

# Instructions for Creating VPN connection in Ubuntu

Before setting up a VPN connection, in the user tree in the desired user's card, check the box **Allow remote access via VPN**. To do this, go to **Users -> User & Group**:

**General**    Quota    IP and MAC authorization

Username

Login

Found in a group

## Operations

[Change password](#)

[Delete](#)

## Additional settings

☐ Deny access

☒ Allow remote access via VPN

[Save](#)

## PPTP Protocol

Before creating a connection in Ubuntu, go to SafeUTM, **Users -> VPN connections**, and check the box **PPTP Connection**:

## General settings

Network for VPN connections

192.168.0.0/16

☒ PPTP connection☐ PPPoE connection☐ IKEv2/IPSec Connection

Domain

safeutm.com

☐ SSTP Connection

Domain

Port

1443

☐ L2TP/IPSec Connection

PSK

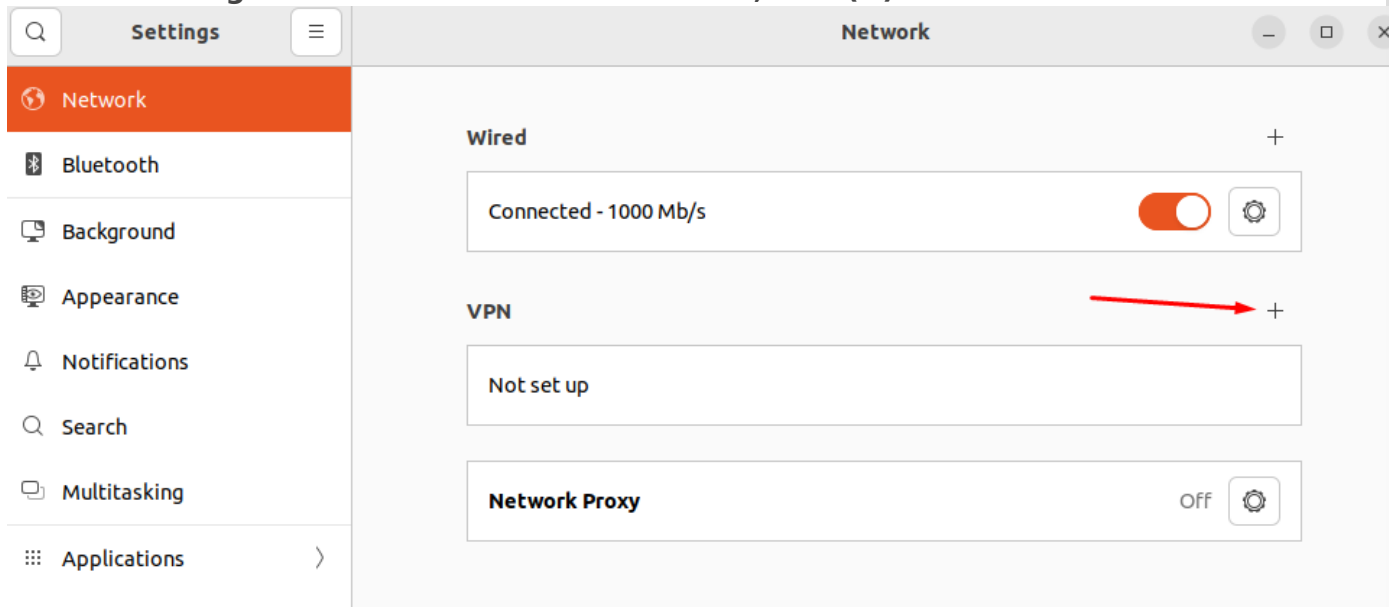
.....



