

Manual:IP/DHCP Relay

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Summary

DHCP Relay is just a proxy that is able to receive a DHCP request and resend it to the real DHCP server.

Applies
to



RouterOS: v3, v4 +

Properties

Sub-menu: /ip dhcp-relay

| Property | Description |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| add-relay-info (<i>yes</i> <i>no</i> ; Default: no) | Adds DHCP relay agent information if enabled according to RFC 3046. Agent Circuit ID Sub-option contains mac address of an interface, Agent Remote ID Sub-option contains MAC address of the client from which request was received. |
| delay-threshold (<i>time</i> <i>none</i> ; Default: none) | If secs field in DHCP packet is smaller than delay-threshold, then this packet is ignored |
| dhcp-server (<i>string</i> ; Default:) | List of DHCP servers' IP addresses which should the DHCP requests be forwarded to |
| interface (<i>string</i> ; Default:) | Interface name the DHCP relay will be working on. |
| local-address (<i>IP</i> ; Default: 0.0.0.0) | The unique IP address of this DHCP relay needed for DHCP server to distinguish relays. If set to 0.0.0.0 - the IP address will be chosen automatically |
| name (<i>string</i> ; Default:) | Descriptive name for the relay |

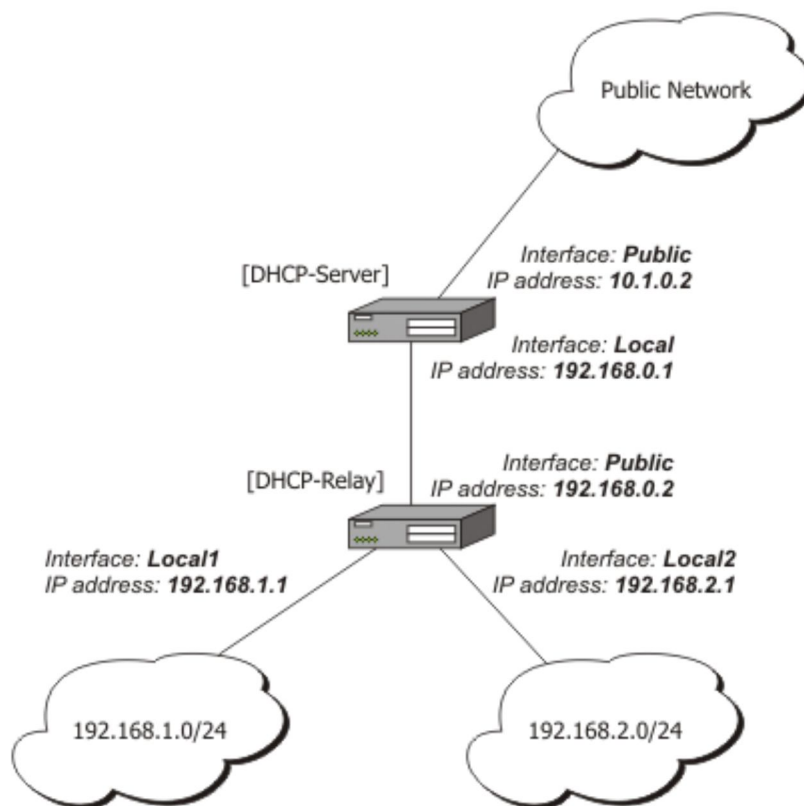
DHCP relay does not choose the particular DHCP server in the dhcp-server list, it just send the incoming request to all the listed servers.

Example setup

Let us consider that you have several IP networks 'behind' other routers, but you want to keep all DHCP servers

on a single router. To do this, you need a DHCP relay on your network which relays DHCP requests from clients to DHCP server.

This example will show you how to configure a DHCP server and a DHCP relay which serve 2 IP networks - 192.168.1.0/24 and 192.168.2.0/24 that are behind a router DHCP-Relay.



