

Urban campus fired up about network surveillance from Axis. Central Piedmont Community College uses IP video as crucial link between IT, campus security, facilities managers and local police.



Organization:
Central Piedmont
Community College

Location:
Charlotte, North
Carolina, USA

Industry segment:
Education

Application:
Campus safety and
security

Axis partners:
ipConfigure

Mission

After a failed attempt to salvage its aging analog surveillance systems with proprietary encoders, Central Piedmont Community College (CPCC) decided it was time to migrate to a centralized network solution that would dovetail with its recently upgraded infrastructure backbone, which linked its main campus with six satellite locations across metro Charlotte, NC. Since they were going all-IP, college security pressed for high resolution cameras that would capture crucial details they needed to do their job more effectively. They also wanted a system that could provide intelligent analytics like motion and audio detection to help them spot potential trouble before it happened.

Solution

The Information Technology Services (ITS) department installed a mix of Axis high resolution fixed dome and PTZ (pan/tilt/zoom) network cameras, piggybacking them on CPCC's high-performance network which had been amplified to support growing demand for voice and streaming video.

The Axis cameras linked via an open standard interface to an ipConfigure video management system (VMS) that allows security to easily monitor the cameras at all seven campuses from a central dispatch station.

Result

The new IP surveillance solution has been a multi-faceted success. CPCC has tied the Axis cameras to access control to monitor food deliveries to its Culinary Arts building. College security has shared video footage from one of its multi-story parking decks with Charlotte-Mecklenburg police to catch a car thief. Local law enforcement has also tapped into the college's camera network during NASCAR events and city festivals to ensure public safety on crowded downtown streets.



Putting all campuses under one surveillance roof

For five years, the Information Technology Services (ITS) department embarked on a project to build a robust framework to connect CPCC's main campus with its six satellite properties. They installed a 30Gbit backbone between core routers and high-performance Power over Ethernet (PoE) switches to support growing demand for voice and video streaming. When they decided to migrate from 18 separate analog systems to a centralized IP surveillance solution, they insisted on a technology that would dovetail with their open standards philosophy.

"We chose Axis cameras because they use the same open standard interface," says Patrick Dugan, Interim Executive Director of Technology Infrastructure Systems at Central Piedmont Community College. "This made it easy to centrally manage the credentials on all the cameras from our ipConfigure video management system, the Enterprise Security Manager (ESM)."

To network-enable the few analog cameras that hadn't reached their end of life, single-channel AXIS M7001 and rack-based AXIS 291 1 U Video Encoders were used because they supported the very same open standard interface to communicate with the VMS. "In a dynamic environment like ours, it just simplifies integration and makes the whole system work better."

Dugan customized the AXIS Camera Management tool to streamline installation and maintenance of the 400+ Axis network cameras at the seven sites. Now the ITS department can make system-wide changes to the cameras – like altering passwords, adjusting common settings or updating firmware – from a single video management server on the main campus.

"We also chose the Axis cameras because they work directly with our IT department's Quality of Service schema," explains Dugan. "We've set up the system to give surveillance traffic network priority over other, non-priority traffic – like 1,000 students streaming the latest YouTube sensation."

Keeping bandwidth consumption at a reasonable level

"Surveillance video doesn't have to be a bandwidth hog if configured correctly," claims Dugan. "The Axis cameras support advanced H.264 compression, which reduces the amount of bandwidth used across our links by a tenfold even when recording high-resolution." To lower bandwidth demand even further, Dugan took advantage of the cameras' multi-streaming feature and configured the surveillance system to archive higher quality video on the local servers at each campus for forensic review while simultaneously transmitting lower resolution video to the main campus dispatch center for live monitoring.

At this dispatch center, security staff centrally monitors video from all seven campuses 24/7 using a bank of four big screen monitors. The motion detection feature as programed in the ipConfigure VMS automatically showcases video streams with active motion to the forefront of the monitors. A custom screen allows security to keep close watch over some of the higher-risk areas at peak times of the day.

