

# SALOME 5.1.0

## Minor release announcement

December 2008

### General information

OPEN CASCADE is pleased to announce [SALOME](#) version [5.1.0](#). It is a minor release that contains the results of planned major and minor improvements and bug fixes against SALOME 5.0.0 version released in April 2008. SALOME version 5.1.0 provides a finalization of SALOME platform porting to Qt series 4.

### New features

#### Open CASCADE Technology 6.3

Open CASCADE Technology 6.2.1sp1 has been replaced by version **6.3**, which includes a debug of some bugs that came from SALOME.

**Note:** it is necessary to recompile NETGEN mesher with the new Open CASCADE Technology version.

#### Open CASCADE Technology 6.3 patch

Installation procedure for Salome 5.1.0 contains a patch for Open CASCADE Technology 6.3 available as an independent "Patch for Open Cascade" checkbox in the Prerequisites. The patch updates binary or source files of the previously installed Open CASCADE Technology 6.3, fixing a number of important bugs. By default this feature is unchecked.

In case of "Install Binaries" installation type, the patch applies only to Open CASCADE Technology 6.3, while Salome binaries are installed as built with Open CASCADE Technology 6.3 without the patch.

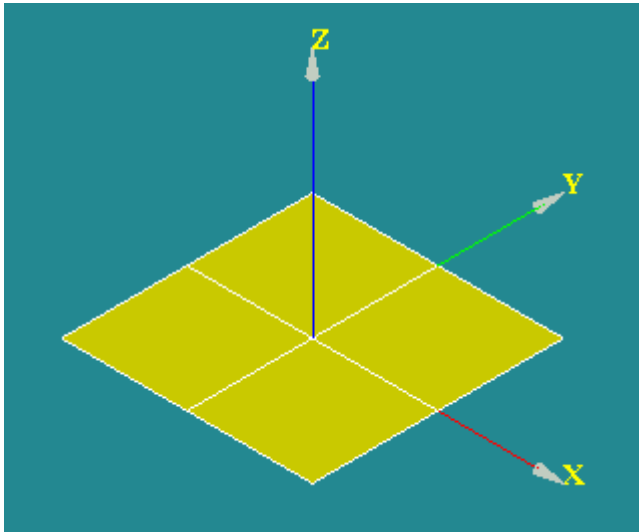
In case of "Install sources and make compilation" installation type this feature allows building Salome modules with patched Open CASCADE Technology 6.3.

#### Prerequisites changes

- New QScintilla 2.3 has been added to Salome Prerequisites as an optional product for YACS modules. QScintilla 2.3 is available as an independent "QScintilla" checkbox in the Prerequisites. Scintilla includes features especially useful when editing and debugging source code:
  - syntax styling with support for over 70 languages
  - error indicators
  - code completion
  - call tips
  - code folding
  - margins can contain markers like those used in debuggers to indicate breakpoints and the current line.
  - recordable macros
  - multiple views
  - printing.
- med-2.3.4 has been replaced by med-2.3.5
- doxygen-1.4.7 has been replaced by doxygen-1.5.6
- Qt version 4.3.3 has been replaced by version 4.4.3
- Sip version 4.7.3 has been replaced by version 4.7.7
- PyQt version 4.3.3 has been replaced by version 4.4.3
- Qwt 5.0.2 has been replaced by version 5.1.1

## Improvements

### New primitives: Square Face



**Square Face** is a square plane of certain dimensions and orientation

To create a Square Face, select in the Main Menu **New Entity - > Primitives - > Face**.

It can be defined using two possible sets of parameters:

- 1) at the origin of coordinates by the height, the width and the orientation axis;
- 2) by the height, the width sizes and the normal to the center of the face.

It is also possible to create a **Square Face** from another face changing the values of height and width.

