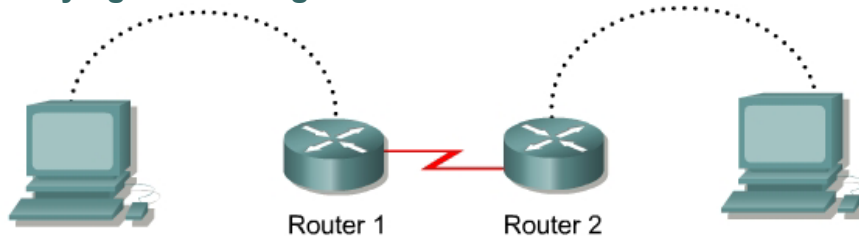
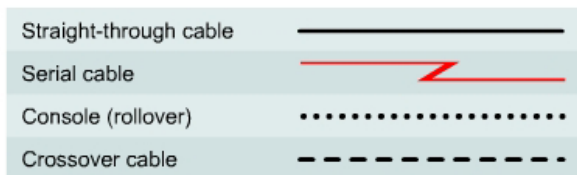


### Lab 3.3.4 Verifying PPP Configuration



Router Designation	Router Name	Interface Type	Serial 0 Address	Subnet Mask	Enable Secret Password	Enable/VTY/Console Passwords
Router 1	Brasilia	DCE	192.168.15.1	255.255.255.0	class	cisco
Router 2	Warsaw	DTE	192.168.15.2	255.255.255.0	class	cisco



#### Objective

- Configure a serial interface on two routers with the PPP protocol.
- Verify and test the link for connectivity.

#### Background/Preparation

Cable a network similar to the one in the diagram above. Any router that meets the interface requirements displayed on the above diagram may be used. This includes the following and any of their possible combinations:

- 800 series routers
- 1600 series routers
- 1700 series routers
- 2500 series routers
- 2600 series routers

Please refer to the chart at the end of the lab to correctly identify the interface identifiers to be used based on the equipment in the lab. The configuration output used in this lab is produced from 1721 series routers. Any other router used may produce slightly different output. Conduct the following steps on each router unless specifically instructed otherwise.

Start a HyperTerminal session.

**Note:** Refer to the erase and reload instructions at the end of this lab. Perform those steps on all routers in this lab assignment before continuing.

## Step 1 Configure the routers

Configure all of the following according to the chart:

- The hostname
- The console
- The virtual terminal
- The enable passwords

If problems occur during this configuration, refer to Lab 1.1.4a Configuring NAT.

## Step 2 Configure the Warsaw interface as shown

Configure the Warsaw router serial interface as follows:

```
Warsaw(config)#interface serial 0
Warsaw(config-if)#ip address 192.168.15.2 255.255.255.0
Warsaw(config-if)#no shutdown
Warsaw(config-if)#exit
Warsaw(config)#exit
```

## Step 3 Configure the Brasilia interface as shown

Configure the Brasilia router serial interface as follows:

```
Brasilia(config)#interface serial 0
Brasilia(config-if)#ip address 192.168.15.1 255.255.255.0
Brasilia(config-if)#clockrate 64000
Brasilia(config-if)#no shutdown
Brasilia(config-if)#exit
Brasilia(config)#exit
```

## Step 4 Save the configuration

```
Brasilia#copy running-config startup-config
Warsaw#copy running-config startup-config
```

## Step 5 Enter the command `show interface serial 0` (refer to interface chart) on Brasilia

```
Brasilia#show interface serial 0
```

This will show the details of interface serial 0.

Encapsulation \_\_\_\_\_

## Step 6 Enter the command `show interface serial 0` (refer to interface chart) on Warsaw

```
Warsaw#show interface serial 0
```

This will show the details of interface serial 0.

Encapsulation \_\_\_\_\_

### Step 7 Turn on PPP debugging

Turn on the PPP debug function on both routers by typing `debug ppp tasks` at the privileged EXEC mode prompt.

**Note:** For the 2600 router, use the command `debug ppp tasks`.

### Step 8 Change the encapsulation type

- Change the encapsulation type to PPP by typing `encapsulation ppp` at the interface serial 0 configuration mode prompt on both routers.

```
Brasilia(config-if)#encapsulation ppp
```

```
Warsaw(config-if)#encapsulation ppp
```

- What did the debug function report when the PPP encapsulation was applied to each router?

- 
- Turn off the debug function by typing `undebug all` at the privileged EXEC mode prompt.

### Step 9 Enter the command `show interface serial 0` on Brasilia

```
Brasilia#show interface serial 0
```

Encapsulation \_\_\_\_\_

### Step 10 Enter the command `show interface serial 0` on Warsaw

```
Warsaw#show interface serial 0
```

Encapsulation \_\_\_\_\_

### Step 11 Verify that the serial connection is functioning

- Ping the other router to verify that there is connectivity between the two routers.

```
Brasilia#ping 192.168.15.2
```

```
Warsaw#ping 192.168.15.1
```

- Can the serial interface on the Warsaw router be pinged from Brasilia? \_\_\_\_\_
- Can the serial interface on the Brasilia router be pinged from Warsaw? \_\_\_\_\_
- If the answer is no for either question, troubleshoot the router configurations to find the error. Then do the pings again until the answer to both questions is yes.

Upon completion of the previous steps, finish the lab by doing the following:

- Logoff by typing `exit`
- Turn the router off
- Remove and store the cables and adapter

## Erasing and reloading the router

Enter into the privileged EXEC mode by typing **enable**.

If prompted for a password, enter **class** (if that does not work, ask the instructor).

```
Router>enable
```

At the privileged EXEC mode, enter the command **erase startup-config**.

```
Router#erase startup-config
```

The responding line prompt will be:

```
Erasing the nvram filesystem will remove all files! Continue? [confirm]
```

Press **Enter** to confirm.

The response should be:

```
Erase of nvram: complete
```

Now at the privileged EXEC mode, enter the command **reload**.

```
Router(config)#reload
```

The responding line prompt will be:

```
System configuration has been modified. Save? [yes/no]:
```

Type **n** and then **Enter**.

The responding line prompt will be:

```
Proceed with reload? [confirm]
```

Press **Enter** to confirm.

In the first line of the response will be:

```
Reload requested by console.
```

After the router has reloaded the line prompt will be:

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

Type **n** and then press **Enter**.

The responding line prompt will be:

```
Press RETURN to get started!
```

Press **Enter**.

Now the router is ready for the assigned lab to be performed.

<b>Router Interface Summary</b>				
<b>Router Model</b>	<b>Ethernet Interface #1</b>	<b>Ethernet Interface #2</b>	<b>Serial Interface #1</b>	<b>Serial Interface #2</b>
800 (806)	Ethernet 0 (E0)	Ethernet 1 (E1)		
1600	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
1700	FastEthernet 0 (FA0)	FastEthernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)
2500	Ethernet 0 (E0)	Ethernet 1 (E1)	Serial 0 (S0)	Serial 1 (S1)
2600	FastEthernet 0/0 (FA0/0)	FastEthernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)

In order to find out exactly how the router is configured, look at the interfaces. This will identify what type and how many interfaces the router has. There is no way to effectively list all of the combinations of configurations for each router class. What is provided are the identifiers for the possible combinations of interfaces in the device. This interface chart does not include any other type of interface even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in IOS command to represent the interface.