SALOME 5.1.6

Maintenance release announcement

September 2011

GENERAL INFORMATION

CEA/DEN, EDF R&D and OPEN CASCADE are pleased to announce SALOME version 5.1.6. It is a public maintenance release that contains the results of planned bug fixes and minor improvements against SALOME version 5.1.5 released in December 2010.

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NEW FEATURES AND IMPROVEMENTS

PREREQUISITES CHANGES (COMPARING WITH SALOME 5.1.5)

No any changes of 3rd-party pre-requisite products versions have been introduced with SALOME 5.1.6.

Please refer to the "Supported Linux distributions and pre-requisites" chapter below for the full list of the 3rd-party pre-requisite products.

LICENSE RESTRICTIONS

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

IMPROVEMENTS

SALOME version 5.1.6 provides only some minor improvement comparing with SALOME 5.1.5:

- Some changes in MED module that is the result of debug and redesign in INTERP_KERNEL, MEDCoupling, MEDLoader, MEDMEM and ParaMEDMEM packages. For example, some Python API modules have been renamed:

  ```
  import libMEDCoupling(Loader)swig
  ```

  is replaced by

  ```
  import MEDCoupling(Loader)
  ```

  Note for developers: MEDCoupling 5.1.5 is not compatible with MEDCoupling 5.1.6.
- Minor improvements in YACSGEN module.

BUG CORRECTIONS

GUI (IAPP) MODULE

Summary: [CEA 439] QtxSpinBox in scientific notation

Changes: fixed bug in double spin box: when scientific notation is used, the trailing zeros in the order are removed.

SMESH MODULE

Summary: [CEA 445] Wrong mesh dimension

In SMESH, at export the mesh to the med file, mesh dimension calculation has been fixed.

VISU MODULE

Summary: [CEA 420] Problem with VISU preferences

Changes: fixed bug with impossibility to set numerical value in the scientific notation to the "imposed scalar range" property of VISU preferences.

MED MODULE

Summary: [CEA 462] Bug in med2sauv

In MEDMEM, GIBI driver has been improved to store nodal field in a dedicated way different from storage of fields on elements.

Summary: [CEA 494] Problem of visualization of a med file

A bug of sauv2med converter has been fixed to correct orientation of all volumes.

Summary: testRenumbering.py fails on 64-bits platforms

Fixed problem that renumbering algorithm did not work on 64bit architecture.

SUPPORTED LINUX DISTRIBUTIONS AND PRE-REQUISITES

SALOME 5.1.6 supports Debian 4.0 Etch 32bit and 64bit, Debian Lenny 5.0 64bit, Mandriva 2006 32bit and 64bit, Mandriva 2008 32bit and 64bit, Mandriva 2010 32bit and 64bit, Fedora Core 6 32bit, Red Hat Enterprise Linux 4 64bit, Scientific Linux 5.1 64bit. SALOME 5.1.6 has been mainly tested with the below specified pre-requisite list on Mandriva 2008 32bit and Debian 4.0 Etch 64bit platforms.

SALOME 5.1.6 comes with the same prerequisites versions on all supported platforms. The table below lists the versions of the products used by SALOME platform. Other versions of the products can also work but this is not guaranteed.

	Version	GUI (IAPP)	KERNEL	GEOM	SMESH	VISU	MED	YACS	NETGENPLUGIN	GHS3DPLUGIN	GHS3DPRLPLUGIN	BLSURFPLUGIN	HexoticPLUGIN	MULTIPR
gcc*	3.3.5**	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
autoconf*	2.59**	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
GNU make*	3.80**	X	X	X	X	X	X	X	X	X	X	X	X	X
cmake	2.6.4													
Python	2.4.4	X	X	X	X	X	X	X	X	X	X	X	X	X
Qt	4.5.2	X		X	X	X	X	X	X	X	X	X	X	X
Sip	4.8.2	X			X									
PyQt	4.5.4	X			X									
Boost	1.40.0	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
OCCT	6.3 sp10	X		X	X	X	X	X	X	X	X	X	X	X
Qwt	5.2.0	X				X								
QScintilla	2.4							X						
OmniORB **OmniORBpy** **omniNotify**	4.1.4 3.4 2.1	X	X	X	X	X	X	X	X	X	X	X	X	X
Hdf5	1.6.9	X	X	X	X	X	X		X	X	X	X	X	
Med	2.3.6				X	X	X		X		X			
Vtk	5.0.4	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	
Doxygen	1.6.1	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	
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			
tcl/tk	8.4.14													
sphinx	0.6.3		X	X	X			X						
expat	2.0.1							X						
libBatch	1.2.0		X											
Setuptools	0.6c9													
Jinja	2.2.1													
pygments	1.0													