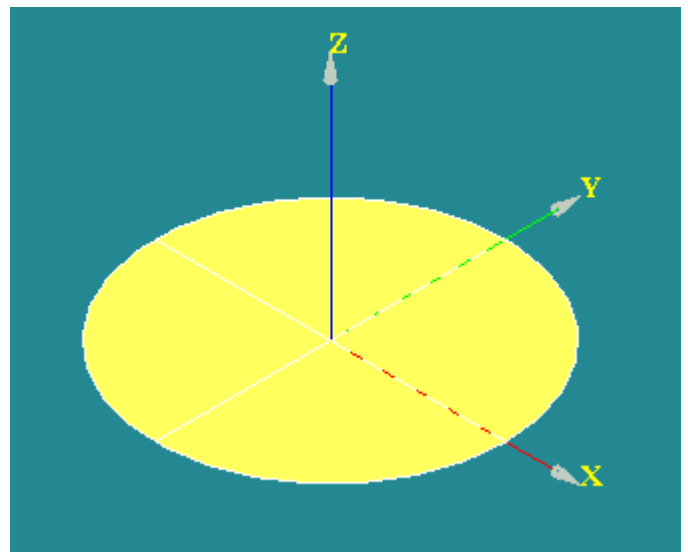
### New primitives: Disk

**Disk** is a round plane with a certain radius and orientation.

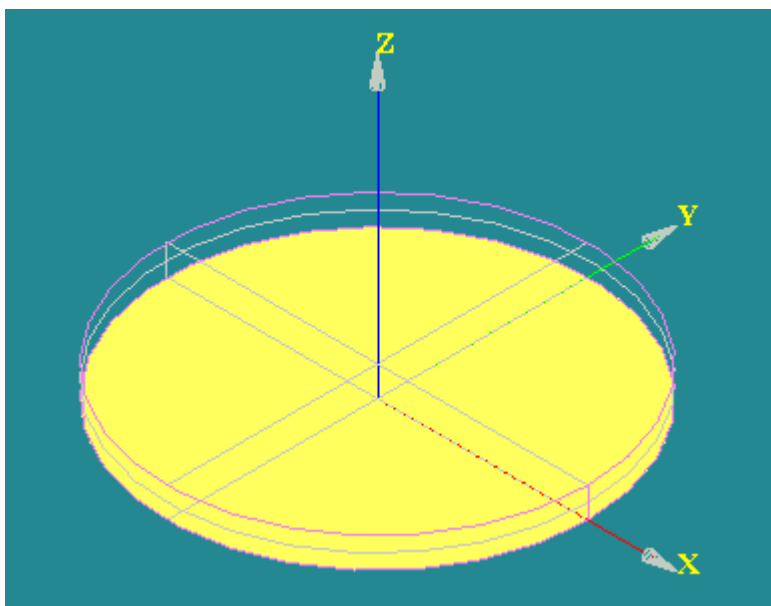
To create a **Disk**, select in the Main menu: **New Entity - > Primitives - > Disk**.

It can be defined using three possible sets of parameters:

- 1) at the origin of coordinates by the radius and the orientation;
- 2) by the center point, the normal vector and the radius;
- 3) by three points that lie on its boundary.



## New method for creation of extrusion

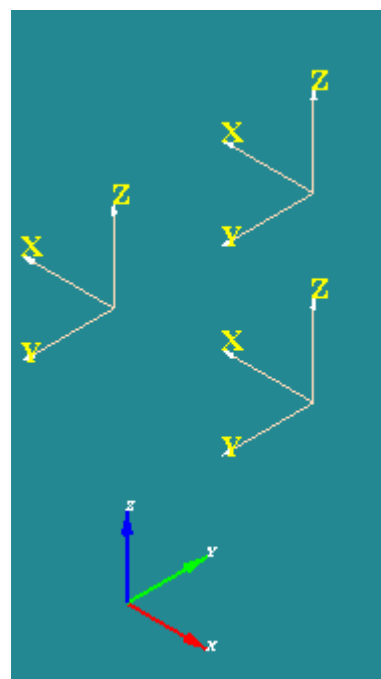


It has become possible to create an **Extrusion** by the base shape and the vector defined directly by **Dx**, **Dy**, **Dz** coordinates.

## Reference trihedron

A multi-colored **Reference Trihedron** with constant size and position has been added in the bottom-left corner of the OCC Viewer. It allows to distinguish the global LCS axis from the others and to keep it always visible

In the picture you can see the reference trihedron and several created local coordinate systems.

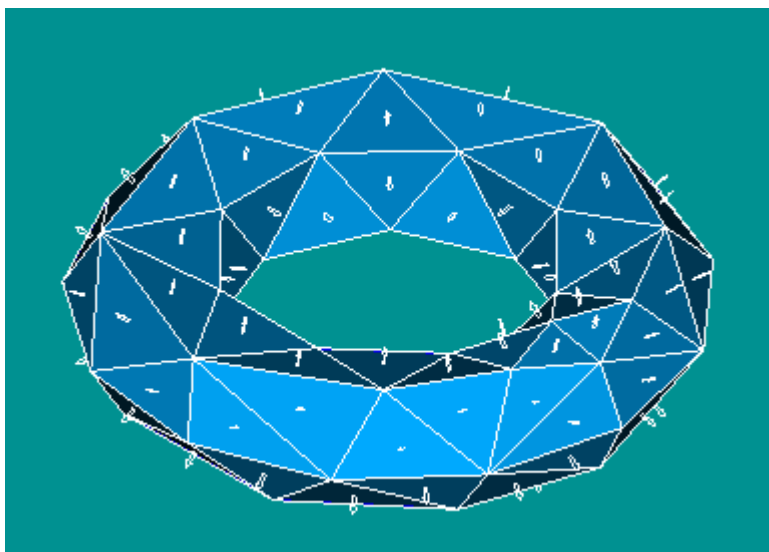


## Mesh computation option

New **Mesh computation** option has been added in **Mesh preferences**. It allows selecting the mode of notification about mesh computation results.

