


1. Hardware

	Hardware System	MIPS MTK7628 580MHz 16MB Flash 64MB DDR2 RAM 16GB Storage <i>Note:RAM 128MB, Flash 32MB optional</i>
	Interface	2x SIM Slot 2x 10/100M Ethernet Port 1x RS232(Rx, Tx and GND) 1x RS485 3x IO 1x DC(2 Pins plugs) 2x SMA-K 5G Antennas 2x SMA-RP Wi-Fi Antennas 1x Reset

1) Ethernet Ports

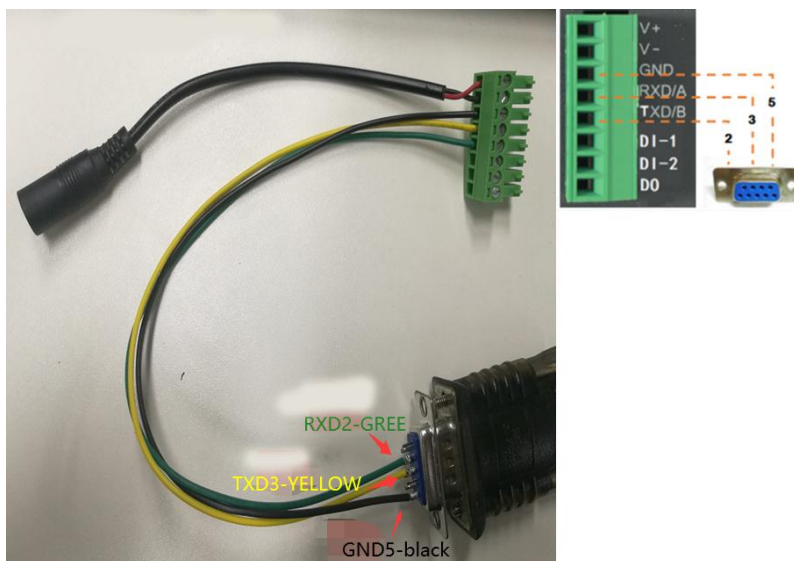
1x WAN/LAN(LAN1), 1x LAN2

- both Ethernet ports can be configured in VLAN in the GUI, refer to the product manual for details

2) Serial Ports

1x RS232(pin terminal), 1x RS232 (Console)

- the new model has the RX&RX wire line sequence reversed from the old one, only the serial port on the terminal block is used for printing device information



2. Download OpenWRT source codes

- 1)git clone https://github.com/openwrt/openwrt.git
- 2)cd openwrt;git checkout v23.05.0-rc2
- 3)git brach -a

```
ivan@LAPTOP-HNMLK4A8:openwrt$ git branch
* (HEAD detached at v23.05.0-rc2) ←
main
ivan@LAPTOP-HNMLK4A8:openwrt$ |
```

3. feeds.conf.default to add modem management tool

src-git mobile_broadband
 https://gitlab.freedesktop.org/mobile-broadband/mobile-broadband-openwrt.git
 src-git luci_proto_modemmanager <https://github.com/nickberry17/luci-proto-modemmanager.git>

Note: Version 23.05 or above, support ModemManager dial-up tool, no need to feed download

4. make menuconfig to choose MT7628 EVB version

- 1)Target System (MediaTek Ralink MIPS) --->
- 2)Subtarget (MT76x8 based boards) --->
- 3)Target Profile (MediaTek MT7628 EVB) --->
- 4) Default Factory Evaluation/Reference Board EVB Firmware Configuration File for R220



Rx-MT7628.conf
g

5. make menuconfig to choose modem management tool and qmi/mbim driver

- 1)LUCI
 - Protocols --->
 - <*> luci-proto-modemmanager. Support for ModemManager
 - <*> luci-proto-qmi. Support for QMI
- 2) Network --->
 - WWAN --->
 - <*> comgt. Option/Vodafone 3G/GPRS control tool
 - <*> umbim. Control utility for mobile broadband modems
 - <*> uqmi. Control utility for mobile broadband modems
 - * modemmanager..... Control utility for any kind of mobile broadband modem
- 3)

- <*> Kernel modules > USB Support > <*> kmod-usb-serial-pl2303.
- <*> Detran custom > <*> pl2303gpio.

