

# Hotspot using MikroTik

This guide walks you through configuring a MikroTik router to work with GATE as an external captive portal. Users register by entering their email and name through the web portal, with information stored in GATE's database (AAA server) and sent back to the MikroTik device. The MikroTik then sends an Access-Request to the server, which responds with an Access-Accept, granting internet access.

## Hardware & Software Requirements

- **Model:** RB952Ui-5ac2nD
- **Architecture:** mipsbe
- **Firmware:** 7.18.2

## Configuration Overview

This configuration involves several key components:

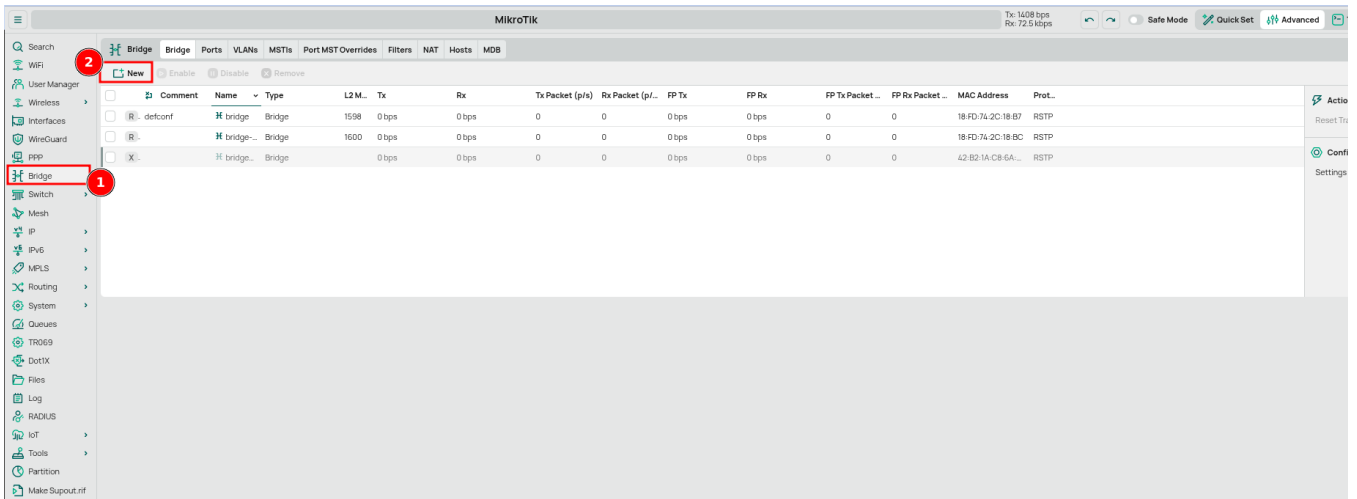
1. **Bridge Setup** - Creates a unified network interface
2. **Network Configuration** - IP addressing, DHCP, and firewall rules
3. **RADIUS Integration** - Connects to GATE's authentication server
4. **Hotspot Configuration** - Portal pages, user profiles, and server setup

## Bridge for Hotspot

The first step is creating a bridge interface to connect WiFi and Ethernet interfaces into a single network.

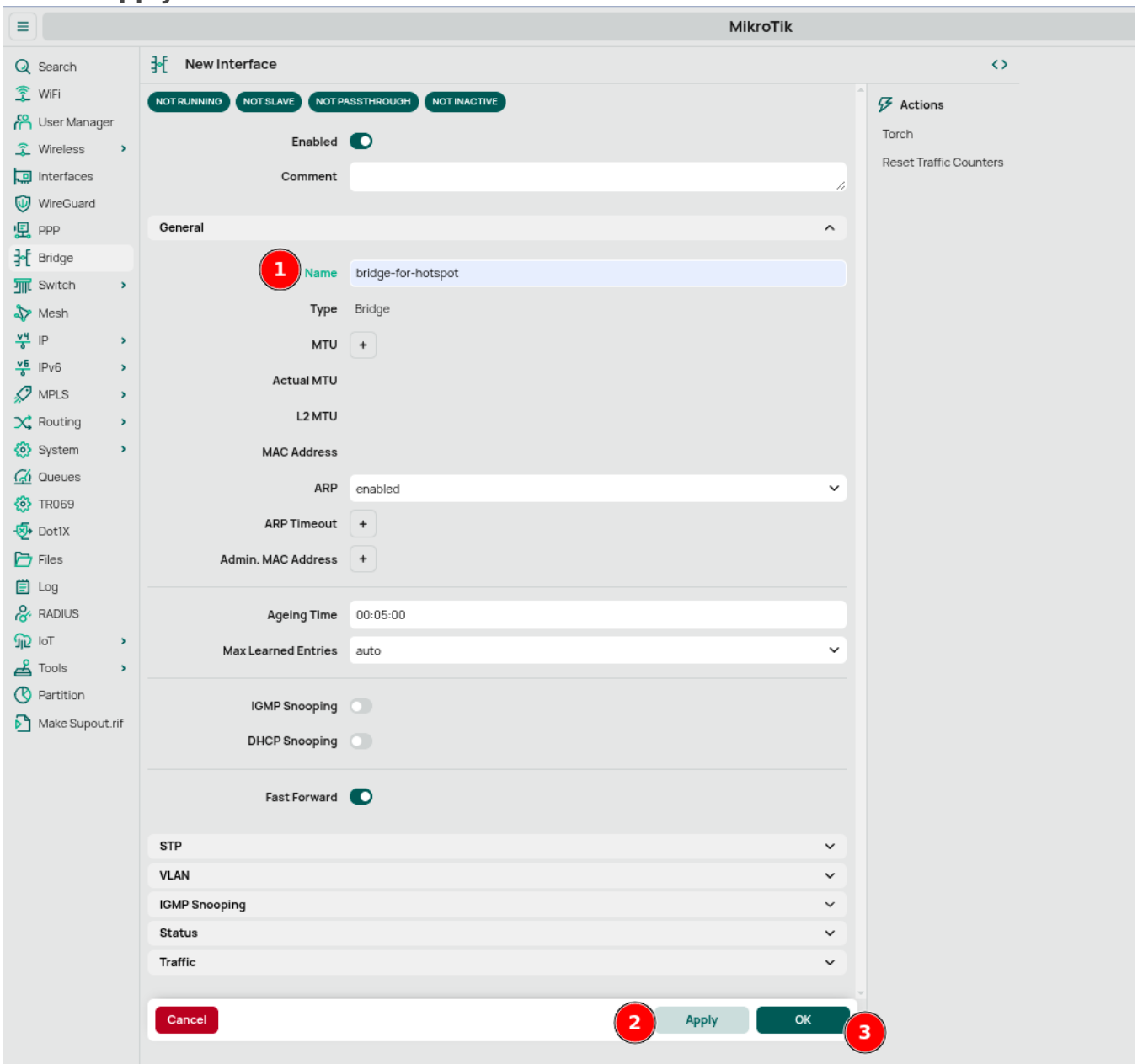
## Creating a Bridge Interface

1. Navigate to **Bridge** in the left menu and click **New**



2. In the new interface form:

- Set **Name** to "bridge-for-hotspot"
- Leave other settings at default values
- Click **Apply** then **OK**



