VIAVI Solutions

Case Study

Virtual Network Testing from VIAVI Reduces Tech Dispatches and Repair Time for Ireland's Largest Wholesale Carrier

Enet was founded in 2004 with a single-minded strategy: provide critical communications services to Ireland's carrier community via an open access model. That wholesale open access philosophy has allowed their customers to provide telecom services in new geographies which has spurred competition and lowered prices to end-users. Enet now operates one of the largest wholesale telecoms network in Ireland, with over 5,400 Km of fibre, including the Irish State's Metropolitan Area Networks (MANs), proprietary metro networks, a unique dark fibre backhaul infrastructure, and one of the largest licensed wireless networks in the country.

The Challenge:

Customer excellence is at the very heart of Enet, so any challenges to delivering the best service possible are always taken very seriously – especially where service interruption or service quality is concerned.

When Enet's ultimate end customers felt like they were experiencing slow Internet, they did what most users throughout the world do: they check their speed on a free speed test website. If the speed test validated that they were indeed experiencing an Internet slowdown, the end-user would contact their service provider who, in turn, would contact Enet.

If Enet was approached by a concerned customer, the NOC agent could potentially be unable to identify exactly what the source of the caller's problem was. Confounding matters further, when the agent would run the same speed test that the end customer did, it sometimes contradicted them and sometimes it validated them.

Commodity Internet speed tests can vary in reliability. The tests use very simple methodology, meaning they are free, however the trade-off is that they lack consistency and diagnostics. Consequently, they can return poor test results but not reveal the root cause. Even more frustrating is that commodity tests typically

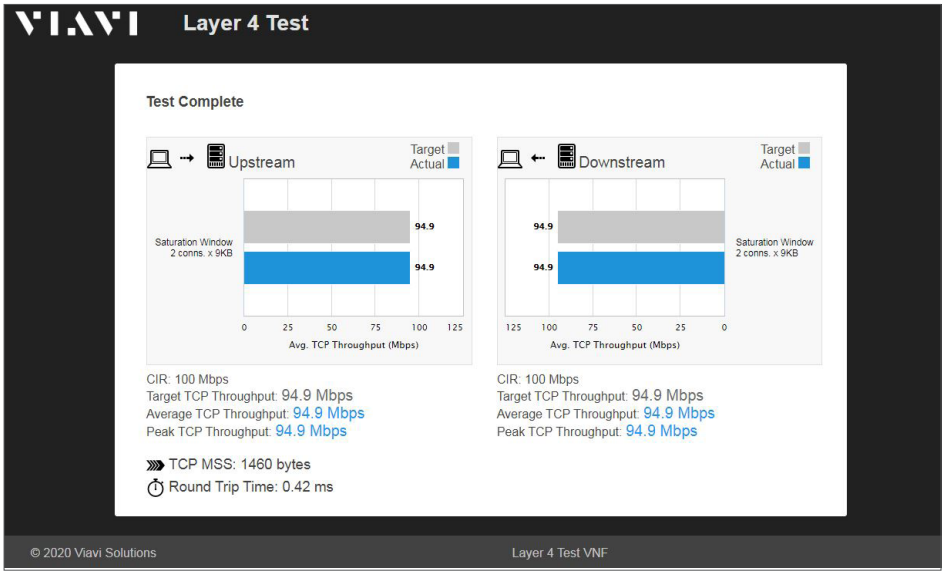
oversubscribe a circuit which results in excessive packet loss, but succeeds in making the throughput number look positive. However, such oversubscription methodology could mask issues in queues, shapers, policers etc. In short, the generic speed test can return a positive result even while user applications are performing poorly.

As a result of diagnostic challenges, Enet technicians were asked to complete a difficult task: go to a customer's premises, source the problem and resolve it as quickly as possible. The technician would start the process by running standard service activation tests but would need to coordinate with another person at the serving central office to help run the test. With many potential causes of network throughput issues, technicians could struggle to find the problem's source.

Based on these recurring customer issues, Enet were looking for more specific documentation that stated what the customer's key network parameters were on the day of service activation, so that if a problem arose, the tech had more detailed information from which to start troubleshooting. Enet were already users of VIAVI T-BERD/MTS-5800 portable network testers, so they were aware of the expertise VIAVI has in throughput testing. Through Enet's network technology partners, Butler Technologies, VIAVI was brought in to assist.

The Solution:

After learning about Enet's network layout and the challenges they were experiencing, VIAVI felt Enet was a strong candidate for Fusion, its virtual test system, and specifically "TrueSpeed", a key capability within Fusion. Compliant with IETF RFC 6349, TrueSpeed is a carrier-grade TCP throughput test which provides accurate, consistent test results and diagnostics that could help Enet better assess customer problems.



