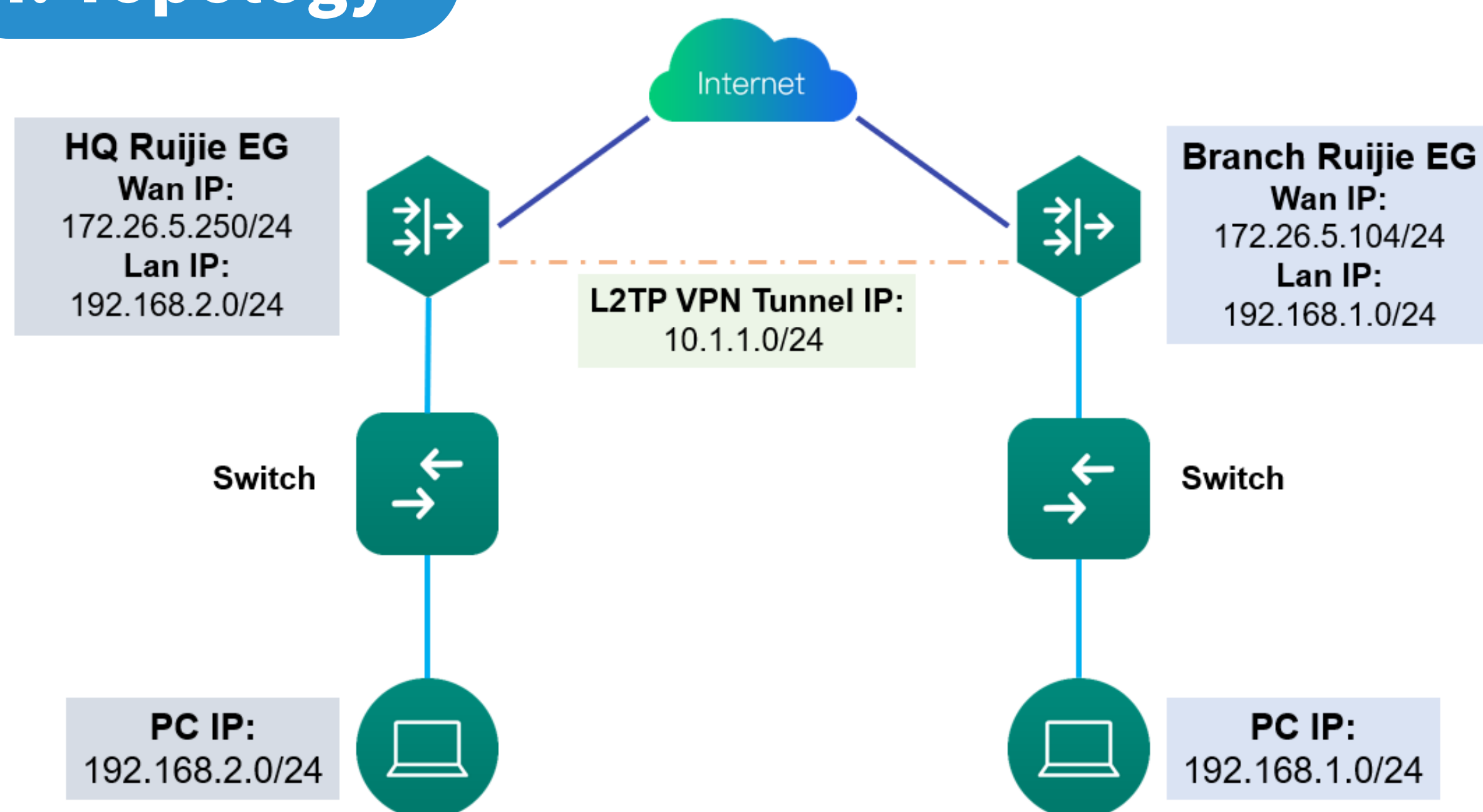# How to configure L2TP over IPsec VPN?

