WI-FI & SMART E-LEARNING EXPERIENCE AT SOA UNIVERSITY

Located in Bhubaneswar, India, Siksha ‘O’ Anusandhan (SOA) University is a prestigious institution of higher education offering professional programs in a wide range of disciplines, including Engineering, Medicine, Management, and Law. In recent years, Wi-Fi enabled mobile devices have become increasingly ubiquitous, building a strong momentum for BYOD (Bring Your Own Device) in both enterprises and campuses. As a result, users are demanding reliability and high performance mobility for Internet services. The administration at SOA University noticed this trend, realizing that in order to meet these demands they had to offer a secure Wi-Fi environment that could handle a large capacity of concurrent mobile devices.

There were several challenges that SOA University faced when it came to providing mobile-ready campus Wi-Fi. First, since the university encompasses a wide area, the deployed APs needed to support fast roaming as users moved from one AP to the next. Second, given that the university could potentially have up to 1,100 students online at any moment, each with multiple mobile devices, the WLAN infrastructure needed to be robust and be able to operate steadily in high-density environments. Last, the university wished to provide differentiated access privileges for faculty members and students to ensure the security of sensitive data.

The university surveyed solutions offered by several vendors and concluded that 4ipnet’s solution was ultimately the most suitable, deploying WHG405 and WHG515 Wireless LAN Controllers with EAP110 APs. The controllers enabled browser-based user authentication, providing an easy and intuitive method for students to login. Furthermore, role-based policies allowed administrators to enforce firewall rules and limit the Internet usage of individual users. For example, students could be prohibited from browsing Facebook during class time, while bandwidth throttling would prevent the campus network from being overwhelmed by HD video streaming and other high bandwidth applications. In the event of illegal Internet activities such as music or movie downloading, detailed usage logs like HTTP Web Log and NAT Conversion Log would help the university IT staff quickly trace the source of the activity. These user management and logging features of the WHG controllers created a secure and reliable Wi-Fi environment for every user at SOA University.

In addition to WLAN controllers, access points also play a significant role in every wireless network when it comes to overall network quality and security. SOA University elected to deploy the most cost-effective 4ipnet EAP110 access points alongside the WHGs, providing up to 300 Mbps data rate for 802.11n clients and packing a complete set of features such as VLAN tagging and Layer 2 Firewall. VLAN tagging allowed the university to segregate network traffic and limit broadcast domains, while Layer 2 Firewall helped prevent unnecessary packets from entering the wireless medium, freeing up the airtime for additional data transfer. The most significant benefit came from integrating the EAP110s and WHG controllers, which allowed the team at SOA University to perform centralized AP management and monitoring, rogue AP detection, and load balancing between APs.

In summary, 4ipnet’s WLAN solution enabled SOA University to deliver a next-generation mobile e-learning experience. From network services to user monitoring and AP management, 4ipnet’s features helped simplify the workload of network administrators and guarantee a high performance and secure wireless network. At SOA University, students can now enjoy uninterrupted Wi-Fi connectivity on their mobile devices across the campus, arming them with a much smarter and more efficient way to learn.

OVERVIEW
With more than 10,000 students and 3,500 faculty members campus wide, SOA University has been a recognized authority in various academic disciplines, and was accredited by the National Assessment and Accreditation Council (NAAC) with a grade ‘A’ for its overall performance.

REQUIREMENTS
- Fast roaming between deployed APs to ensure uninterrupted Wi-Fi connectivity
- Prevent unauthorized users from accessing the university's wireless network
- Centralized AP management to monitor AP operation and reduce maintenance time
- Customized Wi-Fi login page using the university's logo and color theme to create a unified experience

SOLUTION
The following were deployed in SOA University:
- WHG405 Wireless LAN Controller
- WHG515 Wireless LAN Controller
- EAP110 Indoor Access Point

BENEFITS
- Browser-based user authentication supporting all types of mobile devices
- Station isolation and rogue AP detection helps prevent malicious activities
- Separate Internet access rights for professors, students and guests
- Extensive logging and reporting features for security and troubleshooting purposes
- HTTP Web Log and NAT Conversion Log for tracing illegal Internet usage

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