



Editor

Advanced Nastran Control

3. General Capabilities
Optimization
File Display / Editing

4. Job Control
Model Graphical Display

5. Results Graphical
Display

6. Results X-Y Plotting



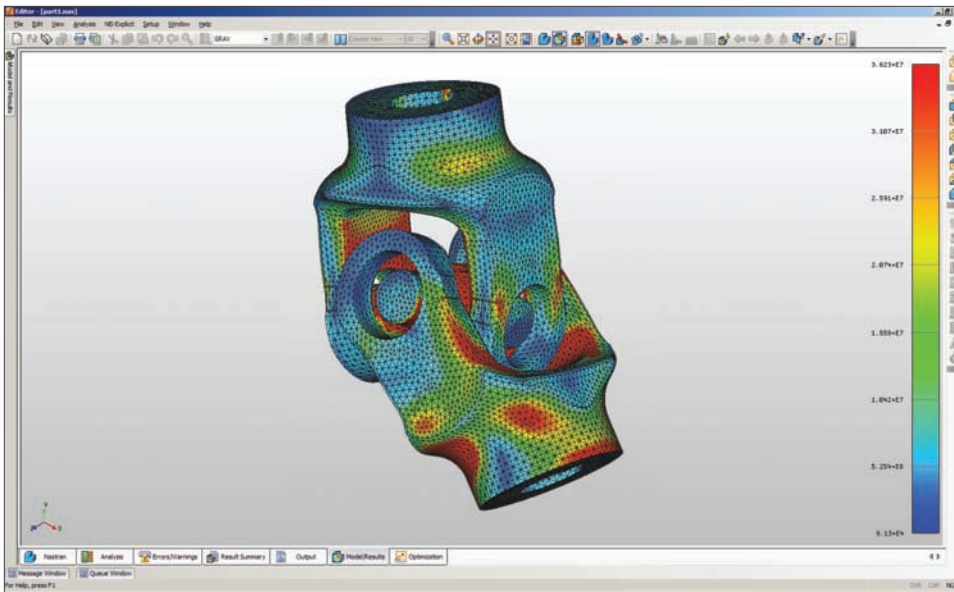
Advanced Nastran Control

Overview

The NEi Nastran Editor is an industry unique tool that gives engineers greater control over their Nastran FEA models and results. Features such as advanced editing, context-sensitive input, and dynamic help greatly increase productivity and the reliability of results. Built-in tools such as the trade study generator and built-in optimization utility give users quick insight into the effects of design changes. Real-time results are displayed through an integrated post-processor allowing users to visualize results as they are generated during the solution sequence. These features combined make the NEi Nastran Editor an indispensable tool for designers and analysts alike.