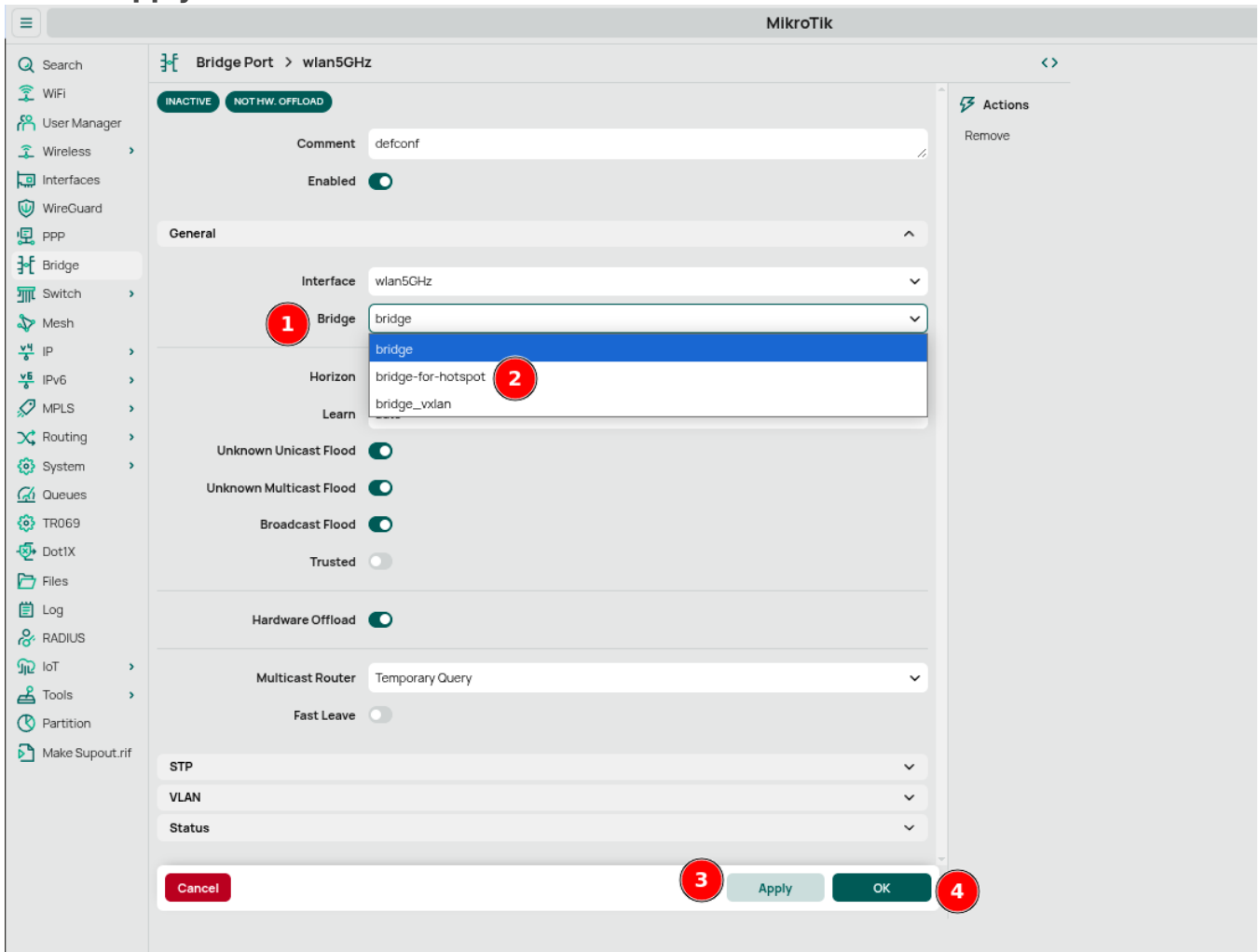
The bridge will connect your interfaces for hotspot functionality, allowing traffic to flow between interfaces and creating a unified network.

# Assign WiFi Interfaces

Next, assign WiFi interfaces to the bridge to allow wireless clients to connect.

## Adding WiFi Interfaces to the Bridge

1. Go to **Bridge** then click the **Ports** tab
2. For each wireless interface (wlan2GHz and wlan5GHz):
  - Click on the interface
  - From the **Bridge** dropdown, select "bridge-for-hotspot"
  - Click **Apply** then **OK**



This creates a unified network for hotspot traffic, with all wireless clients connecting through these interfaces.

