DHCP

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Course Code: Data Communication and Computer Networking

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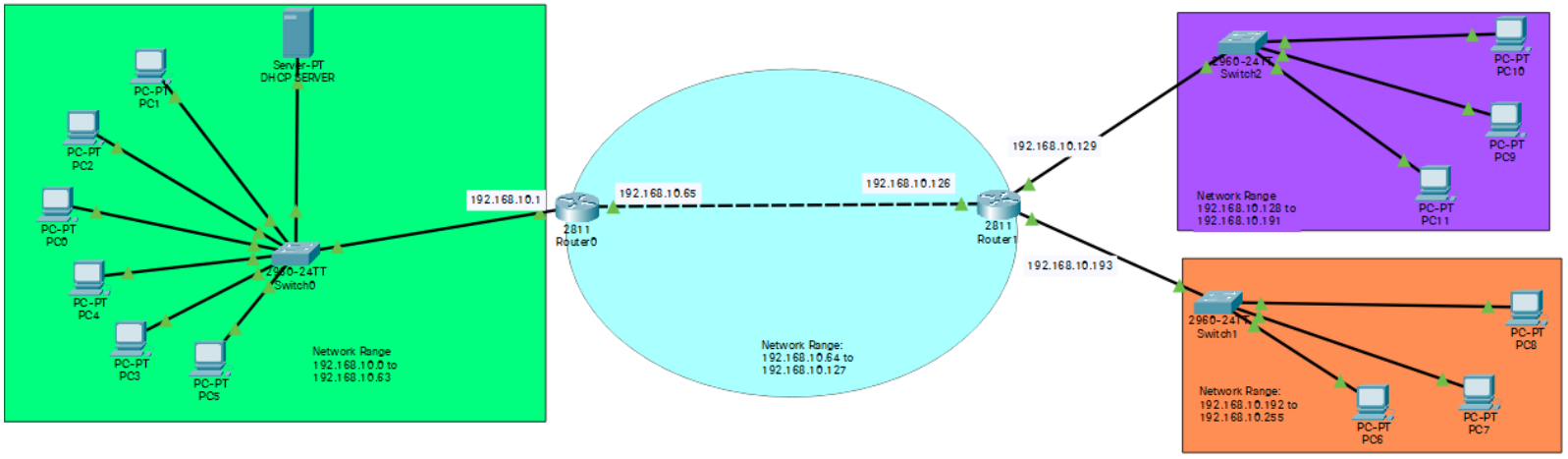
31st December, 2021