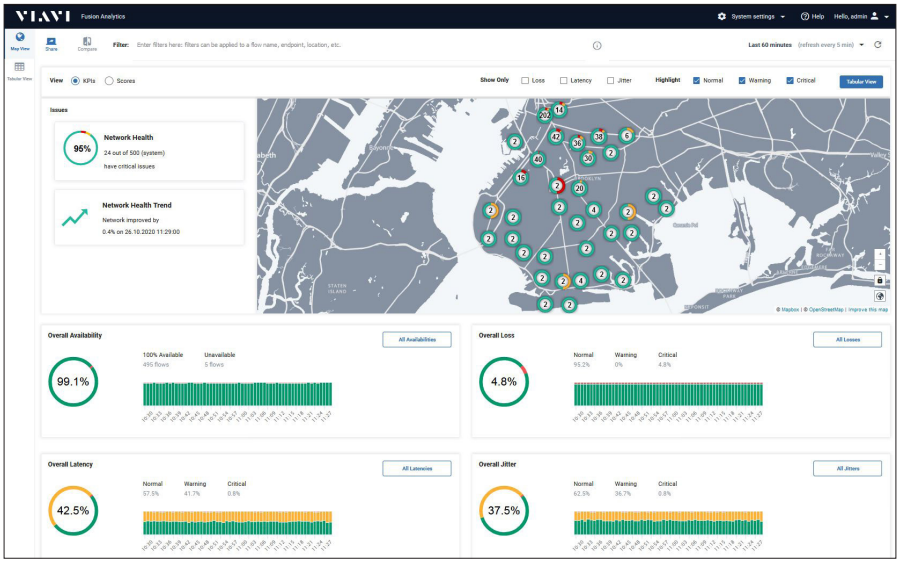
Fusion PC Results

Another benefit of Fusion is that the system was capable of leveraging Enet's T-BERD/MTS hand-held testers as test end points. Enet also deployed a QT-600 server, a component of Fusion, against which to run customer tests.

After the introduction of Fusion into Enet's operations, a customer calling into Enet would be guided by an agent to download a PC test application, from which a TrueSpeed test could be run. From that test, a detailed report is generated by the test controller, providing rich information about the customer's environment that could potentially degrade performance. The TrueSpeed report might also reveal things like inadequate traffic shaper settings that isn't capable of handling bursty TCP traffic; an underpowered laptop, or a PC overloaded with other applications such as virus scanning software, among others.

A common mistake is using WiFi for a speed test instead of using the dedicated wired interface. The TrueSpeed report provides a list of network interface cards that were active during the test, providing the Enet agent the ability to properly diagnose and fix the problem that would otherwise require a technician to be dispatched to the customer premises.

Speaking about Enet's use of VIAVI Fusion, Aaron Joyce, a Director of Butler Technology, said: "Enet is leading the way when it comes to focusing on customer service excellence and is the first network provider in Ireland to deploy a truly virtual test solution."



Fusion Analytics Dashboard

Results:

John Gilvarry, Enet CTO, said: "This is a strategically important investment for Enet as it highlights our continued commitment to delivering a genuinely world-class service for our customers. With this solution in place, we can see how the network is operating from the end-user's perspective, pinpoint troubleshooting, reduce time to repair, and manage a much larger infrastructure estate."

Looking Forward:

VIAVI TrueSpeed was instrumental in helping Enet react to customer concerns about Internet throughput. "The Fusion system marks a key milestone in our transition from a traditional wired network to one based more on SDN/NFV principles," explained Gilvarry. "We are currently looking to further extend the solution in our network."

The next step is to utilize another aspect of VIAVI Fusion – to proactively monitor the key network links to determine if there is a slip in performance or any bottlenecks, and to address the situation as soon as possible, potentially before customers are even aware. Fusion will enable Enet's performance monitoring capability with another standards-based test methodology, Two-Way Active Management Protocol (TWAMP), described in RFC 5357.

Fusion's performance monitoring will allow Enet the unique ability to monitor and segment network performance in real time, using TWAMP data, from the network core to access points, between access points, as well as testing the core mesh. This real-time data will provide the carrier the ability to isolate problems to a specific segment, or even an element in that segment.

Moreover, FUSION provides a Data Analytics that traces traffic flows on a map, pinpointing where the issue is occurring. With this critical information, Enet will be able to deploy technicians proactively to a particular location and arm them with the knowledge required to fix the issue as soon as they arrive.

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