Using Command Snippets in Solution (And a cool new ACT Extension to make life easier)

by **Joe Woodward** 📅 **March 12, 2019** ⏰ 8:48 pm 💬 **Leave a comment** 🔖 **The Focus**

🏷 **ACT**, **ANSYS**, **ANSYS Mechanical**, **Extension**, **Snippets**

So you have results for a job that took several hours to run, or several days, and now you realize that you need to use a post-processing command snippet. In the past, prior to version 14.5, this would be a huge problem, because just adding the command snippet in the Solution branch would trigger a resolve. So, in those cases, we would usually just jump over to MAPDL to do the post-processing. In version 14.5, however, ANSYS allows you to add the snippet to the Solution branch without triggering a resolve.

When you hit "Evaluate All Results", Mechanical will copy the files to a scratch directory and start a separate MAPDL session. This leads to a secondary problem. Often you need to select nodes or elements to use during your snippet. This is usually done with a Named Selection, or a material ID that you saved to a parameter in a Geometry command snippet. The problem is that the Named Selections, or components in MAPDL, are not saved in the RST file, neither are parameters. They are stored in the DB file. If you thought ahead, then in the Analysis Settings, you set the 'Save DB file' option to 'Yes' before you solved. In your post-processing command snippet you could then use the RESUME command to bring the database back to the state that it was just before the solve – having all your Named Selections and parameters. But since the default is to not save the DB file, odds are that you don't have it. It's okay, though. There are still some options.

The first thing I recommend is that you save the solved project, and then do a 'Save As' to make a copy from which to work, just in case something goes wrong.
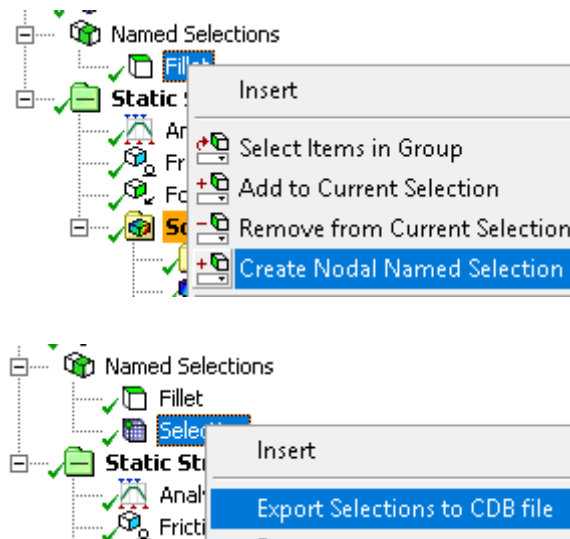
Method 1:

When you hit the Solve button in Mechanical, it writes out a 'ds.dat' file that then gets run in a batch MAPDL run.

If you have all of your needed Named Selections setup prior to the Solve, then you can open an MAPDL session and use the File>Read Input From… command to read in the ds.dat file. In interactive mode, the file stops just before the Solve command, so you can then save the database file at that point. You then need to right-click on the Solution branch in Mechanical and hit "Open Solution Directory", in to which you need to copy the new "file.db" file. Then you can resume the file.db in your post-processing command snippet.

If you need to add a new Named Selection, you can add a new one, even in 14.5, without triggering a resolve, but then you will have to write out a new input file. To do this, highlight the Solution branch in the tree, go to Tools>Write Input File…, and then follow the procedure above.

Method 2:

If you are using version 17.1 or later, you have another option. You can Right-click on a Name Selection and choose "Create a Nodal Named Selection". Then right-click that new nodal named selection and hit "Export Selections to CDB File". You can select several Nodal Named Selections to export, and the export will all go to one file. Include that text in your snippet.

Method 3:

In R19.2, the Named Selections are now stored in the RST file. If you don't need to add a new Named Selection, then can you access the Named Selections that were created prior to the solution run. After a SET command in your snippet, you can just use the name in the NSEL command, as I did in the picture above, with no need to include the CMBLOCK from the CDB file. If you need a new Named Selection, however, then you have to use Methods 1 or 2 above.

Pitfalls:

Now that all sounds somewhat difficult, and it actually gets worse. With Method 1, you have to know at least enough MAPDL to open it and read in the input file, and then save the database file.

With Method 2 and 3, the parameters are still not saved in the RST file. So if you need parameters that were created in earlier command snippets, then you have to go back Method 1.

But there's hope!!

