Packet Tracer - Test a Wireless Connection (Instructor Version)

Objectives

- Configure a computer to join a wireless network.
- Test the wireless connection.

Introduction

In this activity, you will configure **PC3** to connect to the network via a wireless router. You will also use various tools to test the functionality of the network.

Step 1: Connect PC3 to the wireless LAN and verify connectivity with the ping command.

a. Connect **PC3** to the **WRS_LAN** network with the **ITEpassword** Pre-shared Key.

b. From the **Command Prompt** window, ping the default gateway for **PC3**. The ping should be successful. The command should generate the following output:

```
PC> ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=203ms TTL=255
Reply from 192.168.2.1: bytes=32 time=94ms TTL=255
Reply from 192.168.2.1: bytes=32 time=94ms TTL=255
Reply from 192.168.2.1: bytes=32 time=78ms TTL=255

Ping statistics for 192.168.2.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
Approximate round trip times in milli-seconds:
Minimum = 78ms, Maximum = 203ms, Average = 117ms
```

c. From the **Command Prompt** window, ping **PC1** using its IP address of 192.168.1.11.

Step 2: Verify connectivity and the path between PC3 and the rest of the network using the tracert command.

The **tracert** command is used to determine the path between a local host, in this case **PC3**, and a remote host. From the **Command Prompt** of **PC3**, verify the path to **PC2** using the **tracert** command.

a. At the command prompt, type **tracert 192.168.1.12**.

The command should generate the following output:

```
PC> tracert 192.168.1.12

Tracing route to 192.168.1.12 over a maximum of 30 hops:

1     13 ms     12 ms      12 ms    192.168.2.1
2     *          6 ms      13 ms    192.168.1.12

Trace complete.
```

b. The output of the command shows the **ICMP** packets generated by the **tracert** command traveling across the **WRS_LAN** interface to the host, **PC2**.

    c.   Close the Command Prompt window on **PC3**.

Step 3:   Verify connectivity to the web server using DNS.

    a.   In the **Web Browser** of **PC3**, go to **http://www.example.com**. DNS is used to resolve domain names to IP addresses. To verify the resolution, close the **Web Browser** window on **PC3**.

    b.   At the **Command Prompt** on **PC3**, **ping www.example.com**. The command should generate the following output:

```
PC> ping www.example.com


Pinging 192.168.3.100 with 32 bytes of data:


Reply from 192.168.3.100: bytes=32 time=138ms TTL=126
Reply from 192.168.3.100: bytes=32 time=156ms TTL=126
Reply from 192.168.3.100: bytes=32 time=172ms TTL=126
Reply from 192.168.3.100: bytes=32 time=140ms TTL=126
Ping statistics for 192.168.3.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 138ms, Maximum = 172ms, Average = 151ms
```

Note that the domain name www.example.com was translated by the DNS server to the IP address for the webserver, 192.168.3.100. This verifies proper operation of the DNS server.

So far all the DNS requests were done automatically by other applications. To generate DNS requests directly from the server, use the **nslookup** command.

    c.   At the **command prompt** on **PC3**, type **nslookup www.example.com**. The command should generate the following output:

```
PC> nslookup www.example.com
Server: [192.168.3.100]
Address: 192.168.3.100

Non-authoritative answer:
Name: www.example.com
Address: 192.168.3.100
```

When entered in the format above, **nslookup** will submit a request to a DNS server asking "What's the IP address associated to the name www.example.com".

The first line of the command's output informs the name of the DNS server who received the DNS request. **PC3** sent the request to **192.168.3.100** because it learned from **WRS1** via **DHCP** 192.168.3.100 was to be used to resolve names. Because no name is assigned to 192.168.3.100, the IP address was shown.

The second line informs the **IP address** of the **DNS** server used in the request.

The third, fourth and fifth lines reveal the actual answer to the request: the name **www.example.com** is associated to the **192.168.3.100** IP address.

Your completion percentage should be 100%. If not, click **Check Results** to see which required components are not yet completed.