

Installation and Configuration Guide

Step-by-step instructions for installing, configuring, and setting up the Mikrotik VPN WHMCS module, including Mikrotik router preparation (RouterOS certificates, HTTPS and API-SSL, VPN server), WHMCS integration, email templates, server registration, and product configuration.

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- [Product Configuration](#)

WHMCS setup (install/update)

Mikrotik VPN module **WHMCS**

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System requirements

Requirement	Minimum version
PHP	8.2 or higher
WHMCS	9.x or higher
Mikrotik RouterOS	7.x or higher
ionCube Loader	v13 or newer (v14, v15)

“ **Note:** The module uses ionCube encoding. Make sure ionCube Loader is installed and active on your server.

Download

The module can be ordered and downloaded from PUQ Cloud:

- **Order / Download:** <https://panel.puqcloud.com/index.php?rp=/store/whmcs-module-mikrotik-vpn>
- **FAQ:** <https://faq.puqcloud.com/>
- **Direct download link for the latest version:**

```
wget https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php82/PUQ_WHMCS-Mikrotik-VPN-latest.zip
```

“ Older module versions for WHMCS 8 are available in PHP-specific directories:

- PHP 7.4: https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php74/
- PHP 8.1: https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php81/

After downloading, extract the archive:

```
unzip PUQ_WHMCS-Mikrotik-VPN-latest.zip
```

Installation

Step 1: Upload files

Extract the module archive and copy the `puqMikrotikVPN` directory to the WHMCS servers module directory:

```
WHMCS_WEB_DIR/modules/servers/puqMikrotikVPN
```

Step 2: Add server

Navigate to **System Settings** → **Servers** → **Add New Server**:

1. Enter the correct **Name** and **Hostname**
2. In **Assigned IP Addresses**, enter the list of IPs to distribute to users
3. In Server Details, select the **PUQ Mikrotik VPN** module
4. Enter valid Mikrotik router credentials (username and password)
5. Click **Test connection** to verify

Step 3: Create product

Navigate to **System Settings** → **Products/Services** → **Create a New Product**:

1. Select the **PUQ Mikrotik VPN** module in the Module settings section
 2. Configure the product parameters
-

Update

Step 1: Backup

Before updating, it is recommended to back up:

- WHMCS database
- Module files in `modules/servers/puqMikrotikVPN/`

Step 2: Upload new files

Download and extract the new version, then overwrite all files in:

```
WHMCS_WEB_DIR/modules/servers/puqMikrotikVPN/
```

Step 3: Verification

1. Log in to the WHMCS admin panel
2. Check the module is functioning correctly
3. Verify product settings

“ **Important (v3.0):** Product reconfiguration is required after updating to version 3.0. The traffic package model has been replaced with post-paid billing via WHMCS metrics.

Setup guide: Mikrotik preparation and configuration

Mikrotik VPN module **WHMCS**

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This guide covers the preparation of a Mikrotik router for use with the PUQ Mikrotik VPN WHMCS module: root CA certificate, Webfig certificate, HTTPS, API-SSL and VPN server activation.

“ **Note:** Enter the following commands one by one and wait for each command to complete before running the next.

1. Check RouterOS version

Ensure RouterOS version is 7.x or higher:

```
system/package/print
```

2. Create a root CA on the router

Enable HTTPS by creating your own local root Certificate Authority:

```
/certificate
add name=LocalCA common-name=LocalCA key-usage=key-cert-sign,crl-sign
```

3. Sign the root CA certificate

```
/certificate
sign LocalCA
```

4. Create a non-root certificate for Webfig

“ Replace `xxx.xxx.xxx.xxx` with your router's public IP address (or the hostname you use to reach it).

```
/certificate
add name=Webfig common-name=XXX.XXX.XXX.XXX
```

5. Sign the Webfig certificate with the local CA

```
/certificate
sign Webfig ca=LocalCA
```

6. Enable HTTPS (www-ssl) with

the Webfig certificate

```
/ip service
set www-ssl certificate=Webfig disabled=no
```

