
Module 1

Introduction to Computer Network

What is DC?

Data Communication

Data communications (DC) is the **process** of using computing and communication technologies to **transfer data** from one place to another, and vice versa.

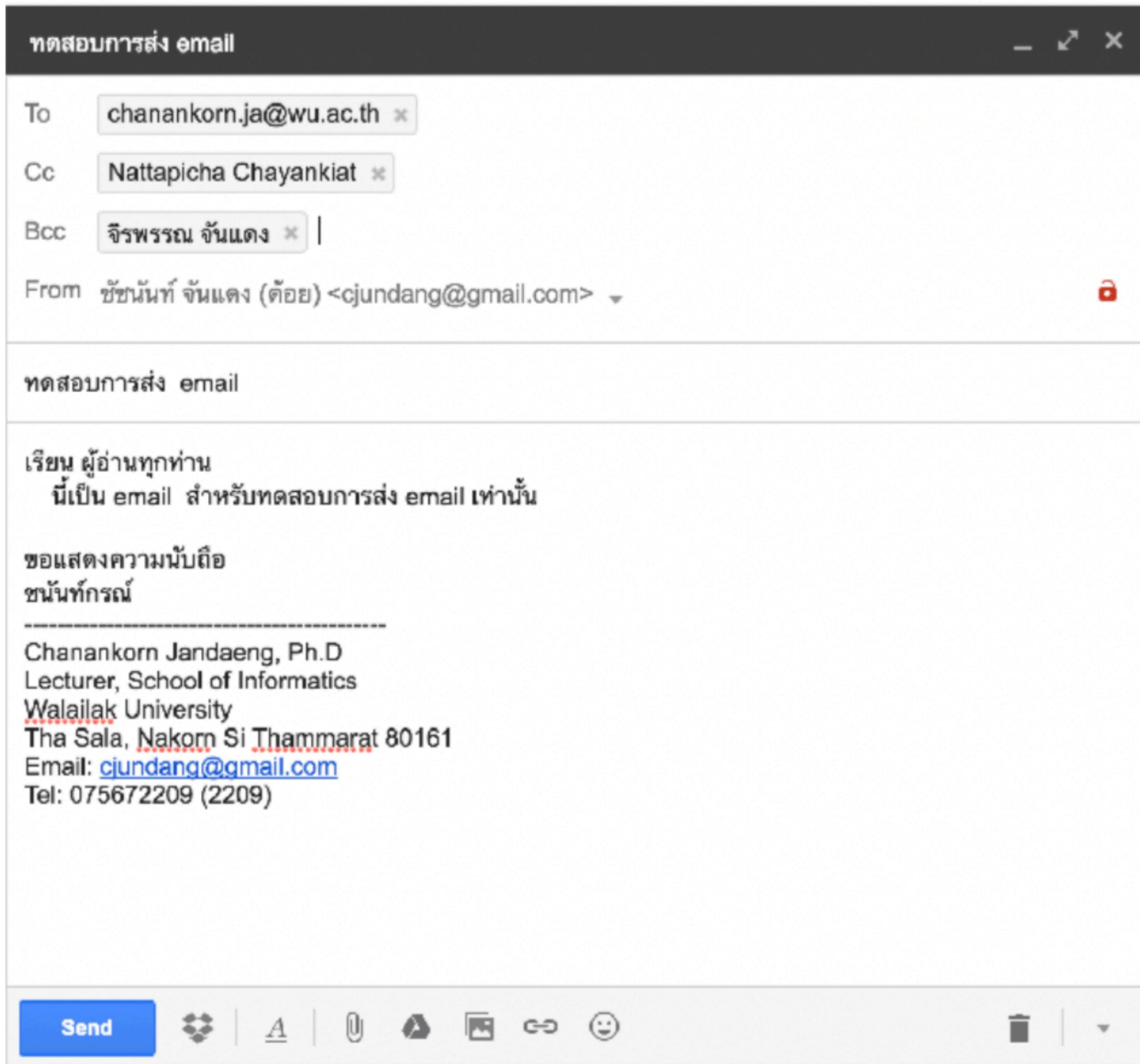
It enables the movement of **electronic** or **digital data** between two or more nodes, regardless of geographical location, technological medium or data contents.

Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

Applications

Email



Applications

Google

Gmail •

Compose

Inbox (39) Sent Mail Circles Friends Family (1) Acquaintances Following Lecturer Student

1–100 of 5,693

Agoda's Best Hotel Offers Hurry up, these weekend offers only last 48 hours! - Hot 6:13 pm

Ronnasak Wongverawatanak. Review papers - Aj. Toi krub, Here's my reviews krub. -- Regan 1:43 pm

Udemy Chanankorn, you've completed 75% of your course: ສ້າງ C 11:51 am

Tumblr These blogs? You'll like 5 of them - These blogs? You'll like ! 4:57 am

AISStatement AIS eStatement 084-997 6675 : 20/02/59 - 19/03/59 - INVOICE Mar 25

ECTI-CON 2016 ECTI-CON 2016 : Start TPC review process - Dear Technical F Mar 24

Jidtima Surkhamani กิจกรรมวิจัยวิชาการ ครั้งที่ 1/2559 - เรียนคณาจารย์ การสัมมนาวิจัยฯ Mar 23

Sunisa Khojeeul สอบสัมภาษณ์การรับนักศึกษาประจำปี 2559 ประจำห้องครุชอนที่ 4 - Mar 22

Email

Junk — Google (93 messages, 57 unread)

Mailboxes Inbox (52) Sent Flagged Drafts

Sort by Date

Popular in your network 3:50 PM ThaiPBS tweeted: ຂົບເທົ່າ ນັບ-ອອກ ລ... Popular in your network ThaiPBS @ThaiPBS ຂົບເທົ່າ ນັບ-ອອກ...

Engineering JournalJourn... 3:08 PM Thomson Reuters ResearcherID inde... ISSN: 2347-6662 We Apologize, If You Have Received Multiple Mails Int...

SILKSPAN 2:46 PM ເພີ້ມກຳນົດຫຼຸດໃຈ ປ່າຍຄວາມ 30 ວິນ 399... Is this email not displaying correctly? View it in your browser. This messag...

Twitter 2:26 PM Follow Leonids, JetBrains Česko and... Hey Dr.Chanankorn, Here are some

Conference Alerts March 18, 2559 BE at 3:35 PM CA

To: Chanankorn Jandaeng Governing Business Systems - BSLab - 4th INTERNATIONAL SYMPOSIUM

Governing Business Systems - Business Systems Laboratory - 4th INTERNATIONAL SYMPOSIUM 24th to 26th August 2016 Mykolas Romeris University- Vilnius, Lithuania

Submit your work today - submissions close Friday, April 15!

We welcome your extended abstract proposals. Become a part of the premier Business Systems forum for presenting your research at the 4th Business Systems Laboratory International Symposium.

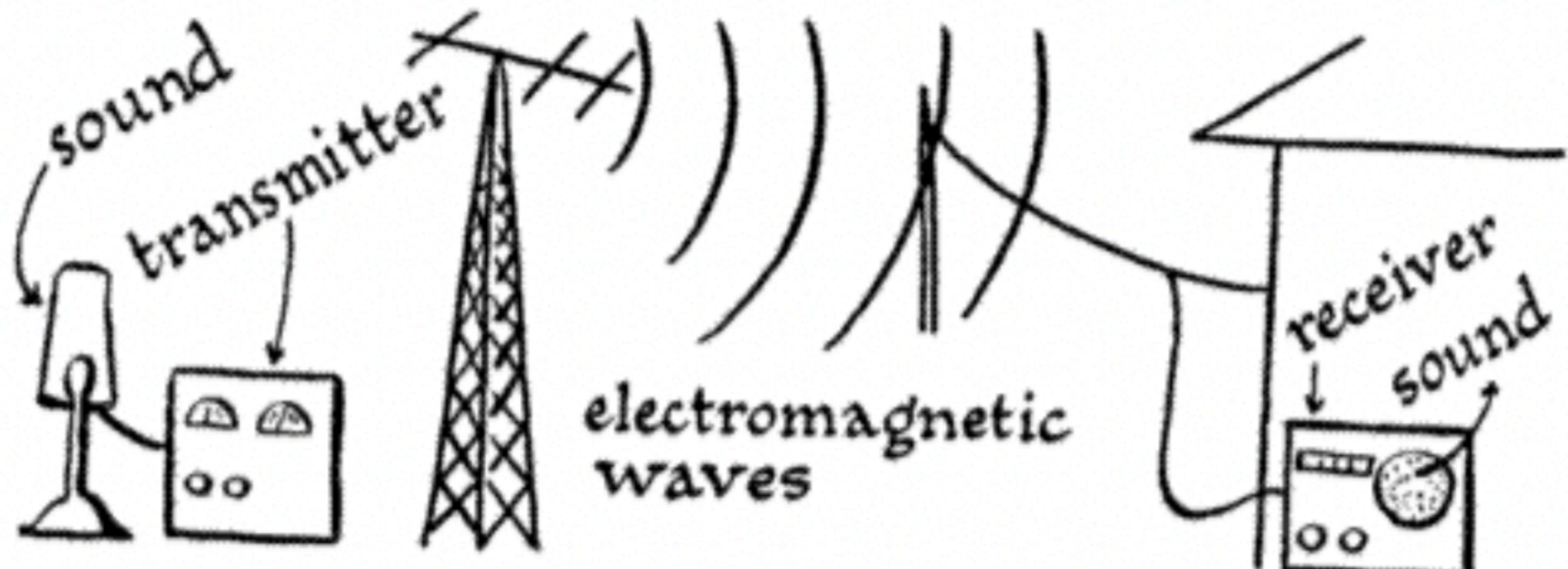
Submitting is easy, please follow instructions at the following link:

<http://bslab-lympia.net/4th-international-symposium-vilnius-2016/submissions/>

We hope to see you in Vilnius!

