

# Catalyst 2800 Module MIB Objects

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The Catalyst 2800 field-pluggable modules provide a choice of 100Base-T connections that support Category 5 UTP or fiber optic cabling. This chapter describes the MIB objects used to configure and manage these modules.

## The esModuleBasic Group

This group is used to manage the high-speed expansion modules in the Catalyst 2800 expansion slots. Any attempt to manage a Catalyst 2800 without modules using this group will result in an error. This group provides configuration, status, and control objects for the overall unit.

### esModuleCapacity (integer)

This read-only MIB object displays the number of expansion slots that are available in the unit.

Valid Values: 2

## The Catalyst 2800 Module Basic Table

### esModuleIndex (integer)

This read-only MIB object identifies the module for which this entry contains information. This value is never greater than esModuleCapacity.

## The esModuleBasic Group

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### esModuleStatus (integer)

This read-only MIB object displays the current operational status of the port. This value is exactly the same as the swPortStatus for the associated switched port.

### esModuleAdminStatus (integer)

This read-write MIB object is used to change the port status to either:

- Enabled: normal status (transmit and receive)
- Disabled-mgmt: port is no longer in use

Valid Values: enabled (1)

disabled (2)

This value is the same as swPortAdminStatus for the corresponding switched port.

### esModuleDescr (display string)

This read-only MIB object displays a text string which includes the full name and version identification of the module's hardware type.

esModuleID (display string)

This read-only MIB object displays a text representation of the specified identifier for the installed module, or *notPresent*.

Valid Values:    110 SingleUTP  
                  101 SingleFiber  
                  140 FourUTP  
                  104 FourFiber  
                  108 EightUTP  
                  401 FDDI (DAS)  
                  401 FDDI (SAS)  
                  410 CDDI (SAS)

esModuleVersion (integer)

This read-only MIB object displays the specified unique identification for the module version, ranging from 1 to 254.

esModuleObjectID (object identifier)

This read-only MIB object displays the vendor's authoritative identification of the module.

esModulePortCapacity (integer)

This read-only MIB object displays the number of external port attachments provided by the module (the object *sysInfoTotalNumberOfPorts* is the sum of this object, for each module, plus 25 for the built-in 10-Mbps ports).

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### esModuleReset (integer)

Setting this read-write MIB object to reset causes the module to be forced into a reset state. The reset state is a module specific condition in which the module's packet operations will cease while the module resets to a known state. Setting this object to noReset has no effect. Catalyst 2800 will always return the value noReset when this object is read.

Valid Values: reset (1)  
noReset (2)

### esModuleLastStatusChange (time ticks)

This read-only MIB object contains the value of sysUpTime at the time that the value of the esModuleStatus object for this module last changed. A value of zero indicates that the group's operational status has not changed since the agent last restarted.

### esModuleCollisionPeriods (counter)

This read-only MIB object contains the number of times the firmware has toggled the module's collision LED from off to on.

### esModuleLinkDisplayMap (octet string)

This read-only MIB object displays a bit array where the presence of a particular bit indicates a lit link LED for a module port.

Each octet within the value of this object specifies a set of eight link LEDs, with the first octet specifying link LEDs for ports 1 through 8, the second octet specifying link LEDs 9 through 16, and so on. Within each octet, the most significant bit represents the lowest numbered LED, and the least significant bit represents the highest numbered LED. Thus, each LED is represented by a single bit within the value of this object. If the bit has a value of 1, then the LED is currently lit; the LED is not lit if its bit has a value of 0.

#### esModuleDisabledDisplayMap (octet string)

This read-only MIB object displays a bit array where the presence of a particular bit indicates a lit disabled LED for a module port.

Each octet within the value of this object specifies a set of eight link LEDs, with the first octet specifying link LEDs for ports 1 through 8, the second octet specifying link LEDs 9 through 16, and so on. Within each octet, the most significant bit represents the lowest numbered LED, and the least significant bit represents the highest numbered LED. Thus, each LED is represented by a single bit within the value of this object. If the bit has a value of 1, then the LED is currently lit; the LED is not lit if its bit has a value of 0.

### The Catalyst 2800 Module Port Table

#### esModulePortTable

This MIB object displays a table of descriptive and status information about the individual ports in a module.

#### esModuleSlotIndex (integer)

This read-only MIB object identifies the module containing the port for which this entry contains information. This value is never greater than esModuleCapacity.

#### esModulePortIndex (integer)

This read-only MIB object identifies the port for which this entry contains information. This value is never greater than esModulePortCapacity.

