Cisco Integrated Video Surveillance Solution: Expand the Capabilities and Value of Physical Security Investments

What You Will Learn

In many enterprises, physical security departments are making a notable transition: from traditional analog and proprietary systems for video surveillance to open, digital solutions based on IP networking technologies. This transition arises from the limitations of traditional systems and the opportunities offered by IP networks for reducing costs, improving surveillance capabilities, and gaining new value from physical security operations.

In this solution overview, both network and physical security managers can discover:

- How network-based capabilities improve the efficiency and flexibility of physical security operations across an enterprise
- The Cisco® Integrated Video Surveillance Solution for the Cisco 3800 and 2800 Series Integrated Services Routers, which deliver multiple network services in branch offices and other remote sites
- Options for protecting current investments in a video surveillance infrastructure while gradually migrating to network-based solutions

Challenge

Traditional video surveillance systems require their own equipment, cable plant, proprietary communications protocols, and management platforms. The closed and isolated nature of these systems presents several challenges for the enterprise:

- **Barriers to increasing value:** Proprietary video surveillance systems cannot be easily aligned with business goals, which hinders the value that can be gained from the network and video infrastructure.
- **Limited opportunity to improve operational efficiency:** Physical security departments often must maintain their own IT resources to manage and troubleshoot the proprietary video surveillance systems. The enterprise cannot benefit from the efficiency and expertise of its overall IT and network operations.
- **Lack of interoperability with other systems:** The demands of more camera installations, increasing needs for video retention, and integration with access control, environmental, and other business applications require flexibility that is not typically offered by standalone video surveillance systems.
- **A single-vendor solution:** Proprietary video surveillance systems increase equipment costs while limiting the choice of components for specific sites or business needs. The results for an enterprise are higher capital and operational costs as well as limited return on system investments.

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

These challenges point to the need for a new type of video surveillance solution, one that is based on open and standard technologies for networks and equipment. The questions then become: Where is the best place to implement new video surveillance solutions, and how can they be implemented as a gradual migration from current systems?

The answer to these questions is provided by the capabilities of an IP-based enterprise network and a Cisco integrated services router at branch offices and other remote sites. The Cisco integrated services router is designed to deliver all primary communications services—voice, data, and video—for the site in a single and flexible network access platform. This flexibility can now encompass video surveillance with the Cisco Integrated Video Surveillance Solution.

Business Benefits

The Cisco Integrated Video Surveillance Solution uses IP networks to deliver video surveillance services, which helps to reduce costs, improve monitoring, and produce additional value from network and physical security investments. (See Table 1.)

