

Tutorial #1: Installation of the OpenComRTOS Suite 1.3

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Introduction

The object of any search invariably
appears in the spot you look at last

MURPHY'S LAW

OpenComRTOS is one of the few formally developed real time operating systems. This rigorous formalism has two benefits. First of all: good performance. This good performance is reflected in the small code size and the fast execution speed. The second benefit is the usability. Due to the formal development, the user interface is clean and the usability is high. Nevertheless, before OpenComRTOS can be used on the ARM target, some setup work is necessary.

The following section presents a step by step manual which guides the user from the 'OpenComRTOS Suite for Win32 version 1.3' towards a working development environment.

1 OpenVE Installation Instructions

This section details how to setup OpenVE, the MinGW toolchain, and the CMake build system.

1.1 MinGW Tool-chain for Windows

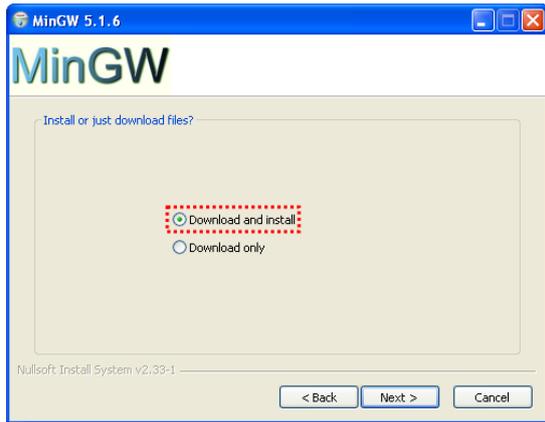
MinGW [1] is a GNU GCC to compile programs for MS-Windows. It is available both under MS-Windows and Linux, which is one of the reasons why we use it. The enclosed USB key contains version 5.1.6. of MinGW, to install it follow these steps:

1. Start the installation process by executing:
`OpenComRTOS.Suite_1.3\Win32\Mingw32\Mingw-5.1.6.exe`
contained in the enclosed USB key.
2. When the installer asks whether to "Download and install" or to "Download only" (Figure 1a) select "Download and install". The necessary files have been downloaded previously, and the installer will use these files, instead of downloading them again.
3. When the installer queries you which package of MinGW to install (Figure 1b), select "Current"
4. In the component selection screen (Figure 1c) select to install "MinGW Make". This component is an essential part of the OpenComRTOS build system.

1.2 Adding MinGW to the System Binary Search Path

The MinGW installer does not add the binary directory of MinGW ("`;c:\Mingw\bin`") to the System Binary Search Path of MS-Windows. This section explains the necessary steps to achieve this for MS-Windows XP, the procedure is similar for MS-Windows Vista and MS-Windows 7. Follow these steps to add the MinGW tools to the system wide Binary Search Path:

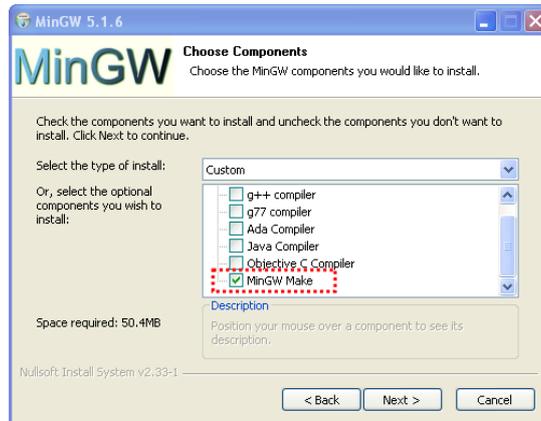
1. Add the binary path of MinGW to the PATH: Open the System Properties (right click on "My Computer" and select "Properties"), see Figure 2a.
2. There select the tab labeled "Advanced", in which you click on the Button labeled "Environment Variables" , see Figure 2b.



(a) The MinGW installer operation selection screen



(b) The MinGW installer package selection screen.



(c) The MinGW installer component selection screen.

Figure 1: MinGW installer screens

3. In the list box “System Variables” select the variable “Path” and click on the button labeled “Edit” (you can also double click on the list entry) , see Figure 2c.
4. In the dialogue “Edit System Variable” (see Figure 2d) add the following to the end of the Edit Field labeled “ Variable value”: “;c:\MinGW\bin”. Be careful not to delete the previous value of “Path” because otherwise MS-Windows will not work correctly any longer.

1.3 CMake Build System

OpenComRTOS uses the CMake build system [2] (version 2.6 or better) to build itself and applications using it. The following steps guide you through the installation process:

1. Start the installation process by executing:
`OpenComRTOS_Suite_1.3\Win32\cmake-2.6.4-win32-x86.exe`
from the enclosed USB key.
2. In the screen “Install Options” select “Add CMake to the system PATH for all users” (see Figure 3). This adds the CMake binary directory to the System Binary Search Path, which is necessary in order for the OpenComRTOS build system to be able to use CMake.

