

# SECON-X

## OpenVPN Installation

# OPENVPN® Connection to SECON-Server



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# 1 Overview

## 1.1 SECON-X system components

SECON-X is a hardware-software network system which comprises several components (see figure below) and performs the following tasks:

- Global data access with web interface to SECON clients (VISY, VAPORIX)
- Remote diagnostics
- Remote display, evaluation and data storage
- Universal data format

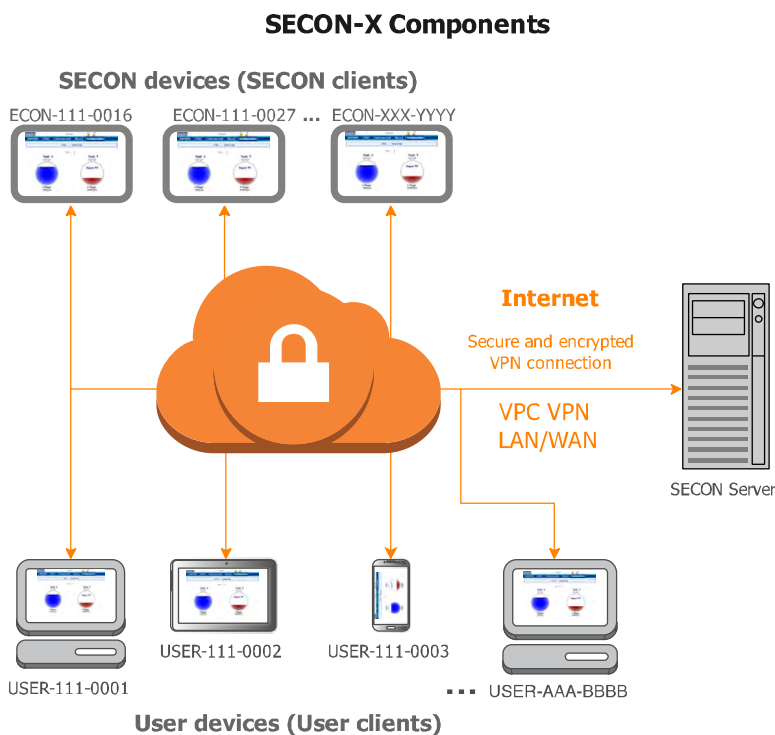







Figure 1: SECON-X system and components

## 1.2 About this document

This documentation describes how to install the software OpenVPN for an encrypted and secure VPN connection of user clients to the SECON-Server. For installation and operation of further SECON devices, see:

-  SECON-Client, technical documentation, art. no. 350076
-  SECON-Lev Administrator, technical documentation, art. no. 350136
-  SECON-Lev User Manual, technical documentation, art. no. 350111
-  SECON-Vap Administrator, technical documentation, art. no. 350134
-  SECON-Vap User Manual, technical documentation, art. no. 350113

### 1.3 Connection to the SECON-Server

The connection of the user clients to the SECON-Server (see Figure 1) is established by a secure encrypted Internet connection (VPN Virtual Private Network).

- (1) For the encrypted Internet connection the VPN software **OpenVPN** need to be installed on the used PC, mobile phone or tablet (user clients). OpenVPN is open-source software (free software) with GNU General Public License.
- (2) **Key and configuration files** are required, which are provided by the FAFNIR company.
- (3) For remote access, "Mozilla Firefox", "Opera", "Chrome" or "Safari" are the **preferred web browsers**.



*Remote access is currently not possible with Internet Explorer.*

### 1.4 Safety instructions



*For use of open source software, the guidelines and safety advice listed applies.*



*Operator / administrator must ensure regular installation of updates in order to ensure the security of data transmission.*

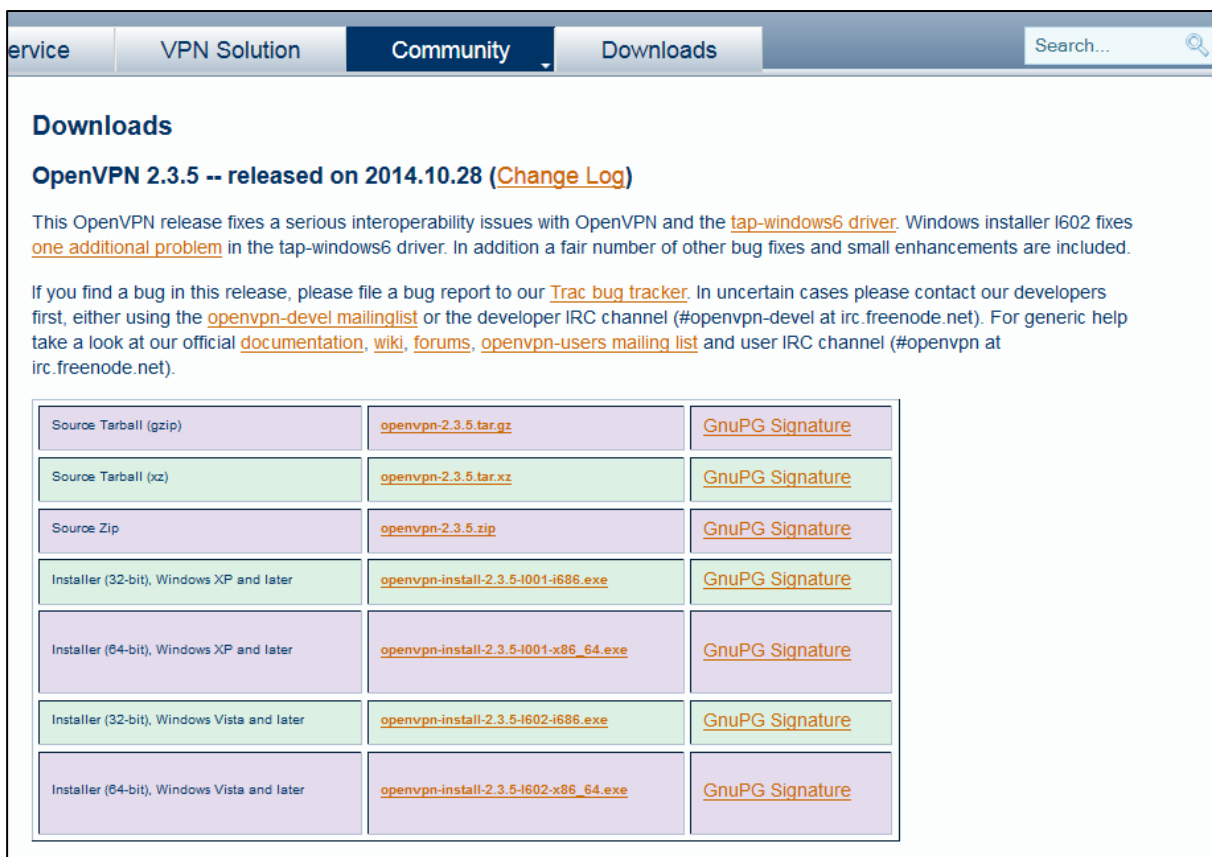
## 2 OpenVPN Software Installation

### 2.1 Installation for Windows Operating system (32/64 bit)



For installation, administrator rights are required.

- (1) Open the **OpenVPN website** at <https://openvpn.net/>
- (2) The OpenVPN software is located in the community section in the download area.
- (3) Once there, select a valid OpenVPN version for your operating system and save it to your PC.



The screenshot shows the OpenVPN website's 'Downloads' page for version 2.3.5. The page includes a navigation bar with 'Service', 'VPN Solution', 'Community', and 'Downloads' tabs. Below the navigation bar, there is a search bar and a 'Downloads' section. The main content area features a heading 'OpenVPN 2.3.5 -- released on 2014.10.28 (Change Log)' followed by a paragraph describing the release. Below the text is a table with seven rows, each representing a different download option. Each row contains a description of the file, a link to the file, and a link to the GnuPG signature.