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

Internet

HQ Ruijie EG
Wan IP:
172.26.5.250/24
Lan IP:
192.168.2.0/24

L2TP VPN Tunnel IP:
10.1.1.0/24

Branch Ruijie EG
Wan IP:
172.26.5.104/24
Lan IP:
192.168.1.0/24

Switch

Switch

PC IP:
192.168.2.0/24

PC IP:
192.168.1.0/24

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.
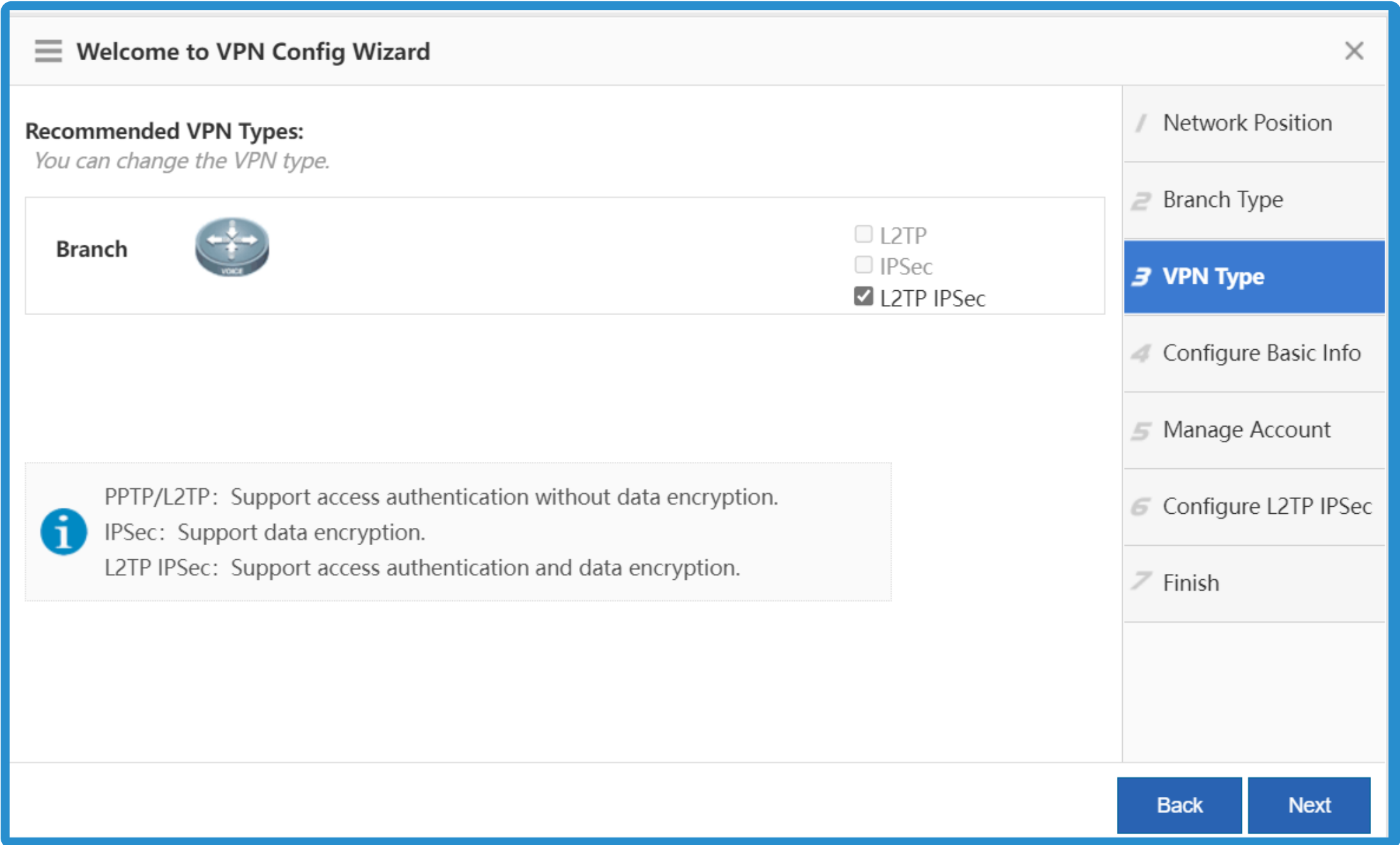
IV. Configuration Steps

