

SALOME 5.1.1

Maintenance release announcement

March 2009

General information

OPEN CASCADE is pleased to announce [SALOME](#) version [5.1.1](#). It is a maintenance release that contains the results of planned major and minor improvements and bug fixes against SALOME 5.1.0 version released in December 2009.

New features

Open CASCADE Technology 6.3.0sp5

Open CASCADE Technology 6.3.0 service pack 1 has been replaced by 6.3.0 service pack 5, which includes a correction of some bugs that came from SALOME.

See Change Log file in the source archive of CASCADE 6.3.0sp5 for more details.

Note: [it is necessary to recompile NETGEN mesher with the new Open CASCADE Technology version.](#)

Prerequisites changes

- OmniORB 4.1.0 has been replaced by OmniORB 4.1.3
- omniORBpy 3.0 has been replaced by omniORBpy 3.3

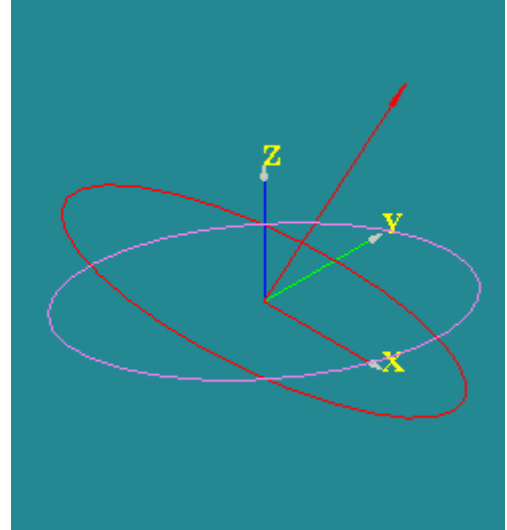
Improvements

Major Axis for ellipse creation

Major Axis vector parameter now can be used to define the direction of the major axis of an ellipse. By default, the major axis of an ellipse corresponds to the OX axis of the global coordinate system.

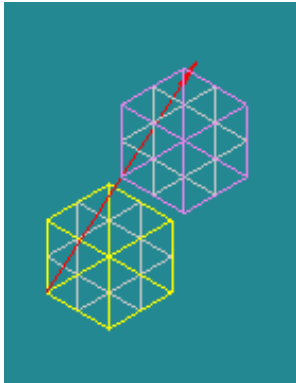
The **Major Axis** of an ellipse can be defined by various means:

- In the GUI Ellipse Construction dialog box in the input field "Major Axis" by selecting this field and an already constructed vector;
- In the TUI (geompyDC.py) using an additional parameter <theVecMaj > (none by default);
- In IDL interface: using the new function `GEOM_Object MakeEllipseVec(in GEOM_Object thePnt, in GEOM_Object theVec, in double theRMajor, in double theRMi nor, GEOM_Object theVecMaj)`.



In the picture, the ellipse built using the default vector is red and the ellipse built using the custom vector is violet.

New Modify the Location algorithm



The yellow box is translated along the red path. In this picture it is translated by half-length of the path.

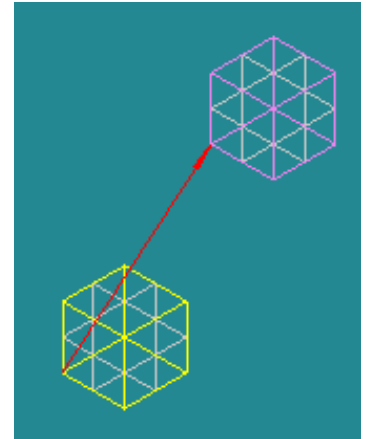
A new algorithm for **Modify the Location** operation has been implemented.

This algorithm modifies the location of an object using the **Path** object (Wire or Edge) and the **Distance** parameter (ranging from 0 to 1) defining how far the object will move along the path.

Reverse checkbox allows translating the object in the reversed direction.

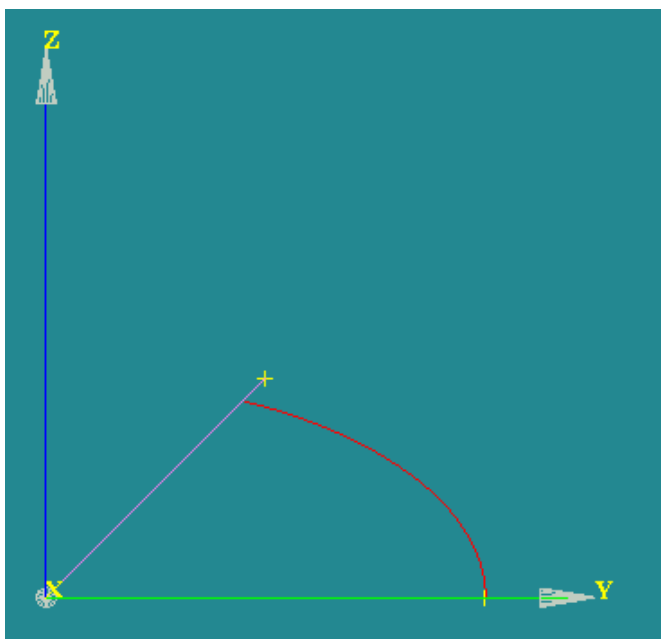
This operation is also available using the Python function:

```
PositionAlongPath(2GEOM_Object, aBaseObject, aPath, double aDistance, bool aCopy).
```



And here it is translated by the full length.

Arc of Ellipse



The method for construction of an **Arc of Ellipse** has been implemented.

For this, in the **Main Menu** select **New Entity - > Basic - > Arc -> Third Radio Button**.

The **Arc** is built on the **Ellipse** that lies in the plane defined by the three points, with the center in the **Center Point**. The major radius of the **Ellipse** is defined by the distance between the **Center Point** and the most remote **Argument point**. The minor radius is defined by the shortest distance between the other **Argument point** and the major radius.

Fillet 2D

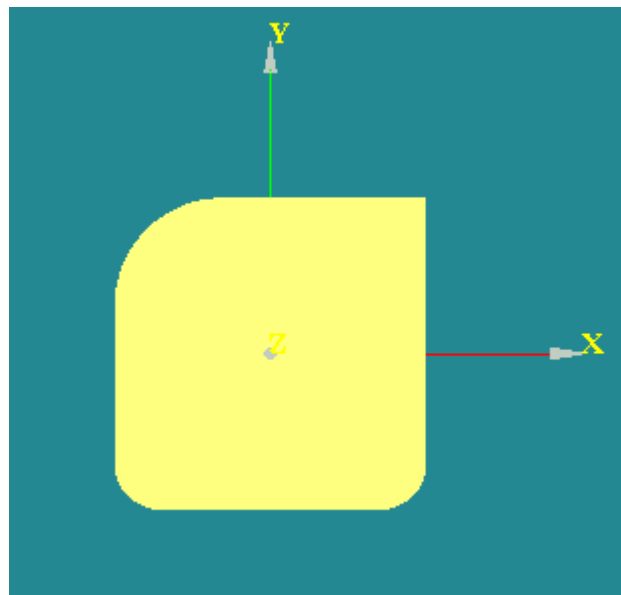
This new operation creates fillets on the corners of a **2D Planar Face**.

To produce a **Fillet 2D** in the **Main Menu** select **Operations - > Transformation - > Fillet 2D**

Define the **Planar Face** to create a fillet on, select the necessary vertices on this face in the OCC Viewer and define the **Radius** of the Fillet.

Note: This Operation Works for the **Planar 2D Faces** Only.