7. Enable API-SSL with the Webfig certificate

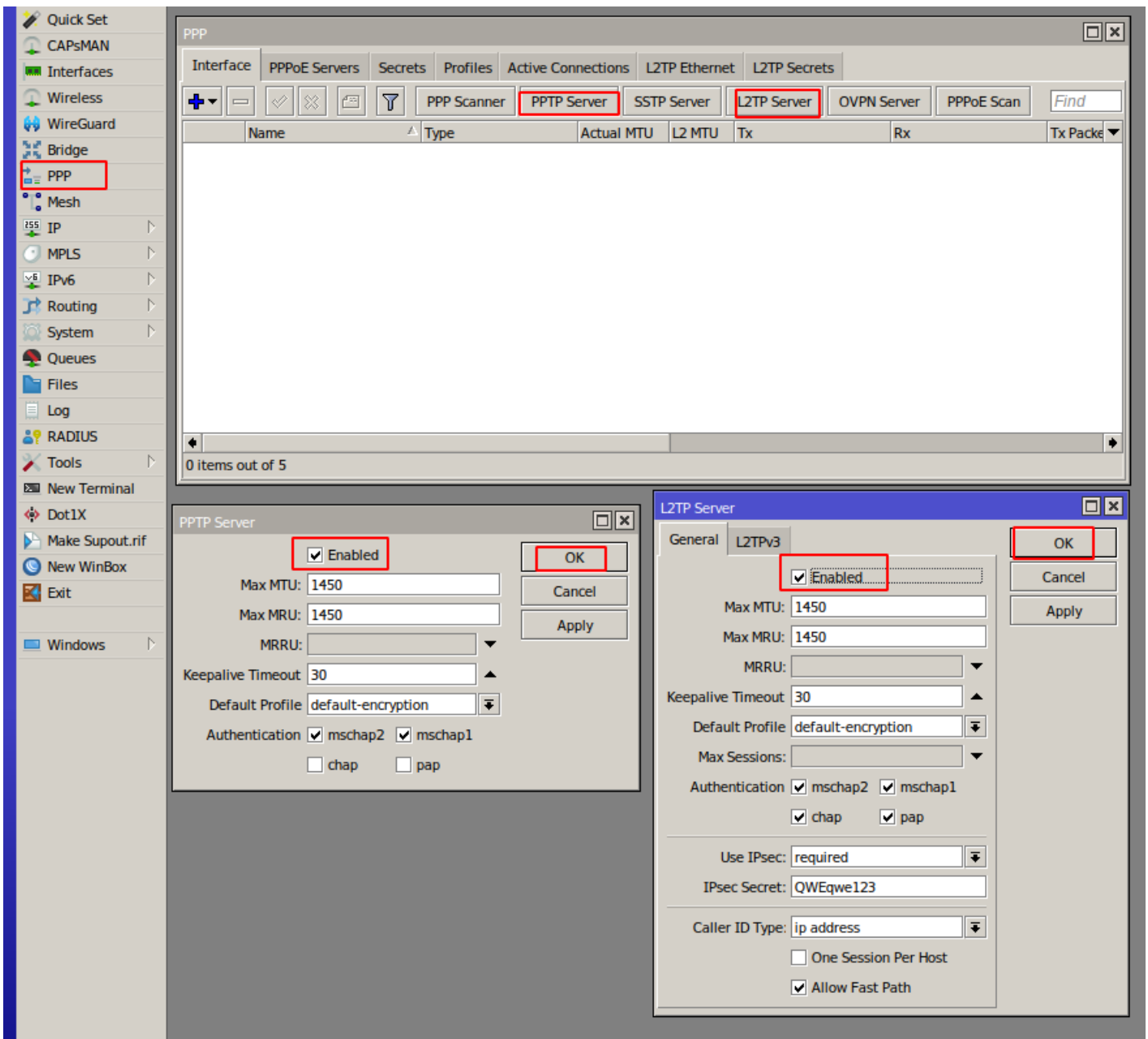
The PUQ Mikrotik VPN module communicates with the router through the **API-SSL** service:

```
/ip service
set api-ssl certificate=Webfig disabled=no
```

🔴 **Important:** The module uses the Mikrotik API only. Make sure the API-SSL port is reachable from the WHMCS server.

