

# SALOME version 7.8.0

## Public release announcement

June 2016

### ❖ GENERAL INFORMATION

CEA/DEN, EDF R&D and OPEN CASCADE are pleased to announce [SALOME](#) version [7.8.0](#). It is a public release that contains the results of planned major and minor improvements and bug fixes against SALOME version 7.7.1 released in December 2015.

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## ❖ NEW FEATURES AND IMPROVEMENTS

### PREREQUISITES CHANGES

The table below lists pre-requisite products used with SALOME 7.8.0. The differences of 3<sup>rd</sup>-party product versions used for SALOME 7.7.1 and 7.8.0 are highlighted in bold.

| Product                             | SALOME 7.7.1 | SALOME 7.8.0             |
|-------------------------------------|--------------|--------------------------|
| Babel                               | 2.0          | 2.0                      |
| Boost                               | 1.52.0       | 1.52.0                   |
| Cgns                                | 3.1.3-4      | 3.1.3-4                  |
| Cmake                               | 2.8.11       | <b>3.0.2</b>             |
| Cppunit                             | 1.12.1       | 1.12.1                   |
| Cython                              | 0.23.2       | 0.23.2                   |
| Distene MeshGems suite <sup>1</sup> | 2.1-1        | <b>2.1-11</b>            |
| Distribute                          | 0.7.3        | 0.7.3                    |
| Docutils                            | 0.12         | 0.12                     |
| Doxygen                             | 1.8.3.1      | 1.8.3.1                  |
| Freeimage                           | 3.16.0       | 3.16.0                   |
| Freetype                            | 2.4.11       | 2.4.11                   |
| Gl2ps                               | 1.3.8        | 1.3.8                    |
| Graphviz                            | 2.38.0       | 2.38.0                   |
| Hdf5                                | 1.8.14       | 1.8.14                   |
| H5py                                | 2.5.0        | 2.5.0                    |
| Homard                              | 11.1         | <b>11.7</b>              |
| Intel® Threading Building Blocks    | 4.2.4        | 4.2.4                    |
| Jinja2                              | 2.7.3        | 2.7.3                    |
| Lapack                              | 3.5.0        | 3.5.0                    |
| Libbatch                            | 2.3.0        | 2.3.0                    |
| Libxml2                             | 2.9.0        | 2.9.0                    |
| Markupsafe                          | 0.23         | 0.23                     |
| Matplotlib                          | 1.4.3        | 1.4.3                    |
| Med                                 | 3.1.0        | <b>3.2.0</b>             |
| MedCoupling                         | -            | <b>7.8.0<sup>2</sup></b> |
| METIS                               | 4.0          | <b>5.1.0</b>             |
| Mpi4py                              | 1.3.1        | 1.3.1                    |
| Netgen                              | 4.9.13       | 4.9.13                   |

<sup>1</sup> Commercial product; requires license.

<sup>2</sup> MedCoupling is former part of MED module which has been extracted to a separate package.

| Product                 | SALOME 7.7.1 | SALOME 7.8.0             |
|-------------------------|--------------|--------------------------|
| Nose                    | 1.3.7        | 1.3.7                    |
| Numpy                   | 1.9.2        | 1.9.2                    |
| Omniorb                 | 4.1.6        | 4.1.6                    |
| Omniorbpy               | 3.6          | 3.6                      |
| Omninotify              | 2.1          | removed                  |
| Open CASCADE Technology | 6.9.1        | <b>6.9.1<sup>3</sup></b> |
| Opencv                  | 2.4.6.1      | 2.4.6.1                  |
| Openmpi                 | 1.8.5        | 1.8.5                    |
| Paco++                  | 0.5.5        | 0.5.5                    |
| Paraview                | 4.3.1        | <b>5.0.1<sup>4</sup></b> |
| Pkgconfig               | 1.1.0        | 1.1.0                    |
| Pygments                | 2.0.2        | 2.0.2                    |
| Pyparsing               | 2.0.3        | 2.0.3                    |
| Pyqt                    | 4.9.6        | 4.9.6                    |
| Python                  | 2.7.10       | 2.7.10                   |
| Python-dateutil         | 2.4.2        | 2.4.2                    |
| Pytz                    | 2015.4       | 2015.4                   |
| Qt                      | 4.8.4        | 4.8.4                    |
| Qwt                     | 6.1.0        | 6.1.0                    |
| Scipy                   | 0.15.1       | 0.15.1                   |
| Scotch                  | 5.1.11       | 5.1.11                   |
| Setuptools              | 0.6c11       | 0.6c11                   |
| Sip                     | 4.14.2       | 4.14.2                   |
| Six                     | 1.9.0        | 1.9.0                    |
| Sphinx                  | 1.3.1        | <b>1.2.3<sup>5</sup></b> |
| Swig                    | 2.0.8        | 2.0.8                    |
| Tcl                     | 8.6.0        | 8.6.0                    |
| Tk                      | 8.6.0        | 8.6.0                    |
| Tclx                    | 8.4.1        | 8.4.1                    |
| Vtk <sup>6</sup>        | 6.2          | <b>7.1.0</b>             |
| Xdata                   | 0.9.11       | 0.9.11                   |

<sup>3</sup> Patched for SALOME

<sup>4</sup> SALOME uses specific version of ParaView.