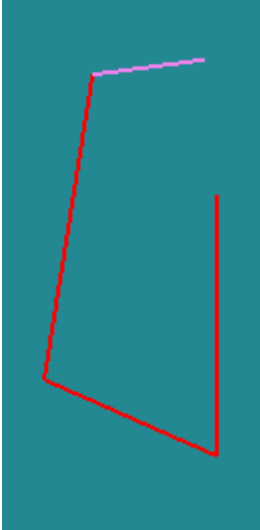
Alternatively, it is possible to use a **TUI Command**: *geompy.MakeFillet (Shape, R, ListVertexes)*



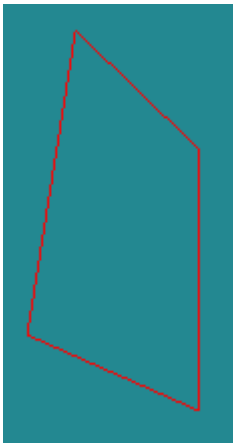
3D Sketcher

New 3D Sketcher is destined for the modeling of tubing lines with isometric sketches.

To activate this functionality, select in the main menu New Entity -> 3D Sketch.



In this picture the applied segments of the sketch are shown in read, the currently built one in violet.



At any time the sketch can be closed with Sketch Closure button



The position of each point can be defined by **Absolute coordinates X, Y, Z** or by **Relative coordinates DX, DY, DZ** with respect to the previous **Applied** point. The type of coordinates can be selected by the **Coordinates Type** radio buttons.

To add the point in the list of points and to proceed with the definition of the next point, click **Apply** button. **Undo and Redo** buttons, respectively, remove or restore the last point in the list.

Sketch Validation button applies the wire, built by the user, "as is". **Sketch Closure** closes the Sketch by a straight line from the start to the end point and applies it.

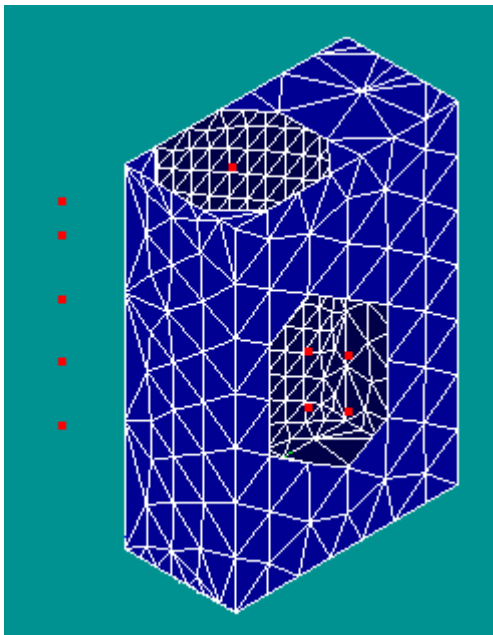
New Tooltips in Geometry module

An improved tooltip has been implemented for GEOM module. In comparison with the previous implementation, the new tooltip:

- gives the name of the module to which the object belongs;
- does not display the name of the object (which is already known because it is displayed under the mouse cursor) and the entry (listed in the entry column in the object browser);
- adds a contextual attribute, for example the type of the object if such a concept exists for every object. For GEOM, it looks like "GEOM Module, <ki ndofshape>". The object type information is equal to the result of `geompy.Ki ndOfShape()` and **Kind of Shape** field contents in **Main menu – Measures – What is** dialog.

The tooltip structure for all other modules remains the same: Object <name>, module <modul e name>, ID=<entry>.

New Quality Controls: Free Nodes and Free Faces



New quality control **Free Nodes** is available from main menu via **Controls -> Free Nodes**.

This mesh quality control highlights the nodes which are not connected to any mesh element.

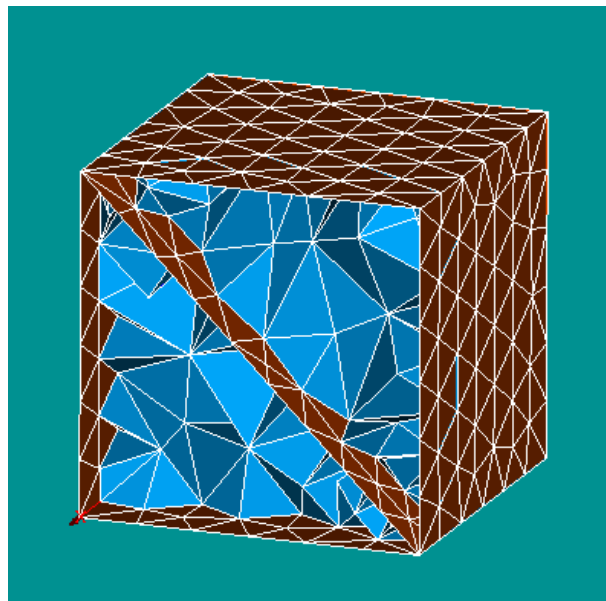
Also, "Free nodes" available as a filter and can be used in "Filter for Nodes" dialog (it concerns mesh group creation) or in the filter library in a usual way.

In the picture the free nodes are highlighted with red.

New quality control **Free Faces** is available from main menu via **Controls -> Free Faces**.

This mesh quality control highlights the faces connected to less than two mesh volume elements. The free faces are shown with the color different from the color of shared faces.

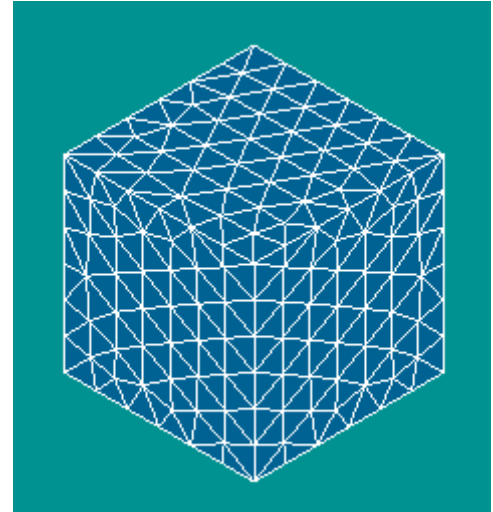
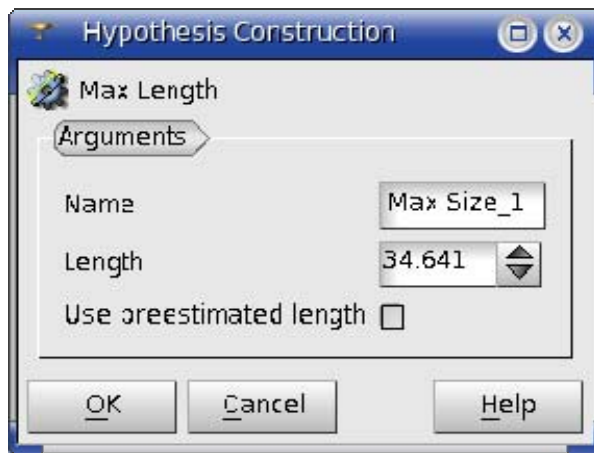
In the picture some volume mesh elements have been removed, as a result some faces became free.



Max Size Hypothesis

Max Size hypothesis allows splitting geometrical edges into segments no longer than the given length. Definition of this hypothesis consists of setting the maximal allowed **length** of segments.

Use pre-estimated length check box allows calculating default **length** automatically basing on the size of the geometrical object, namely as a diagonal of its bounding box divided by ten. The divider can be changed via **Ratio Bounding Box Diagonal / Max Size** preference parameter. **Use pre-estimated length** check box is enabled only if the geometrical object has been selected before the definition of the hypothesis.



Warning! **Max Length** hypothesis is now used by **Automatic Tetrahedralization** algorithm instead of **Automatic Length** hypothesis.

