Configuring the Catalyst 1800 Switch

This chapter describes how to configure the software on the Cisco Catalyst 1800 Token Ring switch. It contains the following sections:

- Accessing the Configuration Menu
- Configuring Bridge Parameters
- Configuring Bridge Port Pairs
- Configuring IP Parameters
- Configuring Logical Segments
- Configuring NetBIOS
- Configuring Physical Ports
- Configuring Ports
- Changing the System Prompt
- Configuring the Serial Port
- Configuring SNMP
- Configuring Spanning-Tree Protocol Port Parameters
- Configuring System Information
- Using a TFTP Server

Note Most command examples in this chapter use the shorthand notation described in the section "Abbreviated Text Recognition" in the chapter "Getting Started."

Accessing the Configuration Menu

The Configuration menu allows you to define the nonsecurity functions available on the Catalyst 1800 switch. Normally, the default for each parameter is listed on the corresponding menu.

To use the Configuration menu, type **Configure** from the Main menu and press **Return**.

The Configuration menu appears, listing the options you can access:

```
                                  Cisco Systems Catalyst 1800 Token Ring Switch




                                          Select From

                                   Bridge
                                          IP
                                  Logical Segments
                                          Netbios
                                    Physical Ports
                                  Port Priority
                                          Prompt
                                          Serial Port
                                          SNMP
                                          STP Ports
                                          System
                                          TFTP




   Catalyst 1800> Configure
```

When this menu appears, the system displays the following message:

```
Enter Next Configuration Menu Selection
```

From this menu you can access the submenus that allow you to change various configuration parameters. To access the Bridge menu, type **c b** (abbreviating the **configure bridge** command), then press **Return**.

The following table describes the parameters on the Configuration menu and points to where you can find procedures describing their use.

Table 3-1 Configuration Menu Selections

Parameter	Allows you to . . .	For more information, see:
Bridge	Configure all of the bridge Spanning-Tree parameters and bridge port pairs	"Configuring Bridge Parameters" and "Configuring Bridge Port Pairs"
IP	Configure the IP address, subnet mask, and default gateway used by the SNMP agent	"Configuring IP Parameters"
Logical Segments	Define the operational mode of the Catalyst 1800 switch (for example, single ring, multiring, bridged, and so on.). It also allows you to configure ring numbers, bridge types (SR and SRT), and MTUs.	"Configuring Logical Segments"
Netbios	Enable or disable Netbios name caching on a per port basis	"Configuring NetBIOS"

Parameter	Allows you to . . .	For more information, see:
Physical Ports	Define the 802.5/FDDI port configuration of the Catalyst 1800 switch (for example, ring speed, active monitor, and so on.)	For 802.5 ports: "Configuring Physical Ports" For FDDI ports: the chapter entitled "Configuring FDDI Software."
Port Priority/ Port Mirroring	Assign priority levels to each port and configure port mirroring	"Configuring Ports"
Prompt	Change the prompt on the console interface	"Changing the System Prompt"
Serial Port	Configure the speed for the serial port	"Configuring the Serial Port"
SNMP	Define the community names (up to 8), access privileges, and trap IP address	"Configuring SNMP"
STP Ports	Set spanning-tree port parameters	"Configuring Spanning-Tree Protocol Port Parameters"
System	Set and display general system information about the Catalyst 1800 switch (for example, description, date, time, H/W and S/W revs, and so on.)	"Configuring System Information"
TFTP	Change the TFTP server IP address.	"Identifying the TFTP Server"
	Download an operational software image.	"Using TFTP to Download a System Software Image"
	Download or upload the configuration database.	"Downloading and Uploading the Configuration Database"

Configuring Bridge Parameters

The Bridge menu allows you to configure multiring bridging and Spanning-Tree parameters. To access the Bridge Configuration menu, follow these steps.

Step 1 Type this command from the Main menu:

```
Configure Bridge
```

The Bridge Configuration menu appears.

```
                    Cisco Systems Catalyst 1800 Token Ring Switch

                            Select From

                Bridge Address
                  Forward Time
                  Hello Time
                  MAC Address Age
                  Maximum Age
                  Pairs
                  Priority
                  Protocol Span
                  Spanning Tree
                  Display


Catalyst 1800> Configure Bridge
```

Note From this menu, you can select any parameter to display the Bridge Configuration menu. You can also use the **display** command.

The system displays the following message:

```
Enter Next Menu Selection
```

Step 2 To change a parameter on this menu, use this syntax:

c b ***parameter_name***

The Bridge Configuration menu appears and the system prompts you to type the appropriate value.

```
                          Cisco Systems Catalyst 1800 Token Ring Switch

                                       Bridge Configuration

MAC Address Aging Time              :   5
Spanning Tree State                 :   Disabled
Spanning Tree Protocol              :   802.1d
Bridge Group Address                :   0xC00000000100
STP Priority                        :   0x8000
STP Bridge Max Age                  :   20
STP Bridge Hello Time               :   2
STP Bridge Forward Time             :   15


Catalyst 1800> c b dis
```

The following table describes the parameters on the Bridge Configuration menu. Note that each parameter's default value is listed on this screen.

Table 3-2 Bridge Configuration Menu Parameters

Parameter	Description
MAC Address Aging Time	The amount of time to wait before aging out unused MAC addresses from the forwarding database
Spanning-Tree State	The enabled/disabled status of the Spanning-Tree Protocol
Spanning-Tree Protocol	The type of Spanning-Tree Protocol to use (802.1d or IBM)
Bridge Group Address	The multicast address used in the spanning-tree frames generated by this node
STP Priority	The value of the writable portion of the bridge ID, expressed in the first two octets of the eight-octet bridge ID
STP Bridge Max Age	The value that all bridges use for the spanning-tree max age value when this node is acting as the root
STP Bridge Hello Time	The value that all bridges use for the spanning-tree hello time value when this node is acting as the root
STP Bridge Forward Time	The value that all bridges use for the spanning-tree forward delay value when this node is acting as the root

MAC Address Aging Time

Step 1 To change the MAC Address Aging Time parameter, type this command:

```
c b mac
```

The system displays the following message:

```
Enter value in minutes between 1 and 60
```

Step 2 Enter the value and press **Return**.

The new parameter value appears on the menu.

Note MAC addresses age between one and two times the aging interval. For example, if you accept the default value of 5 minutes, MAC addresses will age between 5 and 10 minutes.

