



Lab 2.6.5.1 ACU Utilities

Estimated Time: 10 Minutes

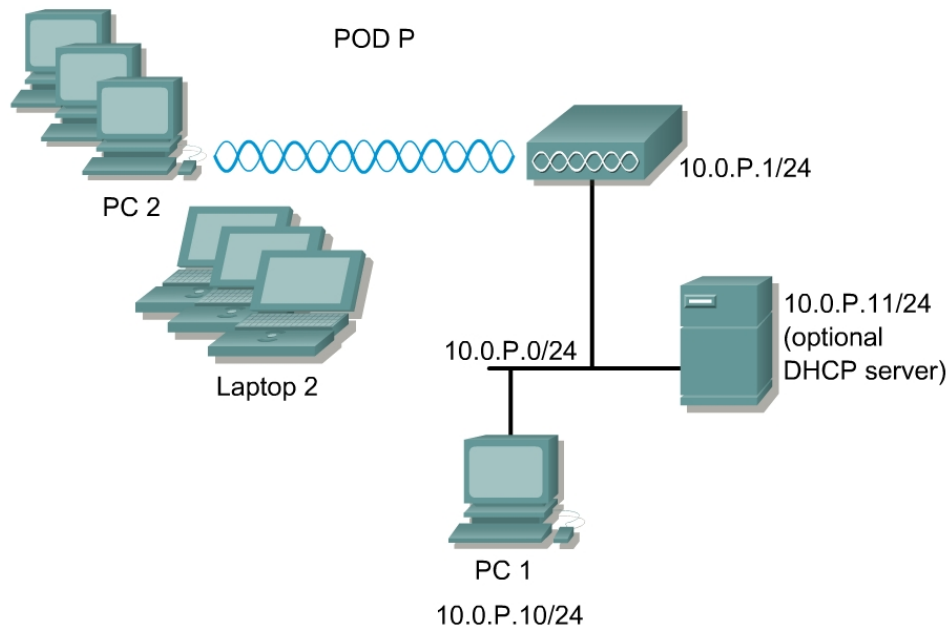
Number of Team Members: 2 students per team

Objective

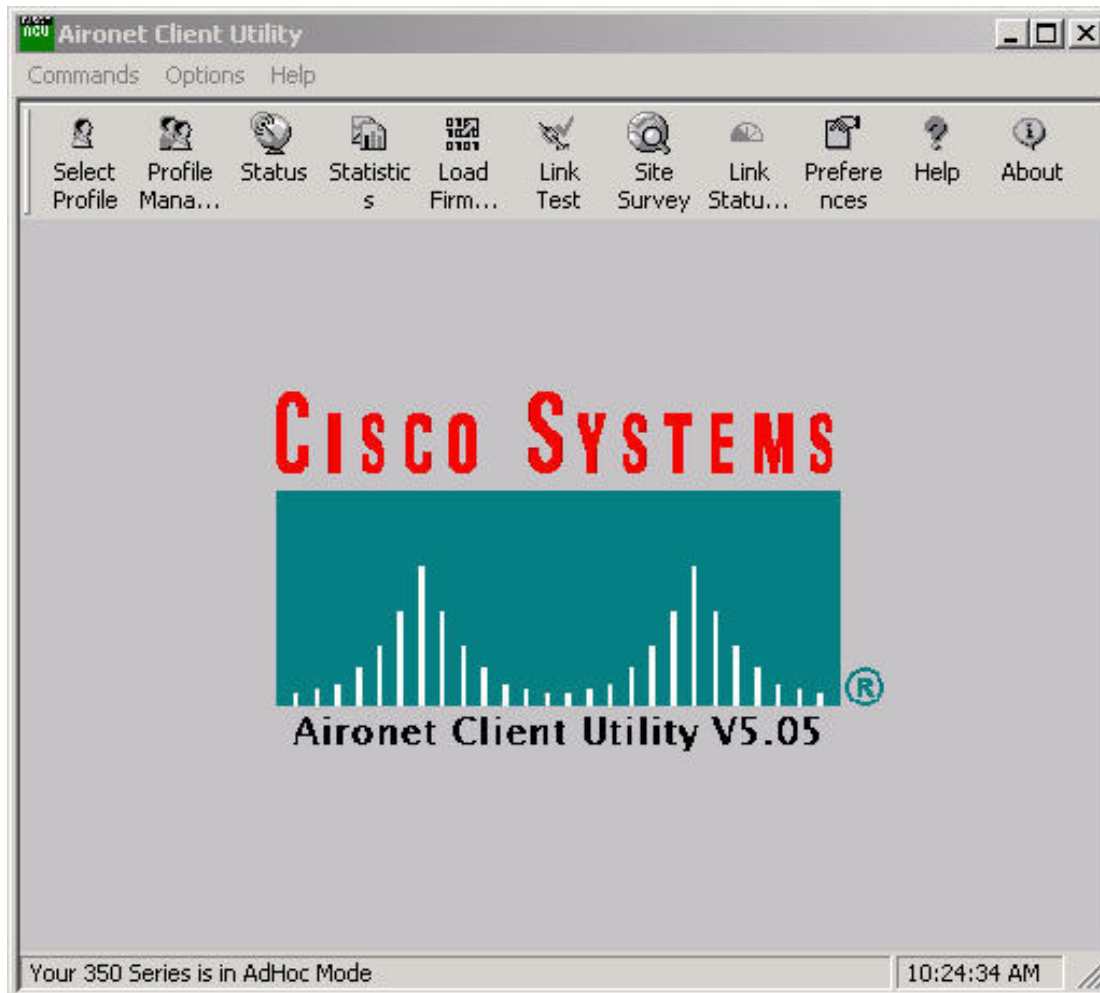
Students will use the Aironet Client Utilities (ACU) to complete the following tasks:

