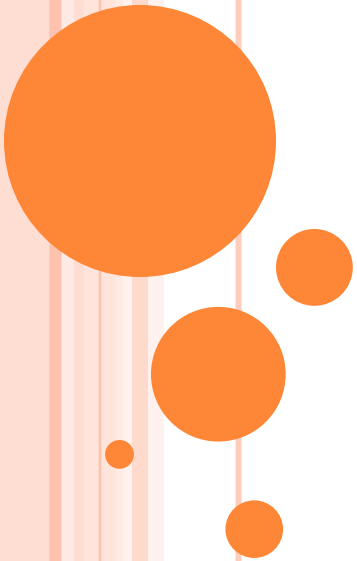

Access Points

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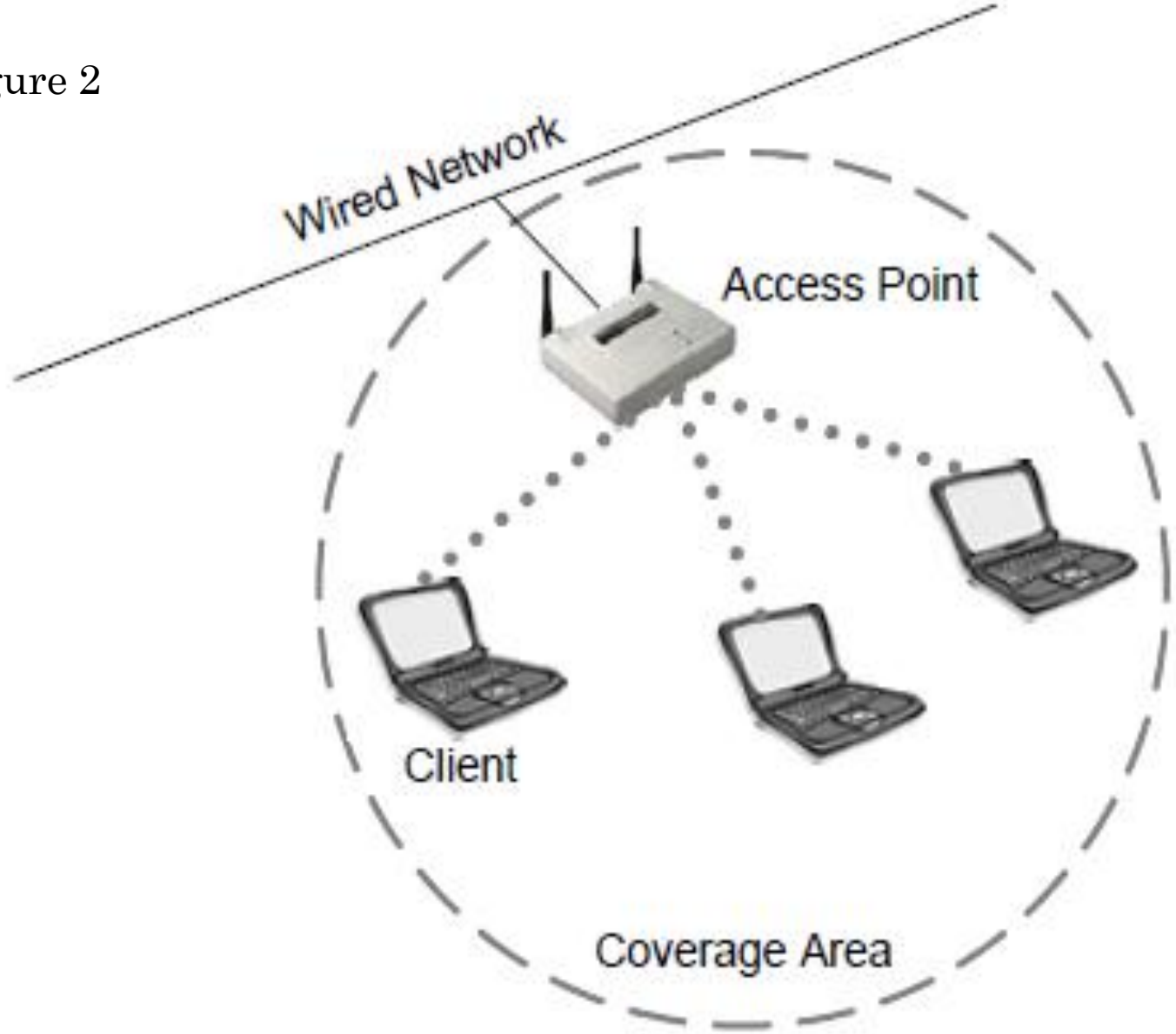
- The access point, or “AP”, is probably the most common wireless LAN device with which you will work as a wireless LAN administrator. As its name suggests, the access point provides clients with a point of access into a network. An access point is a half-duplex device with intelligence equivalent to that of a sophisticated Ethernet switch. Figure 1 shows an example of an access point, while Figure 2 illustrates where an access point is used on a wireless LAN.

