



DistributedDirector Commands

This chapter describes the commands used to configure the Cisco DistributedDirector.

alias (boomerang)

To configure an alias name for a specified domain, use the **alias** command in boomerang configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

alias *alias-name*

no alias *alias-name*

Syntax Description

<i>alias-name</i>	Alias name for a specified domain.
-------------------	------------------------------------

Defaults

No default behavior or values.

Command Modes

Boomerang configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The **alias** command can be used only on a Director Response Protocol (DRP) agent. The boomerang client is the DRP agent.

Use the **alias** command to specify one or more alias names for an existing domain. Because the boomerang client maintains separate counters for requests received for each domain name (alias or otherwise), use the **show ip drp boomerang** command to view these counters for a specified domain name and each of its aliases.

Examples

In the following example, the domain name alias is configured for www.boom1.com. The new alias for www.boom1.com is www.boom2.com:

```
Router(config)# ip drp domain www.boom1.com
Router(config-boomerang)# alias www.boom2.com

Router# show running-config
.
.
.
ip drp domain www.boom1.com
alias www.boom2.com
```

Related Commands	Command	Description
	ip drp domain	Adds a new domain to the DistributedDirector client or configures an existing domain and puts the client in boomerang configuration mode.
	server (boomerang configuration)	Configures the server address for a specified boomerang domain.
	show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
	show ip drp boomerang	Displays boomerang information on the DRP agent.
	ttd dns	Configures the number of seconds for which an answer received from the boomerang client will be cached by the DNS client.
	ttd ip	Configures the IP TTL value for the boomerang response packets sent from the boomerang client to the DNS client in number of hops.

Related Commands	Command	Description
	show cef state	Displays the state of CEF.

ip director cache size

To configure the variable size of the DistributedDirector cache, use the **ip director cache size** command in global configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

ip director cache size *entries*

no ip director cache size *entries*

Syntax Description

entries Maximum number of cache entries. Range is from 1 to 4294967295.

Defaults

Maximum number of cache entries: 2000

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

Use the **ip director cache size** command to configure the maximum number of cache entries that the DistributedDirector system will retain in its cache. This cache size is the maximum number of cache entries that are displayed when the user enters the **show ip director cache** command.

Examples

The following example configures the maximum number of cache entries:

```
Router(config)# ip director cache size 1500
Cache size shrunk to 1500
```

```
Router# show ip director cache
Director cache is on
Cache current size = 0 maximum size = 1500
Cache time for sort cache entries: 60 secs
Director sort cache hits = 0
```

Related Commands

Command	Description
ip director cache	Enables the sorting cache on DistributedDirector.
ip director cache time	Configures how long the DistributedDirector system will retain per-client sorting information.

ip director cache refresh

To enable the DistributedDirector Cache Auto Refresh feature, use the **ip director cache refresh** command in global configuration mode. To disable automatic background refresh, use the **no** form of this command.

ip director cache refresh

no ip director cache refresh

Syntax Description

This command has no keywords or arguments.

Defaults

Automatic background refresh is disabled.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The sorting cache on DistributedDirector must be enabled before you can use the **ip director cache refresh** command. To enable the sorting cache, use the **ip director cache** command.

Once automatic background refresh for the DistributedDirector cache is enabled, the cache will actively and continuously update every expired entry by processing a fake Domain Name System (DNS) request. The cache accumulates and updates answers to all past DNS queries received since cache auto refresh was initiated. Any repeat DNS request is always serviced directly from the cache.

Examples

The following example enables automatic background refresh for the DistributedDirector cache:

```
Router(config)# ip director cache

Router(config)# ip director cache refresh

Router# show running-config

ip host myhost 172.2.2.10 172.2.2.20 172.2.2.30
.
.
.
ip director cache refresh
```

ip director cache time

To configure how long the DistributedDirector system will retain per-client sorting information, use the **ip director cache time** command in global configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

ip director cache time *seconds*

no ip director cache time *seconds*

Syntax Description	<i>seconds</i>	How long the per-client sorting information is retained, in number of seconds. Range is from 1 to 2147483.
---------------------------	----------------	--

Defaults	60 seconds
-----------------	------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines	Use the ip director cache time command to specify how long the DistributedDirector system will retain per-client sorting in its cache. This cache time is the maximum amount of cache time displayed when the user enters the show ip director cache command.
-------------------------	---

Examples	The following example configures how long the DistributedDirector system will retain per-client sorting information:
-----------------	--

```
Router(config)# ip director cache time 100

Router# show ip director cache
Director cache is on
Cache current size = 0 maximum size = 2000
Cache time for sort cache entries: 100 secs
Director sort cache hits = 0
```

Related Commands	Command	Description
	ip director cache	Enables the sorting cache on DistributedDirector.
ip director cache size	Configures the variable size of the DistributedDirector cache.	

ip director default priorities

To set a default priority for a specific metric on the DistributedDirector, use the **ip director default priorities** command in global configuration mode. To remove a default priority for a metric, use the **no** form of this command.

```
ip director default priorities [drp-int num] [drp-ext num] [drp-ser num] [random num] [admin
num] [drp-rtt num] [portion num] [availability num] [route-map num] [boomerang num]
```

```
no ip director default priorities [drp-int num] [drp-ext num] [drp-ser num] [random num]
[admin num] [drp-rtt num] [portion num] [availability num] [route-map num] [boomerang
num]
```

Syntax Description

drp-int	(Optional) DRP internal metric. Range is from 1 to 100.
<i>num</i>	Numeric value of a priority level for a given metric.
drp-ext	(Optional) DRP external metric. Range is from 1 to 100.
drp-ser	(Optional) DRP server metric. Range is from 1 to 100.
random	(Optional) Random metric. Range is from 1 to 100.
admin	(Optional) Administrative metric. Range is from 1 to 100.
drp-rtt	(Optional) DRP round-trip time metric. Range is from 1 to 100.
portion	(Optional) Portion metric. Range is from 1 to 100.
availability	(Optional) Availability metric. Range is from 1 to 100.
route-map	(Optional) Route-map metric. Range is from 1 to 100.
boomerang	(Optional) Boomerang metric.

