CIT 223: Data Communication and Computer Network Lab
Assignment #05
Introduction to CISCO IOS commands

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Objective(s)

- To Understand Basic Commands for Router Configuration

Background

Packet Tracer is a powerful network simulator that can be utilized in training for network certification and learning by allowing students to create networks with an almost unlimited number of devices and to experience troubleshooting without having to buy real Cisco routers or switches. The tool is created by Cisco Systems. The purpose of Packet Tracer is to offer students a tool to learn the principles of networking.

Router Modes

Router>	User mode
Router#	Privileged Mode
Router(config)#	Global Configuration Mode
Router(config-if)#	Interface Mode
Router(config-subif)#	Subinterface Mode
Router(config-line)#	Line mode
Router(config-router)#	Router Configuration Mode

Tasks

Configure the following in Router and Switch as illustrated in the figure:

1. Change Hostname (Cisco)
2. Configure passwords (password: `cisco` & secret: `class`)
3. Secure Console Port and Terminal lines (password: `cisco`)
4. Encrypt Passwords (`service password-encryption`)
5. Configure Clock (`clock`)

6. Configure Banners (`banner motd`)
7. Configure Interface (IP Address) on Router (interface `fa0/0` or `fa0/1`)
8. Configure VLAN on Switch (interface `vlan 1`)
9. Save configurations (running-config to startup-config)
10. Configure Telnet access
11. Configure SSH access
12. Use show commands:
    - `show running-config`
    - `show startup-config`
    - `show ip interface brief`
    - `show interface vlan 1`
13. Configure PCs
14. Verify Connectivity (`ping`)

Router Configuration

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Cisco
Cisco(config)#enable password cisco
Cisco(config)#enable secret class
Cisco(config)#line console 0
Cisco(config-line)#password cisco
Cisco(config-line)#login
Cisco(config-line)#line vty 0 4
Cisco(config-line)#password cisco
Cisco(config-line)#login
Cisco(config-line)#exit
Cisco(config)#service password-encryption
Cisco(config)#exit
Cisco#
%SYS-5-CONFIG_I: Configured from console by console

Cisco#clock ?
set Set the time and date
Cisco#clock set ?
hh:mm:ss Current Time
Cisco#clock set 21:15:00 ?
<1-31> Day of the month
MONTH Month of the year
Cisco#clock set 21:15:00 May ?

<1-31> Day of the month
Cisco#clock set 21:15:00 May
% Incomplete command.
Cisco#clock set 21:15:00 May ?
<1-31> Day of the month
Cisco#clock set 21:15:00 May 15 ?
<1993-2035> Year
```

```
Cisco#clock set 21:15:00 May 15 2021
Cisco#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Cisco(config)#banner motd \$ UNAUTHORISED ACCESS RESTRICTED \$
Cisco(config)#interface fastethernet 0/0
Cisco(config-if)#ip address 192.168.1.1 255.255.255.0
Cisco(config-if)#no shutdown

Cisco(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

Cisco(config-if)#exit
Cisco(config)#exit
Cisco#
%SYS-5-CONFIG_I: Configured from console by console

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

Telnet Configuration

```
Cisco#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Cisco(config)#line vty 0 4
Cisco(config-line)#password cisco
Cisco(config-line)#login
Cisco(config-line)#exit
Cisco(config)#interface fastethernet 0/0
Cisco(config-if)#ip address 192.168.1.1 255.255.255.0
Cisco(config-if)#no shutdown
Cisco(config-if)#exit
Cisco(config)#ip domain-name cisco.com
Cisco(config)#username admin privilege 15 secret adminpass
Cisco(config)#ip ssh version 2
Cisco(config)#crypto key generate rsa
The name for the keys will be: Cisco.cisco.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
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Cisco(config)#line vty 0 4
Cisco(config-line)#transport input telnet ssh
Cisco(config-line)#login local
Cisco(config-line)#exit
Cisco(config)#exit
Cisco#
```

Switch Configuration

```
Switch>
```

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface vlan 1
Switch(config-if)#ip address 192.168.1.4 255.255.255.0
Switch(config-if)#no shutdown
Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
```