TP-LINK®
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IPsec VPN Application Guide

REV: 1.0.0

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CONTENTS

Chapter 1. Overview 1

Chapter 2. Before Configuration 2

Chapter 3. Configuration.....5

3.1 Configure IPsec VPN on TL-WR842ND (Router A) 5

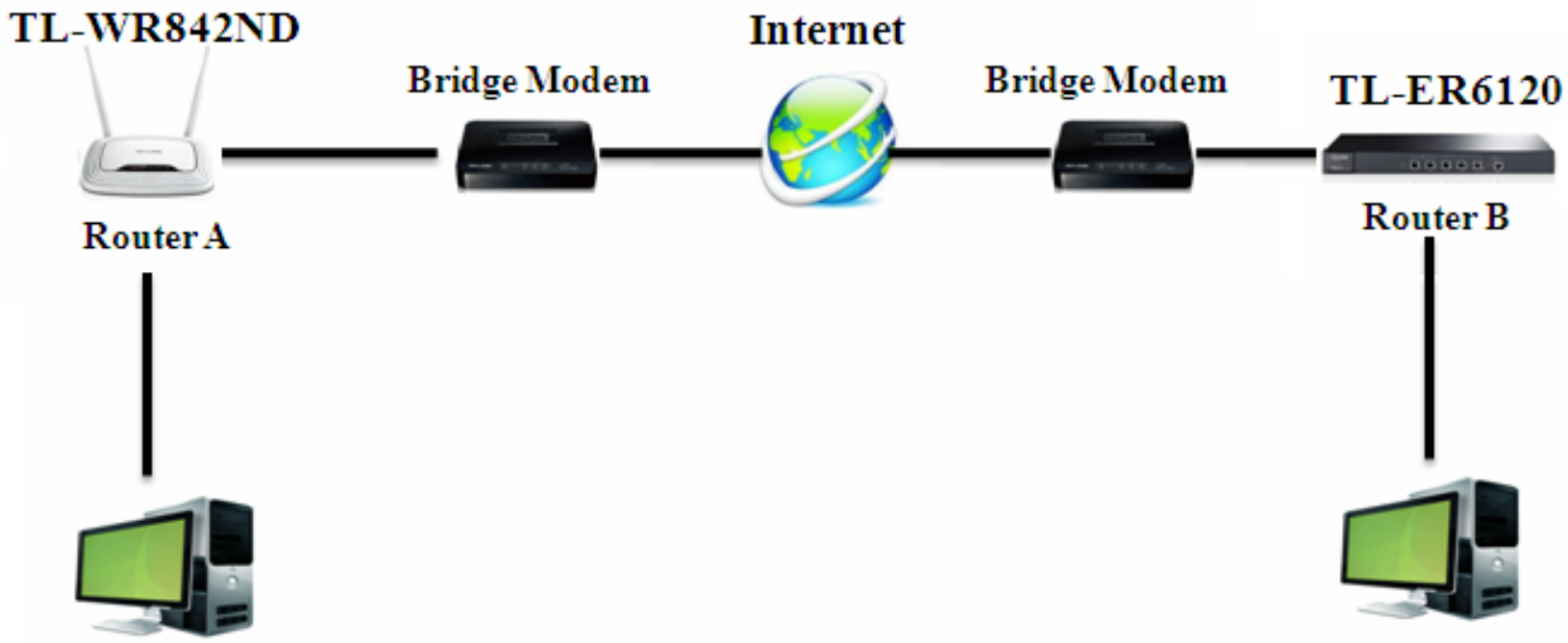
3.2 Configure IPsec VPN on TL-ER6120 (Router B) 10

3.3 Check IPsec Security Alliance 16

Chapter 1. Overview

IPsec VPN is usually built to connect two or more remote LANs via Internet so that hosts in different remote LANs are able to communicate with each other as if they are all in the same LAN.

Typical Topology



* Here we use TL-WR842ND (Router A) and TL-ER6120 (Router B) for example.

Chapter 2. Before Configuration

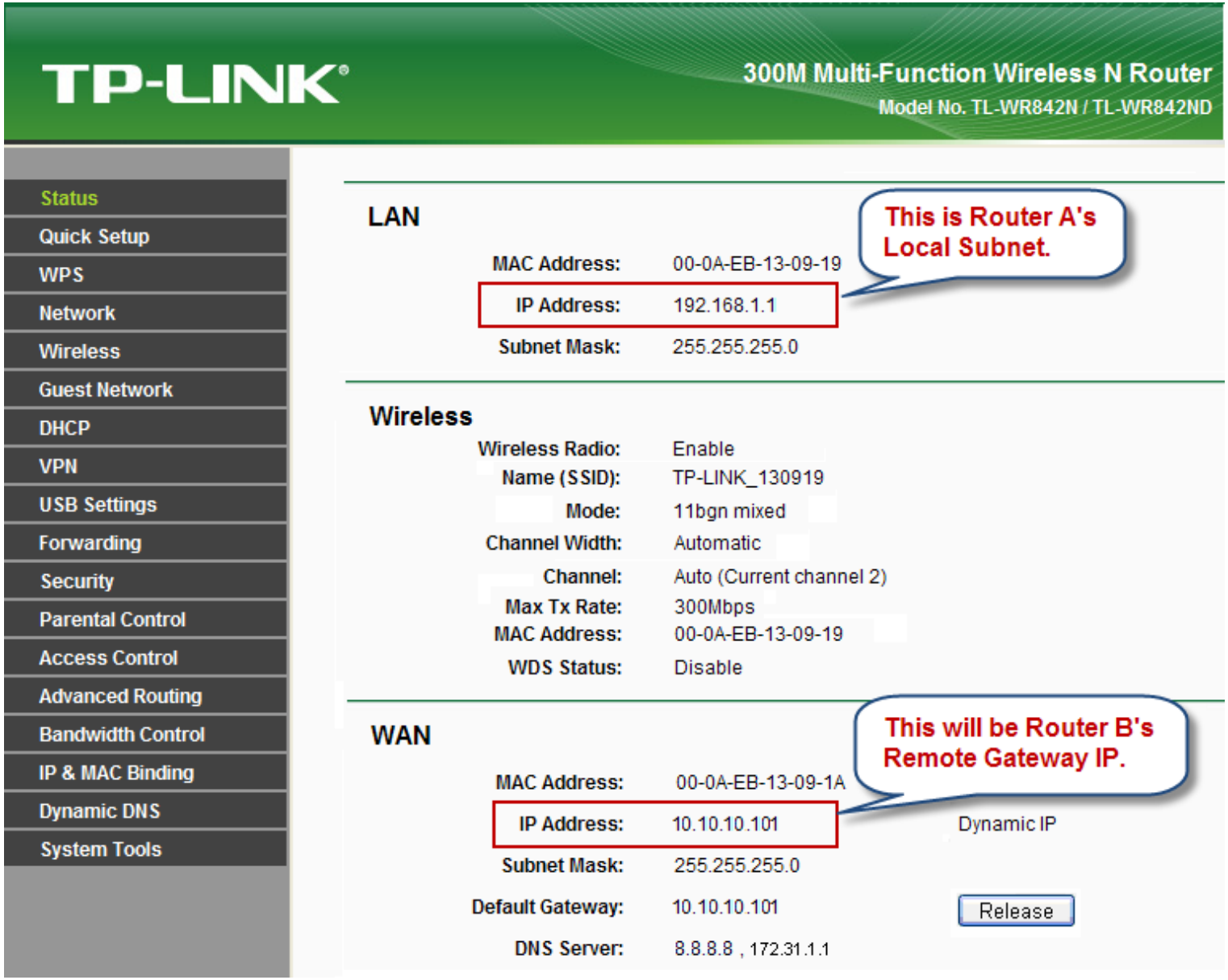
Before setting up an IPsec VPN, you need to

- Ensure that the two routers are connected to the Internet, actively.
- Verify the settings needed for IPsec VPN on the two routers.

