NETGEAR®
BUSINESS

Power over Ethernet – powering a world of opportunities

NETGEAR
BUSINESS

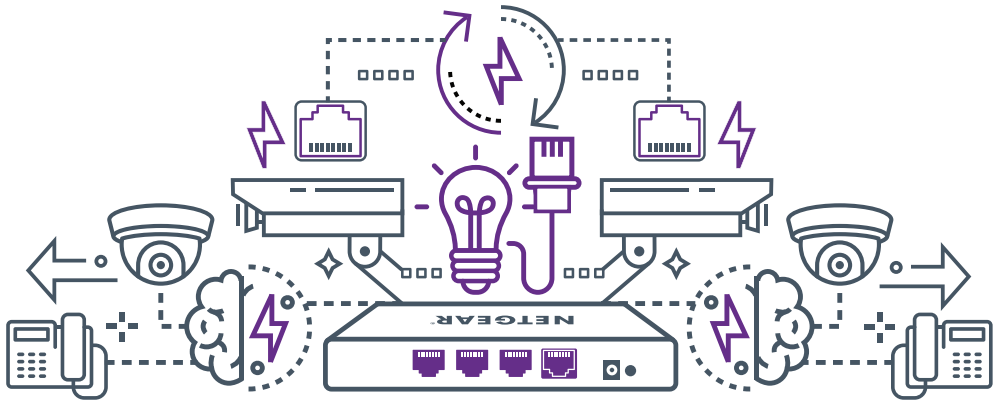
FUTURE-FACING TECHNOLOGY

The potential of Power over Ethernet (PoE) today goes far beyond the powering of VOIP phones, conference systems and CCTV systems for which it is already used.

This safe, low-voltage technology is a gateway to an efficient, cost-effective connected world of all kinds of devices and services. Many of these are already available, for instance the CCTV market which continues to grow. Others are in the throes of being rolled out – PoE lights are expected to be make a lot of market impact – with many more yet to come within the ever-evolving Internet of Things (IoT).

Whether available now or in the future, PoE benefits businesses by dramatically reducing costs, complexity, plus making both power and data networks easier to manage and upgrade. For installers and services providers of all kinds, PoE is a catalyst for new business models and revenue streams, without extensive investment in new skills.

The PoE market is growing fast and the potential is vast. Now is the time to make the most of this future-facing technology that is already here.



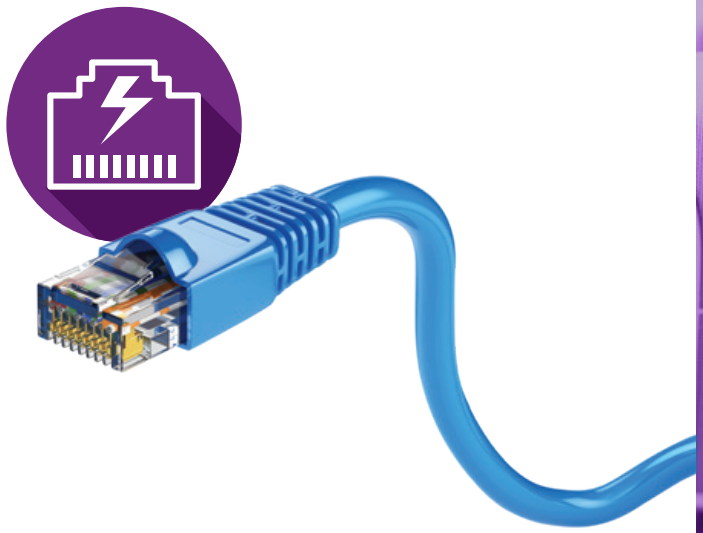
A PoE primer

PoE has also evolved since it was first introduced some years back, so it makes sense to quickly recap on what it does, why it matters, and where are we in terms of its current status.

