

Introduction to Wireless LAN

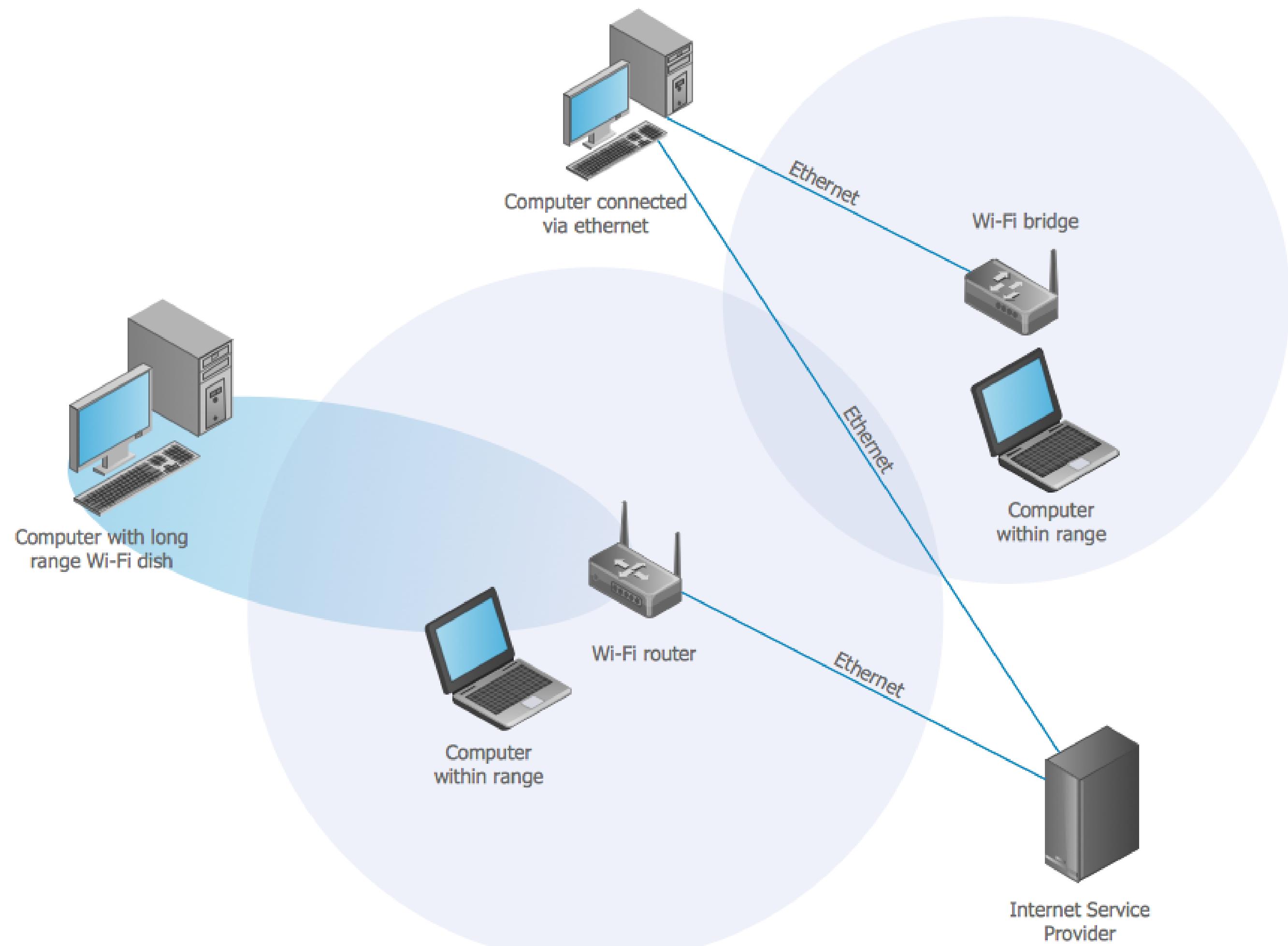


What is WLAN?

A wireless local area network (WLAN) is a group of colocated computers or other devices that form a network based on radio transmissions rather than wired connections.

A Wi-Fi network is a type of WLAN





Benefits of WLAN....

Extended reach: WLANs enable computing to happen anywhere, even when carrying high data loads and advanced web applications.

Device flexibility: A WLAN supports use of a wide range of devices, such as computers, phones, tablets, gaming systems, and IoT devices.

Easier installation and management: A WLAN requires less physical equipment than a wired network, which saves money, reduces installation time.

Scalability: Easily scalable. Adding users is as simple as assigning login credentials.

Network management: Nearly all management of a WLAN can be handled virtually.

Drawback of WLAN....

Slower bandwidth: Wireless LANs offer slower speeds than wired connections.

Security risk: Wireless LANs are vulnerable to unauthorized access.

Limited capacity: Wireless networks can't handle many connections.