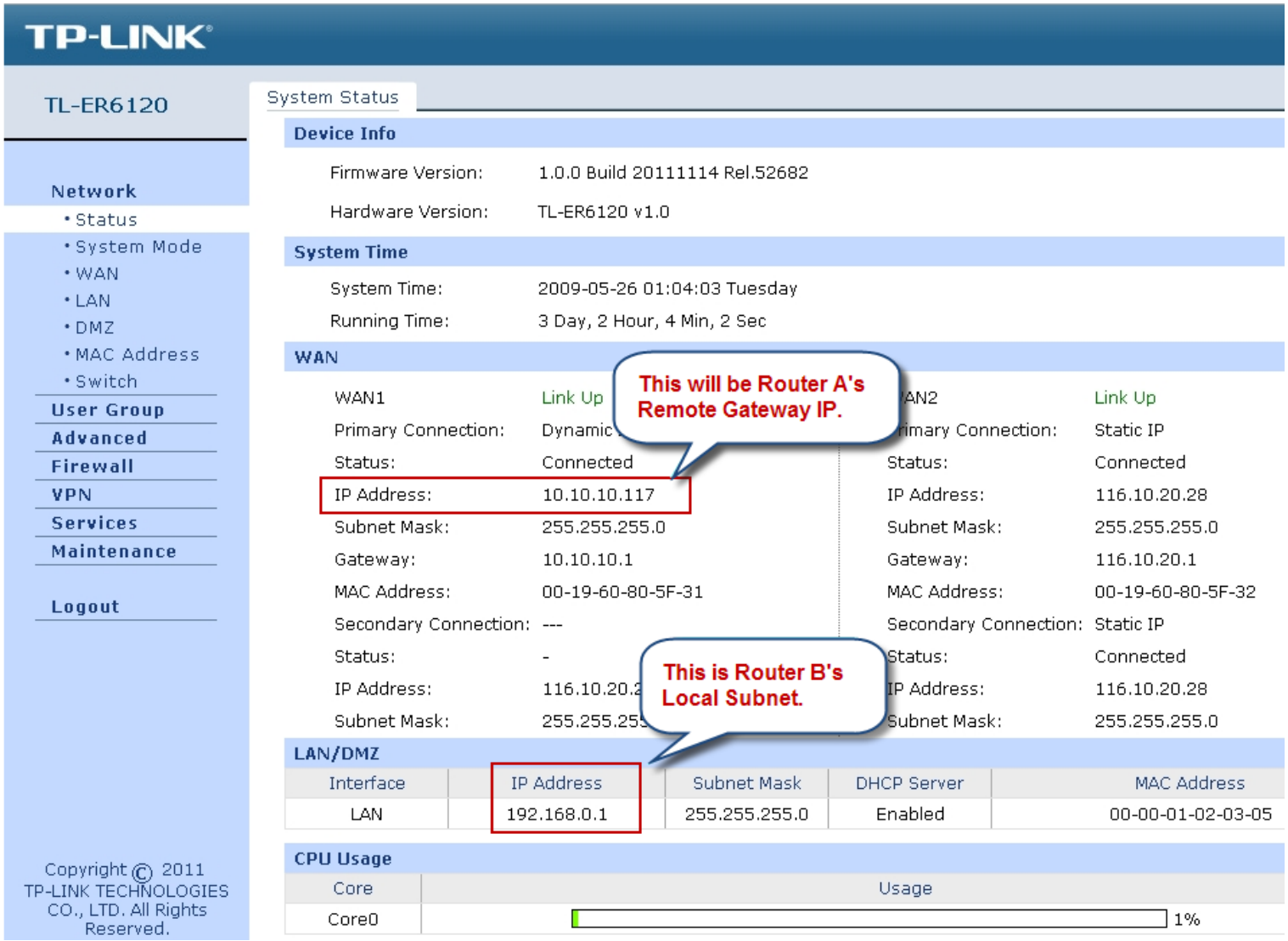
Verify the settings needed for IPsec VPN on the two routers:

1. Log in TL-WR842ND's management webpage, then check on the Status page.
2. Log in TL-ER6120's management webpage, then check on the Network -> Status page.

TL-WR842ND's Status Page:



TL-ER6120's Status Page:

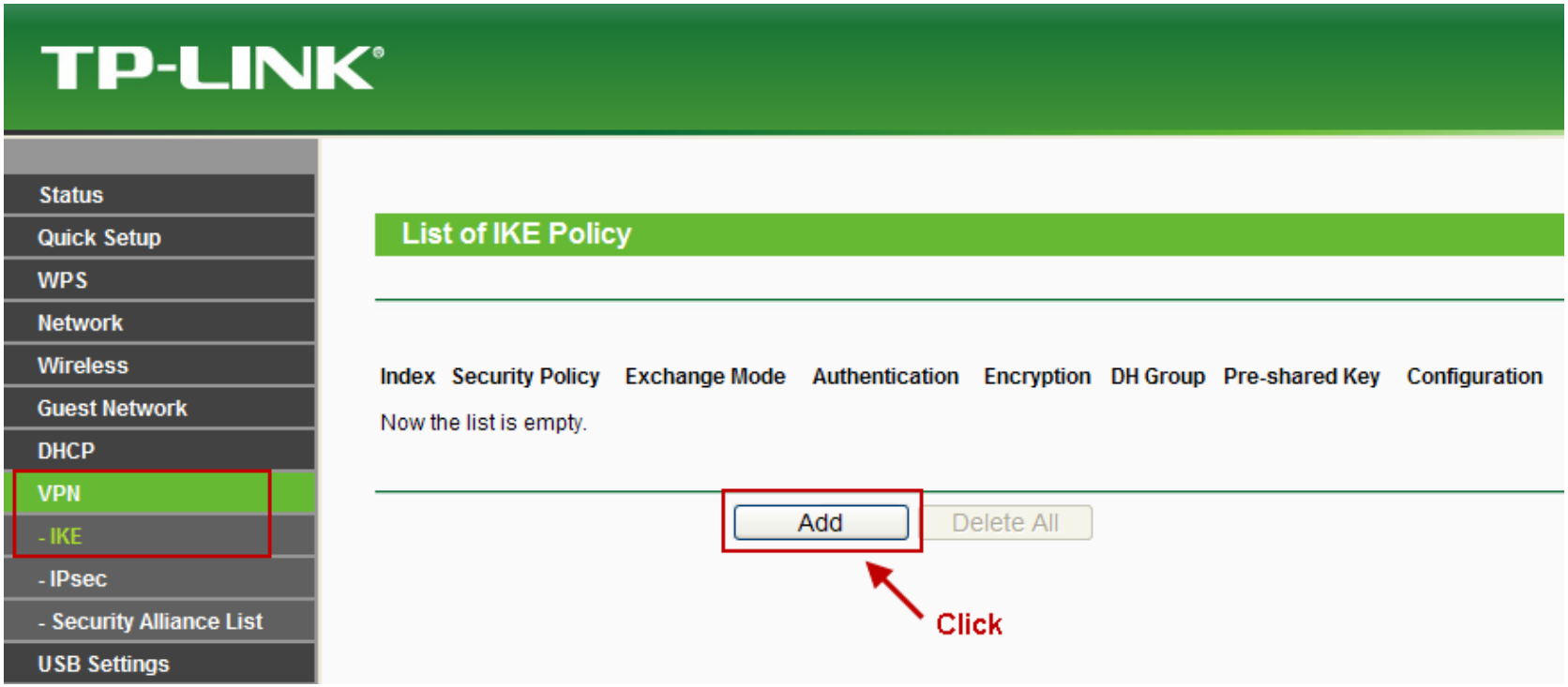


Chapter 3. Configuration

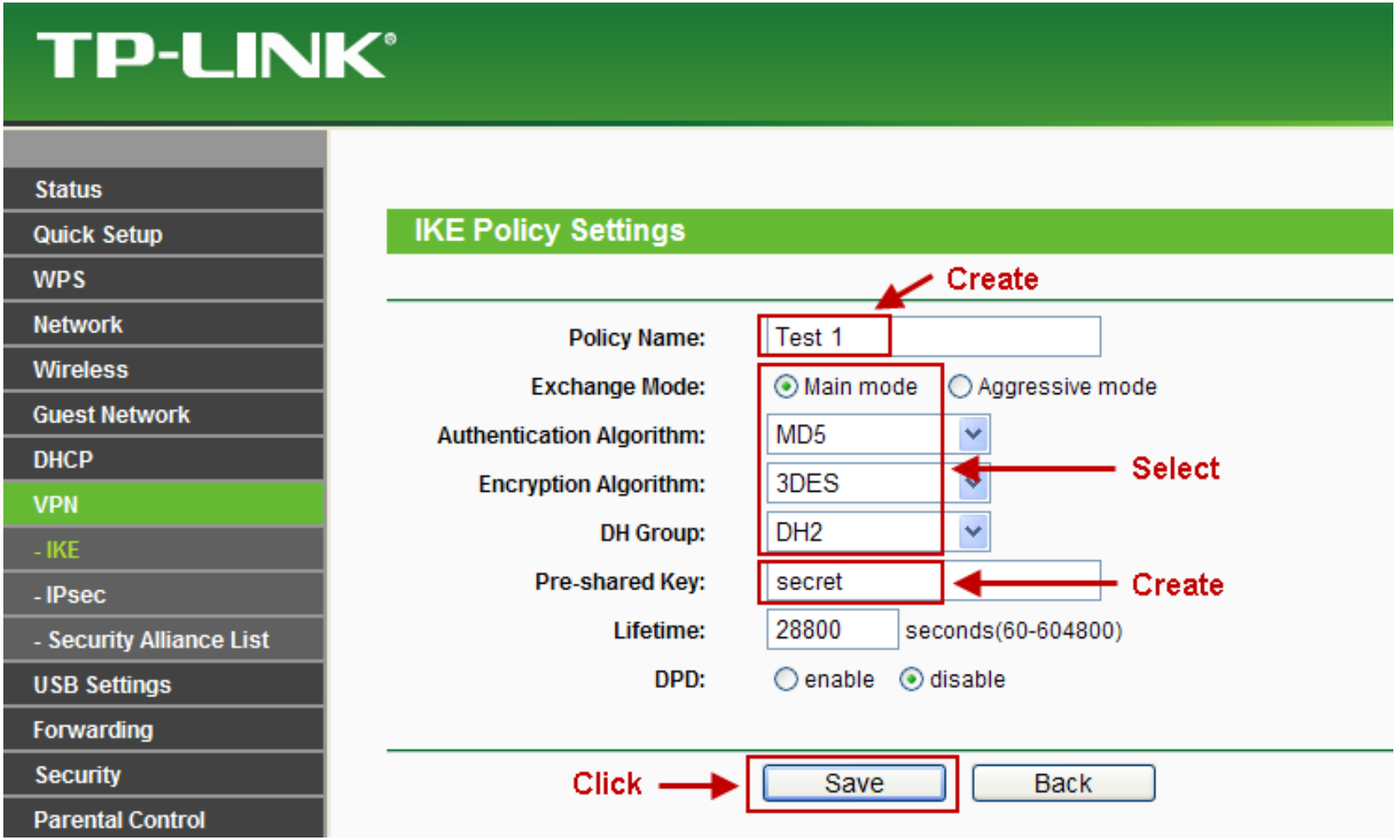
3.1 Configure IPsec VPN on TL-WR842ND (Router A)

Step 1. Log in the management webpage of TL-WR842ND.

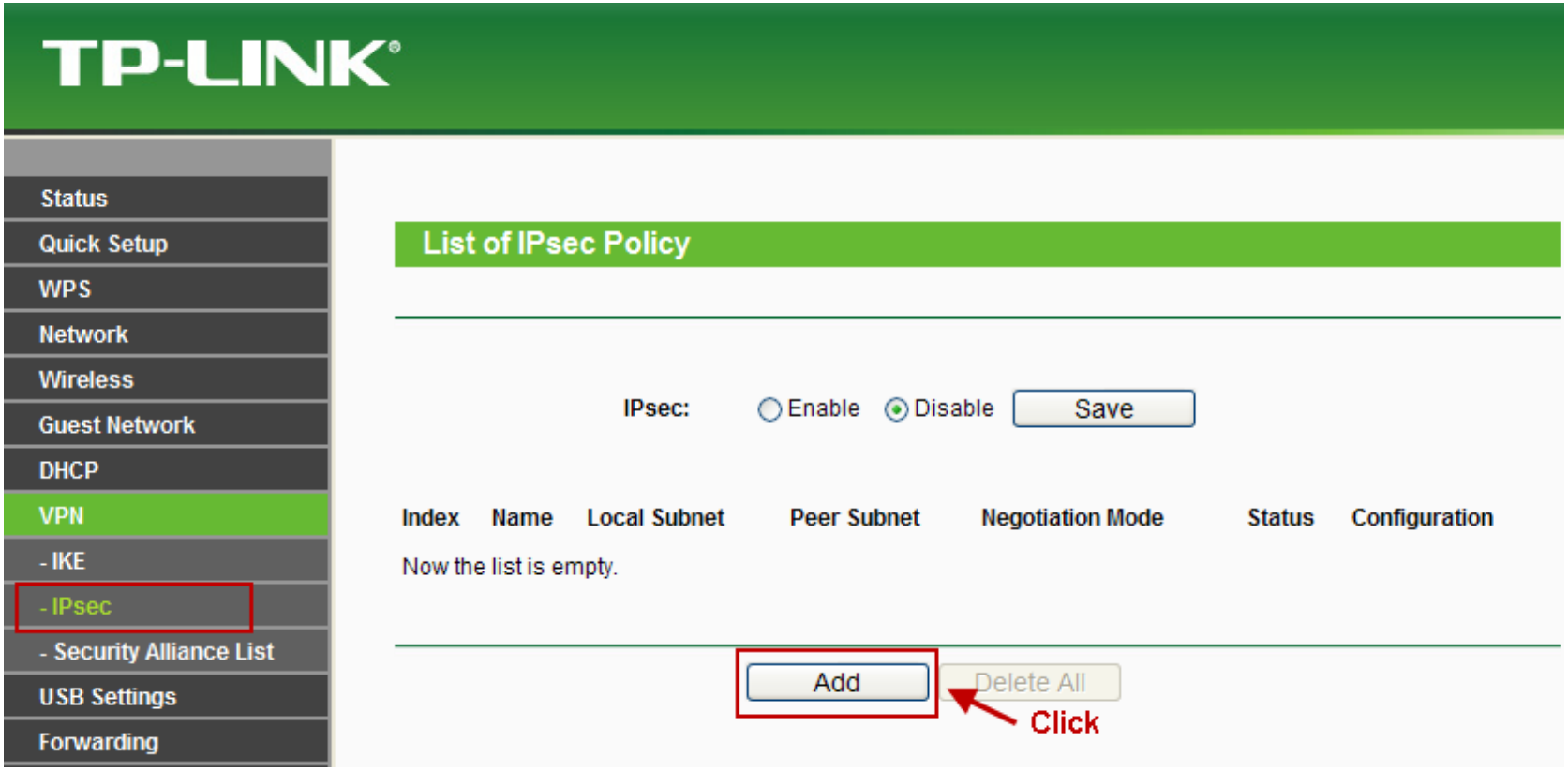
Step 2. Go to **VPN** -> **IKE**, click **Add**.