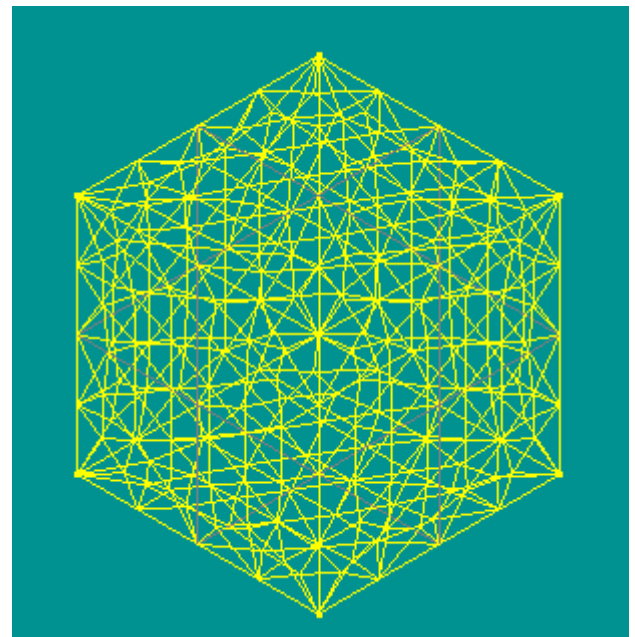
Mesh Preview

Mesh Preview functionality has been added in Mesh module. It allows computing the 2D or 3D mesh step-by-step, seeing the intermediary results (1D and 2D elements).



It can be activated from the context menu on a non-computed mesh in the Object Browser.

1D Mesh preview shows nodes computed on geometry edges. **2D Mesh** preview shows edge mesh elements computed on geometry faces. **Compute** button finishes the computation of the whole mesh.

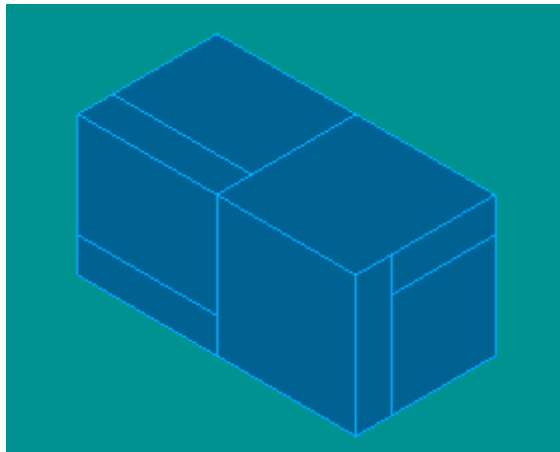


2D Preview of a meshed box.

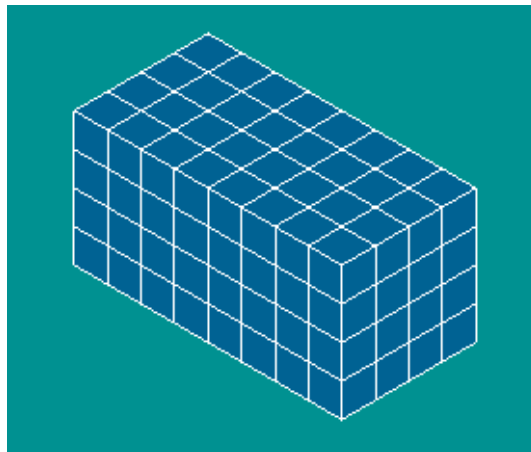
Meshing of boxes with composite sides

The new functionality for meshing of boxes with composite sides, which uses **Hexahedron (i,j,k)** meshing algorithm has been introduced.

For this, 1D sub-meshes on opposite faces should contain the same number of segments.



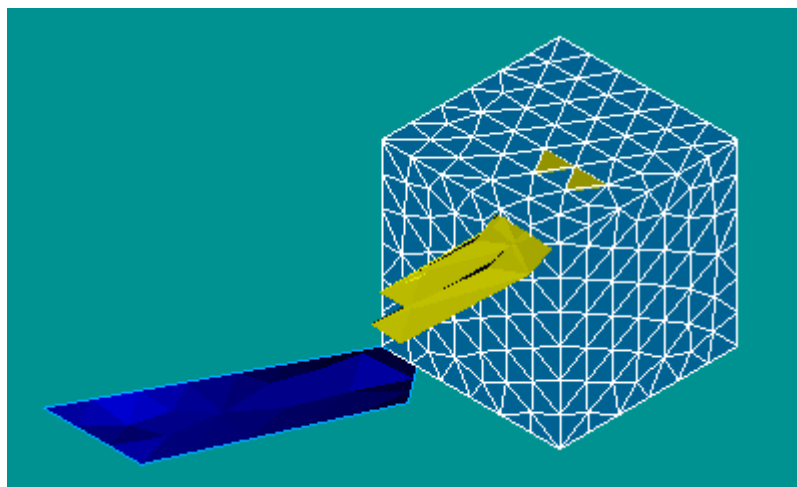
The initial box with composite edges.



Mesh on the box

Extrusion and revolution with normal to a face

The vector for extrusion and revolution of mesh elements can be now also defined as the normal to another mesh face, selected in the viewer.



In the image: the rotated mesh cells and the results of rotation are yellow and the vector face is deep blue.

Doubling of nodes

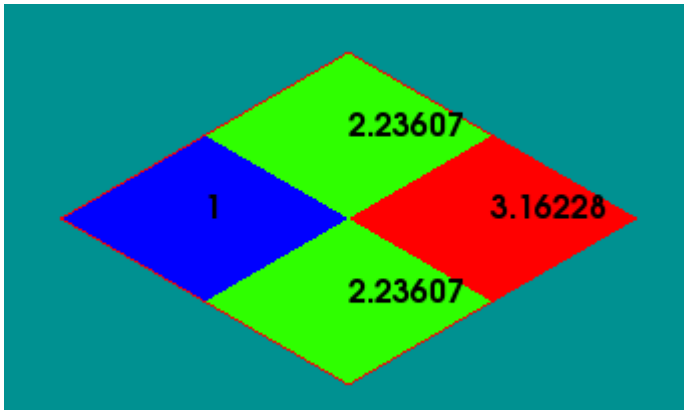
It has become possible to create a hole in the mesh by doubling the nodes of the selected elements using the methods of SMESH_MeshEditor, which splits each node of the selected element into two coinciding nodes.

To perform this operation, specify a set of source nodes, which should be doubled, and a set of elements, which obtain new nodes instead of the source nodes. If the set of elements is not defined, the nodes are doubled but they are not assigned to elements.

The nodes can be specified by:

- one node – `def DoubleNode(sel f, theNodeid, theModifierElements);`
- a list of nodes – `def DoubleNodes(sel f, theNodes, theModifierElements);`
- a group of nodes – `def DoubleNodeGroup(sel f, theNodes, theModifierElements);` or
- a list of groups of nodes – `def DoubleNodeGroups(sel f, theNodes, theModifierElements);`

Display Field Values

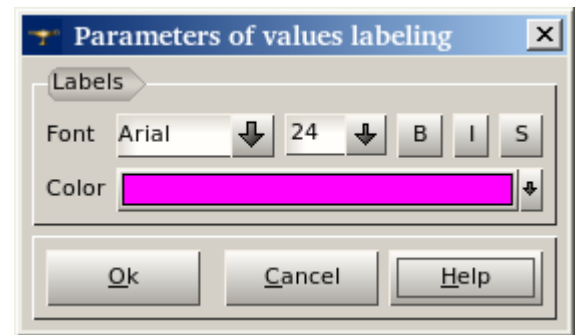


Values Labeling allows displaying values applied to the cells or nodes of a 3D presentation.

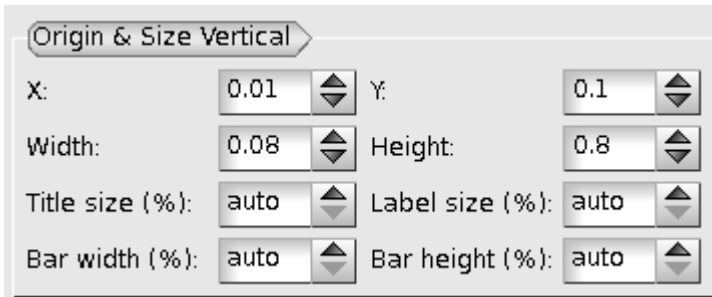
This visualization option can be selected by right-clicking on the presentation in the 3D viewer and choosing **Values labeling** command in the pop-up menu

Labeling Parameters that can be called from the same menu allow changing font and color of labels for the current presentation.

