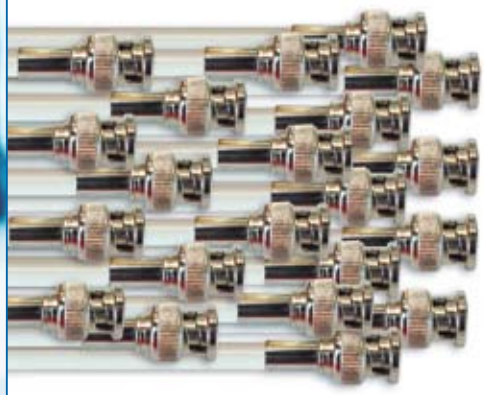
Axis IP-Surveillance

Professional Network Video Solutions for Security Surveillance and Remote Monitoring Applications

AXIS COMMUNICATIONS

Axis IP-Surveillance offers cost-efficient and future-proof solutions for security and remote monitoring applications. Connecting directly to the network, Axis IP-Surveillance products can distribute high-quality video over any IP network, whether local or the Internet, wired or wireless. Easy to install and use, they enable you to have a professional video surveillance application up and running in minutes. The system can be as open or as closed and secure as needed.

Making a progressive move from analog to network video



Many companies and organizations have already made significant investments in analog CCTV systems and as long as these systems are delivering value, companies do not, understandably, see the need to change. With an Axis IP-Surveillance solution, you can integrate your existing analog system into an IP-based solution. The solution enables you to benefit from the numerous functionalities and advantages offered by network video:

- Remote accessibility
- Easy, future-proof integration
- Scalability and flexibility
- Cost-effectiveness
- Distributed intelligence

The IP way

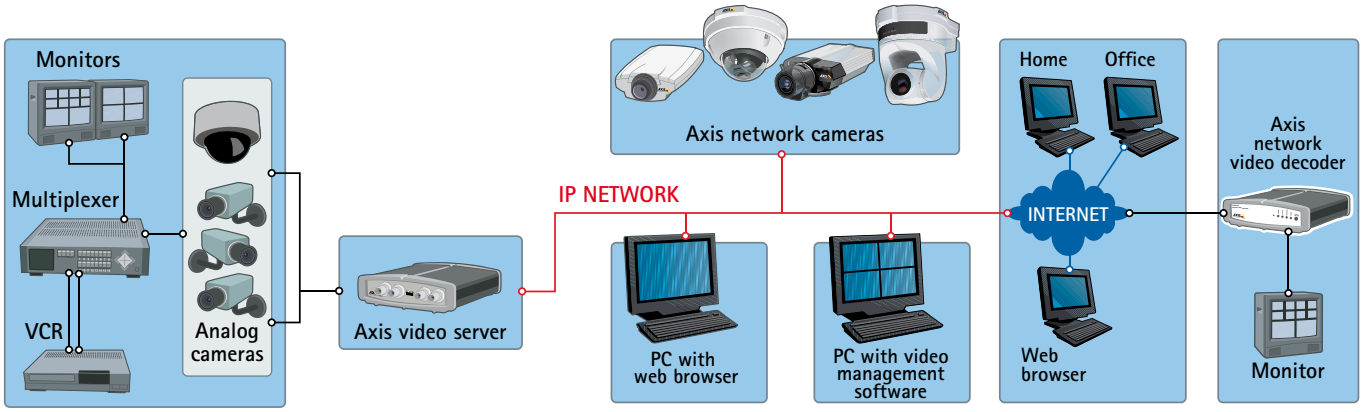
An Axis IP-Surveillance system is able to transmit video without the need for a dedicated physical infrastructure. It uses standard IP networks, such as LANs or the Internet, for transporting information, rather than dedicated point-to-point cabling, such as that used in analog video systems.

Easy set-up

The majority of businesses now have high-speed, IP-based networks connected to the Internet. Adding an IP-Surveillance system simply utilizes and extends the same infrastructure to include video functionality. Under these circumstances setting up an IP-Surveillance system is both simple and cost-effective. The only action required is to set the IP addresses of the network video products. Once the basic system is up and running, it can be fine-tuned in a number of ways. Additional cameras can easily be added, as well as features such as Power over Ethernet, which eliminates the need for power outlets at the camera locations. All communication runs over the IP network, so there is no need for additional cabling.

System expansion

Should the need arise, the system can be expanded by adding more network cameras. This is easily done regardless of whether the new cameras are to be placed at the same site, or at a new location communicating over the Internet.



Axis video servers make it possible to move toward a network video system without having to discard existing analog equipment. They connect to analog cameras, digitize the images and feed them to the IP network, thus turning analog cameras into network cameras. Axis network cameras connect directly to the IP network. They capture and transmit live video directly over the IP network. A standard PC with video management software is used to monitor and record the video. Any camera can be monitored remotely from anywhere on the LAN, WAN or the Internet. If network video streams need to be monitored on existing analog equipment, an Axis network video decoder can be used.