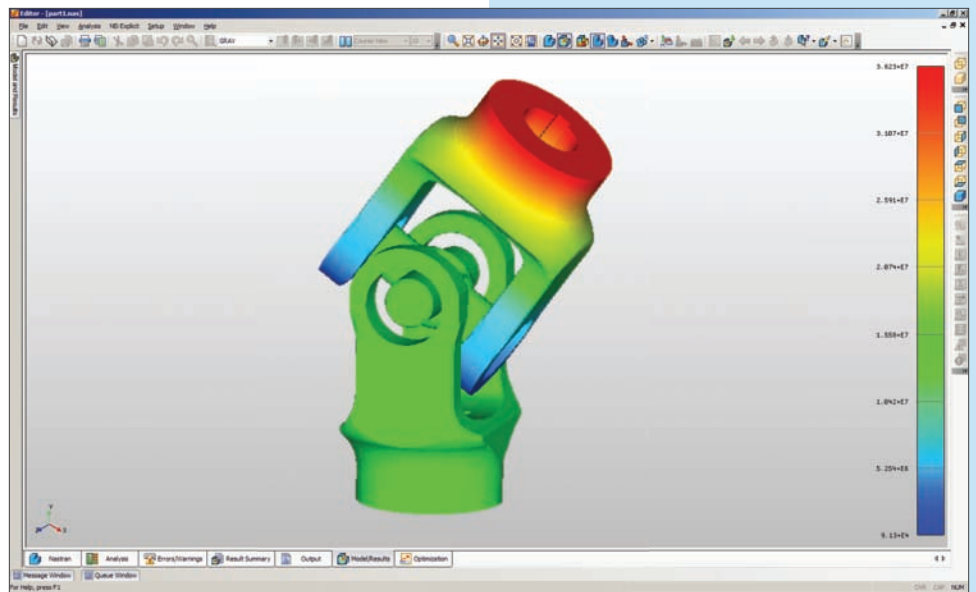
Solution Types

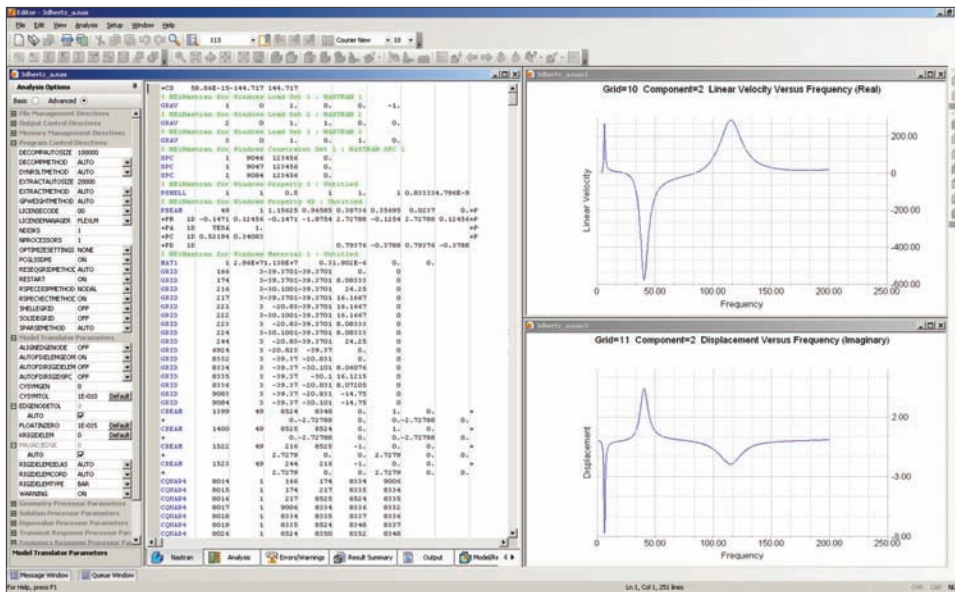
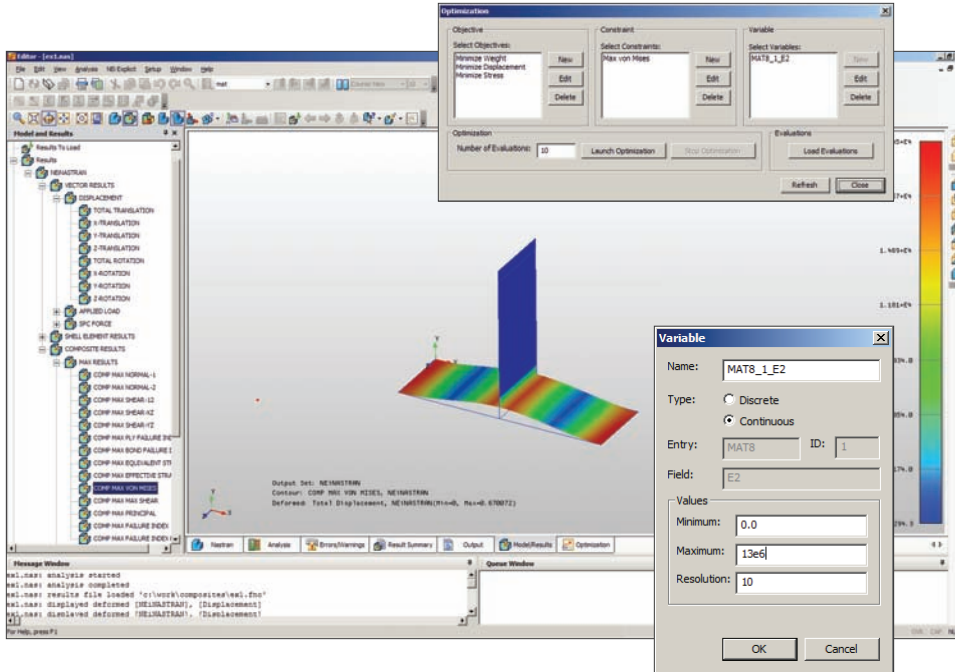
The NEi Nastran Editor is supported in all NEi Nastran solution sequences.



