



# Physical Security

## Video Surveillance

### Cisco Systems



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# Security New Realities

## Common Goals

- **Faster identification, response, investigation and resolution of incidents**
- **Increase monitored locations - scalability**
- **Maximize investments in existing and new technologies**
  - Legacy cameras (analog)
  - Leverage ubiquity of IP networks

## Common Challenges

- **Limited manpower**
- **Tight budgets**
- **Existing VS infrastructure incapable of meeting today's security requirements – proprietary and analog**

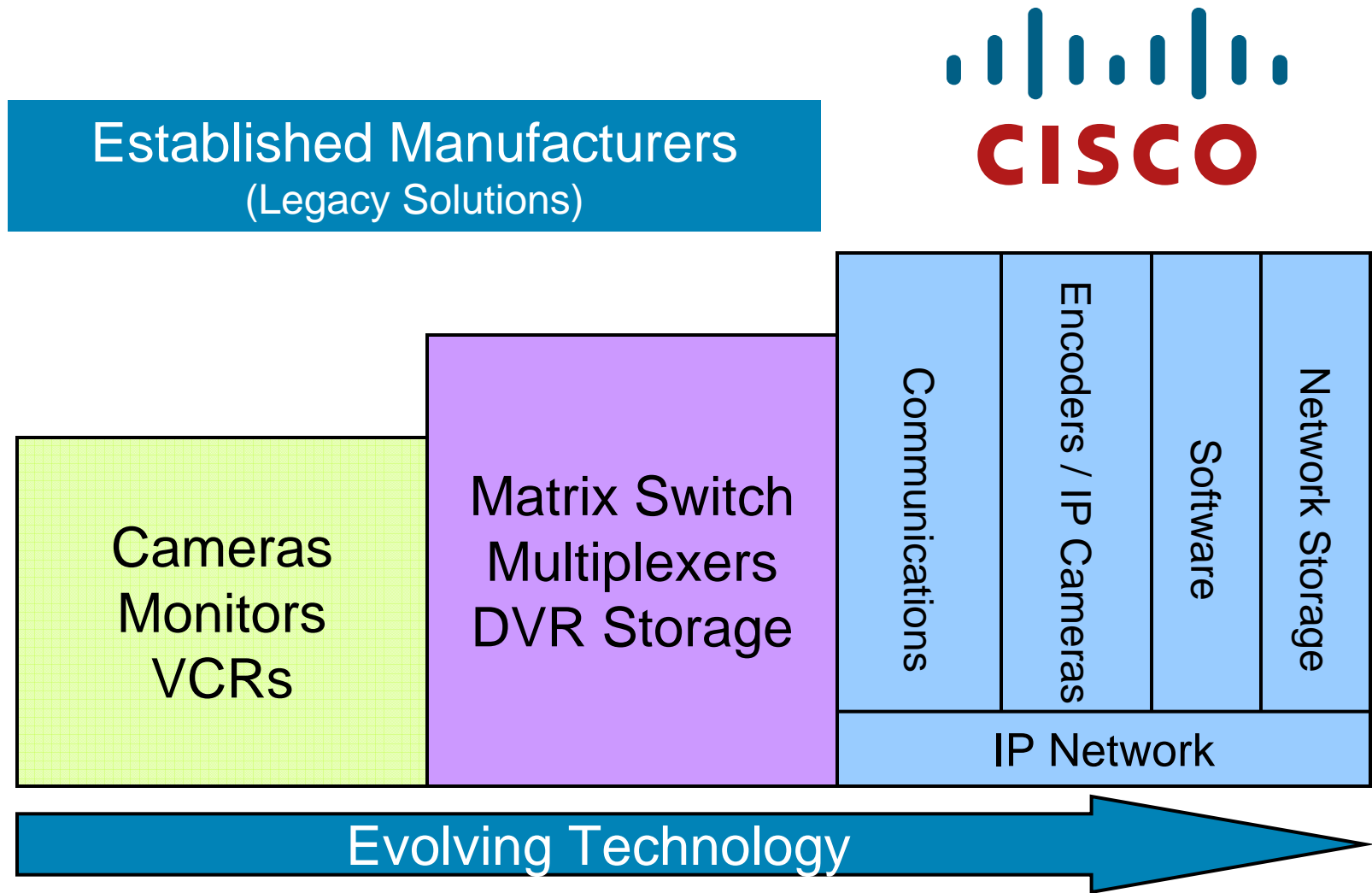




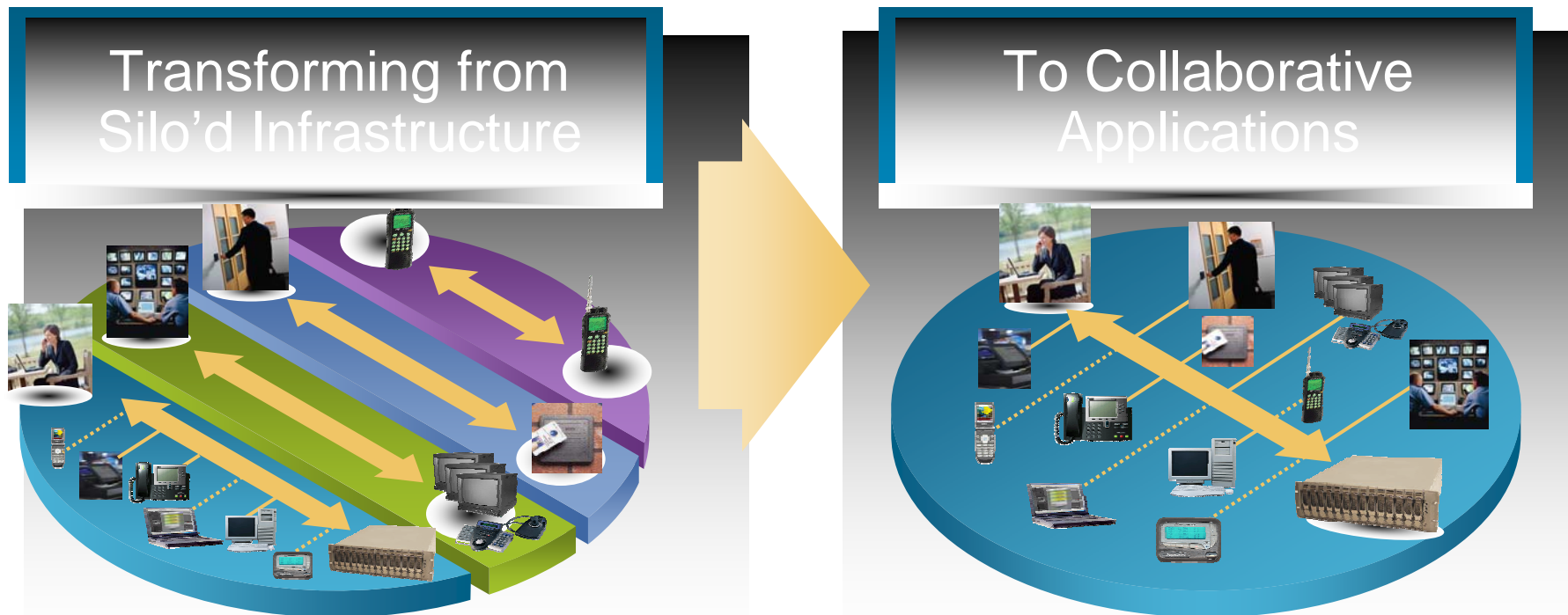
# Why IP?