Default **labeling parameters** can be specified in the Post-pro Preferences



Scalar Bar Parameters

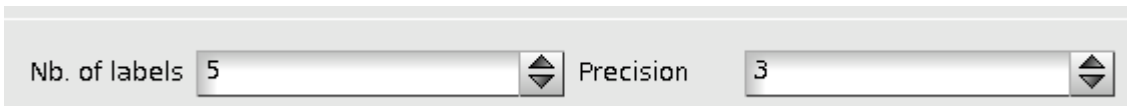
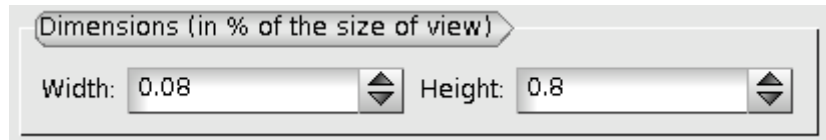


Some of Scalar Bar parameters have been changed/

Parameters **Title width (%)** and **Title height (%)** have been replaced with one parameter **Title size (%)**, in % of the size of the viewer area.

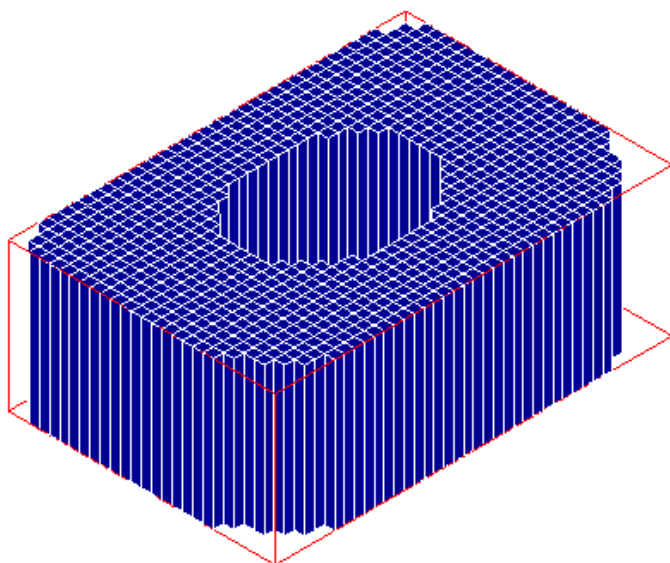
Parameters **Labels width (%)** and **Labels height (%)** have been replaced with one parameter **Labels size (%)**, in % of the size of the viewer area.

The label **Dimensions** of **Scalar bar properties** dialog is replaced with **Dimensions (in % of the size of view)**



The **Precision** of labels is now indicated as the integer value instead of the string value

Surface Frame Mode



New **Surface Frame** mode has been introduced for visualization of all presentations except for Vectors, Cut lines and Stream lines.

This mode is similar to **Surface** mode, but it additionally highlights edges between cells.

Other Improvements

- New **Edit Group as Standalone** operation allows converting an existing Group on geometry into a group of mesh elements. The resulting group loses reference to geometry and contains only the list of element IDs.
- New **Create Group of Underlying Entities** operation allows creating several groups of entities from the existing groups of superior dimension instead of only two groups (for example, groups of nodes from a group of faces).
- It has become possible to create a sub-mesh directly by right clicking on a Mesh and selecting **Create sub-Mesh** from the context menu.
- The eps image format is now supported by the Plot2d view. Dump to postscript format from VTK viewer has been enabled
- The IDL interface for the modifying of the **Shrink** parameter in Post-Pro scripts has been implemented.
- Now the list of timestamps is not reset to the first timestamp after change of the type of Scalar Field in the **Deformed Shape and Scalar Map** dialog box.
- It has become possible to Hide or Show the **Scalar Bar** of the separate Post-Pro presentations.
- Python script generation mechanism has been improved significantly to produce shorter and more readable scripts.
- The build procedure for the SALOME modules which support an option to install GUI libraries has been modified so that availability of the GUI module is automatically detected.

Bug corrections

GUI module (IAPP)

16836	<p><i>Summary:</i> EDF 568 GEOM SMESH VISU : Dump View in PostScript</p> <p><i>Improvement:</i> It has become possible to dump the contents of any Salome viewer into real vector postscript format, instead of the encapsulated bitmap in eps. Within this improvement the support of eps format has been introduced in the Plot2d view and dump to postscript format from VTK viewer has been enabled.</p>
17606	<p><i>Summary:</i> EDF 168: Is it possible to customize the tooltip of the objects in the browser?</p> <p><i>Improvement:</i> Customized tooltip has been implemented for GEOM module; the mechanism of tooltip customization is available for other modules.</p>
20155	<p><i>Summary:</i> GUI doesn't compile is I i b64vtk-devel rpm is installed.</p> <p><i>Change:</i> It has become possible to compile SALOME V5 on 64 bits with native VTK installed.</p>
20169	<p><i>Summary:</i> EDF GUI : Automatically see the good viewer at module activation</p> <p><i>Change:</i> The appropriate viewer is automatically activated when a Salome module is started. For GEOM – OCC viewer; for SMESH and VISU – VTK viewer.</p>
20177	<p><i>Summary:</i> EDF GUI : Close study does not close the viewer bar</p> <p><i>Change:</i> The GUI behavior has been improved to remove "OCC/VTK scene 1 : Viewer ..." from the viewer bar, when the study is closed.</p>
20180	<p><i>Summary:</i> EDF : Duplicate Message in OCCViewer resource file</p> <p><i>Change:</i> Duplicate entries to translation resources have been removed to provide compatibility with Qt 4.5.</p>
20218	<p><i>Summary:</i> EDF GUI OCC: Display issue on remote connection</p> <p><i>Change:</i> The regression with bad performance of OCC viewer working on a remote-computer has been fixed in OCCT service pack 3.</p>
20224	<p><i>Summary:</i> segmentation fault on exit when using xdata with Salome 5.1.1</p> <p><i>Change:</i> The problem of critical error on application exit if SalomePyQt. SALOME_Selection class instance is stored in a Python variable has been fixed.</p>

KERNEL module

20062	<p><i>Summary:</i> [CEA 295] Type coherence in *.i files</p> <p>Change: The sources have been adapted for compilation with gcc/g++ 4.3.2</p>
20109	<p><i>Summary:</i> Possible conflict with another ORB in runSalome.py</p> <p>Change: "import CORBA" has been replaced by "from omniORB import CORBA" in runSalome.py to be sure that CORBA is imported from omniORB.</p>
20215	<p><i>Summary:</i> [CEA 328] New types needed in KERNELCatalog.xml</p> <p>Change: The data types required for compatibility with Nuresu Graph have been added to the file KERNELCatalog.xml.</p>

GEOM module

14047	<p><i>Summary:</i> Problem to select merged face with Create group window</p> <p>Change: The limitation of graphical selection now works properly in the case of "Only Sub-Shapes of the Second Shape" option.</p>
16819	<p><i>Summary:</i> EDF PAL 564: Make fillet on 2D surface</p> <p>New Feature It has become possible to create a 2D fillet on the corners of a 2D Planar Face.</p>
18862	<p><i>Summary:</i> EDF 657 GEOM : to be able to create an arc of ellipse</p> <p>New Feature: The new method for construction of an arc of ellipse has been implemented.</p>
19827	<p><i>Summary:</i> EDF 736 GEOM : Duplication of a object along an elliptic path</p> <p>New Feature: The new algorithm for "Modify the Location" operation has been implemented. This algorithm modifies the location of an object using the Path object (Wire or Edge) and the Distance parameter (ranging from 0 to 1) defining how far the object will move along the path. "Reverse" checkbox allows translating the object in the reversed direction.</p>
20021	<p><i>Summary:</i> EDF 799 GEOM: Creation of 3D wired tubing</p> <p>New Feature: New GEOM feature "3D Sketcher", which allows creating a closed or unclosed 3D wire from a list of points has been implemented.</p>
20065	<p><i>Summary:</i> EDF 876 GEOM : Deleting an object leads to unusable dump</p> <p>Improvement: Dump Python functionality of Geometry module has been improved to avoid dumping of objects depending on the objects, which have not been dumped yet, otherwise the final script is not executable.</p>