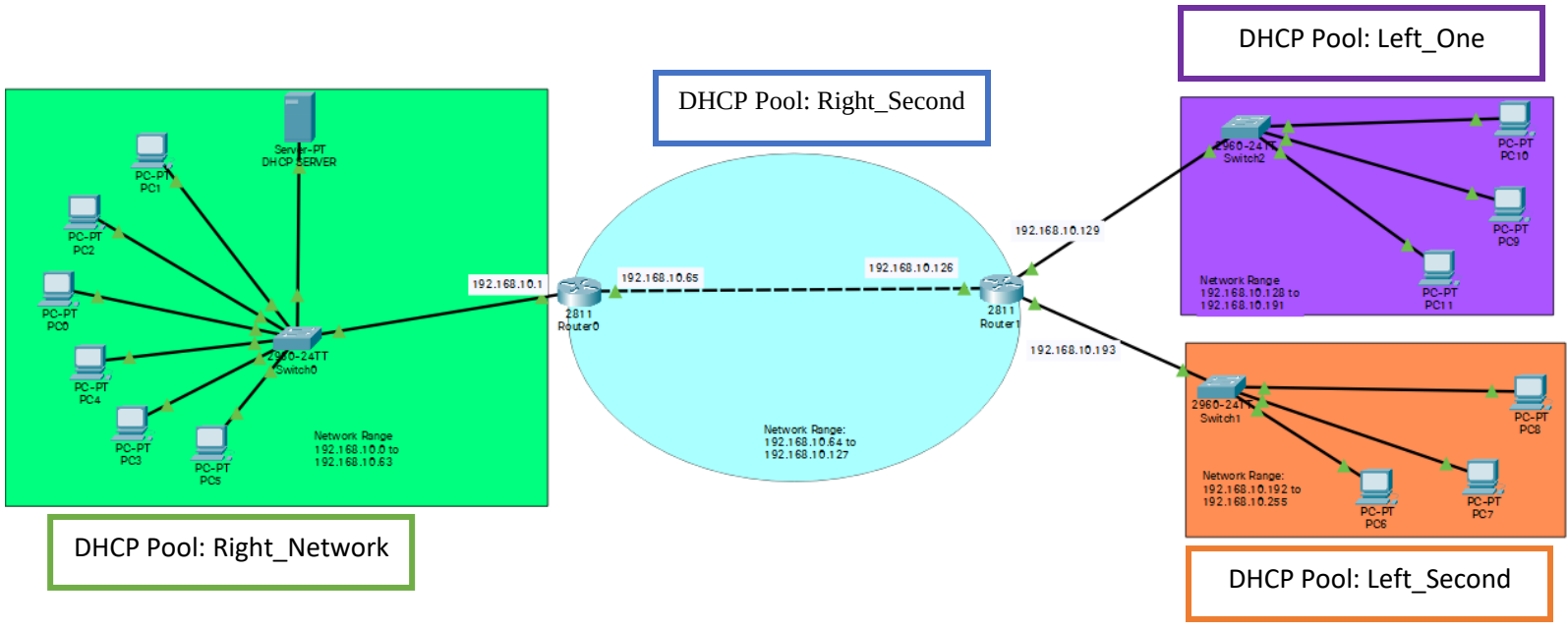
DHCP Assignment

Do the configuration of the DHCP server along with other devices as per the given networks.



In this whole topology, I have created four DHCP pool

1. Right_Network (IP Range: 192.168.10.1 – 192.168.10.62)
2. Right_Second (IP Range: 192.168.10.65 – 192.168.10.126)
3. Left_one (IP Range: 192.168.10.129 – 192.168.10.190)
4. Left_Second (IP Range: 192.168.10.193 – 192.168.10.254)



Router-0

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#show ip dhcp pool Right_Network
Pool Right_Network :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 62
 Leased addresses               : 6
 Excluded addresses             : 1
 Pending event                  : none

 1 subnet is currently in the pool
 Current index        IP address range                  Leased/Excluded/Total
 192.168.10.1         192.168.10.1     - 192.168.10.62     6    / 1      / 62
Router#
```

Router-1

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#show ip dhcp pool right_second
Pool right_second :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 62
 Leased addresses               : 0
 Excluded addresses             : 3
 Pending event                  : none

 1 subnet is currently in the pool
 Current index        IP address range                  Leased/Excluded/Total
 192.168.10.65        192.168.10.65    - 192.168.10.126    0    / 3      / 62
Router#show ip dhcp pool left_one
Pool left_one :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 62
 Leased addresses               : 3
 Excluded addresses             : 3
 Pending event                  : none

 1 subnet is currently in the pool
 Current index        IP address range                  Leased/Excluded/Total
 192.168.10.129       192.168.10.129   - 192.168.10.190    3    / 3      / 62
Router#show ip dhcp pool left_second
Pool left_second :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 62
 Leased addresses               : 3
 Excluded addresses             : 3
 Pending event                  : none

 1 subnet is currently in the pool
 Current index        IP address range                  Leased/Excluded/Total
 192.168.10.193       192.168.10.193   - 192.168.10.254    3    / 3      / 62
Router#
```

CLI Configuration Commands

Router-0 Configuration

Interface configuration

```
Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/1
Router(config-if)#ip address 192.168.10.65 255.255.255.192
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)#int fa0/0
Router(config-if)#ip address 192.168.10.2 255.255.255.192
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
```

dhcp pool Right_Network

```
Router(config)#ip dhcp excluded 192.168.10.0 192.168.10.10
Router(config)#ip dhcp pool Right_Network
Router(dhcp-config)#default-router 192.168.10.2
Router(dhcp-config)#dns-server 192.168.10.3
Router(dhcp-config)#option 150 ip 192.168.10.4
Router(dhcp-config)#network 192.168.10.0 255.255.255.192
Router(dhcp-config)#exit
Router(config)#
```

Router-1 Configuration

Interface configuration

```
Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/1
Router(config-if)#ip address 192.168.10.126
% Incomplete command.
Router(config-if)#ip address 192.168.10.126 255.255.255.192
Router(config-if)#no shutdown

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

Router(config-if)#exit

Router(config)#int fa1/0
Router(config-if)#ip address 192.168.10.129 255.255.255.192
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router(config-if)#exit

Router(config)#int fa0/0
Router(config-if)#ip address 192.168.10.193 255.255.255.192
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
```

dhcp pool right_second

```
Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp excluded-address 192.168.10.65 192.168.10.70
Router(config)#ip dhcp pool right_second
Router(dhcp-config)#default-router 192.168.10.126
Router(dhcp-config)#network 192.168.10.71 255.255.255.192
Router(dhcp-config)#exit
```

