

DNS Client and Cache

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This document applies to V2.9

Table of Contents

[Table of Contents](#)

[Summary](#)

[Specifications](#)

[Related Documents](#)

[Description](#)

[Additional Documents](#)

[Client Configuration and Cache Setup](#)

[Description](#)

[Property Description](#)

[Notes](#)

[Example](#)

[Cache Monitoring](#)

[Property Description](#)

[Static DNS Entries](#)

[Description](#)

[Property Description](#)

[Example](#)

[Flushing DNS cache](#)

[Command Description](#)

[Example](#)

General Information

Summary

DNS cache is used to minimize DNS requests to an external DNS server as well as to minimize DNS resolution time. This is a simple recursive DNS server with local items.

Specifications

Packages required: *system*

License required: *level1*

Home menu level: */ip dns*

Standards and Technologies: [DNS](#)

Hardware usage: *Not significant*

Related Documents

- [Software Package Management](#)
- [HotSpot Gateway](#)

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Description

The MikroTik router with DNS cache feature enabled can be set as a primary DNS server for any DNS-compliant clients. Moreover, MikroTik router can be specified as a primary DNS server under its dhcp-server settings. When the DNS cache is enabled, the MikroTik router responds to DNS TCP and UDP requests on port 53.

Additional Documents

- <http://www.freesoft.org/CIE/Course/Section2/3.htm>
- <http://www.networksorcery.com/enp/protocol/dns.htm>
- [RFC1035](#)

Client Configuration and Cache Setup

Home menu level: */ip dns*

Description

DNS client is used to provide domain name resolution for router itself as well as for the P2P clients connected to the router.

Property Description

allow-remote-requests (yes | no) - specifies whether to allow network requests

cache-max-ttl (*time*; default: **1w**) - specifies maximum time-to-live for cache records. In other words, cache records will expire after cache-max-ttl time.

cache-size (*integer*: 512..10240; default: **2048KiB**) - specifies the size of DNS cache in KiB

cache-used (*read-only: integer*) - displays the currently used cache size in KiB

primary-dns (*IP address*; default: **0.0.0.0**) - primary DNS server

secondary-dns (*IP address*; default: **0.0.0.0**) - secondary DNS server

Notes

If the property **use-peer-dns** under **/ip dhcp-client** is set to **yes** then **primary-dns** under **/ip dns** will change to a DNS address given by DHCP Server.

Example

To set 159.148.60.2 as the primary DNS server and allow the router to be used as a DNS server, do the following:

```
[admin@MikroTik] ip dns> set primary-dns=159.148.60.2 \  
\... allow-remote-requests=yes  
[admin@MikroTik] ip dns> print
```

```
primary-dns: 159.148.60.2
secondary-dns: 0.0.0.0
allow-remote-requests: yes
cache-size: 2048KiB
cache-max-ttl: 1w
cache-used: 17KiB
[admin@MikroTik] ip dns>
```

Cache Monitoring

Home menu level: */ip dns cache*

Property Description

address (*read-only: IP address*) - IP address of the host

name (*read-only: name*) - DNS name of the host

ttl (*read-only: time*) - remaining time-to-live for the record

Static DNS Entries

Home menu level: */ip dns static*

Description

The MikroTik RouterOS has an embedded DNS server feature in DNS cache. It allows you to link the particular domain names with the respective IP addresses and advertize these links to the DNS clients using the router as their DNS server.

Property Description

address (*IP address*) - IP address to resolve domain name with

name (*text*) - DNS name to be resolved to a given IP address

ttl (*time*) - time-to-live of the DNS record

Example

To add a static DNS entry for **www.example.com** to be resolved to **10.0.0.1** IP address:

```
[admin@MikroTik] ip dns static> add name www.example.com address=10.0.0.1
[admin@MikroTik] ip dns static> print
# NAME ADDRESS TTL
0 aaa.aaa.a 123.123.123.123 1d
1 www.example.com 10.0.0.1 1d
[admin@MikroTik] ip dns static>
```

Flushing DNS cache

Command name: */ip dns cache flush*

Command Description

flush - clears internal DNS cache

Example

```
[admin@MikroTik] ip dns> cache flush
[admin@MikroTik] ip dns> print
    primary-dns: 159.148.60.2
    secondary-dns: 0.0.0.0
allow-remote-requests: yes
    cache-size: 2048 KiB
    cache-max-ttl: 1w
    cache-used: 10 KiB
[admin@MikroTik] ip dns>
```