

Day 04 Lab Report

Lab Title

Router-to-Router Communication via Serial Link (PTCL ↔ MOB).

Objective

To configure two Cisco routers to communicate directly over a serial connection by assigning IP addresses, setting clock rate on the DCE side, and verifying connectivity.

Lab Setup Overview

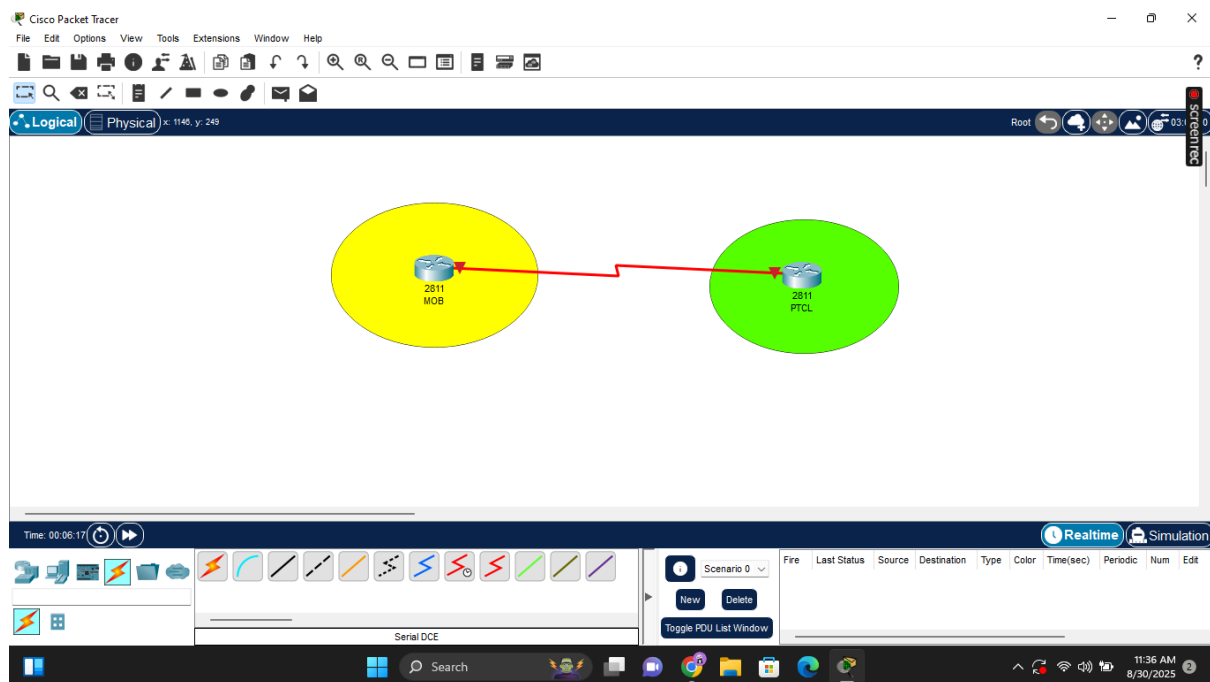
- **Routers:** Cisco 2811 × 2
- **Cable:** Serial DCE (PTCL end)
- **IP Scheme:**
 - PTCL Serial0/0/0 → 10.0.0.1
 - MOB Serial0/0/0 → 10.0.0.2
- **Software:** Cisco Packet Tracer

