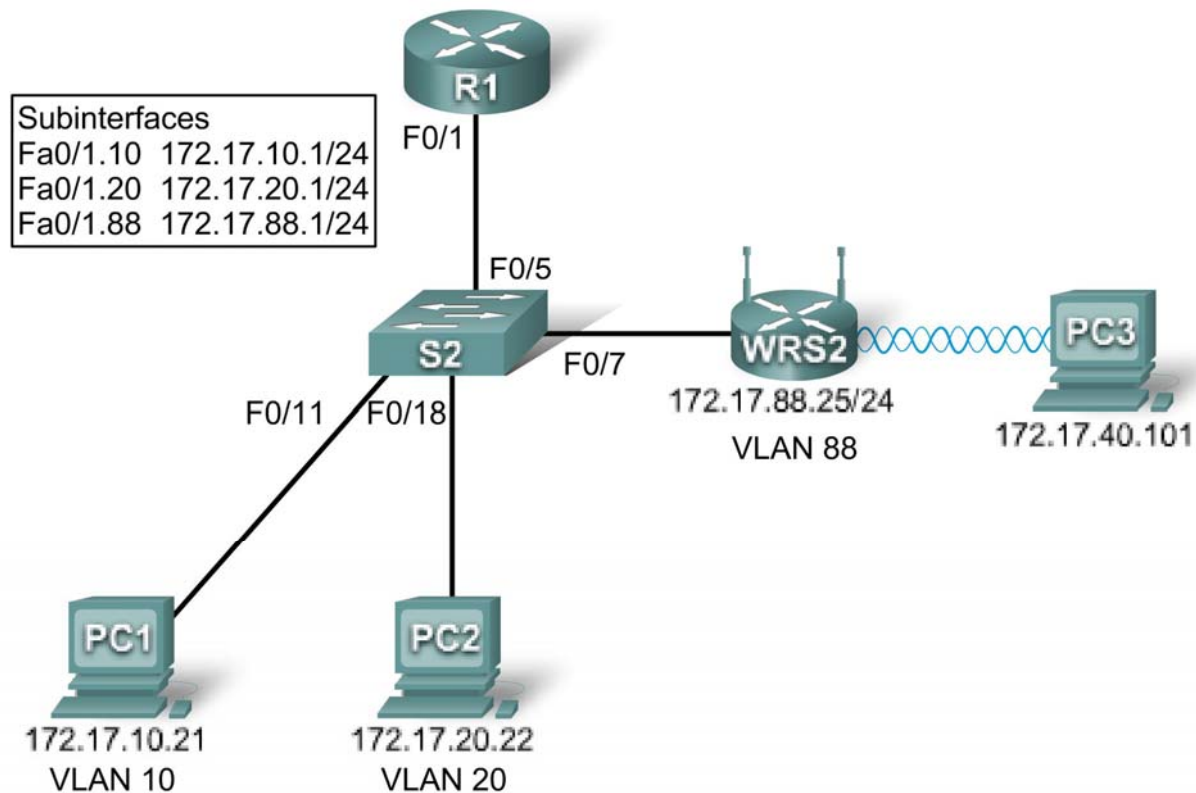


## Lab 7.5.1: Configuring Wireless LAN Access

### Topology Diagram



### Learning Objectives

- Configure options in the Linksys Setup tab
- Configure options in the Linksys Wireless tab
- Configure options in the Linksys Administration tab
- Configure options in the Linksys Security tab
- Add wireless connectivity to a PC
- Test connectivity

### Introduction

In this activity, you will configure a Linksys wireless router, allowing for remote access from PCs as well as wireless connectivity with WEP security.

