



Technical Seminar: Model Organization

Topics:

- Groups: Generate, Evaluate, Automatic Add, etc.
- Blanking: Using the Model Tree for showing/hiding entities
- Visibility: A centralized location for all of the blanking capabilities
- View Options: The original and most comprehensive control for all view and display options.

A Brief Q&A Period

August 2011



Little Useful Things with Femap and NX Nastran

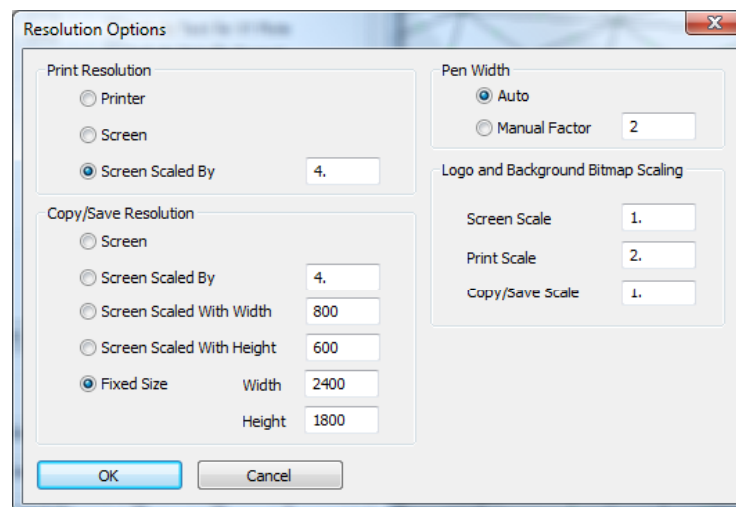
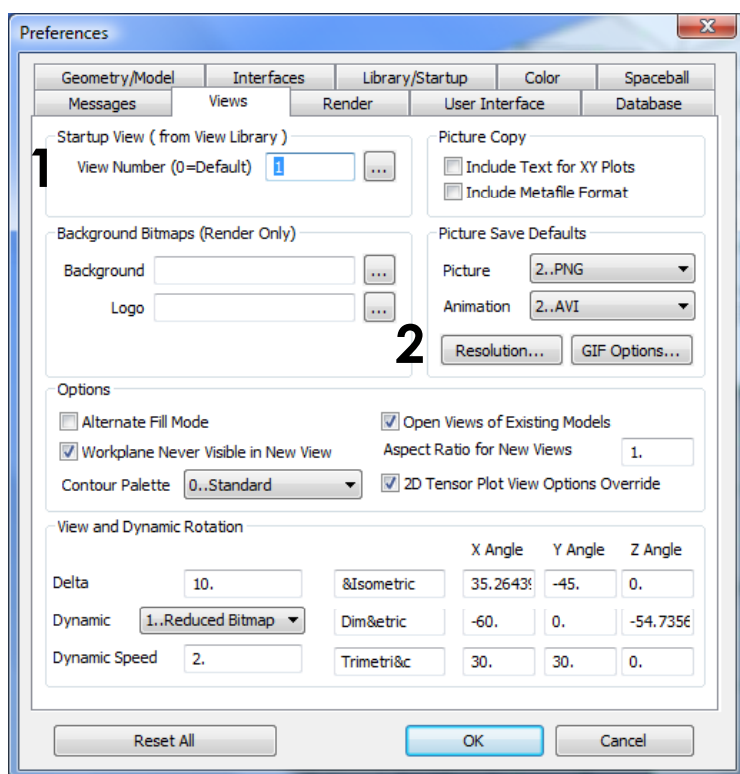
These are my pick of the pack:

- Setting Preferences: Graphics and NX Nastran's 64-bit Solver
- Meshing Toolbox, Blanking and Hidden Cutting Plane Tool
- Ctrl-Z to bring up the Locate Dialog Box while you are in another Dialog Box
- The PCGLSS Iterative Solver
- Using the Save and Load View Option to customize your View Window
- Femap's API Language
- NX Nastran param,bailout,-1
- Femap's and NX Nastran Help Documentation