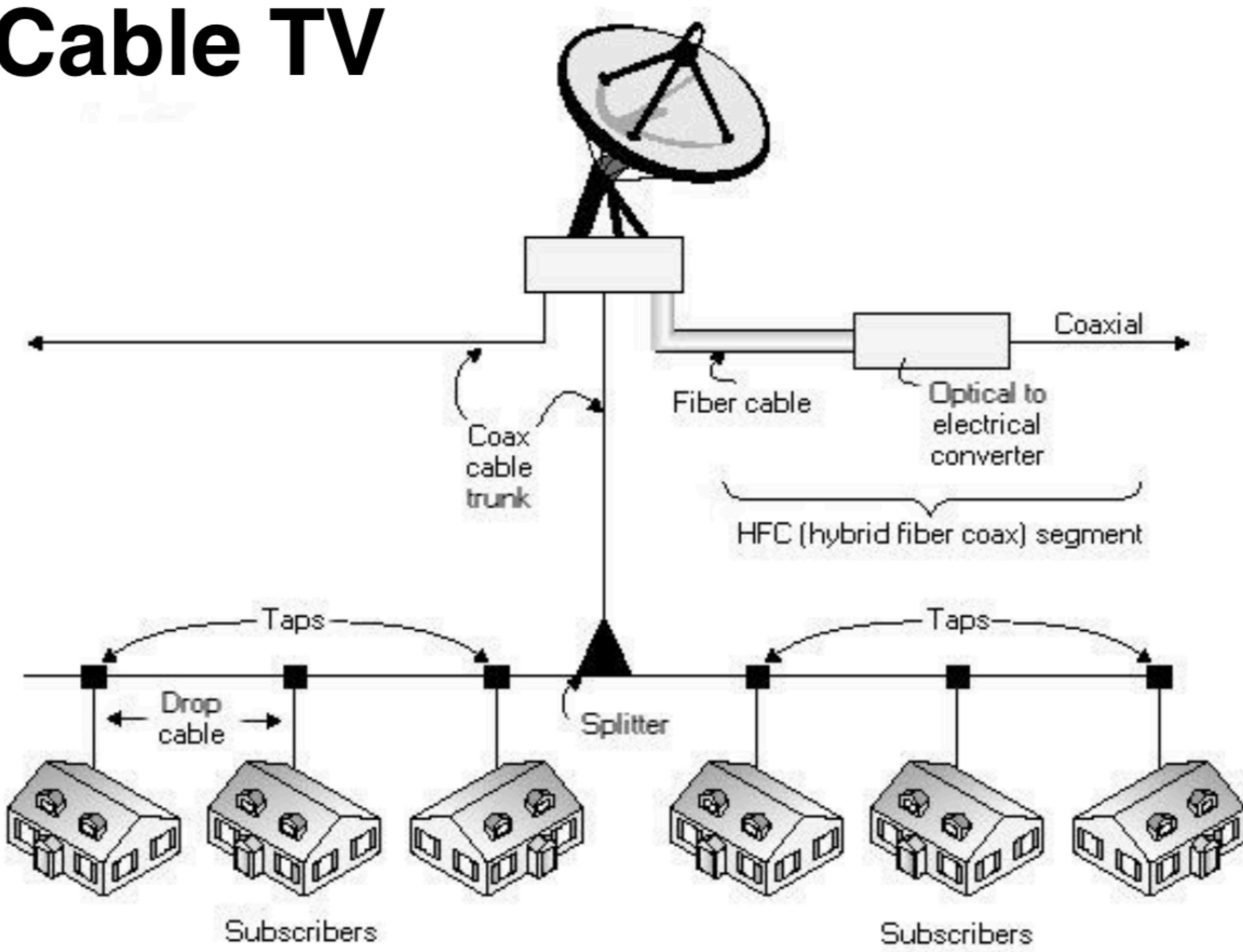
Applications

Radio



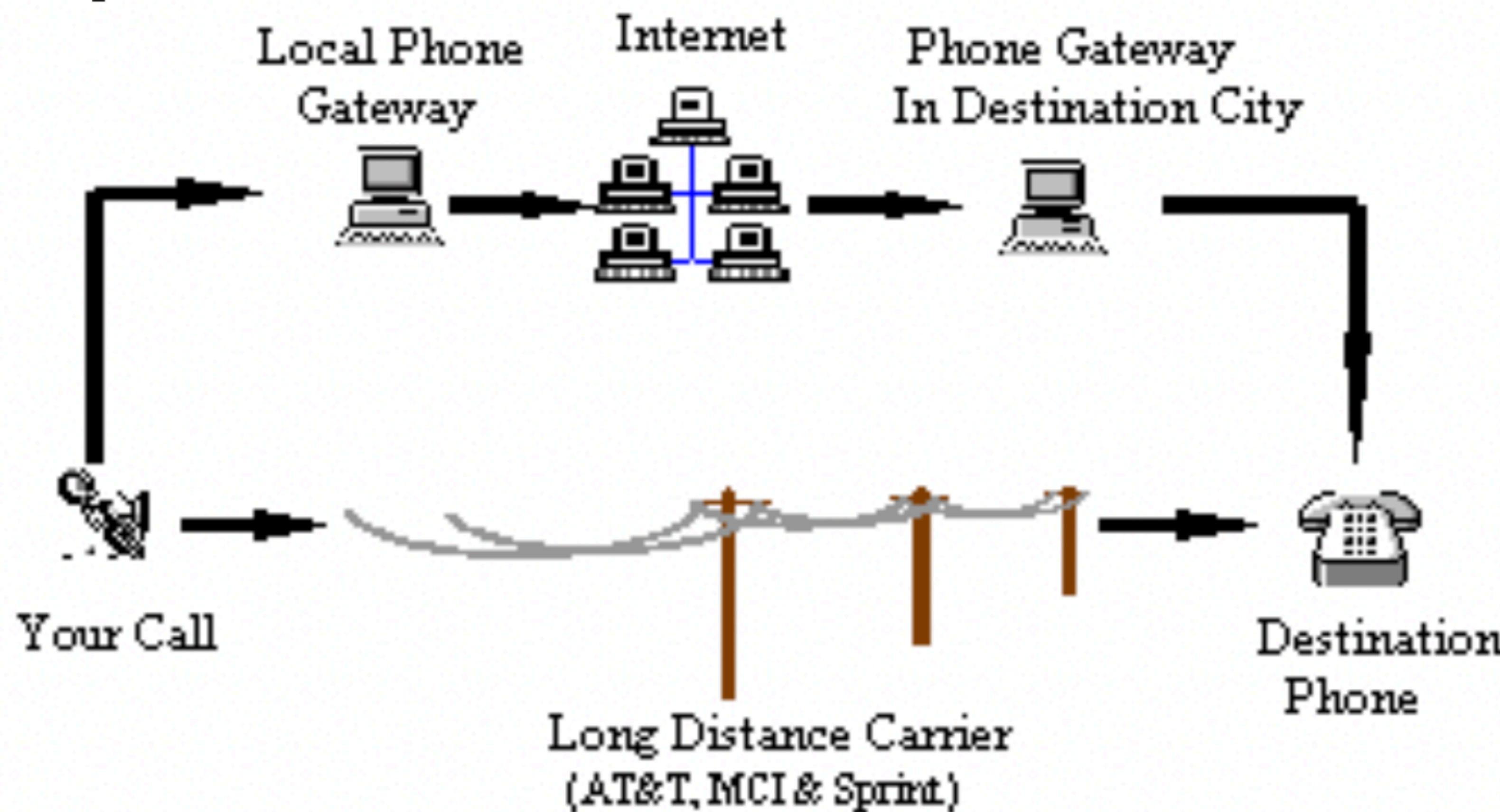
Applications

Cable TV



Applications

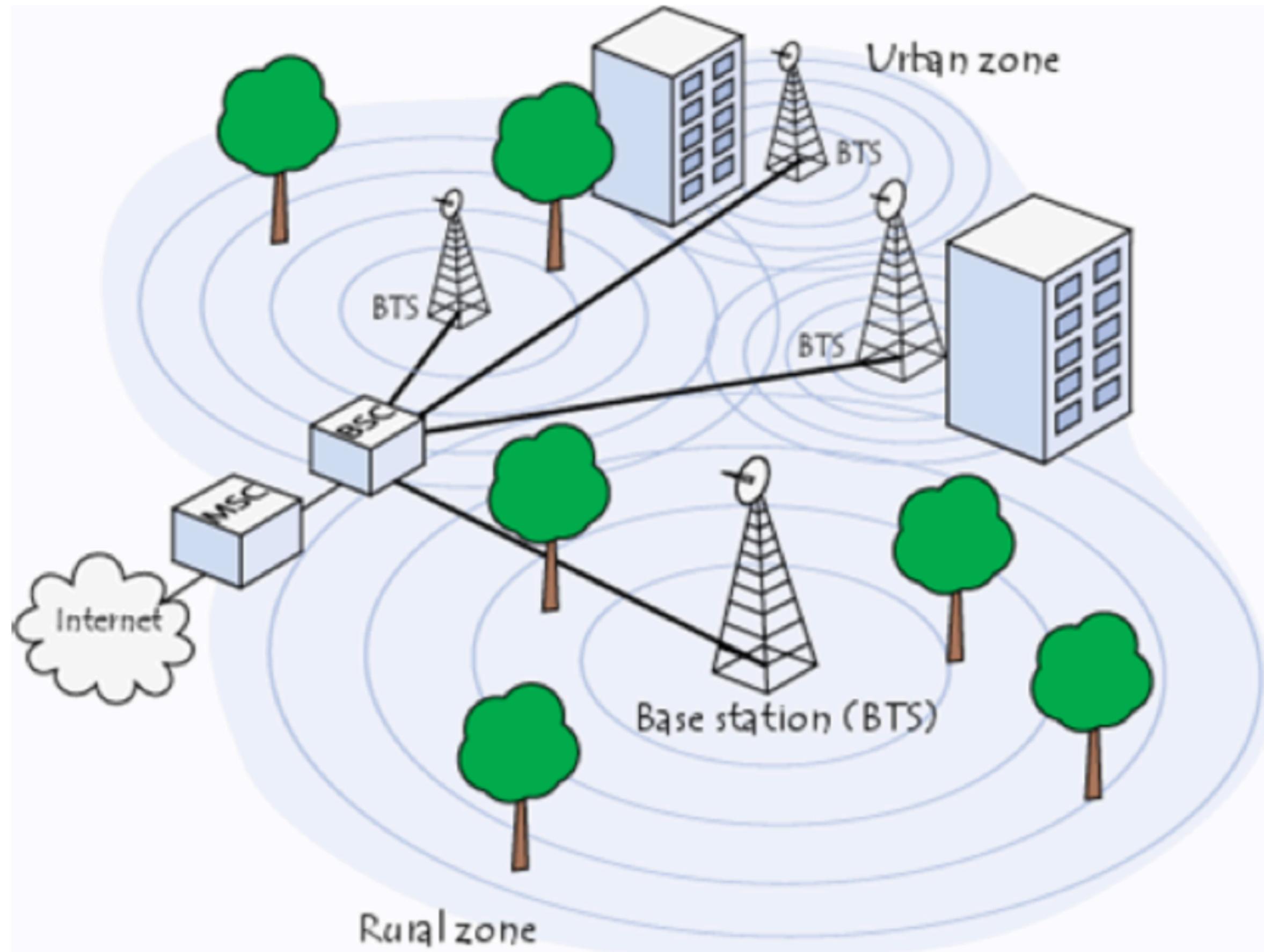
Telephone



Applications

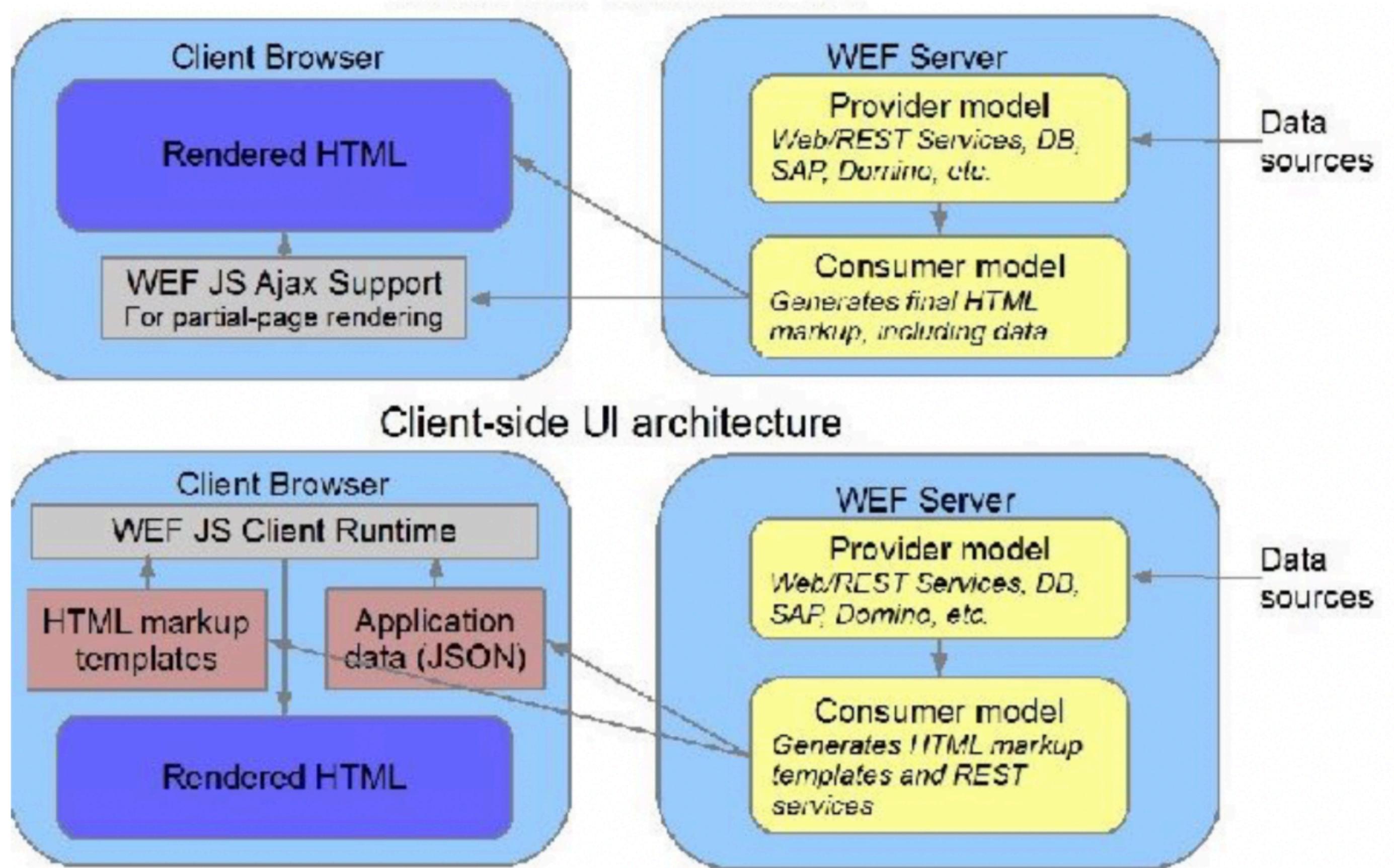
UbiN3\$
Ubiquitous Networked Embedded System