The general concept of PoE is probably quite well understood: the ability to run electrical power - over twisted pair Ethernet cables, so that the data cabling network is delivering both data communications and electricity to end points, such as wireless access points or IP surveillance cameras. What this means in practice is the potential to have one, cost-effective, power-efficient network to run a variety of services and devices. Given that the volume of these is only going to escalate, PoE is the only viable way forward.

The PoE 802.3 standard has been able to support up to 30 watts for some time and for many applications, that was sufficient. However, in late 2018, to meet the demands of devices requiring higher power requirements, the PoE standards changed to support up to 55W and 90-100W, including support for 2.5GBASE-T, 5GBASE-T and 10GBASE-T.

This opens up the range of devices that can be supported via PoE, including advanced cameras with tilt-and-zoom and other features that depend on motor; outdoor equipment with heating and cooling; cloud-based video phones that require support for both sound and vision; PoE-powered video screens, which may need 60W or more; and sensor-based building management systems.



NETGEAR®
BUSINESS

PoE REDUCES COST

Bottom line benefits

Regardless of which PoE standard, the practical benefits of PoE are powerful. Removing the dependence on traditional powered lines means that expanding or changing configurations to support more powered devices becomes fast and simple, even in space-constrained or hard-to-wire environments such as ceilings or atriums.

The cables stay the same, the only changes are the addition or removal of end-point devices, or to how the network is configured. Also, the facility does not have to be powered down when the network is being extended, due to PoE's inherently safer low voltage.

PoE removes the need for AC/DC adapters that take up space and require local power. Advantages to installers include faster, simpler and safer installation, while end-users benefit from fewer cables, less bulky transformers and other power management devices, with reduced power consumption.

A further and very important benefit of PoE is the potential to have centrally managed power and data communications, even remotely, and with the confidence to know that – should a problem occur – there is full back-up available.

The math stacks up

The financial arguments for PoE are equally strong. Whether for a large enterprise or a small SMB, PoE reduces the cost of power consumption substantially. Take for instance a business with 20 employees: a modest estimate would be three Ethernet connections per person. Add in security cameras or other devices and systems and it is easy to get to 100+ points that need power. With PoE, the absolute volume of power required does not increase exponentially at the same rate as the number of devices. There is no other technology that comes anywhere close to PoE in terms of the cost benefit.

The space-saving advantages of PoE – one network for both data communications and power - contribute to cost-efficiencies too. Plus, the NETGEAR range of PoE switches provides high density of ports, maximising the amount of power per square metre even further . Where space is very limited, ceiling-mounted or desktop small switches provide PoE density without sacrificing valuable centimetres.

Time also costs money and because installation of PoE is so fast, on-site time for the installer is minimal, while the customer benefits from zero down-time and business-as-usual. Having just one network to manage also reduces the overheads of maintenance, changes or additions.

Centralized management

Furthermore, when managed through the cloud, PoE switches can be managed remotely, so there is no need for a local, on-site manager. Instead, one person or the business's MSP, can manage multiple buildings even hundreds or thousands of miles away.

Centralized management of the network also adds far more flexibility. Power and devices can be turned up, down, off or on to maximise energy cost savings. LED lights, WiFi access points and VoIP phones can be powered down during working hours, security cameras active only when needed. Plus, as PoE is a low-voltage DC alternative to traditional electrical power networks, energy consumption per device goes down.

Powered by PoE – a game changer

Beyond the well-known categories - CCTV and surveillance cameras, VoIP phones and WiFi access points – the potential is vast.

Smart lighting systems and audio systems have already been mentioned, other examples include: remote help points; building access including intercom, entrance and door locking systems; public address systems and speakers; projectors and video equipment; PoS and self-service kiosks; and of course, smart-home appliances.

So, who gets to benefit from PoE's potential? Answer: a wide variety of firms who can expand beyond their current skillsets and customer bases, to offer not just more products and solutions, but the option to deliver managed services too. Unlike a 220V power network, PoE does not require qualifications and is safe to handle.

