



## Configuring System MTU

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## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

## Information about the MTU

The default maximum transmission unit (MTU) size for frames received and sent on all switch interfaces is 1500 bytes.

## System MTU Values

The following MTU values can be configured:

- System MTU--This value applies to switched packets on the Gigabit Ethernet and 10-Gigabit Ethernet ports of the switch. Use the **system mtu bytes** global configuration command to specify the system jumbo MTU value.

- Protocol-specific MTU--This value applies only to routed packets on all routed ports of the switch or switch stack. Use the **ip mtu bytes** or **ipv6 mtu bytes** interface configuration command to specify the protocol-specific MTU value.

## Restrictions for System MTU

When configuring the system MTU values, follow these guidelines:

- The switch does not support the MTU on a per-interface basis.
- If you enter the **system mtu bytes** global configuration command, the command does not take effect on the switch. This command only affects the system MTU size on Fast Ethernet switch ports.

## System MTU Value Application

This table shows how the MTU values are applied.

**Table 1: MTU Values**

Configuration	system mtu command	ip mtu command	ipv6 mtu command
Standalone switch or switch stack	You can enter the <b>system mtu</b> command on a switch or switch stack, but system MTU value does not take effect.  The range is from 1500 to 9198 bytes.	Use the <b>ip mtu bytes</b> command.  The range is from 832 up to 1500 bytes. <b>Note</b> The IP MTU value is the applied value, not the configured value.	Use the <b>ipv6 mtu bytes</b> command.  The range is from 1280 to the system jumbo MTU value (in bytes). <b>Note</b> The IPv6 MTU value is the applied value, not the configured value.

The upper limit of the IP or IPv6 MTU value is based on the switch or switch stack configuration and refers to the currently applied system MTU value. For more information about setting the MTU sizes, see the **system mtu** global configuration command in the command reference for this release.

## How to Configure MTU Sizes

### Configuring the System MTU

Follow these steps to change the MTU size for switched packets:

## SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **system mtu *bytes***
4. **end**
5. **copy running-config startup-config**
6. **show system mtu**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b> Switch> <b>enable</b>	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	<b>configure terminal</b>  <b>Example:</b> Switch# <b>configure terminal</b>	Enters global configuration mode.
Step 3	<b>system mtu <i>bytes</i></b>  <b>Example:</b> Switch(config)# <b>system mtu 1900</b>	(Optional) Changes the MTU size for all Gigabit Ethernet and 10-Gigabit Ethernet interfaces.
Step 4	<b>end</b>  <b>Example:</b> Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
Step 5	<b>copy running-config startup-config</b>  <b>Example:</b> Switch# <b>copy running-config startup-config</b>	Saves your entries in the configuration file.
Step 6	<b>show system mtu</b>  <b>Example:</b> Switch# <b>show system mtu</b>	Verifies your settings.

## Configuring Protocol-Specific MTU

Beginning in privileged EXEC mode, follow these steps to change the MTU size for routed ports:

## SUMMARY STEPS

1. **configure terminal**
2. **interface *interface***
3. **ip mtu *bytes***
4. **ipv6 mtu *bytes***
5. **end**
6. **copy running-config startup-config**
7. **show system mtu**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> Switch# <b>configure terminal</b>	Enters global configuration mode.
Step 2	<b>interface <i>interface</i></b>  <b>Example:</b> Switch(config)# <b>interface gigabitethernet0/0</b>	Enters interface configuration mode.
Step 3	<b>ip mtu <i>bytes</i></b>  <b>Example:</b> Switch(config-if)# <b>ip mtu 68</b>	Changes the IPv4 MTU size
Step 4	<b>ipv6 mtu <i>bytes</i></b>  <b>Example:</b> Switch(config-if)# <b>ipv6 mtu 1280</b>	(Optional) Changes the IPv6 MTU size.
Step 5	<b>end</b>  <b>Example:</b> Switch(config-if)# <b>end</b>	Returns to privileged EXEC mode.
Step 6	<b>copy running-config startup-config</b>  <b>Example:</b> Switch# <b>copy running-config startup-config</b>	Saves your entries in the configuration file.
Step 7	<b>show system mtu</b>  <b>Example:</b> Switch# <b>show system mtu</b>	Verifies your settings.

## Configuration Examples for System MTU

This example shows how to set the maximum packet size for a Gigabit Ethernet port to 7500 bytes:

```
Switch(config)# system mtu 7500
Switch(config)#
Switch(config)# exit
```

If you enter a value that is outside the allowed range for the specific type of interface, the value is not accepted. This example shows the response when you try to set Gigabit Ethernet interfaces to an out-of-range number:

```
Switch(config)# system mtu 25000
                                     ^
% Invalid input detected at '^' marker.
```

This is an example of output from the **show system mtu** command:

```
Switch# show system mtu
Global Ethernet MTU is 1500 bytes.
```

## Additional References for System MTU

### Error Message Decoder

Description	Link
To help you research and resolve system error messages in this release, use the Error Message Decoder tool.	<a href="https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi">https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi</a>

### MIBs

MIB	MIBs Link
All 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: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**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>	<p><a href="http://www.cisco.com/support">http://www.cisco.com/support</a></p>

**Feature Information for System MTU**

Release	Modification
Cisco IOS XE 3.2SE	This feature was introduced.