Defaults

No default priorities are specified.

Command Modes

Global configuration

Command History

Release	Modification
12.2(4)T	This command was introduced.
12.2(8)T	The boomerang metric was added.

Usage Guidelines

Not all of the metrics need to be specified, but at least one must be specified. If the boomerang metric is specified for a given host name, then all metrics of lower priority (that is, having a higher priority number) than boomerang are always ignored.

The default priorities specified will take effect if no priorities are specified in the **ip director host priority** command or in the corresponding Domain Name System (DNS) text record for the host.

To set the default priority for several metrics, enter the metric keywords and values to be configured on the same line as the **ip director default priorities** command.

Examples

In the following example, the boomerang metric is selected as the default priority:

```
Router(config)# ip director default priorities boomerang 1

Router# show running-config

ip host boom1 172.2.2.10 172.2.2.20 172.2.2.30
ip director server 172.2.2.20 drp-association 172.4.4.2
ip director server 172.2.2.30 drp-association 172.4.4.3
ip director server 172.2.2.10 drp-association 172.4.4.1
ip director host boom1
no ip director cache
ip dns primary boom1 soa boom1 boom1@com
ip director host boom1 priority boomerang 1
no ip director drp synchronized
```

Related Commands

Command	Description
ip director access-list	Defines an access list for DistributedDirector that specifies which subdomain names and host names should be sorted.
ip director cache	Enables the sorting cache on DistributedDirector.
ip director default priorities	Sets a default priority for a specific metric on DistributedDirector.
ip director default weights	Configures default weight metrics for DistributedDirector.
ip director host priority	Configures the order in which DistributedDirector considers metrics when picking a server.
ip director host weights	Sets host-specific weights for the metrics that DistributedDirector uses to determine the best server within a specific host name.
ip director server admin-pref	Configures a per-service administrative preference value.
ip director server portion	Sets the portion value for a specific server.
ip director server preference	Specifies DistributedDirector preference of one server over others or takes a server out of service.
show ip director default priority	Verifies the default configurations of DistributedDirector metrics.
show ip director default weights	Shows DistributedDirector default weights.
show ip director servers	Displays DistributedDirector server preference information.

ip director default weights

To configure default weight metrics for DistributedDirector, use the **ip director default weights** command in global configuration mode. To set the defaults to zero, use the **no** form of this command.

```
ip director default weights {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin n]
[portion n] [availability n] [route-map n]}
```

```
no ip director default weights {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin
n] [portion n] [availability n] [route-map n]}
```

Syntax Description	
drp-int <i>n</i>	<p>(Optional) Director Response Protocol (DRP) internal metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the distance from themselves to the edge of their Border Gateway Protocol (BGP) autonomous system in the direction of the client originating the Domain Name System (DNS) query. This distance can be used along with the DRP external metric (drp-ext) to help determine the distance between the router and the client originating the DNS query.</p> <p>If the client and the DRP server agent are in the same autonomous system, this metric returns the Interior Gateway Protocol (IGP) cost metric between the client and the DRP server agent.</p>
drp-ext <i>n</i>	<p>(Optional) DRP external metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the BGP distance between them and the client originating the DNS query. This distance represents the number of BGP hops between the autonomous system of the DRP server agent and the autonomous system of the client originating the DNS query. Because this is BGP information, the DRP server agents need to have access to full Internet BGP information in order for this metric to be useful.</p>
drp-ser <i>n</i>	<p>(Optional) DRP server metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the IGP route metric between them and the distributed servers that they support. This distance can be used with the DRP internal metric (drp-int) to get a finer distance calculation between the distributed servers and the edge of the BGP autonomous system in the direction of the client originating the DistributedDirector query.</p> <p>If a true BGP border router is used as a DRP server agent, the DRP server metric will return the IGP route metric between the distributed server and the BGP border router (autonomous system edge). Because DRP server metrics should not change frequently, DistributedDirector issues DRP server queries (and caches the results) every 10 minutes.</p>
drp-rtt <i>n</i>	<p>(Optional) DRP round-trip time metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the round-trip time between the DRP agent and the client originating the DNS query.</p>

random <i>n</i>	(Optional) Random metric. The range is 1 to 100. This option selects a random number for each distributed server and defines the “best” server as the one with the smallest random number assignment. Using this metric alone results in random redirection of clients to the distributed servers. Because this metric requires no routing table information, it does not trigger DRP requests to the DRP server agents.
admin <i>n</i>	(Optional) Administrative metric. The range is 1 to 100. This option specifies a simple preference of one server over another. If the administrative metric has been explicitly set to zero, the Director will not consider the server, so the server is taken out of service.
portion <i>n</i>	(Optional) Portion metric. The range is 1 to 100. This option assigns a load “portion” to each server such that servers with a higher portion value will receive a larger percentage of connections at any one time.
availability <i>n</i>	(Optional) Availability metric. The range is 1 to 65,535. This option specifies the load information for the DistributedDirector. The default value is 65,535.
route-map <i>n</i>	(Optional) Route-map metric. The range is 1 to 100. This option specifies if a server should be offered to a client.

Defaults

No default weights are specified.
The availability default value is 65,535.

Command Modes

Global configuration

Command History

Release	Modification
11.1(18)IA	This command was introduced.
12.1(5)T	The availability and route-map metrics were added.
12.2(4)T3	The command name was changed slightly: default weights replaced default-weights . (DistributedDirector Enhancements for Cisco IOS Release 12.2(4)T3)

Usage Guidelines

Not all the metrics need to be configured; however, at least one metric must be configured when this command is used.

Default weights are used for all host names sorted by the DistributedDirector. To override default weights for a certain host, specify host-specific weights in the private DNS server configuration.

When the associated metric is referenced in the sorting decision, it will always be multiplied by the appropriate metric weight. In this way, you can specify that some metrics be weighted more than others. You may determine the weights that you want to use through experimentation. The weights given do not need to add up to 100.

