



CHAPTER 13

Configuring Smartports Macros

- [Understanding Smartports Macros, page 13-1](#)
- [Configuring Smartports Macros, page 13-1](#)
- [Displaying Smartports Macros, page 13-6](#)

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

Each Smartports macro is a set of CLI commands. The switch 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 system default (which cannot be edited by user).

Configuring Smartports Macros

- [Default Smartports Configuration, page 13-1](#)
- [Smartports Configuration Guidelines, page 13-3](#)
- [Creating Smartports Macros, page 13-4](#)
- [Applying Smartports Macros, page 13-4](#)

Default Smartports Configuration

There are no Smartports macros enabled on the switch.

	Description
Global Configuration Macros	

Smartports Configuration Guidelines

- You can apply a macro globally or to a specific switch 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 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.
- 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.

Creating Smartports Macros

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

	Command	Purpose
Step 1	configure terminal	Enter global configuration mode.
Step 2	macro name <i>macro-name</i>	<p>Create a macro definition, and enter a macro name. A macro definition can contain up to 3000 characters.</p> <p>Enter the macro commands with one command per line. Use the @ character to end the macro. Use the # character at the beginning of a line to enter comment text within the macro.</p> <p>(Optional) You can define keywords within a macro by using a help string to specify the keywords. Enter # macro keywords <i>word</i> to define the keywords that are available for use with the macro. Separated by a space, you can enter up to three help string keywords in a macro.</p> <p>Macro names are case sensitive. For example, the commands macro name Sample-Macro and macro name sample-macro will result in two separate macros.</p> <p>We recommend that you do not use the exit or end commands or change the command mode by using interface <i>interface-id</i> in a macro. This could cause any commands following exit, end, or interface <i>interface-id</i> to execute in a different command mode. For best results, all commands in a macro should be in the same configuration mode.</p>
Step 3	end	Return to privileged EXEC mode.
Step 4	show parser macro name <i>macro-name</i>	Verify that the macro was created.

The **no** form of the **macro name** global configuration command only deletes the macro definition. It does not affect the configuration of those interfaces on which the macro is already applied.

This example shows how to create a macro that defines the switchport access VLAN and the number of secure MAC addresses and also includes two help string keywords by using # **macro keywords**:

```
Switch(config)# macro name test
switchport access vlan $VLANID
switchport port-security maximum $MAX
#macro keywords $VLANID $MAX
@
```

Applying Smartports Macros

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

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

	Command	Purpose
Step 4	macro global { apply trace } <i>macro-name</i> [parameter { <i>value</i> }] [parameter { <i>value</i> }]	<p>Apply each individual command defined in the macro to the switch by entering macro global apply macro-name. Specify macro global trace macro-name 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 value keywords. Keywords that begin with \$ require a unique parameter value.</p> <p>You can use the macro global apply macro-name ? 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. 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>
Step 5	interface <i>interface-id</i>	(Optional) Enter interface configuration mode, and specify the interface on which to apply the macro.
Step 6	default interface <i>interface-id</i>	(Optional) Clear all configuration from the specified interface.
Step 7	macro { apply trace } <i>macro-name</i> [parameter { <i>value</i> }] [parameter { <i>value</i> }]	<p>Apply each individual command defined in the macro to the port by entering macro apply macro-name. Specify macro trace macro-name 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 value keywords. Keywords that begin with \$ require a unique parameter value.</p> <p>You can use the macro apply macro-name ? 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. 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>
Step 8	end	Return to privileged EXEC mode.
Step 9	show running-config interface <i>interface-id</i>	Verify that the macro is applied to an interface.
Step 10	copy running-config startup-config	(Optional) Save your entries in the configuration file.

You can delete the **cisco-cg-password** and **cisco-sniffer** global macros on a switch 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 13-2](#).

Table 13-2 *Commands for Displaying Smartports Macros*

Command	Purpose
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.