

CSCI 251

Systems and Networks

Introduction

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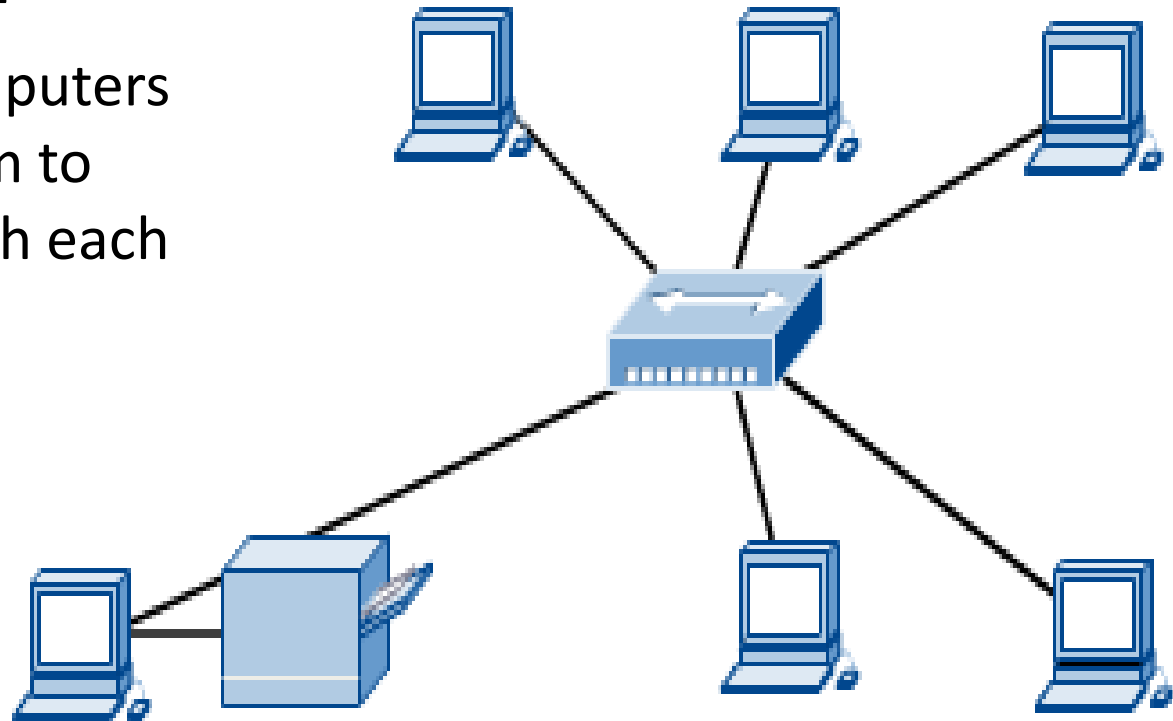
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Outline

