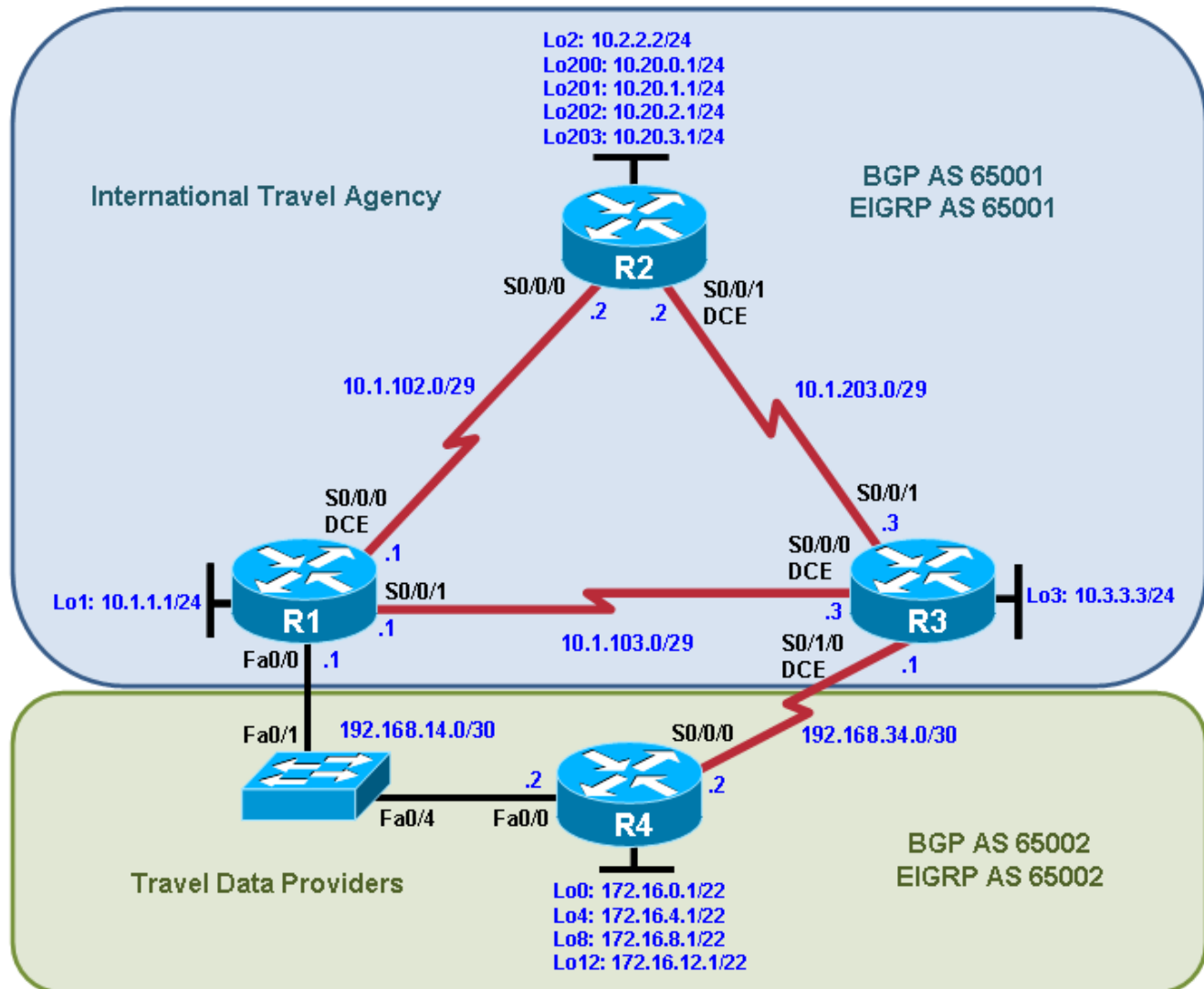# Chapter 6 Lab 6-5, BGP Case Study

Topology

Objectives

- Plan, design, and implement the International Travel Agency core network.
- Plan, design, and implement the Travel Data Providers network.
- Allow the networks to communicate via BGP.
- Verify that all implementations are operational and functional according to the guidelines.

Background

The International Travel Agency (ITA) needs both its core network and its Travel Data Providers (TDP) network set up. Configure each network to run EIGRP, and use BGP to advertise routes between the two.

Note: This lab uses Cisco 1841 routers with Cisco IOS Release 12.4(24)T1 and the Advanced IP Services image c1841-advipservicesk9-mz.124-24.T1.bin. The switch is a Cisco WS-C2960-24TT-L with the Cisco IOS image c2960-lanbasek9-mz.122-46.SE.bin, You can use other routers (such as a 2801 or 2811), switches (such as a 2950), and Cisco IOS Software versions if they have comparable capabilities and features. Depending on the router or switch model and Cisco IOS Software version, the commands available and output produced might vary from what is shown in this lab.

Required Resources

- 4 routers (Cisco 1841 with Cisco IOS Release 12.4(24)T1 Advanced IP Services or comparable)
- 1 switch (Cisco 2960 with the Cisco IOS Release 12.2(46)SE C2960-LANBASEK9-M image or comparable)
- Serial and Ethernet cables

Requirements

1. Use the addressing scheme shown in the diagram.
2. Configure the ITA network to be in EIGRP AS 65001.
3. Configure the TDP network to be in EIGRP AS 65002.
4. Disable automatic summarization in both EIGRP domains.
5. Configure the ITA network to be in BGP AS 65001, and the TDP network to be in BGP AS 65002.
6. Advertise the 192.168.14.0/30 and 192.168.34.0/30 networks in both EIGRP autonomous systems.
7. Configure the interfaces on the border routers between the two EIGRP autonomous systems, so they do not send EIGRP packets.
8. All routers will be participating in BGP. Configure all routers for a full mesh of IBGP peers in each system.
9. Peer R1 and R2 using loopback addresses, not their directly connected interfaces.
10. Advertise all loopback interfaces into the BGP process, except on R2, where the only loopback advertised should be loopback 2.
11. On R2, create a static summary route for the rest of its loopback interfaces and advertise this static route in BGP.
12. R4 should send a summary route to ITA representing all the R4 loopback interfaces.
13. R4 should prefer the path to ITA networks via the Ethernet link between R1 and R4. Accomplish this by modifying the MED advertised to TDP.
14. Routers in the ITA AS should prefer the path to TDP networks via the Ethernet link between R1 and R4. Accomplish this by modifying the local preference of routes being advertised in from TDP.

Notes:

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Router Interface Summary Table

Router Interface Summary				
Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
1700	Fast Ethernet 0 (FA0)	Fast Ethernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)
1800	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2600	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)
2800	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
Note: To find out how the router is configured, look at the interfaces to identify the type of router and how many interfaces the router has. Rather than list all combinations of configurations for each router class, this table includes identifiers for the possible combinations of Ethernet and serial interfaces in the device. The table does not include any other type of interface, even though a specific router might contain one. For example, for an ISDN BRI interface, the string in parenthesis is the legal abbreviation that can be used in Cisco IOS commands to represent the interface.				

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