

ANAGATE
DEVELOPMENT
KIT
(VIRTUALBOX)

FIRST STEPS

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Revision History

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1 Introduction

This manual's goal is to provide a quick overview on the **AnaGate Development Kit** as well as detailed information about the installation of the VirtualBox image from the supplied USB drive.

This USB drive contains all necessary for developing individual applications for an AnaGate device.

The most important part is the virtual machine (VirtualBox) which contains a complete installed development environment and other useful tools.

1.1 Content of the USB drive

The hard drive contains:

- Sun xVM VirtualBox V 2.1.0 Setup for Windows
- A Virtual Media File (*.VDI) which contains the VirtualBox data
 - Linux Ubuntu 8.10 operating system
 - KDevelop and Eclipse (CDT) development systems
 - Example applications for AnaGate device
 - Tools, libraries and documentation
- Manuals, libraries, examples and tools for Windows development

2 Installing and starting the VirtualBox

First of all you need to connect the USB hard drive to your PC.

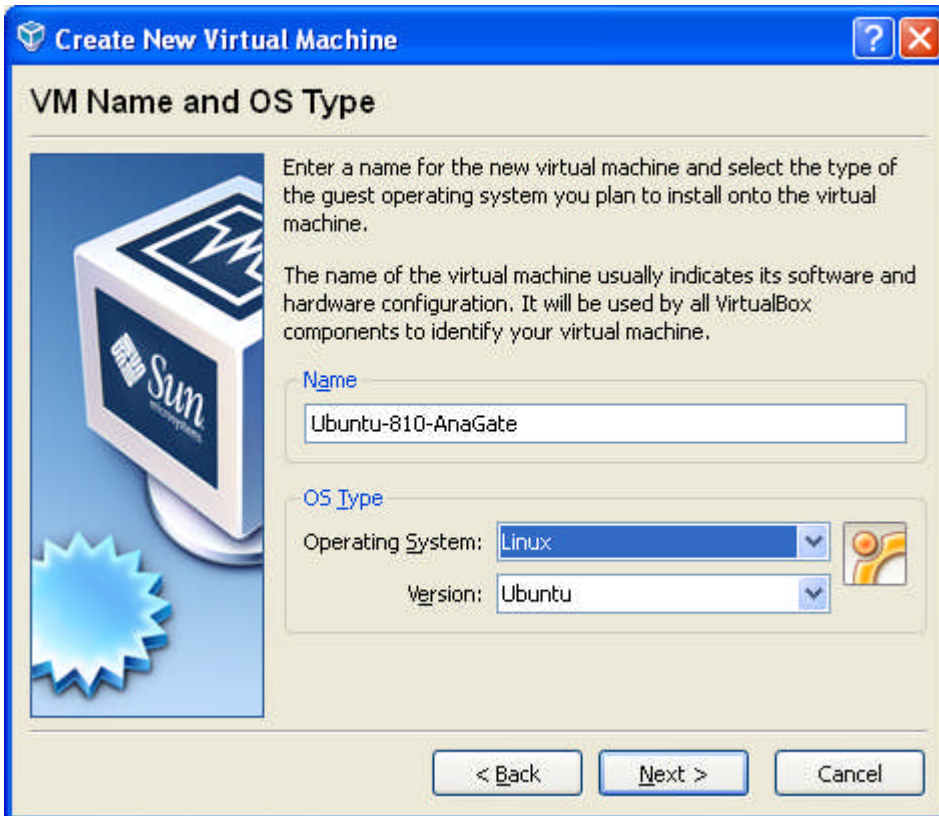
To use the virtual machine included on the hard drive, you have to install the Sun xVM VirtualBox software on your PC. Please start the VirtualBox setup at "<<Drive of the USB HDD>>:\Sun xVM VirtualBox V 2.1.0".

If you want to use the VirtualBox image from a non-windows host like Linux, Macintosh and OpenSolaris, please download the VirtualBox software directly from <http://www.virtualbox.org>.

