Lab 5
Configuring Back-to Back Serial Connections

Lab Topology

Devices:

- R1 (Router)
- R2 (Router)

Lab Setup :

1. Assuming the devices, Router R1 and R2 are 1841 routers.

2. Configuring hostnames :

Configuring R1 :

```
Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#
R1(config)#
R1(config)#
```

Configuring R2:

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R2
R2(config)#
R2(config)#
```

Serial 0/0 is the interface on R2 that is identified as DCE in the topology.

Configuring DCE on R2 to provide clocking to R1, with clock rate speed as 256 Kbps.

```
R1#show controllers serial Serial0/0/0
                           ^
% Invalid input detected at '^' marker.

R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface Serial0/0/0
R1(config-if)#clock rate 256000
Unknown clock rate
R1(config-if)#clock rate ?
Speed (bits per second
  1200
  2400
  4800
  9600
  19200
  38400
  56000
  64000
  72000
  125000
  128000
  148000
  250000
  500000
  800000
  1000000
  1300000
  2000000
  4000000
  <300-4000000>  Choose clockrate from list above
R1(config-if)#clock rate 384000
Unknown clock rate
R1(config-if)#clock rate 250000
R1(config-if)#
```

```
R1#show controllers Serial0/0/0
Interface Serial0/0/0
Hardware is PowerQUICC MPC860
DCE V.35, clock rate 250000
idb at 0x81081AC4, driver data structure at 0x81084AC0
SCC Registers:
General [GSMR]=0x2:0x00000000, Protocol-specific [PSMR]=0x8
Events [SCCE]=0x0000, Mask [SCCM]=0x0000, Status [SCCS]=0x00
Transmit on Demand [TODR]=0x0, Data Sync [DSR]=0x7E7E
Interrupt Registers:
Config [CICR]=0x00367F80, Pending [CIPR]=0x0000C000
Mask   [CIMR]=0x00200000, In-srv  [CISR]=0x00000000
Command register [CR]=0x580
Port A [PADIR]=0x1030, [PAPAR]=0xFFFF
       [PAODR]=0x0010, [PADAT]=0xCBFF
Port B [PBDIR]=0x09C0F, [PBPAR]=0x0800E
       [PBODR]=0x00000, [PBDAT]=0x3FFFD
Port C [PCDIR]=0x00C, [PCPAR]=0x200
       [PCSO]=0xC20,  [PCDAT]=0xDF2, [PCINT]=0x00F
Receive Ring
        rmd(68012830): status 9000 length 60C address 3B6DAC4
        rmd(68012838): status B000 length 60C address 3B6D444
```

Configuring IP Addresses on R1:

```
R1#
R1#
R1#
R1#
R1#
R1#enable
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface Serial0/0/0
R1(config-if)#ip address 172.30.100.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#
```

Configuring IP Addresses on R2:

```
R2#enable
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface Serial0/0/0
R2(config-if)#ip address 172.30.100.2 255.255.255.0
R2(config-if)#no shutdown

R2(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#copy running-config
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

% Incomplete command.
R2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2#
```

Verifying IP Address Configuration

```
R1#
R1#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            172.30.100.1    YES manual up                    up
Vlan1                  unassigned      YES unset  administratively down down
R1#
```

```
R2#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            172.30.100.2    YES manual up                    up
Serial0/1/0            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
R2#
```

Verifying ping connectivity

Ping from R1 to R2

```
R1#ping 172.30.100.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.30.100.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/5/8 ms
```

Ping from R2 to R1

```
R2#ping 172.30.100.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.30.100.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/5/8 ms
```