dhcp pool left_one

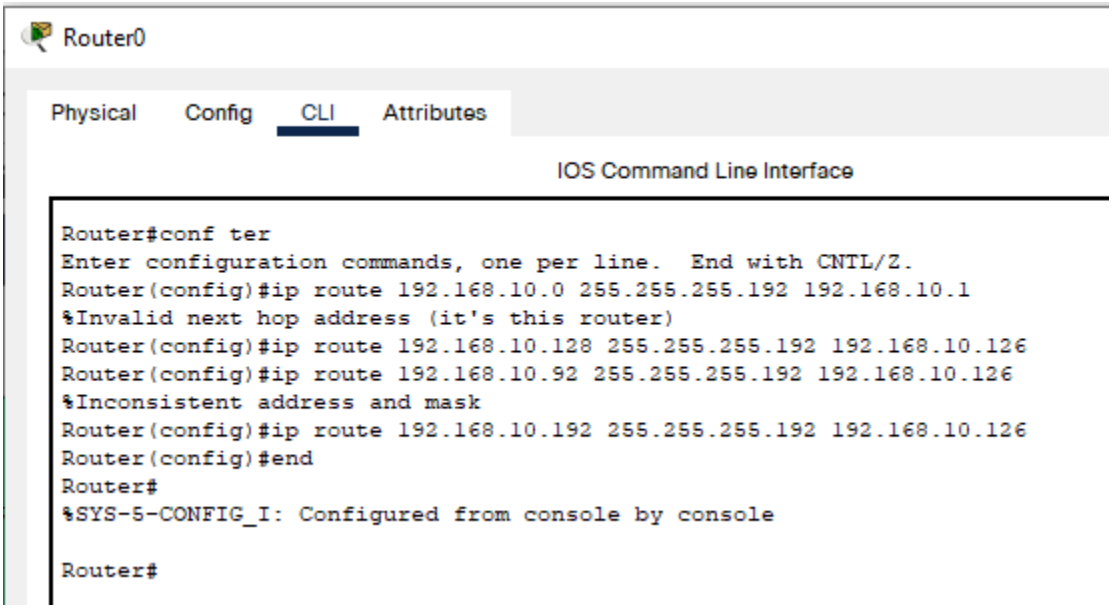
```
Router(config)#ip dhcp excluded-address 192.168.10.129 192.168.10.139
Router(config)#ip dhcp pool left_one
Router(dhcp-config)#default-router 192.168.10.129
Router(dhcp-config)#dns-server 192.168.10.130
Router(dhcp-config)#option 150 ip 192.168.10.131
Router(dhcp-config)#network 192.168.10.128 255.255.255.192
Router(dhcp-config)#exit
```

dhcp pool left_second

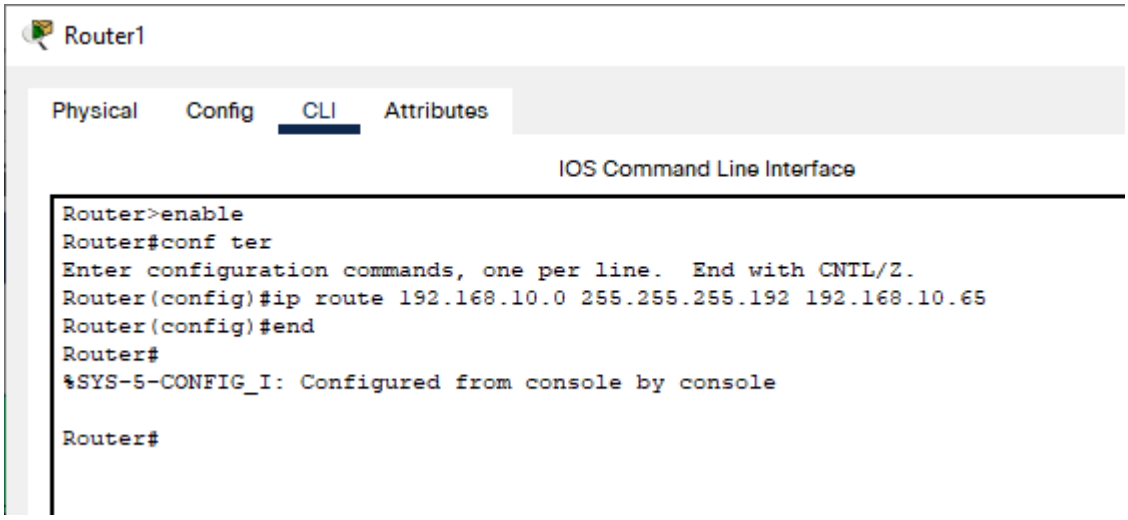
```
Router(config)#ip dhcp excluded-address 192.168.10.193 192.168.10.213
Router(config)#ip dhcp pool left_second
Router(dhcp-config)#default-router 192.168.10.193
Router(dhcp-config)#dns-server 192.168.10.194
Router(dhcp-config)#option 150 ip 192.168.10.195
Router(dhcp-config)#network 192.168.10.192 255.255.255.192
Router(dhcp-config)#exit
Router(config)#
```

Static Routing

Router-0



Router-1



PING from PC2 (192.168.10.12) to

PC9 (192.168.10.141) and PC7 (192.168.10.215)