

serverfarm

To identify a server farm, and then enter the serverfarm configuration submode, use the **serverfarm** command. To remove the server farm from the configuration, use the **no** form of this command.

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.
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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:

```
Cat6k-2(config-module-csm)# serverfarm PUBLIC
```

Related Commands

- [serverfarm \(policy submode\)](#)
- [script task](#)
- [show module csm serverfarm](#)

bindid (serverfarm 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 **bindid** command in the SLB serverfarm configuration submode. To disable the bind identification, use the **no** form of this command.

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	Release	Modification
	1.1(1)	This command was introduced.
Examples	This example shows how to bind a server to multiple virtual servers: Cat6k-2 (config-slb-sfarm) # bindid 7	
Related Commands	dfp script task show module csm serverfarm	

failaction (serverfarm submode)

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

failaction {purge | reassign}

no failaction {purge | reassign}

Syntax Description

purge	Specifies that the connection is removed.
reassign	Specifies that the connection is reassigned to another real server.

Defaults

The default is that no action is taken.

Command Modes

SLB serverfarm configuration submode

Usage Guidelines

With this command enabled, connections to a real server in the server farm are purged or reassigned when the real server goes down. This feature is required for stateful firewall load balancing.

Command History

Release	Modification
3.2(1)	This command was introduced.

Examples

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

```
Cat6k-2(config-slb-sfarm)# failaction purge
```

Related Commands

[backup real \(real server submode\)](#)
[dfp](#)
[inservice \(real server submode\)](#)
[script task](#)
[show module csm serverfarm](#)

health (serverfarm submode)

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

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

no health

Syntax Description		
retries		Specifies 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		Specifies 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:

```
Cat6k-2 (config-slb-sfarm) # health retries 20 failed 200
```

Related Commands

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

nat client (serverfarm 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 **nat client** command in SLB serverfarm configuration submode. To remove the NAT pool from the configuration, use the **no** form of this command.

nat client { *client-pool-name* **static** }

no nat client

Syntax Description

<i>client-pool-name</i>	Client pool name.
static	Enables static NAT.

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

Release	Modification
1.1(1)	This command was introduced.
3.2(1)	This command was modified to include the static option.

Examples

This example shows how to specify NAT on the client:

```
Cat6k-2(config-slb-sfarm)# nat client wishers
```

Related Commands

[natpool \(module submode\)](#)
[nat server \(serverfarm submode\)](#)
[predictor \(serverfarm submode\)](#)
[script task](#)
[show module csm serverfarm](#)

nat server (serverfarm submode)

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

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:

```
Cat6k-2(config-slb-sfarm)# nat server
```

Related Commands

- [nat client \(serverfarm submode\)](#)
- [predictor \(serverfarm submode\)](#)
- [script task](#)
- [show module csm serverfarm](#)

predictor (serverfarm submode)

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

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

```
no predictor
```

Syntax Description

roundrobin	Selects the next servers in the list of real servers.
leastconns	Selects the server with the least number of connections.
hash url	Selects the server using a hash value based on the URL.
hash address	Selects the server using a hash value based on the source and destination IP addresses.
source	Selects the server using a hash value based on the source IP address.
destination	Selects 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	Tells 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

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.

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 **url-hash** command.

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

Cache servers perform better using URL hash. However, the hash methods do not recognize weight for the real servers. The weight assigned to the real servers is used in the round-robin and least connection predictor methods. To create different weights for real servers, you can list multiple IP addresses of the cache server in the server farm. You can also use the same IP address with a different port number.

**Note**

The only time the sequence of servers starts over at the beginning (with the first server) is when there is a configuration or server state change (either a probe or DFP agent).

When the least connection predictor is configured, a slow-start mechanism is implemented to avoid sending a high rate of new connections to the servers that have just been put in service.

Examples

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

```
Cat6k-2 (config-module-csm) # serverfarm PUBLIC  
Cat6k-2 (config-slb-sfarm) # predictor leastconns
```

Related Commands

- [maxconns \(owner submode\)](#)
- [minconns \(real server submode\)](#)
- [nat client \(serverfarm submode\)](#)
- [nat server \(serverfarm submode\)](#)
- [script task](#)
- [serverfarm \(virtual server submode\)](#)
- [show module csm serverfarm](#)

probe (serverfarm submode)

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

probe *probe-name*

no probe *probe-name*

Syntax Description

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

This command has no default settings.

