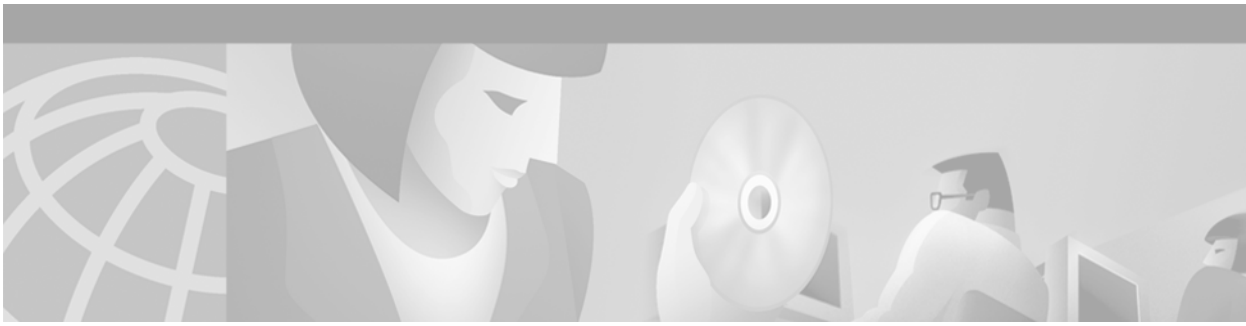

DistributedDirector Configurable Cache

Feature History

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

This document describes the DistributedDirector Configurable Cache feature in Cisco IOS Release 12.2(8)T. It includes the following sections:

Feature Overview

DistributedDirector maintains an internal cache of entries that is dynamically configurable. This internal configurable cache consists of sorting events that occur on a per-client basis. Users can configure both the size of this internal cache and the amount of time for which the DistributedDirector system will retain per-client sorting information.

The DistributedDirector Configurable Cache feature allows users to configure their systems in order to limit the amount of memory that DistributedDirector uses for Domain Name System (DNS) caching. When a query that is a duplicate of a previous query comes from the client within the cache timeout period, the same response can be produced without the use of any Director Response Protocol (DRP) queries or sorting.

The DistributedDirector Cache Auto Refresh feature works in the background to continuously update all entries in the DistributedDirector cache. Once this background refresh feature is initiated, DistributedDirector periodically updates all expired cache entries. The DistributedDirector cache saves the latest answers to all past DNS queries received since cache auto refresh was initiated, and any repeat request is served directly from the cache when caching is enabled.

Benefits

- Use of this feature limits the amount of memory that DistributedDirector uses for DNS caching.
- This feature allows the user to configure how long an entry remains in the cache.

Related Features and Technologies

DistributedDirector Cache Auto Refresh

Related Documents

DistributedDirector Cache Auto Refresh, Cisco IOS Release 12.2(8)T feature module

Supported Platforms

- Cisco 2600 series
- Cisco 3620 series
- Cisco 3640 series
- Cisco 3660 series
- Cisco 3725 series
- Cisco 3745 series
- Cisco 7200 series

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at http://www.cisco.com/register.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

http://www.cisco.com/go/fn

Supported Standards, MIBs, and RFCs

Standards

No new standards are supported by this feature.

MIBs

No new MIBs are supported by this feature.

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

No new RFCs are supported by this feature.

Prerequisites

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

Configuration Tasks

See the following sections for configuration tasks for this feature. Each task in the list is identified as either required or optional.

- Configuring the Size of the Cache (optional)
- Configuring How Long the System Retains Sorting Information (optional)

Configuring the Size of the Cache

To configure the variable size of the DistributedDirector cache, use the following commands in global configuration mode:

	Command	Purpose
Step 1	`Router(config)# ip director cache`	Enables the sorting cache on DistributedDirector.
Step 2	`Router(config)# ip director cache size 1500`	Configures the maximum number of cache entries, where *entries* equals 1500.

Configuring How Long the System Retains Sorting Information

To configure how long the DistributedDirector system will retain per-client sorting information, use the following command in global configuration mode:

	Command	Purpose
Step 1	`Router(config)# ip director cache`	Enables the sorting cache on DistributedDirector.
Step 2	`Router(config)# ip director cache time 100`	Configures how long the DistributedDirector system will retain per-client sorting information, where *seconds* equals 100.

Verifying DistributedDirector Cache Information

To show DistributedDirector cache information, use the **show ip director cache** command.

```
Router# show ip director cache

Director cache is on
Cache current size = 2 maximum size = 2000
Cache time for sort cache entries:60 secs
Director sort cache hits = 8
Entries:
www.myserver.org:for client 172.143.2.78, used 3 times, valid for:
00:00:42
server 172.21.34.10, rank 0, priority 0
               random incomplete:0
               DRP route lookup external to AS incomplete:0
               administrative preference incomplete:0
               DRP route lookup internal to AS complete:40
               DRP distance to associated server incomplete:0
               portion incomplete:0
               Round-trip time from DRP to client incomplete:0
               DFP originated weight incomplete:0
               Route-map evaluation incomplete:0
               Boomerang evaluation incomplete:0
server 172.21.34.10, rank 0, priority 0, best
               random incomplete:0
               DRP route lookup external to AS incomplete:0
               administrative preference incomplete:0
               DRP route lookup internal to AS complete:30
               DRP distance to associated server incomplete:0
               portion incomplete:0
               Round-trip time from DRP to client incomplete:0
               DFP originated weight incomplete:0
               Route-map evaluation incomplete:0
               Boomerang evaluation incomplete:0
www.boom1.com:for client 172.143.2.78, used 5 times, valid for:00:00:13
server 172.21.34.10, rank 0, priority 0
               random incomplete:0
               DRP route lookup external to AS incomplete:0
               administrative preference incomplete:0
               DRP route lookup internal to AS complete:40
               DRP distance to associated server incomplete:0
               portion incomplete:0
               Round-trip time from DRP to client incomplete:0
               DFP originated weight incomplete:0
               Route-map evaluation incomplete:0
               Boomerang evaluation incomplete:0
server 172.21.34.10, rank 0, priority 0, best
```

```
random incomplete:0
DRP route lookup external to AS incomplete:0
administrative preference incomplete:0
DRP route lookup internal to AS complete:30
DRP distance to associated server incomplete:0
portion incomplete:0
Round-trip time from DRP to client incomplete:0
DFP originated weight incomplete:0
Route-map evaluation incomplete:0
Boomerang evaluation incomplete:0
```

Configuration Examples

This section provides the following configuration examples:

- Configuring the Size of the Cache Example
- Configuring How Long the System Retains Sorting Information Example

Configuring the Size of the Cache Example

The following example configures the maximum number of cache entries:

```
Router(config)# ip director cache size 1500

Cache size shrinked to 1500

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
no ip director drp synchronized
ip director cache size 1500
```

Configuring How Long the System Retains Sorting Information Example

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

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

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
no ip director drp synchronized
ip director cache time 100
```

Command Reference

This section documents new commands. All other commands used with this feature are documented in the Cisco IOS Release 12.2 command reference publications.

- **ip director cache size**
- **ip director cache time**

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 shrinked 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 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

seconds	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.