	Version	RANDOMIZER	SIERPINSKY	PYCALCULATOR	COMPONENT	CALCULATOR	HELLO	PYHELLO	LIGHT	PYLIGHT	HXX2SALOME	YACSGEN	JOBMANAGER	xdata
gcc*	3.3.5**	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
autoconf*	2.59**	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
GNU make*	3.80**	X	X	X	X	X	X	X	X	X	X		X	X
cmake	2.6.4													
Python	2.4.4	X	X	X	X	X	X	X	X	X		X	X	X
Qt	4.5.2		X		X	X	X	X	X		X		X	X
Sip	4.8.2				X									
PyQt	4.5.4				X					X				X
Boost	1.40.0		X			X	X						X	
Swig	1.3.40		X		X	X								
OCCT	6.3 sp10		X		X	X	X		X					
Qwt	5.2.0				X									
QScintilla	2.4													
OmniORB **OmniORBpy** **omniNotify**	4.1.4 3.4 2.1	X	X	X	X	X	X	X					X	X
Hdf5	1.6.9		X		X	X			X					
Med	2.3.6		X	X	X	X								
Vtk	5.0.4		X		X				X	X				X
numpy	1.3.0													
lapack	3.2													
graphviz	2.24.0	X	X	X	X		X	X						
Doxygen	1.6.1	X	X	X	X		X	X						
NETGEN	4.5													
docutils	0.6.0													
metis	4.0													
scotch	4.0													
libxml2	2.6.27													
blsurf	2.8													
TetMesh-GHS3D	4.1													
tcl/tk	8.4.14													
sphinx	0.6.3												X	
expat	2.0.1													
libBatch	1.2.0													
Setuptools	0.6c9													
jinja	2.2.1													
pygments	1.0													

*) *Not included into SALOME Installation procedure*
**) *Minimal required version*

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 SALOME Installation Wizard.

SALOME 5.1.6 depends on 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 LIBBATCH only
Tcltk					for OCCT compilation from source files only (optional)
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	For YACS only
OmniORB	X		X		
Hdf	X		X		
Med	X		X		
Vtk	X		X		
numpy/lapack		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 in runtime only if used at compilation step
openpbs		X		X	required in runtime only if used at compilation step
Lsf		X		X	required in runtime only if used at compilation step
metis		X		X	required in runtime only if used at compilation step
scotch		X		X	required in runtime only if used at compilation step
libxml2	X		X		
blsurf	X		X		for BLSURFPLUGIN mesh plug-in only
TetMesh-GHS3D			X		for GHS3DPLUGIN and GHS3DPRLPLUGIN mesh plug-ins only
Sphinx		X			for KERNEL, GEOM, SMESH and YACS documentation only
Expat	X		X		for YACS only
libBatch		X		X	required in runtime only if used at compilation step
setuptools					for Sphinx installation only
Jinja2					for Sphinx installation only
pygments					for Sphinx installation 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 5.1.6 pre-compiled binaries for Linux Mandriva 2006 (32bit and 64bit), Mandriva 2008 (32bit and 64bit), Mandriva 2010 (32bit and 64bit), Debian 4.0 Etch (32bit and 64bit), Debian 5.0 Lenny (64bit), Fedora Core 6 (32bit), Red Hat Enterprise 4 (64bit), Scientific Linux 5.1 (64bit) can be retrieved from the SALOME Web site: http://www.salome-platform.org.

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 (http://qt.nokia.com for Qt for example).

KNOWN PROBLEMS AND LIMITATIONS

- The following modules have not been migrated to Qt series 4 and thus are not included into SALOME 5.1.6 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;
        - BLSUFR + 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.la`). We suggest making symbolic links in that case: "`ln -s /usr/lib/libGL.so /usr/X11R6/lib/libGL.so ln -s /usr/lib/libGL.la /usr/X11R6/lib/libGL.la`".
- VISU module does not support timestamps defined on the same field but on different meshes.
- Stream lines presentation cannot 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 de different at each attempt of building the mesh.