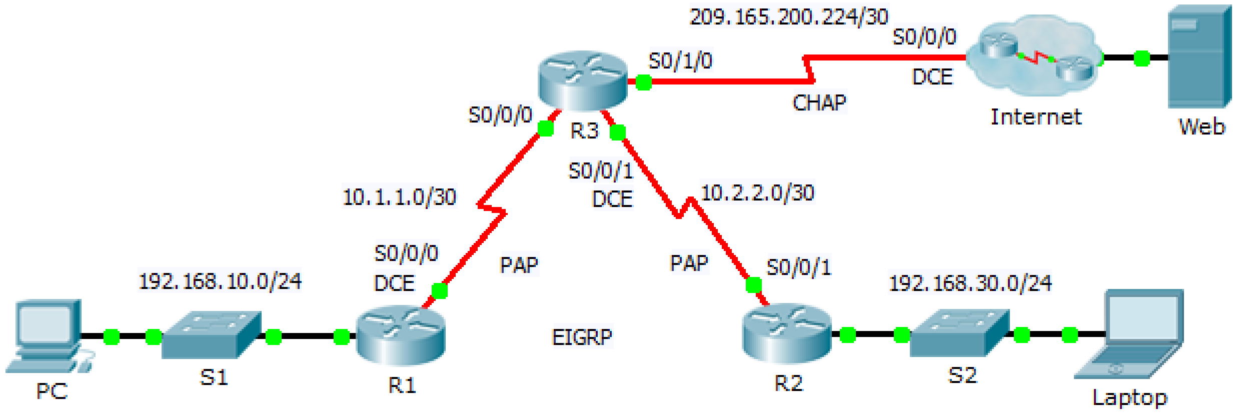
Packet Tracer – Configuring PAP and CHAP Authentication

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	192.168.10.1	255.255.255.0	N/A
	S0/0/0	10.1.1.1	255.255.255.252	N/A
R2	G0/0	192.168.30.1	255.255.255.0	N/A
	S0/0/1	10.2.2.2	255.255.255.252	N/A
R3	S0/0/0	10.1.1.2	255.255.255.252	N/A
	S0/0/1	10.2.2.1	255.255.255.252	N/A
	S0/1/0	209.165.200.225	255.255.255.252	N/A
ISP	S0/0/0	209.165.200.226	255.255.255.252	N/A
	G0/0	209.165.200.1	255.255.255.252	N/A
Web	NIC	209.165.200.2	255.255.255.252	209.165.200.1
PC	NIC	192.168.10.10	255.255.255.0	192.168.10.1
Laptop	NIC	192.168.30.10	255.255.255.0	192.168.30.1

Objectives

Part 1: Review Routing Configurations

Part 2: Configure PPP as the Encapsulation Method

Part 3: Configure PPP Authentication

Background

In this activity, you will practice configuring PPP encapsulation on serial links. You will also configure PPP PAP authentication and PPP CHAP authentication.

Part 1: Review Routing Configurations

Step 1: View running configurations on all routers.

While reviewing the router configurations, note the use of both static and dynamic routes in the topology.

Step 2: Test connectivity between computers and the web server.

From **PC** and **Laptop**, ping the web server at 209.165.200.2. Both **ping** commands should be successful. Remember to give enough time for STP and EIGRP to converge.

Part 2: Configure PPP as the Encapsulation Method

Step 1: Configure R1 to use PPP encapsulation with R3.

Enter the following commands on **R1**:

```
R1(config)# interface s0/0/0
R1(config-if)# encapsulation ppp
```

Step 2: Configure R2 to use PPP encapsulation with R3.

Enter the appropriate commands on **R2**:

Step 3: Configure R3 to use PPP encapsulation with R1, R2, and ISP.

Enter the appropriate commands on **R3**:

Step 4: Configure ISP to use PPP encapsulation with R3.

a. Click the **Internet** cloud, then ISP. Enter the following commands:

```
Router(config)# interface s0/0/0
Router(config-if)# encapsulation ppp
```

b. Exit the **Internet** cloud by clicking **Back** in the upper left corner or by pressing **Alt+left arrow**.

Step 5: Test connectivity to the web server.

PC and **Laptop** should be able to ping the web server at 209.165.200.2. This may take some time as interfaces start working again and EIGRP reconverges.

Part 3: Configure PPP Authentication

Step 1: Configure PPP PAP Authentication Between R1 and R3.

Note: Instead of using the keyword **password** as shown in the curriculum, you will use the keyword **secret** to provide a better encryption of the password.

a. Enter the following commands into **R1**:

```
R1(config)# username R3 secret class
```

```
R1(config)# interface s0/0/0
R1(config-if)# ppp authentication pap
R1(config-if)# ppp pap sent-username R1 password cisco
```

b. Enter the following commands into **R3**:

```
R3(config)# username R1 secret cisco
R3(config)# interface s0/0/0
R3(config-if)# ppp authentication pap
R3(config-if)# ppp pap sent-username R3 password class
```

Step 2: Configure PPP PAP Authentication Between R2 and R3.

Repeat step 1 to configure authentication between **R2** and **R3** changing the usernames as needed. Note that each password sent on each serial port matches the password expected by the opposite router.

Step 3: Configure PPP CHAP Authentication Between R3 and ISP.

a. Enter the following commands into **ISP**. The hostname is sent as the username:

```
Router(config)# hostname ISP
ISP(config)# username R3 secret cisco
ISP(config)# interface s0/0/0
ISP(config-if)# ppp authentication chap
```

b. Enter the following commands into **R3**. The passwords must match for CHAP authentication:

```
R3(config)# username ISP secret cisco
R3(config)# interface serial0/1/0
R3(config-if)# ppp authentication chap
```

Step 4: Test connectivity between computers and the web server.

From **PC** and **Laptop**, ping the web server at 209.165.200.2. Both **ping** commands should be successful. Remember to give enough time for STP and EIGRP to converge.