June 2011



Femap's Preference Settings: Startup and Paste/Print Graphics

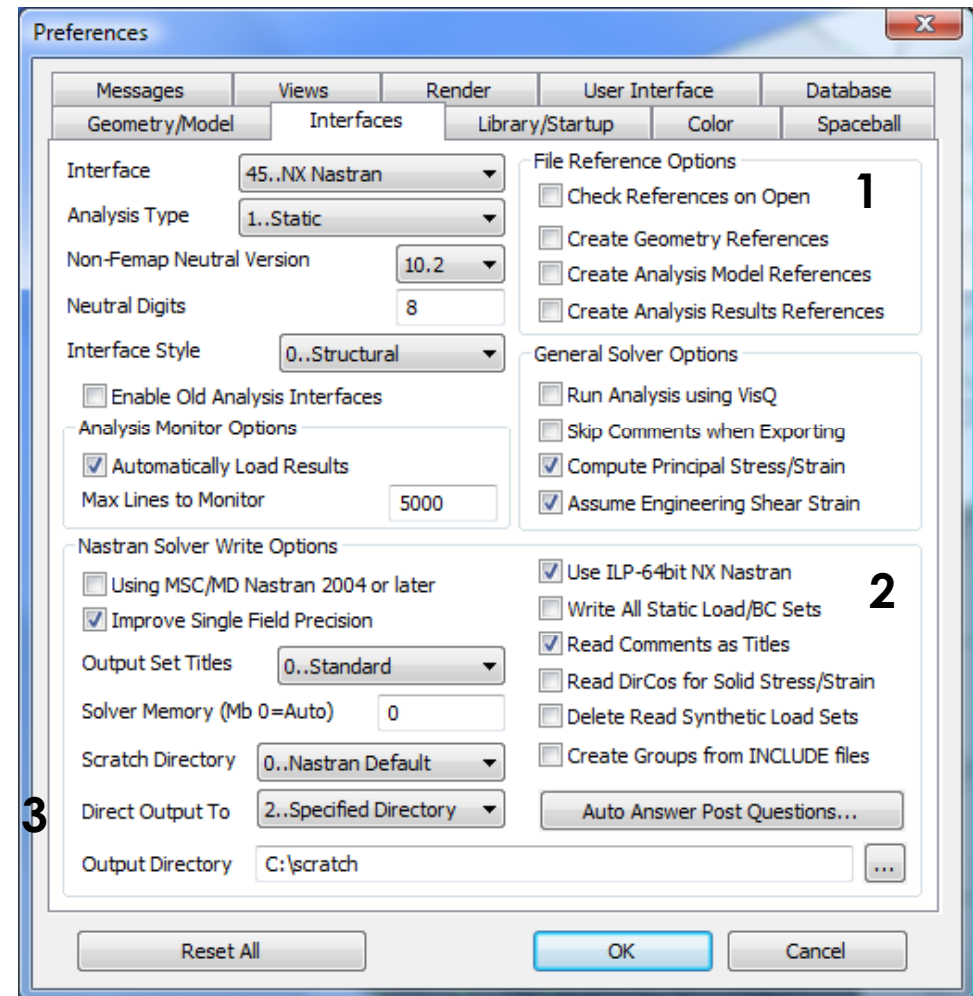


1. Save your view settings (see later slide) and then have Femap use these settings upon startup
2. Fix the resolution of screen captures for MS Word or Powerpoint or whatever.



Femap's Preference Settings: Pesky Geometry References, NX Nastran 64 bit Solver and Housekeeping

1. When you import geometry, Femap can tag a reference to this file. This can be annoying since every time you use this model file, Femap will prompt you to check for a change.
2. Setting to turn on NX Nastran's 64 bit solver. If you have more than 8 Gbytes of RAM and are running large models (>500,000 nodes) this option can significantly increase the solve speed of the model.
3. Let's you pick where you want to put all the solver files (F06, log, F04, etc.) I like having everything in the Scratch directory. Femap's model file saves the important stuff.