8. Enable VPN server

Enable the VPN protocol(s) you plan to offer to clients (PPTP, L2TP, etc.) and configure the corresponding PPP profile, service and IP pool. The PPP profile name configured here will later be selected in the product settings on the WHMCS side.



16-mikrotik-setup.png

9. Firewall, NAT and routing

Configure NAT, firewall and routing on the Mikrotik router so that VPN clients can reach the Internet and any internal resources you want to expose. The module itself only provisions the user account (PPP secret) — the surrounding network configuration is the responsibility of the router administrator.

“ **Important:** The module registers opposite values for upload and download

speeds in the Mikrotik router compared to the WHMCS product settings, because Mikrotik measures incoming traffic while VPN clients experience outgoing traffic.

Setup guide: WHMCS setup

Mikrotik VPN module **WHMCS**

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System requirements

Requirement	Minimum version
PHP	8.2 or higher
WHMCS	9.x or higher
Mikrotik RouterOS	7.x or higher
ionCube Loader	v13 or newer (v14, v15)

“ **Note:** The module uses ionCube encoding. Make sure ionCube Loader is installed and active on your server.

“ Older module versions for WHMCS 8 are available in PHP-specific directories:

- PHP 7.4: https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php74/
- PHP 8.1: https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php81/

Step 1: Download the module

```
wget https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Mikrotik-VPN/php82/PUQ_WHMCS-
Mikrotik-VPN-latest.zip
```

Step 2: Extract the archive

```
unzip PUQ_WHMCS-Mikrotik-VPN-latest.zip
```

Step 3: Copy module files

Copy the `|puqMikrotikVPN|` directory to:

```
WHMCS_WEB_DIR/modules/servers/
```

Step 4: Add server in WHMCS

Navigate to **System Settings** → **Servers** → **Add New Server**

1. Enter the correct **Name** and **Hostname**
2. In **Assigned IP Addresses**, enter the list of IPs that will be distributed to users
3. In the Server Details section, select the **PUQ Mikrotik VPN** module
4. Enter valid Mikrotik router credentials (username and password)
5. Click **Test connection** to verify the connection

Name	<input type="text" value="vpn- [redacted] .pl"/>
Hostname	<input type="text" value="vpn- [redacted] .pl"/>
IP Address	<input type="text"/>
Assigned IP Addresses (One per line)	<div style="border: 1px solid #ccc; padding: 5px;"><p>192.168.222.14 192.168.222.15 192.168.222.16 192.168.222.17 192.168.222.18 192.168.222.19 192.168.222.20 192.168.222.21</p></div>
Monthly Cost	<input type="text" value="0.00"/>
Datacenter/NOC	<input type="text"/>
Maximum No. of Accounts	<input type="text" value="200"/>
Server Status Address	<input type="text"/> <small>To display this server on the server status page, enter the full path to the server status folder (required to be uploaded to each server you want to monitor) - eg. https://www.example.com/status/</small>
Enable/Disable	<input type="checkbox"/> Tick to disable this server

04-add-server-1.png

Server Details

Module	PUQ Mikrotik VPN <input type="button" value="Test Connection"/>
✓ Connection successful. Some values have been auto-filled.	
Username	admin
Password
Access Hash	
Secure	<input checked="" type="checkbox"/> Tick to use SSL Mode for Connections
Port	443 <input type="checkbox"/> Override with Custom Port

05-add-server-2.png

Step 5: Create product in WHMCS

Navigate to **System Settings** → **Products/Services** → **Create a New Product**

Select the **PUQ Mikrotik VPN** module in the Module settings section.

