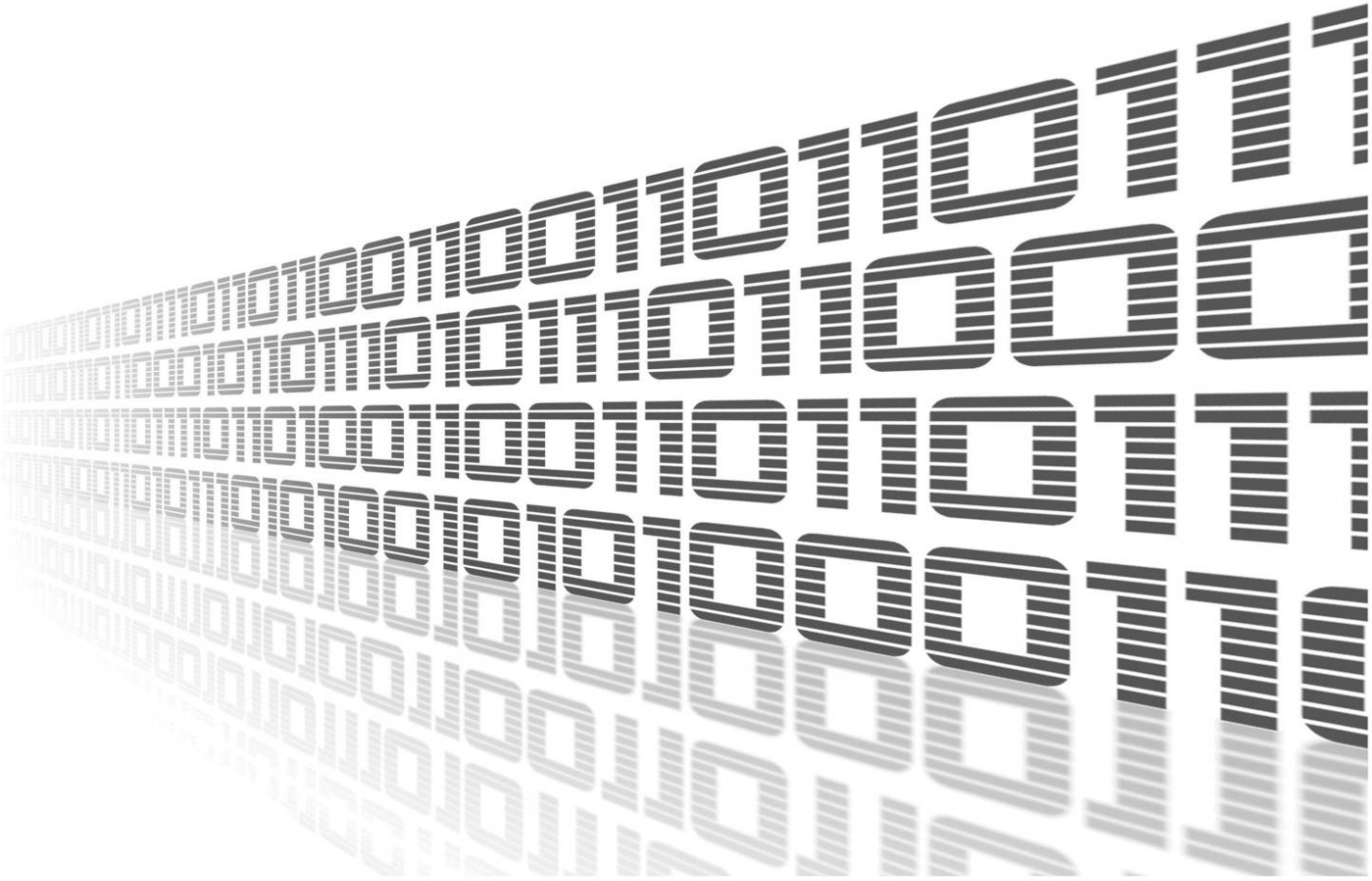
ADVANTECH

RouterApp

L2TP Pseudowire



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Document No. APP-0122-EN, revision from 1st February, 2024.

Used symbols

Danger – Information regarding user safety or potential damage to the router.

Attention – Problems that can arise in specific situations.

