




SENIOR NETWORK ENGINEER INTERVIEW VAULT



**Real Technical Interview Questions & Answers
for Senior-Level & CCNP/CCIE Candidates**

by Gokhan Kosem

www.ipcisco.com



Senior Network Engineer Interview Vault

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Gokhan Kosem - IPCisco.com

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Interview Questions & Advanced Practical Preparation Guide

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MODULE: NETWORK FUNDAMENTALS

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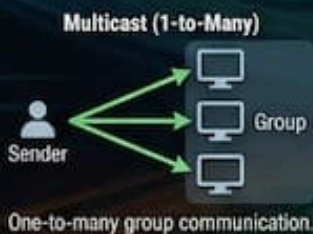
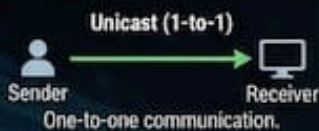
Question 1

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SENIOR LEVEL NETWORK ENGINEER INTERVIEW

Question: What is the difference between unicast, multicast, and anycast? Follow-up: Give an example of anycast usage.

Answer: Unicast, Multicast, Anycast



Unicast: one-to-one,
multicast: one-to-many,
anycast: one-to-nearest.

Answer: Anycast Example



Anycast is used in DNS servers or global content delivery networks to route clients to the nearest server based on network topology and performance metrics.

Question 6

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Question: What is the difference between uplink and downlink ports?
Follow-up: Why is this distinction important?

Answer: Uplink vs. Downlink Ports



Uplink: connects to higher-layer switch (towards network core);
Downlink: connects to end devices (towards network edge).

Answer: Importance of Distinction



Ensures proper traffic flow, optimized performance, prevents loops, and enables a scalable, manageable hierarchical network design.

MODULE: SWITCHING

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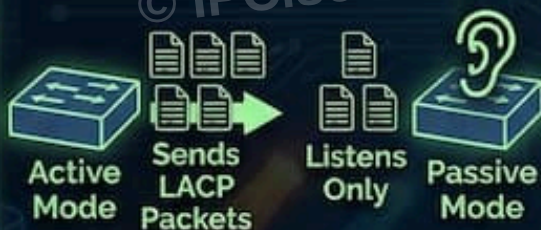


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Question: Active vs Passive mode in LACP — what's the difference?
Follow-up: Which mode initiates negotiation?

Answer: Active vs Passive Mode



Active sends LACP packets; Passive listens only.

Answer: Negotiation Initiation



Active mode initiates negotiation.

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SENIOR LEVEL NETWORK ENGINEER INTERVIEW INTERVIEW

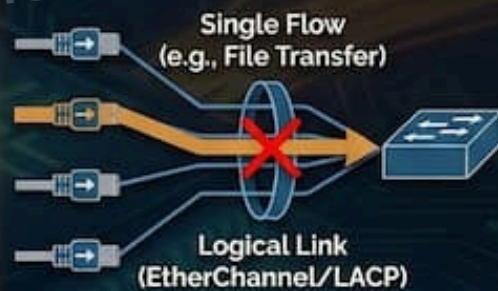
**Question: What is link aggregation used for?
Follow-up: Does it increase single-flow speed?**

Answer: Link Aggregation Purpose



It combines multiple physical links into one logical link.

Answer: Single-Flow Performance



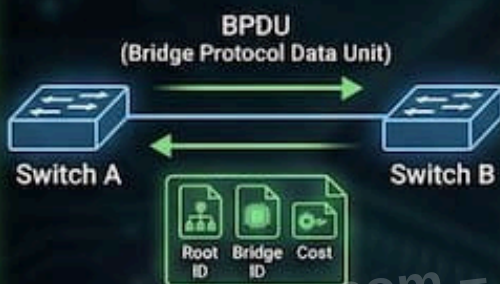
No, a single flow uses one link only.