Details
Pricing
Module Settings
Custom Fields
Configurable Options
Upgrades
Free Domain
Cross-sells
Other
Links

Module Name

Server Group

License key success: 2026-12-29T16:51:23+01:00

Mikrotik & Bandwidth

Comment prefix

Mikrotik profile

Upload (Mbs/s)

Download (Mbs/s)

History

Save history (days)

Number of days to keep usage statistics in WHMCS

User

Username rule

Username template using macros.

Base macros:
{client_id} - Client ID
{service_id} - Service ID

Random macros:
{random_digit_x} - Random digits, where x is length
 (example: {random_digit_4})
{random_letter_x} - Random letters (A-Z, a-z), where x is length
 (example: {random_letter_6})

Date & time macros:
{unixtime}, {year}, {month}, {day}, {hour}, {minute}, {second}

Example:
{client_id}-{service_id}-{random_digit_4}

Password rule

Password generation rule in format length:charset.

Example:
12:1234567890
 This will generate a 12-character password using the provided characters.

06-whmcs-setup.png

Email Template

(puqMikrotikVPN notification traffic limit)

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Creating the email template

Navigate to **System Settings** → **Email Templates** → **Create New Email Template**

This template is used to notify the customer when the remaining traffic falls below the threshold configured in the product settings ("Notification traffic remainder less than X GB").

Template configuration

Parameter	Value
Email Type	Product/service
Unique Name	puqMikrotikVPN notification traffic limit

Email subject

Traffic less than `{notification_traffic_remainder}` GB - `{username}`

Email body

Dear `{client_name}`,

This letter informs you that the traffic limit of the service is coming to an end.

Product/Service: `{service_product_name}`

Due Date: `{service_next_due_date}`

Username: `{username}`

Left traffic: `{traffic_balance_gb}` GB

After renewing the service, `{traffic_billingcycle_gb}` GB will be automatically added.

`{signature}`

Available template variables

The following custom variables are passed to the email template by the module:

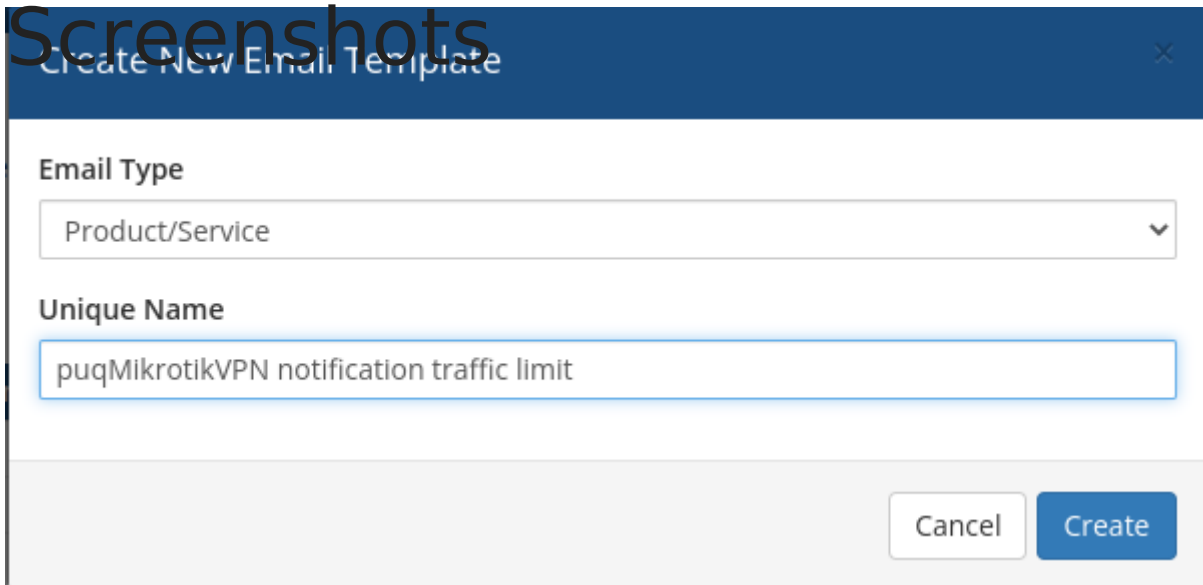
Variable	Description	Example
<code>{username}</code>	VPN account username	mikrotik-user-42
<code>{notification_traffic_remainder}</code>	Traffic threshold configured in product settings (GB)	5
<code>{traffic_balance_gb}</code>	Remaining traffic balance for the customer (GB)	4.2
<code>{traffic_billingcycle_gb}</code>	Traffic that will be added on the next billing cycle (GB)	100