Command Modes

SLB serverfarm configuration submode

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.

Command History

Release	Modification
1.1(1)	This command was introduced.

Examples

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

```
Cat6k-2(config-slb-sfarm)# probe general
```

Related Commands

[probe](#)
[script task](#)
[show module csm probe](#)
[show module csm serverfarm](#)

retcode-map (serverfarm submode)

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

retcode-map *retcodemap_name*

no retcode-map

Syntax Description	<i>retcodemap_name</i>	Return code map name associated with the server farm.
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Defaults	This command has no default settings.
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Command Modes	SLB serverfarm configuration submode
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Command History	Release	Modification
	2.2(1)	This command was introduced.

Examples	This example shows how to associate a probe with a server farm:
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```
Cat6k-2(config-slb-sfarm)# retcode-map return_stats
```

Related Commands	map retcode script task show module csm serverfarm
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show module csm

To display information about the CSM module, use the **show module csm** command.

```
show module csm slot [group-id]
```

Syntax Description

<i>slot</i>	Slot where the CSM resides.
<i>group-id</i>	(Optional) Group ID to which the CSM belongs.

Defaults

This command has no default settings.

Command Modes

Privileged EXEC

Command History

Release	Modification
3.2(1)	This command was introduced as show ip slb .

Examples

This example shows how to display static data:

```
Cat6k-2# show module csm 4 7
```

Related Commands

[module csm](#)
[real \(static NAT submode\)](#)
[static](#)

show module csm arp

To display the CSM ARP cache, use the **show module csm arp** command.

show module csm slot arp

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

Cat6k-2# **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)

```

Related Commands

- [arp](#)
- [module csm](#)
- [capp udp](#)
- [module csm](#)

show module csm conns

To display active connections, use the **show module csm conns** command.

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

Syntax Description

<i>slot</i>	Slot where the CSM resides.
conns	Specifies the connections.
vserver	(Optional) Specifies the connections associated with a particular virtual server.
<i>virtserver-name</i>	(Optional) Name of the virtual server to be monitored.
client	(Optional) Specifies the connections associated with a particular client IP address.
<i>ip-address</i>	(Optional) IP address of the client to be monitored.
detail	(Optional) Specifies 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) .

Usage Guidelines

The following connection state definitions are displayed in the output of this command.

State	Explanation
INIT	No TCP state available, but session received
CLOSING	Received both client and server FINs, waiting for ACK of last FIN
ESTAB	Client and server side connections established, balance decision made Non-TCP flows immediately transition to this state
SYNCLINET	Client sent SYN, the CSM has sent SYN_ACK, waiting for ACK
SYNBOTH	Client side connection established, sent SYN to server
FINCLIENT	Received a FIN from client, waiting for server FIN
FINSERVER	Received a FIN from server, waiting for client FIN

State	Explanation
SYN_SRV	On a persistent Layer 7 connection (where the CSM parses each GET and eventually remaps the connection in the backend), if the load balancing decision has selected a different server, the CSM has sent its SYN to the new server and is waiting on a server SYN_ACK from the new server
REQ_WAIT	On a persistent Layer 7 connection, the CSM has already load balanced at least one request, and is now waiting for the next request.

Examples

This example shows how to display active connection data:

```
Cat6k-2# 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

Cat6k-2# 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
```

Related Commands

[module csm](#)

show module csm dfp

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

```
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) Specifies information about a DFP agent.
detail	(Optional) Specifies all data available.
<i>ip_address</i>	(Optional) Agent IP address.
<i>port</i>	(Optional) Agent port number.
manager	(Optional) Specifies 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) Specifies all data available.
weights	(Optional) Specifies 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:

```
Cat6k-2# show module csm 4 dfp detail
```

This example shows information about weights:

```
Cat6k-2# show module csm 4 dfp weights
```

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

```
Cat6k-2# show module csm 4 dfp
```

Related Commands

[agent \(DFP submode\)](#)
[dfp](#)
[manager \(DFP submode\)](#)
[module csm](#)

show module csm ft

To display statistics and counters for the CSM fault-tolerant pair, use the **show module csm ft** command.

show module csm slot ft [detail]

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
detail	(Optional) Displays 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 ft (<i>for ip slb mode rp only</i>).

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

```
Cat6k-2# 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](#)
[module csm](#)

show module csm map

To display information about URL maps, use the **show module csm map** command.