20096	<p><i>Summary:</i> EDF 897 GEOM MakeFilling with a compound of wires</p> <p>Change: The arguments of the Filling algorithm are now checked and an error is raised if an invalid (containing not only edges) compound is passed.</p>
20102	<p><i>Summary:</i> EDF 903 GEOM: Partition issue.</p> <p>Change: The problem of wrong creation of solids made by OCC during partition has been fixed in OCC bug 20864.</p>
20110	<p><i>Summary:</i> EDF GEOM 882: Unwanted crosses after partition</p> <p>Change: The Partition algorithm has been fixed to avoid the creation of unwanted sections caused by wrong processing of internal edges.</p>
20126	<p><i>Summary:</i> EDF GEOM : Bad 2nd Trihedron</p> <p>Change: The problem with wrong display of the 2nd trihedron has been fixed in OCC bugs 20205 (trihedron position) and 20802 (size of trihedron axis labels).</p>
20149	<p><i>Summary:</i> EDF GEOM: Basic disk and face do not have the same orientation at construction</p> <p>Change: The default orientation of newly created disks and faces has been unified.</p>
20154	<p><i>Summary:</i> Ellipse not well defined</p> <p>Improvement: A new vector parameter – Major axis – has been added for creation of ellipses. Earlier it was presumed that the major axis is the axis OX of the global coordinate system.</p>
20157	<p><i>Summary:</i> Partition failure with pipes</p> <p>Change: The problem of partition with the 2 shapes as objects has been fixed in OCC bug 20891.</p>
20159	<p><i>Summary:</i> EDF GEOM: Dump study with exploded geometry object is not complete</p> <p>Change: Regression of Python dump has been fixed (addToStudyInFather commands disappeared after dumping of a study with an exploded geometry object).</p>
20162	<p><i>Summary:</i> EDF 951 GEOM : GetInPlane is getting additional orthogonal faces</p> <p>Change: The problem with incorrect faces returned by GetInPlane() has been fixed.</p>
20176	<p><i>Summary:</i> EDF GEOM 752: addToStudyInFather definition in geompyDC.py</p> <p>Change: Wrong reference to the global myStudy variable has been fixed in geompyDC.py – geompyDC::addToStudyInFather() function.</p>

20207	<p><i>Summary:</i> EDF GEOM 960: MakePipe : Generation of redundant doubled faces</p> <p>Improvement: Automatic gluing of all shapes, resulting from the pipe operation, has been implemented to solve the problem of double faces.</p>
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MESH module

18239	<p><i>Summary:</i> EDF 627 SMESH : add create submesh in Pop Up menu of a Mesh</p> <p>New Feature: It has become possible to create a sub-mesh directly by right clicking on a Mesh. For this, "Create sub-Mesh" menu item has been added to mesh object context popup menu.</p>
19292	<p><i>Summary:</i> EDF 672 SMESH : extend Composite side discretisation to 2D</p> <p>New Feature: It has become possible to mesh boxes with composite sides using Hexahedron (i,j,k) meshing algorithm.</p>
19562	<p><i>Summary:</i> EDF 695 SMESH : Possibility to replace nodes of a cell without destroying the cell</p> <p>New Feature: SMESH_MeshEditor interface has been extended with new methods for creating a hole in a mesh by doubling the nodes of selected elements.</p>
19923	<p><i>Summary:</i> EDF 765 SMESH : default values of hypothesis</p> <p>New Feature: Default value of hypotheses defining the size of elements is now computed basing on the size of the meshed geometry. The default average length of an element is defined as the diagonal of the boundary box of the geometry divided by a certain predefined value (10 by default), which can be changed via Mesh Preferences parameter "Segmentation of diagonal of boundary box of geometry". The following hypotheses are initialized using that length: Arithmetic1D, LayerDistribution, LocalLength, MaxElementArea, MaxElementVolume, MaxLength, NumberOfLayers and StartEndLength.</p>
19925	<p><i>Summary:</i> EDF 768 SMESH : Validation by 1D/2D preview</p> <p>Improvement: Mesh preview functionality has been added in Mesh module. It can be activated from the context menu on a non-computed mesh in the Object Browser. "1D Mesh" preview shows nodes computed on geometry edges. "2D Mesh" preview shows edge mesh elements computed on geometry faces.</p>
19927	<p><i>Summary:</i> EDF 770 SMESH : Analyzing the Mesh Quality : Orphan nodes</p> <p>New Feature: New mesh quality control Free Nodes highlights in the whole mesh (or in a selection of the mesh) the nodes that do not belong to any element.</p>

19928	<p><i>Summary:</i> EDF 771 SMESH : Extrusion (Revolution) with normal to a face</p> <p>Improvement: It has become possible to define the Vector through the normal of a face in "Extrusion along a line" and "Rotation around an axis" dialogs.</p>
19929	<p><i>Summary:</i> EDF 772 SMESH : script readability</p> <p>New Feature: Script generation mechanism has been improved:</p> <ul style="list-style-type: none"> • Wrapping of creation and addition of hypotheses has been improved in case of usage of a pre-existing algorithm; • The automatically created filter manager and pattern objects are removed if they are not used in any methods; • The sub-mesh commands are placed at the end of the script if no sub-mesh methods are invoked. • SetName command has been added for Mesh objects before Export to Med; • SetName command has been added for Group objects renamed since the latest Export command; • The name of the standard library in CreateHypothesis command has become optional.
19938	<p><i>Summary:</i> EDF 761 SMESH : creation group filters</p> <p>New Feature: The following new filters have been added in the Filter Library:</p> <ul style="list-style-type: none"> • Free face – checks if the face is shared by two (or more) volumes or free; • Linear or Quadratic – checks if the mesh element is linear; • Group color – checks if the element belongs to the group with the indicated color; • Element geometry type – checks if the element is of the indicated geometry type (triangles, quadrangles (2D), tetrahedrons, pyramids, pentahedrons and hexahedrons (3D)) <p>The new quality control "Free faces" has been implemented. The filter dialog now can be activated from the following operations: Remove nodes, Translation, Rotation, Smoothing, Symmetry, Extrusion and Extrusion along a path.</p>
19939	<p><i>Summary:</i> EDF 762 SMESH : Definition of groups from other existing groups</p> <p>New Feature: Operations with groups have been improved to support work with several groups instead of only two groups. "Create group of underlying entities" dialog box allows creating groups of entities from existing groups of superior dimensions (for example, groups of nodes from a group of faces).</p>
19941	<p><i>Summary:</i> EDF 766 SMESH : Max length hypothesis</p> <p>New Feature: New "Max Size" 1D hypothesis allows defining the maximum Length of a segment either explicitly or via "Segmentation of diagonal of boundary box of geometry" parameter, which is displayed as a default Length value. "Max Size" hypothesis is used by Automatic Tetrahedralization algorithm instead of "Automatic Length" hypothesis. Automatic Hexahedralization now uses "Number of Segments" hypothesis with the default value equal to 15, instead of "Automatic Length" hypothesis.</p>

