Table of Contents

LAN Protocols:
1. Ethernet:
2. Wi-Fi (802.11):
3. Token Ring:
4. ARCNET:
WAN Protocols:
1. TCP/IP:
2. MPLS (Multi-Protocol Label Switching):
3. Frame Relay:
4. ATM (Asynchronous Transfer Mode):
5. SONET (Synchronous Optical Networking) / SDH (Synchronous Digital Hierarchy):

LAN (Local Area Network) and WAN (Wide Area Network) are two types of networks commonly used in computer communications.

Here's an introduction to various protocols used in LAN and WAN environments:

LAN Protocols:

1. Ethernet:

Ethernet is the most widely used LAN protocol. It defines the physical and data link layer specifications for wired LANs. Ethernet uses a variety of technologies such as twisted pair, coaxial, or fiber optic cables to transmit data.

2. Wi-Fi (802.11):

Wi-Fi is a wireless LAN protocol that enables devices to connect to a network without physical cables. It operates in the 2.4 GHz or 5 GHz frequency bands and uses different variations of

the 802.11 standard, such as 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac.

3. Token Ring:

Token Ring is a LAN protocol that uses a token-passing mechanism to regulate data transmission. It ensures fair access to the network by passing a special token between devices. Token Ring is less commonly used today compared to Ethernet.

4. ARCNET:

ARCNET (Attached Resource Computer NETwork) is a LAN protocol that uses a token-passing bus topology. It provides a simple and cost-effective solution for small LANs but has limited scalability.

WAN Protocols:

1. TCP/IP:

TCP/IP (Transmission Control Protocol/Internet Protocol) is the foundational protocol suite of the Internet and is commonly used in WAN environments. It provides reliable, end-to-end communication over networks using IP addressing, TCP for connection-oriented communication, and UDP for connectionless communication.

2. MPLS (Multi-Protocol Label Switching):

MPLS is a WAN protocol used to improve the speed and efficiency of network traffic routing. It uses labels to identify and forward packets, allowing for faster routing decisions and better traffic management.

3. Frame Relay:

Frame Relay is a WAN protocol that provides connection-oriented communication over a packet-switched network. It allows multiple virtual circuits to be established within a single physical connection, providing efficient data transmission.

4. ATM (Asynchronous Transfer Mode):

ATM is a WAN protocol that transmits data in fixed-size cells. It supports both voice and data communication and offers high-speed, efficient transmission suitable for multimedia applications.

5. SONET (Synchronous Optical Networking) / SDH (Synchronous Digital Hierarchy):

SONET/SDH are WAN protocols commonly used in fiber-optic networks. They provide high-speed transmission of data, voice, and video signals over long distances.

Related posts:

1. What is computer network
2. Data Link Layer
3. Framing
4. Byte count framing method
5. Flag bytes with byte stuffing framing method
6. Flag bits with bit stuffing framing method
7. Physical layer coding violations framing method
8. Error Control in Data link layer

9. Stop and Wait
10. Sliding Window Protocol
11. One bit sliding window protocol
12. A Protocol Using Go-Back-N
13. Selective repeat protocol
14. Net 10
15. Net 9
16. Net 47
17. Net 43
18. OSI vs TCP/IP
19. TCP/IP Reference Model
20. OSI Reference Model
21. Computer Networks Introduction
22. Types of Computer Networks
23. Network Architectures
24. Computer Network Topologies
25. Network Address
26. IP Addresses
27. Class Full Addressing
28. Networking Media
29. Networking Devices
30. Structured cabling
31. Types of connectivities in Computer Networks
32. Introduction to Network Operating System(NOS)
33. ARP/RARP
34. Cooperative Caching