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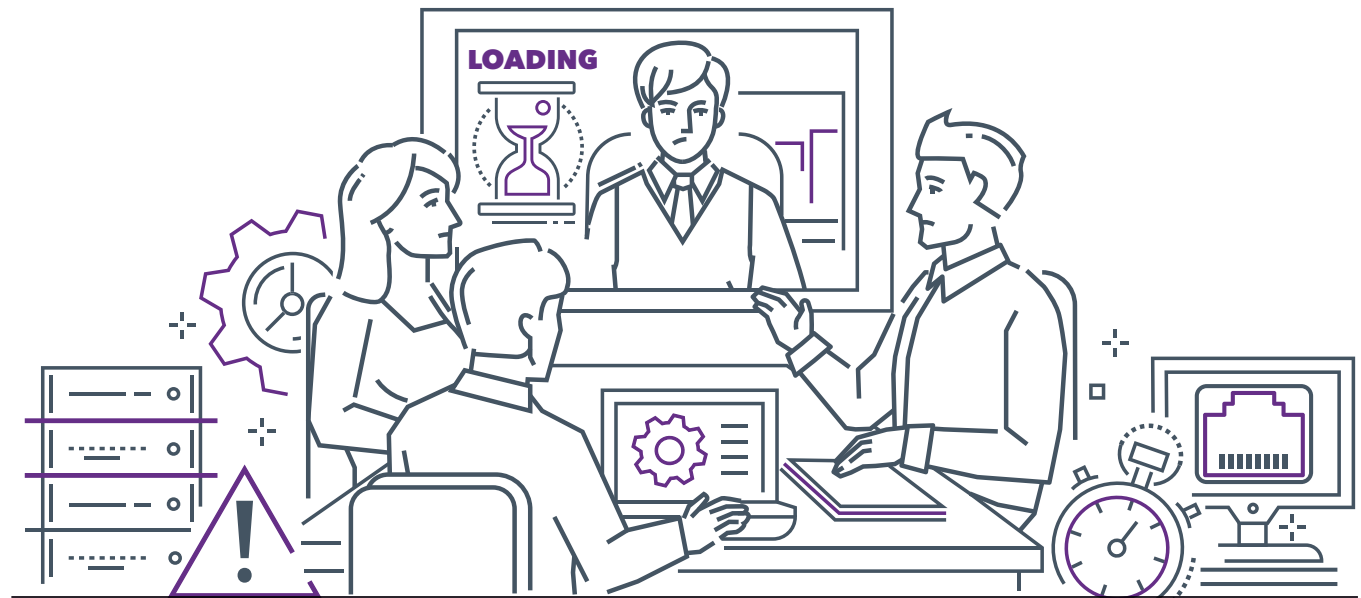**y** twitter.com/NETGEAR

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Go beyond 1Gb and beat Ethernet overload

BUSINESS EVOLUTION

More business owners are realizing that they have outgrown 1Gb Ethernet and need something faster. The sheer volume of data being put on internal networks – more wireless devices, video, demanding applications, large file uploads and downloads, storage, back-ups and real-time communications - all put a lot of stress on 1Gb Ethernet. While existing connections typically still work, Ethernet overload manifests rather as poor performance, such as slow, jittery video conferences, or file transfers taking a long time to complete, or communication time-outs.

The bottom line is that when 1Gb Ethernet is struggling to keep pace with demand, it has financial implications, because it impacts on staff time and productivity, potentially even customer service levels. The load on Ethernet is only going to increase, as applications become more advanced, with businesses being more dependent on virtualization and digitization. Plus in the era of the IoT, the number of connected devices is going to explode. Now is the time to look at going beyond 1Gb Ethernet.

Choosing the right Ethernet evolution

So, having made the decision to upgrade from 1Gb, it is important to consider all the options, because there is no one-size-fits-all. There are some straightforward decision-making factors that a business can use to determine the best Ethernet transition strategy beyond 1Gb. The good news is that the process does not require deep technical expertise. A logical starting point is to describe 10Gb and multi-Gigabit and how they differ from each other.

There are five different widely used Ethernet speeds in Small and Medium Businesses (SMBs), all universally defined and standards-based worldwide. 100Mpbs (also known as 'Fast Ethernet') and 1Gbps (Gigabit or 1Gb) are widely deployed. Beyond these, there are 2.5 and 5Gbps, referred to as Multi-Gigabit or Multi-Gig. Finally, at the top end, is 10Gbps (or 10Gb) Ethernet.

More than just speed

What's critical to understand is that it is not just a case of investing in faster Ethernet, otherwise, subject to price, why not go straight to 10Gb core Ethernet switches? For many businesses, there is a strong case for doing just that, but for others, there are arguments for choosing Multi-Gig. One of the biggest issues is that with 10G Ethernet, if network traffic is between 2.5/5G and 10Gb compatible nodes, then the switch will downgrade to the nearest common denominator - 1Gb - meaning that the business will not be getting the performance for which it is paying.