Cellular Telephone



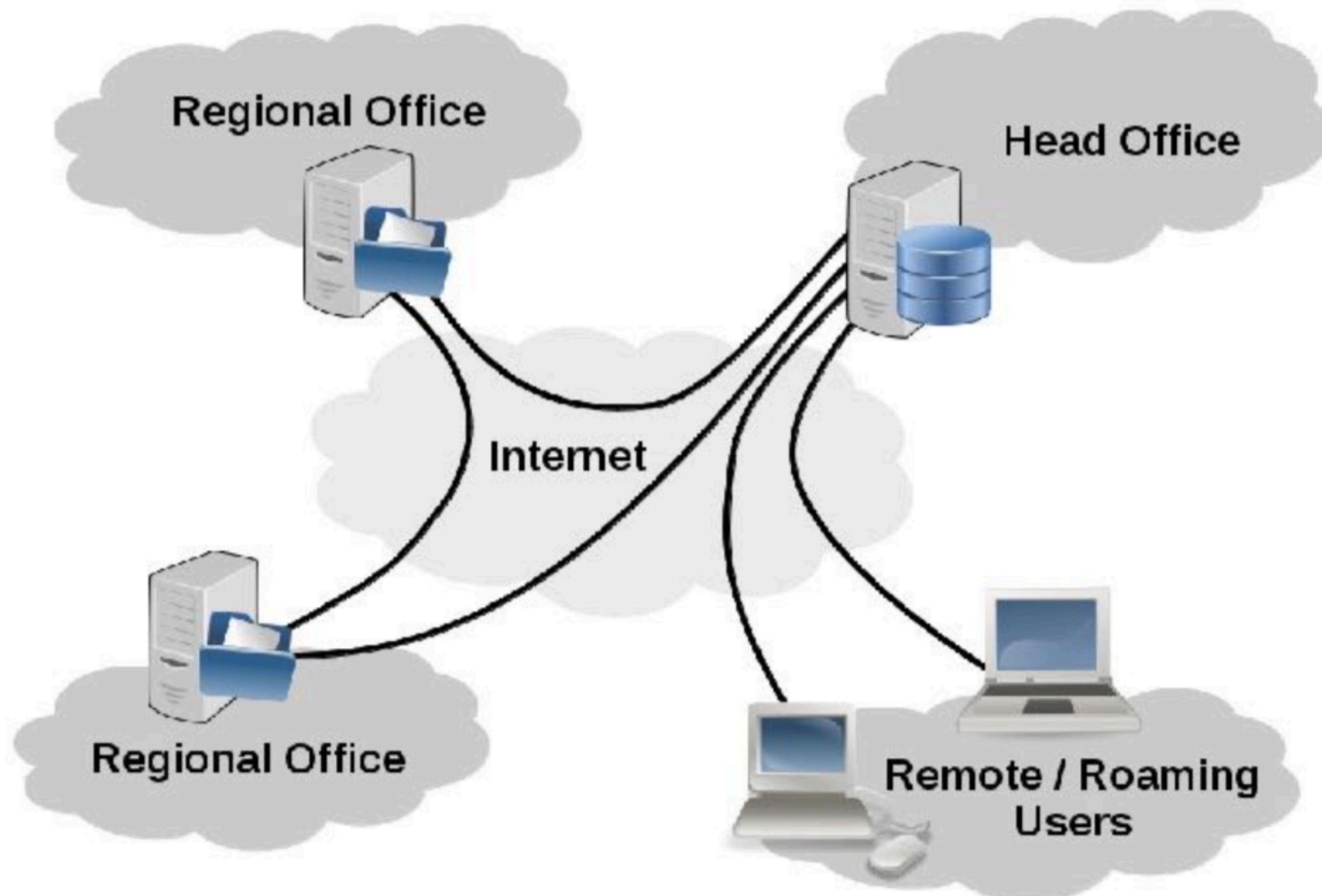
Applications

Web Network



Applications

Organizations



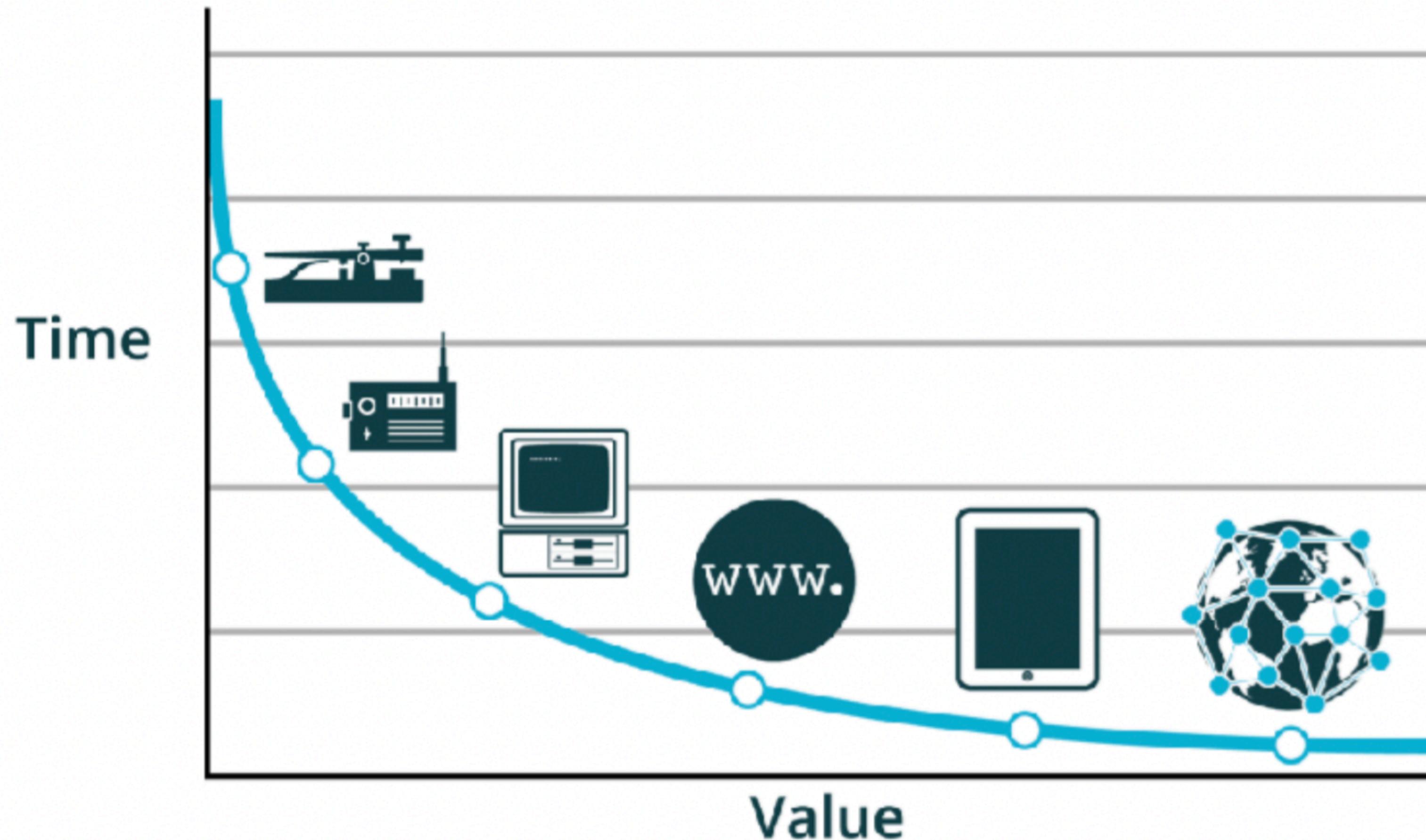
Applications

Finance & Bank



Applications

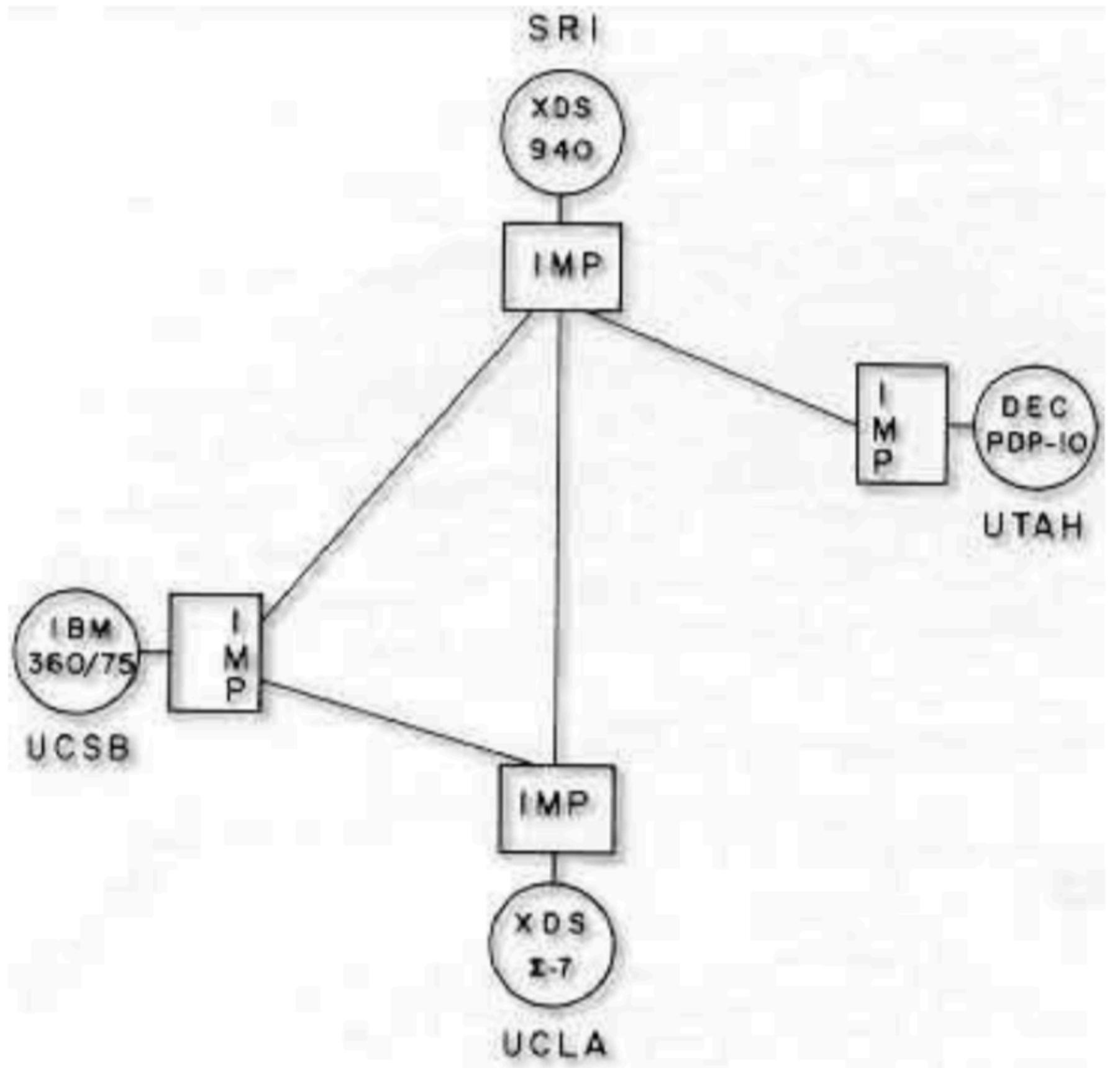
Data Exchange



Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

Internet



Internet in Thailand

```
Return-path: kre@sritrang.psu.th
Received: from mulga.OZ by munnari.oz (5.5)
id AA06244; Thu, 2 Jun 88 21:22:14 EST
(from kre@sritrang.psu.th for kre)
Received: by mulga.oz (5.51)
id AA01438; Thu, 2 Jun 88 21:21:50 EST
Apparently-to: kre
Date: Thu, 2 Jun 88 21:21:50 EST
From: kre@sritrang.psu.th
Message-id: <8806021121.1438@mulga.OZ>
```

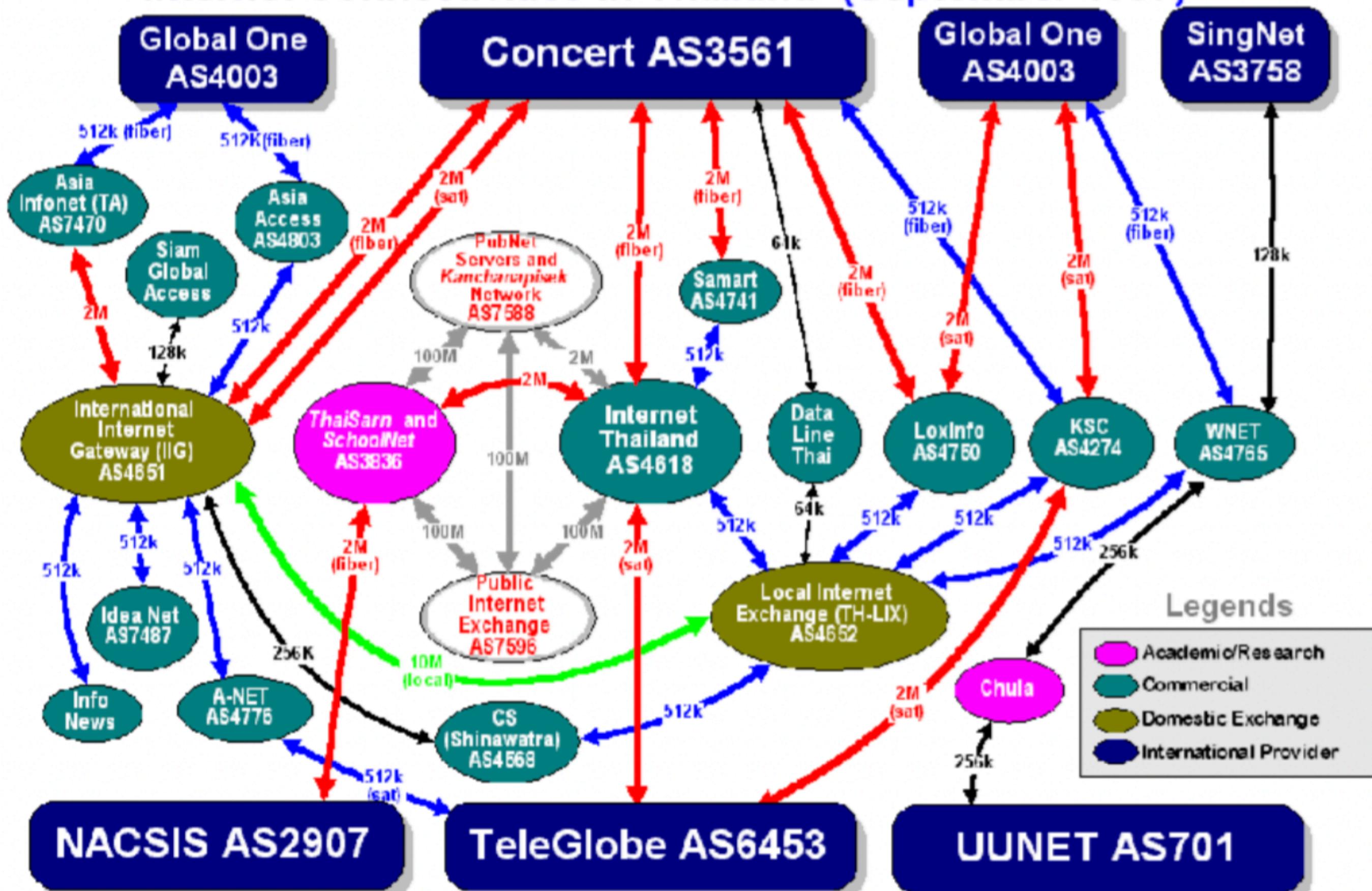
Hi.

Bye

(Courtesy of the Computing Center, Prince of Songkla University, Thailand)

Internet in Thailand

Internet Connectivities in Thailand (September 1997)



DISCLAIMER

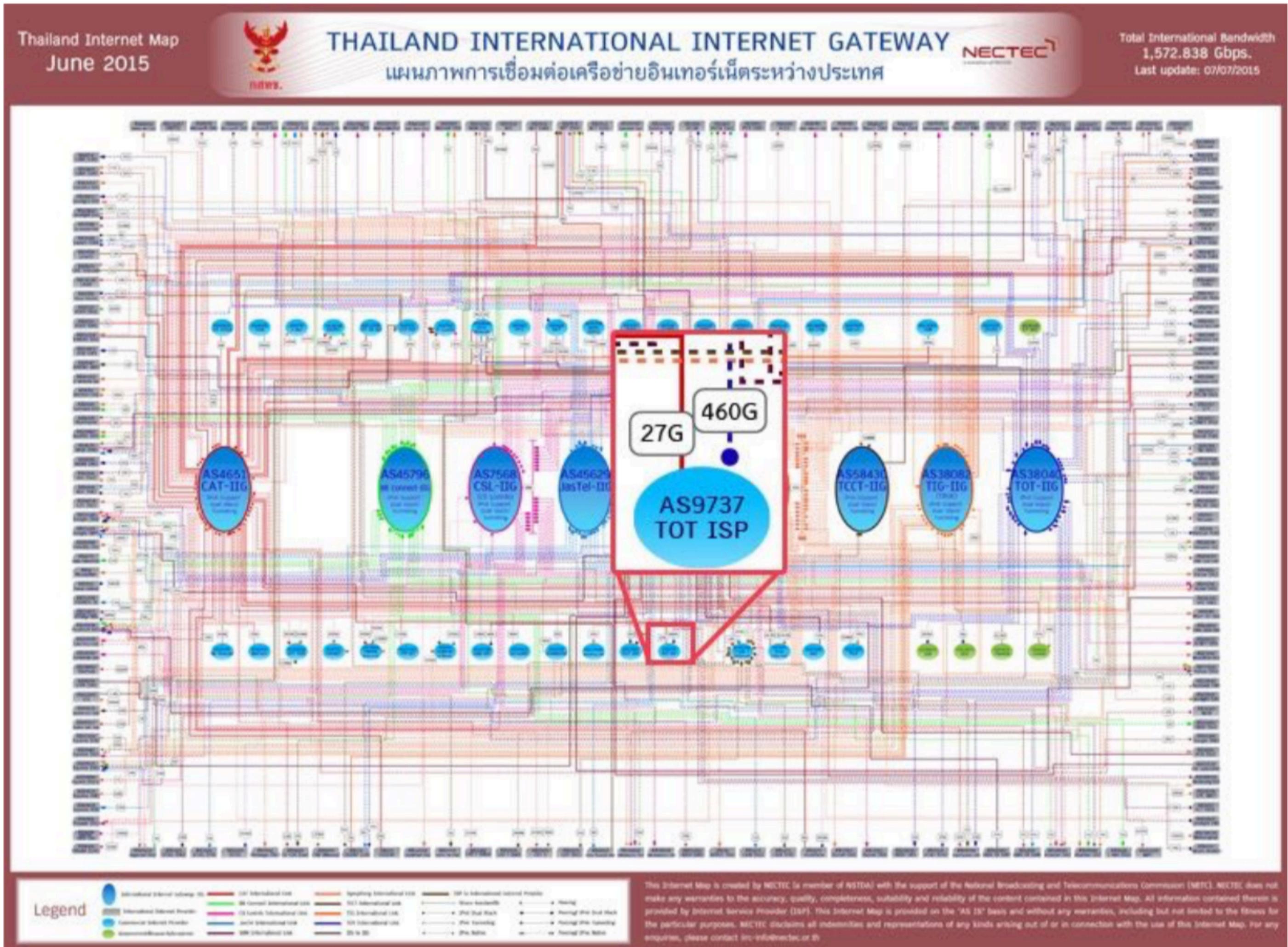
Date: 1997-09-04

This chart is designed, maintained and copyrighted by Junipat Phurikul and Thaveevasak Kuanantakool, NECTEC. All rights reserved. The information contained in this chart is based on actual measurements and estimation. We welcome update information, but reserve the rights to verify the accuracy of the given information. Please contact us at hit@nectec.or.th. For authoritative information please contact Communications Authority of Thailand.



