



# Cisco Video Surveillance—At-A-Glance

## Cisco Video Surveillance Value Proposition

**What:** Cisco Systems® offers network-centric video surveillance software and hardware that supports video transmission, monitoring, recording, and management. These products protect customers' existing investments in analog equipment while enabling these devices to operate as part of an IP network-centric deployment. Cisco® products enable any-to-any multivendor device interoperability, allowing customers to build best-in-class video surveillance systems that optimize price, performance, and function.

**Vision:** Using the power of the IP-based Intelligent Information Network, Cisco Intelligent Converged Environments video surveillance products use a company's existing investments in video surveillance and physical security while enhancing the safety of its people and protection of its assets. Video can be accessed at any time from any place, enabling real-time incident response, investigation, and resolution. The open, standards-based Cisco infrastructure enables the deployment and control of new security applications and maximizes the value of live and recorded video.

**Customers:** Today, the majority of deployed video surveillance systems are proprietary, single-vendor, analog implementations that limit how, where, and when users can access video information. Cisco changes this environment. Cisco core and advanced technologies and convergence expertise help maximize video surveillance system owners' return on investment and lower the total cost of ownership in a highly scalable and secure manner.

**Products:** Cisco video surveillance portfolio works in unison with the advanced features and functions of IP network switches and routers.

**Cisco experience:** As a user and a trusted advisor, Cisco has provided networking expertise for years to forward-thinking organizations that want to maximize the value of their applications, systems, and personnel. This includes video surveillance operations made available using the power of an IP-based infrastructure. Cisco understands how to use the power of an IP network to deliver true innovation that maximizes the value of systems and information.

## What Are the Components of the Cisco Video Surveillance Solution?

- Analog-to-digital video camera encoders and digital-to-analog video monitor decoders, known as “IP gateways”; the gateways may be standalone modules or mounted in a Convergence Chassis or Integrated Service Platform
- Video recording servers, known as “service platforms”
- Video “Stream Manager” Software that provides video stream switching, recording, configuration, and monitoring

Cisco products differentiate themselves through performance, function, and interoperability, and because they provide policy-based access to real-time and recorded video anywhere, from any network-connected monitoring platform (PC, dedicated video surveillance analog monitoring station, PDA, etc.).

Cisco provides an architecture for video surveillance known as the Intelligent Converged Environment; it allows physical security applications such as video surveillance to run on an IP-based network infrastructure. Core (routing, switching, etc.) and advanced (wireless, network security, etc.) Cisco technologies provide a robust, proven set of features, making Cisco the ideal base to support world-class networked video surveillance.

## What Are the Functional Capabilities of Cisco Video Surveillance Solution?

- **Recording:** Receive and index live video surveillance feeds, and manage its storage
- **Monitoring:** Dynamically switch display(s) from one live video surveillance feed to another
- **Archiving:** Store recorded video for extended periods of time
- **Review and Export:** Recall and view recorded video, and export it as evidence
- **Assessment:** Assess video events in order to take appropriate action

## Benefits for the Security Professional

### Any-to-Any Connectivity:

- Access to video at any time from any place
- Virtual matrix software uses the network to switch video streams, with no change to the endpoint device

### Scalable and Reliable:

- Multicast support helps ensure intelligent and efficient bandwidth utilization
- Integrated features for high availability

### Flexibility:

- Linux-based for easy server deployment
- Use of standards-based video compression, including MPEG-4
- In the future video analytics and new applications will be added via a URL-based API

### Open, Standards-Based Infrastructure

- Allows new applications to use live and recorded video

### Greater Video Surveillance Control and Protection

- Enables real-time incident response, investigation, and resolution

## Benefits for the Corporate Executive

- Reduced capital and operational costs, resulting in migration away from proprietary single-vendor implementations
- Increased value from video, which can be accessed and used by many users and applications
- Ability to use existing investment in video surveillance and physical security

## Cisco Video Surveillance Products

### Cisco Video Surveillance IP Gateway

- Standalone video encoders and decoders, running Linux OS, with MPEG-4 compression
- Distributed “virtual matrix” video stream switching between the components of the surveillance system, without the need for a central server
- Full compatibility with leading analog and IP cameras, keyboards, and monitors
- Superior video quality with very low latency—30 frames per second (fps) for NTSC; 25 fps for PAL; and CIF, 2CIF, 4CIF and D1 resolution
- Audio, contact closure, video, and data I/O ports for network, camera, keyboard, and monitor connections
- Offered with 1, 2, or 4 10/100BaseTX/FX ports
- Dual streaming of video: Primary stream for live view at 1 to 30 fps with CIF to full D1 resolution; secondary video stream at reduced rate or for storage

### Cisco Video Surveillance Convergence Chassis

- Rack-mountable 16-slot chassis for Cisco Video Surveillance IP Gateway modules, and 10/100, Gigabit Ethernet, and USB connectivity
- Connects to Cisco switch or router
- Future camera expansion is simple—just add a Cisco Video Surveillance IP Gateway module
- Optional backplane with integrated 2-port Gigabit Ethernet switch
- Optional contact closure and fiber to copper transceiver modules
- Optional redundant power supplies



