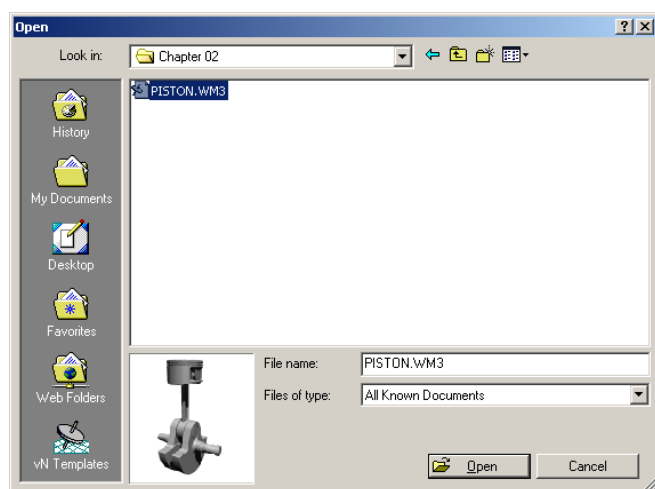


## What's New in MSC.visualNastran Desktop 2002?

MSC.visualNastran Desktop 2002 includes several new features that enhance our motion capabilities and ease-of-use. With new functionality in the motion core and the addition of an interactive multimedia tour that presents the fundamentals of the application, we allow our users to simulate a range of problems and be more productive sooner.

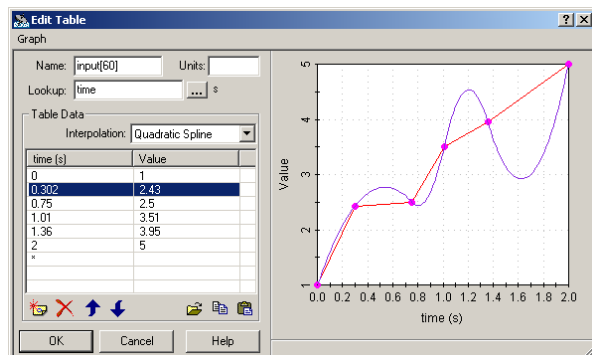
**New File Open Dialog** is modeled after the Microsoft "Open" dialog box and includes **File Preview**, a thumbnail image of the model. **File> Open**.




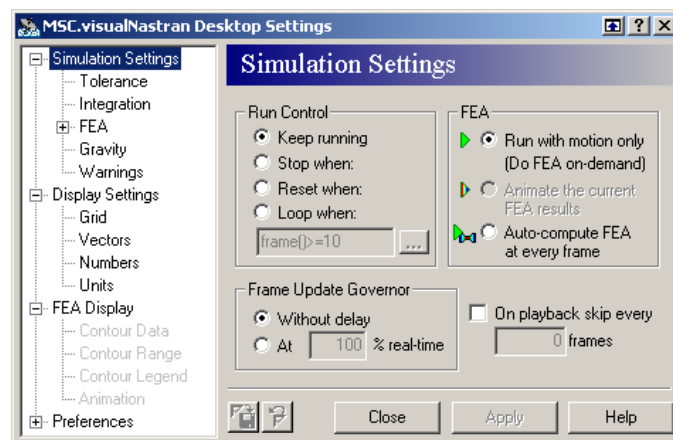
Our **Getting Started** is an interactive multimedia tour that guides our new users through basic concepts of how to use MSC.visualNastran Desktop and enables them to start their own projects. **Help>Welcome**.

**Document Templates** allow users to create custom templates for their \*.wm3 files. Templates for English and metric units are provided. **File> Open**.

With the **Improved Formula and Table Interfaces**, graphs give the user visual feedback of the current formula or table data. Users can create tables from their formulas (ramp, step, harmonic, or user-defined functions) or input table data manually or from a file. For both dialogs, users can manipulate graph data by dragging data points or double-clicking to add data points.



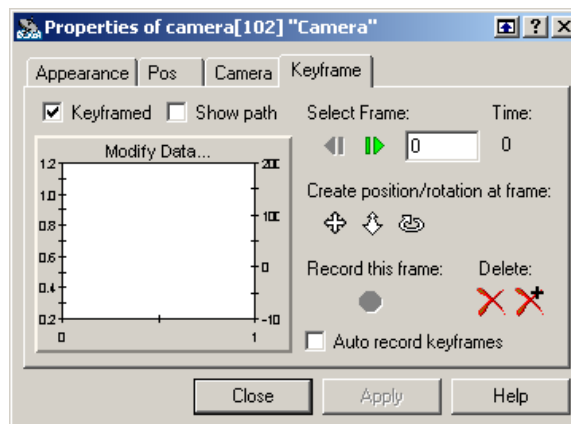
**Improved Settings Dialog** has a "tree" hierarchy that allows Display Settings and Simulation Settings to be combined into one useful dialog. Desktop Settings and Properties dialogs also include a convenient **Window Shade** button  to minimize these windows. **World>Simulation Settings/Display Settings**.



