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Topic	Networking Topologies	Last updated on	07 July 2025

1. What is a network topology?

   A. The speed of the internet

   B. The layout or structure of a network

   C. The number of devices in a network

   D. The protocol used for communication

   Answer: B. The layout or structure of a network

   Explanation: A network topology refers to how nodes (devices) and connections (links) are arranged.

2. Which of the following is not a type of network topology?

   A. Bus

   B. Ring

   C. Star

   D. Layer

   Answer: D. Layer

   Explanation: Bus, Ring, and Star are topologies; Layer is part of the OSI model, not a topology.

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3. What is the main communication pathway called in a bus topology?

   A. Ring

   B. Hub

   C. Bus

   D. Mesh

   Answer: C. Bus

   Explanation: In bus topology, all devices share a single main communication line, known as the bus.

4. How are devices connected to the main communication line in a bus topology?

   A. Through switches

   B. Using drop lines or taps

   C. Using routers

   D. Wirelessly

   Answer: B. Using drop lines or taps

   Explanation: Devices are linked to the main bus through drop lines or taps.

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5. What happens if the main cable (bus) fails in a bus topology?

   A. Only one device fails

   B. Network performance improves

   C. The entire network fails

   D. Devices continue to work independently

   Answer: C. The entire network fails

   Explanation: In bus topology, the entire network depends on a single backbone. If it fails, communication stops.

6. What type of transmission is used in a bus topology?

   A. Unicast

   B. Broadcast

   C. Multicast

   D. Anycast

   Answer: B. Broadcast

   Explanation: Data sent over the bus is broadcasted to all devices, but only the intended recipient accepts it.

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7. Which device is commonly used at both ends of a bus to prevent signal reflection?

   A. Router

   B. Switch

   C. Repeater

   D. Terminator

   Answer: D. Terminator

   Explanation: Terminators are used at both ends of the bus to absorb signals and prevent signal bounce.

8. Bus topology is best suited for:

   A. Large enterprise networks

   B. Wireless networks

   C. Small, temporary networks

   D. Cloud-based systems

   Answer: C. Small, temporary networks

   Explanation: Due to its simplicity and low cost, bus topology is ideal for small or test networks.

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9. What type of cable is often used in traditional bus topologies?

   A. Twisted pair

   B. Fiber optic

   C. Coaxial cable

   D. HDMI cable

   Answer: C. Coaxial cable

   Explanation: Coaxial cables were commonly used in early bus topology networks due to their signal-carrying capabilities.

10. In which topology does data travel in one direction around a closed loop?

    A. Bus

    B. Ring

    C. Star

    D. Tree

    Answer: B. Ring

    Explanation: In a Ring topology, data moves in a circular path, usually in one direction.

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11. How does data typically travel in a ring topology?

A. In both directions simultaneously

B. Randomly

C. In a straight line

D. In one direction (unidirectional)

Answer: D. In one direction (unidirectional)

Explanation: Most ring topologies transmit data in a unidirectional manner, usually clockwise or counterclockwise.

12. What happens if a single device or connection fails in a standard ring topology (without redundancy)?

A. Network continues to operate normally

B. Only one device is affected

C. Entire network can fail

D. The failed device becomes a hub

Answer: C. Entire network can fail

Explanation: A break in the ring can disrupt the entire network, unless there's a dual ring or backup path.

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13. Which type of transmission is used in basic ring topology?

A. Broadcast

B. Unicast

C. Unidirectional

D. Multicast

Answer: C. Unidirectional

Explanation: Data typically travels in one direction only, moving from one device to the next in the ring.

14. What device is commonly used to manage data transmission in a ring topology?

A. Switch

B. Hub

C. Token

D. Bridge

Answer: C. Token

Explanation: Many ring networks use token passing, where a token circulates and only the device holding it can transmit.

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15. In a star topology, all devices are connected to:

A. A single shared cable

B. A ring of devices

C. A central node (hub or switch)

D. Each other directly

Answer: C. A central node (hub or switch)

Explanation: In star topology, every device connects to a central device like a hub or switch, which manages communication.

16. Which of the following best describes star topology?

A. All devices are connected in a loop

B. All devices are connected in a line

C. All devices are connected to a central point

D. All devices are wirelessly linked

Answer: C. All devices are connected to a central point

Explanation: In star topology, the structure is like a hub-and-spoke model with all devices connecting to a central node.

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17. What happens if one device fails in a star topology?

A. The entire network fails

B. Only that device is affected

C. The central hub fails

D. Data is sent wirelessly

Answer: B. Only that device is affected

Explanation: In star topology, failure of a single device does not affect the rest of the network, unless the central hub fails.

18. What happens if the central device (hub or switch) fails in star topology?

A. All devices continue working

B. Only the central device is affected

C. Entire network stops working

D. Data is rerouted through other devices

Answer: C. Entire network stops working

Explanation: If the central device fails, communication between all devices breaks down.

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19. Which of the following is a major advantage of star topology?

A. Minimal cabling

B. Easy to isolate faults and troubleshoot

C. Cheapest to install

D. Doesn't need a switch or hub

Answer: B. Easy to isolate faults and troubleshoot

Explanation: Because each device is individually connected, faults can be easily identified and fixed.

20. Which device is most commonly used at the center of a modern star topology?

A. Router

B. Modem

C. Switch

D. Bridge

Answer: C. Switch

Explanation: In modern networks, a switch is typically used at the center for faster and more efficient data forwarding.