Benefits Highlights

- Real time results are displayed through an integrated post-processor allowing users to see results as they are generated during the solution sequence. This feature provides a major benefit over other FEA software because the analyst gets immediate feedback that the solver is proceeding rather than finding out, maybe hours later through an error message that there was a problem in the pre-processing step.
- The analyst can interact and make changes to the solving parameters as the job runs and he sees things that will improve the solution. Which means that the analyst saves a lot of time because he can arrive at a desired solution “on-the-fly” much faster than running the job over multiple times.
- The Editor allows jobs to be set up in a queue and run overnight. This allows the analyst to spend time on pre- and post-processing work during the day.





General

- Fully integrated and customizable NEI Nastran Editor controls program operation and provides results summary data through an easy-to-use GUI
- Complete online documentation and context sensitive help with hypertext links
- COM (Component Object Model) interface provides interactive communication to Nastran solver during analysis for real-time job control and status
- Automatic update notification
- Integrated NEI Explicit job execution and context-sensitive help

Optimization

- Mapped input file for easy right-click definition of optimization variables
- Optimization control dialog for editing, defining, and deleting objectives, constraints and variables
- Integrated optimization result launcher for access to optimization evaluations

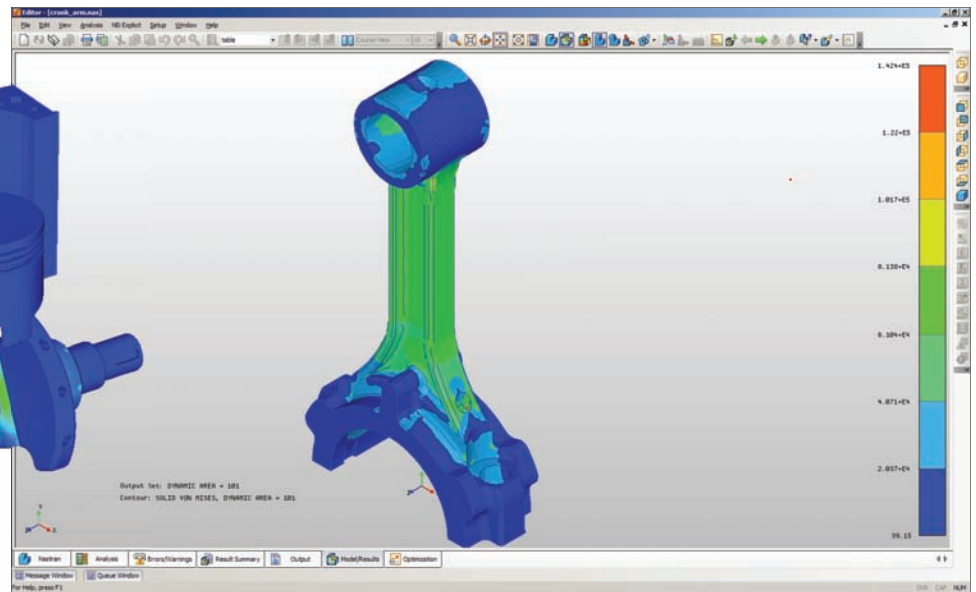
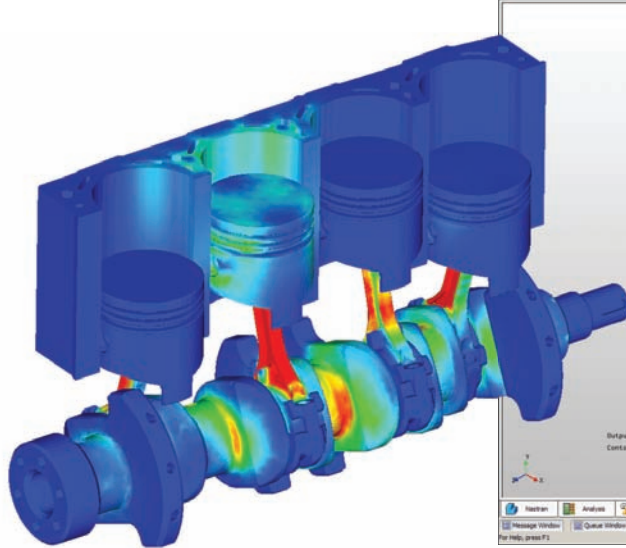
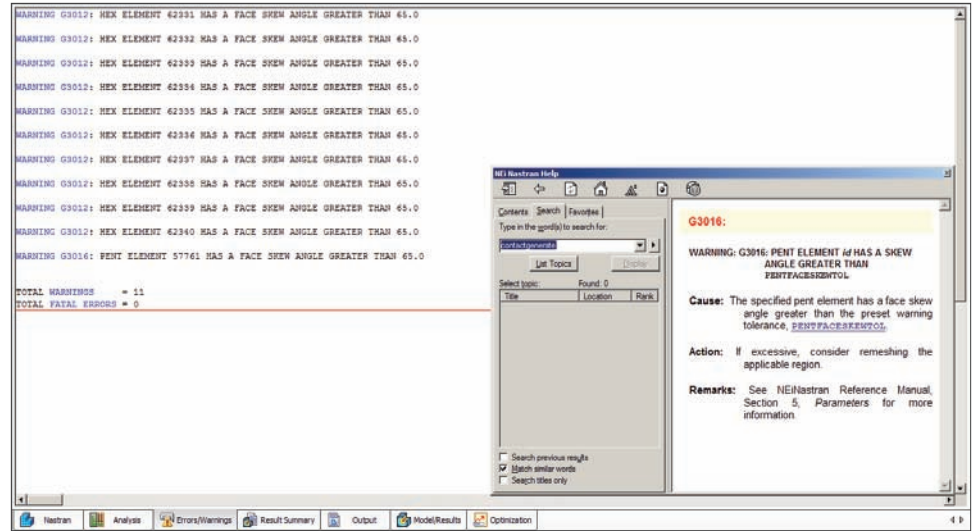
File Display and Editing

- Full-featured Windows text editor with user configurable toolbars, drag-and-drop editing, search and replace, multi-level undo and redo, book marking, clipboard access, and Multiple Document Interface (MDI) support
- Tabbed windows to give immediate access to all input and output files
- Column selection and column cut and paste operations
- Large file support
- Syntax coloring feature highlights comments and recognized Nastran commands and entries
- Free field to fixed field converter utility
- Vertical field markers to simplify manual editing
- User positionable field labels

Capabilities (cont.)