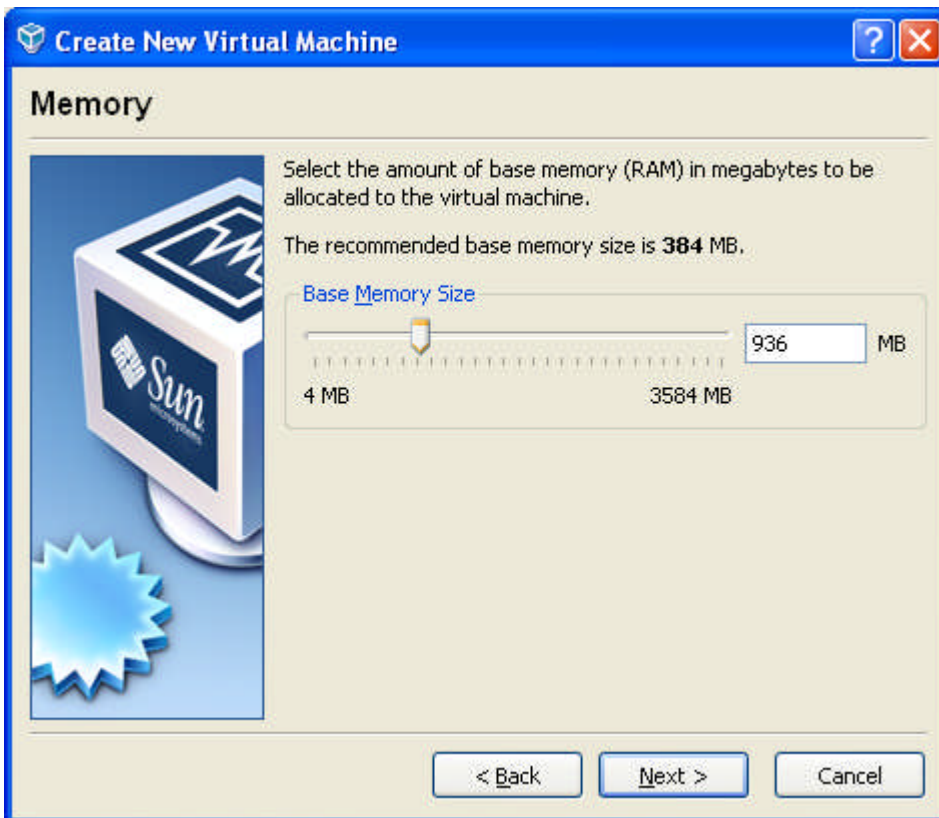
Once the software is installed, start the Virtual Box software and click at the button **New** to create a new Virtual Machine.



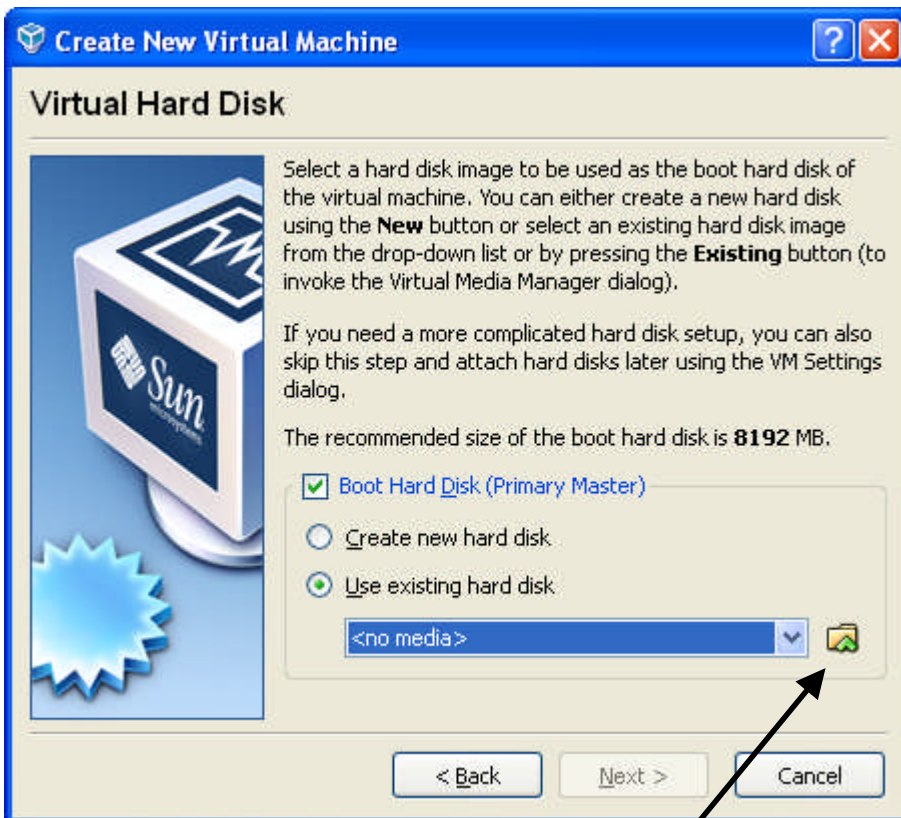
Click on the Button **Next**.



