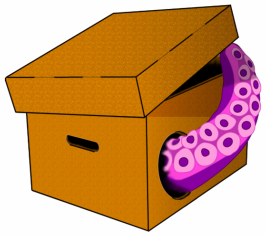

tNETacle

tNETacle

Software Documentation

This document contains the user documentation of the tNETacle project, developed in the Epitech Innovative Projects framework (team projects over three years marking the end of the Epitech's course). The tNETacle's purpose is to easily and intuitively establish a peer-to-peer Virtual Private Network.

This documentation explain how to use the final product.

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Title	User documentation
Date	17/01/2013
Authors	tNETacle
email	team@tnetacle.org
Subject	This document is the user documentation of the tNETacle.
Version	2.04

Version	Date	Author	Section	Comments
0.01	19/02/11	Florent	Beginning	
0.02	19/02/11	Florent	Setup	Process to install
0.03	19/02/11	Florent	Uninstall	Process to uninstall
0.04	19/02/11	Florent	Bugs	Add known bugs
0.05	19/02/11	Florent	FAQ	Add FAQ
0.06	19/02/11	Florent	Links/contacts/description	Add those parts
1.01	23/03/11	Antoine	Setup	Add how to install for Mac OS
1.02	23/03/11	Tristan	Bugs	Add a new bug
1.03	23/03/11	Florent	Usage	add the client
1.04	23/03/11	Raphael	Setup	Setup of the tun-driver
2.01	15/01/13	Florent	Setup	install procedure for Linux
2.02	16/01/13	Florent	Usage	New client screenshot
2.03	16/01/13	Florent	Usage	configuration file
2.04	17/01/13	Florent	Usage	configuration and usage of the GUI, QtNETacle

Contents

List of Figures

1 tNETacle, What is it?

The tNETacle offers an easy, efficient and intuitive way to establish decentralized (peer-to-peer) Virtual Private Networks. It will provide all the VPN[1] technologies, ensuring via strong encryption and authentication to control transactions integrity between different machines.

The tNETacle aims to make the establishment of this kind of network easier so that unskilled users can still enjoy the benefits of these technologies without efforts and prior formation.

It also aims to provide to more experienced users an easy way to deploy more complex networks ensuring the integrity and confidentiality of the data transiting over the network.

There will be two axis that drive the project developement:

- The tnetacle-core, the project's intelligence, will be responsible of the network management and will provide a pseudo-interface usable as any other network system interface.
- The tnetacle-client will offer to neophytes the ability to very simply and intuitively access to the core features. This part wont be required for the proper functioning of the networks created via the tnetacle-core, and wont do anything but providing an additional abstraction to the features.

[1] Inter-network connection that links two different local networks securely.

2 Setup

2.1 Unix-Like

2.1.1 Mac OS X

Does not work for the moment

Download the package .pkg that you can find on the official website of the tNETacle.

Then, double click on it and follow the instructions. An administrator password will be asked.

2.1.2 Gnu/Linux - Debian-based

Download the package .deb, that you can find on the official website of the tNETacle.

First, you have to connect to the tNETacle website. Then, you have to click on the link `Download` to see the `tNETacle.deb`. To download it, right click on it and choose `Save link as...`

Finally, you can install it with :

```
sudo dpkg -i tNETacle.deb
```

2.1.3 OpenBSD

Does not work for the moment

Download the package for OpenBSD on the official website of the tNETacle.

Then, install this package with pkg_add(1)

```
sudo pkg_add -Ui tNETacle.tgz
```

It is also possible to install thanks to the `Ports`. You have to go to the Ports directory and to the tNETacle directory. Then, compile the sources and install it with the command make.

```
cd PORTSDIR
make
sudo make install
```

2.1.4 NetBSD

Does not work for the moment

To install the tNETacle under NetBSD, you have to add the repository to your repository list. Then, update your package list inside to `pkgin`. Finaly, execute the `pkgin` command to install the tNETacle.

This is the different command to execute :

```
echo "http://eip.epitech.eu/2013/tnetacle/" > /usr/pkg/etc/pkgi
sudo pkgin update
sudo pkgin install tNETacle
```

It is possible to make the installation with the ports, consult the section "OpenBSD"

2.2 Windows

Windows installation of the driver required by tNETacle.

Before going further with the tNETacle installation for Windows, it is mandatory to install a third driver provided by the OpenVPN suite.

In order to only install the required files, please follow the following step-by-step tutorial.

1. Download the Windows installer from the following url http://openvpn.net/index.php/download.html

2. Run the previously downloaded installer, Windows may ask you for authorisation, when the confirmation window appears, please click “Yes”.
3. The installer wizard window appears, click “Next”.
4. Please then accept the general licence agreement, click “I Agree”.
5. The available components list appears, ONLY tick the line “TAP Virtual Ethernet Adapter” then click “Next”.
6. Click “Install”.
7. Windows asks you if you really want to install the driver, click “Install”.
8. Click “Next”.
9. Click “Finish”.
10. Optionnal: You can go and check in the “Device Manager” from Configuration Panner that “TAP-Win32 Adapter V9” is actually visible under “Network Adapters”.

