



Command Reference

This appendix describes the Content Switching Module (CSM) commands that are unique to server load-balancing (SLB) and Layer 3 switching.

The following commands allow you to set up and monitor SLB on the CSM:

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dfp

Use the **dfp** command to enter the DFP submode and configure DFP. Use the **no** form of this command to remove the DFP configuration.

dfp [**password** *password* [*timeout*]]

no dfp

Syntax Description		
password	(Optional) Keyword to specify a password for MD5 authentication.	
<i>password</i>	(Optional) Password value for MD5 authentication. This password must be the same on all DFP manager devices.	
<i>timeout</i>	(Optional) Delay period, in seconds, during which both the old password and the new password are accepted; the range is from 0 to 65535.	

Defaults The default timeout value is 180 seconds.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines The timeout option allows you to change the password without stopping messages between the DFP agent and its manager.

During a timeout, the agent sends packets with the old password (or null, if there is no old password), and receives packets with either the old or new password. After a timeout expires, the agent sends and receives packets with only the new password; received packets that use the old password are discarded.

If you are changing the password for an entire load-balanced environment, set a longer timeout. The extended timeout allows enough time for you to update the password on all agents and servers before the timeout expires. It also prevents mismatches between agents and servers that have the new password and agents and servers that have the old password.

Examples This example shows how to initiate DFP agent configuration mode, configure DFP, set the password to *flounder*, and configure a 60-second timeout:

```
SLB-Switch(config-module-csm)# dfp password flounder 60
```

Related Commands [show module csm dfp](#)

agent

Use the **agent** command in the SLB DFP submode to configure the DFP agent to which the CSM is going to communicate. Use the **no** form of this command to remove the agent configuration.

agent *ip-address port [keepalive-timeout [retry-count [retry-interval]]]*

no agent *ip-address port*

Syntax Description		
<i>ip-address</i>		IP address of the DFP agent.
<i>port</i>		Port number of the DFP agent.
<i>keepalive-timeout</i>		(Optional) Time period in seconds between keepalive messages; the range is from 1 to 65535.
<i>retry-count</i>		(Optional) Number of consecutive connection attempts or invalid DFP reports received before tearing down the connections and marking the agent as failed; the range is from 0 to 65535.
<i>retry-interval</i>		(Optional) Interval between retries; the range is from 1 to 65535.

Defaults

The *keepalive-timeout* default is 0 (no keepalive message).

Retry count default is 0 seconds (the default allows infinite retries).

The *retry-interval* default is 180 seconds.

Command Modes

SLB DFP configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to initiate the DFP agent, configure a 350-second timeout, and configure the number of retries to 270:

```
SLB-Switch(config-slb-dfp)# agent 111.101.90.10 2 350 270
```

Related Commands

dfp
manager
show module csm dfp

manager

Use the **manager** command in SLB DFP submode to set the port where an external DFP can connect to the CSM. Use the **no** form of this command to remove the manager configuration.

manager *port*

no manager

Syntax Description	<i>port</i>	Port number.
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Defaults This command has no default settings.

Command Modes SLB DFP configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines This command enables the CSM to listen to DFP connections from an external DFP manager.

Examples This example shows how to set the DFP manager port:

```
SLB-Switch(config-slb-dfp)# manager 4
```

Related Commands

- [dfp](#)
- [agent](#)
- [show module csm dfp](#)

ft group

Use the **ft group** command to enter the fault-tolerant configuration submode and configure fault tolerance. Use the **no** form of this command to remove the fault-tolerant configuration.

ft group *group-id* **vlan** *vlan-id*

no ft group

Syntax Description		
	<i>group-id</i>	ID of the fault-tolerant group. Both CSMs must have the same group ID. The range is from 1 to 254.
	vlan	Keyword to specify a VLAN ID.
	<i>vlan-id</i>	ID of the VLAN over which heartbeat messages are sent. Both CSMs must have the same VLAN ID. The range is from 2 to 4095.

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines A fault-tolerant group is comprised of two Catalyst 6000 family switches each containing a CSM configured for fault-tolerant operation. Each fault-tolerant group appears to network devices as a single device. A network may have more than one fault-tolerant group.

Examples This example shows how to configure a fault-tolerant group named 123 on VLAN 5:

```
SLB-Switch(config-module-csm)# ft group 123 vlan 5
```

Related Commands

- [failover](#)
- [heartbeat-time](#)
- [preempt](#)
- [priority](#)
- [show module csm ft](#)

failover

Use the **failover** command in the SLB fault-tolerant configuration submode to set the time for a standby CSM to wait before becoming an active CSM. Use the **no** form of this command to remove the failover configuration.

failover *failover-time*

no failover

Syntax Description	<i>failover-time</i>	Amount of time the CSM must wait after the last heartbeat message is received before assuming the other CSM is not operating; the range is from 1 to 65535.
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Defaults	The default failover time is 3 seconds.
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Command Modes	SLB fault-tolerant configuration submode.
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Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to set a failover period of 6 seconds: SLB-Switch(config-slb-ft)# failover 6
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Related Commands	ft group show module csm ft
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heartbeat-time

Use the **heartbeat-time** command in the SLB fault-tolerant configuration submode to set the time before heartbeat messages are transmitted by the CSM. Use the **no** form of this command to restore the default heartbeat interval.

heartbeat-time *heartbeat-time*

no heartbeat-time

Syntax Description	<i>heartbeat-time</i>	Time interval between heartbeat transmissions in seconds; the range is from 1 to 65535.
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Defaults The default heartbeat time is 1 second.

Command Modes SLB fault-tolerant configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to set the heartbeat time to 2 seconds:

```
SLB-Switch(config-slb-ft)# heartbeat-time 2
```

Related Commands

- [ft group](#)
- [show module csm ft](#)

preempt

Use the **preempt** command in the SLB fault-tolerant configuration submode to allow a higher priority CSM to take control of a fault-tolerant group when it comes online. Use the **no** form of this command to restore the preempt default value.

preempt

no preempt

Syntax Description This command has no arguments or keywords.

Defaults The default value is that preempt is not specified.

Command Modes SLB fault-tolerant configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines When you enable preempt, the higher priority CSM preempts the other CSM in the fault-tolerant group when the higher priority CSM comes online. When you enable no preempt, the current primary CSM remains the primary CSM when the next CSM comes online.



Note

You must set both members of the fault-tolerant CSM pair to preempt for this feature to work.

Examples This example shows how to set the fault-tolerance mode to preempt:

```
SLB-Switch(config-slb-ft)# preempt
```

Related Commands

- [ft group](#)
- [priority](#)
- [show module csm ft](#)

priority

Use the `priority` command in the SLB fault-tolerant configuration submode to set the priority of the CSM. Use the **no** form of this command to restore the priority default value.

priority *value*

no priority

Syntax Description	<i>value</i> Priority of a CSM; the range is from 1 to 254.				
Defaults	The default priority value is 10.				
Command Modes	SLB fault-tolerant configuration submode.				
Command History	<table border="1"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Release</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">1.1.1</td> <td style="border-bottom: 1px solid black;">This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Usage Guidelines	The CSM with the largest priority value is the primary CSM in the fault-tolerant pair when the modules are both operating.				
Examples	<p>This example shows how to set the priority value to 12:</p> <pre>SLB-Switch(config-slb-ft)# priority 12</pre>				
Related Commands	<p>ft group preempt show module csm ft</p>				

ip slb mode

Use the **ip slb mode** command to configure the switch to operate as a CSM load-balancing device instead of a Cisco IOS SLB load-balancing device. Use the **no** form of this command to remove the **mode** configuration.

ip slb mode { csm | rp }

no ip slb mode



Note

Specifying the **no ip slb mode** command is the same as specifying the **rp** mode.

Syntax Description

csm	Keyword to select the CSM load-balancing mode that allows you to configure a single CSM only and prohibits the use of Cisco IOS SLB load-balancing on the Catalyst 6000 family switch.
rp	Keyword to select the route processor (Cisco IOS SLB) load-balancing mode and enable module CSM commands for configuring multiple CSMs.

Defaults

The default is the **rp** mode.

Command Modes

Global configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.
2.1.1	This command now enables module csm commands for the rp mode.

Usage Guidelines

This command allows you to change from the Cisco IOS SLB load-balancing mode to the CSM load-balancing mode.



Note

In **csm** mode, all **ip slb** commands apply to a CSM module; Cisco IOS SLB is not available. In **rp** mode (the default), **ip slb** commands apply to Cisco IOS SLB; the **module csm** commands are available to configure multiple CSMs.

Examples

This example shows how to configure the switch mode:

```
SLB-Switch(config)# ip slb mode csm
```

■ ip slb mode

Related Commands

[module csm](#)

[show ip slb mode](#)

map cookie

Use the **map cookie** command to create a cookie map and enter the cookie map configuration submode for specifying cookie match rules. Use the **no** form of this command to remove the cookie maps from the configuration.

map *cookie-map-name* **cookie**

no map *cookie-map-name*

Syntax Description		
	<i>cookie-map-name</i>	Cookie map instance; the character string is limited to 15 characters.
	cookie	Keyword to enter the cookie map submode.

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to create a cookie map:

```
SLB-Switch(config-module-csm)# map upnready cookie
```

Related Commands [cookie-map](#) (SLB policy configuration submode)
[match protocol http cookie](#)
[show module csm map](#)

match protocol http cookie

Use the **match protocol http cookie** command in SLB cookie map configuration submode to add cookies to a cookie map. Multiple match rules can be added to a cookie map. Use the **no** form of this command to remove the cookie map name from the cookie map.

match protocol http cookie *cookie-name* **cookie-value** *cookie-value-expression*

Syntax Description	
<i>cookie-name</i>	Cookie name; the range is from 1 to 63 characters.
cookie-value	Keyword to specify a cookie value expression.
<i>cookie-value-expression</i>	Cookie value expression string; the range is from 1 to 255 characters.

Defaults This command has no default settings.

Command Modes SLB cookie map configuration submode.

Usage Guidelines Cookie regular expressions are based on the UNIX filename specification. URL expressions are stored in a cookie map in the form *cookie-name = cookie-value-expression*. Cookie expressions allow spaces provided they are escaped or quoted. You must match all cookies in the cookie map.

“*” means zero or more characters

“?” means exactly one character—the [Ctrl + V] key combination must be entered

“\” means escaped character

Bracketed range (for example, [0–9]) means matching any single character from the range

A leading ^ in a range means do not match any in the range

“\a” means alert (ASCII 7)

“\b” means backspace (ASCII 8)

“\f” means form-feed (ASCII 12)

“\n” means newline (ASCII 10)

“\r” means carriage return (ASCII 13)

“\t” means tab (ASCII 9)

“\v” means vertical tab (ASCII 11)

“\0” means null (ASCII 0)

“\.” means backslash

“\x##” means any ASCII character as specified in two-digit hexadecimal notation

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples

This example shows how to add cookies to a cookie map:

```
SLB-Switch(config-slb-map-cookie)# match protocol http cookie albert cookie-value 4*
```

Related Commands

cookie-map (SLB policy configuration submode)
map cookie
show module csm map

map header

Use the **map header** command to create a map group for specifying HTTP headers and enter the header map configuration submenu. Use the **no** form of this command to remove the HTTP header group from the configuration.

map *name* **header**

no map *name*

Syntax Description	<i>name</i> Map instance; the character string is from 1 to 15 characters.				
Defaults	This command has no default settings.				
Command Modes	Module CSM configuration submenu.				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>2.1.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	2.1.1	This command was introduced.
Release	Modification				
2.1.1	This command was introduced.				

Examples

This example shows how to group HTTP headers and associate them with a Content Switching policy:

```
SLB-Switch(config-module-csm)# map upnready header
SLB-Switch(config-slb-map-header)# match protocol http header Accept header-value *jpeg*
SLB-Switch(config-slb-map-header)# match protocol http header User-Agent header-value *NT*
SLB-Switch(config-slb-map-header)# match protocol http header Host header-value
www.myhome.com
SLB-Switch(config-slb-map-header)# exit
```

Related Commands

[header-map](#) (SLB policy configuration submenu)
[match protocol http header](#)
[show module csm map](#)

match protocol http header

Use the **match protocol http header** command in SLB header map configuration submode to specify header fields and values for the CSM to search for when receiving a request. Multiple match rules can be added to a header map. Use the **no** form of this command to remove the header match rule from the header map.

match protocol http header *field* **header-value** *expression*

no match protocol http header *field*

Syntax Description	<i>field</i>	Literal name of the generic field in the HTTP header. The range is from 1 to 63 characters.
	header-value	Keyword to specify the header value expression.
	<i>expression</i>	Header value regular expression string to compare against the value in the specified field; the range is from 1 to 127 characters.

Defaults This command has no default settings.

Command Modes SLB header map configuration submode.

Usage Guidelines There are predefined fields, for example Accept-Language, User-Agent, or Host. Header regular expressions are based on the UNIX filename specification. URL expressions are stored in a header map in the form *header-name = expression*. Header expressions allow spaces provided that they are escaped or quoted. All headers in the header map must be matched.

“*” means zero or more characters

“?” means exactly one character—the [Ctrl + V] key combination must be entered

“\” means escaped character

Bracketed range (for example, [0–9]) means matching any single character from the range

A leading ^ in a range means don't match any in the range

“\a” means alert (ASCII 7)

“\b” means backspace (ASCII 8)

“\f” means form-feed (ASCII 12)

“\n” means newline (ASCII 10)

“\r” means carriage return (ASCII 13)

“\t” means tab (ASCII 9)

“\v” means vertical tab (ASCII 11)

match protocol http header

“.\0” means null (ASCII 0)

“.\|” means backslash

“.\x##” means any ASCII character as specified in two-digit hexadecimal notation

Command History

Release	Modification
2.1.1	This command was introduced.

Examples

This example shows how to specify header fields and values to search upon a request:

```
SLB-Switch(config-slb-map-header)# match protocol http header Host header-value XYZ
```

Related Commands

[header-map](#) (SLB policy configuration submode)
[map header](#)
[show module csm map](#)

map retcode

Use the **map retcode** command to enable return error code checking and enter the return error code map submode. Use the **no** form of this command to remove the return code error checking from the configuration.

map *name* **retcode**

no map *name*

Syntax Description		
	<i>name</i>	Return error code map instance; the character string is limited to 15 characters.
	retcode	Keyword to enter the return error code map submode.

Defaults This command has no default settings.

Command Modes Global configuration submode.

Command History	Release	Modification
	2.2(1)	This command was introduced.