<sup>5</sup> Reverted to older version due to several bugs detected.

<sup>6</sup> Version included in ParaView distribution.

Note: the table above lists only most important pre-requisite products; some optional products are not shown. For additional information about pre-requisite products and SALOME modules dependencies refer to the paragraph "[Supported distributions and pre-requisites](#)" below.

### License restrictions

Hereby we explicitly declare that PyQt (by Riverbank Computing Ltd) used by SALOME is distributed under the terms of GNU GPL license; for more details please refer to the PyQt site:

<http://www.riverbankcomputing.com/software/pyqt/license>

If you plan using SALOME for commercial purposes please consider obtaining a commercial license for PyQt from Riverbank Computing Ltd.

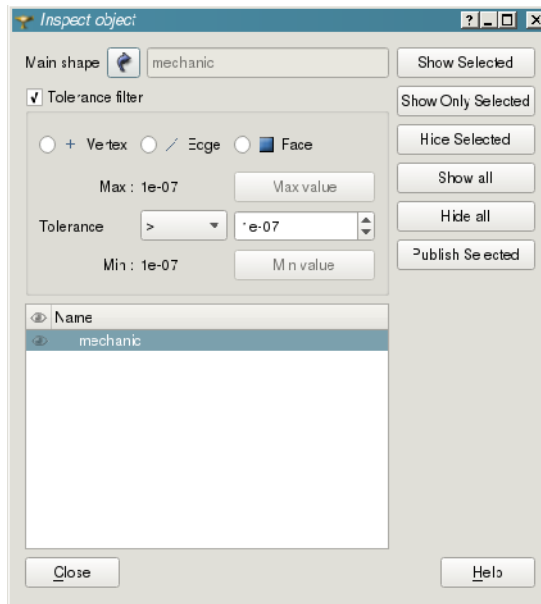
**MAJOR CHANGES**

MEDCoupling has been extracted from SALOME MED module and distributed as a separate product. This allows external projects to benefit from direct usage of MEDCoupling library for operating on MED files.

**IMPROVEMENTS**

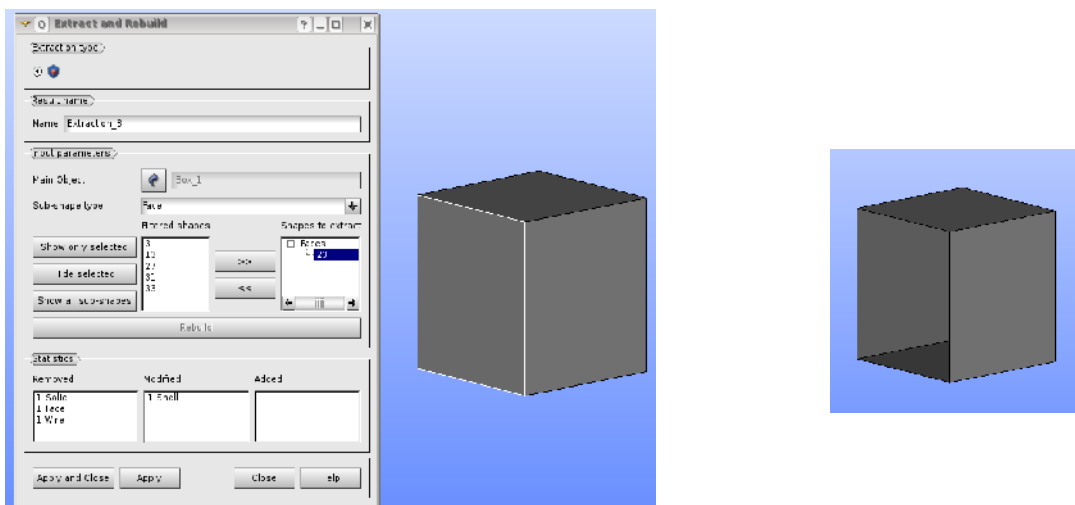
**Geometry module**

- o The length unit can be chosen by the user when exporting a model to the STEP file. The following units are supported: “mile”, “foot”, “inch”, “milliinch”, “microinch”, “kilometer”, “meter”, “centimeter”, “millimeter”, “and micrometer”.
- o “Inspect Object” operation has been improved: it is now possible to filter the sub-shapes which tolerance satisfies user-defined condition in respect of given threshold value.



- o New “Extract and rebuild” feature allows manually reconstructing the object by direct removal of selected sub-shapes from it.

For example, the figure below shows how removal of a face from a box (left picture) results in unclosed shell (right picture).



- “Import STEP” operation now allows reading assemblies data. This functionality is available via the “Create assemblies” check-box (ON by default) in the “Import STEP” dialog box and via the *IsCreateAssemblies* boolean parameter (False by default) of ImportSTEP function in TUI.

When switched ON, this option will result in creating assemblies (compounds) as the top-level sub-shapes of imported model object; names of assemblies will be read and re-used if they are present in the STEP file.

### ParaVis module

- A reader for JSON files has been added.