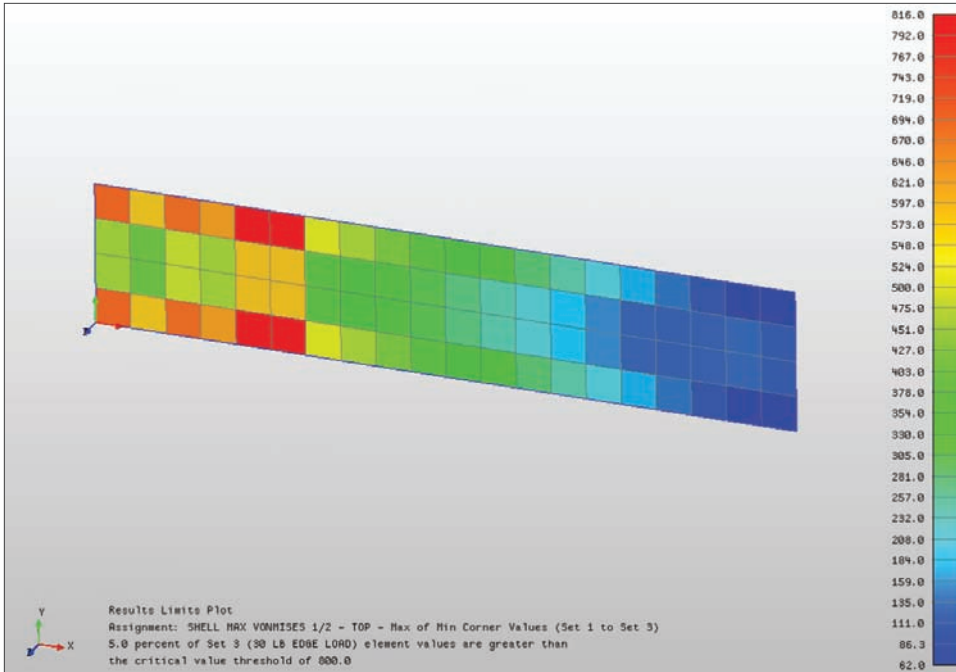
Job Control

- Job queuing for setting up and running consecutive analyses
- Real time job status information with stop/start controls
- Graphical nonlinear convergence form displays nonlinear work, load, and displacement convergence in percent complete bar format
- Expandable tree access to all model parameters and initialization directives
- Direct error message linking to Nastran input file helps locate errors quickly
- Configuration trade study generator automatically generates and queues models with user specified design variable changes such as thickness or dimension for design sensitivity analysis



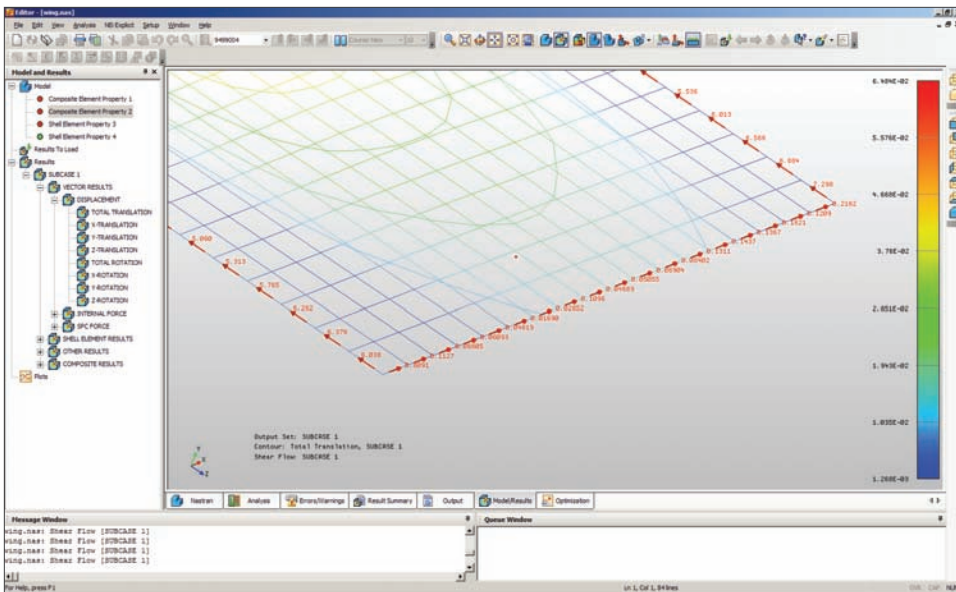
Model Graphical Display

- Hidden line and wireframe displays
- 3D dynamic pan, zoom, and rotation
- Light source shading and transparency
- Toolbars access for frequently used commands
- Dynamic highlight during selection operations
- Load and boundary condition display including: constraints, forces, moments, pressures, temperatures, gravity and enforced displacements
- 2D and 3D element mid-side nodes display
- Model data query for nodes, elements, properties, and materials
- The default analysis options include user-definable default settings for display options and post-processing
- Interactive 'drilldown' querying allows users to look at internal nodes, element, properties, and materials as they change in depth