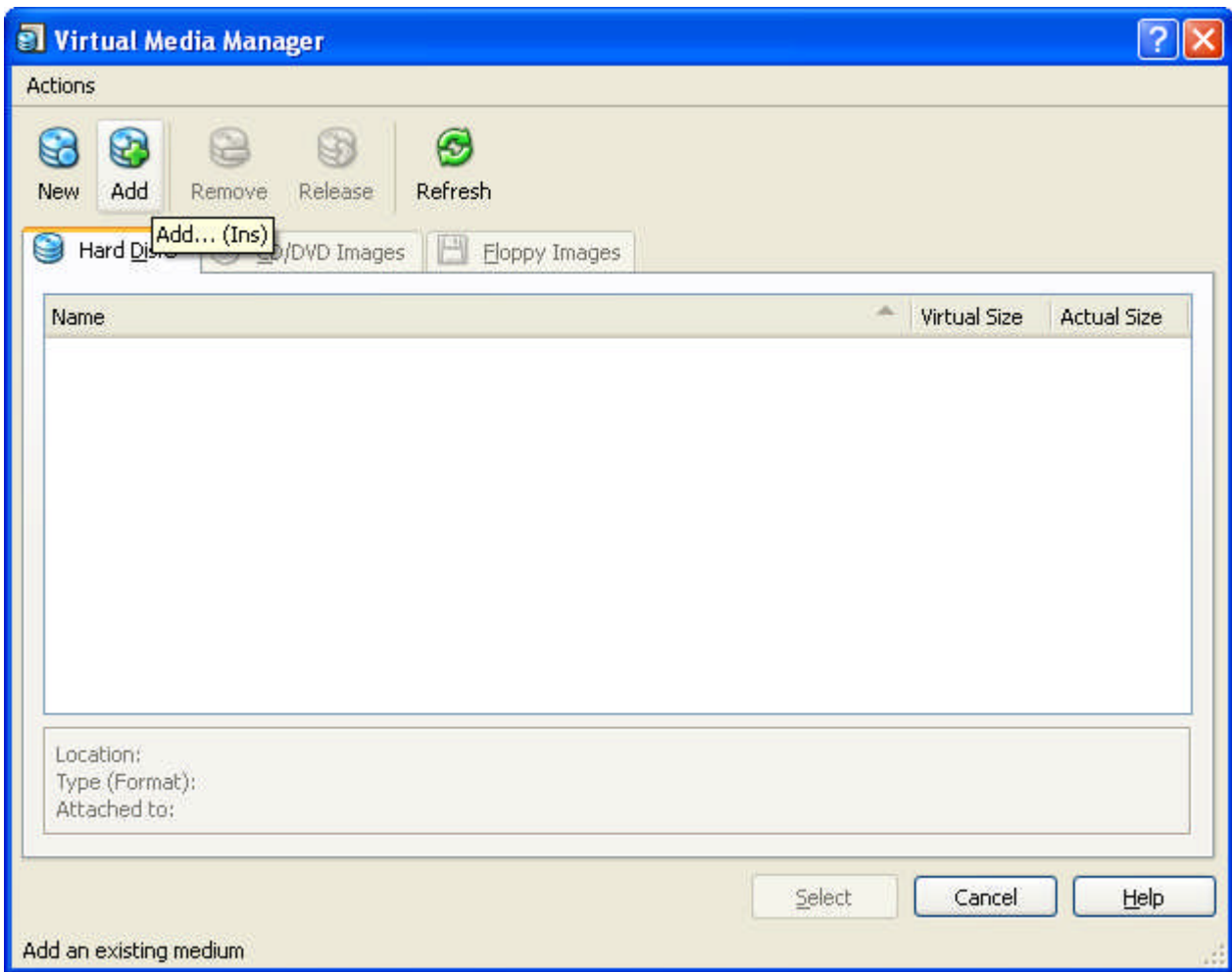
Enter a name of your virtual machine and select as Operating system/Version **Linux/Ubuntu**. Click on the Button **Next**.