The new availability metric allows the DistributedDirector to attempt to create a TCP connection to each distributed server on a configured port over a configurable time interval.

Examples

The following command configures default weights for the internal and external metrics:

```
ip director default weight drp-int 10 drp-ext 90
```

Related Commands

Command	Description
debug ip director parse	Shows debugging information for DistributedDirector parsing of TXT information.
debug ip director sort	Shows debugging information for DistributedDirector IP address sorting.
ip director access-list	Defines an access list for the DistributedDirector that specifies which subdomain names and host names should be sorted.
ip director cache	Enables the sorting cache on the DistributedDirector.
ip director default priorities	Sets default priorities for a specific metric on the DistributedDirector.
ip director drp rttprobe	Sets the protocol used by DRP agents for RTT probing in DistributedDirector.
ip director host priority	Configures the order in which the DistributedDirector considers metrics when selecting a server.
ip director host weights	Sets host-specific weights for the metrics that the DistributedDirector uses to determine the best server within a specific host name.
ip director server admin-pref	Configures a per-service administrative preference value.
ip director server portion	Sets the portion value for a specific server.
ip director server preference	Specifies DistributedDirector preference of one server over others or takes a server out of service.
show ip director default priority	Verifies the default configurations of DistributedDirector metrics.
show ip director default weights	Shows the DistributedDirector default weights.
show ip director servers	Displays the DistributedDirector server preference information.

ip director dfp

To configure the DistributedDirector Dynamic Feedback Protocol (DFP) agent with which the DistributedDirector should communicate, use the **ip director dfp** command in global configuration mode. To turn off the DFP agent, use the **no** form of this command.

ip director dfp *ip-address* [*port*] [**retry** *n*] [**attempts** *n*] [**timeout** *n*]

no ip director dfp *ip-address* [*port*] [**retry** *n*] [**attempts** *n*] [**timeout** *n*]

Syntax Description

<i>ip-address</i>	IP address.
<i>port</i>	(Optional) Port number to which the distributed servers are configured. The default value is 8080.
retry <i>n</i>	(Optional) Number of times a connection will be attempted. The default value is 5 attempts.
attempts <i>n</i>	(Optional) Delay, in seconds, between each attempt. The default value is 10,000 seconds.
timeout <i>n</i>	(Optional) Maximum amount of time, in seconds, for which DFP information is assumed valid. The default value is 10,000 seconds.

Syntax Description

The port default value is 8080.
 The retry default value is 5 attempts.
 The attempts default value is 10,000 seconds.
 The timeout default value is 10,000 seconds.

Command Modes

Global configuration

Command History

Release	Modification
12.1(5)T	This command was introduced.

Usage Guidelines

A connection is attempted a specified number of times with a delay of a specified number of seconds between each attempt. Once a connection is established, the DFP protocol will run. If a time interval update has not occurred for this DFP session, the connection breaks and is reestablished as described above.

Examples

The following example configures the DistributedDirector to communicate with a specified DFP agent:

```
ip director dfp 10.0.0.1 retry 3 attempts 60 timeout 6000
```

ip director dfp security

To configure a security key for use when connecting to the Dynamic Feedback Protocol (DFP) client named, use the **ip director dfp security** command in global configuration mode. To turn off the security key, use the **no** form of this command.

```
ip director dfp security ip-address md5 string [timeout]
```

```
no ip director dfp security ip-address md5 string [timeout]
```

Syntax Description

<i>ip-address</i>	IP address for the service.
md5	Security data authentication. Message Digest 5.
<i>string</i>	Security key.
<i>timeout</i>	(Optional) Amount of time, in seconds, during which DistributedDirector will continue to accept a previously defined security key. The default value is 0 seconds.

Defaults

The timeout default value is 0 seconds.

Command Modes

Global configuration

Command History

Release	Modification
12.1(5)T	This command was introduced.

Usage Guidelines

The **ip director dfp security** command should be entered before configuring the **ip director dfp** command, resulting in a connection being made, but it can be entered independently of making a connection.

DFP allows servers to take themselves Out-of-Service and place themselves back In-Service. This function could result in a security risk because a network that is hacked could be shut down even though all the servers are still performing. An optional security vector is included in DFP to allow each message to be verified. The security vector is used to describe the security algorithm being used and to provide the data for that algorithm. The security vector itself is also extensible in that it specifies which security algorithm is being used. This specification allows different levels of security from MD5 to Data Encryption Standard (DES) to be used without overhauling the protocol and disrupting any installed base of equipment. If a receiving unit is configured for the specified security type, all DFP packets must contain that security vector or they are ignored. If a receiving unit is not configured for any security type, the security vector does not have to be present, and if it is present, it is ignored while the rest of the message is processed normally.

Examples

The following example configures the security key hello:

```
ip director dfp security 10.0.0.1 md5 hello 60
```

Related Commands	Command	Purpose
	ip director dfp	Configures the DistributedDirector DFP agent with which the DistributedDirector should communicate.

ip director drp rttprobe

To set the protocol used by Director Response Protocol (DRP) agents for round-trip time (RTT) probing in DistributedDirector, use the **ip director drp rttprobe** command in global configuration mode. To disable the use of a protocol, use the **no** form of the command.

```
ip director drp rttprobe [tcp | icmp]
```

```
no ip director drp rttprobe [tcp | icmp]
```

Syntax Description

tcp	(Optional) Transmission Control Protocol.
icmp	(Optional) Internet Control Message Protocol.

Defaults

TCP

Command Modes

Global configuration

Command History

Release	Modification
12.2(4)T	This command was introduced.

Usage Guidelines

Both protocols can be activated, in which case DistributedDirector will instruct DRP agents to return the RTT collected from either the TCP or Internet Control Message Protocol (ICMP) protocol, whichever becomes available first. At any time, at least one of the protocols must be active.