① HQ Configuration：

Select a Position: Headquarter
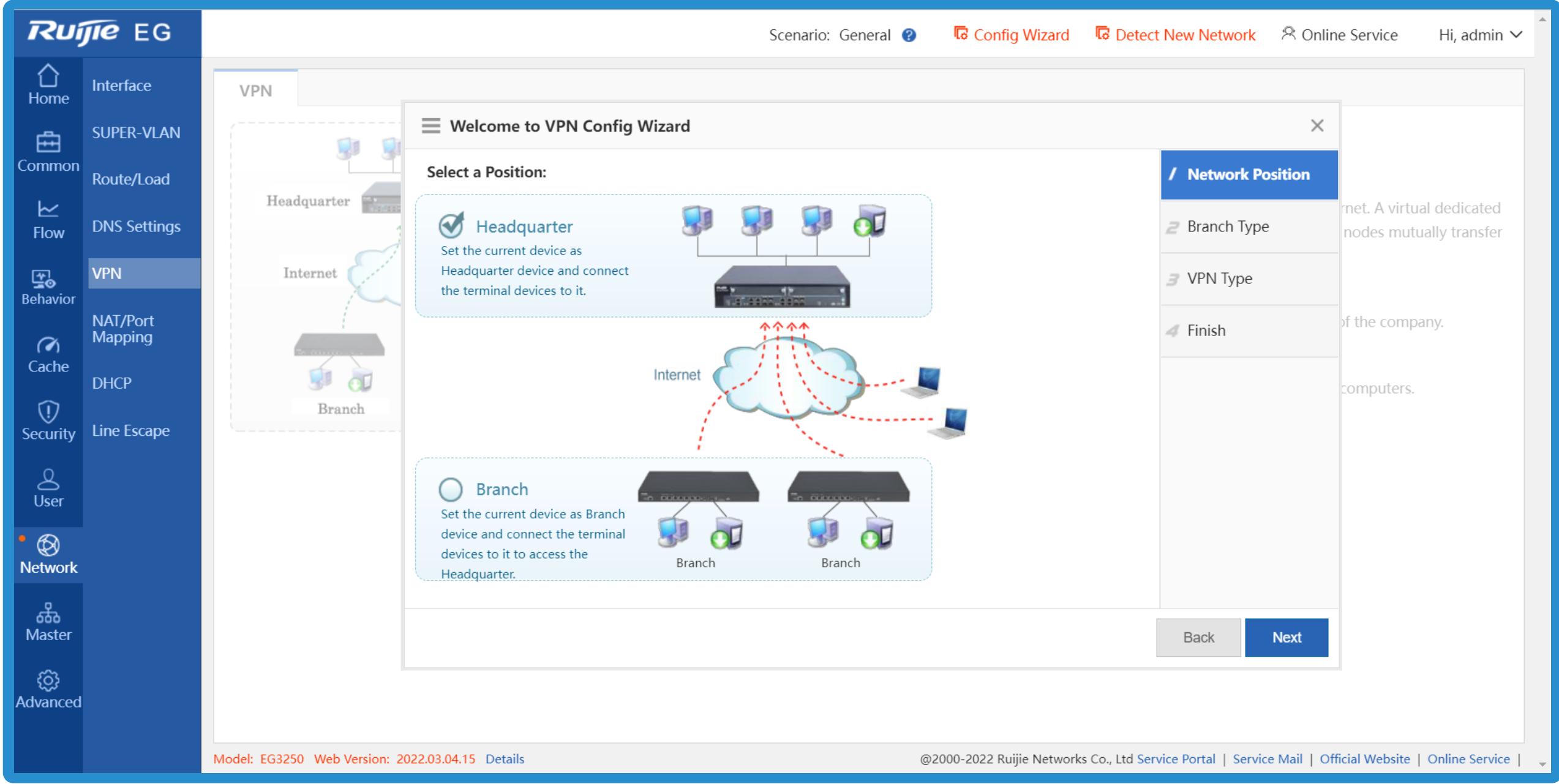
Select a Brach Type: Branch

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.

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.

Add VPN User Account:
Enter **User Name** and **Password**, then click **Add.**

IV. Configuration Steps

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.

IV. Configuration Steps

Welcome to VPN Config Wizard

The VPN is created.

Then:

View branch configuration. View

	Network Position
	Branch Type
	VPN Type
	Configure Basic Info
	Manage Account
	Configure L2TP IPSec
	Finish

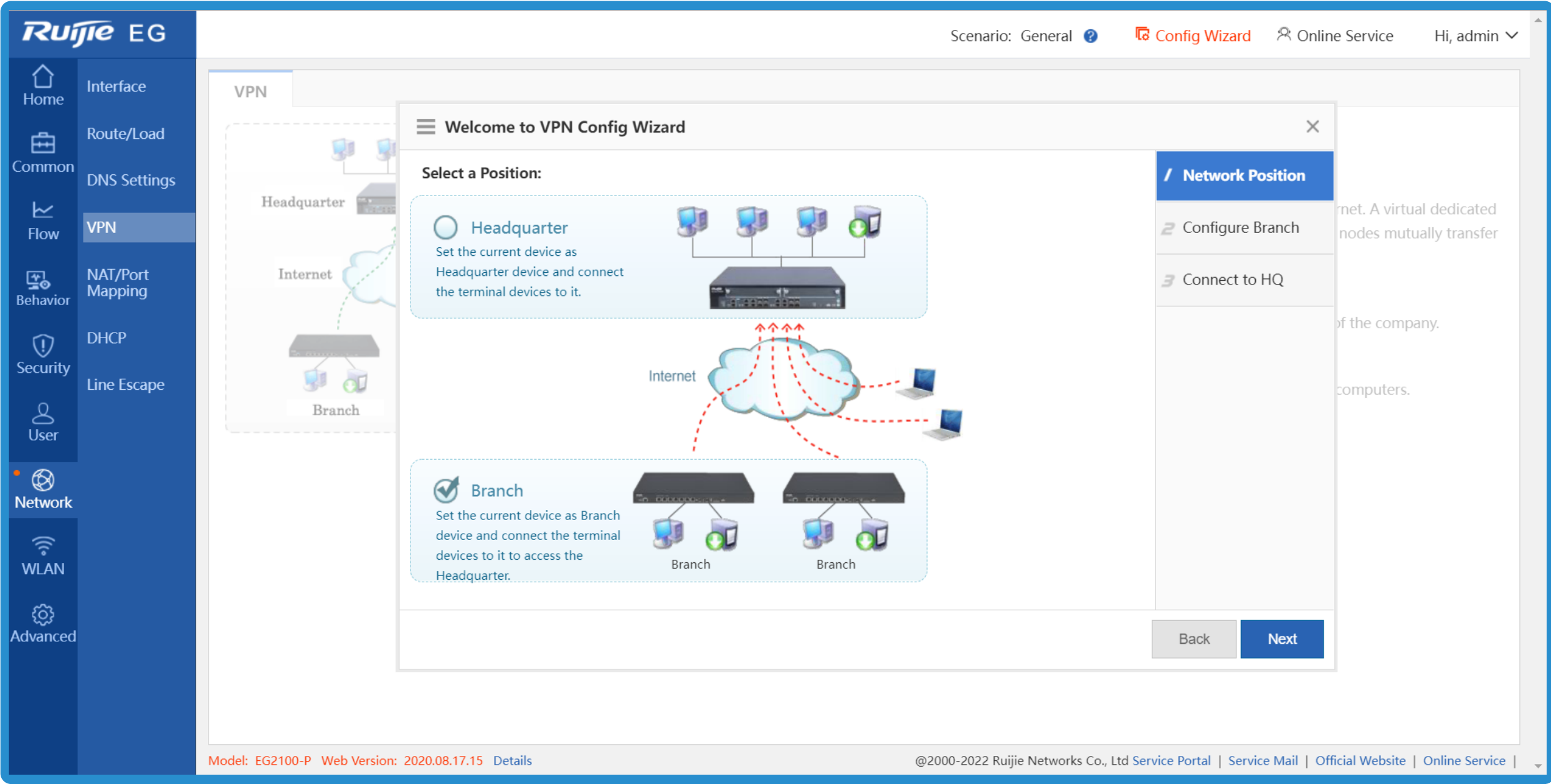Back Finish
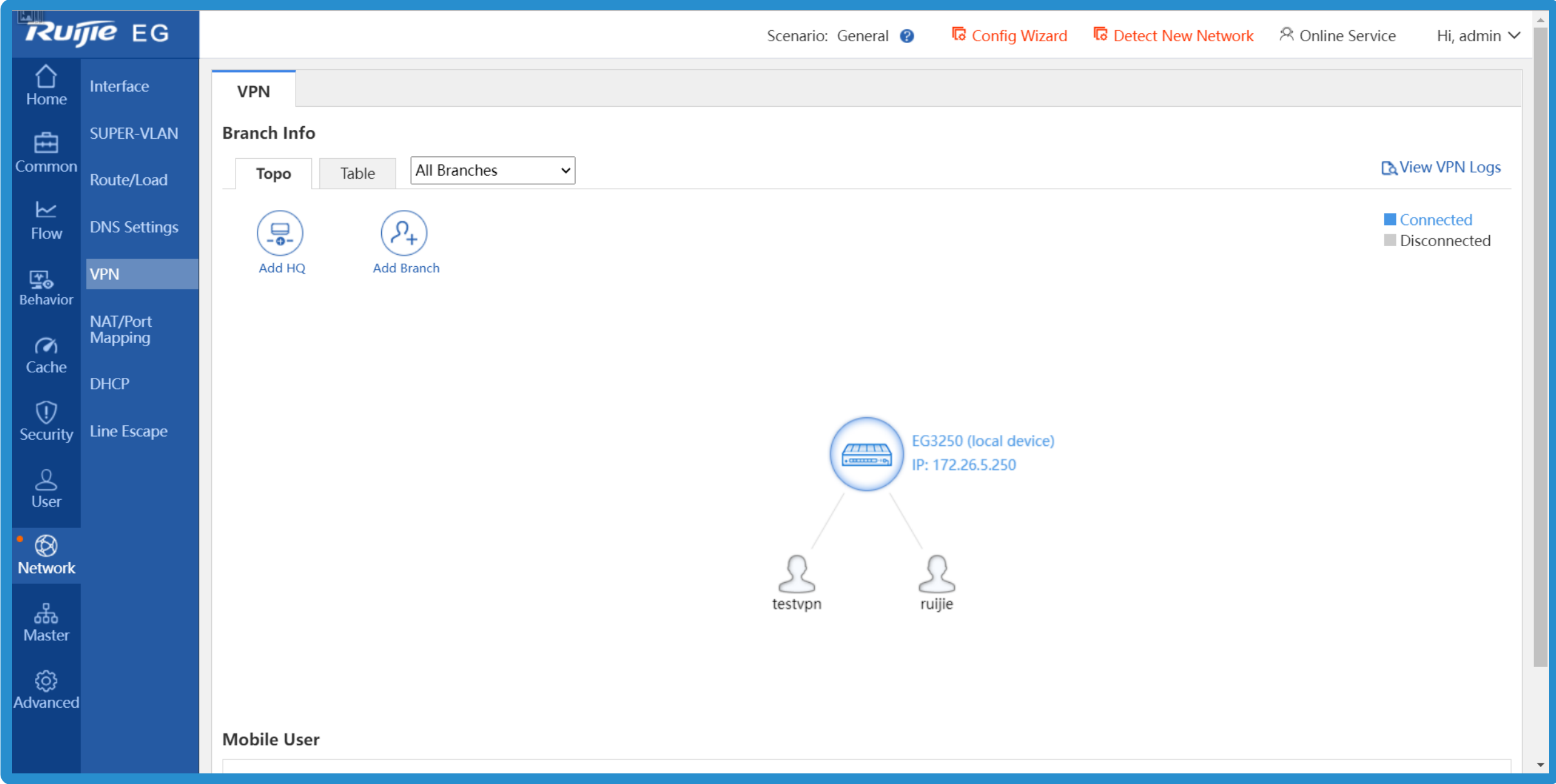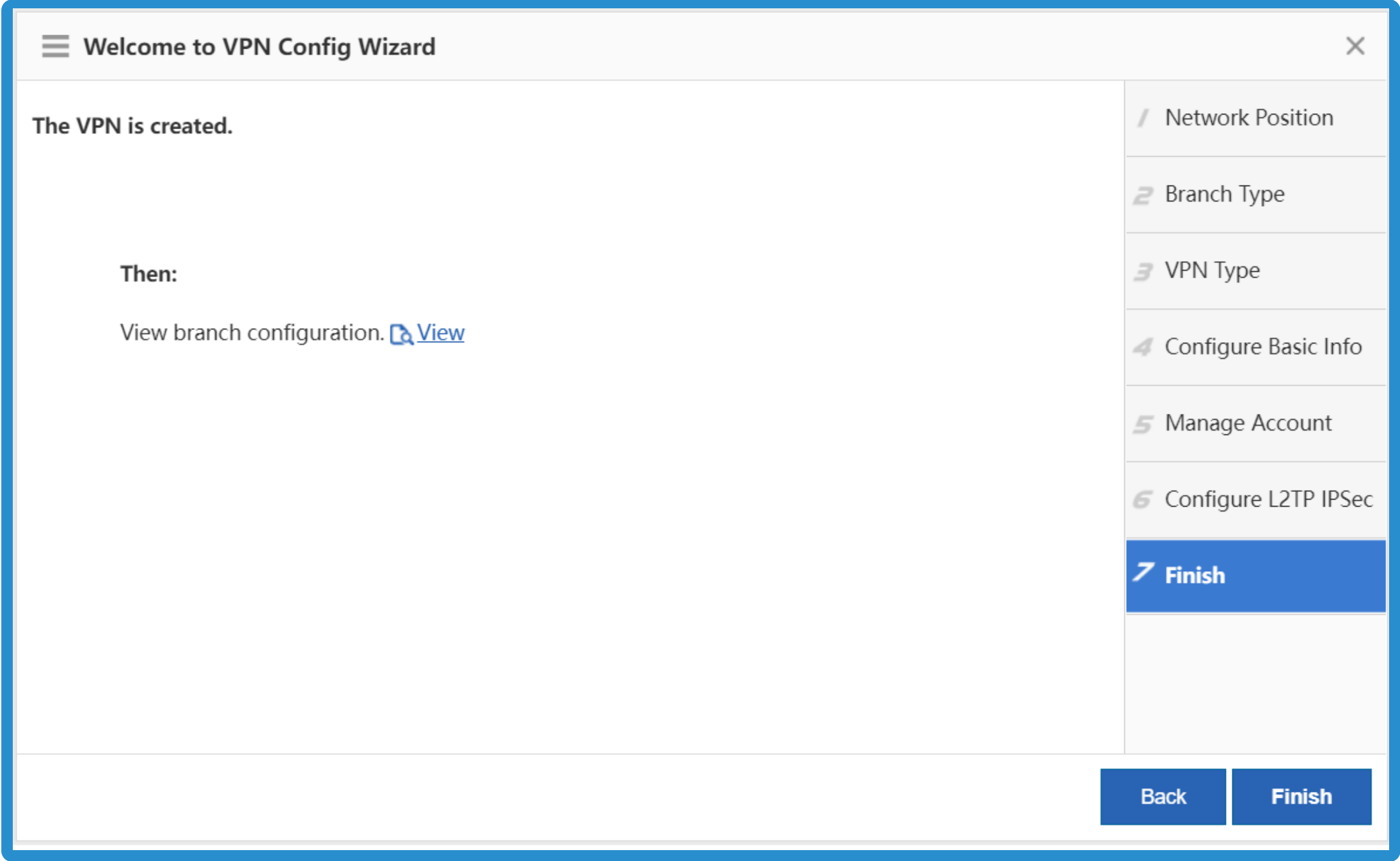
② Branch Configuration：
Select a Position: Branch

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).

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.

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
❷ Configure Branch
❸ Connect to HQ

Back   Next

Welcome to VPN Config Wizard ✕

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

/ Network Position
❷ Configure Branch
❸ Connect to HQ

Back   Finish

Ruijie EG

Scenario: General ? | Config Wizard | Online Service | Hi, admin ∨

Home | Interface
Common | Route/Load
| DNS Settings
Flow | VPN
Behavior | NAT/Port Mapping
Security | DHCP
| Line Escape
User
Network
WLAN
Advanced

VPN

Branch Info

Topo | Table | All Branches

Add HQ   Add Branch Config

■ Connected
■ Disconnected

HQ1
172.26.5.250

EG2100G-P (local device)
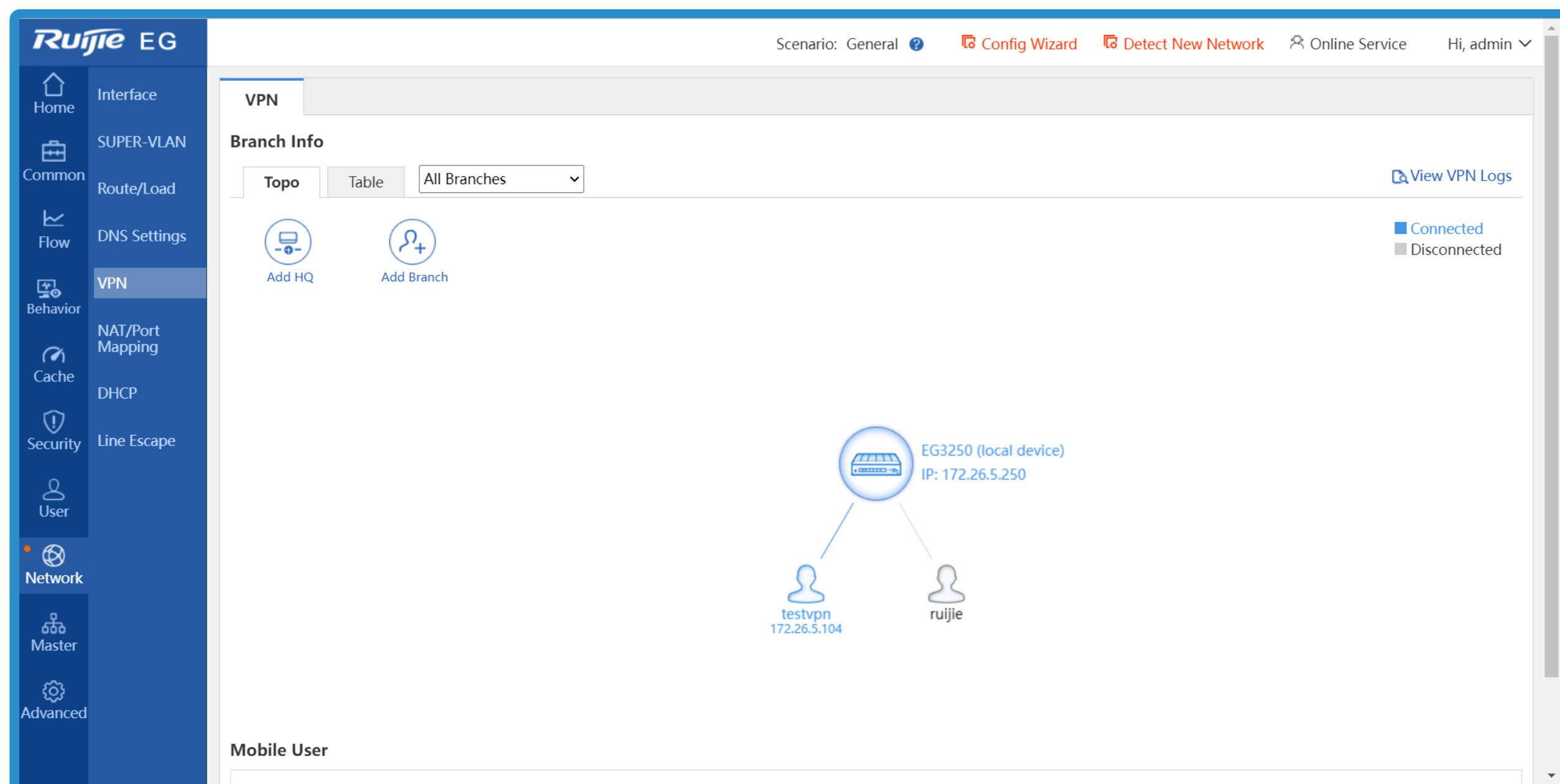IP: 172.26.5.104