6. Kernel Custom

6.1 Modify firmware volume and partition size

1) <openwrt>/target/linux/ramips/image/mt76x8.mk

```

382
383 define Device/mediatek_mt7628an-eval-board
384     IMAGE_SIZE := 16064k
385     DEVICE_VENDOR := MediaTek
386     DEVICE_MODEL := MT7628 EVB
387     DEVICE_PACKAGES := kmod-usb2 kmod-usb-ohci kmod-usb-ledtrig-usbport
388     SUPPORTED_DEVICES += mt7628
389 endif
390 TARGET_DEVICES += mediatek_mt7628an-eval-board
391
    
```

<openwrt>/target/linux/ramips/dts/mt7628an_mEDIATEK_mt7628an-eval-board.dts

Note: The following example is a device tree configuration with 64MB DDR2 and 16MB flash

```

1 #include "mt7628an.dtsi"
2
3 #include <dt-bindings/gpio/gpio.h>
4 #include <dt-bindings/input/input.h>
5 / {
6     compatible = "mediatek,mt7628an-eval-board", "mediatek,mt7628an-soc";
7     model = "Mediatek MT7628AN evaluation board";
8
9     chosen {
10        bootargs = "console=ttyS0,115200";
11    };
12
13    memory@0 {
14        device_type = "memory";
15        reg = <0x0 0x4000000>;
16    };
17
18    keys {
    
```

```

95 &spi0 {
96     status = "okay";
97
98     flash@0 {
99         compatible = "jedec,spi-nor";
100        reg = <0>;
101        spi-max-frequency = <10000000>;
102
103        partitions {
104            compatible = "fixed-partitions";
105            #address-cells = <1>;
106            #size-cells = <1>;
107
108            partition@0 {
109                label = "u-boot";
110                reg = <0x0 0x30000>;
111                read-only;
112            };
113
114            partition@30000 {
115                label = "u-boot-env";
116                reg = <0x30000 0x10000>;
117                read-only;
118            };
119
120            factory: partition@40000 {
121                label = "factory";
122                reg = <0x40000 0x10000>;
123                read-only;
124            };
125
126            partition@50000 {
127                compatible = "denx,uimage";
128                label = "firmware";
129                reg = <0x50000 0x1fb0000>;
130            };
131        };
132    };
133 };

```

6.2 Modify the baud rate of the debugging serial port

<openwrt>/target/linux/ramips/dts/mt7628an_mEDIATEK_mt7628an-eval-board.dts

```

#include "mt7628an.dtsi"

#include <dt-bindings/gpio/gpio.h>
#include <dt-bindings/input/input.h>
/ {
    compatible = "mediatek,mt7628an-eval-board", "mediatek,mt7628an-soc";
    model = "Mediatek MT7628AN evaluation board";

    chosen {
        bootargs = "console=ttyS0,115200";
    };
    memory@0 {
        device_type = "memory";
        reg = <0x0 0x4000000>;
    };
};

```

6.3 Add GPIO control, including module power-up, RST recovery button, LED light control, IO control and other definitions.

