



Student notes for

David Bombal's

Packet Tracer
Labs Course



THANK YOU!

These student notes have been kindly shared by @DJninjaNZ

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These are not official student notes and are not officially supported, but are shared with the hope that they will help you with your CCNA studies.

If you want to share your notes with others on the course, please submit them to sales@ConfigureTerminal.com and we will review them for addition to the course.

Remember: You will probably learn more by making notes like these and sharing them for the benefit of others.

All the best!

David Bombal

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Brief

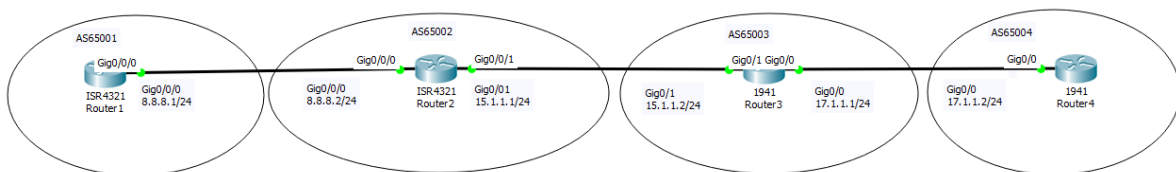
This lab is for configuring OSPF and reviewing how you can advertise specific networks or subnets or everything with one command.

Lab requirements

Configure the network as follows:

BGP T-Shoot

1. Configure R1 to ping R4
 - a. Check strategically from left to right or right to left
 - b. Or start from the centre routes and work out
 - i. Check all interfaces are advertised first and that the network commands are correct
 - ii. Check the remote-as command AS number are correct for each router
 - iii. Check the BGP neighbour adjacency -show ipbgp summary
 - iv. Ping 1.1.1.1 from R4
 - v. Ping 4.4.4.4 from R1 to verify full network convergence



Here we have four routers that we will check which could be incorrectly configured or not configured at all. **IMPORTANT**: packet tracer does have problems if you think everything is correct save all running configs to startup configs then save and restart the program.

Configurations and Verification

BGP T Shoot - 1

Step 1

R1#ping 1.1.1.1

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/4 ms

R1#show ipbgp summary

BGP router identifier 1.1.1.1, local AS number 65001

Neighbor V AS MsgRcvdMsgSentTblVerInQOutQ Up/Down State/PfxRcd

8.8.8.2 4 65002 45 33 15 0 0 00:15:04 4

//this means R1 – R2 is working as expected and the correct networks are advertised and BGP has an adjacency

neighbor 17.1.1.2 remote-as 65004

neighbor 15.1.1.1 remote-as 65002

Verification commands and outputs

R2#show ipbgp summary

BGP T Shoot - 2

router bgp 65004

no network 4.4.4.0 mask 255.255.255.0

network 4.4.4.4 mask 255.255.255.255

Verification commands and outputs

BGP T Shoot - 3

R2

router bgp 65002

no neighbor 8.8.8.8 remote-as 65001

neighbor 8.8.8.1 remote-as 65001

R3

int g0/0

shut

ip add 17.1.1.1 255.255.255.0

no shut

Verification commands and outputs

R1#traceroute 4.4.4.4

Type escape sequence to abort.

Tracing the route to 4.4.4.4

1 10.1.1.2 0 msec 0 msec 0 msec

2 10.1.2.2 0 msec 0 msec 0 msec

3 10.1.3.2 0 msec 0 msec 0 msec

BGP T Shoot - 4

```
R3
router bgp 65003
neighbor 15.1.1.1 remote-as 65002
neighbor 17.1.1.2 remote-as 65004
network 3.3.3.3 mask 255.255.255.255
network 15.1.1.0 mask 255.255.255.0
network 17.1.1.0 mask 255.255.255.0
```

Verification commands and outputs

```
R4#%BGP-5-ADJCHANGE: neighbor 17.1.1.1 Up
```

R4#ping 1.1.1.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/17/88 ms

R4#traceroute 1.1.1.1

Type escape sequence to abort.

Tracing the route to 1.1.1.1

```
1 17.1.1.1 0 msec 1 msec 0 msec
2 15.1.1.1 0 msec 1 msec 1 msec
3 8.8.8.1 0 msec 0 msec 0 msec
```

R4#show 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, 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

1.0.0.0/32 is subnetted, 1 subnets

B 1.1.1.1/32 [20/0] via 17.1.1.1, 00:00:00

2.0.0.0/32 is subnetted, 1 subnets

B 2.2.2.2/32 [20/0] via 17.1.1.1, 00:00:00

3.0.0.0/32 is subnetted, 1 subnets

B 3.3.3.3/32 [20/0] via 17.1.1.1, 00:00:00

4.0.0.0/32 is subnetted, 1 subnets

C 4.4.4.4/32 is directly connected, Loopback0

8.0.0.0/24 is subnetted, 1 subnets

B 8.8.8.0/24 [20/0] via 17.1.1.1, 00:00:00

15.0.0.0/24 is subnetted, 1 subnets

B 15.1.1.0/24 [20/0] via 17.1.1.1, 00:00:00

17.0.0.0/8 is variably subnetted, 2 subnets, 2 masks

C 17.1.1.0/24 is directly connected, GigabitEthernet0/0

L 17.1.1.2/32 is directly connected, GigabitEthernet0/0

Extra Examples and Resources

Cisco BGP

<https://www.cisco.com/c/en/us/support/docs/ip/border-gateway-protocol-bgp/22166-bgp-trouble-main.html>

<https://www.cisco.com/c/en/us/support/docs/ip/border-gateway-protocol-bgp/19345-bgp-noad.html>