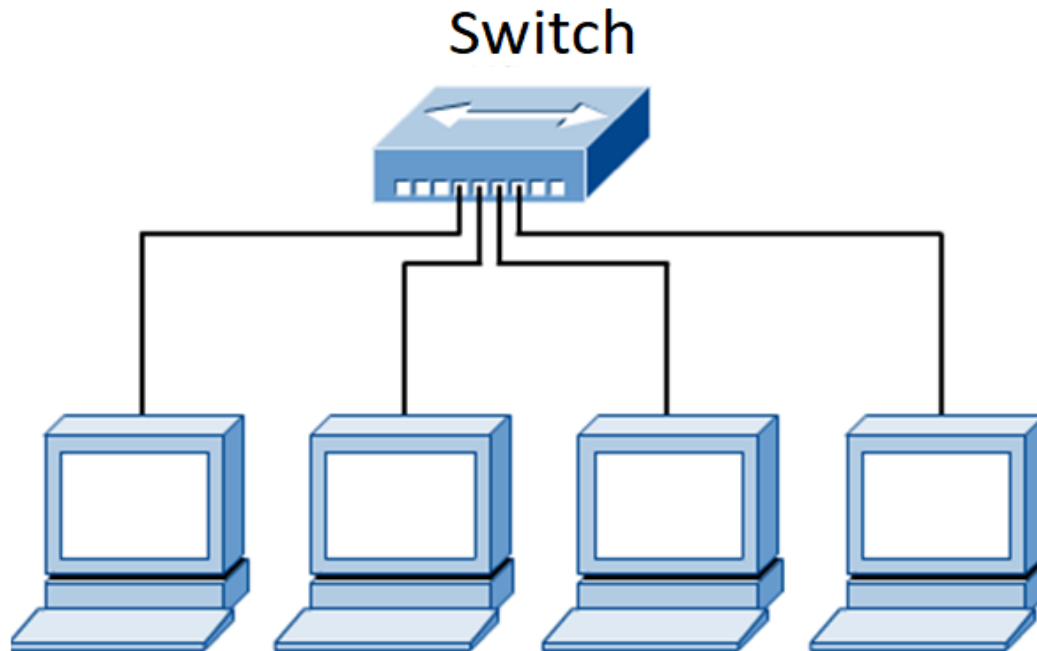
- Computer Network
- Types of networks
 - Wired and wireless
 - Local Area Network
 - Wide Area Network
 - Internetworks (Internet)
 - Virtual Private Network (VPN)

Computer Network

A Computer Network is a connectivity setup among a group of autonomous computers that enables them to communicate with each other.