- **Never** - the dialog with results is not shown at all;
- **Errors only** - the dialog with results is shown if some errors have occurred during mesh computation;
- **Always** - the dialog with results is shown after each mesh computation. This is a default mode.

## New functionality: Show Orientation



New **Show Orientation** functionality available from the pop-up on the selected object in the VTK viewer shows vectors of orientation of faces of the selected mesh.

It is possible to change the color, the size and the type of orientation vectors (2D planar or 3D) in **Preferences -> Mesh -> Mesh -> Orientation of Faces**.

## Action groups

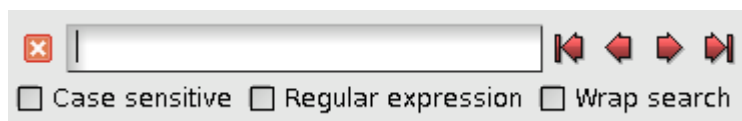
The functionality of using **Action Groups** has been restored in SALOME series 5x. In series 5x SalomePyQt the Python interface exports the QtxActionGroup class which behaves in the same way as it was done by the QActionGroup class in Qt series 3. The API of QtxActionGroup class repeats the API of Qt 3's QActionGroup class. The function SalomePyQt.createActionGroup() now creates and returns the instance of the QtxActionGroup class.

Thus, the porting expenses on the user side should be minimal (or even equal to zero, if the code never checks that the class name of the action group object is equal to "QActionGroup").

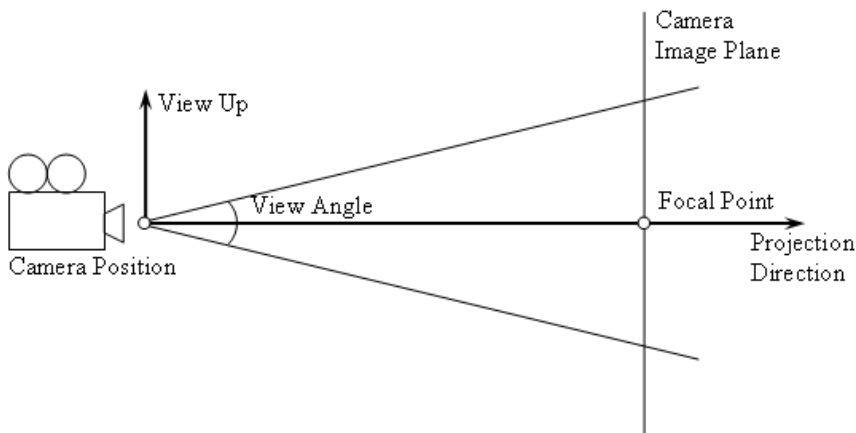
Testing of this functionality is possible via running of PYHELLO module which has been improved correspondingly to use **Action Groups** functionality. Its GUI creates and uses one QtxActionGroup object in menu and toolbar.

## Find Tool

Object Browser has been improved with the **Find Tool**, which allows performing context search of the items.



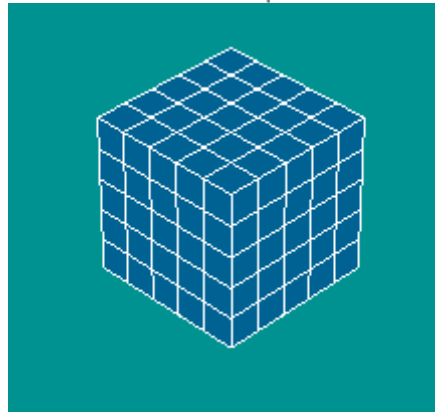
### Perspective view



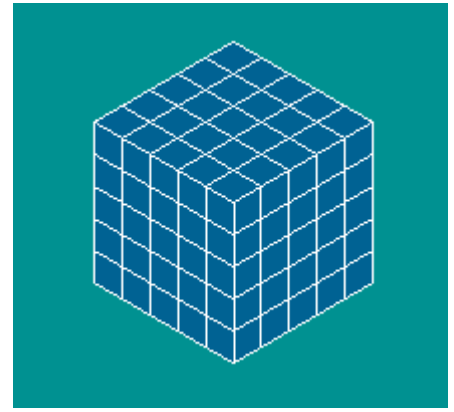
3D objects in **Orthogonal** projection sometimes look as if they were 2D. The possibility to use **Perspective** projection mode makes presentations look more realistic.

Perspective and orthogonal modes can be switched on and off from the VTK viewer toolbar.