Table 1. Features and Benefits

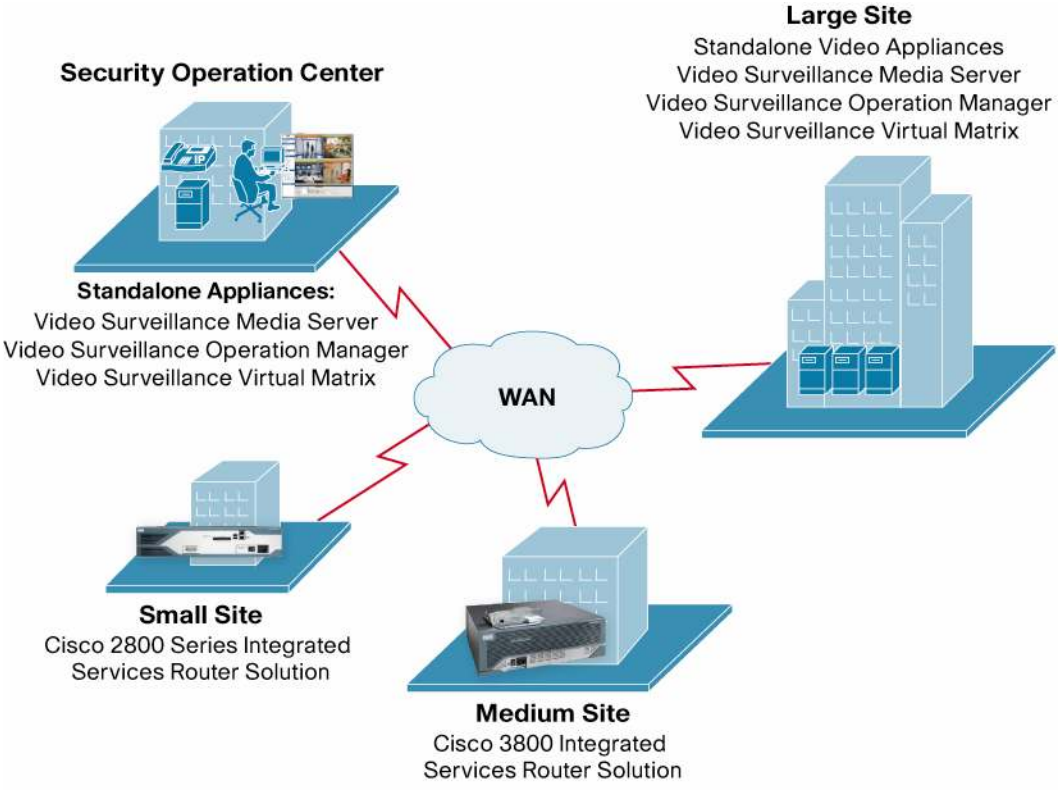
Category	Benefits
Reduced Costs	Reduced capital and operational costs through integration of multiple services into a single device and network link at the remote site Gradual migration to protect existing investments in video surveillance and physical security Flexibility to choose the best components, from multiple vendors, for a specific site or business need
Improved Operational Efficiency	Faster incident response, investigation, and resolution through more flexible access to physical security information Improved security posture through access to live and recorded video—anywhere, any time—with a broad range of devices New ways to use video to improve all business operations through application integration and collaboration among physical security, IT, and other business groups
Increased Investment Value	Broadcast-quality, low-latency, and secure video to enhance surveillance monitoring and decision making 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
Multiple Services, Single Device	Compatibility with other network services used at each site through integration of video surveillance components within the router Simplified deployment and control of new applications and security capabilities Minimal training required for physical security staff because the solution can be supported by the enterprise network and IT staff High reliability and availability from a proven device that is engineered to deliver a site's vital communications

Solution

The Cisco Integrated Video Surveillance Solution provides a cost-effective way to deploy globally accessible video monitoring of physical security from remote sites (Figure 1). As part of an open network, video can also become a source of information for other safety, security, and business applications.

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

Figure 1. Cisco Integrated Video Surveillance Solution Supports Local and Centralized Surveillance Monitoring over Enterprise Network