<openwrt>/target/linux/ramips/dts/mt7628an_mEDIATEK_mt7628an-eval-board.dts

```

leds {
    compatible = "gpio-leds";

    signal1 {
        label = "green:signal1";
        gpios = <&gpio 4 GPIO_ACTIVE_HIGH>;
    };

    signal2 {
        label = "green:signal2";
        gpios = <&gpio 5 GPIO_ACTIVE_HIGH>;
    };

    signal3 {
        label = "green:signal3";
        gpios = <&gpio 45 GPIO_ACTIVE_HIGH>;
    };

    err {
        label = "green:err";
        gpios = <&gpio 46 GPIO_ACTIVE_LOW>;
    };

    wlan {
        label = "green:wlan";
        gpios = <&gpio 12 GPIO_ACTIVE_LOW>;
    };
};

gpio_export {
    compatible = "gpio-export";
    #size-cells = <0>;
    modem {
        gpio-export,name = "modem";
        gpio-export,output = <1>;
        gpios = <&gpio 2 GPIO_ACTIVE_LOW>;
    };
    sim {
        gpio-export,name = "sim";
        gpio-export,output = <0>;
        gpios = <&gpio 3 GPIO_ACTIVE_LOW>;
    };
    usb0 {
        gpio-export,name = "usb0";
        gpio-export,output = <1>; // GPIOF_OUT_INIT_HIGH
        gpios = <&gpio 2 GPIO_ACTIVE_HIGH>;
    };
};
    
```

6.4 MT7628 native GPIO definition for watchdog and reset

<openwrt>/target/linux/ramips/dts/mt7628an_mediatek_mt7628an-eval-board.dts

```

56
57     watchdog {
58         compatible = "linux,wdt-gpio";
59         gpios = <&gpio 11 GPIO_ACTIVE_LOW>;
60         hw_algo = "toggle";
61         hw_margin_ms = <2000>;
62         always-running;
63     };
64
    
```

```

3 #include <dt-bindings/gpio/gpio.h>
4 #include <dt-bindings/input/input.h>
5 / {
6     compatible = "mediatek,mt7628an-eval-board", "mediatek,mt762
7     model = "Mediatek MT7628AN evaluation board";
8
9     chosen {
10         bootargs = "console=ttyS0,115200";
11     };
12     memory@0 {
13         device_type = "memory";
14         reg = <0x0 0x4000000>;
15     };
16     keys {
17         compatible = "gpio-keys";
18
19         reset {
20             label = "reset";
21             gpios = <&gpio 38 GPIO_ACTIVE_LOW>;
22             linux,code = <KEY_RESTART>;
23         };
24     };
25 };
26 };
27
    
```

6.5 Watchdog kernel configuration

<openwrt>/target/linux/ramips/mt76x8/config-5.15

```

78 CONFIG_SRCU=y
79 CONFIG_SWCONFIG=y
80 CONFIG_SWCONFIG_LEDS=y
81 CONFIG_SWPHY=y
82 CONFIG_SYSCTL_EXCEPTION_TRACE=y
83 CONFIG_SYS_HAS_CPU_MIPS32_R1=y
84 CONFIG_SYS_HAS_CPU_MIPS32_R2=y
85 CONFIG_SYS_HAS_EARLY_PRINTK=y
86 CONFIG_SYS_SUPPORTS_32BIT_KERNEL=y
87 CONFIG_SYS_SUPPORTS_ARBIT_HZ=y
88 CONFIG_SYS_SUPPORTS_LITTLE_ENDIAN=y
89 CONFIG_SYS_SUPPORTS_MIPS16=y
90 CONFIG_SYS_SUPPORTS_ZBOOT=y
91 CONFIG_TARGET_ISA_REV=2
92 CONFIG_TICK_CPU_ACCOUNTING=y
93 CONFIG_TIMER_OF=y
94 CONFIG_TIMER_PROBE=y
95 CONFIG_TINY_SRCU=y
96 CONFIG_USB_SUPPORT=y
97 CONFIG_USE_OF=y
98 CONFIG_WATCHDOG_CORE=y
99 CONFIG_GPIO_WATCHDOG=y
100 # CONFIG_GPIO_WATCHDOG_ARCH_INITCALL is not set
    
```

6.6 Device tree, kernel configuration reference file



7. Enable 4G Modem

7.1 ModemManager

The screenshot shows the OpenWrt web interface. At the top, there is a notification: "No password set! There is no password set on this router. Please configure a root password to protect the web interface." Below this, the "Interfaces" section is visible, listing several interfaces: lan, mobile, wan, and wan6. The "mobile" interface is circled in red, and its "Edit" button is also circled in red with an arrow pointing to it. Below the interface list, there is a link "Add new interface...".

