Release Notes

This document contains release notes which explain modifications and changes between EnSight releases. This document is only useful if you are a current EnSight user and have upgraded to a new version of EnSight. New users need not view these notes.

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Release notes from EnSight 7.4 to EnSight 7.6

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Installation

EnSight 7.6 will install itself under INSTALL_DIRECTORY/CEI/ensight76 and will not modify any files previously installed with earlier versions.

The environment variable CEI_HOME must now be set to point to the INSTALL_DIRECTORY/CEI directory and the user's path must include $CEI_HOME/bin. For example:

```
setenv CEI_HOME /usr/local/CEI
set path = ($path $CEI_HOME/bin)
```

It is not necessary to set the CEI_ARCH environment variable unless you want to override the default (i.e., you're running on a 64 bit architecture and you want to run a 32 bit executable).

By design, the ensight7, ensight7.client, ensight7.server, and ensight7.sos scripts in the bin directory will run the version of EnSight installed last (7.6). You can also run version specific scripts if you want to run an older version (i.e., you can run 7.4 by executing "ensight74").

Licensing

If you are upgrading from EnSight 7.3 please see the EnSight 7.3 to EnSight 7.4 release notes.

If you are upgrading from EnSight 7.4 and you are using a floating license (i.e., the slim7.key file located in the license directory contains a "slimd" line) you will need to be sure to install the new version of the license manager which comes with 7.6 as you install EnSight. You then must restart the license manager.

Documentation

The User, How-To, Command Language, and Getting Started manuals have all been updated to reflect changes in 7.6.

GUI Changes

The z-clip button has been removed from the transformation icon list at the bottom of the interface. If you need to modify the z-clip parameters you will now need to access it via Transf.Edit...->EditorFunction->Z-Clip.

The "Last" button has been removed from the standard view icon list at the bottom of the interface. It has been replaced with "Store" and "Recall" buttons.

The Scale icon has been removed from the transformation icon list at the bottom of the interface. To scale bring up the Transformation Editor (Transf.Edit...).

The Transformation editor has been modified to decouple it from the transformation mode set in the main interface. The "About Axis" pulldown has been removed in favor of toggle buttons.

The Part Element Representation icon has been changed to Part Element Settings and is now a pop-up dialog which incorporates element representation and polygon reduction.

The mirror symmetry icon has been replaced by a Visual Symmetry icon which now pops up a dialog. The pop-up controls not only mirror symmetry but also rotational symmetry.

The slider bars for isosurfaces and clip parts are now active even when the part is not in interactive mode - the update to the part value occurs when the slider is released.

It is now possible to indicate surface restricted traces from the particle trace quick interaction dialog.

The keyframe animation dialog has been significantly modified to take into account new functionality as well as rearrange current functionality.

Part defaults attributes have, in the past, been editable when modified with no parts selected. Now they are editable only if the Preference (see Preferences->Parts) is set to allow this.

New and Modified Features

Besides the many bug fixes provided in 7.6, new/modified functionality includes:

Autorecover	Should EnSight terminate an auto-recover file (EnSight command file) is usually available at the next execution.
Animated Traces	A new head type of "arrow" is now available for animated particle traces.
Anti-aliasing	Can now start with a -multi_sampling option to produce anti-aliased images.
Axis	The coordinate axis is now on by default and sporting a new look. To set the default to not show the axis see Edit->Preferences->View, set the Axis display off and select the "Save to Preference File" button.
Batch Stereo	Stereo images can be generated in batch mode - even on non-stereo capable hardware.
Clips	R, Theta, Z clips are now possible.
	The box clip now uses a box tool which can be interactively transformed. The box clip now performs the same clip operations as the other tools, i.e., intersect, in, out, in/out, crinkly
Collaboration	Is now available to standard EnSight users. The collaboration hub will, however, check out an ensight token from the license manager (at most one token will be checked out) if a collaborator does not have a gold license token.
	Collaborators can join up at any time and can break off at any time.
	Is now available for Windows users.
	Multiple collaborators are supported.

