

ANIXTER



Products. Technology. Services. Delivered Globally.

ANIXTER ipassuredSM
Defining Network Video Migration

ANIXTER IPASSUREDSM FOR VIDEO MIGRATION

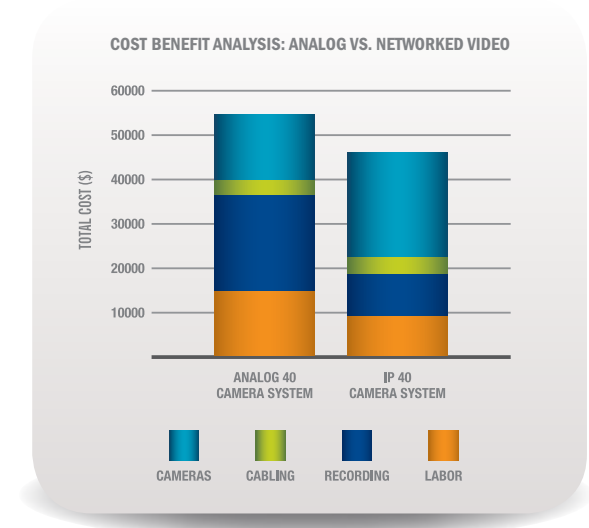


**Video Surveillance Trends:
 A Rapidly Changing Market**

The boundaries of video applications are being extended, and rapidly changing technologies are pushing intelligence to the network edge, providing enterprises with more control over their network video plans and extending into marketing, consumer behavior, sustainability and space-utilization applications. Network-based video systems eliminate the need to maintain separate networks; reduce capital, maintenance and equipment costs; provide improved image quality; and provide better scalability, intelligent video and integrated solutions.

While these emerging technologies bring numerous benefits, they also bring numerous challenges. Companies looking to create a clear migration path to take advantage of these technologies face an abundance of products, protocols and manufacturers. Because there is no one-size-fits-all approach, it's important to address these challenges when migrating to an IP solution:

- Transitioning to IP while still maintaining existing legacy systems
- Sustaining reliability to key stakeholders
- Preserving functionality and quality after the migration



Source: AXIS Communications

In this 40-camera system, the IP-based solution provides 16 percent cost savings through the open architecture, scalability and flexibility offered by the recording and management software. The comparable analog solution would require up to three proprietary DVRs with virtually no scalability, making future cost differentials more apparent.



The applications offered by IP-based video provide enterprises with more control over their networked video plans, and by 2014, a majority of market spend will be in IP-based video rather than analog.

Source: IMS Research forecasts that the growth of the network video surveillance market and the decline of the analog market will lead to a transition in 2014, with network video overtaking analog in terms of sales revenue.

Anixter is a leading global supplier of communications and security products, electrical and electronic wire and cable, fasteners and other small components. We help our customers specify solutions and make informed purchasing decisions around technology, applications and relevant standards. Throughout the world, we provide innovative supply chain management solutions to reduce our customers' total cost of production and implementation.





Anixter ipAssuredSM: Defining Network Video Migration

Anixter ipAssured: Defining Network Video Migration makes choosing the right products and infrastructure easier by pairing technologies to support current and future video surveillance applications for the best video migration strategy.



A technical specialist from Anixter's Technology Solutions Group will assess your facility's current system and future needs,

and based on the data collected, Anixter provides you with a road map to migrate your video network to an IP-based solution. By discussing the latest products and technologies, Anixter will recommend the right solution so you can create a standards-based migration path to help you achieve your goals.

Anixter's ipAssured: Defining Network Video Migration program is divided into three classifications:

- **Refined**, which establishes an analog-to-network video migration path that protects legacy analog hardware and infrastructure investments while building a solid foundation for future technologies
- **Enhanced**, which expands to network video technologies to begin a migration that optimizes your current network video platform for enhanced system performance
- **Advanced**, which incorporates network video solutions with advanced feature sets to address specific application challenges that customers face in specific environments

Network Video Migration Path

Within each classification, there are specific solutions to help you along your migration path.

Physical Infrastructure

- Copper cabling
- Fiber optic cabling
- Wireless

Video Transmission

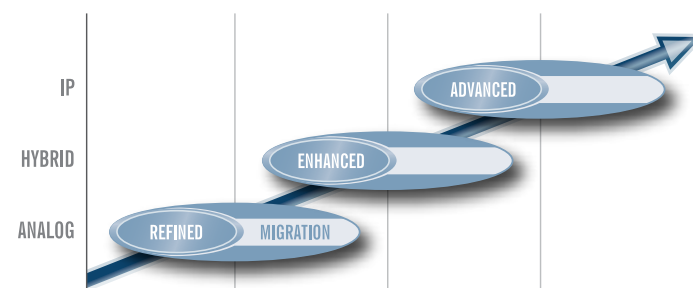
- Analog and network cameras
- Encoders
- Media converters (baluns, Ethernet over coax)