    Does not work for the moment

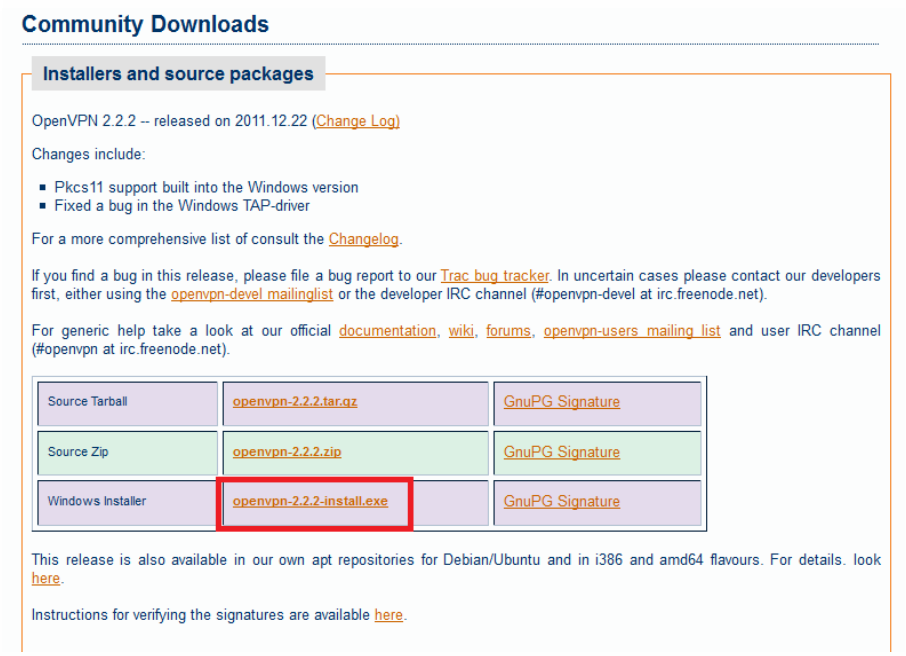


Figure 1: Windows installer download

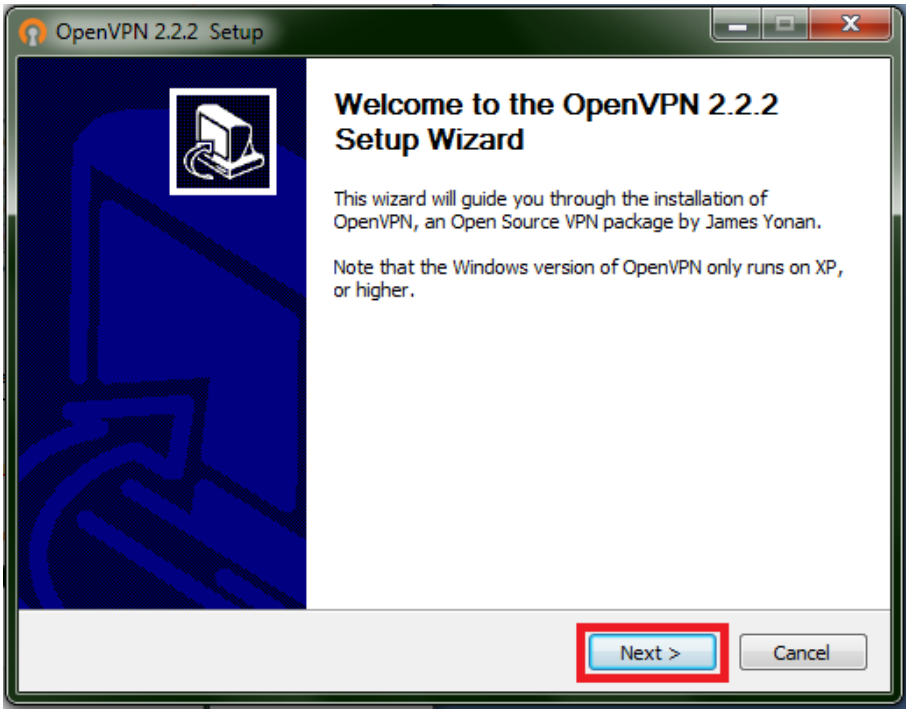


Figure 2: Windows installer.

