



## WEBINAR

# Revolutionize your Workflows with RS2 Python Scripting

**Q1: Is it possible to insert a new failure criterion with Python?**

A1: The scripting feature cannot be used to add a user-defined soil model. Thanks for the feedback.

**Q2: Thank you for this much awaited feature. Is it possible to create models and mesh it all using the script, or do we still need to create the models using the GUI?**

A2: The scripting feature does not currently include modifying model geometry or meshing. The feature is currently limited to general model operations like opening, saving, computing, closing; modifying material, joint and support properties; and extracting results for further analysis. Here is an overview:

<https://www.rocscience.com/help/rs2/documentation/rs2-scripting>.

**Q3: Can you give a percentage of how much you can do with python—where 100% is you can do anything you want?**

A3: Unfortunately, it is difficult for us to give a percentage for this.

**Q4: Great stuff. Can the geometry and meshing also be controlled through scripting?**

A4: The scripting feature does not currently include modifying model geometry or meshing. The feature is currently limited to general model operations like opening, saving, computing, closing; modifying material, joint and support properties; and extracting results for further analysis. Here is an overview:

<https://www.rocscience.com/help/rs2/documentation/rs2-scripting>.

**Q5: Is this version of RS2 with scripting, already available?**

A5: Yes, you can download the latest version which has the scripting feature here:

<https://www.rocscience.com/support/rs2/release-notes>

**Q6: At the moment, is it possible to edit a tie back pre tensioning force?**

A6: Yes, please see this link to the reference manual:

<https://rocscience.github.io/rs2-scripting/generatedAPIDocFiles/rs2.modeler.properties.bolt.html#rs2.modeler.properties.bolt.Tieback.Tieback.getPreTensioningForce>

**Q7: Can we generate the geometry and change the geometry in a loop to see the results? Or, generate multiple geometry by importing multiple dxf files and see the results.**

A7: The scripting feature does not currently include modifying model geometry or meshing. The feature is currently limited to general model operations like opening, saving, computing, closing; modifying material, joint and support properties; and extracting results for further analysis. Here is an overview:

<https://www.rocscience.com/help/rs2/documentation/rs2-scripting>.

**Q8: Can a model be built up from scratch with Python? Or it only works with a built-up model?**

A8: The scripting feature does not currently include modifying model geometry or meshing. The feature is currently limited to general model operations like opening, saving, computing, closing; modifying material, joint and support properties; and extracting results for further analysis. Here is an overview:

<https://www.rocscience.com/help/rs2/documentation/rs2-scripting>.

**Q9: In your route plan—speaking about time—when will the construction modeler be available with Python? (Whole model, stages, meshing, etc)**

A9: We are working hard to include all these useful controls in a future release. Some controls are especially tricky and require extensive research and development. Unfortunately, this means we do not have a strict timeline for when these updates will be available. Thanks for the feedback!

**Q10: Will the Python functionality be extended to other Rocscience tools other than RS3?**

A10: We are actively considering extending the scripting feature to other Rocscience products in the future. Your feedback is crucial in guiding our development efforts. Teams are continuously adjusting priorities based on customer demand. Unfortunately, this means we do not have a strict timeline on when this feature may appear in other products.

**Q11: Is it possible to add user-defined soil models?**

A11: The scripting feature cannot be used to add a user-defined soil model. Thanks for the feedback.

**Q12: Any limitation on what versions of Python have to be used if I bring my own environment?**

A12: We tested this feature with Python 3.11.4, but newer versions should also work

**Q13: Is there a Python interpreter command window that directly connects to an active RS2 session? (So no need to import libraries and setting port every time)—that might be advantageous for some simple operations with light code snippets runs.**

A13: We will look into this. Thanks for the suggestion. At the moment, we did not test the RS2 API library through an existing or created Python Interpreter Command Window.

**Q14: Is there a class for user defined material?**

A14: The scripting feature cannot be used to add a user-defined soil model. Thanks for the feedback.

**Q15: Does scripting exist in RS3 too?**

A15: At the moment, scripting does not exist in RS3.

**Q16: Can I debug my script in VSCode? Or If there is a bug in my code, how can I identify it?**

A16: Yes, you can debug your script using any code editor such as the RocScript Editor, VS Code or Jupyter. For example, the RocScript Editor let's you add breakpoints in the code to pause the script and check the state of variables.

**Q17: Can you connect to RocData files for parametric analysis. i.e. RocData files are the input into RS2.**

A17: No, RocData does not have Python scripting support at this time.

**Q18: Can you change the model geometry? Like the angle of the slope?**

A18: The scripting feature does not currently include modifying model geometry or meshing. The feature is currently limited to general model operations like opening, saving, computing, closing; modifying material, joint and support properties; and extracting results for further analysis. Here is an overview <https://www.rocscience.com/help/rs2/documentation/rs2-scripting>.

**Q19: Is it possible to modify the constitutive models built in RS2 using the scripting?**

A19: The scripting feature cannot be used to modify constitutive model formulations at this time. Thanks for the feedback.

**Q20: Got to the webinar late, so currently, the scripting is more geared towards sensitivity/optimization of a base model?**

A20: You can certainly use the scripting feature to do other manual tasks, such as automatically re-saving all RS2 models in a folder with updated material properties. For this webinar, we picked two sensitivity/optimization problems as we thought it might be most interesting.

**Q21: Is there a roadmap/timeline for the introduction of scripting into other softwares in the Rocscience suite other than RS2/RS3?**

A21: We are actively considering extending the scripting feature to other Rocscience products in the future. Your feedback is crucial in guiding our development efforts. Teams are continuously adjusting priorities based on customer demand. Unfortunately, this means we do not have a strict timeline on when this feature may appear in other products.

**Q22: Should stresses not be provided at integration points?**

A22: Thanks for the feedback, we will consider this for a future release.

**Q23: Can scripts be run from Jupyter notebooks?**

A23: Yes! Near the beginning of the webinar, Will showed an example of how to run a script in Jupyter notebook.

The key thing to do in Jupyter Notebook is install the RS2 Scripting library directly to your notebook environment which can be easily done using the line

```
! pip install RS2Scripting
```

This is similar to Method 2 of our Getting Started where you want to install our RS2 Scripting library to any environment:

<https://www.rocscience.com/help/rs2/tutorials/scripting/getting-started-with-rs2-python-scripting>

After installing the library, take a look at our examples to start writing RS2 workflows!

<https://www.rocscience.com/help/rs2/tutorials/scripting/anchored-sheet-pile-wall>

**Q24: Is there a way to extract results from interpreter and automatically generate sets of modifiers in the modeler as a looped scripting ?**

A24: Yes, the modeler has controls for modifying properties and computing the model while the interpreter has controls for extracting results. You can certainly loop this behaviour to update your model and recompute until a desired result is achieved.