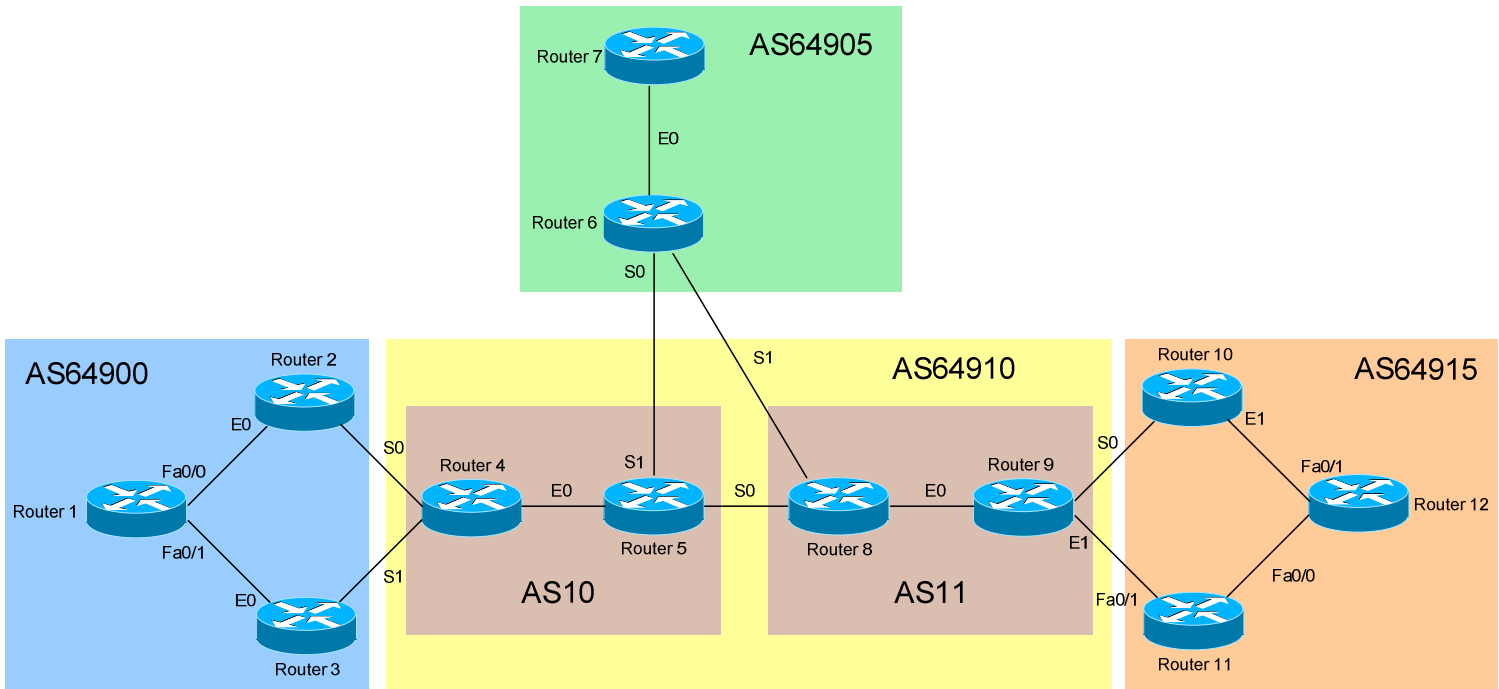


## - Advanced BGP Lab -

### Configuring Advanced BGP - Lab



### Basic Objectives:

1. Configure and cable the Serial/Ethernet interfaces as indicated in the above diagram.
2. Configure the IP addresses on the routers using the following 192.168.YY.x/24 scheme:
 

