SAPAL, Mexico

Challenge:
- Integrating a series of branches for online payments to SAPAL while keeping data traffic consistent and uniterrupted
- Better quality VoIP, video surveillance and resource planning throughout the branches, main office, treatment plant and strategic wells

Solution:
- InfiLINK XG for a robust backbone structure linking all branches to the network, including wells and treatment plants
- InfiLINK 2×2 LITE for last mile connectivity, carrying smaller data packets to a central location

Updating SAPAL's network infrastructure and last mile links to improve connectivity and capacity

Background

SAPAL (Sistema de Agua Portable y Alcantarillado de Leon) is the main municipal public water administration and provider in Leon City, Mexico, and is ranked as one of the three best providers in the country, supplying water to 99% of the city. Its main corporate objective is to provide high-quality drinking water, sanitation and drainage as well as sewage removal and cleaning for the city.

SAPAL's long-term telecommunications supplier, Grupo SITE, has been providing telecommunications solutions around Leon City for more than ten years. The company specialises in wireless solutions, infrastructure and video surveillance as well as providing reliable network connectivity.

Challenge

SAPAL is always looking to improve on customer service and focuses extensively on providing its customers with a fast and reliable way to pay their water bills through a series of inte-grated pay-points at various branches throughout Leon City. Its previous IT network often experienced severe data traffic problems when too many people visited these service points or too many online payments from customers were being made at the same time. This caused excessive delays in the network, rendering video surveillance as 'choppy' broadcasts with badly fuzzy pictures and pixelated videos. SAPAL needed to improve its resource management system to ensure that there was no wastage in the pipeline for customer service and the collection of outstanding fees.

Another challenge that SAPAL wanted to address while updating its previous network was the need for VoIP integration of its service points with the main branches, thus enabling them to connect with the main switchboard located in the head office, and intelligently return calls to the branch if necessary. Furthermore, the branches already had use of video surveillance but many of the video feeds would freeze or experience high delays, meaning real-time monitoring was simply very hard to achieve.

Solution

Because SAPAL already had a backhaul network in place, the new solution had to focus on updating its existing configuration and last mile links to provide adequate network connectivity and capacity for voice, data and video transmissions while still being able to connect all branches, the residual treatment plants and strategic water wells around Leon City. The solution also needed to allow the company's network to run on its own frequency band, essentially avoiding interference from third party wireless networks as is common in densely populated metropolitan areas.

SAPAL had previously tested and deployed a number of wireless solutions from various vendors. However, many of these solutions had their own problems when it came to delivering real time and reliable data streams. Grupo SITE recommended a test with
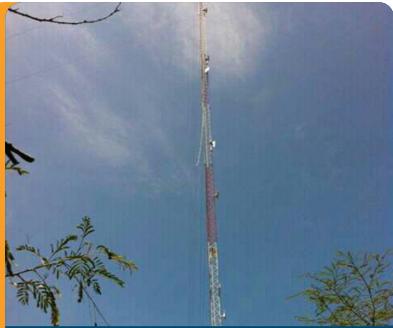
Benefits:

- Faster connectivity than any previous solutions ever deployed by SAPAL. The SAPAL ERP is now optimised to deliver better services to its customers.

- Video surveillance is consistent without freezing or delays to the live feeds, irrelevant of the time of day and whether only a few customers attend the service points or many of them arrive at the same time.

- VoIP has improved significantly.

- All control systems at the residual water treatment plants and strategic water wells now operate effectively.

InfiNet Wireless solutions in order to demonstrate the processing power and reliability of the InfiNet solution. On completion of the tests, SAPAL agreed to deploy InfiNet's products in its network as it was very satisfied with the quality of service achieved, along with the two-year guarantee offered by InfiNet and the net throughput achieved, e.g. 500 Mbps for backbone links and 180 Mbps for last mile links, a much higher figure than those achieved using products from other manufacturers.

Grupo SITE acted as the project integrator and was responsible for designing the solution based on several key deliverables, mainly redesigning the network based on a ring topology as this was deemed right from the start to improve availability. Grupo SITE also ran a feasibility study which concluded at 99.999% network availability. Line of sight analysis was also carried out along with a structural analysis of the towers and telecommunications infrastructure that was already in place to see how these could be integrated into the the new network or improved on.

The final solution included the InfiLINK XG, used mainly to create the backbone of the network and to support the larger scale operation of access points. This platform connected all the branches and wells together, seamlessly integrating all services into a single and manageable platform. The InfiLINK 2×2 LITE was used for the last mile connectivity, linking all remote locations to the head office, relaying vital data streams and ensuring prompt and accurate delivery of every single packet of data transmitted.

Abel Ponce, Wireless Product Manager at SAPAL, said: *"We tested several wireless vendors which achieved different results, and today we consider InfiNet Wireless' solution to be the most robust solution in terms of capacity, reliability and ease of deployment. These characteristics helped the network design of SAPAL, getting immediate results with clear advantages to the customers."*

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