Spanning-Tree State

Step 1 To change the Spanning-Tree State parameter, type this command:

```
c b s
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Type **Enable** or **Disable** and press **Return**.

The new parameter value appears on the menu.

Spanning-Tree Protocol

Step 1 To change the Spanning-Tree Protocol parameter, type this command:

```
c b pro
```

The system displays the following message:

```
Enter 802.1d or IBM
```

Step 2 Type **802.1d** or **IBM** and press **Return**.

The new parameter value appears on the menu.

If you type IBM, new defaults for the STP Bridge Max Age, STP Bridge Hello Time, and STP Bridge Forward Time parameters are displayed on the Bridge Configuration Menu:

```
                                Cisco Systems Catalyst 1800 Token Ring Switch
                                          Bridge Configuration

MAC Address Aging Time                  :   5
Spanning Tree State                     :   Disabled
Spanning Tree Protocol                  :   IBM
Bridge Group Address                    :   0xC00000000100
STP Priority                            :   0x8000
STP Bridge Max Age                      :   6
STP Bridge Hello Time                   :   2
STP Bridge Forward Time                 :   4


  Catalyst 1800> c b pro
```

Note If you modified one of these three parameters (STP Bridge Max Age, STP Bridge Hello Time, STP Bridge Forward Time) from its default value, it is not reset to its default value when you change the Spanning-Tree Protocol status. For example, if the system is using the 802.1d Spanning-Tree Protocol, and you change the STP Bridge Max Age paramter, this parameter does not revert to its IBM default if you change the Spanning-Tree Protocol to IBM.

Bridge Group Address

Step 1 To change the Bridge Group Address parameter, type this command:

```
c b b
```

The system displays the following message:

```
Enter Functional (0xC00000000100) or GroupMSB (0x800143000000)
```

Step 2 Type **Function** or **GroupMSG** and press **Return**.

The new parameter value appears on the menu.

STP Priority

Step 1 To change the STP Priority parameter, type this command:

```
c b pri
```

The system displays the following message:

```
Enter value between 0 and 0xFFFF (hex)
```

Step 2 Enter the hexadecimal value and press **Return**.

The new parameter value appears on the menu.

STP Bridge Max Age

Step 1 To change the STP Bridge Max Age parameter, type this command:

```
c b max
```

The system displays the following message:

```
Enter value between 6 and 40 seconds
```

Step 2 Enter the value and press **Return**.

The new parameter value appears on the menu.

STP Bridge Hello Time

Step 1 To change the STP Bridge Hello Time parameter, type this command:

```
c b h
```

The system displays the following message:

```
Enter value between 1 and 10 seconds
```

Step 2 Enter the value and press **Return**. The new parameter value appears on the menu.

STP Bridge Forward Time

Step 1 To change the STP Bridge Forward Time parameter, type this command:

```
c b f
```

The system displays the following message:

```
Enter value between 4 and 30 seconds
```

Step 2 Enter the value and press **Return**. The new parameter value appears on the menu.

Configuring Bridge Port Pairs

The Bridge Pairs menu allows you to configure multiring bridging parameters. In order to use this configuration, you must first configure logical segments. (See the section "Configuring Logical Segments.") This menu provides the means to configure the bridge number and the state for each bridge port pair.

To access the Bridging Port Pairs menu, follow these steps:

Step 1 Type this command from the Main menu:

```
con bri pa
```

The Bridge Port Pairs menu appears:

```
                                    Cisco Systems Catalyst 1800 Token Ring Switch


                                              Select From

                                              Number
                                              State
                                              Display




  Catalyst 1800>con bri pa
```

Number

Step 1 To change the bridge number for a bridge port pair, type this commands:

```
c b pa nu
```

The Bridge Port Pair Configuration menu appears (shown above), and the system displays this message:

```
Enter first logical segment number in hex
```

Step 2 Enter the value (for example, 65).

```
c b pa nu 65
```

The system displays the following message:

```
Enter second logical segment number in hex
```

Step 3 Enter the value (for example, 66).

```
c b pa nu 65 66
```

The system displays the following message:

```
Enter bridge number for this segment pair, in hex 1...f
```

Step 4 Enter the value (for example, 1).

```
c b pa nu 65 66 1
```

The new values appear on the Bridge Port Pair Configuration menu:

```
                              Cisco Systems Catalyst 1800 Token Ring Switch


                               Bridge Port Pair Configuration, 2 Segments


                    Segment#          Segment#       State    Brdg#
                    ------------------------------------------------------------
                    101 (x065)        102 (x066)     Enabled    1
```

```
Catalyst 1800>c b pa nu 65 66 1
```

The following table describes the parameters on this screen. Note that each parameter's default value is listed on this screen.

Table 3-3 Bridge Port Pair Configuration Menu Parameters

Parameter	Description
Segment#	The segment (ring) number associated with the bridge port
State	Allows you to enable or disable bridging between any two segments
Brdg#	Allows you to configure the bridge number for any bridge port pairs

State

Step 1 To change the state of Bridge Port Pairs, type this command:

```
c b pa st
```

The Bridge Port Pair Configuration menu appears and the system displays the following message:

```
Enter first logical segment number in hex
```

Step 2 Enter the value (for example, 65).

```
c b pa st 65
```

The system displays the following message:

```
Enter second logical segment number in hex
```

Step 3 Enter the value (for example, 66).

```
c b pa st 65 66
```

The system displays the following message:

```
Enter Enable or Disable for State
```

Step 4 Type **Enable** or **Disable**. The new parameter value appears on the menu.

Configuring IP Parameters

The IP Parameters menu allows you to configure these three IP parameters:

- IP address
- Subnet mask
- Default gateway

Step 1 Type this command from the Main menu:

```
c i
```

The system displays the following message:

```
Enter port number or 0 for setting all ports
```

Step 2 Enter the port number or **0** and press **Return**.

The Configuring IP Parameters menu appears:

```
                                Cisco Systems Catalyst 1800 Token Ring Switch


                                             Select From

                                             Address
                                             Default Gateway
                                             Subnet Mask
                                             Display



Catalyst 1800> c i 0
```

Step 3 To change a parameter on this menu, use this syntax:

```
c i  port_number parameter_name
```

The IP Parameters Display menu appears, with a prompt for a value:

```
                          Cisco Systems Catalyst 1800 Token Ring Switch

                                IP Address Information for port 0


                                    IP Address:0.0.0.0

                                    Subnet Mask:0.0.0.0

                                    Default Gateway:0.0.0.0


Catalyst 1800> c i 0 Addr
```

The following table describes the parameters on the IP Parameters Display menu.

Table 3-4 IP Parameters

Parameter	Description
IP Address	The IP address used by UDP for SNMP purposes. All accesses to the Catalyst 1800 switch, in both the 8 port and 16 port models, use a single address.
Subnet Mask	The IP subnet mask associated with the IP address.
Default Gateway	The default IP gateway address to be used by SNMP/UDP when attempting to traverse routed IP networks. For example, when the Catalyst 1800 switch powers up, it sends a trap to the trap receiver defined within the SNMP configuration screen. If that trap receiver contains a base IP address that differs from the IP address configured (for example, the IP = 192.177.0.9, trap receiver = 192.8.0.55), UDP sends the SNMP packet to the default gateway address for appropriate routing.

IP Address

Step 1 To change the IP Address parameter for all ports, type **0 a** from the Configuring IP Parameters menu.

The system displays the following message:

```
Enter Unit's IP Address
```

Step 2 Type the IP address and press **Return**.

The new IP address appears on the menu.

Subnet Mask

Step 1 To change the Subnet Mask parameter for all ports, type **0 s** from the Configuring IP Parameters menu.

The system displays the following message:

```
Enter Unit's IP Subnet Mask Address
```

Step 2 Type the subnet mask address and press **Return**. The new subnet mask address appears on the menu.

Default Gateway

Step 1 To change the Default Gateway parameter for all ports, type **0 def** from the Configuring IP Parameters menu.

The system displays the following message:

```
Enter Unit's Default Gateway Address
```

Step 2 Type the default gateway address and press **Return**. The new default gateway address appears on the menu.

Configuring Logical Segments

The Configuring Logical Segments menu allows you to configure information about the port, such as segment number and port behavior.

Step 1 Type this command from the Main menu:

```
Configure Logical
```

The system displays the following message:

```
Enter port number or 0 for setting all ports
```

Step 2 Enter the port number (or enter **0** to configure all ports) and press **Return**.

The Configuring Logical Segments menu appears:

```
                        Cisco Systems Catalyst 1800 Token Ring Switch


                                Select From

                        Frame Size
                        Max Hops
                        Port Type
                        Ring Number
                        STEMode
                        Display



Catalyst 1800>c l 1
```

Step 3 To change a parameter on this menu, use this syntax:

c l *port_number parameter_name*

(The first argument of the command is the letter **l**, abbreviating **logical**, not a numeral 1.) The Logical Segment Configuration menu for all ports appears, and the system prompts you to type the appropriate value:

```
          Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink
                    Logical Segment Configuration
Port#  Type  Segment#  FrameSeq  MaxHops  MaxFrame  STEMode
1      SRT   65        N/A       7        4865      Auto
2      SRT   65        N/A       7        4865      Auto
3      SRT   65        N/A       7        4865      Auto
4      SRT   65        N/A       7        4865      Auto
5      SRTB  66   V    TB,SR     7        4865      Auto
6      SRT   65        N/A       7        4865      Auto
7      SRT   65        N/A       7        4865      Auto
8      SRT   65        N/A       7        4865      Auto



Catalyst 1800> c l 0 dis
```

If you are using FDDI, the following version of the Logical Segment Configuration menu appears:

```
Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink
                        Logical Segment Configuration
    Port#  Type  Segment#  FrameSeq  MaxHops  MaxFrame  STEMode
    1      SRT   65        N/A       7        4865      Auto
    2      SRT   65        N/A       7        4865      Auto
    3      SRT   65        N/A       7        4865      Auto
    4      SRT   65        N/A       7        4865      Auto
    5      SRTB  66   V    TB,SR     7        4865      Auto

Catalyst 1800> c l 0 dis
```

The following table describes the parameters on the Logical Segments Display menu. Except for Port#, each parameter's default value is listed on the screen.

Table 3-5 Logical Segments Parameters

Parameter	Description
Port#	The port number that uniquely identifies this port. Valid values are 0 through 16. (Zero represents all ports.)
Type	For a Token Ring port, this value identifies whether this is an SR or an SRT port. For an FDDI port, this value identifies whether this is an SR, SRT, TB, or SR/TLB port.
Segment#	The segment (ring) number that uniquely identifies this ring. Valid values are 0 through 4095 (xFFF). For the FDDI port , if the Port Type is set to SR/TLB, this segment number is used as the virtual ring number. If the Spanning Tree protocol (STP) is enabled when the segment# value is changed, STP realigns the tree to reflect the new segment configuration. In this process, which takes about 30 seconds, all setments transition through the STP Listening, Learning, and Blocking/Forwarding states.
FrameSeq	Applies to FDDI Uplink (FDU) systems only. For SR/TLB ports, this value identifies the sequence for transmitting unknown DAs or broadcast frames when received on the SR/TLB port. The TB,SR option indicates that a transparent frame is sent first and a source routed frame sent next. The SR,TB option sends a source routed frame, then a transparent frame. Valid values are TB,SR and SR,TB.
MaxHops	The maximum number of source routing descriptors to be allowed in explorer packets. This limits the maximum number of hops an SR explorer will be allowed to traverse. A single hop is incurred between any two ports. Valid values are 1 through 7.
MaxFrame	The maximum size of the INFO field (LLC and above) that this port can send/receive. It does not include any MAC level (framing) octets. The value of this object is used by the Catalyst 1800 switch to determine whether a modification of the LargestFrame field of the Routing Control field of the Routing Information Field is necessary. Valid values are rounded up to one of the 64 permissible values based on user input. (The 64 valid values are defined by the IEEE 802.5M SRT Addendum.) MaxFrame requires a system reboot to take effect. Use the **sys reb** command for this after making all configuration changes.

Parameter	Description
STEMode	Determines how this port behaves when presented with a spanning-tree explorer (STE) frame. The disabled value indicates that the port does not accept or send spanning-tree Explorer packets. Therefore, received STE packets are silently discarded. The Forced value indicates the port always accepts and propagates spanning-tree explorer frames. This allows you to manually configure the spanning-tree for this class of packet. However, unlike transparent forwarding, if there are loops this condition is not catastrophic to the network. The Auto value can only be returned by a switch that both implements the spanning-tree protocol and has use of the protocol enabled on the port. The behavior of the port for spanning-tree explorer frames is determined by the state of the SNMP variable dot1dStpPortState. If the port is in the forwarding state, the frame is not accepted or propagated.

Port Type

Step 1 To change the Port Type parameter for all ports, type this command:

```
cl0p
```

The system displays the following message:

```
Enter Port Type: SR or SRT
```

Step 2 Type the port type and press **Return**. The new port type appears on the menu.

Segment# (Ring Number)

Step 1 To change the Segment Number (ring number) parameter for all ports, type this command:

```
c l 0 r
```

The system displays the following message:

```
Enter Ring number in hex
```

Step 2 Type the segment number in hexadecimal notation and press **Return**. The new segment number appears on the menu.

FrameSeq

This selection applies to FDU systems only.

Step 1 To change the FrameSeq parameter for the FDDI port, type this command:

```
c l 5 se
```

The system displays the following message:

```
Enter TB,SR or SR,TB
```

Step 2 Type the frame sequence value and press **Return**. The new frame sequence appears on the menu.

Max Hops

Step 1 To change the Max Hops parameter (that is, the maximum number of hops for bridged SR traffic), type this command:

```
c l 0 m
```

The system displays the following message:

```
Enter Maximum Number of Hops for Bridged SR Traffic
```

Step 2 Type the number of hops and press **Return**. The new number appears on the menu.

MaxFrame (Frame Size)

Step 1 To change the MaxFrame parameter (that is, the maximum frame size of the packet), type this command:

```
c l 0 f
```

The system displays the following message:

```
Enter Maximum Frame Size when SR Bridging
```

Step 2 Type the frame size and press **Return**.

The new size appears on the menu. This configuration change does not take effect immediately. The system will have to be rebooted with the **system reboot** command after you have finished making configuration changes.

STEMode

Step 1 To change the STEMode parameter (that is, how the port reacts to spanning-tree explorer packets), type this command:

```
c l 0 st
```

The system displays the following message:

```
Enter Forced, Auto or Disabled
```

Step 2 Type the value and press **Return**. The new value appears on the menu.

Configuring NetBIOS

The NetBIOS menu allows you to enable or disable NetBIOS name caching for each switch port.

Step 1 Type this command from the Main menu:

```
Configure NetBIOS
```

The system displays the following message:

```
Enter port number or 0 for setting all ports
```

Step 2 Enter the port number or **0** and press **Return**.

The Configuring NetBIOS menu appears:

```
                                    Cisco Systems Catalyst 1800 Token Ring Switch

                              NetBIOS Broadcast Reduction Configuration

                                   Port#           State

                                    1              Disabled
                                    2              Disabled
                                    3              Disabled
                                    4              Disabled
                                    5              Disabled
                                    6              Disabled
                                    7              Disabled
                                    8              Disabled



Catalyst 1800> Configure NetBIOS
```

The system displays:

```
Enter Enable or Disable
```

Step 3 To change a parameter on this menu, use this syntax:

c n ***port_number parameter_name***

The NetBIOS name caching status appears on the menu. The default is Disabled.

Configuring Physical Ports

This section explains how to configure various parameters relating to physical ports, such as the ring speed, direct attach, and 802.5 active monitor selection. It also lets you lets you specify the state of a port (that is, connect or disconnect it). A reconfigured port must be disabled and re-enabled for the configuration changes to take effect.

Step 1 Type this command from the Main menu:

```
con phy
```

The system displays the following message:

```
Enter port number or 0 for all ports
```

Step 2 Enter the port number or **0** and press **Return**. The Configuring Physical Ports menu appears. For non-FDDI ports, it appears as follows:

```
                                    Cisco Systems Catalyst 1800 Token Ring Switch

                                          Select From

                                             Active Monitor
                                             Address
                                          Early Release
                                            Ring Speed
                                            State
                                             Display


   Catalyst> 1800 con phy 0
```

For FDDI uplink (FDU) systems, the Configuring Physical Ports menu appears as follows:

```
      Cisco Systems Catalyst 1800 Token Ring Switch

                           Select From

                         Active Monitor
                         Address
                         Direct Attach
                         Early Release
                         MAC (FDDI)
                         Path (FDDI)
                         Port (FDDI)
                         Ring Speed
                         SMT (FDDI)
                         State
                         Display


Catalyst 1800>con phy 0
```

Step 3 To change a parameter on this menu, use this syntax:

c ph ***port_number parameter_name***

The Physical Ports Display menu appears:

```
                                  Cisco Systems Catalyst 1800 Token Ring Switch

                                       Mac Address(MSB): 00-05-77-00-05-89
                                           Single Segment Number: 101


     Port#    State       Speed     ActiveMon    EarlyRelease Direct Attach

       1      Enabled     16 Mb     Enabled      Enabled       Disabled
       2      Enabled     16 Mb     Enabled      Enabled       Disabled
       3      Enabled     16 Mb     Enabled      Enabled       Disabled
       4      Enabled     16 Mb     Enabled      Enabled       Disabled




   Catalyst 1800> c ph 0
```

The system prompts you to type the appropriate value.

In subsequent examples, **0** is chosen (to change all ports). However, each port can be modified separately by specifying the port number by itself, when the system prompts you.

Note For instructions on configuring FDDI ports, refer to the chapter "Configuring FDDI Software."

The following table describes the parameters on the Physical Ports Display menu. Except for Port#, each parameter's default value is listed on this screen.

Table 3-6 Physical Ports Display Menu Parameters

Parameter	Description
MAC Address (MSB)	If 0 (all ports are chosen), the displayed MAC address is the base MAC address of all ports. If you choose a specific non-zero port , the displayed MAC address is the MAC address of the associated port in noncanonical MSB format.
Single Segment Number	The number of the segment to which the ports are attached
Port#	The port number that uniquely identifies this port. Valid values are 1 through 16 for all ports.
State	The state of the physical port. The port may be enabled or disabled. When disabled, the port is disconnected from the ring, all frames are discarded and no learning or forwarding is performed.
Speed	The ring speed of the physical port. Valid values are 4 Mbps, 16 Mbps, or Unknown. If you select a specific speed (4 Mbps or 16 Mbps), the port attempts to enter the ring at this speed. If it fails to enter the ring, the port periodically attempts to open at this speed as long as it is enabled. The Unknown setting is for automatic configuration. If you set the speed to Unknown, the port detects the current ring speed and inserts itself at that speed. If the port is the first to insert into a ring, it inserts at the last speed detected, or at 16 Mbps if no speed was previously detected.
ActiveMon	Active monitor participation for the physical port. Participation may be Enabled or Disabled. When enabled the port may participate in an 802.5 active monitor selection process initiated by another node on the attached ring.
EarlyRelease	Early token release mode on the physical port. Early token release may be enabled or disabled. Early token release can only be enabled if the speed of the port is 16 Mbps. Early token release is an 802.5 defined function for 16 Mbps rings that slightly improves latency between stations on the ring. This does not affect the latency internal to the Catalyst 1800 switch. Many NIC cards are shipped in 16 Mbps mode with early token release enabled. Stations may coexist in both modes on a 16 Mbps ring.
Direct Attach (FDU systems only)	Setting this option to enabled permits the Token Ring port to be directly attached to a Token Ring NIC. A setting of disabled requires that the Token Ring Port be attached to a MAU. Direct Attach is only available for Token Ring ports on the FDU board. Valid values are Enabled and Disabled (default).

MAC Address (MSB)

Step 1 To change the MAC Address (that is, the base MAC address) for all ports, type this command:

```
c ph 0 ad
```

Note To change the MAC Address parameter of a particular port number, specify the designated port in the command above by replacing 0 with a number from 1 to 8.

The system displays the following message:

```
Enter 12-digit hex MAC address (ex. 0102030a0b0c)
```

Step 2 Enter a MAC address in non-cannonical format (MSB) and press **Return**.

The new base MAC address appears on the menu.

State

Step 1 To change the State paramter (that is, the state of the physical port) for all ports, type this command:

```
c ph 0 s
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Enter **Enable** or **Disable** and press **Return**. The new port state appears on the menu.

Speed

Step 1 To change the Speed parameter (that is, the ring speed) of the physical port for all ports, type this command:

```
c ph 0 r
```

The system displays the following message:

```
Enter 4, 16 or Unknown (Auto config)
```

Step 2 Enter the parameter value and press **Return**. The new ring speed appears on the menu.

ActiveMon

Step 1 To change the ActiveMon parameter (that is, the active monitor participation) for all physical ports, type this command:

```
c ph 0 ac
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Enter **Enable** or **Disable** and press **Return**. The new monitor participation state appears on the menu.

EarlyRelease

Step 1 To change the EarlyRelease parameter (that is, the early token release mode) for all physical ports, type this command:

```
c ph 0 e
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Enter **Enable** or **Disable** and press **Return**. The new early token release mode appears on the menu.