## ❖ CHANGE LOG

This chapter does not provide complete list of changes included into this version of SALOME; only most important changes are listed.

### KERNEL MODULE

|       |   |
|-------|---|
| 23165 | <p><i>Summary:</i> [CEA 1590] Salome 7.6.0 on Windows does not liberate the ports</p> <p>The problem that port is not released after SALOME session shutdown on Windows has been fixed.</p> |
| 23225 | <p><i>Summary:</i> [CEA 1642] Patches for Windows version of SALOME</p> <p>An issue about installation of SALOME_PROFILE on windows has been corrected.</p>                                 |

### GUI MODULE

|       |  |
|-------|--|
| 23184 | <p><i>Summary:</i> [CEA 1605] SALOME freezes while loading an empty study</p> <p>There is no more SIGSEGV when trying to launch SALOME specifying empty (or broken) study as a parameter.</p>                            |
| 23262 | <p><i>Summary:</i> [CEA] Duplication of PVSERVER service</p> <p>A problem with duplicating of pvserver process caused by wrong implementation of a service to search available SALOME CORBA services has been fixed.</p> |

### GEOMETRY MODULE

|       |   |
|-------|---|
| 22870 | <p><i>Summary:</i> EDF 10111 GEOM: MakePipe of a wire along an edge fails.</p> <p>Fixed bug in MakePipe operation.</p>  |
| 23125 | <p><i>Summary:</i> EDF 11112 GEOM: Choose the unity of length when exporting to STEP</p> <p>A possibility to specify length unit when exporting a shape to the STEP file has been introduced.</p>   |
| 23193 | <p><i>Summary:</i> [CEA] Show sub-shapes with given tolerance</p> <p>“Inspect Object” dialog box has been improved by introducing a possibility to filter out sub-shapes which properties (length, area or volume) satisfy given threshold value.</p> |
| 23197 | <p><i>Summary:</i> [CEA] Extract and rebuild</p> <p>New “Extract and rebuild” feature allows manually reconstructing the object by direct removal of selected sub-shapes from it.</p>   |
| 23208 | <p><i>Summary:</i> [CEA 1660] GetType function returns 0 with an object resulting from a transformation</p> <p>Documentation of GetType() function has been corrected to clarify its behaviour.</p>   |



|       |   |
|-------|---|
| 23210 | <i>Summary:</i> [CEA 1681] Regression with the function GetInPlaceByHistory<br>Documentation of GetInPlace function has been corrected.   |
| 23216 | <i>Summary:</i> [CEA 1691] Import the compounds with their names from a STEP file<br>"Import STEP" operation now allows creating assemblies as they specified in the STEP file.   |
| 23228 | <i>Summary:</i> EDF 12311 GEOM: Tests fail in a specific context  |
| 23247 | <i>Summary:</i> [CEA 1771] Problem in computing dimensions of objects in GEOM module<br>A tolerance has been added to the functions computing basic properties of a shape; this prevents significant deviation of results from the actual values of properties. |
| 23252 | <i>Summary:</i> [CEA 1780] GEOM : Error on "make test" when SAMPLES module is missing<br>Unitary tests of Geometry module have been fixed to remove dependency on data files repository (SAMPLES).  |
| 23264 | <i>Summary:</i> [CEA 1815] Help Create field<br>A help page for Fields management functionality has been added.   |

**MESH MODULE**

|       |   |
|-------|---|
| 23189 | <i>Summary:</i> EDF 11603 - Dissymmetry in meshing<br>A bug that non-reasonably skewed hexahedra are generated in case of strongly non-uniform discretization of edges has been fixed.                  |
| 23190 | <i>Summary:</i> EDF 11636 - Problem of viscous layer<br>Failure of viscous layers construction has been fixed   |
| 23198 | <i>Summary:</i> EDF 8842 - Management of additional hypothesis<br>Fixed incorrect behaviour of mesh creating dialog box.  |
| 23207 | <i>Summary:</i> EDF 11232 SMESH: viscous layers builder fails at the very first inflation<br>Failure of viscous layers construction has been fixed.   |
| 23209 | <i>Summary:</i> EDF 12115 - Creation of 0D / 1D mesh groups fail when using MeshGems-Hexa<br>Incorrect assignment of mesh segments to edges and of nodes to vertices in MG-Hexa plug-in has been fixed. |
| 23212 | <i>Summary:</i> EDF 12054 - Problem with a pyramidal layer<br>The bug that invalid pyramids are constructed on quadrangle 2D mesh without geometry by tetrahedral 3D algorithms has been fixed.         |