The "mobile" interface configuration page is shown below, with the following settings:

- General Settings: Advanced Settings, Firewall Settings, DHCP Server
- Status: Device: wwan0, Uptime: 0h 3m 3s, RX: 217.05 KB (282 Pkts.), TX: 17.66 KB (247 Pkts.), IPv4: 10.139.164.152/28
- Protocol: ModemManager
- Bring up on boot:
- Modem device: QUALCOMM INCORPORATED - QUECTEL Mobile Broadband Module
- APN:
- PIN:
- Authentication Type: None
- IP Type: IPv4/IPv6 (both - defaults to IPv4)
- Signal Refresh Rate: In seconds

At the bottom of the configuration page, there are "Dismiss" and "Save" buttons.

The "Firewall Settings" tab is selected, showing the "Create / Assign firewall-zone" section. The dropdown menu shows "wan", "wan6", and "mobile". Below this, there is a text box for "Choose the firewall zone you want to assign to this interface. Select *unspecified* to remove the interface from the associated zone or fill out the *custom* field to define a new zone and attach the interface to it." There are "Dismiss" and "Save" buttons at the bottom right.

[Interfaces](#) [Devices](#) [Global network options](#)

Interfaces

<div style="background-color: #e8f5e9; padding: 2px; border: 1px solid #ccc;">lan</div>  br-lan	Protocol: Static address Uptime: 0h 5m 57s MAC: 1C:59:74:82:A9:37 RX: 481 62 KB (3422 Pkts.) TX: 637 61 KB (1308 Pkts.) IPv4: 192.168.11/24 IPv6: 2408:8456:3233:3be5:1/64 IPv6: fdcb.edb3:7fa4:1/60	Restart Stop Edit Delete
<div style="background-color: #ffe0b2; padding: 2px; border: 1px solid #ccc;">mobile</div>  wwan0	Protocol: ModemManager Uptime: 0h 0m 25s RX: 228.95 KB (359 Pkts.) TX: 29.32 KB (352 Pkts.) IPv4: 10.139.164.152/28 IPv6: 2408:8456:3233:3be5:1d92:c514:c10b:fc5c/128 IPv6-PD: 2408:8456:3233:3be5:1/64	Restart Stop Edit Delete
<div style="background-color: #ffe0b2; padding: 2px; border: 1px solid #ccc;">wan</div>  eth0.1	Protocol: DHCP client MAC: 1C:59:74:82:A9:37 RX: 0 B (0 Pkts.) TX: 44.06 KB (150 Pkts.)	Restart Stop Edit Delete
<div style="background-color: #ffe0b2; padding: 2px; border: 1px solid #ccc;">wan6</div>  eth0.1	Protocol: DHCPv6 client MAC: 1C:59:74:82:A9:37 RX: 0 B (0 Pkts.) TX: 44.06 KB (150 Pkts.)	Restart Stop Edit Delete

[Add new interface...](#)

[Save & Apply](#) [Save](#) [Reset](#)

Mobile Service

[/sys/devices/platform/101c0000.ehci/usb1/1-1/1-1](#)

Modem Info

Manufacturer	QUALCOMM INCORPORATED
Model	QUECTEL Mobile Broadband Module
Revision	EG95AUXGAR08A04M1G
IMEI	86844405 [REDACTED]
Device Identifier	f7599b39b5d3873b74f598de1e2a53ea52df2bc3
Power State	on
State	connected

Network Registration

Own Numbers	86186 [REDACTED]
Access Technologies	lte
Operator	CHN-UNICOM
Operator Code	46001
Registration State	home
Packet Service State	attached
Signal Quality	<div style="width: 100%; background-color: #00aaff; height: 10px;"></div> 100 %

Cell Location

CID	0D0E1800
LAC	0000
MCC	460
MNC	01
TAC	00770E

SIMs

SIM 1

Active	yes
Operator Name	UNICOM
ICCID	8986012080 [REDACTED]
IMSI	460010352 [REDACTED]

