Introduction

From it's inception, EnSight has been used extensively to postprocess time-varying or transient data. In many cases, dynamic phenomena can only be understood through interactive exploration as a transient case is animated. EnSight handles all types of transient data. All variables as well as mesh coordinates and connectivity can vary over time. The rate at which variables (or the mesh) change can differ (supported through the EnSight 6 data format only).

EnSight can postprocess transient data in many ways. The **Solution Time** Quick Interaction area lets you easily set the current time step, step through time, or restrict the range of time to a region of interest. You can perform **query operations** to extract information over time. You can use the **flipbook** capability to create an on-screen animation of your data changing over time and continue to interact with it during animation playback. EnSight's **keyframe animation** capability can be used to create high-quality video animations of transient data.

This article covers reading transient data into EnSight.

Basic Operation

Reading transient data into EnSight is essentially the same as reading static data (see **How To Read Data** for more information). By default, the *last* time step will become the current time step. This behavior is based on the assumption that the last step will contain the largest dynamic range of the variable data so that variable palettes will be initialized properly. However, you can override this by clicking the Specify Starting Time Step toggle and entering the desired time step in the data reader File Selection dialog (File > Data (Reader)...).

For most data formats, the "results" file supplies the necessary time information, including number of steps, actual solution time at each step, and how to access the dynamic variable and geometry files. However, some formats supported by EnSight include this information in the same file that contains other geometry or variable data. The following table lists how transient data is specified for each format type.

Format Type	What File Contains Time Info?	Notes
Case	file.case	Standard EnSight case file
EnSight 5	file.res	Standard EnSight results file
EnSight 6	file.case	Standard EnSight case file
ABAQUS	file.fil	
ANSYS	file.rst, file.rth, etc.	
ESTET	Does not handle transient data	
FAST	file.res. Can handle transient geometry as well as solution and function files.	Special FAST format results file. See **FAST UNSTRUCTURED Result file format**.
PLOT3D	file.res. Can handle transient geometry as well as solution and function files.	Special PLOT3D format results file. See **PLOT3D Result file format**.
FIDAP NEUTRAL	file.fdneut	All time steps must be contained in the same neutral file (*i.e.* there is only one file, not one for every time step).
Fluent Universal	file.res	Special Fluent format results file. See **FLUENT Result file format**. Must have one Universal file for *each* time step.
MOVIE.BYU	file.res	Standard EnSight results file
MPGS	file.res	Standard EnSight results file
N3S	file.res	N3S results file
STAR-CD	file29	
User Defined	as required	

See Also

How To Change Time Steps, **How To Animate Transient Data**, **How To Query Over Time**

User Manual: **Solution Time**, **Flipbook Animation**, **Query/Plot**