19942	<p><i>Summary:</i> EDF 760 SMESH : Editing a group when it has been created from GEOM</p> <p>New Feature: New operation "Edit Group as Standalone" has been added in SMESH module. It allows converting an existing Group on geometry into a group of mesh elements, which can be modified. The resulting group loses reference to geometry and contains only the list of element IDs.</p>
19947	<p><i>Summary:</i> EDF 798: BLSurf mesh not possible on geometry with unclosed surface</p> <p>Improvement: BLSURF meshing algorithm has been improved to mesh geometrical faces with internal edges.</p>
20124	<p><i>Summary:</i> EDF SMESH 920 : "Max element volume" hypothesis is not used</p> <p>Improvement: To implement "Max Element Volume" hypothesis in Netgen, parameter maxh (maximal mesh size) used by Netgen to generate volume elements is now computed by the following formula: Netgen_param.maxh = pow(72, 1/6.) * pow(_maxElementVolume, 1/3.), where _maxElementVolume is the maximum volume of resulting mesh elements.</p>
20128	<p><i>Summary:</i> EDF SMESH 926 : Quadratic conversion of BLSURF mesh</p> <p>Improvement Now Quadratic conversion works correctly on a sphere with NetGen1D2D mesh.</p>
20138	<p><i>Summary:</i> EDF SMESH : Impossible to create (n)D mesh after creating (n+1)D mesh</p> <p>Change: The lists of hypotheses and algorithms available in Mesh Creation dialog are now updated on selection of each new shape.</p>
20168	<p><i>Summary:</i> EDF SMESH 953: incomplete selection with filter 'belong on geom..'</p> <p>Improvement: The problem with incomplete selection of elements in a group on geometry has been fixed by implementation of the possibility to customize the precision of the filters "belong to geometry" and "lying on geometry".</p>
20170	<p><i>Summary:</i> EDF SMESH: Selection behavior in object browser from hypothesis editing windows</p> <p>Change: The behavior of Mesh Creation/Edition dialog has been modified to remove all selection filters during creation/edition of the values of a hypothesis.</p>
20182	<p><i>Summary:</i> EDF SMESH 965 : SI GSEV at study opening with SMESH</p> <p>Change: The procedure of loading of some types of submeshes has been fixed.</p>
20183	<p><i>Summary:</i> EDF SMESH 966 : Mesh element info anomaly</p> <p>Change: Mesh Element Info dialog has been fixed to allow selecting nodes belonging to several displayed groups.</p>

20184	<p><i>Summary:</i> EDF SMESH 952: Projection 2D does not work</p> <p>Improvement: It has become possible to project a 2D mesh from the group of faces where an edge of the outer face belongs to the outer wire.</p>
20199	<p><i>Summary:</i> EDF SMESH 982 : 2 identical meshes do not give the same result</p> <p>Change: The problem of generation of different meshes on the same geometry with the same hypotheses by NETGEN 3D algorithm has been fixed.</p>
20200	<p><i>Summary:</i> EDF SMESH 983: changing algo of a mesh and switching back to original algo leads to different result than original</p> <p>This is a duplicate of bug 20199.</p>
20201	<p><i>Summary:</i> EDF SMESH 984: Dump with Netgen1D2D3D doest not work</p> <p>Change: The procedure of python dumping of a simple Netgen 1D-2D-3D hypothesis has been corrected: SI MPLE has been replaced by smesh. SI MPLE.</p>
20206	<p><i>Summary:</i> EDF SMESH 987: Netgen1D2D3D +submesh</p> <p>Change: The problem of segmentation violation at creation of a submesh on a mesh with global NETGEN 1D-2D-3D algorithm has been fixed.</p>
20213	<p><i>Summary:</i> RadialPrism_3D_4 failed on V5_1 64 bits</p> <p>Change: The problem of segmentation violation after node removal has been fixed.</p>
20214	<p><i>Summary:</i> Project_2D_4 failed on V5_1 64 bits</p> <p>This is a duplicate of bug 20199.</p>
20217	<p><i>Summary:</i> EDF SMESH: Dump file with mesh and group on geometry is wrong</p> <p>Change: Python Dump algorithm has been changed to correctly work with script names containing white spaces or commas.</p>
20221	<p><i>Summary:</i> MakeParti ti on fails</p> <p>Change: The problem of wrong partition has been fixed in OCCT service pack 4.</p>
20222	<p><i>Summary:</i> Quandrangle_2D meshing fails</p> <p>Improvement: Quandrangle_2D meshing algorithm has been improved to detect boundaries of composite sides by boundaries of adjacent faces.</p>

VISU module

13557	<p><i>Summary:</i> field values display</p> <p>New feature: It has become possible to display the numerical values on the fields of a Post-Pro presentation.</p>
13676	<p><i>Summary:</i> EDF 318 : VISU Post-processing on quadratic elements</p> <p>Change: The message "ELNO information is only available in Cell selection mode" is now shown at the attempt to use ELNO data in the Point selection mode.</p>
16843	<p><i>Summary:</i> EDF 570 VISU : SurfaceFrame representation for Cut plane</p> <p>New feature: New "Surface Frame" mode has been introduced for visualization of presentations. This mode is similar to "Surface" mode, but it also makes visible the edges between cells. This representation is available for all visualization types except for Vectors, Cut lines and Stream lines.</p>
18029	<p><i>Summary:</i> EDF 609 VISU : to be able to hide scalar bar</p> <p>New feature: It has become possible to Hide or Show the Scalar Bar of the Presentations using a Pop-up menu option.</p>
19819	<p><i>Summary:</i> EDF 643 VISU : Scalar bar ergonomics</p> <p>Improvement: The ergonomics of Scalar bar Preferences has been improved.</p>
19931	<p><i>Summary:</i> EDF 791 VISU : ScalarMapOnDeformed : time stamp by default equal to the DEPL one</p> <p>Change: Now the list of timestamps does not return to the first timestamp after selection of the type of Scalar Field.</p>
19932	<p><i>Summary:</i> EDF 789 VISU : Scalarmap on Deformed Shape not Ok in animation (from DEPL clicking)</p> <p>Improvement: Unselecting the presentation after its hiding clears the current selection instead of displaying the scalar bar of the original presentation without the slider; Display/Display only shows only the presentation that has been selected in the slider.</p>
20020	<p><i>Summary:</i> EDF 534 VISU : Modification of VISU IDL interface</p> <p>New feature: The IDL interface for the modification of the Shrink parameter in VISU scripts has been implemented (methods <code>SetShrink(bool)</code> and <code>IsShrank()</code>).</p>
20064	<p><i>Summary:</i> EDF 877 VISU : NaN in scalar bar</p> <p>Improvement: Checking for Nan values has been implemented in the methods <code>VISU_ColoredPL::GetSourceRange()</code> and <code>DeformedShapeAndScalarMapPL::GetSourceRange()</code>. If the computed range contains Nan values these methods raise <code>std::runtime_error</code> exception.</p>

20074	<p><i>Summary:</i> EDF VISU: Saving picture of animation crashes SALOME</p> <p>Change: A regression in Animation dialog has been fixed: there was a crash on checking "Save pictures to directory" control, if "jpeg" format was not found in the list of supported output formats.</p>
20076	<p><i>Summary:</i> EDF VISU: SI GSEV when editing a presentation and no VTK window</p> <p>Change: SI GSEGV error () at the attempt to edit a presentation without active VTK Viewer has been corrected.</p>
20086	<p><i>Summary:</i> EDF 881 VISU : Rename a gauss point presentation</p> <p>Change: It has become possible to rename Gauss Points presentations.</p>
20088	<p><i>Summary:</i> EDF 884 VISU : Line Width for Vector not taken into account</p> <p>Change: The changes of the Line Width in Vector presentation made by the user are now taken into account and restored in the dialog when the presentation is edited.</p>
20091	<p><i>Summary:</i> EDF 891 VISU Visu points Gauss on a group displays only one Gauss point by cell.</p> <p>Improvement: The algorithms processing Groups on Gauss Points presentations have been improved to display the correct number of points.</p>
20094	<p><i>Summary:</i> EDF 895 VISU : Scal arMaponDeformedShape, problems with title</p> <p>Change: The changes of the scalar bar title made by the user are now taken into account and restored in the dialog when the presentation is edited.</p>
20107	<p><i>Summary:</i> EDF 890 VISU : In some cases, Scalar Bar and Deformed Shape does not store the component used as scalar</p> <p>Change: The changes of the Scalar Mode made by the user are now taken into account and restored in the dialog when the presentation is edited.</p>
20111	<p><i>Summary:</i> EDF VISU 917 : Bad values are displayed for ELNO fields</p> <p>Improvement: The GUI of the Selection Panel has been improved to display scalar and vector values of the selected points for each cell to which they belong in case of ELNO fields. Four different cases have been considered:</p> <ul style="list-style-type: none"> • Cell selection for an ELNO field. The table of selection contains a list of selected cells and sub-lists of their points with coordinates, scalar and vector values at each point. • Point selection for an ELNO field. The table contains the same information but in reverse order: each list corresponds to a separate point and contains sub-lists of cells to which this point belongs with scalar and vector values at the point depending on the cell to which it belongs.