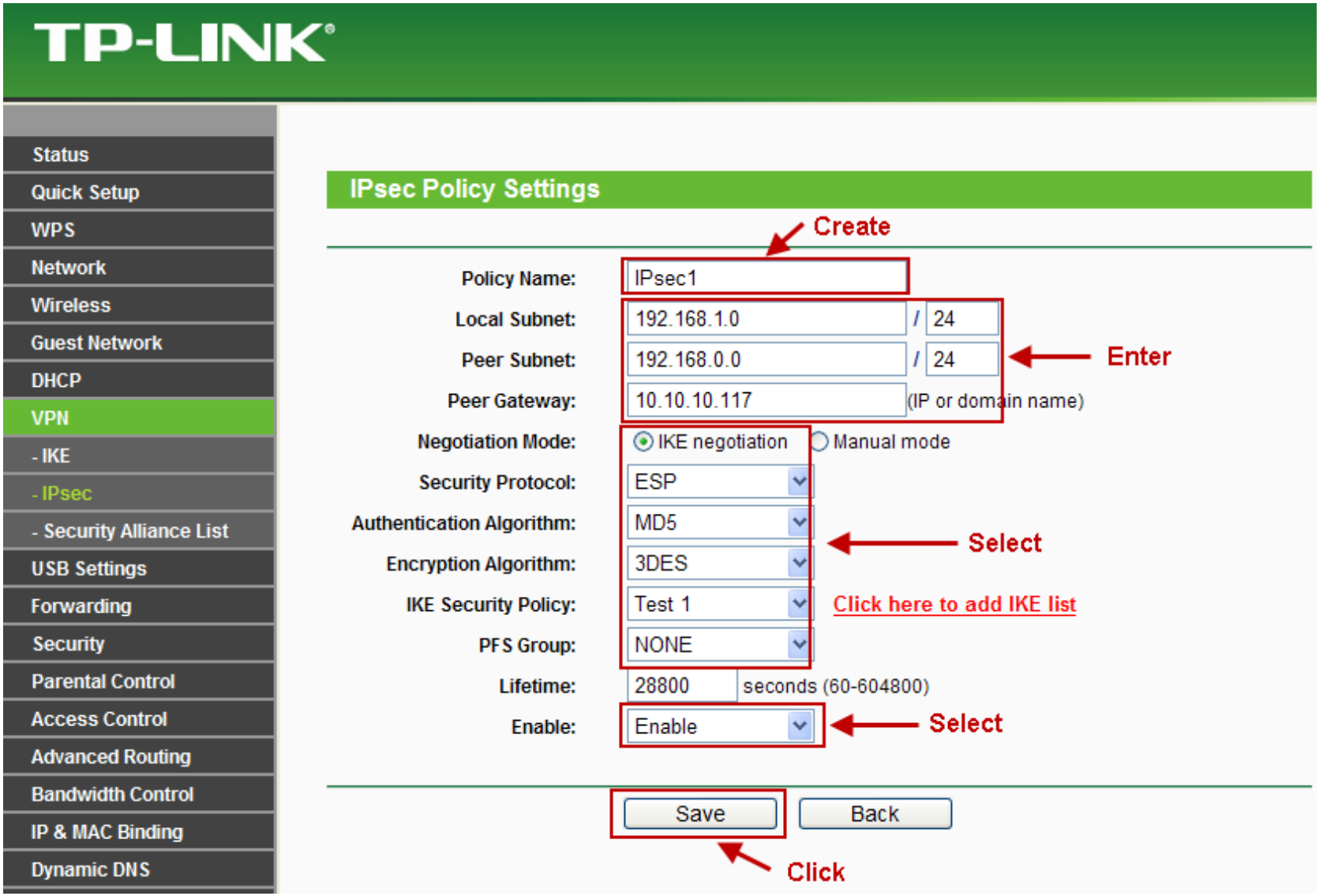
Step 3. Create a Policy Name (here take **Test 1** for example); select **Main mode** as Exchange Mode, **MD5** as Authentication Algorithm, **3DES** as Encryption Algorithm, **DH2** as DH Group; and create a Pre-shared Key (here take **secret** for example). Then click **Save**.



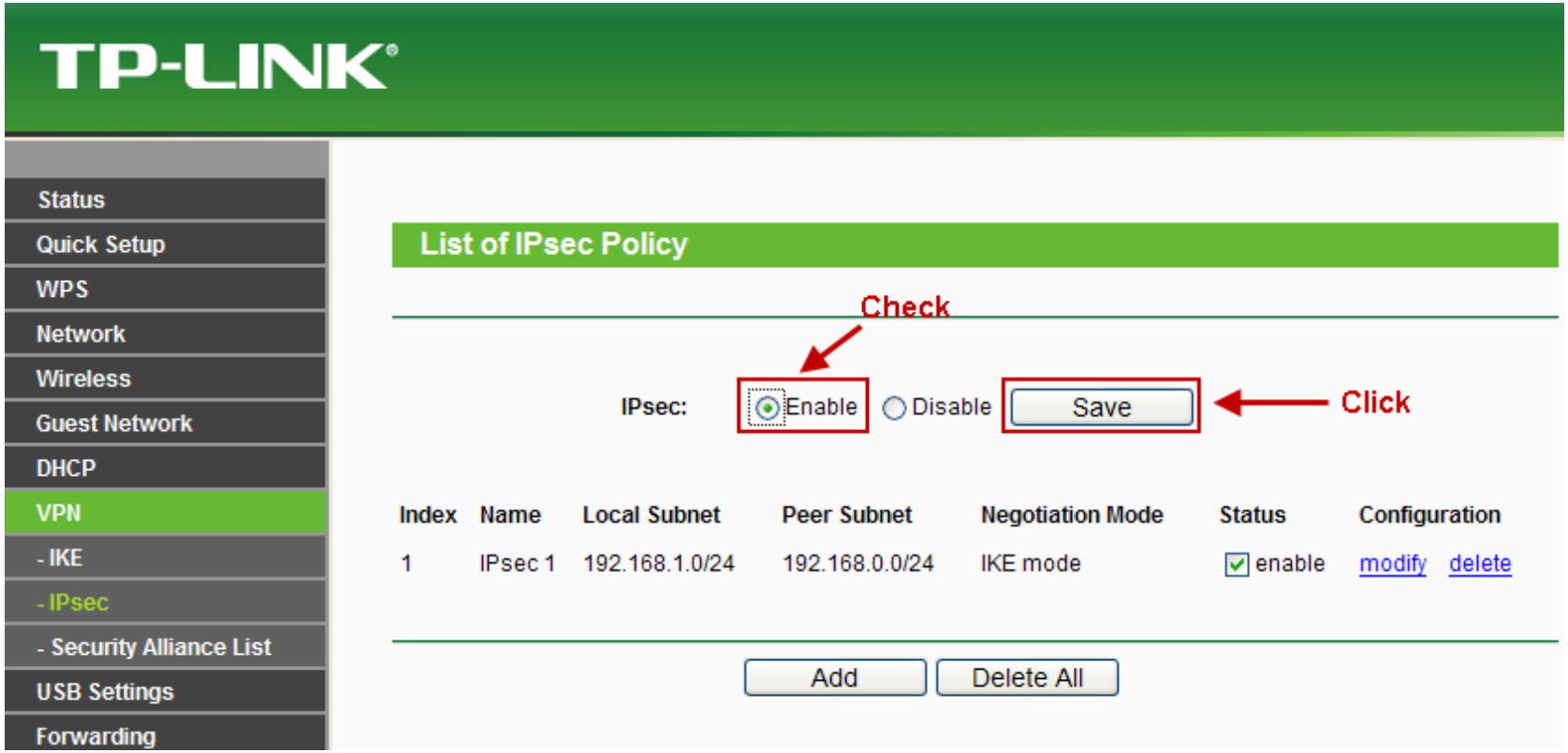
Step 4. Go to **VPN** -> **IPsec**, click **Add**.



Step 5. Create a Policy Name (here take **IPsec 1** for example). Enter **192.168.1.0 / 24** as the Local Subnet, **192.168.0.0 / 24** as the Peer Subnet (it is Router B's Local Subnet), **10.10.10.117** as the Peer Gateway (it is Router B's WAN IP). Select **IKE negotiation** as Negotiation Mode, **ESP** as Security Protocol, **MD5** as Authentication Algorithm, **3DES** as Encryption Algorithm, **Test 1** as IKE Security Policy, **NONE** as PFS Group, **Enable** as the Status. Then click **Save**.