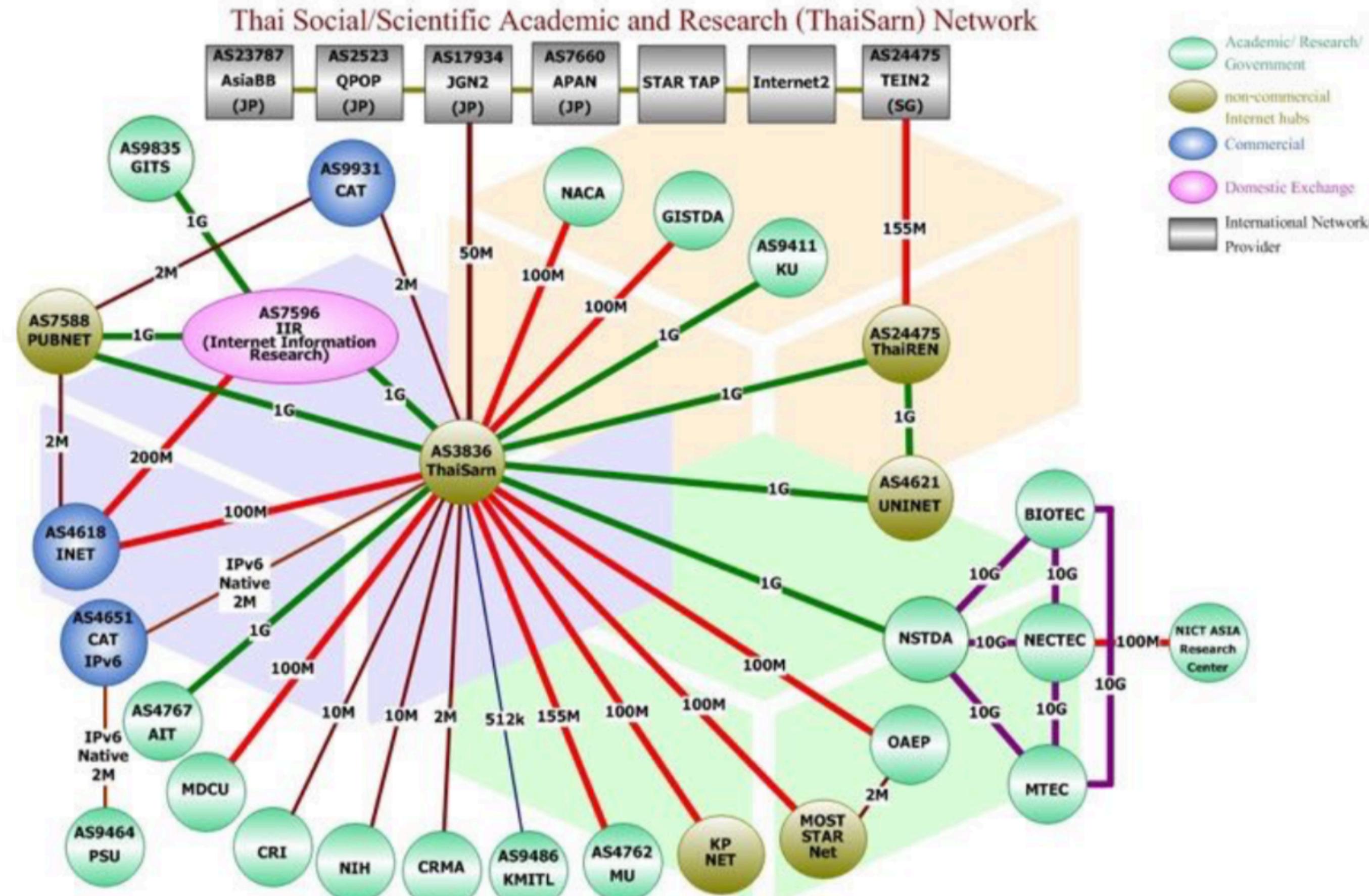
Internet Gateway

UbIn3\$
Ubiquitous Networked Embedded System



ThaiSarn

UbIn3\$
Ubiquitous Networked Embedded System



This chart is designed, maintained copyrighted by Chatchai Chan-In ThaiSarn, NECTEC. All rights reserved.
The information contained in this chart is based actual measurements and estimation. We welcome update information, but reserve the rights to verify the accuracy of the given information. Please contact us at noc@nectec.or.th



Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

Standard

UbiN3\$
Ubiquitous Networked Embedded System

de facto standard



Standard

UbiN3\$
Ubiquitous Networked Embedded System

de jure standard



RFC: Request for Comments UbiN3\$

Ubiquitous Networked Embedded System

Internet Engineering Task Force
Request for Comments
Category: Standards Track
ISSN: 2070-1721

Internet Engineering Task Force (IETF)
Request for Comments: 7540
Category: Standards Track
ISSN: 2070-1721

M. Belshe
BitGo
R. Peon
Google, Inc
M. Thomson, Ed.
Mozilla
May 2015

Hypertext Transfer Protocol Version 2 (HTTP/2)

Abstract

This specification defines a new version of the Hypertext Transfer Protocol (HTTP). It is designed to be an efficient and modern protocol for the delivery of resources and a replacement for HTTP/1.1 over the same connection. It includes a new multiplexing mechanism, header compression, and representations from servers to clients.

Hypertext Transfer Protocol Version 2 (HTTP/2)

This specification is an alternative to, but does not obsolete, the HTTP/1.1 message syntax. HTTP's existing semantics remain unchanged.

Status of This Memo

This is an Internet Standards Track document.

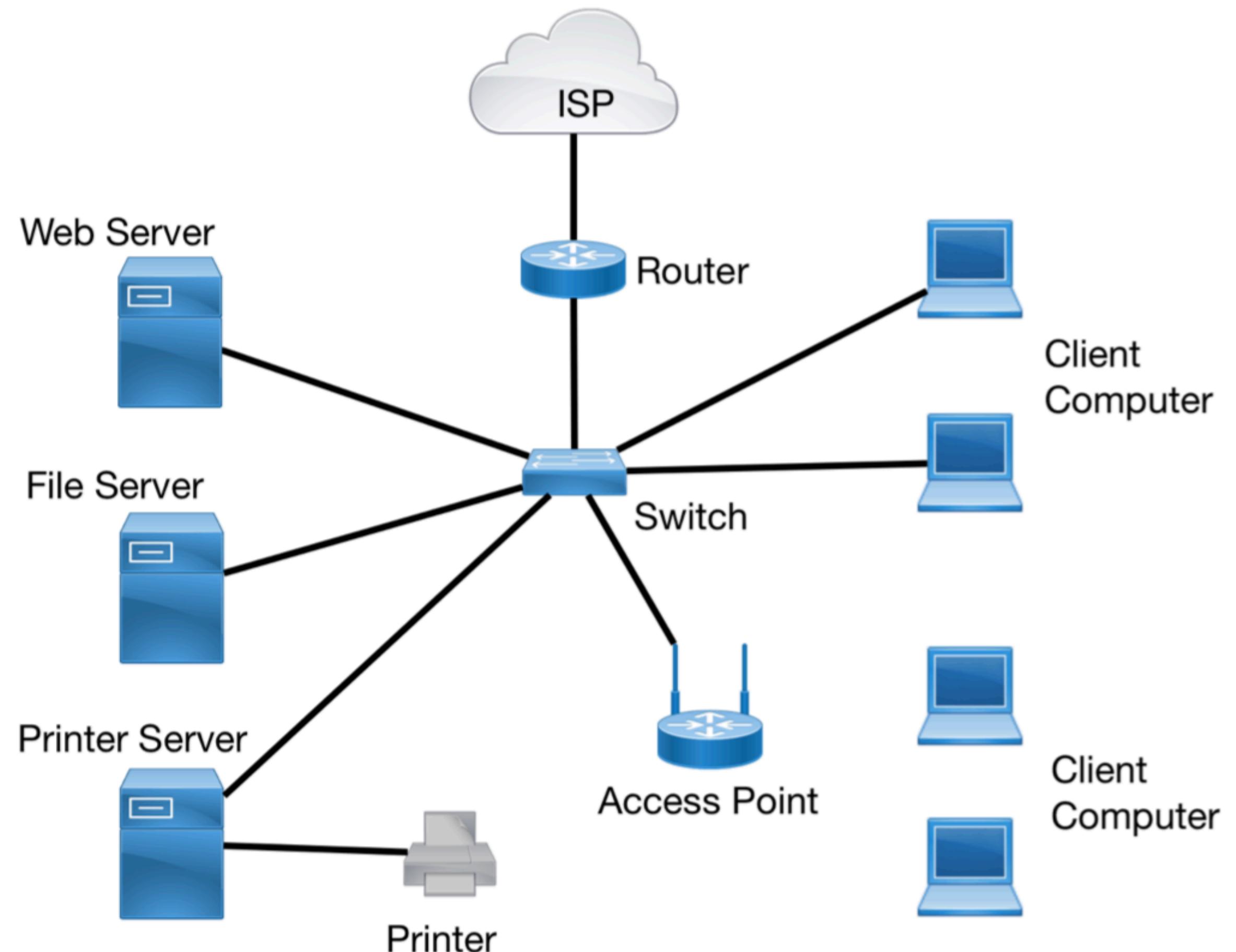
This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in [Section 2 of RFC 5741](#).

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at
<http://www.rfc-editor.org/info/rfc7540>.

Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

Network Components

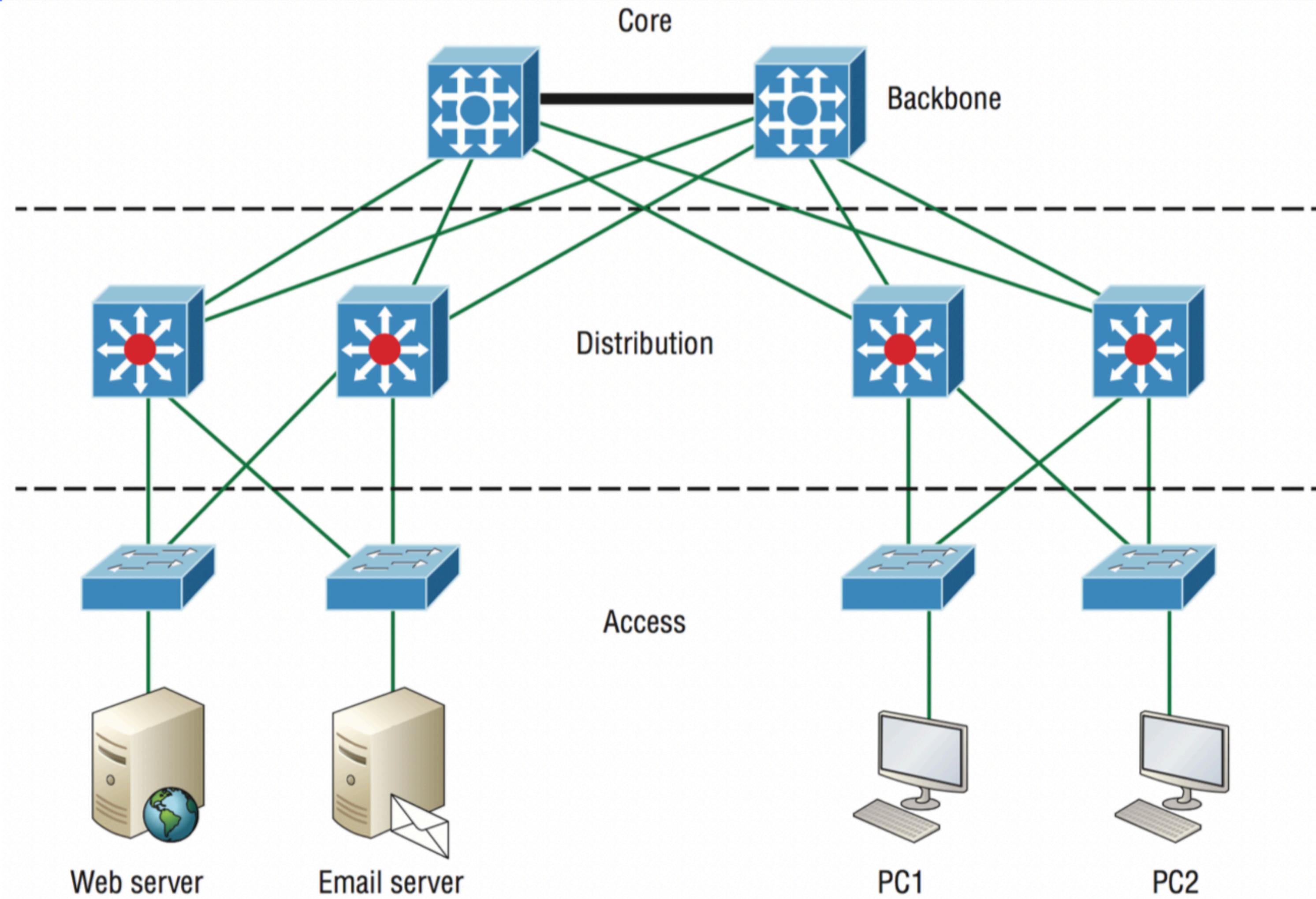


Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

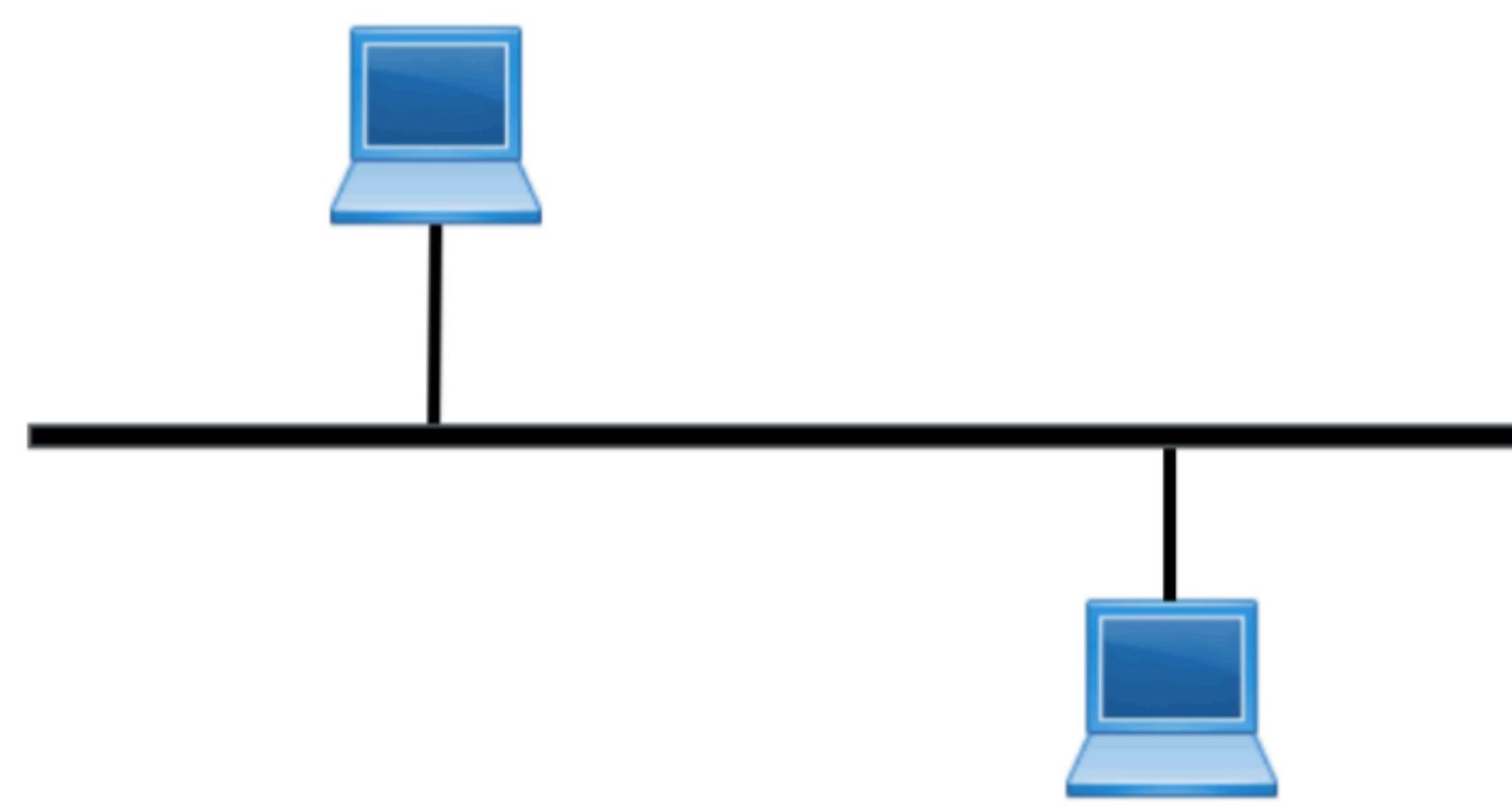
Hierarchical Network Architecture

Ub iN3\$
Ubiquitous Networked Embedded System

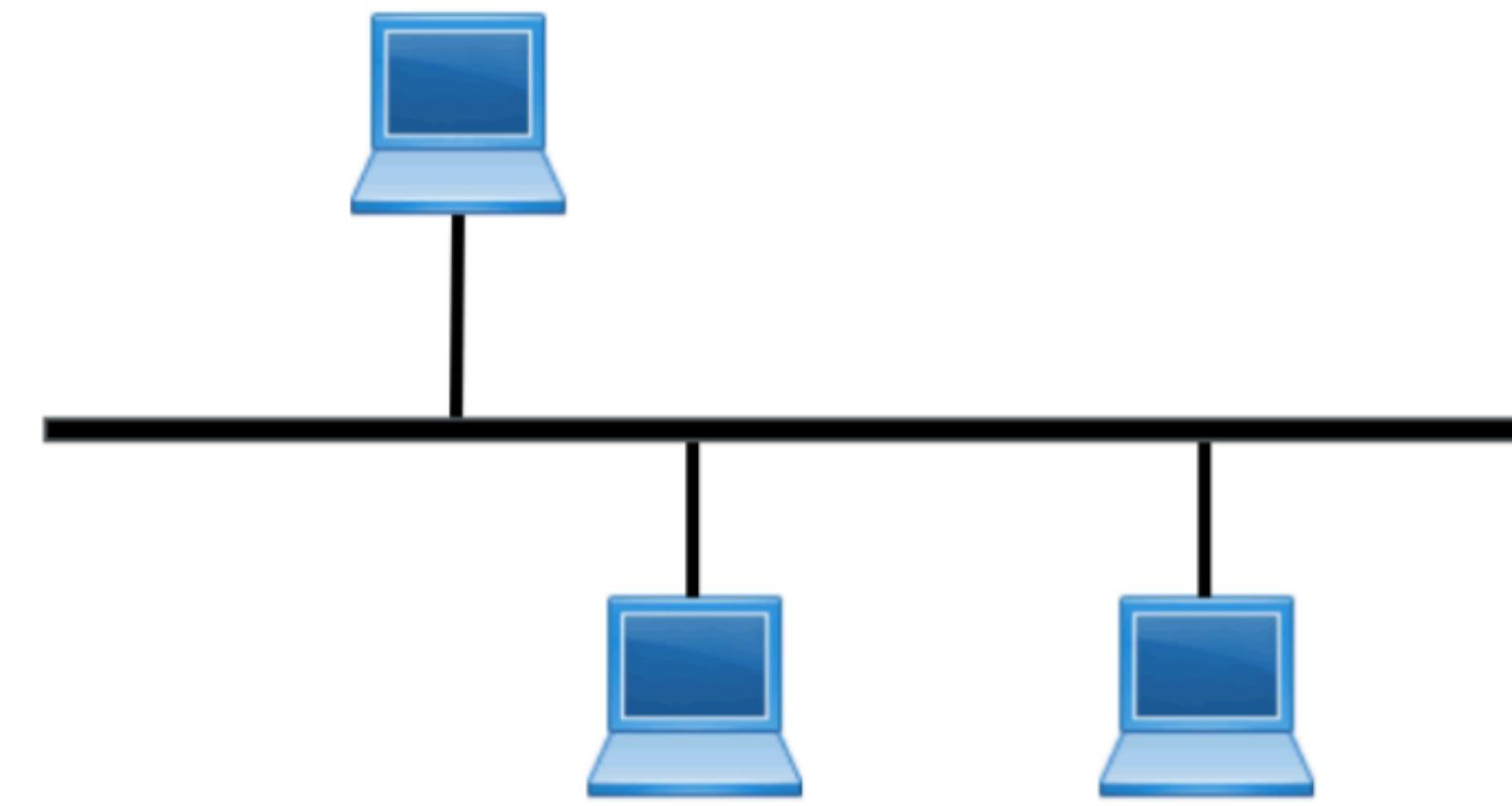


Network Architecture

UbIn3\$
Ubiquitous Networked Embedded System

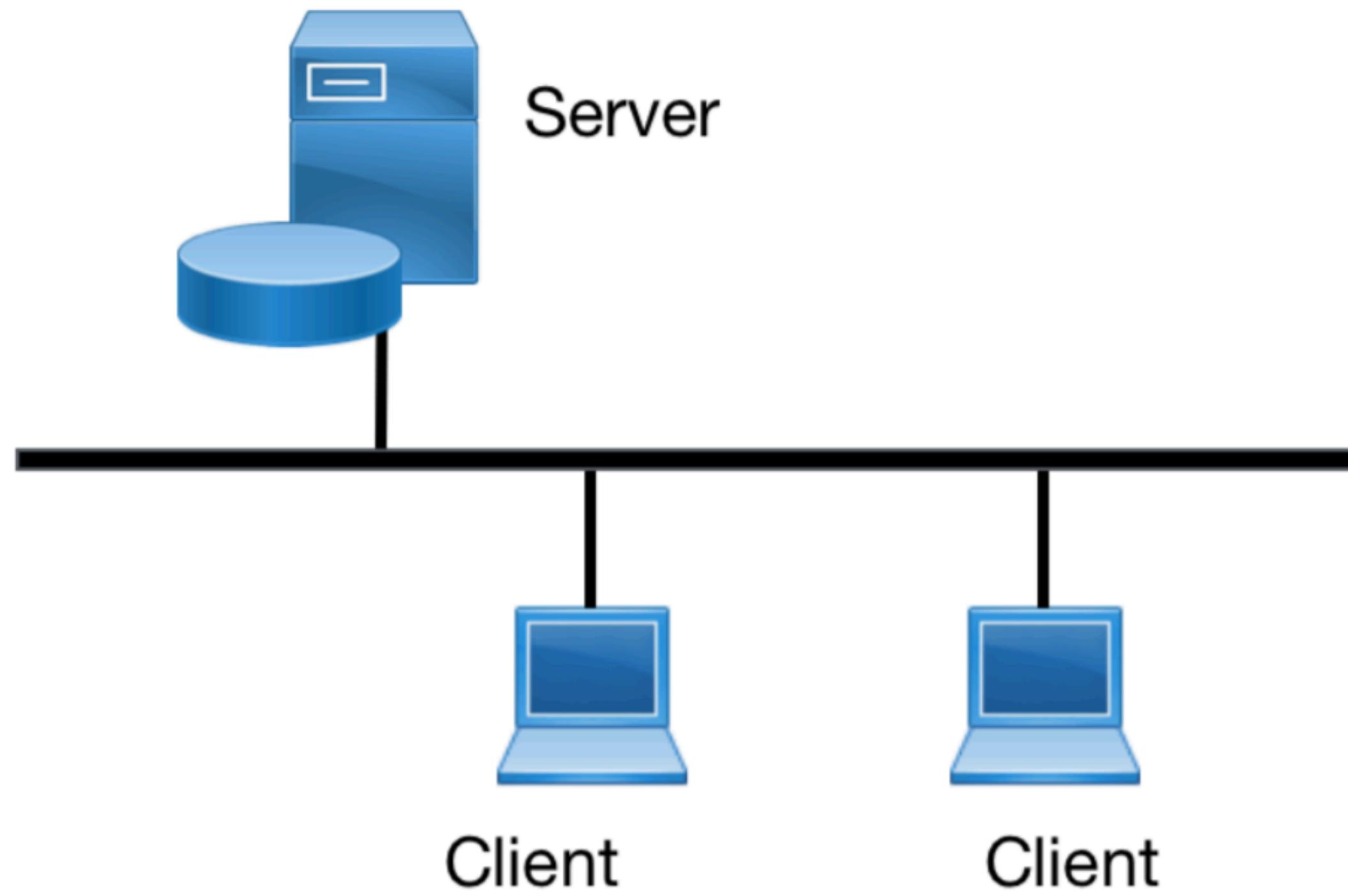


Point-to-Point



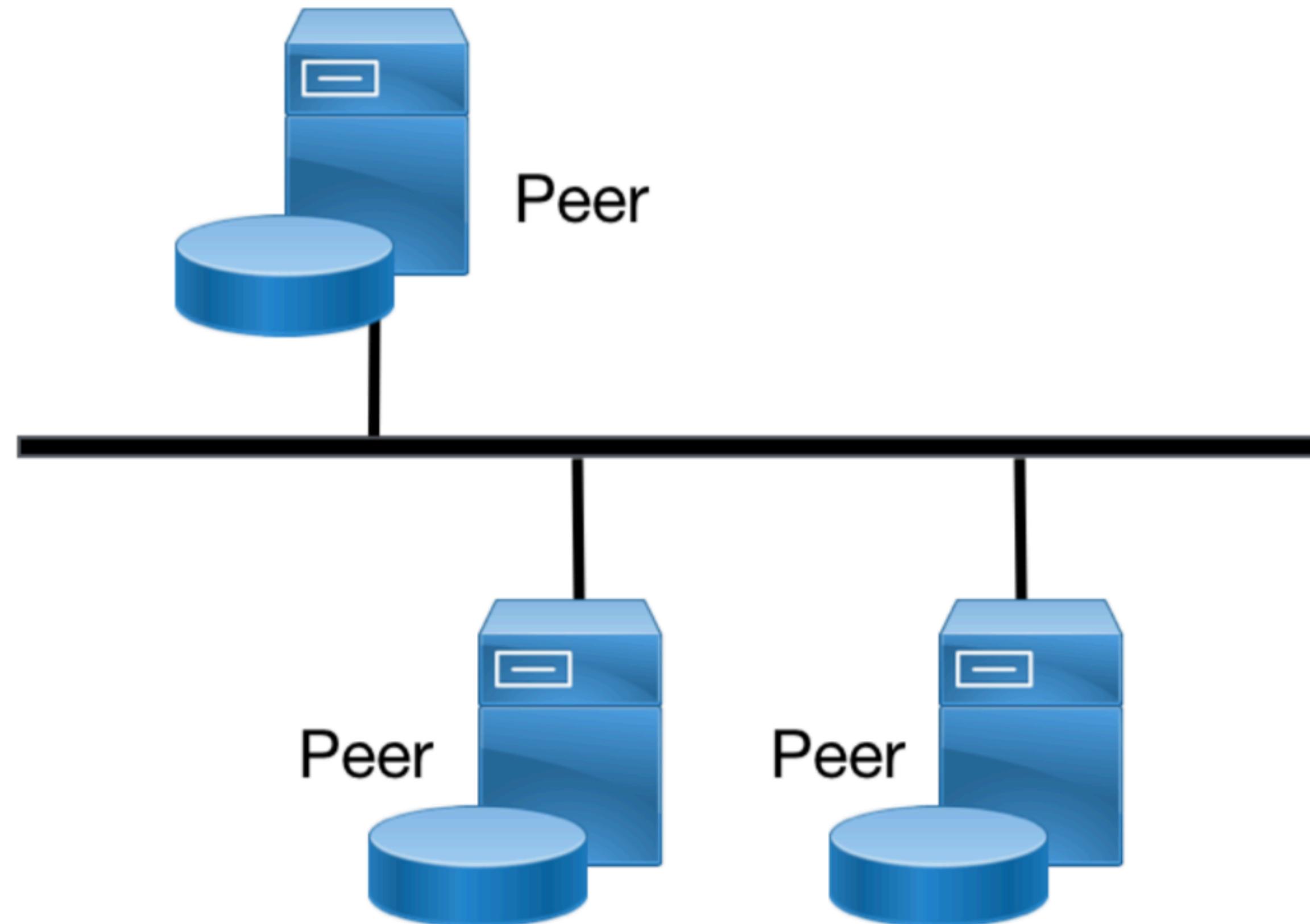
Multipoint

Network Architecture



Client/Server

Network Architecture