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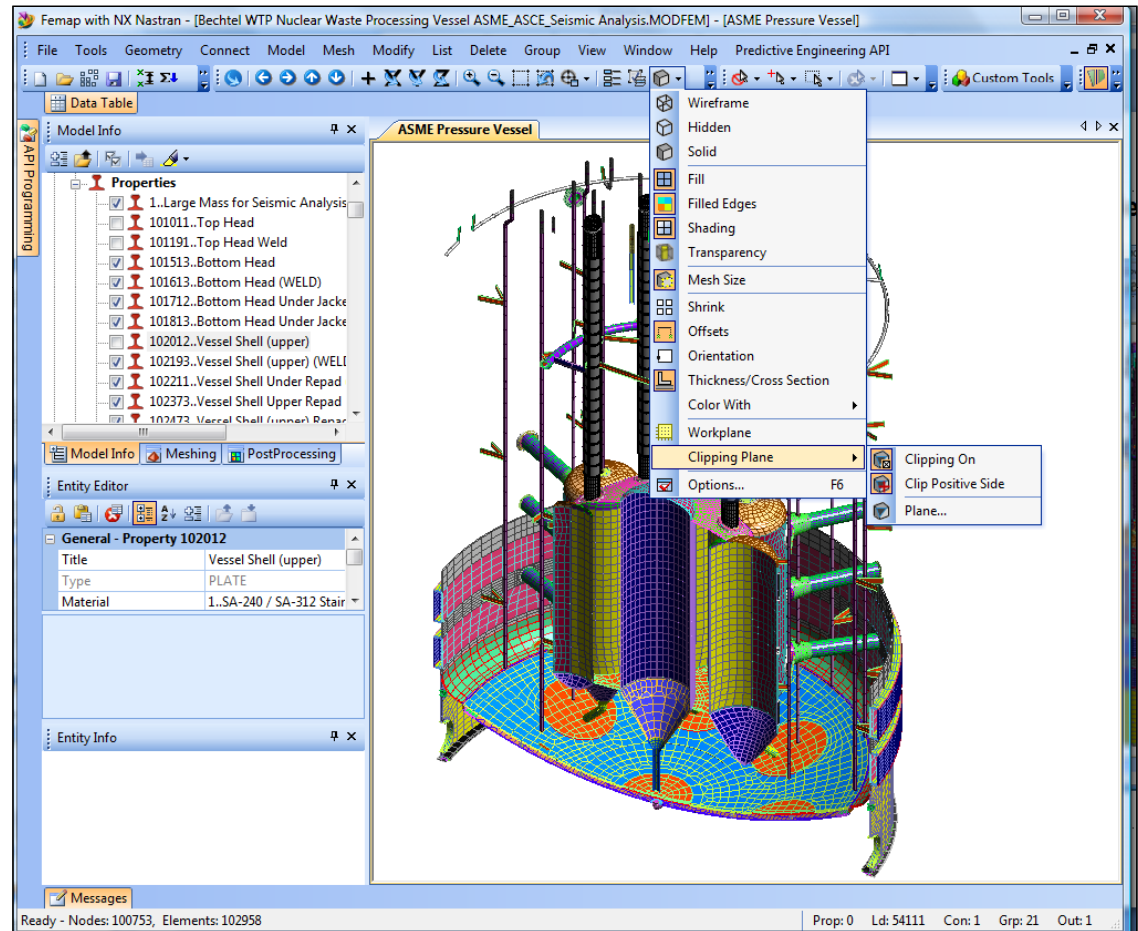


Meshing Toolbox, Blanking and Hidden Cut-Plane

Meshing Toolbox: You should just play around with it. Also, we have several good tutorials on using the Meshing Toolbox, plus Femap's On-Line help has some tips and tricks. Why? An efficient, good looking mesh is the cornerstone to all analysis work.

Blanking: On the graphic at the right, I have blanked several properties (the top head and shell). You can also blank by element type, material, etc. I hardly ever use groups anymore. This was a huge productivity improvement.

Hidden Cut-Plane: It is tucked away under the View Style Icon (see graphic). The model is cut down the middle. Very useful for peering into complex models.



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Ctrl-Z to bring up the Locate Dialog Box while you are in another Dialog Box

This is quite the little Femap secret, but it is in the manual. See the Femap User Manual Section 4.2.4:

A few of the more useful but less obvious shortcut keys are listed below. These keys work within a text or drop down list box in a FEMAP dialog box or list boxes in FEMAP. They do not apply to other Windows applications except for those noted as Windows commands. For a complete list of shortcut keys, see Section A, "Using the Keyboard".

You may be asking yourself how I would use this, but think of all the times you have used the Geometry / Solid / Slice tool and needed to locate a dimension! Or wanted to snap to a point (Ctrl+P) within another box...

