Success Story

BAPS Mandirs Deployed Siklu mmWave Solutions to Deliver Wireless Connectivity for Their Video Surveillance Network

Introduction

BAPS Swaminarayan Sanstha® (BAPS) is a worldwide spiritual and humanitarian organization dedicated to community service, peace, and harmony. Motivated by Hindu principles, BAPS strives to care for the world by caring for societies, families, and individuals. Through various spiritual and humanitarian activities, BAPS endeavors to develop better citizens of tomorrow with high esteem for their roots and culture. Its 3,300 international centers which support these character building initiatives, each receive thousands of visitors per week. Under the guidance and leadership of His Holiness Mahant Swami Maharaj, BAPS aspires to build a community that is free of addictions as well as morally, ethically, and spiritually pure.

Members of BAPS come to the Mandirs (a Mandir is a Hindu Place of Worship) to pray and attend daily character-building rituals and attend weekly activities. Visitors come to view the beautiful architecture and learn about Hinduism while enjoying the onsite Vegetarian Cafes and Snack Shops. With so many visitors on a daily basis, a state of the art video surveillance system was essential to ensure the safety of the visitors, the Mandirs and surrounding parking areas. In addition, this system provides its members with a safer facility to conduct their daily activities as well as to protect the buildings and property.

Challenges

BAPS was striving to expand the current surveillance system coverage in their Robbinsville, New Jersey and Houston, Texas Mandir locations to parts of the sites beyond construction and property perimeter areas. There was no infrastructure to support a fiber connection, so it would have been extremely costly and time-consuming to run a pathway for conduit and for the fiber, a limitation that was only remedied with the addition of reliable wireless connectivity. The resultant system also had to meet strict cost constraints, making traditional Point to Point (PtP) solutions unacceptable.

A second key challenge was to extend the current fiber infrastructure to multiple locations via a single wireless network that would provide the same wireline gigabit speed performance wirelessly without any increase in latency. Legacy wireless solutions that were considered were operating in the highly saturated 5GHz frequency band which could not guarantee availability due to high levels of interference. Coupled with the need for HD and soon 4K resolutions, the legacy networks also struggled from a capacity perspective. With high reliability and high capacity in mind, the organization sought for a wireless solution operating in the interference-free mmWave bands.

The Solution

BAPS witnessed Siklu's technology for the first time at the ISC West show, where a live Siklu network was in operation. Siklu's mmWave wireless radios were powering multiple 4K network cameras from Axis Communications around the convention and streaming the video flawlessly despite massive WiFi interference. BAPS was impressed by the very nature of mmWave wireless, which virtually eliminates interference concerns inherent in all 5GHz products. Siklu was chosen to provide that same performance as their network fiber extension.

Siklu's Point-to-Multipoint MultiHaul™ Series was a perfect fit, leveraging narrow mmWave beams in the uncongested and license exempt 60GHz frequency band. The solution's beamforming 90-degree scanning antenna auto-aligns multiple terminal units from a single base unit and serves multiple locations while reducing installation times to mere hours. Twelve MultiHaul™ radios were deployed to connect parking lots and the facility surroundings - 10 in Robbinsville NJ and 2 in Stafford Houston. Kaivalyamurti Swami, Technology Overseer at BAPS stated that "The installation was very easy with literally zero configuration required. We no longer have to worry about how we will get cable to remote or distant locations on the campus where we need reliable network connectivity."

Eight AXIS Q1941-E Thermal Network Cameras and one Panasonic WV-X8570 4K Multi-Sensor Surveillance Camera are powered using the PoE capabilities built into the Siklu radios, reducing installation time, the number of power supplies required and the need for a hardened switch at each camera location. One AXIS Q6125-LE PTZ camera is powered by Power over Ethernet (PoE) using an Axis midspan, similar to the PoE injectors used to power the Siklu radios.

The video is streamed to the Genetec™ Security Center unified security platform for monitoring and recording. The BAPS technology team engineered the mmWave wireless network to deliver 99.999% network availability.

Results

Since deploying the Siklu solution in October 2018, the Mandir's wireless infrastructure is fast, reliable and stable as a natural extension of their existing fiber. Kaivalyamurti Swami said, "I use a lot of different transmission technologies for LAN applications - mostly wired solutions. This was personally my first point-to-multipoint deployment. The simplicity of the instructions and the components provided with the units, made it very easy to install. The most important part is the extremely low latency and solid connectivity - I couldn't tell the difference between the PTZ cameras connected to the Siklu unit versus the other PTZs which I have hardwired." Kaivalyamurti Swami also mentioned that "the friendliness and willingness of Siklu employees throughout their product review and design support was exceptional."

Should BAPS seek to expand the network further in the future, it can do so incrementally by adding additional Siklu radios as needed, benefiting from the almost infinite scalability inherent to mmWave wireless technology.

"Siklu gigabit radios enable end to end multi-gigabit network speeds, unlike other wireless networks which create a bandwidth bottleneck at the access level in the network reducing speeds, increasing latency and causing packet loss," stated Eyal Assa, Siklu CEO. "Siklu ensures your video streams get the throughput and latency they need for this mission critical demanding application and provide ample network capacity to allow for future growth in the network."