08. IKEv2

Overview

IKEv2/IPsec is a standards-based VPN protocol with native support in most operating systems. PUQVPNCP uses **strongSwan** as the IKEv2 implementation.

Key advantages:

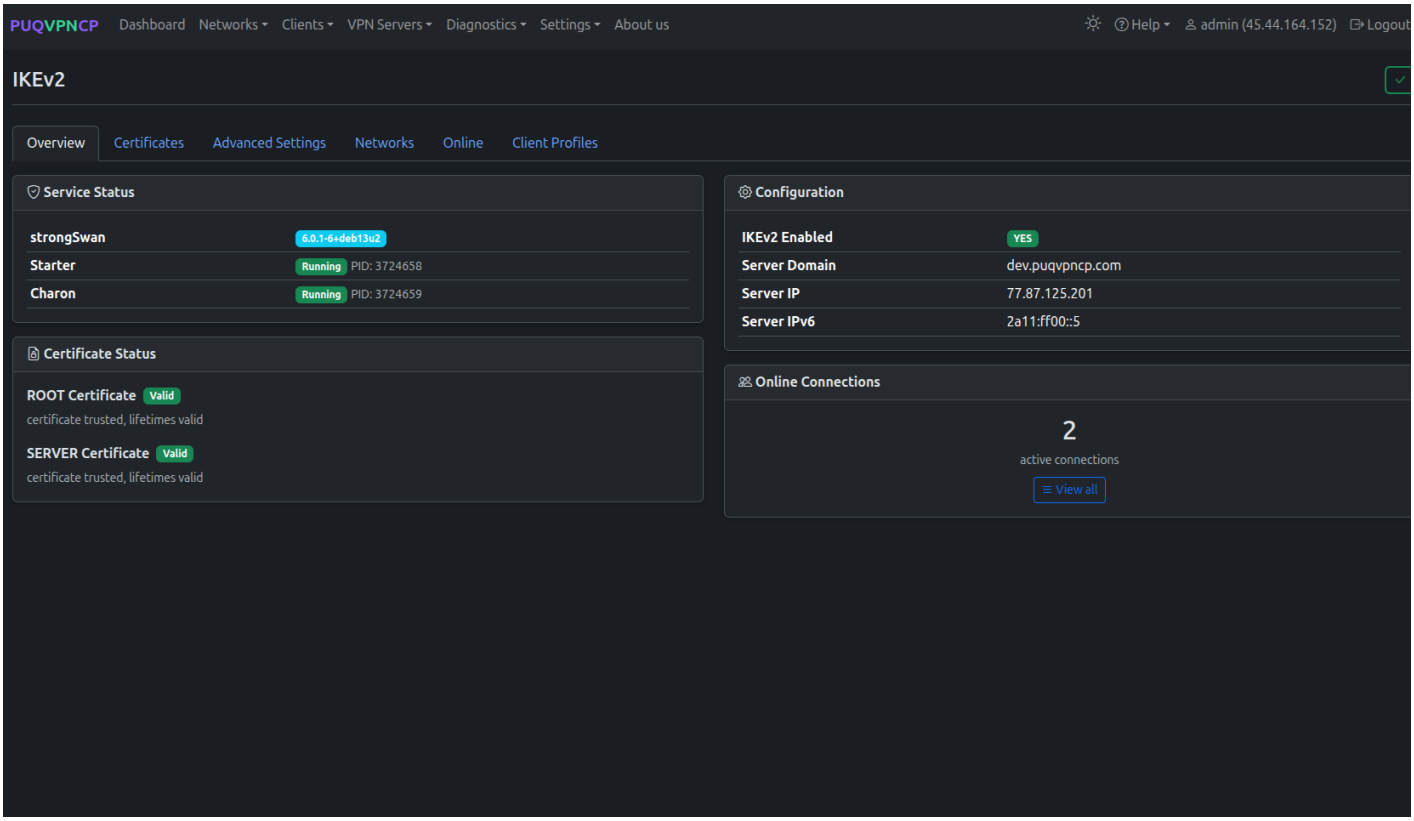
- **No app required** — built into iOS, macOS, Windows, Android, Linux
- **MOBIKE support** — seamless switching between Wi-Fi and cellular without reconnection
- **Strong security** — certificate-based authentication with modern ciphers
- **Automatic reconnection** — reconnects transparently after network changes

IKEv2 is the best choice when you want **zero-install VPN** for end users — they can configure it using only the native OS settings.

> **Requirement:** `strongswan` and `strongswan-pki` packages must be installed.