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

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

```
Cat6k-2# 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:*asdgjasgdkjsdkgjsasdgsg*

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

This example shows how to display return code maps:

```
Cat6k-2# show module csm 5 map retcode detail
RETCODE map HTTPCODES rules:
```

■ show module csm map

```
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](#)
[module csm](#)

show module csm memory

To display information about memory use, use the **show module csm memory** command.

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

Syntax Description	slot	Slot where the CSM resides.
	vserver	(Optional) Specifies 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 memory (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:

```
Cat6k-2# 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 [module csm](#)
[parse-length \(virtual server submode\)](#)

show module csm natpool

To display NAT configurations, use the **show module csm natpool** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
name	(Optional) Displays a specific NAT pool.
<i>pool-name</i>	(Optional) NAT pool name string to display.
detail	(Optional) Lists 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 natpool (for ip slb mode rp only).

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

```
Cat6k-2# 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:

```
Cat6k-2# 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
```

Related Commands [module csm](#)
[natpool \(module submode\)](#)

show module csm owner

To display the current connections count for the specified owner objects, use the **show module csm slot owner** command.

```
show module csm slot owner [name owner-name] [detail]
```

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
owner	Displays a specific owner object.
<i>name</i>	(Optional) Displays a specific owner object.
<i>owner-name</i>	(Optional) Owner object name string to display.
detail	(Optional) Lists the virtual servers in an owner group with the virtual server's state and current connections count.

Defaults This command has no default settings.

Command Modes Privileged EXEC

Command History	Release	Modification
	3.1(1)	This command was introduced.

Usage Guidelines Detailed information about an owner object lists the virtual servers in that group with each virtual server's state and current connections count.

The MAXCONNS state is displayed for a virtual server when the current connections counter is equal to the configured **maxconns** value. Counters for the number of connections dropped due to the virtual server being in this state are added. The **show module csm slot stats** and **show module csm slot vserver detail** command output displays these counters on a global and per-virtual server basis, respectively.

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

```
Cat6k-2# show module csm 4 owner
```

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

```
Cat6k-2# show module csm 4 owner detail
```

Related Commands [module csm owner \(virtual server submode\)](#)

show module csm policy

To display a policy configuration, use the **show module csm policy** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
name	(Optional) Displays 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 policy (<i>for ip slb mode rp only</i>).

Examples This example shows how to display a policy configuration:

```
Cat6k-2# 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
Cat6k-2#
```

Related Commands [module csm policy](#)

show module csm probe

To display HTTP or ping probe data, use the **show module csm probe** command.

```
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) Displays information about the HTTP configuration.
icmp	(Optional) Displays information about the ICMP configuration.
telnet	(Optional) Displays information about the Telnet configuration.
tcp	(Optional) Displays information about the TCP configuration.
ftp	(Optional) Displays information about the FTP configuration.
smtp	(Optional) Displays information about the SMTP configuration.
dns	(Optional) Displays information about the DNS configuration.
name	(Optional) Displays information about the specific probe named.
<i>probe_name</i>	(Optional) Probe name to display.
detail	(Optional) Displays 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 probe (<i>for ip slb mode rp only</i>).

Examples This example shows how to display probe data:

```
Cat6k-2# 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 [module csm probe \(serverfarm submenu\)](#)

show module csm probe script

To display probe script data, use the **show module csm probe script** command.

show module csm *slot* probe script [name *probe-name*] [detail]

Syntax Description		
	<i>slot</i>	Slot where the CSM resides.
	<i>name</i>	(Optional) Displays information about the specific probe named.
	<i>probe-name</i>	(Optional) Probe name to display.
	detail	(Optional) Displays detailed information.

