



Lab 7.1.8.2 Configure Bridge Diversity Settings

Estimated Time: 15 minutes

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

Objective

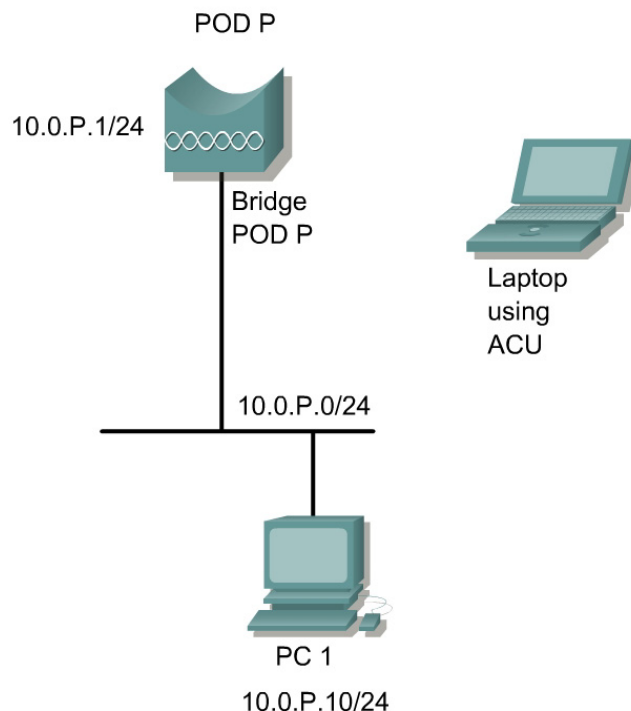
The student will test the effects of various antenna diversity settings on the Cisco BR350

Scenario

Bridges have two RP-TNC connectors attached them. These two antennas connectors are for diversity in signal reception, and their purpose is not to increase coverage or distance. They help eliminate the null path and RF being received out of phase. Only one antenna at a time is active.

Which antenna is active is selected on a per-client basis for optimal signal and only applies to that specific client. The bridge can hop back and forth between antennas when talking to different clients. This can be useful in a point to multipoint installation.

Topology



Preparation

Cisco BR350 configured as a root unit and performing properly.

Computers with a properly installed Cisco Aironet client adapter and utility.

Tools and Resources or Equipment

- Cisco BR350
- Laptop or PC with a client adapter properly installed

AP1 Root Radio Hardware
Cisco 350 Series Bridge 12.01T1
[Map](#) [Help](#)
Uptime: 24 days, 04:30:46

Service Set ID (SSID): [more...](#)
Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no
Enable "World Mode" multi-domain operation?:

Data Rates (Mb/sec):
1.0 2.0 5.5 11.0

Transmit Power:
Frag. Threshold (256-2338): RTS Threshold (0-2339):
Max. RTS Retries (1-255): Max. Data Retries (1-255):
Beacon Period (19-5000 Kusec): Data Beacon Rate (DTIM):
Default Radio Channel: In Use: 1
Search for less-congested Radio Channel?: [Restrict Searched Channels](#)
Receive Antenna: Transmit Antenna:

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

Step 1 Configure the Cisco Aironet antenna settings

- Open a web browser and type the IP address of the bridge in the browser address box.
- Go to the Root Radio Hardware page of the bridge.
- Record the following information:

- Service Set ID


- Transmit Power

- Default Radio Channel

4. Search for less congested channel

For this lab, keep this setting on NO. Both antenna settings should be set to diversity at this time.

AP1 Root Radio Hardware
Cisco 350 Series Bridge 11.23T
[Map](#) [Help](#)


Uptime: 1 day, 01:59:01

Service Set ID (SSID):

Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no

Enable "World Mode" multi-domain operation?:

Data Rates (Mb/sec):
1.0 2.0 5.5 11.0

Transmit Power:

Frag. Threshold (256-2338): RTS Threshold (0-2339):

Max. RTS Retries (1-255): Max. Data Retries (1-255):

Beacon Period (Kusec): Data Beacon Rate (DTIM):

Default Radio Channel: In Use: 1

Search for less-congested Radio Channel?: [Restrict Searched Channels](#)

Receive Antenna:

Right

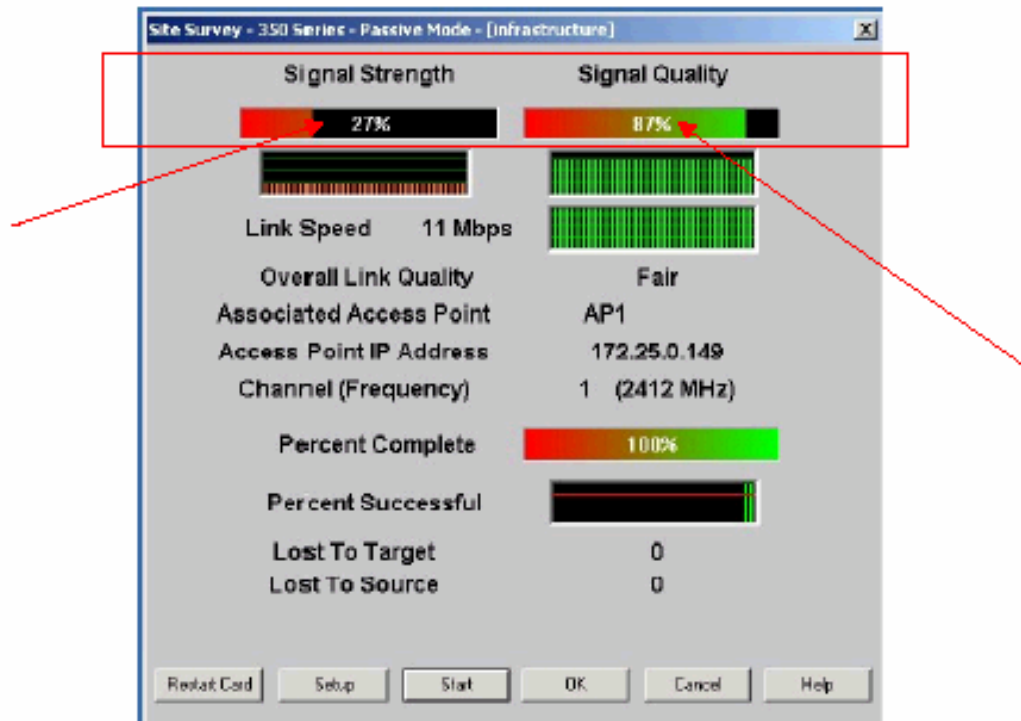
Left

Diversity

Transmit Antenna:

[Radio Data Encryption \(WEP\)](#)

Located near the bottom of the **Radio Hardware** page, you will see two Pull down selection menu boxes, one for the **Receive Antenna** and one for the **Transmit Antenna**.



Before making any changes to the antenna settings, open the Site Survey utility on the PC. Note the Signal Quality and Signal Strength before any changes are made.

AP1 Root Radio Hardware

Cisco 350 Series Bridge 11.23T

Map
Help

Uptime: 1 day, 01:59:01

Service Set ID (SSID):

Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no

Enable "World Mode" multi-domain operation?:

Data Rates (Mb/sec):

1.0
2.0
5.5
11.0

Transmit Power:

Frag. Threshold (256-2338): RTS Threshold (0-2339):

Max. RTS Retries (1-255): Max. Data Retries (1-255):

Beacon Period (Kusec): Data Beacon Rate (DTIM):

Default Radio Channel: In Use: 1

Search for less-congested Radio Channel?: [Restrict Searched Channels](#)

Receive Antenna:

Radio Data Encryption:

Transmit Antenna:

Change the Receive and Transmit antenna settings to left, right, diversity or various combinations and note any changes on the Site Survey Meter once you have applied the changes.

d. Is it actually necessary for you to physically remove the antennas?

AP1 Root Radio Hardware

Cisco 350 Series Bridge 11.23T

[Map](#) [Help](#)



Uptime: 1 day, 01:59:01

Service Set ID (SSID):
Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no
Enable "World Mode" multi-domain operation?:

Data Rates (Mb/sec):
1.0 2.0 5.5 11.0

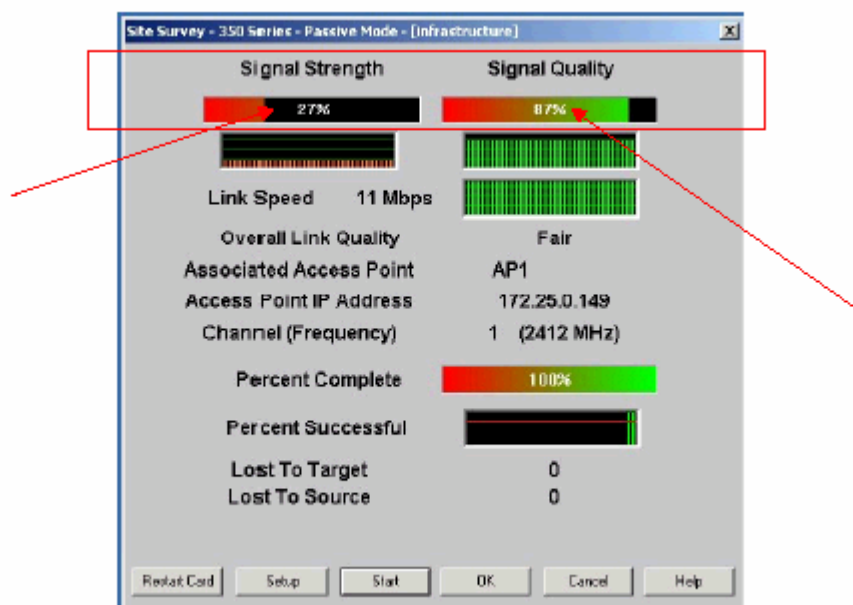
Transmit Power:
Frag. Threshold (256-2338): RTS Threshold (0-2339):
Max. RTS Retries (1-255): Max. Data Retries (1-255):
Beacon Period (Kusec): Data Beacon Rate (DTIM):
Default Radio Channel: In Use: 1
Search for less-congested Radio Channel?: [Restrict Searched Channels](#)

Receive Antenna:

Transmit Antenna:

[Radio Data Encryption \(WEP\)](#)

If using only one antenna, the Receive and Transmit antenna settings will have to correspond to the proper bridge antenna setting for RF reception.



If using two standard dipole antennas, very little changes will be effected on the Site Survey Meter. If you remove one of the antennas, you will observe a more dramatic effect in the setting changes. Make numerous changes with the antenna settings and check the results with the PC Aironet Client Site Survey utility. Remember to only make one change at a time so that you have a good idea which setting change caused the effect.

e. Which antenna setting gave the strongest signal quality (Left, Right, or Diversity)?

f. Which antenna setting gave the strongest signal strength (Left, Right, or Diversity)?

g. Which setting gave the weakest signal strength (Left, Right, or Diversity)?

h. Which setting gave the weakest signal quality (Left, Right, or Diversity)?