Information – Useful tips or information of special interest.

Example – Example of function, command or script.

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1. Changelog

This Router App has been tested on a router with firmware version 6.3.10. After updating the router's firmware to a higher version, make sure that a newer version of the Router App has not also been released, as it is necessary to update it as well for compatibility reasons.

1.1 L2TP Pseudowire Changelog

v1.0.0 (2021-12-03)

- First release

v1.0.0 (2016-01-14)

- First release

v1.0.1 (2016-04-01)

- Added IP encapsulation

v1.0.2 (2016-04-27)

- Added l2spec_type and cookie values

v1.0.3 (2017-02-10)

- Used l2tp modules built-in kernel

v1.0.4 (2017-07-27)

- Fixed interface start and stop

v1.0.5 (2018-09-27)

- Added expected ranges of values to JavaSript error messages

v1.1.0 (2020-10-01)

- Updated CSS and HTML code to match firmware 6.2.0+

v1.1.1 (2021-08-23)

- Removed bridge settings on physical interfaces - it's handled by FW's init script

2. Basic Information

2.1 L2TP Pseudowire

In networking, a pseudowire (PW) refers to a mechanism that allows the encapsulation and forwarding of one type of network traffic over another type of network. L2TP pseudowire specifically refers to the use of L2TP (Layer 2 Tunneling Protocol) to establish a virtual connection between two endpoints over an IP or MPLS (Multiprotocol Label Switching) network, emulating the behavior of a point-to-point or multipoint Layer 2 circuit.

L2TP pseudowire is often used in service provider networks to provide Layer 2 connectivity between geographically dispersed customer sites. It enables the transport of Ethernet, Frame Relay, or ATM (Asynchronous Transfer Mode) frames over an IP or MPLS network. The use of L2TP pseudowires allows service providers to offer Layer 2 VPN services to their customers without the need for dedicated physical circuits between customer sites.

In summary, L2TP pseudowire is a technique that utilizes L2TP to create virtual Layer 2 connections over IP or MPLS networks, providing a flexible and cost-effective way to extend Layer 2 networks across different locations.

3. Router App Description

3.1 Web Interface

After Router App installation, the module's GUI can be invoked by clicking the router app name on the Router Apps page of router's web interface.

Left part of this GUI contains menu with Status menu section, Configuration menu section and Customization menu section. Customization menu section contains only the Return item, which switches back from the module's web page to the router's web configuration pages. The main menu of router app GUI is shown on Figure below.

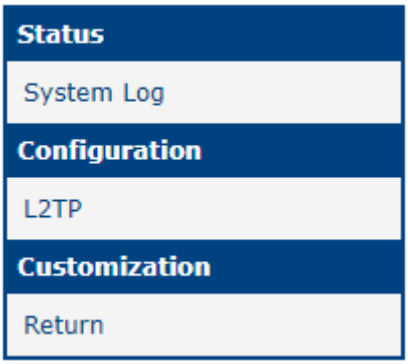

Figure 1: Menu

3.2 L2TP

Configuration menu section contains L2TP item where all the setting of this router app takes place.