Examples This example shows how to enable return error code checking:

```
SLB-Switch(config-module-csm)# map upnready retcode
```

Related Commands [cookie-map](#) (SLB policy configuration submode)
[match protocol http cookie](#)
[show module csm map](#)

match protocol http retcode

Use the **match protocol http retcode** command in SLB return code map configuration submode to specify return code thresholds, count and log return codes, and send syslog messages for return code events received from the servers. Use the **no** form of this command to remove the return code thresholds.

```
match protocol http retcode min max action { count | log | remove } threshold [reset seconds]
```

```
no match protocol http retcode min max
```

Syntax Description

<i>min</i>	Minimum number of return codes received before an action is taken.
<i>max</i>	Maximum number of return codes received before an action is taken.
action	Keyword to enable the header value expression.
count	Keyword to increment the statistics of the number of occurrences of return codes received.
log	Keyword to specify where syslog messages are sent when a threshold is reached.
remove	Keyword to specify where the syslog messages are sent when a threshold is reached and the server is removed from service.
<i>threshold</i>	The number of return occurrences before the log or remove action is taken.
reset	(Optional) Keyword to enable the header value expression.
<i>seconds</i>	Number of seconds to wait before the action can take place again.

Defaults

This command has no default settings.

Command Modes

SLB return code map configuration submode.

Usage Guidelines

The *threshold* and **reset** values are not configurable for the **count** action. These commands only are available for the **log** and **remove** actions.

Command History

Release	Modification
2.2(1)	This command was introduced.

Examples

This example shows how to specify return codes values to search for in an HTTP request:

```
SLB-Switch(config-slb-map-retcode)# match protocol http quigly retcode 30 50 action log  
400 reset 30
```

Related Commands

map retcode (SLB policy configuration submode)

map url

Use the **map url** command to enter the SLB URL map mode and configure a URL map. Use the **no** form of this command to remove the URL map from the configuration.

map *url-map-name* **url**

no map *url-map-name*

Syntax Description	<i>url-map-name</i>	Name of an SLB URL map; the character string range is from 1 to 15 characters.
Defaults	This command has no default settings.	
Command Modes	SLB URL map configuration submode.	
Command History	Release	Modification
	1.1.1	This command was introduced.
Usage Guidelines	Any match of a URL regular expression in the URL map results in a successful match. A maximum of 1023 URLs can be configured to a map.	
Examples	<p>This example shows how to group URLs and associate them with a Content Switching policy:</p> <pre>SLB-Switch(config-module-csm)# map m1 url SLB-Switch(config-slb-map-url)# match protocol http url /index.html SLB-Switch(config-slb-map-url)# match protocol http url /stocks/cisco/ SLB-Switch(config-slb-map-url)# match protocol http url *gif SLB-Switch(config-slb-map-url)# match protocol http url /st* SLB-Switch(config-slb-map-url)# exit SLB-Switch(config)</pre>	
Related Commands	<p>match protocol http url url-map (SLB policy configuration submode) show module csm map</p>	

match protocol http url

Use the **match protocol http url** command in the SLB URL map configuration submode to add a URL regular expression to a URL map. Multiple match rules can be added to a URL map. Use the **no** form of this command to remove the URL regular expression from the URL map.

match protocol http url *urln*

no match protocol http url *urln*

Syntax Description

<i>urln</i>	Regular expression range; the range is from 1 to 255 characters.
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Defaults

This command has no default settings.

Command Modes

SLB URL map configuration submode.

Usage Guidelines

URL regular expressions are based on the UNIX filename specification. URL expressions are stored in a cookie map in the form *urln*. URL expressions do not allow spaces and only one of the URLs in the map must be matched.

“*” means zero or more characters

“?” means exactly one character—the [Ctrl + V] key combination must be entered

“\” means escaped character

Bracketed range (for example, [0–9]) means matching any single character from the range

A leading ^ in a range means don't match any in the range

“\a” means alert (ASCII 7)

“\b” means backspace (ASCII 8)

“\f” means form-feed (ASCII 12)

“\n” means newline (ASCII 10)

“\r” means carriage return (ASCII 13)

“\t” means tab (ASCII 9)

“\v” means vertical tab (ASCII 11)

“\0” means null (ASCII 0)

“\.” means backslash

“\x##” means any ASCII character as specified in two-digit hexadecimal notation

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to add URL expressions to a URL map:

```
SLB-Switch(config-slb-map-url)# match protocol http url Host header-value XYZ
```

Related Commands

map url
url-map (SLB policy configuration submode)
show module csm map

module csm

Use the **module csm** command to allow the association of load-balancing commands to a specific CSM module and enter the CSM module configuration submode for the specified slot. Use the **no** form of this command to remove the **module csm** configuration.



Note

The **module ContentSwitching Module slot** command is the full syntax; the **module csm slot** command is a valid shortcut.

module csm slot-number

no module csm slot-number

Syntax Description

<i>slot-number</i>	Slot number where the CSM resides.
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Defaults

This command has no default settings.

Command Modes

Global configuration submode.

Command History

Release	Modification
2.1.1	This command was introduced.

Usage Guidelines

If you want to use the new multiple module configuration, you must change the **ip slb mode** command to **rp**. An existing CSM configuration is migrated to the new configuration when you change the mode from **csm** to **rp**. A prompt appears requesting a slot number. Migrating from a multiple module configuration to a single module configuration is supported. Migrating the Cisco IOS SLB configuration to the CSM configuration is not supported.

Examples

This example shows how to configure a CSM:

```
SLB-Switch(config)# module csm 5
SLB-Switch(config-module-csm)# vserver VS1
```

Related Commands

[ip slb mode](#)

natpool

Use the **natpool** command in module CSM configuration submode to configure NAT and create a client address pool. Use the **no** form of this command to remove a **natpool** configuration.

```
natpool pool-name start-ip end-ip {netmask netmask | prefix-length leading_1_bits}
```

```
no natpool pool-name
```

Syntax Description		
<i>pool-name</i>	Name of a client address pool; the character string is from 1 to 15 characters.	
<i>start-ip</i>	Starting IP address that defines the range of addresses in the address pool.	
<i>end-ip</i>	Ending IP address that defines the range of addresses in the address pool.	
netmask	(Optional) Keyword to specify the subnet mask.	
<i>netmask</i>	(Optional) Mask for the associated IP subnet.	
prefix-length	(Optional) Keyword to specify the subnet mask.	
<i>leading_1_bits</i>	(Optional) Mask for the associated IP subnet.	

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines If you want to use client NAT, you must create at least one client address pool. A maximum of 255 NAT pool addresses are available for any CSM.

Examples This example shows how to configure a pool of addresses with the name **web-clients**, an IP address range from 128.3.0.1 through 128.3.0.254, and a subnet mask of 255.255.0.0:

```
SLB-Switch(config-module-csm)# natpool web-clients 128.3.0.1 128.3.0.254 netmask 255.255.0.0
```

Related Commands [nat client](#) (SLB serverfarm configuration submode)
[show module csm natpool](#)

policy

Use the **policy** command to configure policies, associate attributes to a policy, and enter the policy configuration submode. In this submode, you can configure the policy attributes. The policy is associated with a virtual server in virtual server submode. Use the **no** form of this command to remove a **policy**.

policy *policy-name*

no policy *policy-name*

Syntax Description

<i>policy-name</i>	Name of an slb-policy instance; the character string is limited to 15 characters.
--------------------	-----------------------------------------------------------------------------------

Defaults

This command has no default settings.

Command Modes

Module CSM configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.

Usage Guidelines

Policies establish rules for balancing connections to servers. They can contain URL maps, cookie maps, header maps, client groups, sticky groups, DSCP values, and server farms. The order in which policies are linked to a virtual server determines the precedence of the policy. When two or more policies match a requested URL, the policy with the highest precedence is selected.

You can create up to 12287 SLB policies for a given CSM module.



Note

All policies should be configured with a server farm.

Examples

This example shows how to configure a policy named `policy_content`:

```
SLB-Switch(config-module-csm)# policy policy_content
SLB-Switch(config-slb-policy)# serverfarm new_serverfarm
SLB-Switch(config-slb-policy)# url-map url_map_1
SLB-Switch(config-slb-policy)# exit
```

Related Commands

slb-policy (SLB virtual server configuration submode)
show module csm policy

client-group

Use the **client-group** command in SLB policy configuration submode to associate an access list with the policy. Use the **no** form of this command to remove access list from the policy.

client-group {1-99 / *std-access-list-name*}

no client-group

Syntax Description		
	<i>1-99</i>	Standard IP access list number.
	<i>std-access-list-name</i>	Standard access list name.

Defaults This command has no default settings.

Command Modes SLB policy configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines Only client groups created with the **ip access-list standard** command can be associated with an SLB policy. Only one client-group can be associated with a given SLB policy.

Examples This example shows how to configure a client group:

```
SLB-Switch(config-slb-policy)# client-group 44
SLB-Switch(config-slb-policy)# exit
```

Related Commands

- [policy](#)
- [ip access-list standard](#)
- [show module csm policy](#)

cookie-map

Use the **cookie-map** command in SLB policy configuration submode to associate a list of cookies with a policy. Use the **no** form of this command to remove a cookie map.

cookie-map *cookie-map-name*

no cookie-map

Syntax Description	<i>cookie-map-name</i>	Name of the cookie list associated with a policy.
---------------------------	------------------------	---------------------------------------------------

Defaults	This command has no default settings.	
-----------------	---------------------------------------	--

Command Modes	SLB policy configuration submode.	
----------------------	-----------------------------------	--

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	Only one cookie map can be associated with a policy. Cookie maps are configured using the map cookie command. The cookie map name must match the name specified in the map cookie command.
-------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Examples	This example shows how to configure a cookie-based SLB policy named policy_content:
-----------------	-------------------------------------------------------------------------------------

```
SLB-Switch(config-module-csm)# policy policy_content
SLB-Switch(config-slb-policy)# serverfarm new_serverfarm
SLB-Switch(config-slb-policy)# cookie-map cookie-map-1
SLB-Switch(config-slb-policy)# exit
SLB-Switch(config)
```

Related Commands	<p>policy</p> <p>map cookie</p> <p>show module csm policy</p>
-------------------------	---------------------------------------------------------------------------------------------------------------

header-map

Use the **header-map** command in SLB policy configuration submode to specify the HTTP header criteria to include in a policy. Use the **no** form of this command to remove a header map.



Note

If any HTTP header information is matched, the policy rule is satisfied.

header-map *name*

no header-map

Syntax Description

<i>name</i>	Name of the previously configured HTTP header expression group.
-------------	-----------------------------------------------------------------

Defaults

This command has no default settings.

Command Modes

SLB policy configuration submode.

Command History

Release	Modification
2.1.1	This command was introduced.

Usage Guidelines

Only one header map can be associated with a policy. The header map name must match the name specified in the **map header** command on page A-18.

Examples

This example shows how to configure a header-based policy named `policy_content`:

```
SLB-Switch(config-module-csm)# policy policy_content
SLB-Switch(config-slb-policy)# serverfarm new_serverfarm
SLB-Switch(config-slb-policy)# header-map header-map-1
SLB-Switch(config-slb-policy)# exit
```

Related Commands

policy
map header
show module csm policy

serverfarm

Use the **serverfarm** command in the SLB policy configuration submode to associate a server farm with a policy. Use the **no** form of this command to remove the server farm from the policy.

serverfarm *serverfarm-name*

no serverfarm

Syntax Description	<i>serverfarm-name</i>	Name of the server farm associated with the policy.
---------------------------	------------------------	-----------------------------------------------------

Defaults	This command has no default settings.	
-----------------	---------------------------------------	--

Command Modes	SLB policy configuration submode.	
----------------------	-----------------------------------	--

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	Use the serverfarm command to configure the server farm. Only one server farm can be configured per policy. The server farm name must match the name specified in the serverfarm module CSM configuration submode command.
-------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Examples	This example shows how to associate a server farm named central with a policy:
-----------------	--------------------------------------------------------------------------------

```
SLB-Switch(config-module-csm)# policy policy
SLB-Switch(config-slb-policy)# serverfarm central
```

Related Commands	<p>policy</p> <p>serverfarm (module CSM configuration submode)</p> <p>show module csm policy</p>
-------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------

set ip dscp

Use the **set ip dscp** command in the SLB policy configuration submode to mark packets that match the policy with a DSCP value. Use the **no** form of this command to stop marking packets.

```
set ip dscp dscp-value
```

```
no set ip dscp
```

Syntax Description	<i>dscp-value</i>	The range is from 0 to 63.
---------------------------	-------------------	----------------------------

Defaults	The default is that the CSM does not store DSCP values.
-----------------	---------------------------------------------------------

Command Modes	SLB policy configuration submode.
----------------------	-----------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to mark packets to match a policy named policy_content:
-----------------	--------------------------------------------------------------------------------

```
SLB-Switch(config-module-csm)# policy policy_content
SLB-Switch(config-slb-policy)# set ip dscp 22
```

Related Commands	policy show module csm policy
-------------------------	------------------------------------------------------------------

sticky-group

Use the **sticky-group** command in the SLB policy configuration submode to associate a sticky group and the sticky group attributes to the policy. Use the **no** form of this command to remove the sticky group from the policy.

sticky-group *group-id*

no sticky-group

Syntax Description	<i>group-id</i>	ID of the sticky group to be associated with a policy.
---------------------------	-----------------	--------------------------------------------------------

Defaults	The default is 0, which means that no connections are sticky.
-----------------	---------------------------------------------------------------

Command Modes	SLB policy configuration submode.
----------------------	-----------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	The <i>group-id</i> must match the ID specified in the sticky command; the range is from 1 to 255.
-------------------------	-----------------------------------------------------------------------------------------------------------

Examples	This example shows how to configure a sticky group:
-----------------	-----------------------------------------------------

```
SLB-Switch(config-module-csm)# policy policy1
SLB-Switch(config-slb-policy)# sticky-group 5
```

Related Commands	policy sticky show module csm policy show module csm sticky
-------------------------	--------------------------------------------------------------------------------------------------------------------------------------

url-map

Use the **url-map** command in SLB policy configuration submode to associate a list of URLs with the policy. Use the **no** form of this command to remove the URL map from the policy.

url-map *url-map-name*

no url-map

Syntax Description	<i>url-map-name</i> Name of the URL list to be associated with a policy.				
Defaults	The default is no URL map.				
Command Modes	SLB policy configuration submode.				
Command History	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>1.1.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Usage Guidelines	Only one URL map can be associated with a policy. URL maps are configured using the map url command.				
Examples	<p>This example shows how to associate a list of URLs with a policy named assembly:</p> <pre>SLB-Switch(config-module-csm)# policy policy SLB-Switch(config-slb-policy)# url-map assembly</pre>				
Related Commands	<p>policy map url show module csm policy</p>				

probe

Use the **probe** command to configure a probe and probe type for health monitoring and to enter the probe configuration submode. Use the **no** form of this command to remove a probe from the configuration.

probe *probe-name* {**http** | **icmp** | **telnet** | **tcp** | **ftp** | **smtp** | **dns**}

no probe *probe-name*

Syntax Description	<i>probe-name</i>	Name of the probe; the character string is limited to 15 characters.
	http	Keyword to create an HTTP probe with a default configuration.
	icmp	Keyword to create an ICMP probe with a default configuration.
	telnet	Keyword to create a Telnet probe with a default configuration.
	tcp	Keyword to create a TCP probe with a default configuration.
	ftp	Keyword to create an FTP probe with a default configuration.
	smtp	Keyword to create an SMTP probe with a default configuration.
	dns	Keyword to create a DNS probe with a default configuration.