Recording and Management Technologies

- Hybrid recorders
- Network video recorders
- Video management software

IT Infrastructure

- Servers
- Storage
- Client viewing stations
- Switches and routers



MIGRATING THROUGH THE CHALLENGES

The move to IP has shifted the focus to meeting end-users' needs, which has created a rapid increase in product development. The hexagon represents an end-user, integrator or consultant and the current state of the security system, which may consist of multiple sites, multiple platforms, legacy hardware and third-party application integration. In the next layer, customers have four key technologies to examine when considering a migration path, with nearly an unlimited number of manufacturers that specialize in each technology to consider. Each key technology hexagon could literally have hundreds of thousands of manufacturers to choose from.

Physical Infrastructure

Vital for an analog-to-IP migration, structured cabling enables interoperability and backward compatibility between traditional and IP-enabled devices. A standards-based cabling infrastructure protects mission-critical video networks from internal and external factors, such as elevated temperatures and humidity, and provides headroom for aging network electronics that introduce errors into the network. Fiber-optics and wireless technologies offer many of these same benefits, but are also able to carry signals over longer distances.

Video Transmission

To protect legacy analog camera investments, organizations can use encoders to migrate onto an IP network. There are also hybrid cameras that can simultaneously transmit both IP and analog signals on a single coaxial cable for applications requiring HD resolution. Analog cameras can also be a cost-effective solution and can provide a migration to network video when leveraging a twisted-pair cabling infrastructure and balun technologies. The ideal scenario is to ultimately move to network camera technologies to benefit from the advanced feature sets these devices offer.

Recording and Management

Selecting the right recording and management platform is crucial in defining both short- and long-term migration paths. Hybrid recorders support analog and network cameras, and video management software (VMS) provides an open-architecture hardware solution to meet current and future needs. The right solution will provide concurrent support for analog and network cameras plus provide scalability for small single-camera solutions as well as large-scale enterprise or campus solutions with thousands of cameras.

IT Infrastructure

Bandwidth needs of megapixel and high-definition resolution cameras has placed a burden on network bandwidth and created several system management challenges. Consequently, the input/output (I/O) capabilities of IP video servers need to be significantly greater, and in many cases, standard data servers, even powerful enterprise servers, are not built to withstand the rigors and nuances of IP video feeds. Selecting the right IT infrastructure is crucial in eliminating bottlenecks that can cripple a mission-critical IP video network.

REFINED MIGRATION

Refined establishes an analog-to-network video migration path that protects legacy analog hardware and infrastructure investments.

Criteria

- ONVIFTM Compliant⁽¹⁾
- Provides path to Enhanced and Advanced technologies
- Retrofit construction
- Legacy investment protection
- Phased migration expectations

Physical infrastructure

- Ethernet over coax
- Twisted pair
- Fiber
- Wireless

Video Transmission

- Analog cameras
 - High resolution
- Hybrid cameras
 - Megapixel and HD resolution support
- Video encoders
 - ONVIF Compliant⁽¹⁾
 - Up to 30 FPS per channel
 - Stand-alone and high-density configurations

Recording and Management

- Hybrid video recorder (HVR)
 - RAID storage (8 TB plus)
 - Enterprise-class hard drives
 - Concurrent network and analog camera support
 - SD and HD recording
 - H.264 compression
 - External storage expansion

⁽¹⁾ Limited to specific devices



ENHANCED OPTIMIZATION

Enhanced expands to network video cameras, recording and management technologies for enhanced system performance.

Criteria

- ONVIF Compliant⁽¹⁾
- Supports Refined and Advanced technologies
- Remodel or new construction
- Technology upgrade or refresh
- Limited scalability and third-party integration

Physical Infrastructure

- Twisted pair
- Fiber
- Wireless

Video Transmission

- Network cameras
 - ONVIF Compliant⁽¹⁾
 - IEEE PoE 802.3af and at
 - Resolution: up to 2.1 MP or 1080i/p
 - HDTV or H.264 compression conformant
 - Multistream support
 - Edge analytics and storage

Recording and Management

- Network video recorder (NVR)
 - Appliance-based hardware
 - Single to multisite architecture
 - Small to medium deployments
- Video management software (VMS)
 - Single to multisite architecture
 - Unlimited camera scalability
 - Multiserver management

IT Infrastructure

- Video optimized hardware
 - Open architecture
 - Enterprise class
 - Redundancy

⁽¹⁾ Limited to specific devices

ADVANCED SPECIALIZATION

Advanced incorporates network video technologies with advanced feature sets to address specific application challenges.