#### esModulePortDescr (display string)

This read-write MIB object displays a descriptive string of up to 60 characters used by the network administrator to name the port.

## The esModuleBasic Group

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### esModulePortAdminStatus (integer)

This read-write MIB object is used to change the port status to either:

- Enabled: normal status (transmit and receive)
- Disabled: the port neither transmits nor receives.

Once disabled, a port must be explicitly enabled to restore operation.

Valid Values: enabled (1)  
disabled (2)

### esModulePortAutoPartitionState (integer)

This read-only MIB object indicates whether the port is currently partitioned by the repeater's auto-partition protection.

Valid Values: notAutoPartitioned (1)  
autoPartitioned (2)  
notAutoPartitioned (1)

### esModulePortOperStatus (integer)

This read-only MIB object indicates the port's operational status:

- enabled: port is enabled and working
- notOperational: the port neither transmits nor receives
- suspended-not-present: the module group is not installed.

Valid Values: enabled (1)  
disabled (2)  
suspended-not-present (3)

esModulePortLinkbeatStatus (integer)

This read-only MIB object displays the port's current linkbeat status.

Valid Values: linkbeat (1)

noLinkbeat (2)

esModulePortConnectorType (integer)

This read-only MIB object displays the connector type for the port. The connector types are:

- Other: none of the following (unknown)
- RJ45: common unshielded twisted pair connector
- BN: thin-coax (BNC)
- AUI: thick-coax (AUI)
- Fiber-SC: fiber fast ethernet connector
- Fiber-ST: fiber fast ethernet connector
- Empty: the port is not installed
- FDDI-mic: FDDI fiber optic connector.

Valid Values: Other (1)

RJ45 (2)

BNC (3)

AUI (4)

Fiber-SC (5)

Fiber-ST (6)

Empty (7)

FDDI-MIC (8)

## The esModuleSpecific Group

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Default Value: RJ45 if 100-Mbps port

### esModulePortReceivePeriods (counter)

This read-only MIB object contains the count of times the front panel port receive activity LED has been toggled from off to on.

## The esModuleSpecific Group

### fmCfgTable

This MIB object displays a table of configuration and status information about FDDI modules.

### fmCfgEntry

This MIB object displays an entry in the table, containing information about a FDDI module.

### fmCfgIndex (integer)

This read-only MIB object identifies the module for which this entry contains information. This value is never greater than esModuleCapacity.

### fmCfgFirmwareVersion (display string)

This read-only MIB object returns the version number of the firmware stored in FLASH memory on the FDDI module. The string has the format *v1.00*.

### fmCfgBOOTCodeVersion (display string)

This read-only MIB object returns the version number of the BOOT code stored in permanent FLASH memory on the FDDI module. The string has the format *v1.00*.

fmCfgPOSTResult (integer)

This read-only MIB object indicates the result of the FDDI module's Power-On Self-Test (POST). If the module passed POST, this item will return noFailure.

- Valid Values:
- noFailure (1)
  - prom (2)
  - cpu (3)
  - flash (4)
  - dram (5)
  - arbiter (6)
  - shared-ram (7)
  - ethernet (8)
  - fddi-mac (9)
  - fddi-phy-a (10)
  - fddi-phy-b (11)
  - packet-ram (12)

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### fmCfgPOSTTest (integer)

This read-only MIB object indicates the specific test that caused the POST to fail. If the module passed POST, this item will return noFailure.

Valid Values: noFailure	(1)
invalid-marker	(2)
checksum	(3)
ram-quick-scan	(4)
ram-byte-test	(5)
checkerboard	(6)
arbiter-id	(7)
read-only-register	(8)
read-write-register	(9)
ethernet-interrupt	(10)
loopback	(11)
invalid-version	(12)

**fmCfgPOSTLoopbackResult (integer)**

If the FDDI module fails the loopback test during POST, this read-only MIB object will indicate which portion of the test caused the failure. If the value of fmCfgPOSTTest is anything other than loopback (11), this object will have the value noFailure (1).

Valid Values:	noFailure	(1)
	cannot-transmit	(2)
	receive-timeout	(3)
	data-mismatch	(4)
	length-mismatch	(5)
	receiver-error	(6)
	buffer-error	(7)

**fmCfgFlashStatus (display string)**

This read-only MIB object displays a string of up to 80 characters that indicate the status of the firmware stored in the FDDI module's FLASH memory. The string includes the firmware revision, the date and time of the last upgrade, the source of the upgrade, and the validity of the firmware. The string is in net ASCII and conforms to one of the following formats:

- For factory installed firmware: *v1.00 factory installed: valid*
- For out-of-band upgrades: *v1.00 written 07-22-1994 08:19:15 from serial terminal: valid*
- For in-band upgrades: *v1.00 written 07-22-1994 12:19:15 from 192.009.200.200: invalid*

## The esModuleSpecific Group

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### fmCfgResetToFactoryDefaults (integer)

Setting this read-write MIB object to reset will cause the settings on the FDDI module to revert to factory defaults. The module will then be reset by the system. The module's packet operations will cease while the module resets to a known state. A read of this object will always return the value noReset. Setting this object to noReset has no effect.

