

Cisco® Wireless Video Surveillance: Improving Operations and Security

What You Will Learn

Today's organizations need flexible, intelligent systems to help protect people and assets as well as streamline business operations. The Cisco® Wireless Video Surveillance solution allows organizations to utilize their mobility infrastructure to install surveillance tools, such as wireless video surveillance cameras, on demand wherever there is wireless coverage.

The flexibility provided by the Cisco® Wireless Video Surveillance Solution provides organizations with:

- Improved video surveillance coverage where cable placement is difficult
- Support for ad-hoc or temporary monitoring of locations
- Support for integration with specialized video surveillance and mobility services applications for improved operations and intelligence.

Challenge

Organizations face a variety of physical security challenges. They must address liability obligations for the people within their organization, including employees, contractors, customers, and guests. They must work to prevent loss of property and limit the cost of asset loss to the organization. They must also be able to respond to threats and emergencies, whether these events manifest as campus crime or a medical crisis.

Traditionally, organizations have employed video surveillance as a tool to help address their security challenges. Analog surveillance systems provided a base level of functionality to monitor large areas from a central location without the need to maintain a personal presence. These systems could also use recorded video as an historical account of events that occurred.

While analog systems delivered surveillance coverage, they came with the additional capital and operational expense of maintaining a separate physical cabling plant (generally coaxial cable) and recording system. Costs also increased because this infrastructure was often available only through single-vendor solutions. Also, these systems didn't support using video analytics to add intelligence to the surveillance.

Today, organizations are moving to IP-based video systems to deliver video surveillance over a common infrastructure (IP networks) in a low-cost, interoperable manner. These IP-based solutions support using analytics software to add intelligence to the video surveillance system. They also deliver lower capital and operational expenses by consolidating in a unified cabling plant. IP-based solutions also allow video to be more flexibly delivered, not only to surveillance applications but any application that is based on an IP platform.

The challenges associated with both analog and IP-based video surveillance solutions include the following:

- Lack of pervasive coverage: Analog and IP video surveillance systems rely solely on wired cameras, which requires either CCTV or Ethernet cabling to be run to each camera. This

can prove difficult in some locations, particularly outdoors, and can result in inadequate coverage.

- **Inflexible deployment options:** Because analog and IP video surveillance systems rely solely on wired cameras, organizations cannot easily place cameras on an ad hoc basis for temporary monitoring or to power applications such as video analytics software.
- **Limited situational awareness:** Video surveillance systems traditionally deliver video to a central monitoring location, limiting the ability for individuals in the field to gain mobile situational awareness from the surveillance system.

These challenges underscore the need for a flexible video surveillance solution, which builds on the foundation of IP-based video surveillance while also providing the flexibility of a wireless network.

Solution

The Cisco Wireless Video Surveillance solution provides a cost-effective method for delivering flexible mobile video surveillance coverage wherever there is wireless coverage. This robust surveillance solution supports a flexible, mobile architecture with powerful integration tools for IP video surveillance. Based on the Cisco Unified Wireless Network, the Cisco Wireless Video Surveillance solution offers unparalleled flexibility and ease of deployment using wired and wireless cameras, indoors or outdoors. This integrated solution uses wireless local area networks (WLANs) and IP networks to deliver video surveillance services. The solution reduces costs, improves the quality of surveillance, and provides added value for existing investments.

Deployment, integration, and troubleshooting of the solution is simplified because a single, unified wireless platform, both indoors and outdoors, is used to support the wireless video surveillance installation. The Cisco Wireless Video Surveillance solution supports a variety of cameras from leading vendors like Cisco, Pelco, Sony, and Panasonic.

Business Benefits

The Cisco Wireless Video Surveillance solution delivers a variety of business benefits. By using wireless LANs and IP networks to deliver video surveillance services, this solution reduces operations costs, improves surveillance monitoring, and gives additional value to network and physical security investments. For details about the benefits delivered by the Cisco Wireless Video Surveillance solution, see Table 1.

Table 1. Cisco Wireless Video Surveillance Solution Business Benefits

Feature	Cisco Wireless Video Surveillance Solution Business Benefits
Improved Operational Efficiency	• Faster incident response time through the efficient delivery of video anywhere, anytime, to the personnel who require it • Improved security posture through access to live and recorded video—anywhere, anytime—with a broad range of mobile devices. • New ways to use video to improve all business operations through application integration and collaboration among physical security, IT, and other business groups.
Reduced Capital and Operational Costs	• Reduced capital and operational costs through integration with the wireless network, offering the flexibility to deploy and redeploy wired or wireless cameras wherever they are needed, and simplifying structured cabling. • Gradual migration to protect existing investments in video surveillance and physical security, with the ability to flexibly connect both wired analog and wired IP cameras, as well as wireless cameras, to the wireless network both indoors and outdoors. • Flexibility to choose the best video surveillance components, from

Feature	Cisco Wireless Video Surveillance Solution Business Benefits
	multiple vendors, for a specific site or business need.
Increased Investment Value	• Broadcast quality, low latency, and secure video to enhance surveillance monitoring and decision making, with all of these benefits delivered anywhere within the organization. • Support for other physical security systems and devices to enhance the value of those investments. • Scalability to serve new requirements and business growth. • Cisco technologies and convergence expertise to help maximize the return on investments in IP-based video surveillance solutions.