|       |   |
|-------|---|
| 23221 | <p><i>Summary:</i> EDF - all edges are not meshed</p> <p>The bug that an internal edge in a solid is not meshed even at presence of 1D algorithm has been fixed.</p>  |
| 23235 | <p><i>Summary:</i> [CEA 1730] Patches for SMESH on Windows</p> <p>Several problems of running Mesh Python plugins on Windows have been fixed.</p>   |
| 23237 | <p><i>Summary:</i> EDF 12367 - SIGSEGV with Remove group</p> <p>SIGSEGV at removal of a group imported from a CGNS file has been fixed.</p>   |
| 23239 | <p><i>Summary:</i> [CEA 1739] Regression : crash trying to create mesh</p> <p>SALOME crash due to a memory error in StdMeshers_Prism_3D::IsApplicable() has been fixed.</p>   |
| 23245 | <p><i>Summary:</i> [CEA 1696] Patch for HYBRIDPLUGIN</p> <p>The patch modifies the script to use the last version available in the prerequisite base. Since the parameters are quite different between the two versions, the hybrid plugin documentation has been also updated.</p> |
| 23248 | <p><i>Summary:</i> [CEA 1767] V7_dev: crash or SIGSEGV when computing the mesh with Hybrid</p> <p>SIGSEGV while using HYBRID mesher w/o hypothesis has been fixed.</p>  |
| 23250 | <p><i>Summary:</i> [CEA 1766] 3D tab is empty when editing mesh</p> <p>Several regressions of "Edit Mesh/Sub-mesh" dialog have been fixed.</p>  |
| 23256 | <p><i>Summary:</i> [CEA 1796] Merge nodes suppresses some elements</p> <p>The bug that Merge Nodes removes quadratic quadrangles has been fixed.</p>  |
| 23269 | <p><i>Summary:</i> Meshing a composite block with IJK</p> <p>A bug of hexahedral meshing of a composite-sided box has been fixed.</p>   |
| 23278 | <p><i>Summary:</i> [EDF] Mesh computation fails for cylinder or sphere with projection algorithm</p> <p>Regression of mesh projection from a quadrangle face to a sphere has been fixed.</p>  |
| 23279 | <p>EDF 12978 – Over-constrained faces</p> <p>Documentation on "Over-constrained faces" control has been refined.</p>  |

**PARAVIS MODULE**

|       |  |
|-------|--|
| 23113 | <p><i>Summary:</i> EDF 7612 PARAVIS: The use of the animation view after applying the macro mode makes Salome terminating in SIGSEGV.</p> <p>Fixed problem with usage of "mode" macro.</p> |
|-------|--|

|       |   |
|-------|---|
| 23167 | <i>Summary:</i> [CEA 1592] JSON ParaView reader<br>A reader for JSON files has been added.  |
| 23243 | <i>Summary:</i> [CEA 1751] PARAVIS - regression bug 812 - Para Geometry<br>The problem with compilation of Geometry CORBA and Mesh CORBA plugins of PARAVIS module has been fixed.                              |
| 23265 | <i>Summary:</i> [CEA 1809] In PARAVIS, the field vtkBlockColors is displayed with a continued scalar bar instead of a discrete one<br>Fixed regression caused by migration on ParaView 5.0.                     |
| 23267 | <i>Summary:</i> [CEA 1808] PARAVIS_OPTIONS does not work<br>PARAVIS_OPTIONS environment variable was moved to GUI module and renamed to PARAVIEW_OPTIONS. Documentation in the ParaVis module has been updated. |

**YACS MODULE**

|       |  |
|-------|--|
| 23234 | <i>Summary:</i> [CEA 1726] YACS - regression - forloop_sum_of_n_integers<br>A regression in a ForLoop node has been fixed.   |
| 23263 | <i>Summary:</i> [EDF] Crash when activating YACS module from another module which does not have Object Browser<br>The bug of YACS module which implementation did not take into account the fact that there can be no Object browser windows when YACS module is activated has been fixed. |

**MG-CADSurf PLUGIN MODULE**

|       |  |
|-------|--|
| 23214 | <i>Summary:</i> EDF 12190 - SetChordalError : no help<br>SetChordalError() method has been added to Python API of MG-CADSurf mesher.   |
| 23236 | <i>Summary:</i> EDF 12346 - Problem with Local Size<br>A bug that local size on compounds is lost after edit/store a MG-CADSurf Parameters hypothesis in GUI has been fixed. |

**MG-TETRA PLUGIN MODULE**

|       |  |
|-------|--|
| 23275 | <i>Summary:</i> [CEA 1833] MG-Tetra: impossible to impose a volumic gradation < 1.05 |
|-------|--|

**MG-TETRA\_HPC PLUGIN MODULE**

|       |   |
|-------|---|
| 23261 | <i>Summary:</i> [CEA 1695] Patch for updating GHS3DPRLPLUGIN<br>Use the executable file that is located in the prerequisite base. |
|-------|---|

**MG-HEXA PLUGIN MODULE**

|       |  |
|-------|--|
| 22515 | <i>Summary:</i> [CEA 1074] Hexotic does not work under Windows 7 64 bits<br>Fixed problem with launching mg-hexa on Windows. |
| 23260 | <i>Summary:</i> [CEA 1685] Patch to keep log file in HexoticPLUGIN<br>An option to keep mg-hexa log files has been added.    |

**OTHER ISSUES**

|       |   |
|-------|---|
| 23220 | <i>Summary:</i> [CEA 1705] Documentation install and broken links<br>A problem with missing and broken links on main documentation page has been fixed.                                     |
| 23224 | <i>Summary:</i> [CEA 1709] Error with numpy with Windows version of SALOME<br>A problem prevented correct initialization of SMESH plugins in case if numpy is not installed has been fixed. |
| 23227 | <i>Summary:</i> [CEA 1718] Correction of the script hxx2salome.py in YACSGEN<br>A bug in the module generator script has been fixed.  |
| 23233 | <i>Summary:</i> [CEA 1725] MED User's Guide is missing in the Help menu<br>A problem with missing MED documentation in Help menu has been fixed.  |

