

CAPS Compilers

Build portable applications

License Installation Guide

CAPS Compilers 3.3



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1. Introduction

1.1. Revisions history

Version	Date	Writer	Modified sections	Revision object
V2.4.0	15/11/2010	CAPS entreprise	All	Creation
V2.4.3	04/03/2011	CAPS entreprise	§3.2	Clarification on the use of a floating license server in an environment combining Windows and Linux users
V2.5	16/06/2011	CAPS entreprise	§2.2.1	Update information concerning the installation of an HMPP floating license server
V2.5.1	07/07/2011	CAPS entreprise	§2.2.1	Correction on path
V3.0.0	16/12/2011	CAPS entreprise	All	Update
V3.1.0	24/04/2012	CAPS entreprise	§1.2, §1.3	Add reference to OpenACC support
V3.2.0	26/06/2012	CAPS entreprise	§2	Update for HMPP 3.2. Add User-based node-locked license and user-based license
V3.2.3	26/09/2012	CAPS entreprise	§2.2	Remove license server installation on Windows as no Windows version of HMPP-3 is available yet
V3.3.0	28/11/2012	CAPS entreprise	All	Renamed HMPP Workbench by CAPS Compilers

1.2. Introduction



Warning: In this document we assume that the reader knows the concepts introduced in the CAPS Compilers reference manual.

The CAPS Compilers provides developers with a set of tools dedicated to build parallel hybrid applications running on many-core systems. These architectures combine general purpose cores with hardware accelerators (HWAs) such as GPUs or SIMD computing units. CAPS Compilers allows the programmer to write hardware independent applications where hardware specific codes are dissociated from the legacy code as additional software plug-ins.

The present document introduces the license policy implemented with CAPS Compilers and describes how to set CAPS Compilers license on a customer's system:

This document comes in addition to the following manuals:

- CAPS Compilers Basics ([R1]). This document introduces main concepts.
- CAPS Compilers - OpenHMPP Directives, Reference Manual ([R2]). This manual introduces main concepts and describes OpenHMPP directives. This document is the main document for people who want to discover CAPS Compilers;

- CAPS Compilers - OpenACC reference Manual ([R3]). This manual describes the OpenACC directives support bringing by CAPS Compilers.
- CAPS Compilers - HMPP Codelet Generator Directives, Reference Manual ([R4]). This manual describes how to enhance your codelet generation by using HMPPCG directives. An HMPP preprocessor allowing users to factorize HMPP directives is also described;
- CAPS Compilers - Linux Manual ([R5]). This manual describes how to compile and run your application on Linux platforms. It also introduces host compilers and supported operating systems;
- CAPS Compilers - Windows Manual ([R5]). This manual describes how to compile and run your application on Windows platforms. It also introduces host compilers and supported operating systems for Windows platform.

1.3. What is subject to license?

The compilation of an application using CAPS Compilers requires a license delivered by CAPS entreprise. This license takes the form of a “xxxxxx.lic” file provided on request by CAPS entreprise.

It should be noted that only the compilation step requires a license. An application generated with CAPS Compilers can be used on any system without any license, while respecting the terms of the End User License Agreement.

CAPS Compilers supports OpenHMPP directives ([R2]) as well as OpenACC directives ([R6]).

2. CAPS Compilers License Types

CAPS Compilers are commercialized with three kinds of license mechanism:

- User-based node-locked license: this license is valid for one identified user on one identified system.
- Floating license: this license is valid for any user on any system having access to the CAPS License Server.

2.1. User-Based Node-Locked License

User-based node-locked licenses are delivered for a single user identified by his login, on a specific workstation identified by at least one host ID. A user-based node-locked license can only be used if both conditions are valid.

If several users want to use CAPS Compilers, each user must have his own license.

To obtain a user-based node-locked license, please execute the following procedure:

1. Install CAPS Compilers on your system
2. Execute the command "`capsmc --licenses`" with your login,
3. Complete the missing information (see):
 - First Name
 - Name
 - Company
 - E-mail
 - Phone number

This information is required by CAPS entreprise. The others fields are automatically filled by the script.

4. Send to CAPS entreprise (licenses@caps-entreprise.com) or to your reseller the corresponding result. CAPS entreprise or your reseller will send back to you the corresponding license file
5. Install the license file into your home directory.

If you need the generation of a new license, the following information will be required by CAPS entreprise.

