

SmartPCTricks

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Redistribution between EIGRP and OSPF Cisco Router Configuration

By Mubashir VP | April 10, 2014

3 Comments

Hi, Welcome back to another wonderful [Cisco Networking tutorial](#). In this article I would like to show you about mutual **Redistribution between EIGRP and OSPF** configuration. Redistribution is the term used to inject routing updates between routers if there are two or more routing protocols enabled in a network or interconnecting two different networks having different routing protocol. We already discussed about [Redistribution between RIP and EIGRP](#), [Redistribution between RIP and OSPF](#). Well, **how to configure redistribution between EIGRP and OSPF?** EIGRP and OSPF are the popular routing protocols that exist today. Every enterprise network sticks on either of these protocols to route network traffic. Hence route redistribution between OSPF EIGRP is more often seen in business networks.



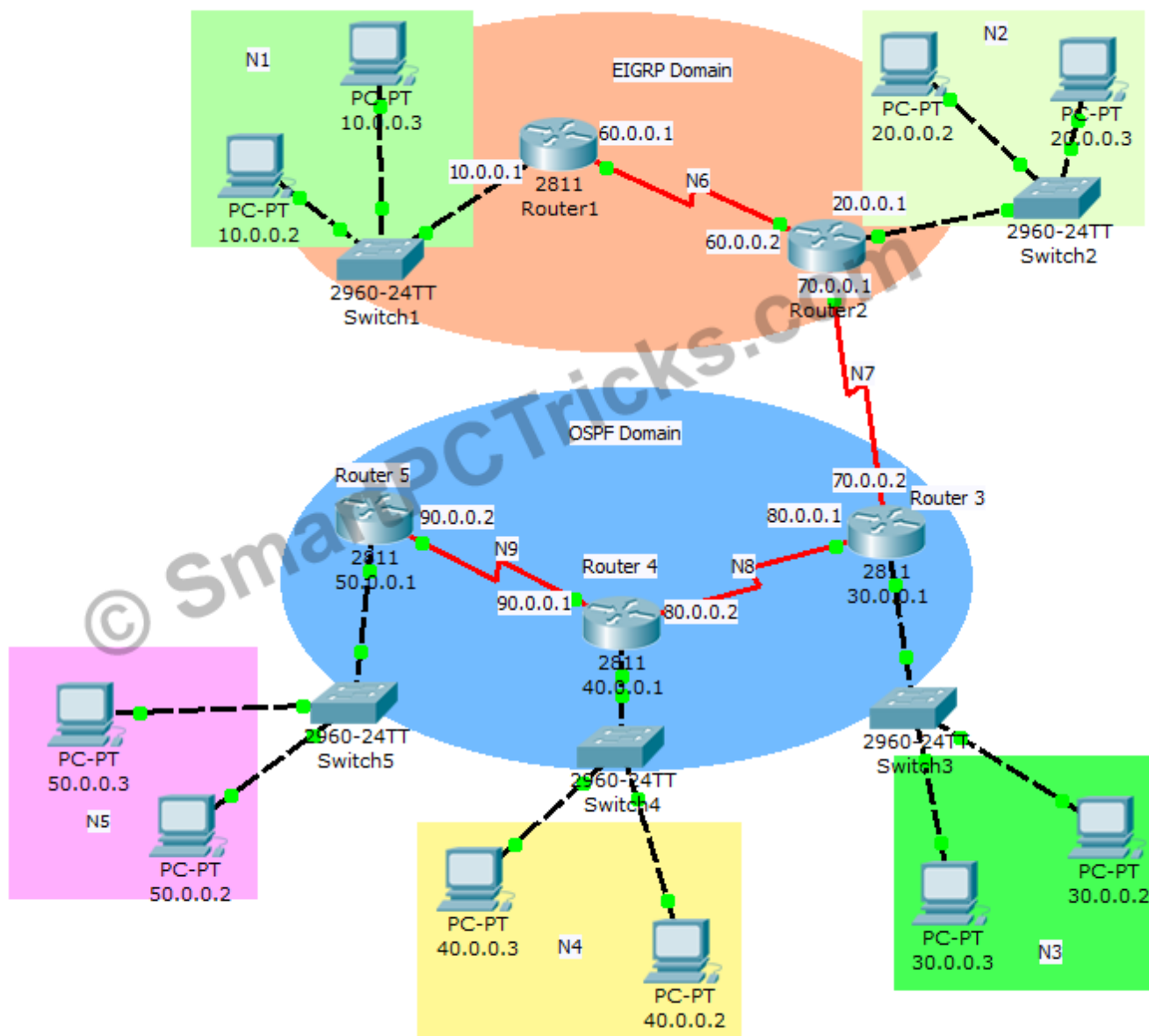
Reader of this post should familiar with

- [What is EIGRP \(Enhanced Interior Gateway Routing Protocol\) and Cisco EIGRP Configuration.](#)
- [What is OSPF \(Open Shortest Path First\) and Cisco OSPF Configuration.](#)

Let's begin with recalling the redistribution that we did in RIP.

