Lab 2.6.5.2 Creating an Ad Hoc Network using ADU

Estimated Time: 30 Minutes

Number of Team Members: Students will work in teams of two for this lab process

Objective

Each team will configure several personal computers to communicate with each other without an AP or cables.

Scenario

Several PCs equipped with wireless client adapters will be needed. They should be installed and setup. This lab will cover the Cisco® Aironet® IEEE 802.11a/b/g Wireless Adapter and how to configure the associated Aironet Desktop Utility (ADU) to allow them to connect together as a network without an AP. Other Cisco 802.11a and 11b clients, which utilize the Aironet Client Utility (ACU), can be used to create a mixed Ad Hoc environment, however students must follow instructions covered in the appropriate lab or configuration guide. Furthermore, students can utilize other vendor wireless adapters to apply skills learned in this lab.

Topology

10.0.P.11/24   10.0.P.10/24
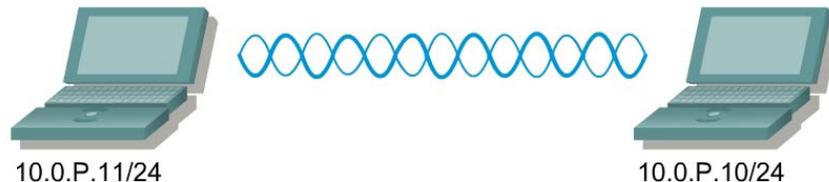
Preparation

Prior to this lab, all the PCs should be equipped with working Cisco Aironet Client Adapters. The Aironet Desktop Utility should be installed on the computers.

It is very important for the instructor to assign team numbers. Also, unique IP Addresses should be assigned to each client adapter or personal computer within each team to avoid IP conflicts.

Each team should use the same SSID for each PC in the pod to ensure that the computers associate to each other. The SSID to be used for all PCs is adhocP (where P is the group number assigned by the instructor).

The instructor should help students understand the addressing scheme. Using the information in the following chart, configure the host computers. Note that no default gateway is needed. By assigning unique IP addresses and SSIDs, the students avoid conflict with other teams.

Team	Client Name	Profile Name	SSID	Client Address
1	Client1a	adhocNET	Adhoc1	10.0.1.10/24
	Client1b	adhocNET	Adhoc1	10.0.1.11/24
2	Client2a	adhocNET	Adhoc2	10.0.2.10/24
	Client2b	adhocNET	Adhoc2	10.0.2.11/24
3	Client3a	adhocNET	Adhoc3	10.0.3.10/24
	Client3b	adhocNET	Adhoc3	10.0.3.11/24

The following tools and resources will be required to complete this lab:

Two PCs equipped with the Cisco Aironet Client Adapter per group. One of the computers should be a laptop for mobility purposes.
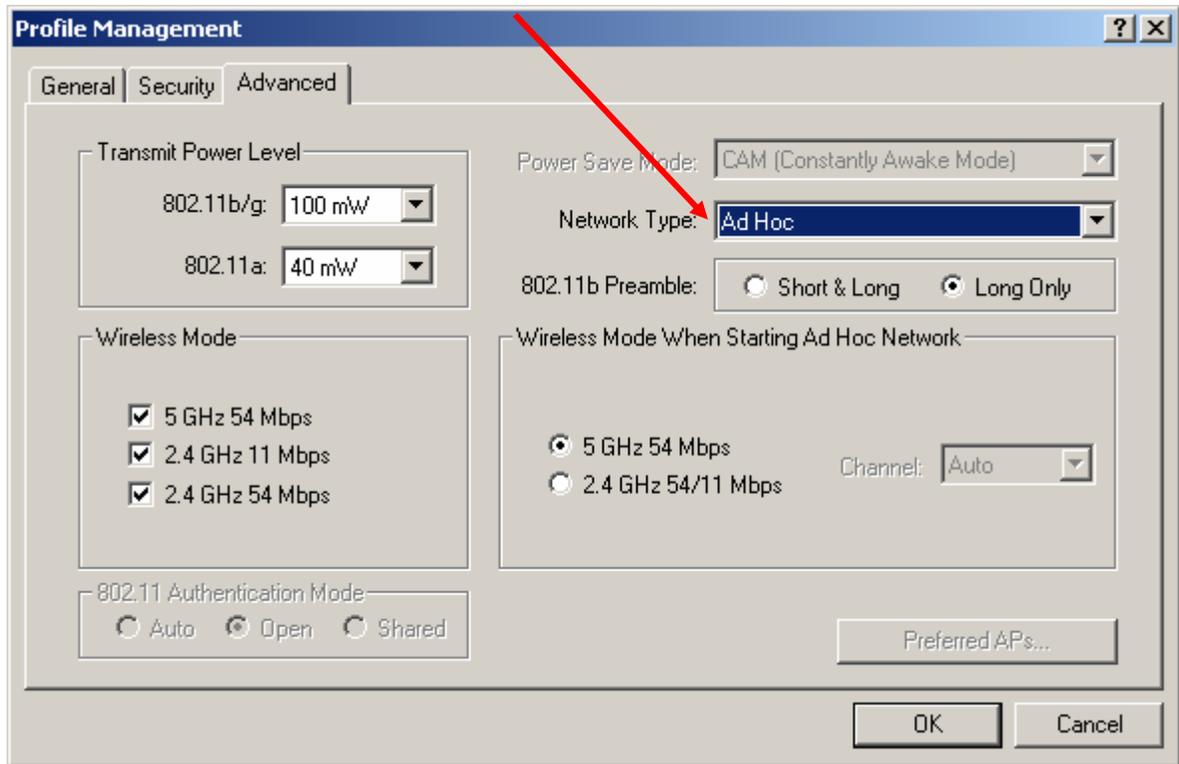
Step 1 Create a profile named adhocP (where P is the team number)

