VISUAL COMPONENTS

Frequently Asked Questions

Visual Components Product Family

Contents

How to get over the most frequently faced problems? 4

I cannot change some properties of components. Why? 4

My 2D drawings are different from the actual layout. Why is it so? 5

I don't see any window to change the properties of components. Where is it? 6

I cannot use PnP tool to connect grippers to my robot. Is PnP broken? 6

I have navigation problems and can't zoom in and out on certain components. Why? 7

Importing a 3D CAD file takes time to complete. Am I doing something wrong? 8

Simulation stops at some point without info in output. What is going on? 10

I have a huge layout and I cannot find or select components, or I cannot check if I have duplicate components (that are making the vcmx file larger than expected). Can you help? 11

The simulation is stopped, and the output panel says: "Simulation Stopped". But why should it stop? 12

Visual Components added new components in the eCat or they are not new and I want to use them for the first time but don't know how. Please help. 13

I cannot change the material of some components or some parts of them. Why is it so? 13

I move the component origin, but it jumps back to its previous place. What more should I do? 15

The 3D world interaction with the layout is laggy even before pressing the Play button. How I can I make it smoother? 16

I cannot move components around easily; they keep jumping and its not easy to position them precisely. How can I fix this? 16

I import a CAD file but the size is wrong. How to I scale it correctly? 16

How do I loop my robot program? It works only once 17

My products never make it to the last conveyor and will disappear before reaching it. What's going on? 17

When I use Shuttle Conveyor or Crossing Conveyor, products get stuck or move in wrong directions. How can I fix it? 18

Where can I get the Visual Components python add-ons and how I can use them? 19

I want to install the latest Visual Components product but don't know how? Can you help? 19

When I launch the application for the first time, the eCatalog is empty and I don't see anything. How do I fix it? 20

Some useful tips when using Visual Components 21

Always check the output window for some info/messages 21

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When using Process Modeling, always pay attention to variable names 25
Better to save the components and layouts in the My Models folder 25
Always simplify the CAD files and save them as separate components, and only then start building the layout. 26
Save your layouts with "Include components" checked. 27
For simulation or interaction with the 3D world, Shaded rendering mode has a better performance. 27
Python debugging 28
Check your spelling 28
Use keyboard shortcut to avoid certain spelling mistakes 29
Understand time-consuming methods and event handlers 29
Check if you are following the general python scripting practice 30

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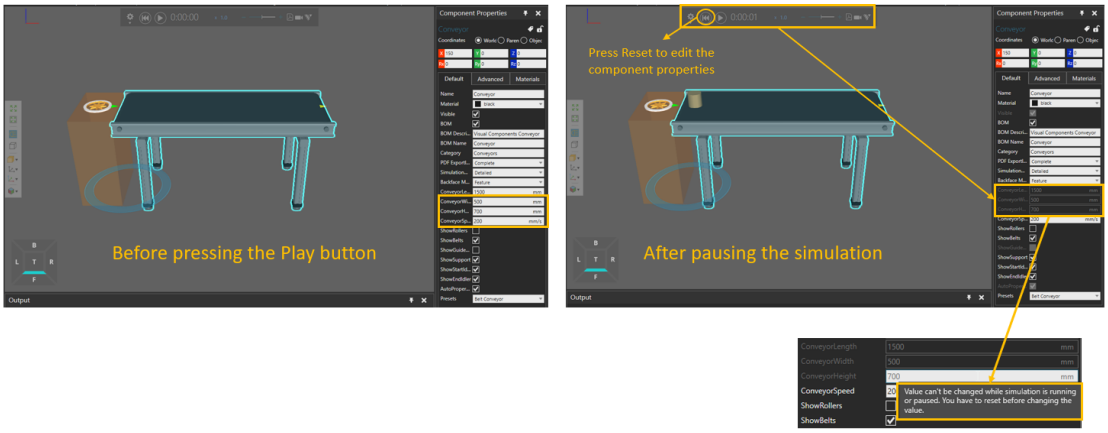
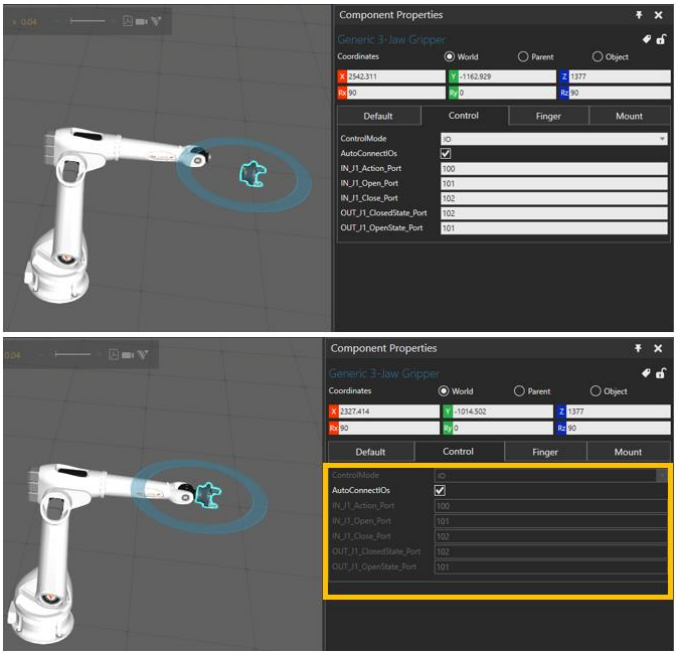
How to get over the most frequently faced problems?

I cannot change some properties of components. Why?