Configuration Steps

1. Place and Connect Devices

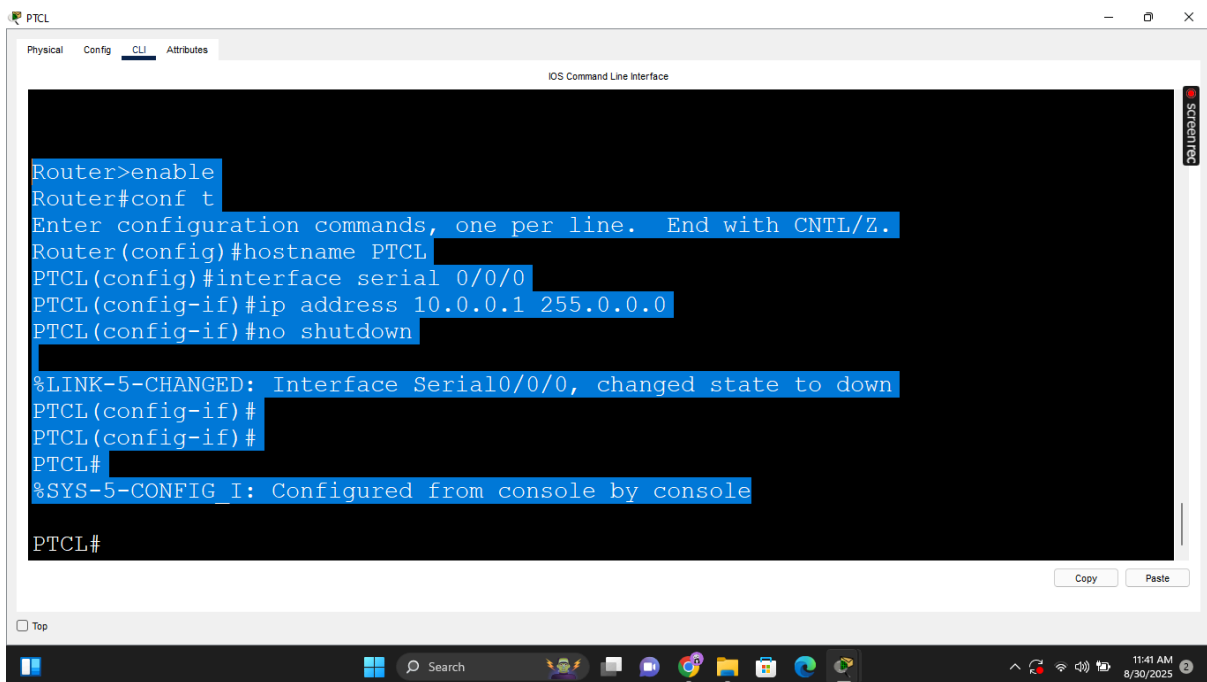
- Drag two routers into the workspace.
- Rename them PTCL and MOB.
- Connect Serial0/0/0 (PTCL) to Serial0/0/0 (MOB) using a Serial DCE cable (DCE on PTCL).

- Note (First Select the WIC-2T module from the modules for the serial connection).



2. Configure PTCL Router

- Router> enable
- Router# configure terminal
- Router(config)# hostname PTCL
- PTCL(config)# interface Serial0/0/0
- PTCL(config-if)# ip address 10.0.0.1 255.255.255.252
- PTCL(config-if)# clock rate 64000
- PTCL(config-if)# no shutdown



The screenshot shows a Windows desktop with a terminal window titled "PTCL" and "IOS Command Line Interface". The terminal displays the following commands and output:

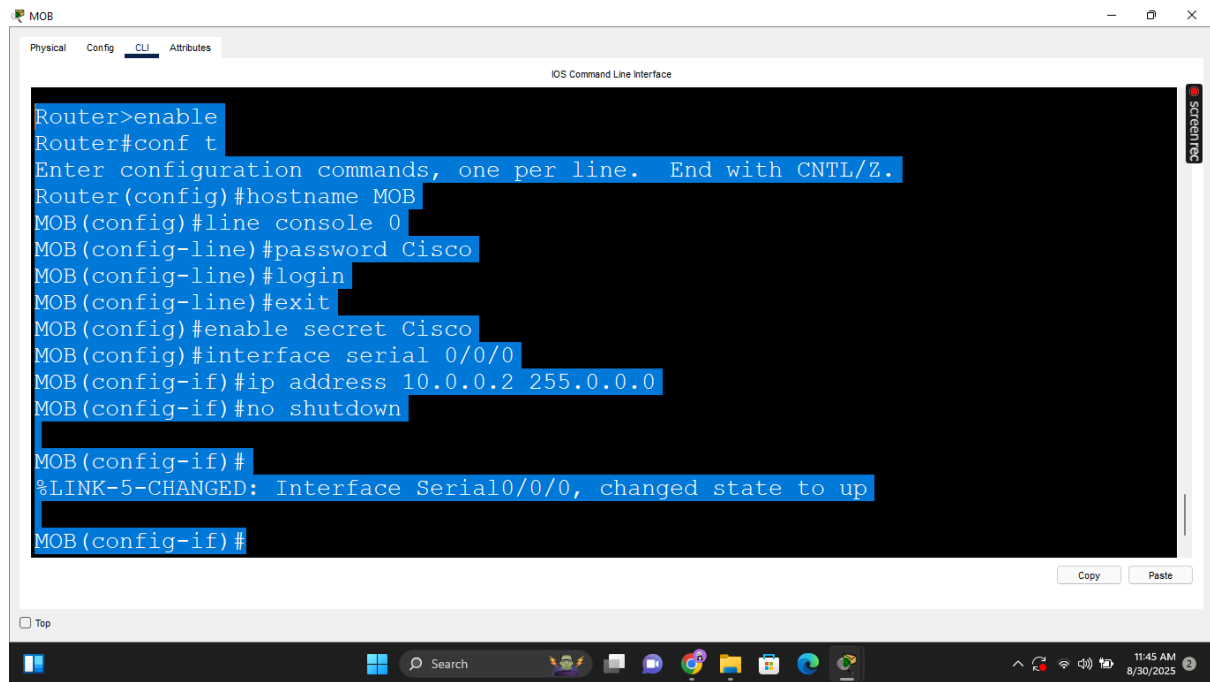
```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname PTCL
PTCL(config)#interface serial 0/0/0
PTCL(config-if)#ip address 10.0.0.1 255.0.0.0
PTCL(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
PTCL(config-if)#
PTCL(config-if)#
PTCL#
%SYS-5-CONFIG_I: Configured from console by console
PTCL#
```

