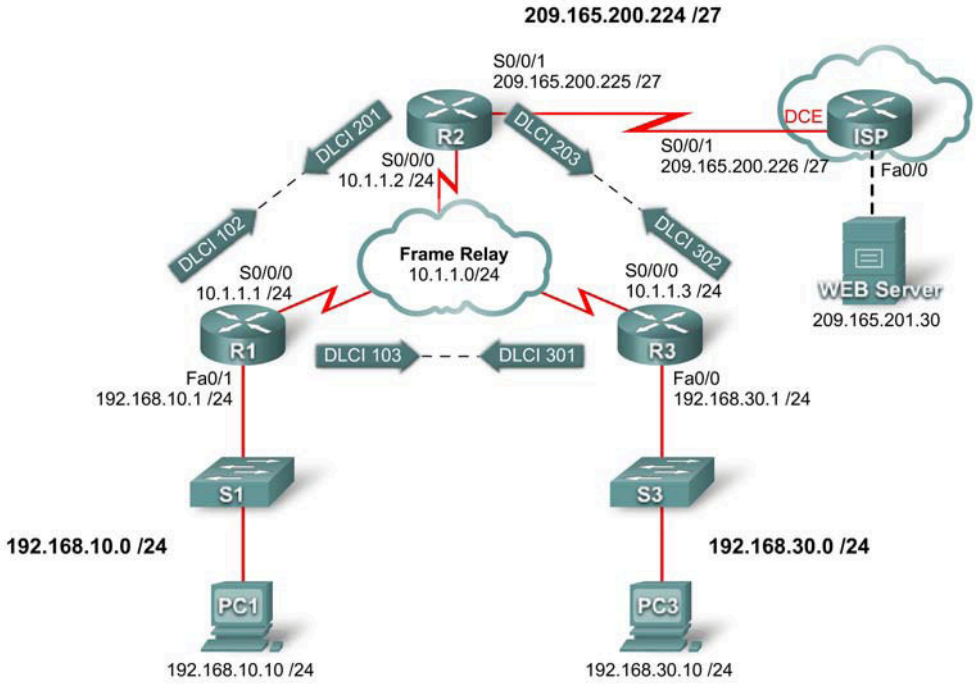
PT Activity 3.2.2: Configuring Basic Frame Relay with Static Maps

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	**Fa0/1**	192.168.10.1	255.255.255.0
	S0/0/0	10.1.1.1	255.255.255.0
R2	**S0/0/0**	10.1.1.2	255.255.255.0
	S0/0/1	209.165.200.225	255.255.255.224
R3	**Fa0/0**	192.168.30.1	255.255.255.0
	S0/0/0	10.1.1.3	255.255.255.0
ISP	**S0/0/1**	209.165.200.226	255.255.255.224

Learning Objectives

- Configure Frame Relay
- Configure static Frame Relay maps
- Configure the Frame Relay LMI type

Introduction

In this activity, you will configure Frame Relay on the serial 0/0/0 interfaces of routers R1, R2, and R3. You will also configure two static Frame Relay maps on each router to reach the other two routers. Although the LMI type is autosensed on the routers, you will statically assign the type by manually configuring the LMI.

Routers R1, R2, and R3 have been preconfigured with hostnames and IP addresses on all interfaces. The Fast Ethernet interfaces on routers R1 and R3 are active, and the S0/0/1 interface of R2 is active.

Task 1: Configure Frame Relay

Step 1. Configure Frame Relay encapsulation on the serial 0/0/0 interface of R1.

```
R1(config)#interface serial0/0/0
R1(config-if)#encapsulation frame-relay
R1(config-if)#no shutdown
```

Step 2. Configure Frame Relay encapsulation on the serial 0/0/0 interfaces of R2 and R3.

Step 3. Test connectivity.

From the command line on PC1, verify connectivity to the PC3 host, located at 192.168.30.10, using the **ping** command.

The ping from PC1 to PC3 should fail since the R1 router does not know how to reach the 192.168.30.0 network. R1 must be configured with a Frame Relay map so that it can find the next hop destination to reach that network.

Step 4. Check results.

Your completion percentage should be 43%. If not, click **Check Results** to see which required components are not yet completed.

Task 2: Configure Static Frame Relay Maps

Step 1. Configure static maps on R1, R2, and R3.

Each router requires two static maps to reach the other routers. The DLCIs to reach these routers are as follows:

Router R1:

- To reach router R2, use DLCI 102 located at IP address 10.1.1.2.
- To reach router R3, use DLCI 103 located at IP address 10.1.1.3.

Router R2:

- To reach router R1, use DLCI 201 located at IP address 10.1.1.1.
- To reach router R3, use DLCI 203 located at IP address 10.1.1.3.

Router R3:

- To reach router R1, use DLCI 301 located at IP address 10.1.1.1.
- To reach router R2, use DLCI 302 located at IP address 10.1.1.2.

The routers must also support RIP; therefore the **broadcast** keyword is required.

On router R1, configure the static Frame Relay maps as follows:


```
R1(config-if)#frame-relay map ip 10.1.1.2 102 broadcast
R1(config-if)#frame-relay map ip 10.1.1.3 103 broadcast
```

Configure routers R2 and R3 using the previously provided information.

Step 2. Check results.

Your completion percentage should be 79%. If not, click **Check Results** to see which required components are not yet completed.

Task 3: Configure the Frame Relay LMI Type

The Frame Relay cloud contains switches that are using ANSI as the LMI type. Therefore, all the Frame Relay links must be manually configured to use ANSI.

Step 1. Configure ANSI as the LMI type on R1, R2, and R3.

Enter the following command on the serial interface for each router.

```
R1(config-if)#interface s0/0/0
R1(config-if)#frame-relay lmi-type ansi
```

Step 2. Check results.

Your completion percentage should be 100%. If not, click **Check Results** to see which required components are not yet completed.

Step 3. Test connectivity.

It is possible to complete the activity with a 100%, yet still not have connectivity. PC1 and PC3 should now be able to successfully ping each other and the web server. If not, make sure that you entered all the commands exactly as specified in the previous steps.