The (car) fire burned so hot that the concrete split and the light fixtures in the parking deck melted. "The Axis camera that was just five feet from the light fixture kept on recording the entire event. And afterwards, we just had to clean some soot from the lens cover. Despite facing the inferno, the camera is still fully operational."

Patrick Dugan, Interim Executive Director of Technology Infrastructure Systems at Central Piedmont Community College.



Tales from the parking decks

While CPCC uses the Axis cameras to monitor emergency call stations, parking lots at each campus and the cashiering stations at the main campus, the majority of them are installed in the four multi-story parking decks at the main campus to give security staff full visibility into the garages as well as an eagle's eye view of the campus. According to Dugan, "The video has been amazing."

The ITS department decided to standardize using AXIS P3344-VE Fixed Dome Network Cameras for their HDTV-quality video, compact size and accessory package that made the install very easy. "Since the cameras can be mounted horizontally or in Corridor View (a vertical, 9:16 view), we could stick with one camera to cover the whole parking deck from top to bottom," explains Dugan.

The department installed AXIS Q6032-E PTZ Dome Network Cameras on some of the stair towers to capitalize on a strategic vantage point in the heart of downtown Charlotte. "We took advantage of the height to gain a panoramic view of the two main roads and a key intersection into our main campus," states Dugan. CPCC has also granted camera access to the local police department during NASCAR events to monitor activity in and out of the congested city center.

Security on fire: Thwarting car thefts and collision fraud

Dugan tells how the Axis cameras captured pertinent forensic detail to help police track down a staff member's stolen vehicle. "The video we shared with the police not only confirmed her car's make, model and license plate, but the make, model and license plate of the car that dropped off the thief," shares Dugan. The high-resolution cameras even caught a perfect face shot of one of the individuals. Dugan reports that all those details led to the recovery of her car within 24 hours.

In another incident, there was a one-car collision outside a parking deck. When the driver pulled into the deck to assess the damage, the car burst into flames. The fire burned so hot that the concrete split and the light fixtures in the parking deck melted. "The Axis camera that was just five feet from the light fixture kept on recording the entire event," says Dugan. "And afterwards, we just had to clean some soot from the lens cover. Despite facing the inferno, the camera is still fully operational."

Adding a crucial video element to access control

CPCC also uses the Axis cameras to enhance access control at the receiving dock of the Culinary Arts building. The video multi-streams three ways: to the security dispatch center, to the local server and to the desktop of the building's administrator to monitor food deliveries. When a delivery person calls for admittance, the administrator can click on the camera icon, see the live video and identify the individual before buzzing him or her in.

Creating a synergy between the college and the community

CPCC started its surveillance system search by seeking open standards technology. The quest led to open communications between ITS, campus security, various college departments and even local law enforcement. "This kind of synergy is especially valuable in an urban environment like ours," asserts Dugan. While CPCC uses video analytics to match license plate numbers with its own campus database, at some point CPCC is hoping to tie in with the North Carolina State Bureau of Investigation's license plate database to assist police in locating stolen vehicles or cars flagged by the bureau for other reasons.



"Axis cameras are pretty much plug-and-play. Because the technology lets you stream lower resolution video to the dispatch center and archive high resolution images locally, our network remains blazingly fast."

Patrick Dugan, Interim Executive Director of Technology Infrastructure Systems at Central Piedmont Community College.



About Axis Communications

As the market leader in network video, Axis is leading the way to a smarter, safer, more secure world — driving the shift from analog to digital video surveillance. Offering network video solutions for professional installations, Axis' products and solutions are based on an innovative, open technology platform.

Axis has more than 1,000 dedicated employees in 40 locations around the world and cooperates with partners covering 179 countries. Founded in 1984, Axis is a Sweden-based IT company listed on NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website www.axis.com