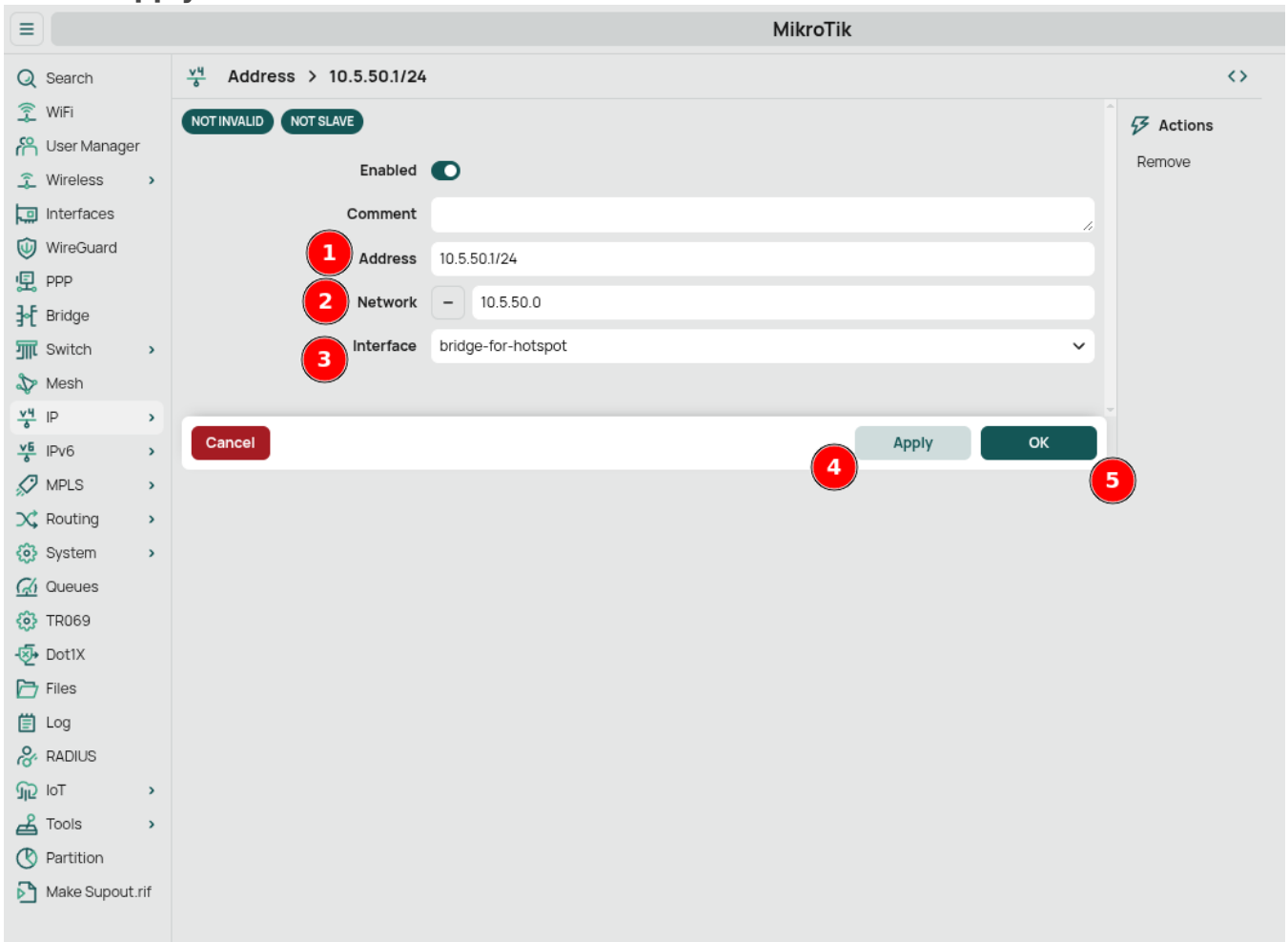
# Network Configuration

Configure network settings to establish the foundation for your hotspot and ensure proper communication.

## IP Address Assignment

First, assign an IP address to the bridge interface:

1. Go to **IP** → **Addresses**
2. Click **New**
3. Configure the following:
  - **Address:** 10.5.50.1/24
  - **Network:** 10.5.50.0
  - **Interface:** "bridge-for-hotspot"
  - Click **Apply** then **OK**

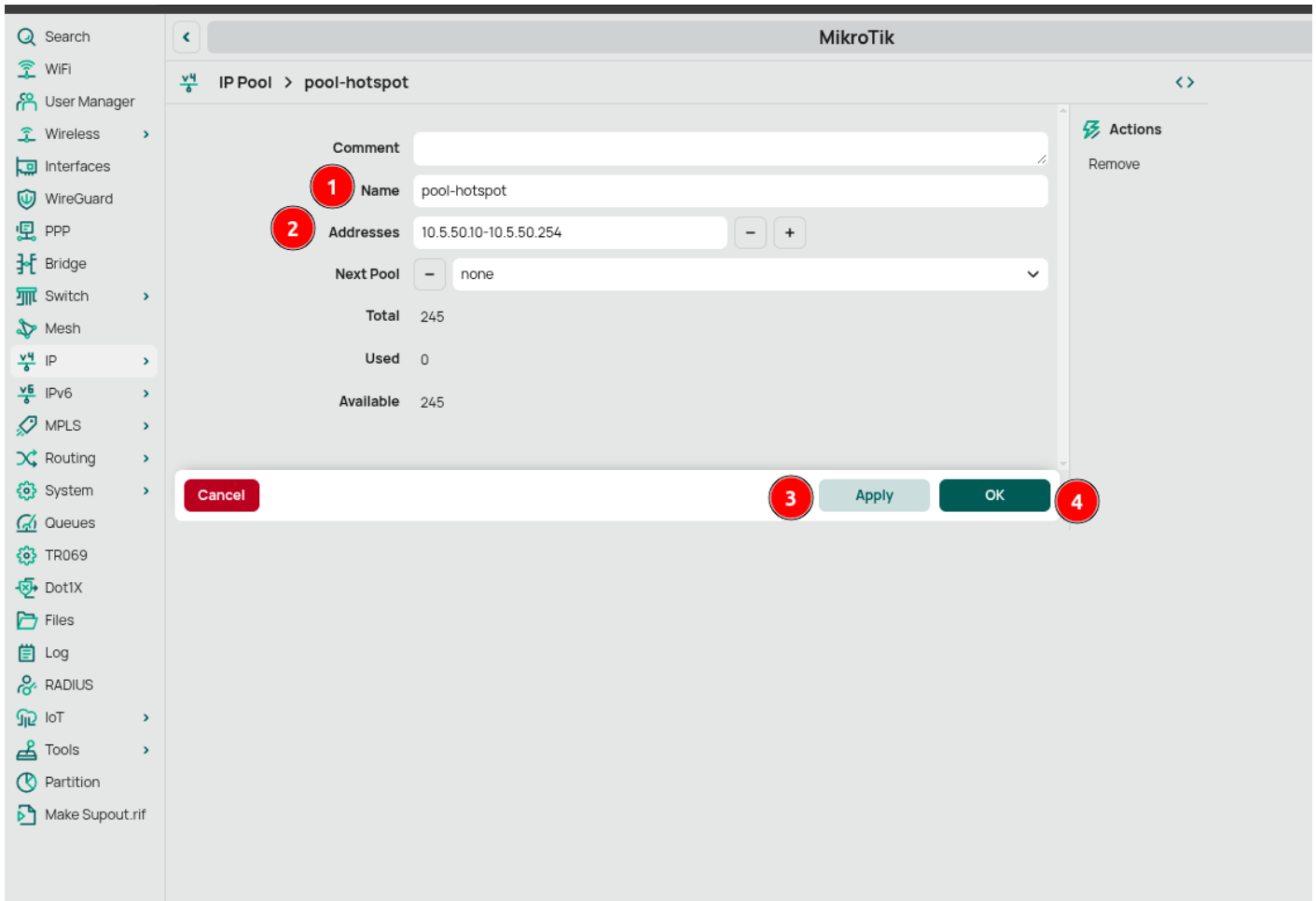


This IP address (10.5.50.1) will serve as the gateway for all devices connecting to your hotspot.

## IP Pool Configuration

Create an address pool for the hotspot:

1. Go to **IP** → **Pool**
2. Click **New**
3. Configure:
  - **Name:** pool-hotspot
  - **Addresses:** 10.5.50.10-10.5.50.254
  - Click **Apply** then **OK**