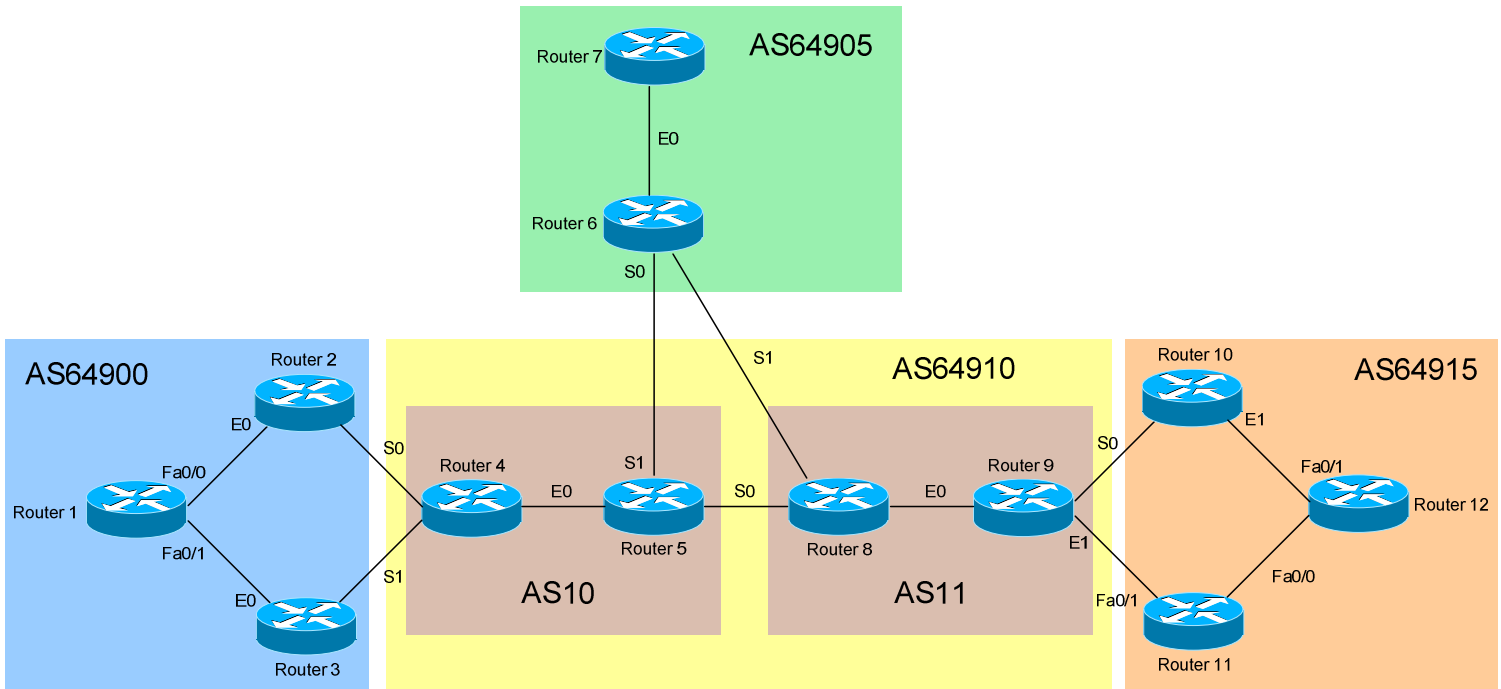
Router 1 – 2 = 192.168.12.x	Router 6 – 7 = 192.168.67.x
Router 1 – 3 = 192.168.13.x	Router 6 – 8 = 192.168.68.x
Router 2 – 4 = 192.168.24.x	Router 8 – 9 = 192.168.89.x
Router 3 – 4 = 192.168.34.x	Router 9 – 10 = 192.168.109.x
Router 4 – 5 = 192.168.45.x	Router 9 - 11 = 192.168.119.x
Router 5 – 6 = 192.168.56.x	Router 10 – 12 = 192.168.120.x
Router 5 – 8 = 192.168.58.x	Router 11 – 12 = 192.168.121.x
3. Configure a loopback interface on each router. The interface should have an address using the following scheme: Y.Y.Y.Y/24. For example, Router 4's loopback should be 4.4.4.4/24.

\* \* \*

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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

4. Each autonomous system should be configured with an IGP as follows:
  - a. AS64900 – EIGRP
  - b. AS64905 – RIP
  - c. AS64910 – OSPF
  - d. AS64915 – EIGRP

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5. Do NOT configure the IGP on interfaces connecting to a different Autonomous System. For example, don't configure EIGRP on Router 2's Serial0 interface. Ensure that IGP updates are *never* sent or received on these interfaces.

