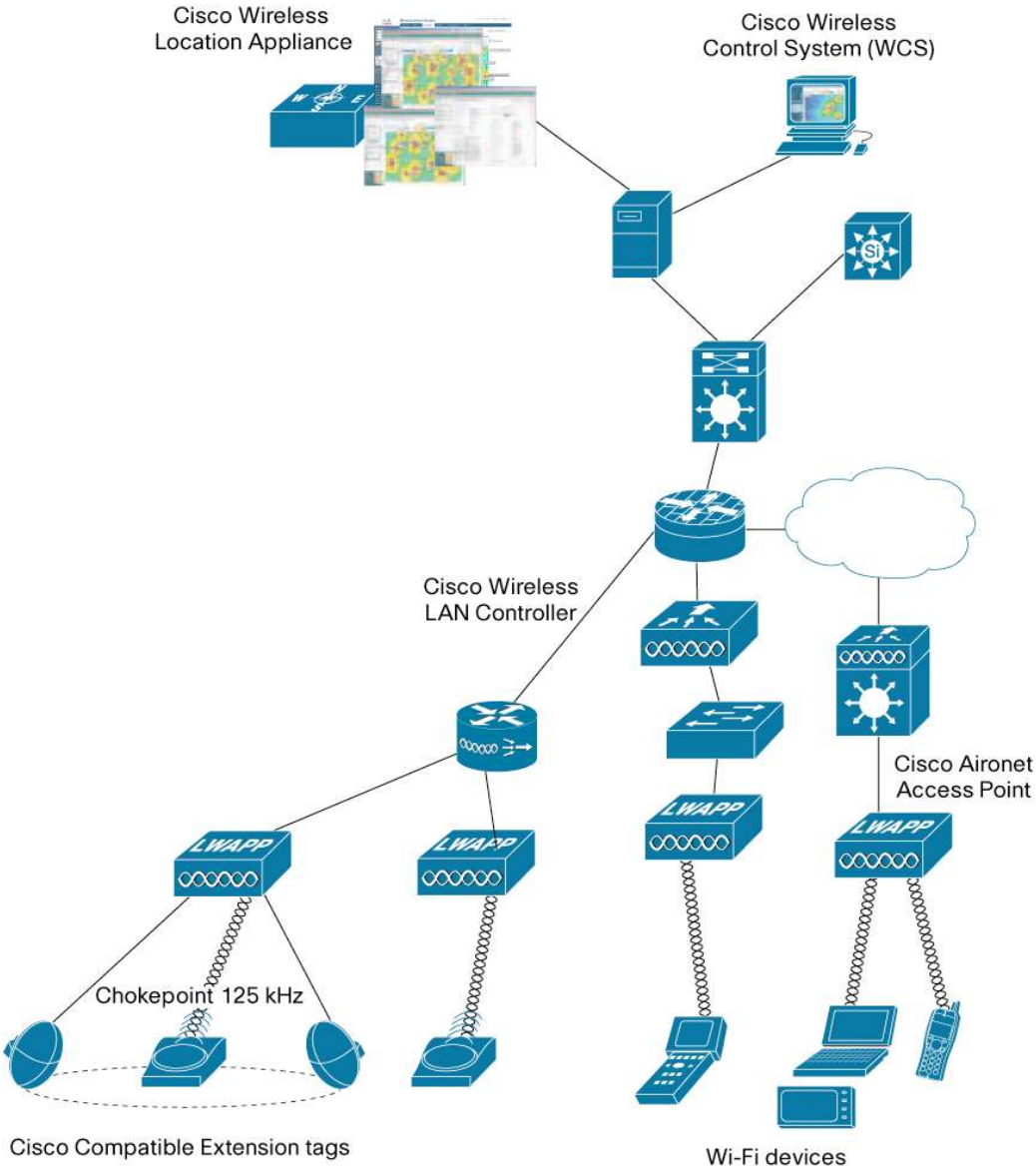

Features

The Cisco Wireless Location Appliance provides a wide range of features applicable to business needs and includes:

Chokepoint Support

The Cisco Wireless Location Appliance supports applications and areas requiring very high fidelity and deterministic location to within a few feet or several centimeters. Notifications are triggered by chokepoints as Cisco Compatible Extensions Wi-Fi tags as they come within range of a chokepoint that is mounted in the area requiring monitoring. Notifications can be triggered for entry or exit of a tag from a specified zone, doorway, or gate. Applications for chokepoints vary from general-purpose uses such as theft prevention of high-value assets to industry-specific process control events, such as those used in manufacturing plants

Location Tracking

Once network maps and access points are added to the appliance, RF predictions and heat maps can be generated to graphically display the location of thousands of devices on the site's floor

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plans. Cisco WCS displays this location information visually, providing an immediate location application for customers who want to enhance their RF capacity management, utilize location-based security, and have asset visibility for WLAN devices. This location information is also available to third-party applications through a Simple Object Access Protocol/Extensible Markup Language (SOAP/XML) API on the appliance, creating an extensible foundation for a host of rich location-based applications.

