



Configuring Smartports Macros

Information About Configuring Smartports Macros

Smartports macros provide a convenient way to save and share common configurations. You can use Smartports macros to enable features and settings based on the location of a switch in the network and for mass configuration deployments across the network.

Each Smartports macro is a set of CLI commands that you define. Smartports macros do not contain new CLI commands; they are simply a group of existing CLI commands.

When you apply a Smartports macro to an interface, the CLI commands within the macro are configured on the interface. When the macro is applied to an interface, the existing interface configurations are not lost. The new commands are added to the interface and are saved in the running configuration file.

How to Configure Smartports Macros

Default Smartports Settings

There are no Smartports macros enabled on the switch.

Table 31 Default Smartports Macros

Macro Name ¹	Description
Global Configuration Macros	
cisco-cg-global	Use this global configuration macro to configure the switch settings for the industrial Ethernet environment. This macro is automatically applied when you use Express Setup to initially configure the switch. Note: You must first apply the cisco-cg-global macro for the interface configuration macros to work properly.
cisco-cg-password	Use this global configuration macro to configure the password settings for the switch.
no-cisco-cg-password	Use the no form of this global configuration macro to delete the macro from the switch.
cisco-sniffer	Use this global configuration macro to configure SPAN functionality to analyze traffic on another port of the switch.
no-cisco-sniffer	Use the no form of this global configuration macro to delete the macro from the interface.
Interface Configuration Macros	
cisco-ethernetip	Use this interface configuration macro when connecting the switch to an EtherNet IP device. Note: You must first apply the cisco-ie-global macro for the cisco-ethernetip macro to work properly.
no-cisco-ethernetip	Use the no form of this global configuration macro to delete the macro from the interface.

Table 31 Default Smartports Macros (continued)

Macro Name ¹	Description
Global Configuration Macros	
cisco-cg-hmi	Use this interface configuration macro for increased network security and reliability when connecting a desktop device, such as a PC, to a switch port. This macro is optimized for utility deployments.
no-cisco-cg-hmi	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-cg-ied	Use this interface configuration macro when connecting the switch to an IED.
no-cisco-cg-ied	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-ie-phone	Use this interface configuration macro when connecting a desktop device such as a PC with a Cisco IP Phone to a switch port. This macro is an extension of the cisco-desktop macro and provides the same security and resiliency features, but with the addition of dedicated voice VLANs to ensure proper treatment of delay-sensitive voice traffic.
no-cisco-ie-phone	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-cg-router	Use this interface configuration macro when connecting the switch and a WAN router. This macro is optimized for utility deployments.
no-cisco-cg-router	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-cg-switch	Use this interface configuration macro when connecting a ring of switches. This macro is optimized for utility deployments.
no-cisco-cg-switch	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-cg-wireless	Use this interface configuration macro when connecting the switch and a wireless access point. This macro is optimized for utility deployments.
no-cisco-cg-wireless	Use the no form of this interface configuration macro to delete the macro from the switch.
cisco-desktop	Use this interface configuration macro for increased network security and reliability when connecting a desktop device, such as a PC, to a switch port. This macro is optimized for utility deployments.
no-cisco-desktop	Use the no form of this interface configuration macro to delete the macro from the interface.
cisco-ie-none	The None Smartport is used to clear all Smartport configurations from the port.
cisco-ethernetip	Use this interface configuration macro when connecting the switch to an EtherNet IP device. Note: You must first apply the cisco-ie-global macro for the cisco-ethernetip macro to work properly.
cisco-ie-global	Use this global configuration macro to configure the switch settings for the industrial Ethernet environment. This macro is automatically applied when you use Express Setup to initially configure the switch. Note: You must first apply the cisco-ie-global macro for the cisco-ethernetip macro to work properly.
cisco-ie-desktop	Use this interface configuration macro for increased network security and reliability when connecting a desktop device, such as a PC, to a switch port. This macro is optimized for industrial automation traffic.
cisco-ie-phone	Use this interface configuration macro when connecting a desktop device such as a PC with a Cisco IP Phone to a switch port. This macro is an extension of the cisco-ie-desktop macro and provides the same security and resiliency features, but with the addition of dedicated voice VLANs to ensure proper treatment of delay-sensitive voice traffic. This macro is optimized for industrial automation traffic.

Table 31 Default Smartports Macros (continued)

Macro Name ¹	Description
Global Configuration Macros	
cisco-ie-router	Use this interface configuration macro when connecting the switch and a WAN router. This macro is optimized for industrial automation traffic.
cisco-ie-switch	Use this interface configuration macro when connecting an access switch and a distribution switch or between access switches connected using small form-factor pluggable (SFP) modules. This macro is optimized for industrial automation traffic.
cisco-ie-wireless	Use this interface configuration macro when connecting the switch and a wireless access point. This macro is optimized for industrial automation traffic.