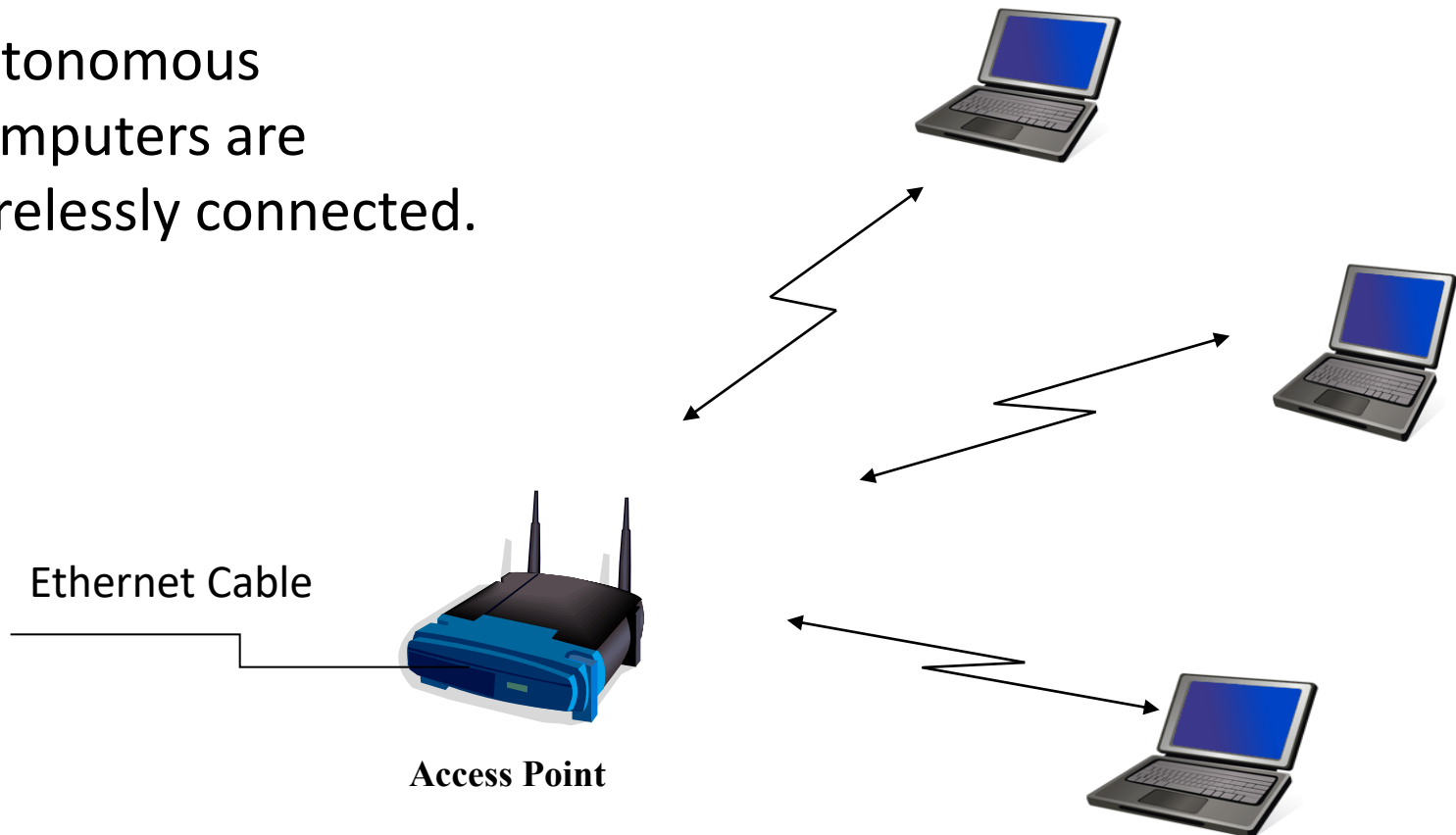
Wired Network



Autonomous Computers are physically connected through wires and network hardware, e.g., switch, hub etc.

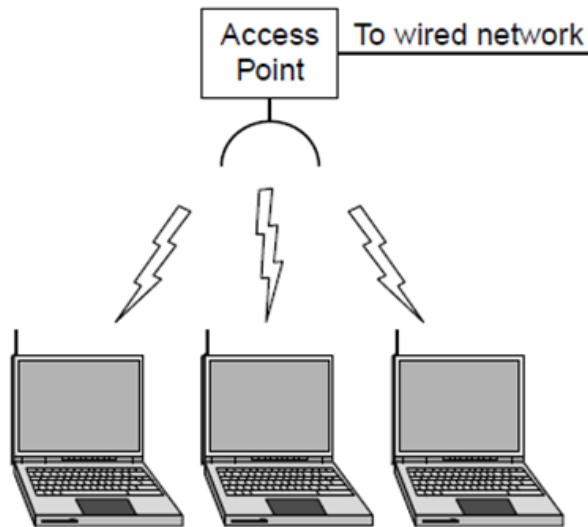
Wireless Network

Autonomous
Computers are
wirelessly connected.

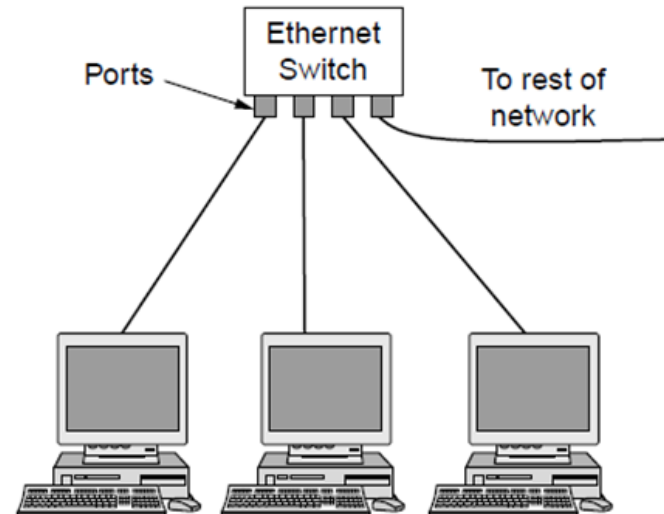


Local Area Networks

- Connect devices in a home, office building, or campus.
- Called enterprise network in a company