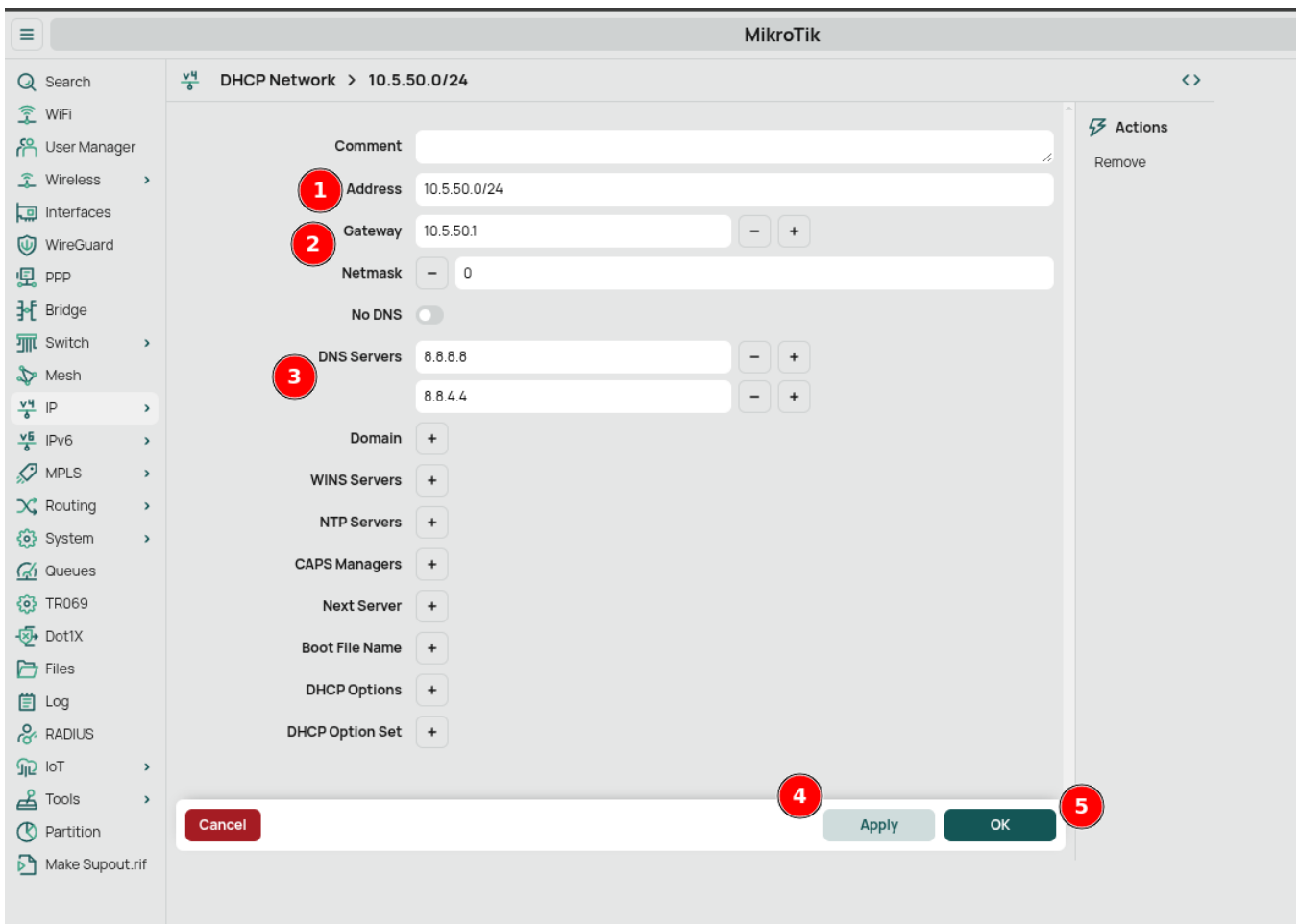


## DHCP Server Setup

Configure the DHCP server to automatically assign IP addresses to clients.

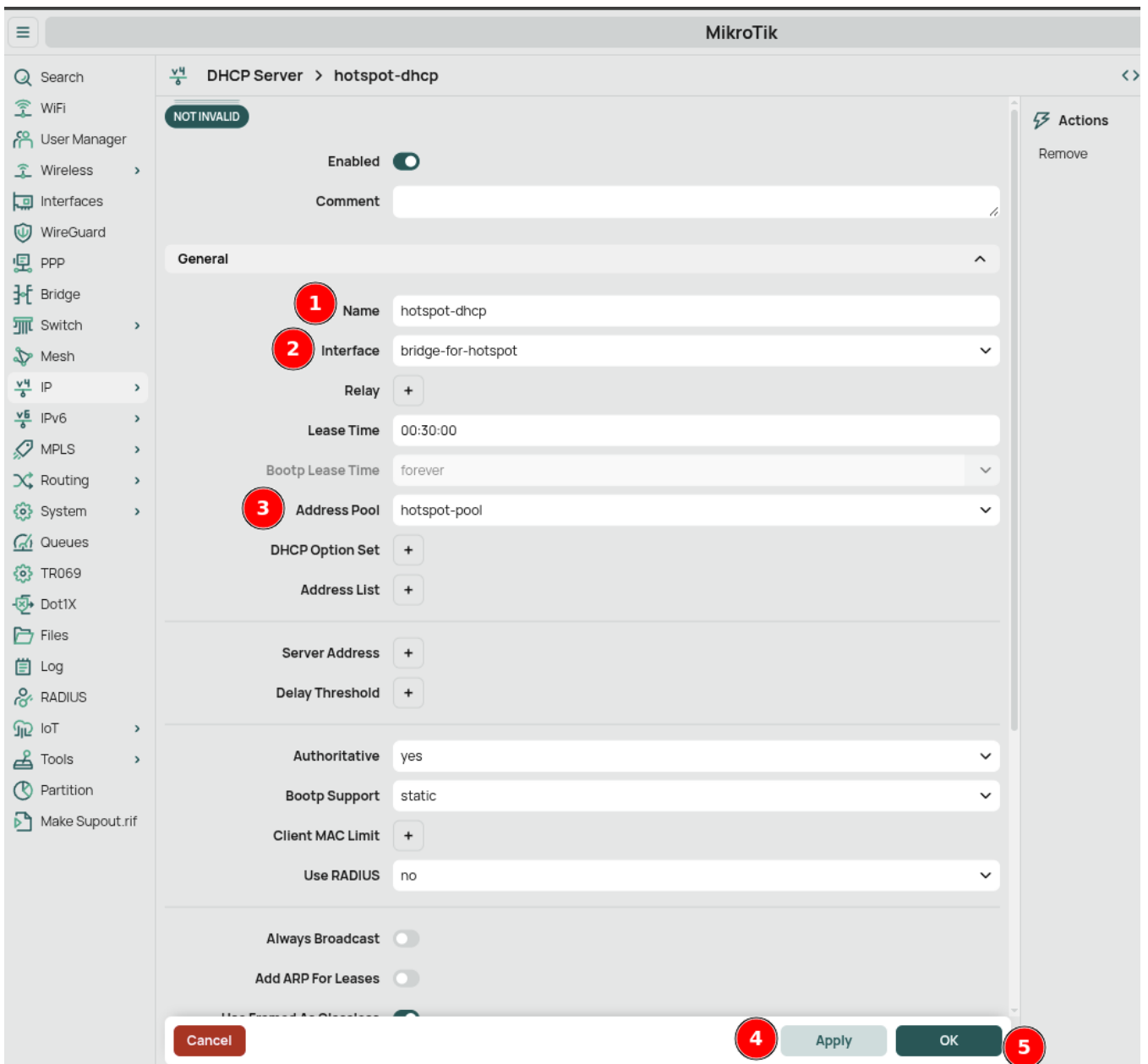
### DHCP Networks

1. Go to **IP** → **DHCP Server** → **Networks** tab
2. Click **New**
3. Configure the network:
  - **Address:** 10.5.50.0/24
  - **Gateway:** 10.5.50.1
  - **DNS Servers:** 8.8.8.8,8.8.4.4 (Google DNS)
  - Click **Apply** then **OK**



## DHCP Server

1. Go to **IP** → **DHCP Server** → **DHCP** tab
2. Click **New**
3. Configure:
  - **Name:** "hotspot-dhcp"
  - **Interface:** "bridge-for-hotspot"
  - **Address Pool:** "pool-hotspot"
  - Leave other settings at defaults
  - Click **Apply** then **OK**

