

advancing information transport systems

BICSI news

PRESIDENT'S MESSAGE	3
EXECUTIVE DIRECTOR'S MESSAGE	4
TECHNICIAN'S CORNER	32-33
EDITOR'S NOTE	34
BICSI UPDATE	35-38
GLOBAL COMMUNITY	39
COURSE SCHEDULE	40-41
STANDARDS REPORT	42

Volume 30, Number 6

Expanding Optical Fiber Infrastructure Capacity with CWDM >>> 12

Working Smarter Not Harder Around the Facility >>> 18

Separately Derived Systems in Data Centers >>> 22

Project Management >>> 24

Internet Marketing >>> 29

FTTD

for the Department of Defense

>>> 6 **AN IDEAL MATCH.**



PRSRIT
STANDARD
U.S. POSTAGE
PAID
PERMIT 595
BOLINGBROOK, IL

Traditional thermometers in a health care setting must be routinely checked and tracked, a process eliminated by IP-based temperature sensors.



WORKING SMARTER Not Harder Around the Facility

Using IP-enabled facility management devices. BY MIKE O'BRIEN

The demands of running a business, education or health care environment require the network to provide the means for communication and collaboration, and ubiquitous network access has become a staple for satisfying basic computing needs. As a result, an increasing percentage of facilities are constructed or remodeled with robust Wi-Fi and Ethernet information transport systems throughout the entire building or campus.

Recently, Wi-Fi and Ethernet network coverage has been growing to support increased demand from a new area—facility management. Equipment that used to provide information in the most manual form such as thermometers, thermostats, relays or even a wall clock can now be fully or semi-automated and tied directly into the network using Internet protocol (IP) technology. Major selling points for these facility devices include reduced costs, automated monitoring and overall

improved facility operations efficiency. Most IP-enabled facility devices deliver savings at multiple levels, which is quite appealing for a facility's operating budget during a down economy.

IP-Enabled Facility Devices

Each year, more facility management products that reside on or leverage a network in some capacity are developed and introduced. Taking advantage of the same benefits used in network computing, IP-enabled facility devices use the network to move data from smart objects to central management software.

A smart object can be defined as an object in the physical world that transmits information about its condition or environment to locations where the information can be analyzed, correlated with other data and acted upon. These smart devices are essentially able to monitor themselves and their function while

reporting in to allow any necessary maintenance.

Once an IP-enabled facility device is on the network, it is a natural extension to leverage software management tools to monitor or control the devices, improve data capture, reduce the cost of maintenance and increase the overall efficiency of the facility. The ability of facility devices to communicate over the network to a central server means real-time access to information like environmental conditions of the facility, required maintenance and the overall performance of the device itself. Facility management is evolving to higher technology products and is expected to continue progressing and improving the efficiency and capabilities around the facility.

Facility systems, which used to require someone to physically monitor each device wherever they were located in the building, can now be checked from a computer anywhere on the network. If the system can be accessed through the Internet, checking the temperature status of a refrigerator can be done practically anywhere from a personal digital assistant (PDA). This means system checks or a simple output reading can be automated, allowing virtually instantaneous access to important information, which drastically improves the efficiency of the facility staff and the capability of the device beyond its original purpose. Making the facility or maintenance team's job more efficient helps reduce time spent on repetitive tasks and perhaps frees up time to focus on the next big project.

Taking advantage of the same benefits used in network computing, IP-enabled facility devices use the network to move data from smart objects to central management software.



Wireless and IP-enabled clocks can be maintained, monitored and synchronized over a Wi-Fi network.

Wi-Fi Product Flexibility

While sharing all the basic benefits of an Ethernet-based IP-enabled device, a Wi-Fi-ready device operating over 802.11 b/g/n wireless networks means additional savings. Wi-Fi devices like sensors and relays can be deployed into a facility with great speed and flexibility. Without having to run a network cable to the device, or even a power cord in the case of battery-powered devices, Wi-Fi devices can save installation headaches and substantial labor costs.

A valuable byproduct of Wi-Fi-ready facility devices is portability. No longer constrained by wires or the location of a network outlet/connector, Wi-Fi-ready devices can communicate wherever they are as long as they are in range of a wireless access point.

The mobility of IP-enabled devices raises yet another benefit of connecting multiple or distributed buildings. An example of this is a school district with wireless-enabled wall clocks located in a dozen individual schools. Each clock can be maintained, monitored and synchronized over the school district's Wi-Fi network for completely automated system management. A district-level administration staff or engineer can synchronize the time of each clock and pinpoint any clock in the district that is not accurate or needs maintenance.

Many facilities are either well saturated in wireless infrastructure or are willing to expand to achieve complete coverage. The added flexibility of Wi-Fi can allow facility managers to quickly plan retrofit deployment of devices or move them as building needs change without rerouting wires and cables.

Facility Monitoring over IP

Facility devices that monitor themselves through system software and communicate over the network when they need maintenance can save significant overhead and labor costs over a product life span. This is achieved by the device performing self-tests or capturing diagnostic information over time. If the device on the network is not communicating, appears erratic or has any other suspicious behavior, a server software application can alert the person responsible for maintaining that particular device.

Additionally, network-enabled devices can help protect against property loss. In a hospital setting, The Joint Commission, which accredits and certifies health care organizations and programs in the United States, requires that refrigerators and freezers storing patient food, medications and other materials be checked and tracked routinely to maintain high-quality standards. To ensure expensive refrigerator contents do not spoil, nurses or other staff are responsible for checking temperatures and charting them over time. This may take only minutes a day, but costs can escalate quickly with many refrigerator units being tracked on a recurring basis. Checking 100 devices each day results in almost 2,000 labor hours each year, which is almost enough to cover a full-time person to conduct temperature checks.

Today, an IP-based temperature sensor can be deployed quickly in every refrigerator to check the temperature, track temperature over time, report readings and send alerts via e-mail if the temperature falls outside predetermined levels. This remote management removes the need to check temperatures manually and simplifies equipment monitoring. The hospital IT infrastructure provides the system for the temperature tracking automation and access for anyone needing to review or monitor the performance.

Tapping the Network for Power

For devices that once used batteries or needed hardwired electric power, power over Ethernet (PoE) can now provide the low-voltage power necessary to power the device as well as manage the communication. This growing trend in or around a facility provides a level of flexibility in areas such as installation and serviceability while lowering the total cost of ownership.

Installation becomes easier with PoE because network cabling can be routed instead of conduit piping or other expensive electrical components. Although the cost of building a network to support PoE devices plays a factor in the installation process, many devices can be powered from a single PoE network switch. Furthermore, the cost of pulling network cables versus conventional alternating current (AC) power cables is much less, helping offset the cost of the PoE network equipment.

Some examples of PoE-ready devices are intercoms, lighting controls, ceiling speakers, security cameras and wall clocks. A facility can have hundreds of wall clocks that need to be individually reset after losing power or at daylight saving time. However, a PoE smart clock can obtain its power over the network cabling, synchronize with a network time protocol (NTP) server and send an alert if offline. Along with PoE, IP-enabled facility devices can save money, provide real-time information on how the facility is running and empower facility managers to work smarter not harder. ■



Mike O'Brien is marketing director for Primex Wireless, a member of the IP for Smart Objects (IPSO) Alliance promoting IP as the network technology of choice for connecting smart objects around the world. He can be reached at mobrien@primexinc.com.

Registered Information Transport Professional (RITP)

NEW CREDENTIAL

Attention sales, educational and management professionals:
Utilize your formal education and industry-related qualifications
to obtain the BICSI RITP credential.

AVAILABLE IN 2010

