

Lab 6.5.5 Configure Layer 3 Site-to-Site Wireless Link—OPTIONAL Challenge Lab

Estimated Time: 45 minutes

Number of Team Members: Students will work in teams of two.

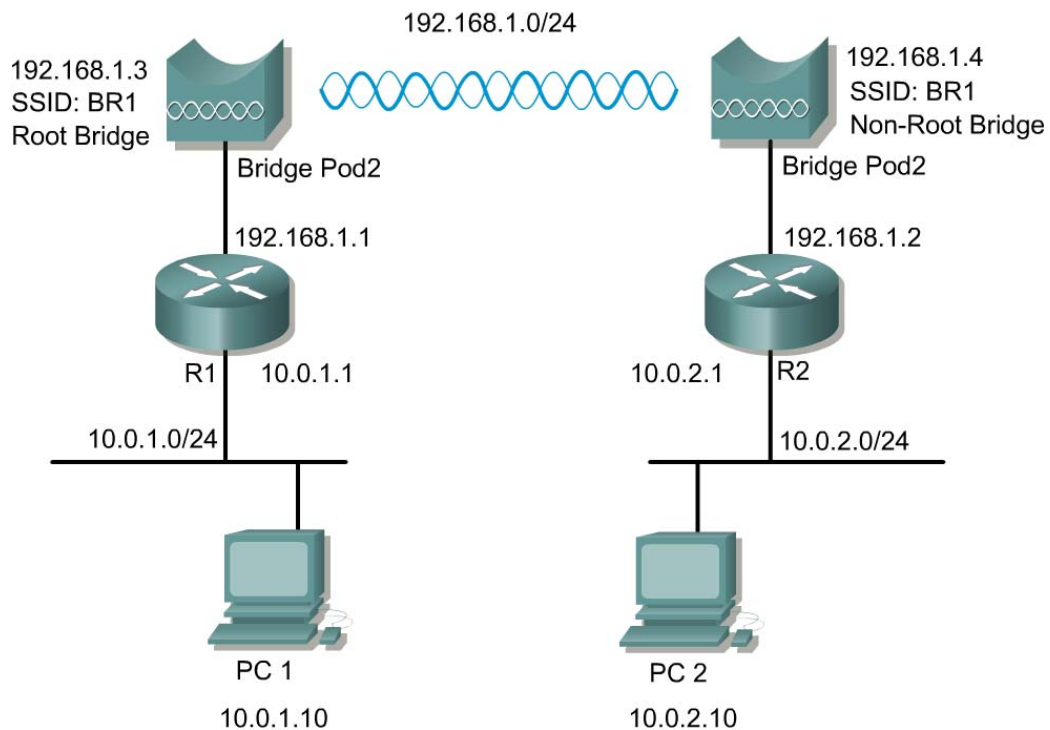
Objective

Configure a site-to-site bridge network separated by a Layer 3 device. Test the speed of the wireless bridge link.

Scenario

A remote location which is several miles away requires connectivity to the existing wired network. The connection can be bridged wirelessly with two BR350s. In large networks, it is necessary to provide Layer 2 broadcast control using routers.

Topology



Preparation

The instructor or students must cable and configure the perimeter routers in addition to the wired LAN. The routers Ethernet interfaces must be configured and enabled. Static routing should be configured on the routers. Ensure that the devices are configured according to the topology. The bridge devices should be configured as follows:

| <u>Device Name</u> | <u>Label</u> | <u>SSID</u> | <u>Address</u> |
|--------------------|--------------|-------------|----------------|
| BPod1 | BR1 | BR1 | 192.168.1.3/24 |
| BPod2 | BR2 | BR1 | 192.168.1.4/24 |

Tools and Resources

Each team will require the following:

- Two wired LAN segments that will be bridged together
- Two Cisco 1310s with 2.4dBi dipole antenna(s)
- Two dual Ethernet routers
- Two switches or hubs(optional)

Step 1 Connect and reset both bridges

Connect to the bridge via the console connection and reset the bridge to factory default settings. Refer to a previous lab if you are unsure how to do this.

Step 2 Connect to the bridge web interface

From the wired PC, open a web browser and navigate to the default IP address of the bridge. Remember that the default factory settings are:

- a. IP address: 10.0.0.1
- b. Username: Cisco
- c. Password: Cisco

Step 3 Configure the bridge settings

Using both the Express Set-up and Express Security pages, configure the bridge with the following settings:

| <u>Parameter</u> | <u>BPod1</u> | <u>BPod2</u> |
|----------------------------------|-----------------------------|-------------------------------|
| • System Name: | <i>BPod1</i> | <i>BPod2</i> |
| • Configuration Server Protocol: | <i>Static IP</i> | <i>Static IP</i> |
| • IP address: | <i>192.168.1.3</i> | <i>192.168.1.4</i> |
| • Subnet Mask: | <i>255.255.255.0</i> | <i>255.255.255.0</i> |
| • Default Gateway: | <i>192.168.1.1</i> | <i>192.168.1.2</i> |
| • Service Set ID: | <i>BR1</i> | <i>BR1</i> |
| • Role in Radio Network: | <i>Root Bridge</i> | <i>Non-Root Bridge</i> |

Click Apply. The connection will drop.

Step 4 Cable and configure the routers and PCs

Using dual Ethernet routers, such as an 806, 2514, or equivalent. Configure both routers with the following commands:

| | |
|--|--|
| <pre>hostname Router1 int fa0/0 ip address 192.168.1.1 255.255.255.0 description outside no shut ! int fa0/1 ip address 10.0.1.1 255.255.255.0 description inside no shut ! router eigrp 1 network 10.0.0.0 network 192.168.1.0 no auto-summary ! line vty 0 4 password cisco login</pre> | <pre>hostname Router2 int fa0/0 ip address 192.168.1.2 255.255.255.0 description outside no shut ! int fa0/1 ip address 10.0.2.1 255.255.255.0 description inside no shut ! router eigrp 1 network 10.0.0.0 network 192.168.1.0 no auto-summary ! line vty 0 4 password cisco login</pre> |
|--|--|

a. Configure the PCs:

PC1 with an IP address of 10.0.1.10/24.

PC2 with an IP address of 10.0.2.10/24

b. Reconnect using the browser. Enter 10.0.P.1 and connect.

c. Verify the settings.

1. What other routing method can be used instead of EIGRP?

2. Can static routes be used? If so, what is the advantage/disadvantage?

Step 5 Advanced Radio settings for the non-root bridge

- a. From the left navigation bar, select **Network Interfaces>Radio0 802.11G** and then the **Settings** tab.
- b. Enter the MAC address of the Root Bridge radio into the **Root Parent MAC 1:** field. Remember to use the MAC address of the root bridge radio.
- c. Click the **Apply** button to apply the settings.
- d. Go to the **Association** page of the Root Bridge.

Ensure that the non-root bridge appears in the root bridge association table before continuing to test the connection.

Step 7 Test the connection

Verify client PCs are configured with the appropriate IP address. The only wireless devices on this topology will be the two wireless multi-function bridges used for the point-to-point connection.

- a. Once the wireless bridge link is configured properly, conduct each of the following tests:
 - a. Ping from PC1 to Router 1 inside Ethernet port
 - b. Ping to Router1 outside port
 - c. Ping from PC1 to BPod2
 - d. Ping from PC1 to Router2 outside port
 - e. Ping from PC1 to Router2 inside port
 - f. Ping from PC1 to PC2
- b. Test layer 7 connectivity by browsing to BPod2 from PC1.