You can send them to licenses@caps-entreprise.com.

```
-----
First Name:  <TO BE COMPLETED>
Name:        <TO BE COMPLETED>
Company:     <TO BE COMPLETED>
E-Mail:      <TO BE COMPLETED>
Phone number: <TO BE COMPLETED>
Software:    HMPP
Version:     xxxx
Platform:    xxxx
Username:    xxxx
Hostname:    xxxx
Ethernet:
- xxxxxxxxxx
IP address:
- xxxxxxxxxx
- xxxxxxxxxx
-----
```

Figure 1 - "capsmc --licenses" output

Then you can check that the license is properly setup by running "capsmc --licenses" again.



Warning:

For a user-based node-locked license, the command "capsmc --licenses" must be executed on the system on which CAPS Compilers will be used and with the right end-user login.

CAPS license are searched in the following directories, in this order:

1. Paths present in CAPS_LICENSE_PATH environment variable
2. Current path
3. Home directory
4. CAPS_COMPILERS_INSTALLATION_PATH/licenses directory

2.2. CAPS Floating License

CAPS Compilers are also commercialized with floating licenses. This kind of license defines a number of tokens that allows a similar number of developers to use CAPS Compilers concurrently. Tokens are distributed by a floating license server that can be installed on any computer.

When a developer uses CAPS Compilers to compile an application, he requests a token from the license server. If a token is available, it is checked out from the license server and **locked for one hour, reserved for the only use of this user**.

If no token is available (i.e., the maximum number of tokens allowed by the floating license has already been checked out) the compilation aborts and the user has to wait for a token to become available.

To obtain a floating license, please execute the following procedure:

1. Install CAPS Compilers on the system hosting the license server
2. Execute the command "capsmc --licenses" in a console
3. Complete the missing information (see Figure 2):
 - First Name
 - Name
 - Company

- E-mail
- Phone number

This information is required by CAPS entreprise. The others fields are automatically filled by the script.

4. Send to CAPS entreprise (licenses@caps-entreprise.com) or to your reseller the corresponding result
 - CAPS entreprise or your reseller will send back to you the corresponding license file.

It should be noted that in an environment where you have Windows and Linux users:

- you may only have one CAPS license server which may be installed either on a Windows system or on a Linux system;
- two distinct CAPS products will be purchased: one for Windows, one for Linux according to the number of tokens required for each platform;
- For each product, CAPS will deliver a CAPS license file which will be able to be installed on the same CAPS license server.

2.2.1. Installing the License Server on Linux

The following procedure will be executed on the node that will host the license server. We consider that CAPS Compilers has already been installed on this node.

1. Copy `CAPS_COMPILERS_INSTALLATION_PATH/licenses/caps-licserver-run.sh` to `/etc/init.d`
2. In `/etc/inid.d/caps-licserver-run.sh`, update the variable `USER` to specify the user that will execute the license server (it is not recommended to use root). Other variables can keep their default values
3. Verify that `caps-licserver-run.sh` can be run as root (mode 740)
4. Copy the license file to `CAPS_COMPILERS_INSTALLATION_PATH/licenses`
5. Then launch the license server:

```
/etc/init.d/caps-licserver-run.sh start
```

Then you can check on your compilation node that the license server is properly setup by running "capsmc --licenses" again.

Remark:

In the event that the floating license server is installed on the same machine as CAPS Compilers and that the license file is installed in `CAPS_COMPILERS_INSTALLATION_PATH/licenses` directory, an error message may appear. This message is generated by CAPS Compilers which first interprets the license file before contacting the license server. This message can be ignored if it is immediately followed by information about valid floating license.

This message can also be removed by installing the license file in another directory and by updating the `caps-licserver-run.sh` file in consequence.


```
~$ capsmc --licenses
License 1: /udd/caps_user/license_2012_11_16-16_37.lic
License Type: From local license file

Checking feature CAPS_STANDARD_OPENHMP
Version: 3.999
Expire Time:
Options: TYPE_COMMERCIAL
SN: 3USDV-00TMT-0F0TR-B365L

Checking feature CAPS_STANDARD_OPENACC
Version: 3.999
Expire Time:
Options: TYPE_COMMERCIAL
SN: 3USDV-00TMT-0F0TR-B365L
...
```

Figure 2 – “capsmc --licenses” correct result

2.2.2. Installing the License Server on Windows

A wizard is provided to ease the installation of the CAPS License Server on Windows.