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines A probe can be assigned to a server farm in serverfarm submode.

Examples This example shows how to configure an HTTP probe named TREADER:

```
SLB-Switch(config-module-csm)# probe TREADER http
```

Related Commands [probe](#) (SLB serverfarm configuration submode)
[show module csm probe](#)

address (dns)

Use the **address** command in SLB DNS probe configuration submode to specify an IP address of the real server used by DNS to resolve requests. Use the **no** form of this command to remove the address.

address *ip-address*

no address *ip-address*

Syntax Description	<i>ip-address</i>	Real server IP address.
---------------------------	-------------------	-------------------------

Defaults	This command has no default settings.
-----------------	---------------------------------------

Command Modes	SLB DNS probe configuration submode.
----------------------	--------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	Multiple addresses can be configured for a DNS probe.
-------------------------	-------------------------------------------------------

Examples This example shows how to configure an IP address of the DNS server:

```
SLB-Switch(config-slb-probe-dns)# address 101.23.45.36
```

Related Commands	<p>probe</p> <p>address (icmp)</p> <p>show module csm probe</p>
-------------------------	-----------------------------------------------------------------------------------------------------------------

address (icmp)

Use the **address** command in SLB ICMP probe configuration submode to specify a destination IP address for health monitoring. Use the **no** form of this command to remove the address.

address *ip-address*

no address

Syntax Description	<i>ip-address</i>	Real server IP address.
---------------------------	-------------------	-------------------------

Defaults	This command has no default settings.
-----------------	---------------------------------------

Command Modes	SLB ICMP probe configuration submode.
----------------------	---------------------------------------

Command History	Release	Modification
	2.1.1	This command was introduced.

Usage Guidelines	One address can be configured for an ICMP probe.
-------------------------	--------------------------------------------------

Examples	This example shows how to configure an IP address of the real server:
-----------------	-----------------------------------------------------------------------

```
SLB-Switch(config-slb-probe-icmp)# address 101.23.45.36
```

Related Commands	<p>probe</p> <p>address (dns)</p> <p>show module csm probe</p>
-------------------------	----------------------------------------------------------------------------------------------------------------

credentials

Use the **credentials** command in the SLB HTTP probe configuration submode to configure basic authentication values for an HTTP probe. Use the **no** form of this command to remove the credentials configuration.

credentials *username* [*password*]

no credentials

Syntax Description		
	<i>username</i>	Name that appears in the HTTP header.
	<i>password</i>	(Optional) Password that appears in the HTTP header.

Defaults This command has no default settings.

Command Modes SLB HTTP probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines This command is for HTTP probes.

Examples This example shows how to configure authentication for an HTTP probe:
 SLB-Switch(config-slb-probe-http)# **credentials seamless abercrombie**

Related Commands [probe](#)
[show module csm probe](#)

expect status

Use the **expect status** command in the SLB HTTP/FTP/Telnet/SMTP probe configuration submode to configure a status code for the probe. Use the **no** form of this command to remove the status code from the configuration.

expect status *min-number* [*max-number*]

no expect status *min-number* [*max-number*]

Syntax Description

<i>min-number</i>	Single status code if <i>max-number</i> is not specified.
<i>max-number</i>	(Optional) Maximum status code in a range.

Defaults

The default range is 0 to 999 (any response from the server is valid).

Command Modes

SLB HTTP/FTP/Telnet/SMTP probe configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.

Usage Guidelines

This command is for HTTP, FTP, Telnet, and SMTP probes. You can specify multiple status code ranges with this command by entering one command at a time. If you specify the *max-number* value, this number is used as the minimum status code of a range. If you specify no maximum number, this command uses a single number (*min-number*). If you specify both *min-number* and *max-number* values, this command uses the range between the numbers.



Note

When you remove the expect status, you cannot set the range of numbers to 0 or as a range of numbers that includes the values you set for the expect status. The expect status state becomes invalid and does not restore the default range of 0 through 999. To remove the expect status, remove each set of numbers using the **no expect status** command. For example, enter the **no expect status 0 3** command and then enter the **no expect status 34 99** command.

Examples

This example shows how to configure an HTTP probe with multiple status code ranges:

```
SLB-Switch(config-slb-probe-http)# expect status 34 99
SLB-Switch(config-slb-probe-http)# expect status 0 33
SLB-Switch(config-slb-probe-http)#
```

Related Commands

[probe](#)
[show module csm probe](#)

failed

Use the **failed** command in the SLB probe configuration submode to set the time to wait before probing a failed server. Use the **no** form of this command to reset the time to wait before probing a failed server to default.

failed *failed-interval*

no failed

Syntax Description	<i>failed-interval</i>	Time in seconds before retrying a failed server; the range is from 5 to 65535.
---------------------------	------------------------	--------------------------------------------------------------------------------

Defaults The default value for the failed interval is 300 seconds.

Command Modes SLB probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines This command is used for all probe types.

Examples This example shows how to configure a failed server probe for 200 seconds:

```
SLB-Switch(config-slb-probe-http)# failed 200
```

Related Commands

- [probe](#)
- [show module csm probe](#)

header

Use the **header** command in the SLB HTTP probe configuration submode to configure a header field for the HTTP probe. Use the **no** form of this command to remove the credentials configuration.

header *field-name* [*field-value*]

no header *field-name*

Syntax Description	<i>field-name</i>	Name for the header being defined.
	<i>field-value</i>	(Optional) Content for the header.

Defaults This command has no default settings.

Command Modes SLB HTTP probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines You can configure multiple headers for each HTTP probe. The length of the *field-name* value plus the length of the *field-value* value plus 4 (for “:”, space, and CRLF) cannot exceed 255 characters. This command is for HTTP probes.

Examples This example shows how to configure a header field for the HTTP probe:

```
SLB-Switch(config-slb-probe-http)# header abacadabra
```

Related Commands

- [probe](#)
- [show module csm probe](#)

interval

Use the **interval** command in the SLB probe configuration submode to set the time interval between probes. Use the **no** form of this command to reset the time interval between probes to default.

interval *seconds*

no interval

Syntax Description	<i>seconds</i>	Number of seconds to wait between probes from the end of the previous probe to the beginning of the next probe; the range is from 5 to 65535.
---------------------------	----------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Defaults	The default value for the interval between probes is 120 seconds.
-----------------	-------------------------------------------------------------------

Command Modes	SLB probe configuration submode.
----------------------	----------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	This command is used for all probe types.
-------------------------	-------------------------------------------

Examples	This example shows how to configure a probe interval of 150 seconds: <pre>SLB-Switch(config-slb-probe-http)# interval 150</pre>
-----------------	-------------------------------------------------------------------------------------------------------------------------------------------

Related Commands	probe show module csm probe
-------------------------	----------------------------------------------------------------

name

Use the **name** command in the SLB DNS probe configuration submode to configure a domain name for the DNS probe. Use the **no** form of this command to remove the name from the configuration.

name *domain-name*

no name

Syntax Description	<i>domain-name</i>	Domain name that the probe sends to the DNS server.
--------------------	--------------------	-----------------------------------------------------

Defaults	This command has no default settings.
----------	---------------------------------------

Command Modes	SLB DNS probe configuration submode.
---------------	--------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to specify the probe name that is resolved by the DNS server:
----------	--------------------------------------------------------------------------------------

```
SLB-Switch(config-slb-probe-dns)# name astro
```

Related Commands	probe show module csm probe
------------------	----------------------------------------------------------------

open

Use the **open** command in the SLB HTTP/TCP/FTP/Telnet/SMTP probe configuration submode to set the time to wait for a TCP connection. Use the **no** form of this command to reset the time to wait for a TCP connection to default.

open *open-timeout*

no open

Syntax Description	<i>open-timeout</i>	Maximum number of seconds to wait for the TCP connection; the range is from 1 to 65535.
---------------------------	---------------------	-----------------------------------------------------------------------------------------

Defaults	The default value for the open timeout is 10 seconds.
-----------------	-------------------------------------------------------

Command Modes	SLB HTTP/TCP/FTP/Telnet/SMTP probe configuration submode.
----------------------	-----------------------------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	This command is not used for any non-TCP probes, for example, ICMP or DNS.
-------------------------	----------------------------------------------------------------------------



Note

There are two different timeout values: open and receive. The open timeout specifies how many seconds to wait for the connection to open (that is, how many seconds to wait for SYN ACK after sending SYN). The receive timeout specifies how many seconds to wait for data to be received (that is, how many seconds to wait for an HTTP reply after sending a GET/HHEAD request). Because TCP probes close as soon as they open without sending any data, the receive timeout is not used.

Examples	This example shows how to configure a time to wait for a TCP connection of 5 seconds:
-----------------	---------------------------------------------------------------------------------------

```
SLB-Switch(config-slb-probe-http)# open 5
```

Related Commands	probe show module csm probe
-------------------------	----------------------------------------------------------------

receive

Use the **receive** command in the SLB probe configuration submode to set the time to wait for a reply from a server. Use the **no** form of this command to reset the time to wait for a reply from a server to default.

receive *receive-timeout*

no receive

Syntax Description	<i>receive-timeout</i>	Number of seconds to wait for reply from a server; the range is from 1 to 65535.
---------------------------	------------------------	----------------------------------------------------------------------------------

Defaults The default value for a receive timeout is 10 seconds.

Command Modes SLB probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines This command is available for all probe types, except TCP.



Note

There are two different timeout values: open and receive. The open timeout specifies how many seconds to wait for the connection to open (that is, how many seconds to wait for SYN ACK after sending SYN). The receive timeout specifies how many seconds to wait for data to be received (that is, how many seconds to wait for an HTTP reply after sending a GET/HHEAD request). Because TCP probes close as soon as they open without sending any data, the receive timeout is not used.

Examples This example shows how to configure a time to wait for a reply from a server to 5 seconds:

```
SLB-Switch(config-slb-probe-http)# receive 5
```

Related Commands

- [probe](#)
- [show module csm probe](#)

request

Use the **request** command in the SLB HTTP probe configuration submode to configure the request method used by the HTTP probe. Use the **no** form of this command to remove the request method from the configuration.

```
request [method {get | head}] [url path]
```

```
no request [method {get | head}] [url path]
```

Syntax Description	method	(Optional) Keyword to configure a method for the probe request.
	get	(Optional) Keyword to direct the server to get this page.
	head	(Optional) Keyword to direct the server to get only the header for this page.
	url	(Optional) Keyword to direct the server to get the URL for this page.
	<i>path</i>	(Optional) A character string up to 255 characters specifying the URL path.

Defaults
The default path is /.
The default method is **get**.

Command Modes
SLB HTTP probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines
The CSM supports only the **get** and **head** request methods. It does not support **post** and other methods. This command is for HTTP probes.

Examples
This example shows how to configure a request method for the probe configuration:
SLB-Switch(config-slb-probe-http)# **request method head**

Related Commands
[probe](#)
[show module csm probe](#)

retries

Use the **retries** command in the SLB probe configuration submode to set the number of failed probes that are allowed before marking the server failed. Use the **no** form of this command to reset the number of failed probes allowed before marking a server as failed to default.

retries *retry-count*

no retries

Syntax Description	<i>retry-count</i>	Number of probes to wait before marking a server as failed; the range is from 0 to 65535.
---------------------------	--------------------	-------------------------------------------------------------------------------------------

Defaults The default value for retries is 3.

Command Modes SLB probe configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines This command is used for all probe types.



Note

Set retries to 2 or more. If retries are set to 1, a single dropped probe packet will bring down the server. A setting of 0 places no limit on the number of probes that are sent. Retries are sent until the system reboots.

Examples This example shows how to configure a retry count of 3:

```
SLB-Switch(config-slb-probe-http)# retries 3
```

Related Commands [probe](#)
[show module csm probe](#)

real

Use the **real** command in the SLB serverfarm configuration submode to identify a real server that is a member of the server farm and enter the real server configuration submode. Use the **no** form of this command to remove the real server from the configuration.

real *ip-address* [*port*]

no real *ip-address* [*port*]

Syntax Description		
	<i>ip-address</i>	Real server IP address.
	<i>port</i>	(Optional) Port translation for the real server; the range is from 1 to 65535.

Defaults The default is no port translation for the real server.

Command Modes SLB serverfarm configuration submode.

Usage Guidelines Use this command to identify a real server that is a member of the server farm and enter the real server configuration submode.



Note

The IP address that you supply provides a load-balancing target for the CSM. This target can be any IP addressable object. For example, the IP addressable object may be a real server, a firewall, or an alias IP address of another CSM.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to identify a real server and enter the real server submode:

```
SLB-Switch(config-slb-sfarm)# real 102.43.55.60
SLB-Switch(config-slb-real)#
```

Related Commands

- [serverfarm](#)
- [show module csm real](#)
- [show module csm serverfarm](#)

inervice

Use the **inervice** command in the SLB real server configuration submode to enable the real servers. Use the **no** form of this command to remove a real server from service.

inervice

no inervice

Syntax Description This command has no arguments or keywords.

Defaults The default for a real server is **no inervice**.