Context	Context files can now be saved/restored for multiple cases.
Contours	Can now be generated either tied to the variable palette (default), or by specifying the min/max values.
	Labels now show value (previously showed level) for contour. Format can also be specified as either "floating" or "exponential".
Data	Material fractions are now supported.
	The SoS case file now supports multiple network interfaces.
	The SoS case file can now auto-distribute block structured datasets to multiple servers.
Data Reader	A HDF5 user defined reader is available.
	The STL user defined reader has been improved to support multiple parts.
Display Offset	Has been removed from the quick interaction dialogs. EnSight now uses hardware display offset (when turned on).
Emitters	Particle traces can now be generated using a file emitter.
Hidden Line	Is now active during transformations.
Keyframe Animation	Timelines have been added that give you the ability to easily control when and how transient data is used.
	Quick animation has been added which gives you the ability to create fly-around, rotate, and exploded view standard animations.
	If a detached display is used you can record images from these displays.
	Acceleration control has been added.
	Spline control has been added for translates and look-from modifications.
	Resets and/or view restores can now be used with the keyframer. The "shortest" path is used between current transform state and the new state.
Material Interface	Given material volume fractions you can create the interface or domain between multiple materials.
Mouse	Space mouse and ball are now supported.
New Variables	OffsetField to compute a scalar field which is the distance from the surface in the normal direction.
	Dist2Nodes to compute the distance between two nodes.
	Constant variables can now be used in place of numeric input for all of the Plot3D functions.
Periodicity	Rotational periodicity can now be about any axis.
Plane Tool	Can now be specified by an origin and a normal. The origin and normal can also be picked.

Polygon Reduction	The number of polygons used for the graphics display can be reduced in order to improve interactivity (at the cost of fidelity)
Textures	1D texture maps can be used for coloring by a variable. The default continues to be RGB mode. See Edit->Preferences->Color Palettes.
Plotting	A query can be independently scaled in the x and y directions for display purposes.
Preferences	To set RGB vs. 1D textures
	To set the default view orientation.
	To automatically reset the legends when a time step occurs.
	To use a click-slide-hold for zoom operations as opposed to the default click_drag.
Save Geometry	Brick of Bytes and Brick of Floats formats now supported for volume rendering.
	User defined writers are now supported. Implemented are a STL, HDF5, and comma delimited writers.
SoS	Incorporates full functionality except interactive operations.
Store/Recall	A Store/Recall (view) button has been added next to the standard view buttons.
Undo	Transformations including tool transforms can now be undone or redone.
User-defined Reader API	Material fractions are now supported.
	N-sided/N-faced elements are now supported.
	Structured block ranges are now supported
Visual Symmetry	Mirror or rotational visual symmetry can now be specified (but not at the same time).
VR	A time slider is now available through the HUM
	A variable list is now available through the HUM
	A command now exists to color a part selected in the HUM by a variable selected in the HUM.
	Can now display annotations and plots on VR walls
Zoom	A new preference exists (see above) to allow you to click and drag/hold to zoom the scene. The zoom continues as long as the mouse button is down.

Archives and Command Language

Archives are NOT compatible between earlier 7.x versions and 7.6

Command language is compatible between earlier 7.x version and 7.6

Release notes from EnSight 7.3 to EnSight 7.4

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Installation

EnSight 7.4 will install itself under INSTALL_DIRECTORY/CEI/ensight74 and will not modify any files previously installed with earlier versions.

The environment variable CEI_HOME must now be set to point to the INSTALL_DIRECTORY/CEI directory and the user's path must include $CEI_HOME/bin. For example:

    setenv CEI_HOME /usr/local/CEI
    set path = ($path $CEI_HOME/bin)

The scripts that start EnSight will figure out what architecture you are running, thus it is no longer necessary to set the CEI_ARCH environment variable unless you want to override the default (i.e., you're running on a 64 bit architecture and you want to run a 32 bit executable). In this case use the CEI_ARCH environment variable (EnSight 7.4 does not use the ENSIGHT7_ARCH environment variable).

By design, the ensight7, ensight7.client, ensight7.server, and ensight7.sos scripts in the bin directory will run the version of EnSight which was installed last. Starting with EnSight 7.4, EnSight versions will also get version specific scripts (i.e., you can run 7.4 by executing "ensight74").

Should you currently have EnSight 7.3 installed, be sure that the user's path includes $CEI_HOME/bin before $ENSIGHT7_HOME/bin so that ensight7 will run the latest version.

Licensing

The license key must now be installed in the INSTALL_DIRECTORY/CEI/license/ directory. If you are a current EnSight user (i.e., using EnSight 7.3 or earlier) you do not need to restart the current license manager (slimd) - simply place a copy of the slim7.key file from your old installation into the new license directory. However, future updates to the SLiM will apply only to the version found in INSTALL_DIRECTORY/CEI/license/. So you will wish to switch over to this version of SLiM in the near future.

Documentation

A new Command Language Manual is now available.

GUI Changes

Command files will now play when the mouse is in the graphics window.