## ❖ OCCT 6.9.1 BUG CORRECTIONS

This chapter lists bug corrections and improvements made for SALOME project in Open CASCADE Technology. These bug corrections and improvements are included into the patched version of OCCT 6.9.1 used by SALOME 7.8.0.

|          |   |
|----------|---|
| OCC26870 | <p><i>Summary:</i> Visualization - deactivated selections are not updated after object's re-computation</p> <p>Update status in <code>SelectMgr_SelectionManager::RecomputeSelection</code> is:</p> <ul style="list-style-type: none"><li>a) set to "full" for all selections;</li><li>b) switched to "none" only if selection was actually recomputed.</li></ul> |
| OCC27065 | <p><i>Summary:</i> <code>BRepOffsetAPI_MakePipe</code> misses definition of virtual method <code>Generated()</code></p> <p>Virtual method <code>Generated()</code> inherited from <code>BRepPrimAPI_MakeSweep</code> is overridden in class <code>BRepOffsetAPI_MakePipe</code>, providing information on shapes generated from the profile.</p>                  |

## ❖ PARAVIEW BUG CORRECTION

This chapter lists bug corrections and improvements made for SALOME project in ParaView 5.0.1. These fixes are included into ParaView version 5.0.1 used by SALOME 7.8.0.

|       |   |
|-------|---|
| 21473 | <i>Summary:</i> EDF 2063 PARAVIS: Save of preferences   |
| 22696 | <i>Summary:</i> EDF 8663 PARAVIEW: Problem with the Magnitude calculation for a given field in Paraview 4.1.0 |
| 22801 | <i>Summary:</i> EDF 9133 PARAVIS: Histogram view is popping up when closed                                    |
| 22863 | <i>Summary:</i> EDF PARAVIS: Double SIGSEGV when exiting Salome + Paravis session                             |
| 22871 | <i>Summary:</i> EDF 10092 PARAVIS : The macro modes is not displayed properly                                 |
| 23107 | <i>Summary:</i> EDF 10988 Paraview: Absence of Points data in the data plotting filters                       |
| 23139 | <i>Summary:</i> EDF 11397 PARAVIS: Save screenshot of a Parallel Coordinates View gives a wrong display.      |

## ❖ SUPPORTED DISTRIBUTIONS AND PRE-REQUISITES

SALOME is a cross-platform solution that supports Linux and Windows. It is distributed as open-source software under the terms of the GNU LGPL license.

**SALOME 7.8.0** comes with the same versions of pre-requisites on all supported platforms (with some minor exceptions). The table below lists the versions of the pre-requisite products used by SALOME platform. Other versions of the products can also work but it is not guaranteed.

| Product                | Version | GUI (APP) | KERNEL | GEOM | SMESH | MED | YACS | PARAVIS | HOMARD | HEXABLOCK | NETGENPLUGIN | GHS3DPLUGIN | GHS3DPRPLPLUGIN | BLSURFPPLUGIN | HexoticPLUGIN | HEXABLOCKPLUGIN | HYBRIDPLUGIN |
|------------------------|---------|-----------|--------|------|-------|-----|------|---------|--------|-----------|--------------|-------------|-----------------|---------------|---------------|-----------------|--------------|
| gcc*                   | 4.1***  | 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            |
| Microsoft Visual C++** | 2010    | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| cmake                  | 3.0.2   | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| Python                 | 2.7.10  | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| Qt                     | 4.8.4   | X         |        | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| Sip                    | 4.14.2  | X         |        |      | X     |     |      |         |        |           |              |             |                 |               |               |                 |              |
| PyQt                   | 4.9.6   | X         |        |      | X     |     |      |         |        |           |              |             |                 |               |               |                 |              |
| Boost                  | 1.52.0  | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| Swig                   | 2.0.8   | X         | X      | X    | X     | X   | X    |         | X      |           | X            | X           | X               | X             | X             | X               | X            |
| OCCT                   | 6.9.1   | X         |        | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| Qwt                    | 6.1.0   | X         |        |      | X     |     |      |         |        |           |              |             |                 |               |               |                 |              |
| OmniORB                | 4.1.6   | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| OmniORBpy              | 3.6     | X         | X      | X    | X     | X   | X    | X       | X      | X         | X            | X           | X               | X             | X             | X               | X            |
| omniNotify             | 2.1     |           | X      |      |       |     |      |         |        |           |              |             |                 |               |               |                 |              |
| Hdf5                   | 1.8.14  | X         | X      | X    | X     | X   |      | X       | X      |           | X            | X           | X               | X             | X             | X               | X            |
| Med                    | 3.2.0   |           |        |      | X     | X   |      | X       | X      |           | X            |             | X               |               |               |                 |              |
| MedCoupling            | 7.8.0   |           |        |      |       | X   |      | X       |        |           |              |             |                 |               |               |                 |              |
| Vtk                    | 7.1.0   | X         |        | X    | X     | X   |      | X       |        | X         | X            | X           | X               | X             | X             | X               | X            |
| numpy                  | 1.9.2   |           | X      |      |       |     |      |         |        |           |              |             |                 |               |               |                 |              |
| lapack                 | 3.5.0   |           | X      |      |       |     |      |         |        |           |              |             |                 |               |               |                 |              |
| graphviz               | 2.38.0  | X         | X      | X    | X     | X   | X    |         |        |           | X            | X           | X               | X             | X             |                 | X            |
| Doxygen                | 1.8.3.1 | X         | X      | X    | X     | X   | X    |         |        |           | X            | X           | X               | X             | X             | X               | X            |
| NETGEN                 | 4.9.13  |           |        |      |       |     |      |         |        |           | X            |             |                 |               |               |                 |              |
| Metis                  | 5.1.0   |           |        |      |       | X   |      |         |        |           |              |             |                 |               |               |                 |              |
| Scotch                 | 5.1.11  |           |        |      |       | X   |      |         |        |           |              |             |                 |               |               |                 |              |
| libxml2                | 2.9.0   | X         | X      |      |       | X   | X    |         |        |           |              |             |                 |               |               |                 |              |
| Distene MeshGems       | 2.1-11  |           |        |      |       |     |      |         |        |           |              | X           | X               | X             | X             |                 | X            |
| Sphinx                 | 1.2.3   |           | X      | X    | X     |     | X    |         | X      | X         |              |             |                 |               |               |                 |              |
| libBatch               | 2.3.0   |           | X      |      |       |     |      |         |        |           |              |             |                 |               |               |                 |              |
| Cgns                   | 3.1.3   |           |        |      | X     |     |      |         |        |           |              |             |                 |               |               |                 |              |
| ParaView               | 5.0.1   | X         |        |      |       |     |      | X       |        |           |              |             |                 |               |               |                 |              |
| Homard                 | 11.7    |           |        |      |       |     |      |         | X      |           |              |             |                 |               |               |                 |              |

