

Concepts of Internet

1.- What is the bandwidth?

The maximum amount of data transmitted over an internet connection in a given amount of time. You can think of bandwidth as a highway with cars, the highway is the network connection and the cars the data. The wider the highway the more cars can travel on it at the same time and therefore the faster they get to their destination.

2.- How to measure the bandwidth?

While bandwidth is traditionally expressed in bits per second (bps), modern network links now have far greater capacity, which is why bandwidth is now more often expressed as Mbps or Gbps.

3.- Why is bandwidth not the same as speed?

Bandwidth refers more to capacity, and speed is the transfer rate. This transfer rate is calculated by dividing the total amount of data sent by the total amount of time the data traveled.

In other words, Internet bandwidth is about how much data can be downloaded or uploaded from your computer, while internet speed is how fast can the data be uploaded or downloaded on your computer.

4.- Why is it important?

It is important because multiple devices using the same connection must share bandwidth. Although speed and bandwidth are not interchangeable, greater bandwidth is essential to maintain tolerable speeds on multiple devices.

5.- Symmetrical vs Asymmetrical

Symmetric bandwidth: means the data capacity is the same in both directions.

Asymmetric bandwidth: Is the opposite, download and upload capacity are not equal, In asymmetrical connections, upload capacity is typically smaller than download capacity, this is common in consumer-grade internet broadband connections.

6.- Types of connections:

https://www.youtube.com/watch?v=gQYiwmamq38&ab_channel=PowerCertAnimatedVideos

- Cable

Through use of a cable modem, users can access the Internet over cable TV lines (coaxial cable).

- DSL (Digital Subscriber Line)

It uses an existing 2-wire copper telephone line connected to one's home so service is delivered at the same time as landline telephone service. Customers can still place calls while surfing the Internet.

- Fiber

Fiber connections are a type of broadband connection that uses optical fiber cables for connection. Fiber optics broadband supports higher bandwidth and speed that ensures faster cloud access. Fiber optic cables are very fragile and can be damaged easily, so installation and maintenance of fiber optics broadband are difficult. It is more expensive than other types of broadband connections.

- Fixed wireless connection

You'll receive internet from a cell tower that's typically within ten miles of your home or business.

- Satellite Connection

This type of connection is provided mainly in rural areas where a broadband connection is not yet offered. It is composed of 3 elements: a geostationary satellite orbiting Earth, the satellite dish, and the modem.

7.- Dedicated Links

Refers to a service where a provider dedicates a specific amount of bandwidth for that connection. Whereas a shared internet service, also known as broadband, is a shared network, amongst many different users in an area. Cable and DSL Internet connection are a form of broadband access.