Defaults This command has no default settings.

Command Modes Privileged EXEC

Command History	Release	Modification
	3.1(1)	This command was introduced.

Examples This example shows how to display probe data:

```
Cat6k-2# show module csm 4 probe script detail
```

Related Commands

- [module csm](#)
- [probe \(serverfarm submode\)](#)
- [script \(probe submode\)](#)

show module csm real

To display information about real servers, use the **show module csm real** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
sfarm	(Optional) Displays real servers for only a single serverfarm.
<i>sfarm-name</i>	(Optional) Name of the server farm to restrict output.
detail	(Optional) Displays 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 real (<i>for ip slb mode rp only</i>).

Examples This example shows Cisco IOS SLB real server data:

```
Cat6k-2# 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

Cat6k-2# 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 2-1 describes the fields in the display.

Table 2-1 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 dynamically 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: OUTOFSERVICE—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 currently open.
remaining retries	Number of retries remaining showing the inband health of a real server.
minconns	Minimum connections configured to the real server. maxconns If minconns and maxconns are changed from their default values, they enable the connection watermarks feature. No more than the maxconns connections are active on this real server. When the server has reached its maximum, the CSM stops sending new connections until the number of active connections drops below the minconns value.
maxconns	Maximum connections configured to the real server.
weight(admin)	Weight you configured and assigned to the real server which identifies the capacity of the real server compared to other real servers in the server farm. Note When using DFP (Dynamic Feedback Protocol), then the dynamic weight can be different from the admin weight.
metric	Health metric sent to the DFP manager.
remainder	Remaining number of connections.
total conns established	Total connections that have been set up since the last reset of the counters with the clear mod csm 6 counters command.
total conn failures	Total connections that have failed.

Related Commands

[module csm](#)
[real \(static NAT submode\)](#)

show module csm real retcode

To display information about the return code configuration, use the **show module csm real retcode** command.

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

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

```
Cat6k-2# 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 [module csm](#)
[real \(static NAT submodule\)](#)

show module csm script

To display the contents of all loaded scripts, use the **show module csm script** command.

```
show module csm slot script [name full_file_URL] [code]
```

Syntax Description		
<i>slot</i>		Slot where the CSM resides.
script		Displays script information.
name		(Optional) Displays information about a particular script.
<i>full_file_URL</i>		(Optional) Name of the script.
code		(Optional) Displays the contents of the script.

Defaults This command has no default settings.

Command Modes Privileged EXEC

Command History	Release	Modification
	3.1(1)	This command was introduced.

Examples This example shows how to display script file contents:

```
Cat6k-2# show module csm 3 script name probe1 xxx
```

Related Commands [module csm script file](#)

show module csm script task

To display all loaded scripts, use the **show module csm script task** command.

show module csm *slot* **script task** [*index script-index*] [*detail*]

Syntax Description		
	<i>slot</i>	Slot where the CSM resides.
	script task	Displays script task information.
	index	(Optional) Displays information about a particular script.
	<i>script-index</i>	(Optional) Specifies the script index.
	detail	(Optional) Displays the contents of the script.

Defaults This command has no default settings.

Command Modes Privileged EXEC

Command History	Release	Modification
	3.1(1)	This command was introduced.

Examples This example shows how to display a running script:

```
Cat6k-2# show module csm 3 script
```

Related Commands

- [module csm](#)
- [script file](#)
- [script task](#)
- [show module csm script](#)

show module csm serverfarm

To display information about a server farm, use the **show module csm serverfarm** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
name	(Optional) Displays information about a particular server farm.
<i>serverfarm-name</i>	(Optional) Name of the server farm.
detail	(Optional) Displays 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 serverfarm (<i>for ip slb mode rp only</i>).

Examples This example shows how to display server farm data:

```
Cat6k-2# 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 2-2 describes the fields in the display.

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

Field	Description
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:

```
Cat6k-2# 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

[module csm](#)
[serverfarm \(virtual server submode\)](#)

show module csm static

To display information about server NAT configurations, use the **show module csm static** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
drop	(Optional) Displays information about real servers configured to drop connections.
nat	(Optional) Displays information about real servers configured to NAT.
<i>ip-address</i>	(Optional) IP address to which to NAT.
virtual	(Optional) Displays 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 static (<i>for ip slb mode rp only</i>).

