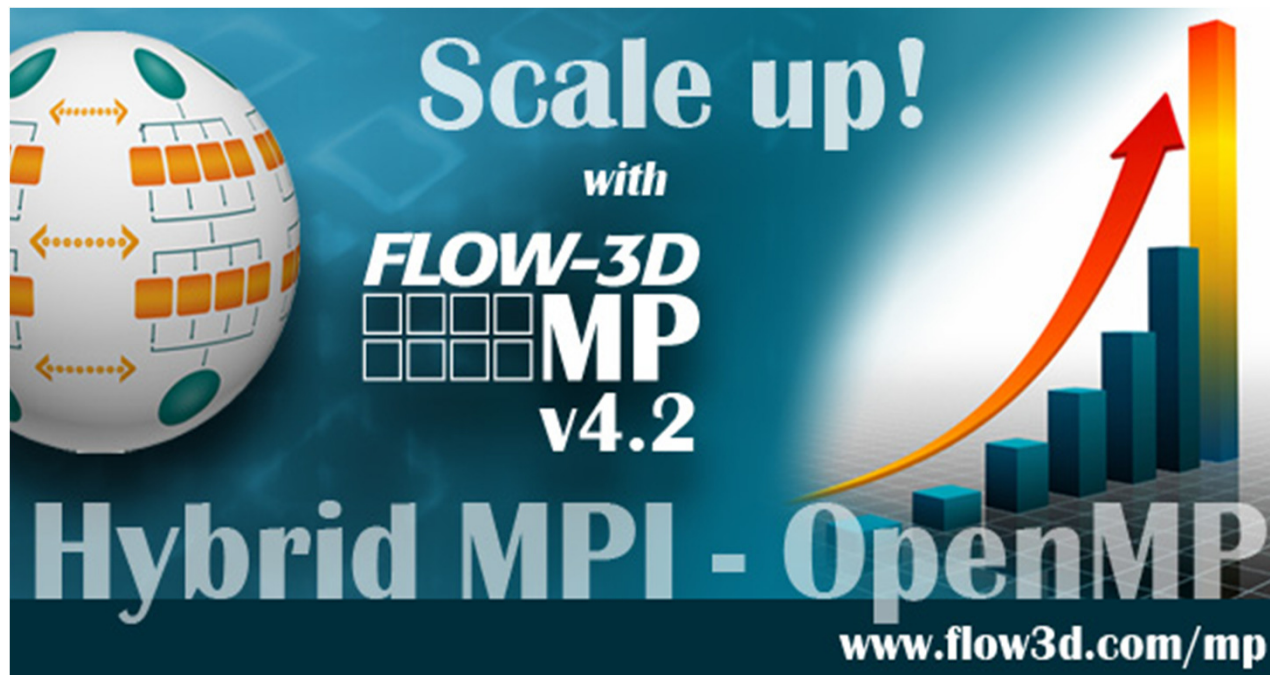


FLOW-3D/MP v4.2 – Installation Tutorial



FLOW-3D/MP manual present in `$F3D_HOME/docs/FLOWDMP_manual`

FLOW-3D/MP Requirements

- A **single multi-core workstation** or a **cluster of computers**, which may consist of:
 - A group of similarly configured Workstations (e.g., Xeon[®] , Opteron[®]).
 - Linux: Red Hat Enterprise Linux version 4 or 5, or SUSE Linux 10 or 11,
 - Windows: Windows Server 2008 (R1 or R2).
 - A Gigabit Ethernet (Intel MPI 4 or MPICH2) or Infiniband (Intel MPI 4 only) interconnect.
 - A large shared disc (e.g., NFS) accessible from all nodes in the cluster.

- **FLOW-3D/MP** v4.2 software.
- An instance token (hydr3d) in the license file.
- Rank tokens (hydr3dmpi) in the license file.
- MPICH2-1.2.1p1 or Intel MPI 4.0 on a Linux cluster or MS MPI and Microsoft HPC Pack on Windows Server 2008.

