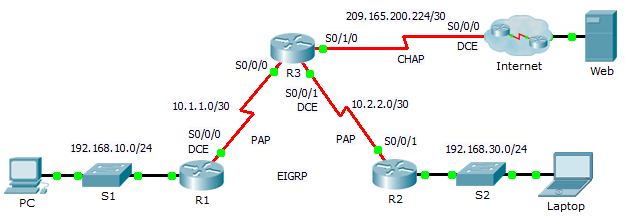
Packet Tracer – Configuring PAP and CHAP Authentication

1. Topology



1. 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 |

1. Objectives

Part 1: Review Routing Configurations

Part 2: Configure PPP as the Encapsulation Method

Part 3: Configure PPP Authentication

1. Background

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

1. Review Routing Configurations
   1. View running configurations on all routers.

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

* 1. 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.

1. Configure PPP as the Encapsulation Method
   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**

* 1. Configure R2 to use PPP encapsulation with R3.

Enter the appropriate commands on **R2**:

* 1. Configure R3 to use PPP encapsulation with R1, R2, and ISP.

Enter the appropriate commands on **R3**:

* 1. Configure ISP to use PPP encapsulation with R3.
     1. Click the **Internet** cloud, then ISP. Enter the following commands:

Router(config)# **interface s0/0/0**

Router(config-if)# **encapsulation ppp**

* + 1. Exit the **Internet** cloud by clicking **Back** in the upper left corner or by pressing **Alt+left arrow**.
  1. 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.

1. Configure PPP Authentication
   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.

* + 1. 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**

* + 1. 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**

* 1. 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.

* 1. Configure PPP CHAP Authentication Between R3 and ISP.
     1. 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**

* + 1. 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**

* 1. 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.