Global Settings

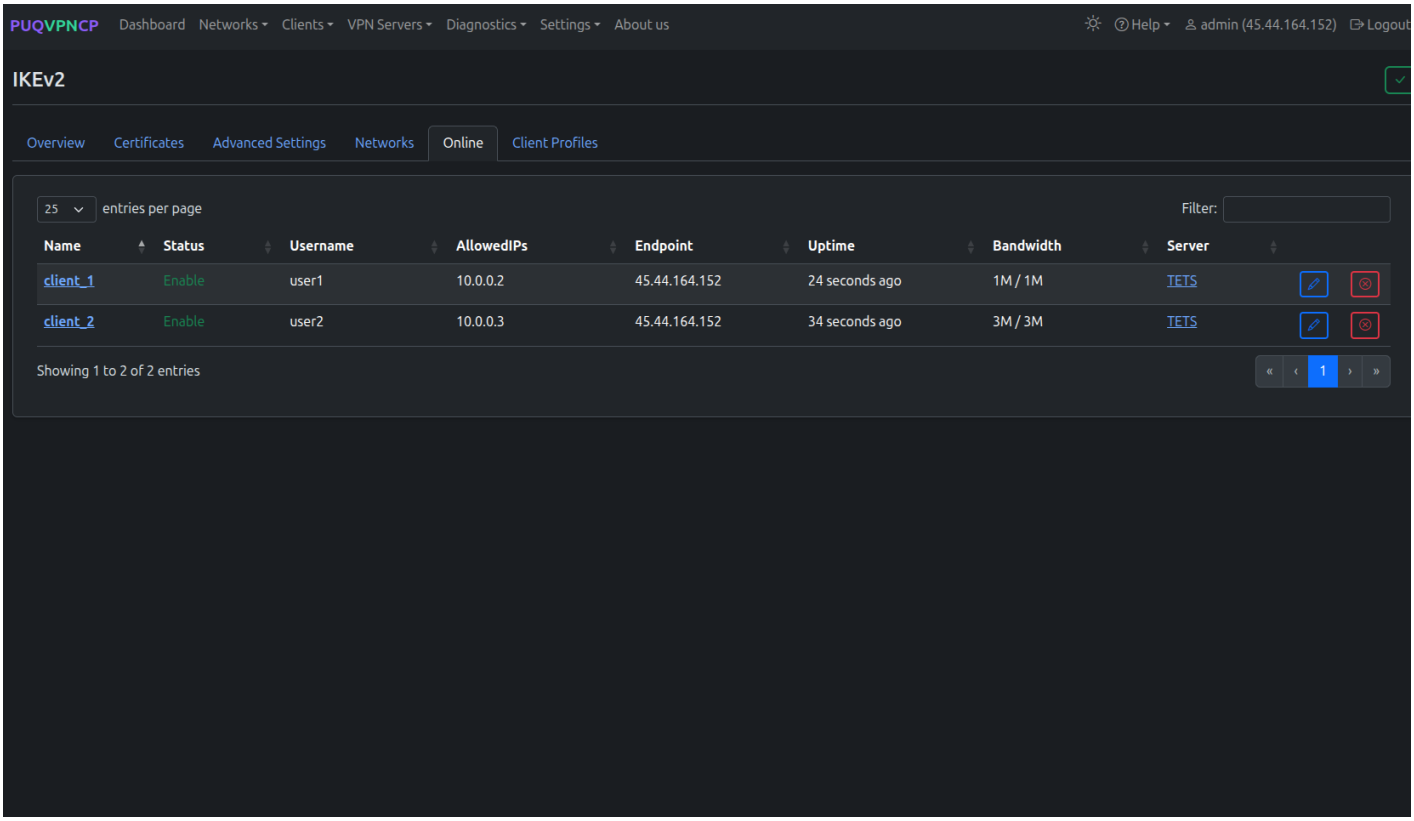
Navigate to **VPN Servers > IKEv2** to configure global IKEv2 settings.



IKEv2 global settings

Setting	Description
Enabled	Enable/disable IKEv2 globally
Ports	500 / 4500 UDP (standard IPsec ports)

