OPC for Linux – Tutorial

1. Introduction

With the Softing OPC Toolbox C++ V4.1, you can create OPC XMLDA servers and clients for Linux. This document describes how the toolbox provides a basic framework for your OPC server application.

The following terminology is used in this description:

- Toolbox sources: source files of the OPC Toolbox C++ V4.1 for Linux
- Project files: source files of your OPC server application

After the product has been licensed on a computer running Microsoft Windows, the toolbox sources are unpacked on the Windows machine. These are then be copied to, compiled and stored on the target computer running Linux. You can then use the toolbox sources to program your own OPC server application on the Linux computer.

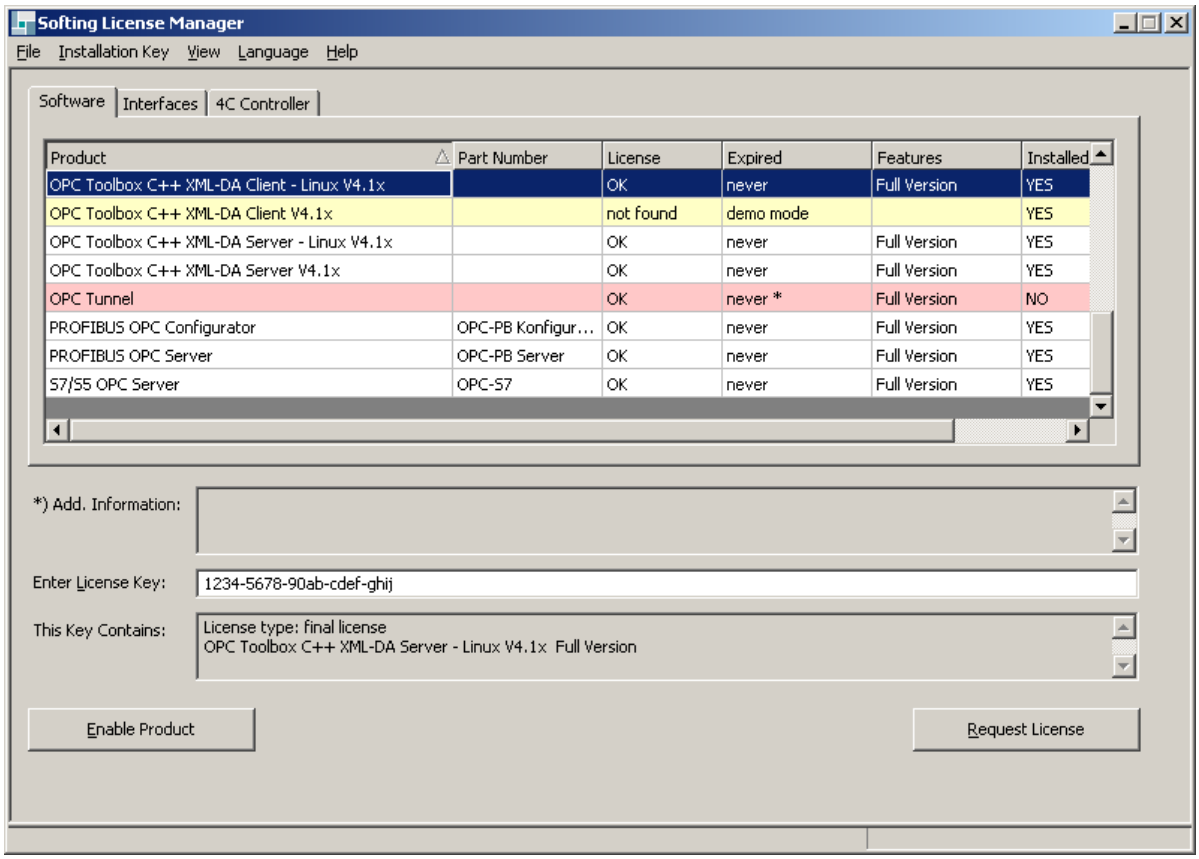
With the OPC Server Project Wizard, the code framework for the OPC server—the project files—can be generated in Windows and then also copied to, modified and compiled on the Linux target computer.

