

# SALOME 6.1.0

## Minor release announcement

July 2010

### GENERAL INFORMATION

CEA/DEN, EDF R&D and OPEN CASCADE are pleased to announce [SALOME](#) version [6.1.0](#). It is a minor release that contains the results of planned major and minor improvements and bug fixes against SALOME version 6.0.0 released in January 2010.

In major, SALOME version 6.1.0 provides the results of the porting of SALOME public version 5.1.4 released in June 2010 to the latest versions of 3<sup>rd</sup> party pre-requisite products, and thus it includes all bug-fixes and improvements available in version 5.1.4. In addition, SALOME 6.1.0 includes latest version of PARAVIS module (new post-processing module based on Kitware's Paraview application).

### Table of Contents

- **GENERAL INFORMATION** .....1
- **NEW FEATURES AND IMPROVEMENTS** .....2
  - PREREQUISITES CHANGES .....2
  - LICENSE RESTRICTIONS .....3
  - IMPROVEMENTS.....3
- **BUG CORRECTIONS**.....4
  - GUI MODULE (IAPP) .....4
  - GEOM MODULE .....4
  - MED MODULE .....4
  - SMESH MODULE .....4
- **SUPPORTED LINUX DISTRIBUTIONS AND PRE-REQUISITES** .....5
- **HOW TO INSTALL AND BUILD SALOME** .....7
- **SALOME SYSTEM REQUIREMENTS** .....7
- **HOW TO GET THE VERSION AND PRE-REQUISITES** .....7
- **KNOWN PROBLEMS AND LIMITATIONS** .....8



## NEW FEATURES AND IMPROVEMENTS

### PREREQUISITES CHANGES

The table below provides a list of pre-requisite products used for SALOME 6.1.0. This table shows the differences of 3<sup>rd</sup>-party products versions used for SALOME 6.1.0 and previous releases – 6.0.0 and 5.1.4; the changes are highlighted in the bold font in the corresponding column.

Product	SALOME 6.1.0	SALOME 6.0.0	SALOME 5.1.4
boost	1.40.0	1.40.0	1.40.0
Open CASCADE Technology	6.3.0 service pack 9	<b>6.3.0 service pack 8</b>	6.3.0 service pack 9
cmake	2.8.0	<b>2.6.4</b>	<b>2.6.4</b>
docutils	0.6.0	0.6.0	0.6.0
doxygen	1.6.1	1.6.1	1.6.1
expat	2.0.1	2.0.1	2.0.1
graphviz	2.24.0	2.24.0	2.24.0
hdf5	1.8.4	<b>1.6.9</b>	<b>1.6.9</b>
jinja2(required by sphinx)	2.5.0	<b>2.2.1</b>	<b>2.2.1</b>
lapack (required by numpy)	3.2	<b>not used</b>	3.2
libbatch	1.1.0	<b>1.0.0</b>	1.1.0
libxml	2.6.27	2.6.27	2.6.27
med	2.3.6	2.3.6	2.3.6
metis	4.0	4.0	4.0
netgen	4.5	4.5	4.5
Numeric	not used	<b>24.2</b>	not used
numpy	1.3.0	<b>not used</b>	1.3.0
omniORB	4.1.4	4.1.4	4.1.4
omniORBpy	3.4	3.4	3.4
omniNotify	2.1	2.1	2.1
pygments (required by sphinx)	1.3.1	<b>1.0</b>	<b>1.0</b>
MedReader	3.0.0	3.0.0	<b>not used</b>
ParaView	3.8.0	<b>3.7.0 dev snapshot from 29/01/10</b>	<b>not used</b>
PyQt	4.7.3	<b>4.5.4</b>	<b>4.5.4</b>
Python	2.6.5	<b>2.4.4</b>	<b>2.4.4</b>
QScintilla	2.4.3	<b>2.4</b>	<b>2.4</b>
qt	4.6.2	<b>4.5.2</b>	<b>4.5.2</b>
qwt	5.2.1	<b>5.2.0</b>	<b>5.2.0</b>
scotch	4.0	4.0	4.0
setuptools (required by sphinx)	0.6c11	<b>0.6c9</b>	<b>0.6c9</b>
sip	4.10.2	<b>4.8.2</b>	<b>4.8.2</b>
sphinx	0.6.6	<b>0.6.3</b>	<b>0.6.3</b>
swig	1.3.40	1.3.40	1.3.40
tcl (required by OCCT)	8.4.14	8.4.14	8.4.14
tk (required by OCCT)	8.4.14	8.4.14	8.4.14
tclX (required by OCCT)	8.3.5	8.3.5	8.3.5
VTK	5.6.0	<b>5.5.0 dev snapshot from 29/01/10</b>	<b>5.0.4</b>
Blsurf	2.8	2.8	2.8
TetMesh-GHS3D	4.1	4.1	4.1
xdata	0.7.3	0.7.3	0.7.3