TP-LINK
Status
Quick Setup
WPS
Network
Wireless
Guest Network
DHCP
VPN
- IKE
- IPsec
- Security Alliance List
USB Settings
Forwarding
Security
Parental Control
Access Control
Advanced Routing
Bandwidth Control
IP & MAC Binding
Dynamic DNS
IPsec Policy Settings
Create
Policy Name: IPsec1
Local Subnet: 192.168.1.0 / 24
Peer Subnet: 192.168.0.0 / 24
Enter
Peer Gateway: 10.10.10.117 (IP or domain name)
Negotiation Mode: IKE negotiation Manual mode
Security Protocol: ESP
Authentication Algorithm: MD5
Encryption Algorithm: 3DES
Select
IKE Security Policy: Test 1
Click here to add IKE list
PFS Group: NONE
Lifetime: 28800 seconds (60-604800)
Enable: Enable
Select
Save
Back
Click

Step 6. Check **Enable** and then click **Save** to activate the IPsec.

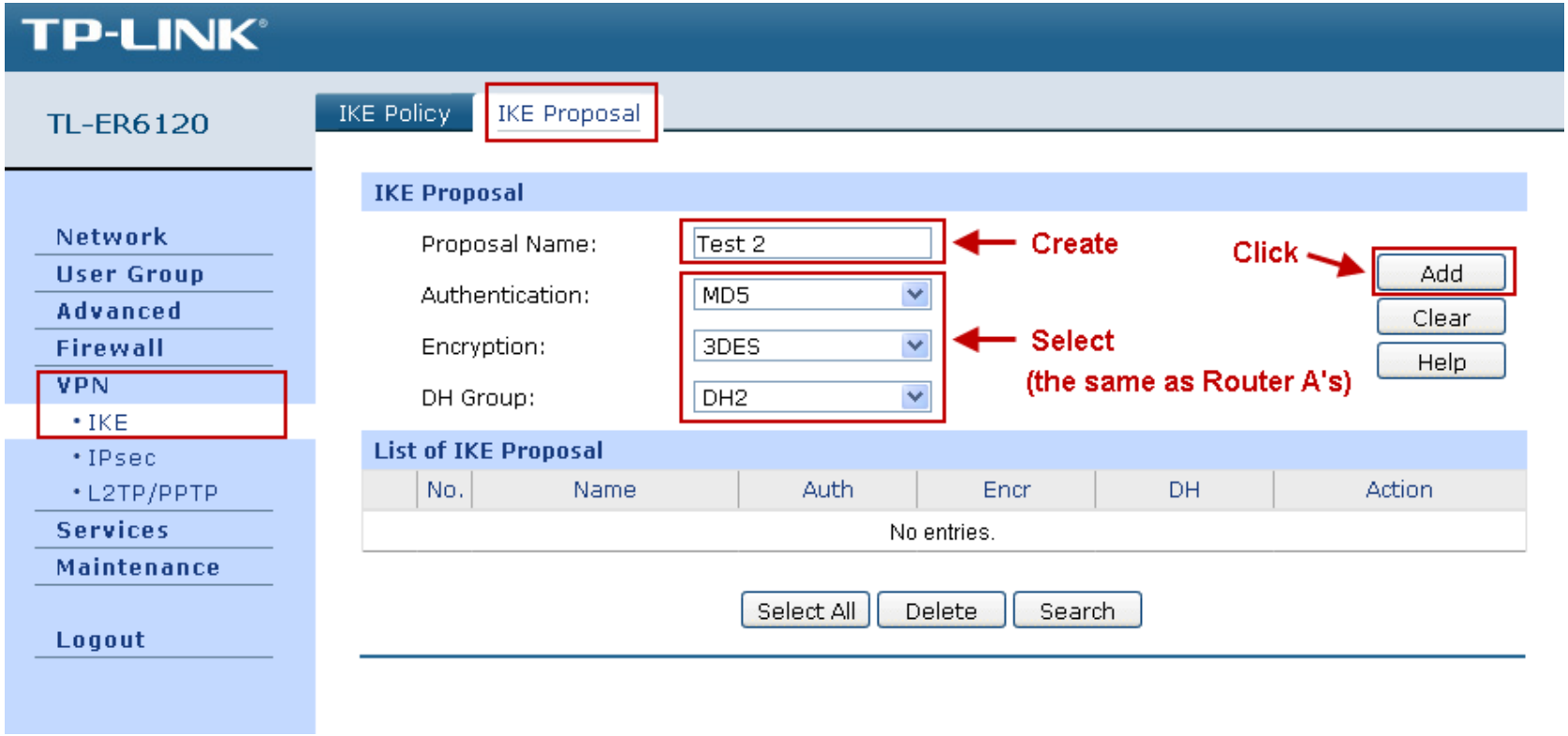


3.2 Configure IPsec VPN on TL-ER6120 (Router B)

Step 1. Log in the management webpage of TL-ER6120.

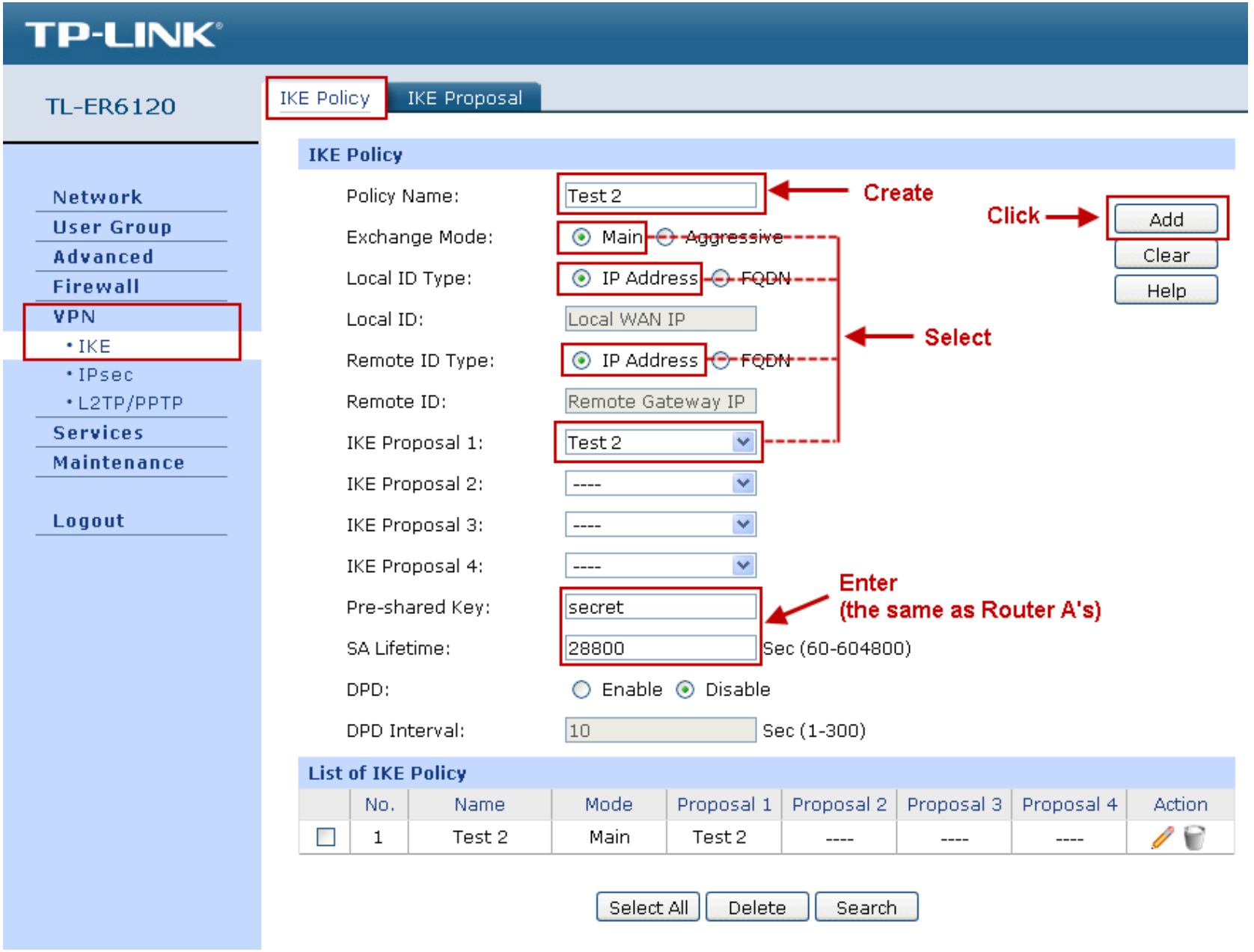
Step 2. Go to **VPN** -> **IKE** -> **IKE Proposal**.

