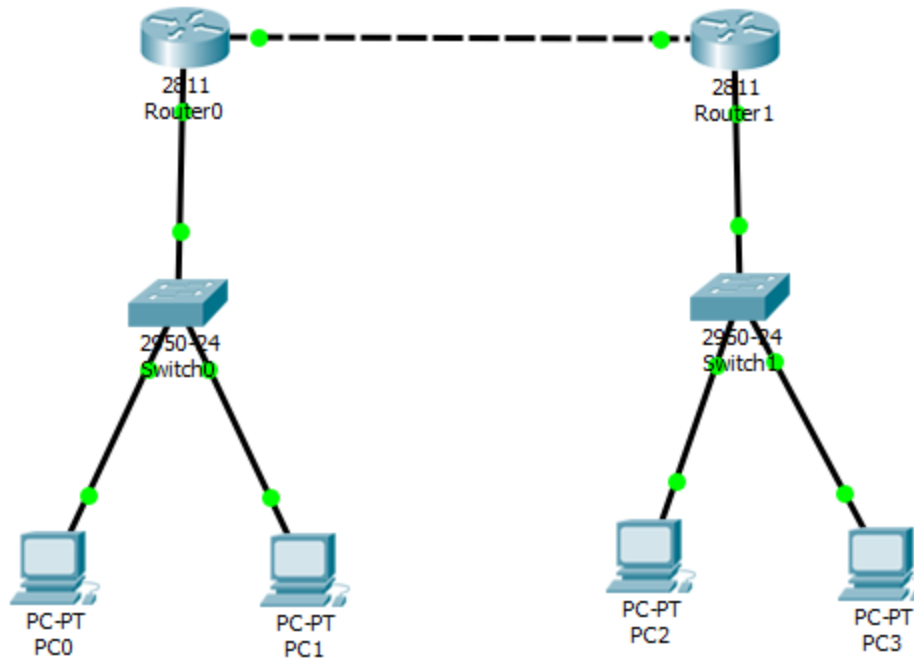


Practical 2

1)Ipv6 Static Routing



Router 0:

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int fa0/0
```

```
Router(config-if)#ipv6 address 2000:1::1/64
```

```
Router(config-if)#no shutdown
```

```
Router(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

```
Router(config-if)#exit
Router(config)#int fa0/1
Router(config-if)#ipv address 2001::10/64
Router(config-if)#no shutdown
```

```
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
```

```
Router(config-if)#exit
Router(config)#ipv6 unicast-routing
```

Router 1:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int fa0/0
Router(config-if)#ipv6 address 2000:2::1/64
Router(config-if)#no shutdown
```

```
Router(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
```

```
Router(config-if)#exit
Router(config)#int fa0/1
Router(config-if)#ipv6 address 2001::20/64
Router(config-if)#no shutdown
```

```
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up
```

Add static route

Router 0:

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#ipv6 route 2000:2::/64 2001::20
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG_I: Configured from console by console

Router 1:

```
Router(config-if)#exit
```

```
Router(config)#ipv6 route 2000:1::/64 2001::20
```

% Not allowed to point static routes through yourself

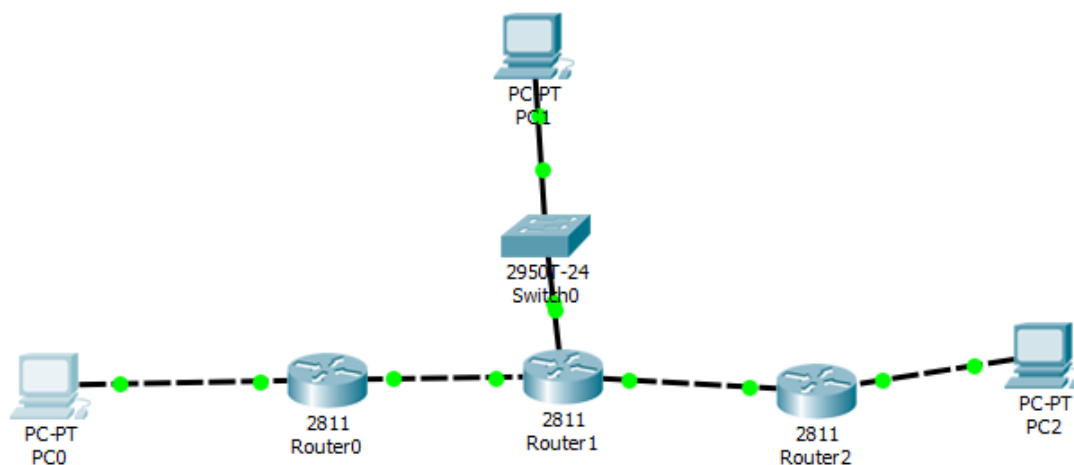
```
Router(config)#ipv6 route 2000:1::/64 2001::10
```