- Assess the performance of the Radio Frequency (RF) link
- View the status of the wireless network
- View the statistics of the wireless network
- View the link status of the wireless network

Topology



Scenario



ACU provides tools that enable a wireless technician to assess the performance of the client adapter and other devices on the wireless network. ACU diagnostic tools perform the following functions:

- Display the current status and configured settings of the client adapter
- Display statistics pertaining to the transmission and reception of data of the client adapter
- Display a graphical image of the client adapter RF link
- Run an RF link test to assess the performance of the RF link between the client adapter and its associated AP.

Preparation

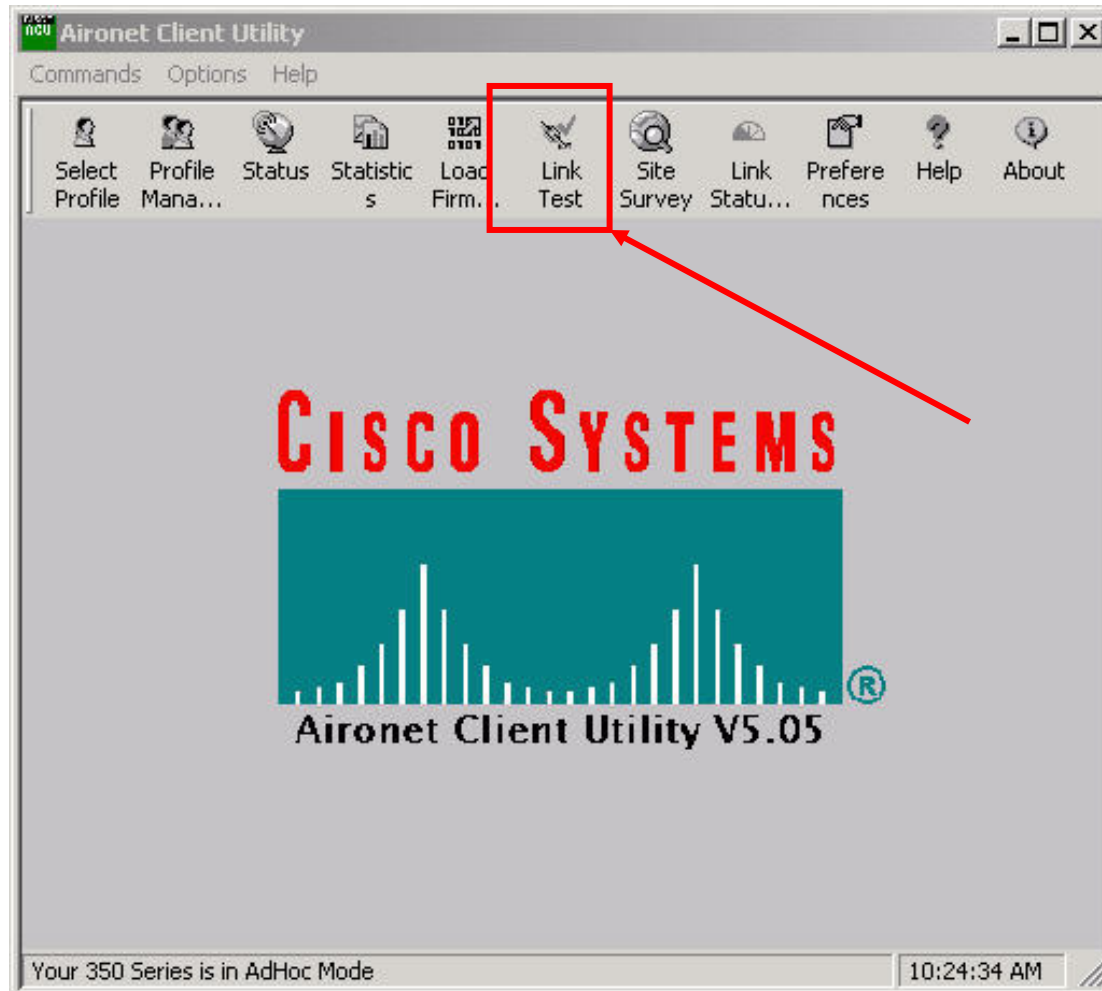
The instructor will prepare one AP that will be used by the whole class to perform this lab exercise. An IP address and SSID must be configured for the AP.