While electricians are in the group set to benefit from PoE opportunities, the good news for other installers is that the simple and safe installation of PoE means that they can easily and quickly extend the range of services they provide, with minimal training required. Apart from electricians, other types of PoE installers include: cabling and TV; communications (including industrial Ethernet); security specialists; AV professionals; hospitality and venue, or smart building and home installers.

Target users

The way the market is changing is good news for customers too: instead of investing in expensive equipment, they simply sign up to a subscription. In the same way that streaming video has replaced DVD rental or purchase, managed services are the way forward. Types of customer expected to drive PoE adoption is varied and wide, including: utility sub-stations, mines and quarries, transportation systems, factories, warehouses, campus-wide sites, large enterprises, SMBs…in other words, just about any organisation that will benefit from more flexible and cost-effective power for connected devices. Beyond the business market, the fast evolution of the IoT means the mass-market for consumer PoE is on the horizon too.

Need to know

Of course, like any technology, there is a difference between theory and practice. While PoE is simple to install and support, there are still a few important aspects to consider. Once these are understood, providing PoE becomes straightforward. Make the most of training from vendors such as NETGEAR and also consider these points:

- **PoE budget** – calculate how many devices will be connected and how many watts are needed for each of them. This will help determine the best type of switch, number of ports required, or number of switches needed. The good news is that the math is simple.
- **Avoid vendor lock-in** - by choosing products that are standards-based and so can be blended in the same network.
- **Stick to standards-based products** - without going into lots of technical detail, there have been various versions of PoE and equipment over the years, not all standards-based. Mixing-and-matching incompatible or products not compliant with current standards can affect performance or even cause system failure.
- **Upgrades and flexibility** – plan for the future as much as possible, but also choose PoE solutions that can be easily extended or upgraded at a later date. Look for plug-and-play PoE product ranges that fit a wide variety of situations, from simple solutions for SMBs through to supporting the complex demands of mission-critical utilities.
- **Make the most of extra features** – what will make the PoE network even better? For instance, will auto-sense for adjusting power requirements be useful? What about how the PoE switches are managed – can that be done remotely?

Conclusion

Choosing the right approach to PoE opens the door to a world of potential for both service providers and their customers. PoE has so much to offer; ease of installation, space saving, reduced costs, management overheads and power consumption, far more flexibility, a high margin of safety and of course, new revenue models that support a more efficient connected world, both today and in the future.

NETGEAR makes PoE easy

NETGEAR has the largest PoE switch portfolio on the market today, meeting a wide variety of business needs. For instance, its PoE switches for SMBs offer different port options, from 2 to 48, supporting 100Mbps, 1Gbps, 2.5Gbps, 5Gbps and 10Gbps networking speeds. With power budgets from 47W to 1440W, business customers and their service providers can choose the switch that best meets their needs today, with the assurance that upgrade to higher power budget models in the future will be straightforward. Depending on the customer, its budget and needs, as well as the business model of the installer or service provider, there is a range of unmanaged and managed options from which to select.

The NETGEAR PoE portfolio is designed to be fast and easy to install, manage and upgrade. While PoE installation requires no specialist qualification and comparatively little expertise, NETGEAR provides extensive training to installers around the globe. NETGEAR Insight Pro means that service providers can remotely monitor, troubleshoot and even update PoE networks remotely, whether via NETGEAR's web portal or smartphone app.

Find out more:
www.netgear.com/poe

NETGEAR® BUSINESS

NETGEAR®
BUSINESS

NETGEAR®

NETGEAR, Inc
408.907.8000
350 E. Plumeria Drive
San Jose, California 95134
Tel: 866-480-2112 Option 2
www.netgear.com/business

Follow us on:

linkedin.com/showcase/netgear-business-products

business.facebook.com/NetgearBiz

twitter.com/NETGEAR

NGUS51906