Figure 1

Figure 2



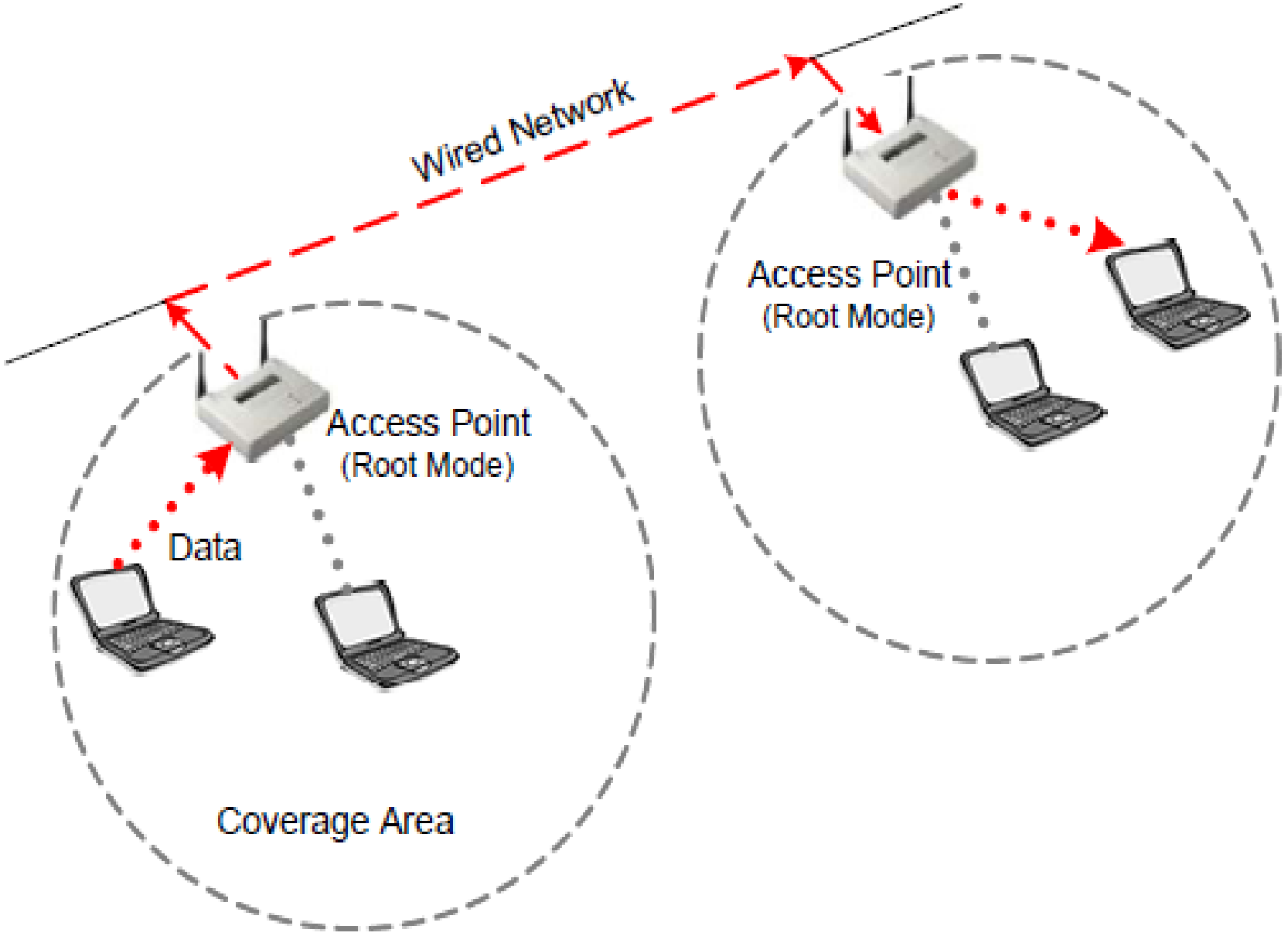
Access Point Modes

- Access points communicate with their wireless clients, with the wired network, and with other access points. There are three modes in which an access point can be configured:
- Root Mode
- Repeater Mode
- Bridge Mode

Root Mode

- Root Mode is used when the access point is connected to a wired backbone through its wired (usually Ethernet) interface. Most access points that support modes other than root mode come configured in root mode by default. When an access point is connected to the wired segment through its Ethernet port, it will normally be configured for root mode. When in root mode, access points that are connected to the same wired distribution system can talk to each other over the wired segment. Access points talk to each other to coordinate roaming functionality such as re-association. Wireless clients can communicate with other wireless clients that are located in different cells through their respective access points across the wired segment, as shown in Figure 3.