Additionally it has become possible to manually define the projection parameters: **Camera position**, **Focal point** and **Camera orientation** (View up).



Perspective view

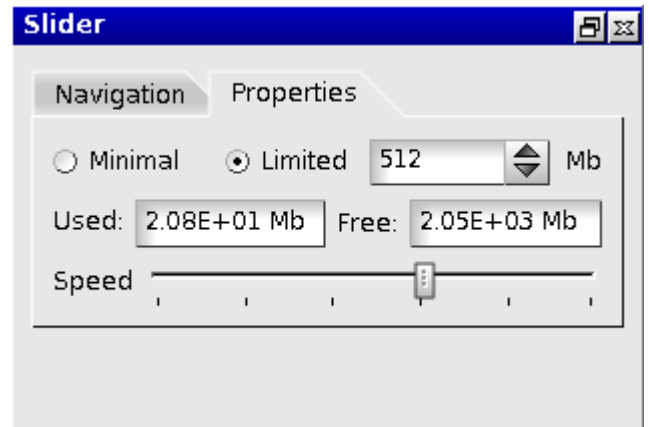
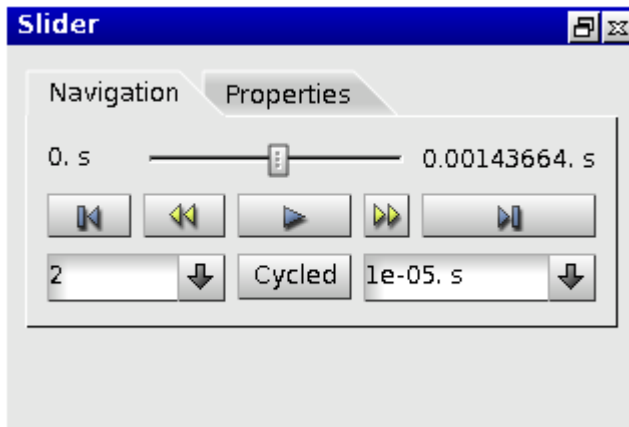


