Nexans

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4 in 10 people intend to stream live Olympic coverage from their computer this summer.* The results from a recent UK survey indicate that nearly 40 per cent of people intend to watch live Olympic coverage at their computers as events unfold this July and August. With many of the most popular events and medal ceremonies taking place during working hours, do IT managers have cause for concern in terms of bandwidth?

The immediate answer is yes - if such a high proportion of an organisations' workforce are streaming high bandwidth video from their computers, the network will come under increased pressure as it struggles to cope with the demands placed on it and network performance will suffer, not just those for those watching but across the organisation.

A truly digital Olympics

The BBC has agreed deals with Sky and Freesat to provide 24 separate Olympics video streams to the satellite broadcaster, allowing viewers to watch whichever events they choose uninterrupted. There will be more than 2,500 hours of live Olympic TV coverage on offer this summer, much of it broadcast during working hours.

"You'll be able to watch sport from every venue from first thing in the morning to last thing at night," said Roger Mosey, BBC director of London 2012, at a recent press conference. "Hockey fans can watch live uninterrupted hockey, and table tennis fans can stick all day with their sport, too. These are the first truly digital Olympics, where we'll offer more choice than ever before."

In March of this year, the BBC spoke about the pressures of popular streaming. Richard Cooper, Controller of Digital Distribution at the BBC: "As with all big sporting occasions, our traffic will vary during the day depending on the event, competitor, team and timing. Where we need to prepare most

is around the big moments which have the potential to drive a lot of people to our online streams. This is not new for us. The BBC has proven it can cope well with big event streaming: in 2010 we brought the World Cup live to online audiences, and dealt with increased traffic comfortably."

The BBC was able to expand its streaming capacity to accommodate inevitable increases in people watching content online and across connected devices, but this is obviously not an immediately feasible solution for every network or IT manager, what with the games beginning in just a matter of weeks.

Preparing your company for the Olympics is not just an issue for businesses based in London. The effects of increased demand for bandwidth streaming will be felt around the world.

Short term solution to the growing demand for bandwidth

During peak times demand for bandwidth will escalate, and the normal functioning of the network could suffer as result, affecting business continuity.

Any company wanting to watch the Olympics coverage on television or the BBC iPlayer will need to have a TV licence. Businesses could consider web content filtering during the Games or simply embrace the event and accept that people will want to watch the coverage. Organisations may wish to consider planning for popular sporting events in advance and provide staff with a television or set up a single video-stream on a communal screen so everyone can watch the big events together – it will create a great atmosphere and give everyone a chance to enjoy the once-in-a-lifetime opportunity to watch the Olympics in the UK.

Planning for the longer term

Escalating demand for bandwidth – and not just during popular events such as the Olympics - is a key concern for IT, network and data centre managers of organisations. Events such as the Olympics can often serve as triggers for consideration of stepping up to higher bandwidth. 36 per cent of network and data centre managers polled in a recent Nexans' survey said that they envisage stepping up to higher bandwidth in their data centre uplinks within the next two years; 65 per cent indicate that changes in their network infrastructure will occur within the next five years. In the enterprise environment, the rate of increase is expected to be slower but even in the office, over 50 per cent of respondents believe their existing backbones will become a bottleneck within five years.

Improving network infrastructure to meet increasing requirements is a significant challenge. Data centre planners and network managers are challenged to increase the bandwidth infrastructure, retain backwards compatibility and improve energy-efficiency with a tight budget. Starting with the ground up, they would be wise to first look at their cabling infrastructure as the network's backbone and support system for increasing bandwidth capabilities.

Lossless Ethernet

An improved version of Ethernet Protocol, Data Centre Bridging, has been defined by the Institute of Electrical and Electronics Engineers. This is a 'lossless' Ethernet with features designed to eliminate packet loss and time-outs that greatly impact upon network performance. It provides for a unified Ethernet network fabric in the data centre through Fibre Channel over Ethernet (FCoE). Maintenance and administrative costs of the total ICT infrastructure are lowered as IT and network managers no longer have to occupy themselves with three physically separate network solutions; Ethernet, Fibre Channel and Infiniband.

The protocol standards, collectively called Data Centre Bridging, include priority flow control, congestion notification, shortest path bridging, link layer routing and an enhanced transmission selection. This creates lower latency, eliminating traffic congestion and increases network efficiency.

A shift in understanding

For the first time in the history of structured cabling, data centre and network managers need to understand that switching to higher Ethernet speeds requires a different type of cable as multi-mode fibre optic requires eight fibres or more per connection to support 40G. Each fibre transports a signal of 10G. This also means a new connector type, the multiple push on (MPO) connector, is required which can connect this number of fibres.

The traditional RJ45 connector will no longer be able to support speeds beyond 10G and new connector will be required such as the Nexans GG45. The connector is fully backwards compatible with legacy equipment with RJ45 connections but has the potential to support bandwidths of 40G and higher. Organisations will have an optimum network infrastructure at their disposal without having to replace all servers and other equipment if just one part is required to upgrade to this higher speed.

A complete cabling solution

Over half the respondents to the Nexans' bandwidth survey believed that using a combination of both copper and fibre is the safest way to future-proof the network infrastructure.

Organisations need an optimal solution of both fibre in the backbone and copper at the network edge. This will provide the most efficient infrastructure, giving the necessary longevity - now expected to be 15 to 20 years.

Businesses need to choose high quality cabling that can provide easy and efficient migration paths to predicted higher bandwidths, not just for large-scale international events such as the Olympics, but for the future.

* Results based on a UK nationally representative survey of 1000 participants

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