To use only one protocol, enable the protocol you want to use, and then disable the protocol that was already configured.

```
Router(config)# ip director drp rttprobe icmp
Router(config)# no ip director drp rttprobe tcp
```

Examples

The following example shows that ICMP is configured for use by DRP agents for RTT probing:

```
Router(config)# ip director drp rttprobe icmp
```

Related Commands

Command	Description
ip director access-list	Defines an access list for the DistributedDirector that specifies which subdomain names and host names should be sorted.
ip director cache	Enables the sorting cache on the DistributedDirector.
ip director default priorities	Sets default priorities for a specific metric on the DistributedDirector.
ip director default weights	Configures default weight metrics for the DistributedDirector.

Command	Description
ip director host priority	Configures the order in which the DistributedDirector considers metrics when selecting a server.
ip director host weights	Sets host-specific weights for the metrics that the DistributedDirector uses to determine the best server within a specific host name.
ip director server admin-pref	Configures a per-service administrative preference value.
ip director server portion	Sets the portion value for a specific server.
ip director server preference	Specifies DistributedDirector preference of one server over others or takes a server out of service.
show ip director default priority	Verifies the default configurations of DistributedDirector metrics.
show ip director default weights	Shows the DistributedDirector default weights.
show ip director servers	Displays the DistributedDirector server preference information.

ip director drp synchronized

To activate clock synchronization between DistributedDirector and Director Response Protocol (DRP), use the **ip director drp synchronized** command in global configuration mode. To deactivate synchronization between the clocks in DistributedDirector and the DRPs, use the **no** form of this command.

ip director drp synchronized

no ip director drp synchronized

Syntax Description This command has no arguments or keywords.

Defaults Clock synchronization is deactivated.

Command Modes Global configuration

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines This command is used in conjunction with boomerang racing.

When the **ip dir drp synchronized** command is configured, DistributedDirector specifies an absolute time at which the DRP agent should respond to the DNS client.

When **no ip director drp synchronized** is configured (which is the default), DistributedDirector specifies a relative time (based on the delay measured between DistributedDirector and the DRP agent) at which the DRP agent should respond to the DNS client.

Examples In the following example, DistributedDirector and DRP clock synchronization are activated:

```
Router# ip director drp synchronized

Router# show running-config

ip host boom1 172.2.2.10 172.2.2.20 172.2.2.30
ip director server 172.2.2.20 drp-association 172.4.4.2
ip director server 172.2.2.30 drp-association 172.4.4.3
ip director server 172.2.2.10 drp-association 172.4.4.1
ip director host boom1
.
.
.
ip director drp synchronized
```

ip director host priority

To configure the order in which the DistributedDirector considers metrics when picking a server, use the **ip director host priority** command in global configuration mode. To turn off metric priorities, use the **no** form of this command.

```
ip director host host-name priority {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n]
[admin n] [portion n] [availability n] [route-map n]}
```

```
no ip director host host-name priority {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n]
[admin n] [portion n] [availability n] [route-map n]}
```

Syntax Description

<i>host-name</i>	Name of the host that maps to one or more IP addresses. Use the <i>host-name</i> argument to name the host that maps to one or more IP addresses. Do not use an IP address.
drp-int <i>n</i>	(Optional) Director Response Protocol (DRP) internal metric. The range is 1 to 100. This option sends a DRP request to all DRP server agents, asking them for the distance from themselves to the edge of their Border Gateway Protocol (BGP) autonomous system in the direction of the client originating the Domain Name System (DNS) query. This distance can be used along with the DRP external metric (drp-ext) to help determine the distance between the router and the client originating the DNS query. If the client and the DRP server agent are in the same autonomous system, this metric returns the Interior Gateway Protocol (IGP) cost metric between the client and the DRP server agent.
drp-ext <i>n</i>	(Optional) DRP external metric. The range is 1 to 100. This option sends a DRP request to all DRP server agents, asking them for the BGP distance between them and the client originating the DNS query. This distance represents the number of BGP hops between the autonomous system of the DRP server agent and the autonomous system of the client originating the DNS query. Because this is BGP information, the DRP server agents need to have access to full Internet BGP information in order for this metric to be useful.
drp-ser <i>n</i>	(Optional) DRP server metric. The range is 1 to 100. This option sends a DRP request to all DRP server agents, asking them for the IGP route metric between them and the distributed servers that they support. This distance can be used with the DRP internal metric (drp-int) to get a finer distance calculation between the distributed servers and the edge of the BGP autonomous system in the direction of the client originating the DistributedDirector query. If a true BGP border router is used as a DRP server agent, the DRP server metric will return the IGP route metric between the distributed server and the BGP border router (autonomous system edge). Because DRP server metrics should not change frequently, DistributedDirector issues DRP server queries (and caches the results) every 10 minutes.

drp-rtt <i>n</i>	(Optional) DRP round-trip time metric. The range is 1 to 100. This option sends a DRP request to all DRP server agents, asking them for the round-trip time between the DRP agent and the client originating the DNS query.
random <i>n</i>	(Optional) Random metric. The range is 1 to 100. This option selects a random number for each distributed server and defines the “best” server as the one with the smallest random number assignment. Using this metric alone results in random redirection of clients to the distributed servers. Because this metric requires no routing table information, it does not trigger DRP requests to the DRP server agents.
admin <i>n</i>	(Optional) Administrative metric. The range is 1 to 100. This option specifies a simple preference of one server over another. If the administrative metric has been explicitly set to zero, the Director will not consider the server, so the server is taken out of service.
portion <i>n</i>	(Optional) Portion metric. The range is 1 to 100. This option assigns a load “portion” to each server such that servers with a higher portion value will receive a larger percentage of connections at any one time.
availability <i>n</i>	(Optional) Availability metric. The range is 1 to 65,535. This option specifies the load information for the DistributedDirector. The default value is 65,535.
route-map <i>n</i>	(Optional) Route-map metric. The range is 1 to 100. This option specifies if a server should be offered to a client.

Defaults

The *availability* default value is 65,535.

Command Modes

Global configuration

Command History

Release	Modification
11.1(18)IA	This command was introduced.
12.1(5)T	This command was integrated into 12.1 T. The availability and route-map metrics were added.
12.2(8)T	The boomerang metric was added.