Direct Attach

Step 1 To change the Direct Attach parameter for all Token Ring ports, type this command:

```
c ph 0 dir
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Enter **Enable** or **Disable** and press **Return**. The new Direct Attach mode appears on the menu.

Note Direct Attach is only available for FDDI uplink (FDU) boards and requires the direct attach cable. For more information, see the appendix "Direct Attach Cable for the FDU."

Configuring Ports

The Configuring Ports menu allows you to choose between configuring port priority or selecting a port with which to use the switched port analyzer (SPAN). This procedure is also known as port mirroring.

To use the Port Configuration menu, type the following from the Main menu:

```
con port
```

The Port Configuration menu appears, listing the options you can access:

```
                                  Cisco Systems Catalyst 1800 Token Ring Switch


                                                 Select From

                                                  Priority
                                                  SPAN


Catalyst 1800> con port
```

From this menu you can configure SPAN ports and set port priority. Refer to the subsequent sections.

Configuring a Switched Port Analyzer (SPAN)

You can configure a SPAN port that reflects the LLC (Logical Link Control) traffic found on another switched port. This feature is useful if you want to monitor the traffic on a specific port. The mirror port is called the SPAN port, while the port being mirrored is the port to monitor. Any one of the 16 switch ports can be designated as either port.

For example, a company wants to monitor the traffic coming over port 4, so they designate port 8 as the SPAN port for port 4. They attach a network analyzer to port 8 allowing any traffic that comes over port 4 to be reflected in the network analyzer.

The following conditions apply to SPAN:

- Port mirroring only reflects LLC (logical link control) frames. It does not reflect Token Ring MAC frames found on the monitored port.
- SPAN ports cannot accept switched traffic while in mirror mode.
- Only one SPAN port or port to monitor can be configured at a time.
- The Logical Segment of the SPAN port refers to the port being monitored and cannot be changed while SPAN is enabled.

The following sections show how to configure and delete a SPAN port.

Configuring a SPAN Port

Step 1 To configure a SPAN port, type this command:

```
con port span
```

The SPAN Port Configuration screen appears and the following message appears:

```
Enter SPAN port, port to analyze
                                        Cisco Systems Catalyst 1800 Token Ring Switch

                                                  SPAN Port Configuration


                                                  Port to Monitor   SPAN Port
                                                  --------------    ---------
                                                         4              8



Catalyst 1800>con port span
```

Step 2 Enter the number of the port you want to mirror and press **Return**.

The system displays the following message:

```
Enter SPAN Port, port attached to analyzer (0 to delete)
```

Step 3 Enter the number of the port that you want to be the SPAN port and press **Return**. The SPAN port now mirrors the LLC traffic on the port being monitored.

Deleting a SPAN Port

You may want to delete a SPAN port to free up the destination port so that it can accept switched traffic. Perform this procedure.

Step 1 Type this command:

```
Configure Port SPAN
```

The SPAN Port Configuration menu appears (shown at the beginning of this section) and the system displays the following message:

```
Enter port to monitor (0 to delete)
```

Step 2 Type **0**.

```
Enter SPAN Port, port attached to analyzer (0 to delete)
```

Step 3 Type **0** press **Return**. The SPAN port is now deleted. No port numbers appear in the Port to Monitor and the SPAN Port fields.

Configuring Port Priority

The Port Priority menu allows you to configure priority levels for each port. Port prioritizing is based on a scale from 1 to 100. Ports assigned higher values receive higher priority.

Step 1 Type this command from the Main menu:

```
Configure Port Priority
```

The Port Priority Configuration menu appears:

```
                    Cisco Systems Catalyst 1800 Token Ring Switch

                        Port Priority Configuration

                    Port#     Percentage of CPU

                       1              12
                       2              12
                       3              12
                       4              12
                       5              12
                       6              12
                       7              12
                       8              12



Catalyst 1800> Configure Port Priority
```

The system displays the following message:

```
Enter port number or 0 for setting all ports
```

Step 2 Enter the port number or **0** and press **Return**.

The system displays the following message:

```
Enter priority as a percentage (total must be less than or equal to 100%)
```

Step 3 Type the port priority for the particular port. For example if you want to assign 20% of the CPU processing time to port 2, type the following:

```
c por 2 20
```

The Port Priority Configuration menu display changes to reflect the new value. The following table describes the parameters on the Port Priority Configuration menu.

Table 3-7 Port Priority Configuration Menu Parameters

Parameter	Description
Port#	The port number that uniquely identifies this port. Valid values are 0 through 16 (0 represents all ports).
Percentage of CPU	The amount of CPU resources allocated per port. The higher the value, the more CPU resources are allocated. Valid values are 1 through 100.

Changing the System Prompt

You can change the system prompt on the console interface to any value.

Step 1 Type this command from the Main menu:

```
c p
```

(This abbreviates the command **configure prompt**.) The system displays the following message:

```
Enter new prompt
```

Step 2 Type the new prompt and press **Return**. If you want to use spaces or special characters, put the entire character string between double quotes.

Configuring the Serial Port

The Serial Port menu allows you to configure serial port parameters for the switch console port, such as port speed and parity.

Note Serial port configuration requires a system reboot to take effect. Use the **system reboot** command for this after making all configuration changes.

Step 1 Type this command from the Main menu:

`Configure Serial`

The Configuring Serial Port menu appears:

```
                        Cisco Systems Catalyst 1800 Token Ring Switch

                                    Select From

                         BPC
                                    Graphics
                                    Parity
                                    Speed
                                    Stop Bits
                                    25th Line
                                    Display


Catalyst 1800> Configure Serial
```

The system displays the following message:

```
Enter Next Menu Selection
```

Step 2 To change a parameter on this menu, use this syntax:

`c se` ***`parameter_name`***

The Serial Port Configuration menu appears, and the system prompts you to type the appropriate value:

```
                                Cisco Systems Catalyst 1800 Token Ring Switch

                                     Serial Port Configuration


Type          :  Console     Graphics Mode     : Enabled

Speed         : 9600         Parity            : None
Bits Per Char: 8             Stop Bits         : 1

25th Line     : OFF




   Catalyst 1800> C se
```

The following table describes the parameters on the Serial Port Configuration menu. The defaults are listed on the menu.

Table 3-8 Serial Port Configuration Parameters

Parameter	Description
Type	The type of terminal emulation on the current system, such as ANSI
Speed	The serial port speed for console operation
Bits Per Char	Bits per character on the serial port for console operation. Options are: 7 or 8.
25th Line	Turns the 25 line on or off. This feature is designed for users of screens that only display 24 lines.
Graphics Mode	Allows you to enable or disable the ANSI graphics option. If this option is disabled, the borders shown on the screens in this manual will not be visible as lines on your console screen. The borders could be a variety of random characters or no borders at all, depending on the terminal emulation program being used.
Parity	The parity for console operation. Options are none, even, or odd.
Stop Bits	The number of stop bits for console operation. Options are 1,2, or 1.5.

Speed

Step 1 To change the Speed parameter of the console port, type this command:

```
c se sp
```

The system displays the following message:

```
Enter Serial Port Speed
```

Step 2 Type the speed and press **Return**. The new speed parameter value appears on the menu.

Bits Per Char

Step 1 To change the Bits Per Char parameter (that is, the character size), type this command:

```
c se b
```

The system displays the following message:

```
Enter 7 or 8
```

Step 2 Type the character value and press **Return**. The new character value appears on the menu.

Parity

Step 1 To change the Parity parameter of the console port, type this command:

```
c se p
```

The system displays the following message:

```
Enter none, even or odd
```

Step 2 Type the parity and press **Return**. The new parity value appears on the menu.

Stop Bits

Step 1 To change the value of the Stop Bits parameter, type this command:

```
c se st
```

The system displays the following message:

```
Enter 1, 2 or 1.5
```

Step 2 Type the stop bit value and press **Return**. The new stop bit value appears on the menu.

Graphics Mode

Step 1 To change the Graphics Mode parameter for the console port, type this command:

```
c se g
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Type **Enable** or **Disable** and press **Return**. The new graphics mode designation appears on the menu.