Valid Values: noReset (1)  
reset (2)

### fmCfgResetModule (integer)

Setting this read-write MIB object to reset causes the module to be forced into a reset state. During the reset state, the module's packet operations will cease while the module resets to a known state.

Valid Values: noReset (1)  
reset (2)

### fmCfgNovellFDDISNAPTranslation (integer)

This read-write MIB object specifies the Ethernet frame type that the FDDI module will translate Novell SNAP FDDI frames into.

The valid values are:

- Automatic (1): The FDDI module will automatically learn which frame type to use.
- Ethernet-8023 (2): The FDDI module will convert Novell SNAP FDDI frames to Ethernet 802.3.
- Ethernet-SNAP (3): The FDDI module will convert Novell SNAP FDDI frames to Ethernet SNAP.
- Ethernet-II (4): The FDDI module will convert Novell SNAP FDDI frames to Ethernet II.

- Drop (5): The FDDI module will not forward Novell SNAP FDDI frames to Ethernet.

Default Value: automatic (1)

#### fmCfgUnmatchedSNAPDestination (integer)

This read-write MIB object specifies what the FDDI module is to do with Novell SNAP FDDI frames whose destination frame type cannot be determined. The value of this object is only valid when fmCfgNovellFDDISNAPTranslation is set to automatic (1).

Valid Values:

- All (1): The unmatched Novell SNAP FDDI frames will be converted into all three possible frame types.
- Ethernet-802.3 (2): The unmatched Novell SNAP FDDI frames will be converted into Ethernet 802.3
- Ethernet-SNAP (3): The unmatched Novell SNAP FDDI frames will be converted into Ethernet SNAP
- Ethernet-II (4): The unmatched Novell SNAP FDDI frames will be converted into Ethernet II
- Drop: The FDDI module will not forward unmatched Novell SNAP FDDI frames to Ethernet.

Default Value: all (1)

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## The esModuleSpecific Group

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### fmCfgAuthorizationChecking (integer)

This read-write MIB object controls enabling and disabling of authorization string checking by the SMT entity. When enabled, the FDDI module will use the current authorization string to verify SMT requests from remote stations.

Valid Values: enabled (1)

disabled (2)

Default Value: disabled (2)

### fmCfgAuthorizationString (display string)

This read-write MIB object specifies the string to be used in the authentication of SMT requests. The length is from 0 to 32 bytes and must be a multiple of four bytes. This item is only used when authorization string checking is enabled.

## The Catalyst 2800 FDDI Translation to Ethernet Table

### fmXlateToEthTable

This MIB object displays a table of statistics that count the number of frames successfully forwarded from the FDDI module to the switch forwarding engine.

### fmXlateToEthIndex (integer)

This read-only MIB object identifies the module for which this entry contains information. This value is never greater than esModuleCapacity.

### fmXlateToEthNovellSnapToRaw8023Frames (counter)

This read-only MIB object is a count of the number of Novell SNAP FDDI frames that have been converted to Raw 802.3 Ethernet frames.

**fmXlateToEthNovellSnapToEthIIFrames (counter)**

This read-only MIB object is a count of the number of Novell SNAP FDDI frames that have been converted to Ethernet II frames.

**fmXlateToEthNovellSnapToSnapFrames (counter)**

This read-only MIB object is a count of the number of Novell SNAP FDDI frames that have been converted to Novell SNAP Ethernet frames.

**fmXlateToEthAppleTalkSnapToSnapFrames (counter)**

This read-only MIB object is a count of the number of AppleTalk SNAP FDDI frames that have been converted to Novell SNAP Ethernet frames.

**fmXlateToEthIpSnapForFragmentationFrames (counter)**

This read-only MIB object is a count of the number of IP FDDI frames that were fragmented.

**fmXlateToEthIpSnapFragmentedFrames (counter)**

This read-only MIB object is a count of the number of Ethernet frames that were forwarded to the switch forwarding engine as a result of IP fragmentation.