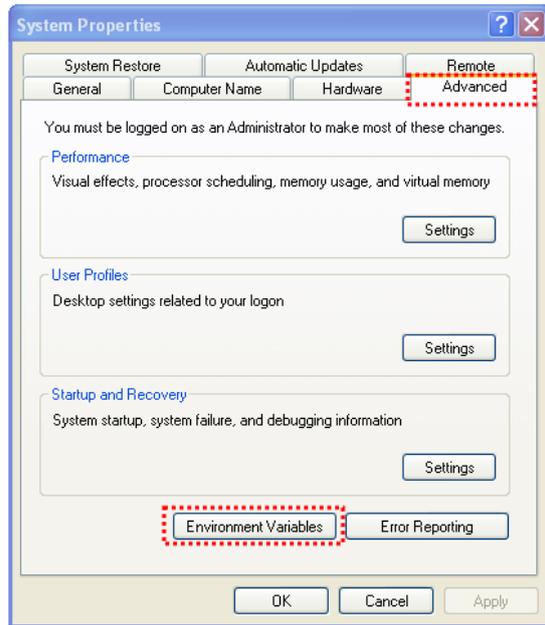
1.4 Installing the OpenComRTOS Suite

The OpenVE installation image is available on the included USB key. To install it, execute: “OpenComRTOS_Suite_1.3\Win32\OpenComRTOS-Suite-1.3.3.x.win32.msi”, where ‘x’ is a number representing the patch-level of the MSI. After this step the Altreonic Open Virtual Environment including the OpenComRTOS Kernel Images for Win32 is installed.

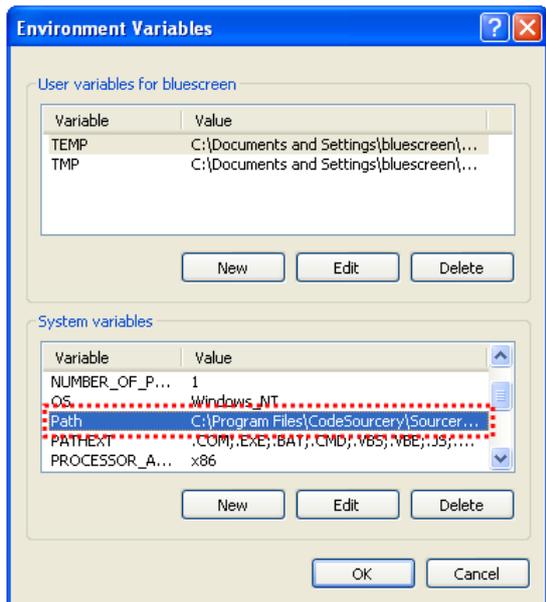
This completes the installation, you are now ready to try out OpenComRTOS on Win32.



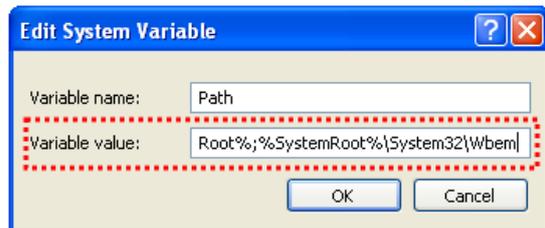
(a) Opening the System Properties Dialogue



(b) Opening the Environment Variables Dialogue



(c) Opening the Dialogue to modify the variable Path



(d) Modifying the value of the variable

Figure 2: Setting the System Binary Search Path

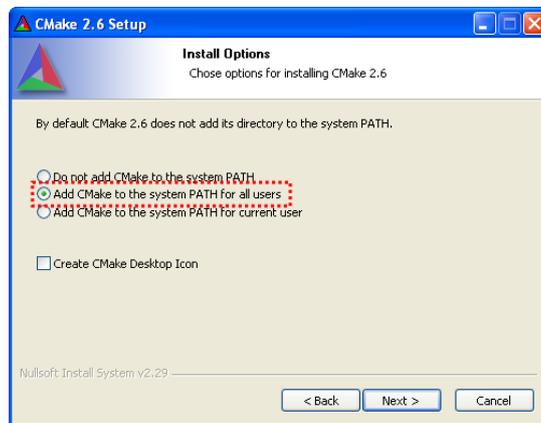


Figure 3: Adding CMake to the System Binary Search Path

2 Summary

This guide covered the installation process of the OpenComRTOS Suite 1.3. It covered the installation of the necessary software packages in Section 1. Your system is now ready to work with OpenComRTOS 1.3.

References

- [1] Mingw minimalist gnu for windows. <http://www.mingw.org/>.
- [2] Cmake — cross platform make. <http://www.cmake.org/cmake/resources/software.html>.