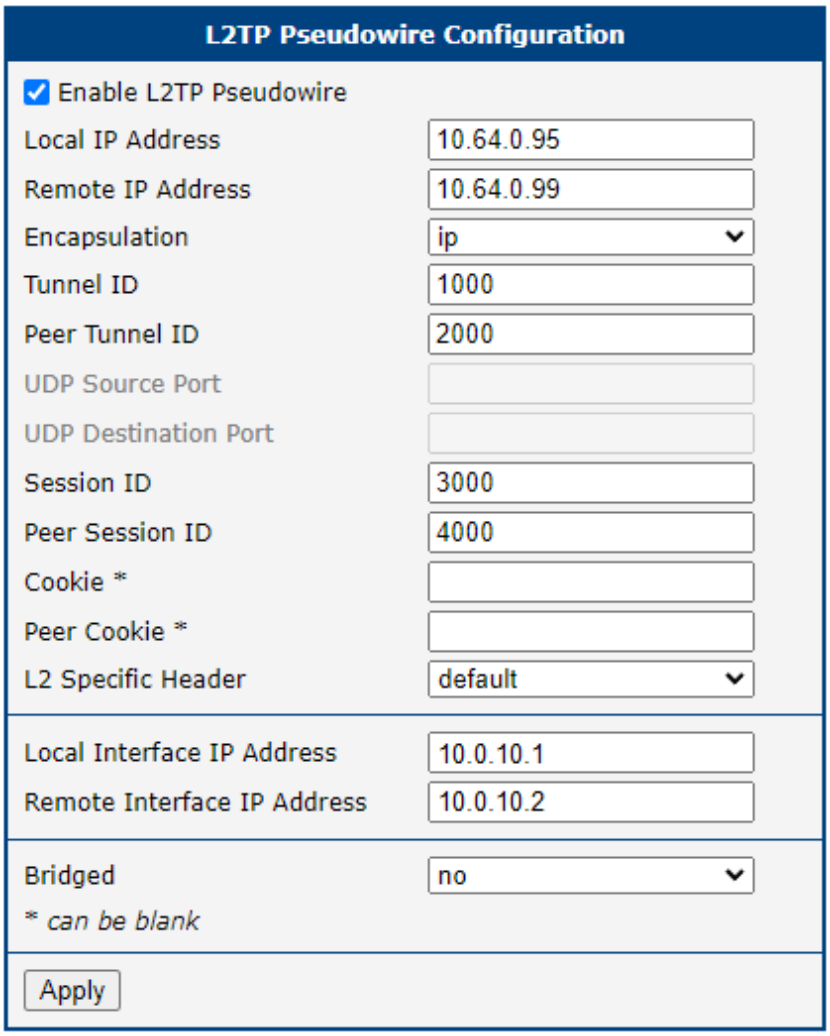

Figure 2: L2TP Configuration

Item	Description
Enable L2TP Pseudowire	Enables L2TP Pseudowire functionality.
Local IP Address	The IP address of the local device is configured with a **subnet mask of /30**.
Remote IP Address	The IP Address of the remote device device is configured with a **subnet mask of /30**.
Encapsulation	• **udp** - this option enable UDP Source port and UDP Destination port • **ip** - this option disable UDP Source port and UDP Destination port
Tunnel ID	Numeral ID of the local tunnel
Peer Tunnel ID	Numeral ID of peer (remote) tunnel
UDP Source Port	Local UDP port
UDP Destination Port	Remote UDP port
Session ID	Local Session ID
Peer Session ID	Remote Session ID
Cookie	Local cookie value, 8 or 16 characters long, (Only characters 0-9, A-F, not case sensitive)
Peer Cookie	Remote cookie value
L2 Specific Header	• default • none
Local Interface IP Address	IP Address of local interface
Remote Interface IP Address	IP Address of remote interface
Bridged	Select if you want connection bridged or not

Table 1: L2TP Pseudowire Config Items

3.3 System log

System log section contains log messages.