1. Cisco-default Smartports macros vary, depending on the software version running on your switch.

Smartports Configuration Guidelines

- When a macro is applied globally to a switch or to a switch interface, all of the existing configurations on the interface are retained. This is helpful when applying an incremental configuration.
- If a command fails because of a syntax or a configuration error, the macro continues to apply the remaining commands. You can use the **macro global trace** *macro-name* global configuration command or the **macro trace** *macro-name* interface configuration command to apply and debug a macro to find any syntax or configuration errors.
- Some CLI commands are specific to certain interface types. If you apply a macro to an interface that does not accept the configuration, the macro fails the syntax or the configuration check, and the switch returns an error message.
- Applying a macro to an interface range is the same as applying a macro to a single interface. When you use an interface range, the macro is applied sequentially to each interface within the range. If a macro command fails on one interface, it is still applied to the remaining interfaces.
- When you apply a macro to a switch or a switch interface, the macro name is automatically added to the switch or interface. You can display the applied commands and macro names by using the **show running-config** user EXEC command.

Applying Smartports Macros

	Command	Purpose
1.	show parser macro	Displays the Cisco-default Smartports macros embedded in the switch software.
2.	show parser macro name <i>macro-name</i>	Displays the specific macro that you want to apply.
3.	configure terminal	Enters global configuration mode.

Command	Purpose
4. macro global { apply trace } <i>macro-name</i> [parameter { <i>value</i> }] [parameter { <i>value</i> }] [parameter { <i>value</i> }]	<p>Applies each individual command defined in the macro to the switch by entering macro global apply <i>macro-name</i>. Specifies macro global trace <i>macro-name</i> to apply and to debug a macro to find any syntax or configuration errors.</p> <p>Appends the macro with the required values by using the parameter value keywords. Keywords that begin with \$ require a unique parameter value.</p> <p>You can use the macro global apply <i>macro-name</i> ? command to display a list of any required values for the macro. If you apply a macro without entering the keyword values, the commands are invalid and are not applied.</p> <p>(Optional) Specifies unique parameter values that are specific to the switch. You can enter up to three keyword-value pairs. Parameter keyword matching is case sensitive. The corresponding value replaces all matching occurrences of the keyword.</p>
5. interface <i>interface-id</i>	(Optional) Enters interface configuration mode and specifies the interface on which to apply the macro.
6. default interface <i>interface-id</i>	(Optional) Clears all configuration from the specified interface.
7. macro { apply trace } <i>macro-name</i> [parameter { <i>value</i> }] [parameter { <i>value</i> }] [parameter { <i>value</i> }]	<p>Applies each individual command defined in the macro to the port by entering macro global apply <i>macro-name</i>. Specifies macro global trace <i>macro-name</i> to apply and to debug a macro to find any syntax or configuration errors.</p> <p>Appends the macro with the required values by using the parameter value keywords. Keywords that begin with \$ require a unique parameter value.</p> <p>You can use the macro global apply <i>macro-name</i> ? command to display a list of any required values for the macro. If you apply a macro without entering the keyword values, the commands are invalid and are not applied.</p> <p>(Optional) Specifies unique parameter values that are specific to the switch. You can enter up to three keyword-value pairs. Parameter keyword matching is case sensitive. The corresponding value replaces all matching occurrences of the keyword.</p>
8. end	Returns to privileged EXEC mode.
9. show running-config interface <i>interface-id</i>	Verifies that the macro is applied to an interface.
10. copy running-config startup-config	(Optional) Saves your entries in the configuration file.

Monitoring and Maintaining Smartports Macros

Table 32 Commands for Displaying Smartports Macros

Command	Purpose
show parser macro	Displays all Smartports macros.

Table 32 Commands for Displaying Smartports Macros (continued)

Command	Purpose
show parser macro name <i>macro-name</i>	Displays a specific Smartports macro.
show parser macro brief	Displays the Smartports macro names.
show parser macro description [interface <i>interface-id</i>]	Displays the Smartports macro description for all interfaces or for a specified interface.

Configuration Examples for Smartports Macros

Applying the Smartports Macro: Examples

This example shows how to display the **cisco-ie-desktop** macro, how to apply the macro and to set the access VLAN ID to 25 on an interface:

```
Switch# show parser macro name cisco-ie-desktop
-----
Macro name : cisco-ie-desktop
Macro type : default interface
# macro keywords ACCESS_VLAN
#macro name cisco-ie-desktop
switchport mode access
switchport access vlan ACCESS_VLAN
switchport port-security
switchport port-security maximum 1
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
spanning-tree portfast
spanning-tree bpduguard enable
no macro description
macro description cisco-ie-desktop
-----

Switch#
Switch# configure terminal
Switch(config)# interface GigabitEthernet1/20
Switch(config-if)# macro apply cisco-ie-desktop $AVID 25
```

Additional References

The following sections provide references related to switch administration:

Related Documents

Related Topic	Document Title
Cisco IOS basic commands	<i>Cisco IOS Configuration Fundamentals Command Reference</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	–

MIBs

MIBs	MIBs Link
–	To locate and download MIBs using Cisco IOS XR software, use the Cisco MIB Locator found at the following URL and choose a platform under the Cisco Access Products menu: http://cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	–

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport