

Configuring Ethernet and Fast Ethernet Software

This chapter describes the procedure used to configure the Fast Ethernet ports on the supervisor engine module, the Fast Ethernet switching module, and the Ethernet switching module using the command line interface

Note For definitions of all commands discussed in this chapter, refer to the “Switch Command Reference” chapter.

Default Configuration

The features you can customize have default values that will most likely suit your environment and probably need not be changed. The default values of these features are set as follows:

- No port name is configured for any port.
- All ports are set to normal priority level.
- All 10/100 Mbps Fast Ethernet Switching Module ports are set to **auto**.
- All 10 Mbps and 100 Mbps Ethernet and Fast Ethernet module ports are set to half duplex.

Customizing the Configuration

As the default configuration, all Ethernet and Fast Ethernet ports are enabled. To configure these ports, complete the tasks in the following sections:

- Setting the Port Name
- Setting the Port Priority Level
- Setting the Port Speed (for the 10/100 Mbps Fast Ethernet Switching module only)
- Setting the Port Transmission Type

Refer to the end of this chapter for switch configuration examples.

Setting the Port Name

Assign a name to each port. To set a port name, perform the following tasks in privileged mode:

Task	Command
Configure a name for a port. Figure 4-1 shows an example of the set port name command.	set port name <i>mod_num/port_num</i> <i>[name_string]</i>
Verify that the port name is correct. Figure 4-2 shows a sample display of the show port command. Port names are listed in the Name column.	show port <i>mod_num/port_num</i>

Figure 4-1 set port name Command Example

```

Console> (enable) set port name 1/1 Router Connection
Port 1/1 name set.
Console> (enable) set port name 1/2 Server 1
Port 1/2 name set.
    
```

Figure 4-2 show port Command Display Example

```

Console> (enable) show port
Port Name                Status   Vlan    Level Duplex Speed Type
-----
1/1 Router Connection    ready   2       high  half  100 100BaseTX
1/2 Server 1             ready   1       high  half  100 100BaseTX
2/1                       ready  10      normal half   10 10BaseT
2/2                       disabled 10      normal half   10 10BaseT
2/3                       connect 10      normal half   10 10BaseT
2/4                       connect 10      normal half   10 10BaseT
.
.
.
2/23                      0       0       0      0      0      0
2/24                      0       0       0      0      0      0

Port Align-Err  FCS-Err  Xmit-Err  Rcv-Err
-----
1/1           0         0         0         0
1/2           0         0         0         0
2/1           0         0         0         0
2/2           0         0         0         0
2/3           0         0         0         0
2/4           0         0         0         0
2/5           0         0         0         0
2/6           0         0         0         0
2/7           0         0         0         0
2/8           0         0         0         0
2/9           0         0         0         0
2/10          0         0         0         0
2/11          0         0         0         0
2/12          0         0         0         0
    
```

Port	Single-Col	Multi-Coll	Late-Coll	Excess-Col	Carri-Sens	Runts	Giants
1/1	0	0	0	0	0	0	-
1/2	0	0	0	0	0	0	-
2/1	0	0	0	0	0	0	-
2/2	0	0	0	0	0	0	-
2/3	0	0	0	0	0	0	-
2/4	0	0	0	0	0	0	-
2/5	0	0	0	0	0	0	-
2/6	0	0	0	0	0	0	-
2/7	0	0	0	0	0	0	-
2/8	0	0	0	0	0	0	-
2/9	0	0	0	0	0	0	-
2/10	0	0	0	0	0	0	-
2/11	0	0	0	0	0	0	-
2/12	0	0	0	0	0	0	-

Last-Time-Cleared

Sun Apr 21 1996, 11:51:37

Console>

Port	Name	Status	Vlan	Level	Duplex	Speed	Type
1/1	Management Port	notconnect	1	normal	half	100	100 BASE-TX
1/2	InterSwitchLink	connected	trunk	normal	half	100	100 BASE-TX
2/1	Dennis	connected	10	normal	a-half	a-10	10/100 BASE-TX
2/2	Luis	notconnect	10	normal	auto	auto	10/100 BASE-TX
2/3	Iris	notconnect	10	normal	auto	auto	10/100 BASE-TX
2/4	Nancy	connected	10	normal	a-half	a-10	10/100 BASE-TX
2/5	Arthur	notconnect	20	normal	auto	auto	10/100 BASE-TX
2/6	Ron	notconnect	20	normal	auto	auto	10/100 BASE-TX
2/7	Connie	disabled	20	normal	auto	auto	10/100 BASE-TX
2/8	Bill	notconnect	20	normal	auto	auto	10/100 BASE-TX
2/9		notconnect	20	normal	auto	auto	10/100 BASE-TX
2/10		notconnect	20	normal	auto	auto	10/100 BASE-TX
2/11		notconnect	20	normal	auto	auto	10/100 BASE-TX
2/12		notconnect	20	normal	full	10	10 BASE-T

Port	Align-Err	FCS-Err	Xmit-Err	Rcv-Err
1/1	0	0	0	0
1/2	1	0	0	0
2/1	0	0	0	0
2/2	0	0	0	0
2/3	0	0	0	0
2/4	30	0	0	0
2/5	0	0	0	0
2/6	0	0	0	0
2/7	0	0	0	0
2/8	0	0	0	0
2/9	0	0	0	0
2/10	0	0	0	0
2/11	0	0	0	0
2/12	0	0	0	0