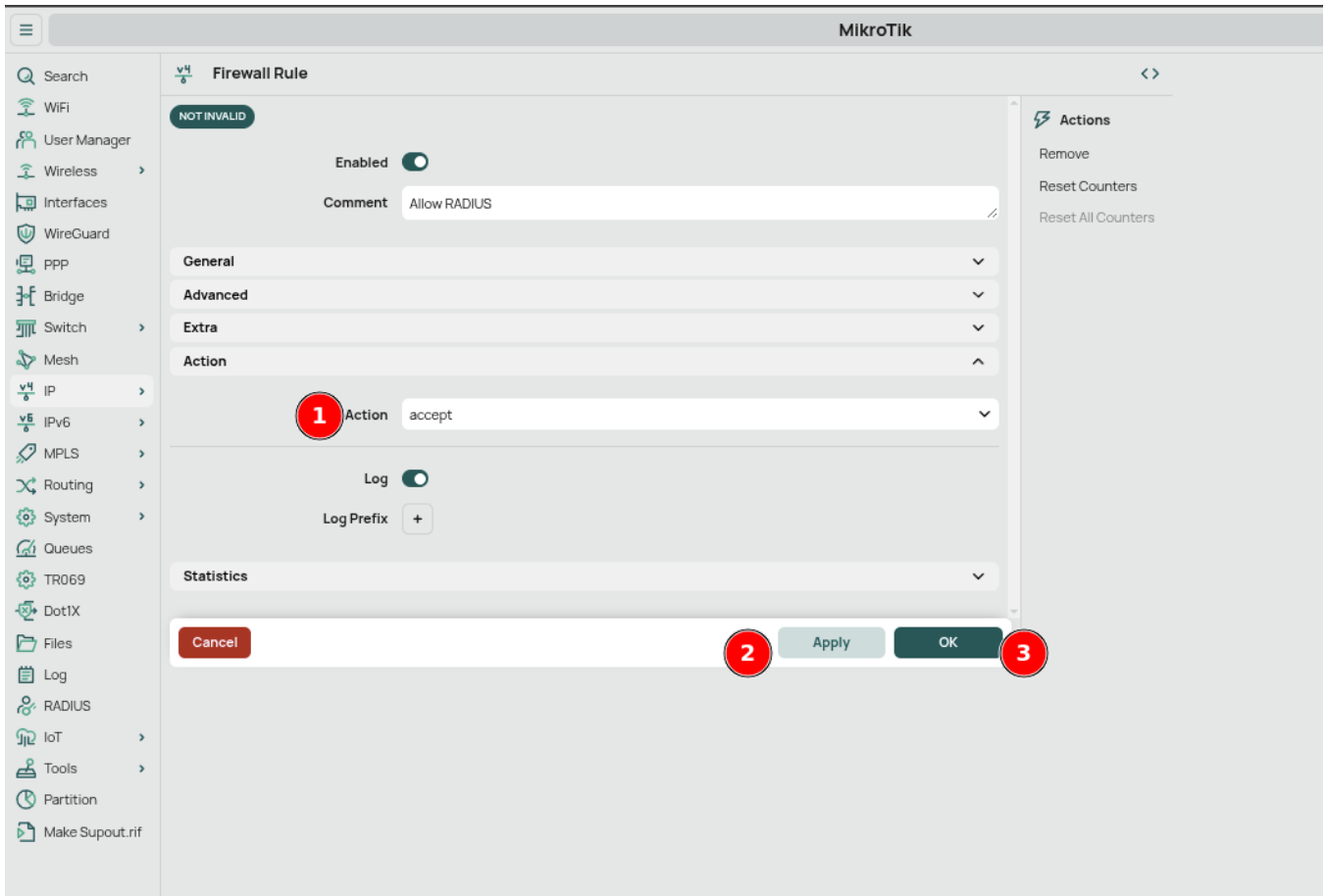


The DHCP server will now assign IP addresses to clients from the specified pool.

## Firewall Configuration

Create a firewall rule to allow RADIUS authentication traffic:

1. Go to **IP** → **Firewall** → **Filter Rules** tab
2. Click **New**
3. Under **General** tab:
  - **Chain:** input
  - **Protocol:** udp
  - **Dst. Port:** 1812, 1813, 3799
4. Under **Action** tab:
  - **Action:** accept
5. Click **Apply** then **OK**



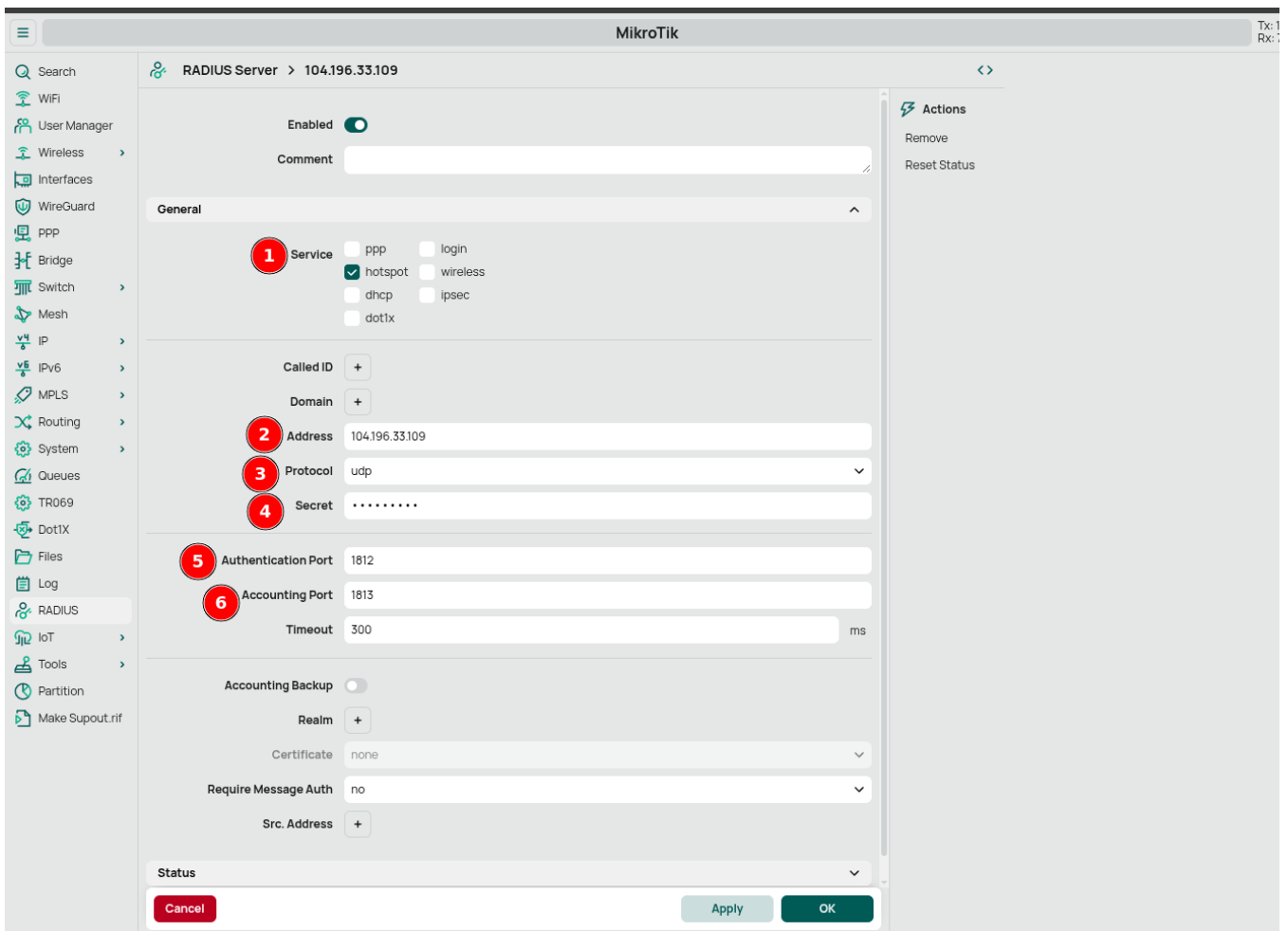
This rule allows communication between your MikroTik router and GATE's RADIUS server.