	<ul style="list-style-type: none"> Cell selection for a standard (not ELNO) field. Selection information is split into two tabs: "Cell Info" tab contains a list of the selected cells with their scalar and vector values, "Point Info" tab contains a direct list of all points of the selected cells (without indication of the cells to which they belong) with scalar and vector values at these points. Point selection for a standard field: Similarly to the second tab in the previous case, the table contains a list of selected points with their attributes and scalar and vector values. <p>Additionally, double-click on any cell in table now allows to perform selection of a mesh cell or point corresponding to that cell.</p>
20114	<p><i>Summary:</i> EDF VISU 918 : Impossible to create a new clipping plane on field presentation</p> <p>Improvement: It has become possible to use clipping planes with presentations created on all time stamps of the field.</p>
20121	<p><i>Summary:</i> EDF VISU 924: Gauss View + Deformed Shape + Picking + Display parent mesh element</p> <p>Change: VISU_GaussPtsAct: : Highlight() method has been modified to correctly display deformed elements. The behaviour of "Display Parent Mesh Element" checkbox has been fixed to avoid crashes.</p>
20122	<p><i>Summary:</i> EDF 923 VISU : deformed shape on scalar map, Performance & Clipping plane</p> <p>Change: The bug with SIGSEGV error after clipping on a deformed shape has been fixed.</p>
20123	<p><i>Summary:</i> EDF VISU 914 : Pyramids are not displayed for ELGA field</p> <p>Improvement: Quadratic pyramids are now correctly displayed in Post-Pro module.</p>
20125	<p><i>Summary:</i> EDF VISU 930 : Bug with Clipping plane on Deformed Shape</p> <p>Improvement: It has become possible to use clipping planes with presentations of a quadratic structured mesh.</p>
20133	<p><i>Summary:</i> EDF 937 VISU : Impossible to set the title of a Deformed Shape</p> <p>Change: It has become possible to define the title of the Deformed Shape presentation</p>
20137	<p><i>Summary:</i> EDF 931 VISU : Trihedron Issues</p> <p>Improvement: Arrows of the trihedron have become scalable in the VTK viewer, just like in the OCC viewer.</p>
20167	<p><i>Summary:</i> EDF VISU 956 : [TUI] AddMeshOnGroup is not fully taken into account</p> <p>Improvement: AddMeshOnGroup Python command, which defines a mesh group on which a presentation is displayed, now works properly and the presentation is displayed only on the group, instead of the whole mesh.</p>

20205	<p><i>Summary:</i> EDF VISU 980: Load hdf study with 2 MED files (same name, same size, different locations)</p> <p>Improvement: The regression causing problems with save/restore of MED files having the same names has been fixed. Now all MED file names receive unique hexadecimal numbers to avoid such problems.</p>
20209	<p><i>Summary:</i> Running simple Schema in YACS Failed</p> <p>Change: The problem of wrong dependencies on native omniORB libraries has been fixed.</p>

MED module

17024	<p><i>Summary:</i> ensight drivers industrialisation</p> <p>Change: The problems with running Enight tests have been solved.</p>
20058	<p><i>Summary:</i> [CEA 292] med could not detect if file version is higher than library version in use</p> <p>Change: The crash at the attempt to load the file generated with a more recent MED version, than the version used by the application, is now avoided.</p>
20067	<p><i>Summary:</i> [CEA 291] nothing to do to make check of MED module</p> <p>Improvement: "Make check" procedure has been implemented in MED module. It allows running test cases for the module functionalities.</p>
20071	<p><i>Summary:</i> Crash of V4_1_4rc2</p> <p>Improvement: The bug with memory corruption at writing descending connectivity of MEDMEM: : MESH in med-2.1 version has been fixed.</p>
20113	<p><i>Summary:</i> [CEA 306] ENSIGHT DRIVER</p> <p>Change: The procedure of import from MED to Enight has been fixed to avoid writing references from variable to time set if there is only 1 time stamp.</p>
20127	<p><i>Summary:</i> [CEA 311] MEDMEMCpptest non regression Test of MEDMEM has 21/36 errors</p> <p>Improvement: MEDCpptest s have been corrected for all platforms to provide correct testing.</p>
20129	<p><i>Summary:</i> [CEA 310] MEDMEM compilation on i cc</p> <p>Improvement: MEDMEM has been modified to properly compile on i cc</p>

20141	<p><i>Summary:</i> [CEA 313] inline keyword missing in MEDMEM: : MODULUSARRAY</p> <p>Change: The problem of multiple function definitions in class MEDMEM: : MEDMODULUSARRAY has been solved by making the functions inline.</p>
20142	<p><i>Summary:</i> [CEA 315] Unused function in MEDMEM: : FI ELD</p> <p>Change: Unused functions <code>getArea()</code>, <code>getLength()</code>, <code>getVolume()</code>, <code>getNormal()</code> and <code>getBarycenter()</code> have been removed from the class MEDMEM: : FI ELD</p>
20171	<p><i>Summary:</i> test_MEDMEM_MeshingPoly fail</p> <p>Change: Binary tests have been modified to take into account that the volume of a polyhedron has become a signed value.</p>
20172	<p><i>Summary:</i> TestMEDMEM fail</p> <p>Change: The problem of SIGSEGV while executing TestMEDMEM due to unset TMP environment variable has been solved.</p>
20179	<p><i>Summary:</i> EDF MED : Native dependencies in Med Splitter</p> <p>Change: The order of libraries used in the file <code>Makefile.am</code> from MEDSPLITTER package has been changed: the libraries <code>metis</code> and <code>scotch</code> have been placed at the beginning. This is done to avoid linkage with native <code>metis</code>.</p>
20181	<p><i>Summary:</i> [CEA 322] valgrind errors in MEDMEMCppTests</p> <p>Change: MEDMEMCppTests have been tested with Valgrind and the detected errors have been fixed.</p>
20190	<p><i>Summary:</i> EDF MED : Missing types in Catalog</p> <p>Change: YACS types have been added in MED catalog. Modules CALCULATOR, PYCALCULATOR and COMPONENT have been updated.</p>

GHS3DPRLPLUGIN module

20072	<p><i>Summary:</i> GHS3DPRLPLUGIN update</p> <p>Improvement: GHS3DPRLPLUGIN has been largely improved; Python interface <code>smeshDC.py</code> has been updated to provide access to the GHS3DPRLPLUGIN. New python example <code>ex30_tepal.py</code> has been added in SMESH module.</p>
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NETGENPLUGIN module

