UNIT 10 CN

What Is subnet:

a part of a larger network such as the Internet.

A subnet is a small network inside a larger network. It is a logical grouping of connected network devices that tend to be located in close physical proximity to each other on a local area network—a [LAN](https://www.lifewire.com/local-area-network-816382)

**What Is Subnetting?**

Subnetting is the process of dividing a network into two or more subnets. An IP address has numbers that identify the network ID and the host ID. A subnet address borrows some of the bits from the host ID of the IP address. Subnetting is largely invisible to computer users who aren't also network administrators.

### Advantages of Using Subnets

* Network performance and speed improve.
* Network congestion is reduced.
* Data delivery is more efficient.
* An organization can take full advantage of the network's capacity.
* Network security improves.
* Administration eases.
* Troubleshooting can be limited to a subnet rather than the entire network

Separation between different departments in an organization is maintained

### Why Use Subnetting?

**Conservation of IP addresses:** Imagine having a network of 20 hosts. Using a Class C network will waste a lot of IP addresses (254-20=234). Breaking up large networks into smaller parts would be more efficient and would conserve a great amount of addresses.

**Reduced network traffic:** The smaller networks created the smaller broadcast domains are formed hence less broadcast traffic on network boundaries.

**Simplification:** Breaking large networks into smaller ones could simplify fault troubleshooting by isolating network problems down to their specific existence.