Model: EG2100-P Web Version: 2020.08.17.15 Details   @2000-2022 Ruijie Networks Co., Ltd Service Portal | Service Mail | Official Website | Online Service
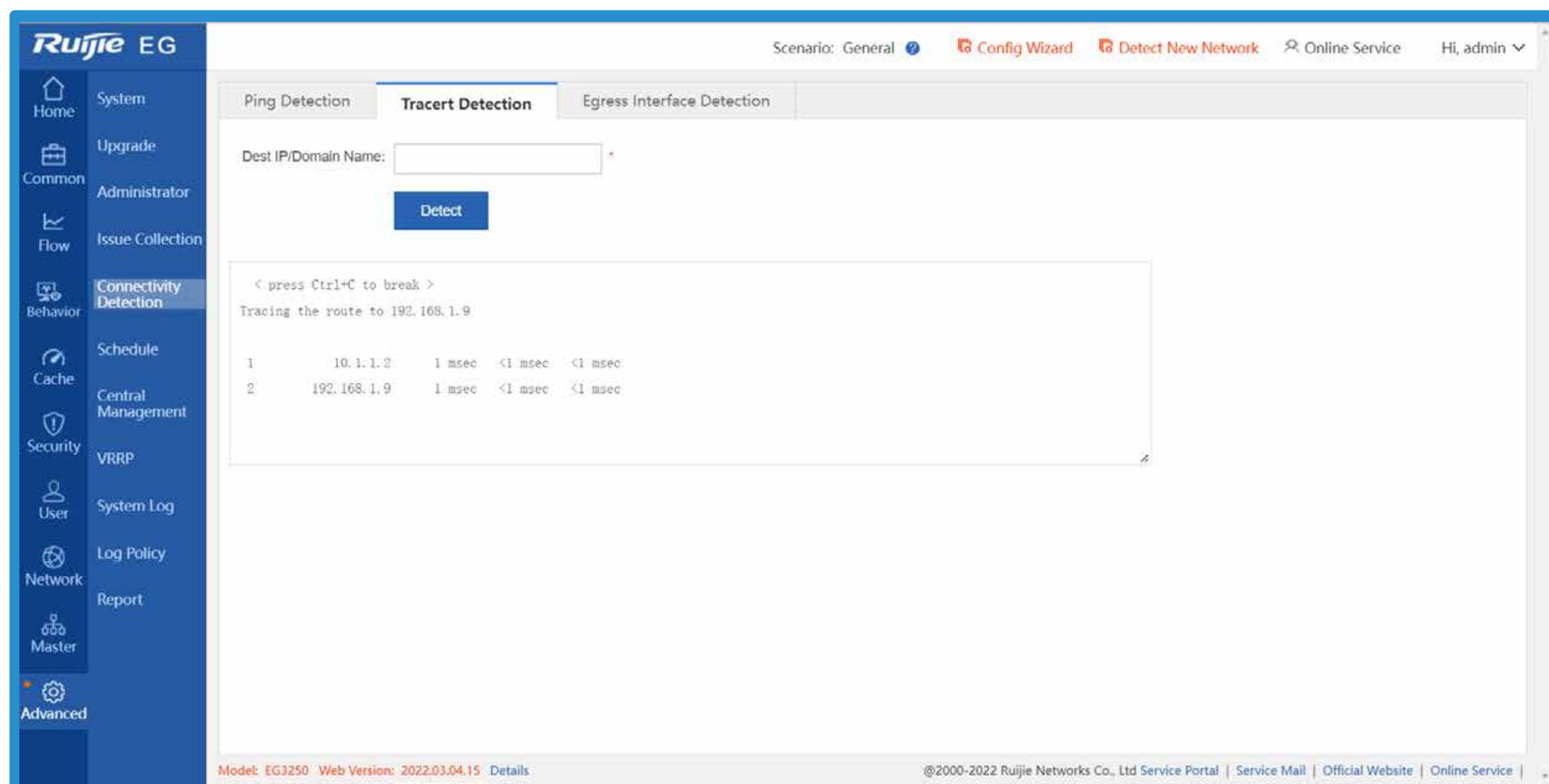
IV. Configuration Steps