8. GPIO control and testing

8.1 Extract the R220 GPIO control package to the <openwrt>/package directory:



pl2303gpio.tar.gz

8.2 GPIO instruction

GPIO List		
GPIO45 ND-D0	Signal_1 Net1_Green	Signal LED1, light at high level
GPIO5 ND-D1	Signal_2 Net1_Green	Signal LED2, light at high level
GPIO4 ND-D2	Signal_3 Net2_Green	Signal LED3, light at high level

GPIO46 ND-D3	Error Net2_Green	Error LED. light at low level No 5G module or network for Red
GPIO2	Module_PWR	4G Module power control High level for power on Low level for power off
GPIO3 JTRST	SIM_Choose	Control SIM card High level for SIM2 Low level for SIM1 Power OFF 4G module at first, then control GPIO to switch SIM card. Then power on 4G module in 8sec.
GPIO38	Default Factory	
GPIO44	WLAN	

GPIO2

GPIO2 for 4G module power control

- `cd /sys/class/gpio/usb0` (GPIO2 is exported from dts file)
- `echo 1 > value` (Power on)
- `echo 0 > value` (Power off)

GPIO 3

GPIO3 for SIM choose

- `cd /sys/class/gpio/sim` (GPIO3 is exported from dts file)
- `echo 1 > value` (High level for SIM2)
- `echo 0 > value` (Low level for SIM1)

Power OFF 4G module at first, then control GPIO to switch SIM card. Then power on 4G module in 8sec.

LED Control

- `cd /sys/class/gpio`
- `echo N > export` (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44)
- `echo out > gpioN/direction` (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. Direction for output)
- `echo 1 > gpioN/value` (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. value 1 for WLAN LED Light on)
- `echo 0 > gpioN/value` (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. value 0 for WLAN LED Light off)

Extend GPIO to Control DI/DO

- `cd /sys/class/gpio` (PL2303 driver file patch exports gpiochip508)
- `echo 508 > export` (508 for DI 1. gpio508/value for input signal. 1 for low level. 0 for high level)
- `echo 509 > export` (509 for DI 2. gpio509/value for input signal. 1 for low level. 0 for high level)
- `echo 510 > export` (510 for DO. gpio510/value for output signal. 1 for low level. 0 for high level)

9. Storage

9.1 Load Driver

- `-*` `kmod-usb-storage`..... USB Storage support
- `<*>` `kmod-usb-storage-extras`..... Extra drivers for usb-storage
- `-*` `kmod-scsi-core`..... SCSI device support
- `<*>` `kmod-fs-ext4`..... EXT4 filesystem support
- `<*>` `kmod-fs-ntfs`..... NTFS filesystem support
- `<*>` `kmod-fs-vfat`..... VFAT filesystem support

```
[ 6.902845] usb-storage 1-1.3:1.0: USB Mass Storage device detected
[ 6.910234] scsi host0: usb-storage 1-1.3:1.0
[ 7.949421] scsi 0:0:0:0: Direct-Access Kingston DataTraveler 2.0 1.00 PQ: 0 ANSI: 4
[ 7.963374] sd 0:0:0:0: [sda] 15131636 512-byte logical blocks: (7.75 GB/7.21 GiB)
[ 7.972245] sd 0:0:0:0: [sda] write protect is off
[ 7.977120] sd 0:0:0:0: [sda] Mode Sense: 45 00 00 00
[ 7.977914] sd 0:0:0:0: [sda] write cache: disabled, read cache: enabled, doesn't support DPO or FUA
[ 7.996408] sd 0:0:0:0: [sda] Attached SCSI removable disk
```

9.2 mount -t vfat /dev/sda/mnt

9.3 Configure the auto loading

192.168.1.1/cgi-bin/luci/admin/system/mounts

Mount Points

Global Settings

Generate Config Generate Config
Find all currently attached filesystems and swap and replace configuration with defaults based on what was detected

Mount attached devices Mount attached devices
Attempt to enable configured mount points for attached devices

