

Keepalive Configuration Mode Commands

Keepalive configuration mode allows you to configure keepalive properties and apply them to any service. When you configure a keepalive for a service (or associate a service with a global keepalive), the CSS periodically sends a message to the service based on the keepalive frequency to determine the state of the service. The CSS considers the service to be alive when a service responds to the keepalive message.

The CSS transitions the service to the dying state when the service fails to respond to a keepalive message. The CSS tests whether the failed service is functional by sending a keepalive message at time intervals based on the retry period.

The CSS transitions the service to the dead state if the service fails to respond a maximum number of retries to the keepalive message. Then the CSS removes the service from the load-balancing algorithm. The CSS continues to test whether the service is functional at time intervals based on the retry period.

Thus, using the default values of a 5-second keepalive frequency interval, a 5-second retry period interval, and maximum of three failures, a service can transition from the alive state to the dead state in 20 seconds; a 5-second interval between a keepalive response and the initial keepalive failure based on the keepalive frequency, and three failures, each occurring at 5-second intervals based on the retry period.

Global keepalives reduce the amount of configuration required for each service. You can apply the keepalive configuration to multiple services. Global keepalives are independent of service mode.



Note

You can configure keepalive message parameters for a service in service configuration mode. However, if you assign a keepalive you created in keepalive mode to a service, it supersedes the keepalive parameters configured in service mode.

The CSS supports a maximum of 512 keepalives (255 script keepalive types). These keepalives include:

- Global keepalives configured in keepalive configuration mode. Regardless of the number of services you assign to a global keepalive through the **(config-service) keepalive type named** command, the CSS always counts it as one keepalive.

- ICMP, HTTP, FTP, and TCP keepalives configured and assigned to a service through the **(config-service) keepalive** command. Each time you assign one of these keepalives to a service through the **(config-service) keepalive type** command, the CSS counts it as another keepalive.

**Caution**

Any service with more than 512 keepalives will not be eligible for content rule selection.

You can only configure 16 keepalives that use script output.

To access keepalive configuration mode, use the **keepalive** command from circuit, global, header-field-group, interface, and IP configuration modes. The prompt changes to (config-keepalive [*name*]). You can also use this command from keepalive mode to access another keepalive. For information about commands available in this mode, refer to the following commands.

Use the **no** form of this command to delete an existing keepalive.

keepalive *name*

no keepalive *existing_keepalive_name*

Syntax Description

<i>name</i>	The name of a new keepalive you want to create or of an existing keepalive. Enter an unquoted text string with no spaces and a maximum length of 31 characters. To see a list of existing keepalive names, enter:
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keepalive ?

Related Commands

show keepalive
(config-service) keepalive type named

(config-keepalive) active

To activate the keepalive you are configuring, use the **active** command. Activating a keepalive starts the sending of messages to the keepalive IP address.

active

Related Commands

show keepalive
(config-keepalive) ip address
(config-keepalive) suspend

(config-keepalive) description

To specify the description for the keepalive, use the **description** command. Use the **no** form of this command to delete the description.

description "*keepalive_description*"
no description

Syntax Description

keepalive_description The description for the keepalive. Enter a quoted text string with a maximum length of 64 characters including spaces.

Related Commands

show keepalive

(config-keepalive) frequency

To specify the frequency to send keepalive messages to the IP address, use the **frequency** command. Use the **no** form of this command to reset the frequency to its default value of 5.

frequency *frequency*
no frequency

Syntax Description

<i>frequency</i>	The time in seconds between sending keepalive messages to the IP address. Enter an integer from 2 to 255. The default is 5.
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Usage Guidelines

For script keepalives, configure a higher frequency time value. A time interval of over 10 seconds ensures that the script keepalive has enough time to finish. Otherwise, state transitions may occur more often than usual.

If you configure more than 16 keepalives the CSS automatically adjusts the keepalive frequency time to a value that best fits the resource usage. Note that this adjustment also affects the keepalive retry period value by adjusting that value to a number that is one-half the adjusted frequency time. If this occurs, you may observe in the running-configuration that your previously set keepalive frequency and retry period times change to a different value, as determined by the CSS.

Related Commands

show keepalive

(config-keepalive) hash

To specify the MD5 hash for the keepalive, use the **hash** command. The keepalive process compares the hash with the computed hash of all HTTP GET responses. A successful comparison results in the keepalive maintaining an ALIVE state. Use the **no** form of this command to clear the hash value.

```
hash "object"
no hash
```

Syntax Description	<i>object</i>	The object containing the MD5 hash in hexadecimal value for the keepalive. To determine the value for the hash, use the show keepalive command after you configure the keepalive without the hash option. Enter a quoted text string up to 32 characters.
Related Commands	show keepalive	

(config-keepalive) ip address

To specify the IP address where the keepalive messages are sent, use the **ip address** command.

```
ip address ip_address
```

Syntax Description	<i>ip_address</i>	The IP address for the keepalive. Enter this address in dotted-decimal notation (for example, 192.168.11.1).
Related Commands	(config-keepalive) port	

(config-keepalive) maxfailure

To specify how many times the IP address can fail to respond to a keepalive message before being considered dead, use the **maxfailure** command. Use the **no** form of this command to reset the maximum failure number to its default value of 3.

maxfailure *number*
no maxfailure

Syntax Description	<i>number</i>	The maximum failure number. Enter an integer from 1 to 10. The default is 3.
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(config-keepalive) method

To specify the HTTP keepalive method assigned to the keepalive, use the **method** command.

method [get|head]

Syntax Description

get

The get method. The CSS issues a HTTP GET method to the service, computes a hash value on the page, and stores the hash value as a reference hash. Subsequent GETs require a 200 OK status (HTTP command completed OK response) and the hash value to equal the reference hash value. If the 200 OK status is not returned, or if the 200 OK status is returned but the hash value is different from the reference hash value, the CSS considers the service down.