Results Graphical Display

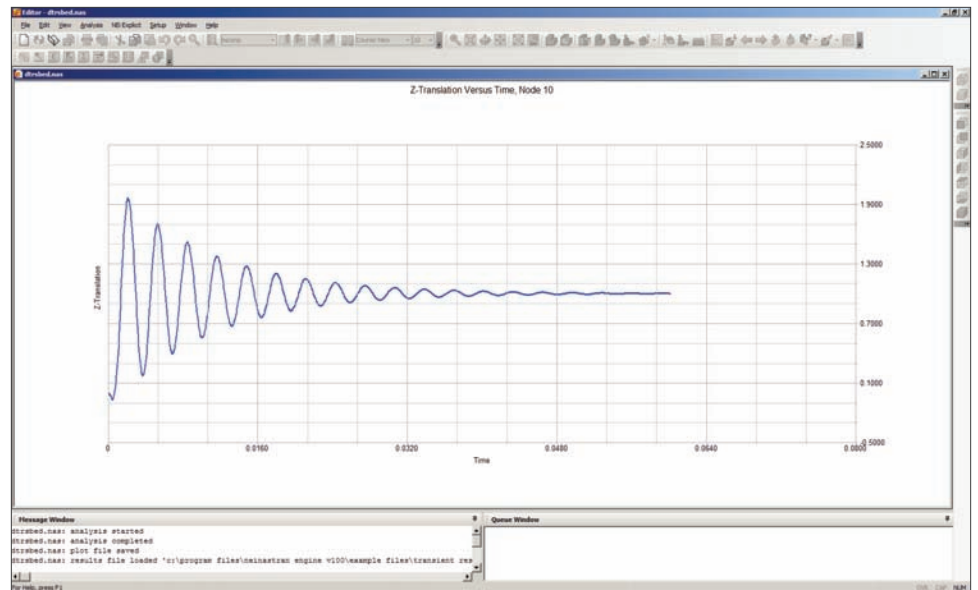
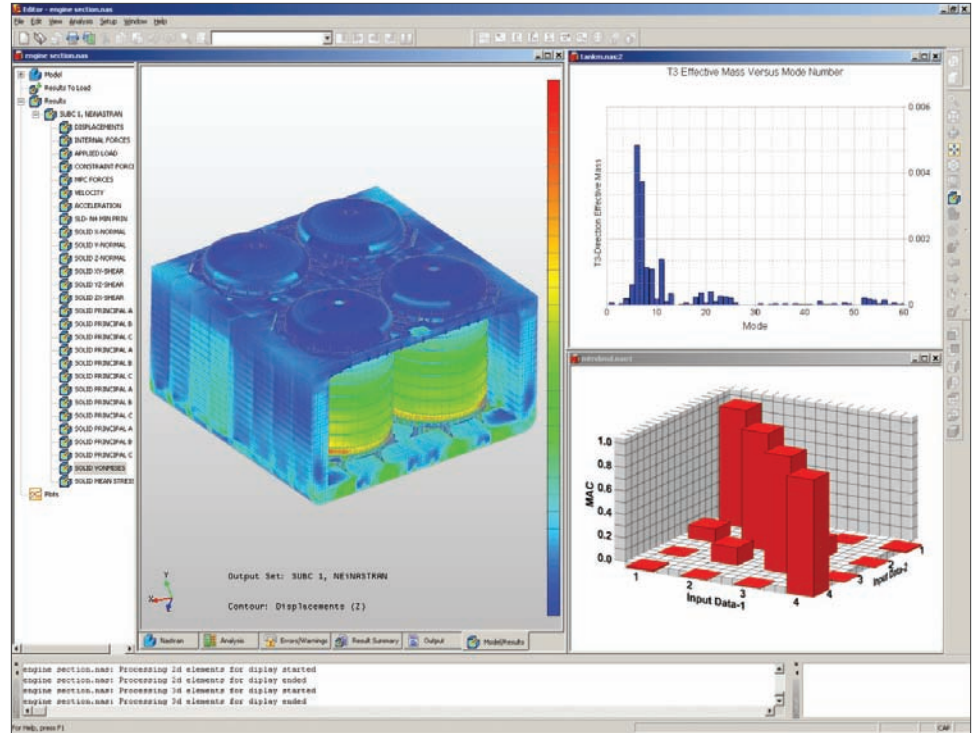
- Deformation, animation, and vector displays
- Filled color contours and criteria displays
- x-y plots
- Transparent max/min labels
- Single and multi-set set animations
- Tabular results output with quick find search buttons
- Print graphics and tubular results windows
- Export graphics to JPEG, BMP, TIFF, and GIF formats
- Save animations with animated GIF support
- Real time deformed shape and results contour displays with automatic updating for nonlinear static and transient solutions
- Interactive 'drilldown' querying allows users to look at internal element results as they change in depth
 - Surface contact results
 - Rod, bar, beam, shell, spring, and solid element results
 - Grid point stress and strain
 - Polar and rectangular complex data results
 - Shear flow and nodal force balance
 - Rigid body elements results
 - TOTAL calculated results, for all Tensor6 x, y and z components in Model tree

