Ex.2 Configuration of Router and Switch

AIM

To perform the basic router and switch configuration for the given topology and also test the connectivity between all the device via console and vty line.

COMMANDS USED IN SWITCH

Commands	Description
Switch>enable	Entering enable mode
Switch#	Prompt indicates enable mode
Switch#conf t	Entering global configuration mode
Switch(config)#interface vlan1	Entering interface configuration mode
Switch(config-if)#ip address 192.168.1.1 255.255.255.0	Enable IP address and Subnet mask
Switch(config-if)#no shutdown	Enable the interface
Switch(config-if)#exit	Exit in this interface
Switch(config)#exit	Exit configuration mode
Switch#conf t	Entering global configuration mode
Switch(config)#line vty 0 15	Entering configuration mode for virtual terminal
Switch(config-line)#login local	Entering local login
Switch(config-line)#user soorya password 1234	Set user name and password
Switch(config)#exit	Then exit configuration mode
Switch#conf t	Entering global configuration mode
Switch#enable password 6666	Enable the password
Switch(config)#exit	Then exit configuration mode
Switch#	Prompt indicates enable mode

COMMANDS USED IN ROUTER

Commands	Description
Router>enable	Entering enable mode
Router#	Prompt indicates enable mode
Router#conf t	Entering global configuration mode
Router(config)# interface gig0/0	Entering interface configuration mode
Router(config-if)#ip address 192.168.1.1 255.255.255.0	Enable IP address and Subnet mask
Router(config-if)#no shutdown	Enable the interface
Router(config-if)#exit	Exit in this interface
Router(config)#exit	Exit configuration mode
Router#conf t	Entering global configuration mode
Router(config)#line vty 0 4	Entering configuration mode for virtual terminal
Router(config-line)#login local	Entering local login
Router(config-line)#user soorya password 1234	Set user name and password
Router(config)#exit	Then exit configuration mode
Router#conf t	Entering global configuration mode
Router#enable password 2222	Enable the password
Router(config)#exit	Then exit configuration mode
Router#	Prompt indicates enable mode

Ex.2 Configuration of Router and Switch

PROCEDURE

1. Configure IP Addressing on the Host PCs.
2. Configure the switches
3. Configure Routers Interfaces.
4. Test and Verify the Configurations.
5. Test and Verify the Telnet.

TOPOLOGY DIAGRAM

TOPOLOGY DIAGRAM OF ROUTER AND SWITCH
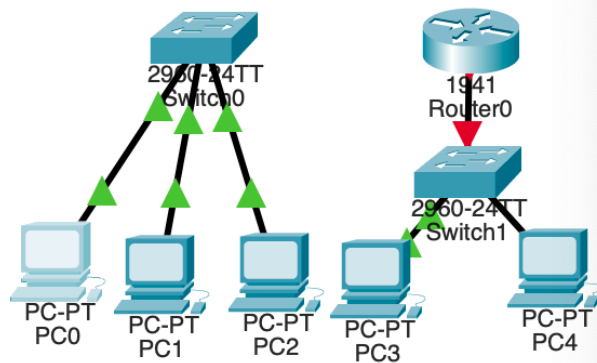
ADDRESSING TABLE(Router)

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/0	192.168.1.1	255.255.255.0	NA
PC1	NIC	192.168.1.2	255.255.255.0	192.168.1.1
PC2	NIC	192.168.1.3	255.255.255.0	192.168.1.1
PC3	NIC	192.168.1.4	255.255.255.0	192.168.1.1

ADDRESSING TABLE (Switch)

Device	Interface	IP Address	Subnet Mask	Default Gateway
S1	vlan	192.168.1.1	255.255.255.0	NA

Ex.2 Configuration of Router and Switch

PC1	NIC	192.168.1.2	255.255.255.0	192.168.1.1
PC2	NIC	192.168.1.3	255.255.255.0	192.168.1.1
PC3	NIC	192.168.1.4	255.255.255.0	192.168.1.1