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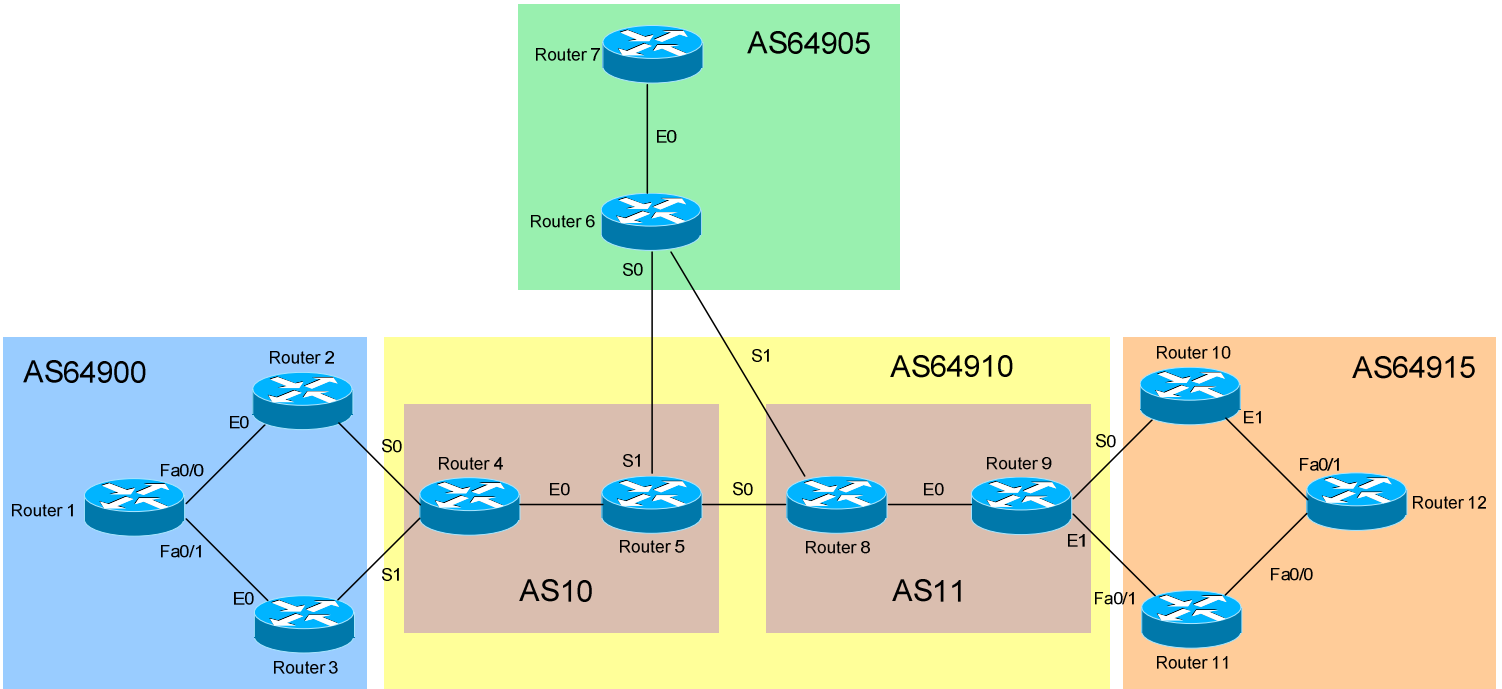
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

- 6. Ensure that the loopback interfaces are also included in the IGP process. For the OSPF AS's, place the loopback interfaces in an area other than Area 0.

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- 7. Configure BGP on *all* routers, using the diagrammed Autonomous System numbers. Configure the Confederation as indicated.