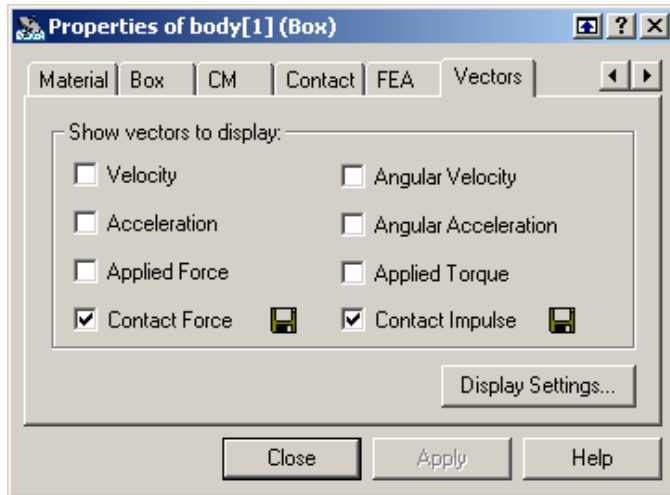
**"Paint the Constraint"** allows you to quickly create assemblies by "painting" constraints directly onto objects without first placing coords. **Help keyword: constraint**.

**Enhanced View Manipulations** - Transient Zoom provides animated transitions from one viewpoint to another as the user changes views. Mouse View Control allows pan, zoom, and rotate control of the view using the mouse. **Help keywords: shortcuts, transient zoom**.

**Improved Key Frame Interface** simplifies the creation and control of animated sequences using key framing.



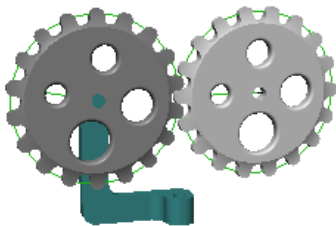
**Collision Response Vectors** allow you to view contact force and contact impulse vectors during a simulation. The output may be saved to a file.



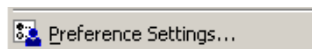
With the **Redundant Constraints Solution**, the analysis of models containing redundant constraints has been improved through the use of MSC.visualNastran Desktop's motion-integrated FEA capabilities. FEA is utilized to determine the actual load path through components that are connected by redundant constraints, providing a more accurate analysis of your moving CAD assemblies. Stresses are properly distributed among these redundant constraints and the displacements of connected components are displayed in a common reference frame.

**Joint Friction** simulates friction of pin/slot joints. **Help keyword: joint friction.**

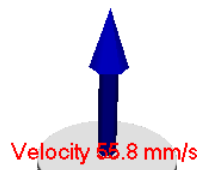
**Belts and Gears** are two new constraint types included in this release. The gear/coupler constraint models general idealized gears. Spur and bevel gear types can be modeled, coordinating the relative orientation and motion. Belt constraints are idealized and implemented in a planar fashion. Multiple belt systems can be coupled for more complex motion. **Help keywords: belts, gears.**



**User Preferences** allow users to set and save default background color, units, meter appearance, materials, messages, and toolbars. With the **CAD Environment Emulation** feature, users can configure their background color(s) and view manipulation tools to mimic those of their favorite CAD software. **Tools>Preference Settings.**



**Vectors with Annotations** augments the vectors tool with text and formulas. To access the vectors toolbar go to the **Display Settings** menu and select the **Preferences** display. Click the **Toolbar** tab and select the vectors checkbox. The vectors toolbar button appears. After clicking this button you

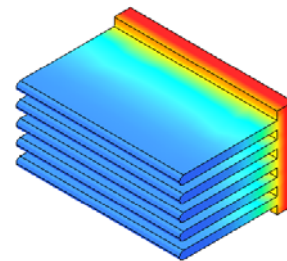


can enter text and formula language to annotate the vector. **Help keyword: vector with annotation.**

**What's This? Help** provides pop-up, instant help for any tool, command, or button.

After selecting either a Body or Coord, the user can add an **FEA Results Meter** by selecting **Insert>Meter>FEA Result**; a meter will be created based on the current FEA Display Settings. This meter measures the maximum stress or strain on the face of a body or at a coord placed on a body over time and displays up to four groups of data from all of the available datasets and components for the FEA results. Results can be viewed as a bar graph. **Help keyword: FEA meter.**

**Heat Transfer** analysis in MSC.visualNastran Desktop offers the fundamental FEA capability for steady state thermal analysis. With this feature, users can include thermal load and boundary conditions such as volumetric heat generation, surface convection, surface radiation, surface heat flux, and prescribed temperature. Users can also provide temperature-dependent film coefficients for convection boundary conditions. Heat transfer boundary conditions can also be controlled by formulas and tables. **Help Keyword: heat**



**Animated Progress Dialog Box** gives a continuously animated stream of status information indicating that vN4D is still calculating simulation data.

The **View Orientation Indicator** in the bottom right corner of the modeling window allows users to keep track of the global orientation at all times.



MSC.visualNastran Desktop 2002 employs **FLEXIm**, a versatile, electronic licensing system developed by GLOBETrotter Software. Concurrent network and campus licenses allow each copy of MSC.visualNastran Desktop to poll your local area network to look for authorization to run. FLEXIm supports most of the many network platforms and protocols available today, including IPX/SPX and TCP/IP.

#### System Requirements

Windows® 98	Pentium™ II (or equivalent) or better
Windows Me	64 MB RAM minimum
Windows 2000	16-bit color video card
Windows NT 4.0 (SP 3) or later	
Windows XP	

#### Software Support

Autodesk® Inventor R4, R5, R5.3  
 CATIA V4 (File open/File import only)  
 MATLAB® 11, 12, 12.1; Simulink® 3, 4, 4.1  
 Mechanical Desktop® R5.0, R6.0  
 Pro/ENGINEER® 20, 2000i, 2000i2, 2001  
 Solid Edge™ V9.0, V10.0, V11.0  
 SolidWorks® 2000, 2001, 2001 Plus

Autodesk Inventor R4 SP1 or higher is required for Automatic Constraint Mapping™. Pro/ENGINEER 2001 datecodes 2001150 and 2001200 are supported.