# Evolution of CCTV Technology



# Network Convergence will drive the next wave of productivity in Safety and Security



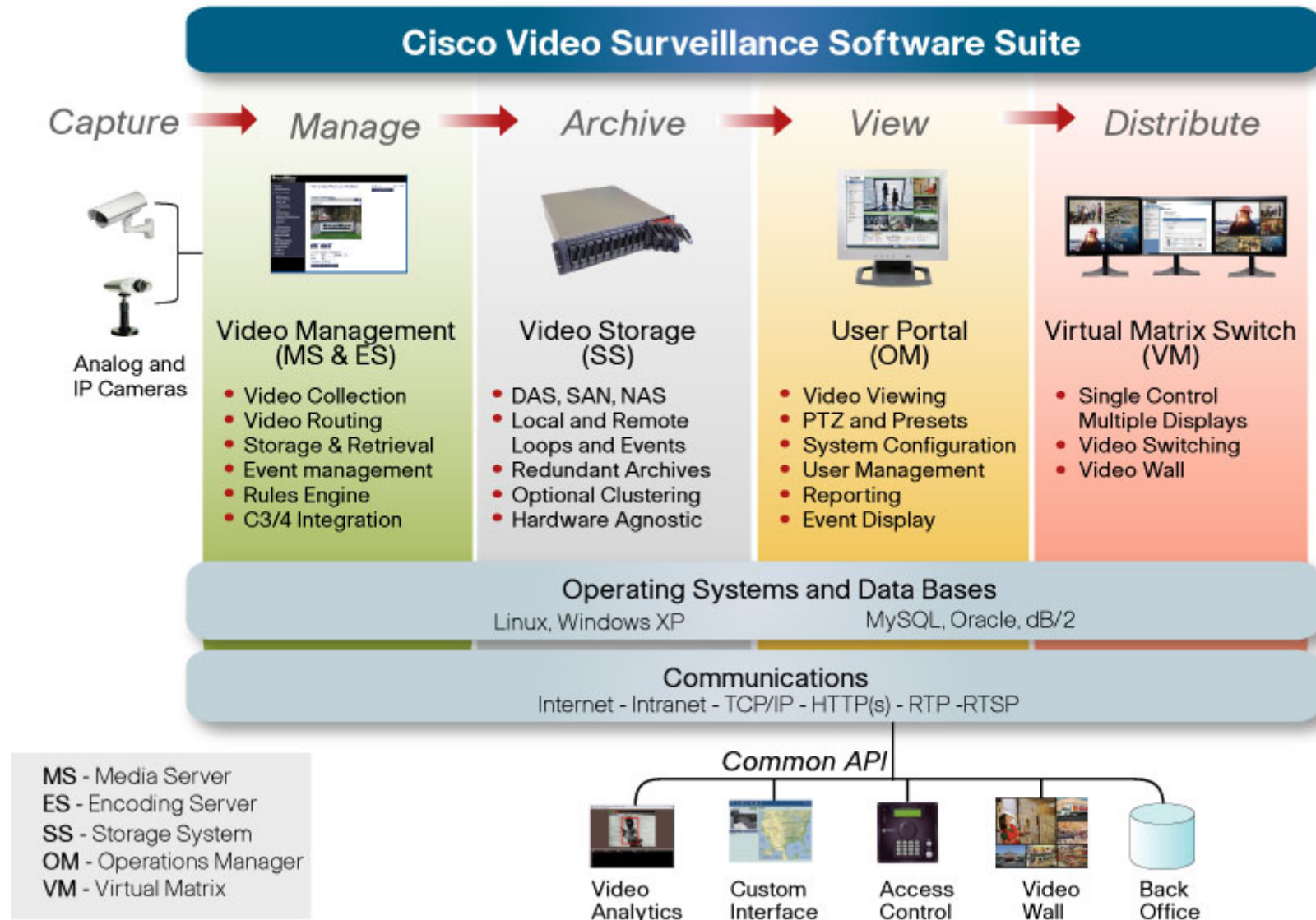
- 1) **Secure Policy Based Accessibility & Collaboration**
- 2) **Greater Interoperability and Flexibility**
- 3) **Leverage Existing Investments and Enable New Capabilities**



## Solution overview and components



# Cisco Video Surveillance Manager Solution



# Solution Components

- **Video Encoders/IP Cameras**  
Source of digital video over IP.  
Compressed MJPEG, MPEG2, MPEG4.