    a.   Open the Cisco Aironet Desktop Utility.

    b.   Click on the **Profile Management** tab.

    c.   Click on the **New…** button.

    d.   Complete the **Profile Name**, **Client Name** and **SSID1** fields with the settings provided in the table.

e. Click the **Advanced** tab to set the Network Type for **Ad Hoc**. The default setting is Infrastructure. Click **OK** to save your settings.

Step 2 Select the profile named adhocP (where P is the team number)

In order to connect to the peer, the ad hoc profile on both computers must be activated.

a. From the **Profile Management** tab, click the adhocNET profile and then click the **Activate** button to use the ad hoc profile.

b. The computers should associate. If association does not occur, troubleshoot as needed.
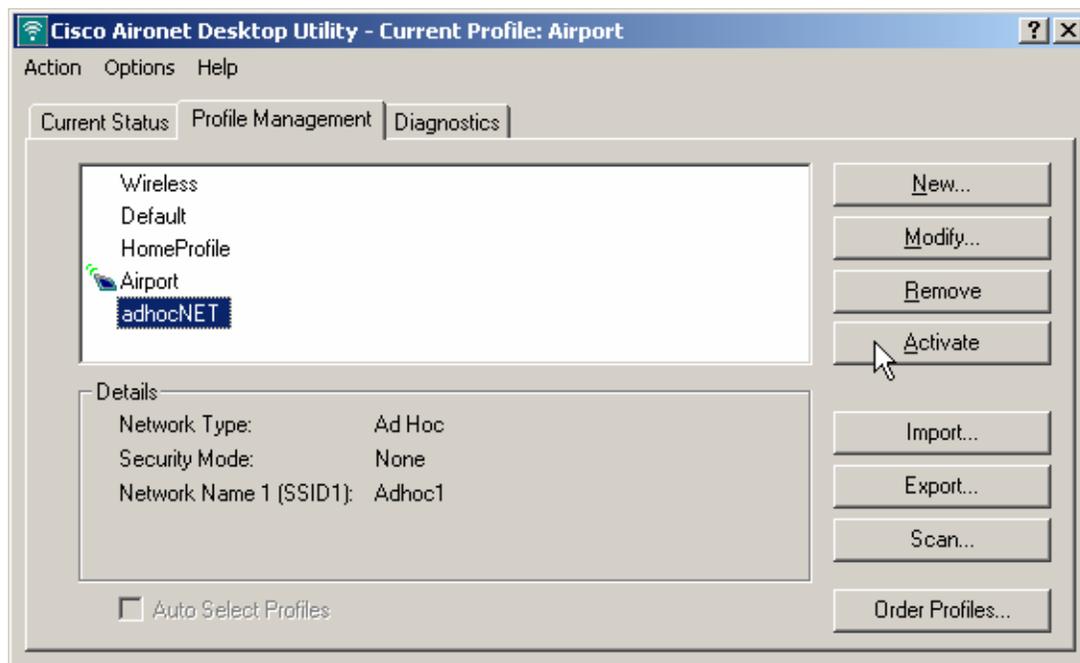
Step 3 Obtain the MAC address of the PC

Once the computers are associated, you can view information about the peer computer.

Step 4 File share in Ad Hoc Mode (OPTIONAL LAB)

Scenario 1—Setup a window file share, a web page, or an FTP server program on each PC. Transfer files from one PC to the other. Open a web browser and enter the IP address of the peer team member. If web services are enabled on the peer PC, then a web page should be displayed. Try to transfer a file by FTP between PCs.