In addition, all standard WHMCS product/service merge fields are available (e.g. `{client_name}`, `{service_product_name}`, `{service_next_due_date}`, `{signature}`).

Note: Notifications are sent automatically during the WHMCS cron execution

when remaining traffic falls below the threshold configured in the product settings.

Screenshots



Create New Email Template

Email Type

Product/Service

Unique Name

puqMikrotikVPN notification traffic limit

Cancel Create



07-email-



template-1.png


















Subject:




Traffic less than {\$notification_traffic_remainder} GB - {\$username}

File ▾ Edit ▾ View ▾ Insert ▾ Format ▾ Table ▾ Help ▾

Paragraph ▾ Verdana ▾ 11pt ▾ **B** *I* ~~S~~ U A ▾ **A** ▾  

 ▾  ▾

         ▾ |  |    |  |   | 


Dear {\$client_name},

This letter informs you that the traffic limit of the service is coming to an end.

Product/Service: **{\$service_product_name}**
Due Date: **{\$service_next_due_date}**

Username: **{\$username}**
Left traffic: **{\$traffic_balance_gb} GB**
After renewing the service, **{\$traffic_billingcycle_gb} GB** will be automatically added.

{\$signature}

P 48 WORDS POWERED BY TINYMCE 

08-email-template-2.png

Email Template (puqMikrotikVPN Suspension Notification traffic limit)

Mikrotik VPN module **WHMCS**

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Creating the email template

Navigate to **System Settings** → **Email Templates** → **Create New Email Template**

This template is used to notify the customer that the VPN account has been **suspended on the Mikrotik router** because the traffic balance reached zero or below. The traffic limit will be restored on the next billing cycle.

Template configuration

Parameter	Value
Email Type	Product/service
Unique Name	puqMikrotikVPN Suspension Notification traffic limit

Email subject

Suspension Information - {\$username}

Email body

Dear {\$client_name},

This letter informs you that the VPN account has been suspended due to traffic exhaustion.

The traffic limit will be restored from the next service cycle.

It is also possible to switch to a package with a large amount of traffic.

Product/Service: {\$service_product_name}

Due Date: {\$service_next_due_date}

Username: {\$username}

Left traffic: {\$traffic_balance_gb} GB

After renewing the service, {\$traffic_billingcycle_gb} GB will be automatically added.

{\$signature}

Available template variables

The same custom variables as in the traffic-limit notification template are available:

Variable	Description
<code>{username}</code>	VPN account username
<code>{traffic_balance_gb}</code>	Remaining traffic balance (GB) — normally zero or below when this template is sent
<code>{traffic_billingcycle_gb}</code>	Traffic that will be added on the next billing cycle (GB)

Plus all standard WHMCS product/service merge fields (`{client_name}`, `{service_product_name}`, `{service_next_due_date}`, `{signature}`).

“ **Note:** This email is sent automatically by the module when the VPN account is auto-suspended on the Mikrotik router because the customer's traffic balance has been exhausted.

Add server (Mikrotik router)

Mikrotik VPN module **WHMCS**

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Adding a Mikrotik router to WHMCS

Configure a Mikrotik router as a server within WHMCS using the PUQ Mikrotik VPN module.