Usage Guidelines

Not all of the metrics need to be specified, but at least one must be specified. If the boomerang metric is specified at a given priority level, then all other metrics of lower priority (that is, having a higher priority number) for that host name are ignored. If the boomerang metric is being considered, then it is the final step in determining the best server.

The **availability** keyword allows the DistributedDirector to attempt to create a TCP connection to each distributed server on a configured port over a configurable time interval.

If multiple servers end up with the same metric value, the next metric is considered to determine the “best” server. If multiple metrics have the same priority value, the metrics are added to obtain a *composite metric*. For example, if two metrics have the same priority value, they are first multiplied by their weight values (if specified) and then added together to form the composite metric.

If you do not specify weights for a group of distributed servers, there are no default weights for the Director, and if you have specified priority values, the weight values are set to 1.

Any metrics that have a nonzero weight and that are assigned no priority value are set to a priority value of 101. They are considered after all other metrics that have priority values. As a result, if no priority values are specified for any metric, metrics are treated additively to form one composite metric.

If you do not use priority and multiple servers have the same metric value, the server whose last IP address was looked at will be returned as the “best” server. If you want to return a random IP address in the case of a tie, use metric priority with the **random** metric as the last criterion.

To turn off all priorities on all metrics associated with the defined host name, use the **no ip director host priority** command. You can turn off the priority for a specific metric or metrics using the **no ip director host host-name priority [drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin n] [portion n] [availability n] [route-map n]** command.

Examples

The following example sets the external metric as the first priority and the administrative metric as the second priority:

```
Router(config)# ip director host www.xyz.com priority drp-ext 1 admin 2
```

The following example specifies the per-host priority of the metric, with a host named boom1, where the DRP internal metric is specified with a priority number of 1 and boomerang is specified with a priority number of 2:

```
Router(config)# ip director host BOOM1 priority drp-int 1 boomerang 2
```

```
Router(config)# do show running-config
```

```
ip host BOOM1 172.2.2.10 172.2.2.20 172.2.2.30
.
.
.
ip director host BOOM1
no ip director cache
ip dns primary boom1 soa boom1 boom1@com
ip director host boom1 priority drp-int 1 boomerang 2
```

Related Commands

Command	Description
ip director default priorities	Sets a default priority for a specific metric on DistributedDirector.
ip director default weights	Configures default weight metrics for DistributedDirector.
ip director host connect	Enables the DistributedDirector to verify that a server is available.
ip director host weights	Sets host-specific weights for the metrics that DistributedDirector uses to determine the best server within a specific host name.

Command	Description
show ip director default priority	Verifies the default configurations of DistributedDirector metrics.
show ip director default weights	Shows DistributedDirector default weights.
show ip director hosts	Displays DistributedDirector host information.

ip director host weights

To set host-specific weights for the metrics that the DistributedDirector uses to determine the best server within a specific host name, use the **ip director host weights** command in global configuration mode. To turn off weights for a host, use the **no** form of this command.

```
ip director host host-name weights {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin n] [portion n] [availability n] [route-map n] }
```

```
no ip director host host-name weights {[drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin n] [portion n] [availability n] [route-map n] }
```

Syntax Description

<i>host-name</i>	Name of the host that maps to one or more IP addresses. Do not use an IP address.
drp-int <i>n</i>	<p>(Optional) Director Response Protocol (DRP) internal metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the distance from themselves to the edge of their Border Gateway Protocol (BGP) autonomous system in the direction of the client originating the Domain Name System (DNS) query. This distance can be used along with the DRP external metric (drp-ext) to help determine the distance between the router and the client originating the DNS query.</p> <p>If the client and the DRP server agent are in the same autonomous system, this metric returns the Interior Gateway Protocol (IGP) cost metric between the client and the DRP server agent.</p>
drp-ext <i>n</i>	<p>(Optional) DRP external metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the BGP distance between them and the client originating the DNS query. This distance represents the number of BGP hops between the autonomous system of the DRP server agent and the autonomous system of the client originating the DNS query. Because this is BGP information, the DRP server agents need to have access to full Internet BGP information in order for this metric to be useful.</p>
drp-ser <i>n</i>	<p>(Optional) DRP server metric. The range is 1 to 100.</p> <p>This option sends a DRP request to all DRP server agents, asking them for the IGP route metric between them and the distributed servers that they support. This distance can be used with the DRP internal metric (drp-int) to get a finer distance calculation between the distributed servers and the edge of the BGP autonomous system in the direction of the client originating the DistributedDirector query.</p> <p>If a true BGP border router is used as a DRP server agent, the DRP server metric will return the IGP route metric between the distributed server and the BGP border router (autonomous system edge). Because DRP server metrics should not change frequently, DistributedDirector issues DRP server queries (and caches the results) every 10 minutes.</p>

drp-rtt <i>n</i>	(Optional) DRP round-trip time metric. The range is 1 to 100. This option sends a DRP request to all DRP server agents, asking them for the round-trip time between the DRP agent and the client originating the DNS query.
random <i>n</i>	(Optional) Random metric. The range is 1 to 100. This option selects a random number for each distributed server and defines the “best” server as the one with the smallest random number assignment. Using this metric alone results in random redirection of clients to the distributed servers. Because this metric requires no routing table information, it does not trigger DRP requests to the DRP server agents.
admin <i>n</i>	(Optional) Administrative metric. The range is 1 to 100. This option specifies a simple preference of one server over another. If the administrative metric has been explicitly set to zero, the Director will not consider the server, so the server is taken out of service.
portion <i>n</i>	(Optional) Portion metric. The range is 1 to 100. This option assigns a load “portion” to each server such that servers with a higher portion value will receive a larger percentage of connections at any one time.
availability <i>n</i>	(Optional) Availability metric. The range is 1 to 65,535. This option specifies the load information for the DistributedDirector. The default value is 65,535.
route-map <i>n</i>	(Optional) Route-map metric. The range is 1 to 100. This option specifies if a server should be offered to a client.