Advanced Settings



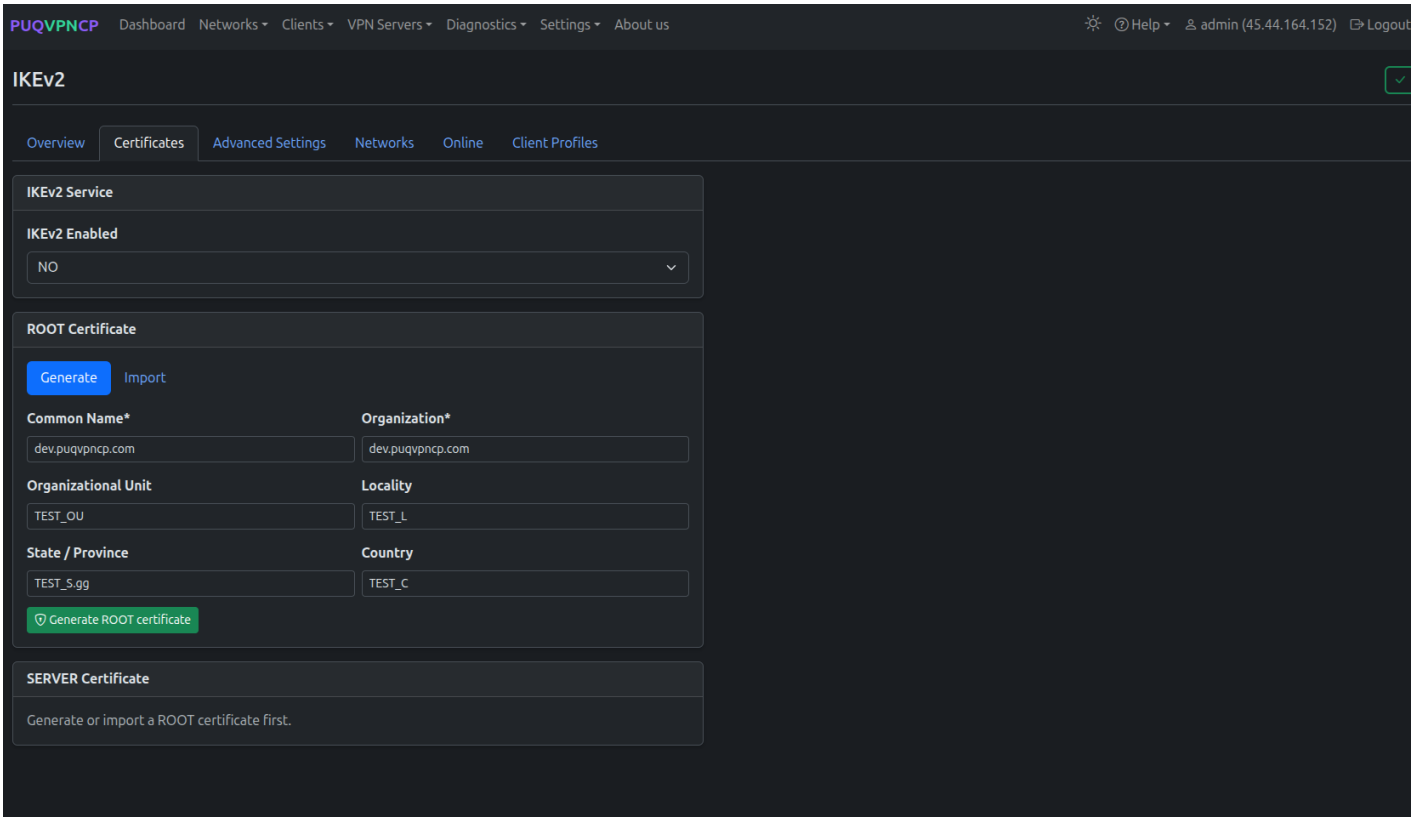
IKEv2 advanced settings

Setting	Description	Default
ESP	ESP encryption proposals	`aes256gcm128-sha256`
IKE	IKE encryption proposals	`aes256-sha256-modp2048`
IKE Lifetime (sec)	IKE SA lifetime	86400
Lifetime (sec)	Child SA lifetime	3600
DPD Delay	Dead Peer Detection interval	30
DPD Timeout	DPD timeout	150

Certificates

IKEv2 uses X.509 certificates for server authentication. PUQVPNCP manages the full PKI chain.

