



Lab 12.4.8.1 Wireless Case Study of a School

Estimated Time: Actual time of completion will vary.

Number of Team Members: Students will work in teams of two.

Objective

In this lab, the student will determine the feasibility of deploying a WLAN at a local school in their area.

Scenario

Connectivity to IT tools is often restricted to IT classrooms or computer labs. However, with the emergence of on-line curriculum and multimedia learning materials, the demand for student access from any part of the campus is growing. Productivity for professors, lecturers, and teachers is no different. A wireless network can enable teachers and students to gain access to information, productivity tools, and applications regardless of their environment or smart devices like laptops, PDA's, BlackBerries, and phones.

Step 1 Arrange the visit

Locate a school in the area and make arrangements for a site visit. Then schedule an interview with the person responsible for the school or district computer network.

- a. Name of the school:

- b. Person Contacted:

Step 2 Document the existing network

- a. Summarize the existing computer network available for student access at this school. A good place to start may be the access available in the library.

Step 3 List the educational initiatives relating to WLANs

- a. List any planned future enhancements to this network:

- b. How much of the future enhancements involve additional cabling? Are classrooms cabled for network access? Is there an outdoor study area that student's use that could benefit from a wireless hotspot?

Step 4 Determine the user needs

- a. Determine how many additional users are expected to utilize the wired network.

This will help determine the amount of APs that will be needed to service the users. For example, using the 2.4 GHz range, estimate one AP per 10-15 users and three APs per cell area for normal bandwidth users. This allows approximately 30 to 45 students per cell coverage. In the 5 GHz range, four APs can be colocated in one area and possibly up to 12, but heavy bandwidth users should stay with a wired network.

Step 5 Prepare and estimate

- a. Prepare a rough estimate of the project cost. Include labor, equipment, and supplies. Create a separate spreadsheet of WLAN devices and accessories to be ordered.

Step 6 Develop a proposed WLAN solution for this school

The following information should be included in the WLAN solution for the school:

- Frequency range spectrum chosen and the reason
- Total number of APs
- Type of antenna
- How to secure access to the WLAN
- Budget
- Installation Schedule
- Total cost for the WLAN deployment
- Pros and cons of the WLAN solution
- Conclusion

Step 7 Present the proposal

Present the proposal to the classroom in a PowerPoint presentation.