

Proximity Properties Configuration Mode Commands

This section describes the commands in proximity properties configuration mode. The proximity properties configuration mode commands allow you to configure a GSS to perform network proximity and determine the best (most proximate) resource for handling global load-balancing requests.

To access the proximity properties configuration mode, use the **proximity-properties** command in global server load-balancing configuration mode. The CLI prompt changes to the proximity properties configuration mode as follows:

```
gssm1.example.com(config)# gslb  
gssm1.example.com(config-gslb)# proximity-properties  
gssm1.example.com(config-gslb-proxprop)#
```

The **proximity-properties** command has no keywords or arguments.

(config-gslb-proxprop) acceptable-rtt

To specify an acceptable round-trip time (RTT) value when determining the most proximate answer, use the **acceptable-rtt** command in proximity properties configuration mode. To reset the acceptable RTT value to its global default value, use the **no** form of this command.

acceptable-rtt *number*

no acceptable-rtt *number*

Syntax Description

number

RTT value. Use this setting to adjust the granularity of the proximity decision process. Enter an acceptable-rtt value from 50–2000 ms. The default value is 100 ms.

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Usage Guidelines

If the zones configured on the GSS report an RTT that is less than the specified acceptable-rtt value, the GSS does the following:

- Disregards the acceptable percentage of zones.
- Determines if there is sufficient proximity data to make a proximity decision.
- Uses the zones reporting less than or equal to this value in the proximity decision.

Examples

The following example shows how to specify an acceptable RTT value when determining the most proximate answer:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# acceptable-rtt 100
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

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The following example shows how to reset the acceptable RTT value to its global default value:

```
gssm1.example.com(config-gslb)# proximity-properties  
gssm1.example.com(config-gslb-proxprop)# enable  
gssm1.example.com(config-gslb-proxprop)# no acceptable-rtt 100  
gssm1.example.com(config-gslb-proxprop)# exit
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) acceptable-zone

To specify a percentage value that the GSS uses to determine if an acceptable number of zones return valid round-trip time (RTT) values, use the **acceptable-zone** command in proximity properties configuration mode. To reset the acceptable zone value to its global default value, use the **no** form of this command.

acceptable-zone *number*

no acceptable-zone *number*

Syntax Description

| | |
|---------------|---|
| <i>number</i> | Percentage value that the GSS uses to determine if an acceptable number of zones return valid RTT values. The value specifies the percentage of all zones configured and used for a DNS rule and answer group. Enter a percentage of zones from 3–100 percent. The default value is 40 percent. |
|---------------|---|

Command Modes

Proximity properties configuration

Usage Guidelines

If an insufficient number of zones report RTT information, the balance clause fails and the GSS processes a new clause. For example, if the answer group associated with a clause includes answers that correspond to five different zones and you specify an acceptable-zone setting of 40 percent, the GSS must receive valid RTT values from a minimum of two zones to satisfy the 40-percent criteria. If the GSS does not receive valid RTT values from at least two zones, it determines that the balance clause has failed.

If the reported RTT from one or more zones for the DNS rule/answer group is below the acceptable-rtt value, then the GSS ignores the acceptable-zone value.

Examples

The following example shows how to specify a percentage value that the GSS uses to determine if an acceptable number of zones return valid RTT values:

```
gssm1.example.com(config-gslb)# proximity-properties  
gssm1.example.com(config-gslb-proxprop)# enable  
gssm1.example.com(config-gslb-proxprop)# acceptable-zone 50  
gssm1.example.com(config-gslb-proxprop)# exit  
gssm1.example.com(config-gslb)#
```

The following example shows how to reset the acceptable-zone value to its global default value:

```
gssm1.example.com(config-gslb)# proximity-properties  
gssm1.example.com(config-gslb-proxprop)# enable  
gssm1.example.com(config-gslb-proxprop)# no acceptable-zone 50  
gssm1.example.com(config-gslb-proxprop)# exit
```

Related Commands

[\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) authentication drp enable

To specify that the GSS authenticates packets that it exchanges with the Director Response Protocol (DRP) agent in a probing device through the exchange of DRP keys, use the **authentication drp enable** command in proximity properties configuration mode. To disable DRP authentication, use the **no** form of this command.

authentication drp enable

no authentication drp enable

Syntax Description

This command has no keywords or arguments.

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Usage Guidelines

Enable this command before using the **key drp** command. In the disabled state (the default), the GSS does not perform DRP authentication with the DRP agent.

Examples

The following example shows how to enable DRP authentication and create two new DRP keys:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# authentication drp enable
gssm1.example.com(config-gslb-proxprop)# key drp number 10 string
DRPKEY1
gssm1.example.com(config-gslb-proxprop)# key drp number 20 string
DRPKEY2
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

The following example shows how to disable DRP authentication:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# no authentication drp enable
gssm1.example.com(config-gslb-proxprop)# exit
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) discovery-sequence

To specify the type of probe method used initially by the Cisco IOS-based router during the probe discovery process with the requesting client's D-proxy, use the **discovery-sequence** command in proximity properties configuration mode. To reset the command to its global default setting, use the **no** form of this command.

```
discovery-sequence {tcp | icmp}
```

```
no discovery-sequence {tcp | icmp}
```

Syntax Description

| | |
|-------------|---|
| tcp | Specifies that the probing device uses the TCP SYN-ACK and RST handshake to probe the user-specified TCP port and measure the round-trip time (RTT) between the probing device and the D-proxy. You can configure the source and destination TCP ports on the Cisco router. |
| icmp | Specifies that the probing device uses the Internet Control Message Protocol (ICMP) echo request and response to measure the RTT between the probing device and the D-proxy. |

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Usage Guidelines

If the router attempts the specified probe method and the D-proxy does not recognize the method, the GSS automatically chooses a different probe method type (TCP or ICMP) to contact the D-proxy.

Examples

The following example shows how to specify the type of probe method used initially by the Cisco IOS-based router during the probe discovery process with the requesting client's D-proxy:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
```

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```
gssm1.example.com(config-gslb-proxprop)# discovery-sequence icmp  
gssm1.example.com(config-gslb-proxprop)# exit  
gssm1.example.com(config-gslb)#
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) enable

To enable global proximity across the entire GSS network, use the **enable** command in proximity properties configuration mode. To disable global proximity, use the **no** form of this command.

enable

no enable

Syntax Description

This command has no keywords or arguments.

Command Modes

Proximity properties configuration

Usage Guidelines

This command is disabled by default.

Proximity settings are applied as soon as you exit from the proximity properties configuration mode or enter a new mode.

Examples

The following example shows how to enable global proximity across the entire GSS network:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

The following example shows how to disable global proximity:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# no enable
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands

[\(config-gslb-stkyprop\) enable](#)

(config-gslb-proxprop) equivalence

To specify a percentage value that the GSS applies to the most proximate round-trip time (RTT) value (the closest) to help identify the relative RTT values of other zones that the GSS should consider as equally proximate, use the **equivalence** command in proximity properties configuration mode. To reset the global value to the default value, use the **no** form of this command.

equivalence *number*

no equivalence *number*

| Syntax Description | <i>number</i> | Percentage value that the GSS applies to the most proximate RTT value. Enter an equivalence value from 0–100 percent. The default value is 20 percent. |
|--------------------|---------------|--|
|--------------------|---------------|--|

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Usage Guidelines Through the equivalence percentage, you define an RTT window that the GSS uses to consider zones equal. The equivalence value enables the GSS to prioritize between multiple distributed servers that have similar server-to-client RTT values. The GSS considers any RTT value that is less than or equal to the lowest RTT plus the percentage to be equivalent to the lowest RTT value. The GSS chooses one answer from a set of answers in equal zones.

Examples The following example shows how to specify a percentage value that the GSS applies to the most proximate RTT value (the closest) to help identify the relative RTT values of other zones that the GSS should consider as equally proximate:

```
ssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# equivalence 40
40 gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) fallback-probe-method

To enable path-probe as the fallback probe method for determining proximity, use the **fallback-probe-method** command in the proximity properties configuration mode. To disable the fallback probe method, use the **no** form of this command.