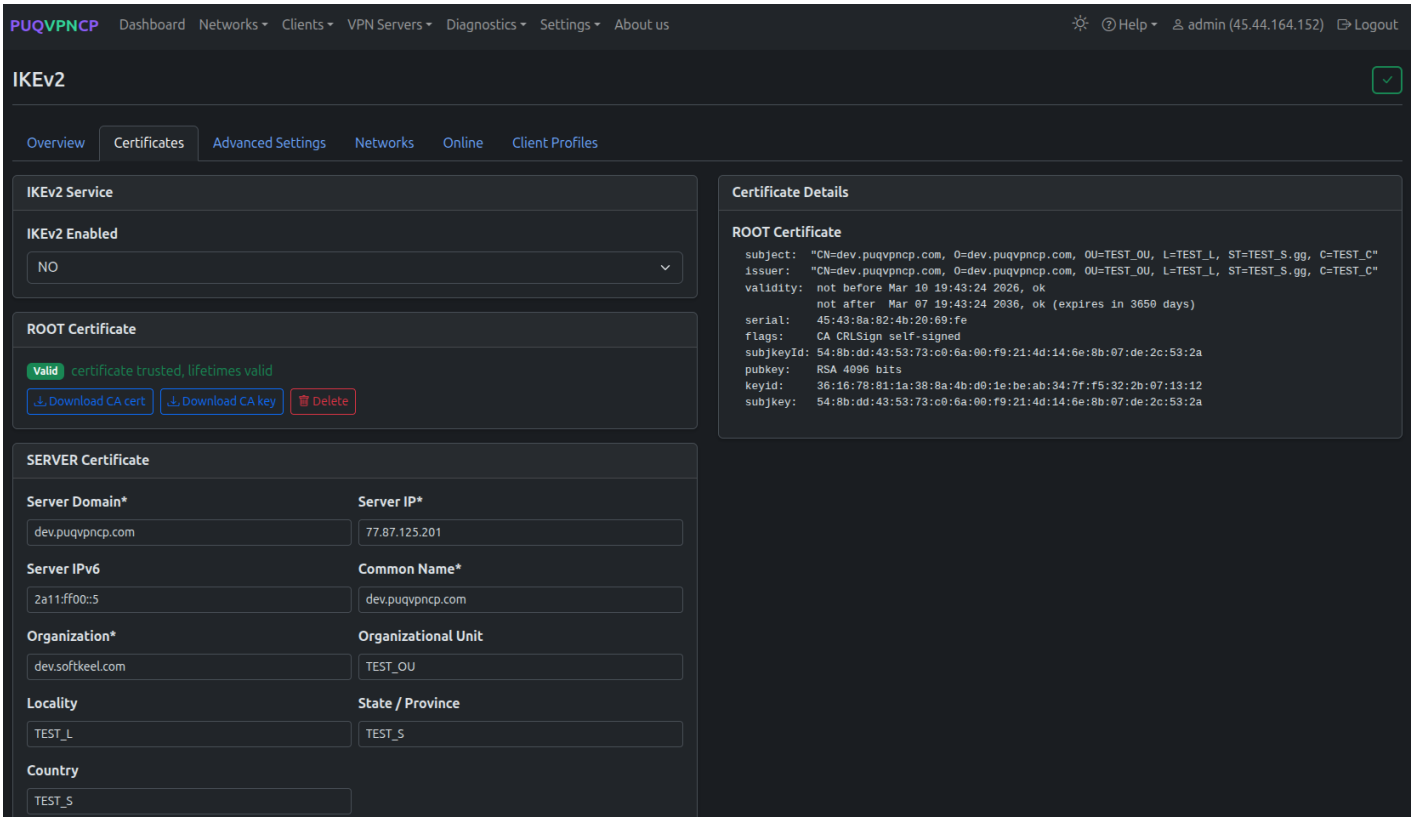
Root Certificate (CA)



IKEv2 Root CA certificate

The Root CA is created once and signs all server certificates. Clients must trust this CA.