11. Execute the setup.exe

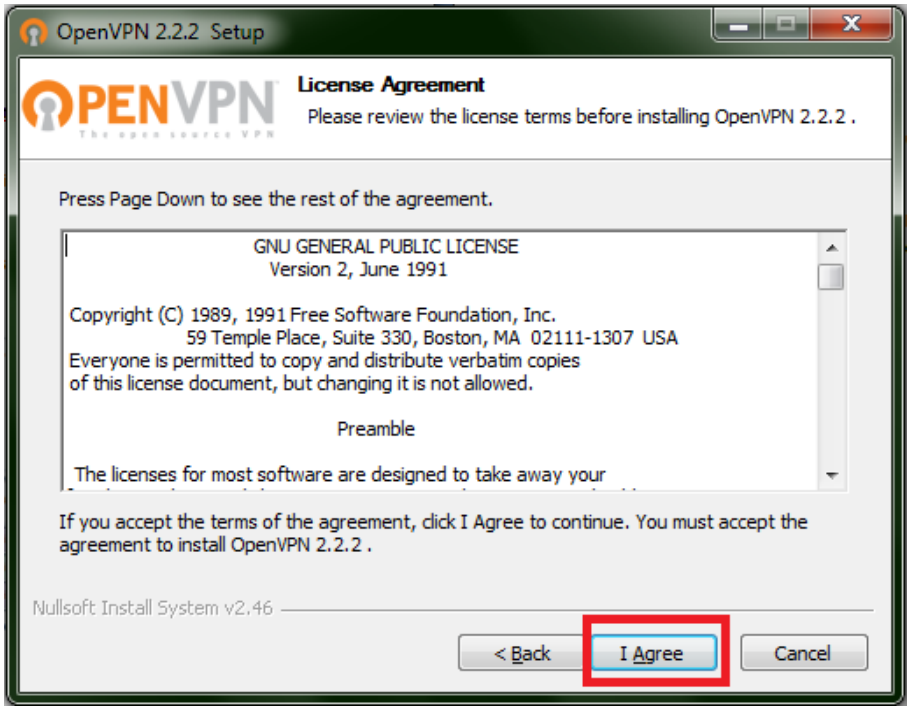


Figure 3: Windows installer

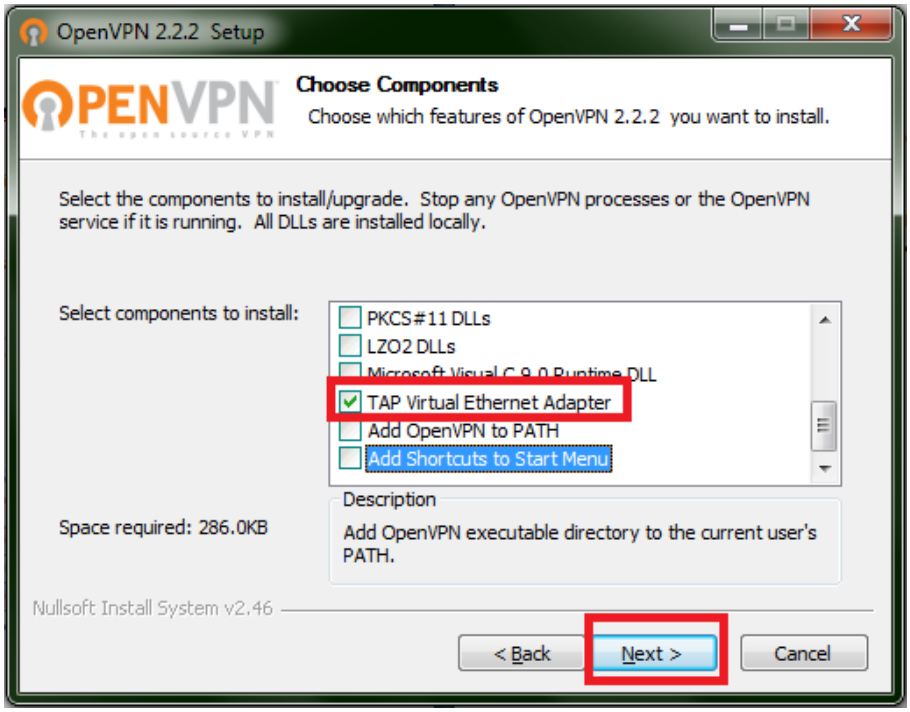


Figure 4: Tap driver selection

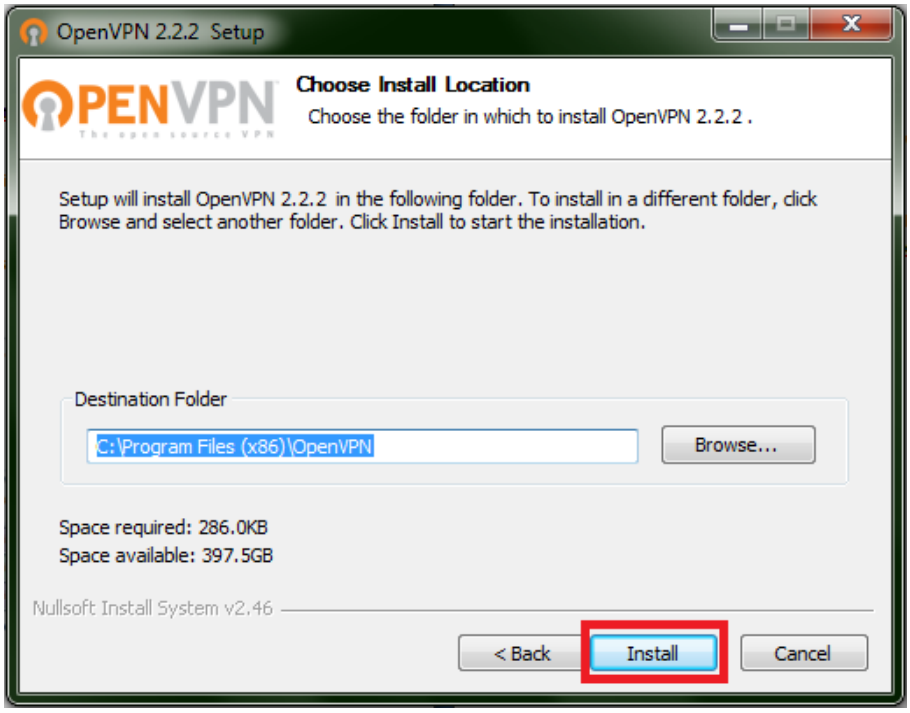


Figure 5: Install

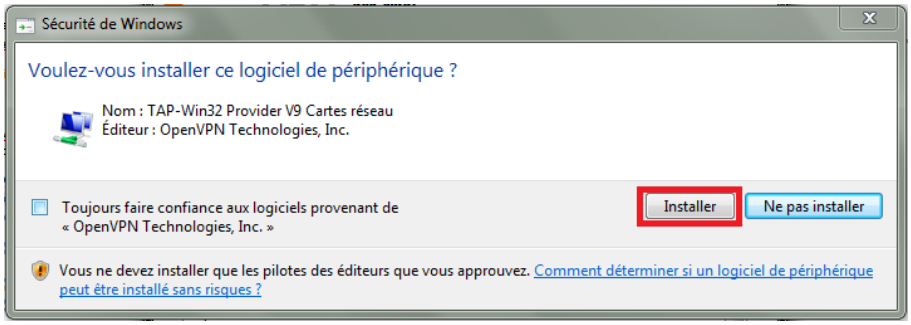


Figure 6: Confirm the installation

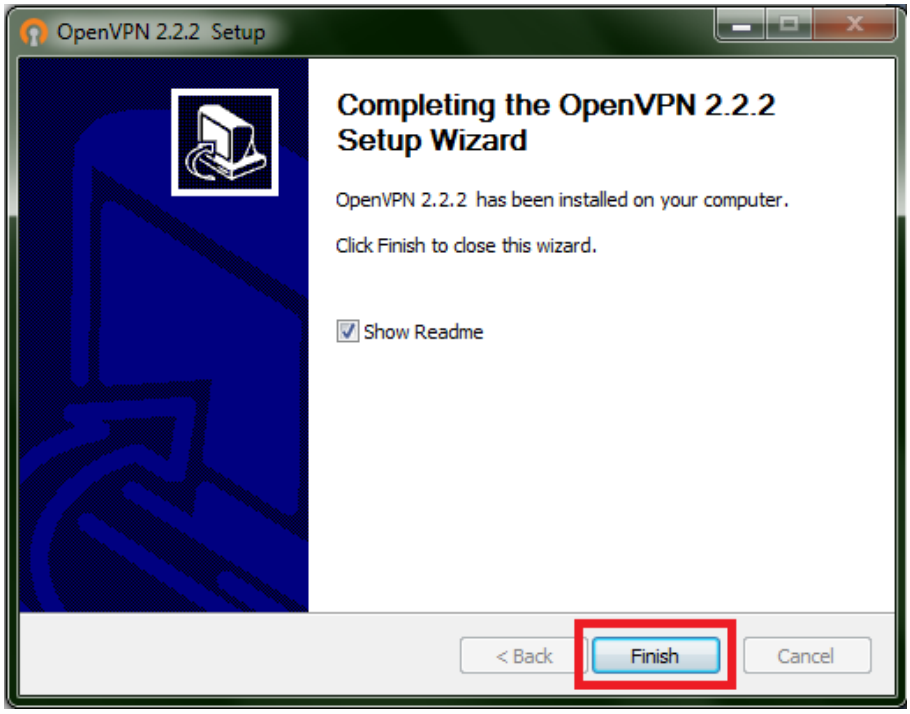


Figure 7: Finish the installation

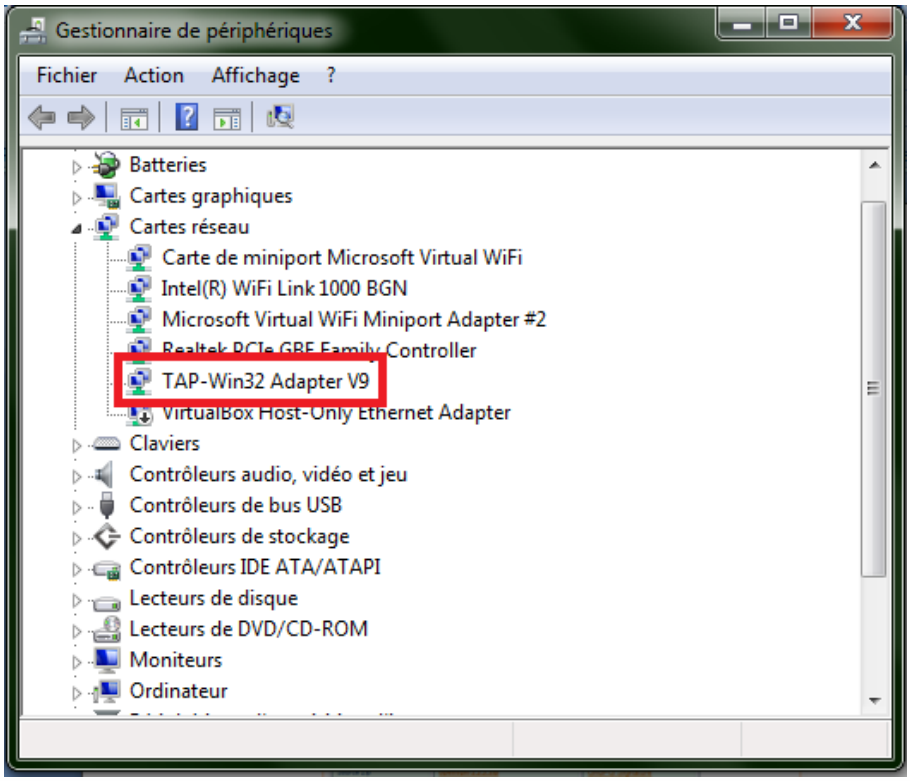


Figure 8: Configuration panner

3 Uninstall

