



Empowering Customers with Performance Management

ORGANIZATION

Virgin Media is the United Kingdom's largest cable operator and a leading provider of broadband, digital television, telephony, content and communications services. Virgin Media is also a major provider of business networks to enterprises, local government, ISP and Telco providers under the operating name of ntl:Telewest Business.

BUSINESS PROBLEM

Virgin Media needed to provide detailed service performance data to a growing list of large ISP and Telco customers, and wanted to integrate the Brix System information with their existing implementation of InfoVista.

EXFO SOLUTION

SOFTWARE:

BrixWorx—Service assurance correlation and analysis software engine

HARDWARE:

Brix 1000 Verifiers

KEY BENEFITS

The custom solution provided concrete information for Virgin Media customers and provided better communication capabilities between Engineering personnel and customers. Integrating with InfoVista also allowed for “zero-touch” configuration by maintaining a single customer database.

Existing EXFO Service Assurance Implementation

One of the United Kingdom's largest communications providers, Virgin Media, selected EXFO Service Assurance (formerly Brix Networks) as their service assurance partner to provide in-depth service analysis of their network. EXFO Service Assurance provides service level agreement (SLA) monitoring and reporting across their expanding portfolio of major accounts. The company has installed EXFO's Brix Verifiers in all core and edge POPs to measure critical Key Performance Indicators (KPI) for their service delivery.

The company deployed a Brix Verifier at every hub site, Regional Head End (RHE) and Data PoP. Brix Verifiers are hardware appliances that send highly accurate time stamped packets between themselves in order to determine the performance of the underlying network. Initially the Verifiers were deployed at each of its 29 Data PoPs and full mesh test was configured between these locations. This full mesh test provided performance measurement between every Data PoP at the edge of their Multi Protocol Label Switching (MPLS) core network and allowed them to benchmark critical performance data.

When Virgin Media deployed their new Ethernet access metropolitan networks, their MPLS network was extended out to every hub site. As part of the standard deployment, a Brix Verifier was also installed at every hub site. This increased the number of installed Brix Verifiers to approximately 230 across the network.

The Business Challenge

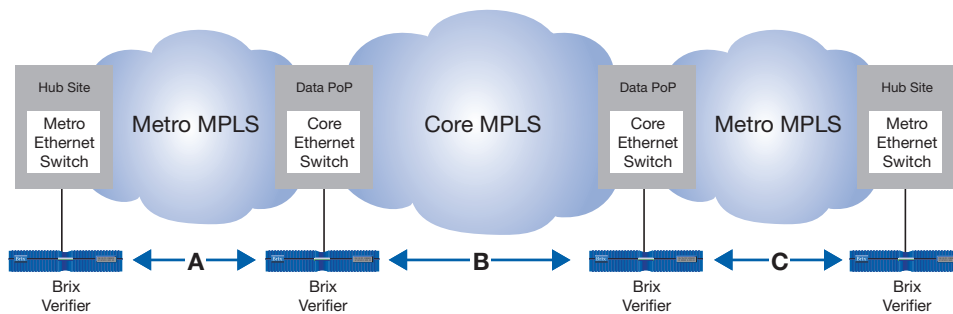
The Brix System had originally been installed to allow the Virgin Media's Engineering personnel to monitor the entire MPLS network. According to Martin Singer, a Senior OSS Architect at Virgin Media, the company had an initiative to provide additional detail to end-customers

about their service performance. Singer and the team at Virgin Media defined additional requirements to provide metrics across the entire network for each customer. They realized that if they measured each individual path, they would measure the same link many times. With such a large population of Brix Verifiers it was not economical to extend the full mesh test to cover all 230 sites. With each Verifier running a test to the other 229 Verifiers every five minutes, this would have resulted in over 50,000 performance tests every few minutes, nearly a million tests per hour.

InfoVista and the Brix System were already deployed in the Virgin Media's MPLS network and Singer determined that they wanted the two vendors to work on a combined solution to this business challenge. “We did not want to do it internally because the information we wanted was deep into the Brix API so we didn't feel we had the internal expertise in integrating the two systems and analyzing the data. We were also concerned about maintaining the application if the API were to change over time,” explained Singer.

The Custom Solution to the Challenge

Virgin Media worked with the EXFO Service Assurance Custom Solutions and sales team to determine a strategy to measure all network paths. Custom Solutions determined that the system could measure between segments of the network and add the link measurements for a total path measurement. This provided a scalable solution and greatly reduced the number of performance tests and overall volume of test results to collect, process and analyze. Measuring the components of each link to derive end-to-end measurement was much more economical. Even if 100 customers used the same link, the measurement of that link was only taken once and incorporated into all 100 customers' measurements. Using spatial composition, Custom Solutions added the



links to get an overall measurement for each customer, for every path.

The EXFO Service Assurance customization included the following:

- Integration with InfoVista to enable the Brix System to consume a topology file, which dictates the customer service paths across the network.
- Brix System publication of the processed performance data for integrated display in the InfoVista customer-facing portal.
- Calculation of performance monitoring using spatial composition

The InfoVista system was Virgin Media's existing strategic platform for customer service performance reporting. The custom solution implemented uses detailed Brix System performance data to estimate a customer's service performance by calculating the performance over the individual links used to deliver a customer's service. The figure above shows how the performance of a point-to-point Ethernet service would be derived by adding the performance metrics from legs A, B and C. It collects aggregated service performance data from the BrixWorx system and presents this data to the customer using the InfoVista portal.

In addition, the Brix System accepts a topology file from InfoVista so that performance data can be mapped to the customer's network. Virgin Media's customers include large ISP backhaul companies and local government agencies, many with hundreds of links across the UK. Virgin Media is able to offer SLAs on a geographical map basis and can monitor all customer services if required.

Key Benefits

The primary benefits of the custom solution are:

- **Putting performance measurements in front of the customer.** The solution provided concrete information for the customers and provided better communication capabilities between Engineering personnel and customers. As Martin Singer explained, "I do expect increased customer satisfaction because seeing detailed performance metrics for our services will give our customers visible evidence as to the quality of the Virgin Media network."
- **Increased Quality of Experience (QoE).** In terms of performance assurance, Network Operations Centres (NOCs) are notified should the performance of any individual network link fall outside a strict operating envelope, prior to breaching service SLAs. This allows remedial action to be undertaken before performance issues start to impact the customer's overall QoE.
- **Integration with InfoVista provided "zero-touch" configuration.** All customer information is stored in one place and the Brix System is able to access that information via the integration without a requirement to maintain an additional customer database.
- **Efficiency gains to allow edge-to-edge measurements for all customer routes.** The ability to fully measure a customer's network, rather than sample a customer's routes, is a significant competitive advantage for Virgin Media.

ABOUT EXFO SERVICE ASSURANCE

EXFO Service Assurance (formerly Brix Networks) is a global provider of open and extensible converged service assurance solutions that allow the world's largest service providers and enterprises to offer reliable and high-quality experiences in voice, video, data, and mobile services to their customers, partners, and employees. The company brings a proven heritage of IP expertise unique to the service assurance marketplace, and collaborates closely with its customers and partners to assure the delivery of any IP-based service over any network to any endpoint.

For more information, visit www.brixnet.com or www.exfo.com.



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