Higher cost: Wireless setups are more expensive than wired ones.

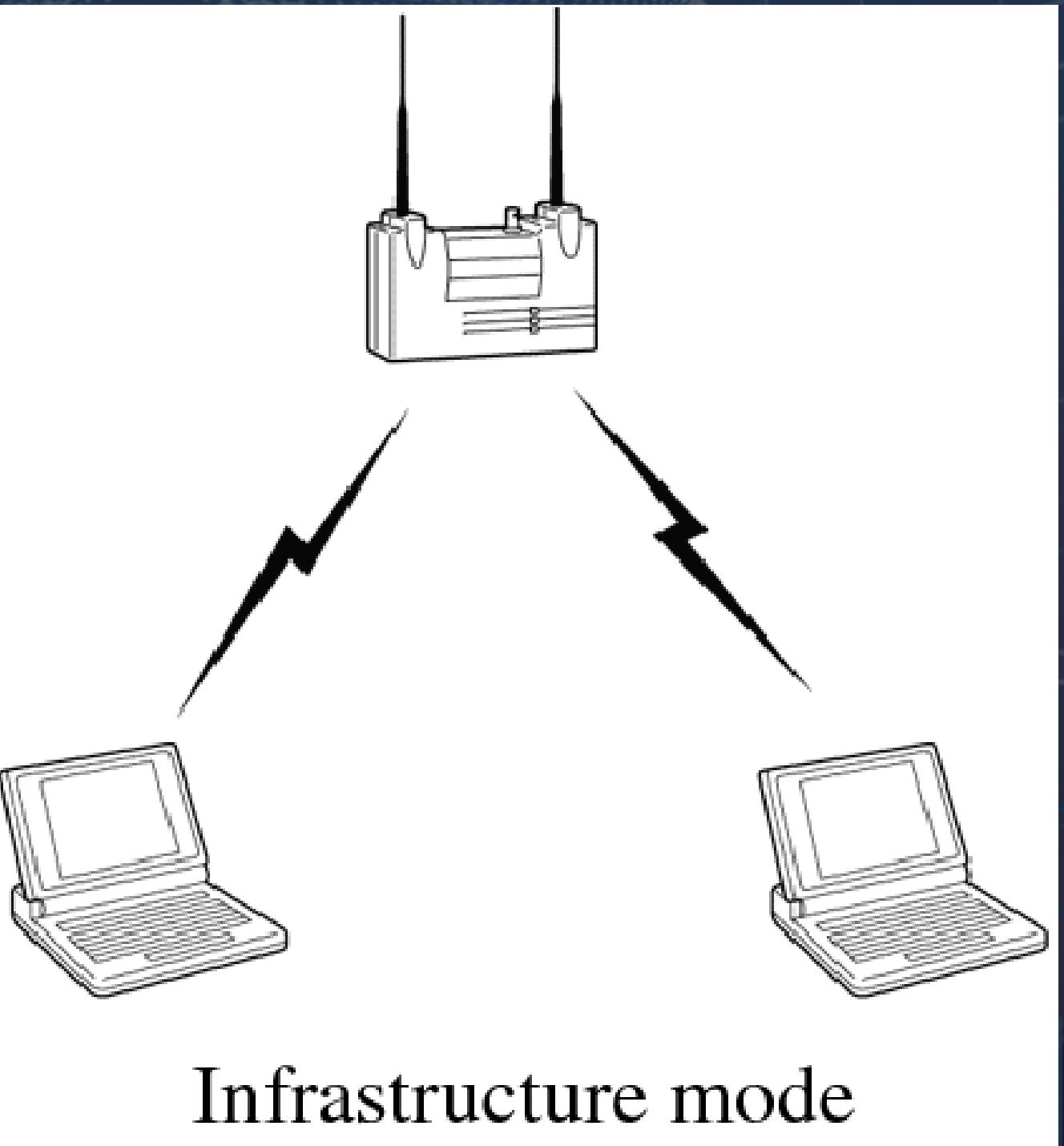
Health concerns: Wireless devices emit potentially harmful RF radiation.

How is a WLAN created?

A WLAN can be configured in one of two ways:

Infrastructure

- A home or office Wi-Fi network is an example of a WLAN set up in infrastructure mode. The endpoints are all connected and communicate with each other through a base station, which may also provide internet access.
- A basic infrastructure WLAN can be set up with just a few parts: a wireless router, which acts as the base station, and endpoints, which can be computers, mobile devices, printers, and other devices



Ad hoc

- In this setup, a WLAN connects endpoints such as computer workstations and mobile devices without the use of a base station. Use of Wi-Fi Direct technology is common for an ad hoc wireless network. An ad hoc WLAN is easy to set up and can provide basic peer-to-peer (P2P) communication.
- An ad hoc WLAN requires only two or more endpoints with built-in radio transmission, such as computers or mobile devices. After adjusting network settings for ad hoc mode, one user initiates the network and becomes visible to the others.