25th Line

Step 1 To change the 25th Line parameter (for example, if your terminal supports only 24 lines), type this command:

```
c se 25th
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Type **Enable** or **Disable** and press **Return**. The new 25th line value appears on the menu.

Configuring SNMP

The SNMP menu allows you to configure read-only and read-write privileges and to establish trap addresses that report information to the SNMP manager.

Step 1 Type this command from the Main menu:

```
c sn
```

The system displays the following message:

```
Enter community table entry (1-8)
```

Step 2 The default name of entry 1 in the community table is public. If you want to add an additional community table entry or change attributes (including the name) of an existing entry, type its number and press **Return**.

The Configuring SNMP menu appears:

```
                        Cisco Systems Catalyst 1800 Token Ring Switch

                                    Select From

                              Access
                                          Community Name
                                          Trap Address
                                          Display


Catalyst 1800> c sn
```

Step 3 To change a parameter on this menu, use this syntax:

c sn ***community_table_number parameter_name***

The SNMP Community Configuration menu appears for the community table, and the system prompts you to type the appropriate value.

```
                                  Cisco Systems Catalyst 1800 Token Ring Switch

                                       SNMP Community Configuration


 Entry     Community Name     Access       Trap IP Address

 1         public             Read-Only    0.0.0.0




   Catalyst 1800> c sn 1
```

The following table describes the parameters on the SNMP Community Configuration menu.

Table 3-9 SNMP Community Configuration Parameters

Parameter	Description
Community Name	The SNMP community name. Up to 8 SNMP community names are permitted. Community names are used to gain read-only or read/write access to the Catalyst 1800 switch, as defined by the SMI definition of SNMP. If more than one community name with read/write access exists, all of those names will be valid passwords for the switch. If a read/write community name has been entered, read-only community names are no longer be accepted as the password.
Access	The access mode for any SNMP manager using the associated community name. Valid values are RO (read-only) and RW (read-write). If a community name is given RW access, it will also be a valid switch password.
Trap IP Address	When the Catalyst 1800 switch encounters an event that must be reported to an SNMP manager, this address is used to send that event (trap). If this address is configured to 0.0.0.0, the Catalyst 1800 switch discards a notification about all traps.

Community Name

Step 1 To specify an SNMP community name, type this command:

```
c sn 1 c
```

The system displays the following message:

```
Enter community Name up to 8 chars
```

Step 2 Type the community name and press **Return**. The new community name appears on the menu.

Access

Step 1 To change the Access parameter (that is, the SNMP access mode), type this command:

```
c sn 1 a
```

The system displays the following message:

```
Enter RO or RW
```

Step 2 Type the access mode and press **Return**. The new access mode appears on the menu.

Trap IP Address

Step 1 To change the Trap IP Address parameter (that is, the SNMP trap IP address for event traps), type this command:

```
c sn 1 t
```

The system displays the following message:

```
Enter SNMP Trap IP Address
```

Step 2 Type the address and press **Return**. The new address appears on the menu.

Configuring Spanning-Tree Protocol Port Parameters

The Spanning-Tree Ports menu allows you to configure segment numbers, physical ports, priority, and path cost. You can also enable or disable the bridge state parameter.

Step 1 Type this command from the Main menu:

```
Configure STP
```

The system displays the following message:

```
Enter logical segment number in hex
```

Step 2 Enter the segment number in hexadecimal notation and press **Return**.

The Configuring Spanning-Tree Protocol Port Parameter menu appears:

```
                                    Cisco Systems Catalyst 1800 Token Ring Switch

                                                Select From

                                           Path Cost
                                           Priority
                                           State
                                           Display



  Catalyst 1800> c st
```

Step 3 To change a parameter on this menu, use this syntax:

c st ***ring_number parameter_name***

The Bridge Ports Configuration screen appears, and the system prompts you to type the appropriate value:

```
                                Cisco Systems Catalyst 1800 Token Ring Switch

                                        Bridge Ports Configuration


    Segment       Physical Ports       Priority       Path       State
    (Ring Number) In Segment                          Cost

     20           1 - 4                0x8000         63         Enabled
     21           5 - 8                0x8001         63         Enabled



  Catalyst 1800>c st
```

The following table describes the parameters on the Bridge Ports Configuration screen.

Table 3-10 Bridge Ports Configuration Parameters

Parameter	Description
Segment (Ring) Number	The segment number associated with this bridge port
Physical Ports in Segment	A list of physical ports associated with this segment, listed as a range

Parameter	Description
Priority	The value of the priority field that is contained in the first octet of the two octet long port ID. This octet is the first octet shown on the screen. The second octet is bridge port number and is not configurable. Valid values are between 0 and 0xFF (hex).
Path Cost	The contribution of this port to the path cost of paths towards the spanning-tree root that includes this port. The spanning-tree specification recommends that this value be inversely proportional to the speed of the attached LAN. Valid values are between 1 and 65535.
State	The enabled/disabled state of this bridge port. The default is Enable.

Priority

Step 1 To change the Priority parameter for the STP bridge port, type this command:

```
c st 20 pr
```

The system displays the following message:

```
Enter value between 0 and 0xFF (hex)
```

Step 2 Type the priority value and press **Return**. The new priority value appears on the menu.

Path Cost

Step 1 To change the Path Cost parameter for the STP bridge port, type this command:

```
c st 20 pa
```

The system displays the following message:

```
Enter value between 1 and 65535
```

Step 2 Type the path cost value and press **Return**. The new path cost value appears on the menu.

State

Step 1 To change the State parameter of the STP bridge port, type this command:

```
c st 2t0 s
```

The system displays the following message:

```
Enter Enable or Disable
```

Step 2 Type **Enable** or **Disable** and press **Return**. The new state appears on the menu.

Configuring System Information

The System menu stores general information about the Catalyst 1800 switch, such as whom to contact for service.

Step 1 Type this command from the Main menu:

Configure System

The Configure System Information menu appears:

```
                                Cisco Systems Catalyst 1800 Token Ring Switch

                                            Select From

                                Contact
                                                Date
                                              Descriptor
                                                Location
                                                 Name
                                                 Time
                                                 Display



Catalyst 1800> Configure System
```

Step 2 To change a parameter on this menu, use this syntax:

c sy ***parameter_name***

The System Information menu appears, and the system prompts you to type the appropriate value:

```
                                    Cisco Systems Catalyst 1800 Token Ring Switch

                                                System Information

      Description     :            Cisco Catalyst 1800
      Admin. Contact  :            Technical Support
      Name            :            Cisco1800.com
      Location        :
   Date      :      Thursday, September 21, 1995 DST
 Time       11:50:21
    UpTime       :          10 days 6:44:45
    Temperature    :         51˚C
    Power Config   :          A

      HW Rev          :           K00 S/N :25510121   Part #: PCA-0044-00
      SW Rev          :           TRX.2.1.6
      HW Image Rev    :           TRX A34
      Boot ROM Rev    :           TRX MP01.x1-TRX LB0.2x1