For full list of pre-requisite products please refer to the chapter **Supported Linux distributions and pre-requisites** below.

### LICENSE RESTRICTIONS

- Hereby we explicitly declare that PyQt 4 toolkit (Riverbank Computing Ltd) is distributed under the terms of GPL license.

### IMPROVEMENTS

Since SALOME 6.1.0 is mainly the result of SALOME 5.1.4 version porting to the new versions of the pre-requisite products, it includes all improvement provided by the version 5.1.4. Please refer to the [SALOME version 5.1.4 Release Notes](#) for the full list of the improvements included in that version.

## BUG CORRECTIONS

Since SALOME 6.1.0 is mainly the result of SALOME 5.1.4 version porting to the new versions of the pre-requisite products, it includes all bug-fixes provided by the version 5.1.4. Please refer to the SALOME version 5.1.4 Release Notes for the full list of the bug-fixes included in that version.

This chapter lists only the bug-fixes made specially for version 6.1.0.

### GUI MODULE (IAPP)

20883	<p><i>Summary:</i> [CEA 404] Pb with old hdf</p> <p>Changes: fixed problem of dumping/loading the Python script using "Import table" operation of the Post-pro module if non-C locale is used.</p>
-------	--

### GEOM MODULE

20882	<p><i>Summary:</i> EDF 1341 GEOM: Unadapted behaviour of the viewer when using the sketcher</p> <p>Change: Corrected bug with resetting of the view window on each preview drawing in the 2D-sketcher dialog box. Added new button to allow resetting the view window according to the selected working plane.</p>
-------	--

### MED MODULE

20861	<p><i>Summary:</i> EDF 1387 MED: Result of medsplitter gives standalone triangles</p> <p>Change: MEDSPLITTER tool has been fixed not to create free faces in domain meshes</p>
20869	<p><i>Summary:</i> EDF 1392 MED: C++ API of medsplitter</p> <p>Changes: C++ API of MEDSPLITTER tool has been completed from point of view of available options</p>

### SMESH MODULE

20693	<p><i>Summary:</i> EDF 1288 SMESH: Problem to recompute a mesh with a sub-mesh and a conversion linear-quadratic</p> <p>Change: In SMESH, an improvement has been made that the user is proposed to fully recompute the mesh in case if the mesh has been edited since a last total recompute that may prevent from a successful local recompute</p>
-------	--

## SUPPORTED LINUX DISTRIBUTIONS AND PRE-REQUISITES

SALOME 6.1.0 supports Linux Debian 4.0 Etch 32bit and 64bit, Mandriva 2008 32bit and 64bit. SALOME 6.1.0 version has been mainly tested with the following pre-requisite list on Mandriva 2008 32bit and Debian 4.0 Etch 64bit platforms. **Linux Debian 3.1 and Mandriva 2006.0 are no more supported.**

SALOME 6.1.0 comes with the same prerequisites versions on all supported platforms (with some exceptions). The table below lists the versions of the products used by SALOME platform. Other versions of the products can also work but it is not guaranteed.

**NOTE:** For some platforms Salome uses prerequisites with patches like in RPM and defines specific keys. If you compile products without Install Wizard we strongly recommend you to check compilation keys using shell files located in config\_files folder of the Installation Procedure.