### Task 1: Load the starting configurations.

#### Step 1. Load R1's configurations.

```
hostname R1
```

```
!  
interface FastEthernet0/0  
  ip address 172.17.50.1 255.255.255.0  
  no shutdown  
!  
interface FastEthernet0/1  
  no ip address  
  no shutdown  
!  
interface FastEthernet0/1.10  
  encapsulation dot1Q 10  
  ip address 172.17.10.1 255.255.255.0  
!  
interface FastEthernet0/1.20  
  encapsulation dot1Q 20  
  ip address 172.17.20.1 255.255.255.0  
!  
interface FastEthernet0/1.88  
  encapsulation dot1Q 88  
  ip address 172.17.88.1 255.255.255.0  
!
```

## Step 2. Load S2's configurations.

```
hostname S2  
!  
interface FastEthernet0/5  
  switchport trunk encapsulation dot1q  
  switchport mode trunk  
  no shutdown  
!  
interface FastEthernet0/7  
  switchport access vlan 88  
  switchport mode access  
  no shutdown  
!  
interface FastEthernet0/11  
  switchport access vlan 10  
  switchport mode access  
  no shutdown  
!  
interface FastEthernet0/18  
  switchport access vlan 20  
  switchport mode access  
  no shutdown  
!
```

## Task 2: Connect and log into the Wireless Router.

In order to configure the settings on the wireless router we will use its Web GUI utility. The GUI can be accessed by navigating to the router's LAN/Wireless IP address with a web browser. The factory default address is 192.168.1.1

### Step 1. Establish physically connectivity.

Connect a straight through cable from the PC to one of the wireless router's LAN ports. The wireless router will provide an IP address to the PC using default DHCP configurations.

### Step 2. Open a web browser.

### Step 3. Navigate to the wireless router's Web Utility.

- Set the URL of the browser to <http://192.168.1.1>.

The default login credentials are a blank username and a password of: **admin**. Note that this is very insecure since it is the factory default and provided publicly. We will set our own unique password in a later task.

### Step 4. Log in

- Leave the username blank and set the password to: admin.

## Task 3: Configure Options in the Linksys Setup Tab.

### Step 1. Set the Internet connection type to static IP.

- By default the start up page is the 'Setup' screen. In the menus at the top notice you are in the 'Setup' section and under the 'Basic Setup' tab.
- In the Setup screen for the Linksys router, locate the **Internet Connection Type** option under **Internet Setup** section of this page. Click the drop-down menu and select **Static IP** from the list.

### Step 2. Configure the VLAN 88 IP address, subnet mask, and default gateway for WRS2.

- Set the Internet IP address to 172.17.88.25.
- Set the subnet mask to 255.255.255.0.
- Set the default gateway to 172.17.88.1.

Note: Typically in a home or small business network, this Internet IP address is assigned by the ISP through DHCP or PPPoE (the specifics of PPPoE are outside the scope of this course).

### Step 3. Configure the router IP parameters.

- Still on this page, scroll down to **Network Setup**. For the **Router IP** fields do the following:
  - Set the IP address to 172.17.40.1 and the subnet mask to 255.255.255.0.
- Under the **DHCP Server Setting**, ensure that the DHCP server is enabled.

### Step 4. Save settings.

Click the **Save Settings** button at the bottom of the **Setup** screen.

Note that the IP address range for the DHCP pool adjusts to a range of addresses to match the router IP parameters. These addresses are used for wireless clients and clients that connect to the wireless

router's internal switch. Clients receive an IP address and mask and are given the router IP to use as a gateway.

#### Step 5. Reconnect to WRS2.

Since we have changed the router's IP address and DHCP pool, we will have to reconnect to it using the new address previously configured.

- Reconnect to the router. You will need to reacquire an IP address from the router via DHCP or manually set your own.
- Reconnect to the router's configuration GUI using an IP address of 172.17.88.1 (reference Task 1 for help).

### Task 4: Configure Options in the Linksys Wireless Tab.

#### Step 1. Set the network name (SSID).

- Click the **Wireless** tab.
- Under **Network Name (SSID)**, rename the network from **Default** to **WRS\_LAN**.
- Click **Save Settings**.

#### Step 2. Set the security mode.

- Click **Wireless Security**. It is located next to **Basic Wireless Settings** in the main **Wireless** tab.
- Change **Security Mode** from **Disabled** to **WEP**.
- Using the default Encryption of 40/64-Bit, set **Key1** to **1234567890**,
- Click **Save Settings**.

### Task 5: Configure Options in the Linksys Administration Tab

#### Step 1. Set the router password.

- Click the **Administration** tab.
- Under **Router Access**, change the router password to **cisco123**. Re-enter the same password to confirm.

#### Step 2. Enable remote management.

- Under **Remote Access**, enable **remote management**.
- Click **Save Settings**.
- You may be prompted to log in again. Use the new password of **cisco123** and still keep the username blank

### Task 6: Configure Options in the Linksys Security Tab

By default ping requests to WRS2's LAN/Wireless interface (172.17.40.1) from sources on its WAN interface (for example PC1 & PC2) will be blocked for security reasons implemented by the wireless router. For the purpose of verifying connectivity in this lab we would like to allow them.

#### Step 1. Allow anonymous internet requests.

- Click the **Security** tab.

- Under **Internet Filter**, uncheck **Filter Anonymous Internet Requests**.

## Task 7: Add Wireless Connectivity to a PC

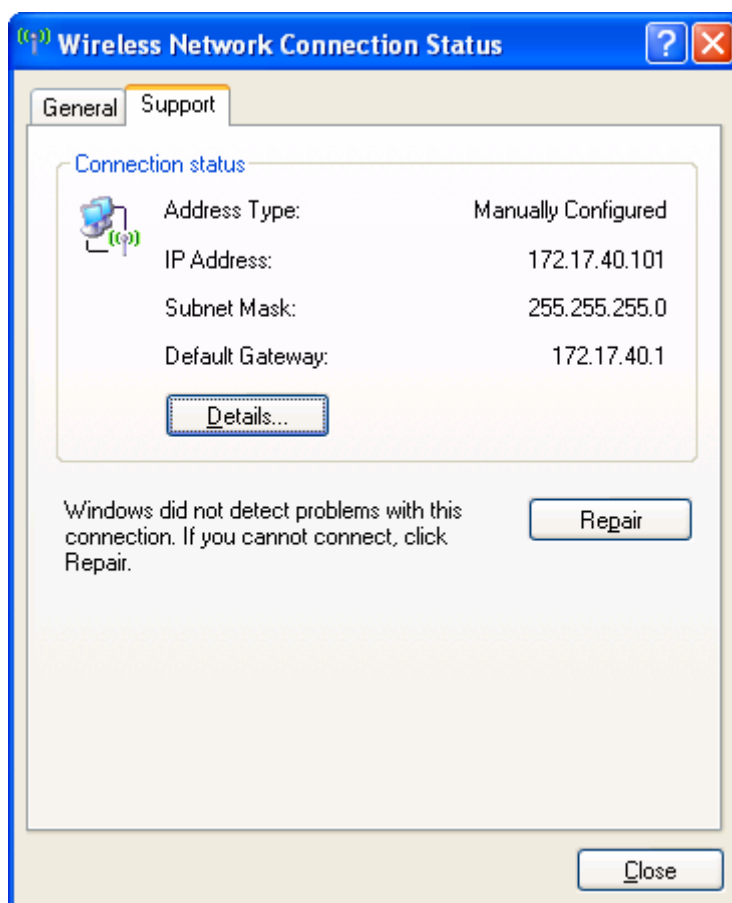
**Step 1. Disconnect the Ethernet connection from PC3 to WRS2.**

**Step 2: Use Windows XP to connect to the wireless router.**

- Locate the Wireless Network Connection icon in your taskbar, or go to **Start > Control Panel > Network Connections**.
- Select the **Wireless Network Connection**.
- Navigate to the **File** menu and select **Status**.
- Click **View Wireless Networks**.
- Locate the 'WRS\_LAN' SSID in the list of available networks and connect to it.
- When prompted for the WEP key enter it as in Task 3, **1234567890** and click **Connect**.

**Step 3: Verify the Connection.**

- In the **Status** window, select the **Support** tab.
- Verify that PC3 has received an IP address from WRS2's DHCP address pool or has been manually configured.



## Task 8: Test Connectivity

### Step 1. Ping WRS2's LAN/Wireless interface.

- On PC3, click **Start->Run**
- Type **cmd** and select open. This will open the command prompt
- In the command prompt type (without quotes) "**ping 172.17.40.1**".

### Step 2. Ping R1's Fa0/1.88 Interface.

- In the command prompt type (without quotes) "**ping 172.17.88.1**"

### Step 3. Ping PC1 and PC2 from PC3.

- In the command prompt type (without quotes) "**ping 172.17.10.21**" to ping PC1.
- Repeat on PC2's address, 172.17.20.22.