Tailor-made for smart classrooms

One-to-one (1:1) computing gives every student access to interactive multimedia content and the Internet . This digital learning approach makes content more vivid through the use of multimedia videos that inspires student interest and allows teachers to perform Q&A or pop quizzes to quickly assess understanding and enhance the learning experience.

1:1 computing demands high-density AP deployments. To accommodate this, Zyxel provides specialized designs that can support reliable WiFi for an uninterrupted learning experience.

Challenges Facing 1:1 Computing Environments

- Triple traffic such as video, audio, and multimedia during lectures.

- High-density connections for 35-50 students simultaneously in a classroom.

- Low latency is required due to real-time and uninterrupted interaction.

- Less interference is essential because high-density AP deployments within a confined space result increased interference among APs.

Flexible WiFi Deployments

Because tablet PCs generally do not feature Ethernet interfaces, they must rely on WiFi for high-speed data transmission. Featuring compliance with advanced 802.11ac technology, the Zyxel Unified Pro AP series delivers high throughput for heightened performance and a better overall user experience. Unified AP series access points are also designed to support both ceiling and wall-mount installation, and can be adapted to different classrooms to provide seamless connectivity.

Load Balancing

In most digital learning environments, each classroom is equipped with two access points to guarantee uninterrupted connectivity. The biggest challenge in this setting is how distribute connections to several student devices quickly for the best possible performance. In a worst-case load-balancing design scenario, the AP could delay or refuse connection requests from WiFi clients, resulting in un-balanced load sharing or situations in which WiFi clients are pushed to more distant APs.

Zyxel's classroom-optimized load balancing offers the following advantages:

- Two (2) APs per room for rapid load-balancing plus fail-over to ensure always-on wireless access.

- Automatic station to AP assignment.

- Smart technology uses the less congested 5 GHz band as first priority for high-speed client devices.

- Dynamic handling of student connections so that if an AP station limit is reached, the AP seamlessly passes the request to a nearby AP.

Advanced Dynamic Channel Selection

In extensive WiFi deployments, the dynamic channel selection (DCS) feature can be extremely helpful in saving time that would have been spent configuring access points. However, if such a feature is not carefully designed, the network could face endless channel reselection and changes, negatively impacting network performance.

Zyxel's advanced design provides the following advantages:

- Intelligent scan scheduling to improve WiFi network availability and manage interference.

- Fast scanning and response mechanism to achieve optimal WiFi channel selection.

- Zero impact to normal wireless student connections when performing DCS scan.

- Quick stabilization of DCS results provides stable WiFi performance.