



Networkforyou

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**Welcome
To
Network for you
Tshoot
Administrative Distance**



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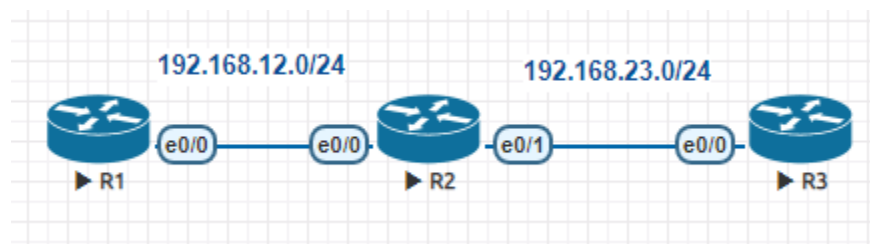


Administrative Distance:

- Administrative Distance is the feature that Routers use to select best path.
- Administrative Distance (AD) is measure of how trusted routing protocol is.
- Administrative Distance (AD) defines the reliability of a Routing protocol.
- Administrative Distance (AD) number is start from 0 and end on 255.
- If the Administrative Distance is 255, the router does not believe the source.
- Administrative Distance (AD) has only local significance and is not advertised in the routing updates.
- The smaller the administrative Distance value, the more reliable the protocol.
- Router is running multiple routing protocols; AD is to determine trustable protocol.
- Routing Protocol with lowest Administrative Distance (AD) wins put in routing table.
- The smaller the Administrative Distance (AD) value, the more reliable the protocol.
- When use route redistribution, occasionally need to modify administrative distance.
- Can modify the administrative distance of a protocol through the distance command.
- One common reason to change AD of a route is when you use Static Routes to backup.

Route Source	Default Administrative Distance
Connected Interfaces	0
Static Route	1
EIGRP Summary	5
External BGP	20
EIGRP	90
OSPF	110
IS-IS	115
RIP	120
External EIGRP	170
Internal BGP	200
Unknown	255

Lab Time:



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R1 Configuration:	R2 Configuration:	R3 Configuration:
<pre>en config t hostname R1 int e0/0 ip add 192.168.12.1 255.255.255.0 no sh !EIGRP Configuration: router eigrp 1 network 192.168.12.0 !OSPF Configuration: router ospf 1 network 192.168.12.0 0.0.0.255 area 0 !RIP Configuration: router rip version 2 network 192.168.12.0 no auto-summary</pre>	<pre>en config t hostname R2 int e0/0 ip add 192.168.12.2 255.255.255.0 no sh int e0/1 ip add 192.168.23.2 255.255.255.0 no sh !EIGRP Configuration: router eigrp 1 network 192.168.12.0 network 192.168.23.0 !OSPF Configuration: router ospf 1 network 192.168.12.0 0.0.0.255 area 0 network 192.168.23.0 0.0.0.255 area 0 !RIP Configuration: router rip version 2 network 192.168.12.0 network 192.168.23.0 no auto-summary</pre>	<pre>en config t hostname R3 int e0/0 ip add 192.168.23.3 255.255.255.0 no sh !EIGRP Configuration: router eigrp 1 network 192.168.23.0 !OSPF Configuration: router ospf 1 network 192.168.23.0 0.0.0.255 area 0 !RIP Configuration: router rip version 2 network 192.168.23.0 no auto-summary</pre>

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```
R1(config)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is not set

    192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.12.0/24 is directly connected, Ethernet0/0
L       192.168.12.1/32 is directly connected, Ethernet0/0
D       192.168.23.0/24 [90/307200] via 192.168.12.2, 00:11:45, Ethernet0/0
```

R1 EIGRP AD increase

```
router eigrp 1
distance eigrp 125 160
```

R2 EIGRP AD increase

```
router eigrp 1
distance eigrp 125 160
```

R3 EIGRP AD increase

```
router eigrp 1
distance eigrp 125 160
```

```
R1(config)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is not set

    192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.12.0/24 is directly connected, Ethernet0/0
L       192.168.12.1/32 is directly connected, Ethernet0/0
O       192.168.23.0/24 [110/20] via 192.168.12.2, 00:00:19, Ethernet0/0
```

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R1 OSPF AD increase

```
router ospf 1
distance ospf intra-area 130 inter-area 130
```

R2 OSPF AD increase

```
router ospf 1
distance ospf intra-area 130 inter-area 130
```

R3 OSPF AD increase

```
router ospf 1
distance ospf intra-area 130 inter-area 130
```

```
R1(config-router)#do sh ip rou
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override

Gateway of last resort is not set

    192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.12.0/24 is directly connected, Ethernet0/0
L       192.168.12.1/32 is directly connected, Ethernet0/0
R       192.168.23.0/24 [120/1] via 192.168.12.2, 00:00:06, Ethernet0/0
R1(config-router)#
```

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