Server Certificate

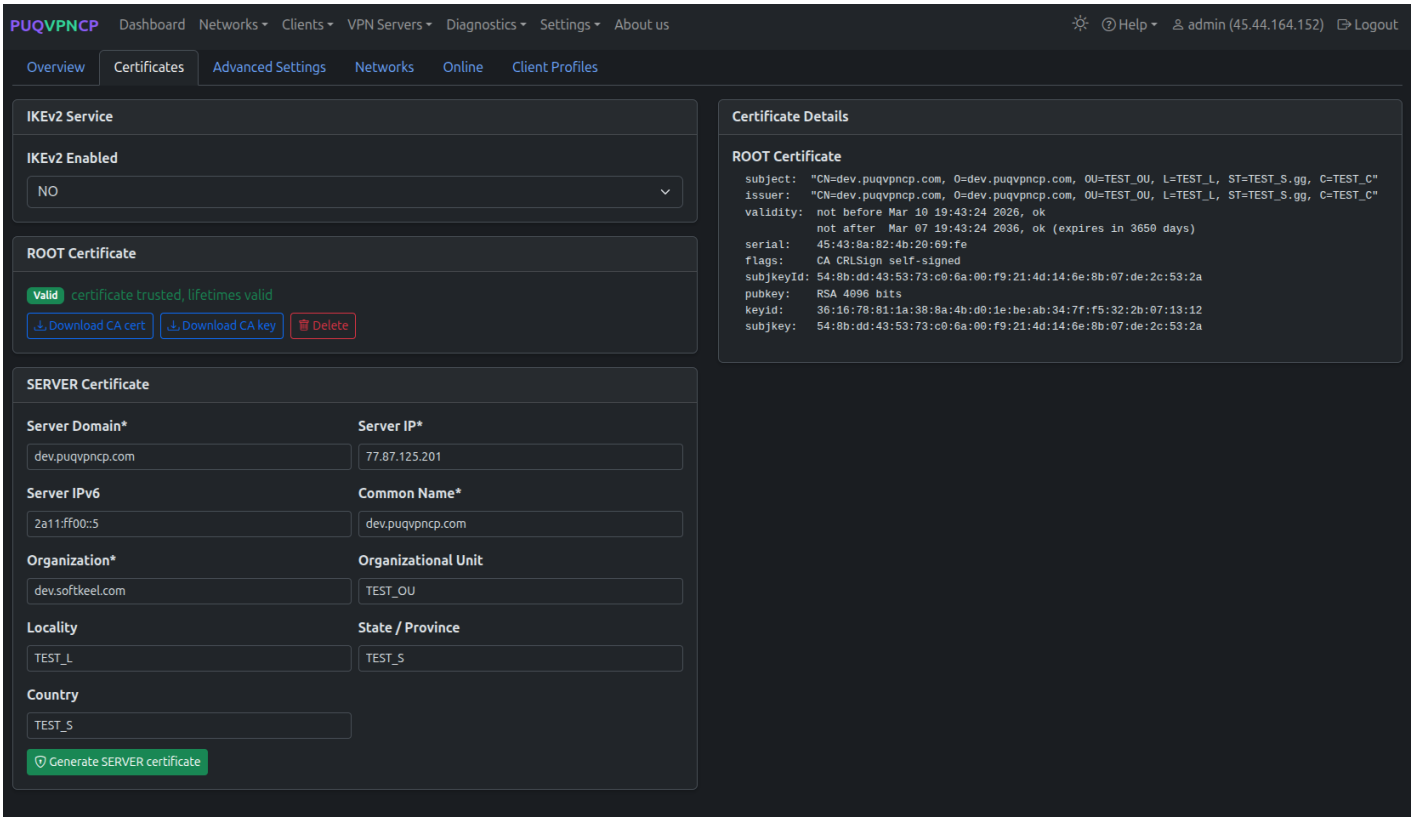


IKEv2 server certificate

The server certificate is signed by the Root CA and presented to clients during the IKE handshake.

> **Important:** The server certificate's Subject Alternative Name (SAN) must match the VPN Domain or server IP.