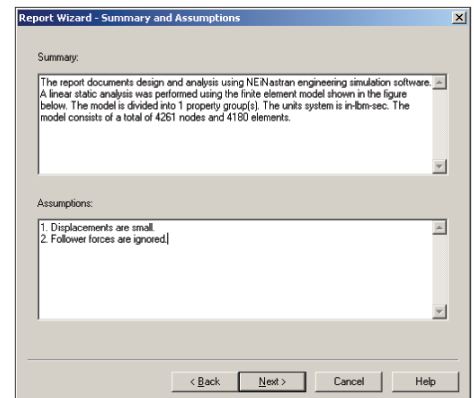
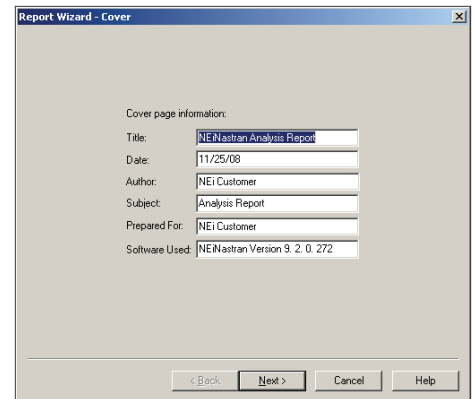
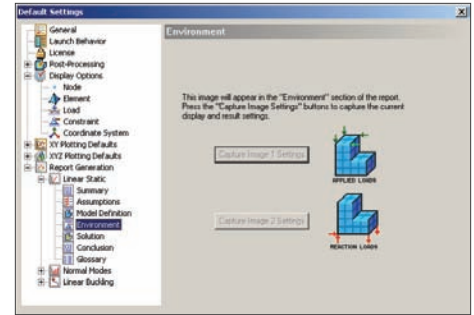
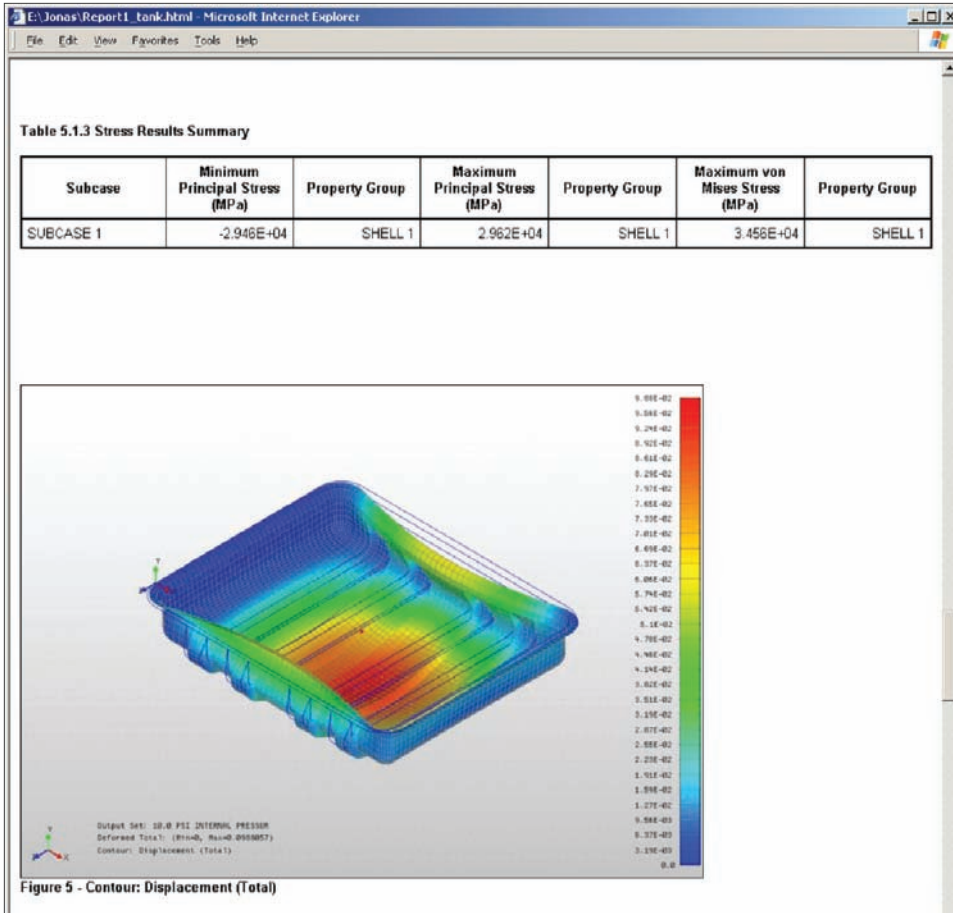