Anonymous Swap Mount swap not specifically configured

Anonymous Mount Mount filesystems not specifically configured

Automount Swap Automatically mount swap on hotplug

Automount Filesystem Automatically mount filesystems on hotplug

Check filesystems before mount Automatically check filesystem for errors before mounting

Mounted file systems

Filesystem	Mount Point	Available	Used	Unmount
/dev/root	/rom	0 B / 8.00 MIB	100.00% (8.00 MIB)	-
tmpfs	/tmp	2768 MIB / 2795 MIB	0.95% (272.00 KIB)	-
/dev/mtdblock6	/overlay	5.39 MIB / 5.69 MIB	5.29% (308.00 KIB)	-
overlays/overlay	/	5.39 MIB / 5.69 MIB	5.29% (308.00 KIB)	-
tmpfs	/dev	512.00 KIB / 512.00 KIB	0.00% (0 B)	-

Mount Points

Mount Points define at which point a memory device will be attached to the filesystem

Enabled	Device	Mount point	Filesystem	Mount options	Run filesystem check
---------	--------	-------------	------------	---------------	----------------------

10. VLAN Configuration

10.1 1x WAN(LAN1) and 1x LAN (LAN2) port as default

No password set!
 There is no password set on this router. Please configure a root password to protect the web interface. [Go to password configuration...](#)

Switch
 The network ports on this device can be combined to several VLANs in which computers can communicate directly with each other. VLANs are often used to separate different network segments. Often there is by default one Uplink port for a connection to the next greater network like the Internet and other ports for a local network.

Switch "switch0" (rt305x-esw), ports: 7 (cpu @ 6)
 Enable VLAN functionality

VLANs on "switch0" (rt305x-esw), ports: 7 (cpu @ 6)

VLAN ID	Description	CPU (eth0)	LAN 1	LAN 2	LAN 3	LAN 4	WAN
1		1000baseT full-duplex	100baseT full-duplex	no link	no link	no link	no link
2		tagged	untagged	untagged	untagged	untagged	off

[Add VLAN](#)

[Save & Apply](#) [Save](#) [Reset](#)

10.2 If configure 2 x LAN, we can /etc/config/network file, refer to the following configuration:



11. Enable Wi-Fi

No password set!
 There is no password set on this router. Please configure a root password to protect the web interface. [Go to password configuration...](#)

Wireless Overview

radio0 MediaTek MT7628 802.11b/g/n
 Device is not active [Restart](#) [Scan](#) [Add](#)

disabled SSID: OpenWrt | Mode: Master
 Wireless is disabled [Enable](#) [Edit](#) [Remove](#)

Associated Stations

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
No information available				

[Save & Apply](#) [Save](#) [Reset](#)

12. Status GUI

OpenWrt
23.05.0-rc2 r23228-cd17d8df2a Refreshing

No password set!

There is no password set on this router. Please configure a root password to protect the web interface.

[Go to password configuration...](#)

Status

System

Hostname	OpenWrt
Model	Mediatek MT7628AN evaluation board
Architecture	MediaTek MT7628AN ver:1 eco:2
Target Platform	ramips/mt76x8
Firmware Version	OpenWrt 23.05.0-rc2 r23228-cd17d8df2a / LuCI openwrt-23.05 branch git-23.186.24963-088bb74
Kernel Version	5.15.118
Local Time	2024-01-04 06:58:50
Uptime	0h 10m 26s
Load Average	1.63, 1.62, 1.11

Memory

Total Available	<div style="width: 15%;"></div> 8.90 MiB / 55.89 MiB (15%)
Used	<div style="width: 76%;"></div> 42.95 MiB / 55.89 MiB (76%)
Buffered	<div style="width: 0%;"></div> 52.00 KiB / 55.89 MiB (0%)
Cached	<div style="width: 26%;"></div> 14.71 MiB / 55.89 MiB (26%)

Storage

Disk space	<div style="width: 5%;"></div> 308.00 KiB / 5.69 MiB (5%)
------------	-----------------------------------------------------------