Step 1: Initial Configurations

Our redistribute between EIGRP and OSPF example consist of two domains viz. **EIGRP Domain** and **OSPF Domain**. Configure these accordingly. We are gonna to implement redistribution in router 2 hence it is configured with bot *EIGRP1 and OSPF1*.



Router 1 EIGRP1

R1#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

```
R1(config)#router eigrp 1
R1(config-router)#network 10.0.0.0
R1(config-router)#network 60.0.0.0
R1(config-router)#no auto-summary
R1(config-router)#exit
R1(config)#
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#
```

Router 2 EIGRP1

```
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router eigrp 1
R2(config-router)#network 20.0.0.0
R2(config-router)#network 60.0.0.0
R2(config-router)#network 70.0.0.0
R2(config-router)#no auto-summary
R2(config-router)#exit
R2(config)#
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#
```

Router 2 OSPF1

```
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router ospf 1
R2(config-router)#network 20.0.0.0 0.255.255.255 area 0
R2(config-router)#network 60.0.0.0 0.255.255.255 area 0
R2(config-router)#network 70.0.0.0 0.255.255.255 area 0
R2(config-router)#exit
R2(config)#
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#
```

Router 3 OSPF1

```
R3#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#router ospf 1
R3(config-router)#network 30.0.0.0 0.255.255.255 area 0
R3(config-router)#network 70.0.0.0 0.255.255.255 area 0
R3(config-router)#network 80.0.0.0 0.255.255.255 area 0
R3(config-router)#exit
R3(config)#
R2#
%SYS-5-CONFIG_I: Configured from console by console

R3#
```

Router 4 OSPF1

```
R4#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#router ospf 1
R4(config-router)#network 40.0.0.0 0.255.255.255 area 0
R4(config-router)#network 80.0.0.0 0.255.255.255 area 0
R4(config-router)#network 90.0.0.0 0.255.255.255 area 0
R4(config-router)#exit
R4(config)#
R4#
%SYS-5-CONFIG_I: Configured from console by console

R4#
```

Router 5 OSPF1

```
R5#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#router ospf 1
R5(config-router)#network 50.0.0.0 0.255.255.255 area 0
R5(config-router)#network 90.0.0.0 0.255.255.255 area 0
R5(config-router)#exit
R5(config)#
R5#
%SYS-5-CONFIG_I: Configured from console by console

R5#
Basic configurations are completed.
```

Step 2: Routing Table verification

Now let's verify the routing tables of each router by **#show ip route** command

Router 1

R1#show ip route

Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, 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

Gateway of last resort is not set

C 10.0.0.0/8 is directly connected, FastEthernet0/0

D 20.0.0.0/8 [90/20514560] via 60.0.0.2, 00:05:54, Serial0/2/0

C 60.0.0.0/8 is directly connected, Serial0/2/0

D 70.0.0.0/8 [90/21024000] via 60.0.0.2, 00:05:54, Serial0/2/0

Router 2

R2#show ip route

Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, 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

Gateway of last resort is not set

D 10.0.0.0/8 [90/20514560] via 60.0.0.1, 00:07:14, Serial0/0/0

C 20.0.0.0/8 is directly connected, FastEthernet0/0

O 30.0.0.0/8 [110/65] via 70.0.0.2, 00:06:56, Serial0/2/0

O 40.0.0.0/8 [110/129] via 70.0.0.2, 00:06:56, Serial0/2/0

O 50.0.0.0/8 [110/193] via 70.0.0.2, 00:06:56, Serial0/2/0

C 60.0.0.0/8 is directly connected, Serial0/0/0

C 70.0.0.0/8 is directly connected, Serial0/2/0

O 80.0.0.0/8 [110/128] via 70.0.0.2, 00:06:56, Serial0/2/0

O 90.0.0.0/8 [110/192] via 70.0.0.2, 00:06:56, Serial0/2/0

Router 2 knows all networks in the scenario because it is running with both EIGRP1 and OSPF1.

