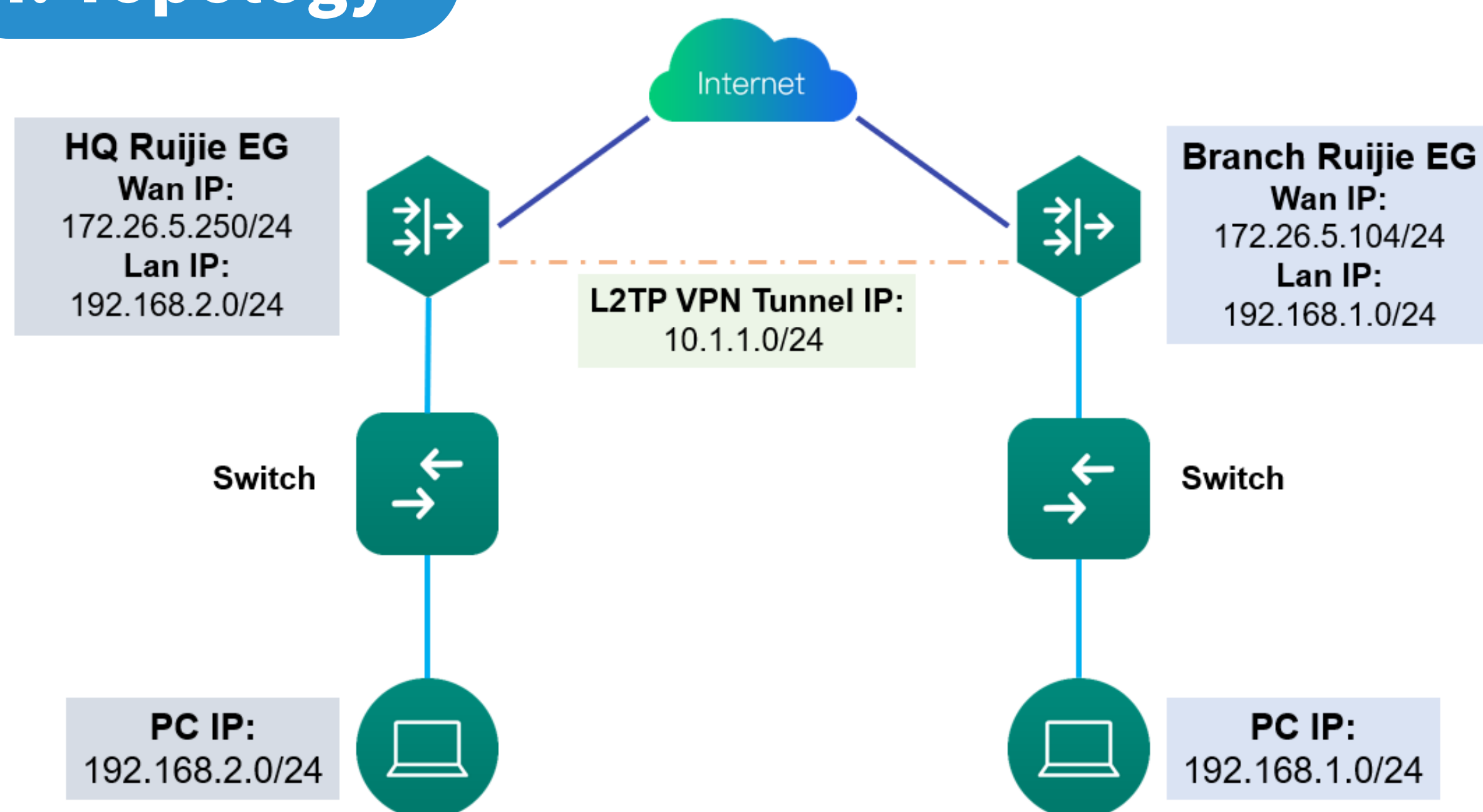


# How to configure L2TP over IPsec VPN?

## I. Requirement

The headquarters and branches need to share the server data frequently. L2TP over IPsec VPN can be established between egress gateways to enable the communication between the headquarters and branches without VPN Settings.

## II. Topology

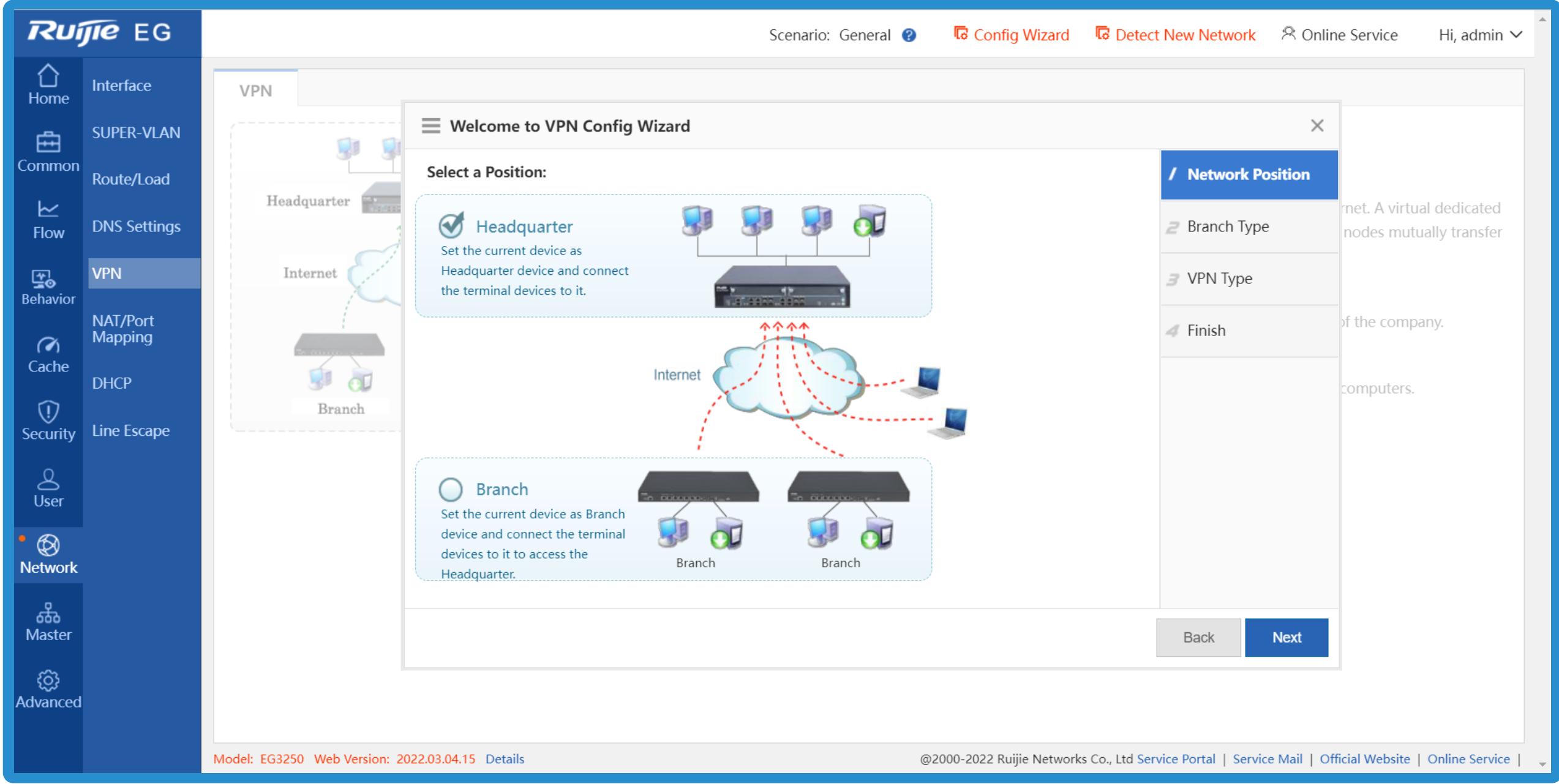


## III. Configuration Notes

- 1 The configurations of Pre-Shared key, IKE Policy, Transform Set on HQ and Branches should be consistent.
- 2 The function of “Allow HQ to Access Branch” is disabled by default, but you can enable it according to your needs. After this function is enabled, the LAN IP range of branch and the Tunnel IP of the designed Branch should be set on HQ and the Tunnel IP should be set on Branch which also should be consistent with the Tunnel IP of HQ.
- 3 Tunnel IP cannot be on the same network segment as the Intranet address of both ends.

# IV. Configuration Steps

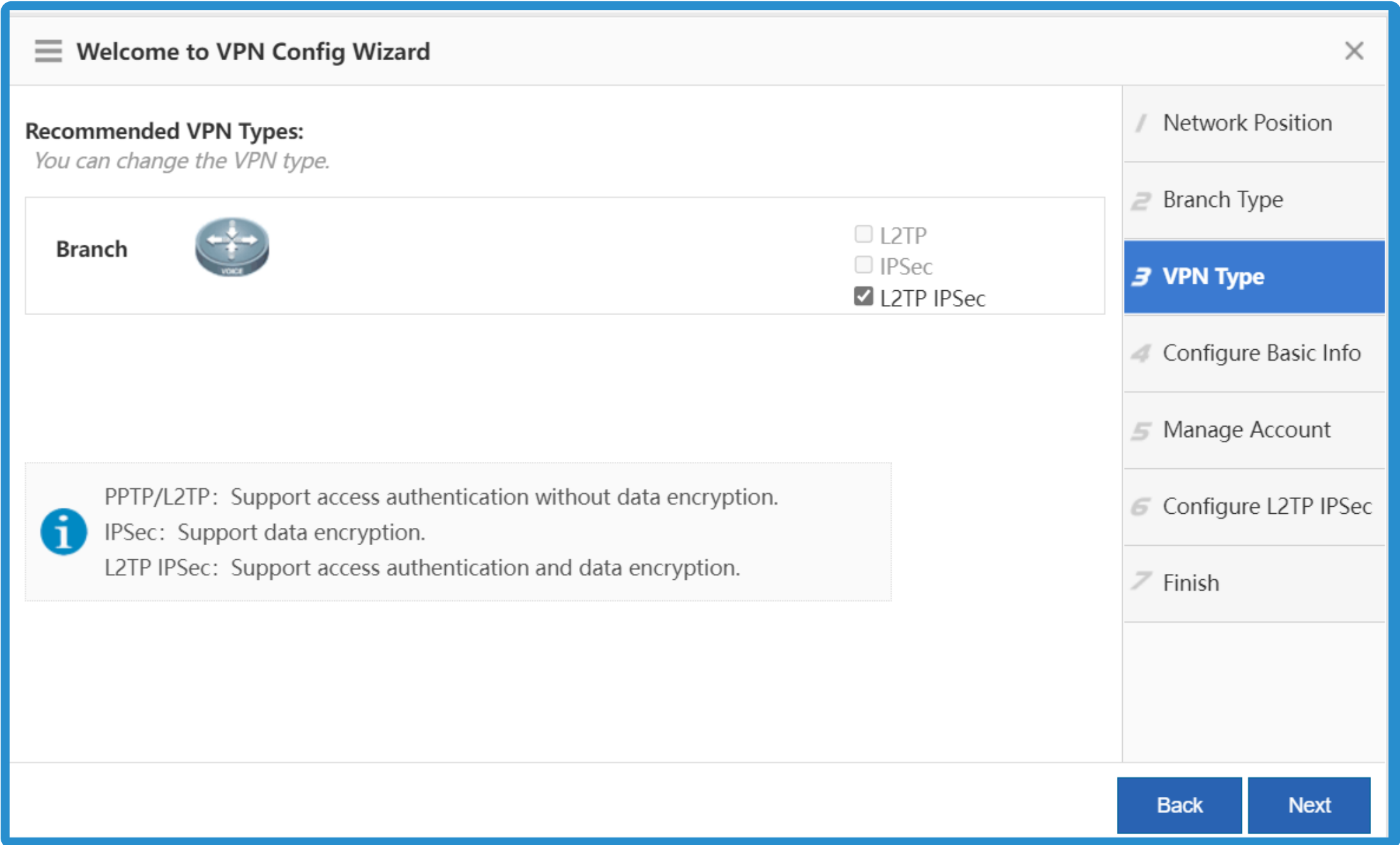
## 1 HQ Configuration: Select a Position: Headquarter



## Select a Brach Type: Branch



## Select VPN Types: L2TP IPsec



## IV. Configuration Steps

### Enter the Basic Information:

Client IP Range: The IP address range of L2TP VPN Tunnel assigned to Branch. Please make sure that these IP Address haven't been used by the LANs of HQ and Branch.

Welcome to VPN Config Wizard

**Enter Basic Information**

Client IP Range:  ~  \*

*Please make sure that the IP addresses are not in use in the LAN.*

HQ Domain Name:

Primary DNS Server:

Secondary DNS Server:

*If a mobile user wants to access the LAN through the domain name, a DNS server address should be configured which is usually the same with the address of the LAN DNS server.*

▼ Advance Settings

Back Next

1 Network Position  
2 Branch Type  
3 VPN Type  
4 **Configure Basic Info**  
5 Manage Account  
6 Configure L2TP IPsec  
7 Finish

### Configure Local Tunnel IP in Advance Settings.

You can allow HQ to access Branch by enabling the function “Allow HQ to Access Branch” and also configure the Branch Tunnel IP and the Branch Network.

Welcome to VPN Config Wizard

▼ Advance Settings

Local Tunnel IP:  \*

Local Tunnel Mask:  \*

L2TP Keepalive  
Interval:  second(s).

L2TP Verification Code: ☐ Enable

Allow HQ to Access  
Branch: ☒ Enable ?

Branch Tunnel IP	The branch network		
<input type="text" value="10.1.1.2"/>	<input type="text" value="192.168.1.0"/>	<input type="text" value="255.255.255.0"/>	<input type="button" value="X"/>

Back Next

1 Network Position  
2 Branch Type  
3 VPN Type  
4 **Configure Basic Info**  
5 Manage Account  
6 Configure L2TP IPsec  
7 Finish

### Add VPN User Account:

Enter **User Name** and **Password**, then click **Add**.



IV. Configuration Steps

Welcome to VPN Config Wizard

Save Account on

Local Device

Other System

Add Branch

User Name:

Password:

Add

Type:	User Name	Action
	testvpn	<div>Edit</div> <div>Delete</div>
	ruijie	<div>Edit</div> <div>Delete</div>

Show No.:

10

Total Count: 2

First

Previous

1

Next

Last

1

GO

Network Position

Branch Type

VPN Type

Configure Basic Info

Manage Account

Configure L2TP IPSec

Finish

Back

Next

**Configure L2TP IPSec Parameter:**  
Pre-shared Key: ruijie  
Configure IKE Policy and Transform Set on Advance Settings.  
IKE Policy: Encryption Algorithm-DES, Hash Algorithm-SHA, DH Group-group1  
Transform Set1: esp-des esp-sha-hmac  
Transform Set2: esp-3des esp-md5-hmac

Notice

The configurations of Pre-shared Key, IKE Policy, Transform Set on HQ and Branch should be consistent.

Welcome to VPN Config Wizard

Configure L2TP IPSec Parameter

Pre-shared Key:

Local ID:

Enable

Advance Settings

Interface:

Gi0/6

IKE Policy: Encryption Algorithm

Hash Algorithm

DH Group

Lifetime

Transform Set 1:

Transform Set 2:

PFS(Perfect

Network Position

Branch Type

VPN Type

Configure Basic Info

Manage Account

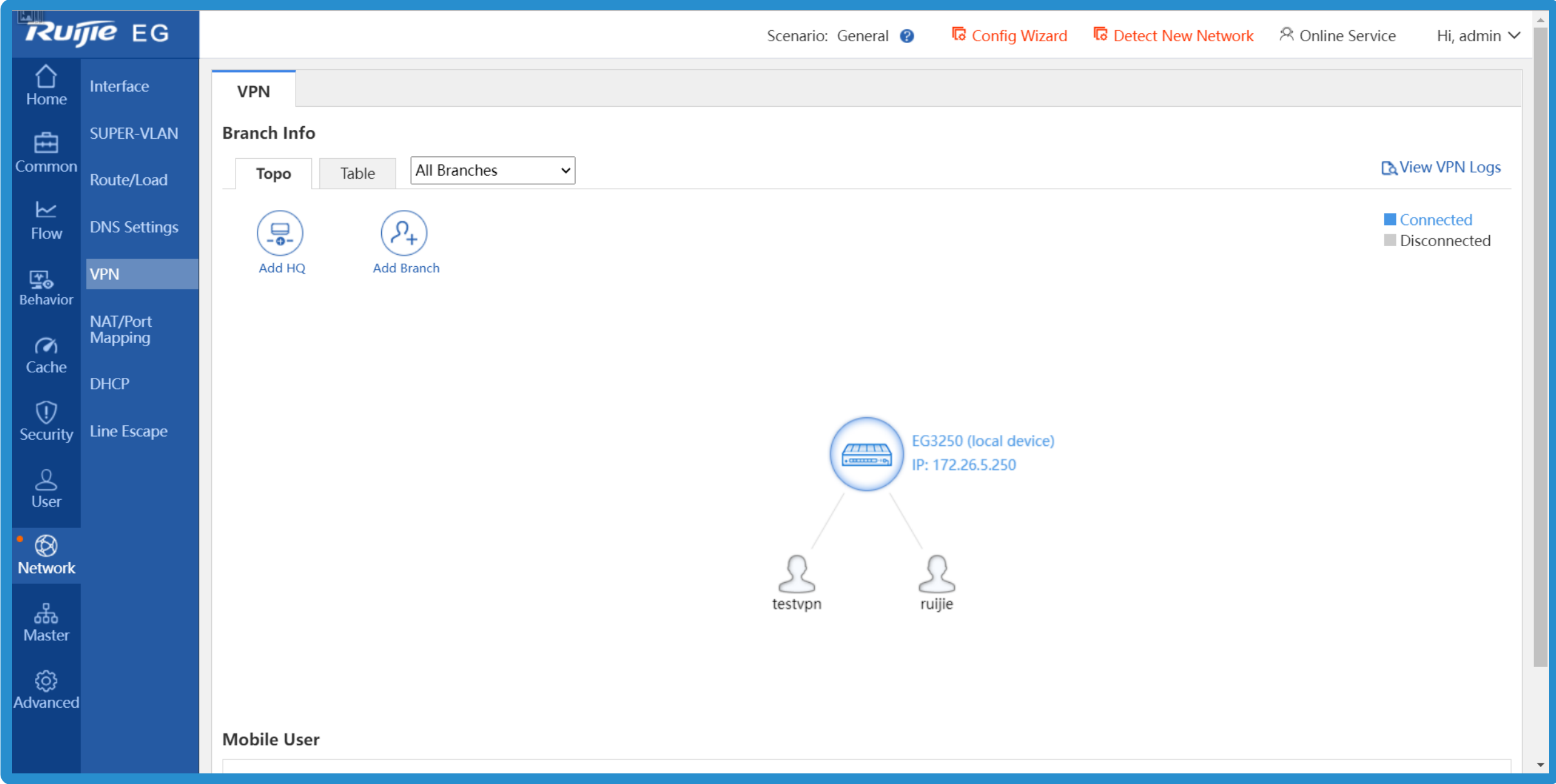
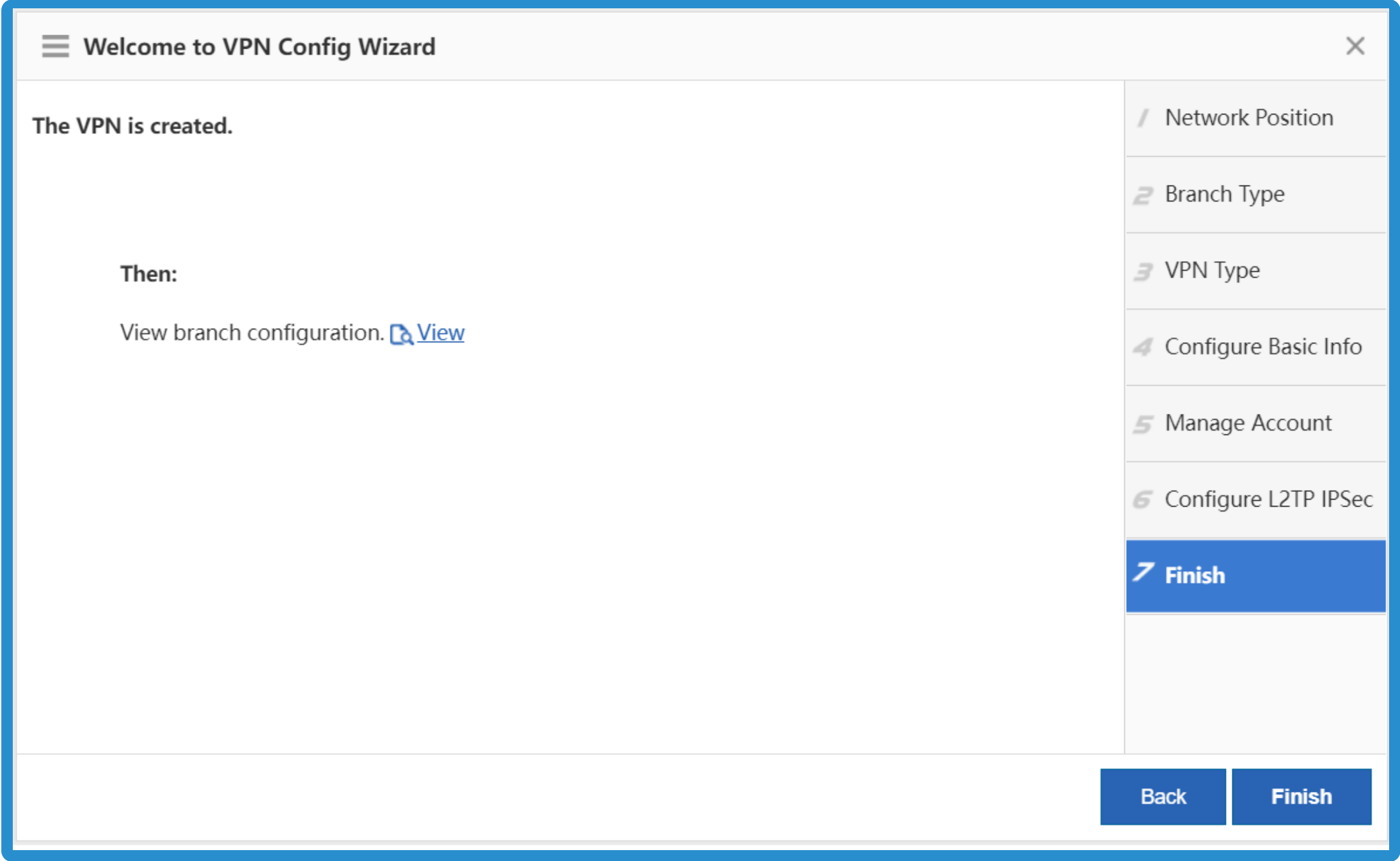
Configure L2TP IPSec

Finish

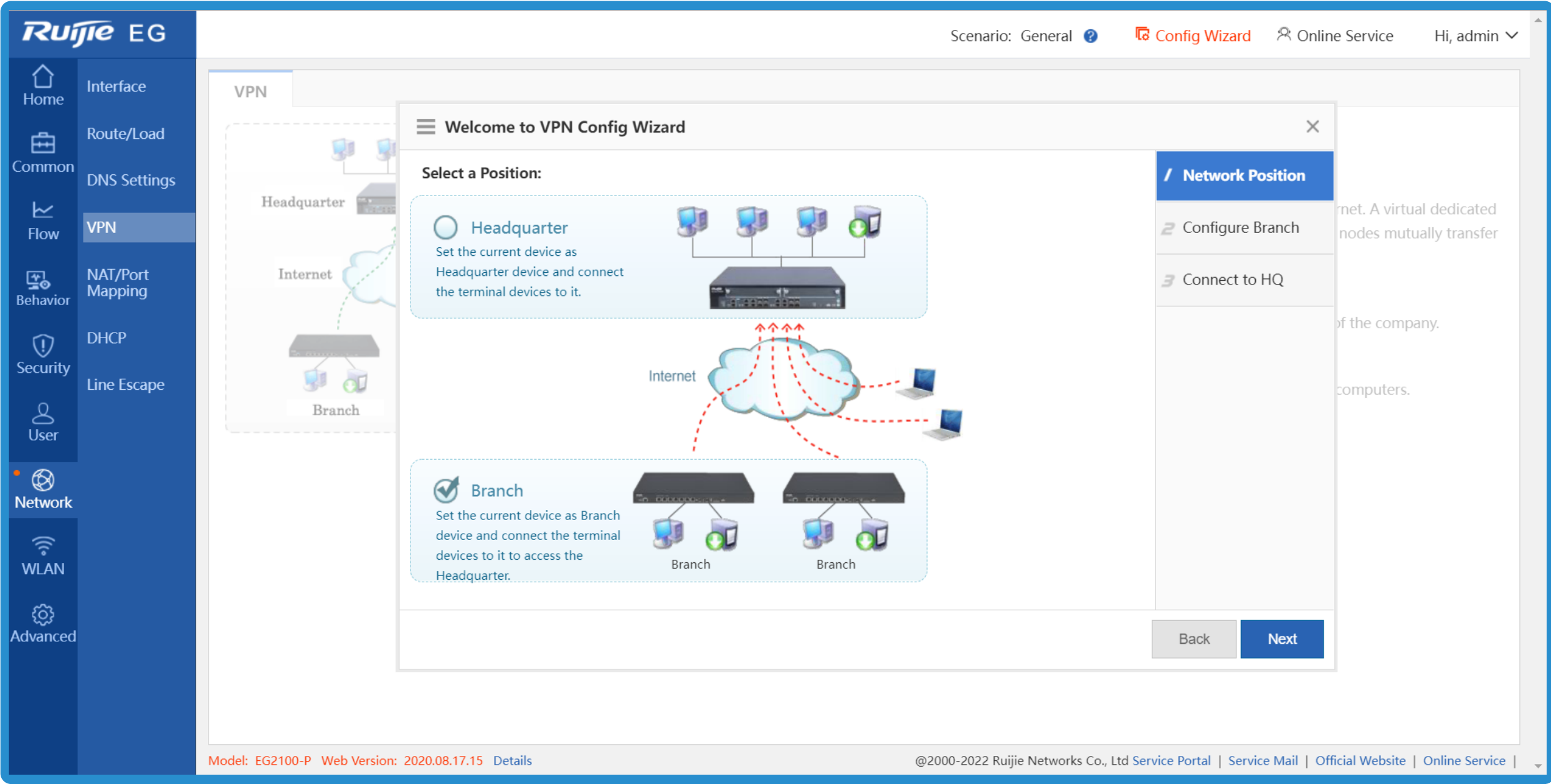
Back

Next

# IV. Configuration Steps



## 2 Branch Configuration: Select a Position: Branch



## IV. Configuration Steps

### Enter Basic Information:

Select VPN Type as L2TP IPsec, fill the HQ Public IP/Domain Name, Pre-shared Key, and HQ Network (HQ LAN IP).

The screenshot shows the 'Welcome to VPN Config Wizard' window with the 'Enter Basic Information' tab selected. The form contains the following fields:

- VPN Type: L2TP IPsec (dropdown)
- HQ Public IP/Domain Name: 172.26.5.250 (text input, with a red asterisk and a '+IP/URL ?' link)
- Pre-shared Key: ..... (password field, with a red asterisk)
- User Name: testvpn (text input, with a red asterisk)
- Password: ..... (password field, with a red asterisk)
- HQ Network: 192.168.2.0 - 255.255.255.0 (text input, with a red asterisk and a '+' icon)

Below the main form, there is an 'Advance Settings' section with a red checkmark icon and a 'Auth: ☐ Enable ?' checkbox. At the bottom, there are four tabs: 'IKE Policy: Encryption Algorithm', 'Hash Algorithm', 'DH Group', and 'Lifetime'. The 'Back' and 'Next' buttons are at the bottom right.

### Configure IKE Policy and Transform Settings in Advance Settings:

IKE Policy: Encryption Algorithm-DES, Hash Algorithm-SHA, DH Group-group1

Transform Set1: esp-des esp-sha-hmac

Transform Set2: esp-3des esp-md5-hmac

### Notice

**Pre-shared Key, IKE Policy, Transform Set on HQ and Branch should be consistent.**

The screenshot shows the 'Welcome to VPN Config Wizard' window with the 'Advance Settings' tab selected. The form contains the following fields:

- Auth: ☐ Enable ? (checkbox)
- IKE Policy: Encryption Algorithm: DES (dropdown)
- Hash Algorithm: SHA (dropdown)
- DH Group: group1 (dropdown)
- Lifetime: 86400 (text input, with a red asterisk and a '?' link)
- Transform Set 1: esp-des esp-sha-hmac (dropdown)
- Transform Set 2: esp-3des esp-md5-hmac (dropdown)
- PFS(Perfect Forwarding Secrecy): Disable (dropdown)
- IPSec Lifetime: 3600 (text input, with a red asterisk and a '?' link) second(s)
- DPD Type: on-demand (dropdown)
- DPD Interval: 30 (text input, with a red asterisk and a '?' link) second(s)

At the bottom, there are 'Back' and 'Next' buttons.

You can enable the function of “Allow HQ to Access Branch” to make the Branch can be accessed by the HQ. At last, Tunnel IP should also be configured and its IP address should be consistent with the HQ.

# IV. Configuration Steps

## Notice

The function of “Allow HQ to Access Branch function” can only be activated after this function being enabled in both Branch and HQ.

Welcome to VPN Config Wizard

Transform Set 2: esp-3des esp-md5-hmac

PFS(Perfect Forwarding Secrecy): Disable

IPSec Lifetime: 3600 second(s)

DPD Type: on-demand DPD Interval: 30 second(s)

Keepalive Interval: 60 second(s)

Allow HQ to Access  
Branch: ☒ Enable(Active only after being enabled in both branch and HQ)

Local Tunnel IP: ☒ Manually Configure 10.1.1.2

L2TP Verification Code: ☐ Enable

Network Position

Configure Branch

Connect to HQ

Back

Next

Welcome to VPN Config Wizard

Connect operation succeeded. You can now access the headquarter network.

Network Position

Configure Branch

Connect to HQ

Back

Finish

Ruijie EG

Home

Interface

Route/Load

Common

DNS Settings

VPN

NAT/Port Mapping

Flow

Behavior

DHCP

Security

Line Escape

User

Network

WLAN

Advanced

Scenario: General

Config Wizard

Online Service

Hi, admin

VPN

Branch Info

Topo

Table

All Branches

Add HQ

Add Branch Config

HQ1  
172.26.5.250

EG2100G-P (local device)  
IP: 172.26.5.104

Connected

Disconnected

Model: EG2100-P

Web Version: 2020.08.17.15

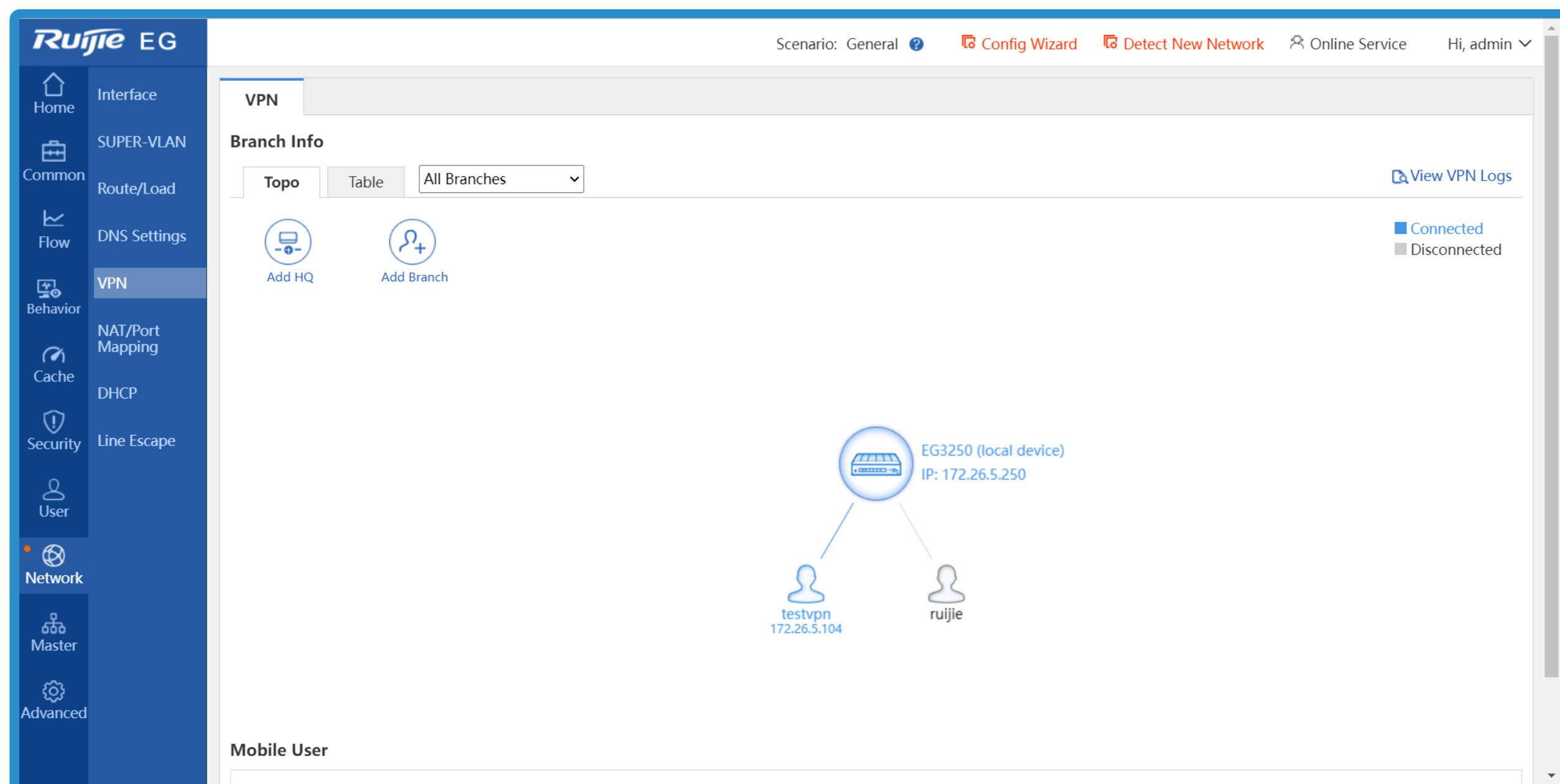
Details

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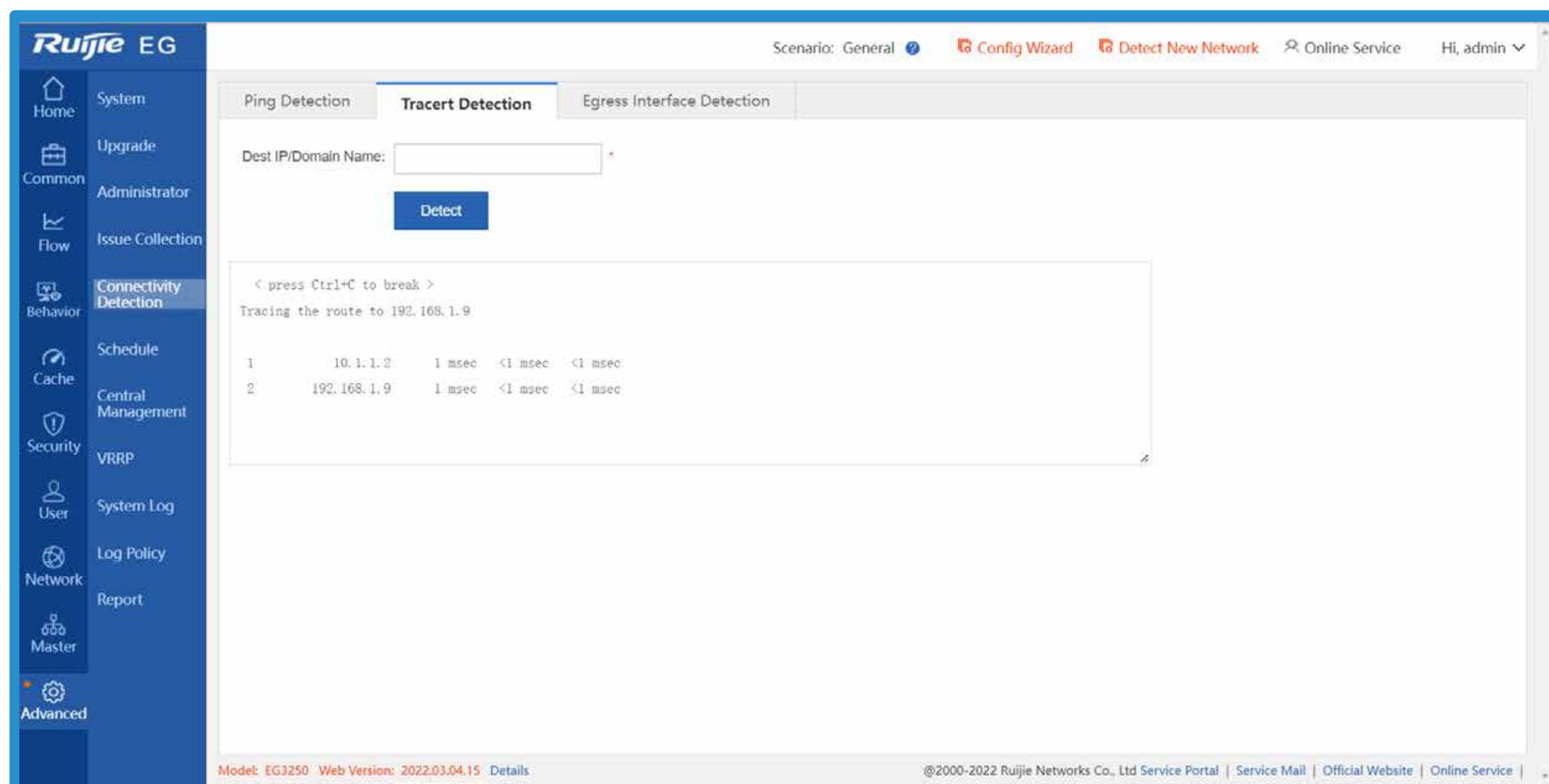
## IV. Configuration Steps

Check the connection status in HQ:



## V. Verify the connectivity

1 HQ tracert to Branch:

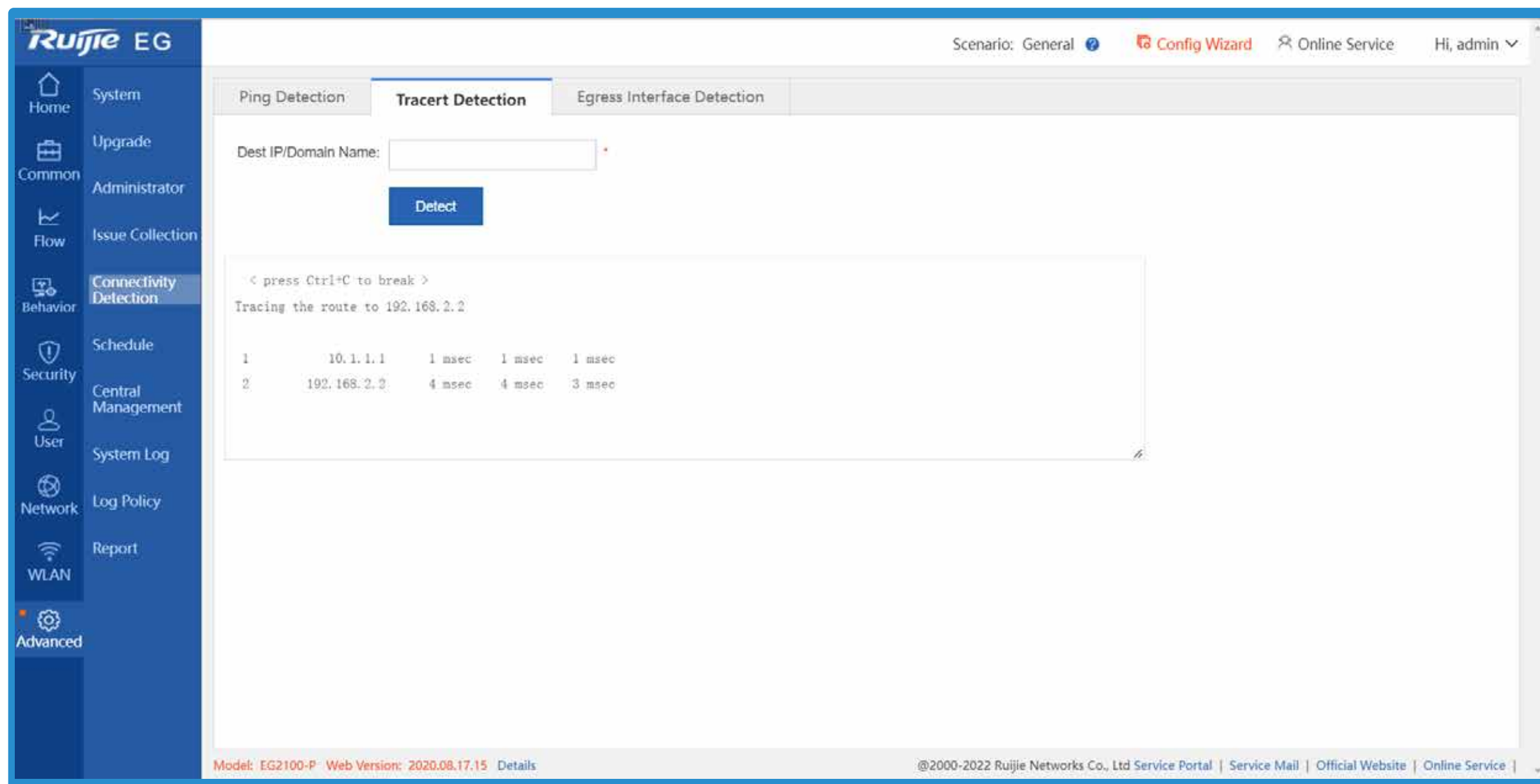


The HQ accesses Branch network 192.168.1.0/24 through L2TP over IPSec VPN tunnel 10.1.1.0/24

2 Branch tracert to HQ:



## V. Verify the connectivity



The Branch accesses HQ Intranet 192.168.2.0/24 through L2TP over IPSec VPN tunnel 10.1.1.0/24.

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Official Website



Community



Facebook



YouTube