Solve the IP surveillance puzzle with Comtrol

Shortly after 6:00 pm on September 28, 2009, two gunmen entered Avi Pawn and Jewelry in the Minneapolis suburb of Richfield. After stealing a small sum of money, one of the criminals fired a single shot that grazed the store clerk and fatally wounded a customer.

When you see stories like this on the local news, you are used to seeing the grainy, off-center pictures of the criminals captured from store surveillance cameras. When local television stations broke the news that evening, the images were startlingly clear. It took less than two days for the public to identify the men involved in the murder. After viewing footage from other local surveillance cameras, the police identified the get-away car and took a third accomplice into custody.

Don’t be quick to give the surveillance camera the credit in this story. Instead, think of it as a security or surveillance system’s endpoint. At the center of the operation are Power over Ethernet (PoE) switches, like the Comtrol RocketLinx ES7506 Industrial Managed PoE Plus switch, that make entire networks of IP cameras and wireless access points—be they a single retail shop—or an airport—or a traffic and control infrastructure for an entire city—possible.

These small devices transfer electrical power and data to remote devices like cameras, wireless access points and other network equipment. PoE switches enable users to place devices in the optimum location for an application—a camera placed on top of a building overlooking a parking lot, for instance—versus mounting the device closest to an available power source.

The PoE Plus switch delivers both power and communication. Advanced managed switches like the RocketLinx ES7506 have the ability to diagnose problems, power and restart cameras and other powered devices and sensors. Data captured by these powered endpoint devices can be quickly and safely transported across the network for real-time monitoring, DVR storage or processing.

PoE switches—which are quickly being adopted in a wide variety of applications and rapidly replacing traditional CCTV cameras—promote safety through the control and reliability they provide. In fact, the IP video camera market is evolving to higher standards of control and features at a rapid pace.

The increased benefits of cameras that can pan, zoom, tilt and withstand extremely hot and cold environments come at a price: power requirements that exceed the delivery capabilities of most switches. PoE switches capable of powering these emerging camera technologies, like the RocketLinx ES7506, comply with the new IEEE802.3at “PoE Plus” standard that requires that each port provide at least 25.5 watt power.
In the past, when a camera failed, it meant sending a service technician to the device’s location to see what was wrong. Managed PoE Plus switches can easily be controlled and managed remotely. This reduces the need for costly service calls and unplanned system downtime while providing tools for remotely diagnosing problems with connected devices. Tasks like configuring ports and power cycling a non-responsive device can be managed via SNMP, command line interface, web interface or management software.

When combined with monitoring software, managed PoE switch applications bring increased levels of safety. Departments of transportation use special software in combination with roadway monitoring devices to quickly detect accidents and deploy emergency responses. Lives are at stake, so quickly restarting downed devices and ensuring network reliability is critical.

PoE Plus switches use redundant power features to increase reliability. If one source of power goes out, the switch is smart enough to recognize it and recover in just a fraction of a second with no network interruption or loss of data. The switch can further alert managers of problems through e-mail event notification and trigger a built-in relay that notifies on-site personnel of problems by or flashing lights or sound alarms at the site of the device.

Green scheduling—the ability to turn off devices when not in use to conserve energy—can also be managed with a PoE Plus switch. For instance, businesses that have multiple cameras focused on entrances during business hours often want to shut off some of the cameras when the business closes and the nighttime security system is turned on.

Lastly, reliability is critical for PoE switch applications. Dependence on these devices means that they must be a rock-solid solution. This means operating in sub zero temperatures. As a Minnesota-based company, we experience the climate extremes that typically challenge the performance of networking equipment. You want hardened equipment that can perform around the clock—even in extreme weather.

As crimes like the robbery mentioned at the beginning of this article continue to be rapidly solved—or even prevented—thanks to advances in IP security technology—demands for PoE switch applications will continue to grow. The scope of the network it (connects) will also continue to expand, as they help provide safety, reliability and control for entire cities and transportation infrastructures.

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