```
fallback-probe-method {path-probe}
```

```
no fallback-probe-method {path-probe}
```

Syntax Description

| | |
|-------------------|--|
| path-probe | Enables the path-probe method on a GSS (acting as a DRP agent) as the fallback probe method should the TCP and ICMP methods fail. By default, path-probe is not enabled. |
|-------------------|--|

Command Modes

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Usage Guidelines

The path-probe method is supported only on the GSS acting as a Director Response Protocol (DRP) agent.

You cannot select path-probe as the initial probe method.

Proximity settings are applied as soon as you exit from the proximity properties configuration mode or enter a new mode.

Examples

The following example shows how to enable path-probe as the fallback method to the TCP and ICMP methods for determining proximity:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# fallback-probe-method
path-probe
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

The following example shows how to disable the fallback probe method:

```
gssm1.example.com(config-gslb)# proximity-properties
```

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```
gssml.example.com(config-gslb-proxprop)# no fallback-probe-method  
path-probe  
gssml.example.com(config-gslb-proxprop)# exit  
gssml.example.com(config-gslb)#
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) key drp

To specify the key that authenticates the Director Response Protocol (DRP) requests and responses sent between the GSS and the DRP agent, use the **key drp** command in proximity properties configuration mode. To disable a DRP key, use the **no** form of this command.

```
key drp {id_number key_name}
```

```
no key drp {id_number key_name}
```

Syntax Description

| | |
|------------------|---|
| <i>id_number</i> | Identification number of a secret key used for encryption. The GSS uses the ID value to retrieve the key string that is used to verify the DRP authentication field. The ID value must be the same between the DRP agent on the Cisco IOS-based router and the GSS. You can add a maximum of 32 keys. The range of key identification numbers is 0–255. |
| <i>key_name</i> | Authentication string that is sent and received in the DRP packets. The string must be the same between the DRP agent on the Cisco IOS-based router and the GSS. The string can contain 1–80 uppercase and lowercase alphanumeric characters. The first character cannot be a number. |

Command Modes

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Usage Guidelines

Enable the **authentication drp enable** command before using this command. Each DRP key contains a key identification number and a key authentication string. The primary GSSM supports a maximum of 32 keys.

Examples

The following example shows how to enable DRP authentication and create two new DRP keys:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# authentication drp enable
gssm1.example.com(config-gslb-proxprop)# key drp number 10 string
DRPKEY1
gssm1.example.com(config-gslb-proxprop)# key drp number 20 string
DRPKEY2
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

The following example shows how to disable a DRP key:

```
gssm1.example.com(config-gslb-proxprop)# no key drp number 20 string
DRPKEY2
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands

[\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) mask

To specify a global subnet mask that the GSS uses to uniformly group contiguous D-proxy addresses as an attempt to increase the number of supported D-proxies in the proximity database (PDB), use the **mask** command in proximity properties configuration mode. To reset the global subnet mask to the default value, use the **no** form of this command.

mask *netmask*

no mask *netmask*

Syntax Description

netmask

Global subnet mask. Enter the subnet mask in dotted-decimal notation (for example, 255.255.255.0). The default global mask is 255.255.255.255.

Command Modes

Proximity properties configuration

Usage Guidelines

When you define a proximity group for incoming D-proxy addresses, and the incoming D-proxy address does not match any of the entries in a defined proximity group, then the GSS uses this global netmask value to calculate a grouped D-proxy network address.