One condition could be that the simulation time has elapsed, for 1 second in the following example, and then paused. As a result, the conveyor height/width/length properties cannot be edited. You can also check the tooltip if you hover your mouse over the greyed-out properties.



Another condition could be that some components, such as Generic 3-Jaw Gripper, have editable properties when they are not connected to a robot. But once they are connected, those properties become locked:



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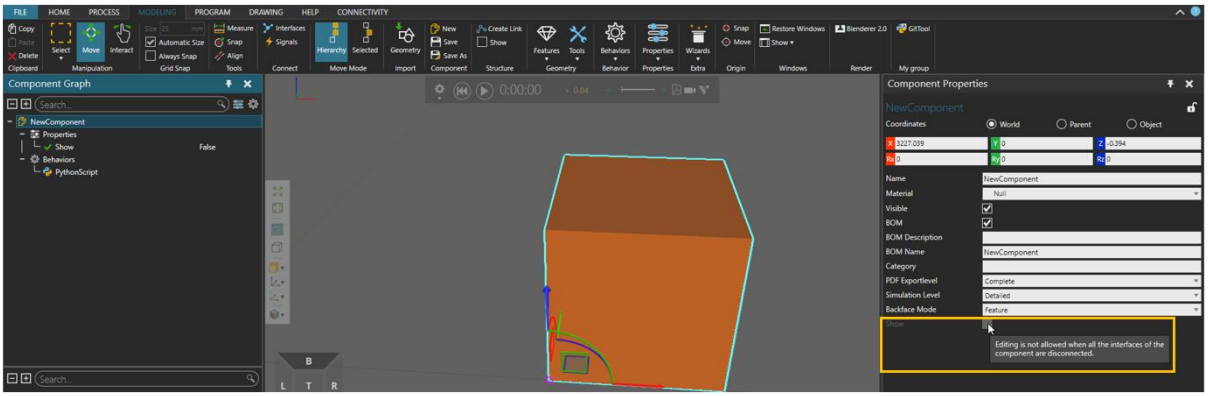
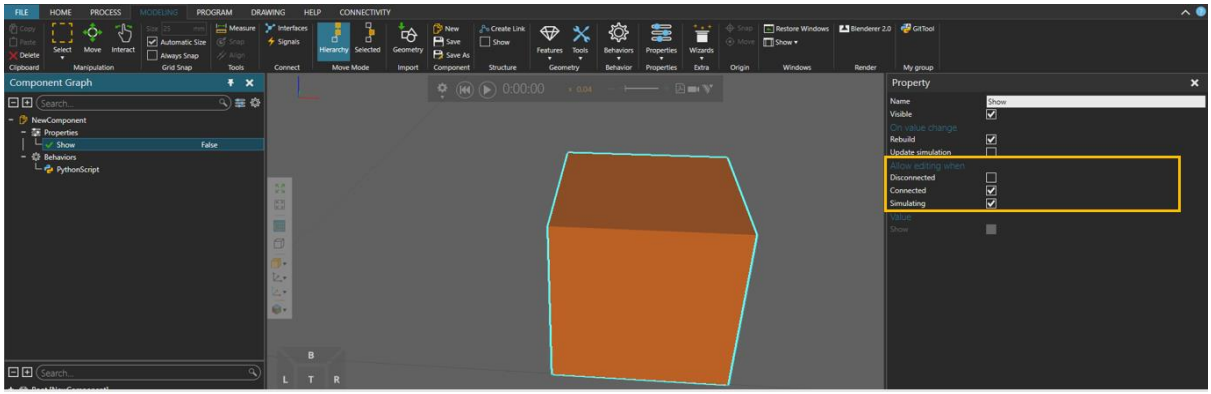
Or it could be that the tooltip says: "Editing is not allowed when all the interfaces of the Component are not connected":



In this case you need to check the "Allow editing when" section (in this example, Disconnected is not checked, which means that it's not possible to edit this property when this component is not attached to something):



My 2D drawings are different from the actual layout. Why is it so?

The drawing view is a static snapshot of the 3D world at the time of capturing it, therefore changes in 3D world are not reflected to the view after creation. In this case you need to Reset the simulation and then create the drawing:

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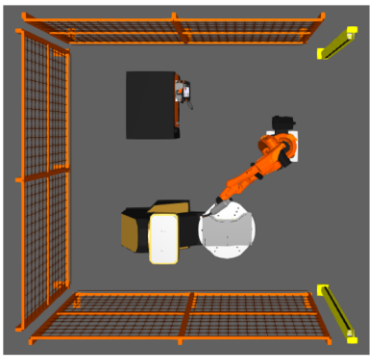
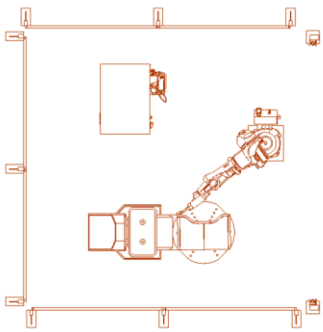
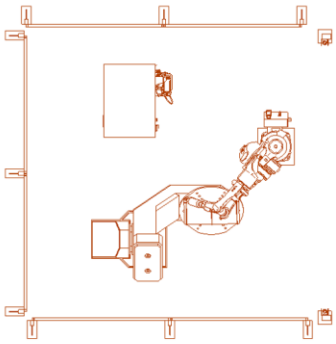