```
Router(config)#exit
```

```
Router#
```

%SYS-5-CONFIG_I: Configured from console by console

2)Ipv6 Dynamic Routing:



Router 0:

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ipv6 unicast-routing

Router(config)#int fa0/0

Router(config-if)#ipv6 address 2000:1::1/64

Router(config-if)#ipv6 rip net1 enable

Router(config-if)#ipv6 enable

Router(config-if)#no shutdown

Router(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

Router(config-if)#exit

Router(config)#int fa0/1

Router(config-if)#ipv6 address 2001::10/64

Router(config-if)#ipv6 rip net1 enable

Router(config-if)#ipv6 enable

Router(config-if)#no shutdown exit

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

Router 1:

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ipv6 unicast-routing

Router(config)#int fa0/0

Router(config-if)#ipv6 address 2000:2::1/64

Router(config-if)#ipv6 rip net1 enable

Router(config-if)#ipv6 enable

Router(config-if)#no shutdown

```
Router(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
```

```
Router(config-if)#exit
```

```
Router(config)#int fa0/1
```

```
Router(config-if)#ipv6 address 2001::20/64
```

```
Router(config-if)#ipv6 rip net1 enable
```

```
Router(config-if)#ipv6 enable
```

```
Router(config-if)#no shutdown
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed  
state to up
```

```
Router(config-if)#exit
```

```
Router(config)#
```

```
Router(config)#int fa1/0
```

```
Router(config-if)#ipv6 address 2001:1::10/64
```

```
Router(config-if)#ipv6 rip net1 enable
```

```
Router(config-if)#ipv6 enable
```

```
Router(config-if)#no shutdown
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
```

```
Router(config-if)#exit
```

```
Router 2:
```

```
Router>en
```

```
Router#config t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#ipv6 unicast-routing
Router(config)#int fa0/0
Router(config-if)#ipv6 address 2000:3::1/64
Router(config-if)#ipv6 rip net1 enable
Router(config-if)#ipv6 enable
Router(config-if)#no shutdown
```

```
Router(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
```

```
Router(config-if)#exit
Router(config)#int fa0/1
Router(config-if)#ipv6 address 2001:1::20/64
Router(config-if)#ipv6 rip net1 enable
Router(config-if)#no shutdown
```

