



10 Reasons to Switch to IP-Based Video

In the following pages we'll take a look at 10 key motivators for switching from analog to IP-based cameras for a more reliable security system, reduced costs, and added value for your business.

1. HIGH RESOLUTION

IP-based cameras are not restricted to the lower resolution of analog cameras. A five-megapixel IP camera gives you 10 times more detail than an analog 4CIF camera. Many analog cameras have a maximum resolution of 704 x 480 pixels (4CIF), but IP cameras can provide much higher resolutions, including HDTV (720p/1080p) and even up to five megapixels (2560 x 1920). This means you can either cover a much larger area or get a highly detailed image to meet more demanding identification requirements.

IP-based cameras also offer several different aspect ratios, making it easier to capture wide scenes and allowing you to focus your coverage where it is needed most.

2. EASY TO INSTALL

IP cameras connect easily to your existing data network, and you don't need to invest in new cabling infrastructure. When using Power over Ethernet (PoE), a single cable per camera can provide power, video and data. You don't need a power outlet near your camera, and if your network switches are connected to back-up power, so are your cameras.

Axis IP cameras have a number of tools to assist you during setup. Remote focus lets you adjust the focus from any location. The pixel counter helps you verify that the resolution fulfills your requirements for a given scene. Remote zoom also allows you to change your viewing angle to fit the coverage area.

3. TRULY DIGITAL

The image from an IP camera will not degrade in quality when transported over long distances, or when converted between different formats. An analog signal, however, drops in quality when transmitted over a distance and when converted. The digital signal remains true – you will always have the same quality. A single IP camera can also stream different parts of the image to different recipients at the same time, reducing the bandwidth and storage requirements.

4. CAMERA INTELLIGENCE

IP cameras can do a lot more than just produce a video feed. Built-in intelligence enables cameras to perform a number of tasks to reduce the workload for operators, deliver vital business data, and increase surveillance efficiency. By activating motion detection, the camera can trigger an event as soon as something happens in a scene. A built-in tampering alarm will notify the operator if the camera's operation is disrupted.

Another useful application is Cross Line Detection. This detects moving objects that cross a virtual line, making it possible to automatically trigger an event.

The functionality of IP cameras can be extended by adding new applications. The AXIS Camera Application Platform is an open application platform that enables the development of third-party applications. This allows them to be downloaded and installed on Axis network cameras and video encoders.

5. FULLY INTEGRATED

An IP camera integrates power, video, audio, PTZ control, and I/O in a single cable, which means cost savings, increased functionality, and vast potential for integration.

An IP camera not only requires less cabling; it also offers many possibilities for integration. By using the input or output ports on the camera, you can enable physical access control, with or without the supervision of an operator. With built-in two-way audio, an operator can communicate verbally with a person standing in front of the camera. The camera can also use audio for detection, and trigger alarms or recordings.

For an analog PTZ camera, you need a separate cable to control the pan, tilt and zoom functions. To add audio, you need yet another cable. Together with the power and video cables, this adds up to costly and inflexible camera infrastructure.

6. BUILT-IN SECURITY

IP cameras offer encryption of the video feed, as well as multi-level user access control. This means you can control exactly who can see what in your system, and your video is safe from any form of third-party manipulation.

Analog video is insecure. Lacking encryption or any means of authentication, the video feed from an analog camera could possibly be tapped into, or even altered or replaced, to disrupt the surveillance operation. In addition to HTTPS encryption and VPN support, IP cameras can also use IEEE 802.1x and IP address filtering. Digital watermarks can be added to all recorded material.

7. CRYSTAL-CLEAR MOTION

With an IP camera, there are no problems associated with interlacing. Using progressive scan allows the entire image to be captured in each frame, resulting in superior image quality. All cameras capture an image one line at a time. IP cameras use progressive scan to get the whole image on every pass.

Most analog cameras use interlaced scanning. This means that only lines with odd numbers are scanned on the first pass, and the even-numbered lines are scanned on the next. The two subsets are then combined into one image. The problem with this is that any motion happening in between the passes will be blurred in the final image.

8. EASY TO SCALE

IP-based video surveillance is easy to extend as and when the need arises. Cabling requirements are far less complex than for an analog system, and you are not tied to proprietary technology thanks to a foundation of open standards.

Adding more cameras or functions to an analog system

means a lot of new cabling, and matching the new equipment to your proprietary system could mean a limited selection from only one vendor.

Axis is a founding member of ONVIF, an open industry forum for the development of a global standard for the interface of IP-based physical security products. ONVIF ensures that IP-based equipment from different manufacturers can co-exist and interoperate on the same network.

By using standard IP components, you ensure easy integration with other systems. You can easily route your video to wherever you need it from day to day, and cameras can be upgraded with intelligent plugins to extend functionality.

9. LOWER TOTAL COST

The total cost of ownership for an IP-based system is lower than an analog system. Even though analog cameras are less expensive to buy, the accompanying labor costs and expensive DVR equipment tip the scales in favor of IP cameras.

In an independent integrator survey in 2010, retail store bids for analog versus IP-based systems featuring 14, 25 and 40 cameras were compared. The survey showed that the IP-based bids were consistently lower, and the difference increased with the number of cameras. With 40 cameras offered, the IP-based system cost 16 percent less than the analog one.

Less cabling means less maintenance, and the open standard enables the use of inexpensive, off-the-shelf IT hardware for integrating functions.

10. NEW POSSIBILITIES

With an all IP-based surveillance system, you can grow with future challenges and opportunities. Open standards and a plug-in architecture mean that your cameras can adapt to the latest technology.

An IP-based system offers many advantages over an analog system. A web interface in the camera allows easy access. System management and storage can be handled remotely.

Axis cameras and encoders support the AXIS Video Hosting System (AVHS), making it possible to connect the network video product to a local service provider.

Axis cameras can easily be upgraded, and system maintenance and overview are at the camera level. Axis IP cameras with SD/SDHC cards or NAS provide efficient and affordable local storage and system redundancy.

CONCLUSION

IP-based surveillance systems provide many advantages, including high image quality, built-in security, and the possibility to add video analytics. The products are easy to install, and the security system can be scaled simply by adding more devices to the network.



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