Top view of the actual layout



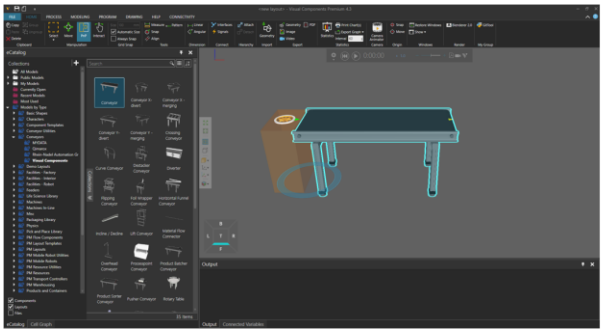
Top view 2D drawing before pressing the Play button

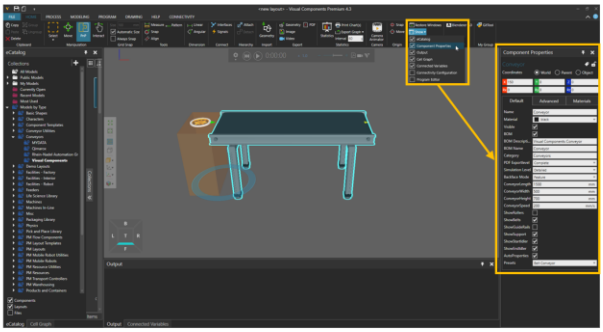


Top view 2D drawing after pausing the simulation

I don't see any window to change the properties of components. Where is it?

It could be that they were closed accidentally. One example is when a component is selected, but the Component Properties panel is not visible to modify its properties. In that case you could either reopen that specific window by pressing Show, or you could press the Restore Windows to restore all the default windows in the application:





I cannot use PnP tool to connect grippers to my robot. Is PnP broken?

It's useful to know that all interfaces are connected in projected XY-plane, and thus it is easier to connect components by using the top view.

If you are working with standard eCat components PnP tool should work fine, but maybe you are in the orthographic view. In that case, turn that off to switch to the perspective view.

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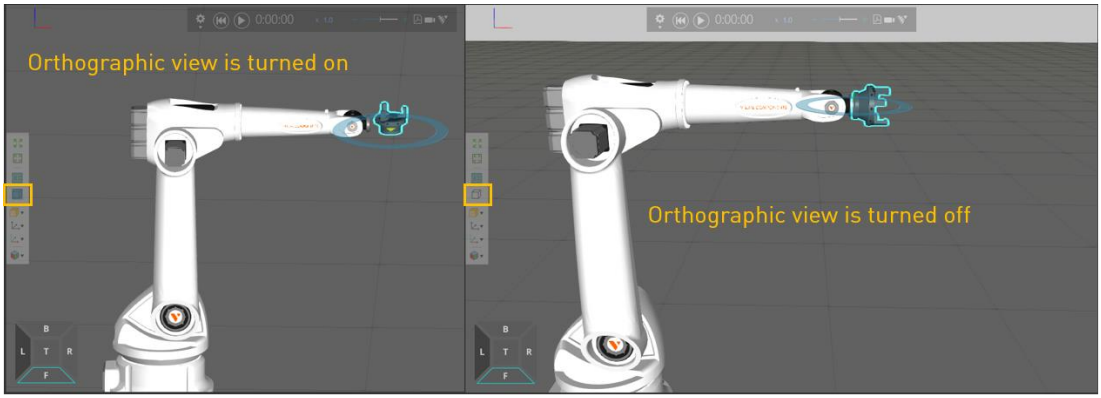
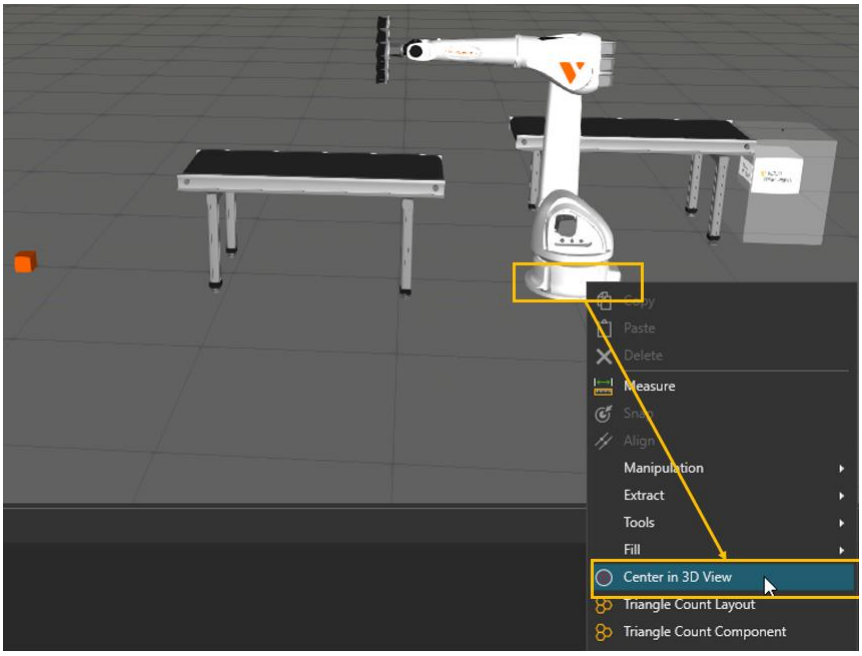


If that's not the case and you are working with your own components (based on 3D CAD files), then you need to check if your components actually have the correct interfaces for the PnP tool; maybe you have not added the interfaces properly. Here is an example of using a 3D model of a robot gripper in Visual Components.

I have navigation problems and can't zoom in and out on certain components. Why?

Navigation problems could often be fixed by adjusting the center point. Your center point is a point which you turn around. To set a new center point, press and hold LEFT CTRL, then click on top of a geometry.