20198	<p><i>Summary:</i> EDF NETGENPLUGIN 979 : mesh of parallepiped with Netgen1D2D3D crashes Salome</p> <p>Change: The problem of Salome crash at the usage of Netgen1D2D3D algorithm has been fixed.</p>
20203	<p><i>Summary:</i> EDF 986 NETGENPLUGIN : Netgen 1D2D crashes Salome</p> <p>Change: The problem of Salome crash at the usage of Netgen 1D2D algorithm has been fixed.</p>
20220	<p><i>Summary:</i> Netgen 2D1D fail</p> <p>Change: The problem of usage an out-of-date NETGEN/netgen45ForSalome. patch for building netgen-4.5 product has been fixed.</p>

Environment bugs

20140	<p><i>Summary:</i> EDF 945 ENV : OmniORB prerequisite 4.1.0 to 4.1.3</p> <p>Improvement: Salome has been upgraded to the new omniORB version: - omniORB 4.1.0 has been replaced by version 4.1.3; - omniORBpy 3.0 has been replaced by version 3.3</p>
20193	<p><i>Summary:</i> EDF QT 4.4.3: "JPEG" format not found by QImageWriter::supportedImageFormats()</p> <p>Change: The function addLibraryPath() has been integrated in SUI TApp (light SALOME) and SALOME_Session_Server (full SALOME). It is used to add \${QTDIR}/plugins directory to the libraries search path. New QT_PLUGIN_PATH environment variable can be defined in SALOME installation procedure.</p>

Installation bugs

19977	<p><i>Summary:</i> Installation of Salome modules without GUI</p> <p>Improvement: The build procedure for the SALOME modules which support an option to install GUI libraries has been modified so that availability of the GUI module is automatically detected. The following options are now available in the configure script:</p> <ul style="list-style-type: none"> • No options: in this mode the GUI of the module will be used only if it has been found, if the GUI has not been found, the user receives the corresponding warning and module will be configured without GUI • 2) --without-gui (equal to --with-gui=no): the module will be configured without GUI • 3) --with-gui (equal to --with-gui=yes): module will be configured with GUI; if the GUI has not been found, the user gets corresponding warning and module will be configured without GUI 4) --with-gui=DIR: module will be configured with GUI installation defined by DIR, if DIR is incorrect user gets corresponding warning and module will be configured without GUI.
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20160	<p><i>Summary:</i> [CEA : 321] installation wizard should make the difference between optional and mandatory "missing libraries"</p> <p>Improvement: The warning message about missing libraries, which is shown during the installation procedure, now contains separate lists for mandatory and optional libraries absent in the system. It is possible to customize the list of libraries defining some of them as optional in the XML configuration file for the platform in the <code>config</code> section for <code>optionallibs</code> attribute. By default, this attribute is equal to <code>libcppunit, libblsurf</code>.</p>
20219	<p><i>Summary:</i> Some *.la still have reference to /dn2*</p> <p>Change: Incorrect references have been removed from *.la files.</p>
20223	<p><i>Summary:</i> Compiling Salome from the Install Wizard throws a warning</p> <p>Change: The problems with NETGENPLUGIN compilation are now avoided in the installation procedure.</p>

Documentation bugs

19962	<p><i>Summary:</i> MakePipeBiNormalAlongAxis implementation</p> <p>Change: The difference between methods of "Extrusion along path operation" from Geometry module has been better described in the documentation.</p>
20101	<p><i>Summary:</i> EDF 902 DOC : Missing doc for TUI/GUI interface</p> <p>Improvement: Additional help page describing the usage of Python module <code>salome.py</code> and access to the main SALOME functionalities from the Python code has been introduced into the documentation of GUI module.</p>
20165	<p><i>Summary:</i> EDF 948 OTHER: How implement dump in python component?</p> <p>Improvement: The procedure of implementation of DumpPython functionality in Python-based SALOME modules has been documented at the example of PYHELLO module.</p>
20175	<p><i>Summary:</i> EDF GEOM SMESH VISU: Documentation organization</p> <p>Change: The newly created help pages have been correctly located in the table of contents.</p>
20202	<p><i>Summary:</i> EDF SMESH 985: Differences between using Netgen1D2D3D or Netgen3D + Netgen2D + Regular1D</p> <p>Change: The behavior of NETGEN algorithm has been described in more details in the documentation.</p>

Processed and answered queries

18673	<i>Summary:</i> EDF 645 SUPERV: Display a message in the Message window in a SUPERV node.
19199	<i>Summary:</i> EDF 655 ALL comp: Using GEOM interface from C++.
20049	<i>Summary:</i> [win32] src/SALOMEDS/SALOMEDS_AttributePythonObject.cxx problem.
20087	<i>Summary:</i> EDF 912 GUI: Missing text in OCC viewer, regression in Salome 5?
20147	<i>Summary:</i> EDF SMESH: Bad hexahedral mesh.
20148	<i>Summary:</i> Basic smesh compute fail.
20152	<i>Summary:</i> New tooltip functionality on GUI object browser induces a crash in YACS.
20156	<i>Summary:</i> EDF GUI : How the GUI adds the Module Help item of a component
20161	<i>Summary:</i> EDF 961 OCC: UV coordinates on a face from XYZ 3D coordinates.

Supported Linux distributions and pre-requisites

SALOME 5.1.1 supports Debian 3.1 Sarge, Debian 4.0 Etch 32bit and 64bit, Mandriva 2006 32bit and 64bit, Mandriva 2008 32bit and 64bit.

SALOME 5.1.1 version has been mainly tested with the following pre-requisite list on Mandriva 2008 32bit and Debian 4.0 Etch 64bit platforms.

SALOME 5.1.1 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 confi_g_files folder of the Installation Procedure.

	Version	GUI (IAPP)	KERNEL	GEOM	SMESH	VISU	MED	HexoticPLUGIN	GHS3DPRLPLUGIN	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 sp5	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	4.1.3 3.3 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	0.4.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		
metis	4.0						X																
scotch	4.0						X																
libxml2	2.6.27	X	X				X															X	
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

SALOME 5.1.1 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 5.1.1 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 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 5.1.1 release: MULTIPR, FILTER and SUPERV.
- The store/restore GUI state functionality is not fully supported in SALOME version 5.1.1. 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 plug-in:
 - Mesh contains inverted elements, if it is based on a shape, consisting of more than one face (box, cone, torus...) and if the option "Allow Quadrangles (Test)" has been checked before computation.
 - SIGFPE exception is raised after trying to compute a mesh based on a box with "Patch independent" option checked.
 - It has been found out that BLSURF algorithm can't be used as a local algorithm (on sub-meshes) and as a provider of low-level mesh for some 3D algorithms because BLSURF mesher (and, consequently, the plug-in) does not provide information on node parameters on edges (U) and faces (U, V). For example, the following combinations are impossible:
 - global MEFISTO or Quadrangle(mapping) + local BLSURF;
 - BLSURF + Projection 2D from faces meshed by BLSURF;
 - local BLSURF + Extrusion 3D.

- Sometimes regression test bases give unstable results; in this case the testing should be restarted.
- A native VTK can be used only after manual recompilation with the GL2PS component.
- NETGEN 1D-2D and 1D-2D-3D algorithm do not require definition of 2D and 1D algorithms and hypotheses for both mesh and sub-mesh. 2D and 1D algorithms and hypotheses defined with NETGEN 1D-2D or 1D-2D-3D algorithm will be ignored during calculation.
- SALOME supports reading of documents from earlier versions but the documents created in the new version may not open in earlier ones.
- If SALOME modules are not installed in a single folder, SALOME may not work in the CSH shell since the environment variables are too long by default. In this case, it is suggested to use SH or to install all modules in the same folder.
- During the compilation of OCT 6.x by makefiles on a station with NVIDIA video card you can experience problems because the installation procedure of NVIDIA video driver removes library `libGL.so` included in package `libMesaGL` from directory `/usr/X11R6/lib` and places this library `libGL.so` in directory `/usr/lib`. However, `libtool` expects to find the library in directory `/usr/X11R6/lib`, which causes compilation failure (See `/usr/X11R6/lib/libGLU.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.
- 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.