	Version	GUI (IAPP)	KERNEL	GEOM	SMESH	VISU	MED	YACS	NETGENPLUGIN	GHS3DPLUGIN	GHS3DPRPLPLUGIN	BLSURFPLUGIN	HexoticPLUGIN	RANDOMIZER	SIERPINSKY	PYCALCULATOR	COMPONENT	CALCULATOR	HELLO	PYHELLO	LIGHT	PYLIGHT	MULTIPR	HX2SALOME	PARAVIS
gcc*	4.1.2**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
automake*	1.9**	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	
autoconf*	2.59**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
libtool*	1.5.6**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
cmake	2.8.0																								X
GNU make*	3.80**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Python	2.6.5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Qt	4.6.2	X		X	X	X	X	X	X	X	X	X			X		X	X	X	X	X		X	X	X
Sip	4.10.2	X															X								
PyQt	4.7.3	X															X					X			
Boost	1.40.0	X	X	X	X	X	X		X	X	X	X	X		X			X	X				X		
Swig	1.3.40	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X					X		
OpenCASCADE Technology	6.3 sp9	X		X	X	X	X	X	X	X	X	X	X		X		X	X	X		X		X		
Qwt	5.2.1	X															X								
QScintilla	2.4.3							X																	
OmniORB	4.1.4								X	X	X	X	X	X	X	X	X	X	X	X			X		X
OmniORBpy	3.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		X
omniNotify	2.1																								
Hdf5	1.8.4	X	X	X	X	X	X		X	X	X	X	X		X		X	X			X		X		X
Med	2.3.6				X	X	X		X		X				X	X	X	X					X		X
Vtk	5.6.0	X		X	X	X	X		X	X	X	X	X		X		X			X	X				X
numpy	1.3.0		X																						
lapack	3.2		X																						
Graphviz	2.24.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X				
Doxygen	1.6.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X				
NETGEN	4.5								X																
docutils	0.6.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X				
metis	4.0						X																		
scotch	4.0						X																		
libxml2	2.6.27	X	X				X	X																	
blsurf	2.8											X													
TetMesh-GHS3D	4.1									X	X														
TcITk	8.4.14																								
Sphinx	0.6.6							X																	
Expat	2.0.1							X																	
libBatch	1.1.0		X																						
MedReader	3.0.0																								X

\*) Not included into SALOME Installation procedure

\*\*) Minimal required version

SALOME 6.1.0 depends of a number of products for run time execution, others are necessary only for compilation or generation of development documentation (like doxygen for example). Below there is a list of mandatory and optional products.

**Software Requirements**

	Compilation and Development		Execution		Remarks
	Mandatory	Optional	Mandatory	Optional	
gcc	X		X		
Automake	X				
Autoconf	X				
libtool	X				
GNU make	X				
cmake	X				For PARAVIS and LIBBATCH modules only
Tcltk					for OCCT compilation from source files only
Python	X		X		
Qt	X		X		
sip	X				
PyQt	X		X		
Boost	X		X		
Swig	X				
OpenCASCADE Technology	X		X		
Qwt	X		X		
QScintilla		X		X	
OmniORB	X		X		
Hdf	X		X		
Med	X		X		
Vtk	X		X		
numpy		X			
Graphviz		X			
Doxygen		X			
NETGEN	X				for NETGENPLUGIN mesh plug-in only
docutils		X			for KERNEL and YACS documentation only
cppunit		X			
mpi		X		X	required only if used at compilation step
openpbs		X		X	required only if used at compilation step
Lsf		X		X	required only if used at compilation step
metis	X		X		
scotch	X		X		
libxml2	X				
blsurf	X		X		for BLSURFPLUGIN mesh plug-in only
TetMesh-GHS3D			X		for GHS3DPLUGIN mesh plug-in only
Sphinx		X			for YACS documentation only
Expat	X				For YACS only
libBatch		X			
MedReader				X	For PARAVIS module only



## HOW TO INSTALL AND BUILD SALOME

Please follow README file from Installation Wizard for processing correctly installation of SALOME and all prerequisites.

If you would like to compile SALOME from scratch, please use `build.csh` or `build.sh` script delivered with the Installation Wizard. Call "`build.sh -h`" to see available options of this script.