Alternatively, you can Right-Click on the geometry and center that in 3D view. In the following example, we would like to make the robot base our new center in 3D view:



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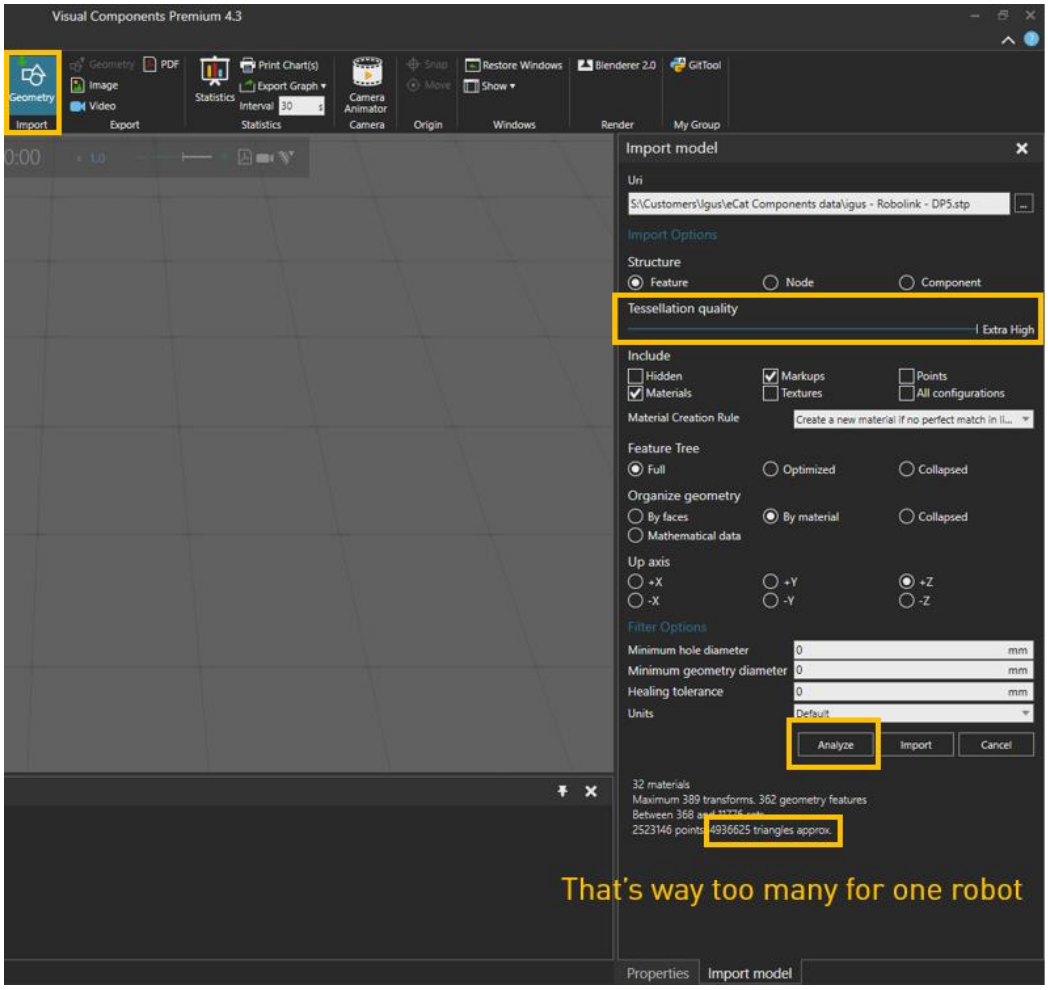
Importing a 3D CAD file takes time to complete. Am I doing something wrong?

Always check the polygon (triangle) count and tessellation quality of the CAD files before importing them. Check this tutorial for how to handle CAD files. In that tutorial two helpful add-ons (tools) are introduced: Triangle Count and Auto Materialize.



