

# **COMPUTER NETWORKS**

**EXP 15** 



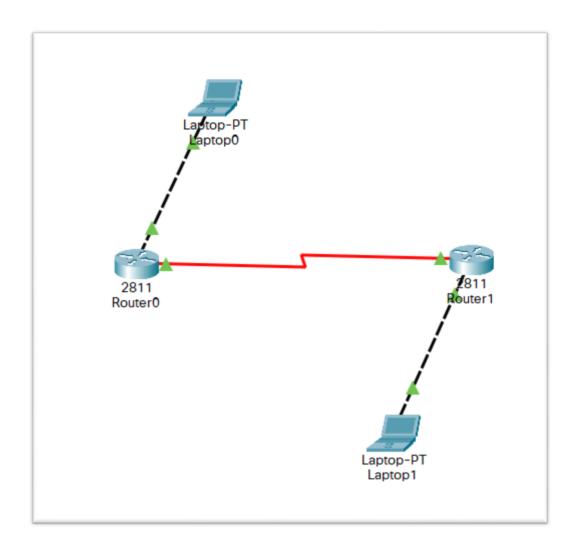
# **PPP CONFIGURATION**

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## Aim:

To implement PPP Configuration using Cisco Packet Tracer.

# Diagram:



# Procedure:

Create the setup as shown in the following figure and configure everything according to it.



Go to the physical tab of each router, turn it off and place WIC-1T in its place and then switch the router on.

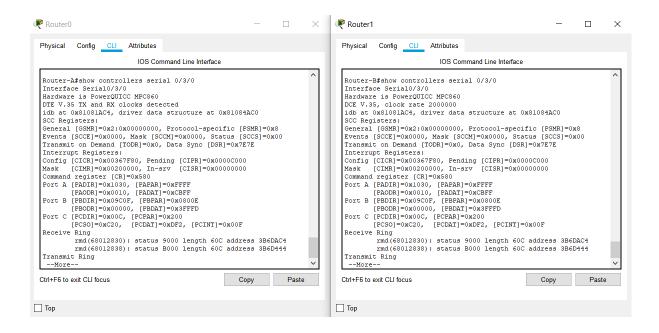
#### 1. Use the connected laptops to find the DCE and DTE routers

The **show controllers <serial interface>** command is used to determine which side of the cable is the DCE side.

In this example, Router-A is the DTE side, and Router-B is the DCE side (DCE V.35, clock rate set).

Router-A#show controllers serial 0/3/0 Interface Serial0/3/0 Hardware is PowerQUICC MPC860 DTE V.35 TX and RX clocks detected

Router-B#show controllers serial 0/3/0 Interface Serial0/3/0 Hardware is PowerQUICC MPC860 DCE V.35, clock rate 2000000



### 2. Configure the routers with the following parameters

Router-B being the DCE, clock rate has to be configured on Router-B serial 0/3/0 interface

Router-B(config)#interface serial 0/3/0 Router-B(config-if)#clock rate 250000

Then, configure PPP encapsulation and IP address on Router-B serial 0/3/0 interface.

The **encapsulation PPP** configures PPP protocol on the serial interface.

Router-B being the DCE side of the serial link, the 192.168.10.5/30 IP address is configured on the Router-B serial 0/3/0 interface. Don't forget to enable the interface with a **no shutdown** command.

Router-B(config)#interface serial 0/3/0
Router-B(config-if)#encapsulation ppp
Router-B(config-if)#ip address 192.168.10.5 255.255.252
Router-B(config-if)#no shutdown

Finally, configure PPP encapsulation and IP address on Router-A serial 0/3/0 interface. The link becomes up as both routers are correctly configured.

Router-A(config)#interface serial 0/3/0 Router-A(config-if)#encapsulation ppp Router-A(config-if)#ip address 192.168.10.6 255.255.255.252 Router-A(config-if)#no shutdown %LINK-5-CHANGED: Interface SerialO/O/O, changed state to up Router0 Router1 П Physical Config CLI Attributes Physical Config CLI Attributes IOS Command Line Interface IOS Command Line Interface [FBODK]=UXUUUUU, [FBDAK]=UX3FFFD

Port C [PCDIR]=0x00C, [PCPAR]=0x200

[PCSO]=0xC20, [PCDAT]=0xDF2, [PCINT]=0x00F rmd(68012830): status 9000 length 60C address 3B6DAC4 rmd(68012838): status B000 length 60C address 3B6D444 Receive Ring Ring rmd(68012830): status 9000 length 60C address 3B6DAC4 rmd(68012838): status B000 length 60C address 3B6D444 Transmit Ring Router-B#config t Enter configuration commands, one per line. End with CNTL/Z. Router-B(config)#interface serial 0/3/0 Router-B(config-if)#clock rate 250000 Enter configuration commands, one per line. End with CNTL/Z. Router-A(config)  $\sharp$ interface serial 0/3/0 Router-B(config-if) #no shutdown Router-A(config-if) #encapsulation ppp Router-A(config-if) #ip address 192.168.10.6 255.255.255.252 Router-A(config-if) #no shutdown %LINK-5-CHANGED: Interface Serial0/3/0, changed state to down Router-B(config-if) #exit Router-B(config) #interface serial 0/3/0 Router-B(config-if) #encapsulation ppp Router-B(config-if) #ip address 192.168.10.5 255.255.255.252 %LINK-5-CHANGED: Interface Serial0/3/0, changed state to up

Router-B(config-if) #no shutdown

changed state to up

Ctrl+F6 to exit CLI focus

Тор

\*LINK-S-CHANGED: Interface Serial0/3/0, changed state to up \*LINEPROTO-S-UPDOWN: Line protocol on Interface Serial0/3/0,

Router-B(config-if) #show interfaces serial 0/3/0

The show interfaces serial 0/3/0 confirms that PPP encapsulation is enabled on the interface: Encapsulation PPP, loopback not set, keepalive set (10 sec)

Copy Paste

Router-B#show interfaces serial 0/3/0
Serial0/0/0 is up, line protocol is up (connected)
Hardware is HD64570
Internet address is 192.168.10.5/30
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set, keepalive set (10 sec)
Last input never, output never, output hang never
[...]

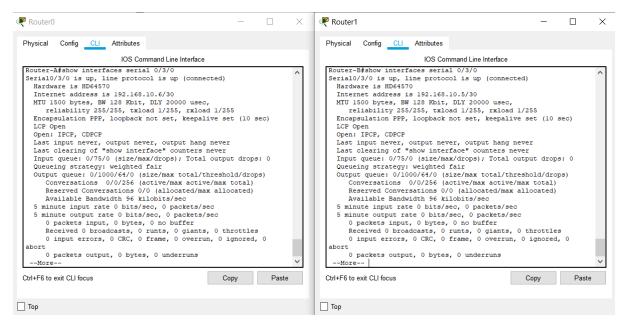
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0,

%SYS-5-CONFIG\_I: Configured from console by console

Router-A(config-if) #exit

Router-A(config) #exit

Ctrl+E6 to exit CLI focus



3. Check IP connectivity between the two routers using the ping command.

Issue a ping from Router-A to Router-B to test network connectivity between the two routers.

Router-A#ping 192.168.10.5

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.10.5, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 3/3/4 ms

Router-B#ping 192.168.10.6

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.10.6, timeout is 2 seconds:

!!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/8/22 ms

#### **RESULT:**

PPP Configuration is successfully implemented and demonstrated.