Router 3

R3#show ip route

Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, 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

Gateway of last resort is not set

O 20.0.0.0/8 [110/65] via 70.0.0.1, 00:07:49, Serial0/0/0

C 30.0.0.0/8 is directly connected, FastEthernet0/0

O 40.0.0.0/8 [110/65] via 80.0.0.2, 00:07:49, Serial0/2/0

O 50.0.0.0/8 [110/129] via 80.0.0.2, 00:07:39, Serial0/2/0

O 60.0.0.0/8 [110/128] via 70.0.0.1, 00:07:49, Serial0/0/0

C 70.0.0.0/8 is directly connected, Serial0/0/0

C 80.0.0.0/8 is directly connected, Serial0/2/0

O 90.0.0.0/8 [110/128] via 80.0.0.2, 00:07:49, Serial0/2/0

Router 4

R4#show ip route

Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, 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

Gateway of last resort is not set

O 20.0.0.0/8 [110/129] via 80.0.0.1, 00:08:16, Serial0/0/0

O 30.0.0.0/8 [110/65] via 80.0.0.1, 00:08:16, Serial0/0/0

C 40.0.0.0/8 is directly connected, FastEthernet0/0

O 50.0.0.0/8 [110/65] via 90.0.0.2, 00:08:16, Serial0/2/0

```
O 60.0.0.0/8 [110/192] via 80.0.0.1, 00:08:16, Serial0/0/0
O 70.0.0.0/8 [110/128] via 80.0.0.1, 00:08:16, Serial0/0/0
C 80.0.0.0/8 is directly connected, Serial0/0/0
C 90.0.0.0/8 is directly connected, Serial0/2/0
```