Method 4: Oh, Joy!!!

There is one other thing that you can do, and this is my favorite method. (Probably because I wrote it. J) There is now a new free ACT extension in the ANSYS App store. It is called SAVE_DB, and was written because yours truly got tired of dealing with the other three methods above. SAVE_DB allows you to save the MAPDL database file without having to solve the Mechanical model, or cause a resolve. SAVE_DB will automatically change the Analysis Settings > Analysis Data Management > Save MAPDL DB value to "Yes" so that future resolves are also saved. MAPDL will be run in the background on the same version as the Workbench project, and the "file.db" will be saved to the Solver Files Directory. Now any new Named Selections that you add will be ready at the push of a button. This one:
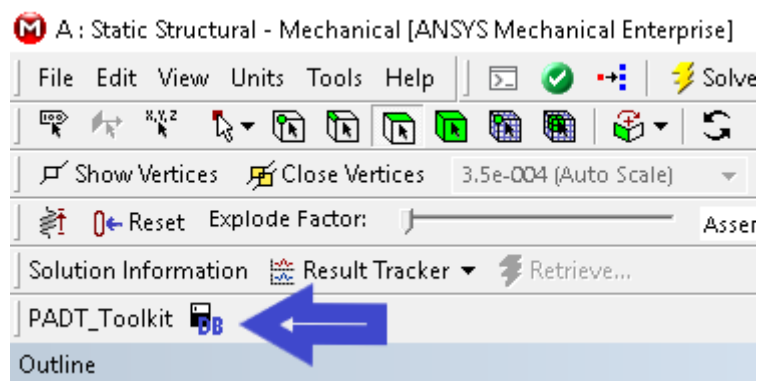
This is the first of many helpful tools planned for a PADT_Toolkit. I will post another plug, I mean 'blog', when I get more tools added and the PADT_Toolkit uploaded to the APP Store. Until then enjoy SAVE_DB!

Share this:

🖨 ✉ ⭕ in 🐦

Like this:

Like

Be the first to like this.

Related

Making APDL Parameters Available in the ANSYS

Retrieving Accurate PSD Reaction Forces in ANSYS

10 Great New Features in ANSYS Mechanical 19.0 and

Privacy - Terms

You must **log in** to post a comment.

Contact PADT
1-800-293-PADT 📞
info@padtinc.com ✉

SEARCH

Search 🔍

LINKS

PADT Website
Contact PADT
PADTMarket.com
Manage PADT Subscriptions

SUBSCRIBE TO OUR BLOG

Enter your email address to subscribe to this blog and receive notifications of new posts by email.

Join 1,804 other subscribers

Email Address

Privacy - Terms
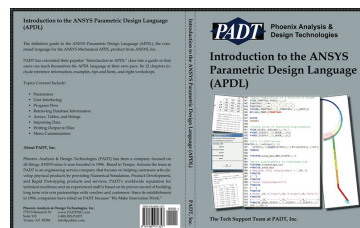
UPCOMMING EVENTS

01/19/2022 - 01/21/2022
Arizona Photonics Days

04/04/2022 - 04/07/2022
37th Space Symposium
Arizona Space Industry Booth

04/12/2022 - 04/14/2022
D&M West | MD&M West

3D PRINTING GLOSSARY

INTRODUCTION TO THE ANSYS PARAMETRIC DESIGN LANGUAGE

Learn APDL with this workshop based book written by PADT's Technical Support Team. The new and improved Second Edition contains additional chapters on APDL Math and APDL in ANSYS Mechanical.
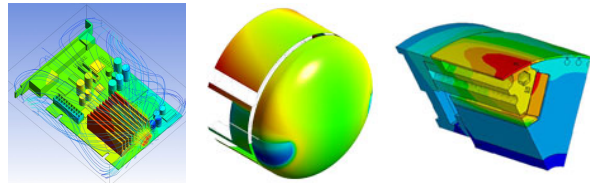
Now available on Kindle as well as paperback.

More…

SIMULATION SERVICES

PADT's simulation engineers are true experts in virtual prototyping. Trust the people you come to for ANSYS expertise to handle your simulation outsourcing needs.

Structural, Thermal, Fluid, Electromagnetic, and Systems.

LOOKING FOR ANSYS TRAINING?

Let the people who write "The Focus" train you and your team. Check out our **schedule** or **contact us** to set up a class at your place or something custom.