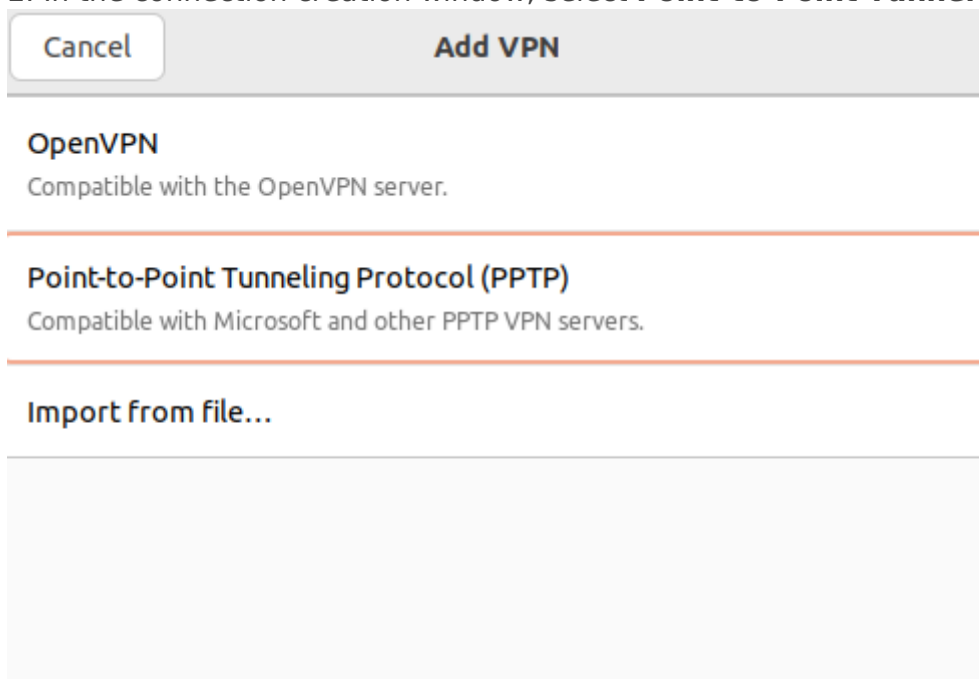
Save

## Creating a connection in Ubuntu

1. Go to **Settings -> Networks** and in the **VPN** line, click **(+)**:



2. In the connection creation window, select **Point-to-Point Tunneling Protocol (PPTP)**:



3. In the **Identification** section fill in the following fields:

- **Name** – the connection name.
- **Gateway** – the domain name or IP address of the UTM interface.
- **Username** – the name of the user allowed to connect via VPN.
- **Password** – the user's password. In the right part of the field, select the storage option for the VPN connection password.

- **NT domain** – leave the field empty.

Cancel

Add VPN

Add

Identity    IPv4    IPv6

Name

VPN 1

**General**

Gateway

11.22.33.44


**Optional**

User name

j.smith


Password

.....



☐ Show password

NT Domain

 Advanced...

We recommend that you click **Advanced** and check the following:

- **Allow the following authentication methods** – check the item
- **Use MPPE encryption** – in the Encryption line, select 128-bit (the most protected).
- **Use BSD compression for data** – using the BSD-compress algorithm.
- **Use Deflate compression for data** – using Deflate algorithm.

- **Use TCP Header Compression** – using Van Jacobson's TCP/IP header compression method.

Cancel

Advanced Properties

Apply

**Authentication**

Allow the following authentication methods:

☐ CHAP

☐ MSCHAP

☒ MSCHAPv2

☐ EAP

**Security and Compression**

☒ Use Point-to-Point encryption (MPPE)

Security: 128-bit (most secure) ▾

☐ Allow stateful encryption

☒ Allow BSD data compression

☒ Allow Deflate data compression

☒ Use TCP header compression

**Misc**

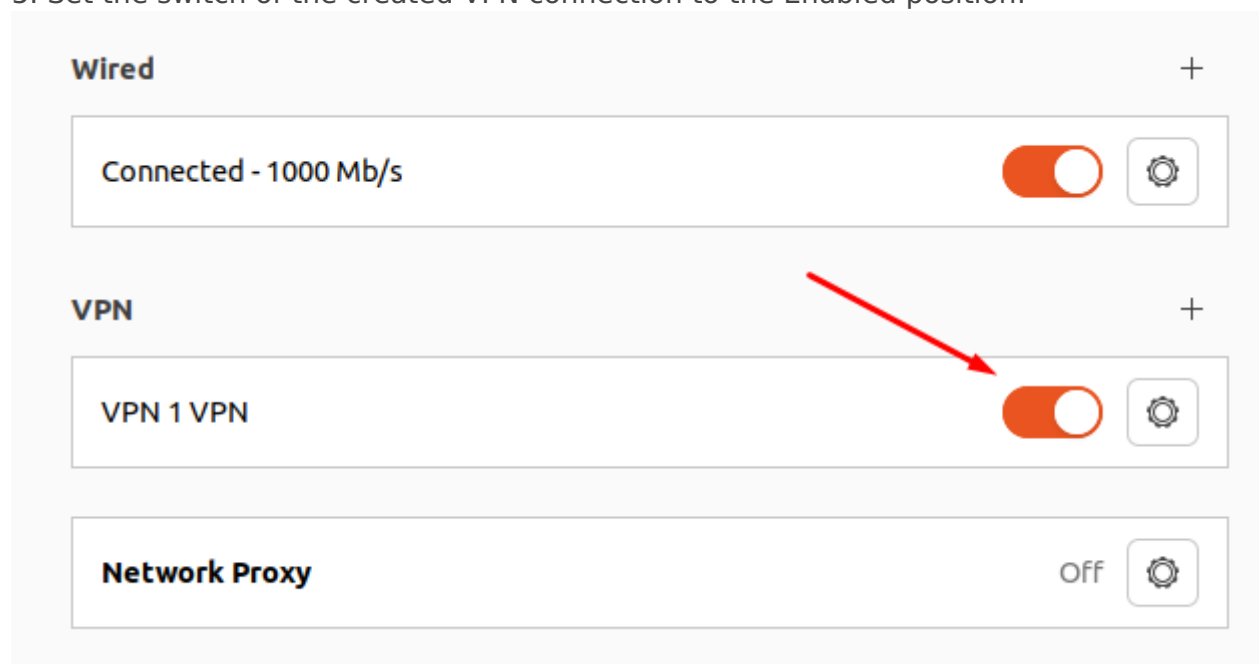
☐ Send PPP echo packets

☐ Use custom unit number: 0 

– +

4. Click **OK** and **Add**.

5. Set the switch of the created VPN connection to the Enabled position:



## IKEv2/IPsec Protocol

Before creating a connection in Ubuntu, configure SafeUTM:

- 1. Go to **Users -> VPN connections**.
- 2. Check the box **IKEv2/IPsec Connection** and fill in the **Domain** fields:

**General**      Fixed VPN IP addresses

General settings

Network for VPN connections

192.168.0.0/16

☐ PPTP connection

☐ PPPoE connection

☒ IKEv2/IPSec Connection

Domain

example.com

☐ SSTP Connection

Domain

Port

1443

☐ L2TP/IPSec Connection

PSK





.....