Criteria

- ONVIF Compliant⁽¹⁾
- Supports Refined and Enhanced technologies
- Addresses application challenges
- Unlimited scalability and third-party integration
- Open architecture
- Large multisite deployments
- Advanced system management

Physical Infrastructure

- Twisted pair
- Fiber
- Wireless

Video Transmission

- Network cameras
 - **Meets Enhanced plus:**
 - Resolution: 2.1 MP +
 - Continuous pan
 - Low-light color imaging
 - Wide dynamic range (WDR)
 - Thermal imaging
 - Infrared illumination
 - 180° and 360°

Recording and Management

- Video management software (VMS)
 - Centralized management
 - Failover recording
 - Federated architecture
 - Health monitoring
- Video content analytics (VCA)
 - Live and recorded video search and analysis
 - Concurrent and complex algorithms

IT Infrastructure

- Video optimized hardware
 - High performance I/O
 - High capacity storage
 - Highly expandable

⁽¹⁾ Limited to specific devices

Building Clarity through Standardization

An open network that uses multiple products provides the most flexibility and long-term reliability, but making sure different products from different manufacturers can talk to each other can be challenging. Standards-compliant products homogenize the communication between IP-based network video products and increase flexibility and choice as well as secure investments by making sure that interoperable products are available from a number of manufacturers. ONVIF is an open industry forum for the development of a global standard for the interface of IP-based network video products regardless of manufacturer, has developed protocols that include automatic device discovery, video streaming and intelligence metadata.

Other organizations exist that set standards to make sure performance levels for the cabling and infrastructure solutions that will support network video including:

- Telecommunications Industry Association (TIA)
- International Organization for Standardization (ISO)
- Institute of Electrical & Electronics Engineers (IEEE)

Anixter's Infrastructure Solutions Lab

Anixter's Infrastructure Solutions LabSM provides a unique environment for customers to interact with current technologies from industry-leading manufacturers. Anixter leverages technologies from its manufacturer partners and demonstrates solutions that address specific application changes. Anixter educates customers on the latest technologies, trends and best practices.

The Anixter Infrastructure Solutions Lab's engineers perform rigorous testing on new products and solutions to validate manufacturers' claims and to make sure customers are confident they are receiving the best solution.

To register for a lab visit, go to anixter.com/lab.



> Benefits

- Infrastructure Solutions Lab
- Interoperability
- Proof of concept
- ONVIF conformance validation and independent certification
- Performance simulations: bandwidth, light sensitivity, cabling infrastructure, image resolution, network fabric and hardware optimization
- IP security migration
- Technology deployment best practices
- Application engineering assistance
- Addressing the concerns of IT, security and other technology departments
- Product and technology training
- Performing solution acceptance testing
- Verifying product claims

Resources that Keep You Current on the Latest Trends

Anixter has specialized network video and certified protection professionals that can help with any access control, door locking hardware, controller or video surveillance challenge.

Anixter has more than 90 technical experts and engineers worldwide that drive product specifications and identify when a product can meet your resources. By visiting with end-users, integrators and suppliers, Anixter's systems engineers provide the latest training and industry best practices.





Supply Chain Solutions

Anixter's Supply Chain Solutions address the key components of any security project as a whole to maximize installation productivity, improve the speed of deployment, mitigate risk and lower the total cost of deployment.



READY!SM Deployment Services by Anixter map our distribution and Supply Chain Solutions to the construction or deployment process

of any technology project. We combine sourcing, inventory management, kitting, labeling, packaging and deployment services to simplify and address the material management challenges at the job site(s). READY! Deployment Services by Anixter will help deliver your product specifications as planned.

Global Capabilities

With locations in more than 50 countries, Anixter offers local solutions with global support and local expertise where needed. By positioning local management teams, technical experts, distribution facilities and research centers closest to the place you do business, Anixter can address your larger business needs.

Anixter Association and Committee Memberships

- Telecommunications Industry Association (TIA)
- International Organization for Standardization (ISO)
- Institute of Electrical & Electronics Engineers (IEEE)
- ONVIF
- Building Industry Consulting Services International (BICSI)
- Security Industry Association (SIA)
- Control Systems Integrators Association (CSIA)

Technical Certifications

- ASIS CPP (Certified Protection Professional)
- More than 90 Registered BICSI RCDDs
- PSPs (Physical Security Professional Certification)
- CCNAs (Cisco Certified Network Associate)



■ ANIXTER PRESENCE

<p>YEAR FOUNDED 1957</p>	<p>NUMBER OF EMPLOYEES Over 8,300</p>	<p>2012 REVENUE \$6.3 Billion</p>	<p>INVENTORY: OVER \$1 Billion</p>	<p>MORE THAN 450,000 PRODUCTS</p>
<p>MORE THAN 50 countries</p>	<p>CUSTOMERS: OVER 100,000</p>	<p>OVER 250 cities</p>	<p>STOCK SYMBOL AXE</p>	<p>FORTUNE 500 LIST</p>

About Anixter: anixter.com/aboutus
Legal Statement: anixter.com/legalstatement

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