**Note**

No host weights are set. If the **ip director default-weights** command is configured, the configured weights are the default.

Defaults

The availability default value is 65,535.

Command Modes

Global configuration

Command History

Release	Modification
11.1(25)IA	This command was introduced.
12.0(3)T	This command was integrated into Cisco IOS Release 12.0(3)T.
12.1(5)T	The availability and route-map metrics were added.

Usage Guidelines

Use host-specific weights when you want to use different metric weights for different virtual host names (for example, www.xyz.com and ftp.xyz.com).

The new availability metric allows the DistributedDirector to attempt to create a TCP connection to each distributed server on a configured port over a configurable time interval.

If desired, host-specific weights can instead be configured on the DistributedDirector default DNS server.

For example, you could configure host-specific weights with the following DNS TXT record:

```
hostname in txt "ciscoDD: weights {[drp-int n] [drp-ext n] [drp-ser n] [random n]
[admin n]}"
```

To use the default weights for all metrics associated with this host name, use the **no ip director host weights** command. To use the default weights for a specific metric or metrics, use the **no ip director host *host-name* weights [drp-int n] [drp-ext n] [drp-ser n] [drp-rtt n] [random n] [admin n] [portion n] [availability n] [route-map n]** command.

Examples

The following example sets the DRP internal metric to 4:

```
ip director host www.xyz.com weights drp-int 4
```

Related Commands

Command	Description
ip director default-weights	Configures default weight metrics for the DistributedDirector.
show ip director dfp	Displays information about the current status of the DistributedDirector connections with a particular DFP agent.

ip director server availability

To configure a default availability value for all ports on a server, use the **ip director server availability** command in global configuration mode. To restore the default, use the **no** form of this command.

ip director server *ip-address* **availability** {*availability-value* | **dfp** [*availability-value*]}

no ip director server *ip-address* **availability** {*availability-value* | **dfp** [*availability-value*]}

Syntax Description		
	<i>ip-address</i>	IP address.
	<i>availability-value</i>	Availability value as it would be represented on the DistributedDirector system. The range is 0 to 65,535.
	dfp [<i>availability-value</i>]	Availability value as it would be represented on the LocalDirector system. The range for value is 0 to 65,535.

Defaults The availability default value is 65,535.

Command Modes Global configuration

Command History	Release	Modification
	12.1(5)T	This command was introduced.

Usage Guidelines There are two methods for specifying a default availability value. These two methods exist because the LocalDirector and the DistributedDirector deal with values in two different ways. All metrics for the DistributedDirector are arranged such that lower is better; however the LocalDirector load information is calculated such that higher is better. Thus, the DistributedDirector translates the metric value upon receipt from the LocalDirector by subtracting the availability from the maximum possible value of 65,535.

Examples To configure a default availability to be used if there is no other valid availability information, the following configuration would suffice. The following example shows how to specify the LocalDirector load and DistributedDirector availability, respectively:

```
ip director server 10.0.0.1 availability dfp 1
ip director server 10.0.0.1 availability 65534
```

To make the availability clear and to allow for specifying numbers in both schemes easily, there are two methods of specifying availability information. If the servers are running multiple serves, it may be necessary to configure the default availability value on a per-port basis by using the **ip director server port availability** command.

```
ip director server 10.0.0.1 port availability dfp 65535
ip director server 10.0.0.20 port availability dfp 65535
```

Related Commands	Command	Description
	ip director server port availability	Configures a default availability value for a specific port on a server.

ip director server port availability

To configure a default availability value for a specific port on a server, use the **ip director server port availability** command in global configuration mode. To restore the default, use the **no** form of this command.

```
ip director server ip-address port availability { availability-value | dfp [availability-value] }
```

```
no ip director server ip-address port availability { availability-value | dfp [availability-value] }
```

Syntax Description

<i>ip-address</i>	IP address.
<i>availability-value</i>	Availability value as it would be represented on the DistributedDirector system. The range is 0 to 65,535.
dfp [<i>availability-value</i>]	Availability value as it would be represented on the LocalDirector system. The range for value is 0 to 65,535.

Defaults

The availability default value is 65,535.

Command Modes

Global configuration

Command History

Release	Modification
12.1(5)T	This command was introduced.

Usage Guidelines

There are two methods for specifying a default availability value. These two methods exist because the LocalDirector and the DistributedDirector deal with values in two different ways. All metrics for the DistributedDirector are arranged such that lower is better; however the LocalDirector load information is calculated such that higher is better. Thus, the DistributedDirector translates the metric value upon receipt from the LocalDirector by subtracting the availability from the maximum possible value of 65,535.

Examples

To make the availability clear and to allow for specifying numbers in both schemes easily, there are two methods of specifying availability information. If the servers are running multiple serves, it may be necessary to configure the default availability value on a per-port basis by using the **ip director server port availability** command.

```
ip director server 10.0.0.1 port availability dfp 65535
ip director server 10.0.0.20 port availability dfp 65535
```

To configure a default availability to be used if there is no other valid availability information, the following configuration would suffice. The following example shows how to specify the LocalDirector load and DistributedDirector availability, respectively:

```
ip director server 10.0.0.1 availability dfp 1
ip director server 10.0.0.1 availability 65534
```

■ ip director server port availability

Related Commands	Command	Description
	ip director server availability	Configures a default availability value for all ports on a server.

ip dns server

To enable the Domain Name System (DNS) server on a router, use the **ip dns server** command in global configuration mode. To disable the DNS server, use the **no** form of the command.

ip dns server

no ip dns server

Syntax Description This command has no arguments or keywords.

Defaults The DNS server is disabled.

Command Modes Global configuration

Command History	Release	Modification
	12.2(4)T	This command was introduced.

Usage Guidelines Use the command to enable the DNS server as needed.