Peer-to-Peer

Contents

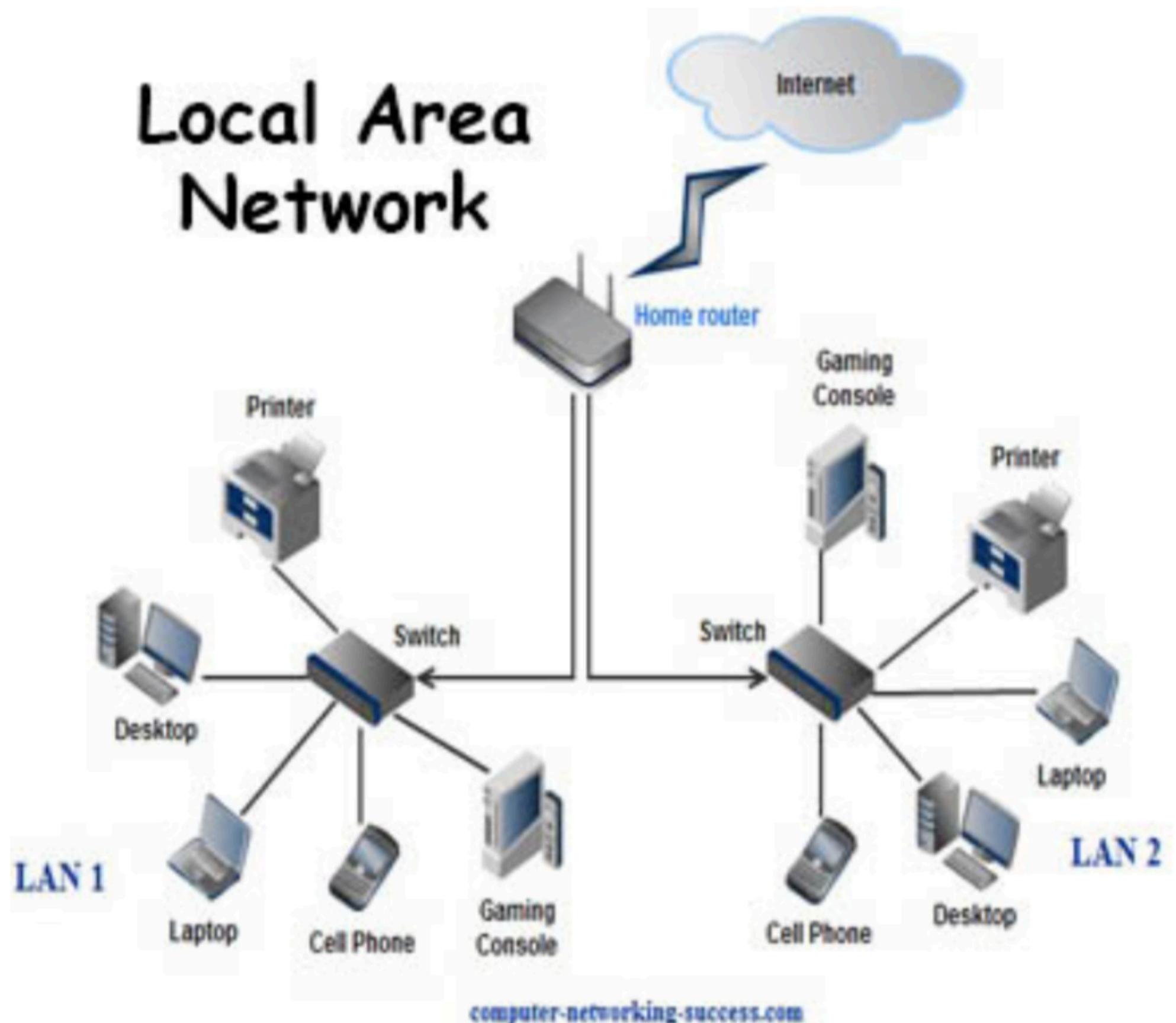
- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

Area based: Personal Area Network (PAN)



Network Categories

Area based: Local Area Network (LAN)



Network Categories

UbiN3\$
Ubiquitous Networked Embedded System

Area based: Local Area Network (LAN)

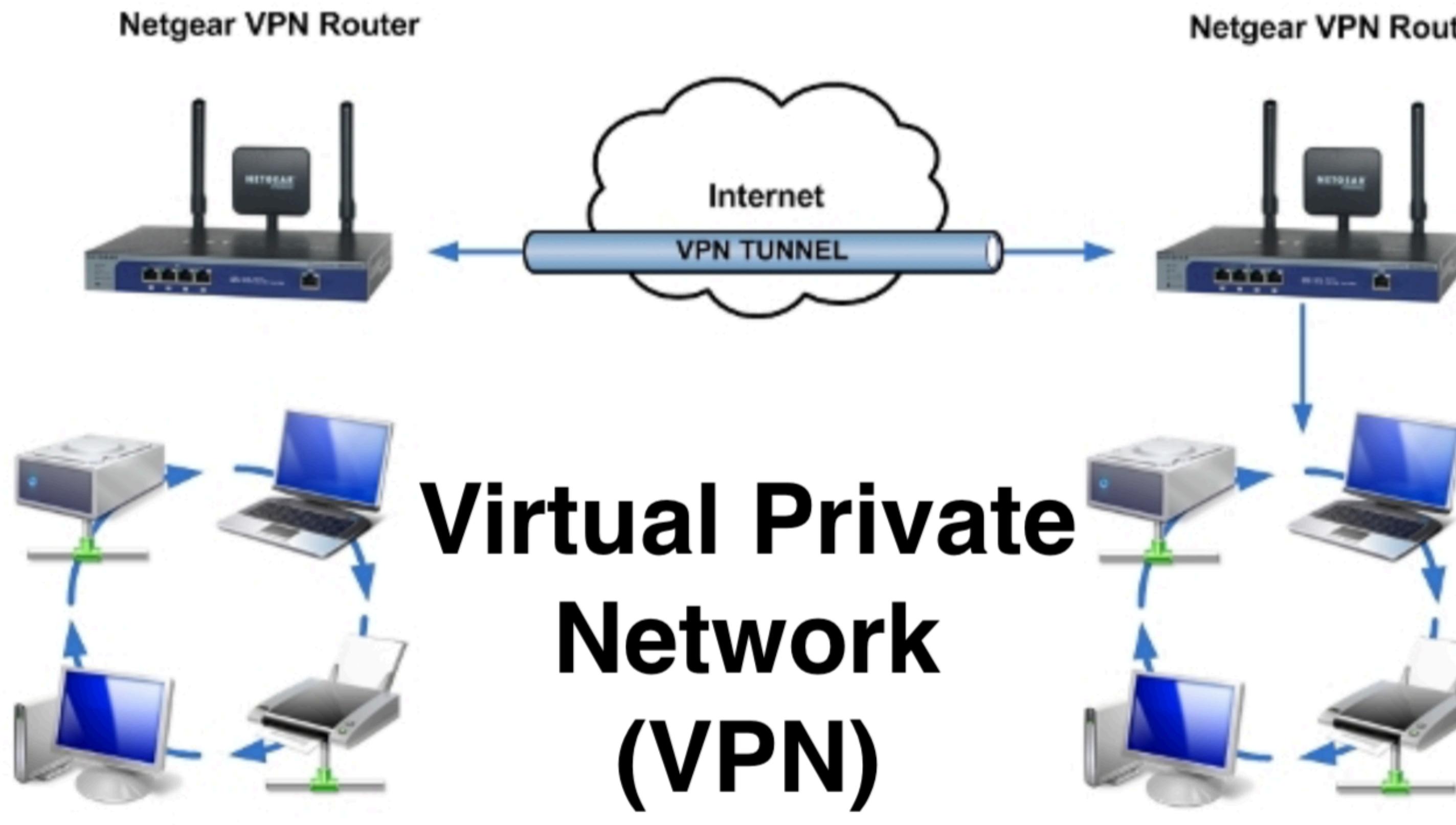


Home Network

Network Categories

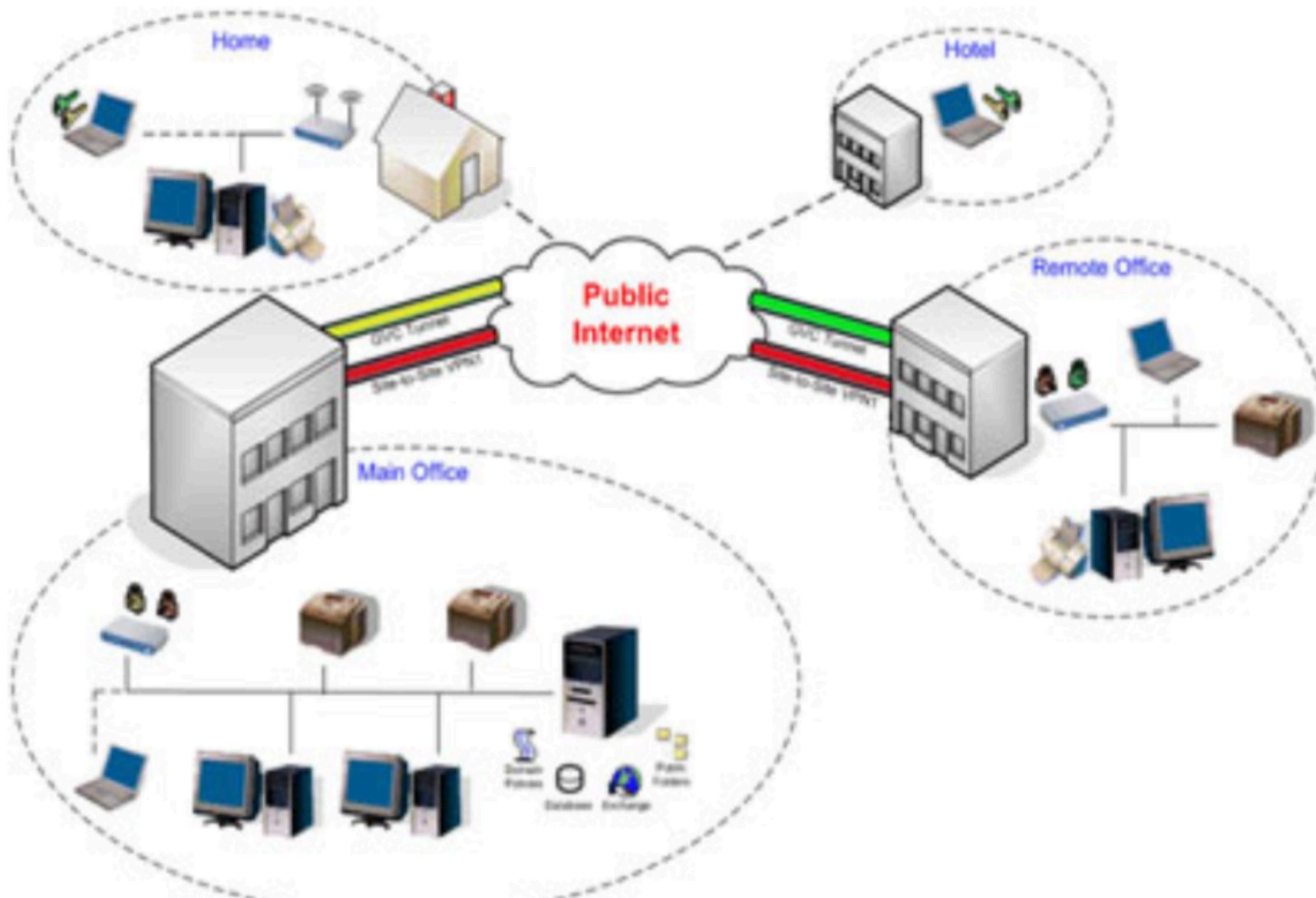
UbIn3\$
Ubiquitous Networked Embedded System

Area based: Local Area Network (LAN)



Network Categories

Area based: Local Area Network (LAN)