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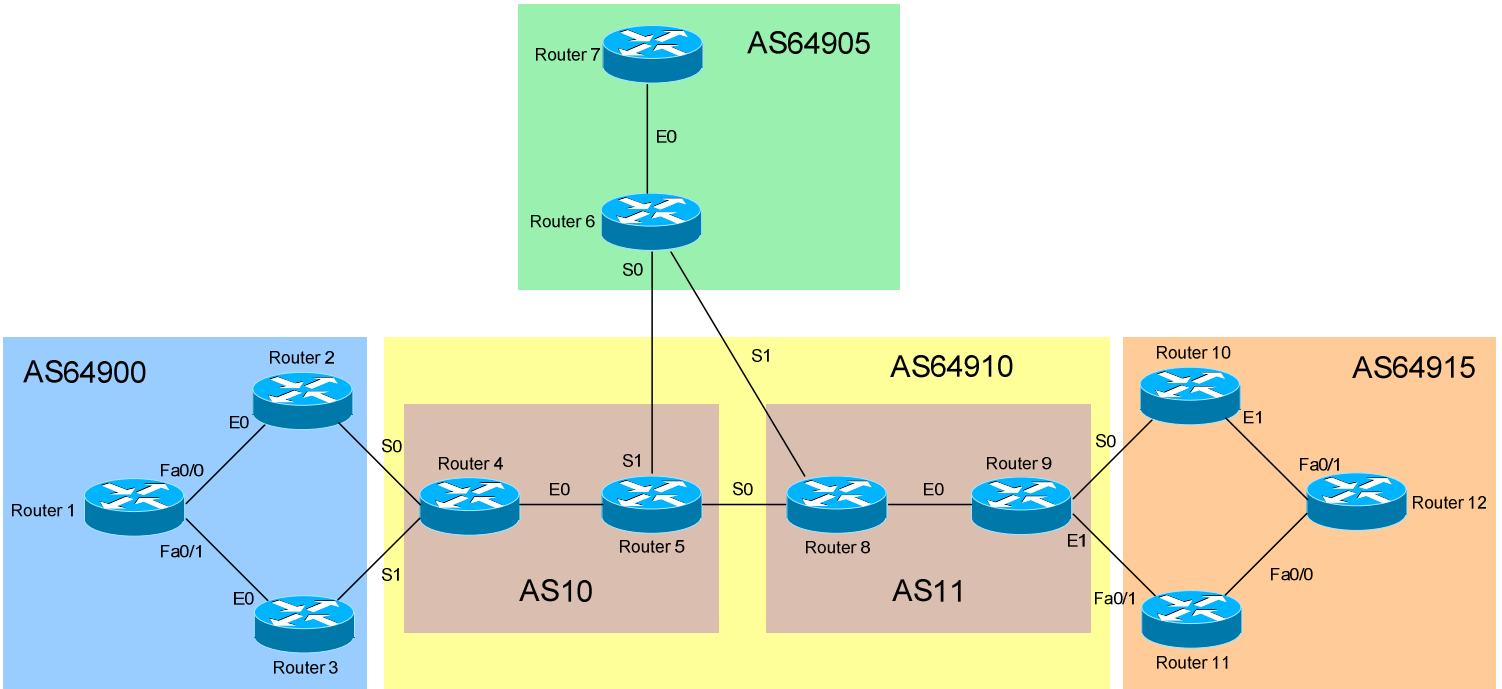
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

- 8. Form iBGP and eBGP neighbor relationships where appropriate. However, configure Router 1 and Router 12 as Route Reflector servers in their respective AS's.

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- 9. Ensure that all BGP updates between peers are sourced from each router's loopback interface.

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- 10. Configure authentication between all BGP peers. Use a password of CISCO.