## SALOME SYSTEM REQUIREMENTS

### Minimal Configuration:

- Processor: Pentium IV.
- 512 Mb RAM.
- Hard Drive Space: 1.5 Gb.
- Video card 64mb.
- CD/DVD

### Optimal Configuration:

- Processor: Dual Core.
- 2 Gb RAM.
- Hard Drive Space: 5Gb.
- 2Gb Swap.
- Video card 128mb.
- CD/DVD



## HOW TO GET THE VERSION AND PRE-REQUISITES

**SALOME 6.1.0** pre-compiled binaries for Linux Mandriva 2008.0 (32bit and 64bit) and Debian 4.0 Etch (32bit and 64bit) can be retrieved from the <ftp://ftp.opencascade.com> repository.

The SALOME Installation procedure includes SALOME modules sources, and it is possible to build sources from scratch using `build.sh` or `build.sch` script coming with installation procedure.

There are two patches on **NETGEN** which are placed inside NETGENPLUGIN modules sources. The first patch file is used for all 32 bit platforms; the second patch file is an addition to the first one and should be applied only for 64bit platforms.

During the compilation on NETGEN from sources by SALOME Installation Wizard, the patches are applied automatically to the standard NETGEN distribution. You can download NETGEN 4.5 from its official site using the following link: <http://www.hpfem.jku.at/netgen>.

All other pre-requisites can be obtained either from your Linux distribution (please be sure to use a compatible version) or from the distributors of these pre-requisites (for example, <http://qt.nokia.com> for Qt).



## KNOWN PROBLEMS AND LIMITATIONS

- The following modules have not been migrated to Qt series 4 and thus are not included into SALOME 6.1.0 release: FILTER and SUPERV.
- The following limitations refer to BLSURF plug-in:
  - Mesh contains inverted elements, if it is based on a shape, consisting of more than one face (box, cone, torus...) and if the option "Allow Quadrangles (Test)" has been checked before computation.
  - SIGFPE exception is raised after trying to compute a mesh based on a box with "Patch independent" option checked.
  - It has been found out that BLSURF algorithm can't be used as a local algorithm (on sub-meshes) and as a provider of low-level mesh for some 3D algorithms because BLSURF mesher (and, consequently, the plug-in) does not provide information on node parameters on edges (U) and faces (U, V). For example, the following combinations are impossible:
    - global MEFISTO or Quadrangle(mapping) + local BLSURF;
    - BLSURF + Projection 2D from faces meshed by BLSURF;
    - local BLSURF + Extrusion 3D.
- Sometimes regression test bases give unstable results; in this case the testing should be restarted.
- A native VTK can be used only after manual recompilation with the GL2PS component.
- NETGEN 1D-2D and 1D-2D-3D algorithm do not require definition of 2D and 1D algorithms and hypotheses for both mesh and sub-mesh. 2D and 1D algorithms and hypotheses defined with NETGEN 1D-2D or 1D-2D-3D algorithm will be ignored during calculation.
- SALOME supports reading of documents from earlier versions but the documents created in the new version may not open in earlier ones.
- If SALOME modules are not installed in a single folder, SALOME may not work in the CSH shell since the environment variables are too long by default. In this case, it is suggested to use SH or to install all modules in the same folder.
- During the compilation of OCT 6.x by makefiles on a station with NVIDIA video card you can experience problems because the installation procedure of NVIDIA video driver removes library libGL.so included in package libMesaGL from directory /usr/X11R6/lib and places this library libGL.so in directory /usr/lib. However, libtool expects to find the library in directory /usr/X11R6/lib, which causes compilation failure (See /usr/X11R6/lib/libGLU.1a). We suggest making symbolic links in that case: `ln -s /usr/lib/libGL.so /usr/X11R6/lib/libGL.so ln -s /usr/lib/libGL.1a /usr/X11R6/lib/libGL.1a`.
- VISU module does not support timestamps defined on the same field but on different meshes
- Stream lines presentation can not be built on some MED fields due to limitations in VTK.
- MEFISTO algorithm sometimes produces different results on different platforms.
- In some cases the number of triangles generated by MEFISTO may be different at each attempt of building the mesh.
- For the current moment, because of architecture limitations of the Paraview application, the PARAVIS module has the following known limitations:
  - PARAVIS is a "singleton" module: that means that it can be used within one study only. As soon as the user activates the PARAVIS in some study, this module becomes unavailable in other studies.
  - PARAVIS module works unstably using the remote connection; when SALOME is running on remote computer, activation of PARAVIS module can lead to the application hang-up.