Step 3. Create a Proposal Name (here take **Test 2** for example). Select **MD5** as Authentication Algorithm, **3DES** as Encryption Algorithm, **DH2** as DH Group, the same as Router A's. Then click **Add**.



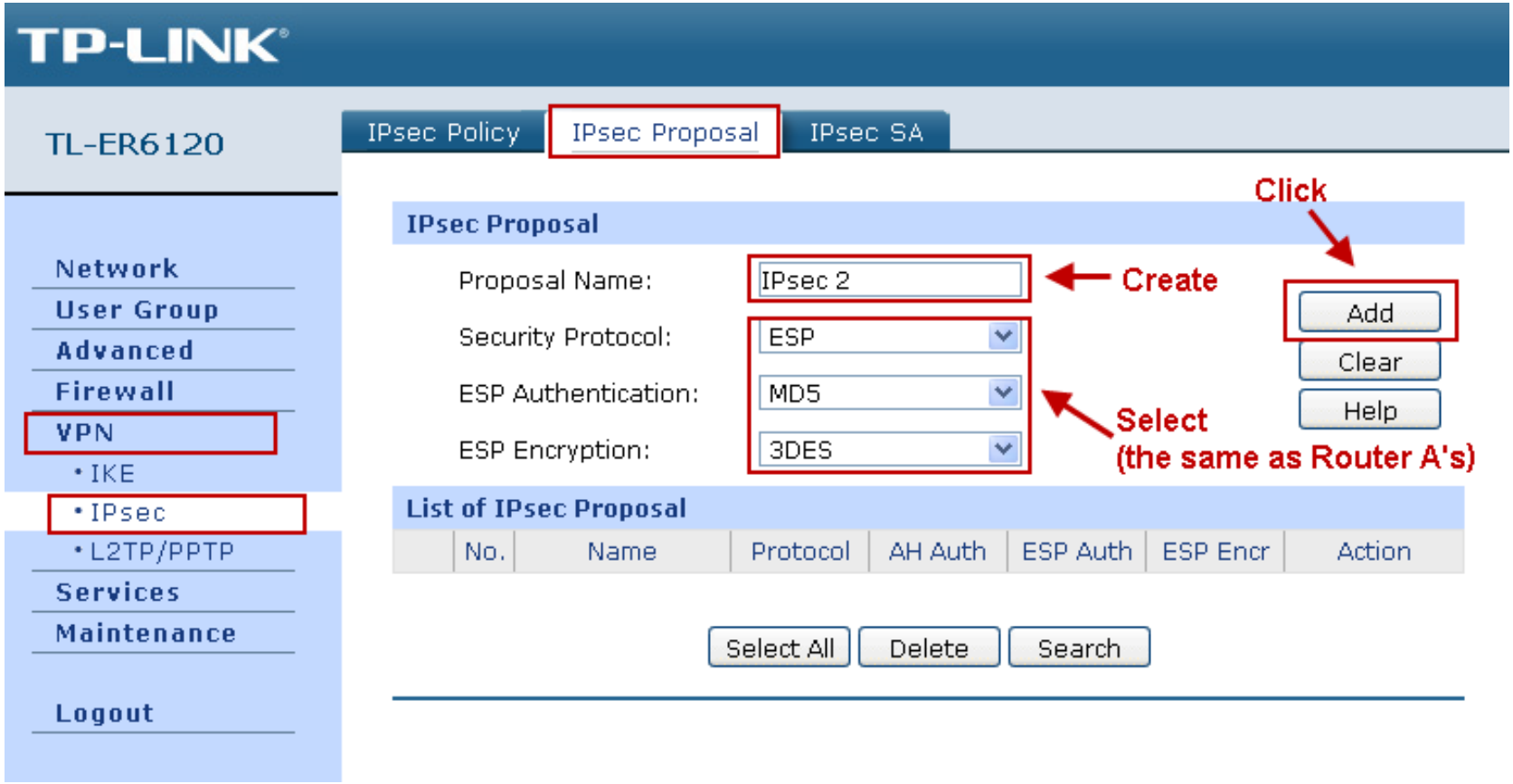
Step 4. Go to **VPN** -> **IKE** -> **IKE Policy**.

Step 5. Create a Policy Name (here take **Test 2** for example). Select **Main** as Exchange Mode, **IP Address** as Local ID Type and Remote ID Type, **Test 2** as IKE Proposal 1; enter **secret** as Pre-shared Key, and **28800** as SA Lifetime, the same as Router A's. Then click **Add**.


TP-LINK
TL-ER6120
IKE Policy
IKE Proposal
Network
User Group
Advanced
Firewall
VPN
• IKE
• IPsec
• L2TP/PPTP
Services
Maintenance
Logout
IKE Policy
Policy Name: Test 2
Create
Click
Add
Clear
Help
Exchange Mode: Main Aggressive
Local ID Type: IP Address FQDN
Local ID: Local WAN IP
Remote ID Type: IP Address FQDN
Select
Remote ID: Remote Gateway IP
IKE Proposal 1: Test 2
IKE Proposal 2: ----
IKE Proposal 3: ----
IKE Proposal 4: ----
Pre-shared Key: secret
Enter
(the same as Router A's)
SA Lifetime: 28800 Sec (60-604800)
DPD: Enable Disable
DPD Interval: 10 Sec (1-300)
List of IKE Policy
No. Name Mode Proposal 1 Proposal 2 Proposal 3 Proposal 4 Action
1 Test 2 Main Test 2 ---- ---- ----
Select All
Delete
Search

Step 6. Go to **VPN** -> **IPsec** -> **IPsec Proposal**.

Step 7. Create a Proposal Name (here take **IPsec 2** for example). Select **ESP** as Security Protocol, **MD5** as ESP Authentication, **3DES** as ESP Encryption, the same as Router A's. Then click **Add**.



Step 8. Go to **VPN** -> **IPsec** -> **IPsec Proposal**.

Step 9. Create a Policy Name (here take **IPsec 2** for example). Select **LAN-to-LAN** as the Mode.

Enter **192.168.0.0 / 24** as the Local Subnet, **192.168.1.0 / 24** as the Remote Subnet (it is Router A's Local Subnet), **10.10.10.101** as the Remote Gateway (it is Router A's WAN IP).