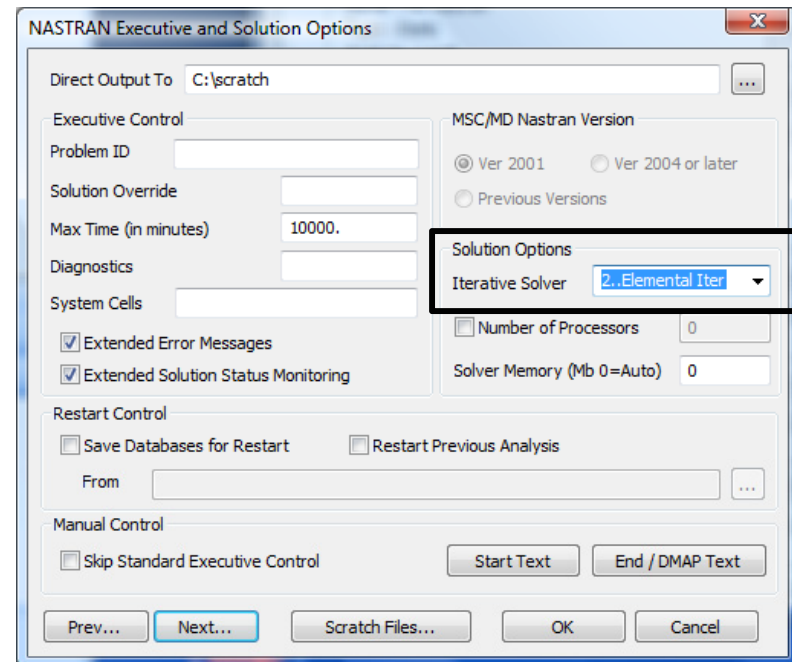
Key(s)	Function
Ctrl+A	Measure an angle.
Ctrl+C	Copy (Windows command)
Ctrl+D	Measure a distance.
Ctrl+E	Display FEMAP Equation Editor for interactive definition of variables and equations.
Ctrl+F	List functions.
Ctrl+G	Snap cursor selections to snap grid.
Ctrl+L	Display a list of the existing entities of the desired type.
Ctrl+N	Snap cursor selections to nearest node.
Ctrl+P	Snap cursor selections to nearest point.
Ctrl+S	Snap cursor selections to screen (snap off).
Ctrl+T	Redefine snap grid.
Ctrl+V	Paste (Windows command)
Ctrl+W	Redefine workplane.
Ctrl+X	Cut (Windows command)
Ctrl+Z	Use standard coordinate selection dialog box to define location.

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The PCGLSS Iterative Solver

If you are running a 10-node tetrahedral model with a limited number of rigid links and beam elements (it has problems with plate elements due to some fundamental FE numerical challenges), this is the solver for you. When you set up your analysis job within the Analysis Manager just set the solver the Elemental Iter:

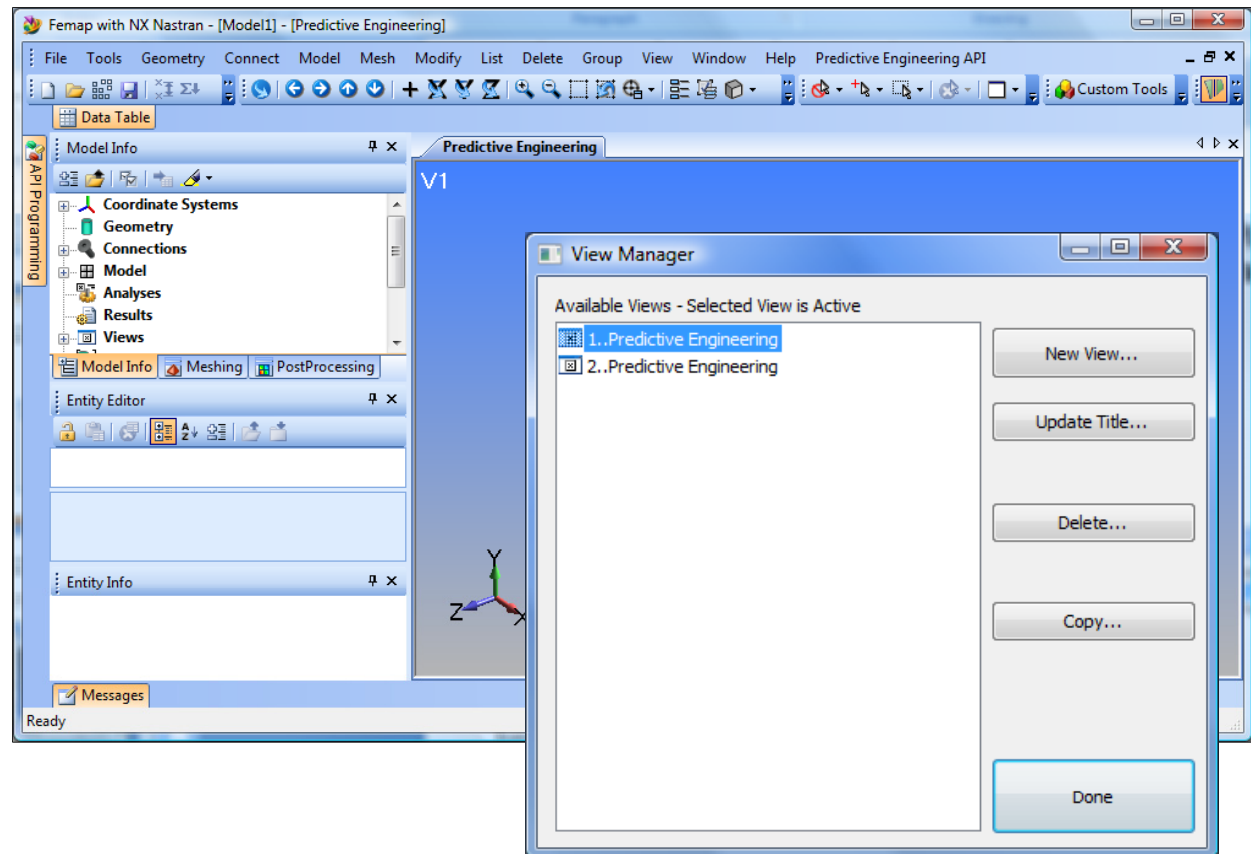


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Using the Save and Load View Option to customize your View Window (Part I of II)

Femap's View Window is actually a mini-database. In the default mode, it comes up with the label "Untitled". This View Windows actually stores all your View Options and your View Select options. It will also remember your background color and orientation of the model.

