

At a Glance

Customer:

J&G Systems; to their clients (2nd and 3rd line support)

Country:

United Kingdom

Industry:

Providing Network Consultancy and managed services to Educational establishments

Network type:

Educational Ethernet switched networks ranging from 500 users to 1500 user across multiple sites which can include up to 20 or more servers.

Challenge:

Complexity and growth of the multi-site networks, with a lack of structure, planning and supporting documentation made troubleshooting and reporting difficult. Fault identification took place on an ad hoc basis, with network problems being fixed "on the fly".

Solution:

The Fluke Networks Etherscope Series II Network Assistant gives complete visibility in seconds, providing comprehensive reporting across complex networks.

Results:

- One tool combining essential tools for network troubleshooting across 10, 100 and Gigabit copper, fiber and wireless LANs
- Enhanced visibility across multiple networks
- Fast troubleshooting, high cost savings
- Comprehensive reporting

Products:

Etherscope Series II Network Assistant

J&G Systems

Background

J&G Systems are an IT Consultancy providing support & fully managed services to schools across the London area. Based in Romford, Essex, J&G Systems was set up two years ago by a team of Engineers bringing with them 20 years of industry experience. For J&G Systems, an average client site will consist of approximately 10-30 switches across multiple sites, with 500 desktops serving 1500 users. With a corporate objective this year to consolidate and grow the business whilst providing customers with value added services at no additional cost to them, J&G Systems were looking for a solution from Fluke Networks that would save their customers time and money.

Challenge

Educational networks are typically large, complex and poorly planned. Geoff Hall, Consultant Engineer for J&G Systems comments, "these networks are typically hybrid in their nature and usually cover multiple site locations. They tend to grow quickly with little structure or planning and are also poorly documented. Troubleshooting takes place during regular site visits and issues are usually fixed on the fly." The nature of the networks complexity hampered visibility and poor supporting documentation highlighted a real need for a comprehensive report out following each site visit.

Solution

J&G Systems have purchased and made extensive use of a number of Fluke Networks products in the past. The Fluke Networks' CableIQ qualifies to see if existing cabling has the bandwidth to support voice, 10/100, VoIP or Gigabit Ethernet and also helps to troubleshoot cabling problems. Fluke Networks' LinkRunner addresses user connectivity problems and the NetTool Inline Tester provides connectivity capability with protocol analysis to indentify PC set up problems, as well as watching PC requests during boot up. These are all very useful tools and proved their worth time and time again. However what J&G Systems needed was "one tool" that would not only do all of the above, but would also show, at the click of a button, whether an issue was network or application based. Geoff Hall explains how the Etherscope Network Assistant has become their "x-ray vision for networks" by ensuring complete network visibility, speedy problem diagnostics and comprehensive reporting, all in one robust, portable tool. He outlines below a specific example of how the Etherscope has been invaluable in solving a specific issue:

One of our regular clients, a large Secondary school, was finding that when attempting to re-image a number of classroom workstations in a particular lab, they were unable to establish and maintain a network connection. After spending a number of weeks attempting to resolve this problem, despite contacting the hardware manufacturers, the school's first line support team concluded that their

"The Etherscope Network Assistant has become our "x-ray vision for networks"

- Geoff Hall
Consultant Engineer
for J&G Systems



workstations were not picking up a DHCP (Dynamic Host Configuration Protocol) address consistently. However, other workstations outside the affected lab, were displaying no DHCP issues. The school gave us a call to see if we could help.

Within an hour of arriving onsite, the Etherscope was able to confirm that workstations in other classrooms were indeed receiving DHCP leases ok.

With the EtherScope connected in the affected classroom, workstations in the lab finally received a DHCP address proving that there were no issues with the workstation or DHCP server, but a problem was occurring somewhere between the DHCP server and the workstations in the classroom.

We decided to run a Trace SwitchRoute test, a feature unique to Fluke Networks, which identifies the layer 2 path from the EtherScope to a target address, in this case the DHCP server. On identifying this path, the EtherScope showed three switches and their associated in/out ports. We then used the EtherScope's Switch Scan feature to assess and analyze the level of traffic for each of these ports. Following this, we asked the first line support team to check the configuration of each of the switches. This test showed that one switch in the path to the lab was set up for STP (Spanning Tree Protocol) instead of RSTP (Rapid C Rapid Spanning Tree Protocol). Both these protocols ensure a loop-free topology for any switched or bridged LAN. Bridge loops must be avoided as they result in a flooding of the network however, the latency introduced by the use of STP instead of RSTP was causing the failure.

When the offending switch was reconfigured, the workstations received a satisfactory DHCP address immediately and could finally be re-imaged. All thanks to the Etherscope, which not only saved us a great deal of time and effort, but also saved our client money.

Geoff Hall concludes, "The Etherscope investment has been invaluable to us. Since we purchased the tool we have only had a need to use it on wired networks and haven't even started on the wireless applications – we are only just scratching the surface. It's one of the best tools I have ever invested in and not only has it already provided a huge ROI for itself after just 4 weeks of usage, the confidence it gives my clients is worth every penny – they always ask about my box of tricks, using the Etherscope on their network and providing them with comprehensive reporting gives them peace of mind and ensures they come back to me time and time again".

For more info regarding Fluke Networks products, please visit our website: www.flukenetworks.com or call us on + 44 1923 281334.

NETWORK SUPERVISION

Fluke Networks
P.O. Box 777, Everett, WA USA 98206-0777

Fluke Networks operates in more than 50 countries worldwide. To find your local office contact details, go to www.flukenetworks.com/contact.

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