How can you benefit?

Remote accessibility

Access video at anytime, from anywhere

Authorized users can access video at any time from any computer anywhere. Axis IP-Surveillance products provide an easy way to capture and distribute high-quality video over any kind of IP network or the Internet. The video can be stored at remote locations for convenience and security, and the information can be transported over the LAN or Internet.

Easy, future-proof integration

Put the cameras wherever you want, integrate applications, and leverage your investments

There are almost no limitations as to where you can place Axis IP-Surveillance products. In addition, they have the capacity to provide a high level of integration with other equipment and functions, making it a continually developing system. With an Axis solution, you can integrate your existing analog system into an IP-based solution. A fully integrated Axis IP-Surveillance system can also be used for a multitude of applications simultaneously, such as access control, building management, point-of-sales systems, and ATMs.

Scalability and flexibility

A system that grows with your needs

An Axis IP-Surveillance system can be expanded by adding more network cameras. This is just as easily done regardless of whether the new cameras are to be placed at the same site, or at a new location communicating over the Internet. You can choose exactly what you need today, and scale the system at any time to meet your growing needs. New technologies, additional cameras, and extra storage capacity are all easily added as required, due to strict adherence to industry standards.

Cost-effectiveness

Save money and lower total cost of ownership due to strict adherence to industry standards

Based on open standards, Axis IP-Surveillance products run on Ethernet networks and support technologies such as Power over Ethernet. Using standard PC server hardware for video recording and storage rather than proprietary equipment such as DVRs radically reduces management and equipment costs, particularly for larger systems where storage and servers are a significant portion of the total solution cost. Additional cost savings come from the infrastructure used. IP-based networks such as the Internet, LANs and various connection methods such as wireless can be leveraged for other applications across the organization.

Distributed intelligence

Put the system's intelligence wherever you need it

In today's network video systems, intelligence has been brought into the camera itself. Advanced network cameras can have built-in motion detection and alarm management so the camera decides when to send video, at what frame rate and resolution, and when to alert a specific operator for monitoring and/or response. More intelligent algorithms are also being integrated into network cameras. You obtain data in more manageable forms and with higher levels of accuracy. Intelligence at the camera level implies a far more effective means of surveillance than is possible with centralized systems such as DVRs.

Applications

Always a solution for your business

Axis IP-Surveillance is an established, attractive technology not only for enhancing or revitalizing existing surveillance and remote monitoring applications, but also for a vast number of applications in sectors such as:

Government

In urban areas troubled by the problems of rising crime, installing the necessary infrastructure is expensive and time consuming. Axis IP-Surveillance meets the requirements of a high-quality and cost effective system and has proved to be a successful way of reducing crime and violence in troubled areas.

Retail

For cash register staff constantly exposed to the threat of robbery, Axis IP-Surveillance solutions provide additional security compared to traditional analog systems. When transmitting live video over networks and storing the images on a server, the visual evidence is not within reach of potential criminals. Owners and managers can also follow the business from any remote location.

Transportation

To meet the traffic needs of today's traveling public, Axis IP-Surveillance products can be integrated with existing surveillance systems to enhance security for passengers at railway stations, airports and highways. Monitoring centrals will have easy access to images of highways and toll booths.

Banking and Finance

As a means of protection against cash card fraud and theft, financial institutions are installing Axis IP-Surveillance solutions to monitor ATM transactions and other sensitive areas. Separate image files of each specific action can be stored onto a central database for potential future investigation. Video can easily be copied and distributed to speed up police investigation in case of incidents.

Education

Axis IP-Surveillance solutions are being used in schools and other educational establishments for security surveillance and the remote monitoring of playground areas, corridors and halls - making educational institutions a safer place. Axis IP-Surveillance solutions utilize a school's existing computer network, simplifying installation and reducing costs.

Industrial

In manufacturing plants and warehouse facilities, Axis IP-Surveillance systems give staff visual access to critical points along the production line. Potential dangerous incidents can be discovered and avoided at an early stage. The prevention of costly production jams saves companies substantial amounts of money.

Factors to consider when designing a network video system

To design a successful, high-performance network video system, there are multiple factors to consider, among which, image quality and bandwidth management.

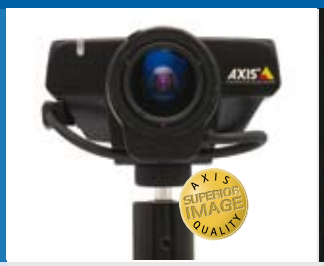


Image Quality

Image quality is one of the most important features of any camera, if not the most important. This is particularly so in surveillance and monitoring applications, where lives and property may be at stake.

