Computer Networks Foundations

Computer Networks

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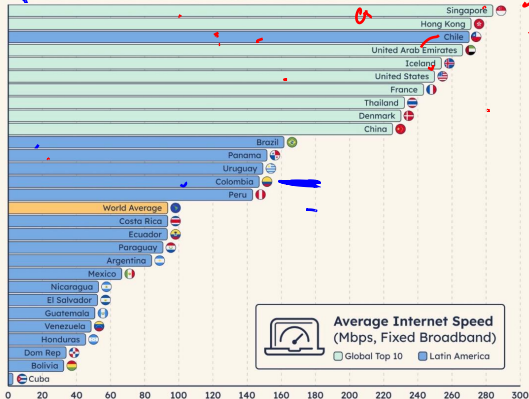
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Outline

1. Classification

2. Communication

3. Standard Models

4. Security

Outline

LATAM Internet Speed

Chile's internet speed is faster than yours

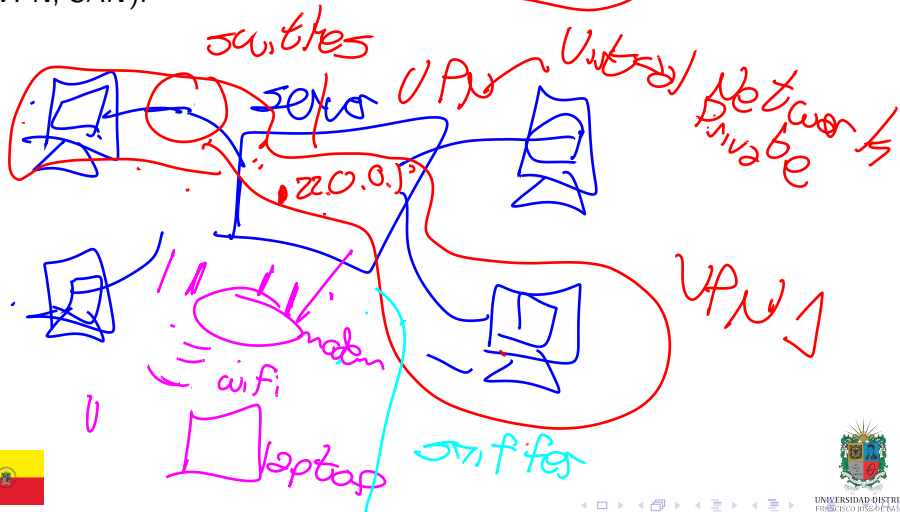**Average Internet Speed** (Mbps, Fixed Broadband)

Source: **speedtest.net**

Latinometrics

Basic Classification

Classification depends on geographical distribution or services shared (*VPN*, *SAN*).

Work Area Classification

Work area Classification depends on network size and geographical distribution. In this case, we have: PAN, LAN, MAN, and WAN.

PAN → Personal Area Network

LAN → Local Area Network

MAN → Medium Area Network

WAN → Wide area network

distancias

Network Topologies

Network Topology Types

1 Point to point
2 Bus
3 Ring
4 Star
5 Tree
6 Mesh
7 Hybrid

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Communication Models

Communication models must be choosed depending of domain needs.
Typical models are: *point-to-point*, *client-server*, and *publish-suscribe*.

Communication Standards

First at all, protocols are defined as set of standarized rules. There are two types of protocols: de facto and de jure.

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OSI Model

Open Systems Interconnection (OSI) model describes seven layers: *physical*, *data link*, *network*, *transport*, *session*, *presentation*, and *application*.

DoD Model

Department of Defense (DoD) model describes four layers: *application*, *transport*, *internet*, and *network access*.

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Networks Security

Protocol and standard compliance protects data, resources and networks. Important aspects here are: *interoperability*, *security baseline*, and *vulnerability management*.

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Thanks!

Questions?

Repo: *https://github.com/EngAndres/ud-public/tree/main/courses/computer-networking*