\*) Linux only  
 \*\*) Windows only  
 \*\*\*) Minimal required version

| Product                | Version | RANDOMIZER | SIERPINSKY | PYCALCULATOR | COMPONENT | CALCULATOR | HELLO | LIGHT | PYLIGHT | ATOMIC | ATOMGEN | ATOMSOLV | HXX2SALOME | YACSGEN | JOBMANAGER |
|------------------------|---------|------------|------------|--------------|-----------|------------|-------|-------|---------|--------|---------|----------|------------|---------|------------|
| gcc*                   | 4.1**   | 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          |
| Microsoft Visual C++** | 2010    | X          | X          | X            | X         | X          | X     | X     | X       | X      | X       | X        | X          |         | X          |
| Python                 | 2.7.10  | X          | X          | X            | X         | X          | X     | X     | X       | X      | X       | X        |            | X       | X          |
| Qt                     | 4.8.4   |            | X          |              | X         | X          | X     | X     |         | X      | X       | X        | X          |         | X          |
| Sip                    | 4.14.2  |            |            |              | X         |            |       |       |         |        | X       |          |            |         |            |
| PyQt                   | 4.9.6   |            |            |              | X         |            |       |       | X       |        | X       |          |            |         |            |
| Boost                  | 1.52.0  |            | X          |              |           | X          | X     |       |         |        |         | X        |            |         | X          |
| Swig                   | 2.0.8   |            | X          |              | X         | X          |       |       |         |        |         |          |            |         |            |
| OCCT                   | 6.9.1   |            | X          |              | X         | X          | X     | X     |         | X      |         | X        |            |         |            |
| Qwt                    | 6.1.0   |            |            |              | X         |            |       |       |         |        |         |          |            |         |            |
| OmniORB                | 4.1.6   | X          | X          | X            | X         | X          | X     |       |         |        | X       | X        |            |         | X          |
| OmniORBpy              | 3.6     | X          | X          | X            | X         | X          | X     |       |         |        | X       | X        |            |         | X          |
| Hdf5                   | 1.8.14  |            | X          |              | X         | X          |       | X     |         | X      |         |          |            |         |            |
| Med                    | 3.2.0   |            | X          | X            | X         | X          |       |       |         |        |         |          |            |         |            |
| Vtk                    | 7.1.0   |            | X          |              | X         |            |       | X     | X       | X      |         | X        |            |         |            |
| graphviz               | 2.38.0  | X          | X          | X            | X         |            | X     |       |         | X      |         |          |            |         |            |
| Doxygen                | 1.8.3.1 | X          | X          | X            | X         |            | X     |       |         | X      |         |          |            |         |            |
| Sphinx                 | 1.2.3   |            |            |              |           |            |       |       |         |        |         |          |            |         | X          |

- \*) Linux only
- \*\*) Windows only
- \*\*\*) Minimal required version

The following products are not mandatory for SALOME directly; these products are either optional for SALOME or only required to build other pre-requisite products.