# RADIUS Configuration

Configure RADIUS settings to connect to GATE's authentication server.

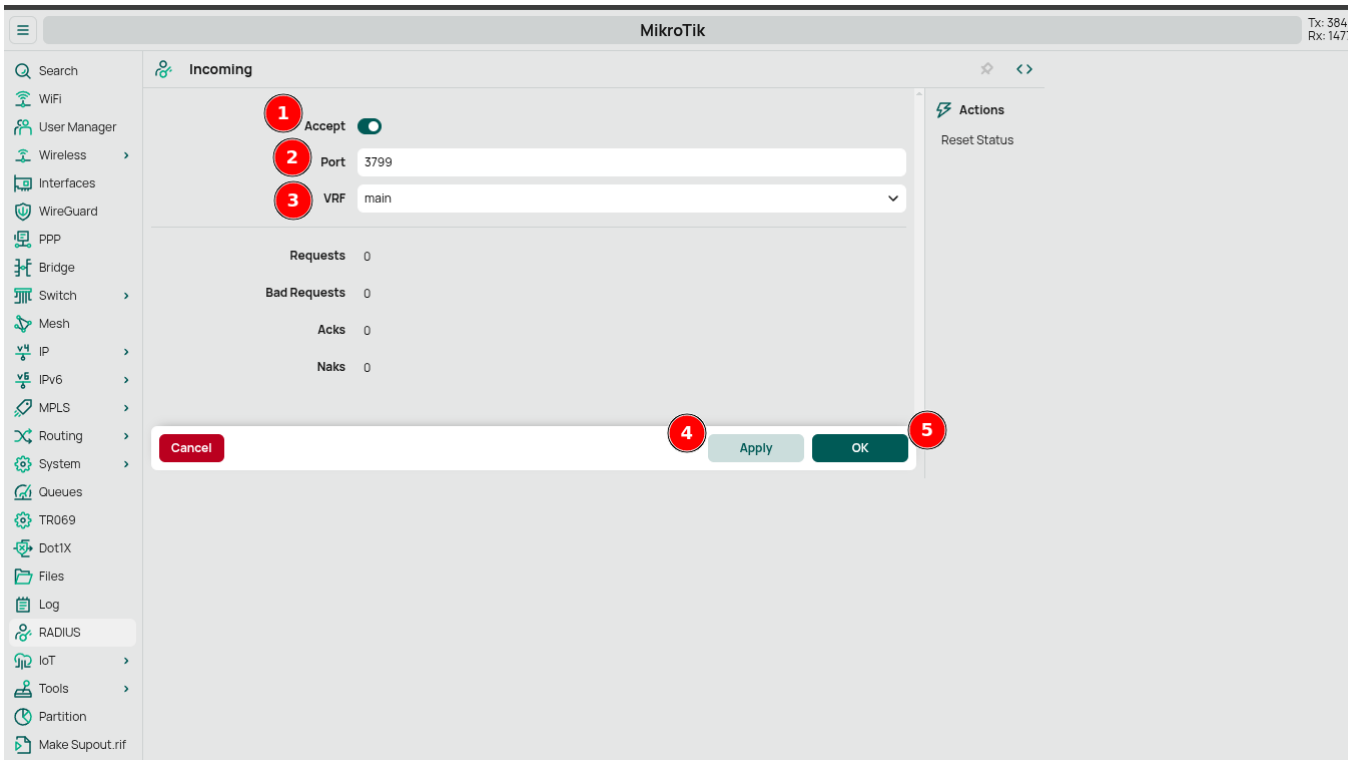
## RADIUS Server Setup

1. Go to **RADIUS** and click **New**
2. Configure:
  - Under **Service**, enable only **hotspot**
  - **Address**: Enter your GATE server IP address
  - **Secret**: Enter the shared secret password
  - **Authentication Port**: 1812
  - **Accounting Port**: 1813
  - Click **Apply** then **OK**



# RADIUS Incoming Configuration

1. Go to **RADIUS** and click **Incoming**
2. Configure:
  - Enable **Accept** toggle
  - **Port:** 3799
  - **VRF:** Select "main"
  - Click **Apply** then **OK**



## Understanding RADIUS Ports

- **Port 1812** (Authentication): Validates user credentials
- **Port 1813** (Accounting): Sends session data (connection time, data usage)
- **Port 3799** (CoA): Allows dynamic session modification

## Hotspot Configuration

The Hotspot feature provides controlled internet access through a captive portal system integrated with GATE.

## Custom Portal Files

Create custom HTML files for the external captive portal integration:

### Required Files

Create these three files locally with the content below:

#### login.html

```
<!DOCTYPE html>
<html>
<head>
```

```

<title>Redirecting to Registration Portal</title>
<meta http-equiv="refresh" content="0;url=https://gate-dev.zequenze.com/page/demo-
mikrotik/?mac=$(mac)&ip=$(ip)">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
</head>
<body>
  <div style="text-align: center; margin-top: 100px; font-family: Arial, sans-serif;">
    <h2>Redirecting to registration portal...</h2>
    <p>If you are not redirected automatically, please click <a href="https://gate-
dev.zequenze.com/page/demo-mikrotik/?mac=$(mac)&ip=$(ip)">here</a>.</p>
  </div>
</body>
</html>

```

## logout.html

```

<!DOCTYPE html>
<html>
<head>
  <title>Logged Out</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <style>
    body { font-family: Arial, sans-serif; margin: 0; padding: 20px; }
    .container { max-width: 600px; margin: 0 auto; background-color: #f9f9f9; padding: 20px;
border-radius: 5px; text-align: center; }
    .btn { display: inline-block; padding: 10px 20px; background-color: #0078d4; color: white;
text-decoration: none; border-radius: 4px; margin-top: 20px; }
  </style>
</head>
<body>
  <div class="container">
    <h2>You have been logged out</h2>
    <p>Thank you for using our service.</p>
    <p>Session duration: $(uptime)</p>
    <p>Downloaded: $(bytes-in-nice) / Uploaded: $(bytes-out-nice)</p>
    <a href="$(link-login)" class="btn">Login Again</a>
  </div>
</body>