**fmXlateToEthBridgeTunnelToEthIIFrames (counter)**

This read-only MIB object is a count of the number of Bridge Tunnel FDDI frames that have been converted to Ethernet II frames.

**fmXlateToEthOtherSnapToEthIIFrames (counter)**

This read-only MIB object is a count of the number of SNAP FDDI frames that do not fall into one of the previous SNAP FDDI categories that have been converted to Ethernet II frames.

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### fmXlateToEthOtherSnapToSnapFrames (counter)

This read-only MIB object is a count of the number of SNAP FDDI frames that do not fall into one of the previous SNAP FDDI categories that have been converted to Ethernet SNAP frames.

### fmXlateToEth8022To8022Frames (counter)

This read-only MIB object is a count of the number of 802.2 FDDI frames that have been converted to Ethernet 802.2 frames.

## The Catalyst 2800 FDDI Translation to FDDI Table

### fmXlateToFDDITable

This MIB object displays a table of statistics that count the number of frames successfully forwarded from the switch forwarding engine to the FDDI ring.

### fmXlateToFDDIIndex (integer)

This read-only MIB object identifies the module for which this entry contains information. This value is never greater than esModuleCapacity.

### fmXlateToFDDINovellRaw8023ToSnapFrames (counter)

This read-only MIB object is a count of the number of Novell Raw 802.3 Ethernet frames that have been converted to SNAP FDDI frames.

### fmXlateToFDDINovellEthIIToSnapFrames (counter)

This read-only MIB object is a count of the number of Ethernet II frames that have been converted to SNAP FDDI frames.

**fmXlateToFDDINovellSnapToSnapFrames (counter)**

This read-only MIB object is a count of the number of Novell SNAP Ethernet frames that have been converted to SNAP FDDI frames.

**fmXlateToFDDIEthIIToBridgeTunnelFrames (counter)**

This read-only MIB object is a count of the number of Ethernet II frames that have been converted to Bridge Tunnel FDDI frames.

**fmXlateToFDDIEthIIToSnapFrames (counter)**

This read-only MIB object is a count of the number of Ethernet II frames that have been converted to SNAP FDDI frames.

**fmXlateToFDDIOtherSnapToSnapFrames (counter)**

This read-only MIB object is a count of the number of SNAP frames that do not fall into one of the above listed SNAP type categories that have been translated to Ethernet II.

**fmXlateToFDDI8022To8022Frames (counter)**

This read-only MIB object is a count of the number of FDDI 802.2 frames that have been converted to Ethernet 802.2 frames.

## The Catalyst 2800 FDDI Filter Table

**fmFilterTable**

This MIB object displays a table of statistics that counts the number of frames that were not forwarded by the FDDI module.

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### fmFilterIndex (integer)

This read-only MIB object identifies the module for which this entry contains information. This value is never greater than esModuleCapacity.

### fmFilterFcsInvalidFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame contained an invalid FCS.

### fmFilterDataLengthFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame contained an invalid data length.

### fmFilterErrorIndFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame's error indication flag was set.

### fmFilterFddiFifoOverrunFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the FDDI FIFO experienced an overflow.

### fmFilterFddiInternalErrorFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the module experienced an internal error.

### fmFilterNoBufferSpaceFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the module did not have sufficient buffer space.

**fmFilterNoEndDelimitFrames (counter)**

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame did not have a valid end delimiter.

**fmFilterNoLlcHeaderFrames (counter)**

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame did not have a valid LLC header.

**fmFilterSourceRouteFrames (counter)**

The FDDI module does not forward source routing frames. This read-only MIB object is a count of the number of such frames that were filtered.

**fmFilterNoSnapHeaderFrames (counter)**

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame did not have a valid SNAP header.

**fmFilterTooLargeFrames (counter)**

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame was too large.

**fmFilterNovellSnapFilteredFrames (counter)**

This read-only MIB object is a count of the number of Novell SNAP FDDI frames that were filtered by the module.

**fmFilterCantFragmentFrames (counter)**

This read-only MIB object is a count of the number of FDDI IP frames that were not forwarded because the module was unable to fragment the frame.

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### fmFilterBadIpHeaderFrames (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the frame contained an invalid IP header.

### fmFilterRingDownDiscards (counter)

This read-only MIB object is a count of the number of FDDI frames that were not forwarded because the FDDI ring was not operational.

### fmFilterNovellOtherFilteredFrames (counter)

This read-only MIB object is the sum of the Novell Ethernet frames that were not forwarded because they contained an invalid size field, and the number of Novell Ethernet frames that were not forwarded because the FDDI module was configured to filter Novell SNAP FDDI frames.