| Product    | Version | Required by                                     | Comment                     |
|------------|---------|---|-----------------------------|
| Babel      | 2.0     | Sphinx  |                             |
| Cppunit    | 1.12.1  | KERNEL, MED, GEOM, YACS, HEXABLOCK, MEDCoupling | Optional                    |
| Cython     | 0.23.2  | H5py, Mpi4py, Scipy                             | Not used directly by SALOME |
| Distribute | 0.7.3   | Matplotlib                                      |                             |
| Docutils   | 0.12    | Sphinx  |                             |
| Freeimage  | 3.16.0  | Open CASCADE Technology                         | Optional                    |
| Freetype   | 2.4.11  | Open CASCADE Technology, ParaView               |                             |
| Gl2ps      | 1.3.8   | Open CASCADE Technology, VTK, ParaView          | Optional                    |
| H5py       | 2.5.0   |   | Not used directly by SALOME |
| Intel TBB  | 4.2.4   | Open CASCADE Technology, SMESH                  | Optional                    |
| Jinja2     | 2.7.3   | Sphinx  |                             |
| Markupsafe | 0.23    | Shinx   |                             |
| Matplotlib | 1.4.3   | ParaView  | Optional                    |
| Mpi4py     | 1.3.1   |   | Not used directly by SALOME |
| Nose       | 1.3.7   | H5py  |                             |
| Opencv     | 2.4.6.1 | GEOM  | Optional                    |



|                        |        |                                  |                             |
|------------------------|--------|----------------------------------|-----------------------------|
| <b>Openmpi</b>         | 1.8.5  | ParaView, Hdf5, Med, KERNEL, MED | Optional                    |
| <b>Paco++</b>          | 0.5.5  | KERNEL                           | Optional                    |
| <b>Pkgconfig</b>       | 1.1.0  | H5py                             |                             |
| <b>Pygments</b>        | 2.0.2  | Sphinx                           |                             |
| <b>Pyparsing</b>       | 2.0.3  | Matplotlib                       |                             |
| <b>Python-dateutil</b> | 2.4.2  | Matplotlib                       |                             |
| <b>Pytz</b>            | 2015.4 | Matplotlib                       |                             |
| <b>Scipy</b>           | 0.15.1 | Matplotlib                       |                             |
| <b>Setuptools</b>      | 0.6c11 | Sphinx                           |                             |
| <b>Six</b>             | 1.9.0  | Matplotlib                       |                             |
| <b>Tcl</b>             | 8.6.0  | Open CASCADE Technology, Python  | Optional                    |
| <b>Tk</b>              | 8.6.0  | Open CASCADE Technology, Python  | Optional                    |
| <b>Tclx</b>            | 8.4.1  | Open CASCADE Technology, Python  | Optional                    |
| <b>Xdata</b>           | 0.9.11 |                                  | Not used directly by SALOME |

SALOME 7.8.0 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**

| Product                | Compilation and Development |          | Execution |          | Remarks   |
|------------------------|-----------------------------|----------|-----------|----------|---|
|                        | Mandatory                   | Optional | Mandatory | Optional |   |
| Gcc                    | X                           |          | X         |          |   |
| GNU make               | X                           |          |           |          |   |
| Microsoft Visual C++   | X                           |          | X         |          | For execution, runtime libraries are only required  |
| Boost                  | X                           |          | X         |          |   |
| Cgns                   |                             | X        |           | X        | For SMESH only<br>Required only if used at compilation step   |
| Cmake                  | X                           |          |           |          |   |
| Cppunit                |                             | X        |           |          | Used for unitary testing  |
| Distene MeshGems suite | X                           | X        | X         |          | Compilation: mandatory for BLSURFPLUGIN only, optional for HEXOTICPLUGIN<br>Runtime: mandatory for BLSURFPLUGIN, GHS3DPLUGIN, GHS3DPRLPLUGIN, HexoticPLUGIN, HYBRIDPLUGIN |
| Doxygen                |                             | X        |           |          | Needed only for documentation generation  |
| Freetype               | X                           |          | X         |          |   |
| Freeimage              |                             | X        |           | X        | Required only if used when building OCCT  |
| Gl2ps                  |                             | X        |           | X        | Required only if used when building OCCT and/or Paraview  |
| Graphviz               | X                           |          | X         |          | In run-time required for YACS only  |
| Hdf5                   | X                           |          | X         |          |   |
| Homard                 |                             |          | X         |          | For HOMARD module only  |
| Intel TBB              |                             | X        |           | X        | Required if used when building OCCT and/or if used to build SMESH   |
| Libbatch               |                             | X        |           | X        | Required only if used at compilation step for KERNEL  |
| Libxml2                | X                           |          | X         |          |   |
| Matplotib              |                             |          |           | X        | Required only if used when building ParaView  |
| Med                    | X                           |          | X         |          |   |
| MedCoupling            | X                           |          | X         |          | Required by MED and PARAVIS modules   |
| Metis                  |                             | X        |           | X        | Required only if used at compilation step for MED   |
| Netgen                 | X                           |          | X         |          | For NETGENPLUGIN only   |
| Numpy (+ Lapack)       |                             | X        |           | X        | Required by MED   |
| Omniorb                | X                           |          | X         |          |   |
| Omniorbpy              | X                           |          |           |          |   |
| Omninotify             | X                           |          | X         |          |   |
| OCCT                   | X                           |          | X         |          |   |
| Opencv                 |                             | X        |           | X        | Required only if used at compilation step for GEOM  |
| Openmpi                |                             | X        |           | X        | Required only if used when building SALOME and/or pre-requisites  |
| Paco++                 |                             | X        |           | X        | Required only if used at compilation step for KERNEL  |
| ParaView               | X                           |          | X         |          | Mandatory for PARAVIS module; optional for GUI module   |
| Pyqt                   | X                           |          | X         |          |   |
| Python                 | X                           |          | X         |          |   |
| Qt                     | X                           |          | X         |          |   |
| Qwt                    | X                           |          | X         |          |   |
| Scotch                 |                             | X        |           | X        | Required only if used at compilation step for MED   |
| Sip                    | X                           |          |           |          |   |
| Sphinx                 |                             | X        |           |          | Needed only for documentation generation  |
| Swig                   | X                           |          |           |          |   |
| Vtk                    | X                           |          | X         |          |   |