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21. Star topology is considered:

A. Slow and outdated

B. Highly secure and scalable

C. Complex and inefficient

D. Only for wireless networks

Answer: B. Highly secure and scalable

Explanation: Star topology is efficient, scalable, and relatively secure, making It is the most popular topology today.

22. What type of topology is most widely used in home and office networks today?

A. Bus

B. Ring

C. Mesh

D. Star

Answer: D. Star

Explanation: Star topology is the most commonly used topology today due to its simplicity and reliability.

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23. In a mesh topology, how are devices connected?

A. Through a single cable

B. Through a central hub

C. Each device connects directly to every other device

D. In a circular loop

Answer: C. Each device connects directly to every other device

Explanation: In a mesh topology, every device is connected to every other device via a dedicated link.

24. What are the individual connections between devices in a mesh topology called?

A. Hops

B. Nodes

C. Links

D. Loops

Answer: C. Links

Explanation: The dedicated channels between devices are called links.

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25. What is the biggest advantage of mesh topology?

A. Low cost

B. Uses fewer cables

C. High reliability and redundancy

D. Simple to install

Answer: C. High reliability and redundancy

Explanation: Mesh topology offers multiple paths, so if one link fails, data can be sent through alternate routes.

26. Mesh topology is most commonly used in which type of network?

A. PAN

B. LAN

C. MAN

D. WAN

Answer: D. WAN (Wide Area Network)

Explanation: Due to its fault tolerance, mesh topology is ideal for critical WAN environments where uptime is essential.

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27. What happens if one link fails in a mesh network?

A. Entire network shuts down

B. Only the connected devices are affected

C. Data finds another path to the destination

D. Network becomes wireless

Answer: C. Data finds another path to the destination

Explanation: Mesh networks offer alternative routes, ensuring network continuity even when one link fails.

28. Which topology provides the best fault tolerance among the options below?

A. Star

B. Ring

C. Bus

D. Mesh

Answer: D. Mesh

Explanation: Because of its multiple redundant paths, mesh topology provides superior fault tolerance.

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29. Tree topology is a combination of which two topologies?

A. Ring and Bus

B. Mesh and Star

C. Star and Bus

D. Bus and Mesh

Answer: C. Star and Bus

Explanation: Tree topology combines star topology groups connected via a main bus line.

30. Tree topology is most commonly used in:

A. Personal home networks

B. Small coffee shops

C. Large organizations or universities

D. Bluetooth networks

Answer: C. Large organizations or universities

Explanation: Tree topology is ideal for large, structured networks, such as in campuses or corporate offices.

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31. What acts as the central backbone in a tree topology?

A. Switch

B. Ring cable

C. Main bus line

D. Token server

Answer: C. Main bus line

Explanation: The bus in tree topology serves as the central backbone connecting multiple star-configured nodes.

32. What is required at each star group in tree topology to manage traffic?

A. Modem

B. Hub or switch

C. Repeater

D. Firewall

Answer: B. Hub or switch

Explanation: Each star group in a tree topology uses a hub or switch to connect devices locally.

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33. What is a hybrid topology?

A. A topology with wireless-only connections

B. A topology that combines two or more different topologies

C. A topology that uses only mesh connections

D. A topology that works only for LANs

Answer: B. A topology that combines two or more different topologies

Explanation: Hybrid topology is formed by merging different types of topologies (e.g., star + bus, star + ring).

34. Why is hybrid topology considered flexible?

A. Because it uses coaxial cables

B. It supports only ring structures

C. It allows customization based on network needs

D. It only works on wireless networks

Answer: C. It allows customization based on network needs

Explanation: Hybrid topology can be custom-built for specific needs, making It is highly flexible.

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35. What is the biggest advantage of a hybrid topology?

A. Cheapest to install

B. Simple to design

C. Combines strengths of different topologies

D. Needs fewer devices

Answer: C. Combines strengths of different topologies

Explanation: It leverages the advantages of multiple topologies to create a powerful and adaptable network.

36. Which of the following is true about hybrid topology?

A. Not suitable for large networks

B. Difficult to scale

C. Easily modified and expanded

D. Cannot use routers or switches

Answer: C. Easily modified and expanded

Explanation: Hybrid topology is known for being highly scalable, especially in enterprise networks.

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37. A disadvantage of hybrid topology is:

A. Not secure

B. Not scalable

C. Complex to design and expensive

D. Doesn't support wired networks

Answer: C. Complex to design and expensive

Explanation: Designing a hybrid network is technically complex and may require higher costs due to its mixed structure.

38. Hybrid topologies are ideal for:

A. Small homes

B. Simple two-device connections

C. Large organizations with complex needs

D. Only wireless setups

Answer: C. Large organizations with complex needs

Explanation: Hybrid topology suits corporate networks, universities, and ISPs that demand flexibility and high performance.

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39. Which topology connects each device to every other device?

A. Mesh

B. Ring

C. Star

D. Bus

Answer: A. Mesh

Explanation: A Mesh topology connects every device to every other device, offering high redundancy.

40. Which topology is best suited for fault tolerance and redundancy?

A. Bus

B. Ring

C. Mesh

D. Star

Answer: C. Mesh

Explanation: Mesh topology offers multiple paths, so if one link fails, data can take another route.

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41. In a tree topology, the structure resembles:

A. A circle

B. A star and ring combined

C. A hierarchical tree with branches

D. A mesh of wires

Answer: C. A hierarchical tree with branches

Explanation: A tree topology is a hybrid that resembles a hierarchical branching structure.