IP Address Configuration

IP addresses of DHCP-Server:

```
[admin@DHCP-Server] ip address> print
Flags: X - disabled, I - invalid, D - dynamic
#  ADDRESS      NETWORK      BROADCAST    INTERFACE
0   192.168.0.1/24  192.168.0.0  192.168.0.255 To-DHCP-Relay
1   10.1.0.2/24    10.1.0.0     10.1.0.255    Public
[admin@DHCP-Server] ip address>
```

IP addresses of DHCP-Relay:

```
[admin@DHCP-Relay] ip address> print
Flags: X - disabled, I - invalid, D - dynamic
#  ADDRESS      NETWORK      BROADCAST    INTERFACE
0   192.168.0.2/24  192.168.0.0  192.168.0.255 To-DHCP-Server
1   192.168.1.1/24  192.168.1.0  192.168.1.255 Local1
2   192.168.2.1/24  192.168.2.0  192.168.2.255 Local2
[admin@DHCP-Relay] ip address>
```

DHCP Server Setup

To setup 2 DHCP Servers on DHCP-Server router add 2 pools. For networks 192.168.1.0/24 and 192.168.2.0:

```
/ip pool add name=Local1-Pool ranges=192.168.1.11-192.168.1.100
/ip pool add name=Local2-Pool ranges=192.168.2.11-192.168.2.100
[admin@DHCP-Server] ip pool> print
# NAME                                RANGES
0 Local1-Pool                        192.168.1.11-192.168.1.100
1 Local2-Pool                        192.168.2.11-192.168.2.100
[admin@DHCP-Server] ip pool>
```

Create DHCP Servers:

```
/ip dhcp-server add interface=To-DHCP-Relay relay=192.168.1.1 \
  address-pool=Local1-Pool name=DHCP-1 disabled=no
/ip dhcp-server add interface=To-DHCP-Relay relay=192.168.2.1 \
  address-pool=Local2-Pool name=DHCP-2 disabled=no
[admin@DHCP-Server] ip dhcp-server> print
Flags: X - disabled, I - invalid
# NAME      INTERFACE      RELAY      ADDRESS-POOL LEASE-TIME ADD-ARP
0 DHCP-1    To-DHCP-Relay 192.168.1.1 Local1-Pool 3d00:00:00
1 DHCP-2    To-DHCP-Relay 192.168.2.1 Local2-Pool 3d00:00:00
[admin@DHCP-Server] ip dhcp-server>
```

Configure respective networks:

```
/ip dhcp-server network add address=192.168.1.0/24 gateway=192.168.1.1 \
  dns-server=159.148.60.20
/ip dhcp-server network add address=192.168.2.0/24 gateway=192.168.2.1 \
  dns-server 159.148.60.20
[admin@DHCP-Server] ip dhcp-server network> print
# ADDRESS      GATEWAY      DNS-SERVER      WINS-SERVER      DOMAIN
0 192.168.1.0/24 192.168.1.1 159.148.60.20
1 192.168.2.0/24 192.168.2.1 159.148.60.20
[admin@DHCP-Server] ip dhcp-server network>
```

DHCP Relay Config

Configuration of DHCP-Server is done. Now let's configure DHCP-Relay:

```
/ip dhcp-relay add name=Local1-Relay interface=Local1 \
  dhcp-server=192.168.0.1 local-address=192.168.1.1 disabled=no
/ip dhcp-relay add name=Local2-Relay interface=Local2 \
  dhcp-server=192.168.0.1 local-address=192.168.2.1 disabled=no
[admin@DHCP-Relay] ip dhcp-relay> print
Flags: X - disabled, I - invalid
# NAME      INTERFACE      DHCP-SERVER      LOCAL-ADDRESS
0 Local1-Relay Local1          192.168.0.1      192.168.1.1
1 Local2-Relay Local2          192.168.0.1      192.168.2.1
[admin@DHCP-Relay] ip dhcp-relay>
```

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