- **Software Suite**
- **Video and Application Servers**  
Linux servers for streaming video between cameras, storage and viewers. May also run a Web server or application sever for delivering a Web application.

**VSMS - VSOM - VSVM**



# Solution Components

- **Network**  
TCP/IP network, typically on Ethernet.  
Conventional switches and routers.

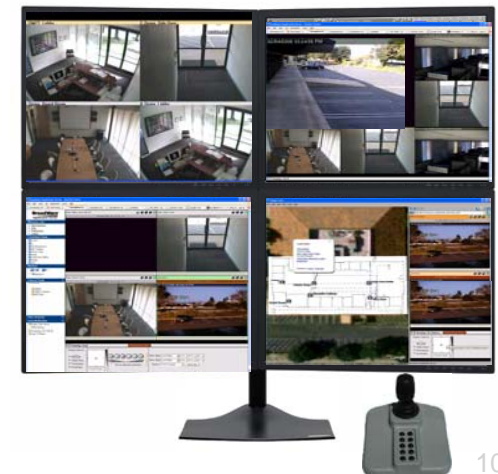


- **Storage**  
Redundant RAID storage  
Direct Attached, SAN or iSCSI



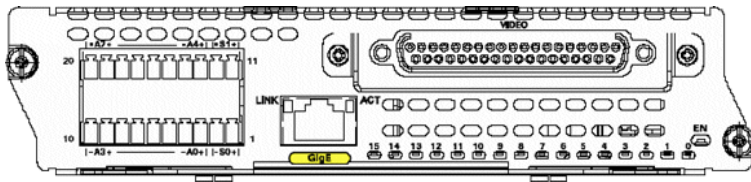
# Solution Components

- **Client Stations**  
Windows PCs for video decoding, display and control.  
Running Web browsers or specialized Windows applications.



# Cisco Integrated Video Surveillance

The Cisco Integrated Video Surveillance Solution provides a cost effective way to deploy globally accessible surveillance to your remote sites



*Integrated Analog Video Gateway*



*Integrated Video Management and Storage System*

- **Analog Video Gateway**

- Offers analog video interface for IP Video Surveillance Solutions
- 16 Analog Video Ports: MJPEG, MPEG-4, H.264
- 8 Contact Closure Ports
- 2 RS-485 ports for device Pan/Tilt/Zoom control

- **Integrated Video Management and Storage System**

- Targeted at <32 stream (camera) deployments
- Utilizes pre-packaged VS Operation Manager and VS Media Server
- Manage, view and archive surveillance data for up to 32 devices simultaneously
- Unified interface into IP Cameras and Analog devices (through the AVG)
- Expand the surveillance system flexibility with Unified Communications

## Key Benefits

- **Single Box Solution for UC and Surveillance**
- **Remote access to surveillance data for alarm/event validation**
- **Fully survivable solution**

# Cisco IP Video Surveillance Cameras 2500 Series

**NOT ORDERABLE YET**





# Operations



**Predefined Views**

- Combined View - 1731 & PD
- E hazel Crest Outside - Live & Archive
- E Hazel Crest PD
- Sheriff 1731 - Front Live
- Sheriff 1731 - Live Front & Back

**Monitors**

**Camera Feeds**

- Expand All
- East hazel Crest PD
  - Hazel Crest Cam 1
  - Hazel Crest Cam 2
- Sheriff 1731
  - Sheriff 1731 Front
  - Sheriff 1731 Rear Cam

**Video Archives**

Hazel Crest Cam 1 Sheriff 1731 Front

09/18/07 10:42:07  
SHERIFF-UNIT1731

**Combined View - 1731 & PD** Super User

- Title Bars
- Video Tools
- Timestamps
- Scroll Bars
- Fixed Aspect
- Full Source

9/18/2007 08:27:36 Seek

Video Surveillance Operations Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://vs.nmogensen.dk/vsom/index.php?cmd=eventSetup&action=form&id=1> Go Links Web Sign On

**Devices**

- Servers (2)
- Encoders (1)
- Analog Cameras (1)
- IP/Network Cameras (2)
- PTZ Configuration (1)
- Motion Configuration (0)
- Monitors (2)

**Video Feeds**

- Camera Feeds (3)
- Camera Groups
- Archives (5164)
- Views (3)

**Accounts**

- Users (1)
- Roles (2)

**System**

- Events (1 | 30)**
- Schedules (0)
- Settings
- Reports
- License
- Overview

**Utilities**

- Device Import

## Events

[Return to Event List](#)  
[Help: Edit an Event](#)

Use the form below to update an event.