Examples In the following example, the DNS server is enabled:

```
ip dns server
```

ip drp domain

To add a new domain to the DistributedDirector client or to configure an existing domain, use the **ip drp domain** command in global configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

ip drp domain *domain-name*

no ip drp domain *domain-name*

Syntax Description

<i>domain-name</i>	Specified domain name.
--------------------	------------------------

Defaults

No default domain is configured.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The **ip drp domain** command can be used only on a Director Response Protocol (DRP) agent. The boomerang client is the DRP agent.

Enabling this command puts the client in boomerang configuration mode.

Use the **ip drp domain** command to enter a new or existing domain name. Entering a new domain name creates a new domain, and entering an existing domain name allows the user to configure the specified domain. When a domain name is configured on the boomerang client, the user can configure specific parameters, such as server address, aliases, and time to live (TTL) values, for that domain.

When a Director Response Protocol (DRP) agent receives a Domain Name System (DNS) racing message from boomerang servers such as DistributedDirector, the DRP agent extracts the specified domain name (for example, www.cisco.com) in the DNS message.

Examples

In the following example, a domain named “www.boom1.com” is added on the boomerang client:

```
Router(config)# ip drp domain www.boom1.com
```

```
Router# show running-config
.
.
.
ip drp domain www.boom1.com
```

Related Commands

Command	Description
alias (boomerang configuration)	Configures an alias name for a specified domain.
server (boomerang configuration)	Configures the server address for a specified boomerang domain.
show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
show ip drp boomerang	Displays boomerang information on the DRP agent.
ttdns	Configures the number of seconds for which an answer received from the boomerang client will be cached by the DNS client.
ttdip	Configures the IP TTL value for the boomerang response packets sent from the boomerang client to the DNS client in number of hops.

server (boomerang)

To configure the server address for a specified boomerang domain, use the **server** command in boomerang configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

server *server-ip-address*

no server *server-ip-address*

Syntax Description

<i>server-ip-address</i>	IP address of the specified server.
--------------------------	-------------------------------------

Defaults

No default behavior or values.

Command Modes

Boomerang configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The **server** command can be used only on a Director Response Protocol (DRP) agent. The boomerang client is the DRP agent.

Use the **server** command to specify a server address that is to be associated with a given domain name. This configuration overrides the server-to-DRP agent association that is configured on DistributedDirector.

Examples

The following example configures the server for a domain named “www.boom1.com”. The server address for www.boom1.com is 172.16.101.101:

```
Router(config)# ip drp domain www.boom1.com
Router(config-boomerang)# server 172.16.101.101

Router# show running-config
.
.
.
ip drp domain www.boom1.com
content-server 172.16.101.101
```

Related Commands

Command	Description
alias (boomerang configuration)	Configures an alias name for a specified domain.
ip drp domain	Adds a new domain to the DistributedDirector client or configures an existing domain and puts the client in boomerang configuration mode.
show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
show ip drp boomerang	Displays boomerang information on the DRP agent.
ttd dns	Configures the number of seconds for which an answer received from the boomerang client will be cached by the DNS client.
ttd ip	Configures the IP TTL value for the boomerang response packets sent from the boomerang client to the DNS client in number of hops.

show ip director default

To verify default metric configuration information for DistributedDirector metrics, use the **show ip director default** command in privileged EXEC mode.

show ip director default [priority | weight]

Syntax Description	priority	(Optional) Default priorities for metrics
	weight	(Optional) Default weights for metrics

Command Modes Privileged EXEC

Command History	Release	Modification
	12.2(4)T	This command was introduced.

Usage Guidelines Use this command to verify default metric configurations.

Examples The following is sample output from the **show ip director default priority** command:

```
Router# show ip director default priority

Director default metric priorities:
random priority = 2
DRP route lookup external to AS priority = 1
administrative preference priority = 0
DRP route lookup internal to AS priority = 0
DRP distance to associated server priority = 0
portion priority = 0
Round-trip time from DRP to client priority = 0
DFP originated weight priority = 0
Route-map evaluation priority = 0
```

Related Commands	Command	Description
	ip director default priorities	Sets default priorities for DistributedDirector metrics.

show ip director dfp

To display information about the current status of the DistributedDirector connections with a particular Dynamic Feedback Protocol (DFP) agent, use the **show ip director dfp** command in EXEC mode.

```
show ip director dfp [host-name | ip-address]
```

Syntax Description

<i>host-name</i>	(Optional) Host name.
<i>ip-address</i>	(Optional) IP address.

Command Modes

EXEC

Command History

Release	Modification
12.1(5)T	This command was introduced.

Examples

The following is sample output from the **show ip director dfp** command:

```
Router# show ip director dfp

172.24.9.9:
Max retries: 5
Timeout between connect attempts: 60
Timeout between updates: 90
Last update received: 00:00:12 ago
Server      Port BindID Address  Mask
172.28.9.9  80   0      0.0.0.0 0.0.0.0
192.168.25.25
Max retries: 5
Timeout between connect attempts: 60
Timeout between updates: 90
Last update received: 00:00:44 ago
Server      Port BindID Address  Mask
192.168.30.30 80   0      0.0.0.0 0.0.0.0
```

show ip drp boomerang

To display the status of various boomerang domains, use the **show ip drp boomerang** command in privileged EXEC mode.

show ip drp boomerang [*domain-name*]

Syntax Description	<i>domain-name</i>	(Optional) Specified domain name.
--------------------	--------------------	-----------------------------------

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

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines

The **show ip drp boomerang** command can be used on the boomerang client to display the status of the various boomerang domains. The following information can be shown for each domain:

- Alias information—The number of DNS requests for each alias.
- Content server address information:
 - Number of DNS requests.
 - Number of requests dropped because server is down.
 - Number of requests dropped because there is no original server.
 - Number of requests dropped because of security failures.