Save









3. Download the root certificate from **Services -> TLS Certificates:**

## TLS Certificates




### Valid certificates






| Status  | Domain                    | Type                    | Publisher   | Operations  |
|---|---------------------------|-------------------------|-------------|---|
|  | UTM-SAFEDNS (Root)        | Automatically generated | UTM-SAFEDNS |    |
|  | safeutm-1.root.safe.local | Automatically generated | UTM-SAFEDNS |   |
|  | web-interface.local       | Automatically generated | UTM-SAFEDNS |   |

### Uploaded certificates



Upload user certificate

Upload root certificate

| Common Name        | Type                    | Publisher   | Operations  |
|--------------------|-------------------------|-------------|---|
| UTM-SAFEDNS (Root) | Automatically generated | UTM-SAFEDNS |    |

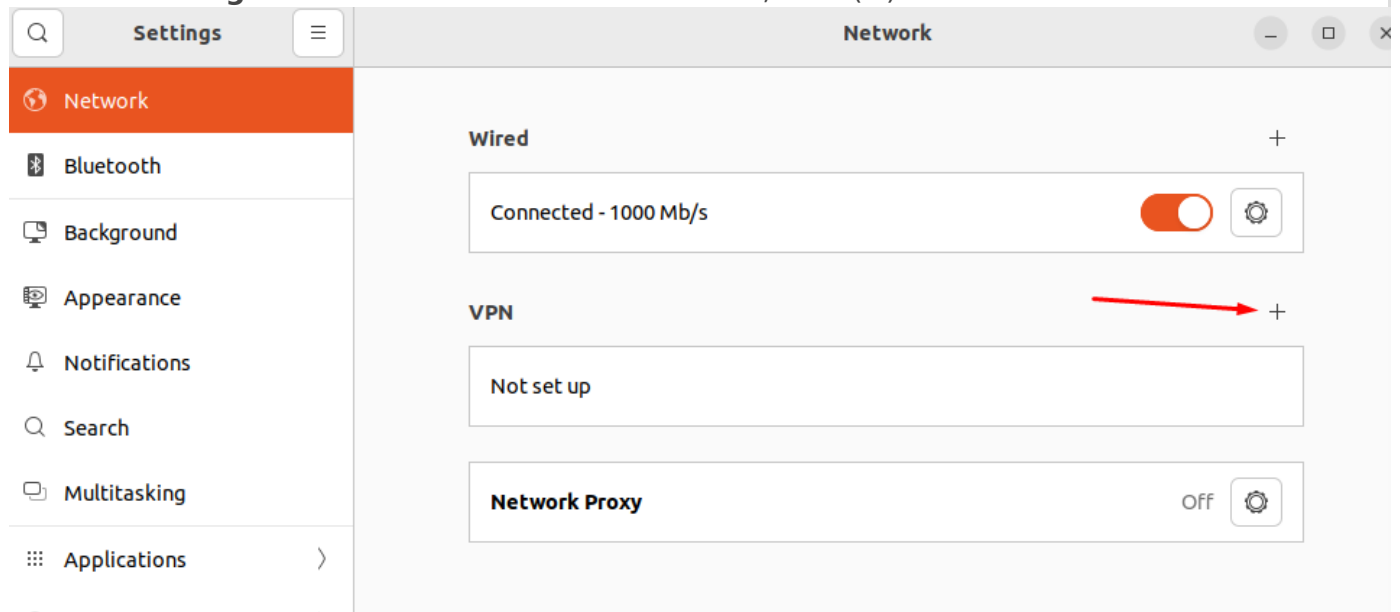
The root certificate will be required to configure the connection of the user's workstation if the root certificate was not obtained via Let's Encrypt. If necessary, transfer the certificate file to the workstation.

If a certificate issued by Let's Encrypt is used for a VPN connection, then installing a root certificate on the device is not required.

