



Smartports Macros Configuration

This chapter describes how to configure and display Smartports macros. It contains the following topics:

- [Understanding Smartports Macros, page 10-1](#)
- [Configuring Smartports Macros, page 10-1](#)
- [Displaying Smartports Macros, page 10-5](#)

Understanding 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 module in the network and for mass configuration deployments across the network.

Each Smartports macro is a set of CLI commands. The switch module software has a set of default macros. You can also create your own macros. Smartports macros do not contain new CLI commands; they are simply a group of existing CLI commands.

A macro can be user defined or a system default (which cannot be edited by the user).

Configuring Smartports Macros

- [Default Smartports Configuration, page 10-1](#)
- [Smartports Configuration Guidelines, page 10-2](#)
- [Applying Smartports Macros, page 10-3](#)
- [Applying Smartports Macros, page 10-3](#)

Default Smartports Configuration

There are no Smartports macros enabled on the switch module.

Table 10-1 Default Smartports Macros

Macro Name ¹	Description
Global Configuration Macros	
cisco-cg-global	Configures the switch module settings for the industrial Ethernet environment. This macro is automatically applied when you use Express Setup to initially configure the switch module. Note You must first apply the cisco-cg-global macro for the interface configuration macros to work properly.
cisco-cg-password	Configures the password settings for the switch module.
no-cisco-cg-password	Use the no form to delete the macro from the switch module.
cisco-sniffer	Configures SPAN functionality to analyze traffic on another port of the switch module.
no-cisco-sniffer	Use the no form to delete the macro from the interface.
Interface Configuration Macros	
cisco-cg-hmi	Increases 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 to delete the macro from the switch module.
cisco-cg-ied	Use when connecting the switch module to an IED.
no-cisco-cg-ied	Use the no form to delete the macro from the switch module.
cisco-cg-router	Use when connecting the switch module and a WAN router. This macro is optimized for utility deployments.
no-cisco-cg-router	Use the no form to delete the macro from the switch module.
cisco-cg-switch	Use when connecting a ring of switches. This macro is optimized for utility deployments.
no-cisco-cg-switch	Use to delete the macro from the switch module.
cisco-cg-wireless	Use when connecting the switch module and a wireless access point. This macro is optimized for utility deployments.
no-cisco-cg-wireless	Use the no form to delete the macro from the switch module.
cisco-desktop	Use for increased network security and reliability when connecting a desktop device, such as a PC, to a switch module port. This macro is optimized for utility deployments.
no-cisco-desktop	Use the no form to delete the macro from the interface.

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

Smartports Configuration Guidelines

- You can apply a macro globally or to a specific switch module interface.
- When creating a macro, do not use the **exit** or **end** commands or change the command mode by using **interface interface-id**. This could cause commands that follow **exit**, **end**, or **interface interface-id** to execute in a different command mode.

- When creating a macro, all CLI commands should be in the same configuration mode.
- When you apply a macro to an interface, the CLI commands within the macro are configured on the interface. The existing interface configurations are not lost.
The new commands are added to the interface and are saved in the running configuration file. 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.
- When creating a macro that requires the assignment of unique values, use the **parameter value** keywords to designate values specific to the interface. Keyword matching is case sensitive. All matching occurrences of the keyword are replaced with the corresponding value. Any full match of a keyword, even if it is part of a larger string, is considered a match and is replaced by the corresponding value.
- Macro names are case sensitive. For example, the commands **macro name Sample-Macro** and **macro name sample-macro** will result in two separate macros.
- Some macros might contain keywords that require a parameter value. You can use the **macro global apply** *macro-name* ? global configuration command or the **macro apply** *macro-name* ? interface configuration command to display a list of any required values in the macro. If you apply a macro without entering the keyword values, the commands are invalid and are not applied.
- If you modify a macro definition by adding or deleting commands, the changes are not reflected on the interface where the original macro was applied. You need to reapply the updated macro on the interface to apply the new or changed commands.
- 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 module 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 module or interface, the macro name is automatically added to the switch module or interface. You can display the applied commands and macro names by using the **show running-config** user EXEC command.
- When you apply a macro to a user network interface (UNI) or enhanced network interface (ENI), you must first enable the port. UNIs and ENIs are disabled by default.

Applying Smartports Macros

Beginning in privileged EXEC mode, follow these steps to apply a Smartports macro:

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

Step	Command
<p>Step 4 Apply each individual command defined in the macro to the switch module by entering macro global apply <i>macro-name</i>. Specify macro global trace <i>macro-name</i> to apply and to debug a macro to find any syntax or configuration errors.</p> <p>Append the macro with the required values by using the parameter <i>value</i> 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) Specify unique parameter values that are specific to the switch module. 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>	<pre>macro global { apply trace } macro-name [parameter {value}] [parameter {value}] [parameter {value}]</pre>
<p>Step 5 (Optional) Enter interface configuration mode, and specify the interface on which to apply the macro.</p>	<pre>interface interface-id</pre>
<p>Step 6 (Optional) Clear all configuration from the specified interface.</p>	<pre>default interface interface-id</pre>
<p>Step 7 Apply each individual command defined in the macro to the port by entering macro apply <i>macro-name</i>. Specify macro trace <i>macro-name</i> to apply and to debug a macro to find any syntax or configuration errors.</p> <p>Append the macro with the required values by using the parameter <i>value</i> keywords. Keywords that begin with \$ require a unique parameter value.</p> <p>You can use the macro 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) Specify unique parameter values that are specific to the switch module. 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>	<pre>macro { apply trace } macro-name [parameter {value}] [parameter {value}] [parameter {value}]</pre>
<p>Step 8 Return to privileged EXEC mode.</p>	<pre>end</pre>

	Step	Command
Step 9	Verify that the macro is applied to an interface.	show running-config interface <i>interface-id</i>
Step 10	(Optional) Save your entries in the configuration file.	copy running-config startup-config

You can delete the **cisco-cg-password** and **cisco-sniffer** global macros on a switch module by entering the **no** version of each command in the macro. The **cisco-cg-global** global macro does not have a **no** version. You can delete a macro-applied configuration on a port by entering the **default interface *interface-id*** interface configuration command.

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

```
Switch# show parser macro name cisco-desktop
Macro name : cisco-desktop
Macro type : default interface
# Macro keywords $access_vlan
# macro description cisco-desktop
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
port-type nni
spanning-tree portfast
spanning-tree bpduguard enable
Switch# configure terminal
Switch(config-if)# interface fastethernet 0/2
Switch(config-if)# macro trace cisco-desktop $access_vlan 25
Applying command... 'macro description cisco-desktop'
Applying command... 'switchport access vlan 25'
Applying command... 'switchport port-security'
Applying command... 'switchport port-security maximum 1'
Applying command... 'switchport port-security aging time 2'
Applying command... 'switchport port-security violation restrict'
Applying command... 'switchport port-security aging type inactivity'
Applying command... 'port-type nni'
Applying command... 'spanning-tree portfast'
```

Displaying Smartports Macros

To display the Smartports macros, use one or more of the privileged EXEC commands in [Table 10-2](#).

Table 10-2 Commands for Displaying Smartports Macros

Command	Description
show parser macro	Displays all Smartports macros.
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.