The terminal window has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active. The output is highlighted in blue. The Windows taskbar at the bottom shows the Start button, Search bar, and various application icons. The system clock in the bottom right corner indicates 11:41 AM on 8/30/2025.

3. Configure MOB Router

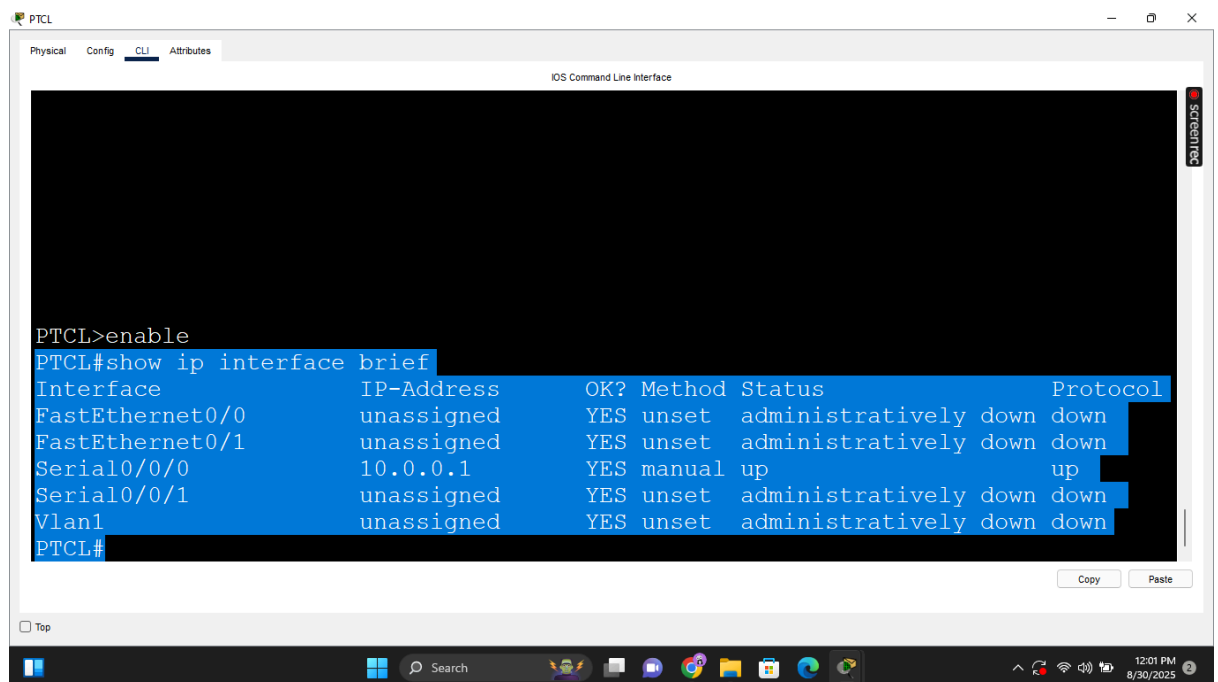
- Router> enable
- Router# configure terminal
- Router(config)# hostname MOB
- MOB(config)# line console 0
- MOB(config-line)# password Cisco
- MOB(config-line)# login
- MOB(config)# enable password class
- MOB(config)# interface Serial0/0/0
- MOB(config-if)# ip address 10.0.0.2 255.255.255.252
- MOB(config-if)# no shutdown



```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname MOB
MOB(config)#line console 0
MOB(config-line)#password Cisco
MOB(config-line)#login
MOB(config-line)#exit
MOB(config)#enable secret Cisco
MOB(config)#interface serial 0/0/0
MOB(config-if)#ip address 10.0.0.2 255.0.0.0
MOB(config-if)#no shutdown
MOB(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
MOB(config-if)#
```