```
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up
```

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

View the rip database:

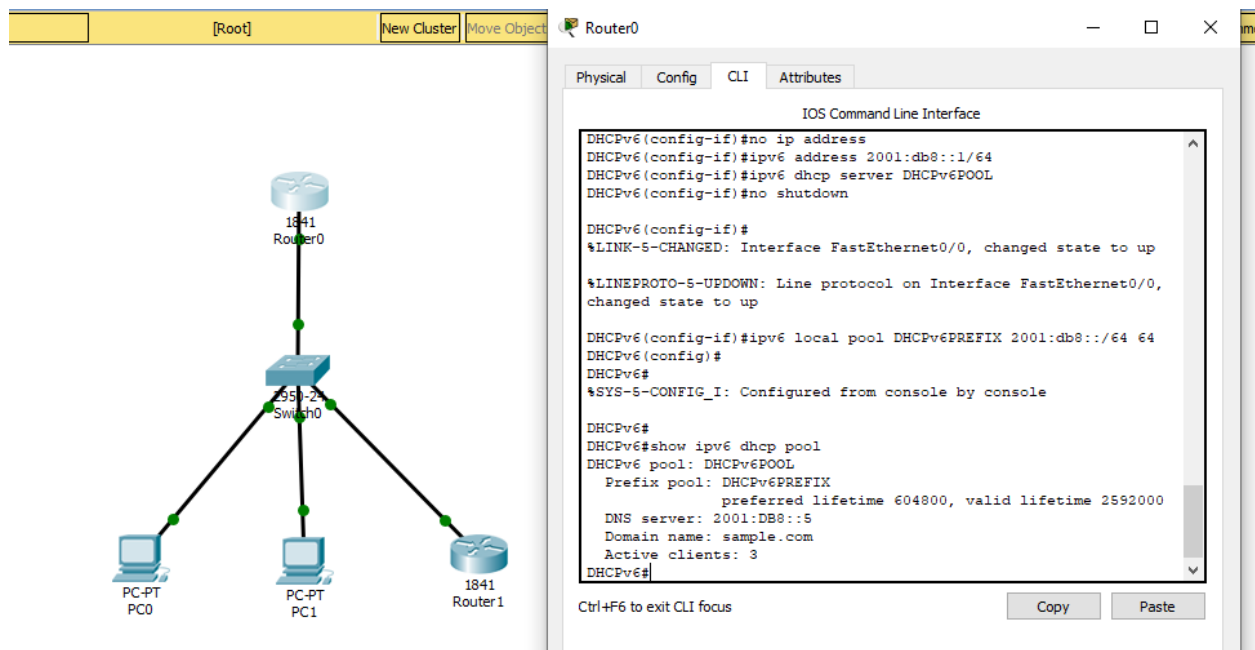
```
Router#sh ipv6 rip database
RIP process "net1" local RIB
2000:1::/64, metric 3, installed
FastEthernet0/1/FE80::204:9AFF:FED9:5EB8, expires in 177 sec
2000:2::/64, metric 2, installed
```

FastEthernet0/1/FE80::204:9AFF:FED9:5EB8, expires in 177 sec
2001::/64, metric 2, installed

FastEthernet0/1/FE80::204:9AFF:FED9:5EB8, expires in 177 sec
2001:1::/64, metric 2

FastEthernet0/1/FE80::204:9AFF:FED9:5EB8, expires in 177 sec

3)DHCPv6



DHCP Server:

```
Router#config t
Router(config)#no ip domain-lookup
Router(config)#service password-encryption
Router(config)#enable password cisco
Router(config)#enable secret class
Router(config)#hostname DHCPv6
DHCPv6(config)#line vty 0 4
DHCPv6(config-line)#password cisco
DHCPv6(config-line)#login
```

```
DHCPv6(config-line)#line console 0
DHCPv6(config-line)#password cisco
DHCPv6(config-line)#login
DHCPv6(config-line)#exec-timeout 0 0
DHCPv6(config-line)#loggin synch
DHCPv6(config-line)#exit
DHCPv6(config)#banner motd ^Authorized Users Only^
DHCPv6(config)#end
```

```
Router(config)#hostname DHCPv6
DHCPv6#config t
DHCPv6(config)#ipv6 unicast-routing
DHCPv6(config)#ipv6 dhcp pool DHCPv6POOL
DHCPv6(config-dhcpv6)#prefix-delegation pool DHCPv6PREFIX
DHCPv6(config-dhcpv6)#dns-server 2001:db8::5
DHCPv6(config-dhcpv6)#domain-name sample.com
DHCPv6(config-dhcpv6)#int fa0/0
DHCPv6(config-if)#no ip address
DHCPv6(config-if)#ipv6 address 2001:db8::1/64
DHCPv6(config-if)#ipv6 dhcp server DHCPv6POOL
DHCPv6(config-if)#no shutdown
```

DHCP Client:

```
Router#config t
Router(config)#ipv6 unicast-routing
Router(config)#int fa0/0
Router(config-if)#ipv6 address autoconfig
Router(config-if)#ipv6 dhcp client pd prefix-from-provider
Router(config-if)#ipv6 address prefix-from-provider ::10/64
Router(config-if)#no shutdown
```


PC0

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☒ DHCP ☐ Auto Config ☐ Static

IPv6 Address 2001:DB8::203:E4FF:FE91:C064 / 64

Link Local Address FE80::203:E4FF:FE91:C064

IPv6 Gateway FE80::2E0:A3FF:FE41:8D01

IPv6 DNS Server 2001:DB8::5

☐ Top

PC1

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☒ DHCP ☐ Auto Config ☐ Static DHCPv6 request successful.

IPv6 Address 2001:DB8::20D:BDFF:FE48:EAE6 / 64

Link Local Address FE80::20D:BDFF:FE48:EAE6

IPv6 Gateway FE80::2E0:A3FF:FE41:8D01

IPv6 DNS Server 2001:DB8::5

☐ Top