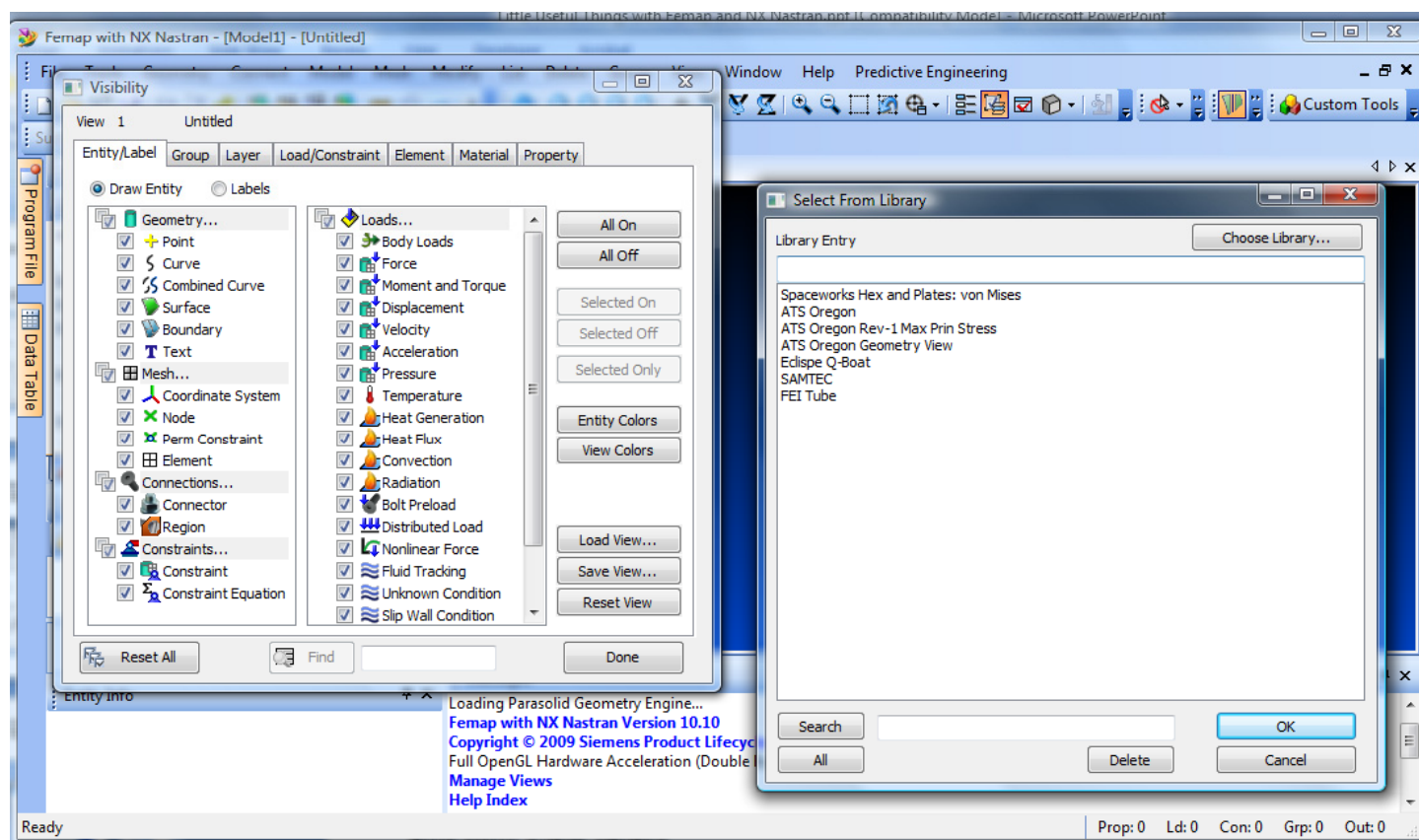


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Using the Save and Load View Option to customize your View Window (Part II of II)

Once you have everything configured the way you want it (element colors, contour type, transparent background, etc), you can give your View Window a name and save it using the Visibility tab. Once saved, you can reload it into a different model by using “Load View”:

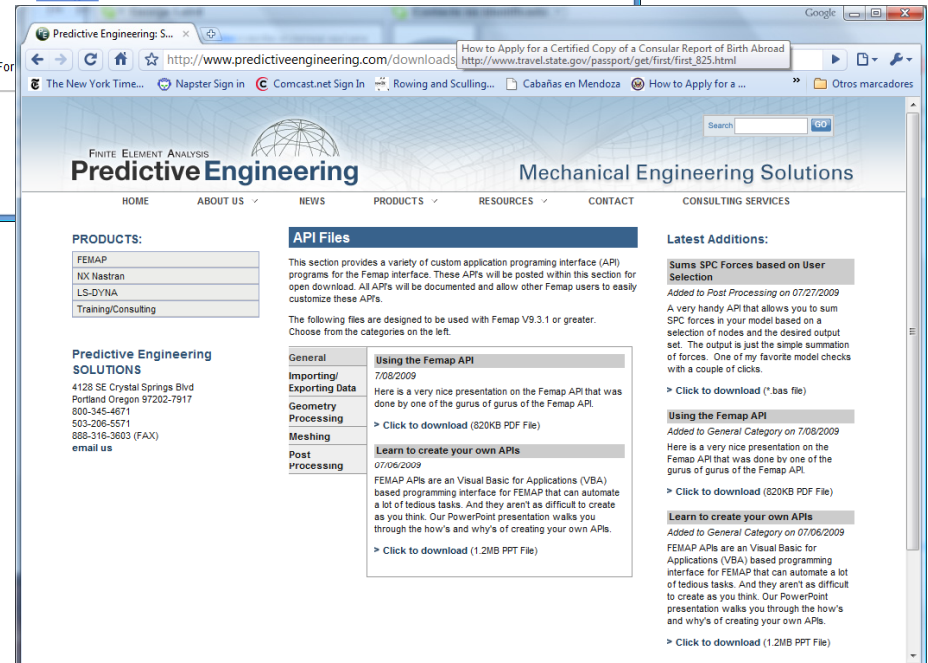
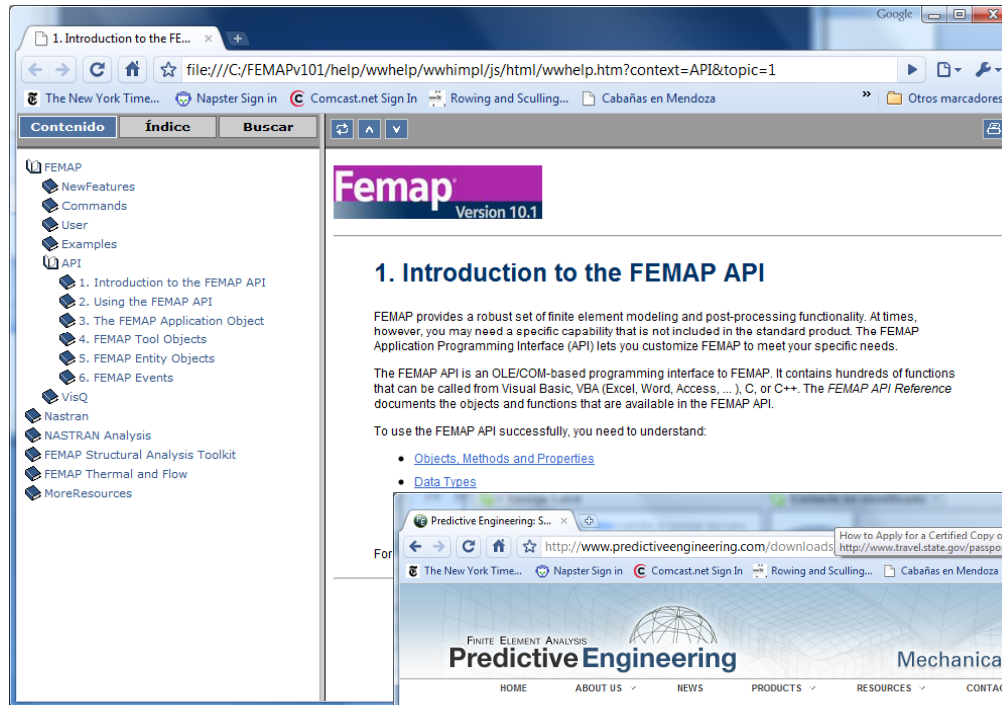