Orthogonal view

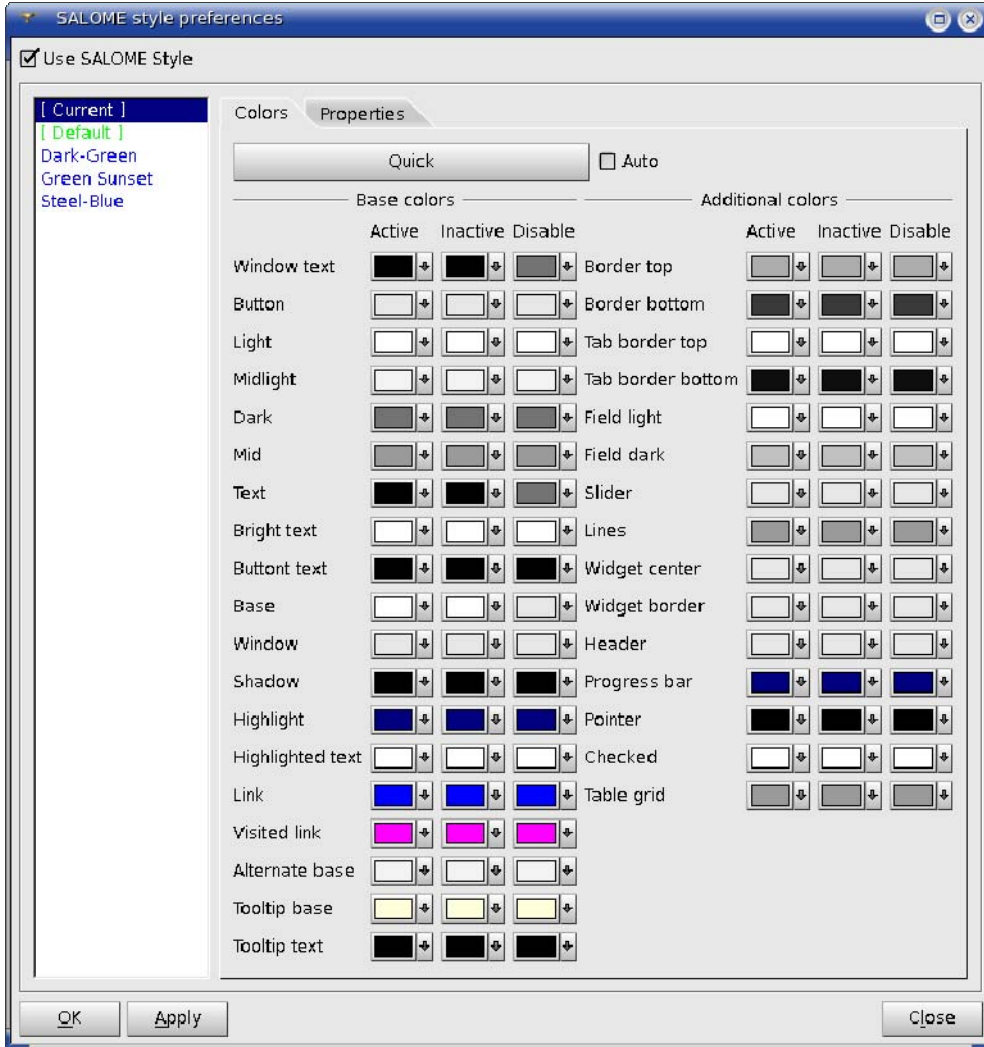
### Slider

3D Cache system has been reworked and transformed into **Slider** functionality, which allows animating Post-Pro field presentations in the most simple and efficient way. The presentations compatible with this functionality can be synchronized (in terms of timestamps) and moved along the time axis to reproduce the corresponding physical process.

Slider also provides memory management possibilities, which allow the user to define a suitable compromise between the available computer resources and the navigation performance.



## Themes



New **Themes** functionality of the GUI module is used for customization of the look and feel of Salome.

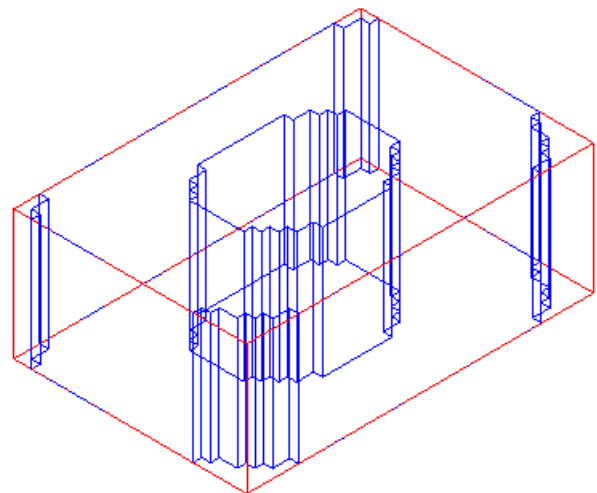
It is possible to choose a predefined color scheme or to edit a custom color scheme.

Other elements, such as menu fonts, widgets and handlers are also customizable.

## Feature Edges

This new Post-Pro module functionality highlights the contour of the object. To apply it, select the object in the VTK Viewer, right-click on it and choose in the context menu **Representation -> Feature edges**.

It is possible to define the type of highlighted objects: feature, boundary, manifold or non-manifold edges.



## Other Improvements

- SMESH filters `BelongToGeom` and `LyngOnGeom` have been improved to work not only with sub-shapes.
- A special case has been introduced for building 3D meshes on shells: if the shell is not closed, building of a 3D mesh is disabled in Mesh GUI (the corresponding tab in the mesh construction dialog is not accessible), and in Mesh python interface (an attempt to add a 3D hypothesis to an opened shell will give an error).
- A curve now can be displayed in the Plot 2D browser using Show command in the object browser even if a PLOT2D scene has not been created. In this case, it will be created automatically and the selected curve will be displayed.
- The function `convertToPoly input_med_file output_med_file mesh_name` that translates a MED file in another MED file containing only poly-lines has been implemented in MED module.
- The source files for KERNEL and GUI modules have been corrected to allow compilation of the KERNEL module with cmake tool. Additionally, a set of scripts enabling multi-platform compilation of GUI module with the cmake tool has been integrated. These scripts generate cmake projects by conversion of the existing `Makefile.am` files. Cmake tool can be run to build SALOME GUI module on Linux and Windows platforms
- The configuration script checking Qt 4 availability has been improved to support native Qt 4 installation. If the Qt 4 is not found in the environment and not specified by `--with-qt` option it is searched in `/usr/lib/qt4` or `/usr/local/lib/qt4` folders.
- "Add Point on Edge" functionality now provides a preview of the created object.
- The message "Unable to create solid from unclosed shape" is now shown at the attempt to Create Solid from the unclosed object.
- The first available constructor is now selected by default for creation of: vector, working plane, box, cone, sphere, cylinder and torus.
- The item groups in the toolbar are now saved and restored correctly after module activation/deactivation.
- "Save/Restore GUI State" functionality has been implemented for the following parameters of GEOM objects in the OCC and the VTK viewers: color, transparency, display mode and number of isolines; and of SMESH objects in the VTK viewer: display mode, displayed entities, colors and sizes of entities, transparency and clipping.
- The behavior of Geometry GUI dialogs has been changed: now the selection focus is automatically switched to the next selection field when the current field is filled. The current selection field is marked with white background, the others are gray, and the selection button near the current field is set down.

