GAM-12-M

SYNOPSYS: Quantum Internet & Telephone recently took over the offer for connectivity services to a privately owned student housing campus in Maryland. This garden-style complex consists of two rows of six 2-floor buildings, each with eight (8) apartments. Internet connectivity to each row of buildings was previous achieved with VDSL2 loops of about 500 feet (150 meters) and was limited to 100 Mbps downstream / 50 Mbps upstream to each group of buildings. With the Internet demand skyrocketing from the students, there was a need for a lot more bandwidth over the same copper infrastructure.

About Quantum Internet and Telephone

quantum
[internet & telephone]

Quantum Internet and Telephone is a locally owned and operated Internet and telephone service provider based in Manchester, MD. Quantum has seen rapid growth since its establishment in 1995 and is currently one of the Baltimore area's largest independent Internet and telephone service providers. Quantum serves both commercial and residential customers by providing high-speed Internet and data services over point-to-point dedicated circuits, including gigabit fiber and wireless circuits, as well as web hosting and co-location services. **www.qis.net**

Initial Challenges

The Internet service over VDSL2 being limited to only 100 Mbps meant that, in peak hours, the average bandwidth to each row of houses was barely 2 Mbps per student. This was clearly an issue for concern especially in an environment where High Speed Internet access is so critical.

While there is an existing Gigabit Ethernet connectivity over the structured wiring in place between each of these buildings in the rows of houses, the fiber connection could not easily and cost effectively be extended beyond the current Point of Presence. This was the initial reason to use VDSL2 for that initial stretch of 500 feet (about 150 meters) since Ethernet is unusable on this copper outside plant (OSP) infrastructure. While a Fixed Wireless Access link could have possibly been a potential solution, there was a strong preference by all parties involved to re-use the copper wiring already in place. The selected solution had to integrate seamlessly with the managed Wi-Fi coverage in these buildings.

Time was of the essence to replace the VDSL2 access and prolonged downtime was out of the question.

Why G.hn and Positron

Quantum already used the Positron Ethernet over Copper xDSL solutions elsewhere in their network. With G.fast deemed too complex and expensive, the Positron G.hn **GAM-12-M** solution allowed them to deliver up to 1Gbps of aggregate bandwidth (or 500 Mbps symmetrical) to each row of houses over a single copper pair. This 500% increase in the bandwidth is a huge improvement, allowing each student with the bandwidth they demanded for Internet access. The secure and managed Positron **G1000-M** (G.hn to Ethernet Bridge) connects to the in-house router and Wi-Fi infrastructure to serve the students. This 1-2 hours migration allowed Quantum to fit seamlessly with the existing structured wiring and Wi-Fi coverage without any other changes.