Command Modes SLB real server configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to enable a real server:

```
SLB-Switch(config-slb-sfarm)# real 10.2.2.1
SLB-Switch(config-slb-real)# inervice
```

Related Commands [real](#) (SLB serverfarm submode)
[show module csm real](#)

maxconns

Use the **maxconns** command in the SLB real server configuration submode to limit the number of active connections to the real server. Use the **no** form of this command to change the maximum number of connections to its default value.

maxconns *max-conns*

no maxconns

Syntax Description	<i>max-conns</i>	Maximum number of active connections on the real server at any one point in time; the range is from 1 to 4294967295.
---------------------------	------------------	----------------------------------------------------------------------------------------------------------------------

Defaults	The default value is the maximum value or infinite (not monitored).
-----------------	---------------------------------------------------------------------

Command Modes	SLB real server configuration submode.
----------------------	----------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	When you specify minconns , you must also specify the maxconns command.
-------------------------	---------------------------------------------------------------------------------------

Examples	This example shows how to limit the connections to a real server:
-----------------	-------------------------------------------------------------------

```
SLB-Switch(config-slb-sfarm)# real 10.2.2.1
SLB-Switch(config-slb-real)# maxconns 4000
```

Related Commands	<p>minconns (real server submode)</p> <p>real (serverfarm submode)</p> <p>show module csm real</p>
-------------------------	-------------------------------------------------------------------------------------------------------------------------

minconns

Use the **minconns** command in the SLB real server configuration submode to establish a minimum connection threshold for the real server. Use the **no** form of this command to change the minimum number of connections to the default value.

minconns *min-cons*

no minconns

Syntax Description	<i>min-cons</i>	Minimum number of connections allowed on the real server; the range is from 0 to 4294967295.
---------------------------	-----------------	----------------------------------------------------------------------------------------------

Defaults	The default value is no minconns .
-----------------	-------------------------------------------

Command Modes	SLB real server configuration submode.
----------------------	----------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	When the maxconns threshold is exceeded, the CSM stops sending connections until the number of connections falls below the minconns threshold. This value must be lower than the maximum number of connections configured by the maxconns command. When you specify minconns , you must also specify the maxconns command.
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Examples	This example shows how to establish a minimum connection threshold for a server:
-----------------	----------------------------------------------------------------------------------

```
SLB-Switch(config-slb-sfarm)# real 102.2.2.1
SLB-Switch(config-slb-real)# minconns 4000
```

Related Commands	maxconns (real server submode) real (serverfarm submode) show module csm real
-------------------------	-------------------------------------------------------------------------------------------------------------------------------------

redirect-vserver

Use the **redirect-vserver** command in the SLB real server configuration submode to configure a real server to receive traffic redirected by a redirect virtual server. Use the **no** form of this command to specify that traffic is not redirected to the real server.

redirect-vserver *name*

no redirect-vserver

Syntax Description	<i>name</i>	Name of the virtual server that has its requests redirected.
--------------------	-------------	--------------------------------------------------------------

Defaults	The default is no redirect-vserver .
----------	---------------------------------------------

Command Modes	SLB real server configuration submode.
---------------	----------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Usage Guidelines	Mapping real servers to redirect virtual servers provides persistence for clients to real servers across TCP sessions. Before using this command, you must create the redirect virtual server in serverfarm submode with the redirect-vserver command.
------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Examples	This example shows how to map a real server to a virtual server:
----------	------------------------------------------------------------------

```
SLB-Switch(config-slb-sfarm)# real 10.2.2.1
SLB-Switch(config-slb-real)# redirect-vserver timely
```

Related Commands	<p>real (SLB serverfarm configuration submode)</p> <p>redirect-vserver (SLB serverfarm configuration submode)</p> <p>show module csm real</p> <p>show module csm vserver redirect</p>
------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

weight

Use the **weight** command in the SLB real server configuration submode to configure the capacity of the real servers in relation to the other real servers in the server farm. Use the **no** form of this command to change the server's weight to its default capacity.

weight *weighting-value*

no weight

Syntax Description	<i>weighting-value</i>	Value to use for the server farm predictor algorithm; the range is from 1 to 100.
---------------------------	------------------------	-----------------------------------------------------------------------------------

Defaults	The weighting value default is 8.
-----------------	-----------------------------------

Command Modes	SLB real server configuration submode.
----------------------	----------------------------------------

Command History	<table border="1"> <thead> <tr> <th style="border-right: none;">Release</th> <th style="border-left: none;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-right: none;">1.1.1</td> <td style="border-left: none;">This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				

Examples	This example shows how to configure the weight of a real server:
-----------------	------------------------------------------------------------------

```
SLB-Switch(config-slb-sfarm)# real 10.2.2.1
SLB-Switch(config-slb-real)# weight 8
```

Related Commands	<p>predictor (SLB serverfarm submode)</p> <p>real (SLB serverfarm submode)</p> <p>show module csm real</p>
-------------------------	---------------------------------------------------------------------------------------------------------------------------------

redirect-vserver

Use the **redirect-vserver** command in submode to specify the name of a virtual server to receive traffic redirected by the server farm and enter redirect virtual server configuration submode. Use the **no** form of this command to remove the redirect virtual server.

redirect-vserver *name*

no redirect-vserver *name*

Syntax Description	<i>name</i>	Name of the virtual server to receive traffic redirected by the server farm; the virtual server name can be no longer than 15 characters.
---------------------------	-------------	-------------------------------------------------------------------------------------------------------------------------------------------

Defaults	This command has no default settings.
-----------------	---------------------------------------

Command Modes	SLB serverfarm configuration submode.
----------------------	---------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	<p>This example shows how to name the virtual server:</p> <pre>SLB-Switch(config-slb-sfarm)# redirect-vserver quantico</pre>
-----------------	-------------------------------------------------------------------------------------------------------------------------------------

Related Commands	<p>real (SLB serverfarm submode) redirect-vserver (SLB real server submode) serverfarm show module csm serverfarm show module csm vserver redirect</p>
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

advertise

Use the **advertise** command in the SLB redirect virtual server configuration mode to allow the CSM to advertise the IP address of the virtual server as host-route. Use the **no** form of this command to stop advertising the host-route for this virtual server.

advertise [active]

no advertise

Syntax Description	active (Optional) Keyword to allow the CSM to advertise the IP address of the virtual server as host-route.				
Defaults	The default for network mask is 255.255.255.255 if the network mask is not specified.				
Command Modes	SLB redirect virtual server configuration submode.				
Usage Guidelines	Without the active option, the CSM always advertises the virtual server IP address whether or not there is any active real server attached to this virtual server.				
Command History	<table border="1"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Release</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">1.1.1</td> <td style="border-bottom: 1px solid black;">This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Examples	<p>This example shows how to restrict a client from using the redirect virtual server:</p> <pre>SLB-Switch(config-slb-redirect-vs)# advertise 10.5.2.1 exclude</pre>				
Related Commands	<p>vserver show module csm vserver redirect</p>				

client

Use the **client** command in the SLB redirect virtual server configuration mode to restrict which clients are allowed to use the redirect virtual server. Use the **no** form of this command to remove the client definition from the configuration.

client *ip-address* [*network-mask*] [**exclude**]

no client *ip-address* [*network-mask*]

Syntax Description		
	<i>ip-address</i>	Client's IP address.
	<i>network-mask</i>	(Optional) Client's IP mask.
	exclude	(Optional) Keyword to specify that the IP address is disallowed.

Defaults The default for network mask is 255.255.255.255 if the network mask is not specified.

Command Modes SLB redirect virtual server configuration submode.

Usage Guidelines The network mask is applied to the source IP address of incoming connections and the result must match the IP address before the client is allowed to use the virtual server. If you do not specify **exclude**, the IP address and network mask combination is allowed.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to restrict a client from using the redirect virtual server:

```
SLB-Switch(config-slb-redirect-vs)# client 10.5.2.1 exclude
```

Related Commands [client-group](#) (SLB policy submode)
[vserver](#)
[show module csm vserver redirect](#)

idle

Use the **idle** command in the SLB redirect virtual server configuration submode to specify the connection idle timer duration. Use the **no** form of this command to disable the idle timer.

idle *duration*

no idle

Syntax Description	<i>duration</i>	SLB connection idle timer in seconds; the range is from 4 to 65535.
---------------------------	-----------------	---------------------------------------------------------------------

Defaults	The default is 3600.
-----------------	----------------------

Command Modes	SLB redirect virtual server configuration submode.
----------------------	----------------------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to specify the connection idle timer duration:
-----------------	-----------------------------------------------------------------------

```
SLB-Switch(config-slb-redirect-vs)# idle 7
```

Related Commands	redirect-vserver (SLB serverfarm submode) show module csm vserver redirect
-------------------------	---------------------------------------------------------------------------------------------------------------

inservice

Use the **inservice** command in the SLB redirect virtual server configuration submode to enable the real server for use by the CSM. If this command is not specified, the virtual server is defined but not used. Use the **no** form of this command to disable the virtual server.

inservice

no inservice

Syntax Description This command has no arguments or keywords.

Defaults The default is **no inservice**.

Command Modes SLB redirect virtual server configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to enable a redirect virtual server for use by the CSM:

```
SLB-Switch(config-slb-redirect-vs)# inservice
```

Related Commands [redirect-vserver](#) (SLB serverfarm submode)
[show module csm vserver redirect](#)

replicate csrp

Use the **replicate csrp** command in the SLB redirect virtual server configuration submode to enable connection redundancy. Use the **no** form of this command to remove connection redundancy.

replicate csrp

no replicate csrp

Syntax Description This command has no keywords or arguments.

Defaults The default is **no replicate csrp**.

Command Modes SLB virtual server configuration submode.

Command History	Release	Modification
	2.1.1	This command was introduced.

Examples This example shows how to enable connection redundancy:

```
SLB-Switch(config-slb-redirect-vs)# replicate csrp
```

Related Commands

- [vserver](#)
- [show module csm vserver redirect](#)

ssl

Use the **ssl** command in the SLB redirect virtual server configuration submode to redirect an HTTP request to either HTTPS (SSL) or the FTP service. Use the **no** form of this command to reset the redirect of an HTTP request to an HTTP service.

```
ssl {https | ftp | ssl-port-number}
```

```
no ssl
```

Syntax Description	<i>ssl-port-number</i> SSL port number; the range is from 1 to 65535.				
Defaults	The default is no ssl forwarding.				
Command Modes	SLB redirect virtual server configuration submode.				
Command History	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>1.1.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Examples	<p>This example shows how to enable SSL forwarding:</p> <pre>SLB-Switch(config-slb-redirect-vs)# ssl 443</pre>				
Related Commands	<p>redirect-vserver (SLB serverfarm submode) show module csm vserver redirect</p>				

virtual

Use the **virtual** command in SLB redirect virtual server configuration submode to specify the virtual server's IP address, the protocol used for traffic, and the port the protocol is using. Use the **no** form of this command to reset the virtual server to its defaults.

virtual *v_ipaddress* **tcp** *port*

no virtual *v_ipaddress*

Syntax Description		
	<i>v_ipaddress</i>	Redirect virtual server's IP address.
	tcp	Keyword to specify the protocol used for redirect virtual server traffic.
	<i>port</i>	Port number used by the protocol.

Defaults The default IP address is 0.0.0.0, which prevents packet forwarding.

Command Modes SLB redirect virtual server configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to specify the virtual server's IP address, the protocol for redirect virtual server traffic, and the port number used by the protocol:

```
SLB-Switch(config-slb-redirect)# virtual 130.32.44.50 tcp 80
```

Related Commands [redirect-vsver](#) (SLB serverfarm submode)
[show module csm vsver redirect](#)

vlan

Use the **vlan** command in the SLB redirect virtual server submode to define which source VLANs can be accessed on the redirect virtual server. Use the **no** form of this command to remove the VLAN.

vlan {*vlan-number* | **all**}

no vlan

Syntax Description		
	<i>vlan-number</i>	VLAN the virtual server may access.
	all	(Optional) Keyword to specify all VLANs are accessed by the virtual server.

Defaults The default is all VLANs.

Command Modes SLB virtual server configuration submode.

Command History	Release	Modification
	2.1.1	This command was introduced.

Examples This example shows how to specify a VLAN for redirect virtual server access:

```
SLB-Switch(config-slb-redirect-vs)# vlan 5
```

Related Commands

- [sticky](#)
- [sticky-group](#) (SLB policy submode)
- [show module csm sticky](#)
- [show module csm vserver redirect](#)

webhost backup

Use the **webhost backup** command in SLB redirect virtual server configuration submode to specify a backup string sent in response to HTTP requests. Use the **no** form of this command to disable the backup string.

webhost backup *backup-string* [**301** | **302**]

webhost backup

Syntax Description	<i>backup-string</i>	String sent in response to redirected HTTP requests; the maximum length is 127 characters.
	301	(Optional) Keyword to specify the HTTP status code: “The requested resource has been assigned a new permanent URL.”
	302	(Optional) Keyword to specify the HTTP status code: “The requested resource resides temporarily under a different URL.”

Defaults The default status code is 302.

Command Modes SLB redirect virtual server configuration submode.

Usage Guidelines This command is used in situations where the redirect virtual server has no available real servers. **301** or **302** is used to specify the redirect code. The backup string may include a %p at the end to indicate inclusion of the path in the HTTP redirect location statement field.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to specify a backup string that is sent in response to HTTP requests:

```
SLB-Switch(config-slb-redirect-vs)# webhost backup www.mybackup.com%p 301
```

Related Commands [redirect-vserver](#) (SLB serverfarm submode)
[show module csm vserver redirect](#)

webhost relocation

Use the **webhost relocation** command in the SLB redirect virtual server configuration submode to specify a relocation string sent in response to HTTP requests. Use the **no** form of this command to disable the relocation string.

webhost relocation *relocation string* [**301** | **302**]

no webhost relocation

Syntax Description	<i>relocation string</i>	String sent in response to redirected HTTP requests; the maximum length is 127 characters.
	301	(Optional) Keyword to specify the HTTP status code: "The requested resource has been assigned a new permanent URL."
	302	(Optional) Keyword to specify the HTTP status code: "The requested resource resides temporarily under a different URL."

Defaults The default status code is 302.

Command Modes SLB redirect virtual server configuration submode.

Usage Guidelines The backup string may include a %p at the end to indicate inclusion of the path in the HTTP redirect location statement field.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to specify a relocation string that is sent in response to HTTP requests:

```
SLB-Switch(config-slb-redirect-vs)# webhost relocation www.myhome1.com%p 301
```

Related Commands [redirect-vserver](#) (SLB serverfarm submode)
[show module csm vserver redirect](#)

serverfarm

Use the **serverfarm** command to identify a server farm and enter the serverfarm configuration submode. Use the **no** form of this command to remove the server farm from the configuration.

serverfarm *serverfarm-name*

no serverfarm *serverfarm-name*

Syntax Description	<i>serverfarm-name</i>	Character string used to identify the server farm; the character string is limited to 15 characters.
---------------------------	------------------------	------------------------------------------------------------------------------------------------------

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Usage Guidelines Use this command to enter the server farm configuration submode to configure the load-balancing algorithm (predictor), a set of real servers, and the attributes (NAT, probe, and bindings) of the real servers.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to identify a server farm named PUBLIC and change the CLI to server farm configuration mode:

```
SLB-Switch(config-module-csm)# serverfarm PUBLIC
```

Related Commands

- [serverfarm](#) (SLB policy configuration submode)
- [serverfarm](#) (SLB virtual server configurations submode)
- [show module csm serverfarm](#)

bindid

Use the **bindid** command in the SLB serverfarm configuration submode to assign a unique ID to allow the DFP agent to differentiate a real server in one server farm versus another server farm. Use the **no** form of this command to disable the bindid.

bindid [*bind-id*]

no bindid

Syntax Description	<i>bind-id</i> (Optional) Identification number for each binding; the range is from 0 to 65533.				
Defaults	The default is 0.				
Command Modes	SLB serverfarm configuration submode.				
Usage Guidelines	The single real server is represented as multiple instances of itself, each having a different bind identification. DFP uses this identification to identify a given weight for each instance of the real server.				
Command History	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>1.1.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Examples	<p>This example shows how to bind a server to multiple virtual servers:</p> <pre>SLB-Switch(config-slb-sfarm)# bindid 7</pre>				
Related Commands	<p>dfp serverfarm show module csm serverfarm</p>				

failaction purge

Use the **failaction purge** command in the SLB serverfarm configuration submode to set the behavior of connections to real servers that have failed. Use the **no** form of this command to disable the behavior of connections to real servers that have failed.

failaction purge

no failaction purge

Syntax Description This command has no arguments or keywords.

Defaults The default is **no failaction purge**.

Command Modes SLB serverfarm configuration submode.

Usage Guidelines With this command enabled, connections to a real server in the server farm are purged when the real server goes down. This feature is required for VPN load balancing.

Release	Modification
2.1.1	This command was introduced.