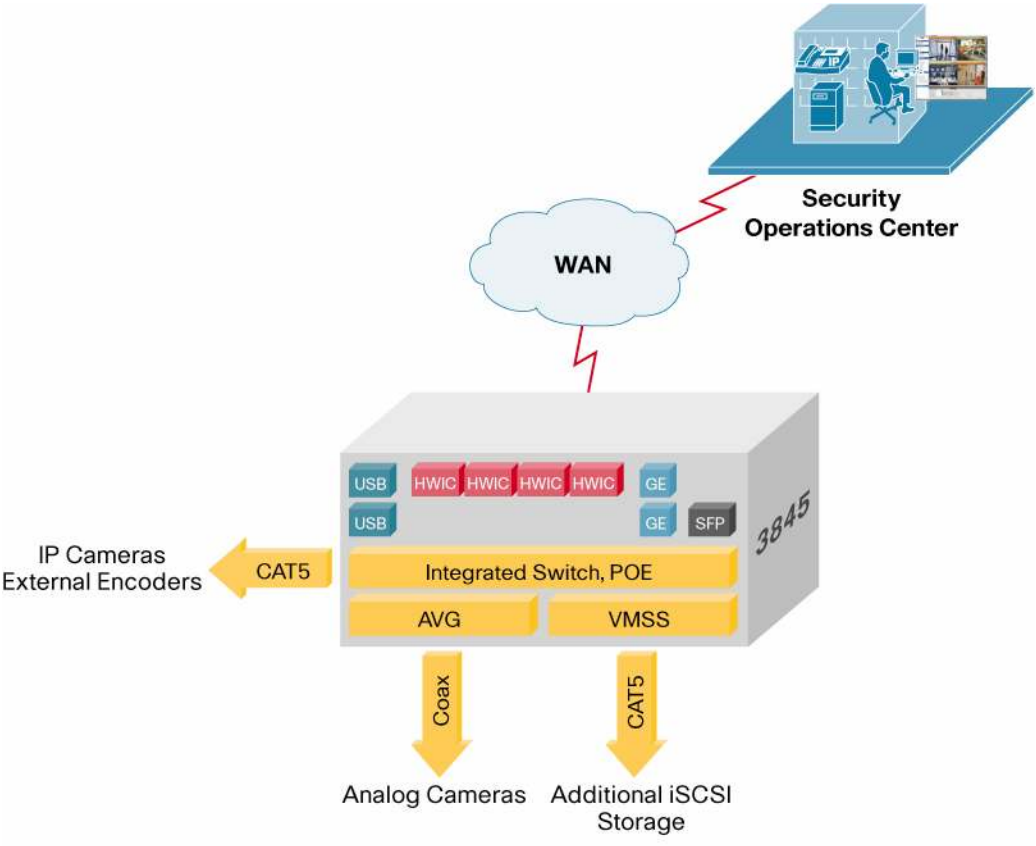


The Cisco Integrated Video Surveillance Solution combines, on a single platform, the primary functions of an analog video gateway, a video management system, video switching, and inline power for the connected IP cameras and encoders.

Integrating video switching functions in the platform reduce the complexity and lower the cost of deploying video surveillance capabilities while also providing the flexibility to design video applications that are customized to unique requirements (Figure 2).

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

Figure 2. Cisco Integrated Services Router Platform Integrates Video Surveillance on Single Network Access Device for Remote Sites



Solution Components

The following components are included in a Cisco Integrated Video Surveillance Solution:

- Cisco 3800 or 2800 Series Integrated Services Routers
- Cisco IP Video Surveillance 16-Port Analog Video Gateway (AVG) Network Module
- Cisco Video Management and Storage System (VMSS) Network Module
- Cisco Video Surveillance Operations Manager
- Cisco Video Surveillance Media Server

The Cisco 3800 or 2800 Series Integrated Services Routers combine data, voice, video, and wireless networking services into a single, secure platform for branch offices and other remote locations. Integration reduces the number of devices as well as the training and network expertise needed at the site. This platform also integrates the Cisco network modules that manage local video surveillance applications and video storage.

The Cisco IP Video Surveillance 16-Port AVG Network Module is installed in the Cisco integrated services router to aggregate video and other surveillance data streams for transport across the enterprise network. The Cisco AVG also allows remote control of camera and door operations. Supporting up to 16 ports in a single module, the Cisco AVG communicates with both Motion JPEG (MJPEG) and MPEG4 video codecs.

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

The Cisco VMSS Network Module, also installed in the Cisco integrated services router, offers a powerful system for managing video streams and archive files. Through a single browser interface, users can view live or stored video and manage multiple video sources such as IP cameras and codecs. An application programming interface (API) supports use of surveillance video by access control and other enterprise applications. Other capabilities offered by the Cisco VMSS module include local storage of archived video, event-based control of video stream recording, alerts to security personnel, and highly configurable user privileges.

The Cisco Video Surveillance Operations Manager is designed for the security operations center. This appliance authenticates and manages access to video feeds and provides a centralized administration tool for managing media servers, virtual matrixes, cameras, encoders, and viewers.

The Cisco Video Surveillance Media Server software manages, replicates, distributes, and archives video streams and video storage in a centralized security operation.

The Cisco Integrated Video Surveillance Solution also 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. The maintenance contract for the Cisco integrated services router covers the router chassis and every integrated service, including the Cisco Integrated Video Surveillance Solution. A single annual maintenance contract from Cisco encompasses hardware maintenance (Cisco SMARTnet® Service support) and maintaining software updates on all components of the integrated platform (Cisco Software Application Support plus Upgrades [SASU]).