Source Tarball (gzip)	<a href="#">openvpn-2.3.5.tar.gz</a>	<a href="#">GnuPG Signature</a>
Source Tarball (xz)	<a href="#">openvpn-2.3.5.tar.xz</a>	<a href="#">GnuPG Signature</a>
Source Zip	<a href="#">openvpn-2.3.5.zip</a>	<a href="#">GnuPG Signature</a>
Installer (32-bit), Windows XP and later	<a href="#">openvpn-install-2.3.5-i001-i686.exe</a>	<a href="#">GnuPG Signature</a>
Installer (64-bit), Windows XP and later	<a href="#">openvpn-install-2.3.5-i001-x86_64.exe</a>	<a href="#">GnuPG Signature</a>
Installer (32-bit), Windows Vista and later	<a href="#">openvpn-install-2.3.5-i602-i686.exe</a>	<a href="#">GnuPG Signature</a>
Installer (64-bit), Windows Vista and later	<a href="#">openvpn-install-2.3.5-i602-x86_64.exe</a>	<a href="#">GnuPG Signature</a>

Figure 2: Windows OpenVPN

- (4) *Install OpenVPN with the default settings preferably not in the default directory, but in a new installation directory (e.g. C:\OpenVPN).*

- (5) Confirm installation of the "TAP Window adapter", see the following figure:

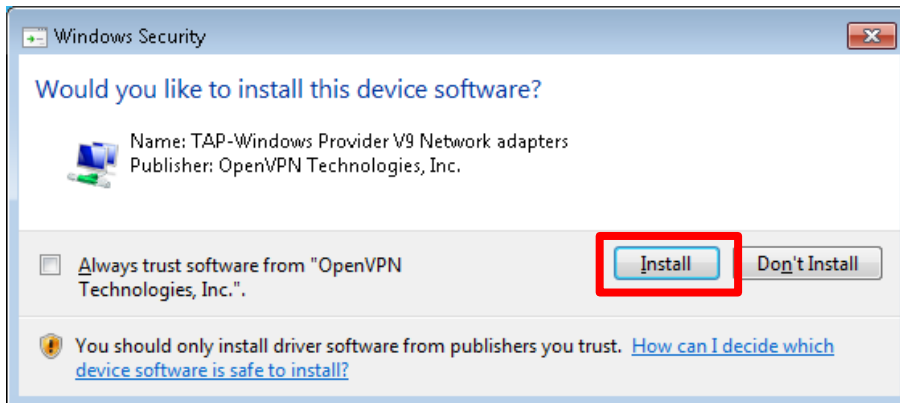


Figure 3: TAP Window Adapter

- (6) The successful installation is confirmed with the following message:

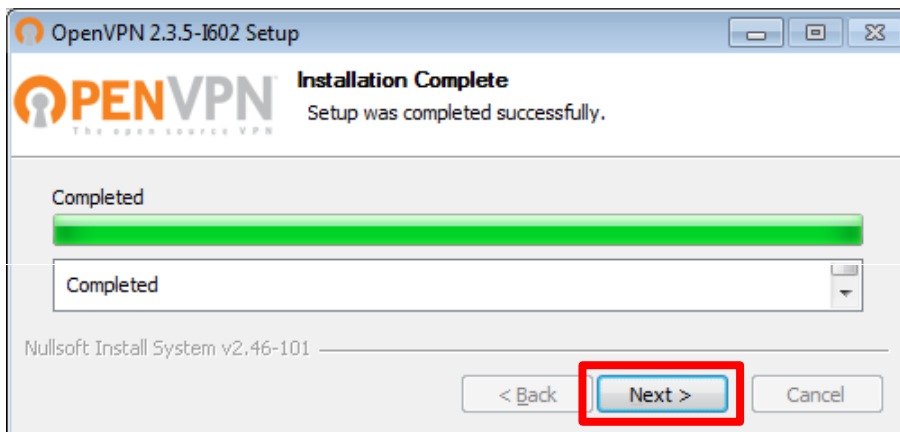


Figure 4: Installation note

- (7) Finish the installation by clicking on <Finish>.

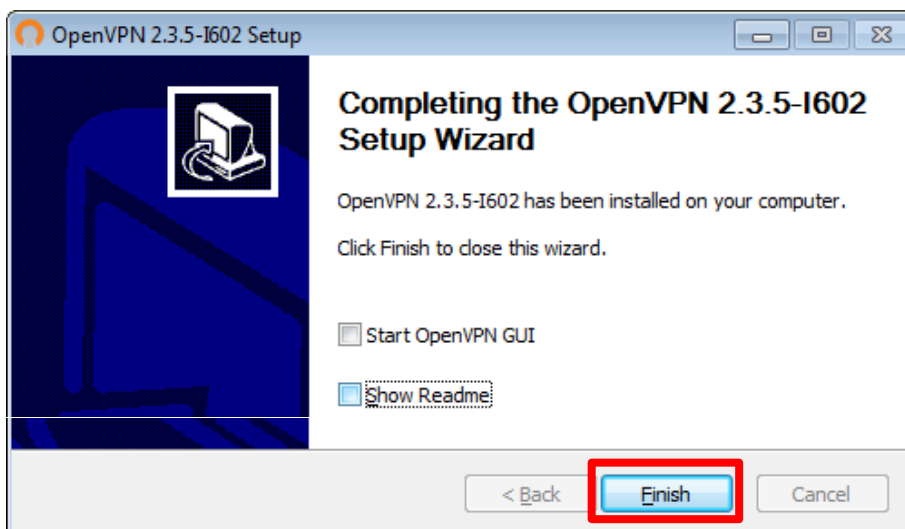


Figure 5: Complete installation

- (8) Open the "properties" menu by right-clicking the mouse onto the OpenVPN icon and confirm "Run the program as administrator" for all users, see the following figures:

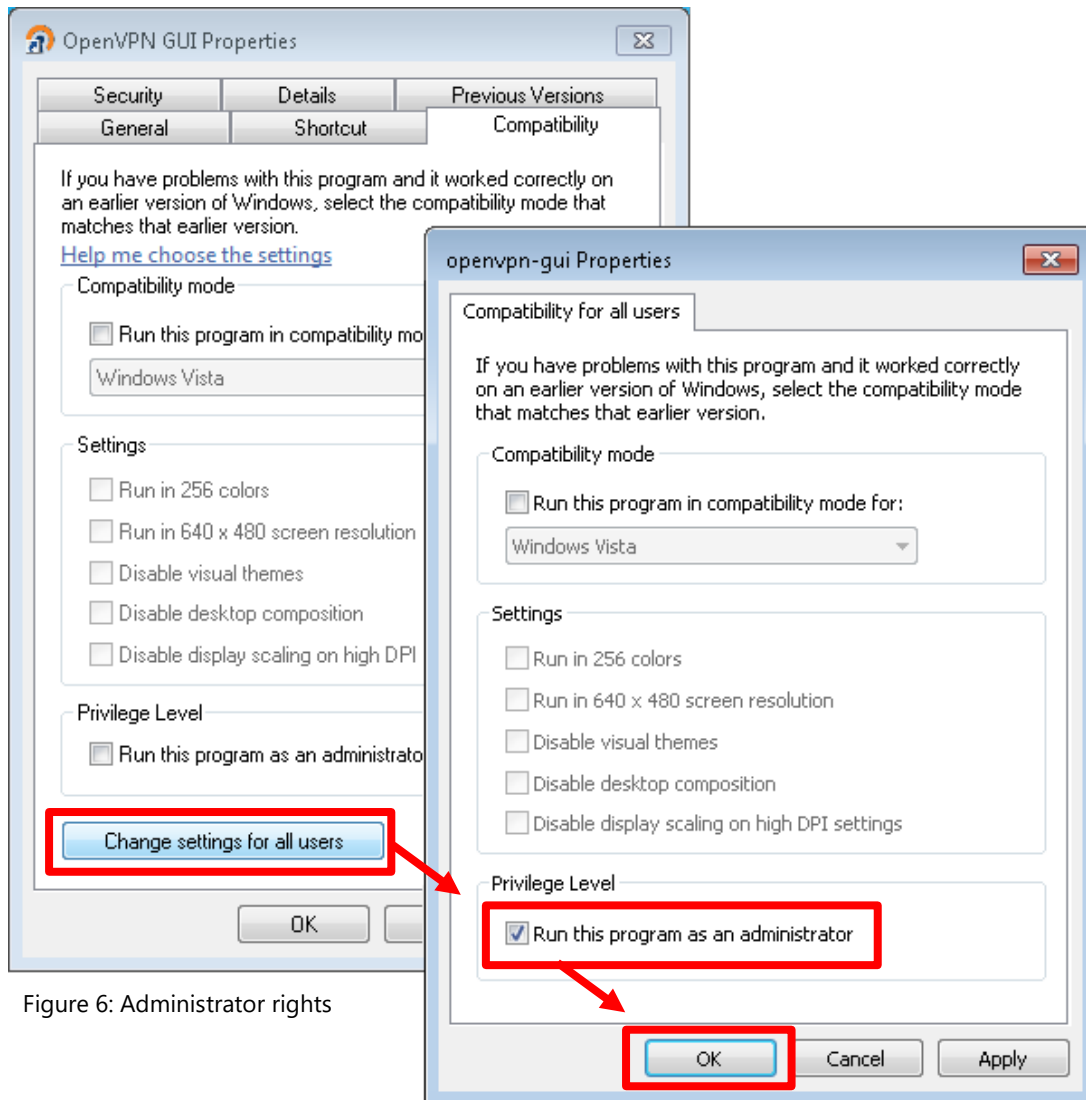


Figure 6: Administrator rights

- (9) Open the OpenVPN installation directory  
(e. g. C:\OpenVPN)
- (10) Copy the OpenVPN key and configuration files provided by FAFNIR to the "config" sub-directory of the installation directory (e. g. C:\OpenVPN\config):

"ca.crt"

"SECON-VPN-Client.ovpn"

"USER-AAA-BBBB.crt" (AAA-BBBB represents a USER ID)

"USER-AAA-BBBB.key" (AAA-BBBB represents a USER ID)



*If you are not using the FAFNIR server, you must enter the IP address of your server within the file "SECON VPN Client.ovpn" instead of the FAFNIR IP address. Copy the modified file as a backup file.*



- (11) Start OpenVPN by a double-click on the **OpenVPN GUI** link.  
Now the OpenVPN icon is displayed in the info area of the task bar.
- (12) OpenVPN connection / disconnection  
Right-click on the OpenVPN icon and select "Connect" for connection or "Disconnect" for disconnection.