3.1 Unix-Like

3.1.1 Gnu/Linux - Debian-based

Execute dpkg to uninstall :

```
sudo dpkg -r tNETacle
```

3.1.2 OpenBSD

Execute pkg_delete to uninstall :

```
sudo pkg_delete tNETacle
```

3.1.3 NetBSD

Execute pkgin to uninstall :

```
sudo pkgin remove tNETacle
```

3.2 Windows

Does not work for the moment
Execute uninstall.exe

4 Utilisation

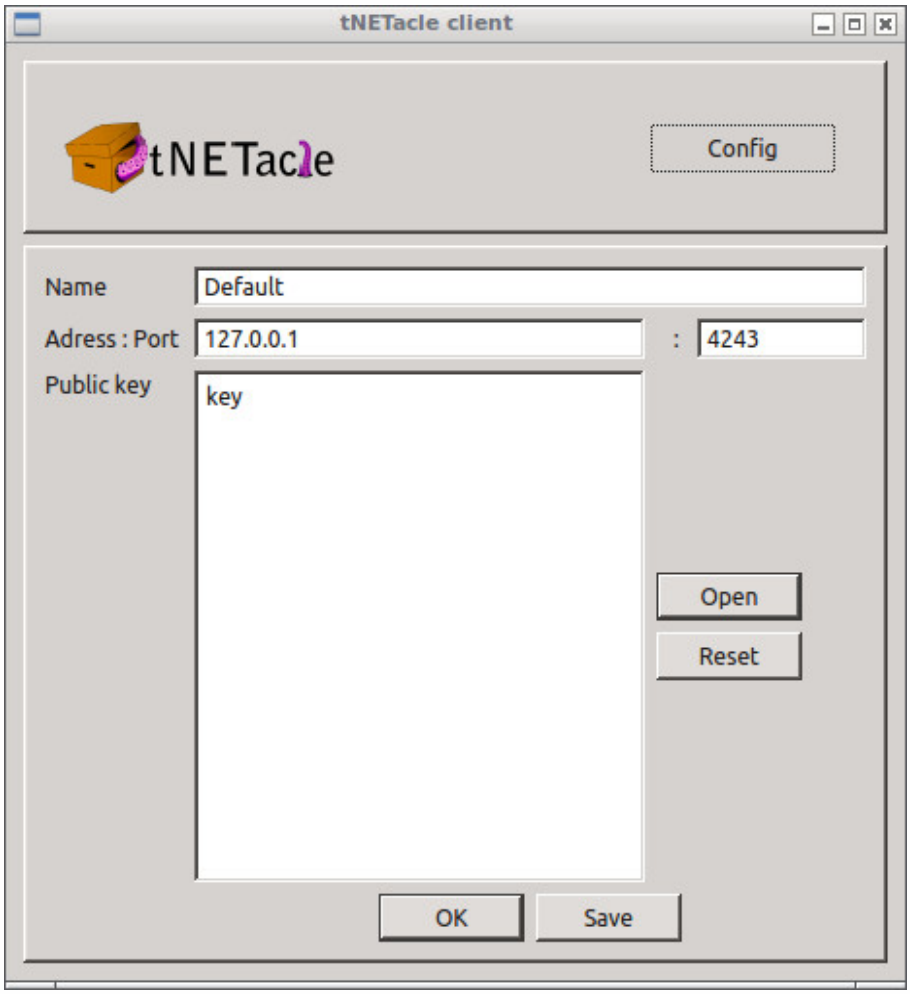


Figure 9: Client screenshot

The tNETacle wants to be easy to use. To do it, there are many ways to configure it, thanks to a config file, a graphical client or with a home made client using our library `libtclt` which abstracts the protocol between the client and the core. This library make easy the way to create a client and is adapt to different programming language.

4.1 GUI : QtNETacle

The GUI (screenshot above) is the easiest way to use the tNETacle. When the core is running, it is possible to configure the tNETacle thanks to the GUI, QtNETacle.