Examples

The following is sample output from the **show ip drp boomerang** command:

```
Router# show ip drp boomerang www.boom1.com

DNS packets with unknown domain 0

Domain www.boom1.com
  Content server          172.16.101.101 up
  Origin server           0.0.0.0
  DNS A record requests   0
  Dropped (server down)  0
  Dropped (no origen server) 0
  Security failures       0

Alias www.boom2.com
  DNS A record requests   0
```

Related Commands

Command	Description
alias (boomerang configuration)	Configures an alias name for a specified domain.
ip drp domain	Adds a new domain to the DistributedDirector client or configures an existing domain and puts the client in boomerang configuration mode.
server (boomerang configuration)	Configures the server address for a specified boomerang domain.
show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
tll dns	Configures the number of seconds for which an answer received from the boomerang client will be cached by the DNS client.
tll ip	Configures the IP TTL value for the boomerang response packets sent from the boomerang client to the DNS client in number of hops.

snmp-server enable traps director

To enable DistributedDirector SNMP notifications, use the **snmp-server enable traps director** command in global configuration mode. To disable DistributedDirector SNMP notifications, use the **no** form of this command.

snmp-server enable traps director [server-up | server-down]

no snmp-server enable traps director [server-up | server-down]

Syntax Description

<i>server-up</i>	Enables the DistributedDirector notification that the server has changed to the “up” state.
<i>server-down</i>	Enables the DistributedDirector notification that the server has changed to the “down” state.

Defaults

SNMP notifications are disabled by default.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

SNMP notifications can be sent as traps or inform requests. This command enables both traps and inform requests.

This command controls (enables or disables) DistributedDirector status notifications for systems. If none of the optional keywords is specified, all available environmental notifications are enabled.

Examples

In the following example, both `ciscoDistDirEventServerUp` and `ciscoDistDirEventServerDown` notifications are enabled:

```
Router(config)# snmp-server enable traps director

Router# show running-config

ip host myhost 172.2.2.10 172.2.2.20 172.2.2.30
.
.
.
ip director host myhost
ip dns primary myhost soa myhost myhost@com
ip director host myhost priority boomerang 1
no ip director drp synchronized
snmp-server enable traps director server-up server-down
```

Related Commands

Command	Description
snmp-server enable traps	Enables the router to send SNMP traps.
snmp-server host	Specifies the recipient of an SNMP notification.
snmp-server informs	Specifies inform request options.
snmp-server trap-source	Specifies the interface (and hence the corresponding IP address) from which an SNMP trap should originate.
snmp-server trap-timeout	Defines how often to try resending trap messages on the retransmission queue.
snmp trap link-status	Enables SNMP trap notifications to be generated when a specific port is brought up or down.

ttl dns

To configure the number of seconds for which an answer received from the boomerang client will be cached by the Domain Name System (DNS) client, use the **ttl dns** command in boomerang configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

ttl dns *seconds*

no ttl dns *seconds*

Syntax Description	<i>seconds</i>	Number of seconds for which an answer received from the boomerang client will be cached by the DNS client. Range is from 10 to 2147483647.
---------------------------	----------------	--

Defaults	No default behavior or values.
-----------------	--------------------------------

Command Modes	Boomerang configuration
----------------------	-------------------------

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines The **ttl dns** command can be used only on a Director Response Protocol (DRP) agent. The boomerang client is the DRP agent.

The **ttl dns** command configures the number of seconds for which the DNS client can cache a boomerang reply from a boomerang client.

Examples In the following example, the number of seconds for which the DNS client can cache a boomerang reply from a boomerang client is configured as 10:

```
Router(config)# ip drp domain www.boom1.com
Router(config-boomerang)# ttl dns 10

Router# show running-config
.
.
.
ip drp domain www.boom1.com
dns-ttl 10
```

Related Commands

Command	Description
alias (boomerang configuration)	Configures an alias name for a specified domain.
ip drp domain	Adds a new domain to the DistributedDirector client or configures an existing domain and puts the client in boomerang configuration mode.
server (boomerang configuration)	Configures the server address for a specified boomerang domain.
show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
show ip drp boomerang	Displays boomerang information on the DRP agent.
ttl ip	Configures the IP TTL value for the boomerang response packets sent from the boomerang client to the DNS client in number of hops.

ttl ip

To configure the IP time to live (TTL) value for the boomerang response packets sent from the boomerang client to the DNS client, use the **ttl ip** command in boomerang configuration mode. To remove this command from the configuration file and restore the system to its default condition with respect to this command, use the **no** form of this command.

ttl ip *hops*

no ttl ip *hops*

Syntax Description	<i>hops</i>	Number of hops that occur between the boomerang client and the DNS client before the boomerang response packet fails. Range is from 1 to 255.
---------------------------	-------------	---

Defaults No default behavior or values.

Command Modes Boomerang configuration

Command History	Release	Modification
	12.2(8)T	This command was introduced.

Usage Guidelines The **ttl ip** command can be used only on a Director Response Protocol (DRP) agent. The boomerang client is the DRP agent.

The **ttl ip** command configures the maximum number of hops allowed between the boomerang client and the DNS client, after which the boomerang response packet fails. If the user wants to restrict the contending proxies only to nearby ones, the value of the **ttl ip** command can be set to a specific number within the allowed range. Any proxy outside of this range will be automatically disqualified in the boomerang race because its replies will never reach the DNS client. Because the **ttl ip** command specifies the number of hops for which a response from a client will live, it allows faraway proxies to avoid wasting bandwidth.

Examples In the following example, the number of hops that occur between the boomerang client and the DNS client before the boomerang response packet fails is configured as 2:

```
Router(config)# ip drp domain www.boom1.com
Router(config-boomerang)# ttl ip 2

Router# show running-config
.
.
.
ip drp domain www.boom1.com
ip-ttl 2
```

Related Commands

Command	Description
alias (boomerang configuration)	Configures an alias name for a specified domain.
ip drp domain	Adds a new domain to the DistributedDirector client or configures an existing domain and puts the client in boomerang configuration mode.
server (boomerang configuration)	Configures the server address for a specified boomerang domain.
show ip drp	Displays DRP statistics on DistributedDirector or a DRP server agent.
show ip drp boomerang	Displays boomerang information on the DRP agent.
ttl dns	Configures the number of seconds for which an answer received from the boomerang client will be cached by the DNS client.

