DNS Client and Cache

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This document applies to MikroTik RouterOS V2.8

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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

- ***Package Management***
- ***HotSpot Gateway***

- ***AAA***

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

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

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

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

cache-max-ttl (*time*; default: **7d**) - specifies maximum time-to-live for cahce records. In other words, cache records will expire after cache-max-ttl time.

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

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, do the following:

```
[admin@MikroTik] ip dns> set primary-dns=159.148.60.2
[admin@MikroTik] ip dns> print
     resolve-mode: remote-dns
      primary-dns: 159.148.60.2
    secondary-dns: 0.0.0.0
```

```
[admin@MikroTik] ip dns>
```

Cache Monitoring

Home menu level: ***/ip dns cache***

Property Description

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

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

ttl (*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

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

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

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: no
               cache-size: 2048 kB
            cache-max-ttl: 7d
               cache-used: 10 kB
[admin@MikroTik] ip dns>
```