# Cisco Video Surveillance—(Continued)

## Cisco Video Surveillance Service Platform

- Network-attached digital video storage
- Cost-effective method to replace traditional analog VCRs with high-resolution, real-time digital recording
- Linux-based
- Digitally encoded video can be accepted from Cisco Video Surveillance IP Gateways
- Offers instant replay and time-date lookup of selected video at the touch of a button
- Up to 1.6 TB storage JBOD models, 1 RU; the base model has 2x400-MB hard disk drives (HDDs)
- Up to 4.4 TB usable Raid 5 fault-tolerance models, 2 RU; the base model has 6x400-MB HDDs
- Where higher storage capacity is required, Cisco offers direct attached storage (DAS) through its storage partners
- SCSI and Fibre Channel options

## Cisco Video Surveillance Integrated Service Platform

- Digital video recording in a scalable appliance form factor
- Optional virtual matrix switching
- 2-RU high, 19-in. rack-mount unit
- Accepts 4-port encoder modules and 400- or 500-GB HDDs for video storage; the base model has 6x400-MB HDDs with eight encoder ports
- As a VCR replacement, it can accept up to 12 video feeds and provide up to 4.4 TB of storage
- In its high-capacity variant, up to 64 video feeds can be aggregated using the Cisco Video Surveillance Convergence Chassis with USB ports connected to a services platform model
- Three serial ports for interface to matrix switches, time master, and pan, tilt, zoom (PTZ) camera control
- Video is passed to HDDs over USB, SCSI, or Fibre Channel connections

## Cisco Video Surveillance Stream Manager Software

- Base-level switching and recording software required for Cisco Video Surveillance IP Gateways, Convergence Chassis, Service Nodes, and Integrated Gateways
- Provides virtual matrix switching to connect cameras, keyboards, and monitors via Cisco Video Surveillance IP Gateways
- Provides camera PTZ and keyboard serial protocol translation to ensure cross-platform compatibility
- Delivers unicast and multicast support and alarm management
- Provides video storage and recall, allowing display on analog monitors or PCs
- Delivers time-data stamping, bookmarking of video for archiving or review, and event-based recording

## Cisco Video Surveillance Stream Manager—Administration Software

- PC-based applications allow easy setup of Cisco Video Surveillance IP Gateways, Convergence Chassis, Service Nodes, and Integrated Service Platforms
- Video stream parameters, network addresses, and serial ports can be configured
- Watchdog application helps ensure automatic switchover from failed storage device to backup

## Cisco Video Surveillance Stream Manager—Monitoring Software

- PC client application allows viewing of video on a PC monitor
- Video may be real-time or stored
- Client application displays the video associated with any alarm

## What Cisco Programs Support the Video Surveillance Solution?

The Cisco Advanced Technology Partner (ATP) program provides a network of resellers and integration partners to help in any system deployment.

## With Which Video Surveillance Vendors is Cisco Interoperable?

Cisco interoperability and any-to-any translation is a primary differentiator in the market. Vendors include:

- **Matrix Switches:** AD, Bosch, and Pelco
- **Keyboard:** Pelco KB300, Bosch IntuiKey Universal, Panasonic WV-CU650, AD 2088, CC1100, and Touch Tracker
- **Domes:** All Bosch domes, Pelco Speed Dome (D protocols); AD Ultra 6 and 7 series; Ultrak KD6; Panasonic WV-CS954; and Cohu i-Dome

## How Can Customers Deploy a Cisco Video Surveillance Solution?

There are four primary scenarios:

- **Large-scale video surveillance, with hundreds to thousands of deployed cameras**—Medium-sized to large facilities with higher density of cameras and campus or MAN-like networks. Typical customers include airports, department stores, corporate headquarters, casinos, seaports, ships, military bases, hotels, prisons, and stadiums.
- **Low-video-camera-density deployments**—Smaller facilities with limited density of devices and switched Ethernet LAN and WAN links to other sites. Typical customers include schools, convenience stores, banks, small retail outlets, restaurants, and car dealers.
- **Remote locations and transportation routes (known as “rings and strings” deployments)**—Video surveillance deployments with very few devices per kilometer. They typically use fiber-optic or wireless links to connect adjacent cameras in a serial fashion back to a central monitoring center. Typical customers include borders, canals, roadways, and railways. These deployments frequently require environmentally rugged, hardened enclosures and circuitry.
- **Mobile sites and vehicles**—Often mobile vehicles are equipped with one or two cameras and PC-based monitoring and recording, and use mobile wireless uplinks to connect with other vehicles or sites. Typical customers include police cruisers, trains, and buses. These deployments frequently require environmentally rugged, hardened enclosures and circuitry.

## Resources on Cisco Video Surveillance Solutions

For information on Cisco Video Surveillance, visit:

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