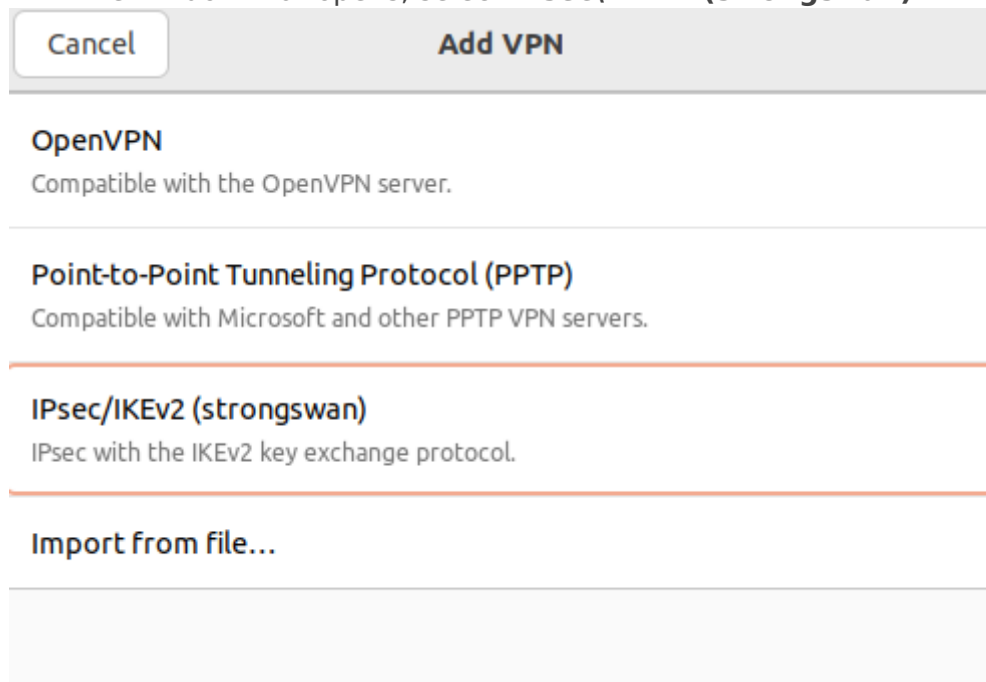
## Creating a connection in Ubuntu



1. Open the terminal with the keyboard shortcut Ctrl+Alt+F1 and run the command: `sudo apt install -y network-manager-strongswan libcharon-extra-plugins libstrongswan-extra-plugins`
2. After the installation is complete, restart the computer: `sudo reboot`
3. Go to **Settings -> Networks** and in the **VPN** line, click (+):



4. In the window that opens, select **IPsec/IKEv2 (strongswan)**:



5. In **Identification** fill in the following fields:

- **Name** – connection name.
- **Address** – enter the domain specified in **Users -> Authorization -> VPN Connection -> IKEv2/IPsec Connection**.
- **Certificate** – select the previously saved root certificate (if it was not issued by Let's Encrypt).

- **Authentication** – we recommend choosing EAP.
- **Username** – the name of the user allowed to connect via VPN.
- **Password** – the user's password. In the right part of the field, select the storage option for the VPN connection password.

Check the box **Request an inner IP address** and click **Add**:

Cancel
Add VPN
Add

Identity
IPv4
IPv6

Name
VPN 1

Server

Address
example.com

Certificate
(None)

Identity
(Defaults to address or certificate subject)

Client

Authentication
EAP (Username/Password)

Certificate
Certificate/private key

Certificate file
(None)

Private key
(None)

Identity
(Defaults to username, certificate subject o...

Username
j.smith

Password
.....

☐ Show password

Options
Algorithms

☒ Request an inner IP address
☐ Enforce UDP encapsulation
☐ Use IP compression

Server port
(Defaults to UDP 500/4500)

6. Set the switch of the created VPN connection to the Enabled position.

## SSTP Protocol

Before creating a connection in Ubuntu, configure SafeUTM:

1. Go to **Users -> VPN connections**.
2. Check the box **SSTP Connection** and fill in **Domain** and **Port** fields:

**General**

Fixed VPN IP addresses

### General settings

Network for VPN connections

192.168.0.0/16

☐ PPTP connection

☐ PPPoE connection

☐ IKEv2/IPSec Connection

Domain

safeutm.com

☒ SSTP Connection

Domain

Port

1443

☐ L2TP/IPSec Connection

PSK

.....