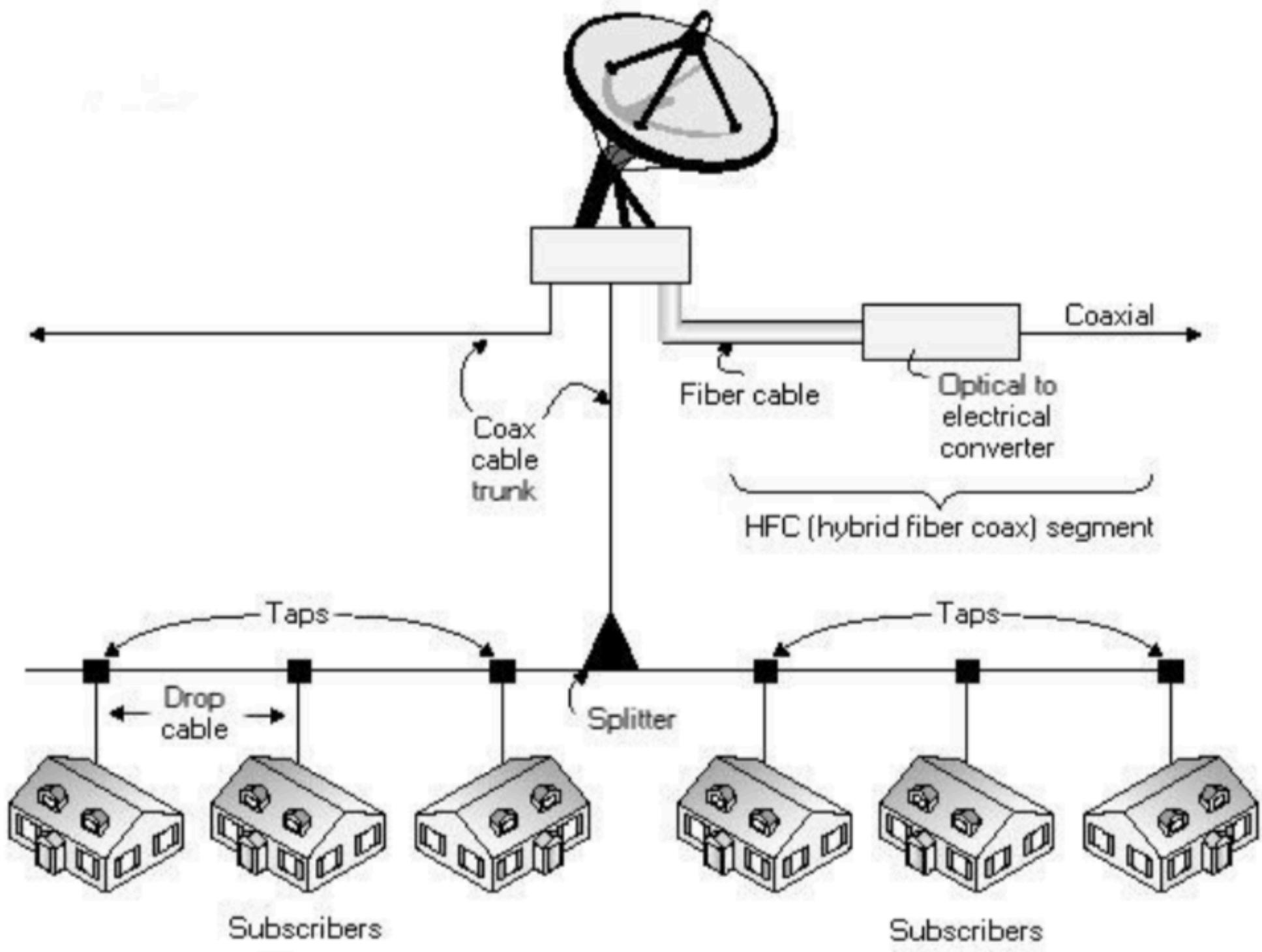


**Virtual Private
Network
(VPN)**

Network Categories

UbiN3\$
Ubiquitous Networked Embedded System

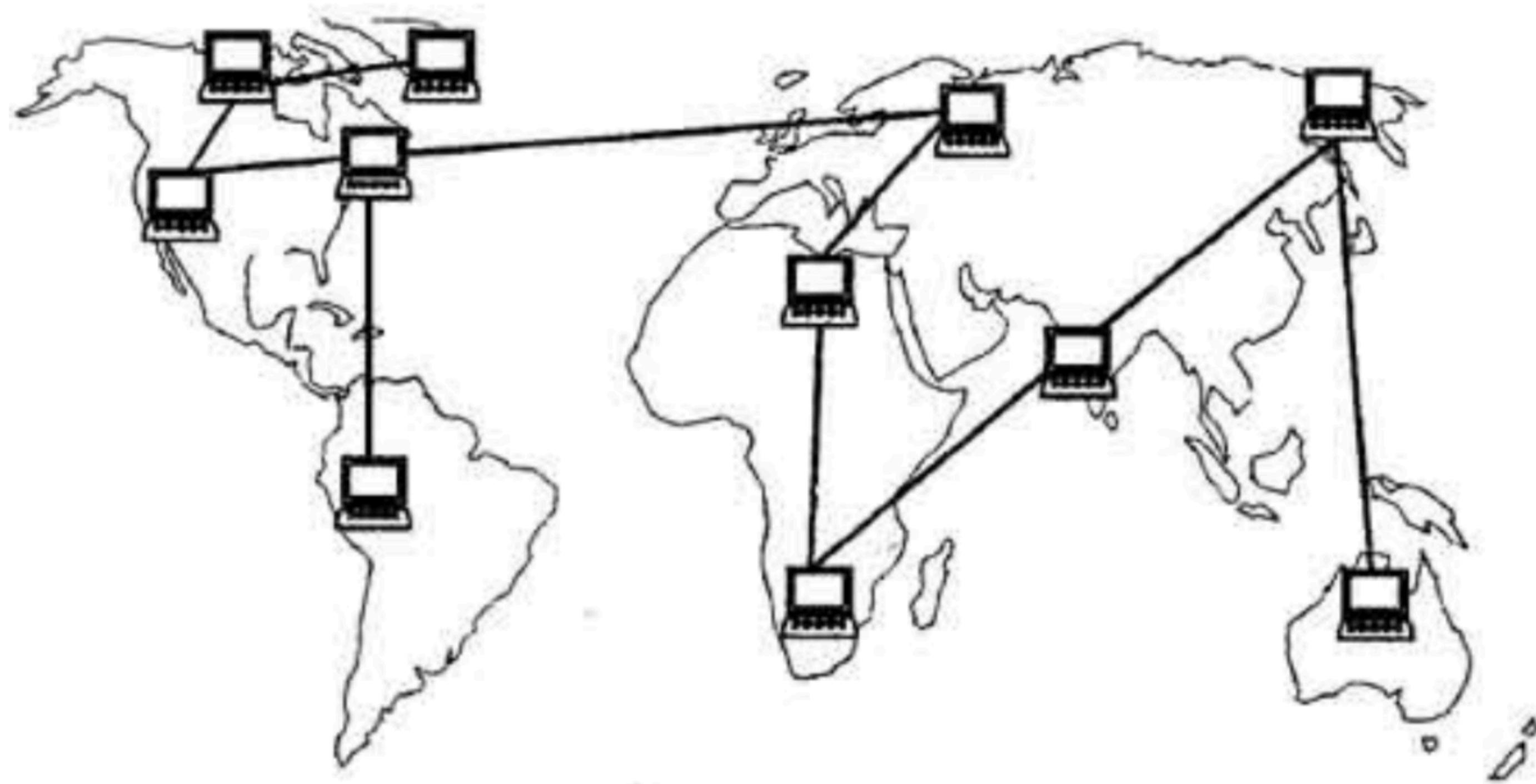
Area based: Metropolitan Area Network (MAN)



Network Categories

UbiN3\$
Ubiquitous Networked Embedded System

Area based: Wide Area Network (WAN)

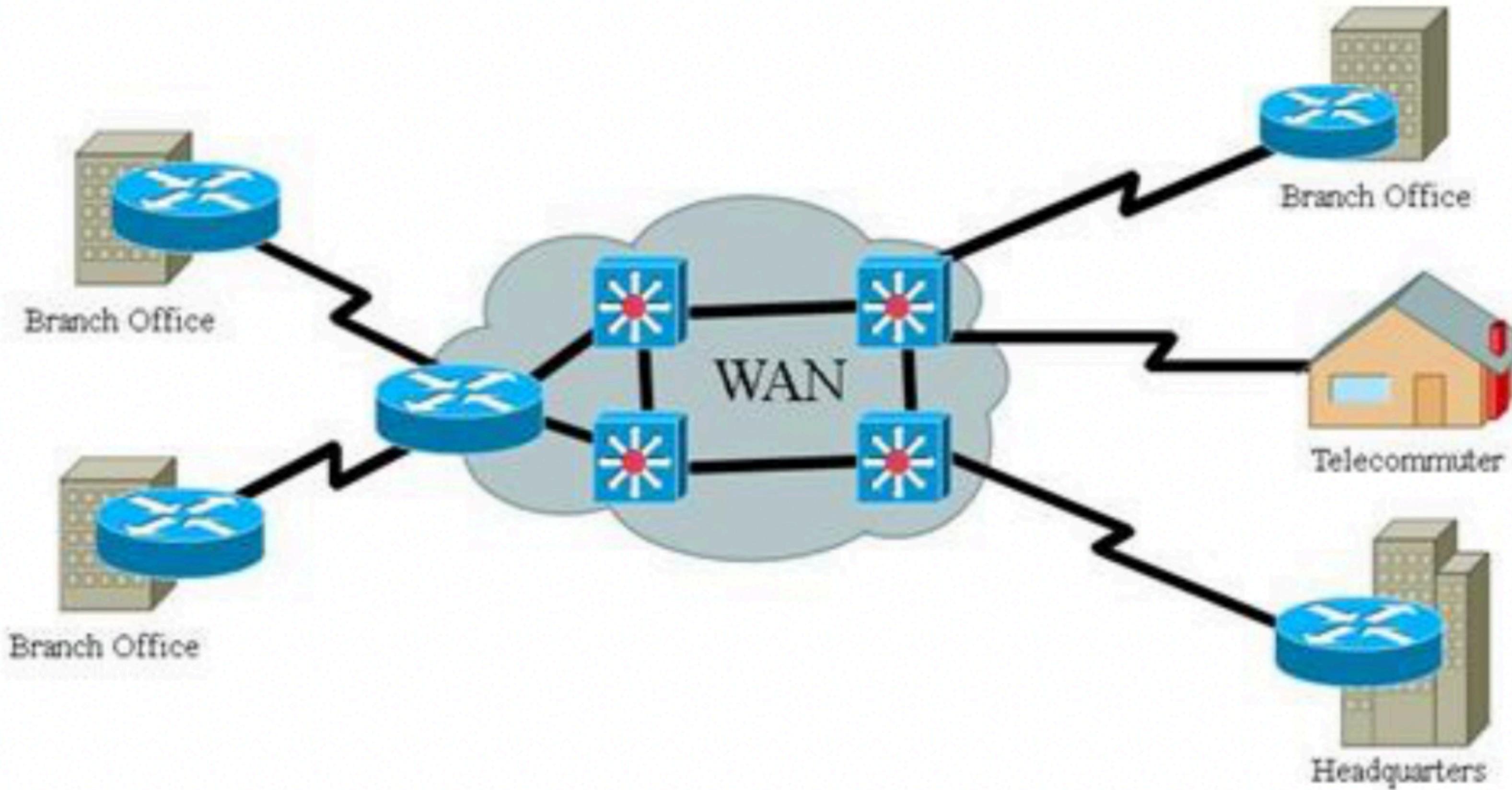


Internet

Wide area network

Network Categories

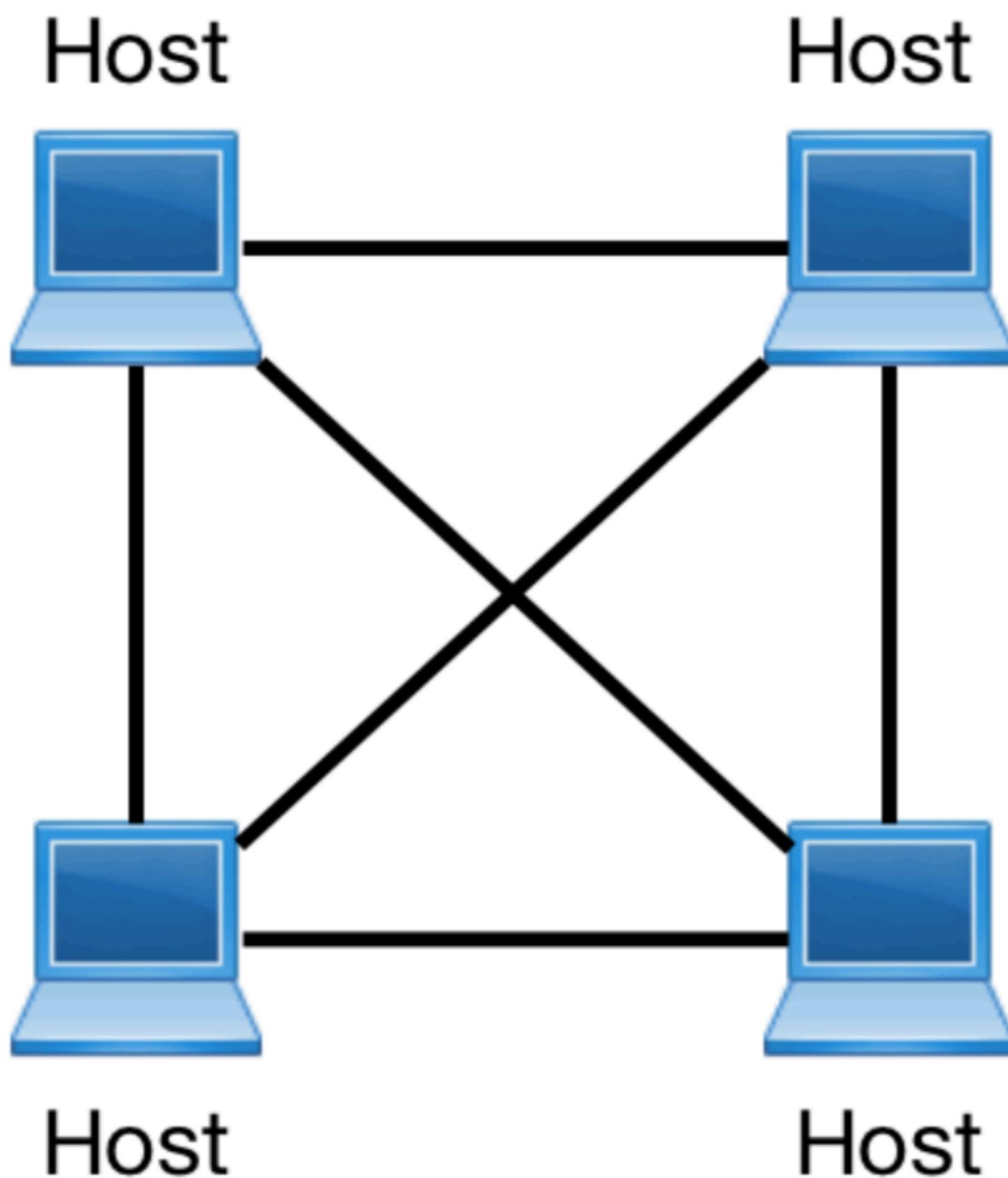
Area based: Wide Area Network (WAN)



Contents

- Applications
- Internet
- Standard
- Network Component
- Network Architecture
- Network Categories
- Network Topology