Vertical Solutions Support

The Cisco Wireless Video Surveillance solution supports a variety of different vertical markets, including education, government and retail.

Education

By offering a flexible deployment model, the Cisco Wireless Video Surveillance solution helps educational institutions improve the safety of students through improved coverage and also reduces asset theft.. The wireless video surveillance solution can also allow for ad hoc placement of cameras to support large, one-time events like lectures and concerts that are common to many educational institutions. Educational institutions that have outdoor wireless deployments can also easily add surveillance coverage by using the outdoor wireless infrastructure to drive the surveillance system.

Government

Many governmental agencies have a mandate to protect the safety and security of citizens. They are also charged with protecting government-owned assets and meeting standards in performing their jobs as public servants. The Cisco Wireless Video Surveillance solution makes it easy for government agencies to deploy and redeploy cameras to protect people and assets, particularly in outdoor environments. The ability to deliver video anywhere there is wired or wireless coverage allows for improved situational awareness for first responders in emergencies. Furthermore, the Cisco Wireless Video Surveillance solution can be used with video analytics applications to monitor for suspicious activities and to pinpoint the source, for example, of gunshots.

Retail

The Cisco Wireless Video Surveillance solution makes it possible for retailers to easily deploy and redeploy cameras as a store's layout changes. This flexibility of deployment offers enhanced surveillance coverage to prevent merchandise theft and can also power analytics applications to enhance intelligence on customer buying habits, streamline sales staff operations, and offer other improvements to retailers' business processes. Larger retailers can also easily add surveillance coverage outdoors, using a wireless network, to cover areas like parking lots and other public spaces.

Application and Network Intelligence

Enhanced wireless video surveillance activities can be supported through the addition of application and network intelligence.

Video Surveillance API

Because the Cisco Wireless Video Surveillance solution has an open, standards-based IP network architecture, a variety of applications can be supported. The solution can be tightly integrated with a range of applications, including applications for physical access control, IT and network security,

video analytics, command and control, unified communications, and other third-party applications that use standard products, open APIs, protocols, and network services. As a result, customers and partners have increased operational flexibility and can take advantage of new capabilities. They have also lowered costs and lowered risk.

Mobility Services API

Because the Cisco Wireless Video Surveillance solution is integrated with the Cisco Unified Wireless Network, it can use mobility services to take advantage of intelligence from the wireless network. Examples of this intelligence include information gathered through integration with external triggers like location-based services, temperature sensors, humidity sensors, sound sensors, and other context-aware devices. Integration with the Cisco Mobility Services Engine API means that organizations can seamlessly integrate their video surveillance applications with services running on the Cisco Mobility Services Engine, enhancing the effectiveness of applications such as asset tracking, facilities monitoring, and public safety.

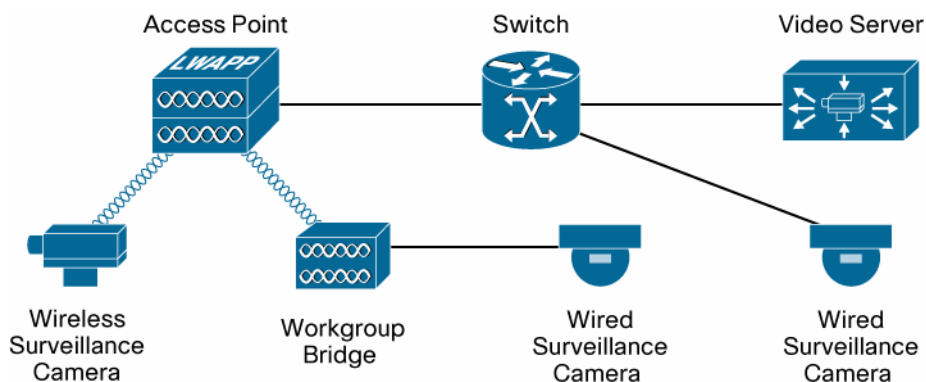
Deployment and Implementation Options

Indoor Deployments

The Cisco Wireless Video Surveillance solution can connect both wired and wireless cameras to offer a scalable and flexible architecture for deploying video surveillance infrastructure and applications. Wireless cameras can connect directly to the Cisco Unified Wireless Network. And with 802.11n, the wireless network offers the bandwidth and capacity to support high-definition surveillance cameras in large-scale deployments. Both wired IP cameras and analog CCTV cameras with IP gateways can also be connected to the wireless network, allowing organizations to extend their existing wireless network investment to wired cameras. In this case, wired cameras can be connected to a workgroup bridge access point; the wired connection on the access point provides connectivity to the wired camera while the wireless radio on the access point provides a connection to the enterprise network. Local power either through an AC outlet or from a battery power source can be provided to power surveillance devices.