These steps are described in this document. More information can be found in the online help for the Softing OPC Toolbox C++ V4.1.

2. Procedure

2.1. Licensing

To use the full version of the Toolbox for Linux, you must license the product. You can do this in Windows with the Softing License Manager.



- Open the Softing License Manager via the Windows start menu (Programs / Softing License Manager)
- Enter your valid registration key in the appropriate field. You will find this number on the cover sheet of your license agreement. After entering the number, you will see text describing the product in the “This Key Contains” field.
- Click the “Enable Product” button. The toolbox sources will then be unpacked to the “C:\Program Files\Softing\OPCToolbox\V41x\Linux” directory. The toolbox sources include the following sub-directories:

    - SOCmn: Source code of the general toolkit classes
    - SODaS: Source code of the data access server toolkit
    - SOSrv: Source code of the shared server toolkit classes
    - SODaC: Source code of the data access client toolkit
    - SOClt: Source code of the shared client toolkit classes

- Copy the entire “C:\Program Files\Softing\OPCToolbox\V41x\Linux” directory to your Linux computer.

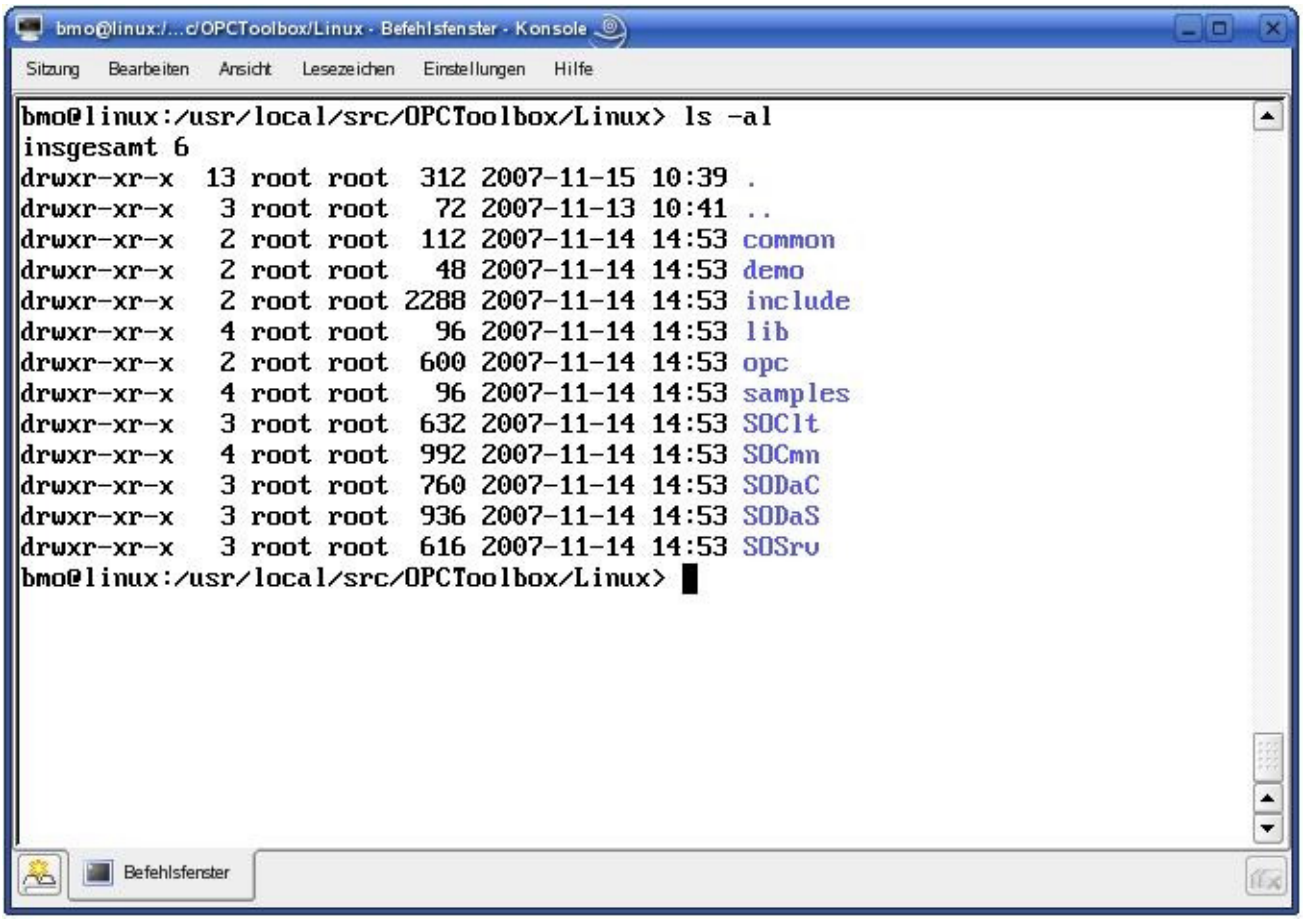
Important note:

The server toolbox and client toolbox are licensed separately.
You can only access the sources which you have licensed.

2.2. Installing the toolbox sources on the Linux computer

Carry out the following steps on the Linux computer:

- Open a shell and switch to the “SOCmn” sub-directory of the toolbox sources.
- Compile the code with the following command: **`make -f SOCmn_gcc.mak`**
- Follow the same procedure to compile the content of the other source code directories (SODaS, SOSrv, SODaC, SOClt).
- Move the entire directory of toolbox sources to the “/usr/local/src/OPCToolbox” directory.



2.3. Creating the project files for an OPC server

The project files for the OPC server contain the basic framework for your OPC server solution and are created in Windows. This is done with the Softing OPC Server Project Wizard.

- Open the OPC Server Project Wizard via the start menu (Programs / Softing OPC Toolbox C++ V4.1x / OPC Server Project Wizard).
- Select “Gcc & make” as the development environment.
- Give your project a name and select a project directory.
- Click the "Continue>" button.

There are no options to select in the following "Application" dialog window in Linux. An OPC XML data access server to be created as an "Application" is automatically selected. Click the "Continue>" button.

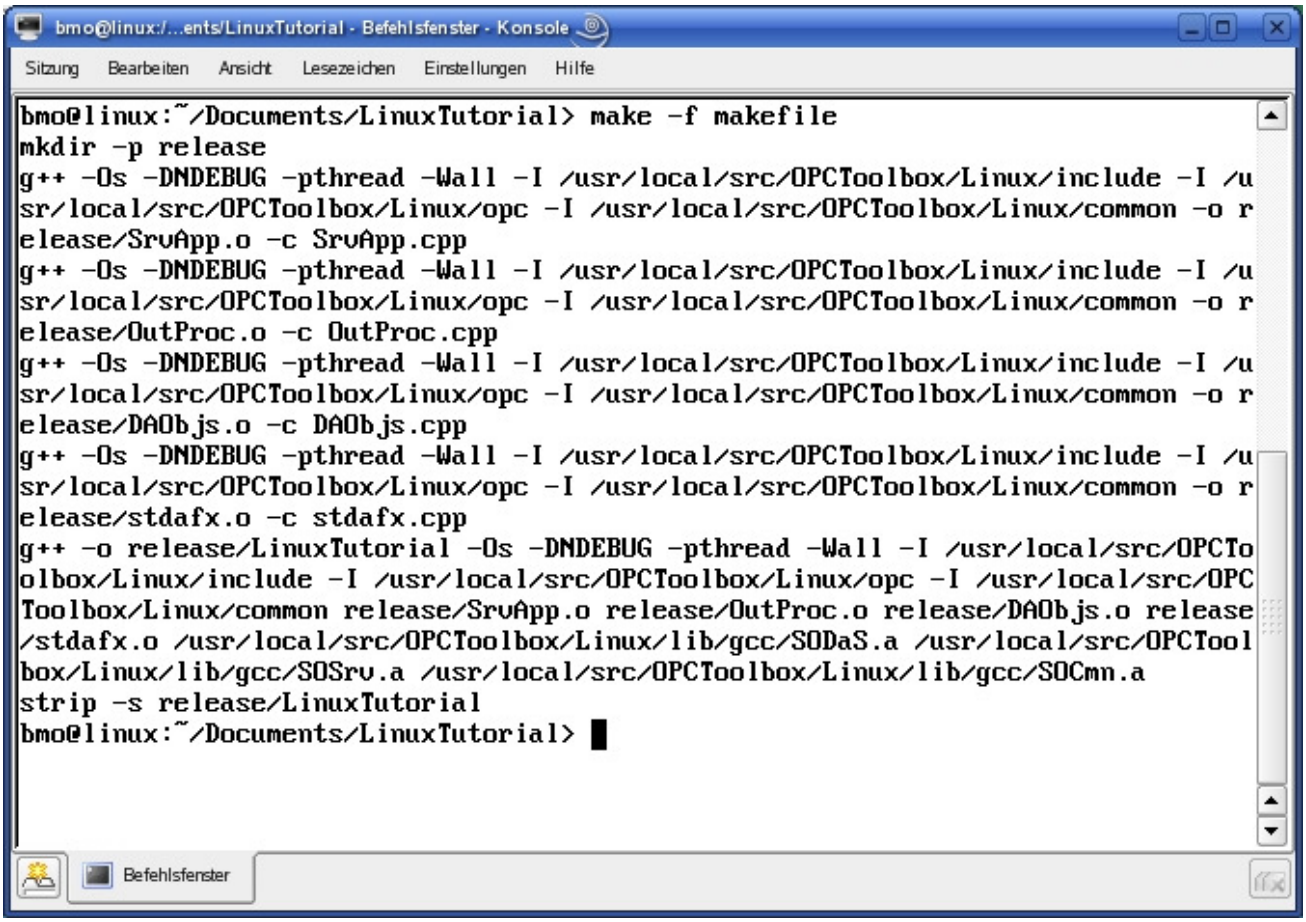
You can take other steps to specify OPC server settings such as the name, version number and type of device connection. More information can be found in the online help in the chapter entitled “Development environment/OPC Server Wizard.”