Navigate to **System Settings** → **Servers** → **Add New Server**

Step 1: General settings

Enter the correct **Name** and **Hostname** for your Mikrotik router.

- **Name** — an internal identification for the server (e.g. "My great Mikrotik router")
- **Hostname** — a resolvable domain pointing to the router's IP address (e.g. `vpn.mydomain.com`)

If your Mikrotik API-SSL service listens on a non-standard port, enter it in the **Port** field. Check the **Secure** checkbox (the module talks to the router through API-SSL).

Name	<input type="text" value="vpn-████████.pl"/>
Hostname	<input type="text" value="vpn-████████.pl"/>
IP Address	<input type="text"/>
Assigned IP Addresses (One per line)	<div style="border: 1px solid #ccc; padding: 5px;"><p>192.168.222.14 192.168.222.15 192.168.222.16 192.168.222.17 192.168.222.18 192.168.222.19 192.168.222.20 192.168.222.21</p></div>
Monthly Cost	<input type="text" value="0.00"/>
Datacenter/NOC	<input type="text"/>
Maximum No. of Accounts	<input type="text" value="200"/>
Server Status Address	<input type="text"/> To display this server on the server status page, enter the full path to the server status folder (required to be uploaded to each server you want to monitor) - eg. https://www.example.com/status/
Enable/Disable	<input type="checkbox"/> Tick to disable this server

04-add-server-1.png

Step 2: Assigned IP addresses

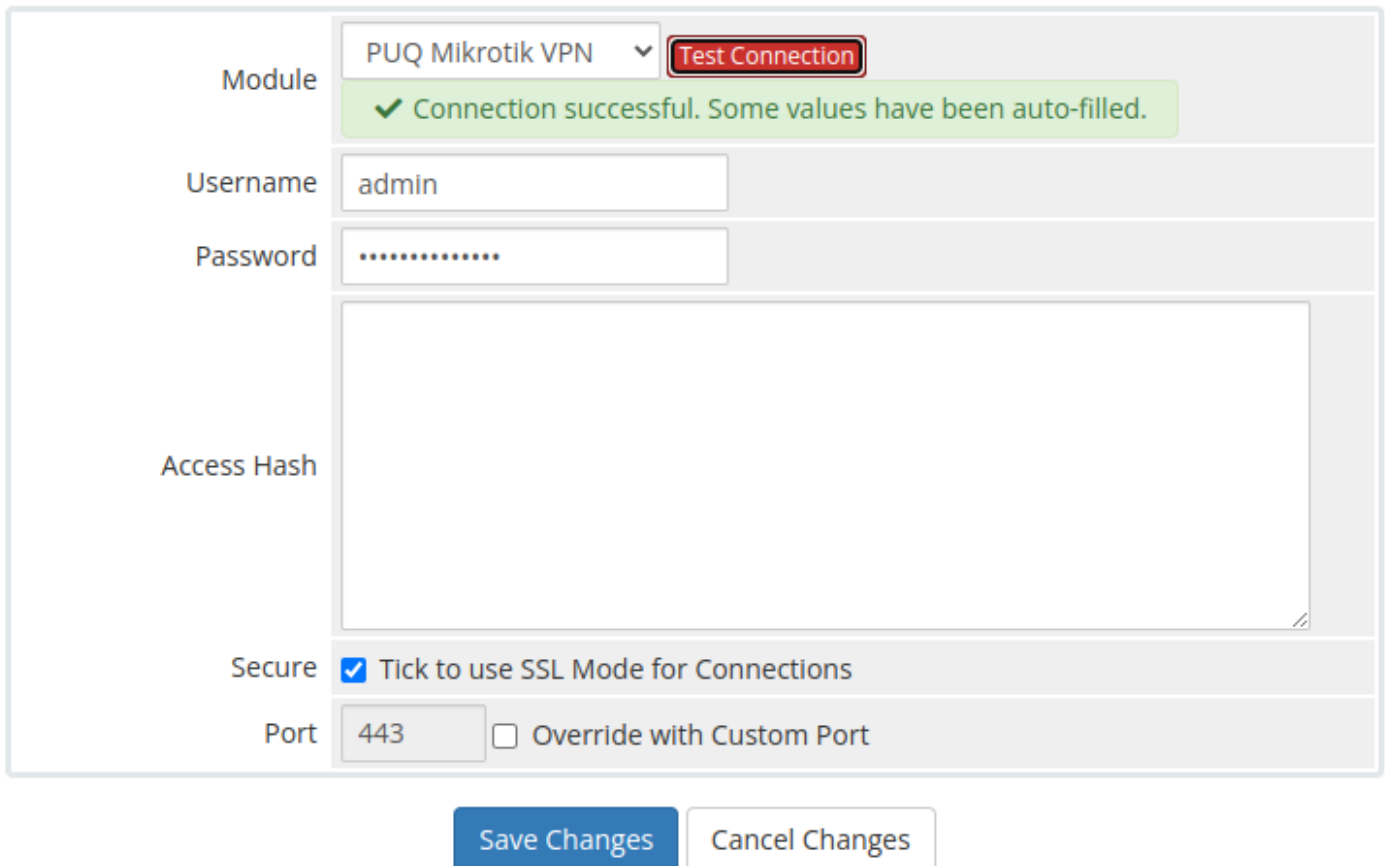
In the **Assigned IP Addresses** field, enter the list of IP addresses that will be distributed to users. These IPs are consumed sequentially as new VPN accounts are provisioned. Both private and public IP addresses are supported.