Figure 1 illustrates an indoor wired and wireless video surveillance solution.

Figure 1. Indoor Wired and Wireless Video Surveillance Solution



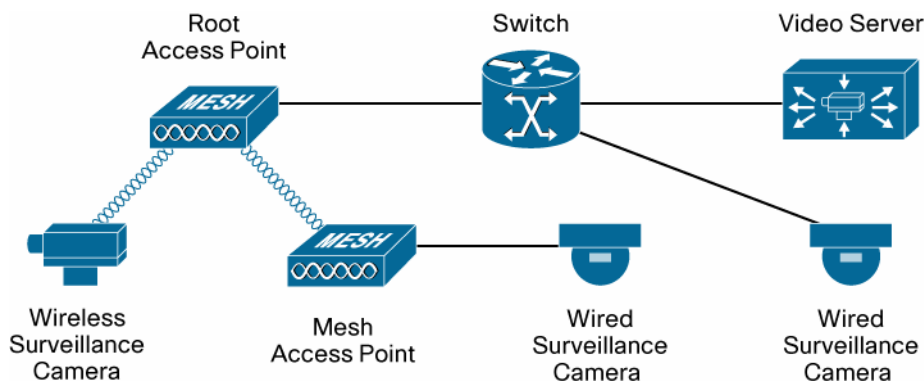
Outdoor Deployments

The Cisco Wireless Video Surveillance solution can also connect wired and wireless cameras to the Cisco Outdoor Wireless Network solution in order to provide pervasive outdoor surveillance coverage without the need for additional, expensive outdoor cabling. Wireless cameras can be

deployed to connect directly to a wireless mesh access point. Wired IP cameras and analog CCTV cameras with an IP gateway can also be connected to a mesh access point via a secondary Ethernet port located directly on the mesh access point. With Power-over-Ethernet-capable cameras, power can be provided directly from the mesh access point via standard Power over Ethernet (PoE). Cisco mesh access points can receive power from a variety of sources, including local AC power and outdoor street lamps.

Figure 2 illustrates an outdoor wired and wireless video surveillance solution.

Figure 2. Outdoor Wired and Wireless Video Surveillance Solution



Integration with the Cisco Integrated Video Surveillance Solution

The Cisco Wireless Video Surveillance solution can easily integrate with the Cisco Integrated Video Surveillance solution, based on the Cisco Integrated Services Router. The Cisco Video Management and Storage System (VMSS) Network Module provides a powerful system for managing video streams and archive files, while the Cisco Wireless LAN Controller Module offers the ability to control 6, 8, 12, or 25 Cisco Aironet® Access Points. When these two modules are combined with the Cisco Integrated Services Router, small and medium-sized organizations, as well as enterprise branches, have the ability to deliver a wireless video surveillance system all from a single platform.

Service and Support

Cisco and our specialized partners offer a broad portfolio of end-to-end services to help you improve your organization's productivity and collaboration by assisting with the readiness, deployment, and optimization of your wireless network and mobility services. Our services help you successfully design and deploy a Cisco Wireless Video Surveillance solution that provides the highest levels of performance and security while lowering the total cost of ownership.

To learn more about Cisco Wireless LAN Service offers, visit:

<http://www.cisco.com/go/wirelesslanservices>

Why Cisco?

As a global company and operator of one of the largest enterprise networks in the world, Cisco has become a trusted adviser to its customers as they evolve their networks. In developing its video surveillance solutions, Cisco has applied the insights gained from operating its own network-based physical security solutions and mobility infrastructure to drive business processes and to protect the company's more than 200 corporate locations worldwide.

Cisco engineers offer vast experience in both digital video, including video surveillance as well as mobility. They understand how to use the power of an IP network to deliver innovative, standards-based video surveillance capabilities that enhance security, foster multigroup collaboration, and better align with an organization's overall goals.

Furthermore, the Cisco Wireless Video Surveillance solution offers the simplicity and operational cost savings of a single support system. The Cisco Technical Assistance Center (TAC) provides world-class support 24 hours a day, 365 days a year, for the solution components and the Cisco network.

For More Information

For more information on Physical Security, visit [Cisco Physical Security Solutions](#)

For more information on Cisco Wireless & Mobility Solutions, visit [Cisco Wireless & Mobility Solutions](#)



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