Catalyst 1800> configure system display
```

The following table describes the parameters on the System Information menu.

Table 3-11 System Information Parameters

Parameter	Description
Configurable parameters:	
Description	You can define any system description for the Catalyst 1800 switch up to 64 characters. If you want blank spaces as part of the text, place the text between double quotes when typing on the console, and end with a **Return**. (ex. `"Catalyst 1800 switch"`)
Admin. Contact	You can define any name, up to 64 characters, for the system contact person(s) to be contacted for changes to the switch. If you want blank spaces as part of the text, place the text between double quotes when typing on the console, and end with a **Return**.
Name	You can define any system name for the Catalyst 1800 switch up to 64 characters. If you want blank spaces as part of the text, place the text between double quotes when typing on the console, and end with a **Return**.
Location	You can define any system location for the Catalyst 1800 switch up to 64 characters. If you want blank spaces as part of the text, place the text between double quotes when typing on the console, and end with a **Return**.
Date	The current date
Time	The system time, entered in 24-hour format
Nonconfigurable parameters:	
UpTime	The time in number of days, hours, minutes and seconds that the Catalyst 1800 switch has been working since last the time the system power was turned on
Temperature	Displays the temperature (in degrees Celsius) on the Cisco Systems Catalyst Token Ring PCA This is not the internal ambient chassis temperature or the external ambient room temperature. If there are 2 boards in the chassis, the temperature reflects the board currently in use.
Power Config	Displays which power supply is in use (A, B, or A & B)
HW Rev	Displays the current Hardware Revision of the Catalyst 1800 PCA. This value is read from the ID PROM on the PCA.
SW Rev	Displays the Software Revision of the operational code of the Catalyst 1800 PCA. This value is revised when new software is downloaded.
HW Image Rev	Displays the revision of the FPGA code residing on the Catalyst 1800 PCA. This value is revised when a new FPGA image is downloaded.
Boot ROM Rev	Displays the revision of the boot ROM code residing on the Catalyst 1800 PCA. This value is revised when a new monitor or loader image is downloaded.

Description

Step 1 To specify the value of the Description parameter, type this command:

```
c sy de
```

The system displays the following message:

```
Enter Description of system, i.e. Product Name
```

Step 2 Type the description value and press **Return**. The new description appears on the menu.

Admin. Contact

Step 1 To specify the value of the Admin. Contact parameter (that is, the name of the administrative contact), type this command:

```
c sy ad
```

The system displays the following message:

```
Enter person(s) to contact for changes
```

Step 2 Type the administrative contact name and press **Return**.

The new name appears on the menu. For more information, refer to Table 3-11.

Name

Step 1 To specify the value of the Name parameter (that is, the system name of the Catalyst 1800 switch), type this command:

```
c sy na
```

The system displays the following message:

```
Enter new system name
```

Step 2 Type the system name and press **Return**. The new name appears on the menu. For more information, refer to Table 3-11.

Location

Step 1 To specify the value of the Location parameter (that is, the system location for the Catalyst 1800 switch), type this command:

```
c sy lo
```

The system displays the following message:

```
Enter system location
```

Step 2 Type the system location and press **Return**. The new location appears on the menu.

Date

Step 1 To specify the value of the Date parameter (that is, the system date for the Catalyst 1800 switch), type this command:

```
c sy da
```

The system displays the following message:

```
Enter day of week (range: 'Sunday' to 'Saturday')
```

Step 2 Specify the day and press **Return**. The system displays the following message:

```
Enter day of month (range: 1 to 31)
```

Step 3 Specify the date and press **Return**. The system displays the following message:

```
Enter month (range: 1 to 12)
```

Step 4 Specify the month and press **Return**. The system displays the following message:

```
Enter year (range: 95 to 99)
```

Step 5 Specify the year and press **Return**. The system displays the following message:

```
Enter daylight savings option (Enabled or Disabled)
```

Step 6 Specify **EN** or **DI** and press **Return**. The new date appears on the menu.

Time

Step 1 To specify the value of the Time parameter (that is, the system time for the Catalyst 1800 switch), type this command:

```
c sy ti
```

The system displays the following message:

```
Enter hour (range: 0[12 am] to 23[11 pm]).
```

Step 2 Specify the hour and press **Return**. The system displays the following message:

```
Enter minutes (range: 0 to 59)
```

Step 3 Specify the minutes and press **Return**. The new time appears on the menu.

UpTime

To reset the UpTime parameter (that is, the amount of time the Catalyst 1800 switch has been working since the system power has been on), perform either of the following:

- Turn the system off, then on.
- Reboot the system, using the **sys reb** command. For more information, see the section "Reboot" in the chapter "The System Menu."

Using a TFTP Server

Use the TFTP option on the Configuration menu

- To specify the IP address of the TFTP server.
- To download an operational software image file from a TFTP server to the Catalyst 1800 switch.
- To download or upload the configuration database file that is stored in flash memory.

The Trivial FTP (TFTP) is a simplified form of FTP (file transfer protocol) that does not require a login interaction.

Note If you want to display the currently selected values on the TFTP Configuration screen, type **c t** *subcommand* **display.**

Identifying the TFTP Server

You must specify the IP address of a file server that is appropriately configured to support TFTP access.

Step 1 Type this command from the Main menu:

```
c t
```

The TFTP Configuration menu appears:

```
        Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink
                         Select From
                        Server IP
                        Software Image
                        Upload Config
                        Download Config
Catalyst 1800> c t
```

Step 2 The first part of the command, c t, is echoed at the prompt. Type se and the system displays the following message:

```
Enter TFTP Server's IP Address.
```

Step 3 Enter the IP address of the TFTP server. The Configuration menu reappears.

Using TFTP to Download a System Software Image

To download an operational software image file from a TFTP server to the Catalyst 1800 switch, use the **Software Images** selection on the TFTP Configuration menu.

There are two different software image files, one for the FDDI uplink module and one for the Token Ring module. The following procedure assumes you have two boards installed. If you have only one board installed, the software prompts you for only one filename.

In the previous release, it was necessary to upload the image through the serial port on the switch. This procedure is still available for offline downloading. For more information, refer to the section "Upgrading to New Software Releases through the Serial Port" in the appendix "Installation and Maintenance."

The steps to download an operational software image file from a TFTP server to the Catalyst 1800 switch are:

Step 1 Type **c t** at the Main menu and the TFTP Configuration menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
              Select From
                Download
            Software Images
               Server IP
                Upload
          Catalyst 1800> c t
```

Step 2 The first part of the command, **c t**, is echoed at the prompt. Type **so** for "software images" and press **Return**. The TFTP Software Images menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
              Select From
                Filename
                  Start
                 Display
Catalyst 1800> c t so
```

Step 3 The first part of the command, **c t so**, is echoed at the prompt. Type **d** for "Display". The TFTP configuration screen appears, displaying the progress and results of downloading the software image or images.