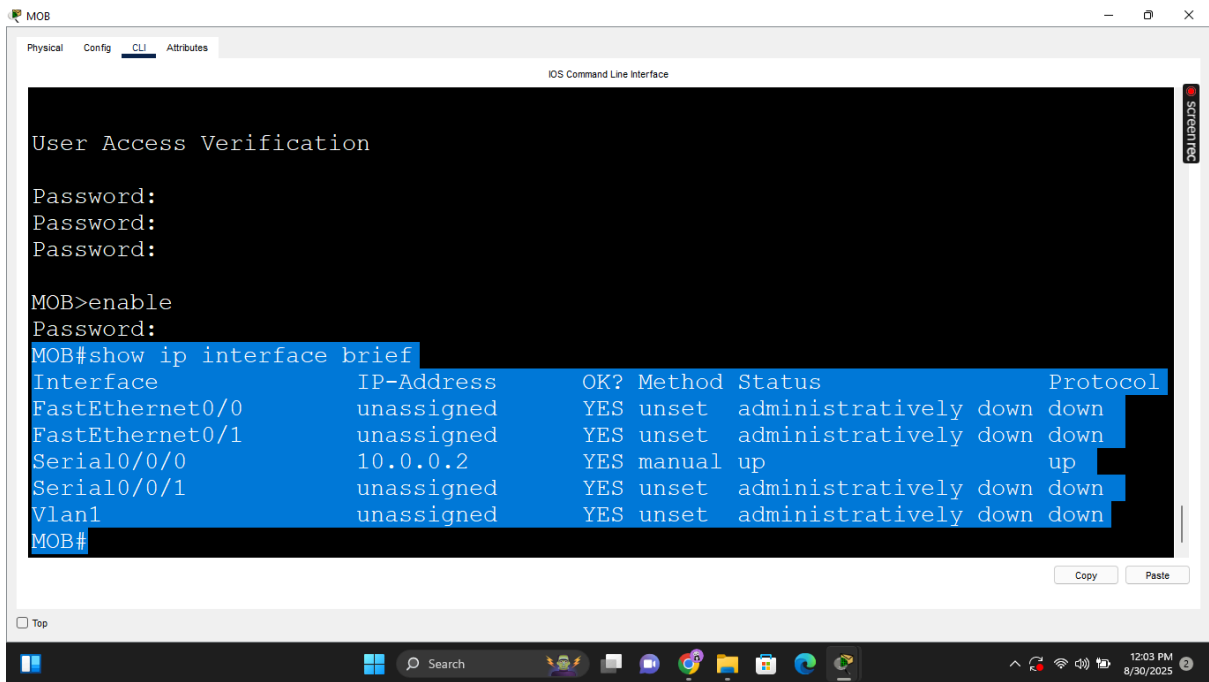
4. Verify the interfaces

Verify the interfaces on the both routers and check the state of the link. The link state should be up/up on both sides mean Interface is up and Line protocol is up. Verification command for the interfaces is “show ip interface brief”. **On PTCL it is UP/UP.**