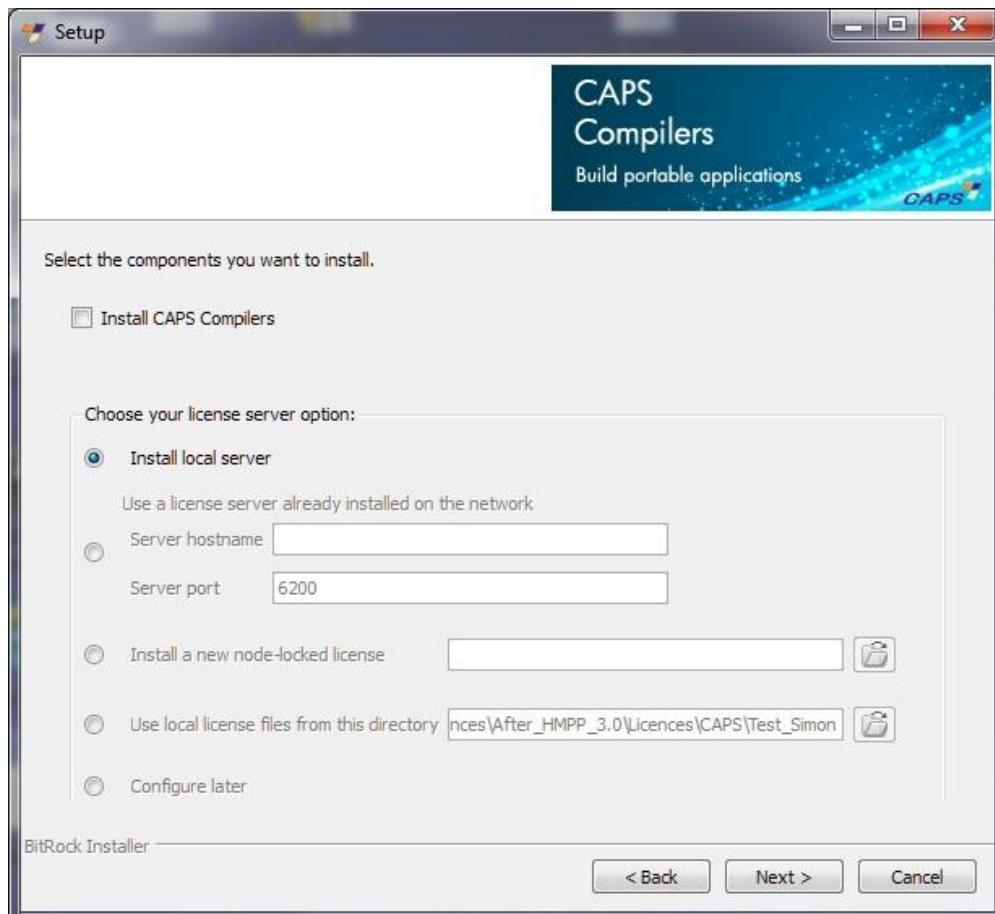


Figure 3 - CAPS Compilers, Windows Installation Wizard

Figure 3 presents the installation Wizard for Windows. Select the right option “Install local server” and follow wizard’s instructions.

2.2.3. Troubleshooting

If the CAPS Compilers cannot find the license server, you can force the automatic license server discovery by setting `CAPS_LICENSE_PATH=6200@licence_server_name`.

If it is still failing, a firewall on the license server may block the connection from the compilation node. The license server is listening on TCP and UDP port 6200. You can check that the compilation node can connect to the license server by executing “`telnet licence_server_name 6200`” or by launching a web browser with the following address http://licence_server_name:6200.

3. Annexes

Annex 1. Bibliography

[R1]	CAPSCompilers-3.3_Basics.pdf, CAPS entreprise
[R2]	CAPSCompilers-3.3_OpenHMPP_Directives_ReferenceManual.pdf, CAPS entreprise.
[R3]	CAPSCompilers-3.3_OpenACC_ReferenceManual.pdf, CAPS entreprise
[R4]	CAPSCompilers-3.3_HMPPCG_Directives_ReferenceManual.pdf, CAPS entreprise
[R5]	CAPSCompilers-3.3_Linux_Manual.pdf, CAPS entreprise
[R6]	CAPSCompilers-3.3_Windows_Manual.pdf, CAPS entreprise