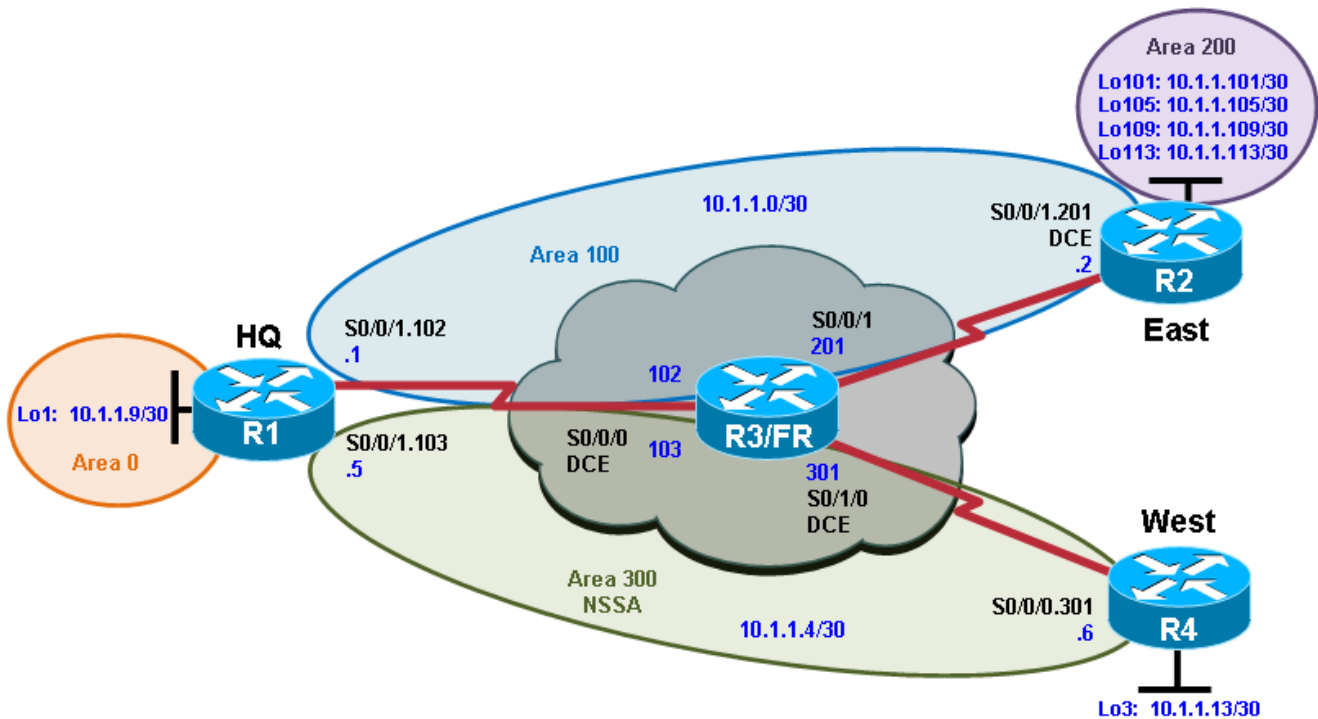


## Chapter 3 Lab 3-7, OSPF Case Study

### Topology



### Objectives

- Plan, design, and implement the International Travel Agency network shown in the diagram and described below.
- Verify that all configurations are operational and functioning according to the guidelines.

**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. You can use other routers (such as a 2801 or 2811) and Cisco IOS Software versions if they have comparable capabilities and features. Depending on the router 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 Service or comparable)
- Serial and console cables

### Requirements

The International Travel Agency needs its core network set up for OSPF with the specifications indicated in the diagram and listed below. Design, configure, and test a network that meets all the following requirements:

## CCNPv6 ROUTE

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1. Use the addressing scheme shown in the diagram.
2. Configure OSPF with the networks shown in the diagram.
3. Configure the OSPF backbone area to be on Loopback0 on HQ.
4. Configure the Frame Relay subnets as point-to-point subinterfaces, with the link between HQ and East in area 100, and the link between HQ and West in area 300.
5. Configure area 300 as an NSSA.
6. Configure the router East loopback interfaces to be in area 200. Summarize this area with the most efficient summary.
7. Redistribute the loopback network on router West into OSPF.
8. Create virtual links as necessary for full connectivity.
9. Make sure that all loopback interfaces are advertised with the correct subnet mask.

### Notes:

## 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) |
| <p><b>Note:</b> 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.</p> |                           |                           |                       |                       |