Pioneered by NETGEAR, five-speed Multi-Gig supports all five Ethernet speeds from one switch: 100Mbps, 1Gb, 2.5Gb, 5Gb and 10Gb. Five-speed intelligent auto-adapt ports match the speed to the traffic and users can create priorities (for example, video taking precedence over back-ups). In practice, the result is that businesses can have Ethernet up to five times faster, right up to 5Gb, using the existing Cat5e cabling still found in many businesses today.

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REDUCE
DATA
TRAFFIC

The case for Multi-Gig

NETGEAR Multi-Gig immediately boosts a business's network speed and performance, ideal for demanding applications such as rapid file transfers, high-bandwidth WiFi connectivity and 4K streaming. Business benefits are faster and better team collaboration, improved productivity, even better communications with customers.

Cabling is an important consideration, because to perform beyond five metres, 10Gb Ethernet requires on-premise copper Category 6A, or fiber cables, so switching to 10Gb would mean replacing the existing cabling network. Depending on the size of the building, number of users and devices, that might be an unnecessary expenditure, or difficult to achieve in older buildings, even prohibited in some heritage locations.
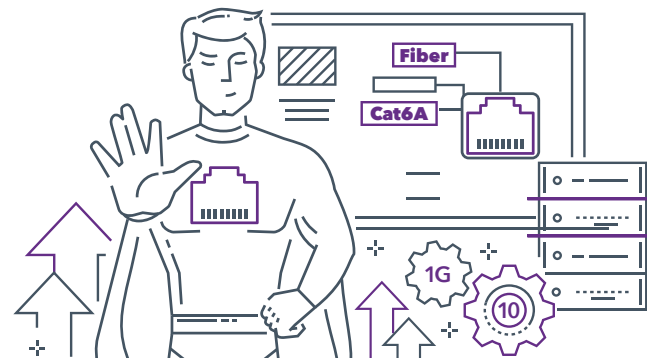
When 10Gb makes sense

However, for many businesses, going straight to 10Gb makes sense, giving them instant performance benefits. Typical 10G customers include small data centres run by an ISP or MSP, a design or games studio that routinely transfers large art, audio and video files, or an enterprise that depends on good quality conference calls to negotiate with important customers. 10Gb and beyond provides the performance that high storage, back-up or high-speed server environments require, with the added bonus of 10Gb Ethernet to the desktop. The risk of bottlenecks is minimized across data, mobility, voice, video and virtualized traffic.

Plus, if a business already has Cat6A or fiber cabling, that strengthens the argument for 10G even more and looking beyond 10Gb - to 40Gb or even 100Gb - putting in place the framework for those faster speeds makes sense. NETGEAR M4300 switches already support 40Gb, so users can start taking advantage of that higher speed as soon as they are ready. One wire for power and connectivity (Power of Ethernet – PoE) and pre-configured AV-over-IP provides convenience, while NETGEAR's unique 'spine and leaf' stacking system, with easy mounting, supports flexible design configuration.

Making it easy to move to faster Ethernet

Businesses need the right Ethernet at the right price, but there are other factors that make a difference, such as choosing products that are easy to deploy and manage, without introducing unnecessary levels of complexity. Look for Ethernet solutions that are designed for the size or business type: a scaled-down system originally developed for a big data centre or enterprise with 500+ employees is not going to have the price and the simplicity that a smaller or medium-sized business wants.

Another big trend is the use of fully managed switches, giving both business users and their service providers far more flexibility without needing to invest in technical know-how and resources. There are options to suit every business, from unmanaged to fully managed, including cloud-based solutions that remove the headache of on-site configuration, maintenance and monitoring (which is controlled by a managed service provider).

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Ethernet Expertise across the board

The NETGEAR approach is to develop network solutions designed for business needs today, with an emphasis on balancing speed and performance with simple installation and management, as well as flexible, scalable configuration.

NETGEAR is a leader in network switches with over 20 years' experience and the number one provider of 10Gb Ethernet switches for SMBs in the world, is also the company that has pioneered and launched five-speed Multi-Gig Ethernet switches. NETGEAR is at the forefront of managed network solutions, giving both businesses and their managed service providers more choice than ever before. Plus, NETGEAR has the market's largest five-speed and 10Gb switch portfolio, including a range of PoE power budget and port count options.

Choosing Ethernet: Four questions for businesses

1. Are you getting the best from your current Ethernet?

2. What devices, apps, users, services go over Ethernet?

3. Are Ethernet needs going to change or grow – how, when?

4. How much in-house technical resources do you have?

5. Would you benefit from a managed Ethernet solution?

"After doing way too much research into SFP+ and 10gbase-T network protocols, trying to make all the 10g devices on my network communicate, I found this amazing go-between. The MS510TXPP features both interfaces, so you can bridge both technologies in one device. When it arrived, I plugged in my wires, and everything worked instantly. Extremely pleased.

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