Setting the Port Priority Level

```
Port Single-Coll Multi-Coll Late-Coll Excess-Col Carri-Sens Giants
-----
1/1          0          0          0          0          0          0
1/2         680         418         0          1          0          -
2/1         756          99         0          0          0          0
2/2          0          0         0          0          0          0
2/3          0          0         0          0          0          0
2/4         409         403         0          11         0         1256
2/5          0          0         0          0          0          0
2/6          0          0         0          0          0          0
2/7          0          0         0          0          0          0
2/8          0          0         0          0          0          0
2/9          0          0         0          0          0          0
2/10         0          0         0          0          0          0
2/11         0          0         0          0          0          0
2/12         0          0         0          0          0          0

Last-Time-Cleared
-----
Wed Dec 27 1995, 16:09:47
Console> (enable)
```

Setting the Port Priority Level

Configure the priority level of each port. When ports request simultaneous access to the switching bus, the Catalyst 2900 uses the port priority level to determine the order in which ports have access to the switching bus. To set the priority level, perform the following steps in privileged mode:

Task	Command
Configure the priority level for each port. Figure 4-3 shows an example of the set port level command.	set port level <i>mod_num/port_num</i> normal high
Verify that the port priority level is correct. Figure 4-2 shows a sample display of the show port command. Port priority levels are listed in the Level column.	show port <i>mod_num/port_num</i>

Figure 4-3 set port level Command Example

```
Console> (enable) set port level 1/1 high
Port 1/1 level set to high.
Console> (enable) set port level 1/2 high
Port 1/2 level set to high.
```

Setting the Port Speed

Configure the port speed for the 100BaseTX ports on the 10/100 Mbps Fast Ethernet Switching module if desired. To set the port speed for a port, perform the following steps in privileged mode:

Task	Command
Set the port speed of a port. Figure 4-4 shows an example of the set port speed command.	set port speed <mod_num/port_num> <10/100/auto>
Verify that the port speed has been set correctly.	show port mod_num/port_num

Note Interfaces automatically configure themselves to operate at the proper speed and transmission type (simplex or duplex) when you set the port speed of a 10/100 Mbps Fast Ethernet Switching module to **auto**.

Figure 4-4 set port speed Command Example

```

Console> (enable) set port speed
Usage: set port speed <mod_num/port_num> <10|100|auto>
Console> (enable) set port speed 2/1 auto
Port 2/1 speed set to auto-sensing mode.
Console> (enable) set port speed 2/2 10
Port 2/2 speed set to 10 Mbps.
Console> (enable) set port speed 2/3 100
Port 2/3 speed set to 100 Mbps.

```

Setting the Port Transmission Type

Set the transmission type to full or half duplex for the ports that will be used. To set the transmission type of a port, perform the following steps in privileged mode:

Task	Command
Set the transmission type of a port. Figure 4-5 shows an example of the set port duplex command.	set port duplex mod num/port num full half
Verify that the transmission type has been set correctly. Figure 4-2 shows a sample display of the show port command. The transmission type is listed in the Duplex column.	show port mod_num/port_num

Note When a port is in auto-sensing mode, both its speed and duplex are determined by auto-sensing. An error message is generated if you attempt to set the transmission type of auto-sensing ports. On a 10/100 module, if a port speed is set to **auto**, its transmission type (duplex) will also set to **auto** automatically, i.e., the duplex of an auto-speed port is not settable.

Figure 4-5 set port duplex Command Example

```

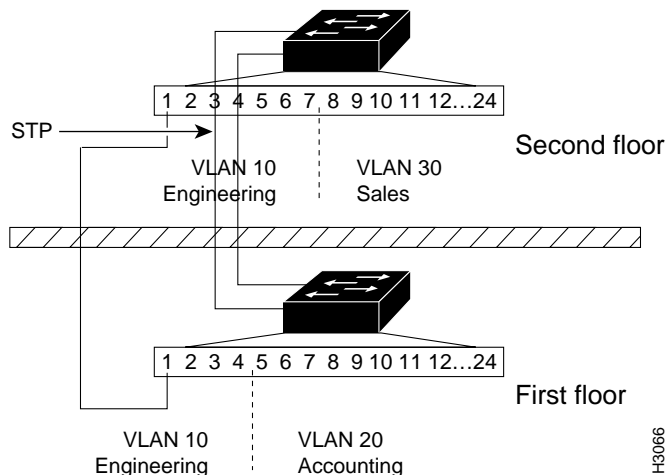
Console> (enable) set port duplex 2/1 half
Port 2/1 set to half-duplex.
Console> (enable) set port duplex 2/2 half
Port 2/2 set to half-duplex.

```

Multiple Switch VLAN Configuration Example

VLAN groups can be set up across multiple Catalyst 2900 if the switches have any two ports of the same VLAN connected, as shown in the example in Figure 4-7. You need to configure the VLANs individually for both switches using the `set vlan` command.

Figure 4-6 Multiple Catalyst 2900 VLAN Configuration



The VLANs for the Catalyst 2900 on the first floor were configured as follows:

```

system1> (enable) set vlan 10 2/1-4
VLAN 10 modified.
VLAN 1 modified.
VLAN    Mod/Ports
10      2/1-4
system1> (enable) set vlan 20 2/5-14
VLAN 20 modified.
VLAN 1 modified.
VLAN    Mod/Ports
20      2/5-14
    
```

VLANs for the Catalyst 2900 on the second floor were configured as follows:

```

system2> (enable) set vlan 10 2/1-7
VLAN 10 modified.
VLAN 1 modified.
VLAN    Mod/Ports
10      2/1-7
system2> (enable) set vlan 30 2/8-14
VLAN 30 modified.
VLAN 1 modified.
VLAN    Mod/Ports
30      2/8-14
    
```