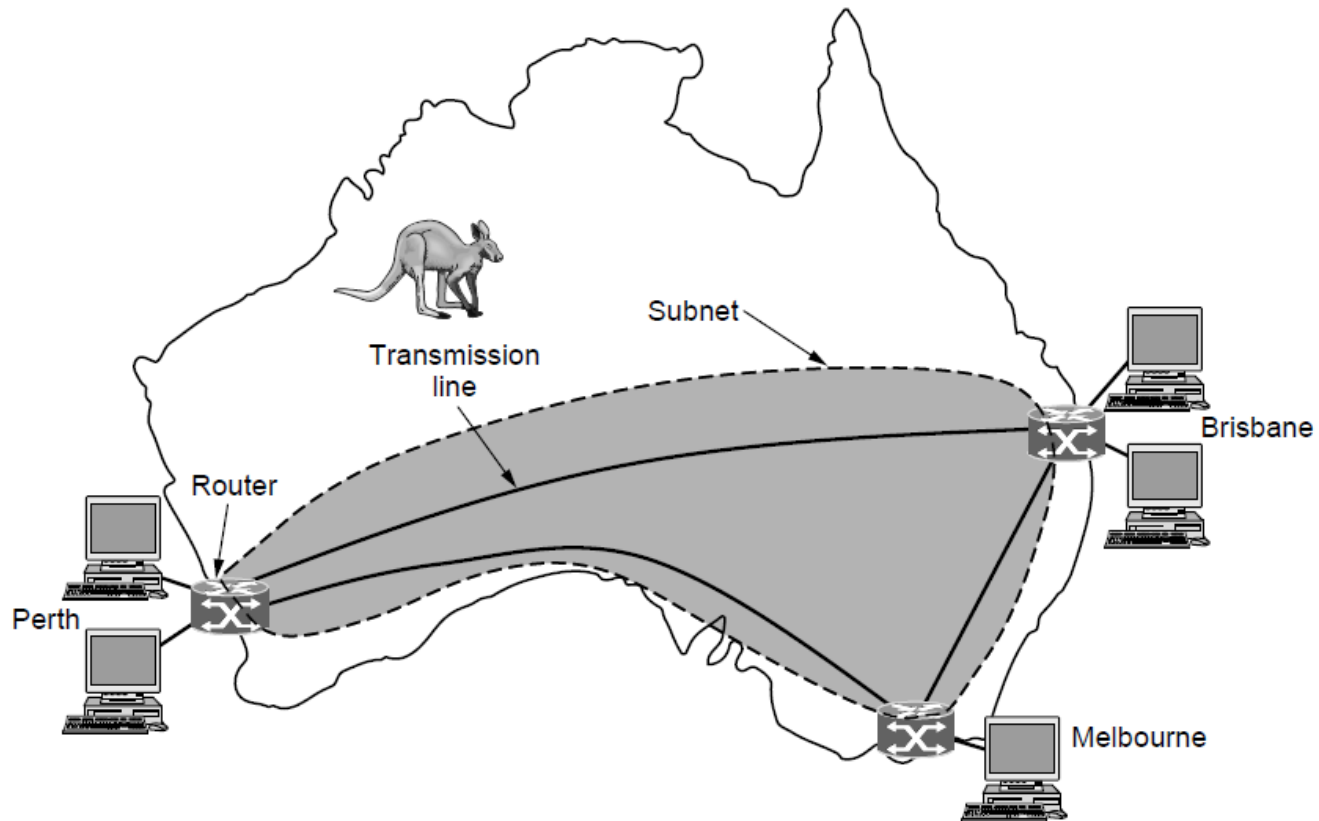
Wireless LAN
with 802.11



Wired LAN with
switched Ethernet