The client is composed of different windows. First, the starting window allowed user to connect to the core with the public key to use. There is a button to save this configuration for a later usage.

The second one shows, in real-time, the other tNETacles connected with us. It also show the different sub-netwoks that we belong. Those sub-networks are used to separate VPN

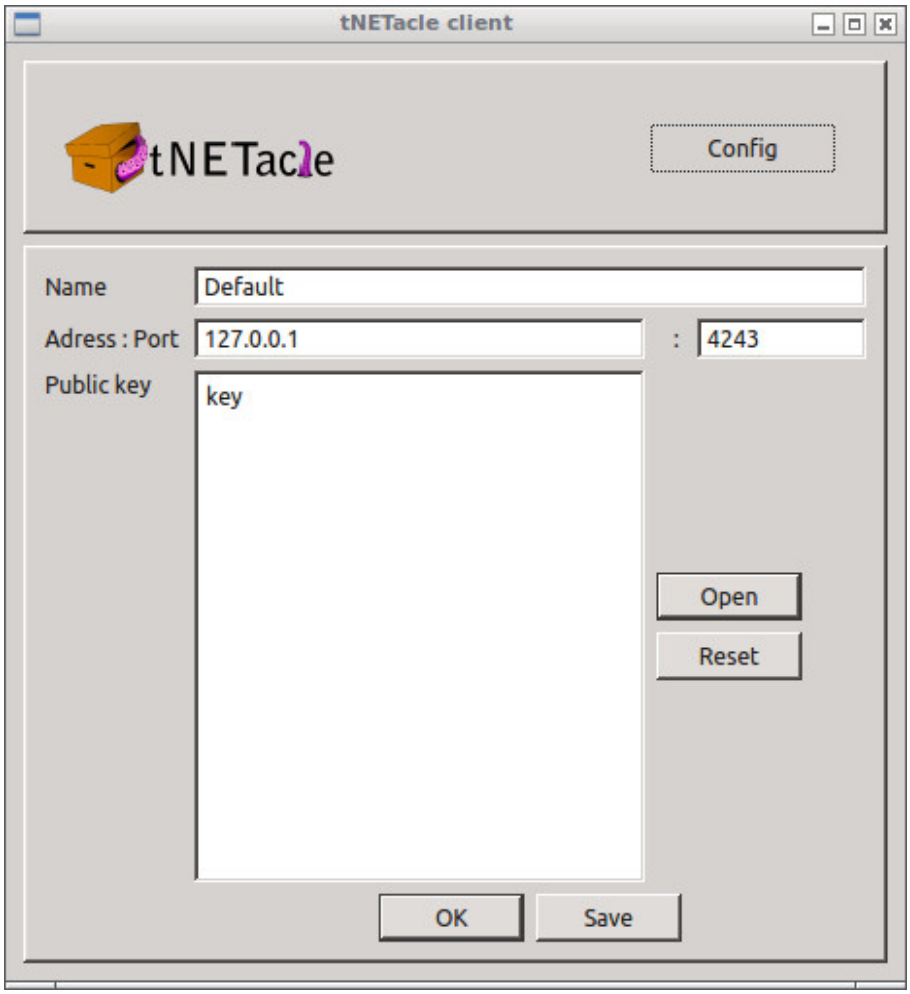


Figure 10: Client connexion

inside a master VPN.

On the up-right, there are the buttons to connect, delete another tNETacle and the link to the window to manage a sub-network.

The third window is used to add another tNETacle composed of :

- name : name of the user
- IP : Ip of the other tNETacle
- Port : Port of the other tNETacle
- Public Key : public key of the local tNETacle

The last window is used to add a sub-network. We have to type-in :

