01. Introduction

- **Network Edge** - Hosts (Clients and servers)
- **Access Networks** - Wired and wireless communication links
- **Network Core** - Network of interconnected routers

Network Core

Packet-Switching

- Host breaks messages into packets of L bits
- Transmits packets into access network at transmission rate R (aka Link bandwidth, capacity)

$$\text{Packet Transmission Delay} = \frac{\text{Packet Size (bits)}}{\text{Transmission Rate (bits/sec)}}$$

- **Store and Forward** - Entire packet must arrive at router before being transmitted to next link
- **Queueing and Loss** - If Arrival Rate $>$ Transmission Rate, packets will queue and can be dropped if queue fills up
- **Routing** - Determines