

## Simplify VA Projects

### Planning and Understanding

[VisualAnalysis](#) provides a powerful tool for solving very large and complicated projects. As our machines have gotten faster, and our features have expanded it has become easier than ever to solve very large problems. But you can still create models that take hours to analyze, run out of RAM memory, or burn you out under the weight of their complexity.

### Four Keys to Success with VisualAnalysis

1. Start Small and Simple
2. Avoid Common Problems
3. Understand the Costs
4. Know when to Refactor

### Start Small and Simple

Before you construct a frame, truss, or other finite element model it is good to have a clear picture of what you need to learn. It is common to **model every stick**, joint, diaphragm or appendage on a frame because it CAN be done, it looks great for clients, or it seems to be the easiest way. Think carefully before adding things to your model where you don't need to understand their behavior or stresses. A column support may be as simple as a nodal pin, or as complex as a plate element mesh on spring supports.

Similarly, you can rush through building a very complex model and applying loads in a dozen load cases and only then realize that the model is not stable or fails to analyze under just gravity loading because some members are undersized. With larger models it is a good idea to analyze under just self weight, and then perhaps D+L before investing lots of time fine-tuning things or investing a lot of hours in a dead-end approach.

### Avoid common problems.

The "Succeed" section of the Help(F1) lists a number of *gotchas* that catch engineers every month. Ten minutes of reading before you start a project more complex than normal may save you time in the long-run. Here are a few highlights from other places in the Help system:

When **modeling in 3D** you have to think in 3D or you will have **instabilities**. Will your columns really rotate at the foundation? Probably not, adding a rotational restraint to the easy "pin" supported node is an easy improvement. Will you really have weak-axis bending in beams? If not, you might not use the "simple-simple" connection type on members, but set only strong-moment releases. In this way you might avoid mathematical instabilities in the model.

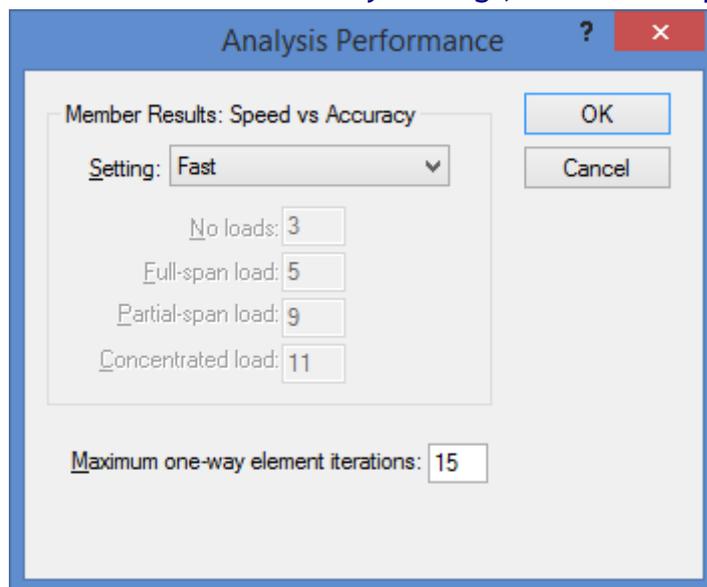
| Connections   |  |
|---------------|--|
| Node 1        | N001   |
| Node 2        | N002   |
| Type          | <See Releases>                               |
| Releases      |  |
| Axial, Fx 1   | <input type="checkbox"/> Rigid               |
| Shear, Fy 1   | <input type="checkbox"/> Rigid               |
| Shear, Fz 1   | <input type="checkbox"/> Rigid               |
| Torsion, Mx 1 | <input type="checkbox"/> Rigid               |
| Weak, My 1    | <input type="checkbox"/> Rigid               |
| Strong, Mz 1  | <input checked="" type="checkbox"/> Released |

Similarly, **plate-elements are approximate** elements and require some theoretical knowledge to use them successfully--this Help topic is important reading. What does it mean if you have large stress-jumps from one element to the next? Are your results OK or not?