Examples

The following example shows how to specify a global subnet mask that the GSS uses to uniformly group contiguous D-proxy addresses as an attempt to increase the number of supported D-proxies in the PDB:

```
gssml.example.com(config-gslb)# proximity-properties
gssml.example.com(config-gslb-proxprop)# enable
gssml.example.com(config-gslb-proxprop)# mask 255.255.255.0
gssml.example.com(config-gslb-proxprop)# exit
gssml.example.com(config-gslb)#
```

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Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) no

To negate a CLI command or set it to its default settings, use the **no** command. Some GSS CLI commands do not have a **no** form.

no *command*

| Syntax Description | | |
|--------------------|----------------------------------|--|
| | acceptable-rtt | Resets the acceptable round-trip time (RTT) value to its global default value. |
| | acceptable-zone | Resets the acceptable zone value to its global default value. |
| | authentication drp enable | Disables Director Response Protocol (DRP) authentication. |
| | discovery-sequence | Resets the command to its global default value. |
| | enable | Disables global proximity. |
| | equivalence | Resets the global value to the default value. |
| | key drp | Disables a DRP key. |
| | mask | Resets the global subnet mask to the default value. |
| | refresh-interval | Resets the interval to the default value. |
| | timeout | Resets the timeout value to the default value. |
| | wait enable | Resets the wait state to its default value. |

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Usage Guidelines Use the **no** command to disable functions or negate a command. If you need to negate a specific command, such as the default gateway IP address, you must include the specific string in your command, such as **no ip default-gateway ip-address**.

Examples

The following example shows how to negate a CLI command or set it to its default settings:

```
gss1.example.com(config)# no ip name-server 10.11.12.14  
gss1.example.com(config)# no ntp-server 172.16.22.44
```

(config-gslb-proxprop) refresh-interval

To specify the frequency of the refresh probing process to probe and update round-trip time (RTT) values for the entries in the proximity database (PDB), use the **refresh-interval** command in proximity properties configuration mode. To reset the interval to the default value, use the **no** form of this command.

refresh-interval *number*

no refresh-interval *number*

Syntax Description

number

Frequency of the refresh probing process to probe and update RTT values for the entries in the PDB. Enter a value from 1–72 hours. The default value is 8 hours.

Command Modes

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Examples

The following example shows how to specify the frequency of the refresh probing process to probe and update RTT values for the entries in the PDB:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# refresh-interval 6
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands

[\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) timeout

To specify the maximum time interval that can pass without the proximity database (PDB) receiving a lookup request for an entry before the GSS removes that entry, use the **timeout** command in proximity properties configuration mode. To reset the timeout value to the default, use the **no** form of this command.

timeout *number*

no timeout *number*

| | | |
|---------------------------|---------------|--|
| Syntax Description | <i>number</i> | Maximum time interval that can pass without the PDB receiving a lookup request for an entry before the GSS removes that entry. Enter a value from 1–10080 minutes (168 hours). The default value is 4320 minutes (72 hours). |
|---------------------------|---------------|--|

Command Modes Proximity properties configuration

Usage Guidelines This value defines the PDB entry age-out process. Once an entry reaches the inactivity time, the GSS removes the selected dynamic entries from the PDB.

Examples The following example shows how to specify the maximum time interval that can pass without the PDB receiving a lookup request for an entry before the GSS removes that entry:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# timeout 2880
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands [\(config-gslb-proxprop\) enable](#)

(config-gslb-proxprop) wait enable

To specify that the GSS waits to perform a proximity selection until it receives the appropriate round-trip time (RTT) and zone information based on the proximity settings, use the **wait enable** command in proximity properties configuration mode. To reset the wait state to its default (disabled) value, use the **no** form of this command.

wait enable

no wait enable

Syntax Description This command has no keywords or arguments.

Command Modes Proximity properties configuration

Usage Guidelines The GSS does not return an answer to the requesting client's D-proxy until the GSS obtains sufficient proximity data to complete the selection process. In the disabled state (the default), the GSS does not wait to perform a proximity selection if it has not received the appropriate RTT and zone information based on other proximity settings. In this case, the GSS proceeds to the next balance clause in the Domain Name System (DNS) rule.

Examples The following example shows how to specify that the GSS waits to perform a proximity selection until it receives the appropriate RTT and zone information based on the proximity settings:

```
gssm1.example.com(config-gslb)# proximity-properties
gssm1.example.com(config-gslb-proxprop)# enable
gssm1.example.com(config-gslb-proxprop)# wait enable
gssm1.example.com(config-gslb-proxprop)# exit
gssm1.example.com(config-gslb)#
```

Related Commands [\(config-gslb-proxprop\) enable](#)