CHAPTER 4

Configuring Gigabit Ethernet Interfaces

To configure the Gigabit Ethernet (GE) interface on the Cisco MWR 2941, complete the following tasks:

Configuring the Interface Properties

Perform a basic Gigabit Ethernet IP Address configuration by specifying the port adapter and aligning an IP address and subnet mask of the interface as follows.

Note In the following procedure, press the **Return** key after each step unless otherwise noted. At any time, you can exit the privileged level and return to the user level by entering **disable** at the `Router#` prompt.

Note The spanning tree-related commands described in this section are optional.

To configure the GE interface, follow these steps while in global configuration mode:

	Command	Purpose

Step 1	**`enable`**
	
	Example:
	`Router> enable`
	`Router#`
		Enter enable mode.

Step 2	**`configure terminal`**
	
	Example:
	`Router# configure terminal`
	`Router(config)#`
		Enter configuration mode.

	Command	Purpose
Step 3	**interface gigabitethernet** *slot/port* **Example:** `Router(config)# interface gigabitethernet 0/1`	Specify the port adapter type and the location of the interface to be configured. The *slot* is always 0 and the *port* is the number of the port.
Step 4	**switchport mode** {**access** | **trunk**} **Example:** `Router(config-if)# switchport mode trunk`	Specify the interface mode.
Step 5	**spanning-tree port-priority** *port_priority* **Example:** `Router(config-if)# spanning-tree port-priority port_priority`	Specify an interface priority. You can use this value to prioritize an interface when two bridges compete for position as the root bridge.
Step 6	**spanning-tree cost** *port_cost* **Example:** `Router(config-if)# spanning-tree cost 10000000`	To calculate the path cost of STP on an interface, use the **spanning-tree cost** command.
Step 7	**spanning-tree portfast** **Example:** `Router(config-if)# spanning-tree portfast`	For interfaces that connect to end stations, you can use the **spanning-tree portfast** command to set the interface to move directly to the spanning-tree forwarding state when linkup occurs.
Step 8	**cdp enable** **Example:** `Router(config-if)# cdp enable`	To enable Cisco Discovery Protocol on the router, use the **cdp enable** command.

Step 9	**end**
	
	Example:
	`Router(config-if)# end`
	`Router#`
		Exit configuration mode.

Setting the Speed and Duplex Mode

The Gigabit Ethernet ports of the Cisco MWR 2941 router can run in full or half- duplex mode—100 Mbps or 1000 Mbps (1 Gbps). The Cisco MWR 2941 router has an autonegotiation feature that allows the router to negotiate the speed and duplex mode with the corresponding interface at the other end of the connection.

Autonegotiation is the default setting for the speed and transmission mode.

When you configure an interface speed and duplex mode, follow these guidelines:

- If both ends of the line support autonegotiation, use the default autonegotiation settings.
- When autonegotiation is turned on for either speed or duplex mode, it autonegotiates both speed and the duplex mode.
- If one interface supports autonegotiation, and the interface at the other end does not, configure the duplex mode and speed on both interfaces. If you use the autonegotiation setting on the supported side, the duplex mode setting is set at half-duplex.

Note In the following procedure, press the **Return** key after each step unless otherwise noted. At any time, you can exit the privileged level and return to the user level by entering **disable** at the `Router#` prompt.

To configure speed and duplex operation, follow these steps while in interface configuration mode:

	Command	Purpose
Step 1	**duplex** [**auto** | **half** | **full**] **Example:** `Router(config-if)# duplex auto`	Specify the duplex operation.
Step 2	**speed** [**auto** | **1000** | **100**] **Example:** `Router(config-if)# speed auto`	Specify the speed.

Enabling the Interface

Note In the following procedure, press the **Return** key after each step unless otherwise noted. At any time, you can exit the privileged level and return to the user level by entering **disable** at the `Router#` prompt.

	Command	Purpose
Step 1	**interface gigabitethernet** *slot/port* **Example:** `Router(config)# interface gigabitethernet 0/1`	Specify the port adapter type and the location of the interface to be configured. The *slot* is always 0 and the *port* is the number of the port.
Step 2	**no shutdown**	Enable the gigabit Ethernet interface using the **no shutdown** command.

Creating Backup Switch Interfaces

You can use the following command to create a backup switch interface:

	Command	Purpose
Step 1	**switchport backup interface** *interface_name* **preemption** [**forced** | **bandwidth** | **off**] **delay** [**time**]	Create a backup switch interface.