ASSUMPTION UNIVERSITY

FACULTY OF ENGINEERING

COMPUTER ENGINEERING

CE4224 TELECOMMUNICATION NETWORK LABORATORY
SECTION 641
SEMESTER 2/2022

WEEK10
CONFIGURATION OF IP PHONE WITH ROUTER
IN DIFFERENT NETWORK

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Introduction

IP phones are used when you call with IP telephony. IP telephony is a term that summarizes calling via internet. The word IP stands for Internet Protocol which is a language, or the standard used to send information over internet.

IP phones are also called VoIP that mean Voice over IP, also the same thing but with a different name. IP phones don't differ in looks form a regular phone, the difference lies in the fact that you can call over internet instead of the regular phone network.

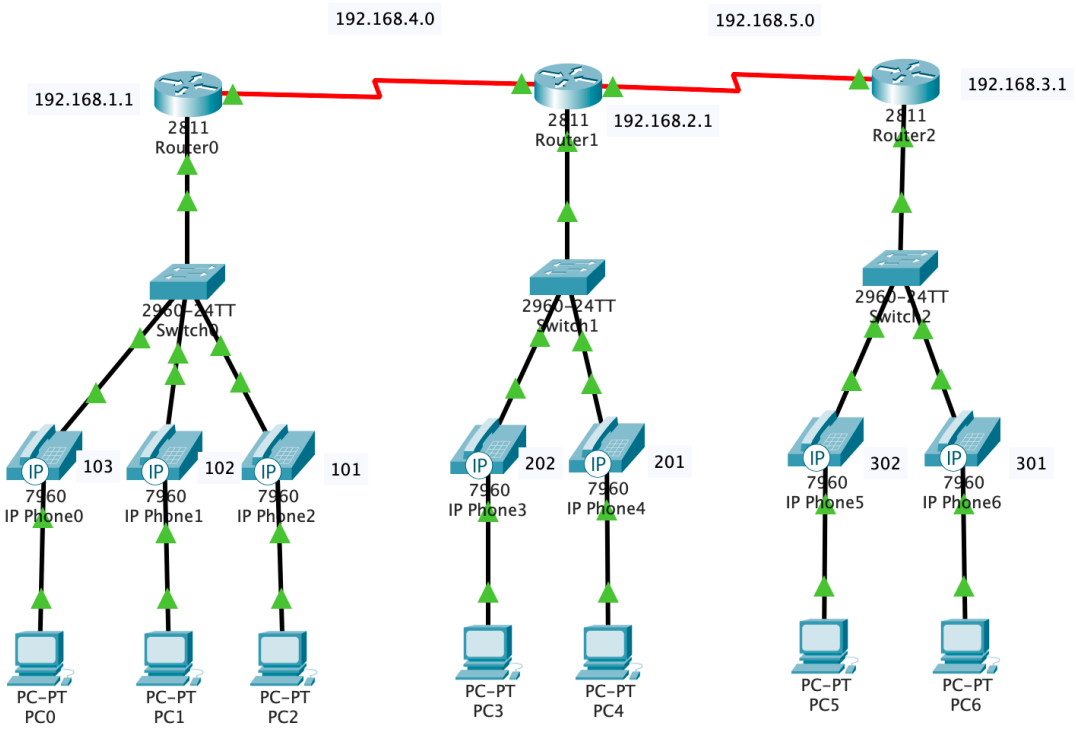
Many IP phones are programs inside your computer and the only thing you need is a internet connection and a pair of headphones with microphone. To call with IP telephony is oftentimes cost-efficient and is used by many big companies, such as callcenter.

Apparatus

- Laptop
- Cisco Packet Tracer

Procedure

- Practice and review in class



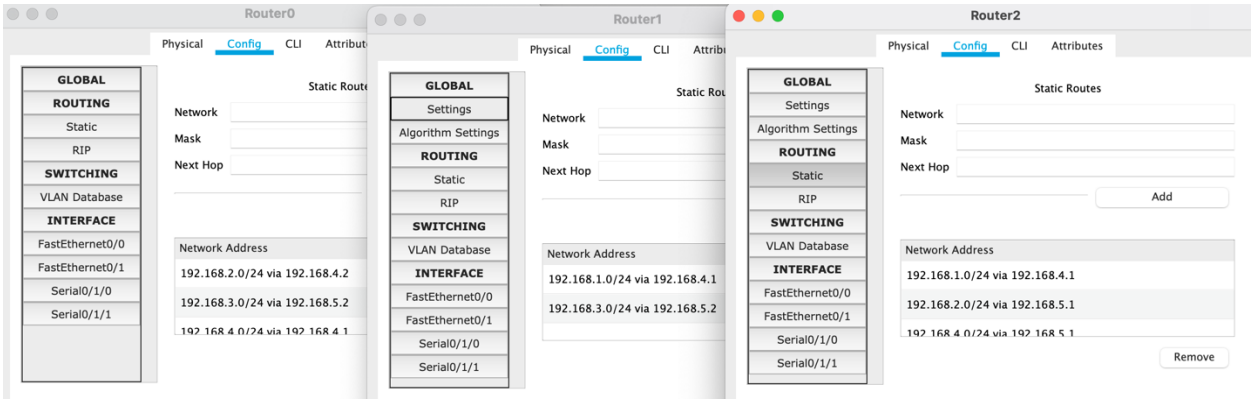
Step 1 Configure the router IP Address for Fast Ethernet and Serial port

```
interface FastEthernet0/0
 ip address 192.168.1.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/2/0
 ip address 192.168.4.1 255.255.255.0
 clock rate 2000000
!
interface Serial0/2/1
 no ip address
 clock rate 2000000
 shutdown
!
```

```
interface FastEthernet0/0
 ip address 192.168.2.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/3/0
 ip address 192.168.4.2 255.255.255.0
!
interface Serial0/3/1
 ip address 192.168.5.1 255.255.255.0
 clock rate 2000000
!
```

```
interface FastEthernet0/0
 ip address 192.168.3.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/3/0
 ip address 192.168.5.2 255.255.255.0
!
interface Serial0/3/1
 no ip address
 clock rate 2000000
 shutdown
!
```