Examples This example shows how to set the behavior of connections to real servers that have failed:

```
SLB-Switch(config-slb-sfarm)# failaction purge
```

Related Commands

- [dfp](#)
- [serverfarm](#)
- [show module csm serverfarm](#)

health

Use the **health** command in the SLB serverfarm configuration submode to set the retry attempts to real servers that have failed. Use the **no** form of this command to disable the retries or the time to wait for connections to real servers that have failed.

health retries *count* **failed** *seconds*

no health

Syntax Description		
	retries	Keyword to specify the number of tries to attempt to failed real servers.
	<i>count</i>	Number of probes to wait before marking a server as failed; the range is from 0 to 65534.
	failed	Keyword to specify the time to wait to attempt retries to the real servers.
	<i>seconds</i>	Time in seconds before retrying a failed server; the range is from 0 to 65535.

Defaults There are no default settings.

Command Modes SLB serverfarm configuration submode.

Command History	Release	Modification
	2.2(1)	This command was introduced.

Examples This example shows how to set the behavior of connections to real servers that have failed:

```
SLB-Switch(config-slb-sfarm)# health retries 20 failed 200
```

Related Commands

- [dfp](#)
- [serverfarm](#)
- [show module csm serverfarm](#)

nat client

Use the **nat client** command in SLB serverfarm configuration submode to specify a set of client NAT pool addresses that should be used to perform the NAT function on clients connecting to this server farm. Use the **no** form of this command to remove the NAT pool from the configuration.

nat client *client-pool-name*

no nat client

Syntax Description	<i>client-pool-name</i> Client pool name.				
Defaults	This command has no default settings.				
Command Modes	SLB serverfarm configuration submode.				
Usage Guidelines	Use this command to enable client NAT. If client NAT is configured, the client address and port number in load-balanced packets are replaced with an IP address and port number from the specified client NAT pool. This client pool name must match the pool name entered from a previous natpool command.				
Command History	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>1.1.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Examples	<p>This example shows how to specify NAT on the client:</p> <pre>SLB-Switch(config-slb-sfarm)# nat client wishers</pre>				
Related Commands	<p>natpool serverfarm nat server predictor show module csm serverfarm</p>				

nat server

Use the **nat server** command in SLB serverfarm configuration submode to specify NAT to servers in this server farm. Use the **no** form of this command to disable server NAT.

nat server

no nat server

Syntax Description This command has no arguments or keywords.

Defaults Server NAT is enabled by default.

Command Modes SLB server farm configuration submode.

Usage Guidelines Use this command to enable server NAT. If server NAT is configured, the server address and port number in load-balanced packets are replaced with an IP address and port number of one of the real servers in the server farm.



Note

The **nat server** command has no effect when **predictor forward** is configured, because no servers can be configured.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to specify NAT on the server:

```
SLB-Switch(config-slb-sfarm)# nat server
```

Related Commands

- [serverfarm](#)
- [nat client](#)
- [predictor](#)
- [show module csm serverfarm](#)

predictor

Use the **predictor** command in the SLB serverfarm configuration submode to specify the load-balancing algorithm for the server farm. Use the **no** form of this command to remove the load-balancing algorithm.

```
predictor { roundrobin | leastconns | hash url | hash address [source | destination] [ip-netmask]
| forward }
```

```
no predictor
```

Syntax Description

roundrobin	Keyword to select the next servers in the list of real servers.
leastconns	Keyword to select the server with the least number of connections.
hash url	Keyword to select the server using a hash value based on the URL.
hash address	Keyword to select the server using a hash value based on the source and destination IP addresses.
source	Keyword to select the server using a hash value based on the source IP address.
destination	Keyword to select the server using a hash value based on the destination IP address.
<i>ip-netmask</i>	(Optional) Bits in the IP address to use for the hash. If not specified, 255.255.255.255 is assumed.
forward	Keyword to tell the CSM to forward traffic in accordance with its internal routing tables.

Defaults

The default algorithm is round robin.

Command Modes

SLB serverfarm configuration submode.

Usage Guidelines

Use this command to define the load-balancing algorithm used in choosing a real server in the server farm. If you do not specify the **predictor** command, the default algorithm is **roundrobin**. Using the **no** form of this command changes the predictor algorithm to the default algorithm.



Note

The **nat server** command has no effect when **predictor forward** is configured, because no servers can be configured.

The portion of the URL to hash is based on the expressions configured for the virtual server submode command **url-hash**.

No real servers are needed. The server farm is actually a route forwarding policy with no real servers associated with it.

Command History	Release	Modification
	1.1.1	This command was introduced.
	2.1.1	Changed the ip-hash to the hash address source keyword and added new keyword types of hash address , hash address destination , hash url , and forward . In addition, the http-redirect command is now hidden.

Examples

This example shows how to specify the load-balancing algorithm for the server farm:

```
SLB-Switch(config-module-csm)# serverfarm PUBLIC
SLB-Switch(config-slb-sfarm)# predictor leastconns
```

Related Commands

[nat client](#)
[nat server](#)
[maxconns](#)
[minconns](#)
[serverfarm](#)
[show module csm serverfarm](#)
[serverfarm](#) (SLB virtual server configuration submode)

probe

Use the **probe** command in the SLB serverfarm configuration submode to associate a probe with a server farm. Use the **no** form of this command to disable a specific probe.

probe *probe-name*

no probe *probe-name*

Syntax Description	<i>probe-name</i>	Probe name associated with the server farm.
---------------------------	-------------------	---------------------------------------------

Defaults	This command has no default settings.	
-----------------	---------------------------------------	--

Command Modes	SLB serverfarm configuration submode.	
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Usage Guidelines	Each server farm can be associated with multiple probes of the same or different protocols. Protocols supported by the CSM include HTTP, ICMP, TCP, FTP, SMTP, Telnet, and DNS.	
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Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to associate a probe with a server farm:	
-----------------	-----------------------------------------------------------------	--

```
SLB-Switch(config-slb-sfarm)# probe general
```

Related Commands	<p>probe (Module CSM configuration submode)</p> <p>serverfarm</p> <p>show module csm probe</p> <p>show module csm serverfarm</p>	
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retcode-map

Use the **retcode-map** command in the SLB serverfarm configuration submode to assign a return code map to a server farm. Use the **no** form of this command to disable a specific probe.

retcode-map *retcodemap_name*

no retcode-map

Syntax Description	<i>retcodemap_name</i>	Return code map name associated with the server farm.
--------------------	------------------------	-------------------------------------------------------

Defaults	This command has no default settings.
----------	---------------------------------------

Command Modes	SLB serverfarm configuration submode.
---------------	---------------------------------------

Command History	Release	Modification
	2.2(1)	This command was introduced.

Examples	This example shows how to associate a probe with a server farm:
----------	-----------------------------------------------------------------

```
SLB-Switch(config-slb-sfarm)# retcode-map return_stats
```

Related Commands	map retcode (Module CSM configuration submode) serverfarm show module csm serverfarm
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static

Use the **static** command to configure the server NAT behavior and enter the NAT configuration submode. This command configures the CSM to support connections initiated by real servers. Both client NAT and server NAT can exist in the same configuration. Use the **no** form of this command to remove NAT from the CSM configuration.

```
static { drop | nat { virtual | ip-address }
```

```
no static { drop | nat { virtual | ip-address }
```

Syntax Description

drop	Keyword to drop connections from servers specified in static submode.
virtual	Keyword specifying that the configuration is for NAT.
nat	Keyword to use the server's Virtual IP (VIP) to NAT its source IP address.
<i>ip-address</i>	IP address to be used for NAT.

Defaults

This command has no default settings.

Command Modes

Module CSM configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to configure the CSM to support connections initiated by the real servers:

```
SLB-Switch(config-module-csm)# static nat virtual
```

Related Commands

[show module csm static](#)

real

Use the **real** command in SLB static NAT configuration submode to specify the address for a real server or the subnet mask for multiple real servers performing server NAT. Use the **no** form of this command to remove the address of a real server or the subnet mask of multiple real servers so they are no longer performing NAT.

real *real-ip-address* [*real-netmask*]

no real *real-ip-address* [*real-netmask*]

Syntax Description		
	<i>real-ip-address</i>	Real server IP address performing NAT.
	<i>real-netmask</i>	(Optional) Range of real servers performing NAT. If not specified, the default is 255.255.255.255 (a single real server).

Defaults This command has no default settings.

Command Modes SLB static NAT configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to specify the address for a real server:

```
SLB-Switch(config-slb-static)# real 10.0.0.0 255.0.0.0
```

Related Commands [static](#)
[show module csm static](#)

sticky

Use the **sticky** command to ensure that connections from the same client that match the same SLB policy use the same real server on subsequent connections. Use the **no** form of this command to remove a sticky group.

```
sticky sticky-group-id { netmask netmask | cookie name | ssl } [timeout sticky-time]
```

```
no sticky sticky-group-id
```

Syntax Description

<i>sticky-group-id</i>	ID to identify the sticky group instance; the range is from 1 to 255.
netmask	Keyword to specify the network mask for IP stickiness.
<i>netmask</i>	Network mask number.
cookie	Keyword to specify cookie stickiness.
<i>name</i>	Name of the cookie attached to the <i>sticky-group-id</i> .
ssl	Keyword to specify SSL stickiness.
timeout	(Optional) Keyword to specify the sticky duration.
<i>sticky-time</i>	(Optional) Sticky timer duration in minutes; the range is from 0 to 65535.

Defaults

The sticky time default value is 1440 minutes (24 hours).

Command Modes

Module CSM configuration submode.

Command History

Release	Modification
1.1.1	This command was introduced.
2.1.1	Changed the default timeout from 0 to 1440.

Usage Guidelines

Specifying a netmask permits sticky connections based on the masked client IP address.

Use the sticky time option to ensure that connections from the same client that match the same SLB policy use the same real server. If you specify a nonzero value, the last real server that was used for a connection from a client is remembered for *sticky-time* minutes after the end of the client's latest connection. New connections from the client to the virtual server initiated before the sticky time expires and that match SLB policy are balanced to the same real server that was used for the previous connection. A sticky time of 0 means sticky connections are not tracked.

Examples

This example shows how to create an IP sticky group:

```
SLB-Switch(config-module-csm)# sticky 5 netmask 255.255.255.255 timeout 20
```

Related Commands [sticky-group](#) (SLB policy submode)
 [sticky](#) (SLB vserver submode)
 [show module csm sticky](#)

vlan

Use the **vlan** command to create a client or server VLAN and assign it a VLAN ID and enter the VLAN submode. Use the **no** form of this command to remove the VLAN from the configuration.

vlan *vlan-id* { **client** | **server** }

no vlan *vlan-id*

Syntax Description		
	<i>vlan-id</i>	Number of the VLAN; the range is from 2 to 4095.
	client	Keyword to specify a client-side VLAN.
	server	Keyword to specify a server-side VLAN.

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Usage Guidelines A database entry should exist for the given VLAN ID.

Command History	Release	Modification
	1.1.1	This command was introduced.
	2.1.1	VLAN type fault-tolerance is deprecated and hidden.

Examples This example shows how to create a server VLAN and assign it a VLAN ID:

```
SLB-Switch(config-module-csm)# vlan 2 server
```

Related Commands [vlan](#) (SLB vserver submode)
[show module csm vlan](#)

alias

Use the **alias** command in the SLB VLAN configuration submode to assign multiple IP addresses to the CSM. Use the **no** form of this command to remove an alias IP addresses from the configuration.

alias *ip-address netmask*

no alias *ip-address netmask*

Syntax Description		
	<i>ip-address</i>	Alias IP address; a maximum of 255 addresses are allowed per VLAN.
	<i>netmask</i>	Network mask.

Defaults This command has no default settings.

Command Modes SLB VLAN configuration submode.

Usage Guidelines This command allows you to place the CSM on a different IP network than real servers without using a router.

Command History	Release	Modification
	1.1.1	This command was introduced for server VLANs.
	2.1.1	This command is now available for both client and server VLANs.

Examples This example shows how to assign multiple IP addresses to the CSM:

```
SLB-Switch(config-slb-vlan-server)# alias 130.21.34.56 255.255.255.0
SLB-Switch(config-slb-vlan-server)# alias 130.22.35.57 255.255.255.0
SLB-Switch(config-slb-vlan-server)# alias 130.23.36.58 255.255.255.0
SLB-Switch(config-slb-vlan-server)# alias 130.24.37.59 255.255.255.0
SLB-Switch(config-slb-vlan-server)# alias 130.25.38.60 255.255.255.0
```

Related Commands [vlan](#)
[show module csm vlan](#)

gateway

Use the **gateway** command in the SLB VLAN configuration mode to configure a gateway IP address. Use the **no** form of this command to remove the gateway from the configuration.

gateway *ip-address*

no gateway *ip-address*

Syntax Description

<i>ip-address</i>	IP address of the client-side gateway.
-------------------	----------------------------------------

Defaults

This command has no default settings.

Command Modes

SLB VLAN configuration submode.

Usage Guidelines

You can configure up to seven gateways per VLAN with a total of up to 255 gateways for the entire system. A gateway must be in the same network as specified in the **ip address** SLB VLAN command.

Command History

Release	Modification
1.1.1	This command was introduced for client VLANs.
2.1.1	This command is now available for both client and server VLANs.

Examples

This example shows how to configure a client-side gateway IP address:

```
SLB-Switch(config-slb-vlan-client)# gateway 130.21.34.56
```

Related Commands

[ip address](#) (SLB VLAN configuration submode)
[vlan](#)
[show module csm vlan](#)

ip address

Use the **ip address** command in the SLB VLAN configuration submode to assign an IP address to the CSM that is used for probes and ARP requests on a VLAN. Use the **no** form of this command to remove the CSM IP address and disable probes and ARP requests from the configuration.

ip address *ip-address netmask*

no ip address

Syntax Description	<i>ip-address</i>	IP address for the CSM; only one management IP address is allowed per VLAN.
	<i>netmask</i>	Network mask.

Defaults This command has no default settings.

Command Modes SLB VLAN configuration submode.

Usage Guidelines This command is applicable for both server and client VLANs. Up to 255 unique VLAN IP addresses are allowed per module.

Command History	Release	Modification
	1.1.1	This command was introduced.
	2.2.1	Increases maximum number of unique VLAN IP addresses per system from 32 to 255.

Examples This example shows how to assign an IP address to the CSM:

```
SLB-Switch(config-slb-vlan-client)# ip address 130.21.34.56 255.255.255.0
```

Related Commands [vlan](#)
[show module csm vlan](#)

route

Use the **route** command in the SLB VLAN configuration submode to configure networks that are one Layer 3 hop away from the CSM. Use the **no** form of this command to remove the subnet or gateway IP address from the configuration.

route *ip-address netmask gateway gw-ip-address*

no route *ip-address netmask gateway gw-ip-address*

Syntax Description	<i>ip-address</i>	Subnet IP address.
	<i>netmask</i>	Network mask.
	gateway	Keyword to specify that the gateway is configured.
	<i>gw-ip-address</i>	Gateway IP address.

Defaults This command has no default settings.

Command Modes SLB VLAN configuration submode.