```
          Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink


                        TFTP Configuration


            TFTP Server IP    :  0.0.0.0

         B1:SW Image Filename :  trxopsw.img

         B2:SW Image Filename :  trxopsw.img

         B1:Download Results  :  None

         B2:Download Results  :  None


Catalyst 1800> c t so d
```

The following table describes the parameters on the TFTP Configuration screen.

Table 3-12 TFTP Configuration Screen Parameters

Parameter	Description
TFTP Server	The IP address of the TFTP server containing the image file(s), expressed in standard IP address format (*xxx.xxx.xxx.xxx*)
(Lower) B1 SW Image Filename	The software image filename residing on the TFTP server. Ordinarily, this image file is used for the FDU board in the Catalyst 1800 switch. In 16 port Token Ring systems, both B1 and B2 use the same TR filename.
(Upper) B2 SW Image Filename	The software image filename residing on the TFTP server. Ordinarily, this image file is used for the Token Ring board in the Catalyst 1800 switch.
Download Results	The results of the latest software image download session for a module. This field can be one of the following: • None. No download is taking place. • In Progress. The download is currently taking place. Typically, a download takes about 15 seconds. • Successful. The most recent download was successful. • Fail. The download failed. Verify your Server IP address, TFTP base directory and its contents. Also, verify the error message that may be reported by your TFTP server. If these remedies provide no help, contact technical support.

Step 4 Type **c t so *filename*** and The system displays the following message:

```
Enter Board number 1 (lower) or 2 (upper)
```

Note This system prompt always appears, whether you have one or two boards on your system.

Step 5 Enter the software image filename for the lower board in the Catalyst 1800 chassis and press **Return**. Typically, this is the FDDI module.

If the file is not on the root directory of the TFTP server, enter the whole pathname, with a maximum of 16 characters. If you type more than 16 characters, the system does not perform the procedure.

The system displays the following message:

```
Enter Filename to Download
```

Step 6 Enter the software image filename for the upper board in the Catalyst 1800 chassis and press **Return**. Typically, this is the Token Ring module.

If the file is not on the root directory of the TFTP server, enter the whole pathname, with a maximum of 16 characters.

Step 7 Type **c t so start *board#* yes**, press **Return** and the download begins.

After about 15 seconds, the Download Results field should display the word Successful.

Step 8 Reboot the Catalyst 1800 switch, using the **sys reb** command.

The new image is now loaded into the Catalyst 1800 flash memory.

Note Both the serial downloadable image and the TFTP downloadable image are available. The serial image uses the file extension .COF and the TFTP downloadable image file uses the extension .IMG. For more information, call Cisco Systems Technical Assistance Center (TAC).

Downloading and Uploading the Configuration Database

From the Configuration menu you can

- Download a configuration database file from the TFTP server to the switch.
- Upload the switch's configuration database to the server.

Downloading a Configuration Database File

To download a configuration database file from the TFTP server:

Step 1 Type this command from the Main menu:

```
c t
```

The TFTP Configuration menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
                  Select From
                    Download
                Software Images
                   Server IP
                     Upload

Catalyst 1800> c t
```

Step 2 The first part of the command, **c t**, is echoed at the prompt. Type **d** to download a configuration file. The Download menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
                  Select From
                    Filename
                      Start
                     Display

Catalyst 1800>
```

Step 3 The first part of the command, **c t d**, is echoed at the prompt. Type **f** to specify a configuration file name. The following prompt appears:

```
Enter Filename to Download (e.g. con2112.cfg)
```

Step 4 Enter the configuration file name (16 characters maximum) and press **Return**.The file is stored in the configured default TFTP directory of the server.

Step 5 Type **c t d** (as in Step 1 through Step 3), then type **s** to start downloading. A prompt appears asking you to specify whether you are replacing or modifying the current running configuration.

- If you want to replace the current configuration in its entirety, type **ov** for "override." This resets the current database configuration to the factory defaults and applies the new configuration when it is downloaded.
- If you want the download to affect only those configuration parameters that have changed, without resetting the whole database configuration, type **add**.

Step 6 A prompt appears requiring you to acknowledge **Y** to continue or press **Esc** to stop. If you type anything else, the following summary appears:

```
               Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink


                       TFTP Download Configuration


                 TFTP Server IP           :  204.242.251.250

                 Download Config Filename :  con2112.cfg

                 Download Results         :  None


 Catalyst 1800>
```

Step 7 Type **Y** and press **Return**. While the download is in progress (typically, about 15 seconds) the following summary appears:

```
                Cisco Systems Catalyst 1800 Token Ring/FDDI Uplink


                        TFTP Download Configuration


                  TFTP Server IP           :  204.242.251.250

                  Download Config Filename :  con2112.cfg

                  Download Results         :  In Progress

 Catalyst 1800>
```

When the download has completed successfully, the Download Results field changes to say `Successful`. If it fails, it changes to say `Fail`, and you should

- Verify that the TFTP base directory is correct.
- Verify that the specified file is in the TFTP base directory.
- Look on the TFTP server for error messages.

Step 8 If your configuration changes include serial port changes or changes to the maximum frame size, reboot the Catalyst 1800 switch with the **sys reb** command. If they involve physical port parameters such as ring speed and active monitor participation, the affected ports must be disabled and re-enabled. Other changes take effect immediately.

Note When you download a configuration file that contains logical port, IP subnet, or spanning tree information, the switch reconfigures dynamically, terminating any open telnet sessions.

Uploading a Configuration Database File

To upload a configuration database file to the TFTP server:

Step 1 Type this command from the Main menu:

```
c t
```

The TFTP Configuration menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
                  Select From
                    Download
                Software Images
                   Server IP
                     Upload

Catalyst 1800> c t
```

Step 2 The first part of the command, **c t**, is echoed at the prompt. Type **u** to upload a configuration file. The Upload menu appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
                  Select From
                    Filename
                      Start
                     Display

Catalyst> c t u
```

Step 3 The first part of the command, **c t u**, is echoed at the prompt. Type **s** to start uploading the current configuration database to the TFTP server.

Step 4 The system displays the following prompt:

```
Enter Changes or All
```

It also echoes the first part of the command, **c t u s**, at the prompt. The choice is whether to upload the entire database (upload **all**) or to upload just those parameter settings that differ from the default (upload **change**). If you upload just the changed parameters, your stored configuration database file is much smaller. Type **ch** to upload just the changes.

Step 5 A prompt appears requiring you to acknowledge **Y** to continue or **N** to stop. If you type anything else, the following summary appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
            Upload Configuration

                  Select From
       TFTP Server IP : 204.242.251.250
         Config Filename : con2112.cfg
             Upload Results : None

Catalyst 1800>
```

Step 6 Type **Y** and press **Return**. The file is stored in the configured default TFTP directory on the server. While the download is in progress (typically, about 15 seconds) the following summary appears:

```
Cisco Systems Catalyst 1800 Token Ring Switch
            Upload Configuration

                  Select From
       TFTP Server IP : 204.242.251.250
         Config Filename : con2112.cfg
          Upload Results : In Progress

Catalyst 1800>
```

When the upload has completed successfully, the Upload Results field changes to say Successful. If it fails, it changes to say Fail, and you should

- Verify that the TFTP base directory is correct.
- Verify that the specified file is in the TFTP base directory.
- Look on the TFTP server for error messages.
- For uploads some TFTP servers do not allow the file to be overridden. If this occurs, change the name of the file when you upload, or remove the old file from the server.