OUTPUT

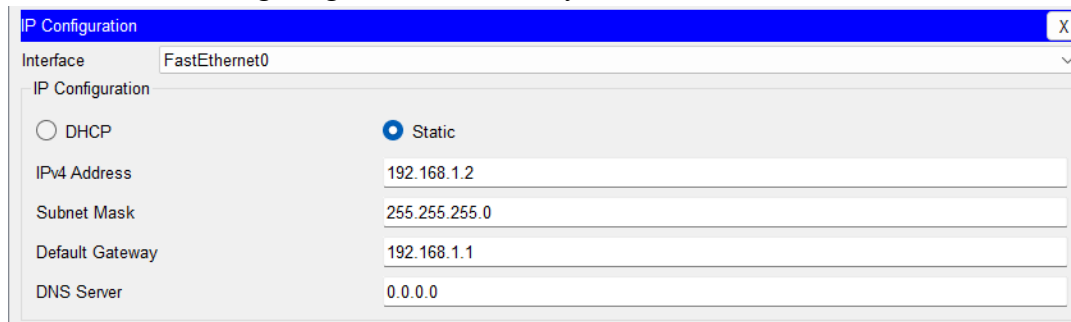TOPOLOGY OF ROUTER
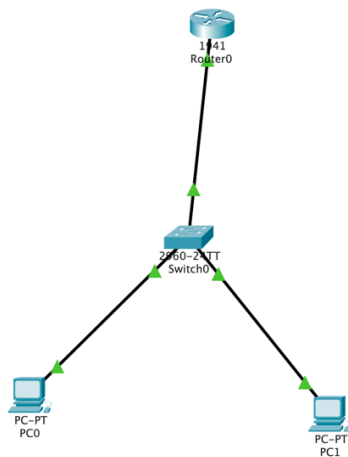
TOPOLOGY OF SWITCH:
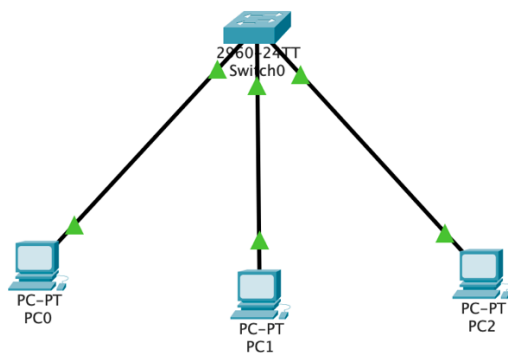
Ex.2 Configuration of Router and Switch

Screenshot of configuring IP address for anyone PC:

IP Configuration	X
Interface	FastEthernet0 ∨

IP Configuration

○ DHCP   ● Static

IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	0.0.0.0

Screenshot of Routing Table of any 1 router

```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.1.0/24 is directly connected, GigabitEthernet0/0
L        192.168.1.1/32 is directly connected, GigabitEthernet0/0

Router#
```

Screenshot of successful ping from PC to PC:

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time=1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Screenshot of Telnet access.

```
C:\>telnet 192.168.1.1
Trying 192.168.1.1 ...Open


User Access Verification

Username: soorya
Password:
Router>
```

Screenshot of Mac-Address Table of any one switch

Ex.2 Configuration of Router and Switch

```
Device Name: Switch0
Custom Device Model: 2960 IOS15
Hostname: Switch

Port               Link    VLAN   IP Address        MAC Address
FastEthernet0/1    Up      1      --                0060.7050.7B01
FastEthernet0/2    Up      1      --                0060.7050.7B02
FastEthernet0/3    Up      1      --                0060.7050.7B03
FastEthernet0/4    Down    1      --                0060.7050.7B04
FastEthernet0/5    Down    1      --                0060.7050.7B05
FastEthernet0/6    Down    1      --                0060.7050.7B06
FastEthernet0/7    Down    1      --                0060.7050.7B07
FastEthernet0/8    Down    1      --                0060.7050.7B08
FastEthernet0/9    Down    1      --                0060.7050.7B09
FastEthernet0/10   Down    1      --                0060.7050.7B0A
FastEthernet0/11   Down    1      --                0060.7050.7B0B
FastEthernet0/12   Down    1      --                0060.7050.7B0C
FastEthernet0/13   Down    1      --                0060.7050.7B0D
FastEthernet0/14   Down    1      --                0060.7050.7B0E
FastEthernet0/15   Down    1      --                0060.7050.7B0F
FastEthernet0/16   Down    1      --                0060.7050.7B10
FastEthernet0/17   Down    1      --                0060.7050.7B11
FastEthernet0/18   Down    1      --                0060.7050.7B12
FastEthernet0/19   Down    1      --                0060.7050.7B13
FastEthernet0/20   Down    1      --                0060.7050.7B14
FastEthernet0/21   Down    1      --                0060.7050.7B15
FastEthernet0/22   Down    1      --                0060.7050.7B16
FastEthernet0/23   Down    1      --                0060.7050.7B17
FastEthernet0/24   Down    1      --                0060.7050.7B18
GigabitEthernet0/1 Down    1      --                0060.7050.7B19
GigabitEthernet0/2 Down    1      --                0060.7050.7B1A
Vlan1              Up      1      192.168.1.2/24    0001.9655.11BA

Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > Switch0
```

Screenshot of Password validation in console and vty line

```
Router(config-if)#exit
Router(config)#line vty 0 4
Router(config-line)#login local
Router(config-line)#user keba password 123
Router(config)#exit
Router#
%SYS-5-CONFIG I: Configured from console by console
```

Screenshot of all the configuration done(router)

Ex.2 Configuration of Router and Switch

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface gig0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

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

Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#line vty 0 4
Router(config-line)#login local
Router(config-line)#user soorya password 1234
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Screenshot of all the configuration done(switch)

```
Switch>enable
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface vlan1
Switch(config-if)#ip address 192.168.1.1 255.255.255.0
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

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

Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#line vty 0 15
Switch(config-line)#login local
Switch(config-line)#user soorya password 1234
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

RESULT

The required configuration of router and switch was achieved with help of the above mentioned steps and methods.