Router 5

R5#show ip route

Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area

* - candidate default, U - per-user static route, o - ODR

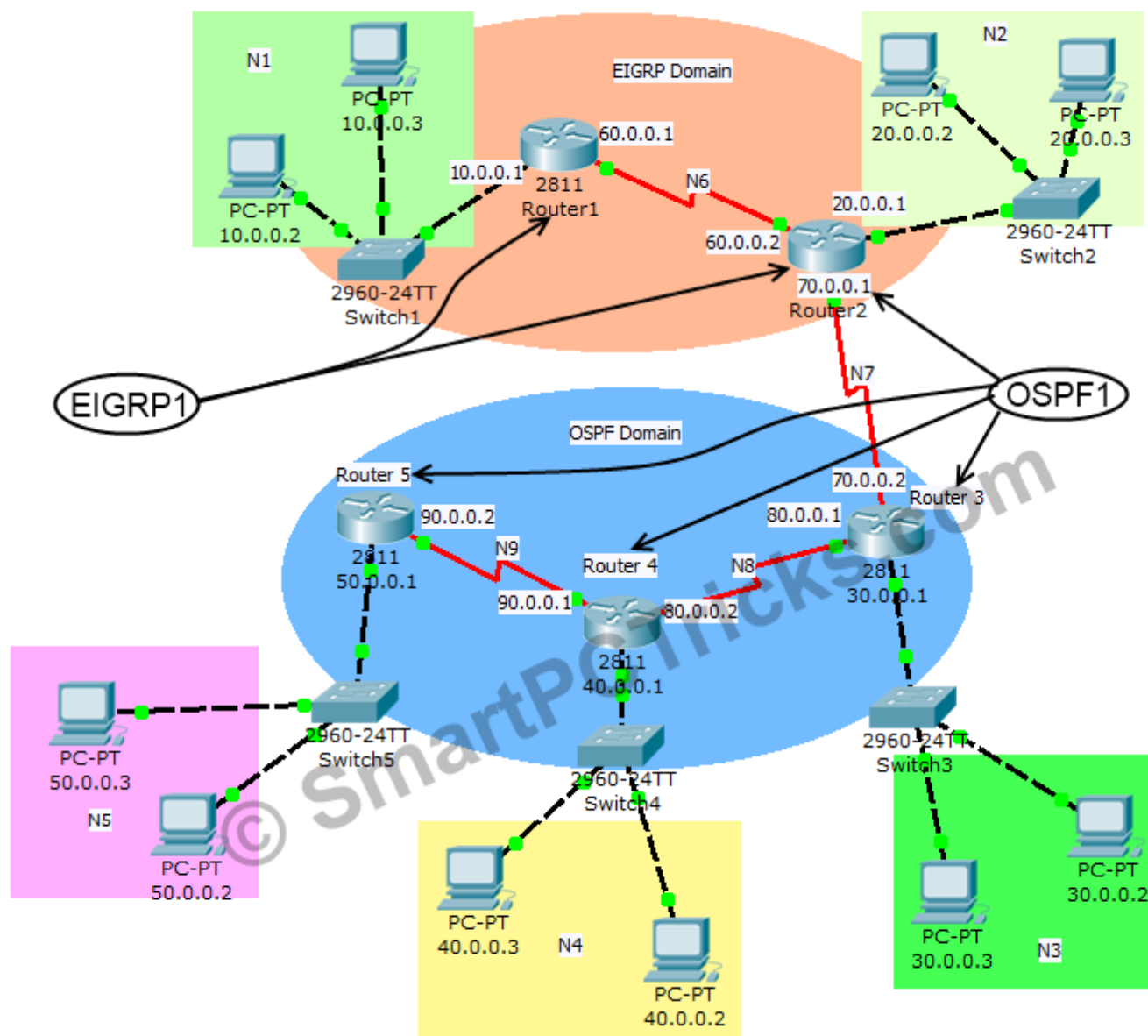
P - periodic downloaded static route

Gateway of last resort is not set

```
O 20.0.0.0/8 [110/193] via 90.0.0.1, 00:08:35, Serial0/2/0
O 30.0.0.0/8 [110/129] via 90.0.0.1, 00:08:35, Serial0/2/0
O 40.0.0.0/8 [110/65] via 90.0.0.1, 00:08:35, Serial0/2/0
C 50.0.0.0/8 is directly connected, FastEthernet0/0
O 60.0.0.0/8 [110/256] via 90.0.0.1, 00:08:35, Serial0/2/0
O 70.0.0.0/8 [110/192] via 90.0.0.1, 00:08:35, Serial0/2/0
O 80.0.0.0/8 [110/128] via 90.0.0.1, 00:08:35, Serial0/2/0
C 90.0.0.0/8 is directly connected, Serial0/2/0
```

Step 3: Redistribution between EIGRP and OSPF Protocols

The following figure shows the current configuration running on each router. Now run redistribute command on R2



Redistribute OSPF into EIGRP Commands (Packet Tracer)

To redistribute OSPF database to RIP table follow the configuration command syntax.

#redistribute ospf metric

R2(config-router)#redistribute ospf 1 metric ?

Bandwidth metric in Kbits per second

R2(config-router)#redistribute ospf 1 metric 1500 ?

EIGRP delay metric, in 10 microsecond units

R2(config-router)#redistribute ospf 1 metric 1500 1000 ?

EIGRP reliability metric where 255 is 100% reliable

R2(config-router)#redistribute ospf 1 metric 1500 1000 255 ?

EIGRP Effective bandwidth metric (Loading) where 255 is 100% loaded


```
R2(config-router)#redistribute ospf 1 metric 1500 1000 255 1 ?
EIGRP MTU of the path
R2(config-router)#redistribute ospf 1 metric 1500 1000 255 1 1500
R2(config-router)#exit
```

Redistribute EIGRP to OSPF

Syntax for inject EIGRP database to OSPF routing table is `#redistribute eigrp metric subnets`

`metric-type OSPF/IS-IS exterior metric-type OSPF/IS-IS exterior`
subnets Consider subnets for redistribution into OSPF
tag Set tag for routes redistributed into OSPF

```
R2(config-router)#redistribute eigrp 1 metric ?
OSPF default metric
R2(config-router)#redistribute eigrp 1 metric 10 ?
metric-type OSPF/IS-IS exterior metric-type for redistributed routes
subnets Consider subnets for redistribution into OSPF
tag Set tag for routes redistributed into OSPF
```

```
R2(config-router)#redistribute eigrp 1 metric 10 subnets
R2(config-router)#exit
R2(config)#
```

Check the routing table again, now the network is converged. The route **O E2 10.0.0.0/8 [110/10] via 90.0.0.1** is learned by mutual redistribution.

We have successfully completed mutual redistribution between EIGRP and OSPF. Keep visiting SPT for advanced Networking Tutorials.

Cheers!

Related Posts:

1. [Redistribution between RIP and OSPF Lab](#)
2. [Redistribution between RIP and EIGRP Cisco Router Configuration](#)
3. [Cisco Enhanced Interior Gateway Routing Protocol EIGRP Configuration Guide – How to configure EIGRP](#)
4. [Cisco OSPF Configuration Guide – Open Shortest Path First](#)

Category: CCNA Cisco Networking

3 thoughts on “Redistribution between EIGRP and OSPF Cisco Router Configuration”

**Matt**

October 29, 2014

Hello Jaseem!

I am very impressed with these articles regarding GNS3. They are a little dated since we released 1.1 last week. I encourage you to create an account and post these articles with the latest screenshots. I have a need for these to be ported into our GNS3 Jungle. Your Loopback adapter worked. But the actual direct connection to the Wifi Adapter did not work on my Windows 8.1.

In addition, you seem to be a very good Microsoft server pro. I'd like to see Microsoft server products featured inside the GNS3 topology so as to show novice Microsoft admins how to setup DNS, DHCP and other vital Microsoft services in a 'safe' environment in GNS3.

Let me know what you think about that.

-Matt

**Jaseem**[Post author](#)

October 30, 2014

Hi Matt,

Thank you for your feedback 😊 I have been contributing in GNS3 community, I have done some posts also. You can visit my profile at [Jaseem](#)

I will try to do some article regarding Microsoft server products with GNS3. Right now I'm working with IOU in GNS3.

**mohammed**

January 8, 2016

please, can you send to me the file .pkt for this tutorial about Redistribute OSPF into EIGRP Commands (Packet Tracer)

thank you very much