PODCAST: ALL THINGS ANSYS

ANSYS ACADEMIC PROGRAM

RSS SUBSCRIBE:

RECENT POSTS:

Surprise – 2021 Turned out to Be a Lot Like 2020

All Things Ansys 102: Electronics Reliability Updates in Ansys 2021 R2

Simulating an Electro-Permanent Magnet (EPM) using Ansys Maxwell

Ansys Pro – Premium – Enterprise Electronics Licensing Adjustments

All Things Ansys 101: Additive & Structural Optimization Updates in Ansys 2021 R2

CATEGORIES

Additive Manufacturing

Ansys

ANSYS Discovery

ANSYS Energy Innovation Campaign

ANSYS R 18

Carbon

Education

Events

Flownex

Fun
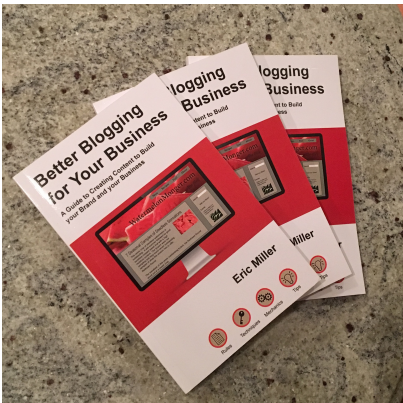
Contact PADT
1-800-293-PADT 📞
info@padtinc.com ✉

THINKING ABOUT A BLOG FOR YOUR COMPANY?

Where do you start? How do you keep it going? Where do I get ideas for posts? Should I use humor?

These questions and many others are answered in the book that was inspired by the success of PADT's blog:

Better Blogging for your Business

Available now as a Kindle book or softcover on Amazon.

Manage how PADT Emails You

Want to receive Emails from PADT? Please select any of the basic topics below to tell us what you are interested in. We promise to keep it simple sharing news, opportunities, and useful information. You can come back and change your settings whenever you need to.

* **Email**

State/Province

Company

* **Email Lists**

☐ PADT Additive & Advanced Manufacturing Email List

☐ PADT General Information Email List

☐ PADT Product Development and Testing Email List

☐ PADT Simulation Email List

By submitting this form, you are consenting to receive marketing emails from: Phoenix Analysis and Design Technologies, 7755 S. Research Dr., Suite 110, Tempe, AZ, 85284, US, http://www.padtinc.com. You can revoke your consent to receive emails at any time by using the SafeUnsubscribe® link, found at the bottom of every email. **Emails are serviced by Constant Contact.**

Sign Up!

Privacy - Terms

Contact PADT
1-800-293-PADT 📞
info@padtinc.com ✉️

SEARCH

[   ]   **Search**

LINKS

PADT Website

Contact PADT

PADTMarket.com

Manage PADT Subscriptions

ANSYS STARTUP PROGRAM

☐

LOOKING FOR ANSYS TRAINING?

Let the people who write "The Focus" train you and your team. Check out our **schedule** or **contact us** to set up a class at your place or something custom.
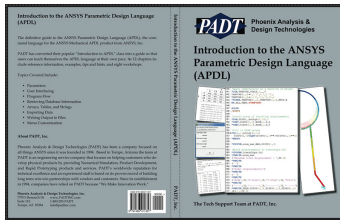
TRYING TO FIND A COMPUTER BUILT FOR SIMULATION?

INTRODUCTION TO THE ANSYS PARAMETRIC DESIGN LANGUAGE

Learn APDL with this workshop based book written by PADT's Technical Support Team. The new and improved Second Edition contains additional chapters on APDL Math and APDL in ANSYS Mechanical.

Now available on Kindle as well as paperback

More...

RECENT POSTS

Surprise – 2021 Turned out to Be a Lot Like 2020

All Things Ansys 102: Electronics Reliability Updates in Ansys 2021 R2

Simulating an Electro-Permanent Magnet (EPM) using Ansys Maxwell

Ansys Pro – Premium – Enterprise Electronics Licensing Adjustments

All Things Ansys 101: Additive & Structural Optimization Updates in Ansys 2021 R2

CATEGORIES

Additive Manufacturing

Ansys

ANSYS Discovery

ANSYS Energy Innovation Campaign

ANSYS R 18

Carbon

Education

Events

Flownex

Fun

Getting To Know PADT

News

Nimbix

PADT Medical

PADT Startup Spotlight

Podcast

Product Development

Publications

Startups

Stratasys

Stratasys Marketing

The Focus

Uncategorized

Connect with PADT