DistributedDirector Configurable Cache

Note
Effective with Cisco IOS Release 12.4(24)T, this feature is not available in Cisco IOS software.

Feature History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.2(8)T</td>
<td>This feature was introduced.</td>
</tr>
<tr>
<td>12.4(24)T</td>
<td>This feature was removed.</td>
</tr>
</tbody>
</table>

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

- Feature Overview, page 1
- Finding Feature Information, page 2
- Supported Standards, MIBs, and RFCs, page 2
- Prerequisites, page 3
- Configuration Tasks, page 3
- Configuration Examples, page 4

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

**Finding Feature Information**

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [http://www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**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:


**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:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
</tr>
<tr>
<td>Router(config)# <code>ip director cache</code></td>
<td>Enables the sorting cache on DistributedDirector.</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
</tr>
<tr>
<td>Router(config)# <code>ip director cache size 1500</code></td>
<td>Configures the maximum number of cache entries, where entries equals 1500.</td>
</tr>
</tbody>
</table>

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:

<table>
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</tr>
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<tbody>
<tr>
<td>Step 1</td>
<td></td>
</tr>
<tr>
<td>Router(config)# <code>ip director cache</code></td>
<td>Enables the sorting cache on DistributedDirector.</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
</tr>
<tr>
<td>Router(config)# <code>ip director cache time 100</code></td>
<td>Configures how long the DistributedDirector system will retain per-client sorting information, where seconds equals 100.</td>
</tr>
</tbody>
</table>

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 172.17.2.78, 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 172.17.2.78, 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 shrunk to 1500

Router# show running-config

ip host myhost 172.18.18.10 172.18.18.20 172.18.18.30
.
.
.
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 172.18.18.10 172.18.18.20 172.18.18.30
.
.
.
ip director host myhost
ip dns primary myhost soa myhost myhost@com
no ip director drp synchronized
ip director cache time 100