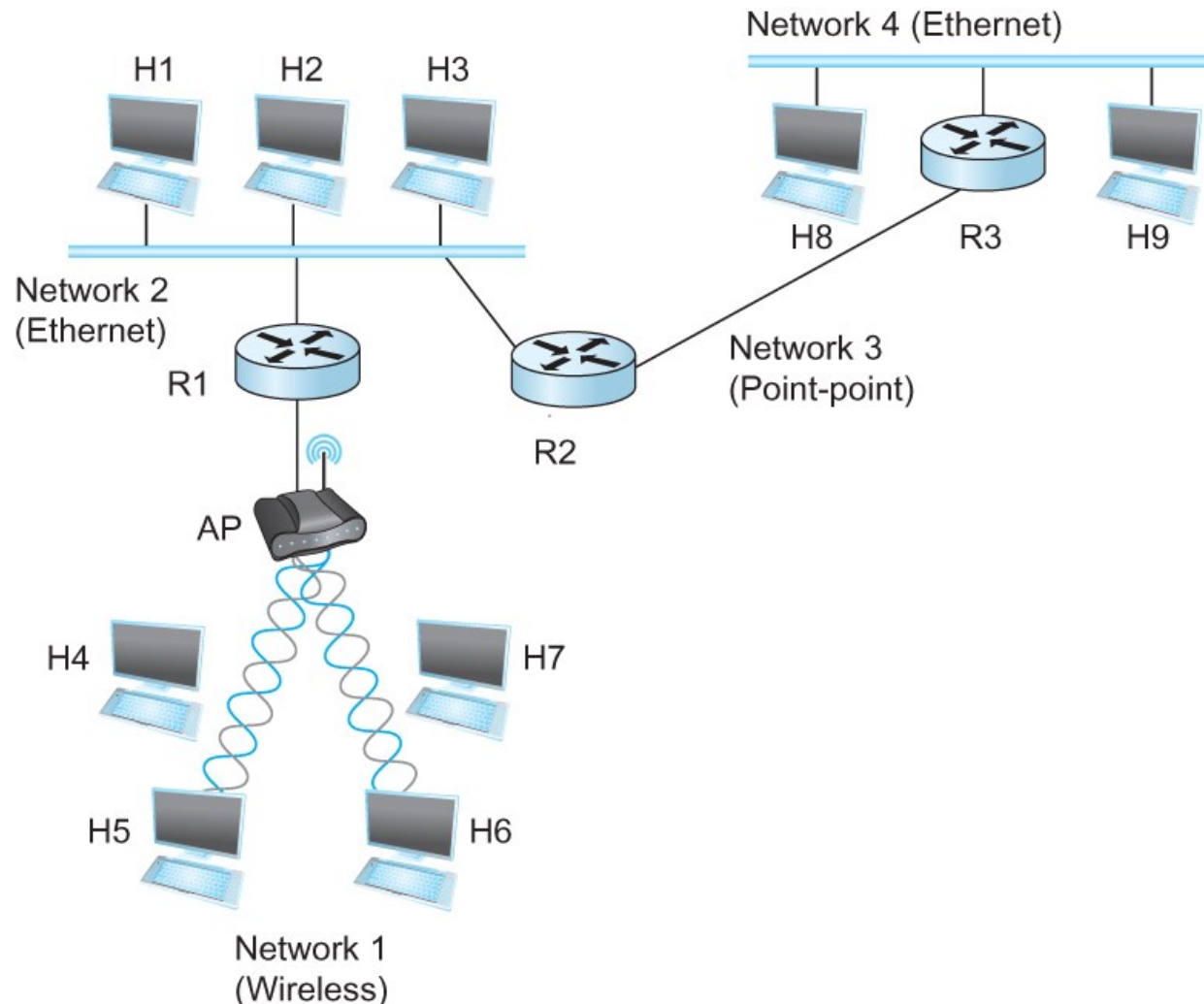
Wide Area Networks

- Connect devices over a country
- Example WANs connecting three branch offices:

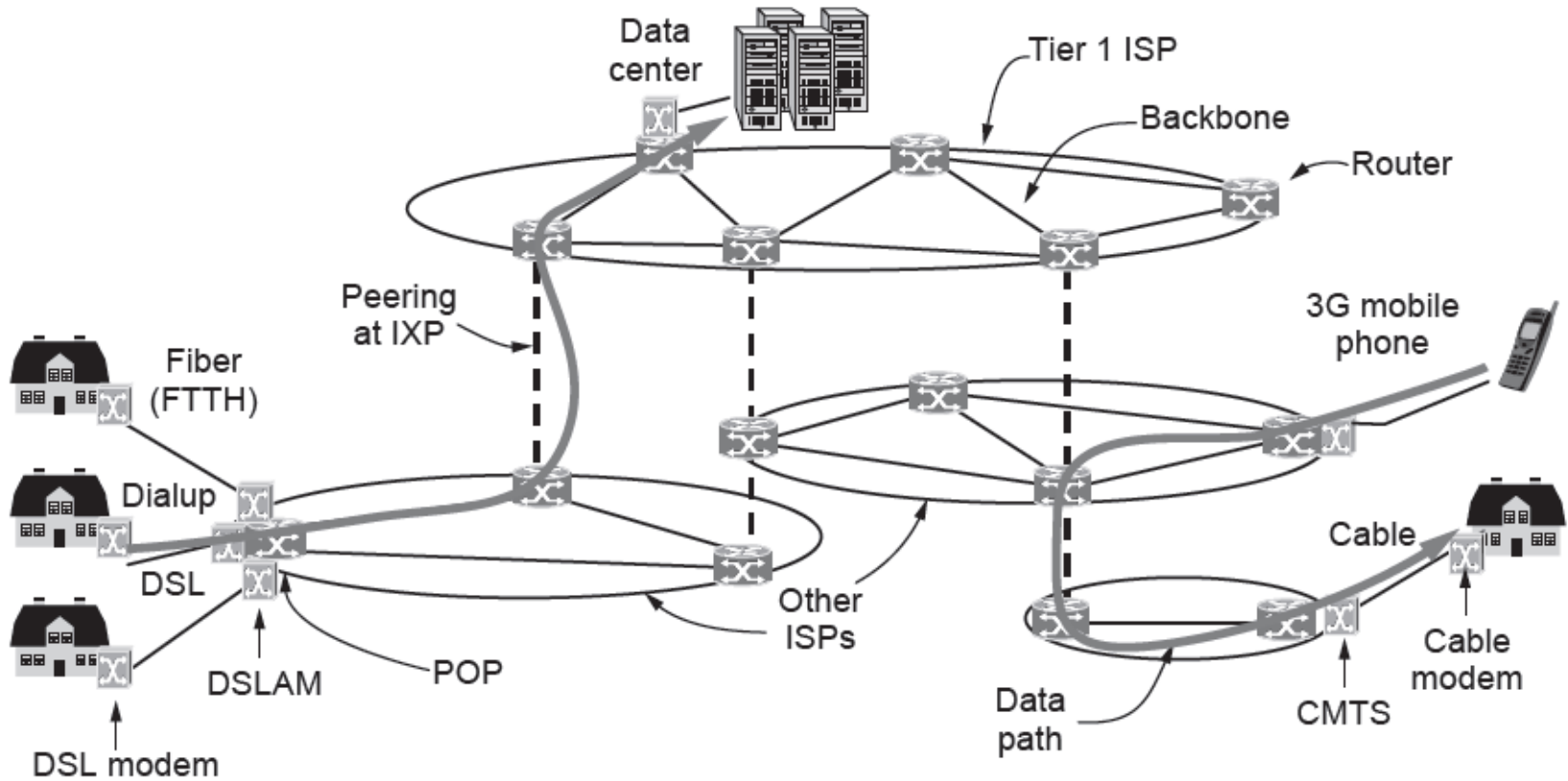


Internetworking

An arbitrary collection of networks interconnected to provide host-host to packet delivery service, i.e., a network of networks