Finally, If you plan to use the design-checks in VisualAnalysis, you had better familiarize yourself with the **limitations** associated with our checks. Automation is great, but won't solve all your problems--don't just get the wrong answer faster!

### Understand the Costs

Analysis time will increase by a factor approaching  $N^3$ , where N is the number of nodes. **Every load case and load combination has a cost**, this becomes more and more important as projects get larger. Did you know you can turn-off the analysis of Service Load Cases in the Load Case Manager? Do you know about the Performance vs. Accuracy settings, and what impact they can have?



Auto-meshed Areas are a great time saver, however, if the areas are too small, or too large, or have high aspect ratios, you may end up with many thousands of plate elements and performance problems. Area loads to members are convenient, but also not free.

### Know When to Refactor

Sometimes larger projects can sneak up on you and before you know it you are waiting two hours for analysis to complete or every modeling change takes ten minutes. This is not normal, or shouldn't be normal for you! **Sometimes you need to divide and conquer**: two models or projects may be better than one. The 64-bit version of VisualAnalysis may help you avoid out-of-memory crashing, but it also may just prolong the overall time it takes YOU to solve the problems that need solving. Take a step back--is there an easier approach? Modeling is an art as much as a science and the best engineers will master it, rather than blindly assuming that software is the answer, even when their design-needs aren't fully

understood.

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## Upgrade Path Returns

### Customers Speak, IES Listens

We recently asked customers about their experiences with our software, our sales, and our service and we learned a few things--thank you to those who participated. Overall you gave us excellent ratings in all areas except pricing and licensing, where we slipped a little.

One of the big requests was more flexibility in licensing and maintenance. Not everyone likes the "*Software As Service*" approach to maintenance plans, and so we are implementing an optional return to upgrades. The new licensing choices follow:

#### Option #1 Pay Annual Maintenance

When you keep your licenses current, you benefit from the lowest total cost of ownership, you get **automatic upgrade coverage** during the maintenance period, and you get the **best technical support** with updates. You also benefit from **licensing flexibility** to manage your installations with deactivations and activations. These features are included in the annual maintenance fee. When you buy a new license you automatically get one year of maintenance at no charge. The payment plan is the default option.



#### Option #2: Cancel Maintenance, Upgrade Later

If you let your maintenance expire, or cancel the payment plan, then you may continue to use your installed and activated product-version "indefinitely". You pay nothing to continue using the product you originally licensed, where it is already installed and running.



However, you will not receive new major-versions of the product, nor will you be able to move your license to different machines. Four years after your product-version is replaced by a new version it will become an unsupported product, without an upgrade option.

**At some point you may wish to upgrade** to the latest IES version, to do so you will simply pay an upgrade fee, currently twice the annual maintenance. For this you will get a license to the latest version of the product and one year of maintenance coverage.

#### Conclusion

The choice of regular maintenance or upgrading every two or three years is yours once again. We wish to thank our customers for their patience as we transitioned to the new licensing system. IES will continue to listen and make changes to best meet your needs.

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## Windows 10

### Windows 8, Plus a Start Menu

Microsoft released Windows 10 in July. IES products all run fine on this new operating system. Windows 10 offers some nice improvements over Windows 8 while restoring some of the "lost" functionality from Windows 7 namely the missing start-menu and "tablet style" apps that did not work so well on the Desktop with a mouse and keyboard.



### Deactivate Your Licenses!

Before you upgrade your machine, you may wish to deactivate your single-user IES

software licenses, which are encrypted with a "Machine Fingerprint" that will change. Any time you change hardware, networking, or operating system your license file could become unusable. If you forget, you may just need to manually deactivate your license(s) in the [Self Service Portal](#) or contact IES Sales for assistance in resetting your activation or deactivation counts.

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## Maintenance Prices

### Notice of Increase

IES is in the process of increasing single-user maintenance pricing by a small dollar amount per year. Officially, the price changes were implemented on July 1, 2015. You will see this change taking effect with your next billing cycle.

This is being done to reflect support demands, the frequency of upgrades, and consistency for all products and license-types. (Network licensing prices changed in April 2015.)

IES Maintenance costs are still quite reasonable: on the order of 8-15% of new pricing.

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