

Typical Configuration Of OSPF Stub Area on AR28、AR46 Series Routers

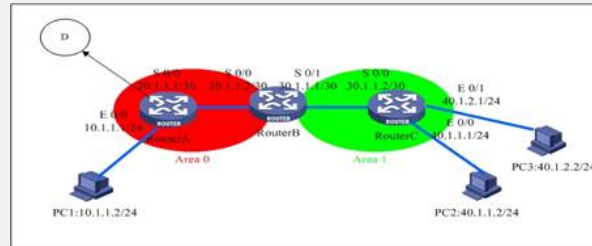
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[Requirements]

In an OSPF AS, Routers A and B run in area 0; Routers B and C run in area 1 (Stub area); Router B serves as the ABR. Router A imports an external route to D. No Type -5 external routes to D exist in area Area 1 accesses D through the default route advertised by the ABR.

[Networking diagram]



[Configuration script]

Configuration script on Router A

```
#
sysname RouterA
#
router id 1.1.1.1
#
radius scheme system
#
domain system
#
interface Ethernet0/0
ip address 10.1.1.1 255.255.255.0
#
interface Ethernet1/0/1
ip address 50.1.1.2 255.255.255.0
#
interface Serial0/0
link-protocol ppp
ip address 20.1.1.1 255.255.255.252
#
interface NULL0
#
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
#
ospf 1
import-route static /Import the static route/
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 10.1.1.0 0.0.0.255
network 20.1.1.0 0.0.0.3
#
ip route-static 100.1.1.0 255.255.255.0 50.1.1.1 preference 60
/Configure the static route to 100.1.1.0/24/
#
user-interface con 0
user-interface vty 0 4
#
return
```

Configuration script on Router B

```
#
sysname RouterB
#
router id 1.1.1.2
#
radius scheme system
#
domain system
#
interface Serial0/0
link-protocol ppp
ip address 20.1.1.2 255.255.255.252
#
interface Serial0/1
link-protocol ppp
ip address 30.1.1.1 255.255.255.252
#
interface NULL0
#
interface LoopBack0
ip address 1.1.1.2 255.255.255.255
#
ospf 1
area 0.0.0.1
network 30.1.1.0 0.0.0.3
stub /Configure area 1 to Stub area/
#
area 0.0.0.0
network 1.1.1.2 0.0.0.0
network 20.1.1.0 0.0.0.3
#
user-interface con 0
user-interface vty 0 4
#
return
```

Configuration script on Router C

```
#
sysname RouterC
#
router id 1.1.1.3
#
radius scheme system
#
domain system
#
interface Ethernet0/0
ip address 40.1.1.1 255.255.255.0
#
interface Ethernet1/0/1
ip address 40.1.2.1 255.255.255.0
#
interface Serial0/0
link-protocol ppp
ip address 30.1.1.2 255.255.255.252
#
interface NULL0
#
interface LoopBack0
ip address 1.1.1.3 255.255.255.255
#
ospf 1
area 0.0.0.1
network 1.1.1.3 0.0.0.0
network 30.1.1.0 0.0.0.3
network 40.1.1.0 0.0.0.255
network 40.1.2.0 0.0.0.255
stub /Configure area 1 to Stub area/
#
user-interface con 0
user-interface vty 0 4
#
return
```

[Verification]

Routers can learn the routes of the whole network through OSPF, and their network segments can be pinged mutually.

Routing table of Router C:

[RouterC]disp ip routing-table

Routing Table: public net

Destination/Mask	Protocol	Pre	Cost	NextHop	Interface
0.0.0.0/0	OSPF	10	1563	30.1.1.1	Serial0/0
1.1.1.1/32	OSPF	10	3125	30.1.1.1	Serial0/0
1.1.1.2/32	OSPF	10	1563	30.1.1.1	Serial0/0

1.1.1.3/32	DIRECT	0	0	127.0.0.1	InLoopBack0
10.1.1.0/24	OSPF	10	3125	30.1.1.1	Serial2/0/0
20.1.1.0/30	OSPF	10	3124	30.1.1.1	Serial2/0/0
30.1.1.0/30	DIRECT	0	0	30.1.1.2	Serial2/0/0
30.1.1.1/32	DIRECT	0	0	30.1.1.1	Serial2/0/0
30.1.1.2/32	DIRECT	0	0	127.0.0.1	InLoopBack0
40.1.1.0/24	DIRECT	0	0	40.1.1.1	Ethernet0/0
40.1.1.1/32	DIRECT	0	0	127.0.0.1	InLoopBack0
40.1.2.0/24	DIRECT	0	0	40.1.2.1	Ethernet0/1
40.1.2.1/32	DIRECT	0	0	127.0.0.1	InLoopBack0
127.0.0.0/8	DIRECT	0	0	127.0.0.1	InLoopBack0
127.0.0.1/32	DIRECT	0	0	127.0.0.1	InLoopBack0

[Tip]

1. Stub area is a special OSPF area, which **does not receive or spread** Type-5 LSAs (AS-external-LSAs). For a network with a great number of Type-5 LSAs, this method can effectively reduce the LSDB size of router in the Stub area and mitigate the resource utilization of SPF calculation for the router. In general, the Stub area is located at the AS border.
2. To guarantee that the packets in the Stub area can be correctly forwarded outside the AS, the ABR in the Stub area will advertise a default route to the local area through the Summary-LSA. This route is spread in the local area only.