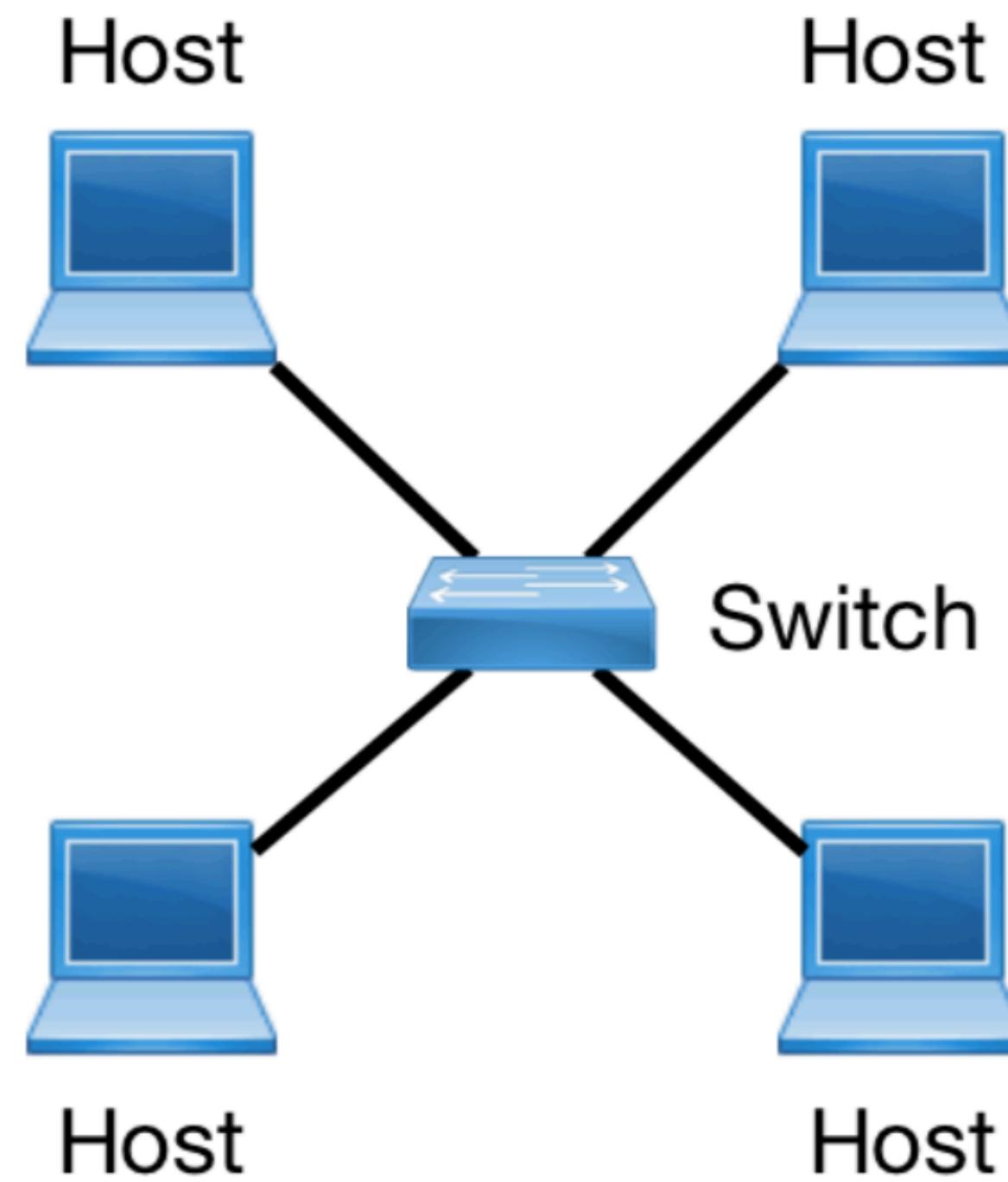
Network Topology



Topology : Mesh

Network Topology

UbiN3\$
Ubiquitous Networked Embedded System



Topology : Star

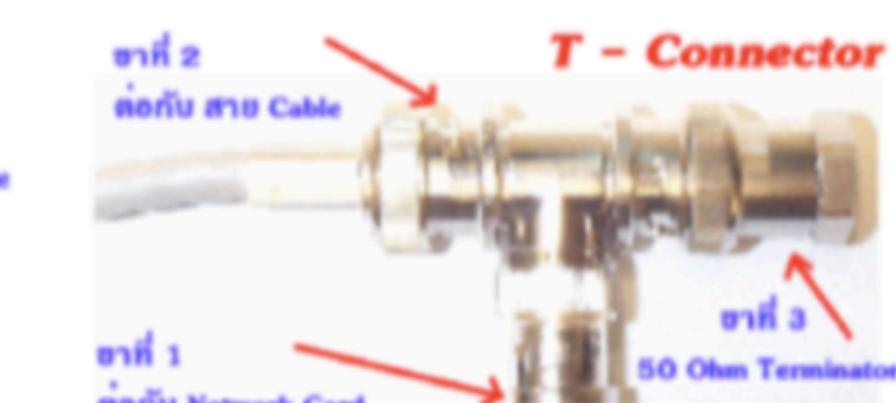
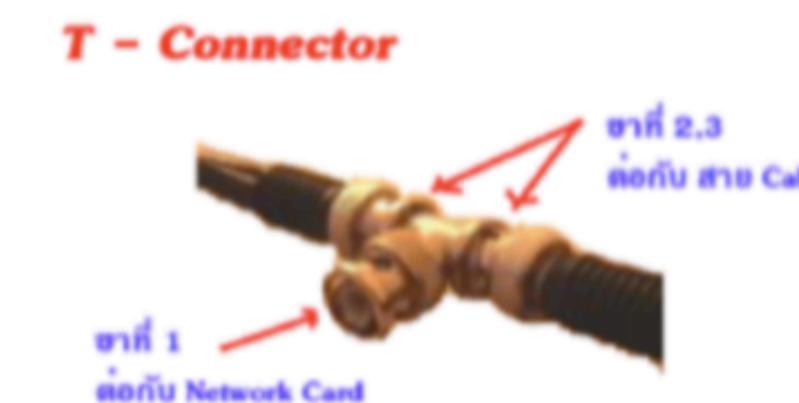
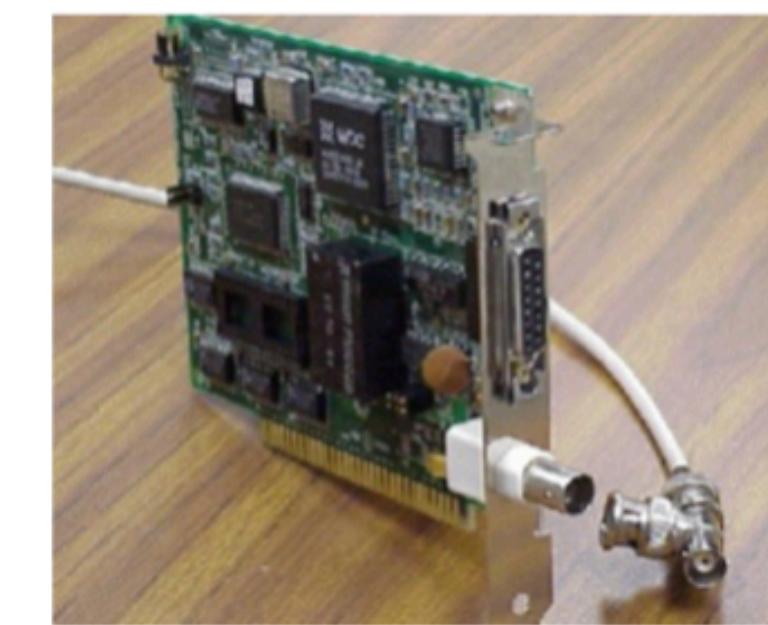
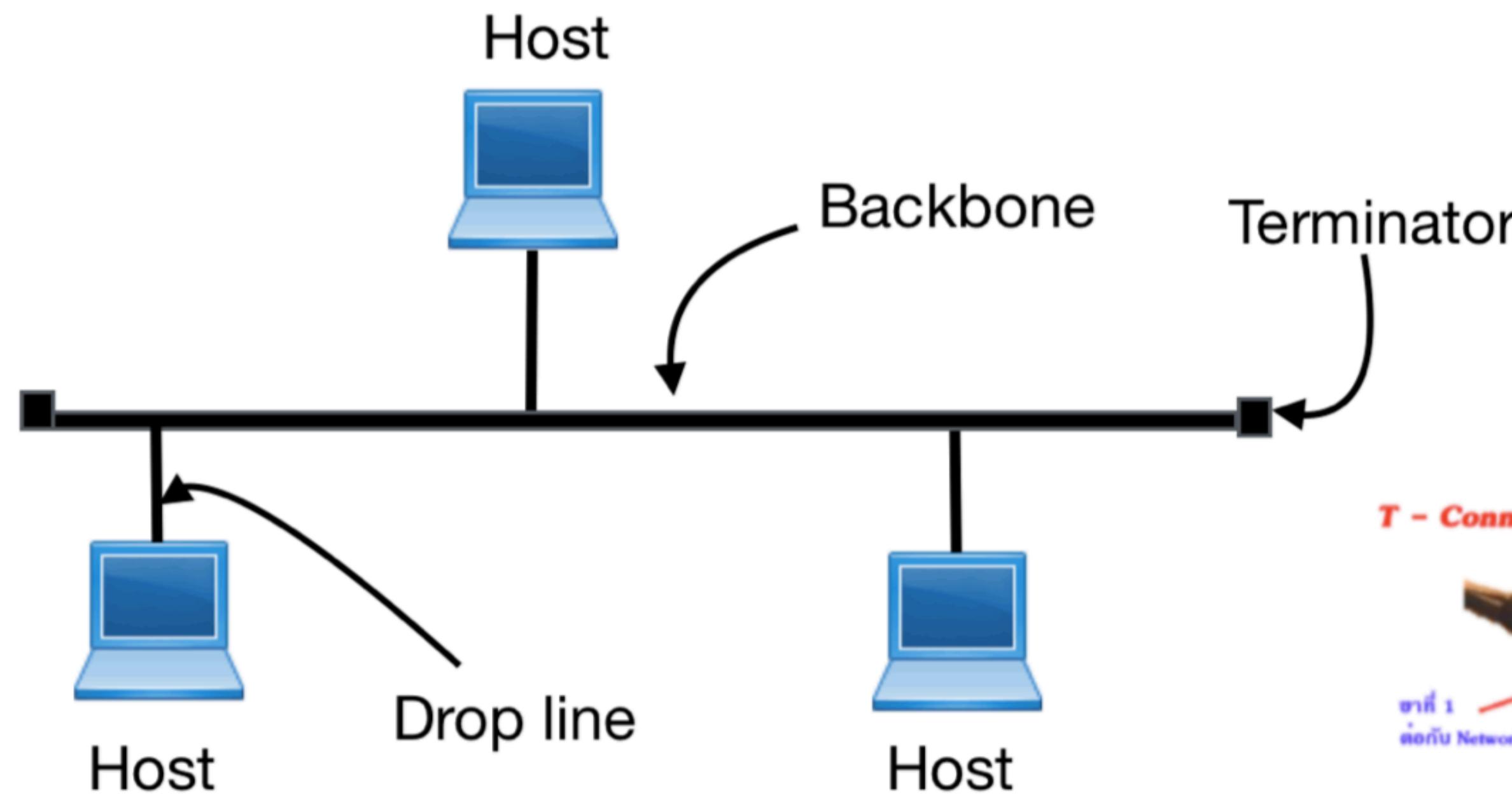


Switch

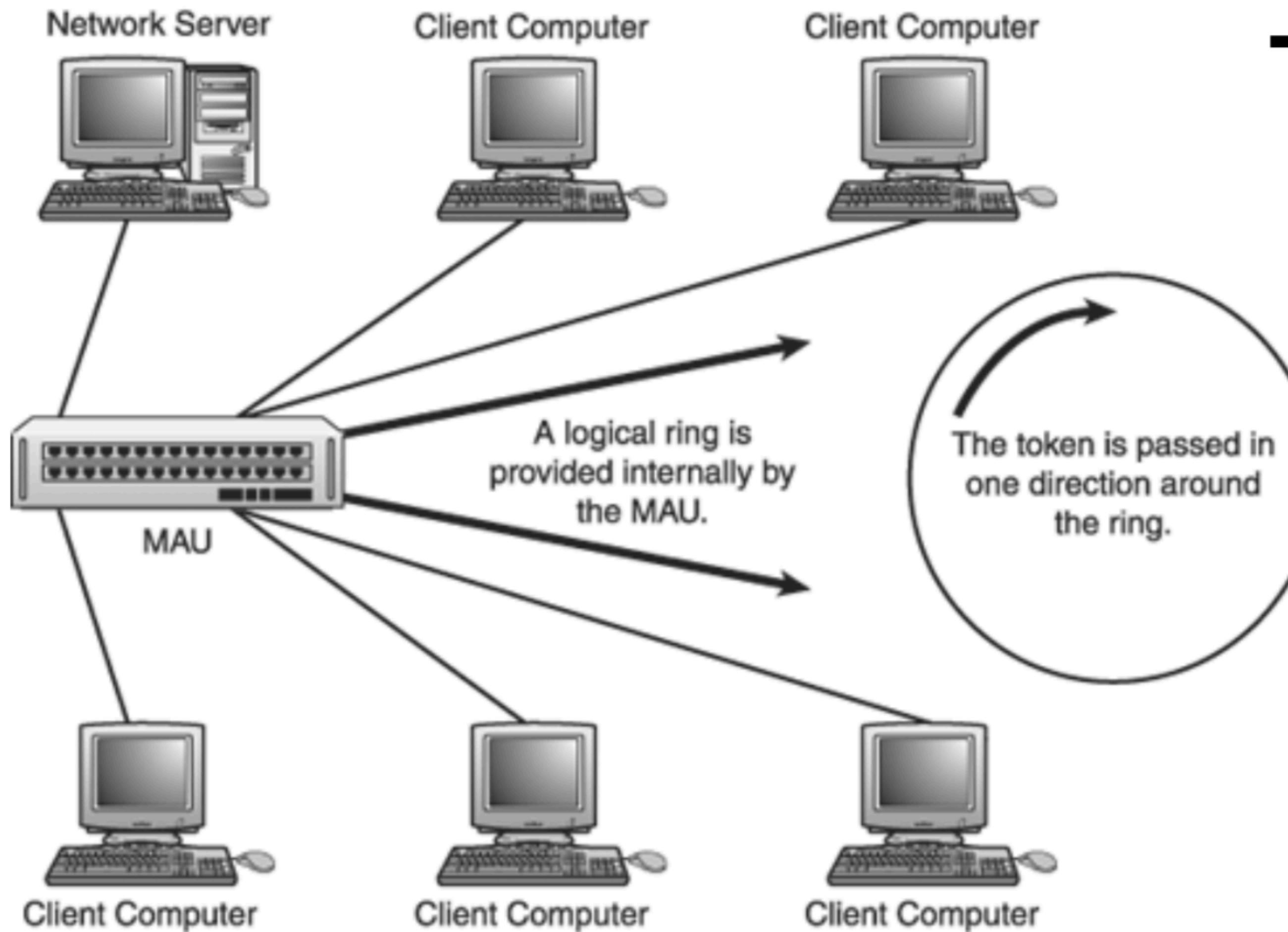
Network Topology

UbIn3\$
Ubiquitous Networked Embedded System

Topology : Bus



Network Topology



Topology : Ring

