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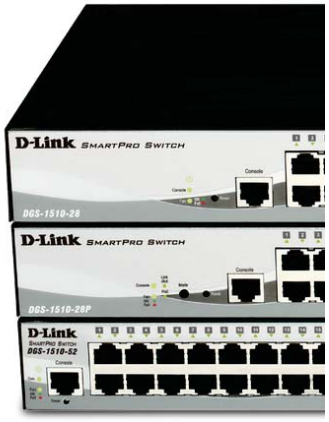
PoE Applications: Today and Tomorrow



Over the last several years, D-Link has experienced remarkable month-over-month sales growth within our family of Power over Ethernet (PoE) switches. While much of this success is attributable to the quality, durability and competitive pricing of our Business Switching products, it is also a reflection of the current state of the industry. PoE is exploding. Network managers are utilizing more and more PoE in their networks every day, because they recognize the simplicity and cost savings benefits that it brings. At the same time, device manufacturers are continually exploring and developing new PoE applications.

PoE is an IEEE standard. This is important, because standards-based technologies support interoperability. Interoperability allows network designers to select the right networking equipment for their needs, regardless of manufacturer. Standards-based technologies also promote safety.

Most IT professionals and security system integrators are already familiar with the two most prevalent uses for PoE technology – IP telephony and IP surveillance. They know that using PoE for IP phones and IP cameras eliminates the need for separate power and data cables, which simplifies installation, increases flexibility for device locations, and saves time and money.

Yet PoE has many more uses beyond these two applications. Today there are many other applications that utilize PoE in ways you may not have considered.

Wireless Access Points

Most business-class wireless Access Points (APs) support PoE on their WAN interface—the uplink to the wired portion of the network. Powering an AP with PoE offers the flexibility

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to be mounted on walls, ceilings and other hard-to-reach strategic locations. And if an AP needs to be repositioned, it's quite easy to do so, because only the Ethernet cable needs to be moved.

IP Clocks

How many times have you visited a school or business building and noticed every wall clock keeping slightly different time? This problem is solved with IP clocks. They require no external AC power, no batteries and they remain synchronized to a centralized time server. They can be powered by the same PoE switch used for other applications in the network. For these reasons, they're ideal for schools, office buildings and government facilities.

Door Locks and Badge/RFID Readers

Network-powered door locks, badge readers and RFID readers are another common-sense PoE application. For security-conscious businesses and schools that are already managing IP Surveillance systems, it's not a stretch to see the value that building access control offers, while also being powered and controlled by the same network.

Ethernet Repeaters

Ethernet is designed to reach 100 meters (328 ft.) over UTP cable. For applications that require longer spans, some manufacturers offer PoE-powered Ethernet repeaters. They're powered by PoE from an Ethernet switch up to 100m away, and can extend the Ethernet signal an additional 100 meters. In some cases, they can also provide power to an end device at the far end of the Ethernet span.

PoE Splitters

PoE splitters are installed at the end of an Ethernet link. They convert PoE voltage (about 48VDC) to a lower voltage, typically 5 VDC or 12 VDC. At the same time, the Ethernet signal is transparently passed through the splitter to the end device. Splitters allow PoE switches to power non-PoE cameras and other devices that instead need lower voltages to operate.

Intercoms, Pagers and Public Address (PA) Systems

Analog PA systems with long speaker runs from a large central amplifier are largely outdated and antiquated. Today's modern systems use small PoE powered amplifiers strategically placed wherever there may be a network drop using the existing Ethernet network. Software running on a PC or server manages the system and provides digital voice quality sound wherever it's needed. The system can be used to provide emergency notification to an entire campus, or specific messages to each room.

Digital Signage

Digital signs, interactive displays and video kiosks have become an increasingly popular way to deliver compelling and creative media to any school campus, store, bank,

IP Camera Features

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DAP-2695 Wireless AC1750 Simultaneous Dual-Band PoE Access Point Video Datasheet

DCS-2136L Wireless AC Day/Night Camera with Color Night Vision Video Datasheet

manufacturing floor or hospital—engaging customers, students and employees in a whole new way. PoE easily and cost effectively powers many of these popular communications devices, addressing concerns of both physical concealment and AC proximity for power bricks.

Environmental/Industrial Sensors

Frequently, businesses use intelligent online PoE sensors to measure environmental factors in mission-critical locations, such as warehouses, data centers, computer and server rooms, equipment rooms and more. These sensors provide important measurements for temperature, humidity, atmospheric pressure, power failure, airflow and the presence of water. Furthermore, they can automatically generate alerts via email or SNMP traps, so any problems can be resolved quickly, before they escalate.

New and Future Applications

Not surprisingly, there are plenty of new PoE applications on the horizon. I really like the potential of PoE powered LED lighting fixtures, which are easier to measure, monitor and control than traditional lighting fixtures. Because each LED fixture can be an end point on a network, it can be controlled separately, or dimmed automatically with proximity sensors that increase light when someone enters the space. And because PoE is typically considered as “low voltage” wiring, some of the permitting and installation costs associated with traditional high voltage wiring can be avoided.

The IEEE is currently in Task Force phase working on a next generation PoE standard – 802.3bt. This new standard will utilize all four pairs in the UTP cable and likely double (or more) the power delivered to a PD beyond the 25.5W maximum permitted by the 802.3at standard.

This ability to deliver higher power to end devices will further expand the list of PoE applications over the years to come. Point of sale (credit card readers, printers), office productivity (thin clients, laptops), and higher end IP cameras (PTZ motors, heaters/blowers) are just a few.

Here at D-Link, we’re excited to be part of this industry. As the standards evolve, so will our products. We are committed to our customers, and we’re focused on helping them save money with the value and utility that our products bring. Lowering installation costs by delivering power and data over the same link is just one way we do that.

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