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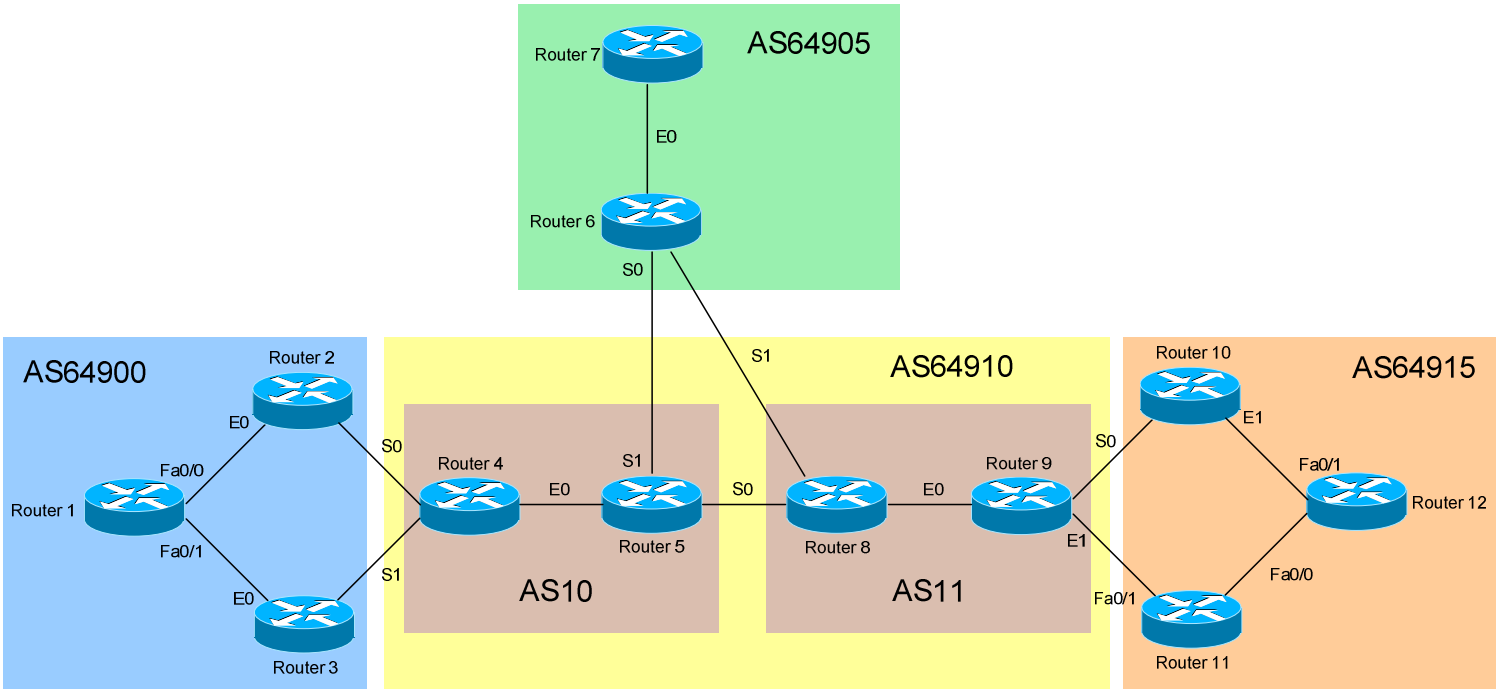
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

11. View your BGP neighbor table. Ensure all neighbors are established.

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12. Advertise all **physical** and **loopback** interfaces within an AS to EBGP peers. You may not use the *network* command.

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13. View the BGP table to ensure the routes have been injected into BGP.

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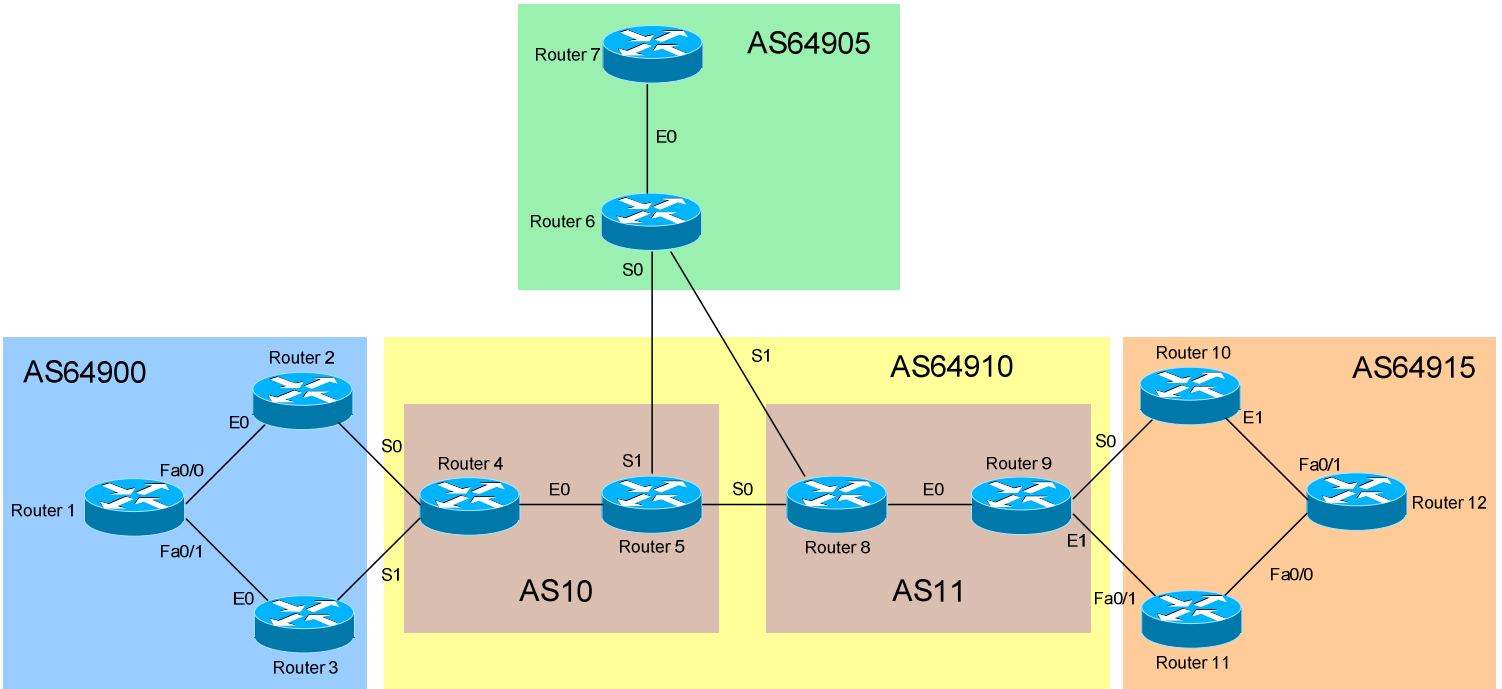
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