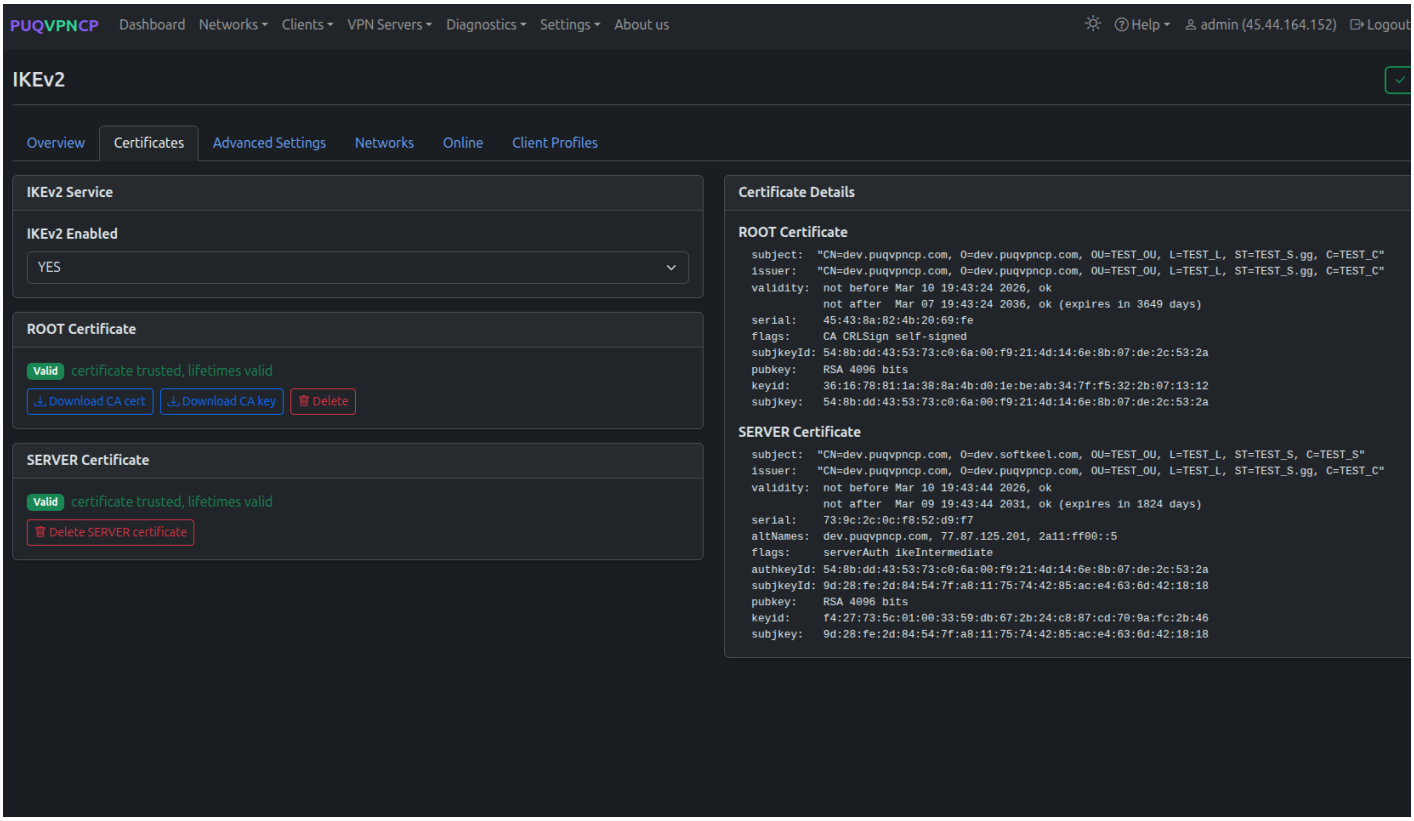
Import Certificate



Import existing CA and server certificates

If you have existing certificates from another strongSwan installation, you can import them instead of generating new ones.

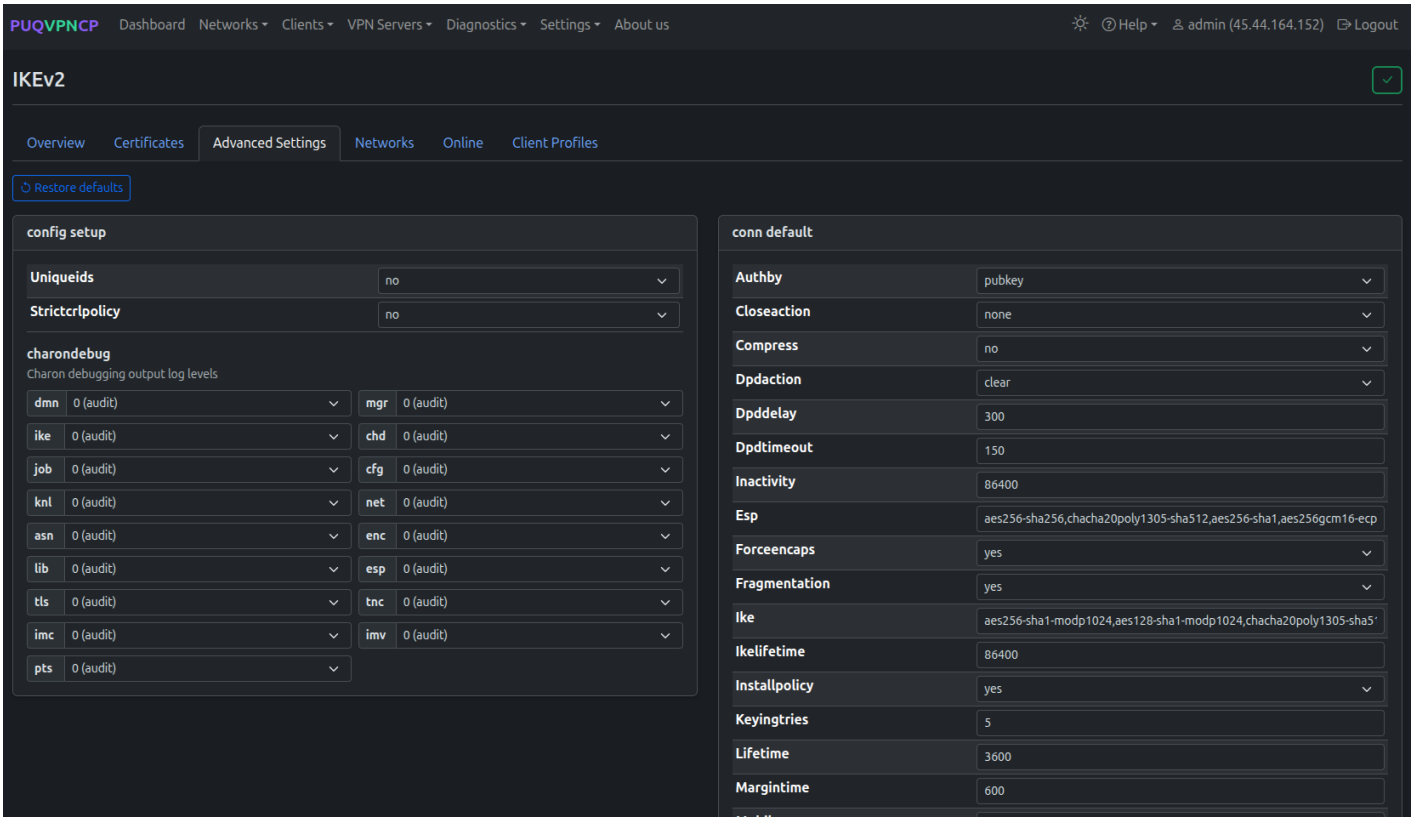
DNS



IKEv2 DNS configuration

Configure DNS servers pushed to IKEv2 clients.