Select as much as possible memory for the virtual machine and click the button **Next**.

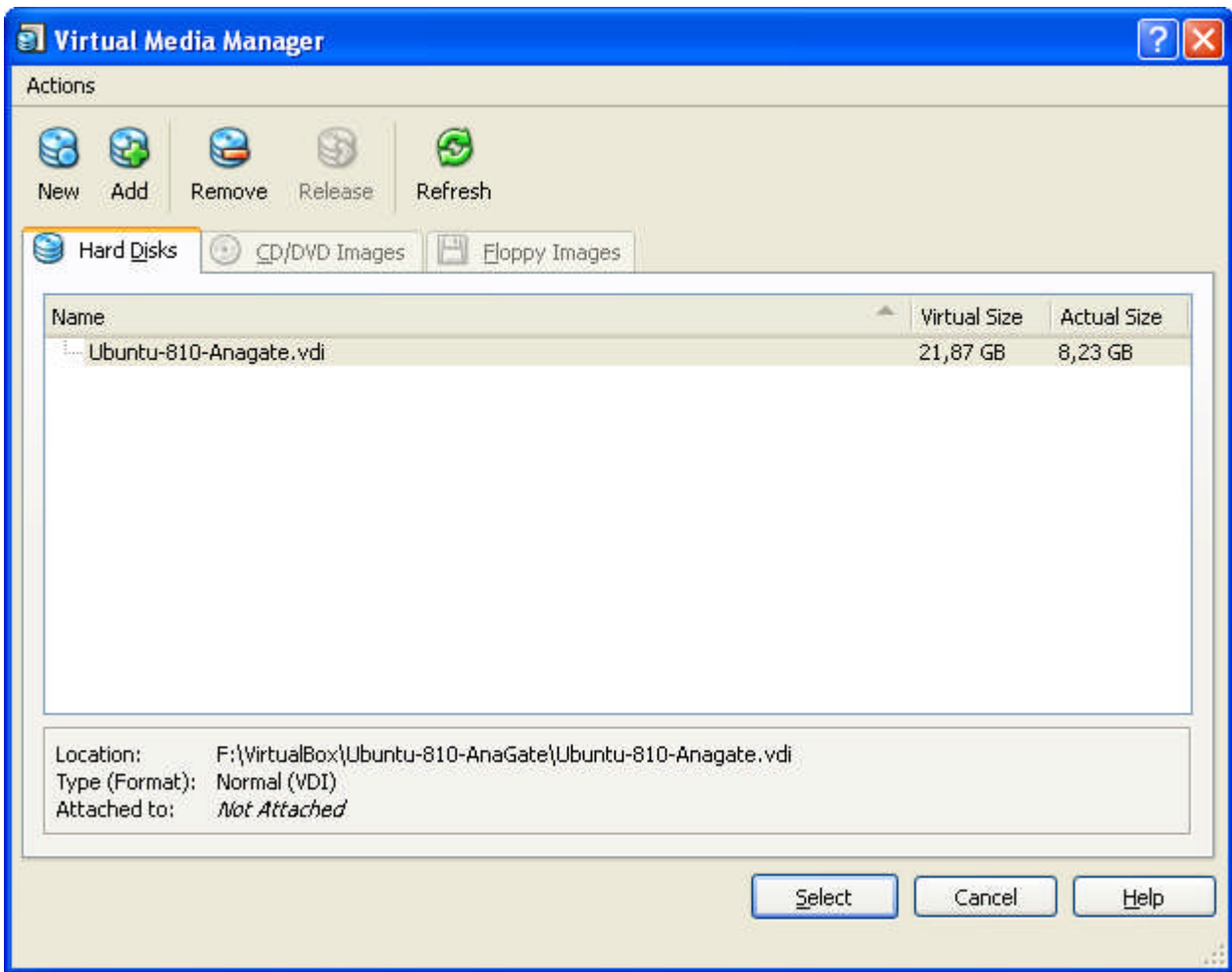


Select *Use existing hard disk* and click on the symbol to invoke the Virtual Media Manager dialog.