14. Ensure reachability to these networks throughout all AS's.

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15. Ensure that Router 4 prefers the path through Router 3 to reach Router 1's loopback interface. Do not configure anything on Router 3 or Router 4 to accomplish this.

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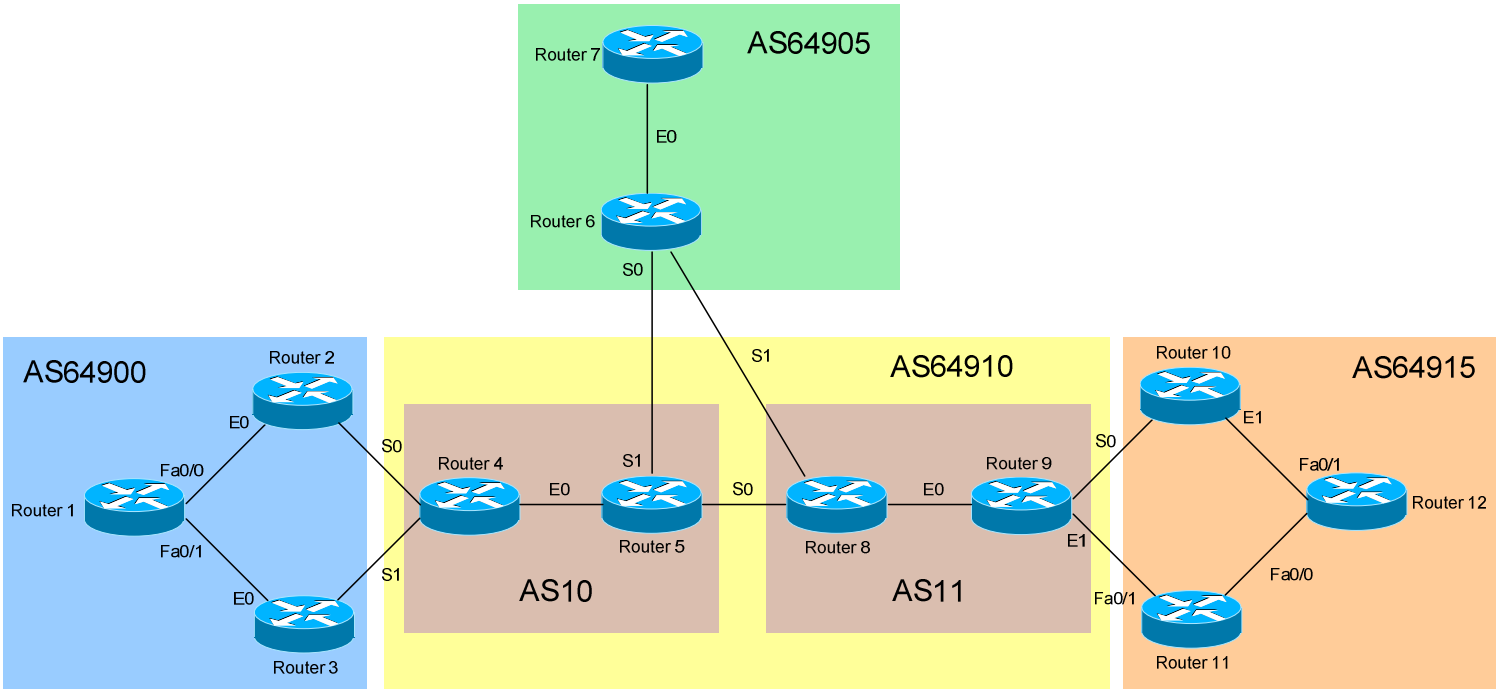
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

16. Ensure that Router 9 prefers the path through Router 10 to reach Router 12's loopback interface. Do not configure anything on Router 10 or Router 11 to accomplish this.