Step 1 Run an RF link test

The ACU link test tool sends out pings to assess the performance of the RF link. The test is performed multiple times at various locations throughout the lab area. The test is designed to run at the data rate set in the Edit Properties - RF Network section of ACU.

The results of the link test can be used to determine the RF network coverage and ultimately the required number and placement of APs in the network. The test also helps installers avoid areas where performance is weak. Therefore the test helps to eliminate the risk of a lost connection between the client adapter and its associated AP.

Because the link test operates above the RF level, it does more than test the RF link between two network devices. It also checks the status of wired sections of the network and verifies that TCP/IP and the proper drivers have been loaded.



Select the **Link Test** button from the Aironet Client Utility screen. The Link Test Screen will appear on the desktop.

Step 2 Link test screen

350 Series Linktest - [Cisco]

IP Address of Access Point: 10.0.1.1

Number of Packets: 100

Packet Size: 64

1 1000 64 2048

☐ Continuous Linktest (Ignore Number of Packets)

Defaults Start OK Cancel Help

In the IP Address of AP field, notice, by default, the IP address is the AP to which the wireless NIC is associated. This IP address could be changed to another wireless device IP address.

The link test can be setup to run until it has attempted to send a specific number of packets or to run until it is stopped. Choose one of the following steps to determine how long the link test will run:

- Select the number of packets that the link test should attempt to send. A number can be entered in the Number of Packets field or the slider can be used to select this value. (The Number of Packets parameter is ignored if the Continuous Linktest checkbox is selected.)
Range: 1 to 1000
Default: 100
- Select the Continuous Linktest checkbox to allow the link test to run continuously.
Default: Deselected
- Select the size of the data packet that is to be sent. Using the ACU, a number can be entered in the Packet Size field or the slider can be used to select this value.
Range: 64 to 2048
Default: 64
- Leave all options to the default settings.

Step 3 Run the link test

350 Series Linktest - [Cisco]

IP Address of Access Point: 64.101.112.76

Number of Packets: 100 Packet Size: 64

☐ Continuous Linktest (Ignore Number of Packets)

Receive Statistics	Current	Cumulative Total
Packets Received OK	= 13	= 14

Transmit Statistics	Current	Cumulative Total
Packets Transmitted OK	= 8	= 9

Status = Authenticated
Current Link Speed = 11 Mbps
Associated Access Point Name = phx-21-ap4.cisco
Associated Access Point MAC = 00:40:96:5B:04:ED

Current Signal Strength 80%
Current Signal Quality 98%
Overall Link Quality **Excellent**

Defaults Stop OK Cancel Help

Click the **Start** button to run the link test. While the test is running, statistics are displayed and updated periodically.

- a. What is the Cumulative Total of the AP Receive Statistics (Packets)?

- b. What is the Cumulative Total of the AP Transmit Statistics (Packets)?