## Bug corrections

### GUI module (IAPP)

13946	<p><i>Summary:</i> EDF PAL 332 : Improvement of Sal omePyQt interface</p> <p>New Feature: The functionality of using action groups in SALOME series 5x. has been restored.</p>
16175	<p><i>Summary:</i> EDF 455 GUI: Save GUI State doesn't redisplay the objects which were displayed during the save.</p> <p>New Feature: "Save/Restore GUI State" functionality has been implemented for the following parameters of GEOM objects in the OCC and the VTK viewers: color, transparency, display mode and number of isolines; and of SMESH objects in the VTK viewer: display mode, displayed entities, colors and sizes of entities, transparency and clipping.</p>
19892	<p><i>Summary:</i> Regression in Menubar creation</p> <p>Changes: A regression with creation of empty menus in Python modules (feature used by XDATA) has been fixed.</p>
19894	<p><i>Summary:</i> Strange behavior of after sgPyQt. getPopupMenu(Sal omePyQt. Tool s)</p> <p>Improvement: The item groups in the toolbar are now saved and restored correctly after module activation/deactivation. The same concerns the "Preferences" menu, however, since this menu is not supported in SALOME 4.x/5.x, the method getPopupMenu() just returns "None" when this menu is requested.</p>
19994	<p><i>Summary:</i> compile GUI with cmake</p> <p>Improvement: The GUI module source files have been corrected to allow compilation of the GUI module with cmake tool.</p>
20008	<p><i>Summary:</i> A patch for gcc 4.3.2 compilation</p> <p>New Feature: A patch to compile GUI on Mandriva 2009.0 has been added.</p>
20010	<p><i>Summary:</i> EDF GUI : Some remarks on GUI configure step</p> <p>Improvement: The configuration script checking Qt 4 availability has been improved to support native Qt 4 installation.</p>
20025	<p><i>Summary:</i> [GUI] A tiny patch to compile with cmake</p> <p>Improvement: Incorrect include files have been fixed.</p>



20026	<p><i>Summary:</i> [GUI] A contribution to compile with cmake</p> <p>Improvement: A set of scripts has been implemented to enable multi-platform compilation of GUI module with the cmake tool.</p>
20055	<p><i>Summary:</i> [GUI win32] Some patches to compile</p> <p>Improvement: GUI module source files have been corrected to provide Win32 platform compatibility.</p>
20056	<p><i>Summary:</i> EDF GUI: in the python embedded console a newline is missing after importing a script</p> <p>Improvement: The problem with the missing newline after importing a script has been fixed</p>

### **KERNEL module**

19971	<p><i>Summary:</i> A patch for cmake compilation</p> <p>New Feature: A patch to compile Kernel with cmake containing various problems fixed in #include macros has been integrated.</p>
19981	<p><i>Summary:</i> A patch for cmake on windows compilation</p> <p>Improvement: The KERNEL module source files have been corrected to allow compilation of the KERNEL module with cmake tool.</p>
20007	<p><i>Summary:</i> A patch for gcc 4.3.2 compilation</p> <p>New Feature: A small patch to compile with gcc 4.3.2 on Mandriva 2009.0 has been integrated.</p>
20023	<p><i>Summary:</i> A contribution to compile KERNEL with cmake</p> <p>New Feature: A patch that allows compiling KERNEL with cmake has been integrated.</p>
20046	<p><i>Summary:</i> [win32] Resources Manager / Makefile.am patch</p> <p>Improvement: Necessary changes have been made to compile on win32 with cmake.</p>
20047	<p><i>Summary:</i> [win32] Logger / Makefile.am patch</p> <p>Improvement: Necessary changes have been made to compile on win32 with cmake.</p>

