# Introduction to Packet Tracer

## 

**F0/0**

**F0/1**

## Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| **R1** | **F0/0** | **192.168.0.1** | **255.255.255.0** | **N/A** |
|  | **F0/1** | **192.168.1.1** | **255.255.255.0** | **N/A** |
| **S1** | **VLAN 1** | **192.168.1.4** | **255.255.255.0** | **192.168.1.1** |
| **PC-A** | **NIC** | **192.168.1.3** | **255.255.255.0** | **192.168.1.1** |
| **PC-B** | **NIC** | **192.168.0.3** | **255.255.255.0** | **192.168.0.1** |

## Learning Objectives

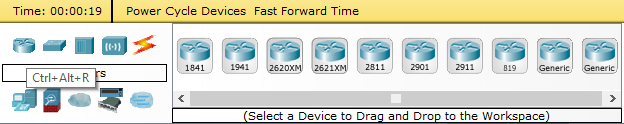
* Explore Packet Tracer
* Connect and configure devices
* Test and Verify IPv4 End to End Connetivity with ping

## Background

Since equipment and time are limited, this experience can be supplemented by a simulated environment. The simulator that is used in this course is Packet Tracer. Packet Tracer provides a rich set of protocols, equipment, and features but only a fraction of what is possible with real equipment. Packet Tracer is a supplement to not a replacement for experience with real equipment. You are encouraged to compare the results obtained from Packet Tracer network models with the behavior of real equipment.

This activity will provide an opportunity to explore the standard lab setup using Packet Tracer simulator.

Task 1: Enter the required devices



* 1 Router (Cisco 2811)
* 1 Switch (Cisco 2960)
* 2 PCs (Generic)
* Ethernet cables as shown in the topology

Task 2: Rename devices

* Router (R1)
* Switch (S1)
* PCs (PC-A y PC-B)

Task 3: Connect the devices

Click on the connections group symbol. The specific connection symbols provide different cable types that can be used to connect devices. To connect two devices click the auto connection symbol, click the first device, and then click the second device. Make the following connection:

* Connect PC-A to the S1 switch (Copper straight-through cable).
* Connect the S1 switch to the R1 router (Copper straight-through cable).
* Connect PC-B to the R1 router (Copper cross-Over cable).

Task 4: Configure the PC Interfaces

Configure the Ethernet interfaces of **PC-A** and **PC-B** with the IP addresses and default gateways from your network design.

Task 5: Configure the Router

**Access CLI (Command-Line Interface) prompt of router.**

Step 1: Enter privileged EXEC mode.

You can access all router commands in privileged EXEC mode. The privileged EXEC command set includes those commands contained in user EXEC mode, as well as the **configure** command through which access to the remaining command modes are gained. Enter privileged EXEC mode by entering the **enable** command.

Router> **enable**

Router#

The prompt changed from **Router>** to **Router#** which indicates privileged EXEC mode.

Step 2: Enter configuration mode.

Use the **configuration terminal** command to enter configuration mode.

Router# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#

Step 3: Give the router a name.

Use the **hostname** command to change the router name to **R1**.

Router(config)# **hostname R1**

R1(config)#

Step 4: Configure Cisco Router Interfaces.

R1(config)# **interface fa0/0**

R1(config-if)# **description Connection to PC-B**

R1(config-if)# **ip address** 192.168.0.1 255.255.255.0

R1(config-if)# **no shutdown**

R1(config)# **interface fa0/1**

R1(config-if)# **description Connection to Switch**

R1(config-if)# **ip address** 192.168.1.1 255.255.255.0

R1(config-if)# **no shutdown**

R1(config-if)# **end**

R1#

Step 5: Save RAM configuration to NVRAM

For a configuration to be used the next time the router is powered on or reloaded, it must be manually saved in NVRAM. Save the RAM configuration to NVRAM:

R1# **copy run start**

Destination filename [startup-config]? <ENTER>

Building configuration...

[OK]

Step 6: Display the current configuration.

The **show running-config** command displays the entire running configuration, one page at a time.

R1# **show run**

Building configuration...

Task 6: Configure the Switch

**Access CLI (Command-Line Interface) prompt of switch**

Step 1: Enter privileged EXEC mode.

You can access all switch commands in privileged EXEC mode. The privileged EXEC command set includes those commands contained in user EXEC mode, as well as the **configure** command through which access to the remaining command modes are gained. Enter privileged EXEC mode by entering the **enable** command.

Switch> **enable**

Switch#

The prompt changed from **Switch>** to **Switch#** which indicates privileged EXEC mode.

Step 2: Enter configuration mode.

Use the **configuration terminal** command to enter configuration mode.

Switch# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#

The prompt changed to reflect global configuration mode.

Step 3: Give the switch a name.

Use the **hostname** command to change the switch name to **S1**.

Switch(config)# **hostname S1**

S1(config)#

Step 4: Configure the Switch Virtual Interface (SVI) IP address

Enter global configuration mode to set the SVI IP address to allow remote switch management.

S1(config)# **interface vlan 1**

S1(config-if)# **ip address 192.168.1.4 255.255.255.0**

S1(config-if)# **no shut**

S1(config-if)# **exit**

S1(config)#

Step 5: Configure the default gateway

S1(config)# **ip default-gateway 192.168.1.1**

S1(config)# **end**

S1#

Step 6: Save the configuration.

Use the **copy** command to save the running configuration to the startup file on non-volatile random access memory (NVRAM).

S1# **copy run start**

Destination filename [startup-config]? **[Enter]**

Building configuration...

[OK]

Step 7: Display the current configuration.

The **show running-config** command displays the entire running configuration, one page at a time.

S1# **show run**

Building configuration...

Task 7. Test and Verify IPv4 End to End Connetivity with ping

Use the ping command to verify network connectivity. Use the following table to methodically verify connectivity with each network device. Take corrective action to establish connectivity if a test fails:

|  |  |  |  |
| --- | --- | --- | --- |
| 1. From | **To** | **IP Address (To)** | **Ping results** (Fail / Success) |
| PC-A | Switch | 192.168.1.4 |  |
| PC-A | R1 Fa0/1 | 192.168.1.1 |  |
| PC-A | PC- B | 192.168.0.3 |  |
| PC-B | R1 Fa0/0 | 192.168.0.1 |  |
| PC-B | Switch | 192.168.1.4 |  |
| PC-B | PC-A | 192.168.1.3 |  |