**Edit an Event: test-event**

**Details**

Operator View

Archives

Alerts

PTZ Presets

Monitors

Schedules

Setup Rights

History Rights

**Event Information**

Event Name: test-event

Description:

Server: vsms

Status: Enabled

Default Flag: Flags

**Enable Soft Trigger**

Click [http://vs.nmogensen.dk/vsom/service/event\\_notify.php?id=1](http://vs.nmogensen.dk/vsom/service/event_notify.php?id=1) to permit external programs to trigger events.

**Device Trigger**

Encoder/IP Camera: -- Choose One --

Channel:

Type: Alarm

Default State:  (Rising)  (Falling)



# Deployments



# What do you want to achieve?

- What to monitor?
  - Assets, people, behavior, spaces
- How to monitor?
  - Active monitoring, forensics
- When to monitor?
  - Day, night, summer, winter
- Who is monitoring?
  - Access rights
- Events and Reactions
  - Analytics, alert, archive, view – how, when and who



# Streams

- **Resolution**

**CIF= 320 x 240    2CIF= 640 x 240            4CIF= 640 x 480**

**Face recognition: +40p License plate recognition: +60p**

92x110

60x70

52x60

42x50

33x40

26x30

20x26



- **Frames pr. second**

**Speed of moving objects – people ~ 12fps**

- **Compression**

**Storage, Network load and Legal matter**

*CIF: Common Intermediate Format*

# Considerations



- Cameras and encoders

  - Analog quality, digital capability and quality, network features, security, analytics, PTZ, I/O, lighting, environment and mounting

- Media Servers

  - Number of- and quality of streams

- Storage

  - Number of- and quality of streams, events and retention

- Clients

  - Number of- and quality of streams, number of clients and the people that handle them

- Infrastructure

  - Bandwidth, speed, latency, QoS, redundancy, security

# Configuration example

- **30 cameras, 4CIF, ~25 fps, MPEG-4, full storage 30 days:**

Network load: 77Mbps Storage: 23TB

Price: ~ \$100.000

- **30 cameras CIF, ~12 fps, MPEG-4, full storage 30 days:**

Network load: 13Mbps Storage: 4TB

Price: ~ \$60.000

## Software:

1 Media server License

1 Operations Manager License

30 stream license

1 Virtual Matrix Server License

1 Virtual Matrix Monitor License

price: ~ \$15.000



# Partnumbers



<b>CIVS-MS1R-500FC</b>	<b>Cisco VS Media Server, 1RU, 1x500GB, Fibre Channel</b>	<b>1</b>
<b>CIVS-SS-4U-31500</b>	<b>Cisco VS 4U Storage System With 42x750GB Drives</b>	<b>1</b>
<b>CIVS-MS-SW5.0=</b>	<b>Media Server V5.0 Software Only</b>	<b>1</b>
<b>CIVS-MS-10SCFL=</b>	<b>10 Stream Connection Feature License For Media Server</b>	<b>3</b>
<b>CIVS-OM-SW3.0=</b>	<b>Cisco VS Operations Manager v3.0 SW Only</b>	<b>1</b>
<b>CIVS-VM-SW5.0=</b>	<b>Cisco VS Virtual Matrix v5.0 SW Only</b>	<b>1</b>
<b>CIVS-VM-1DFL=</b>	<b>Cisco VS Virtual Matrix Client License, 1 Client</b>	<b>1</b>

# Deployment example