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17. Ensure that Router 6 prefers the path through Router 8 to reach all loopbacks in AS64915. Use BGP's metric to accomplish this.

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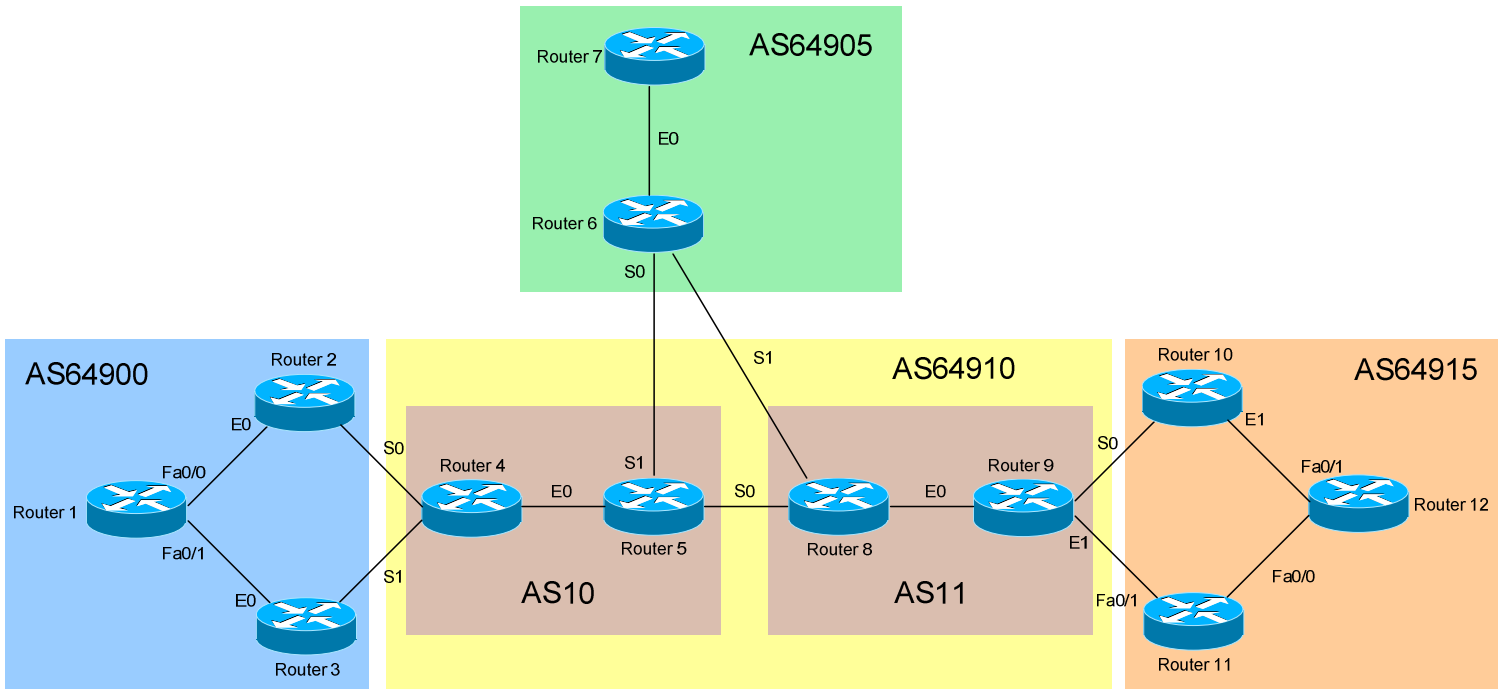
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**Configuring Advanced BGP – Lab (continued)**



**BGP Objectives:**

18. Ensure that Router 1 prefers the path through Router 2 to reach *all* external networks. Perform the configuration only on Router 1 to accomplish this.

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19. Ensure that Router 12 prefers the path through Router 11 to reach networks in AS64905. Do not use BGP’s metric, local preference, or weight.

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