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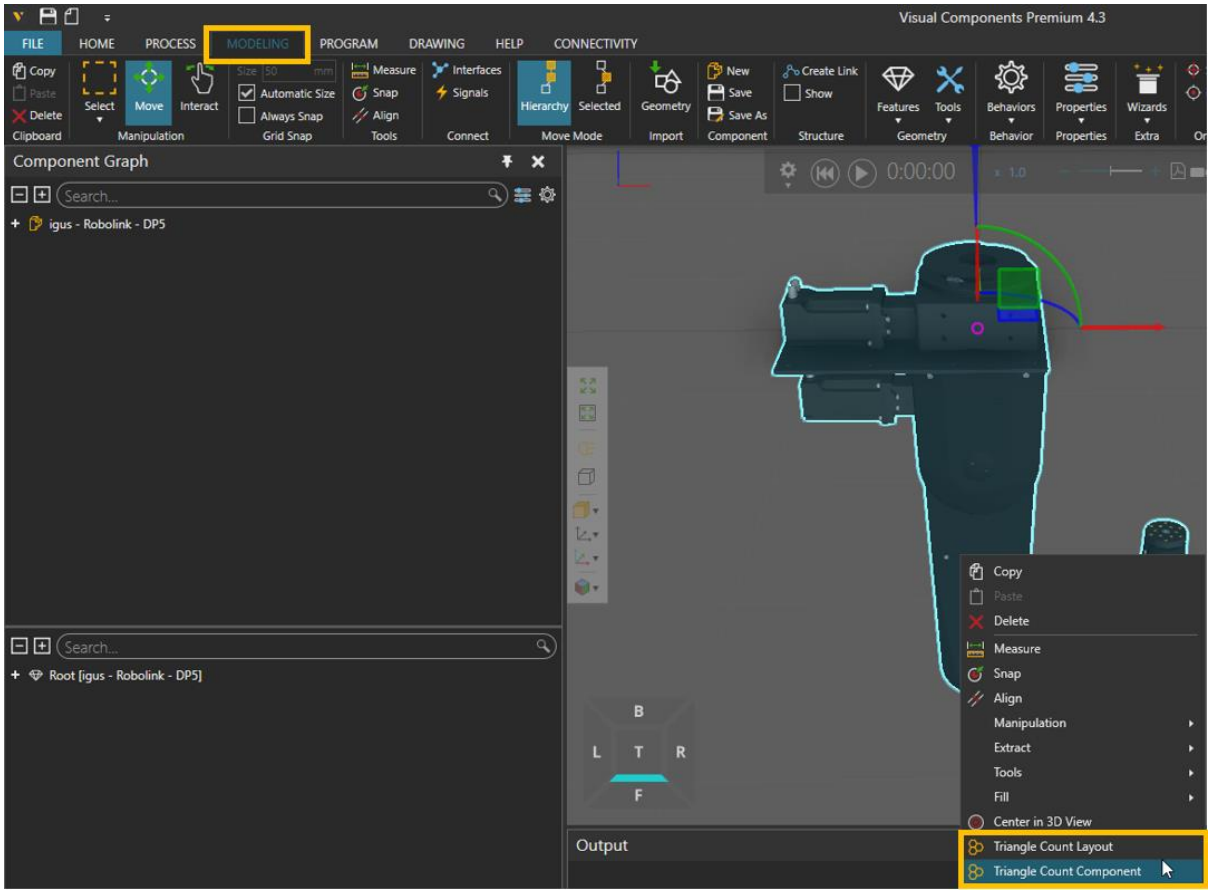
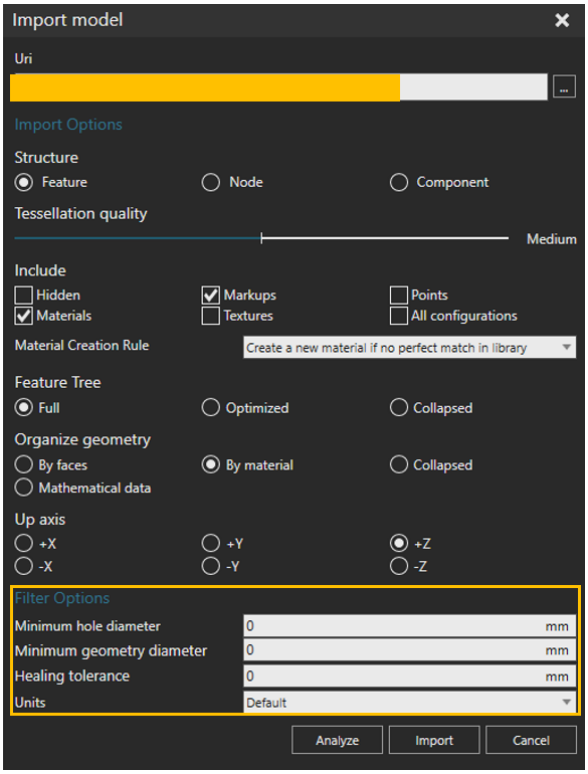


As a rule of thumb, check that you are importing without filtering options; that should be faster:



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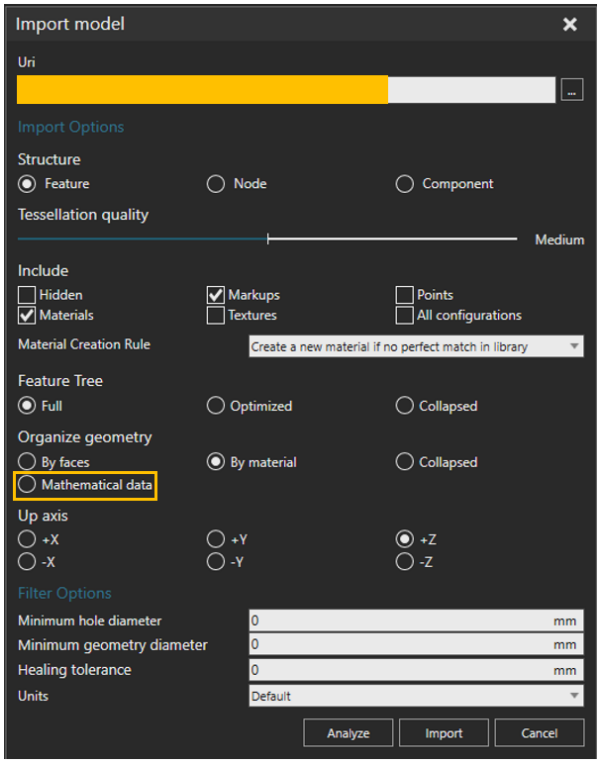
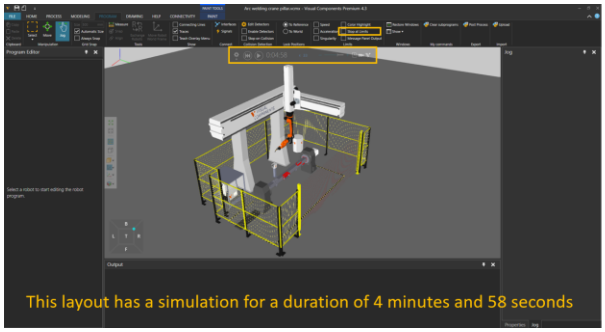
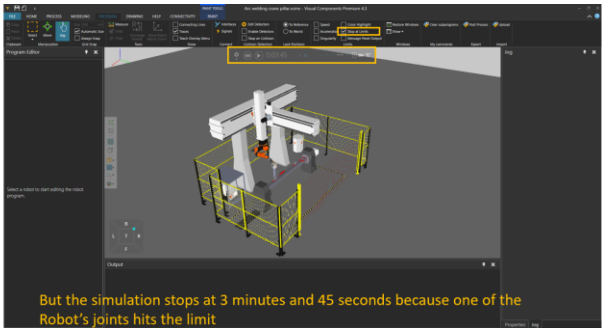
Also make sure that you do not Organize Geometry based on Mathematical data if its not necessary:



Simulation stops at some point without info in output. What is going on?