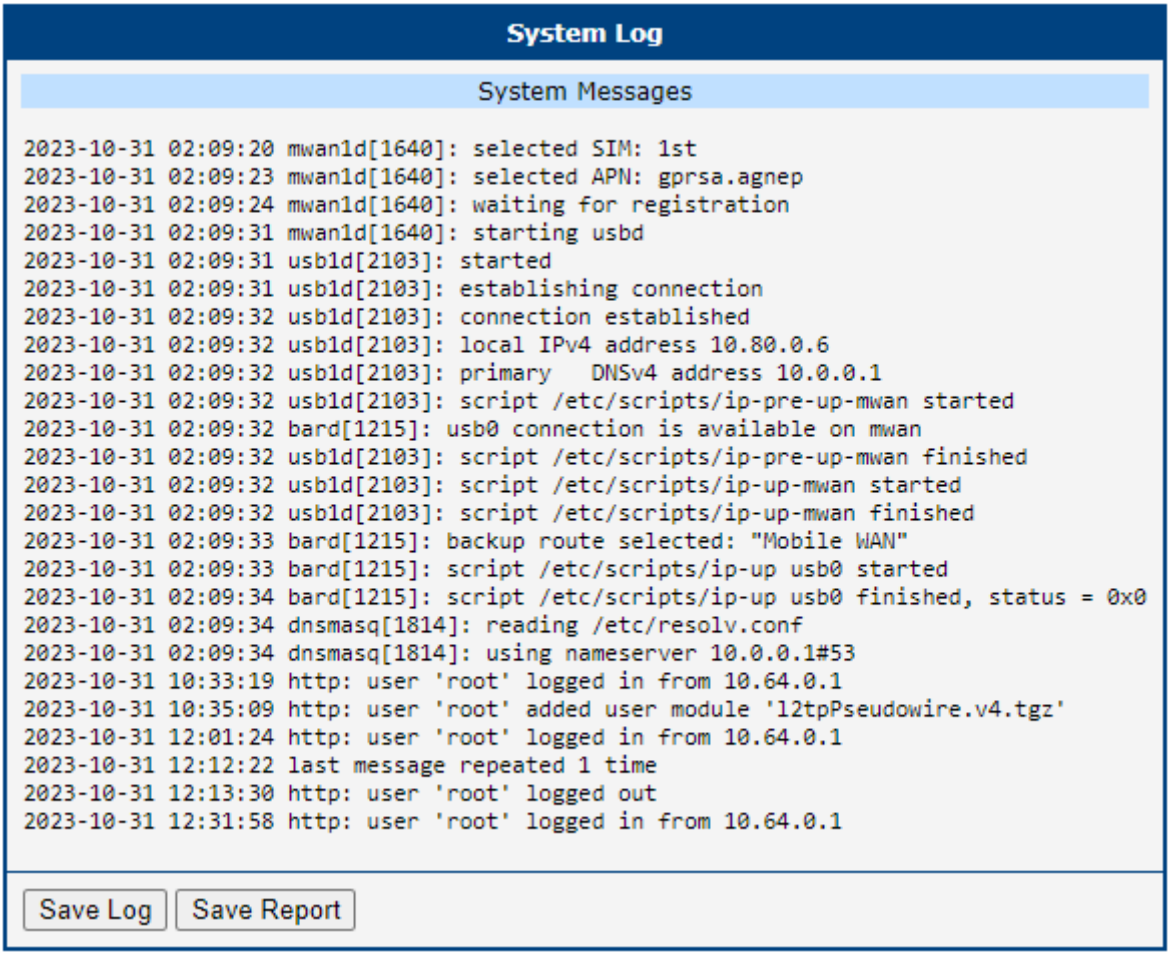

Figure 3: System log

4. Example

You have 2 devices between which you want to create L2TP pseudowire. Each device have to have this router app installed and Config filled to reflect settings of other device.