Step 2 Configure the static routing



Step 3 Set DHCP pool for all network

```
ip dhcp pool SiteA
 network 192.168.1.0 255.255.255.0
 default-router 192.168.1.1
 option 150 ip 192.168.1.1
```

```
ip dhcp pool SiteB
 network 192.168.2.0 255.255.255.0
 default-router 192.168.2.1
 option 150 ip 192.168.2.1
```

```
ip dhcp pool SiteC
 network 192.168.3.0 255.255.255.0
 default-router 192.168.3.1
 option 150 ip 192.168.3.1
```

Step 4 Configure Telephony service and assign phone number to the IP phone in the router

```
ephone-dn 1
 number 101
!
ephone-dn 2
 number 102
!
ephone-dn 3
 number 103
!
ephone 1
 device-security-mode none
 mac-address 0000.0C76.5DE4
 type 7960
 button 1:1
!
ephone 2
 device-security-mode none
 mac-address 0001.C9C5.C0BD
 type 7960
 button 1:2
!
ephone 3
 device-security-mode none
 mac-address 0009.7CC7.AC75
 type 7960
 button 1:3
!
```

```
ephone-dn 1
 number 201
!
ephone-dn 2
 number 202
!
ephone 1
 device-security-mode none
 mac-address 00D0.D327.8069
 type 7960
 button 1:2
!
ephone 2
 device-security-mode none
 mac-address 0004.9A6C.C89B
 type 7960
 button 1:1
!
```

```
ephone-dn 1
 number 301
!
ephone-dn 2
 number 302
!
ephone 1
 device-security-mode none
 mac-address 0030.F224.37D3
 type 7960
 button 1:1
!
ephone 2
 device-security-mode none
 mac-address 0004.9AD4.CB3B
 type 7960
 button 1:2
!
```

Step 5 Configure the switch

```
Switch>en
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface range fa0/1-5
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#xit
```

```
Switch(config)#interface range fa0/1-5
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#ex
```

```
Switch>en
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#int range fa0/1-5
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport voice vlan 1
```

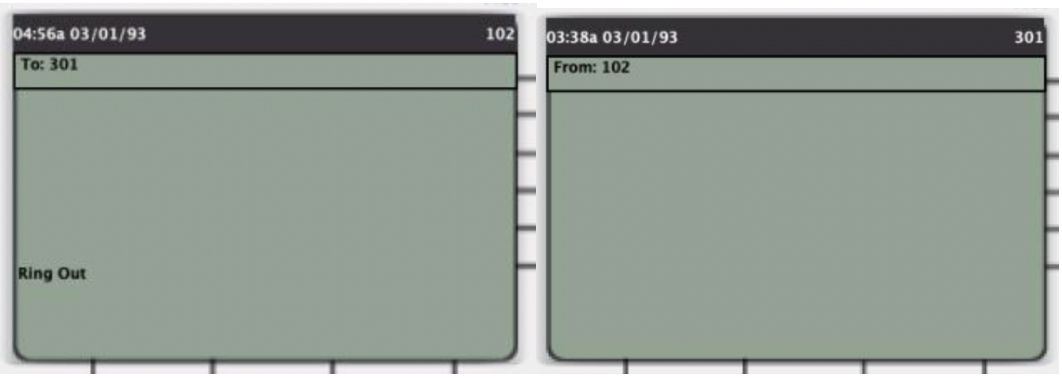
Step 6 Configure the Dial Peer Network for IP phone

```
Router(config)#dial-peer voice 1 voip
Router(config-dial-peer)#destination-pattern 20.
Router(config-dial-peer)#session target ipv4:192.168.2.1
Router(config-dial-peer)#ex
Router(config)#dial-peer voice 2 voip
Router(config-dial-peer)#destination-pattern 30.
Router(config-dial-peer)#session target ipv4:192.168.3.1
Router(config-dial-peer)#ex
```

```
Router(config)#dial-peer voice 1 voip
Router(config-dial-peer)#destination-pattern 10.
Router(config-dial-peer)#session target ipv4:192.168.1.1
Router(config-dial-peer)#e
Router(config)#dial-peer voice 2 voip
Router(config-dial-peer)#destination-pattern 30.
Router(config-dial-peer)#session target ipv4:192.168.3.1
Router(config-dial-peer)#e
```

```
Router(config)#dial-peer voice 1 voip
Router(config-dial-peer)#destination-pattern 10.
Router(config-dial-peer)#session target ipv4:192.168.1.1
Router(config-dial-peer)#e
Router(config)#dial-peer voice 2 voip
Router(config-dial-peer)#destination-pattern 20.
Router(config-dial-peer)#session target ipv4:192.168.2.1
Router(config-dial-peer)#e
```

Step 7 Ring the IP phone one network to another network by using enter the number



Caller: 102 Receiver: 301

Conclusion

In this experiment, we have learned more advance than last week because we use a multiple router and get more understanding about the IP phone and one thing that different from last experiment is we assign the number phone by ourselves and learn using Dial Peer Network for IP phone.