Storage

Disk space	<div style="width: 5%;"></div> 308.00 KiB / 5.69 MiB (5%)
Temp space	<div style="width: 0%;"></div> 272.00 KiB / 27.95 MiB (0%)

Network

IPv4 Upstream

Protocol: ModemManager
 Address: 10.39.24.18/30
 Gateway: 10.39.24.17
 DNS 1: 120.196.165.7
 DNS 2: 221.179.38.7
 Connected: 0h 8m 18s
 Device: Ethernet Adapter: "wwan0"

Active Connections 51 / 7168 (0%)

Active DHCP Leases

Hostname	IPv4 address	MAC address	Lease time remaining	Static Lease
<i>There are no active leases</i>				

Active DHCPv6 Leases

Host	IPv6 address	DUID	Lease time remaining	Static Lease
WLINK-Support	fd0d:4bcc:9d37:b85/128	000100012a1242bee4a8dfc4f23f	expired	Set Static

Wireless

radio0

Type: MediaTek MT7628 802.11b/g/n
 Channel: 1 (0.000 GHz)
 Bitrate: -

13. OpenVPN

13.1 Installing OpenVPN-openssl and luci-app-openvpn

62% (3.55 MiB)

Filter: Download and install package: Actions: Clear Package name or URL... OK Update lists... Upload Package... Configure pkg...

Display LuCI translation packages: filtered all none

Available Installed Updates

Displaying 1-10 of 10

Package name	Version	Size (ipk)	Description	Actions
openvpn-easy-rsa	3.0.8-4	28.01 KiB	CLI utility to build and manage a PKI CA.	Install...
openvpn-mbedtls	2.5.8-5	171.58 KiB	Open source VPN solution using mbedtls	Install...
openvpn-openssl	2.5.8-5	177.00 KiB	Open source VPN solution using OpenSSL	Installed
openvpn-wolfssl	2.5.8-5	175.85 KiB	Open source VPN solution using WolfSSL (experimental)	Install...
collected-mod-openvpn	5.12.0-49	5.73 KiB	OpenVPN traffic/compression input plugin	Install...
kmod-ovpn-doo	5.15.118+2022-10-23-did53564-3	25.17 KiB	This module enhances the performance of the OpenVPN userspace software...	Install...
luci-app-openvpn	git-24.108.03100-3129664	12.66 KiB	LuCI Support for OpenVPN	Installed
softhevpn5-bridge	5.02.5190-3	2.90 KiB	SoftEther VPN supports SSL-VPN, OpenVPN, L2TP, EtherIP, L2TPv3 and IPsec as a single VPN software...	Install...
softhevpn5-client	5.02.5190-3	2.82 KiB	SoftEther VPN supports SSL-VPN, OpenVPN, L2TP, EtherIP, L2TPv3 and IPsec as a single VPN software...	Install...

13.2 Upload client.ovpn file

Note: please test in advance that this client.ovpn file also works on windows.

OpenWrt 23.05.0-r02 r23228-0d7d38df2a

No password set!
There is no password set on this router. Please configure a root password to protect the web interface. [Go to password configuration...](#)

OpenVPN

OpenVPN instances

Below is a list of configured OpenVPN instances and their current state

Name	Enabled	Started	Start/Stop	Port	Protocol	Actions
test	<input checked="" type="checkbox"/>	yes (2741)	stop	1194	udp	Edit Delete

Template based configuration

Instance name:
Select template ...
[Add](#)

OVPN configuration file upload

Instance name:
[Choose file](#) No file chosen
[Upload](#)

[Save & Apply](#) [Save](#) [Reset](#)