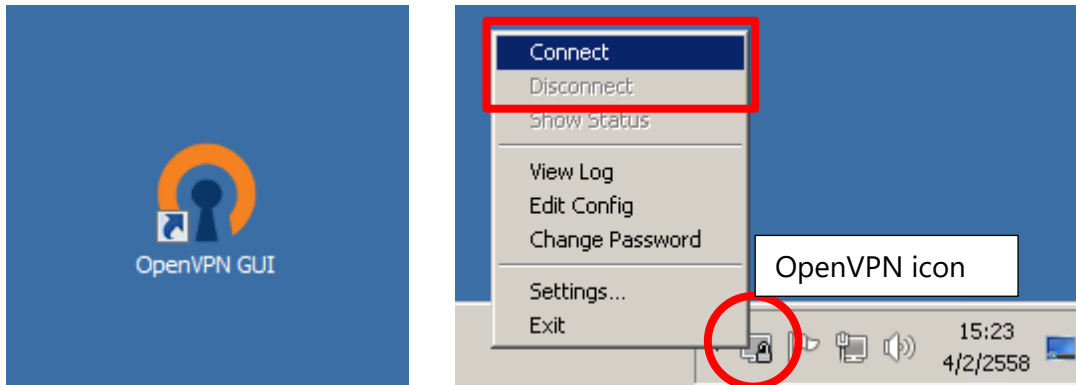


Figure 7: OpenVPN connection / disconnection




*After successful connection, the colour of the icon will change to **green**.*

- (13) Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server <http://10.0.8.1>):



Figure 8: SECON-Server startup screen

## 2.2 Installation for Mac OS X operating system

 For installation, administrator rights are required.

- (1) Open the **Tunnelblick Homepage** <https://code.google.com/p/tunnelblick>
- (2) The OpenVPN open source software for Mac OS "Tunnelblick" is a current stable version available in the tab "Downloads" under "Tunnelblick Stable Release".
- (3) There, select the OpenVPN version suitable for your Mac OS operating system and save it to install on your Mac.

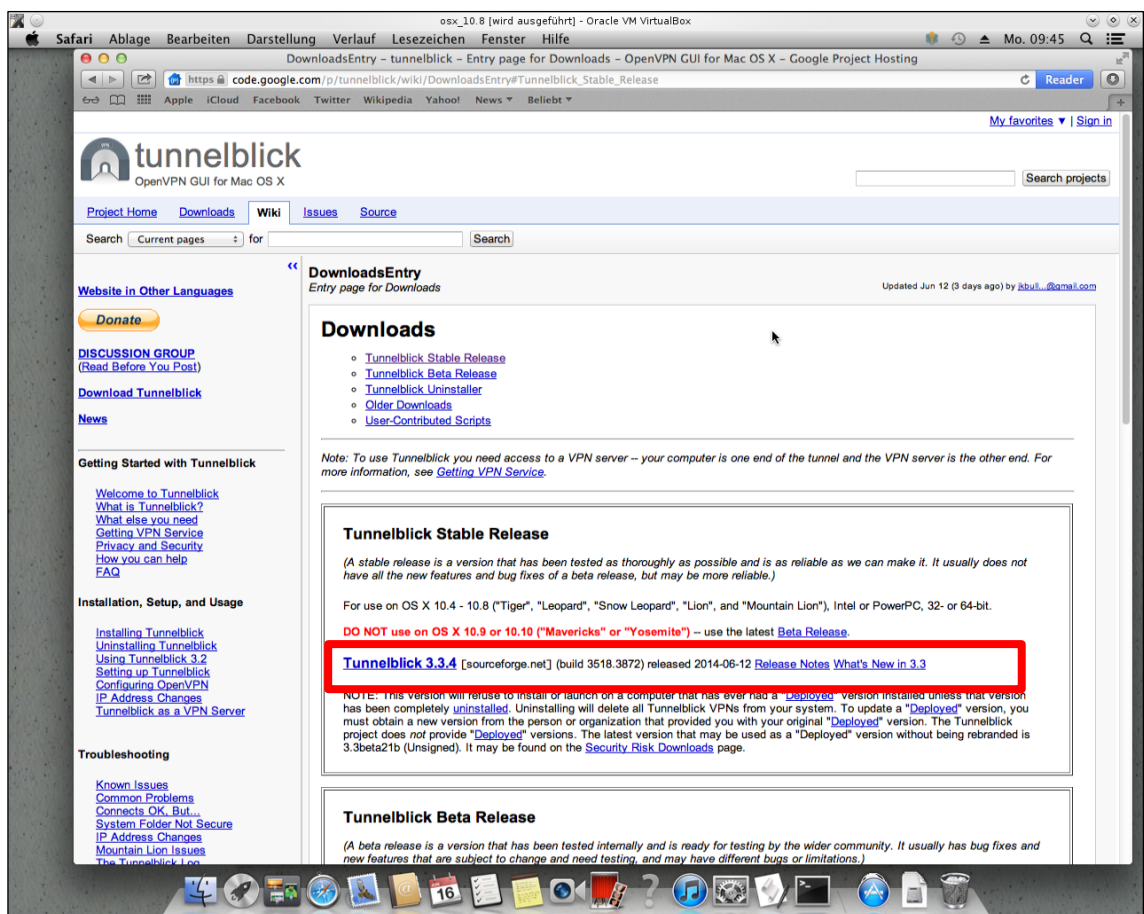


Figure 9: Macintosh OpenVPN (Tunnelblick)

- (4) Run the downloaded file
- (5) Start the installation by double-click on "Tunnelblick" and enter the following confirmation prompt, see the following figure ...

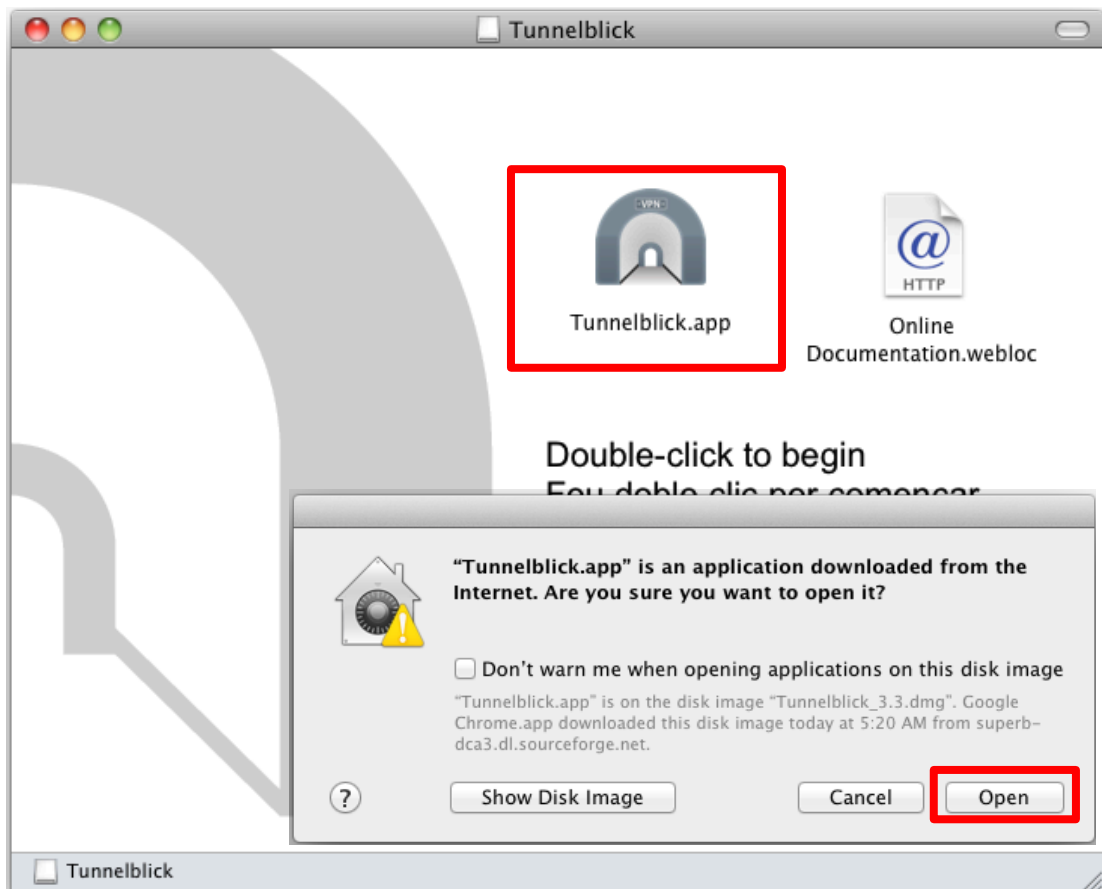


Figure 10: Confirmation prompt

- (6) The successful installation will be confirmed by a message, see the following figure. Start Tunnelblick by clicking on <Launch>:



Figure 11: Launching Tunnelblick

- (7) Key and configuration files provided by FAFNIR are required for connecting to the SECON-Server.
- (8) Confirm the following prompt with "I have configuration files":



Figure 12: Configuration files prompt

- (9) Confirm the following prompt with "OpenVPN configuration"

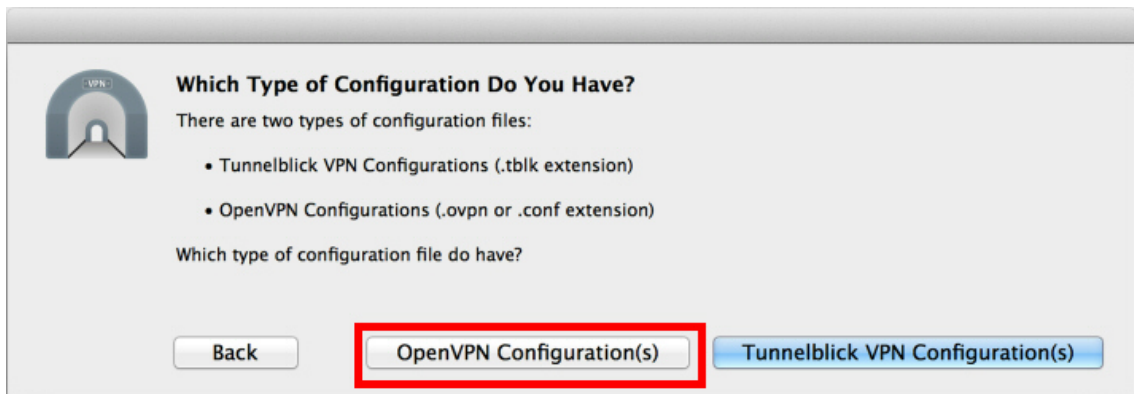


Figure 13: Query of the type of configuration files

- (10) Save the OpenVPN key and configuration files provided by FAFNIR to your Desktop or a FAT formatted USB stick:

**"ca.crt"**

**"SECON-VPN-Client.ovpn"**

**"USER-AAA-BBBB.crt"** (AAA-BBBB represents a USER ID)

**"USER-AAA-BBBB.key"** (AAA-BBBB represents a USER ID).

- (11) Drag the OpenVPN key and configuration files to the folder "Empty Tunnelblick VPN Configuration"

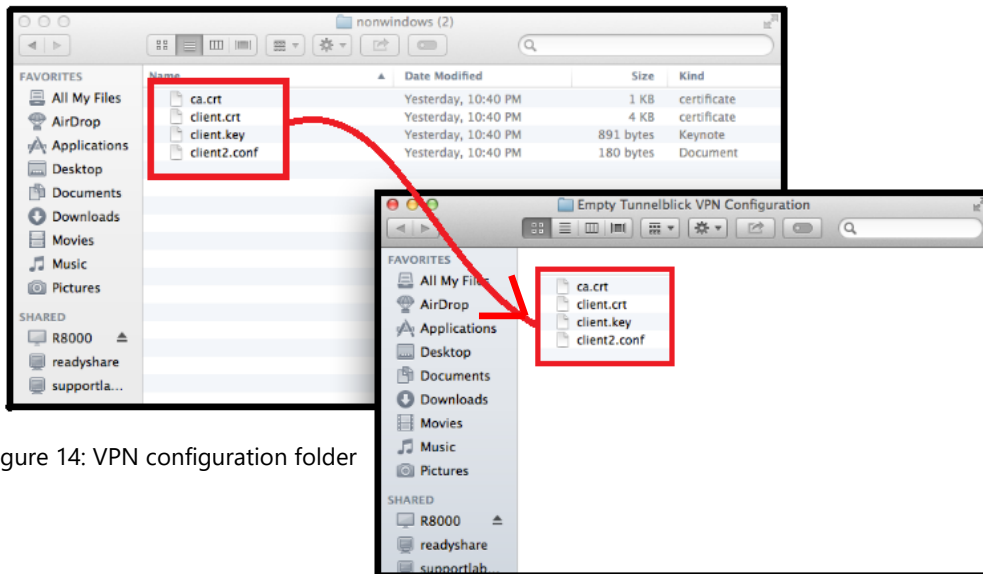


Figure 14: VPN configuration folder

- (12) Open the file with the extension .ovpn and confirm the selection.
- (13) Confirm the following installation query for "All Users" respectively "Only me":



Figure 15: Installation for "All Users"

You may need to enter a username and password.

- (14) Enter the installation prompt with "OK".

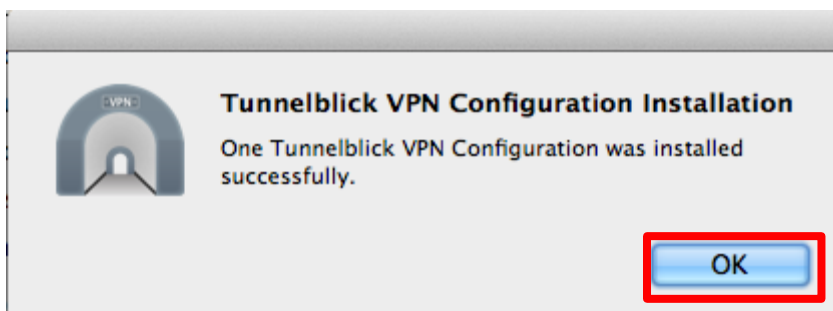


Figure 16: VPN configuration prompt

- (15) After successful installation and configuration the Tunnelblick icon is displayed in the top menu bar, which allows you to open the Tunnelblick window.
- (16) Start/Stop the VPN connection with the "Connect"/"Disconnect" button:

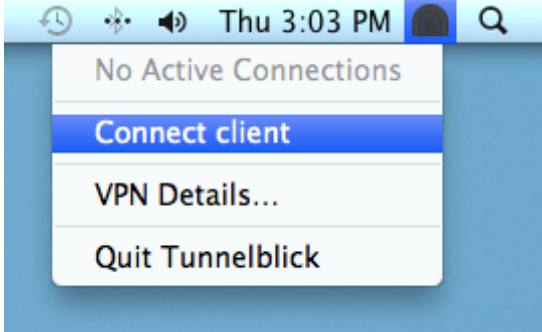


Figure 17: Start of VPN connection

- (17) Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server <http://10.0.8.1>):  
If you use your own server, the configuration files and the server address in the browser bar must be changed accordingly.
- (18) It opens the SECON-Server with the startup screen:



Figure 18: SECON-Server startup screen

## 2.3 Installation for the iOS operating system

- (1) On your iPhone / iPad look for the **OpenVPN Connect** app in the **Apple App Store** and install it:

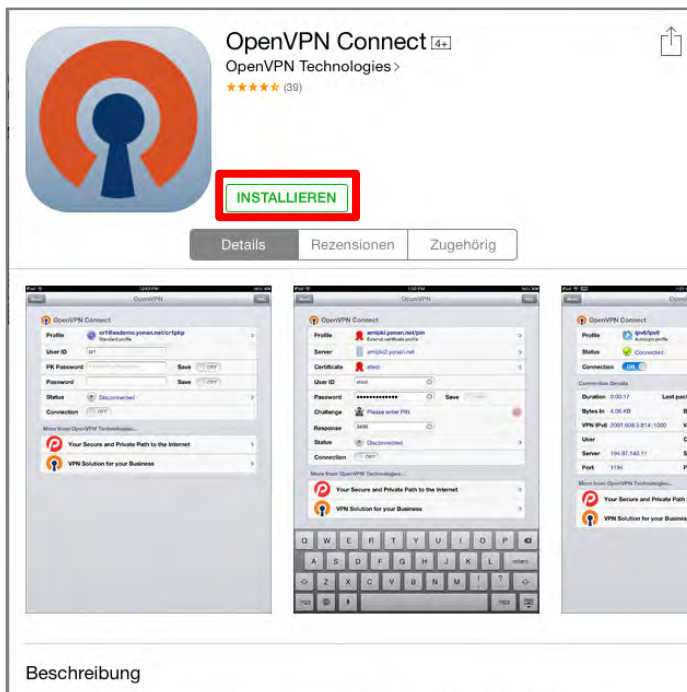


Figure 19: iOS OpenVPN

- (2) Confirm the access rights and open OpenVPN Connect:

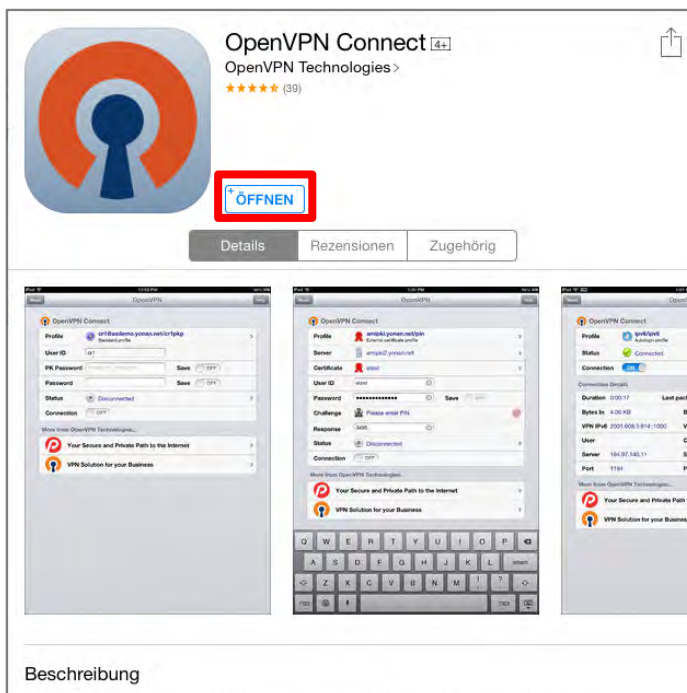


Figure 20: Open OpenVPN Connect

- (3) With **iTunes** open the OpenVPN Connect app on your PC and add the provided key files to the folder "**Documents of OpenVPN**":

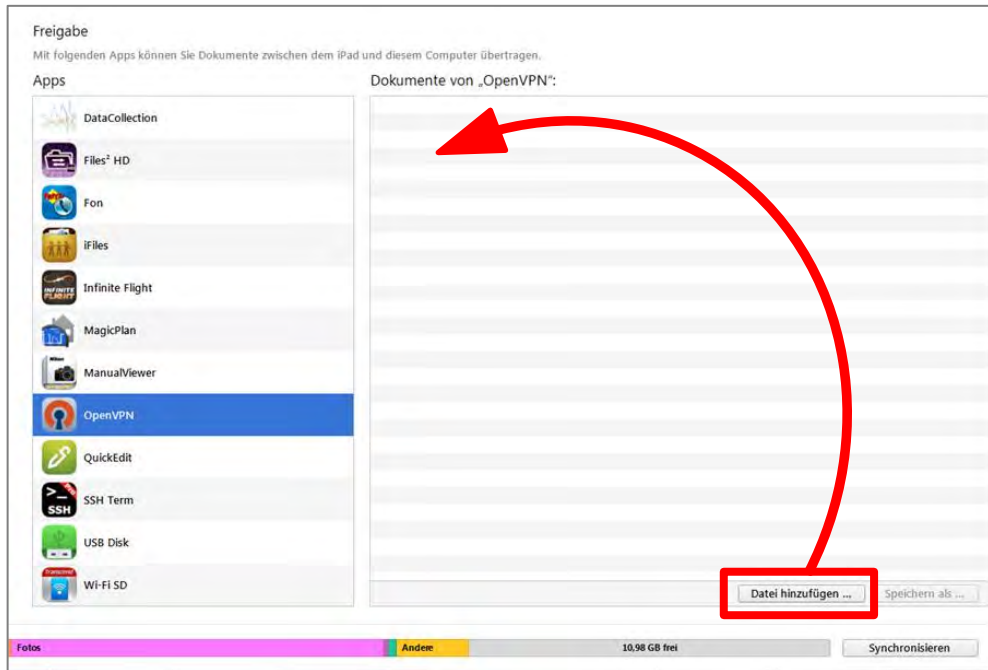


Figure 21: Opening OpenVPN Connect with iTunes

- (4) Synchronize the key files with your iPhone / iPad:

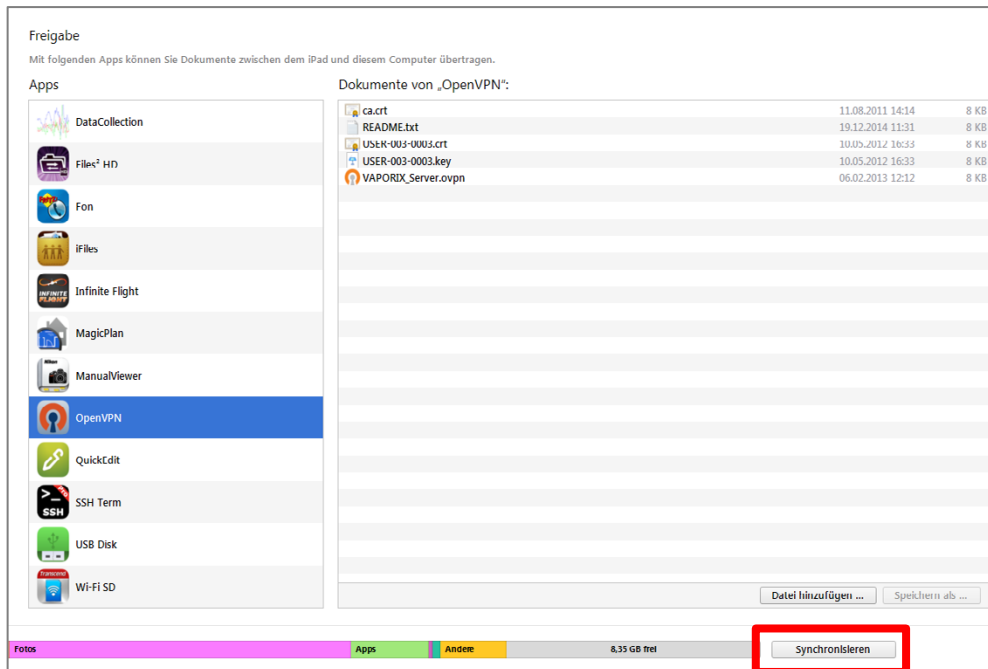


Figure 22: Synchronizing OpenVPN Connect files



- (5) Within OpenVPN Connect, click onto the green circle to add the server:

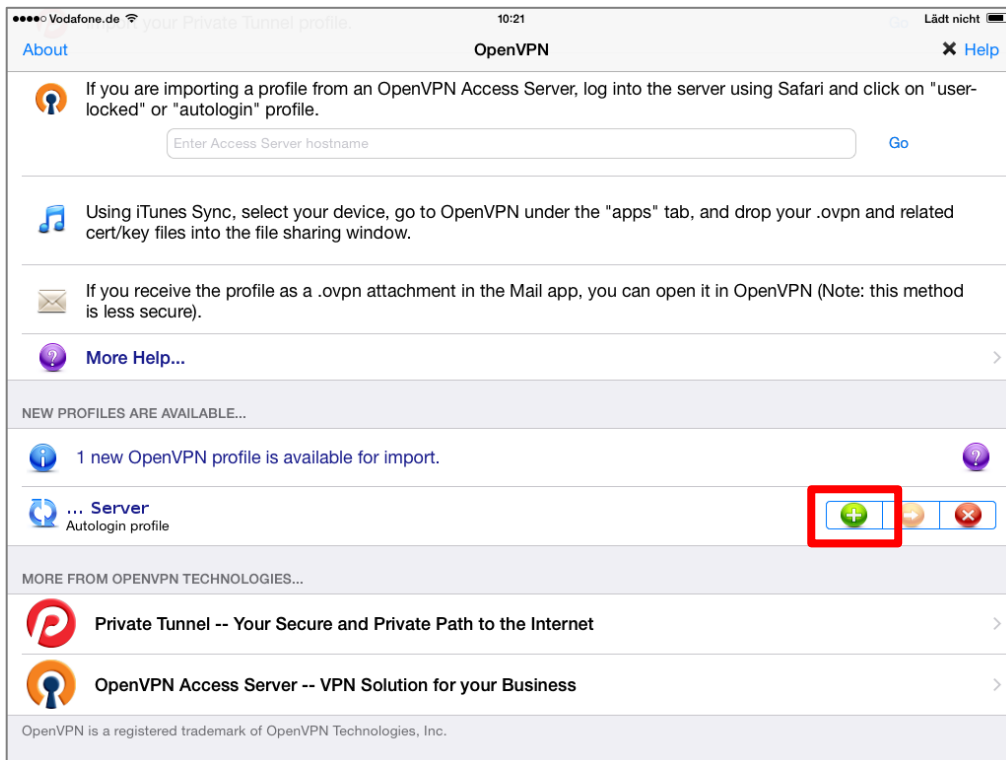


Figure 23: Adding OpenVPN Connect Server

- (6) For the trusted connection or termination of the secure connection click the "Connection" button and confirm the following prompt:

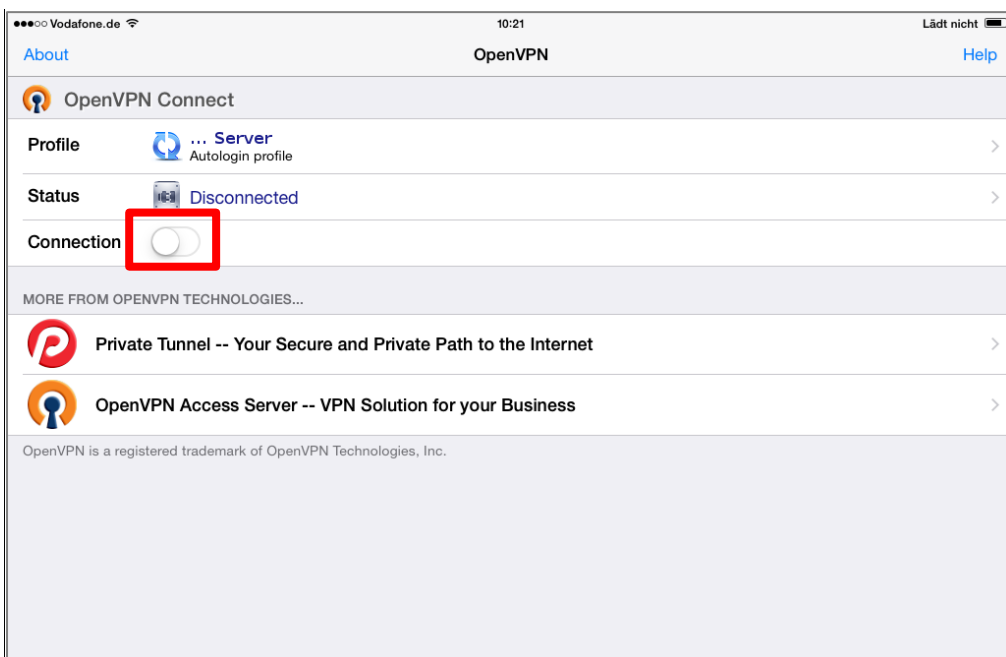


Figure 24: Secure VPN connection on / off

- (7) The secure VPN connection is shown with the **green connection symbol**:

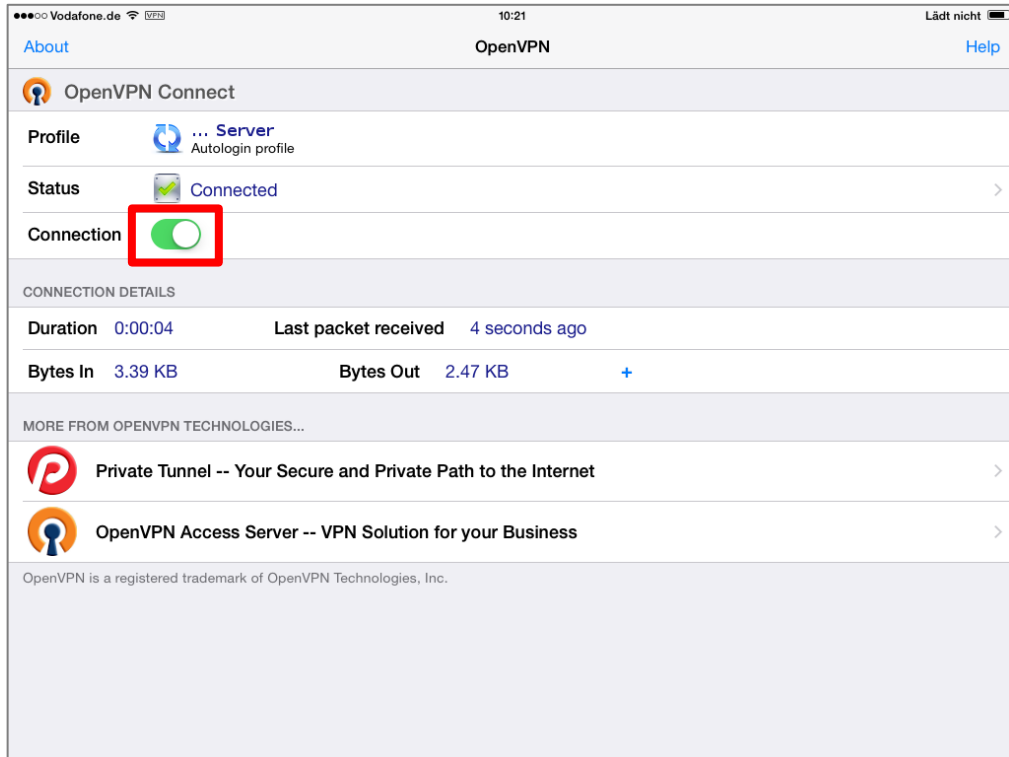


Figure 25: Secure VPN connection established

- (8) Open your web browser with the server address <http://10.0.8.1>. The secure connection is displayed with a VPN icon in the menu bar:



Figure 26: SECON-Server startup screen with secure VPN connection

## 2.4 Installation for the Android operating system

- (1) On your Android phone or Android tablet look for the **OpenVPN Connect** app at **Google Play Store** and install it:



Figure 27: Android OpenVPN

- (2) Confirm the access rights:

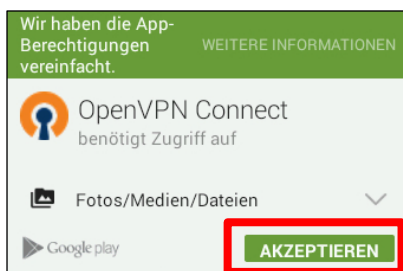


Figure 28: Access rights

- (3) Open the OpenVPN Connect app:



Figure 29: Open OpenVPN Connect

- (4) Open the "Settings" menu in the OpenVPN startup screen:

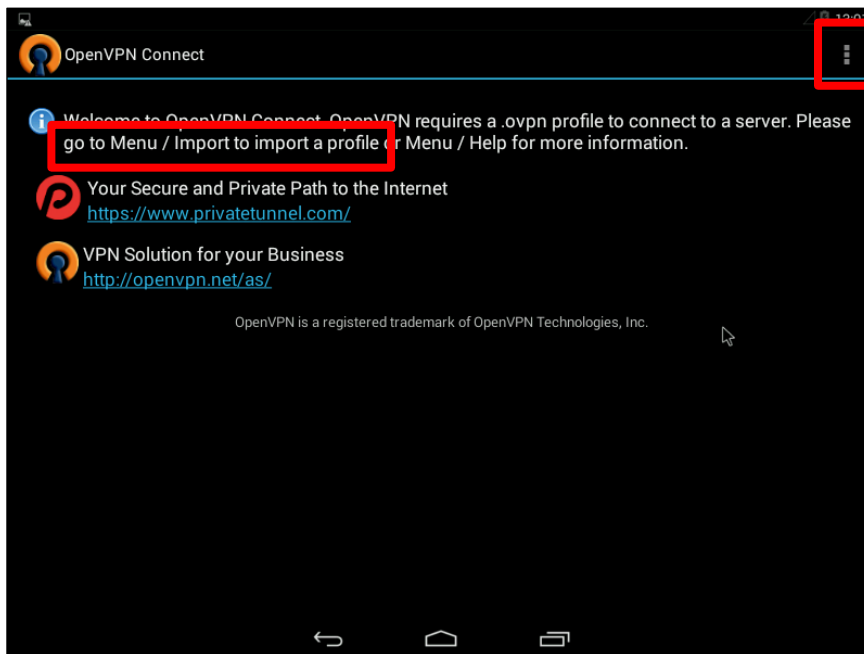


Figure 30: OpenVPN Connect startup screen

- (5) Select the menu item "Import" and then "Import profiles from SD card":

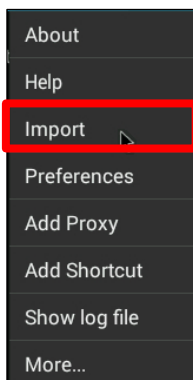


Figure 31: Drop-down list "Import"

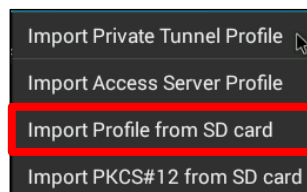


Figure 32: Drop-down list "Import profiles from SD card"

Save the key and configuration files provided by FAFNIR:

**"ca.crt"**

**"SECON-VPN-Client.ovpn"**

**"USER-AAA-BBBB.crt"** (AAA-BBBB represents a USER ID)

**"USER-AAA-BBBB.key"** (AAA-BBBB represents a USER ID)

on the SD card of your Android phone / tablet or on a FAT formatted USB stick.

- (6) Open that folder in the import query.

