

Lecture 1

01/05/2018 [T]

Chapter 1.1 - What is the Internet

The internet is the world's largest network system.

Technical Viewpoint

- A **host** or **end system** is a device, usually a computer, in a network which offers *information, services, or applications* to users.
- Communication is done through *links* such as: *fiber, copper, radio, satellite...*
- **Bandwidth** is the transmission rate across the link.
- Data is transmitted via **packet switching**, where they are forwarded in chunks called *packets*.
 - Data is received by **network nodes**, which are usually *routers* or *switches*.
- **Internet**: A "network of networks."
 - Interconnected ISPs (Internet Service Providers).
- **Protocols** control *sending* and *receiving* of messages.
 - **Ex.** *TCP, IP, HTTP, Skype, 802.11*
- The internet has *standards*:
 - *Request for Comments (RFC)*: A publication from the *Internet Engineering Task Force (IETF)* which describes behaviours and methods for making the Internet and connected systems work.

Service Viewpoint

- The internet is an infrastructure that provides *services* to applications.
 - **Ex.** *Web, VoIP, email, games...*

- It provides *programming interfaces* to apps.
 - Uses *hooks*, which allow the sending and receiving of application programs to "connect" to the internet.
- Must use a **socket interface**: A set of rules that programs must abide by to deliver and receive data.

What is a Protocol

- Human Protocols:
 - Questions (ex. "What is the time?")
 - Introductions
- Network Protocols:
 - Uses machines rather than humans
 - Communication activity in the Internet is governed by protocols.