Determining factors

Unlike traditional analog cameras, Axis network cameras are equipped with processing power not only to capture and present the images, but also to digitally manage and compress the video for network transport. There is a natural trade-off between levels of compression and image quality. But even so, image quality can vary considerably, depending on choice of optics and image sensor, available processing power and level of sophistication of the algorithms. To summarize, one should specifically look at the aspects of

- Type of image sensor
- Low light capabilities of the camera
- Ability to replace the lens
- Resolution
- Supported compression standards
- Image capture technology (*see separate section below*)

Why is Axis image quality superior?

Since the development of network cameras first began, Axis introduced a stream of image enhancing technologies and patents. From a technical point of view, Axis' Superior Image Quality rests on three pillars:

- Advanced signal processing, image enhancement algorithms and video compression technologies.
- Custom-designed image processing and video networking chips.
- Careful selection and matching of the latest image sensors and lenses.

Bandwidth Management

Network video products utilize bandwidth based on their configuration. For instance, bandwidth usage of a camera depends on several factors such as:

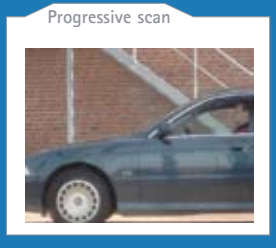
- Image resolution
- Compression level and type
- Frame rate (images per second)
- Complexity of the scene

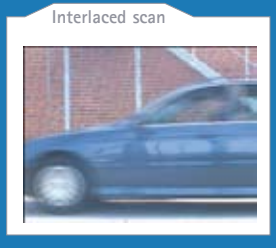
The following techniques are among those that enable management of bandwidth consumption.

- **Switched networks:** By using network switching, the same physical computer and IP-Surveillance network can be separated into two autonomous networks. Even though these networks remain physically connected, the network switch logically divides them into two virtual and independent networks.
- **Faster networks:** Most networks today are 100 Mbit/s or faster, providing ample bandwidth for network video applications. As Gigabit networks are becoming more affordable, hundreds of network cameras can use the same physical infrastructure, without degrading network performance.
- **Event driven frame rate:** 30 frames per seconds (fps) on all cameras at all times is above the level required for many applications. With the configuration capabilities and built-in intelligence of the network camera/video server, frame rates under normal conditions can be set lower, e.g. 5 fps, dramatically decreasing bandwidth consumption. In the event of an alarm, if motion detection is triggered, the recording frame rate speed can be automatically increased to a higher frame level. In many cases the camera will only send video over the network if the video is worth recording. The rest of the time, nothing is being transferred.

Image capture technologies: Progressive vs. interlaced scan

Many network cameras employ "progressive scan" technology that better suits depicting moving objects clearly. This more advanced image capture technology means that the whole image is captured at one time, thus providing crystal clear images even with a high degree of motion.





Product overview

Axis provides all the necessary components for the successful deployment of IP-Surveillance installations, so you will find our product portfolio includes:

- Network cameras
- Video servers
- Video management software
- A full range of accessories

For a complete list of Axis products, please visit www.axis.com

A complete range of video solutions

- For new video installations as well as for expanding and/or migrating existing analog installations to network video.
- For indoor and outdoor, wired and wireless environments.
- With advanced functions such as motion detection, alarm inputs/outputs, Power over Ethernet, audio, megapixel, and many more.
- Enabling integration with other systems for increased functionality and easier operation. Examples of systems which can be integrated include access control, building management, and industrial control systems.
- That easily integrate in systems scaling from one to thousands of cameras.

AXIS COMMUNICATIONS
APPLICATION DEVELOPMENT PARTNER

Solutions for any application

Axis' ADP partners offer a wide range of complete software solutions that meet varying specifications and requirements for different application areas, from entry-level software to comprehensive applications covering most industry segments.
www.axis.com/partner/adp_intro.htm

World leader

For more information on Axis IP-Surveillance solutions, visit www.axis.com/solutions

Axis is the global market leader in network video products. We have been developing solutions that add value to your network since 1984 and specifically, network video solutions since 1996. With the largest installed base of network video products and a total of 3 million networking products installed, Axis has the experience to meet your company's needs. It is this experience, combined with our cutting-edge technology that makes Axis the partner of choice when it comes to network video.

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About Axis

Axis is an IT company offering network video solutions for professional installations. The company is the global market leader in network video, driving the ongoing shift from analog to digital video surveillance. Axis products and solutions focus on security surveillance and remote monitoring, and are based on innovative, open technology platforms.

Axis is a Swedish-based company, operating worldwide with offices in 18 countries and cooperating with partners in more than 70 countries. Founded in 1984, Axis is listed on the OMX Nordic Exchange, Large Cap and Information Technology. For more information about Axis, please visit our website at www.axis.com.

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