Intuitive Appliance Management

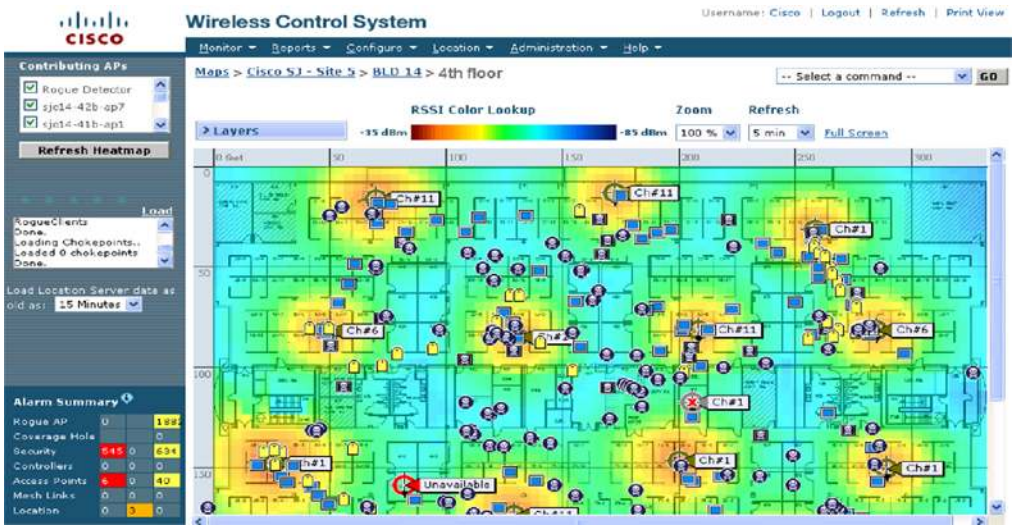
Cisco WCS manages the Cisco Wireless Location Appliance through an intuitive and visually rich GUI providing centralized management and configuration. For greater scalability, Cisco WCS can manage multiple Cisco Wireless Location Appliances. Cisco WCS view filters and flexible search criteria make targeted viewing of location data easy and adaptive to user needs. A Cisco WCS license with location services must be installed in order to interface with the Cisco Wireless Location Appliance and display location services information.

Wireless Security and Rapid Troubleshooting

The Cisco Wireless Location Appliance allows IT managers to quickly and accurately locate security threats such as rogue access points and devices. Rogue access points create potential security breaches and unsecured WLAN connections that put the entire network at risk. Rogue devices are installed by employees or intruders. The ability to locate these devices more accurately helps IT managers rapidly isolate security threats and unauthorized attempts to access the network. Accurate detection of these rogue devices provides enhanced WLAN security by helping ensure that legitimate client stations associate only with trusted access points

Figure 3 shows a targeted view for rogue access points and devices. Targeted views can be created for a variety of selections, including device categories, logical names, time detected and physical location such as floor area.

Figure 3. Cisco Wireless Control System—Targeted View for Rogue Access Points and Devices



Location Trending for RF Capacity Management and Visibility

A variety of useful information for enhanced RF capacity management can be generated. This information can be based on location trends, including:

- **Client tag distribution across a floor**: where people have been and when

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- **Statistical location information**: where people have been and associated traffic analysis
- **Coverage areas**: where hotspots are based on volume of people and traffic to determine how concentrated RF resources are and how WLAN is handling the number of clients

Integration with Location-Based Applications

To facilitate the deployment of location-based applications in the enterprise, the Cisco Wireless Location Appliance is equipped with a rich and open SOAP/XML-based API. Applications can rapidly make use of location information by importing components that impact the RF environment, such as entire network maps that include buildings, floors, access points, coverage areas, and device lists from the location appliance. Rich and actionable data can also be imported, such as recent and historical location and statistical device information. Location-based alarms and notifications can be triggered in applications through area boundary definitions, allowed areas, and distances.

Benefits

The Cisco Wireless Location Appliance delivers a host of tangible benefits to enterprises running business-critical wireless LANs, including:

- **Increased location accuracy:** The Cisco Wireless Location Appliance uses the Cisco patent-pending RF fingerprinting technology to determine the location of wireless devices. Cisco has the only WLAN infrastructure that correlates known RF characteristics of a building with user information to track mobile devices to within a few meters.
- **Location-based alerts:** This feature provides the ability to proactively send location notifications based on device movement, device absence, zone entry and exit of tracked devices, Wi-Fi tag battery level, Wi-Fi device position change, emergency groups, and chokepoint information.
- **Scalability:** With the Cisco Wireless Location Appliance, 2500 devices including wireless clients or Wi-Fi tags can be tracked simultaneously, helping ensure that location services can be applied to an entire enterprise environment.
- **Lowered total cost of ownership:** The Cisco solution reduces operating expenses by using the existing Cisco WLAN network infrastructure in conjunction with the location appliance. This approach is more cost-effective than proprietary or single-purpose location tracking solutions because it uses standard 802.11 components and does not require dedicated access points for location tracking.
- **Transparent integration:** Cisco is the only vendor to integrate location tracking directly into the existing WLAN infrastructure. The same Cisco access points that deliver data traffic are also used to locate wireless devices. This minimizes capital expenditures and helps enable the WLAN to act upon location information for better security and capacity management.
- **Flexibility:** Cisco offers the only WLAN system that can track 802.11 clients, such as a laptop or PDA, and other, Wi-Fi mobile devices equipped with active radio frequency identification (RFID) tags (tags supplied by Cisco partners).
- **Easy deployment of business applications:** Asset tracking, inventory management, location-based security, automated workflow management, and other new business applications can be easily deployed with the Cisco Wireless Location Appliance.
- **Innovation and Investment Protection:** The Cisco Compatible Extensions program for Wi-Fi tags allows customers with a Cisco Unified Wireless Network and a Cisco Location

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Solution to benefit from the latest innovations offered by Cisco's technology partners. Customers can choose Wi-Fi tags from multiple vendors as well as implement mixed-vendor applications that integrate with the Cisco Wireless Location Appliance API.

Summary

Customers need a cost-effective, easy-to-deploy solution for tracking and managing Wi-Fi devices and tags across a variety of business environments. They also need to deploy advanced services that enhance their business applications and meet regulatory requirements for enhanced security and asset visibility,

The Cisco Wireless Location Appliance, a component of the Cisco Location Solution, meets these needs by delivering accurate and scalable location services with device tracking and chokepoint notifications. This easy-to-deploy solution provides asset visibility for Wi-Fi enabled devices and tags, enhanced capacity management, location-based business policy enforcement, and increased WLAN security for the Wi-Fi environment.

Product Specifications

A Cisco WCS license with location services must be installed in order to interface with the Cisco Wireless Location Appliance and display location services information. Table 1 shows product specifications.

Table 1. Product Specifications: 1-Rack-Unit Mountable Appliance

Specification	Description
Memory	1-GB memory
Ports	• Serial: One 9-pin connector • RJ-45: Two RJ-45 connectors for connection to two 10/100/1000 Ethernet controllers • 2 USB ports: One USB connector in front and one in back • 2 PS2 ports: One mouse and one keyboard • 2 VGA ports: One in front and one in back
Connectivity	Network: Two 10/100/1000 (RJ-45) ports
Management	SNMP v1, v2c, and v3
Network Management	Cisco WCS Location v.3.0 or greater running Internet Explorer 6.0/Service Pack 1 or later
Network and Client Devices	Cisco 2100, 4100, and 4400 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module, Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points Wi-Fi enabled laptops, PDAs, voice over Wi-Fi handsets, Cisco Compatible Extensions client devices, Cisco client devices, non-Wi-Fi mobile devices equipped with active Wi-Fi tags, or Cisco Compatible Extensions Wi-Fi tags (tags supplied by Cisco partners) 125-kHz-based chokepoints using AeroScout Exciters or WhereNet tags
Programming Interfaces	SOAP/XML APIs
Physical Dimensions	Height: 1.68 in. (4.27cm) Width: 16.8 in. (42.7cm) Depth: 23 in. (58.4cm) Weight: 28.6lbs (13kg) maximum
Power	• AC power supply wattage: 230W • AC power supply voltage: 100-120V at 50-60Hz; 200-240V at 50-60Hz
Environmental	Operating temperature: 50 to 95℉ (10–35℃) Storage temperature: 32 to 104℉ (0–40℃)

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Specification	Description
Approvals and Compliance	• Safety UL 60950 • CAN/CSA -C22.2 No. 60950 • EN60950 • IEC 60950: EMC FCC Part 15 (CFR 47) Class A • ICES-003 Class A • EN 55022 Class A • CISPR22 Class A • AS/NZS 3548 Class A • VCCI Class A • EN 55024 • EN 50082-1

Ordering Information

Table 2 lists ordering information for the Cisco Wireless Location Appliance. To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

The Cisco Wireless Location Appliance 2710 (AIR-LOC2710-L-K9) model is the successor to the 2700 (AIR-LOC2700-L-K9) model. There is no functional difference between the 2700 and 2710 models. Both models support the same features and functionality.

Table 2. Ordering Information

Part Number	Product Name
AIR-LOC2710-L-K9	Cisco 2700 Series Wireless Location Appliance (May 2006 Model Release)
AIR-LOC2700-L-K9	Cisco 2700 Series Wireless Location Appliance

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you to protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, refer to Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about the Cisco Location Solution, visit http://www.cisco.com/go/location or contact your local Cisco account representative.

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