

Exercises

1. Name two protocols that ensure that the packet transfer from IP A to IP B is completed.

Ans: UDP , TCP

2. What command do you use to see the current version of the IOS?

Ans: show version

3. Discuss the advantages and disadvantages of static routing and dynamic routing. Hint : Highlight factors such as simplicity, scalability, and adaptability to network changes.

Advantages of Static Routing:

Simplicity: Easy to configure and manage, especially in smaller networks.

- Predictability: Routing paths are explicitly defined, providing consistent routing behaviour.
- Lower resource overhead: Requires less CPU and memory resources compared to dynamic routing protocols.

Disadvantages

Lack of scalability: Not suitable for large or complex networks due to manual configuration requirements.

Limited adaptability: Cannot automatically adjust to network changes or failures without manual intervention.

- Maintenance overhead: Requires frequent updates and manual adjustments as network topology changes.

Advantages of Dynamic Routing:

- Scalability: Well-suited for large and dynamic networks, automatically adapting to changes in network topology.
- Adaptability: Dynamic routing protocols can quickly reroute traffic in response to network changes or failures.
- Efficient resource utilisation: Optimal routing decisions based on real-time network conditions, improving network efficiency.

Disadvantages of Dynamic Routing:

- Complexity: Configuration and management may be more complex compared to static routing, especially in larger networks.
- Overhead: Requires additional CPU and memory resources to run routing protocols and maintain routing tables.
- Potential for instability: Misconfigurations or network issues can lead to routing loops or suboptimal routing paths if not properly managed.

4. Give the command to manually configure static routes to reach the networks that are not directly connected. Choose IP addresses of your own.

Ans: R1(config)# ip route 172.16.0.0 255.255.255.0 10.0.0.2