- Group name : name of the sub-network

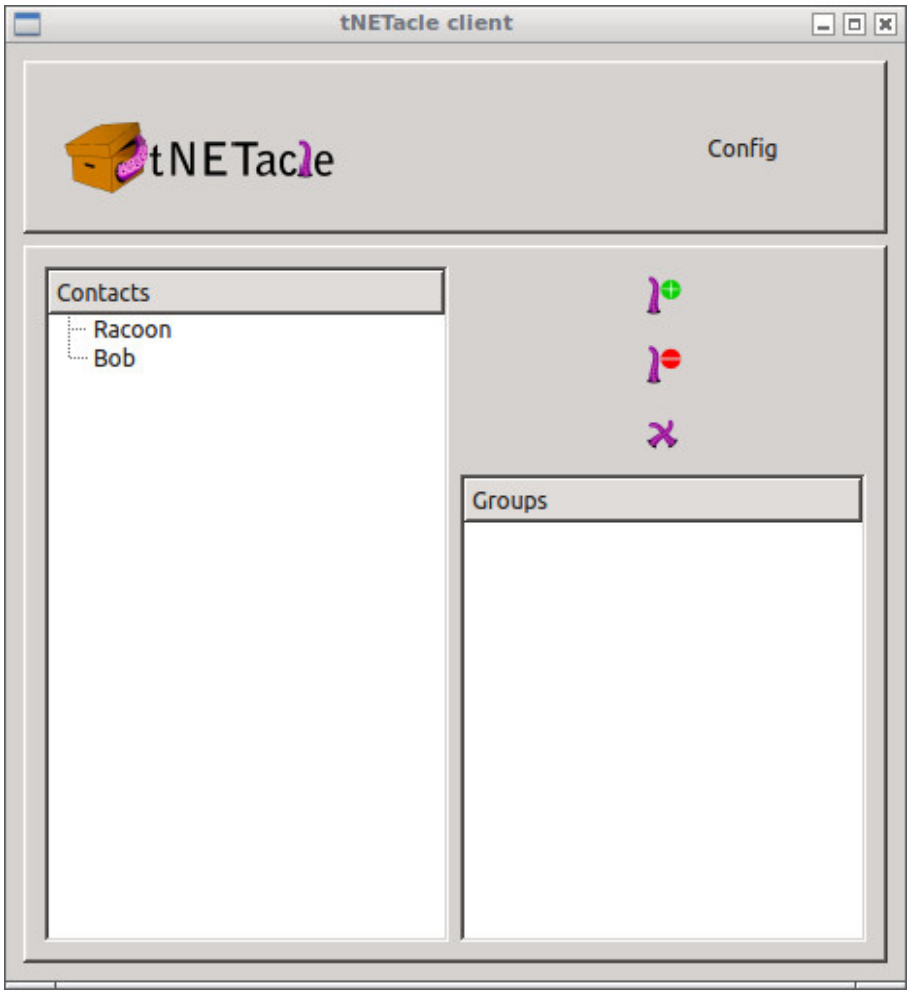


Figure 11: Main window with two contacts connected

- Public Key : clé publique du tNETacle administrateur du groupe
- Empty field : Drag-and-drop users from the left

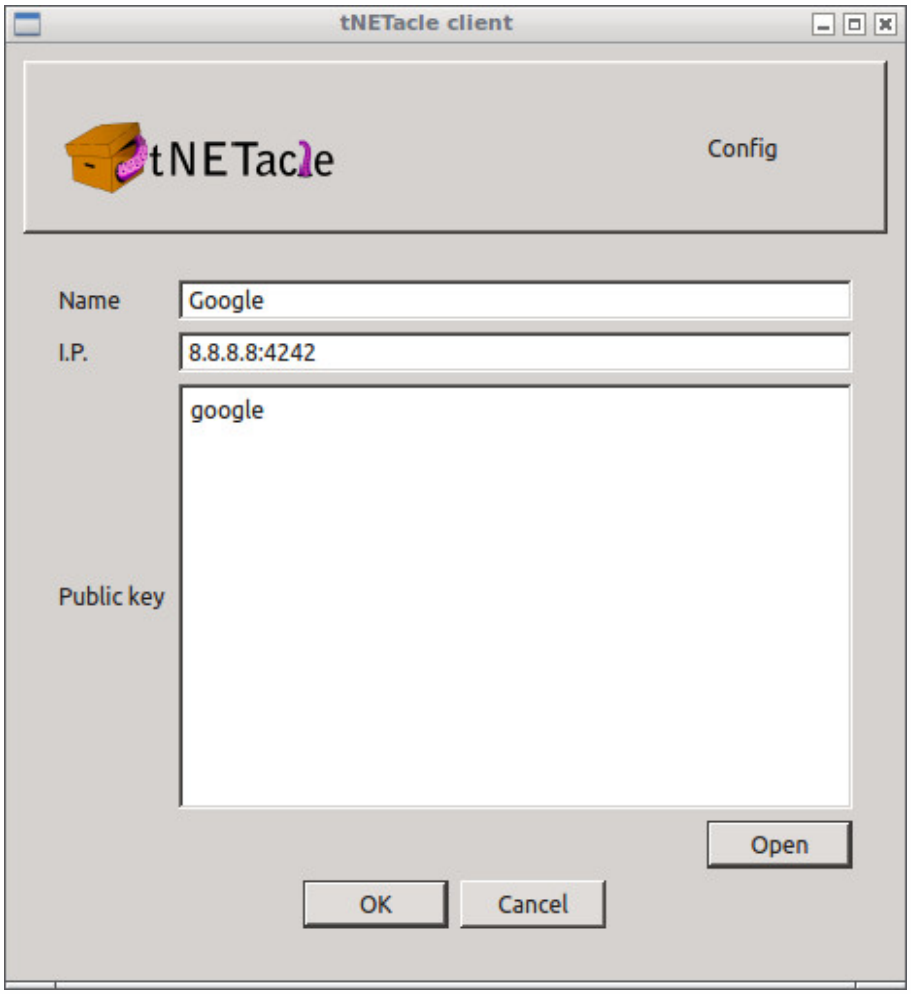
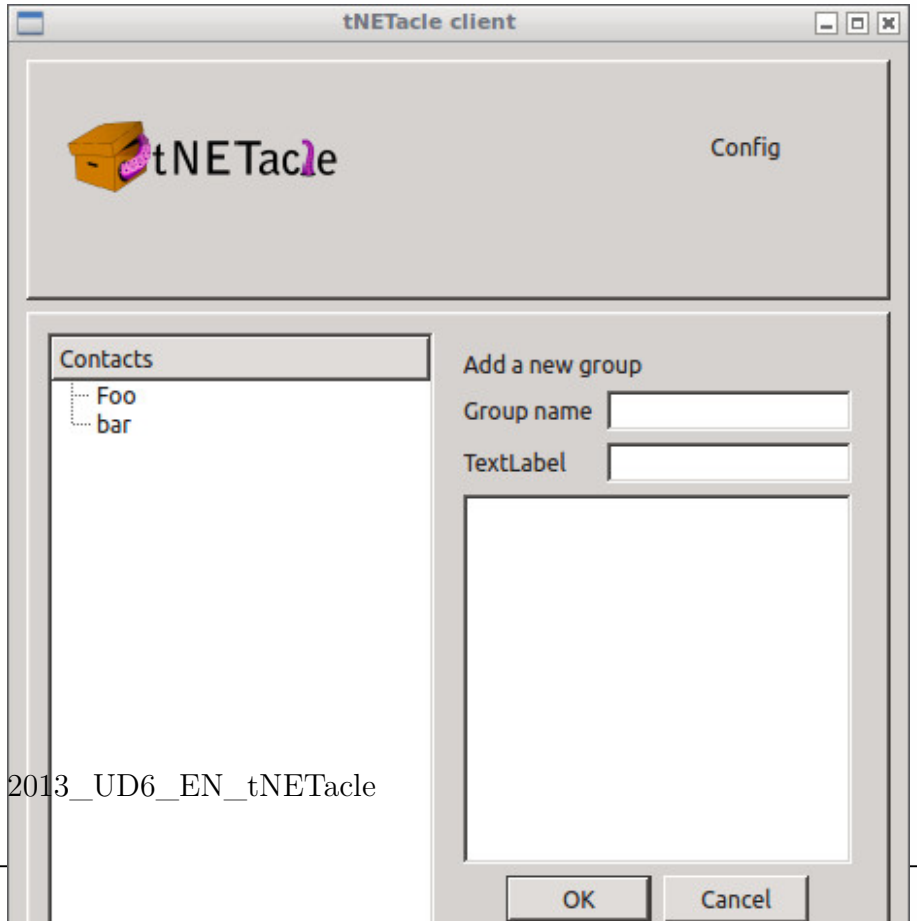