**GEOM module**

16154	<p><i>Summary:</i> EDF 446 GEOM : Add point on edge: Point preview</p> <p>New Feature: Preview has been implemented for "Add Point on Edge" dialog.</p>
16551	<p><i>Summary:</i> EDF PAL 501: To add a second trihedron always visible and with constant size</p> <p>New Feature: The reference trihedron with constant size and position has been added into bottom-left corner of the OCC Viewer.</p>
16585	<p><i>Summary:</i> EDF PAL 518: Clarify Solid construction error message.</p> <p>New Feature: The message "Unable to create solid from unclosed shape" is now shown at the attempt to Create Solid from the unclosed object.</p>
16640	<p><i>Summary:</i> EDF 528 GEOM : Improve selection mechanism in GEOM dialog boxes</p> <p>New Feature: The behavior of Geometry GUI dialogs has been improved: now the selection focus is automatically switched to the next selection field when the current field is filled. The current selection field is marked with white background, the others are gray, and the selection button near the current field is set down.</p>
16654	<p><i>Summary:</i> EDF PAL 529: Improve comprehension of partition dialog box</p> <p>Improvement: Terms in the partition dialog box have been changed for better understanding - "Reconstruction limit" has been renamed into "Resulting type"; - "Keep non-limit shapes" has been renamed into "Keep shapes of lower type".</p>
16656	<p><i>Summary:</i> EDF PAL 531: Default constructor in creation dialog of geometric objects</p> <p>Improvement: A simpler constructor is selected by default for creation of: vector, working plane, box, cone, sphere, cylinder and torus.</p>
16756	<p><i>Summary:</i> EDF 545 GEOM : Extrusion, give the coordinates of the vector as input</p> <p>New Feature: The possibility to create extrusion by vector with direct definition of DX, DY and DZ has been implemented.</p>
16757	<p><i>Summary:</i> EDF 546 GEOM : Add Face and Disc in geom primitives</p> <p>New Feature: New primitives: Face and Disk have been implemented in GEOM module.</p>

**MESH module**

13410	<p><i>Summary:</i> EDF PAL 284: SMESH: SubMesh not taken into account with Netgen 1D-2D et 1D-2D-3D</p> <p>New Feature: It has become impossible to create a submesh if a global algorithm does not support submeshes</p>
16155	<p><i>Summary:</i> EDF PAL 447: If the shape is a Shell, disable 3D tab</p> <p>New Feature: A special case has been introduced for building 3D meshes on shells: if the shell is not closed, building of a 3D mesh is disabled in Mesh GUI (the corresponding tab in the mesh construction dialog is not accessible), and in Mesh python interface (an attempt to add a 3D hypothesis to an opened shell will give an error).</p>
16172	<p><i>Summary:</i> EDF 452 SMESH : Define in the preferences if we want or not the Mesh info Box (at end of computation)</p> <p>New Feature: New "Mesh computation" option has been added in "Mesh preferences". It allows selecting the mode of notification about mesh computation results.</p>
16693	<p><i>Summary:</i> EDF PAL 461: To use BelongToGeom or Lyi ngOnGeom with non-subshape Objects</p> <p>Improvement: SMESH filters BelongToGeom and Lyi ngOnGeom have been improved to work with the objects that are not sub-shapes.</p>
17291	<p><i>Summary:</i> EDF 591 SMESH : Visualization of the orientation of the normal vector of the mesh faces</p> <p>New Feature: The possibility to show orientation of mesh faces by vectors has been implemented.</p>
20018	<p><i>Summary:</i> Disparition of SMESH --&gt; File --&gt; Import</p> <p>New Feature: The regression with the disappeared submenu "File / Import" has been fixed.</p>

**VISU module**

16100	<p><i>Summary:</i> EDF 429 VISU : Automatic creation of a view Plot2D when we display a curve</p> <p>New Feature: The curve now can be displayed in the Plot 2D browser using Show command in the object browser even if a PLOT2D scene has not been created. In this case, it will be created automatically and the selected curve will be displayed.</p>
16187	<p><i>Summary:</i> EDF PAL 460: To be able to export a MED file saved in a HDF study</p> <p>New Feature: An opportunity to export a MED file has been implemented</p>

**MED module**

20033	<p><i>Summary:</i> [CEA 285] convertToPoly</p> <p>Improvement: MED function ConvertToPoly has been corrected to prevent errors if the PolygonsConnectivity does not exist at the time of calling this function.</p>
20040	<p><i>Summary:</i> [CEA - 287] convertToPoly MEDMEMSwig</p> <p>Improvement: The method MEDMEM::MESH::convertToPoly has been included to libMEDMEMSwig, so it is possible to call convertToPoly operation from Salome v.5 python console.</p>
20041	<p><i>Summary:</i> [CEA 286] Binary for convertToPoly</p> <p>New feature: The function convertToPoly input_med_file output_med_file mesh_name that translates a MED file in another MED file containing only poly-lines has been implemented in MED module.</p>
20068	<p><i>Summary:</i> [CEA 289] includes missing on make install (MEDMEM)</p> <p>Improvement: ParamEDMEM/DECOptions.hxx include files are installed on "make install"</p>

** Bug corrections with patch for CAS-6.3**

19957	<p><i>Summary:</i> EDF 785 SMESH: Convert Quadratic and Group on GEOM OCC20329</p> <p>Changes: The problem of memory leaks made by OCC during partition has been fixed in OCC bug 20329.</p>
20009	<p><i>Summary:</i> EDF 834 GEOM: Partition with a plane shows incoherent result - OCC20546</p> <p>Changes: Processing of edges on planes has been improved to prevent return value (True) when the basic surface is a plane.</p>
20016	<p><i>Summary:</i> EDF 838 GEOM : Scale transform DXDYDZ of a sphere should give an ellipsoid - OCC20373</p> <p>Changes Problem of Shading on a b-spline sphere has been fixed.</p>

** Processed and answered queries**

19079	<i>Summary:</i> Salome 64B GetElementContainingPoint problem
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## Supported Linux distributions and pre-requisites

**SALOME 5.1.0** supports Debian 3.1 Sarge, Debian 4.0 Etch 32bit and 64bit, Mandriva 2006 32bit and 64bit, Mandriva 2008 32bit and 64bit.