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SENIOR LEVEL NETWORK ENGINEER INTERVIEW

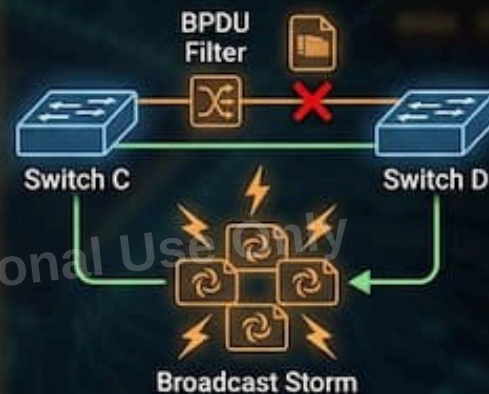
Question: What is the function of a BPDU in STP?
Follow-up: What happens if BPDUs are blocked?

Answer: BPDU Function in STP



BPDU carries spanning tree information between switches. It exchanges topology details to select the root bridge and determine path costs.

Answer: Blocked BPDUs Consequence



If blocked, STP can't detect loops, causing broadcast storms. This leads to network instability and potential network crashes.

MODULE: ROUTING

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**Question: What is the default
Administrative Distance of
EIGRP internal routes?**

**Follow-up Question: What is the
AD of EIGRP external routes?**

Answer:
EIGRP Internal AD



EIGRP internal routes
have a default
Administrative Distance
(AD) of 90.

Answer:
EIGRP External AD



EIGRP external routes
have a default
Administrative Distance
Distance (AD) of 170.



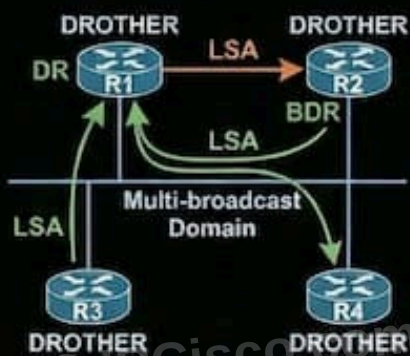
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Question: What is the purpose of the OSPF DR and BDR? Follow-up: How are they elected?

Answer: Purpose of OSPF DR/BDR



The DR (Designated Router) and BDR (Backup Designated Router) reduce LSA flooding in multi-access networks. They act as central points for LSA exchange.

Answer: OSPF DR/BDR Election



Election is based on the highest OSPF priority; if equal, highest router ID is used. The router with the highest value becomes DR, second highest becomes BDR.

The DR and BDR optimize OSPF performance on multi-access networks by minimizing control plane traffic. ✦

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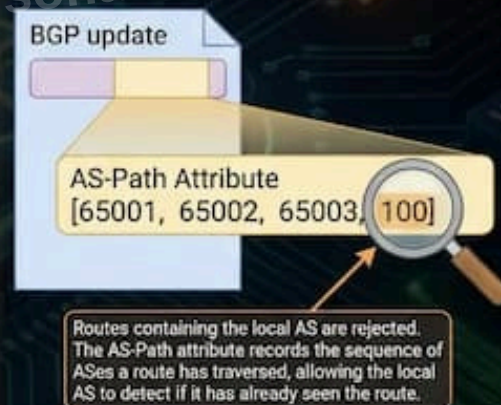
Question: How does BGP prevent routing loops?
Follow-up: Which attribute is used?

Answer: BGP Loop Prevention Mechanism



By checking the **AS-Path attribute**. Routes containing the local AS are rejected.

Answer: The Key Attribute (AS-Path)



Which attribute is used?
The AS-Path attribute is used to detect and prevent loops.

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SENIOR LEVEL NETWORK ENGINEER INTERVIEW

Question: A host cannot reach the network.
Which layer do you check first?
Follow-up: What do you verify at that layer?

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Answer:
First Layer Check

OSI
Model

L1

Layer 1
(Physical Layer)



Layer 1.

Answer:
Layer 1 Verification



Interface Status:
Up/Up

**Cables, link lights,
and interface
status.**

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Question: When should you use debug commands?
Follow-up: What is the main risk?

Answer: Ideal Usage Scenario



When logs are insufficient.

Answer: Main Risk



High CPU/Memory Utilization

They can impact performance.