

Exercise: Expanding the network layout

Introduction

So far, you've learned how to establish a physical network for a business and about the various activities associated with it. And you've explored how data is transmitted across a network and the layered architecture of the OSI and TCP/IP models.

In this activity, you will put this knowledge to work by adding Wi-Fi technology to expand the physical topology for a small business. On completion of this exercise, you will have gained some understanding of the factors that must be taken into account when expanding a network topology.

Case study

Sam is excited about the pace at which the ice cream business has recently been growing. Of course, the technology needs are growing too. Sam just hired a shop manager and an additional counter attendant to cope with the increase in demand. Sam wants employees to access the network from anywhere in the shop, not just wired network points in the office. The new staff is supplied with mobile devices to connect to the network wirelessly.

You are tasked to advise Sam on the additional technology she needs and implement it once purchased. You need to update the previous physical diagram and expand it to include the new devices that will be installed.

Instructions

Step 1: Identify additional equipment needs

Begin by making a list of all the additional equipment needed to expand Sam's business to support the need presented in the case study. Keep in mind what device/s will allow additional staff to join the network and work wirelessly.

Step 2: Construct a diagram

Once you've identified the equipment needs, it's time to demonstrate how everything works together. Using a mind-mapping tool (or pen and paper if you prefer), expand the network topology from the exercise in Week 1, Lesson 2.

Step 3: Identity and list protocols

With the expanded network topology in place, identify and list the two protocols that support the network at the network access layer of the TCP/IP suite to improve communication between employees.

Conclusion

This exercise allowed you to consider the technology needs of a small business that is expanding to include wireless connectivity. You've gained experience planning an expanded network to support new users and have demonstrated the practical use of the protocols that you have learned about.