License Tokens	User 1	User 2	Total
hydr3d	1	1	2
hydr3dmpi	3	7	10
Total	4	8	

Scope of Tutorial

- Installation demonstration on;
 - Linux Cluster
 - Cluster composed of 8 compute nodes with Intel Xeon 5500 series processors (2 quad-core per Node).
 - Operating System - Red Hat Enterprise Linux version 4.
 - MPI Library - Intel MPI Runtime Environment Library v4.0 (INCLUDED in the Installation).
 - Windows Cluster
 - Cluster composed of 2 compute nodes with AMD Opteron 265 (2 dual-core per node).
 - Operating System – Windows Server 2008 R1
 - MPI Library – MS MPI

Installing **FLOW-3D/MP** on a Linux Cluster

Installing **FLOW-3D/MP v4.2** with Intel MPI

- Installation can be carried out by the user or can be done by the administrator as the root (when multiple users are using **FLOW-3D/MP**).
- To mount a CD-ROM, insert the cd and then the following command can be used;

```
mount -t iso9660 -o ro /dev/scd0 /cdrom
```

- Where, `/dev/scd0` is the device and `/cdrom` is the mount point.
- To mount an iso file called `image.iso`, the following command can be used;

```
mount -o loop image.iso /mnt/disk
```

- Where, `/mnt/disk` is the mount point.
- Set current working directory to the unix directory on the CD-ROM.
- Run the installation script: `./install`

Licensing **FLOW-3D/MP v4.2**

- In order to run simulations using **FLOW-3D/MP** the license server needs to be started using the license file provided.
- This can be done by changing the working directory to the "licenses" directory in the installation folder

```
cd $F3D_HOME/licenses;
```

- Issuing the following command starts the license server;

```
./lmgrd -c flow3d.lic -l flow3d.log &
```

- Every time a license is checked out and checked back in, an entry in the `flow3d.log` file is recorded.
- The status of the license server can be checked using;

```
./lmutil lmdiag -c flow3d.lic
```

- It is important to note that the license server need not have to be restarted every time a simulation is run or a different user wants to run a simulation.

FLOW-3D/MP and Intel MPI Library 4.0

- After the installation the required path can be set using (adding in `.bashrc` recommended);

```
source /home/<user>/FLOW3D/local/flow3dvars.sh
```

- By adding this line in the `.bashrc` file the Intel MPI libraries and the **FLOW-3D/MP** environment variables are automatically sourced/set every time a new Terminal is opened.
- A password-less ssh needs to be setup for this command to work.

<http://tinyurl.com/TutorialS11>

Linux Installation Complete!

Installing **FLOW-3D/MP** on a Windows Cluster

Installing *FLOW-3D/MP* v4.2 with MS MPI

- MS MPI, if not already present on the cluster, is available as part of Microsoft HPC Pack 2008 SDK (or HPC Pack 2008 R2 SDK) and can be downloaded and installed from the Microsoft website;
[http://msdn.microsoft.com/en-us/library/cc853440\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/cc853440(VS.85).aspx)
- Insert the *FLOW-3D/MP* CD on the head node and run setup.exe (as Administrator) and follow the on-screen instructions.
- Simulations can be run only from **inside user directories** (e.g., C:\Users\

Licensing **FLOW-3D/MP v4.2**

- The administrator should start the license server through “Imtools” in “Utilities” menu.
- Make sure that the path to the Imgrd.exe, license file, and the debug log file under the “Config Services” tab include the network path (*e.g.*, \\%logonserver%\v4.2mp\licenses\flow3d.lic).
- The “Use Services” dialog must be unchecked for the license server to start correctly.
- If the headnode (where the license server is running) is restarted for any reason this step needs to be repeated by the administrator.

Windows Installation Complete!

Thank You!

For more information refer the **FLOW-3D/MP** manual present in
`$F3D_HOME/docs/FLWDMP_manual`