**Save**

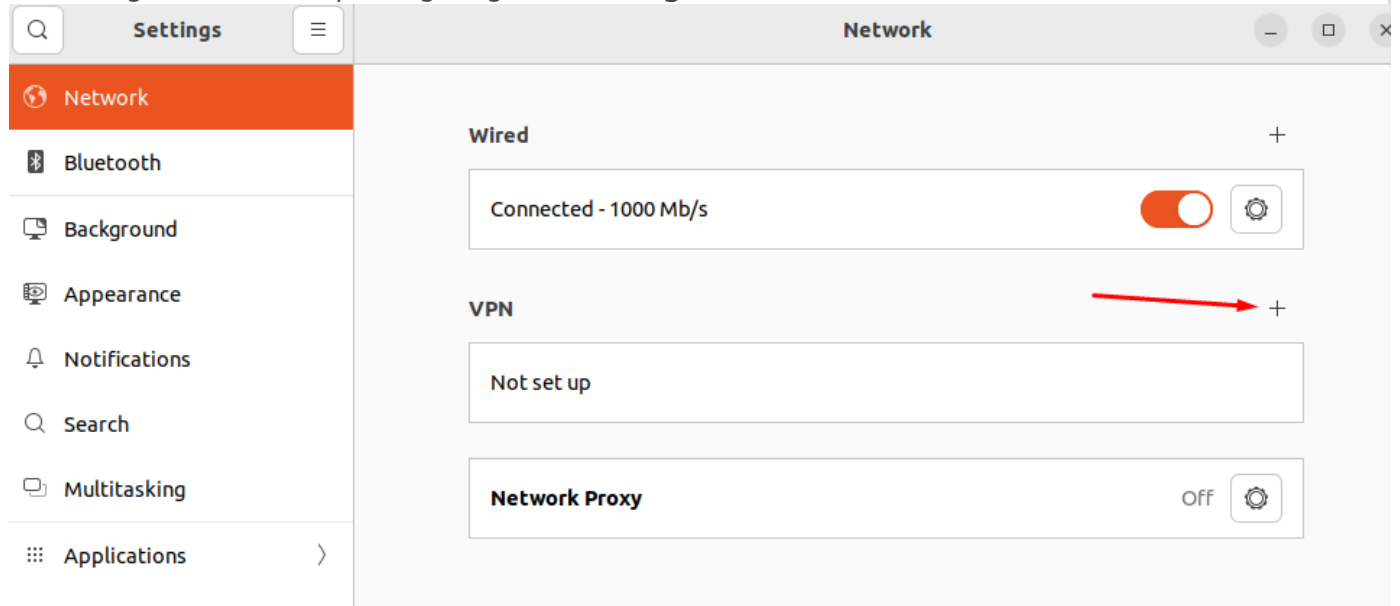
## Creating a connection in Ubuntu

1. Open the terminal with the keyboard shortcut Ctrl+Alt+F1 and run two commands:

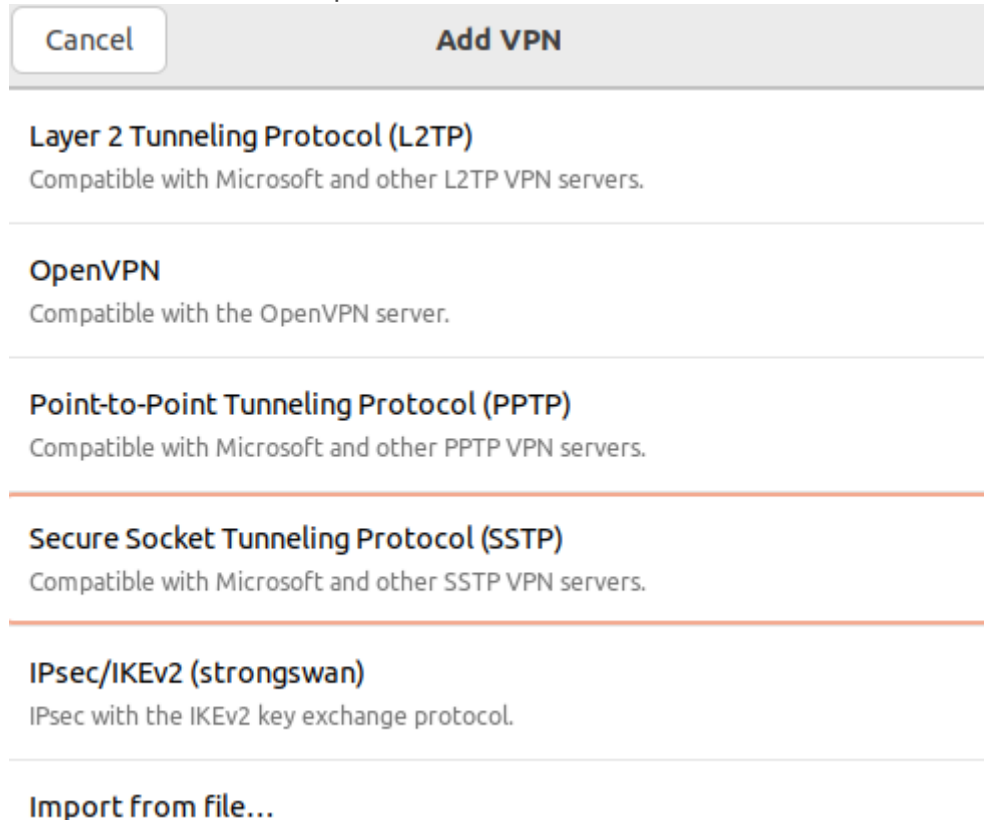
```
sudo apt-add-repository ppa:eivnaes/network-manager-sstp
sudo apt install -y network-manager-sstp sstp-client
```

2. After the installation is complete, restart the computer: `sudo reboot`

3. Having installed the packages, go to **Settings -> Networks**, and in the **VPN** line, click (+):



4. In the window that opens, select **Point-to-Point Tunnel Protocol (SSTP)**:



5. In **Identification** fill in the following fields:

- **Name** – connection name.

- **Gateway** – specify in the format *domain:[port selected on UTM]*.
- **Username** – the name of the user allowed to connect via VPN.
- **Password** – the user's password. In the right part of the field, select the storage option for the VPN connection password.
- **NT domain** – leave the field empty.

Cancel
Add VPN
Add

Identity
IPv4
IPv6

Name
VPN 1

General

Gateway:
example.com:8443

Authentication

Type:
Password

Username:
j.smith

Password:
.....