Examples This example shows how to display static data:

```
Cat6k-2# show module csm 4 static nat
```

Related Commands

- [module csm](#)
- [real \(static NAT submode\)](#)
- [static](#)

show module csm static server

To display information about actual servers that are having NAT performed, use the **show module csm static server** command.

```
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) Displays information about real servers configured to drop connections.
nat		(Optional) Displays information about real servers configured to NAT.
<i>ip-address</i>		(Optional) IP address to NAT.
virtual		(Optional) Displays information about servers configured to NAT virtual server addresses.
pass-through		(Optional) Displays 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 slot static server (for ip slb mode rp only).

Examples This example shows how to display static server data:

```
Cat6k-2# 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 [module csm](#)
[real \(static NAT submodule\)](#)
[static](#)

show module csm stats

To display SLB statistics, use the **show module csm stats** command.

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 stats (<i>for ip slb mode rp only</i>).

Usage Guidelines The statistics counters are 32-bit.

Examples This example shows how to display SLB statistics:

```
Cat6k-2# 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 2-3 describes the fields in the display.

Table 2-3 *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.

Related Commands

[module csm](#)

show module csm status

To display if the CSM is online, use the **show module csm status** command. 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 <i>slot</i> status (<i>for ip slb mode rp only</i>).

Examples This example shows how to display CSM status:

```
Cat6k-2# show module csm 4 status
SLB Module is online in slot 4.
Configuration Download state:COMPLETE, SUCCESS
```

Related Commands [module csm](#)

show module csm sticky

To display the sticky database, use the **show module csm sticky** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
groups	(Optional) Displays all of the sticky group configurations.
client	(Optional) Displays 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 sticky (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:

```
Cat6k-2# show module csm 4 sticky groups
Group  Timeout  Type
-----
20     100       netmask 255.255.255.255
30     100       cookie foo
```

Related Commands [module csm sticky](#)
[sticky \(virtual server submode\)](#)

show module csm tech-script

To display the status of a script, use the **show module csm tech-script** command.

show module csm *slot* tech-script

Syntax Description

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

Defaults

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

Command Modes

Privileged EXEC

Command History

Release	Modification
3.1(1)	This command was introduced.

Examples

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

```
Cat6k-2# show module csm 4 tech-script
```

Related Commands

[module csm](#)

show module csm tech-support

To display technical support information for the CSM, use the **show module csm tech-support** command.

```
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) Displays all of the available statistics.
processor	(Optional) Displays the IXP statistics for the IXP identified by the <i>num</i> value.
<i>num</i>	(Optional) IXP number.
redirect	(Optional) Displays all of the HTTP redirect statistics.
slowpath	(Optional) Displays all of the slowpath statistics.
probe	(Optional) Displays all of the probe statistics.
fpga	(Optional) Displays all of the field programmable gate array (FPGA) statistics.
core_dump	(Optional) Displays 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 slot tech-support (for ip slb mode rp only).

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

```
Cat6k-2# 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

Cat6k-2# show module csm 4 tech-support processor 2
-----
----- TCP Statistics -----
```

show module csm tech-support

```

-----
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

```

Related Commands [module csm](#)

show module csm vlan

To display the list of VLANs, use the **show module csm vlan** command.

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

Syntax Description	
<i>slot</i>	Slot where the CSM resides.
client	(Optional) Displays only the client VLAN configuration.
server	(Optional) Displays only the server VLAN configuration.
ft	(Optional) Displays only the fault-tolerant configuration.
id	(Optional) Displays the VLAN.
<i>vlan-id</i>	(Optional) Displays the specified VLAN.
detail	(Optional) Displays 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 vlan (for ip slb mode rp only) .

