Configuring DHCP on a Multi-function Device

Objective

- Connect three PCs to a Linksys-WRT300N, which is a multi-function device

- Change the DHCP setting to a specific network range

- Configure the clients to obtain an IP address via DHCP

Background

A home user wants to use a Linksys-WRT300N device to connect three PCs. All three PCs should obtain an IP address automatically from the Linksys device.

Step 1: Set up the network topology

a) Add three PCs to the work area.

b) Add a Linksys-WRT300N to the work area.

c) Connect each PC to an Ethernet port on the Linksys device using a straight through cable.

Step 2: Observe the default DHCP settings

a) Click the Linksys-WRT300N Router to open the configuration window.

b) Click the **Config** tab and change the **Display Name** to **DHCP Enabled Router**.
*Note: A popup window will appear when changing the Display Name warning that changing the Display Name may affect scoring. Proceed with changing the Display Name since it must match exactly for the activity to score correctly.

c) Select the **GUI** tab.
*This navigates to the **Setup / Basic Setup** page within the Linksys GUI.

d) Scroll through the Basic Setup page to view default settings, including the default IP address of the Linksys device.
*Note that DHCP is enabled, the starting address of the DHCP range and the range of addresses available to clients.

Step 3: Change the default IP address of the Linksys device

a) Within the **Router IP** section, change the IP address of the Linksys device to: **192.168.5.1**.

b) Scroll to the bottom of the GUI page and click **Save Settings**.

c) Scroll back up to the Router IP section to ensure the change is made.

Step 4: Change the default DHCP range of addresses

    a) Notice the starting IP address in the DHCP Server Setting is updated to match the same network as the IP address of the Linksys device: **192.168.5.100**.

    b) Change the **Starting IP Address** from **192.168.5.100** to **192.168.5.26**.

    c) Change the **Maximum Number of Users** to **75**.

    d) Scroll to the bottom of the GUI page and click **Save Settings**.

    e) Scroll back up to the DHCP Setting section to ensure the change is made.
       *Notice the range of address available to clients has updated to reflect the change.

    f) Close the Linksys configuration window.

Step 5: Configure DHCP on the client workstations

    a) Enable DHCP on **PC0**.

        1. Click PC0.

        2. Click he **Config** tab. Go to the Interface **FastEthernet** sub-menu.

        3. Enable DHCP by selecting the **DHCP** button in the IP Configuration panel.
          *Notice that an IP address and subnet mask is automatically assigned.

        4. Close the configuration window.

    b) Observe the IP configuration of a client that does not have DHCP enabled.

        1. Click PC1.

        2. Click the **Desktop** tab > **Command Prompt**.

        3. Type **ipconfig** and press *enter*.
          *Notice that all settings are set to 0.0.0.0. No IP address is assigned statically, and the PC has not obtained an address automatically from DHCP.

    c) Enable DHCP on PC1 and PC2, using the **Config** tab as outlined in Step 5a.
       *Notice that a different IP address from the one assigned to PC0 is automatically assigned to PC1 and PC2.

    d) Close the configuration window.

Step 6: Verify connectivity

    a) Click PC1 and select the **Desktop** tab > **Command Prompt**.

    b) Type **ipconfig** to view the IP configuration of PC1.

    c) Type **ping 192.168.5.1** to ping the Linksys device.

d) Type **ping 192.168.5.26** to ping PC0.
*You should receive a reply from both devices.

e) Close the configuration window and click **Check Results** button at the bottom of the instruction window to check your work.

f) Choose the **Assessment Items** tab to view any configurations that were not done correctly.