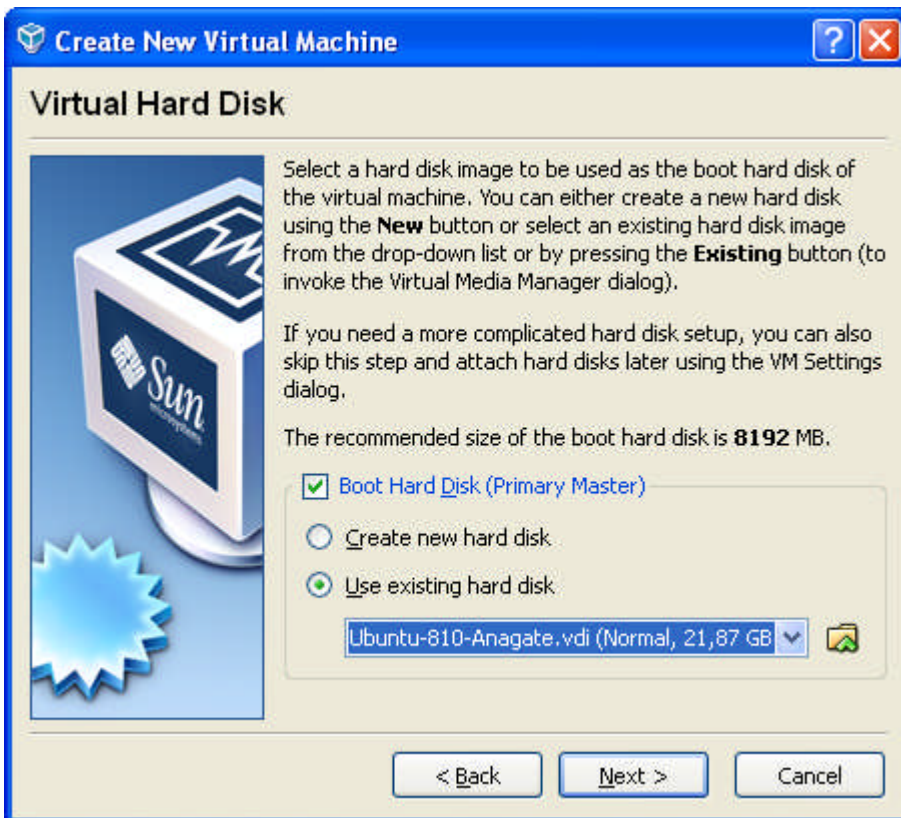


Click on the button **Add** to add the .vdi file located on the USB hard disc to the media manager.

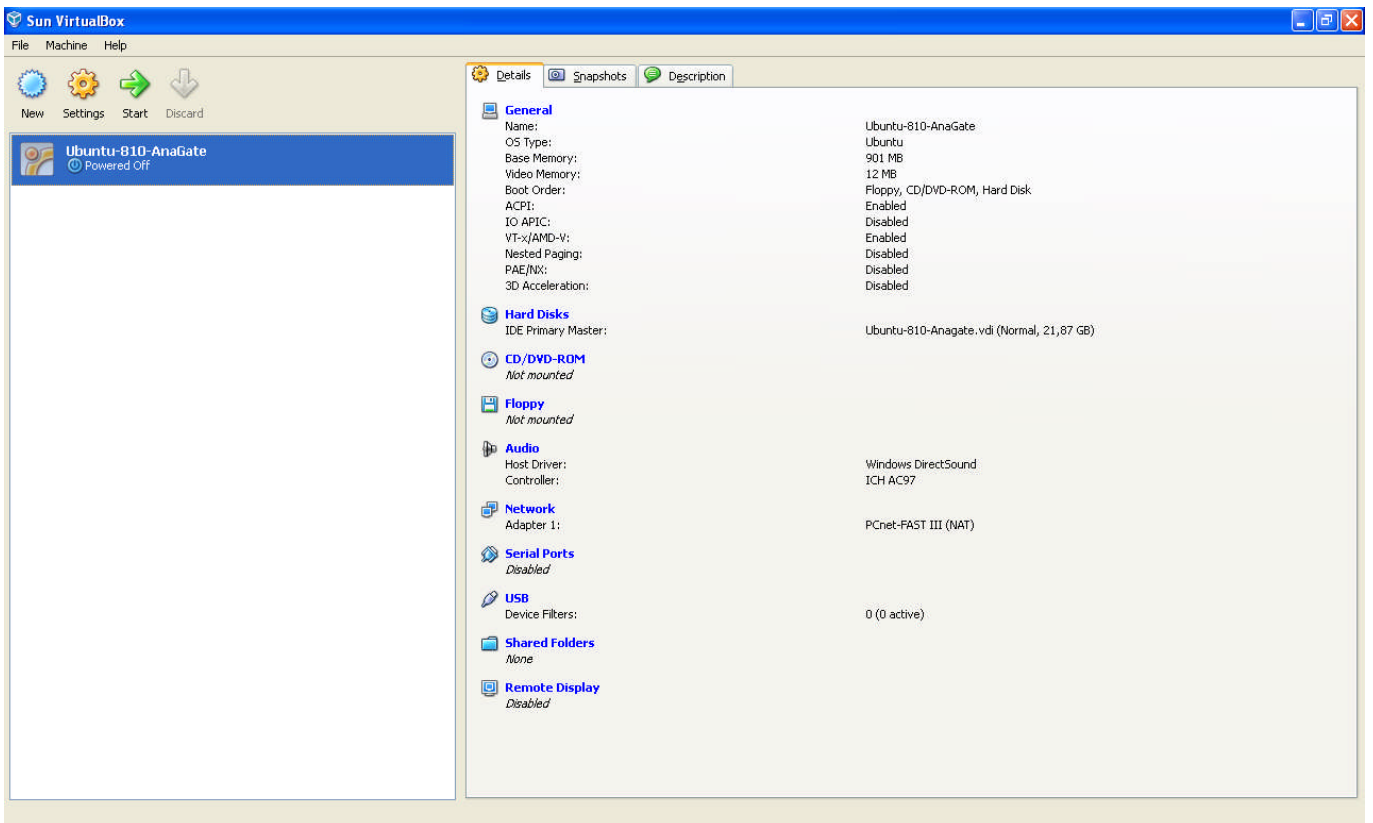
If you copy the .vdi file to a local hard disk, you also can use the local copy instead of the external copy. This means that you can work independently of the external USB hard disk.