After you have created the project files, copy the project directory that has been generated to your Linux computer.

2.4. Compiling your OPC server solution

The project files already contain a complete OPC server. All you have to do is define the name space and enter values in it. Then you can compile the code with the help of a makefile. Softing has placed this makefile in your OPC project directory.

To do this, execute one of the following commands:
Release version: **`make -f makefile`**
Debug version: **`make -f makefile DEBUG=1`**



Important note:

If you have not copied the toolbox sources to “/usr/local/src/OPCToolbox“ as described in section 0, you will have to modify the makefile and the path to the toolbox sources.

3. Demo version

You can use the demo version of the OPC Toolbox without a license. Any applications you create will have a limited runtime of 15 minutes.

In order to use the demo version, please proceed as follows:

- Install the toolbox on a Windows computer.
- Copy the toolbox sub-directory to the "/usr/local/src/OPCToolbox" directory on the Linux target computer.
- Use the OPC Server Project Wizard on the Windows computer to create the basic framework for your OPC application. In step 4, "Generation", check the box next to "Demo version."
- Copy your project directory to the Linux computer and execute the makefile (make –f makefile).

Important note:

In the demo version, the toolbox sources take the form of pre-compiled libraries. These were compiled with kernel 2.6.

Softing AG wishes you great success with this software. If you have any questions or suggestions, please feel free to contact our support team at support.automation@softing.com.