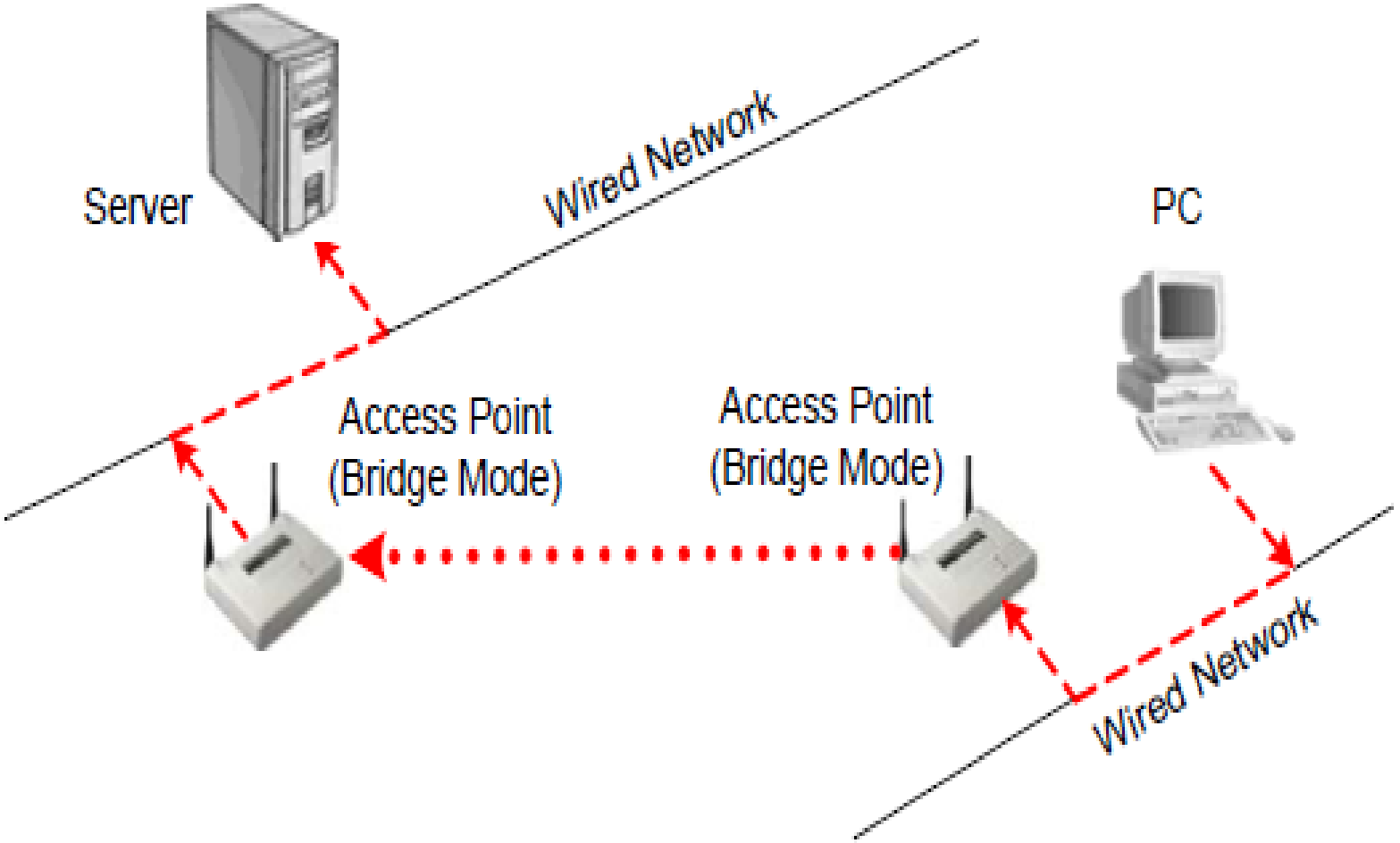
An access point in root mode



Bridge Mode

- A wireless bridge provides connectivity between two wired LAN segments, and is used in point-to-point or point-to-multipoint configurations. A wireless bridge is a half-duplex device capable of layer 2 wireless connectivity only. Only a small number of access points on the market have bridge functionality, which typically adds significant cost to the equipment, clients do not associate to bridges, but rather, bridges are used to link two or more wired segments together wirelessly.