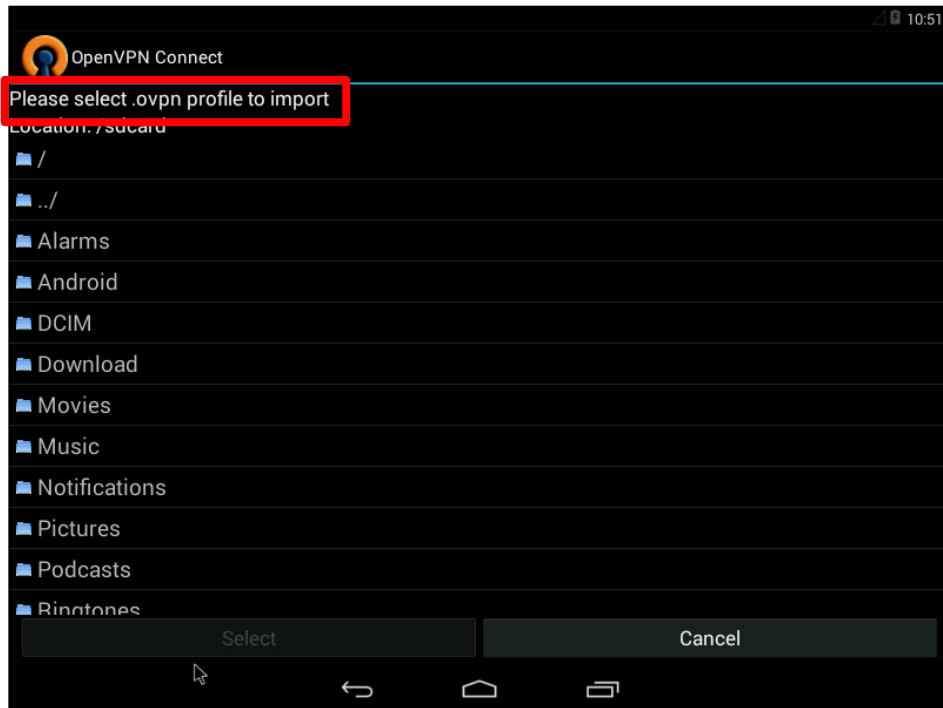


Figure 33: Import query

- (7) Choose the file with the extension .ovpn and confirm this selection with "Select":

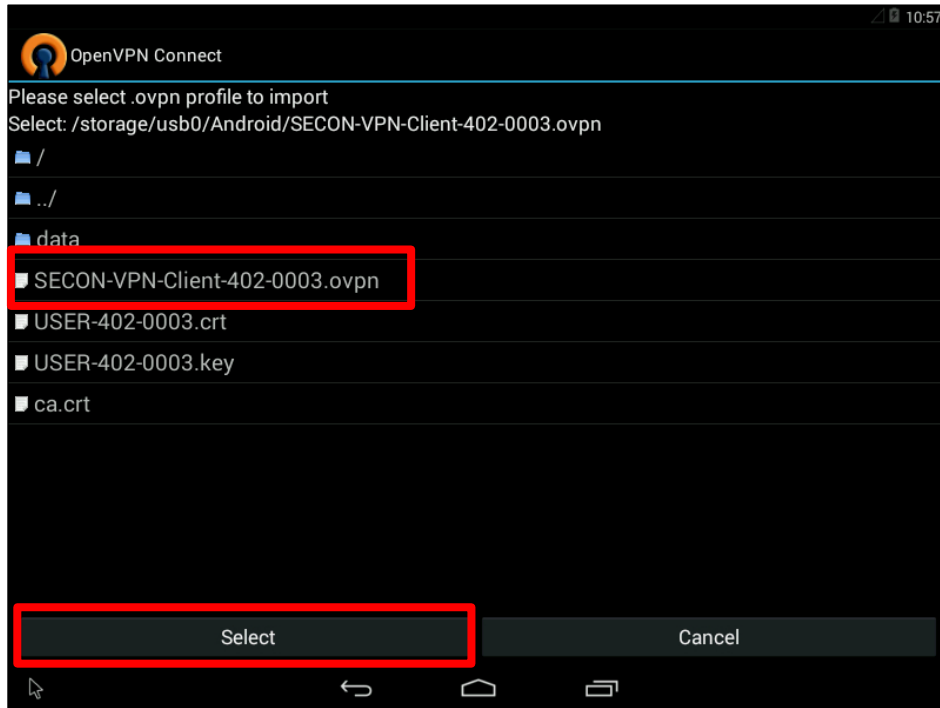


Figure 34: Selection of the ovpn profile

- (8) Select "Connect" to establish the secure VPN connection

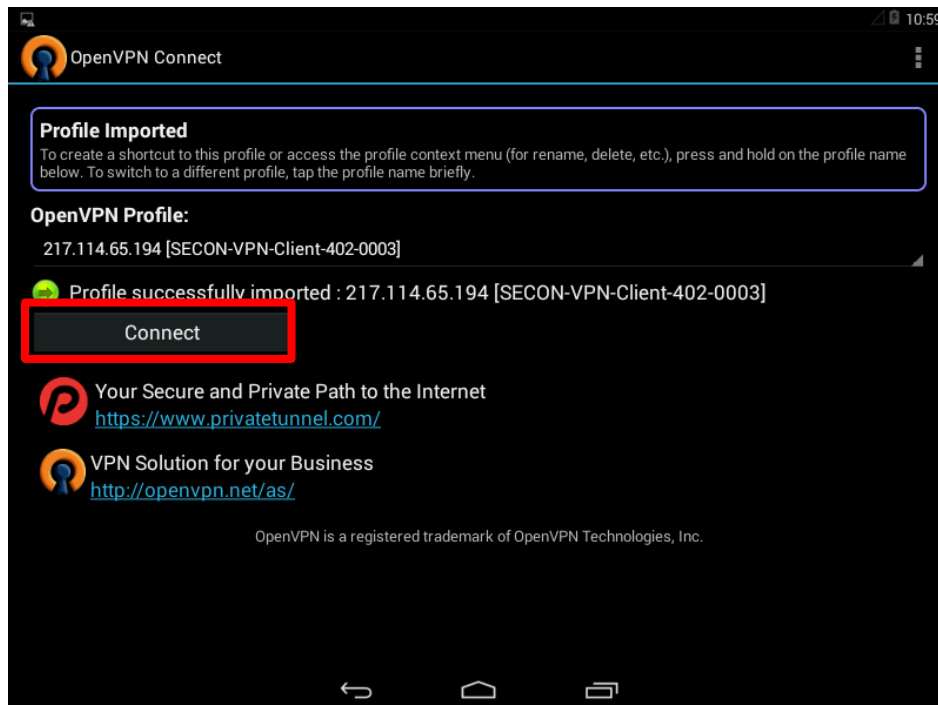


Figure 35: Execution of the secure VPN connection

(9) Enter the confirmation prompt:

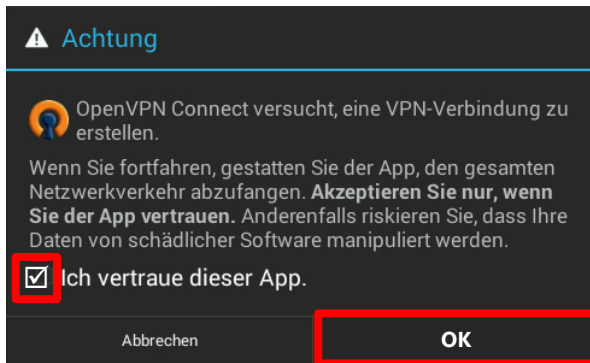


Figure 36: Confirmation prompt

(10) Dial-up to the SECON-Server

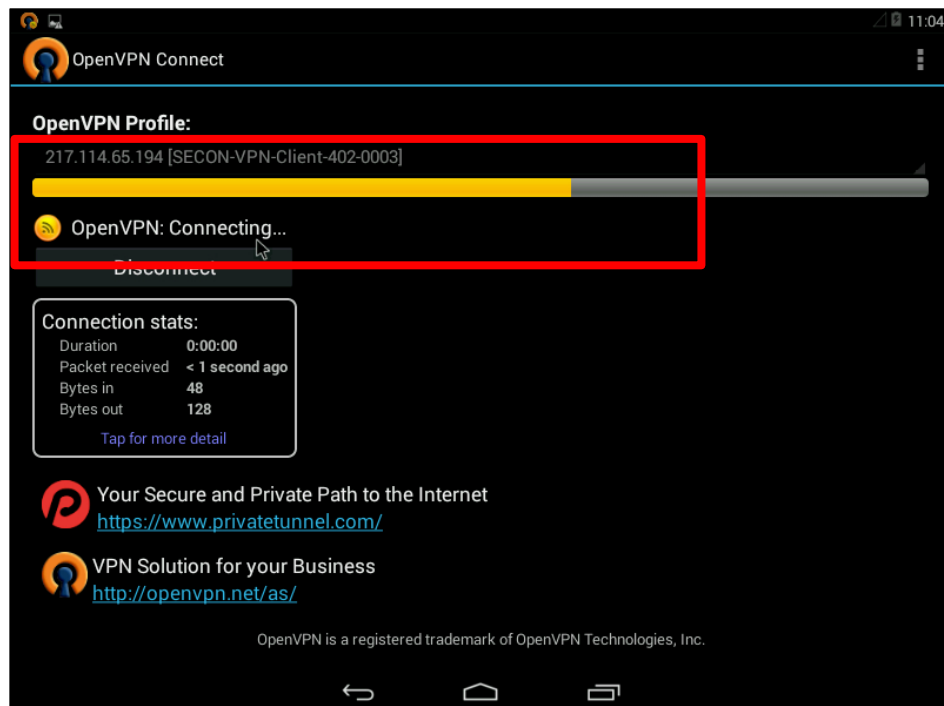


Figure 37: Dial-up to the SECON-Server

- (11) View of a successful connection; the OpenVPN icon is displayed with a green point and the message "OpenVPN Connected" appears:

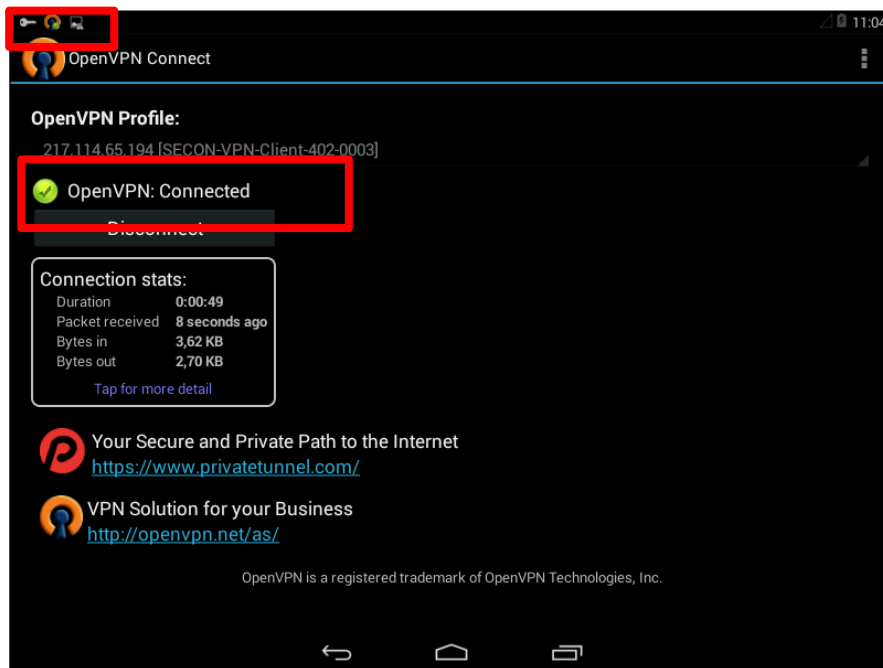


Figure 38: Successful connection

- (12) Close the OpenVPN window via the Home button. The connection remains unchanged. Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server <http://10.0.8.1>):

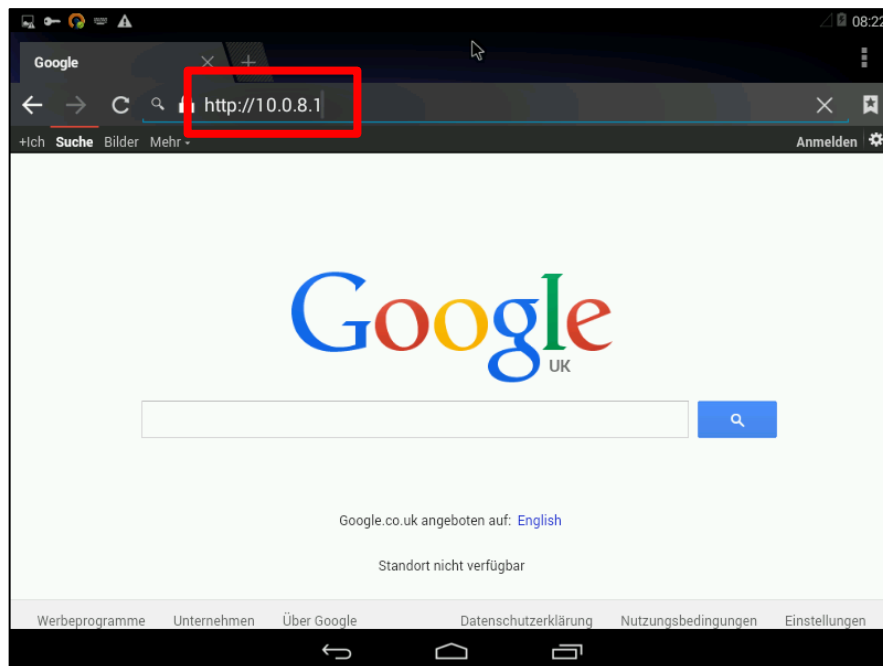


Figure 39: Dial-up to the SECON-Server

If you use your own server, the configuration files and the server address in the browser bar must be changed accordingly.



(13) It opens the SECON-Server with the startup screen:

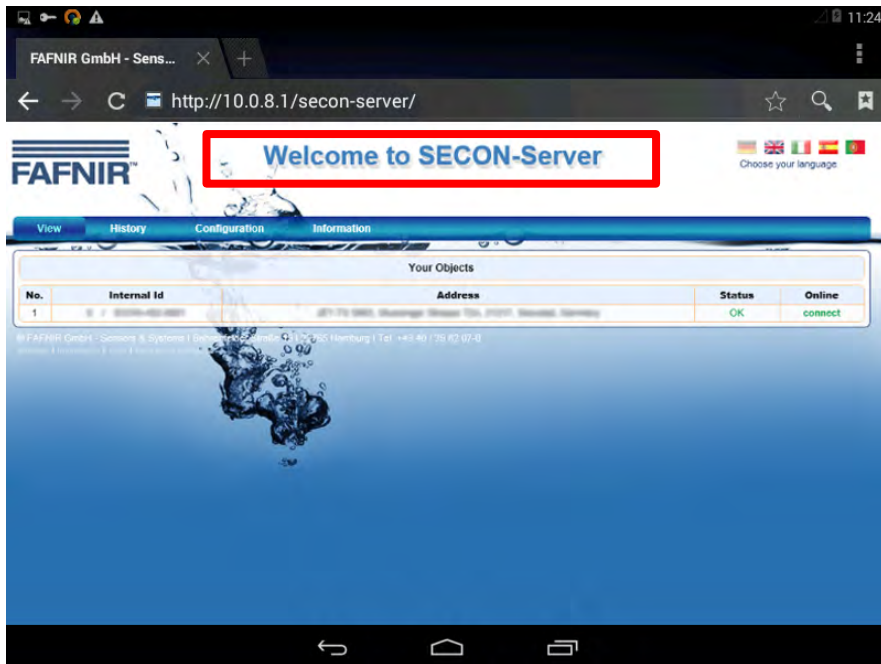


Figure 40: SECON-Server startup screen

(14) To terminate the connection, close the web browser, open the OpenVPN Connect app and press "Disconnect":

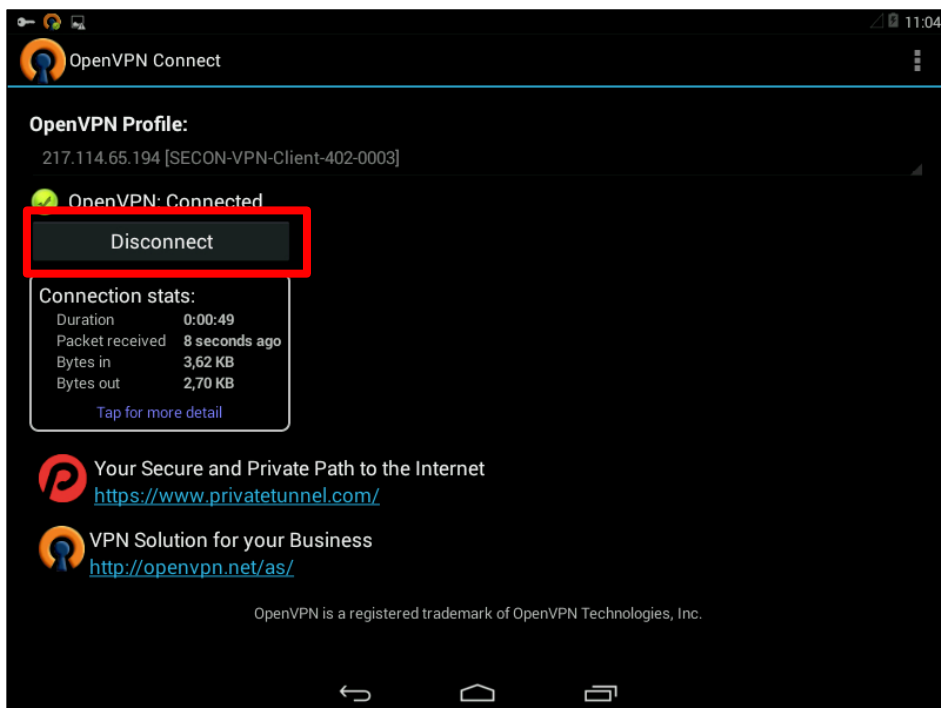


Figure 41: Terminating connection

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