Step 3: Module settings

1. In the Server Details section, select the **PUQ Mikrotik VPN** module from the dropdown
2. Enter valid Mikrotik router credentials:
 - **Username** — Mikrotik user with API access (typically with the `full` group or custom group that includes `api`, `write`, `read`, `policy`)
 - **Password** — the corresponding password
3. Click **Test connection** to verify the connection is working correctly

The test connection verifies that the module can reach the Mikrotik API-SSL service and authenticate with the provided credentials.

Server Details



The screenshot shows a configuration form for the 'PUQ Mikrotik VPN' module. The 'Module' dropdown is set to 'PUQ Mikrotik VPN' and a 'Test Connection' button is highlighted. A green message box states: '✓ Connection successful. Some values have been auto-filled.' The 'Username' field contains 'admin' and the 'Password' field is masked with dots. The 'Access Hash' field is empty. The 'Secure' checkbox is checked with the label 'Tick to use SSL Mode for Connections'. The 'Port' field is set to '443' and the 'Override with Custom Port' checkbox is unchecked. At the bottom, there are 'Save Changes' and 'Cancel Changes' buttons.

05-add-server-2.png

“ **Important:** The Mikrotik user must have sufficient privileges to create and manage PPP secrets, read traffic counters and reset them. The module uses the Mikrotik API only — SSH access is not used.

Product Configuration

Mikrotik VPN module **WHMCS**

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Add new product to WHMCS

Navigate to **System Settings** → **Products/Services** → **Create a New Product**

Select the **PUQ Mikrotik VPN** module in the Module settings section.

Configuration parameters

Parameter	Description
License key	A pre-purchased license key for the PUQ Mikrotik VPN module. The license must be active for correct operation. After saving, the verification status is displayed below the field.
Comment PREFIX	Prefix applied to the VPN user comments on the Mikrotik router. Helps identify which PPP secrets belong to WHMCS-managed accounts.
Profile	PPP secret profile on the Mikrotik router. The dropdown is populated with the profiles configured on the selected server.
Service	Available VPN service on the Mikrotik router (e.g. <code>[any]</code> , <code>[pptp]</code> , <code>[l2tp]</code> , <code>[pppoe]</code> , etc.).
Bandwidth Download	Download speed limit in M/s applied to the VPN account.
Bandwidth Upload	Upload speed limit in M/s applied to the VPN account.
Traffic (One Time / Monthly / Quarterly / Semi-Annual / Annual / Biennial / Triennial)	Packet of traffic added per billing cycle (in GB). Values match the WHMCS billing cycle of the product.

