

CASE STUDY

Rampal Power Station

About Rampal Power Station

Rampal Power Station is a 1320-megawatt coal-fired power station currently under construction at Rampal Upazila of Bagerhat District in Khulna, Bangladesh. The power plant is being constructed on an area of over 1834 acres of land and is situated 14 kilometers north of the world's largest mangrove forest, Sundarbans, which is a UNESCO World Heritage Site. It will be the country's largest power plant once the construction is complete. There will be over 1000 users who will need access to stable, fast, and secure internet on a regular basis without interruption.



THE PROBLEM

Rampal will be the biggest Powerplant in Bangladesh with thousands of employees who require stable internet for their day-to-day operations. Most of their work meetings are held online with large data files constantly being transferred over the internet, so there is a need for fast and strong capacity routers with access points. Meetings with foreign clientele lasted up to 5 hours or more and resulted in a very substandard network experience with constant disruption and disconnection.

There are a total of 4 administrative buildings with 7 floors each, and each floor is around 10,000 square feet, thereby cementing the fact that only a strong interconnected network can fulfill the connectivity needs while roaming. Being in a remote area mobile data was no longer a valid option and a strong internet connection was an urgent requirement.



Excel
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Provided By Excel Technologies

Excel Technologies Ltd. is one of the leading IT Companies in Bangladesh and started their journey back in 1999. Excel Technologies Ltd. is one of the most trusted companies because of their excellent after sale service and warranty policies. With an experience of more than 24 years and 17 excel service customer support point available throughout whole Bangladesh.

THE NEED

After meeting with the representatives at Rampal Power Station the following needs were identified:

Connection Stability:

There are around 1000 people working at the plant and all of whom are frequently using the internet for virtual meetings both within the country and outside of the country. Engineers from more than 5 countries are working on this project and frequent meetings are being held with them. Being a sensitive project, a stable internet with zero latency was on Rampal's priority list so that the information shared is accurate whilst keeping the meetings on time. This was not possible with the internet connection constantly disrupted.

Strong Security:

Being a national government project, and two countries working simultaneously on this project, there is a lot of sensitive data being shared over the internet. A breach in the network could result in a disastrous situation for both countries and can also put the national power grid at risk. Therefore, having a network set up with strong security was a priority for the representatives at Rampal.

Centralized Management Systems:

Rampal needed the ability to connect over 200 devices to a single management interface and needed a stable network management platform to ensure this can be done smoothly. Managing one device at a time is not feasible, thereby a centralized network management system was a mandatory solution for them.

Guest Wi-Fi Zone:

Many foreign stakeholders and experts visited the premises daily. Sharing the main password on a regular basis could potentially create a breach in the security systems. This resulted in a need for a separate networking channel for guests to gain internet access, which differed from the internet available to the employees at Rampal.

Separate User Base Based on Priority:

At Rampal, government officials are present at the power plant from the top level to the lower level with different requirements in terms of internet speed based on the task being performed. For this purpose, there was a need for internet speed bandwidth allocation at the plant.



GRANDSTREAM
CONNECTING THE WORLD

COMPETITORS CONSIDERED

Along with Grandstream, a few other competitors also proposed their solutions to the Rampal team. Other competitors who tried to provide solutions were Ubiquiti and Cambium. However, they found Grandstream's access points and free management platform to be the most optimal and efficient after doing thorough analysis and comparison.

PRODUCTS DEPLOYED



GWN7602
Wi-Fi AP with Integrated
Ethernet Switch
Rooms



GWN.Cloud
Cloud Management
Platform
Access Point Management

WHY GRANDSTREAM?

After careful consideration, the best choice to implement a stable network connection at the facility was to use Grandstream's networking solutions, specifically the GWN7602 indoor access point. To provide stability with uninterrupted service, Excel Technologies installed one device per room so that each room is provided with a stable internet connection. Around 200 units were used throughout the facility to provide a seamless connection no matter where their workers are. With gigabit LAN connectivity, PoE, support for up to 80 devices, and Grandstream's free network management platform, GWN.Cloud, was the perfect choice for Rampal to implement these solutions at their power plant.

A Secure Network:

As it is a government project, the security aspect of the network setup is one of the most important elements that needed to be addressed. GWN7602 is equipped with anti-hacking secure boot and critical data/control lockdown via digital signatures assuring an attempt at data breaching is prevented. Along with this the unique security certificate and random default password per device assured connection security to the facility.

Network Stability:

GWN7602 has a coverage range of up to 100 meters and installing a single unit in every room ensured corner-to-corner connectivity no matter where a person was in the facility. With the data roaming feature in place, users can seamlessly move from one location to another without losing network connection. The 2x2:2 MU-MIMO technology ensures stable connection and smooth data transmission from the device to the access point. The distribution of GWN7602 units throughout the facility was able to connect 3,000 user devices that were able to remain connected without any network interruption throughout the power plant.

Centralized Management System - GWN.Cloud:

GWN.Cloud is a free network cloud management platform that offers unlimited AP management. After using GWN.Cloud, Rampal's network team no longer needs to travel from floor to floor to monitor the system and can control the system from just one location and easily diagnose any issues. The fact that GWN7602 supports PoE allows for a reduction in wire management issues.

Setting Up Multiple Wi-Fi Networks:

A total of 5 SSIDs were created to distribute speed across the network using the Per SSID Bandwidth Allocation system. The facility received a total of 1 Gbps connectivity that was distributed according to the priority of the SSID and users. The SSIDs were used to split between Management, IT Department, Meeting Room, Regular Users, and Guests. Using the **QoS** (Quality of Service) feature, device priority was set for the users according to their needs and use.

Guest Management:

Grandstream's captive portals authentication rule system feature was used to create a separate network for temporary guests. It automatically created a temporary password for them that was used to connect to the internet. After a specific time, the guest is disconnected from the network automatically ensuring the security and safety of the system.

Once the installation was completed, sufficient training was provided to the engineering team at Rampal, and multiple tests were taken to ensure that they are familiar with the network management system.

THE RESULT



Excel Technologies visited the team at Rampal a month after deploying the access points and these were the results that were identified:

- Rampal's IT team is extremely satisfied with the strong security system in place. With constant monitoring of all 200 GWN7602 access points and an effective network management system, the team is easily able to trace issues with any AP and diagnose it immediately without too much hassle.
- Strong security prevented any unauthorized logins from taking place and blocked the IPs permanently to stop further intrusion. Additionally, the captive portal system adopted by the IT team helps to keep the guest users in check.
- An internal survey carried out among all network users over the course of 3 months identified that 100% of the users managed to connect to the network without any disruptions. They have also rated the connection stability as 'highly satisfactory' in the survey.
- Multiple bandwidth allocation helps to prioritize functionality based SSID. For example, the survey resulted in 99% connection stability for the SSID created for meetings saving more than 10-15 minutes per 1 hour of meeting time, as they no longer needed to repeat topics because there is finally a stable internet connection.
- Finally, strong Wi-Fi coverage throughout the whole project area ensured that everyone stays connected from anywhere on the premises and can carry out online activities such as attending meetings, sending data, and other activities without any disruption. The survey also showed that 100% of big data (1GB+) and small data uploads that were sent over the internet were successful without failure.

Excel Technologies' continuous engagement and support with the team at Rampal helped in building a strong reputation for Grandstream as a trustworthy and reliable brand. They are extremely satisfied with Grandstream solutions and are already in the process of setting up devices for the new buildings that are being created. Along with that, the team at Rampal aims to use IP Solutions from Grandstream.