Step 4 Status screen

- a. From the Aironet Client Utility screen, select the **Status** button.
- b. Complete the following list of information about the Wireless Infrastructure status that is displayed on this page:
 1. Firmware version _____
 2. Is WEP enabled or disabled _____
 3. IP Address _____
 4. Current Link Speed _____
 5. Current Power Level _____
 6. Channel or Frequency _____
 7. Status _____
 8. SSID _____
 9. Power Save Mode _____
 10. Associated AP Address _____
 11. Associated AP MAC Address _____

Step 5 Statistics screen

350 Series Statistics - [Cisco]

Receive Statistics		Transmit Statistics	
Multicast Packets Received	= 89,677	Multicast Packets Transmitted	= 421
Broadcast Packets Received	= 28,667	Broadcast Packets Transmitted	= 178
Unicast Packets Received	= 390,650	Unicast Packets Transmitted	= 297,339
Bytes Received	= 392,185,526	Bytes Transmitted	= 61,751,703
Beacons Received	= 244,427	Beacons Transmitted	= 0
Total Packets Received OK	= 1,317,138	Ack Packets Transmitted	= 390,838
Duplicate Packets Received	= 142	RTS Packets Transmitted	= 134
Overrun Errors	= 0	CTS Packets Transmitted	= 1,787
PLCP CRC Errors	= 1,165,988	Single Collisions	= 0
PLCP Format Errors	= 987	Multiple Collisions	= 0
PLCP Length Errors	= 0	Packets No Deferral	= 0
MAC CRC Errors	= 250,450	Packets Deferred Protocol	= 446
Partial Packets Received	= 0	Packets Deferred Energy Detect	= 22,402
SSID Mismatches	= 12,177	Packets Retry Long	= 19,360
AP Mismatches	= 0	Packets Retry Short	= 10
Data Rate Mismatches	= 0	Packets Max Retries	= 0
Authentication Rejects	= 0	Packets Ack Received	= 299,874
Authentication Time-out	= 0	Packets No Ack Received	= 19,360
Association Rejects	= 0	Packets CTS Received	= 124
Association Time-out	= 0	Packets No CTS Received	= 10
Packets Aged	= 0	Packets Aged	= 0
Up Time (hh:mm:ss)	= 07:14:18		
Total Up Time (hh:mm:ss)	= 07:14:18		

Reset Pause OK Help

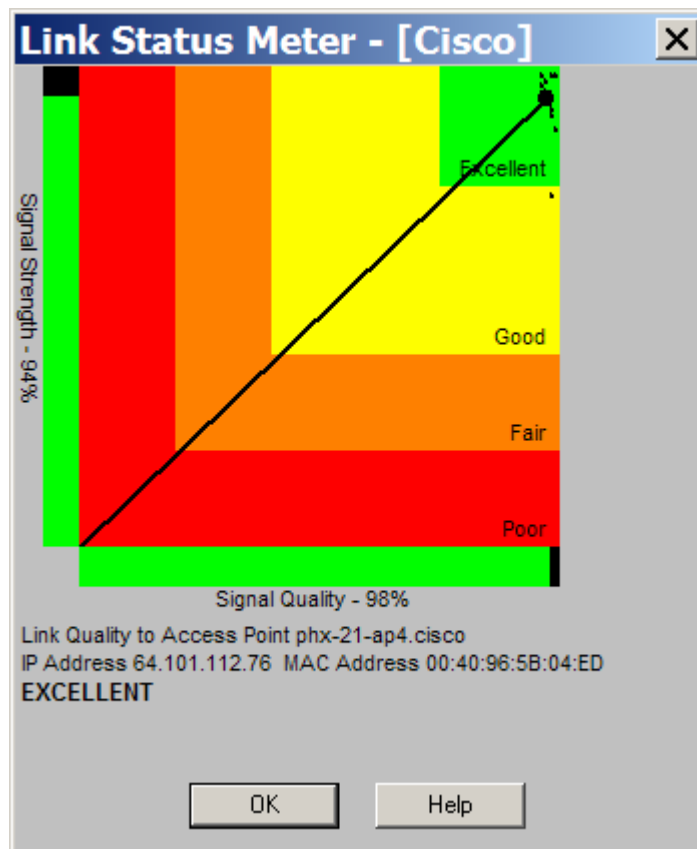
From the Aironet Client Utility screen, select the **Statistics** button.

- a. Which statistics are incrementing greater, transmit or receive? Why?

- b. Define the following terms from the Statistics screen:

1. **RTS** _____
2. **CTS** _____
3. **ACK** _____

Step 6 Link Status Meter



- a. Bring up the Link Status Meter. Click the **Link Status Meter** button on the ACU.
- b. Observe the Signal Quality over a period of 30 seconds.
 1. What is the Signal Quality of the AP?

 2. What is the Signal Strength of the AP?