Usage Guidelines You specify the Layer 3 network's subnet address and the gateway IP address to reach the next-hop router. The gateway address must be in the same network as specified in the **ip address** SLB VLAN command.

Command History	Release	Modification
	1.1.1	This command was introduced for server VLANs.
	2.1.1	This command is now available for both client and server VLANs.

Examples This example shows how to configure a network to the CSM:

```
SLB-Switch(config-slb-vlan-server)# route 130.21.34.56 255.255.255.0 gateway 120.22.36.40
```

Related Commands

- [ip address](#) (SLB VLAN configuration submode)
- [vlan](#)
- [show module csm vlan](#)

vserver

Use the **vserver** command to identify a virtual server and enter the virtual server configuration submode. Use the **no** form of this command to remove a virtual server from the configuration.

vserver *virtserver-name*

no vserver *virtserver-name*

Syntax Description	<i>virtserver-name</i>	Character string used to identify the virtual server; the character string is limited to 15 characters.
--------------------	------------------------	---------------------------------------------------------------------------------------------------------

Defaults This command has no default settings.

Command Modes Module CSM configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to identify a virtual server named PUBLIC_HTTP and change the CLI to virtual server configuration mode:

```
SLB-Switch(config-module-csm)# vserver PUBLIC_HTTP
```

Related Commands [redirect-vserver](#) (SLB serverfarm submode)
[show module csm vserver redirect](#)

advertise

Use the **advertise** command in the SLB redirect virtual server configuration mode to allow the CSM to advertise the IP address of the virtual server as host-route. Use the **no** form of this command to stop advertising the host-route for this virtual server.

advertise [active]

no advertise

Syntax Description	active (Optional) Keyword to allow the CSM to advertise the IP address of the virtual server as host-route.				
Defaults	The default for network mask is 255.255.255.255 if the network mask is not specified.				
Command Modes	SLB redirect server configuration submode.				
Usage Guidelines	Without the active option, the CSM always advertises the virtual server IP address whether or not there is any active real server attached to this virtual server.				
Command History	<table border="1"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Release</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">1.1.1</td> <td style="border-bottom: 1px solid black;">This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	1.1.1	This command was introduced.
Release	Modification				
1.1.1	This command was introduced.				
Examples	<p>This example shows how to restrict a client from using the virtual server:</p> <pre>SLB-Switch(config-slb-redirect-vs)# advertise 10.5.2.1 exclude</pre>				
Related Commands	<p>redirect-vserver show module csm vserver redirect</p>				

client

Use the **client** command in the SLB virtual server configuration mode to restrict which clients are allowed to use the virtual server. Use the **no** form of this command to remove the client definition from the configuration.

client *ip-address* [*network-mask*] [**exclude**]

no client *ip-address* [*network-mask*]

Syntax Description		
	<i>ip-address</i>	Client's IP address.
	<i>network-mask</i>	(Optional) Client's IP mask.
	exclude	(Optional) Keyword to specify that the IP address is disallowed.

Defaults The default for network mask is 255.255.255.255 if the network mask is not specified.

Command Modes SLB virtual server configuration submode.

Usage Guidelines The network mask is applied to the source IP address of incoming connections and the result must match the IP address before the client is allowed to use the virtual server. If **exclude** is not specified, the IP address and network mask combination is allowed.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to restrict a client from using the virtual server:

```
SLB-Switch(config-slb-vserver)# client 10.5.2.1 exclude
```

Related Commands

- client-group** (SLB policy submode)
- ip access-list standard**
- vserver**
- show module csm vserver redirect**

idle

Use the **idle** command in the SLB virtual server configuration submode to control the amount of time the CSM maintains connection information in the absence of packet activity. Use the **no** form of this command to change the idle timer to its default value.

idle *duration*

no idle

Syntax Description	<i>duration</i>	Idle connection timer duration in seconds; the range is from 4 to 65535.
---------------------------	-----------------	--------------------------------------------------------------------------

Defaults	The default is 3600.
-----------------	----------------------

Command Modes	SLB virtual server configuration submode.
----------------------	-------------------------------------------

Usage Guidelines	If you do not specify a duration value, the default value is applied.
-------------------------	-----------------------------------------------------------------------

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to specify an idle timer duration of 4000:
-----------------	-------------------------------------------------------------------

```
SLB-Switch(config-slb-vserver)# idle 4000
```

Related Commands	vserver show module csm vserver redirect
-------------------------	-----------------------------------------------------------------------------

inservice

Use the **inservice** command in the SLB virtual server configuration submode to enable the virtual server for load balancing. Use the **no** form of this command to remove the virtual server from service.

inservice

no inservice

Syntax Description This command has no keywords or arguments.

Defaults The default is **no inservice**.

Command Modes SLB virtual server configuration submode.

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples This example shows how to enable a virtual server for load balancing:

```
SLB-Switch(config-slb-vserver)# inservice
```

Related Commands

- [vserver](#)
- [show module csm vserver redirect](#)

parse-length

Use the **parse-length** command in the SLB virtual server configuration submode to set the maximum number of bytes to parse for URLs and cookies. Use the **no** form of this command to restore the default.

parse-length *bytes*

no parse-length

Syntax Description	<i>bytes</i>	Number of bytes; the range is from 1 to 4000.
---------------------------	--------------	-----------------------------------------------

Defaults	The default is 600.	
-----------------	---------------------	--

Command Modes	SLB virtual server configuration submode.	
----------------------	-------------------------------------------	--

Command History	Release	Modification
	1.1.1	This command was introduced.

Examples	This example shows how to set the number of bytes to parse for URLs and cookies: SLB-Switch(config-slb-vserver)# parse-length 1000	
-----------------	----------------------------------------------------------------------------------------------------------------------------------------------	--

Related Commands	vserver show module csm vserver redirect	
-------------------------	-----------------------------------------------------------------------------	--

pending

Use the **pending** command in the SLB virtual server configuration submode to set the pending connection timeout. Use the **no** form of this command to restore the default.

pending *timeout*

no pending

Syntax Description	<i>timeout</i>	Seconds to wait before a connection is considered unreachable. Range is from 1 to 65535.
Defaults	The default pending timeout is 30 seconds.	
Command Modes	SLB virtual server configuration submode.	
Usage Guidelines	This command is used to prevent denial of service (DOS) attacks. The pending connection timeout sets the response time for terminating connections if a switch becomes flooded with traffic. The pending connections are configurable on a per virtual server basis.	
Command History	Release	Modification
	2.2(1)	This command was introduced.
Examples	This example shows how to set the number to wait for a connection to be made to the server: SLB-Switch(config-slb-vserver)# pending 300	
Related Commands	vserver show module csm vserver redirect	

persistent rebalance

Use the **persistent rebalance** command in the SLB virtual server configuration submode to enable or disable HTTP 1.1 persistence for connections in the virtual server. Use the **no** form of this command to disable persistence.

persistent rebalance

no persistent rebalance

Syntax Description This command has no keywords or arguments.

Defaults The default is **no persistent rebalance**.

Command Modes SLB virtual server configuration submode.

Command History	Release	Modification
	2.1.1	This command was introduced.

Examples This example shows how to enable the HTTP 1.1 persistence:

```
SLB-Switch(config-slb-vserver)# persistent rebalance
```

Related Commands

- [vserver](#)
- [show module csm vserver redirect](#)

replicate csrp

Use the **replicate csrp** command in the SLB virtual server configuration submode to enable connection redundancy. Use the **no** form of this command to disable connection redundancy.

replicate csrp {sticky | connection}

no replicate csrp {sticky | connection}

Syntax Description	sticky	Replicate the sticky database to the backup CSM.
	connection	Replicate connections to the backup CSM.
Defaults	The default is disabled.	
Command Modes	SLB virtual server configuration submode.	
Usage Guidelines	Sticky and connection replication can be enabled or disabled separately. For replication to occur, you must enable SLB fault tolerance with the ft group command.	
Command History	Release	Modification
	2.1.1	This command was introduced.
Examples	This example shows how to enable connection redundancy: <pre>SLB-Switch(config-slb-vserver)# replicate csrp connection</pre>	
Related Commands	ft group vserver show module csm vserver redirect	

serverfarm

Use the **serverfarm** command in SLB virtual server configuration submode to associate a server farm with a virtual server. Use the **no** form of this command to remove a server farm association from the virtual server.

serverfarm *serverfarm-name*

no serverfarm

Syntax Description

<i>serverfarm-name</i>	Character string used to identify the server farm.
------------------------	----------------------------------------------------

Defaults

This command has no default settings.

Command Modes

SLB virtual server configuration submode.

Usage Guidelines

The server farm name must match the server farm name specified in a previous module CSM submode **serverfarm** command.

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to associate a server farm with a virtual server named PUBLIC_HTTP:

```
SLB-Switch(config-slb-vserver)# serverfarm PUBLIC_HTTP
```

Related Commands

serverfarm (Module CSM submode)
serverfarm (SLB policy submode)
show module csm vserver redirect
vserver

slb-policy

Use the **slb-policy** command in the SLB virtual server configuration submode to associate a load-balancing policy with a virtual server. Use the **no** form of this command to remove a policy from a virtual server.

slb-policy *policy-name*

no slb-policy *policy-name*

Syntax Description

<i>policy-name</i>	Policy associated with a virtual server.
--------------------	------------------------------------------

Defaults

This command has no default settings.

Command Modes

SLB virtual server configuration submode.

Usage Guidelines

Multiple load-balancing policies can be associated with a virtual server. URLs in incoming requests are parsed and matched against policies defined in the same order in which they are defined with this command. The policy name must match the name specified in a previous **policy** command.



Note

The order of the policy association is important; you should enter the highest priority policy first.

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to associate a policy with a virtual server.:

```
SLB-Switch(config-slb-vserver)# slb-policy COOKIE-POLICY1
```

Related Commands

[vserver](#)
[policy](#)
[show module csm policy](#)
[show module csm vserver redirect](#)

sticky

Use the **sticky** command to ensure that connections from the same client use the same real server. Use the **no** form of this command to change the sticky timer to its default value and remove the sticky option from the virtual server.

```
sticky duration [group group-id] [netmask ip-netmask]
```

```
no sticky
```

Syntax Description

<i>duration</i>	Sticky timer duration in minutes; the range is from 1 to 65535.
group	(Optional) Keyword to place the virtual server in a sticky group for connection coupling.
<i>group-id</i>	(Optional) Number identifying the sticky group to which the virtual server belongs; the range is from 0 to 255.
netmask	(Optional) Keyword to specify which part of the address should be used for stickiness.
<i>ip-netmask</i>	(Optional) Network that allows clients to be stuck to the same server.

Defaults

The default is **no sticky**. Sticky connections are not tracked.
The group ID default is 0. The sticky feature is not used for other virtual servers.
The network default is 255.255.255.255.

Command Modes

SLB virtual server configuration submode.

Usage Guidelines

The last real server that was used for a connection from a client is stored for the *duration* value after the end of the client's latest connection. If a new connection from the client to the virtual server is initiated during that time, the same real server that was used for the previous connection is chosen for the new connection.

A nonzero sticky group ID must correspond to a sticky group previously created using the **sticky** command. Virtual servers in the same sticky group share sticky state information.

Command History

Release	Modification
1.1.1	This command was introduced.

Examples

This example shows how to set the sticky timer duration and places the virtual server in a sticky group for connection coupling:

```
SLB-Switch(config-module-csm)# vserver PUBLIC_HTTP
SLB-Switch(config-slb-vserver)# sticky 60 group 3
```

Related Commands

sticky
sticky-group (SLB policy submode)
show module csm sticky
show module csm vserver redirect

url-hash

Use the **url-hash** command in the SLB virtual server configuration submode to set the beginning and ending pattern of a URL to parse URLs for the URL hash load-balancing algorithm. Use the **no** form of this command to remove the hashing from service.

```
url-hash { begin-pattern | end-pattern } pattern
```

```
no url-hash
```

Syntax Description	begin-pattern	Keyword to specify the beginning of the URL to parse.
	end-pattern	Keyword to specify the ending of the URL to parse.
	<i>pattern</i>	Pattern string to parse.

Defaults The default is **no url-hash**.

Command Modes SLB virtual server configuration submode.

Usage Guidelines The beginning and ending patterns apply to the URL hashing algorithm that is set using the **predictor** command in the SLB serverfarm submode.

Command History	Release	Modification
	2.1.1	This command was introduced.

Examples This example shows how to specify a URL pattern to parse:

```
SLB-Switch(config-slb-vserver)# url hash begin pattern lslkjfsj
```

Related Commands

- [predictor](#) (SLB serverfarm configuration submode)
- [vserver](#)
- [show module csm vserver redirect](#)

virtual

Use the **virtual** command in the SLB virtual server configuration submode to configure virtual server attributes. Use the **no** form of this command to set the virtual server's IP address to 0.0.0.0 and its port number to zero.

virtual *ip-address* [*ip-mask*] *protocol* *port-number* [**service** **ftp** | **rtsp**]

no virtual *ip-address*

Syntax Description		
	<i>ip-address</i>	IP address for the virtual server.
	<i>ip-mask</i>	(Optional) Mask for the IP address to allow connections to an entire network.
	<i>protocol</i>	Load-balancing protocol, either TCP, UDP, any, or a number from to 255.
	<i>port-number</i>	(Optional) Decimal TCP/UDP port number (0-65535) or port name.
	service ftp	(Optional) Keyword to combine connections associated with the same service so that all related connections from the same client use the same real server. FTP data connections are combined with the control session that created them. If you want to configure FTP services, these keywords are required.
	service rtsp	(Optional) Keyword to combine connections to the Real Time Streaming Protocol (RTSP) TCP port 554.

Defaults The default IP mask is 255.255.255.255.

Command Modes SLB virtual server configuration submode.

Usage Guidelines Clients connecting to the server farm represented by the virtual server use this address to access the server farm. This service option is allowed only if a port number is specified. A port of 0 (or **any**) means that this virtual server handles all ports not specified for handling by another virtual server with the same IP address. The port is used only for TCP or UDP load balancing.

The following TCP port names can be used in place of a number:

XOT—X25 over TCP (1998)

dns—Domain Name Service (53)

ftp—File Transfer Protocol (21)

https—HTTP over Secure Sockets Layer (443)

matip-a—Mapping of Airline Traffic over IP, Type A (350)

nntp—Network News Transport Protocol (119)

pop2—Post Office Protocol v2 (109)

pop3—Post Office Protocol v3 (110)

smtp—Simple Mail Transport Protocol (25)

telnet—Telnet (23)

www—World Wide Web—Hypertext Transfer Protocol (80)

any—Allows traffic for any port, or the same as specifying a 0.

Command History

Release	Modification
1.1.1	This command was introduced.
2.1.1	<i>ip-netmask</i> , UDP/arbitrary protocol introduced.
2.2.1	RTSP support introduced.

