COMPUTER NETWORKS

ASSIGNMENT-1

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Scenario: BGP is used to connect different regions in a financial companies.

Parameters:
→ BGP filters
→ Prefix control
→ Route propogation.

1. If 20 prefixes are advertised and 10 accepted, how many are filtered?

Ans: Advertised prefixes = 20, routes sent by BGP to neighbor.

Accepted prefixes = 10, routes that neighbor accept and install in its routing table

filtered prefixes = 20-10 = 10 filtered prefixes.

Example: Region A advertised 20 prefixes to region B.

Region B has filter allowing only 10 prefixes

Result : 10 prefixes are accepted and 10 filtered out.

2. What is the impact on route table size if route summarization is enabled?

Ans: When route summarization is enabled, the route table size decreases significantly.

* without summarization, each subnet is advertised individually.

* with summarization, multiple subnets are combined into a single larger prefix.

This reduces BGP table size, improves convergence speed and may hide more specific routers.

Example:

Before Summarization:

192.168.10.0/24 , 192.168.20.0/24 , 192.168.30.0/24
↓
3 entries

After Summarization:

192.168.0.0/22 (cover all subnets) → 1 entry

3. How does MED affect path decision selection between two same-length AS-PATHS?

Ans: MED (Multi-Exit discriminator) breaks the tie when AS-PATH lengths are equal.

* Default BGP path selection order:

1. Highest weight (cisco)

2. Highest local preference

3. Shortest AS-PATH

4. Lowest MED (used if AS-PATH is the same).

• MED is the hint to external neighbors about preferred entry points.