DHCP RELAY over L2TPv3

Contents

Introduction

A DHCP relay agent allows the DHCP clients to obtain IP addresses from a DHCP server that is not configured on the same LAN.

This article provides a configuration example with details on how to set-up a DHCP relay over a L2TPv3 VPN.

Prerequisites

You will need:

- Two RUT or RUTX devices (one as Server and other as Client)
- A PC acting as a Host for testing
- Both routers must have a Public Static or Public Dynamic IP addresses

Configuration Scheme

DHCP Server Settings

DHCP Pool

Login to the router's WebUI and navigate to **Network → Interfaces → Ethernet LAN.** Click the **'Edit'** button on the right side of the interface to set the LAN network address.

Under **DHCP SERVER** set parameters for the DHCP pool.

Set up Mobile WAN as Main WAN

Enter to the router's WebUI, go to **Network → Interfaces** press mouse click on the Mobile Wan interface, then drag it to the 1st position and then press **Save & Apply**. 

Create L2TPv3 instance

Go to router's WebUI, under **Service → VPN → L2TP → L2TPv3** and create new **L2TPV3** instance.

LOCAL SETTING

Local address: 84.15.XXX.XXX

Tunnel ID: 100

Session ID: 100

Cookie: 12ABCDEF

PEER SETTING

Peer address: 84.15.XXX.XXX

Peer Tunnel ID: 10

Peer Session ID: 10

Peer Cookie: 12ABCDEF

INSTANCE SETTING

Bridge to: LAN

MTU: 1500

Encapsulation: IP

Layer 2 specific header type: Linux Default

Note: Specify on "Local address" your mobile WAN public IP. Local value for Tunnel ID, session ID and Cookie must match with the peer values being used at the other end.

DHCP Client Settings (Relay)

DHCP Relay

Enter the router's WebUI, go to **Network → Interface → LAN → DHCP Server** and change the "**Enable DHCP**" field value from Enable to Relay and type in the DHCP Server the IP address of the server. Click **Save & Apply**.

Note: The IPv4 address of the LAN interface is different from the server's LAN interface address, this is necessary to avoid conflicts.

Set up Mobile WAN as Main WAN

Enter to the router’s WebUI, go to **Network → Interfaces** press mouse click on the Mobile Wan interface, then drag it to the 1st position and then press **Save & Apply**.

Modify Enable-DHCP-renew firewall rule

Enter in the router’s WebUI, go to **Network → Firewall → Traffic rules** to additionally allow destination port 67.

Create L2TPv3 instance

Go to router’s WebUI, under **Service → VPN → L2TP → L2TPv3** and create new **L2TPV3** instance.

LOCAL SETTING

Local address: 84.15.XXX.XXX

Tunnel ID: 10

Session ID: 10

Cookie: 12ABCDEF

PEER SETTING

Peer address: 84.15.XXX.XXX

Peer Tunnel ID: 100

Peer Session ID: 100

Peer Cookie: 12ABCDEF

INSTANCE SETTING

Bridge to: LAN

MTU: 1500

Encapsulation: IP

Layer 2 specific header type: Linux Default

Note: Specify on "Local address" your mobile WAN public IP. Local value for Tunnel ID, session ID and Cookie must match with the peer values being used at the other end.

Testing DHCP over L2TPv3

To test the realy settings go to DHCP server to check that devices are able to recieve IP addresses in the range 192.168.10.150 - 192.168.10.170 either via LAN port or Wi-Fi. Access the CLI and run **cat /tmp/dhcp.leases** to list all DHCP clients.

Asking for the Address Resolution Protocol (ARP) table is also an other method to find hosts on the LAN network.