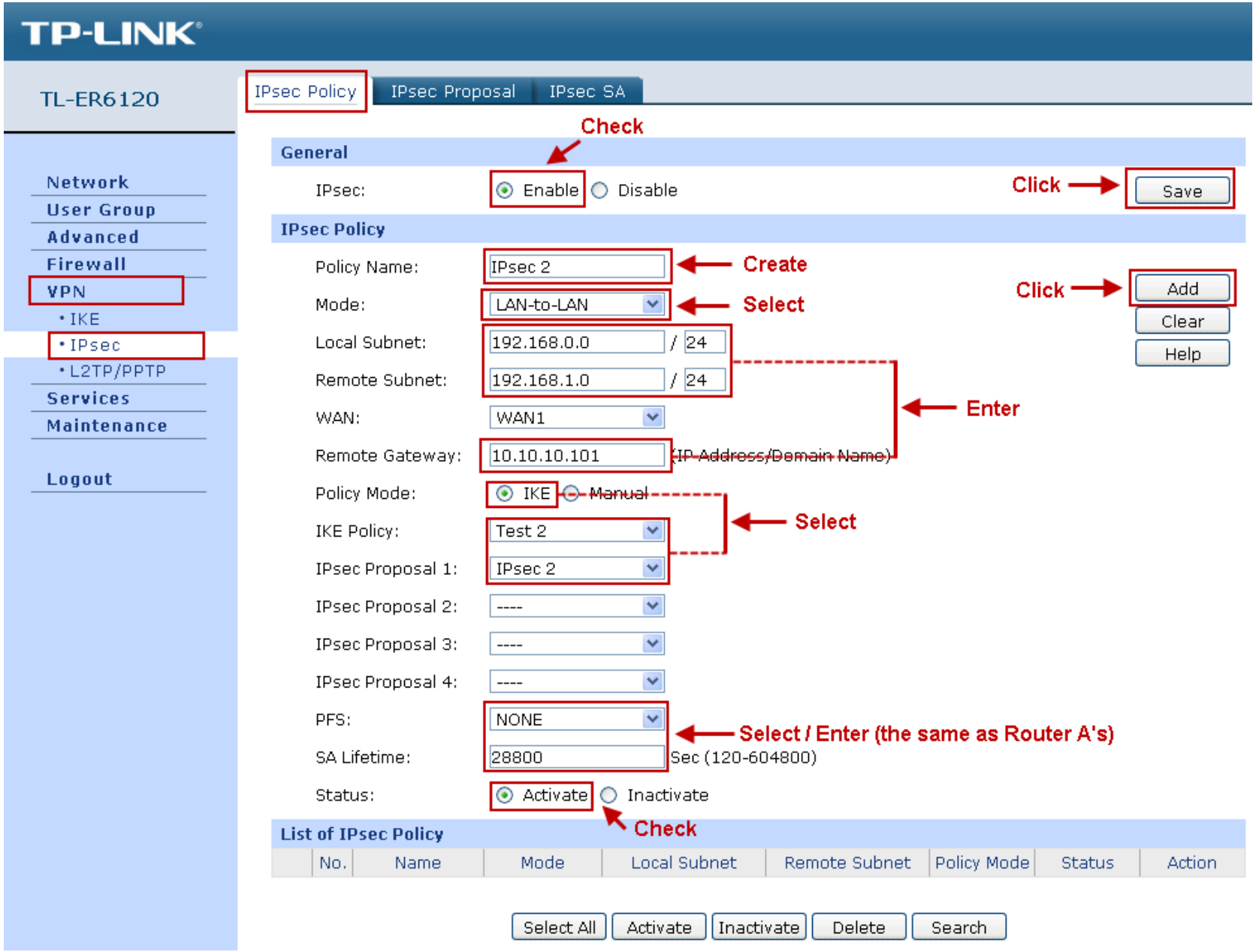
Select **IKE** as Policy Mode, **Test 2** as IKE Policy, **IPsec 2** as IPsec Proposal.

Select **NONE** as PFS, and enter **28800** for SA Lifetime, which are the same as Router A's.

Check **Activate** for the Status.

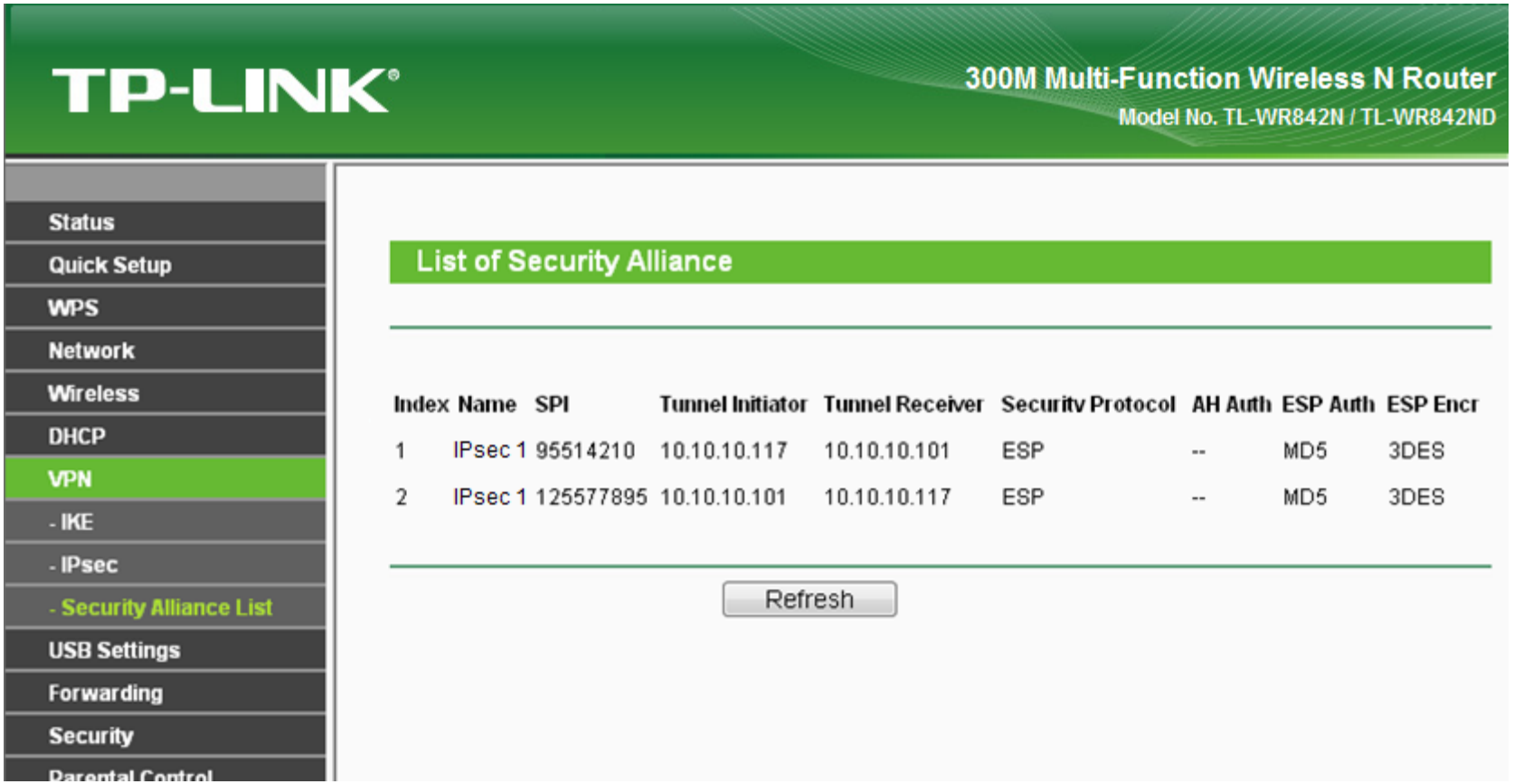
Click **Add**.