One reason could be, if the "Stop at Limits" is checked and the "Message Panel Output" is unchecked, then simulation could stop without printing anything in the output panel:





Therefore, it's always best to check the checkboxes for both "Stop at Limits" and "Message Panel Output" together:

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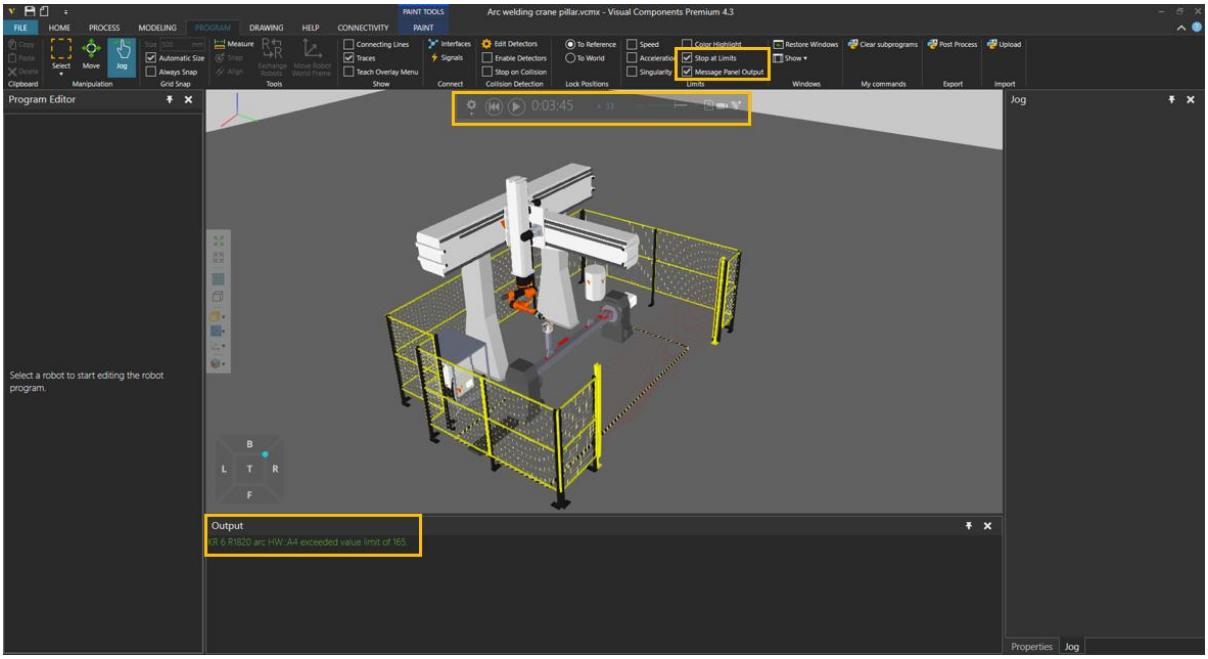
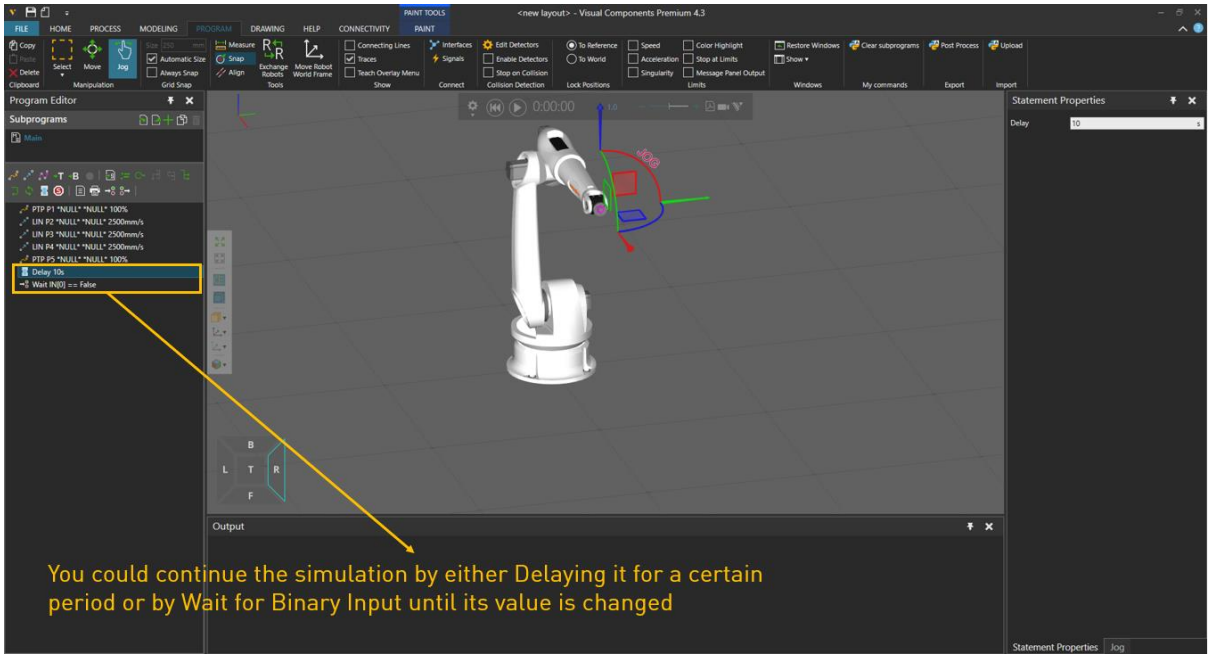


Another reason could be that your robot program has been executed from the beginning to the end. In this case, you could add a Delay or Wait for Binary Input Statement.



