

# 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.

## Index:

[Release notes from EnSight 7.3 to EnSight 7.4](#)

[Release notes from EnSight 7.1 to EnSight 7.3](#)

## Release notes from EnSight 7.3 to EnSight 7.4

### Index

[Installation](#)

[Licensing](#)

[Documentation](#)

[GUI Changes](#)

[New and Modified Features](#)

[Performance](#)

[Archives and Command Language](#)

### 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	Hold keys 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 <code>\$CEI_HOME/ensight74/user_defined_src/input/README.v2</code> 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

# **Release notes from EnSight 7.1 to EnSight 7.3**

## **Index**

- [Installation](#)
- [Licensing](#)
- [Setup Files](#)
- [GUI Changes](#)
- [New and Modified Features](#)
- [Performance](#)
- [Archives and Command Language](#)
- [Structured Part Part Building Improvements](#)

## **Installation**

EnSight 7.3 will install itself under `INSTALL_DIRECTORY/ensight73` and will not modify any files previously installed with EnSight 7.0.x, 7.1.x or 7.2.

## **Licensing**

If you have a floating EnSight license (i.e., you run the SLiM license manager), you will need to stop the current SLiM daemon (use `slimd_stop`) and restart (use `slimd_start`) using the license manager contained in this release. You do NOT need a new license key - a stop of the old daemon and a restart with the new daemon using your current license key is all that is necessary.

With a floating license, EnSight now checks the expiration date from the license key used by SLiM and ignores the expiration date found locally.

The SLiM administration tools now check for redundant servers and report information from all license servers (all options to `slimd_status`).

For redundant license servers, EnSight now checks out license tokens from the first available `slimd` host according to the specified order in the key file (previous versions used alphabetical order).

EnSight no longer gives up its license token when idle.

EnSight prints the name of the `slimd` host from which it checked out a token.

## **Setup Files**

Since EnSight 7.0.x, 7.1, 7.2 and 7.3 use the `ensight.connect.default` file located in your `home_directory/.ensight7`, you should make sure that the “executable” line simply refers to “`ensight7.server`” and does not include a path. If a path is included, the auto-connect will start up the wrong executable which will result in an error message indicating a client/server version mismatch.

To allow different window position files depending on the resolution of the system, EnSight 7.3 now looks for a `ensight7.winpos.default_XRES*YRES` file, where XRES and YRES is the resolution of the current windowing system. If this file can not be found it will look for `ensight7.winpos.default`.

## **GUI Changes**

In order to make command files more portable and to clarify the intended operation, the “Binary Files are Native” toggle in the Data Reader Dialog has been changed to set the binary file as little or big endian. The default remains “native” which has the same meaning as before (i.e., when native is set the byte order of the binary file is assumed to be the same as the server machine).

The Prefs pulldown from the main dialog found in 7.0 and 7.1 has been removed and replaced with a Preferences... section under the Edit pulldown.

## **New and Modified Features**

Besides the many bug fixes provided in 7.3, new/modified functionality includes:

Animation	Transparency modifications can now be animated in the keyframe animator.
Annotation	A symbol font, as well as subscript and superscript capability, is now included for annotation purposes.
Boundary Variables	EnSight Gold can now compute the following boundary layer parameters: boundary layer thickness, displacement thickness, momentum thickness, H shape parameter, and skin friction coefficient.
Data Reader	The “Binary Files are Native” switch in the data reader dialog has been changed to directly specify big or little endian binary order. This allows greater flexibility when moving command files between systems of different byte order.
Feature Extraction	EnSight can now compute vortex cores, separation/attachment lines, and shock surfaces/regions.
Environment Variables	<p>The following optional environment variables have been added:</p> <pre>ENSIGHT7_MAX_CTHREADS ENSIGHT7_MAX_SOSTHREADS</pre> <p>These variables specify the maximum number of threads to be used for accelerating computation in the client and server-of-servers, respectively. <code>ENSIGHT7_MAX_THREADS</code> controls the number of threads for the server.</p> <p><i>Note that the number of threads is limited to 2 (for each client or server) for a standard license.</i></p>
Palette Editor	Ability to save and restore predefined palettes (colors only) by name.
Partial Display	For EnSight Gold, customers can now set the percent of geometry that is displayed during interactive use.
Plots	Log scales are now possible for the x and/or y axis.
Preferences	Nearly every EnSight attribute can now be a preference read at start time. For example, you can set which data format is the default and which timestep to initially load, start-up annotation, etc.
Query	<p>The “Distance” option now includes the ability to query according to the arc length or according to the global coordinate system. The start point for the query can also be modified. In the case of the query of multiple line segments, the line segments can be treated as a single query with continuous incrementing distance, or as a series of independent queries as has been the case in previous versions.</p> <p>When saving a distance query to a disk file, the X/Y/Z coordinates along the query are also saved.</p> <p>The line tool has been modified to show direction to aid in the query operation.</p>
Scenario Files	Either a scenario project or a scenario file can be saved.
Tensors	Tensors can now be fully asymmetric.
User Defined Readers	Version 2 of the user defined reader API has been implemented. This new API allows for EnSight Gold type functionality and is significantly faster than the old API. The old API remains supported. Users may mix readers from the 1.0 and 2.0 API's.

## **Performance**

EnSight Gold now allows multiple graphics pipes (IR pipes in a SGI Onyx) to be used to render to a single window or to a powerwall type display.

The ability to handle decomposed datasets has been added for EnSight Gold through the server of servers (ensight7.sos). This new server appears to the client as a regular server. The server of servers (SOS) reads a modified case file in order to start a number of standard servers. The SOS communicates with all of the standard servers and concatenates the results before sending them on to the client. At the present time the SOS performs a subset of the full EnSight functionality.

Further SMP parallel enhancements have been added.

## **Archives and Command Language**

Archives are compatible between 7.1.x, 7.2 and 7.3

Command language is compatible between 7.1.x, 7.2 and 7.3

## **Structured Part Part Building Improvements**

Starting at EnSight 7.3.1(a), structured part building has been extended for the various structured data formats that EnSight supports. The user can now enter values in the From and To fields that are positive (advancing from the min toward the max), zero (represents the max surface for the specified  $i$ ,  $j$ , or  $k$  - which can vary per zone), or negative (decreasing from the max towards the min). Additionally, you can now specify ranges for multiple zones. It is also possible to create multiple surfaces at a constant delta within a given zone (such as blade rows in a jet engine). Note that the “delta” option produces an unstructured part instead of a structured one.