```

```
</html>
```

## redirect.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Redirecting</title>
  <meta http-equiv="refresh" content="0;url=https://gate-dev.zequenze.com/page/demo-
mikrotik/?mac=$(mac)&ip=$(ip)">
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
</head>
<body>
  <div style="text-align: center; margin-top: 100px; font-family: Arial, sans-serif;">
    <h2>Redirecting to registration portal...</h2>
    <p>If you are not redirected automatically, please click <a href="https://gate-
dev.zequenze.com/page/demo-mikrotik/?mac=$(mac)&ip=$(ip)">here</a>.</p>
  </div>
</body>
</html>
```

## File Upload Process

1. Connect to your MikroTik router using an FTP client
2. Navigate to the `/flash` directory
3. Create a new folder (e.g., `myhotspot`)
4. Upload all three HTML files to this folder

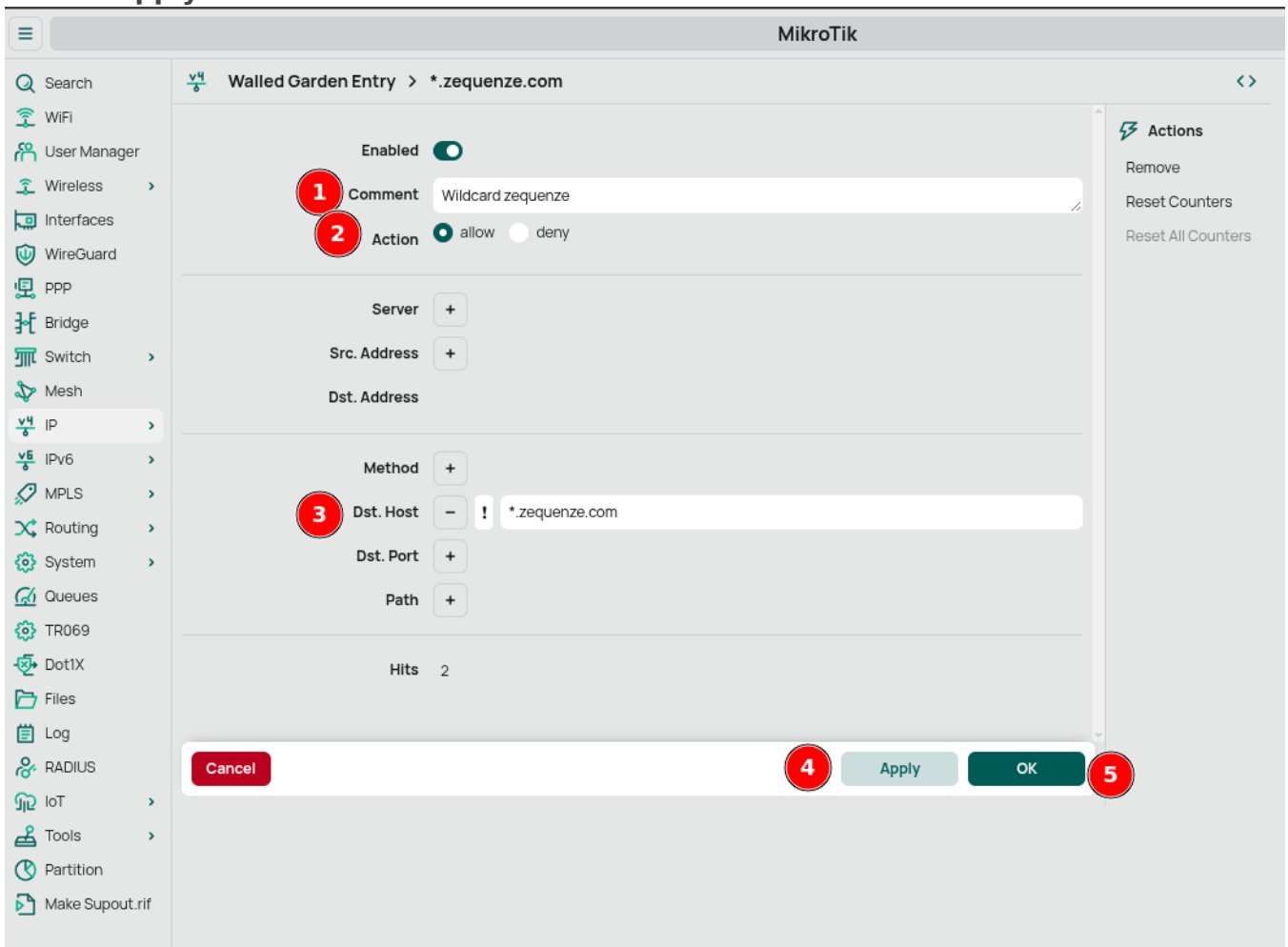
“ **Important:** Use FTP to preserve MikroTik variables like `$(mac)` and `$(ip)`. These variables are automatically replaced with actual values when users access the portal.

## Walled Garden Configuration

Configure the Walled Garden to allow access to GATE's servers without authentication:

1. Go to **IP** → **Hotspot** → **Walled Garden** tab
2. Click **New**
3. Configure:

- **Comment:** "Wildcard zequenze"
- **Action:**
- **Dst. Host:**
- Click **Apply** then **OK**

