



Configuring EEE

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Restrictions for EEE

EEE has the following restrictions:

- Changing the EEE configuration resets the interface because the device has to restart Layer 1 autonegotiation.
- You might want to enable the Link Layer Discovery Protocol (LLDP) for devices that require longer wakeup times before they are able to accept data on their receive paths. Doing so enables the device to negotiate for extended system wakeup times from the transmitting link partner.

Information About EEE

EEE Overview

Energy Efficient Ethernet (EEE) is an IEEE 802.3az standard that is designed to reduce power consumption in Ethernet networks during idle periods.

Default EEE Configuration

EEE is disabled by default.

How to Configure EEE

You can enable or disable EEE on an interface that is connected to an EEE-capable link partner.

Enabling or Disabling EEE

Procedure

	Command or Action	Purpose
Step 1	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 2	interface <i>interface-id</i> Example: Device(config)# interface gigabitethernet1/0/1	Specifies the interface to be configured, and enter interface configuration mode.
Step 3	power efficient-ethernet auto Example: Device(config-if)# power efficient-ethernet auto	Enables EEE on the specified interface. When EEE is enabled, the device advertises and autonegotiates EEE to its link partner.
Step 4	no power efficient-ethernet auto Example: Device(config-if)# no power efficient-ethernet auto	Disables EEE on the specified interface.
Step 5	end Example: Device(config-if)# end	Returns to privileged EXEC mode.
Step 6	copy running-config startup-config Example: Device# copy running-config startup-config	(Optional) Saves your entries in the configuration file.

Monitoring EEE

Table 1: Commands for Displaying EEE Settings

Command	Purpose
show eee capabilities interface <i>interface-id</i>	Displays EEE capabilities for the specified interface.
show eee status interface <i>interface-id</i>	Displays EEE status information for the specified interface.
show eee counters interface <i>interface-id</i>	Displays EEE counters for the specified interface.

Following are examples of the **show eee** commands

```
Switch#show eee capabilities interface gigabitEthernet 2/0/1
Gi2/0/1
EEE(efficient-ethernet): yes (100-Tx and 1000T auto)
Link Partner : yes (100-Tx and 1000T auto)

ASIC/Interface : EEE Capable/EEE Enabled

Switch#show eee status interface gigabitEthernet 2/0/1
Gi2/0/1 is up
EEE(efficient-ethernet): Operational
Rx LPI Status : Low Power
Tx LPI Status : Low Power
Wake Error Count : 0

ASIC EEE STATUS
Rx LPI Status : Receiving LPI
Tx LPI Status : Transmitting LPI
Link Fault Status : Link Up
Sync Status : Code group synchronization with data stream intact

Switch#show eee counters interface gigabitEthernet 2/0/1

LP Active Tx Time (10us) : 66649648
LP Transitioning Tx : 462
LP Active Rx Time (10us) : 64911682
LP Transitioning Rx : 153
```

Configuration Examples for Configuring EEE

This example shows how to enable EEE for an interface:

```
Device# configure terminal
Device(config)# interface gigabitEthernet1/0/1
Device(config-if)# power efficient-ethernet auto
```

This example shows how to disable EEE for an interface:

```
Device# configure terminal
Device(config)# interface gigabitEthernet1/0/1
```

```
Device(config-if) # no power efficient-ethernet auto
```

Additional References for EEE

Related Documents

Related Topic	Document Title
For complete syntax and usage information for the commands used in this chapter.	See the <i>Interface and Hardware Commands</i> section of the <i>Command Reference (Catalyst 9300 Series Switches)</i>

MIBs

MIB	MIBs Link
All the supported MIBs for this release.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	http://www.cisco.com/support

Feature History for Configuring EEE

This table provides release and related information for features explained in this module.

These features are available on all releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature	Feature Information
Cisco IOS XE Everest 16.5.1a	Energy Efficient Ethernet	Energy Efficient Ethernet (EEE) is an IEEE 802.3az standard that is designed to reduce power consumption in Ethernet networks during idle periods.

Use Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>.