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Femap's API Language

Femap's API is amazing. If you want to customize the interface and avoid repetitive tasks – it can do it all. The Predictive Engineering website has examples and tutorials. The Username is PredictiveAccess.



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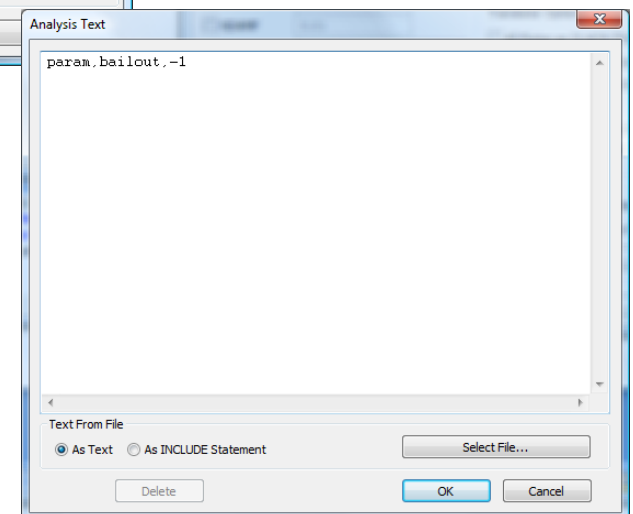
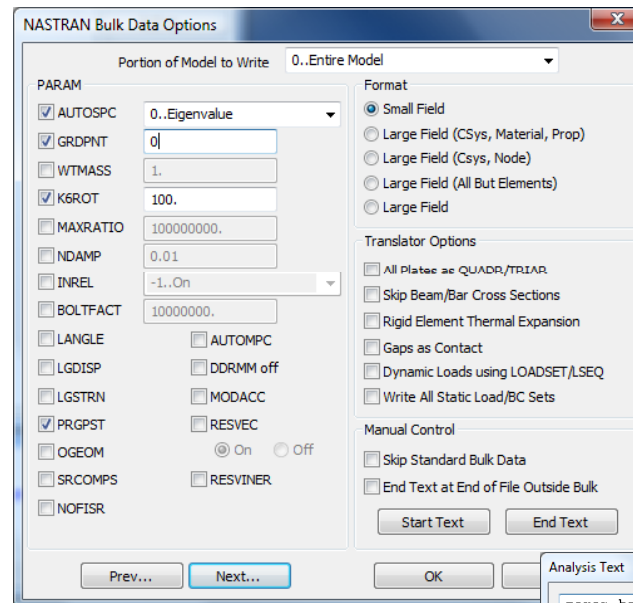




NX Nastran param,bailout,-1

I know you are probably wondering what the heck this is about.....