I have a huge layout and I cannot find or select components, or I cannot check if I have duplicate components (that are making the vcmx file larger than expected). Can you help?

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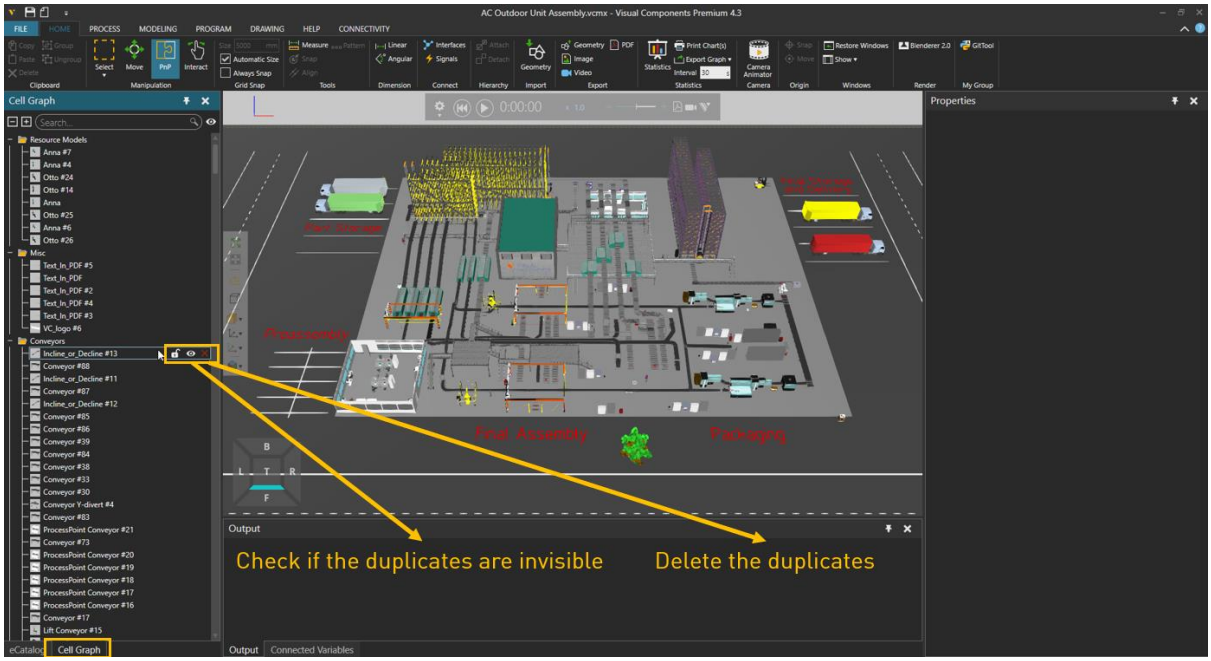
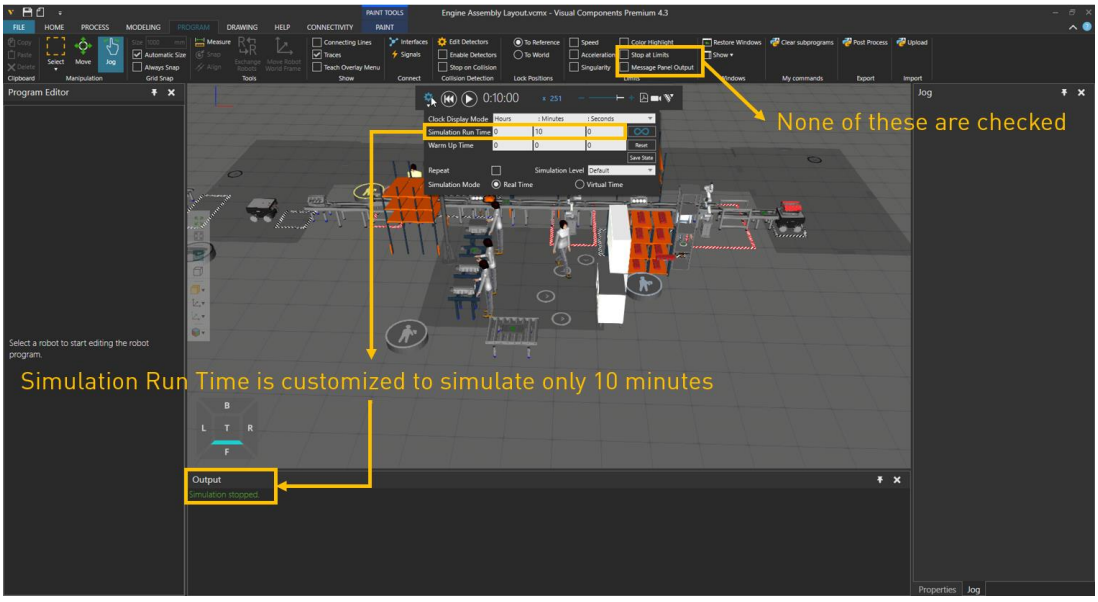
Always check the Cell Graph to see the category of the components, double-click to zoom in on them, control their visibility, or delete the duplicates (having two same components on top of each other).