Animations (animated iso/clips, flipbooks, animated traces, etc.) will play even when the mouse is not in the graphics window.

Access to the surface restricted particle options have been added to the particle trace quick interaction area.

New and Modified Features

Besides the many bug fixes provided in 7.4, new/modified functionality includes:

Animation	Holds have been added to the keyframe animator.
	An auto mode has been added to XYZ and IJK clips similar to the isosurface functionality.
Bounds	Bounding box with tick marks and coordinates can be displayed for both 2D and 3D viewports.
Case	When new cases are added it is now possible to automatically place the new case geometry into a new viewport, apply a mirror symmetry, and/or apply a context file from case 1.
Center of Transform	Previous versions of EnSight use the Look-At point as the center of transform. The transformation centroid has now been separated from the look-at point. In addition the centroid can be modified without having to reset previous transforms.
Clips	A "crinkly" surface can now be generated.
Collaboration	Collaboration between two EnSight Gold sessions are now possible.
Data	A general cell type is now supported.
	Per element variables can now be shown as continuously colored without having to generate a per-node variable. Further, the ability to contour a per-element variable has been added.
	Ghost cells are now supported.
Data Reader	A boundary file can now be read which defines the IJK bounds for surface extractions from structured data (Plot3D, EnSight6, and EnSight Gold). EnSight's boundary format, as well as Fieldview's .fvbnd format are supported. Parts described in the boundary file will be unstructured. Once in the part loader, look for them under the unstructured tab.
	Preferences now exist to limit the number of formats visible in the Format chooser.
	The Dytran reader has been extended to read Dytran .dat files. This eliminates the need for creating a casefile when multiple .ARC files are present in the model.
	Also Dytran .ths files can be imported directly into EnSight's query/plot section.
Interactive Query	The interactive query dialog has been modified so that multiple variables can be queried simultaneously.
Legends	The default size and location has been changed to the lower right corner of the graphics window. Also the preference for automatically turning on the legend when a part is colored by a variable is now by default on. To get the old behavior (namely, not automatically show the legend when a part is colored) go to Edit-Preferences->Color Palettes and turn off the preference for "Display Legend When Part is Colored", then click on "Save To Preference File".

Massed Particles	Particles can now be traced with drag, gravity, and pressure force terms.
Math Functions	Less Than (LT), Greater Than (GT) and Round (RND) have been added as math functions in the calculator.
New Variables	1D Force has been added to the calculator.
	It is now possible to set preferences to minimize the list of predefined functions.
	It is now possible to provide your own predefined functions for the calculator through the use of User Defined Math Functions (UDMF).
Part Loading	Plot3D now uses the standard EnSight part loader.
	It is now possible to specify a delta offset for structured parts in order to extract multiple surfaces (or thick slices).
	It is now possible to specify a negative number for the maximum I/J/K value indicating maximum value minus specified value.
	Transformations are no longer reset when loading additional parts.
Plotting	A preference can now be set to automatically plot any new query.
Preferences	A preference can be set to automatically average per element variables to the nodes for fringe and contour display on the client.
Query	Queries of two variables (i.e., "scatter plots) generated over time or distance have been added.
	It is now possible to scale and/or add queries together.
	The marker size now automatically sizes itself according to the current view.
Rubber Band Zoom	Rubber Band Zoom operations now maintain perspective if in use. The center of transform is also modified during this operation to lie at the center of the selected geometry.
Save Geometry	STL files can now be saved from EnSight.
User-Defined Input API	The user-defined input device API has been updated to version 2.0. Libraries using the version 1.0 API are no longer supported. See `$CEI_HOME/ensight74/src/input/README.v2` for more information on updating to the latest interface.
Vector Arrow	The surface normal can now be shown as vector arrows.
Viewports	The main viewport can now be 2D. It will automatically change to 3D if out-of-plane geometry is received and made visible in this viewport.
VR	It is now possible to display to non-planar displays such as CAVE and RAVE configurations.
	A part list and part attribute slider are now available for display together with the HUM.

Performance

EnSight Gold now uses a new multi-pipe configuration file.

The SoS functionality has been expanded to include all functions except particle traces and some new value computations/queries.

The EnSight Gold client can now build the geometry display lists in parallel (must use the ENSIGHT7_MAX_CTHREADS environment variable). Improvements have also eliminated the need to build both solid and wireframe displays when in shaded mode.

Archives and Command Language

Archives are NOT compatible between earlier 7.x versions and 7.4

Command language is compatible between earlier 7.x version and 7.4