When you have a model that is spinning off into space (a constraint problem) and you are struggling to figure out what part of your model is not sufficiently constrained, you can always just force NX Nastran to solve and then debug the final solution. Just go to the Nastran Bulk Data Options page and hit the button Start Text and in the dialog box type in param, bailout,-1

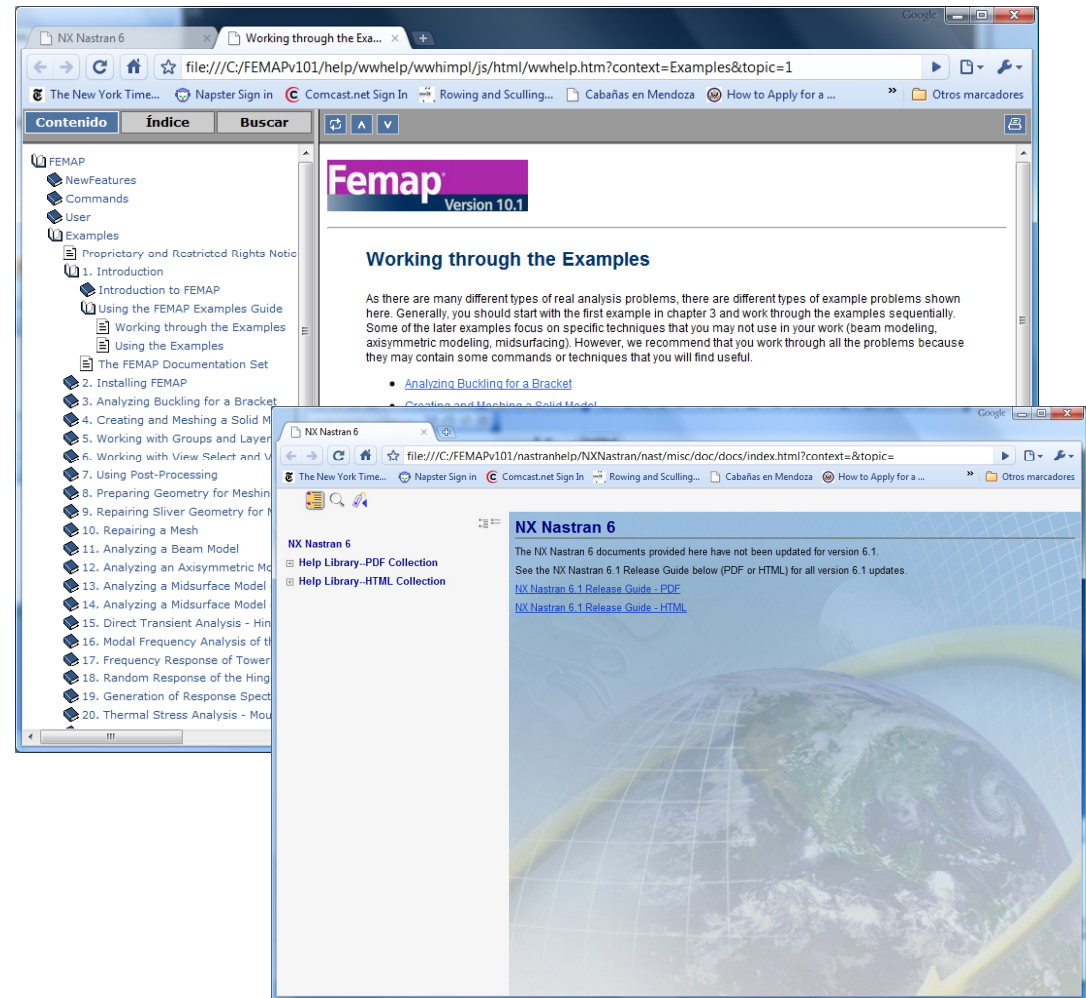


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Femap's and NX Nastran Help Documentation

When I do my Femap and NX Nastran course, I always spend a few minutes talking about the documentation that comes with Femap and NX Nastran. It is impressive. It is extremely valuable and will save you days of analysis time if you spend a few hours reading through what is available. All of this is installed in your current seat of Femap. Just open Femap and go to Help.



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Femap's and NX Nastan Help Documentation and Web Browsers

Lastly, this is a little bit boring but it will make your life easier when working with the Femap Help:

Concept: You have a specific browser that you like and would like have Femap always use this specific browser for its online Help System (please note that Google Chrome is not supported). This trick lets you set Femap's Help system to a specific browser.

Open the FEMAP.INI file and enter the following below any existing text:

[User]

BrowserPath="(actual path to browser including .exe file name)"

BrowserURLOnly=1

[Please note, you must enter both the BrowserPath and BrowserURLOnly=1 lines for this to work.]

Concept: You use Windows Internet Explorer (IE) and it prompts you EVERY time to enable Active X controls. This trick allows you to disable the IE requirement.

In IE: "Tools, Internet Options" command in IE.

Click "Advanced" tab in "Internet Options" dialog box

Scroll down to Security section and "check" the box for "Allow Active Content to run in files on My Computer"

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