Scenario 2—Setup a network game or program that requires network connectivity between PCs. Determine if there are any performance issues. Have other teams change to the adhoc network by matching the SSID and moving into the same IP subnet. Determine if there is a point at which network performance is an issue. Remember that network connectivity is more than ping or telnet traffic. Network application and user demands must always be tested to assure proper network performance after any wireless installation.

Scenario 3—Setup a PC as an mp3 file server and stream music across the wireless adhoc network. Determine if there are any performance issues. Have other teams change to the adhoc network by matching the SSID and moving into the same IP subnet. Determine if there is a point at which network performance is an issue.

Step 5 Create an AdHoc Network with Windows XP Internet connection sharing (OPTIONAL)
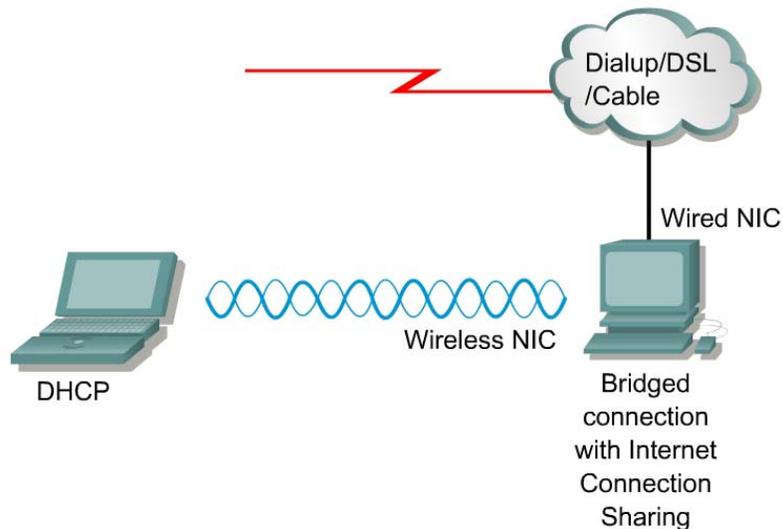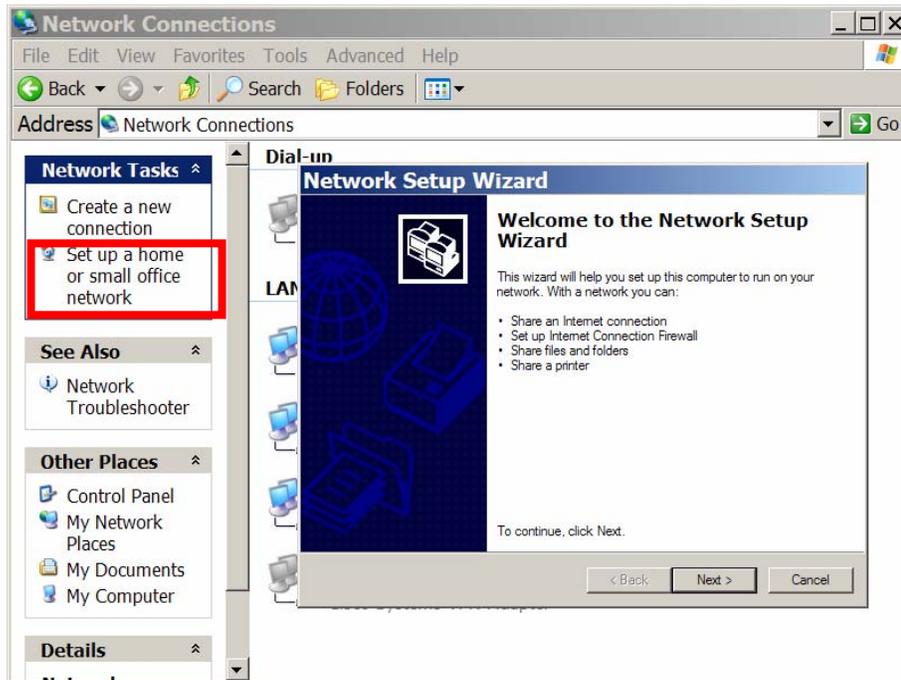

Is it necessary to purchase an AP in order to share the fast broadband connection at home? This lab is very similar to using a cross-connect cable for a small PC network, but without the use of the router or additional cables.

a. Bridge the connection on the Desktop PC

b. Share an Internet connection

c. Configure Wireless NICs on both PCs in Adhoc mode.