

# D-Link case study

Game on! – Thanks to D-Link network products



➤ A new kind of gaming centre located in the heart of London's West End is causing waves among the gaming community and the public at large. But it nearly didn't happen before D-Link networking equipment was installed.

## Background

Located in the heart of London's West End, the state-of-the-art Gamerbase centre in HMV's Trocadero store is as close as you could come to heaven for a gamer. With no less than 80 Quad Core PCs and Dual Core notebooks with multiplayer LAN and online play, it boasts over 150 of the best games and is a perfect venue for gamers to visit with their friends or use as a base to take on rivals over the internet.

What's more, the centre is becoming a focus for high-profile games launches, competitions and tournaments, and is set to be the first of many such gaming dens in stores across the country. This is the first time that a PC gaming centre has been built in conjunction with a high street retailer and Gamerbase Marketing Director, Sujoy Roy, one of the country's most experienced professional gamers, even sees the potential for the centre to unearth "the UK's next top gamers to represent our country at worldwide competitive events".

Although the site itself is compact, operating on a membership-only, pay-per-play basis and nestling just behind the main games department in the store, the set-up required state-of-the-art switching to provide guaranteed high performance to the desktop. But its installation in November last year just in time for Christmas was nearly beset by disaster as the other networking supplier failed to deliver. Gamerbase turned to D-Link to help out and its xStack managed switches, together with Dell XPS PCs and Razer peripherals now form the foundations for one of the most powerful gaming centres in the world.



## A number of firsts

Gamerbase scores a number of firsts. Managing Director and gaming centre veteran Dominic Mulroy says: "This is the first centre for quite some time that we've set up ourselves and that we own. And it's the first time one has been done inside a retail environment. Previously they've all been like internet cafes."

It's also the first time Dell has agreed to set up a retail environment within a high street store, and Gamerbase also sells Dell systems. However, its initial network partner was not such a success – and Gamerbase experienced a number of failures within its testing period.

To avert the disaster that would have come from unreliable networking kit, Gamerbase decided to change tack. It only approached D-Link a few days before the centre was due to open, but after talking to the supplier and testing its kit, it agreed to switch partners. Andrew Mulholland, D-Link's Marketing Manager, explains: "You do need a really robust switch for this kind of environment. If a switch overheats or doesn't have enough memory, it will just fall over and come to a halt."

Gamerbase's requirements included a robust switching architecture, sufficient memory to keep up with the working environment and a fabric switching speed that was fast enough to handle the demanding gaming servers. The most important thing Gamerbase was looking for from the switches, however, was reliability. Mulroy explains: "If a computer goes down, we've got 79 more, but if a port goes down in a switch or if anything happens to the kit, the whole network goes down. Whereas the PCs are like a cog in the wheel, the network is the wheel and if ever that breaks then none of the PCs are available for customers."

As well as reliability, it needed a strong support team behind it. While the company has good familiarity with networking environments, it wanted the suppliers to configure their own systems.



**"Kit from other companies was not reliable," says Mulroy. "The reason we approached D-Link was that kit from the previous manufacturer who was supporting us in the testing period blew up. The switches just weren't good enough."**

**"D-Link gave us the confidence that their kit was reliable. They stress-tested it for a couple of days before it came out. We've also got good support processes in place as well as a back-up unit..."**

## Performance and reliability

The set-up uses five xStack DGS-3427 switches which deliver performance, flexibility, security, multi-layer Quality of Service (QoS) and come with a redundant power option. Mulholland says: "We set up the DGS-3427 D-Link switches providing dedicated Gigabit speed to the desktop. One of the switches was positioned as the master with all servers connected to it, which left us with more ports on the slave switches for the gamers."

However, even 1Gb uplinks were not enough for the demands of gamers for high bandwidth and low latency, so D-Link used link aggregation to combine bandwidth across multiple uplinks on Layer 2. This resulted in a total of 16Gb uplinks on the master switch and 4Gb uplinks on the slave switches.

"Using D-Link's clever load balancing algorithms, traffic is fairly balanced along the uplinks to ease congestion, says Mulholland. "This means that if one slave switch fails it will not affect the other switches. Also, with D-Link's unique "Safeguard Engine" not even an over utilisation of bandwidth can cause the switch to stutter."

If a network pushes too much traffic through any switch, it will ultimately freeze as the processor is not left with enough processing power to function. However, Safeguard Engine saves a percentage of CPU power for its own switching functions with a threshold limiting capability.

The DGS-3427s also have three optional 10Gb stacking modules per switch. These can be utilised in the future for scalability if the Gamerbase network needs to grow further in the form of a fault tolerant star stack providing 20Gb of uplink per switch. These robust uplinks will free up ports on the front of the switches and also provide resiliency for the slave and master switches allowing almost seamless transition between the master switches if one fails.



Since the Gamerbase centre opened it has experienced 100% uptime. "We've never had an issue with the equipment," says Mulroy. "That's more important for us than anything else. If the network goes down, then our reputation goes down with it."

It's also designed to deliver a higher level of performance than a games player might be used to. "The key thing we are trying to push about Gamerbase is its first class gaming. All other gaming experiences customers have had have been economy. When you go on a plane and you turn right for economy seating, you always like to sneak a look the other way to see what first class is like – this is the gaming equivalent of it."

Gamerbase has a key role as an influencer to the consumer and is considering reselling some of D-Link's networking solutions, particularly the wireless products. "When kids watch their favourite football player, they look to see what boots they're wearing, then go out and buy them because they say if it's good enough for David Beckham, then it's good enough for me on a Sunday afternoon in the park. It's the same thing with gaming; if they see these professional gamers who come down and play in our gaming centre using a certain piece of kit they want to get that as well."

Mulroy sees an opportunity in this area for a trusted brand to make things easier for gamers to piece together their solutions at home – and essentially try to replicate what the centre is providing in their own environment.

**"There's traditionally been no market leader for networked gaming. People use standard kit and patch it all together. D-Link could make it easier for them."**

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