☐ Show password

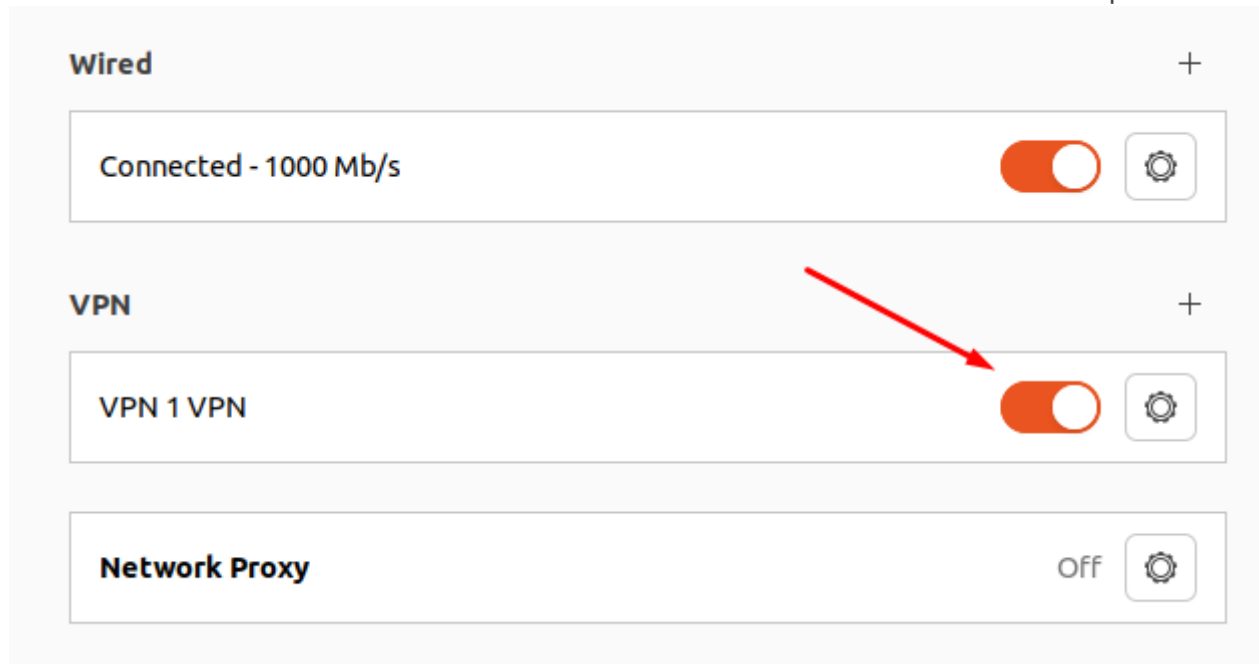
NT Domain:

Advanced...

We recommend that you click **Advanced** and check the following:

- **Allow the following authentication methods** – check the item
- **Use MPPE encryption** – in the Encryption line, select 128-bit (the most protected).
- **Use BSD compression for data** – using the BSD-compress algorithm.
- **Use Deflate compression for data** – using Deflate algorithm.
- **Use TCP Header Compression** – using Van Jacobson's TCP/IP header compression method.

6. Click **Add** and set the switch of the created VPN connection to the Enabled position:



## L2TP/IPsec Protocol

**Important:** L2TP IPsec clients behind the same NAT may experience connectivity issues if there is more than one. We recommend using IKEv2 IPsec instead of L2TP IPsec.

Before creating a connection, configure SafeUTM:

1. Go to **Users -> VPN connections**.
2. Check the box **L2TP/IPsec Connection** and copy the **PSK** key:

### General settings

Network for VPN connections  
192.168.0.0/16

☐ PPTP connection

☐ PPPoE connection

☐ IKEv2/IPSec Connection

Domain  
safeutm.com


☐ SSTP Connection


Domain


Port  
1443

☒ L2TP/IPSec Connection

PSK  
.....