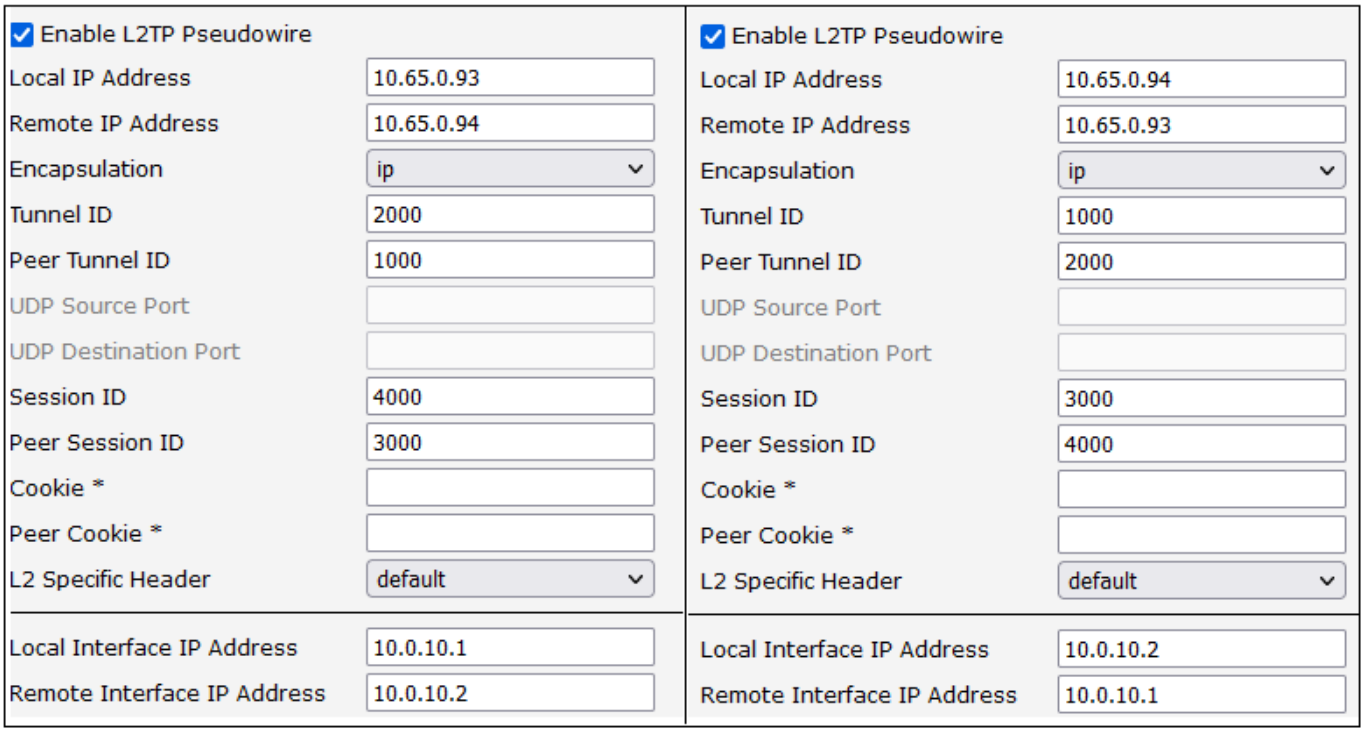

Figure 4: Settings on 2 routers

After that, the L2TP tunnel is created, which can be confirmed by pinging other device

```
~ # ifconfig l2tpeth0
l2tpeth0  Link encap:Ethernet  HWaddr EA:6B:CF:92:D2:0A
          inet addr:10.0.10.1  Bcast:0.0.0.0  Mask:255.255.255.252
          inet6 addr: fe80::e86b:cfff:fe92:d20a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1488  Metric:1
          RX packets:18 errors:0 dropped:0 overruns:0 frame:0
          TX packets:22 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1684 (1.6 KB)  TX bytes:2060 (2.0 KB)

~ # ping 10.0.10.2 -c 4
PING 10.0.10.2 (10.0.10.2): 56 data bytes
64 bytes from 10.0.10.2: seq=0 ttl=64 time=0.476 ms
64 bytes from 10.0.10.2: seq=1 ttl=64 time=0.425 ms
64 bytes from 10.0.10.2: seq=2 ttl=64 time=0.435 ms
64 bytes from 10.0.10.2: seq=3 ttl=64 time=0.438 ms
```

Figure 5: Ping from local to remote device

```
~ # ifconfig l2tpeth0
l2tpeth0  Link encap:Ethernet  HWaddr 36:1C:BE:FF:F0:4B
          inet addr:10.0.10.2  Bcast:0.0.0.0  Mask:255.255.255.252
          inet6 addr: fe80::341c:beff:feff:f04b/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1488  Metric:1
          RX packets:30 errors:0 dropped:0 overruns:0 frame:0
          TX packets:30 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2972 (2.9 KB)  TX bytes:2732 (2.6 KB)

~ # ping 10.0.10.1 -c 4
PING 10.0.10.1 (10.0.10.1): 56 data bytes
64 bytes from 10.0.10.1: seq=0 ttl=64 time=0.441 ms
64 bytes from 10.0.10.1: seq=1 ttl=64 time=0.420 ms
64 bytes from 10.0.10.1: seq=2 ttl=64 time=0.422 ms
64 bytes from 10.0.10.1: seq=3 ttl=64 time=0.426 ms
```

Figure 6: Ping from remote to local device

5. Related Documents

You can obtain product-related documents on *Engineering Portal* at *icr.advantech.com* address.

To get your router's *Quick Start Guide*, *User Manual*, *Configuration Manual*, or *Firmware* go to the *Router Models* page, find the required model, and switch to the *Manuals* or *Firmware* tab, respectively.

The *Router Apps* installation packages and manuals are available on the *Router Apps* page.

For the *Development Documents*, go to the *DevZone* page.