Press the button **Select** in order to select this .vdi file.



Press the button **Next** to continue.



Click the **Start** button to start the virtual machine.

To login use the username “**administrator**” and the password “**anagate**”.

Hints:

Press the right “CTL” +”F” keys to toggle between full screen mode and window mode of the virtual box.

Press the right “CTL” key to switch to your host system (e.g. Windows).

3 The Virtual Machine Ubuntu-810-Anagate

The guest operation system of the Virtual Machine is Linux Ubuntu V8.10 with Gnome as user interface.

3.1 Users and Passwords

Two users are predefined:

- root
- administrator

For both users the password is “anagate”.

3.2 Contents of the Virtual Machine (VM)

The VM is completely preinstalled and contains everything for developing individual applications with the C/C++ language for an AnaGate device.

In the directory **/home/administrator/Analytica** you can find all the stuff that we have installed on the system.

3.2.1 Development tool

Two different c/c++ development tools are installed:

- KDevelop V 3.5.3
- Eclipse V3.2

Both tools can use an ARM cross-compiler which is already installed under “/usr/local/arm/gcc_411”. This compiler is necessary for creating applications which can run directly on the AnaGate itself.

To build applications that run on a PC linux system (e.g. under the VirtualBox itself), use the standard “gcc” instead of the ARM cross compiler.

3.2.2 Examples

The directory **/home/administrator/Samples** contains some simple programming examples.

Within this directory there are two subdirectories:

- KDevelop
 - Arm-linux

Within this directory you find two example projects (CAN_Send_Rec and Hello_World) using the cross compiler in order to create applications for the AnaGate.

Pressing F8 builds the application. Pressing “Shift-F9” transfers the application via FTP down to the AnaGate. For more information have a look at the source file(s).
 - I686-linux

Within this directory you find an example project (CAN_Send_Rec) using the linux i386 compiler in order to create an application to be run on the linux PC operating system
- Eclipse

In this directory you find identical sample projects like on the directory “KDevelop” but with Eclipse project files.

In the source code of these examples some more information can be found about the libraries needed by this application etc.

3.2.3 Uploading/Downloading software from/to the AnaGate

On the AnaGate a FTP server (ProFTP) is running. Currently only one FTP user is available (user: “anagate”, password: “anagate”). The local directory of the FTP transfer is “/mnt/ramdisk”, which is the RAM disk on the AnaGate itself.

If you want to keep your application persistent on the AnaGate you will have to copy your application from the RAM disk to the flash file system (e.g. /firmware/...).

3.2.4 Documentation

In the directory **home/administrator/Analytica/Documents** you can find some manuals about the AnaGate itself, the TCP-IP protocol, the libraries, etc.