Examples

This example shows how to create a virtual server and assign it an IP address, protocol, and port:

```
SLB-Switch(config-slb-vserver)# virtual 102.35.44.79 tcp 1
```

Related Commands

[vserver](#)
[show module csm vserver redirect](#)

vlan

Use the **vlan** command in the SLB virtual server submode to define which source VLANs may access the virtual server. Use the **no** form of this command to remove the VLAN.

vlan *vlan-number*

no vlan

Syntax Description	<i>vlan-number</i>	VLAN that the virtual server may access.
---------------------------	--------------------	------------------------------------------

Defaults The default is all VLANs.

Command Modes SLB virtual server configuration submode.

Usage Guidelines The VLAN must correspond to an SLB VLAN previously created with the **vlan** command.

Command History	Release	Modification
	2.1.1	This command was introduced.

Examples This example shows how to specify a VLAN for virtual server access:

```
SLB-Switch(config-slb-vserver)# vlan 5
```

Related Commands

- [show module csm vserver redirect](#)
- [show module csm vlan](#)
- [vlan](#)

show module csm arp

Use the **show module csm slot arp** command to display the CSM ARP cache.

show module csm slot arp

Syntax Description	<i>slot</i>	Slot where the CSM resides.
---------------------------	-------------	-----------------------------

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb arp .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display the CSM ARP cache:

```
SLB-Switch# show module csm 4 arp
```

Internet Address	Physical Interface	VLAN	Type	Status
10.10.3.100	00-01-64-F9-1A-02	0	VSERVER	local
10.10.3.1	00-D0-02-58-B0-00	11	GATEWAY	up(0 misses)
10.10.3.2	00-30-F2-71-6E-10	11/12	--SLB--	local
10.10.3.10	00-D0-B7-82-38-97	12	REAL	up(0 misses)
10.10.3.20	00-D0-B7-82-38-97	12	REAL	up(0 misses)
10.10.3.30	00-D0-B7-82-38-97	12	REAL	up(0 misses)
10.10.3.40	00-00-00-00-00-00	12	REAL	down(1 misses)

show module csm conns

Use the **show module csm slot conns** command to display active connections.

show module csm slot conns [**vserver** *virtserver-name*] [**client** *ip-address*] [**detail**]

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
vserver		(Optional) Keyword to specify the connections associated with a particular virtual server.
<i>virtserver-name</i>		(Optional) Name of the virtual server to be monitored.
client		(Optional) Keyword to specify the connections associated with a particular client IP address.
<i>ip-address</i>		(Optional) IP address of the client to be monitored.
detail		(Optional) Keyword to specify detailed connection information.

Defaults If no options are specified, the command displays output for all active connections.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb conns .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display active connection data:

```
SLB-Switch# show module csm 4 conns
prot vlan source                destination                state
-----
In  TCP  11  100.100.100.2:1754  10.10.3.100:80  ESTAB
Out TCP  12  100.100.100.2:1754  10.10.3.20:80   ESTAB

In  TCP  11  100.100.100.2:1755  10.10.3.100:80  ESTAB
Out TCP  12  100.100.100.2:1755  10.10.3.10:80   ESTAB

SLB-Switch# show module csm 4 conns detail

      prot vlan source                destination                state
      -----
In  TCP  11  100.100.100.2:1754  10.10.3.100:80  ESTAB
Out TCP  12  100.100.100.2:1754  10.10.3.20:80   ESTAB
      vs = WEB_VIP, ftp = No, csrp = False

In  TCP  11  100.100.100.2:1755  10.10.3.100:80  ESTAB
Out TCP  12  100.100.100.2:1755  10.10.3.10:80   ESTAB
      vs = WEB_VIP, ftp = No, csrp = False
```

show module csm dfp

Use the **show module csm slot dfp** command to display DFP agent and manager information, such as passwords, timeouts, retry counts, and weights.

show module csm slot dfp [**agent** [**detail** | *ip-address port*] | **manager** [*ip_addr*] | **detail** | **weights**]

Syntax Description

<i>slot</i>	Slot where the CSM resides.
agent	(Optional) Keyword to specify information about a DFP agent.
detail	(Optional) Keyword to specify all data available.
<i>ip_address</i>	(Optional) Agent IP address.
<i>port</i>	(Optional) Agent port number.
manager	(Optional) Keyword to specify the agent and manager connection state and statistics, and the load and health metric sent to DFP manager.
<i>ip_addr</i>	(Optional) IP address of reported weights.
detail	(Optional) Keyword to specify all data available.
weights	(Optional) Keyword to specify information about weights assigned to real servers for load balancing.

Defaults

If no options are specified, the command displays summary information.

Command Modes

Privileged EXEC.

Command History

Release	Modification
1.1.1	This command was introduced as show ip slb dfp .
2.1.1	Added the virtual server weight display information to report to the DFP manager.
	This command was changed to show module csm slot (for ip slb mode rp only).

Examples

This example shows all available DFP data:

```
SLB-Switch# show module csm 4 dfp detail
```

This example shows information about weights:

```
SLB-Switch# show module csm 4 dfp weights
```

This example, with no options specified, shows summary information:

```
SLB-Switch# show module csm 4 dfp
```

Related Commands**dfp****agent** (SLB DFP configuration submode)**manager** (SLB DFP configuration submode)

show module csm ft

Use the **show module csm slot ft** command to display statistics and counters for the CSM fault-tolerant pair.

show module csm slot ft [detail]

Syntax Description	detail (Optional) Keyword to display more detailed information.
---------------------------	------------------------------------------------------------------------

Defaults	No values are displayed.
-----------------	--------------------------

Command Modes	Privileged EXEC.
----------------------	------------------

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb ft .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples	This example shows how to display the statistics and counters for the CSM fault-tolerant pair:
-----------------	------------------------------------------------------------------------------------------------

```
SLB-Switch# show module csm 4 ft
FT group 2, vlan 30
  This box is active
  priority 10, heartbeat 1, failover 3, preemption is off
```

Related Commands	ft group
-------------------------	--------------------------

show module csm map

Use the **show module csm slot map** command to display information about URL maps.

show module csm slot map [**url** | **cookie** | **header** | **retcode**] [**name** *map-name*] [**detail**]

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
url		(Optional) Keyword to specify only the URL map configuration.
cookie		(Optional) Keyword to specify only the cookie map configuration.
header		(Optional) Keyword to specify only the header map configuration.
retcode		(Optional) Keyword to specify only the return code map configuration.
name		(Optional) Keyword to specify the named map.
<i>map-name</i>		Map name to display.
detail		(Optional) Keyword to specify all data available.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb map .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only). The header option is added for displaying only header maps.
	2.2(1)	This command was changed to include the retcode option.

Examples This example shows how to display URL maps associated with a Content Switching policy:

```
SLB-Switch# show module csm 4 map url
URL map UHASH_UMAP
  COOKIE map UHASH_CMAP1
  COOKIE map UHASH_CMAP2

6k#show ip slb map detail
URL map UHASH_UMAP rules:
  *aabb*

COOKIE map UHASH_CMAP1 rules:
  name:foo value:*asdglasgdkjsdkgjsasdgsg*

COOKIE map UHASH_CMAP2 rules:
  name:bar value:*asdglasgdkjsdkgjsasdgsg*
```

This example shows how to display return code maps:

```
SLB-Switch#show module csm 5 map retcode detail
RETCODE map HTTPCODES rules:
  return codes:401 to 401  action:log      threshold:5  reset:120
  return codes:402 to 415  action:count   threshold:0  reset:0
  return codes:500 to 500  action:remove threshold:3  reset:0
  return codes:503 to 503  action:remove threshold:3  reset:0
```

Related Commands

[map cookie](#)
[map header](#)
[map url](#)

show module csm memory

Use the **show module csm slot memory** command to display information about memory use.

show module csm slot memory [*vserver vserver-name*] [**detail**]

Syntax Description	slot	Slot where the CSM resides.
	vserver	(Optional) Keyword to specify the virtual server configuration.
	<i>vserver-name</i>	(Optional) Option to restrict output to the named virtual server.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb memory .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only). The detail keyword no longer has an effect and is hidden or deprecated.

Examples This example shows how to display the memory usage of virtual servers:

```
SLB-Switch# show module csm 4 memory
slb vserver      total bytes  memory by type
-----
WEB_VIP         0           0           0
FTP_VIP         0           0           0
Total(s):       0           0           0
Out of Maximum: 261424     261344
```

Related Commands [parse-length](#) (SLB virtual server configuration submode)

show module csm natpool

Use the **show module csm slot natpool** command to display NAT configurations.

show module csm slot natpool [*name pool-name*] [**detail**]

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
name		(Optional) Keyword to display a specific NAT pool.
<i>pool-name</i>		(Optional) NAT pool name string to display.
detail		(Optional) Keyword to list the interval ranges currently allocated in the client NAT pool.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb natpool .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Usage Guidelines

Examples This example shows how to display results of the default **show module csm slot natpool** command:

```
SLB-Switch# show module csm 4 natpool
nat client B 1.1.1.6 1.1.1.8 Netmask 255.255.255.0
nat client A 1.1.1.1 1.1.1.5 Netmask 255.255.255.0
```

This example shows how to display results of the **show module csm slot natpool** command with the **detail** variable:

```
SLB-Switch# show module csm 4 natpool detail
nat client A 1.1.1.1 1.1.1.5 Netmask 255.255.255.0
  Start NAT      Last NAT      Count      ALLOC/FREE
-----
  1.1.1.1:11001  1.1.1.1:16333  0005333  ALLOC
  1.1.1.1:16334  1.1.1.1:19000  0002667  ALLOC
  1.1.1.1:19001  1.1.1.5:65535  0264675  FREE
SLB-Switch#
```

Related Commands [natpool](#)

show module csm policy

Use the **show module csm slot policy** command to display a policy configuration.

show module csm slot policy [**name** *policy-name*]

Syntax Description	slot	Slot where the CSM resides.
	name	(Optional) Keyword to display a specific policy.
	<i>policy-name</i>	(Optional) Policy name string to display.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb policy .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display a policy configuration:

```
SLB-Switch# show module csm 4 policy
policy:                PC1_UHASH_T1
sticky group:         20
serverfarm:           SF_UHASH_T1

policy:                PC1_UHASH_T2
sticky group:         30
serverfarm:           SF_UHASH_T2

policy:                PC1_UHASH_T3
url map:              UHASH_UMAP
serverfarm:           SF_UHASH_T3

policy:                PC1_UHASH_T4
cookie map:           UHASH_CMAP1
serverfarm:           SF_UHASH_T4

policy:                PC2_UHASH_T4
cookie map:           UHASH_CMAP2
serverfarm:           SF_UHASH_T4
SLB-Switch#
```

Related Commands [policy](#)

show module csm probe

Use the **show module csm slot probe** command to display HTTP or ping probe data.

show module csm slot probe [**http** | **icmp** | **telnet** | **tcp** | **ftp** | **smtp** | **dns**] [**name** *probe_name*] [**detail**]

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
http	(Optional) Keyword to display information about the HTTP configuration.
icmp	(Optional) Keyword to display information about the ICMP configuration.
telnet	(Optional) Keyword to display information about the Telnet configuration.
tcp	(Optional) Keyword to display information about the TCP configuration.
ftp	(Optional) Keyword to display information about the FTP configuration.
smtp	(Optional) Keyword to display information about the SMTP configuration.
dns	(Optional) Keyword to display information about the DNS configuration.
name	(Optional) Keyword to display information about the specific probe named.
<i>probe_name</i>	(Optional) Probe name to display.
detail	(Optional) Keyword to display detailed information.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb probe .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display probe data:

```
SLB-Switch# show module csm 4 probe
probe          type      interval  retries  failed  open  receive
-----
PB_ICMP1      icmp      60        1        5       0     10
PB_HTTP1      http      60        1        10      10    10
PB_TCP1       tcp       60        1        10      10    10
```


PB_FTP1	ftp	60	1	10	10	10
PB_TELNET1	telnet	60	1	10	10	10
PB_SMTP1	smtp	60	1	10	10	10

Related Commands [probe](#)

show module csm real

Use the **show module csm slot real** command to display information about real servers.

show module csm slot real [*sfarm sfarm-name*] [**detail**]

Syntax Description		
	<i>slot</i>	Slot where the CSM resides.
	sfarm	(Optional) Keyword to displays real servers for only a single serverfarm.
	<i>sfarm-name</i>	(Optional) Name of the server farm to restrict output.
	detail	(Optional) Keyword to display detailed information.

Defaults If no options are specified, the command displays information about all real servers.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb real .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows Cisco IOS SLB real server data:

```
SLB-Switch# show module csm 4 real
real          server farm      weight  state          conns
-----
10.10.3.10    FARM1                20      OPERATIONAL    0
10.10.3.20    FARM1                16      OUTOFSERVICE   0
10.10.3.30    FARM1                10      OPERATIONAL    0
10.10.3.40    FARM1                10      FAILED         0
SLB-Switch# show mod csm 5 real detail
10.1.0.102, FARM1, state = OPERATIONAL
  Inband health:remaining retries = 3
  conns = 0, maxconns = 4294967295, minconns = 0
  weight = 8, weight(admin) = 8, metric = 0, remainder = 0
  total conns established = 0, total conn failures = 0
10.1.0.101, FARM1, state = OPERATIONAL
  Inband health:remaining retries = 3
  conns = 0, maxconns = 4294967295, minconns = 0
  weight = 8, weight(admin) = 8, metric = 0, remainder = 0
  total conns established = 0, total conn failures = 0
10.1.0.101, FARM2, state = OPERATIONAL
  conns = 2, maxconns = 4294967295, minconns = 0
  weight = 8, weight(admin) = 8, metric = 0, remainder = 2
  total conns established = 7, total conn failures = 0
```

Table A-1 describes the fields in the display.

Table A-1 *show module csm real Command Field Information*

Field	Description
real	Information about each real server is displayed on a separate line.
server farm	Name of the server farm associated to the real server.
weight	Weight assigned to the real server. The weight identifies the capacity of the real server compared to other real servers in the server farm.
state	Current state of the real server: <ul style="list-style-type: none"> • OUTFSERVICE—Removed from the load-balancing predictor lists. • FAILED—Removed from use by the predictor algorithms that start the retry timer. • OPERATIONAL—Functioning properly. • MAXCONNS • DFP_THROTTLED • PROBE_FAILED • PROBE_TESTING • TESTING—Queued for assignment. • READY_TO_TEST—Device functioning and ready to test.
conns	Number of connections.

Related Commands [real](#) (SLB serverfarm configuration submode)

show module csm real retcode

Use the **show module csm *slot* real retcode** command to display information about the return code configuration.

show module csm *slot* real retcode [*sfarm sfarm-name*] [*detail*]

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
sfarm		(Optional) Keyword to displays real servers for only a single server farm.
<i>sfarm-name</i>		(Optional) Name of the server farm to restrict output.
detail		(Optional) Keyword to display detailed information.

Defaults If no options are specified, the command displays information about all real servers.

Command Modes Privileged EXEC.

Command History	Release	Modification
	2.2.1	This command was introduced.

