Packet Tracer - Configure Secure Passwords and SSH

# Addressing Table

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| --- | --- | --- | --- | --- |
| RTA | G0/0/0 | 172.16.1.1 | 255.255.255.0 | N/A |
| PCA | NIC | 172.16.1.10 | 255.255.255.0 | 172.16.1.1 |
| SW1 | VLAN 1 | 172.16.1.2 | 255.255.255.0 | 172.16.1.1 |

Blank Line, No additional information

# Scenario

The network administrator has asked you to prepare **RTA** and **SW1** for deployment. Before they can be connected to the network, security measures must be enabled.

# Intructions

## Configure Basic Security on the Router

* + - 1. Configure IP addressing on **PCA** according to the Addressing Table.
      2. Console into **RTA** from the Terminal on PCA.
      3. Configure the hostname as **RTA**.
      4. Configure IP addressing on **RTA** and enable the interface.
      5. Encrypt all plaintext passwords.

RTA(config)# **service password-encryption**

* + - 1. Set the minimum password length to 10.

RTA(config)# **security passwords min-length 10**

* + - 1. Set a strong secret password of your choosing.

**Note**: Choose a password that you will remember, or you will need to reset the activity if you are locked out of the device.

* + - 1. Disable DNS lookup.

RTA(config)# **no ip domain-lookup**

* + - 1. Set the domain name to **netsec.com** (case-sensitive for scoring in PT).

RTA(config)# **ip domain-name netsec.com**

* + - 1. Create a user of your choosing with a strong encrypted password.

RTA(config)# **username *any\_user* secret *any\_password***

* + - 1. Generate 1024-bit RSA keys.

**Note**: In Packet Tracer, enter the crypto key generate rsa command and press Enter to continue.

RTA(config)# **crypto key generate rsa**

The name for the keys will be: **RTA.netsec.com**

Choose the size of the key modulus in the range of 360 to 2048 for your

General Purpose Keys. Choosing a key modulus greater than 512 may take

a few minutes.

How many bits in the modulus [512]: **1024**

* + - 1. Block anyone for three minutes who fails to log in after four attempts within a two-minute period.

RTA(config)# **login block-for 180 attempts 4 within 120**

* + - 1. Configure all VTY lines for SSH access and use the local user profiles for authentication.

RTA(config)# **line vty 0 4**

RTA(config-line)# **transport input ssh**

RTA(config-line)# **login local**

* + - 1. Set the EXEC mode timeout to 6 minutes on the VTY lines.

RTA(config-line)# **exec-timeout 6**

* + - 1. Save the configuration to NVRAM.
      2. Access the command prompt on the desktop of **PCA** to establish an SSH connection to **RTA**.

C:\> **ssh /?**

Packet Tracer PC SSH

Usage: **SSH -l username target**

C:\>

## Configure Basic Security on the Switch

Configure switch **SW1** with corresponding security measures. Refer to the configuration steps on the router if you need additional assistance.

* + - 1. Console into **SW1** from the Terminal on PCA.
      2. Configure the hostname as **SW1**.
      3. Configure IP addressing on SW1 **VLAN1** and enable the interface.
      4. Configure the default gateway address.
      5. Disable all unused switch ports.

**Note**: On a switch it is a good security practice to disable unused ports. One method of doing this is to simply shut down each port with the ‘**shutdown**’ command. This would require accessing each port individually. There is a shortcut method for making modifications to several ports at once by using the **interface range** command. On **SW1** all ports except FastEthernet0/1 and GigabitEthernet0/1 can be shutdown with the following command:

SW1(config)# **interface range F0/2-24, G0/2**

SW1(config-if-range)# **shutdown**

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to administratively down

<Output omitted>

%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to administratively down

%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to administratively down

The command used the port range of 2-24 for the FastEthernet ports and then a single port range of GigabitEthernet0/2.

* + - 1. Encrypt all plaintext passwords.
      2. Set a strong secret password of your choosing.
      3. Disable DNS lookup.
      4. Set the domain name to **netsec.com** (case-sensitive for scoring in PT).
      5. Create a user of your choosing with a strong encrypted password.
      6. Generate 1024-bit RSA keys.
      7. Configure all VTY lines for SSH access and use the local user profiles for authentication.
      8. Set the EXEC mode timeout to 6 minutes on all VTY lines.
      9. Save the configuration to NVRAM.

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