## ❖ SYSTEM REQUIREMENTS

### Minimal Configuration:

- Processor: Pentium IV
- 512 MB RAM
- Hard Drive Space: 3 GB
- Video card 64 MB

### Optimal Configuration:

- Processor: Dual Core
- 2 GB RAM + 2 GB Swap
- Hard Drive Space: 5 GB
- Video card 128 MB

## ❖ HOW TO GET THE VERSION AND PRE-REQUISITES

Sources of SALOME 7.8.0 can be retrieved from the Git repositories using V7\_8\_0 tag; the complete list of repositories can be found at <https://git.salome-platform.org/gitweb/>.

All pre-requisites can be obtained either from the Linux distribution (please be sure to use a compatible version) in form of native package or from the distributors of these pre-requisites.

*Note: SALOME version 7.8.0 uses patches for some third-party pre-requisite products, such as Open CASCADE Technology, ParaView, Netgen and other. These patches solve different problems detected within SAOME project.*

## ❖ LICENSE

SALOME platform is distributed under terms of the GNU Lesser General Public License (LGPL) license version 2.1. All used pre-requisites use similar or compatible licenses (with minor exceptions). Detail information about licenses used by SALOME and its pre-requisites can be found on the following page: <http://www.salome-platform.org/downloads/license/>.

## ❖ KNOWN PROBLEMS AND LIMITATIONS

- The following modules are obsolete and not included into SALOME 7.8.0 release: FILTER, SUPERV, MULTIPR, VISU (Post-Pro). These modules are considered obsolete and not supported anymore.
- Application crash might occur on the data publication in the study if both data server and CPP container are running in the standalone mode.
- On some platforms the default font settings used in SALOME might cause bad application look-n-feel. This problem can be solved by changing the font settings with `qtconfig` utility included into the distribution of Qt.
- 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.
- 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 in general supports reading of documents from earlier versions but the documents created in the new version may not open in earlier ones. However, some studies may work incorrectly in SALOME 7x; mainly it concerns studies with Post-Pro data in which med v2.1 files have been imported. Due to removal of med v2.1 support and deprecation of Post-Pro module in SALOME series 7x, there can be problems with opening of such studies in SALOME.
- 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.
- Compilation of OCCT by Makefiles on a station with NVIDIA video card can cause 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 using the following commands (note: you need root permission to do this):
 

```
ln -s /usr/lib/libGL.so /usr/X11R6/lib/libGL.so
ln -s /usr/lib/libGL.la /usr/X11R6/lib/libGL.la
```
- 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 be different at each attempt of building the mesh.
- When generating a 2D mesh with "Maximum Area" hypothesis used, MEFISTO algorithm can produce cells with maximum area larger than specified by the hypothesis.
- For the current moment, because of the ParaView application architecture limitations, PARAVIS module has the following known limitations:
  - PARAVIS module works unstably using a remote connection; when SALOME is running on a remote computer, activation of PARAVIS module can sometimes lead to the application hang-up.

- PARAVIS module compilation can fail on 64-bit platforms when building ParaMEDCorba plugin (due to crash of kwProcessXML tool during generation of the plugin documentation). In such case it is necessary to unset VTK\_AUTOLOAD\_PATH environment variable and restart the compilation, for example:  
[bash%] unset VTK\_AUTOLOAD\_PATH
- Loading big files in ParaVis might render SALOME instable. This will be fixed in the next release and can be avoided in the current version by one of the two solutions below:
  - In ParaVis settings (ParaVis tab), disable the use of the external pvserver. This approach has the limitation that it is not possible to execute ParaVis' Python scripts outside the SALOME graphical interface (for instance, from an external terminal).
  - In ParaVis settings (ParaView tab → RenderView tab), increase the amount of memory under "Remote/Parallel rendering options" to something bigger than the default 20 MB (for example 200 MB).
- ParaVis module executes ParaView-related code in the standalone pvserver process that is launched with `--offscreen-rendering` option; this can cause problems with displaying data in ParaVis module if graphic card driver does not support off-screen rendering feature.
- Med library (medfichier) does not supports only reading files MED of version 2.1 and older.