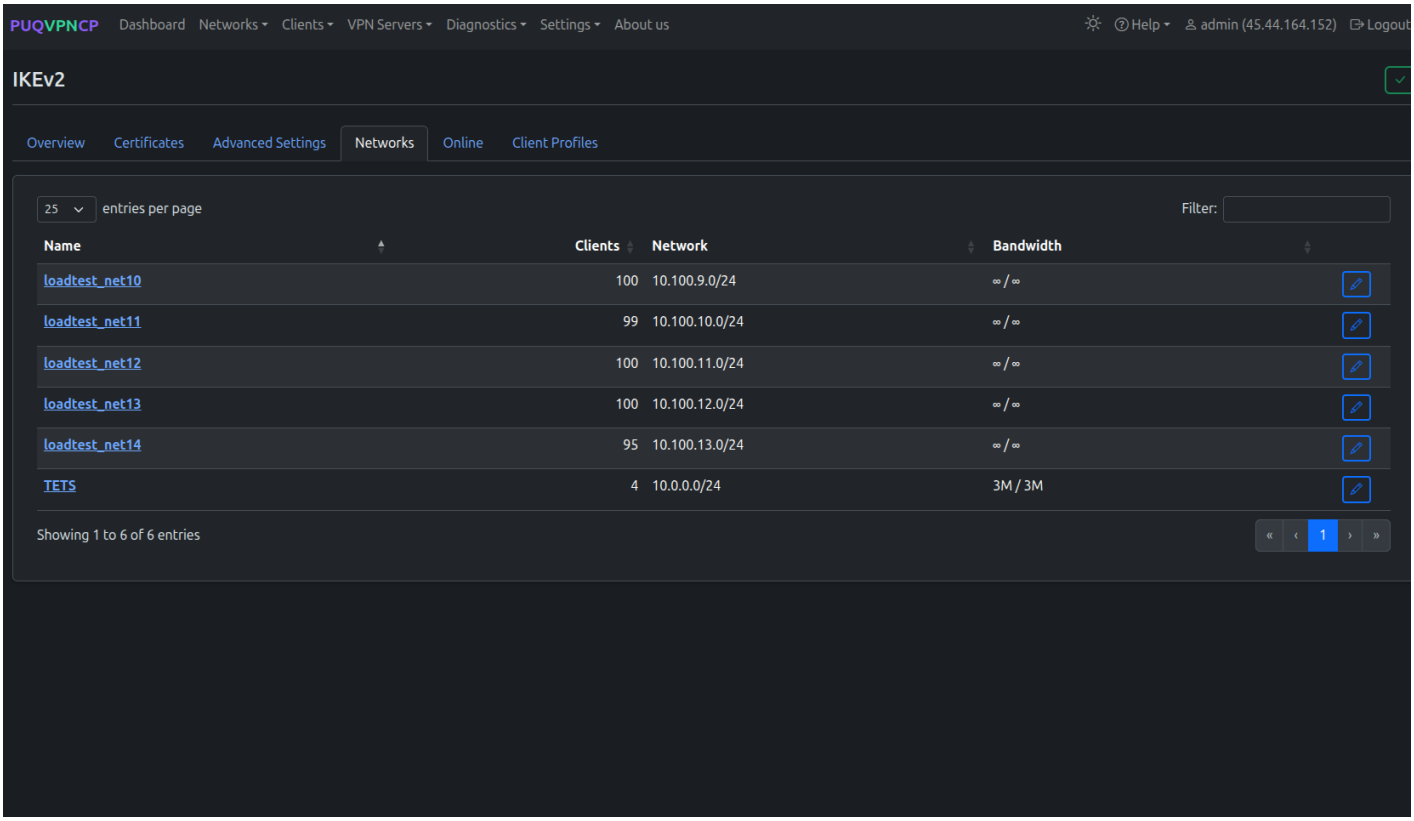
Status



IKEv2 service status

Shows the strongSwan daemon status, starter and charon PIDs, and current active SAs.