Examples This example shows how to display the VLAN configurations:

```
Cat6k-2# 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
Cat6k-2#
Cat6k-2#
Cat6k-2# 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 \(virtual server submode\)](#)

show module csm vserver redirect

To display the list of virtual servers, use the **show module csm vserver redirect** command.

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 <i>slot</i> vserver redirect (<i>for ip slb mode rp only</i>).

Examples This example shows how to display the CSM virtual servers:

```
Cat6k-2# 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
```

```
Cat6k-2#
```

```
Cat6k-2#
```

```
Cat6k-2# 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 csrps = 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 csrps = 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 [module csm](#)

show module csm xml stats

To display a list of extensible markup language XML statistics, use the **show module csm xml stats** command.

show module csm xml stats

Defaults

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

Command Modes

Privileged EXEC

Command History

Release	Modification
3.1(1)	This command was introduced.

Examples

This example shows how to display the CSM XML statistics:

```
Cat6k-2# show module csm 4 xml stats
XML config:inservice, port = 80, vlan = <all>, client list = <none>
connection stats:
  current = 0, total = 5
  failed = 2, security failed = 2
requests:total = 5, failed = 2
```

Related Commands

[xml-config](#)

snmp enable traps slb ft

To enable or disable fault-tolerant traps, use the **snmp enable traps slb ft** command. To disable fault-tolerant traps, use the **no** form of this command.

snmp enable traps slb ft

no snmp enable traps slb ft

Defaults

This command has no default settings.

Command Modes

Module CSM configuration submode

Command History

Release	Modification
3.1(1)	This command was introduced.

Usage Guidelines

A fault-tolerant trap allows the CSM to send an SNMP trap when the CSM transitions from standby to active after detecting a failure in its fault tolerant peer.

Examples

This example shows how to enable fault tolerant traps:

```
Cat6k-2(config-module-csm)# snmp enable traps slb ft
```

static

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

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

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

Syntax Description

drop	Drops connections from servers specified in static submode.
virtual	Uses the server's virtual IP (VIP) to NAT its source IP address.
nat	Specifies that the configuration is for NAT.
<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:

```
Cat6k-2 (config-module-csm) # static nat virtual
```

Related Commands

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

real (static NAT submode)

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

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:

```
Cat6k-2(config-slb-static)# real 10.0.0.0 255.0.0.0
```

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

sticky

To ensure that connections from the same client that match the same SLB policy use the same real server on subsequent connections and enter the sticky submode, use the **sticky** command. To remove a sticky group, use the **no** form of this command.

```
sticky sticky-group-id { netmask netmask | cookie name | ssl } [address [source | destination | both]] [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 <i>netmask</i>	Specifies the network mask for IP stickiness.	
cookie <i>name</i>	Specifies name of the cookie attached to the <i>sticky-group-id</i> value.	
ssl	Specifies SSL stickiness.	
address source destination both	Specifies the real server IP address for the source, the destination, or both.	
timeout <i>sticky-time</i>	(Optional) Specifies the 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 net mask 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 the *sticky-time* value 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:

```
Cat6k-2 (config-module-csm)# sticky 5 netmask 255.255.255.255 timeout 20
Cat6k-2 (config-slb-sticky-ip)#
```

Related Commands [sticky \(virtual server submode\)](#)
[sticky-group \(policy submode\)](#)
[show module csm sticky](#)

static (sticky submode)

To add a static sticky entry, use the **static** command. To remove a sticky group, use the **no** form of this command.

```
static client source ip-address [real ip-address]
```

```
static cookie value [real ip-address]
```

```
static ssl id [real ip-address]
```

```
no static
```

Syntax	Description
client <i>source ip-address</i>	Identifies the client source for the sticky entry.
real <i>ip-address</i>	(Optional) Identifies the real server.
cookie <i>value</i>	Identifies the cookie.
ssl <i>id</i>	Identifies SSL.

Defaults This command has no default settings.

Command Modes Sticky configuration submode

Command History	Release	Modification
	3.2(1)	This command was introduced.

Examples This example shows how to create an IP sticky group:

```
Cat6k-2 (config-module-csm) # sticky 5 netmask 255.255.255.255 timeout 20  
Cat6k-2 (config-slb-sticky-ip) #
```

Related Commands

- [sticky \(virtual server submode\)](#)
- [sticky-group \(policy submode\)](#)
- [show module csm sticky](#)

■ static (sticky submode)