Check the connection status in HQ:

V. Verify the connectivity
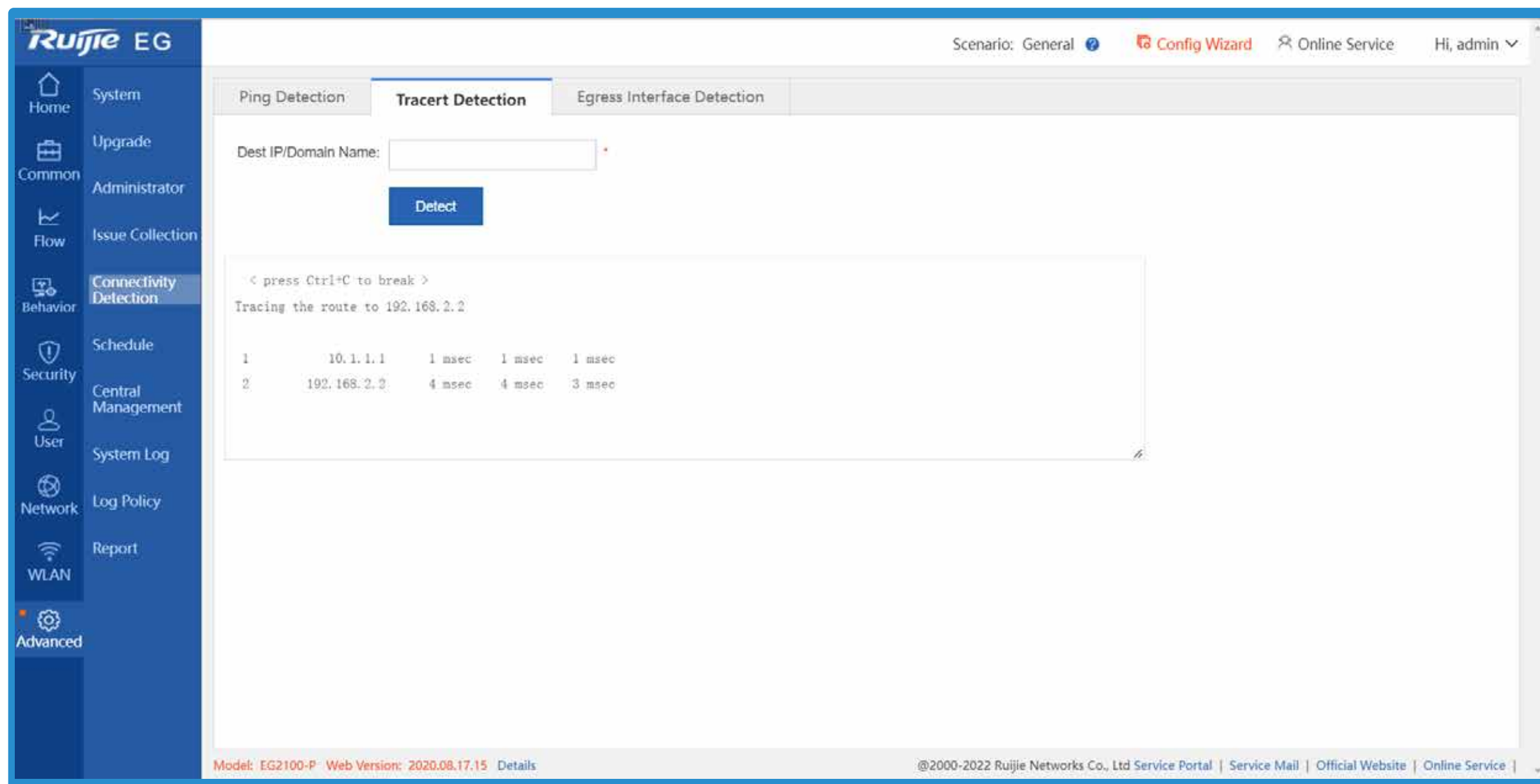
1 HQ tracert to Branch:

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.

Official Website ≫ https://www.ruijienetworks.com

Community ≫ https://community.ruijienetworks.com

Facebook ≫ Page：Ruijie Tech Support

YouTube ≫ Channel：Ruijie Technical Support

Official Website   Community   Facebook   YouTube