PowerShell - script for configuring connections

Save

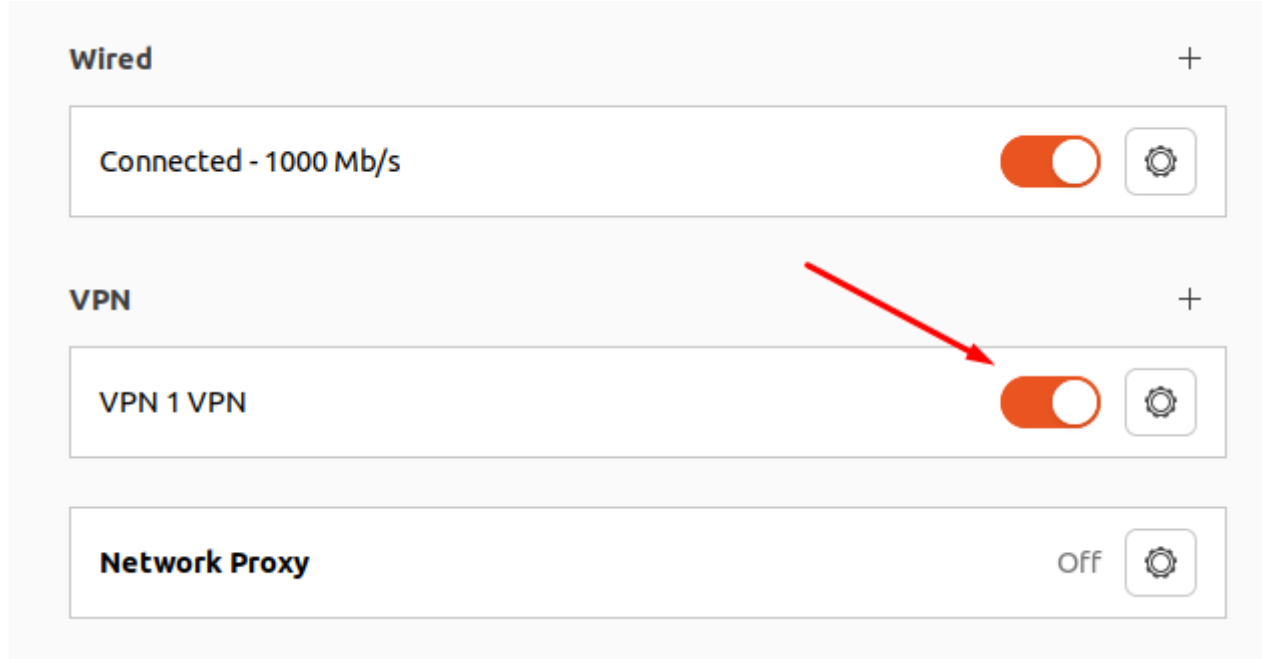
## Creating a connection in Ubuntu

1. Connect the repository that contains the necessary packages to create an L2TP VPN connection, and then update the information about the repositories. To do this, run the following commands:

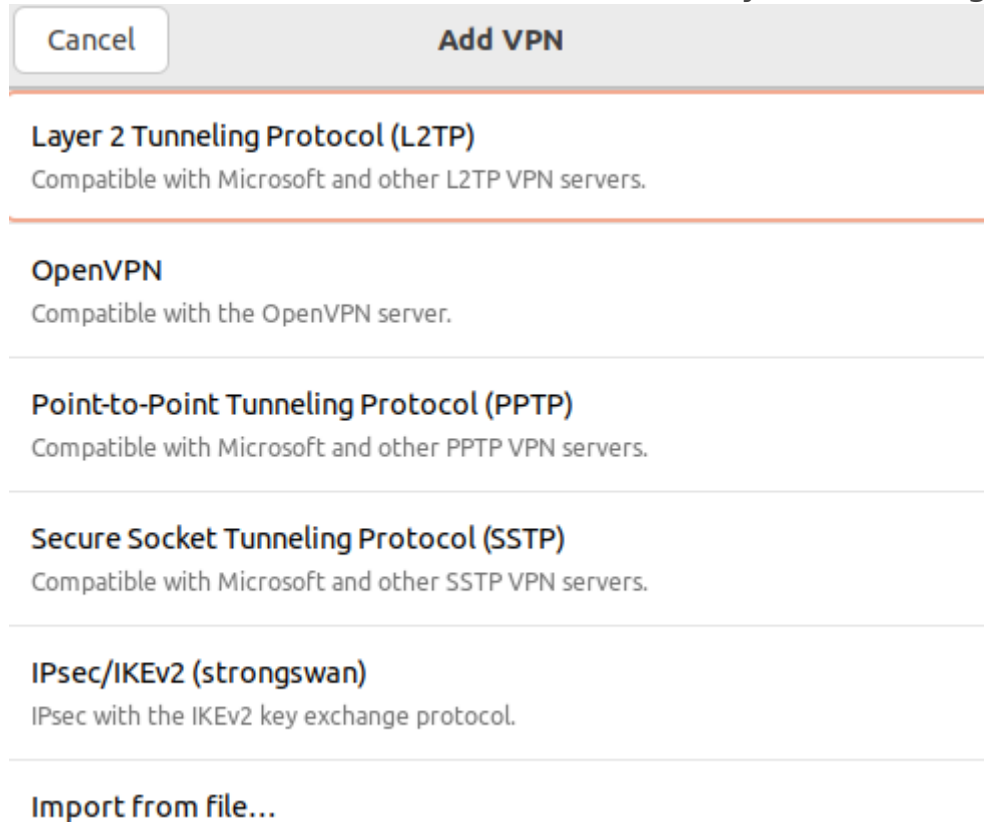
```
sudo add-apt-repository ppa:nm-l2tp/network-manager-l2tp
sudo apt update
```

2. Install the add-on to the standard NetworkManager using two packages: `sudo apt install -y network-manager-l2tp network-manager-l2tp-gnome`
3. After the installation is complete, restart the computer: `sudo reboot`

4. Having installed the packages, go to **Settings -> Networks** and in the **VPN** line, click (+):



5. In the VPN connection creation window, select **Layer 2 Tunneling Protocol (L2TP)**:



6 . In the tab **Identification** fill in the following fields:

- **Name** – connection name.
- **Gateway** – the domain name or IP address of the UTM interface.
- **Type** – user authentication by a password.
- **Username** – the name of the user allowed to connect via VPN.



- **Password** – the user's password. In the right part of the field, select the storage option for the VPN connection password.
- **NT domain** – leave the field empty.