Examples This example shows Cisco IOS SLB real server return code data:

```
SLB-Switch# show module csm 5 real retcode
10.1.0.101, FARM2, state = OPERATIONAL
  retcode-map = HTTPCODES
  retcode  action  count      reset-seconds  reset-count
  -----
  401      log       3          0              1
  404      count    62         0              0
  500      remove   1          0              0
```

Related Commands [real](#) (SLB serverfarm configuration submode)

show module csm serverfarm

Use the **show module csm slot serverfarm** command to display information about a server farm.

show module csm slot serverfarms [*name serverfarm-name*] [**detail**]

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
name		(Optional) Keyword to display information about a particular server farm.
<i>serverfarm-name</i>		(Optional) Name of the server farm.
detail		(Optional) Keyword to display detailed server farm information.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb serverfarm .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display server farm data:

```
SLB-Switch# show module csm 4 serverfarm
server farm    predictor    nat    reals    redirect    bind id
-----
FARM1          RoundRobin  S      4        0           0
VIDEO_FARM     RoundRobin  S      5        0           0
AUDIO_FARM     RoundRobin  S      2        0           0
FTP            RoundRobin  S      3        0           0
```

Table A-2 describes the fields in the display.

Table A-2 *show module csm serverfarms Command Field Information*

Field	Description
server farm	Name of the server farm about which information is being displayed. Information about each server farm is displayed on a separate line.
predictor	Type of load-balancing algorithm) used by the server farm.
nat	Shows whether server and client NAT is enabled.
reals	Number of real servers configured in the server farm.

Table A-2 show module csm serverfarms Command Field Information (continued)

redirect	Number of redirect virtual servers configured in the server farm.
bind id	Bind ID configured on the server farm.

This example shows how to display only the details for one server farm:

```
SLB-Switch# show mod csm 5 serverfarm detail
FARM1, predictor = RoundRobin, nat = SERVER, CLIENT(CLNAT1)
  virtuals inservice:4, reals = 2, bind id = 0, fail action = none
  inband health config:retries = 3, failed interval = 200
  retcode map = <none>
  Real servers:
  10.1.0.102, weight = 8, OPERATIONAL, conns = 0
  10.1.0.101, weight = 8, OPERATIONAL, conns = 0
  Total connections = 0

FARM2, predictor = RoundRobin, nat = SERVER, CLIENT(CLNAT1)
  virtuals inservice:2, reals = 1, bind id = 0, fail action = none
  inband health config:<none>
  retcode map = HTTPCODES
  Real servers:
  10.1.0.101, weight = 8, OPERATIONAL, conns = 2
  Total connections = 2
```

Related Commands [serverfarm](#)

show module csm static

Use the **show module csm slot static** command to display information about server NAT configurations.

show module csm slot static [drop | nat {ip-address | virtual}]

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
drop	(Optional) Keyword to display information about real servers configured to drop connections.
nat	(Optional) Keyword to display information about real servers configured to NAT.
<i>ip-address</i>	(Optional) IP address to which to NAT.
virtual	(Optional) Keyword to display information about real servers configured to NAT virtual server IP addresses.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb static .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display static data:
 SLB-Switch# **show module csm 4 static nat**

Related Commands [static](#)
[real](#) (SLB static NAT configuration submode)

show module csm static server

Use the **show module csm *slot* static server** command to display information about actual servers that are having NAT performed.

show module csm *slot* static server [*ip-address*] [**drop** | **nat** {*ip-address* | **virtual**} | **pass-through**]

Syntax Description		
	<i>slot</i>	Slot where the CSM resides.
	<i>ip-address</i>	(Optional) Option to limit output to a specified server address.
	drop	(Optional) Keyword to display information about real servers configured to drop connections.
	nat	(Optional) Keyword to display information about real servers configured to NAT.
	<i>ip-address</i>	(Optional) IP address to NAT.
	virtual	(Optional) Keyword to display information about servers configured to NAT virtual server addresses.
	pass-through	(Optional) Keyword to display detailed information about real servers with no NAT configured.

Defaults This command has no default settings.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb static server .
	2.1.1	This command was changed to show module csm <i>slot</i> (for ip slb mode rp only).

Examples This example shows how to display static server data:

```
SLB-Switch# show module csm 4 static server
```

```
Server          NAT Type
-----
10.10.3.10      NAT to 100.100.100.100
10.10.3.20      No NAT
10.10.3.30      NAT to 100.100.100.100
10.10.3.40      No NAT
Cat6k-1#
```

Related Commands [static](#)
[real](#) (SLB static NAT configuration submode)

show module csm stats

Use the **show module csm slot stats** command to display SLB statistics.

show module csm slot stats

Syntax Description	<i>slot</i>	Slot where the CSM resides.
---------------------------	-------------	-----------------------------

Defaults	This command has no default settings.
-----------------	---------------------------------------

Command Modes	Privileged EXEC.
----------------------	------------------

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb stats .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display SLB statistics:

```
SLB-Switch# show module csm 4 stats
Connections Created:      180
Connections Destroyed:   180
Connections Current:     0
Connections Timed-Out:   0
Connections Failed:      0
Server initiated Connections:
    Created:0, Current:0, Failed:0
L4 Load-Balanced Decisions:180
L4 Rejected Connections: 0
L7 Load-Balanced Decisions:0
L7 Rejected Connections:
    Total:0, Parser:0,
    Reached max parse len:0, Cookie out of mem:0,
    Cfg version mismatch:0, Bad SSL2 format:0
L4/L7 Rejected Connections:
    No policy:0, No policy match 0,
    No real:0, ACL denied 0,
    Server initiated:0
Checksum Failures: IP:0, TCP:0
Redirect Connections:0, Redirect Dropped:0
FTP Connections:      0
MAC Frames:
    Tx:Unicast:1506, Multicast:0, Broadcast:50898,
    Underflow Errors:0
    Rx:Unicast:2385, Multicast:6148349, Broadcast:53916,
    Overflow Errors:0, CRC Errors:0
```

Table A-3 describes the fields in the display.

Table A-3 show module csm stats Command Field Information

Field	Description
Connections Created	Number of connections that have been created since the last time counters were cleared.
Connections Destroyed	Number of connections that have been destroyed since the last time counters were cleared.

show module csm status

Use the **show module csm slot status** command to display if the CSM is online. If the CSM is online, this command shows the CSM chassis slot location and indicates if the configuration download is complete.

show module csm slot status

Syntax Description	<i>slot</i>	Slot where the CSM resides.
---------------------------	-------------	-----------------------------

Defaults	This command has no default settings.
-----------------	---------------------------------------

Command Modes	Privileged EXEC.
----------------------	------------------

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb status .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples	This example shows how to display CSM status:
-----------------	-----------------------------------------------

```
SLB-Switch# show module csm 4 status
SLB Module is online in slot 4.
Configuration Download state:COMPLETE, SUCCESS
```

show module csm sticky

Use the **show module csm slot sticky** command to display the sticky database.

```
show module csm slot sticky [groups | client ip_address]
```

Syntax Description		
	<i>slot</i>	Slot where the CSM resides.
	groups	(Optional) Keyword to display all of the sticky group configurations.
	client	(Optional) Keyword to display the sticky database entries associated with a particular client IP address.
	<i>ip_address</i>	(Optional) IP address of the client.

Defaults If no options are specified, the command displays information about all clients.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb sticky .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Usage Guidelines This command only displays the database of clients using IP stickiness; it does not show cookie or SSL.

Examples This example shows how to display the sticky database:

```
SLB-Switch# show module csm 4 sticky groups
Group Timeout Type
-----
20      100      netmask 255.255.255.255
30      100      cookie foo
```

Related Commands [sticky](#)
[sticky](#) (SLB virtual server configuration submode)

show module csm tech-support

Use the **show module csm *slot* tech-support** command to display technical support information for the CSM.

```
show module csm slot tech-support [all | processor num | redirect | slowpath | probe | fpga |
core-dump]
```

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
all	(Optional) Keyword to display all of the available statistics.
processor	(Optional) Keyword to display the IXP statistics for the IXP identified by <i>num</i> .
<i>num</i>	(Optional) IXP number.
redirect	(Optional) Keyword to display all of the HTTP redirect statistics
slowpath	(Optional) Keyword to display all of the slowpath statistics.
probe	(Optional) Keyword to display all of the probe statistics.
fpga	(Optional) Keyword to display all of the FPGA statistics.
core_dump	(Optional) Keyword to display all of the most recent statistics for the process (IXP or Power PC) that experienced a core dump.

Defaults If no options are specified, the command displays all information.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb tech-support .
	2.1.1	This command was changed to show module csm <i>slot</i> (for ip slb mode rp only).

Examples This example shows how to display the technical support information for the CSM:

```
SLB-Switch# show module csm 4 tech-support ?
  all           All tech output
  core-dump     Most recent core dump
  fpga          FPGA info output
  ft            Fault Tolerance info output
  probe        Probe info output
  processor     Processor info output
  redirect      HTTP redirect info output
  slowpath      Slowpath info output

SLB-Switch# show module csm 4 tech-support processor 2
-----
----- TCP Statistics -----
-----
```

```

Aborted rx                    3350436013  66840864
New sessions rx               180          0
Total Packets rx              16940        0
Total Packets tx               0            0
Packets Passthrough           697          0
Packets Dropped                0            0
Persistent 000 Packets Dropped 0            0
Persistent Fastpath Tx         0            0
Total Persistent Requests     0            0
Persistent Same Real           0            0
Persistent New Real            0            0

Data Packets rx                877          0
L4 Data Packets rx             877          0
L7 Data Packets rx              0            0
Slowpath Packets rx            7851         0
Relinquish Requests rx         8031         0

TCP xsum failures              0            0

Session Mismatch                0            0
Session Reused while valid     0            0
Unexpected Opcode rx           0            0
Unsupported Proto               0            0
Session Queue Overflow         0            0
Control->Term Queue Overflow   0            0
t_fifo Overflow                 0            0

L7 Analysis Request Sent       0            0
L7 Successful LB decisions     0            0
L7 Need More Data decisions    0            0
L7 Unsuccessful LB decisions   0            0
L4 Analysis Request Sent       180          0
L4 Successful LB decisions     180          0
L4 Unsuccessful LB decisions   0            0

Transmit:
  SYN                           0            0
  SYN/ACK                       0            0
  ACK                           0            0
  RST/ACK                       0            0
  data                          0            0
Retransmissions:                0            0

Receive:
  SYN                           180          0
  SYN/ACK                       0            0
  ACK                           340          0
  FIN                           0            0
  FIN/ACK                       340          0
  RST                           17           0
  RST/ACK                       0            0
  data                          0            0

Session Redundancy Standby:
  Rx Fake SYN                    0            0
  Rx Repeat Fake SYN             0            0
  Rx Fake Reset                  0            0
  Fake SYN Sent to NAT           0            0
  Tx Port Sync                   0            0
  Encap Not Found                0            0
  Fake SYN, TCP State Invalid    0            0

Session Redundancy Active:
  L4 Requests Sent               0            0

```

L7 Requests Sent	0	0
Persistent Requests Sent	0	0
Rx Fake SYN	0	0
Fake SYN Sent to NAT	0	0
Session's torn down	180	0
Rx Close session	1	0
Slowpath(low pri) buffer allocs	7843	0
Slowpath(high pri) buffer allocs	8	0
Small buffer allocs	180	0
Medium buffer allocs	0	0
Large buffer allocs	0	0
Session table allocs	180	0
Slowpath(low pri) buffer alloc failures	0	0
Slowpath(high pri) buffer alloc failures	0	0
Small buffer allocs failures	0	0
Medium buffer allocs failures	0	0
Large buffer allocs failures	0	0
Session table allocs failures	0	0
Outstanding slowpath(low pri) buffers	0	0
Outstanding slowpath(high pri) buffers	0	0
Outstanding small buffers	0	0
Outstanding medium buffers	0	0
Outstanding large buffers	0	0
Outstanding sessions	0	0

show module csm vlan

Use the **show module csm slot vlan** command to display the list of VLANs.

show module csm slot vlan [**client** | **server** | **ft**] [**id** *vlan-id*] [**detail**]

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
client	(Optional) Keyword to display only the client VLAN configuration.
server	(Optional) Keyword to display only the server VLAN configuration.
ft	(Optional) Keyword to display only the fault-tolerant configuration.
id	(Optional) Keyword to display the VLAN.
<i>vlan-id</i>	(Optional) Keyword to display the specified VLAN.
detail	(Optional) Keyword to display the map configuration details.

Defaults If no options are specified, the command displays information about all VLANs.

Command Modes Privileged EXEC.

Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb vlan .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples This example shows how to display the VLAN configurations:

```
SLB-Switch# show module csm 4 vlan

vlan    IP address      IP mask          type
-----
11      10.10.4.2        255.255.255.0   CLIENT
12      10.10.3.1        255.255.255.0   SERVER
30      0.0.0.0          0.0.0.0         FT
SLB-Switch#
SLB-Switch#
SLB-Switch# sh mod csm 4 vlan detail
vlan    IP address      IP mask          type
-----
11      10.10.4.2        255.255.255.0   CLIENT
      GATEWAYS
      10.10.4.1
12      10.10.3.1        255.255.255.0   SERVER
30      0.0.0.0          0.0.0.0         FT
```

Related Commands [vlan](#) - Module CSM configuration submode.

show module csm vserver redirect

Use the **show module csm slot vserver redirect** command to display the list of virtual servers.

show module csm slot vserver redirect

Syntax Description	<i>slot</i>	Slot where the CSM resides.
Defaults	If no options are specified, the command displays information about all clients.	
Command Modes	Privileged EXEC.	
Command History	Release	Modification
	1.1.1	This command was introduced as show ip slb vserver redirect .
	2.1.1	This command was changed to show module csm slot (for ip slb mode rp only).

Examples

This example shows how to display the CSM virtual servers:

```
SLB-Switch# show module csm 4 vserver

slb vserver      prot  virtual                vlan  state      conns
-----
FTP_VIP          TCP   10.10.3.100/32:21     ALL   OUTOFSERVICE  0
WEB_VIP          TCP   10.10.4.100/32:80     ALL   OPERATIONAL   0
SLB-Switch#
SLB-Switch#
SLB-Switch# sh mod csm 4 vserver detail
FTP_VIP, state = OUTOFSERVICE, v_index = 3
  virtual = 10.10.3.100/32:21, TCP, service = NONE, advertise = FALSE
  idle = 3600, replicate csrp = none, vlan = ALL
  max parse len = 600, persist rebalance = TRUE
  conns = 0, total conns = 0
Policy          Tot Conn  Client pkts  Server pkts
-----
(default)       0         0            0

WEB_VIP, state = OPERATIONAL, v_index = 4
  virtual = 10.10.4.100/32:80, TCP, service = NONE, advertise = FALSE
  idle = 3600, replicate csrp = none, vlan = ALL
  max parse len = 600, persist rebalance = TRUE
  conns = 0, total conns = 140
Default policy:
  server farm = FARM1
  sticky:timer = 0, subnet = 0.0.0.0, group id = 0
Policy          Tot Conn  Client pkts  Server pkts
-----
(default)       140      672         404
```

■ show module csm vserver redirect

Related Commands [vserver](#)