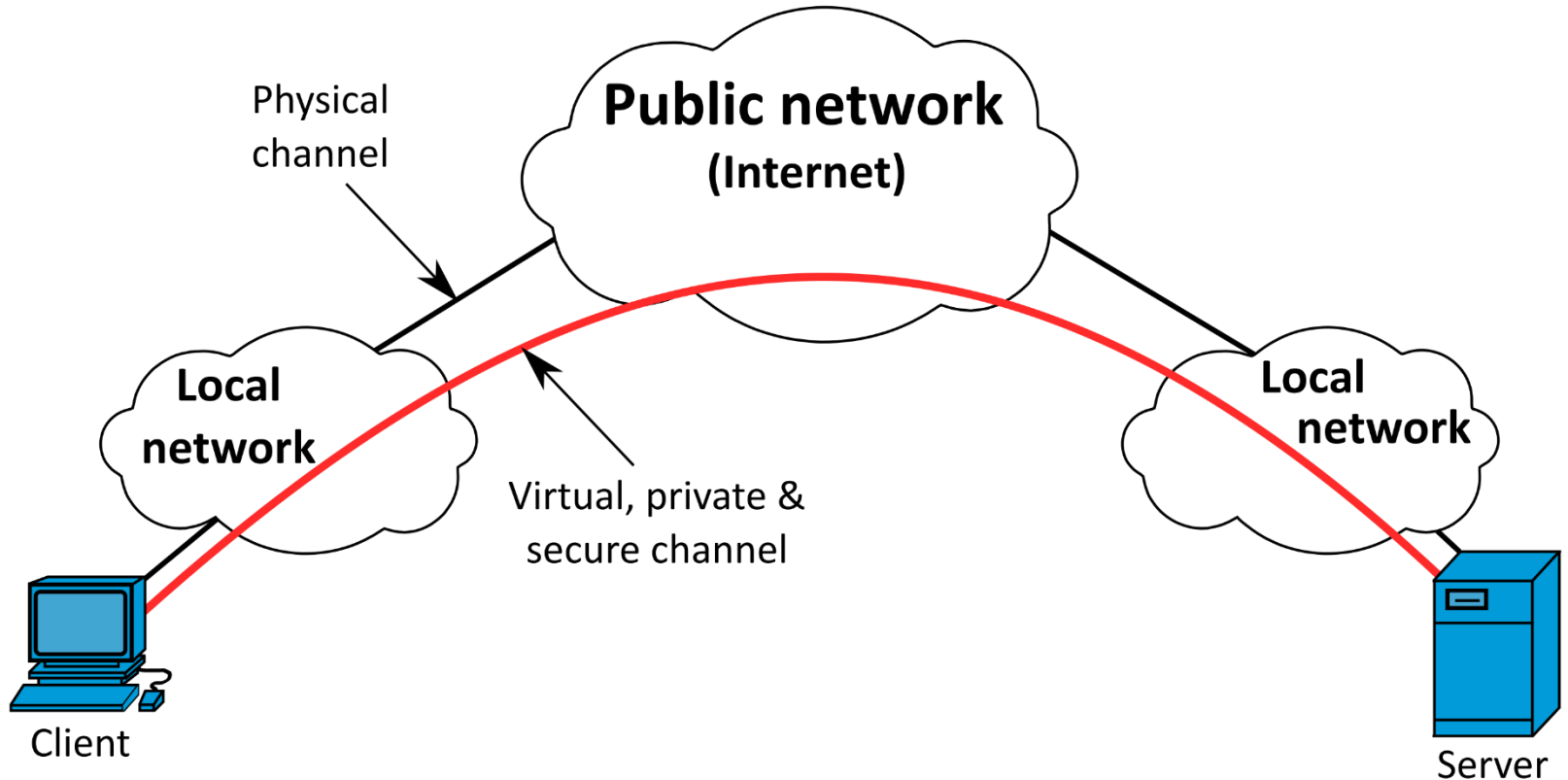
Internet



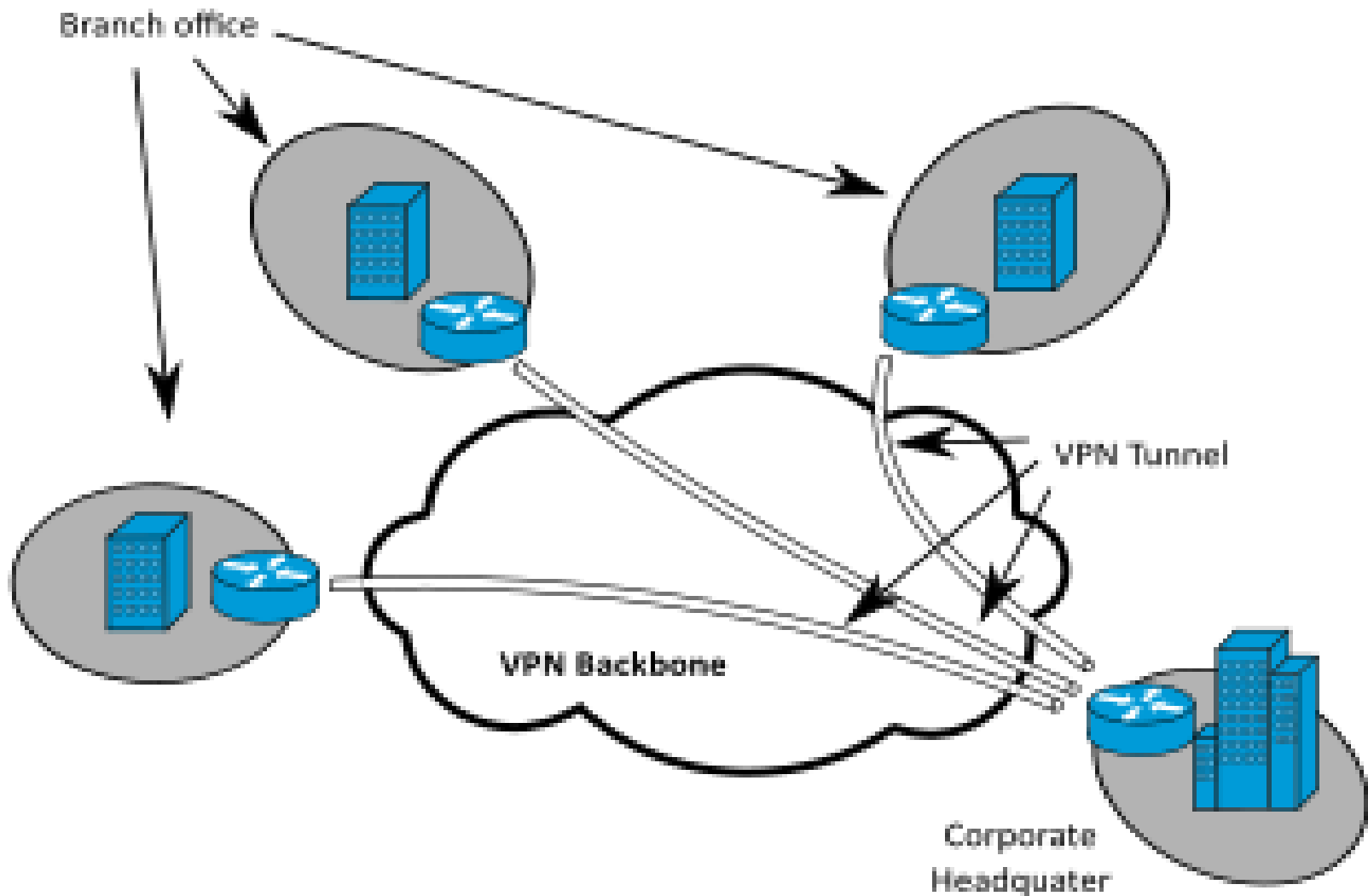
Architecture of the Internet

Virtual Private Network (VPN)

- A virtual private connection made through a public network
- Uses tunneling and encryption mechanisms



Virtual Private Network (VPN)



Summary

- What is computer network?
- Types of networks
 - Wired and wireless
 - Local Area Network
 - Wide Area Network
 - Internetworks (Intranet and Internet)