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Network Design and Configuration for ABC and XYZ Location Preferences

Pradip Suresh Patole
Westerly, Easterly, and Southerly

I. OVERVIEW

This document describes the network configuration changes required to ensure that certain locations prefer ABC for the default route while others prefer XYZ. The configurations include IP SLA for reachability tracking, route maps for policy-based routing, and EIGRP redistribution of static routes with adjusted metrics to control route preferences.

A. Pre-Requisite

1) Ensure backups are taken for all respective devices before applying configuration changes.
2) Confirm that static routes have been removed from both ISR and ASR routers.
3) Verify that the redistribute connected command is configured under EIGRP.

B. ABC Location Configuration

The ABC location will prefer the default route when the specified conditions are met.

C. IP SLA Configuration for ABC

Bash (Copy code)

```
ip sla 1
 icmp-echo <IP_to_track> source-ip <IP_ADDRESS>
 timeout 9000
 frequency <Frequency>
!
ip sla schedule 1 life forever start-time now
!
track 1 ip sla 1 reachability
!
track 2 ip route 0.0.0.0 0.0.0.0 reachability
!
track 3 list Boolean and
   object 1
   object 2
```

D. Default Route Configuration

bash
Copy code

```
ip route 0.0.0.0 0.0.0.0 <ABC_Next-hop_IP> tag 1 track 3
ip route 8.8.8.8 255.255.255.255 <Next-hop> tag 1 track 1
```

E. Redistribution and Route Map for ABC

bash
Copy code

```
redistribute static metric 10000 1000 255 1 1500 route-map STATIC->EIGRP
!
```

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```
route-map STATIC->EIGRP permit 10
   match tag 1
!
router eigrp <AS>
   redistribute static route-map STATIC->EIGRP
```

F. XYZ Location Configuration

The XYZ location will prefer the default route when the specified conditions are met.

IP SLA Configuration for XYZ:

```
bash
Copy code
ip sla 1
 icmp-echo <IP_to_track> source-ip <IP_ADDRESS>
 timeout 9000
 frequency <Frequency>
!
ip sla schedule 1 life forever start-time now
!
track 1 ip sla 1 reachability
!
track 2 ip route 0.0.0.0 0.0.0.0 reachability
!
track 3 list Boolean and
   object 1
   object 2
```

G. Default Route Configuration

```
bash
Copy code
ip route 8.8.8.8 255.255.255.255 <Next-hop> tag 9 track 1
ip route 0.0.0.0 0.0.0.0 <XYZ_Next-hop_IP> tag 9 track 3
```

H. Redistribution and Route Map for XYZ

```
bash
Copy code
redistribute static metric 10000 100 255 1 1500 route-map STATIC->EIGRP
!
route-map STATIC->EIGRP permit 10
   match tag 9
!
router eigrp <AS>
   redistribute static route-map STATIC->EIGRP
```

II. POLICY-BASED ROUTING AND ROUTE MAP FOR TAGGING AND REDISTRIBUTION

A. Subnet-Based Routing Configuration

```
bash
Copy code
ip prefix-list SUBNET-A seq 5 permit <Subnet-A_IP>/xx
ip prefix-list SUBNET-B seq 5 permit <Subnet-B_IP>/xx
```

```
!
route-map ADV permit 10
   match ip address prefix-list SUBNET-A
   set tag 500
!
route-map ADV permit 20
   match ip address prefix-list SUBNET-B
   set tag 1000
!
router eigrp <AS>
   redistribute connected route-map ADV
```

B. ABC Side Route Map for Tagging

bash
Copy code

```
route-map <NAME> permit 10
   match tag 500
!
route-map <NAME> deny 20
   match tag 1000
!
route-map <NAME> permit 30
!
router eigrp <AS>
   distribute-list route-map <NAME> in
```

C. XYZ Side Route Map for Tagging

bash
Copy code

```
route-map <NAME> permit 10
   match tag 1000
!
route-map <NAME> deny 20
   match tag 500
!
route-map <NAME> permit 30
!
router eigrp <AS>
   distribute-list route-map <NAME> in
```

D. Testing and Monitoring

For testing the configurations, use the following commands to verify the IP SLA and track status:

bash
Copy code