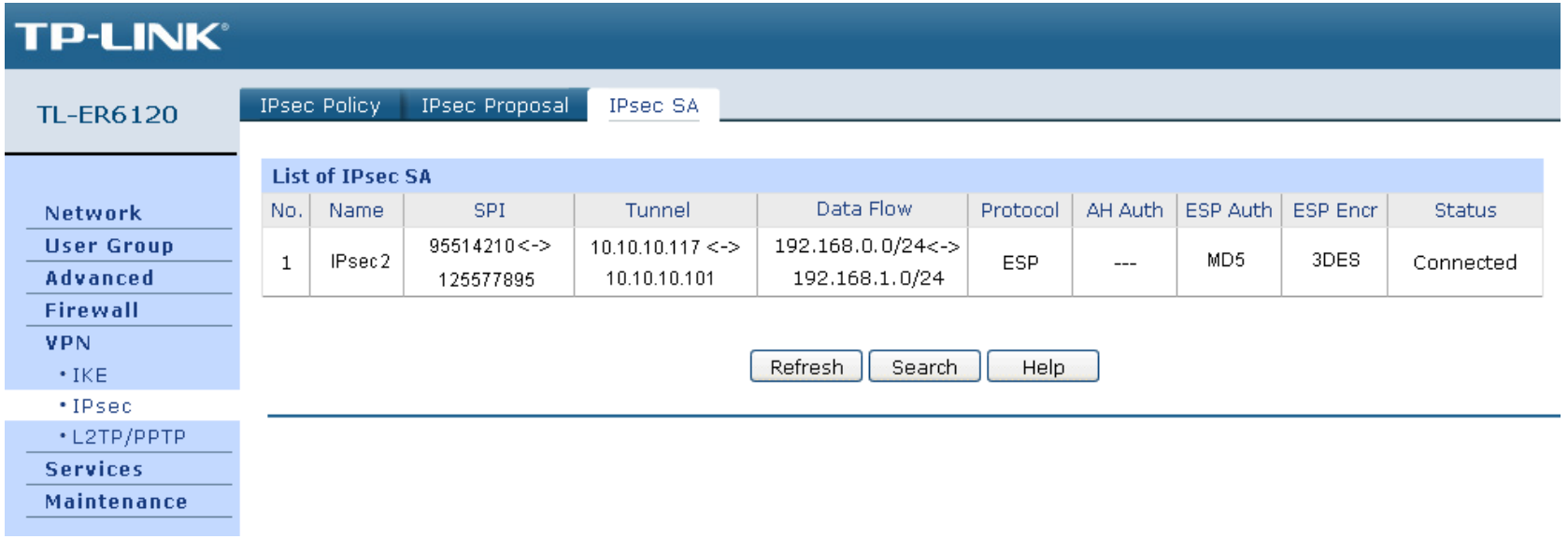
Check **Enable** and then click **Save** to activate the IPsec.


TP-LINK
TL-ER6120
Network
User Group
Advanced
Firewall
VPN
• IKE
• IPsec
• L2TP/PPTP
Services
Maintenance
Logout
IPsec Policy
IPsec Proposal
IPsec SA
Check
General
IPsec: Enable Disable
Click
Save
IPsec Policy
Policy Name: IPsec 2
Create
Mode: LAN-to-LAN
Select
Local Subnet: 192.168.0.0 / 24
Remote Subnet: 192.168.1.0 / 24
WAN: WAN1
Remote Gateway: 10.10.10.101 (IP Address/Domain Name)
Enter
Policy Mode: IKE Manual
IKE Policy: Test 2
IPsec Proposal 1: IPsec 2
Select
IPsec Proposal 2: ----
IPsec Proposal 3: ----
IPsec Proposal 4: ----
PFS: NONE
SA Lifetime: 28800 Sec (120-604800)
Select / Enter (the same as Router A's)
Status: Activate Inactivate
Check
Click
Add
Clear
Help
List of IPsec Policy
No. Name Mode Local Subnet Remote Subnet Policy Mode Status Action
Select All
Activate
Inactivate
Delete
Search

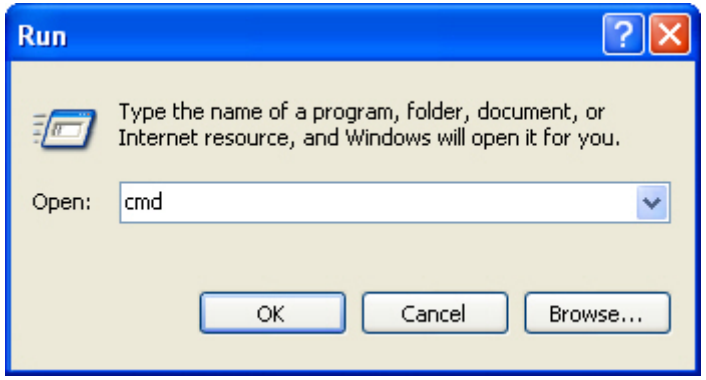
3.3 Check IPsec Security Alliance

Step 1. Check the **VPN** -> **Security Alliance List** page of TL-WR842ND as well as the **VPN** -> **IPsec** -> **IPsec SA** page of TL-ER6120.

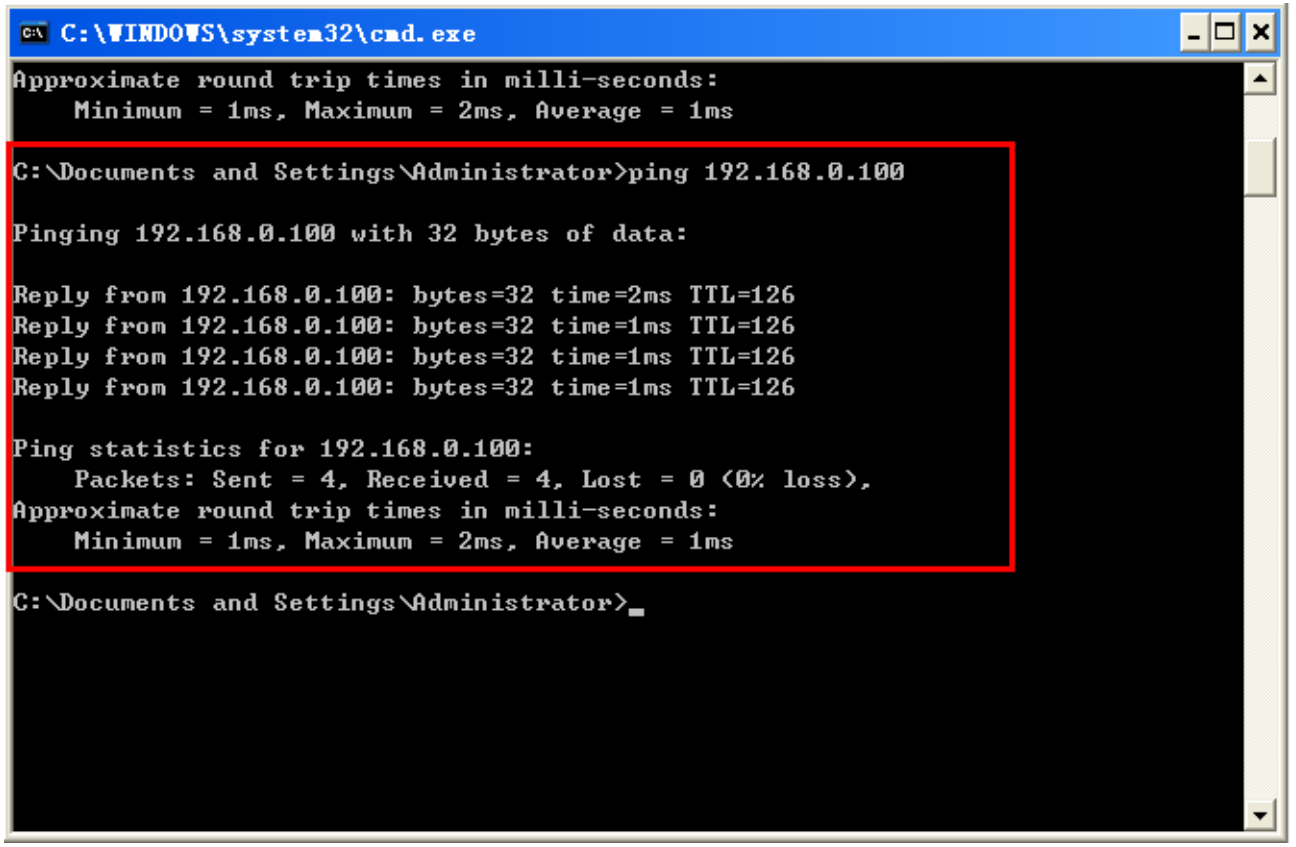




Step 2. On a host under TL-WR842ND, press [Windows Logo] + [R] to open **Run** dialog, input **cmd** and click **OK**.



Step 3. In the CLI window, type in **ping 192.168.0.x** (192.168.0.x can be IP address of any host in TL-ER6120), and then press [Enter].



If Ping proceeds successfully and gets replies from the host in TL-ER6120, the IPsec connection must be working properly now.

If there are any further problems, please feel free to contact our TP-LINK technical support.