Check the status in the system log

```

Tue Jun 25 05:46:55 2024 daemon.notice openvpn[test]: library versions: OpenSSL 3.0.13 30 Jan 2024, LZO 2.10
Tue Jun 25 05:46:55 2024 daemon.warn openvpn[test]: NOTE: the current --script-security setting may allow this configuration to call user-defined scripts
Tue Jun 25 05:46:55 2024 daemon.notice openvpn[test]: Outgoing Control Channel Authentication: Using 160 bit message hash 'SHA1' for HMAC authentication
Tue Jun 25 05:46:55 2024 daemon.notice openvpn[test]: Incoming Control Channel Authentication: Using 160 bit message hash 'SHA1' for HMAC authentication
Tue Jun 25 05:46:56 2024 daemon.notice openvpn[test]: TCP/UDP: Preserving recently used remote address: [AF_INET]:::1194
Tue Jun 25 05:46:56 2024 daemon.notice openvpn[test]: Socket Buffers: R=[180024->180024] S=[180024->180024]
Tue Jun 25 05:46:56 2024 daemon.notice openvpn[test]: UDP link local: (not bound)
Tue Jun 25 05:46:56 2024 daemon.notice openvpn[test]: UDP link remote: [AF_INET]:::1194
Tue Jun 25 05:46:56 2024 daemon.notice openvpn[test]: TLS: Initial packet from [AF_INET]:::1194, sid=d687cd62 6733debc
Tue Jun 25 05:46:56 2024 user.info main[track]: Check (ping) failed for target '1.1.1.1' a... van (ppp0). Current score: 10
Tue Jun 25 05:46:57 2024 daemon.notice openvpn[test]: VERIFY OK: depth=1, C=IT, ST=MI, L=Milano, O=Elmecelettronica, OU=Elmecelettronica, CN=Elmecelettronica, n
Tue Jun 25 05:46:57 2024 daemon.notice openvpn[test]: VERIFY KU OK
Tue Jun 25 05:46:57 2024 daemon.notice openvpn[test]: Validating certificate extended key usage
Tue Jun 25 05:46:59 2024 daemon.warn openvpn[test]: WARNING: 'keysize' is used inconsistently, local='keysize 128', remote='keysize 256'
Tue Jun 25 05:46:59 2024 daemon.notice openvpn[test]: ++ Certificate has EKU (str) TLS Web Server Authentication, expects TLS Web Server Authentication
Tue Jun 25 05:46:57 2024 daemon.notice openvpn[test]: VERIFY OK: depth=0, C=IT, ST=MI, L=Milano, O=Elmecelettronica, OU=Elmecelettronica, CN=server, name=server,
Tue Jun 25 05:46:59 2024 daemon.notice openvpn[test]: SENT CONTROL [server]: 'PUSH_REQUEST' (status=1)
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: PUSH: Received control message: 'PUSH_REQUEST',route 10.4.0.0 255.255.0.0,topology net30,ping 10,ping-restart
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: OPTIONS IMPORT: timers and/or timeouts modified
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: OPTIONS IMPORT: route options modified
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: OPTIONS IMPORT: peer-id set
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: OPTIONS IMPORT: adjusting link_mtu to 1625
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: OPTIONS IMPORT: data channel crypto options modified
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: Data Channel: using negotiated cipher 'AES-256-GCM'
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: Outgoing Data Channel: Cipher 'AES-256-GCM' initialized with 256 bit key
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: Incoming Data Channel: Cipher 'AES-256-GCM' initialized with 256 bit key
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_route_v4_dest_get query: dst 0.0.0.0
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_route_v4_dest_get result: via 10.64.64.64 dev ppp0
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: tun/tap device tun0 opened
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_iface_mtu_set: mtu 1500 for tun0
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_iface_up: set tun0 up
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_addr_ptp_v4_add: 10.4.23.170 peer 10.4.23.169 dev tun0
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: /usr/libexec/openvpn-hotplug up test tun0 1500 1553 10.4.23.170 10.4.23.169 init
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: net_route_v4_add: 10.4.0.0/16 via 10.4.23.169 dev [NULL] table 0 metric -1
Tue Jun 25 05:47:01 2024 daemon.notice openvpn[test]: Initialization Sequence Completed
Tue Jun 25 05:47:02 2024 daemon.info ModemManager[1507]: notbus: add-network: since-face: smbd: even: processo

```