```
show track
show ip sla statistics
```

This will help confirm that the routes are correctly preferred according to the SLA conditions and that tracking is functional.

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III. CONCLUSION

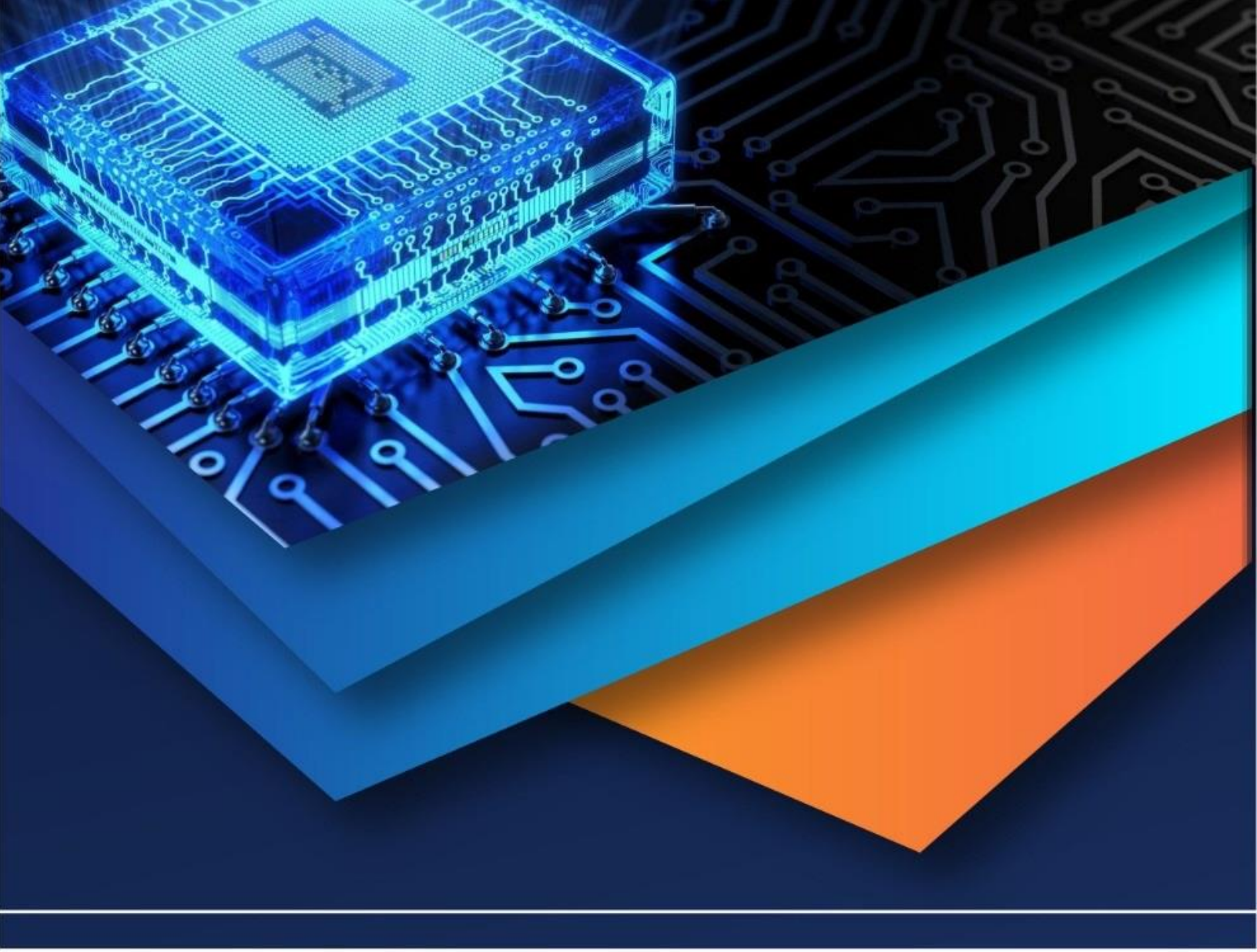
These configurations ensure that:

1) Subnet A accesses the internet through ABC.
2) Subnet B accesses the internet through XYZ.
3) The default route will be dynamically adjusted based on the availability of the monitored routes, allowing failover if one path goes down.
4) EIGRP and redistribution mechanisms are properly configured with route maps and appropriate metrics for optimal path selection.

Please proceed with applying the configurations as outlined. Make sure to validate the setup using the testing commands provided, and monitor the network to ensure the desired behavior.

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