Parameter	Description
Save traffic history (days)	Number of days to retain daily traffic usage statistics. Older records are deleted automatically during cron execution.
User notification traffic limit email template	Email template sent when remaining traffic falls below the threshold configured in the next field. Select a Product/service email template (created manually in WHMCS).
Notification traffic remainder less than X GB	Traffic threshold (in GB) that triggers the notification email.
Suspend exceeding traffic limit email template	Email template sent when the traffic balance reaches zero or below and the VPN account is automatically suspended on the router.
Link to instruction	Optional URL to a client-facing setup manual. Displayed as a button in the client area. Leave empty to hide the button.
Support PPTP	Toggles the display of PPTP connection details (server address, credentials) in the client area.
Support L2TP	Toggles the display of L2TP connection details in the client area.
L2TP IPSec PSK key	The IPSec pre-shared key for L2TP; displayed in the client area when L2TP support is enabled.
Statistics collection frequency	The frequency at which traffic usage statistics are collected by the WHMCS cron. Also checks the traffic balance and disables the VPN account on the Mikrotik router when the balance is exhausted.

Important notes

⚠ **Warning:** This module works only as a **server module** (Products/Services). It cannot be used as an add-on product. Attempting to use it with add-on products will result in an error message.

⚠ **Post-paid traffic billing (v3.0+):** The module no longer exposes its own traffic package selector. Traffic consumption is reported back to WHMCS using standard metrics, so you can build any post-paid traffic pricing model directly in the WHMCS product configuration.

“ **Opposite upload/download values on Mikrotik:** the module intentionally registers opposite values on the router compared to the WHMCS settings, because Mikrotik measures incoming traffic while VPN clients experience outgoing traffic.

Screenshots

Edit Product

Details Pricing **Module Settings** Custom Fields Configurable Options Upgrades Free Domain Cross-sells Other Links

Module Name: PUQ Mikrotik VPN
Server Group: None

License key: [redacted] success: 2026-12-29T16:51:23+01:00

Mikrotik & Bandwidth

Comment prefix
whmcs2

Mikrotik profile
default

Upload (Mbs/s)
10

Download (Mbs/s)
10

History

Save history (days)
32
Number of days to keep usage statistics in WHMCS

User

Username rule
{client_id}-{service_id}{random_digit_5}
Username template using macros.

Base macros:
{client_id} - Client ID
{service_id} - Service ID

Random macros:
{random_digit_x} - Random digits, where x is length
(example: {random_digit_4})
{random_letter_x} - Random letters (A-Z, a-z), where x is length
(example: {random_letter_6})

Date & time macros:
{unixtime}, {year}, {month}, {day}, {hour}, {minute}, {second}

Example:
{client_id}-{service_id}-{random_digit_4}

Password rule
12:123456789QAZWSXEDCRFVTGBYHNUJMIKqazwsxedcrfvtgbyhnujmikolp
Password generation rule in format **length:charset**.
Example:
12:123456789Q
This will generate a 12-character password using the provided characters.

09-product-configuration.png

Client Area

Link to instruction

A link to the instruction will be reflected in the client area.

Show password

Defines how the password is displayed in the client area

L2TP

Enable L2TP

PSK Key

Pre-shared key for L2TP connection

Custom HTML

Custom HTML content for L2TP protocol

SSTP

Enable SSTP

Custom HTML

Custom HTML content for SSTP protocol

PPTP

Enable PPTP

Custom HTML

Custom HTML content for PPTP protocol

OpenVPN

Enable OpenVPN

Profile download URL

URL to download OpenVPN profile

Custom HTML

Custom HTML content for OpenVPN protocol

17-product-configuration-2.png