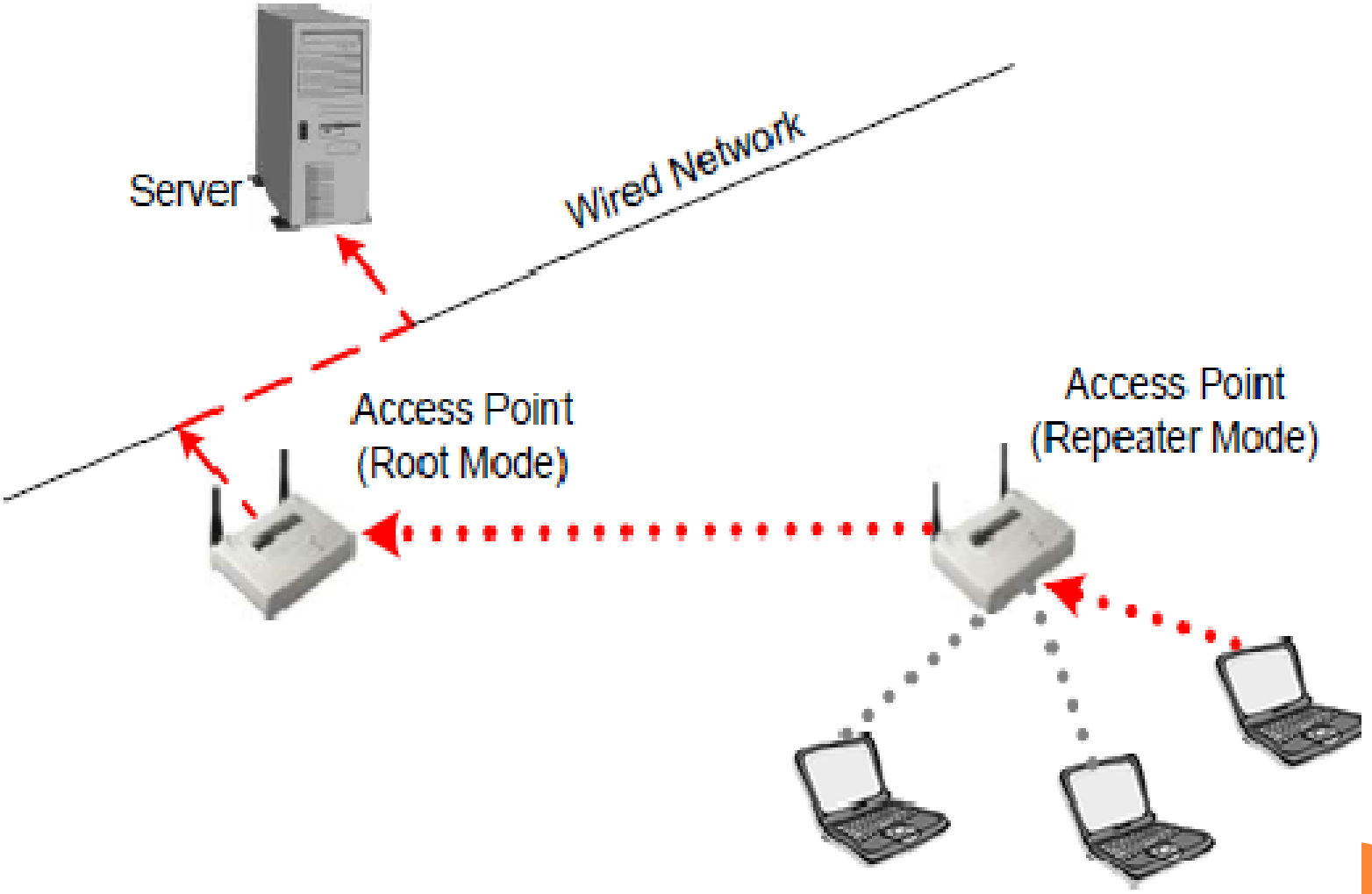
An access point in bridge mode



Repeater Mode

- In repeater mode, access points have the ability to provide a wireless upstream link into the wired network rather than the normal wired link. As you can see in Figure 4.5, one access point serves as the root access point and the other serves as a wireless repeater. The access point in repeater mode connects to clients as an access point and connects to the upstream root access point as a client itself. Using an access point in repeater mode is not suggested unless absolutely necessary because cells around each access point in this scenario must overlap by a minimum of 50%.

An access point in repeater mode



Access Points Common Options

The most common of these options are:

- Fixed or Detachable Antennas
- Advanced Filtering Capabilities
- Varied Types of Wired Connectivity

Fixed or Detachable Antennas

- Depending on your organization or client's needs, you will need to choose between having an access point with fixed (meaning non-removable) antennas or detachable antennas. An access point with detachable antennas gives you the ability to attach a different antenna to the access point using whatever length of cable you require. For example, if you needed to mount the access point inside, and give outdoor users access to the network, you could attach a cable and an outdoor antenna directly to the access point and mount only the antenna outside.

Advanced Filtering Capabilities

- MAC or protocol filtering functionality may be included on an access point. Filtering is typically used to screen out intruders on your wireless LAN. As a basic security provision, an access point can be configured to filter out devices that are not listed in the access point's MAC filter list, which the administrator controls.
- Protocol filtering allows the administrator to decide and control which protocols should be used across the wireless link.

Varied Types of Wired Connectivity

- Connectivity options for an access point can include a link for 10baseTx, 10/100baseTx, 100baseTx, 100baseFx, token ring, or others. Because an access point is typically the device through which clients communicate with the wired network backbone, the administrator must understand how to properly connect the access point into the wired network. Proper network design and connectivity will help prevent the access point from being a bottleneck and will result in far fewer problems due to malfunctioning equipment.

Thanks