Cancel
Add VPN
Add

Identity
IPv4
IPv6

Name
VPN 1

General

Gateway
10.0.0.1

User Authentication

Type
Password

User name
j.smith

Password
.....

☐ Show password

NT Domain

☐ Use L2TP ephemeral source port

IPsec Settings...
PPP Settings...

7. Go to **IPsec settings** and enable **IPsec tunnel to L2TP host** to activate the ability to configure other parameters:

- **Type: Pre-shared key (PSK)** – public key authentication.
- **Pre-shared key** - the key that needs to be copied along the path **Users -> Authorization -> VPN connection** from the field **PSK**.

The section **Advanced** is optional.

Cancel

IPsec Properties

Apply

☒ Enable IPsec tunnel to L2TP host

**Machine Authentication**

Type

Pre-shared key (PSK) ▾

Pre-shared key

.....|

☐ Show password

▾

**Advanced**

☐ Remote ID:

☐ Phase1 Algorithms:

☐ Phase2 Algorithms:

☐ Phase1 Lifetime:

3:00

—

+

(HH:MM)

☐ Phase2 Lifetime:

1:00

—

+

(HH:MM)

☐ Enforce UDP encapsulation

☐ Use IP compression

☐ Use IKEv2 key exchange

☐ Disable PFS

Having finished configuring L2TP **IPsec Options**, click **OK**.

8. If necessary, go to **PPR settings** and configure **Authentication**, **Encryption and Compression**, and **Other**:

Cancel

PPP Properties

Apply

**Authentication**

Allow the following authentication methods:

☐ PAP

☐ CHAP

☒ MSCHAP

☒ MSCHAPv2

☐ EAP

**Security and Compression**

☐ Use Point-to-Point encryption (MPPE)

Security 

All Available (Default) ▾

☐ Allow stateful encryption

☐ Allow BSD data compression

☒ Allow Deflate data compression

☒ Use TCP header compression

☐ Use protocol field compression negotiation

☐ Use Address/Control compression

**Misc**

☐ Send PPP echo packets

☐ Multilink PPP MRRU: 

1600

—

+

MTU 

1400

—

+

MRU 

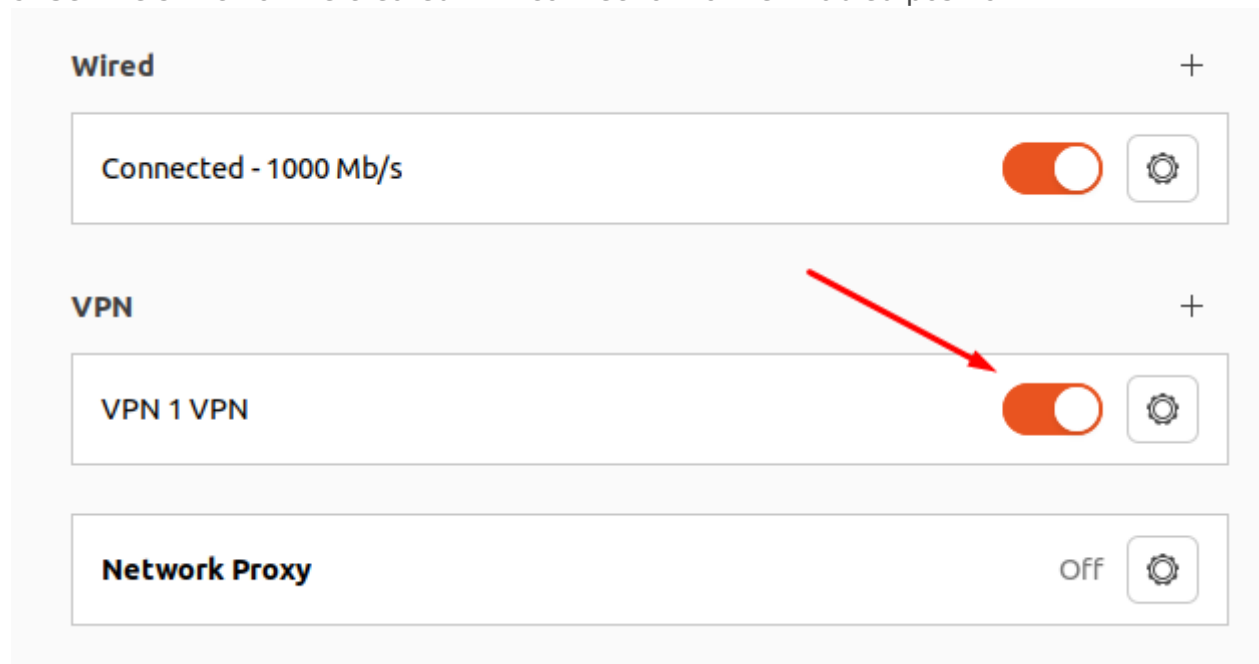
1400

—

+

After setting up **PPR parameters** click **OK** and **Apply**.

9. Set the switch of the created VPN connection to the Enabled position:



Revision #5

Created 27 August 2022 21:01:14 by Val Redman

Updated 13 October 2022 16:13:10 by Val Redman