Capabilities (cont.)

Results X-Y Plotting

- Data generated at grid points with a Case Control command (XYDATAGENERATE)
- Real-time results x-y plot support at max/min and user specified model locations with automatic updating at each nonlinear or dynamic solution step
- Export x-y plots to MS Excel Comma Separated Variable (.CSV) file format
- 3D vertical bar plot support for Modal Assurance Criterion (MAC) and Modal Cross Orthogonality (MXO) analysis as well as Damage and Rainflow counting matrices from fatigue analyses
- Automatic modal effective mass and frequency versus mode number x-y plot generation for modal response solutions
- Real/imaginary and magnitude/phase plots in frequency response and random vibration solutions
- User definable settings can be customized and saved for different solution types





Advanced Tools

- Special input forms for classified DDAM data allows models to run in an unclassified environment
- Parabolic shell to linear shell element converter
 - CQUAD8 to CQUAD4 and CTRIA6 to CTRIA3
- Parabolic shell to element with vertex rotation converter
 - CQUAD8 to CQUADR and CTRIA6 to CTRIAR

Automatic HTML Report Generator

- Report contains:
 - Analysis summary
 - Group definitions
 - Contact definitions
 - Element initial distortion
 - Load vector resultant
 - Reaction vector resultant
 - Displacement data
 - Peak displacement
 - Stress result summary
- Report wizard for easy generation

About NEi Software

NEi Software is a world leader in Finite Element Analysis (FEA), engineering simulation, and virtual test software. The core product NEi Nastran is a powerful, industry-proven FEA solver that thousands of companies routinely use to perform linear and nonlinear structural stress, dynamics, and heat transfer analysis. In addition, NEi Software's portfolio includes products for impact, kinematics, fatigue, acoustics, optimization, aeroelasticity, and Computational Fluid Dynamics (CFD) with support for a full range of materials from composites to hyperelastic rubber. NEi Software covers the different needs of each stage of the product development process, from designers looking for affordable, easy-to-use, CAD-based simulation for validation and trade-off studies to dedicated FE analysts looking for high accuracy, productivity, and real world fidelity. The website features case studies in aerospace, automotive, maritime, military, civil, petroleum, medical, and consumer products with videos, webinars, tutorials, and options for evaluation.

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