Online Users

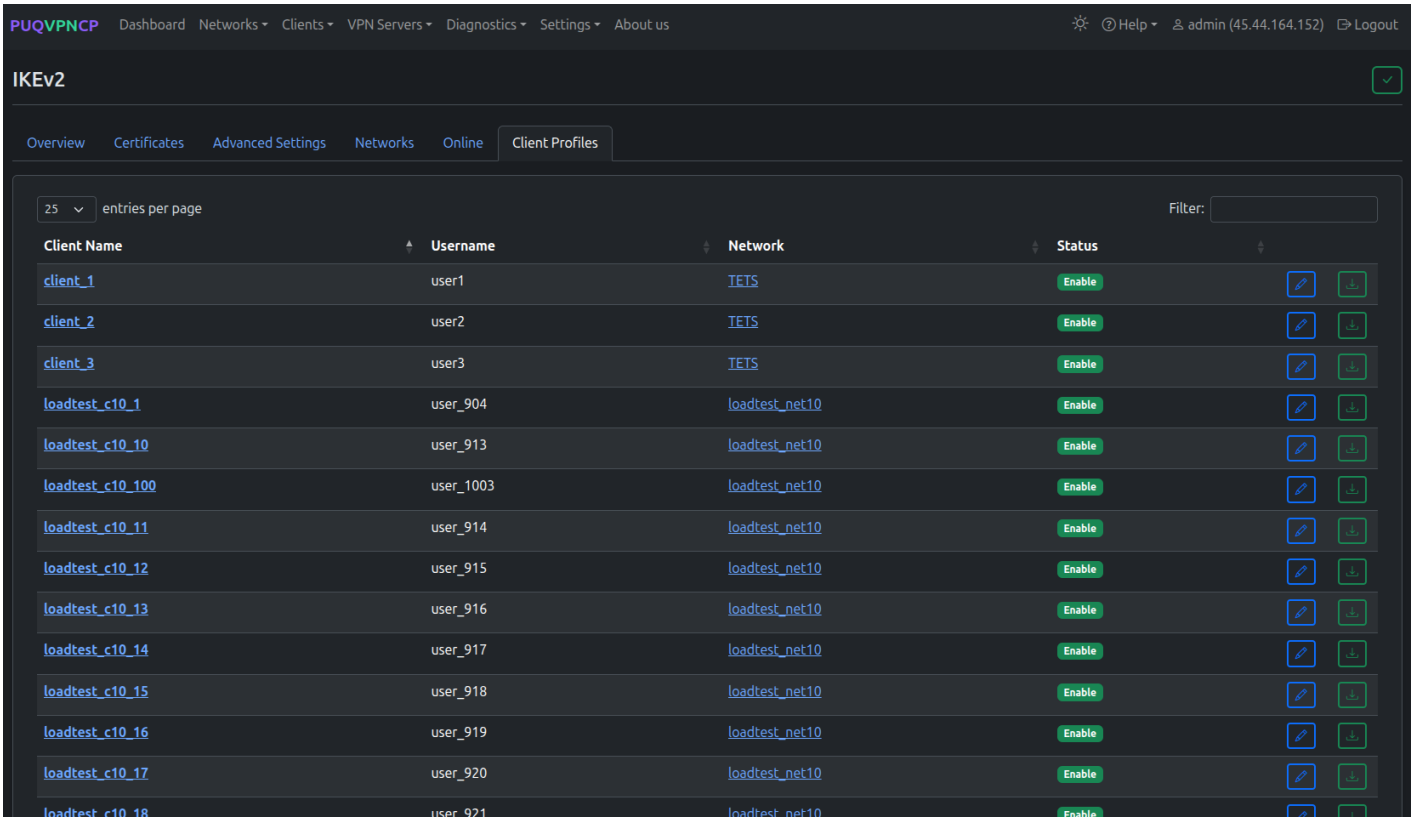


IKEv2 online users

Lists all active IKEv2 security associations with:

- Client name and network
- Virtual IP assigned
- Remote (real) IP
- IKE and ESP proposals in use
- Connection duration

Client Profiles



IKEv2 client profiles — all clients across all networks

Lists all IKEv2 clients across all networks:

Column	Description
Client Name	Client name (link to client page)
Username	System user who owns this client
Network	Network this client belongs to
Status	Enable/Disable

Each client row has buttons to edit the client and download the `.sswan` configuration file.

Client Configuration

IKEv2 clients authenticate using **username/password** (EAP-MSCHAPv2) with server certificate validation.

Configuration by Platform

Platform	Method

iOS	Settings > VPN > Add Configuration > IKEv2. Or import `.mobileconfig` profile
macOS	System Preferences > Network > + > VPN > IKEv2
Windows	Settings > Network > VPN > Add VPN > IKEv2
Android	Settings > VPN > + > IKEv2/IPsec MSCHAPv2 (or use strongSwan app)
Linux	NetworkManager or `charon-cmd`

Required Client Settings

Field	Value
Server	Your VPN domain or IP
Remote ID	Same as server (domain or IP)
Authentication	Username (EAP)
Username / Password	From client's IKEv2 tab
CA Certificate	The Root CA certificate (download from panel)

> **Tip:** Use **One-Time Links** to give users a downloadable `.sswan` profile that imports all settings automatically.

Per-Network Configuration

Each network can override the global IKEv2 settings:

- ESP and IKE proposals
- SA lifetimes
- DPD delay and timeout

See the IKEv2 tab in Networks for details.

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