**SALOME 5.1.0** version has been mainly tested with the following pre-requisite list on Mandriva 2008 32bit and Debian 4.0 Etch 64bit platforms.

**SALOME 5.1.0** 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 it is not guaranteed.

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

	Version	GUI (IAPP)	KERNEL	GEOM	SMESH	VISU	MED	HexoticPLUGIN	GHS3DPLRPLUGIN	RANDOMIZER	SIERPINSKY	BLSURFPLUGIN	GHS3DPLUGIN	PYCALCULATOR	COMPONENT	NETGENPLUGIN	LIGHT	CALCULATOR	HELLO	PYHELLO	YACS	xdata	HXX2SALOME
gcc*	3.3.5**	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
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
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
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
Python	2.4.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Qt	4.4.3	X		X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X
Sip	4.7.7	X													X								
PyQt	4.4.3	X													X							X	
Boost	1.34.1	X	X	X	X	X	X	X	X		X	X	X			X		X	X				
Swig	1.3.31	X	X	X	X	X	X	X	X		X	X	X		X	X		X			X		
OpenCASCADE Technology	6.3***	X		X	X	X	X	X	X		X	X	X		X	X	X	X	X		X		
Qwt	5.1.1	X													X								
QScintilla	2.3																					X	
OmniORB OmniORBpy omniNotify	4.1.0 3.0 2.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	
Hdf5	1.6.4	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X					
Med	2.3.5				X	X	X		X		X			X	X	X		X					
Vtk	5.0	X		X	X	X	X	X	X		X	X	X		X	X	X					X	
Numeric	24.2		X																				
Graphviz	2.16.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		
Doxygen	1.5.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		
NETGEN	4.5															X							
docutils	0.3.9	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	
elementtree	1.2.6																					X	
cElementTree	1.0.5																					X	
blsurf	2.7.12											X											
TetMesh-GHS3D	4.0								X				X										
TcITk	8.4.14																						

\*) Not included into SALOME Installation procedure

\*\*\*) Minimal required version

\*\*\*\*) Service pack 1 for OCCT 6.3 fixing some bugs can be also used optionally

SALOME 5.1.0 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				
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		
Numeric		X			
Graphviz		X			
Doxygen		X			
NETGEN	X				for NETGENPLUGIN mesh plug-in only
docutils		X			
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				
elementtree	X				
cElementTree	X				
blsurf	X		X		for BLSURFPLUGIN mesh plug-in only
TetMesh-GHS3D			X		for GHS3DPLUGIN mesh plug-in 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 `bui I d. csh` or `bui I d. sh` script delivered with the Installation Wizard. Call "`bui I d. csh -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 5.1.0** pre-compiled binaries for Linux Debian 3.1 Sarge, Mandriva 2006 (32bit and 64bit), Mandriva 2008 (32bit and 64bit), Debian 4.0 Etch (32bit and 64bit) can be retrieved from the [ftp.opencascade.com](http://ftp.opencascade.com) site.

Besides it is possible to install Debian 3.1 Sarge Salome universal binaries on the platforms that are not supported officially.

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 (*www.trolltech.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 5.1.0 release: MULTIPR, FILTER, SUPERV.
- The store/restore GUI state functionality is not fully supported in SALOME version 5.1.0. There are some bugs with this functionality which are planned to be fixed in the future releases of SALOME platform.
- The following limitations refer to BLSURF plugin:
  - 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 plugin) 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.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 can not be built on some MED fields due to limitations in VTK
- In the current implementation of "Save VISU State" operation the parameters of Gauss view Partition mode are not stored. If a window has been partitioned and saved, it will be restored as non-partitioned.
- Step-by-step execution fails on some graphs in SUPERVISOR. This functionality is only a prototype and has not been finished completely
- 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
- Results of some TUI non-regression testing are different on slow and fast computers. This is caused by using the functionality of GEOM from Supervisor in parallel nodes in some test cases. Open CASCADE Technology (OCCT) is not thread safe in some geometry operations, so on some hardware configurations the conflict with parallel access to some data may occur and such supervisor graphs may fail. This problem will be fixed in the future. Currently the workaround uses the GEOM nodes subsequently.