Figure 12: add a new tNETacle named : "Google", with ip : "8.8.8.8", with port : 4242", and with key : "Google"



To delete a know tNETacle, we have to reach the main page, to click on the tNETacle that we want to delete and to click on the delete button.

4.2 Configuration file

There is an example of the configration file in the directory dat, in the root of the sources.

In this file, it is possible to define :

Filed name	data types	dafault	description
Port	List of numbers	4242	Port to bind
ClientPort	list of numbers	4243	Port to bind to connect a client
AddressFamily	string	inet	Family adress
ListenAddress	string	any	Adress to listen
PeerAddress	list of string	[""]	Other tNETacle adresses
Adress	string	10.0.0.123/24	Our tNETacle private adress
Compression	boolean	false	To compress data
Encryption	boolean	false	To Encrypt data
Debug	boolean	true	Display the debug log
PrivateKey	string	/path/to/your/key	Indicate where the private key is
CertFile	chaîne de caractères	/path/to/your/certfile	Indicate where the certificat is

5 Bugs

5.1 Contributions

Please report any bugs by filling in a ticket on our dedicated interface http://trac.medu.se. The ticket must be as precise as possible and include which version was used and the context of utilisation. If your ticket is accepted, it will be assigned to a developer who will be responsible to for providing a solution. You can also provide a solution to a bug by attaching a patch to your ticket. This patch will be reviewed by the core developers and merged to the project if the code respects the rules described on the project website.

5.2 Known issues

The known issues are summurized on the following table:

Number	Where	Description	Solved
01	libtuntap	Cannot create the interface	Yes
02	libtuntap	Incorrect behavior when setting a MAC Address	Yes
03	libtuntap	Can't assign a MAC Address under OpenBSD	Yes
04	libtuntap	Can't assign a MTU without blowing up the device	Yes
05	libtuntap	Can't assign an IPv6	No

6 FAQ

6.1 What is a decentralized VPN

A virtual private network (VPN) is a network that uses primarily public telecommunication infrastructure, such as the Internet, to provide remote offices or traveling users an access to a central organi zational network.[2].

6.2 I found a bug!?

You can find the tNETacle sources here. Create a ticket, and don't forget to provide a precise description of your problem, your system configuration, and how you have compiled it, if yo u have changed the default compilation settings.

6.3 How to use the tNETacle?

tNETacle provides a simple and efficient GUI.

When you have installed it, you need to create your keys (private and public) which permit to talk with the other users.

Most of the time, the default configuration does not need to be modified to run the tNETacle.

You just have to add the public keys of your friend and to send your public keys to be allowed to create or join a network.

Never give your private key.

[2] http://en.wikipedia.org/wiki/Virtual_private_network

7 Links

- tNETacle website
- tNETacle sources
- Epitech website
- EIP Laboratory website

8 Contacts

- Antoine Marandon ntnmrndn@gmail.com
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