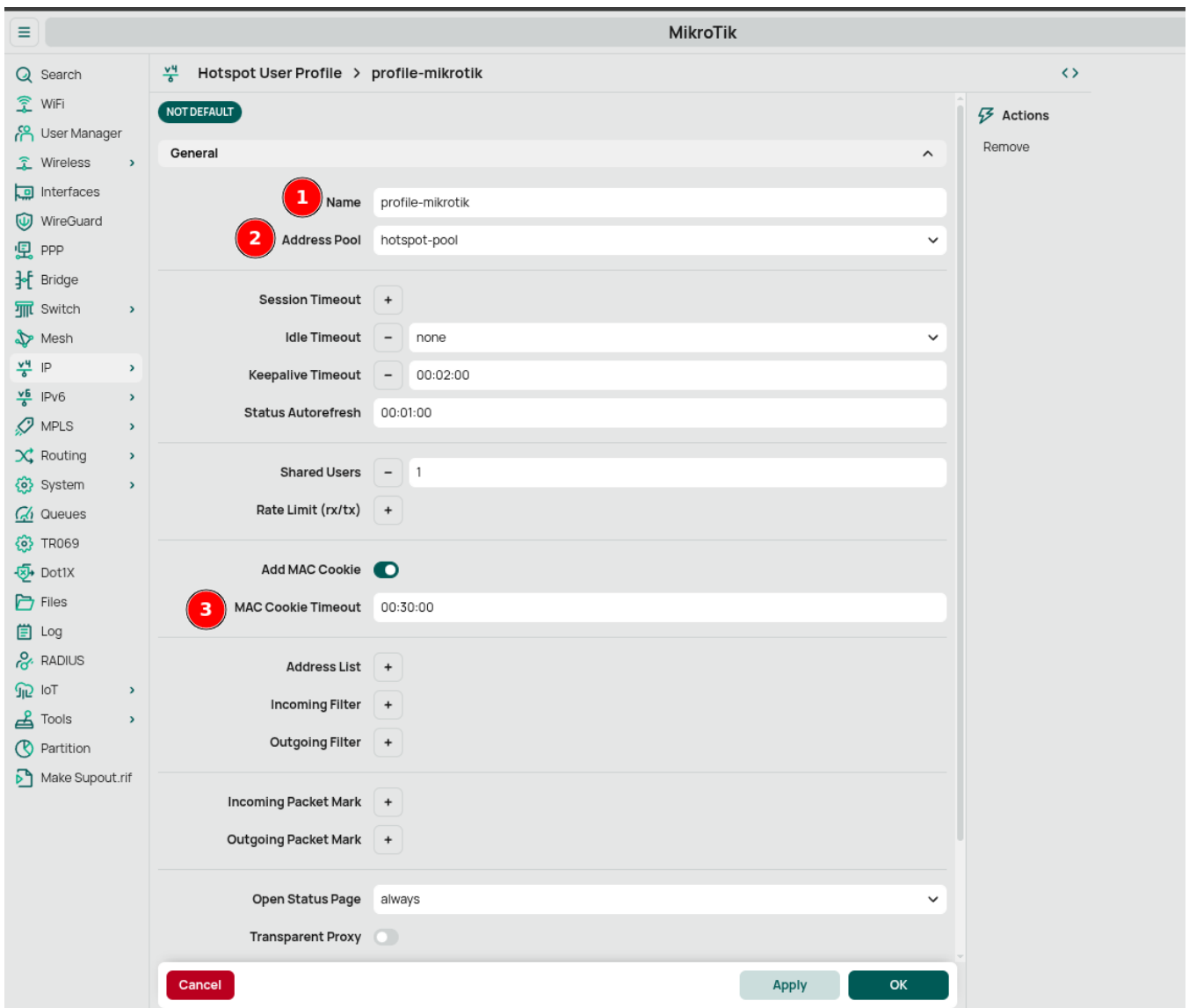


This ensures users can reach GATE's registration page before authentication.

## User Profiles

Create a user profile to define connection parameters:

1. Go to **IP** → **Hotspot** → **User Profiles** tab
2. Click **New**
3. Configure:
  - **Name:** "profile-mikrotik"
  - **Address Pool:** "pool-hotspot"
  - **MAC Cookie Timeout:** "00:30:00" (30 minutes)
  - Click **Apply** then **OK**



# Server Profiles

Configure how the hotspot server operates:

1. Go to **IP** → **Hotspot** → **Server Profiles** tab
2. Click **New**
3. Configure the following sections:

## General Settings:

- **Name:** "Gate-html"
- **DNS Name:** "hotspot.gateway"
- **HTML Directory:** "flash/myhotspot" (path to your uploaded files)

## Login Settings:

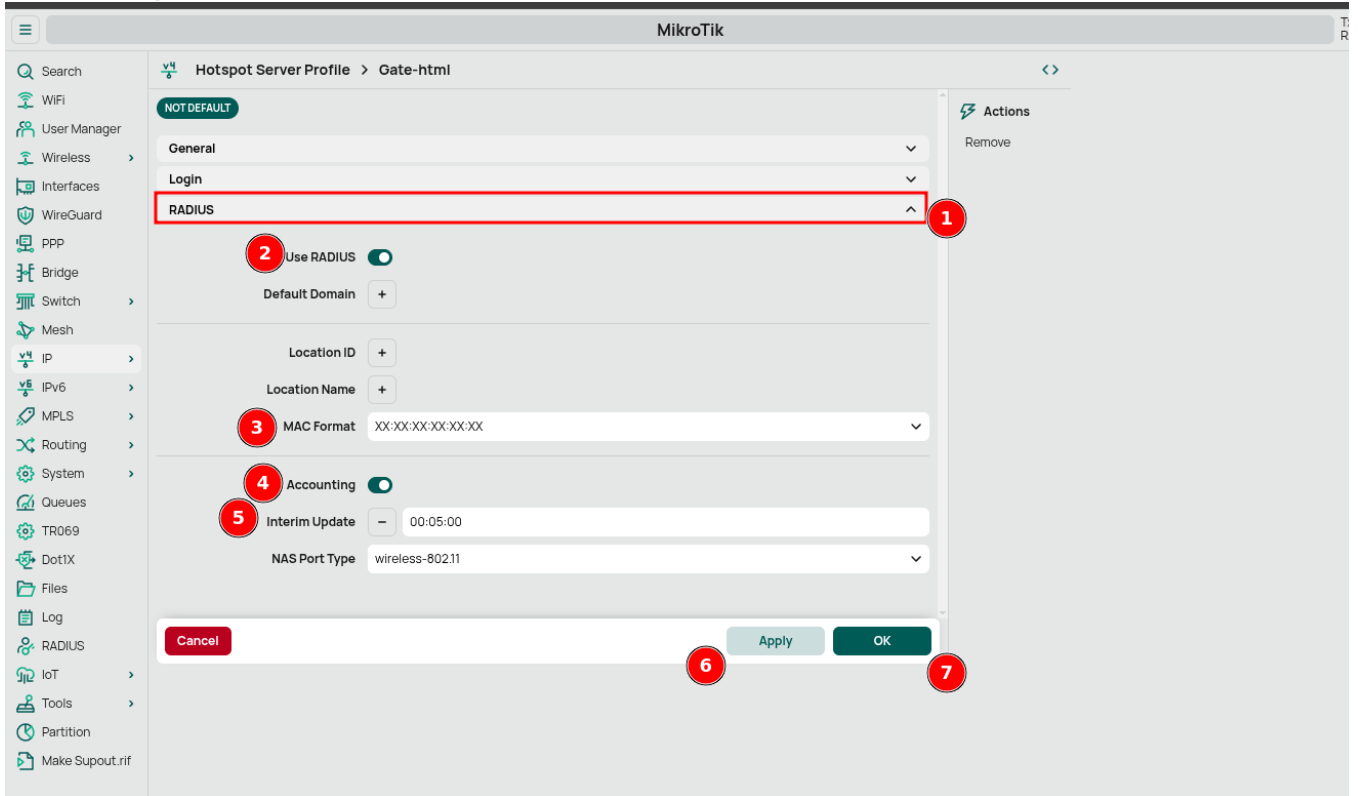
- Enable **HTTP CHAP**
- Enable **HTTP PAP**

## RADIUS Settings:

- Enable **Use RADIUS**
- **MAC Format:** "XX:XX:XX:XX:XX:XX"

- Enable **Accounting**
- **Interim Update:** "00:05:00" (5 minutes)

4. Click **Apply** then **OK**



## Hotspot Server Creation

Create the actual hotspot server:

1. Go to **IP** → **Hotspot** → **Servers** tab
2. Click **New**
3. Configure:
  - Enable the **Enabled** toggle
  - **Name:** "hotspot1"

Revision #8

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Updated 2026-03-05 22:28:03 UTC by ipena@zequenze.com