# DHCP RELAY over L2TPv3



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## 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.