When you specify the content information of an HTTP Uniform Resource Identifier (URI) for an HTTP keepalive, the CSS calculates a hash value for the content. If the content information changes, the hash value no longer matches the original hash value and the CSS assumes that the service is down. To prevent the CSS from assuming that a service is down due to a hash value mismatch, specify the **method** as **head**.

head

The head method (default). The CSS issues a HTTP HEAD method to the service and a 200 OK status is required. The CSS does not compute a reference hash value for this type of keepalive. If the 200 OK status is not returned, the CSS considers the service down.

(config-keepalive) no

To negate a command or set it to its default, use the **no** command. For information on general **no** commands you can use in this mode, refer to the general **no** command. The following options are available in keepalive mode.

Syntax Description

no acl <i>index</i>	Deletes an existing ACL
no description	Clears the keepalive description
no frequency	Resets the keepalive frequency to its default of 5 seconds
no hash	Clears the MD5 hash object value
no keepalive <i>name</i>	Deletes an existing keepalive
no maxfailure	Resets the keepalive maximum number of failures to its default setting of 3
no owner <i>name</i>	Deletes an existing owner
no port	Resets the keepalive port number to its default setting based on the configured keepalive type
no retryperiod	Resets the keepalive retry period to its default of 5 seconds
no rmon-event <i>index</i>	Deletes an RMON event
no rmon-history <i>index</i>	Deletes an RMON history
no uri	Clears the keepalive content information of the URI

(config-keepalive) port

To specify the port number for the keepalive, use the **port** command. Use the **no** form of this command to reset the port to the default based on the configured keepalive type.

port *number*
no port

Syntax Description	<i>number</i>	<p>The port number associated with the keepalive. Enter the number as an integer from 0 to 65535. The default is based on the keepalive type. If the keepalive type is:</p> <ul style="list-style-type: none"> • Not configured, the default port number is 0 • HTTP or TCP, the default port number is 80 • FTP, the default port number is 21
Related Commands	(config-keepalive) ip address	

(config-keepalive) retryperiod

To specify the retry period to send messages to the keepalive IP address, use the **retryperiod** command. Use the **no** form of this command to reset the retry period to its default value of 5.

```
retryperiod period
no retryperiod
```

Syntax Description

period

The time in seconds between sending retry messages to the keepalive IP address. Enter an integer from 2 to 255. The default is 5.

Usage Guidelines

When a service has failed to respond to a given keepalive message (the service has transitioned to the dying state), the retry period specifies how frequently the CSS tests the service to see if it is functional.

(config-keepalive) suspend

To deactivate the keepalive, use the **suspend** command.


```
suspend
```


Related Commands show keepalive
 (config-keepalive) active

(config-keepalive) type

To specify the type of keepalive message assigned to the keepalive, use the **type** command.

```
type [ftp ftp_record | http { non-persistent } | icmp | script script_name
      {"arguments"} {use-output} | tcp]
```

Syntax Description		
ftp		The keepalive method that accesses an FTP server by logging into an FTP server as defined in an FTP record file.
<i>ftp_record</i>		The name of an existing FTP record for an FTP server. Enter an unquoted text string with no spaces. To create an FTP record, use the (config) ftp-record command.
http { non-persistent }		An HTTP index page request. By default, HTTP keepalives attempt to use persistent connections. To disable this behavior, include the non-persistent option.
icmp		An ICMP echo message (default).
script		The script keepalive to be used by the service. The script is played every time the keepalive is issued.
		
	Note	You can configure only 255 script keepalives.

<i>script_name</i>	The name of the script keepalive. To view a list of scripts, enter: type script ?
<i>arguments</i>	The optional arguments to pass into the keepalive script. Enter a quoted text string with a maximum of 128 characters including spaces.
use-output	Allows the script to parse the output for each executed command. This optional keyword allows the use grep and file direction within a script. By default, the script does not parse the output.
	 Note You can configure only 16 keepalives that use script output.
tcp	The TCP connection handshake request.

Usage Guidelines

You can configure a maximum of 512 keepalive per type except script keepalives. You can configure only 255 script keepalives. Note that the CSS support a maximum of 512 at a time.

(config-keepalive) uri

To specify the content information for an HTTP global keepalive, use the **uri** command. Use the **no** form of this command to clear the URI assigned to the keepalive.

uri *“uri”*

no uri

Syntax Description

“uri”

Content information for the HTTP keepalive URI. Enter the content information for a URI as a quoted text string with a maximum length of 64 characters. Do not include the host information in the string. The CSS derives the host information from the service IP address and the keepalive port number.

Usage Guidelines

When you specify the content information for an HTTP keepalive, the CSS calculates a hash value for the content. If the content information changes, the hash value no longer matches the original hash value and the CSS assumes that the service is down. To prevent the CSS from assuming that a service is down due to a hash value mismatch, specify the **keepalive method** as **head**. If you specify a Web page with changeable content and do not specify the keepalive method as **head**, you must suspend and reactivate the service each time the content information changes.