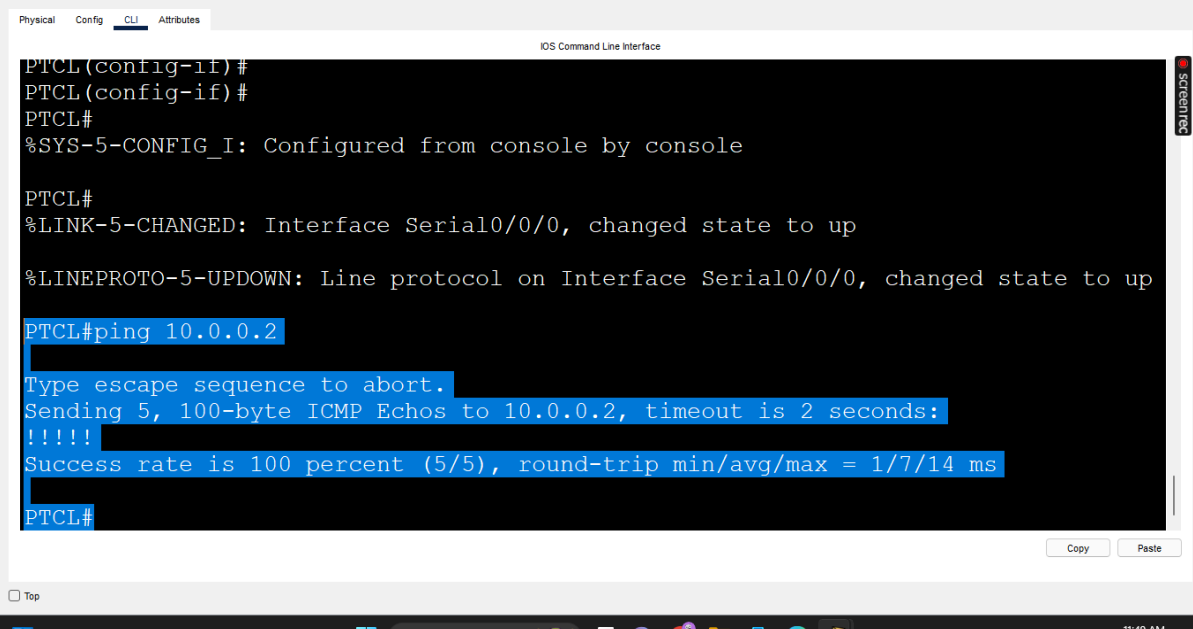
```
PTCL>enable
PTCL#show ip interface brief
Interface          IP-Address      OK? Method Status Protocol
FastEthernet0/0    unassigned      YES unset  administratively down down
FastEthernet0/1    unassigned      YES unset  administratively down down
Serial0/0/0        10.0.0.1        YES manual  up      up
Serial0/0/1        unassigned      YES unset  administratively down down
Vlan1              unassigned      YES unset  administratively down down
PTCL#
```

Also on the MOB side is UP/UP



5. Test Connectivity

- From PTCL: ping 10.0.0.2
- From MOB: ping 10.0.0.1
- Ensure successful replies from both side



The screenshot shows the PTCL (Physical Test Cloud Layer) CLI interface. The user is in the configuration mode for interface Serial0/0/0. The output shows that the interface is up and the line protocol is up. A ping command is executed to 10.0.0.2, resulting in a success rate of 100 percent (5/5) with a round-trip time of 1/7/14 ms. The Windows taskbar is visible at the bottom, showing the time as 11:49 AM on 8/30/2025.

```
PTCL
Physical Config CLI Attributes
IOS Command Line Interface
PTCL(config-if)#
PTCL(config-if)#
PTCL#
%SYS-5-CONFIG_I: Configured from console by console
PTCL#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
PTCL#ping 10.0.0.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/7/14 ms
PTCL#
```

```
MOB
Physical Config CLI Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface Serial10/0/0, changed state to up
MOB(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial10/0/0, changed state to up
MOB(config-if)#exit
MOB(config)#exit
MOB#
%SYS-5-CONFIG_I: Configured from console by console
MOB#ping 10.0.0.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/11/19 ms
MOB#
```

Ping is successful from both sides. So it means topology is working and configurations are done correctly.

Concepts Practiced

- Serial interface configuration
- DCE/DTE cabling and clock rate
- Basic router security (console & enable passwords)
- Connectivity testing with ping