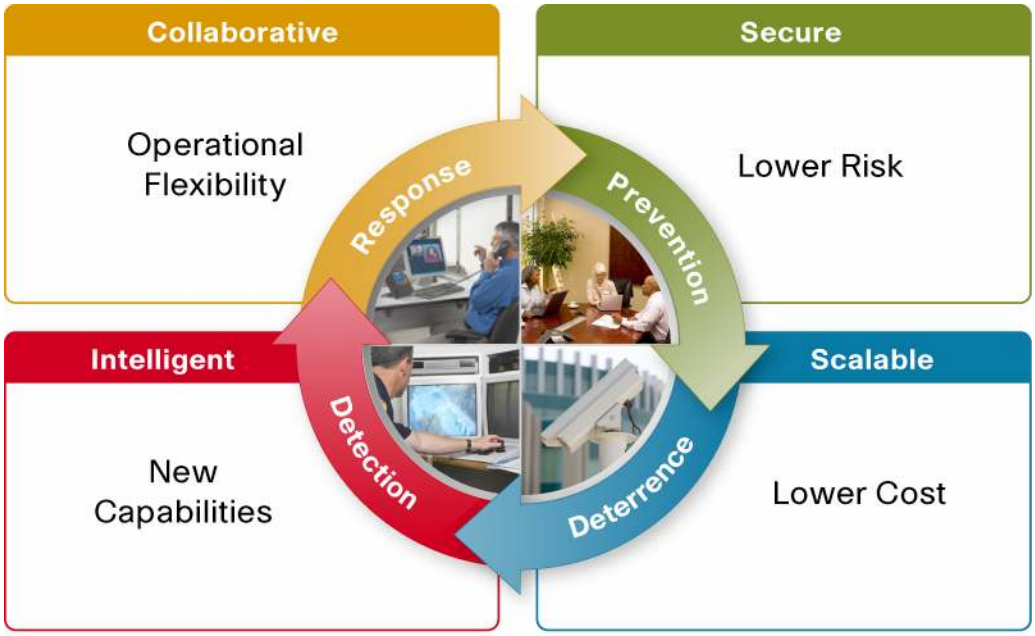
The Network as the Platform Reinvents Safety and Security

Unlike traditional physical security applications, which are proprietary, single purpose, limited, expensive, and difficult to extend, the network as the platform together with the Cisco Connected Physical Security Solutions portfolio delivers end-to-end integrated solutions to better protect people, information, and assets. The network as the platform reinvents safety and security across the entire lifecycle of safety and security, including (1) response, (2) prevention, (3) deterrence, and (4) detection. Because the network as the platform and Cisco Connected Physical Security Solutions bring together integrated intelligent applications, video surveillance and monitoring can now be tightly integrated with physical access control, together with 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, new capabilities, lower costs, and lower risk.

The Cisco Integrated Video Surveillance Solution is part of the Cisco Connected Physical Security Solutions Architecture, which uses the intelligent network as the platform for integrating diverse enterprise applications into a single network and access device. This architecture supports the convergence of diverse applications such as security management and event correlation, access control, wired and wireless network connectivity, and unified communications and interoperability. (See Figure 3.)

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

Figure 3. Network as Platform Reinvents Safety and Security



Video surveillance is also an example of network services defined in the Cisco Empowered Branch vision, which uses services and capabilities across the network to meet the needs of branch offices and other remote sites.

The Cisco integrated services router is crucial to the Cisco Empowered Branch blueprint. Integrating multiple network services into the router optimizes capital and operating expenses for each site, provides technology benefits such as system interoperability, and delivers a consistent, high-quality user experience for network services.

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 own networks. In developing its video surveillance solutions, Cisco has applied the insights gained from operating network-based physical security solutions to protect the company's more than 200 corporate locations worldwide.

Cisco engineers offer vast experience in digital video, including video surveillance. 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.

For More Information

- For details about the Cisco solutions for video surveillance, visit http://www.cisco.com/go/physicalsecurity. For more information about Cisco IP video surveillance on Cisco integrated services routers, visit http://www.cisco.com/go/isrvideo.

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

You will also find useful information in two Cisco white papers:

- “Cisco Systems IP Network-Centric Video Surveillance,” available at http://www.cisco.com/en/US/prod/collateral/vpndevc/ps6918/ps6921/ps6938/prod_white_paper0900aecd804a3e89_ps6937_Products_White_Paper.html
- Cisco’s vision for the Empowered Branch, available at http://www.cisco.com/go/empoweredbranch

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCDE, CCENT, Cisco Eos, Cisco Lumin, Cisco Nexus, Cisco StadiumVision, Cisco TelePresence, Cisco WebEx, the Cisco logo, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0809R)

Printed in USA C22-464908-01 10/08

© 2008 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.