

Project 4

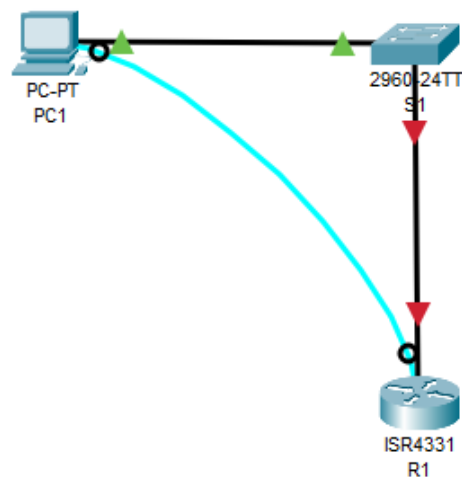
Basic network device security

Project description:

To ensure the basic security of a network device using the example of a Cisco router.

Steps:

- Create a topology of LAN



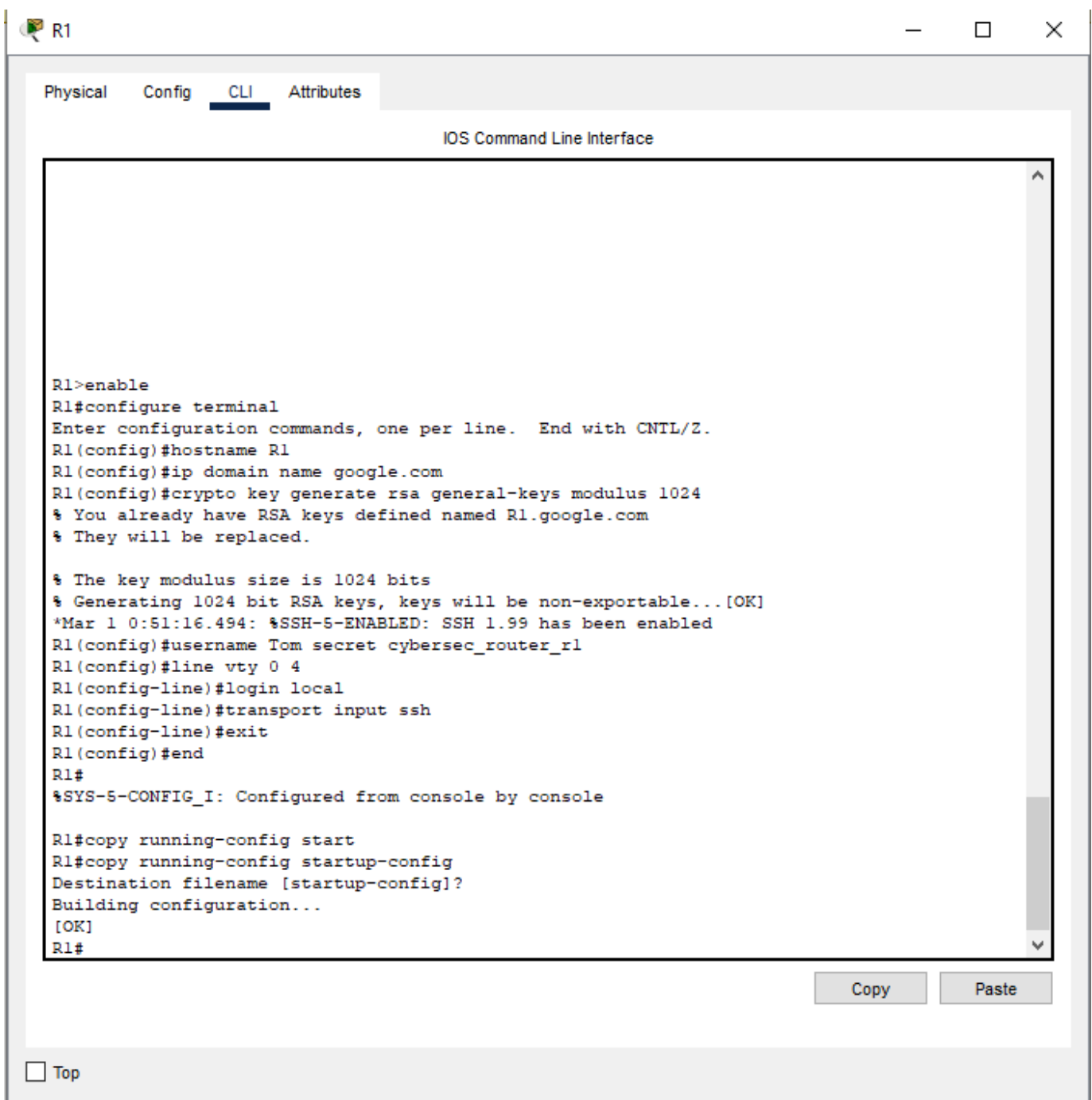
- Configure the basic security of the router
 1. Encrypt all open passwords
 2. Setting the minimum password length
 3. Setting a lock on multiple login attempts
 4. Setting up session logout after inactivity
 5. Setting up user disconnection on VTY lines
 6. Check the settings

```
R1>enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#hostname R1
R1(config)#service password-encryption
R1(config)#security passwords min-length 8
R1(config)#login block-for 120 attempts 3 within 60
R1(config)#line vty 0 4
R1(config-line)#passwords sec_router_r1
^
% Invalid input detected at '^' marker.

R1(config-line)#password sec_router_r1
R1(config-line)#exec-timeout 5 30
R1(config-line)#transport input ssh
R1(config-line)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#show running-config | section line vty
line vty 0 4
  exec-timeout 5 30
  password 7 0832494D360B0A02060E1E3B387A
  login
  transport input ssh
R1#
```

- Activating SSH connection for secure remote access:
 1. Setting up a unique device name
 2. Configure the IP domain name
 3. Generate a key to encrypt SSH traffic
 4. Create a user and password
 5. Enable local database authentication
 6. Enable ssh session for vty lines
 7. Checking open ports
 8. Save configuration



```
R1>enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#hostname R1
R1(config)#ip domain name google.com
R1(config)#crypto key generate rsa general-keys modulus 1024
% You already have RSA keys defined named R1.google.com
% They will be replaced.

% The key modulus size is 1024 bits
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]
*Mar 1 0:51:16.494: %SSH-5-ENABLED: SSH 1.99 has been enabled
R1(config)#username Tom secret cybersec_router_rl
R1(config)#line vty 0 4
R1(config-line)#login local
R1(config-line)#transport input ssh
R1(config-line)#exit
R1(config)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#copy running-config start
R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#
```

Copy Paste

☐ Top

Summary:

The basic security configuration of the router is configured. We need to understand that in order to fully ensure network security, we also need to use and configure: Firewall, VPN, Proxy, IPS/IDS, Wireshark + Siem for monitoring and analyzing logs.