The simulation is stopped, and the output panel says: “Simulation Stopped”. But why should it stop?

Check the Simulation Run Time and make it Infinity if it’s customized:



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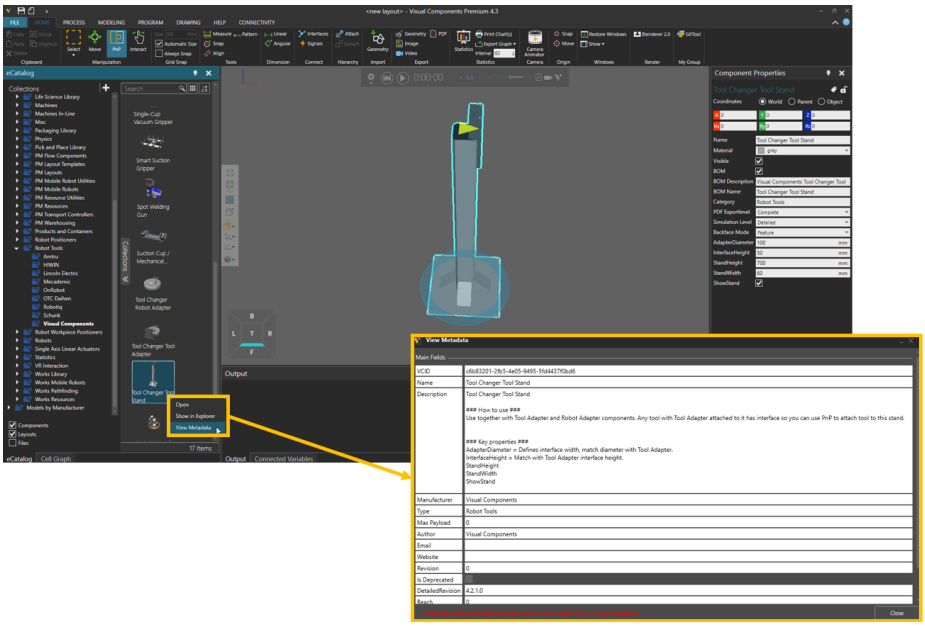
Visual Components added new components in the eCat or they are not new and I want to use them for the first time but don't know how. Please help.

Whenever there is a new component in the eCatalog or even the existing ones that you would want to use for the first time and don't know how to use them, just check the description in their Metadata:



I cannot change the material of some components or some parts of them. Why is it so?

This is because those components or some of their geo sets have been assigned material individually. Or if you have imported your CAD files and you cannot change their material, you need to clear their material (the default color for Null material is Orange).

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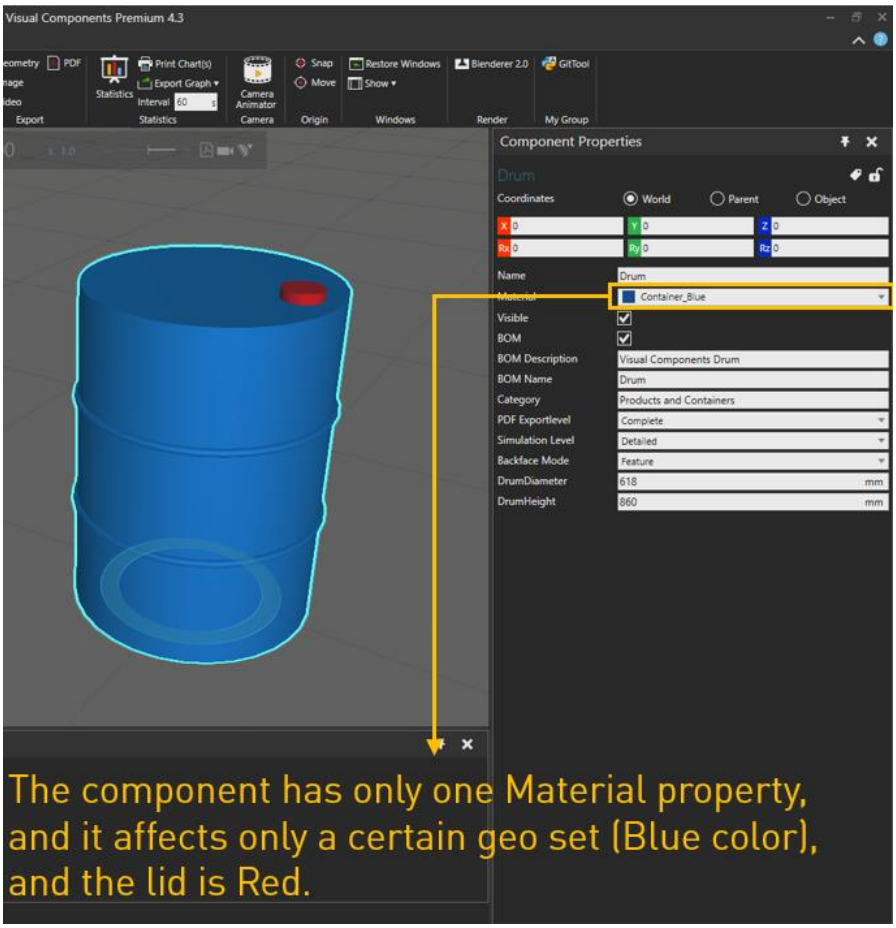

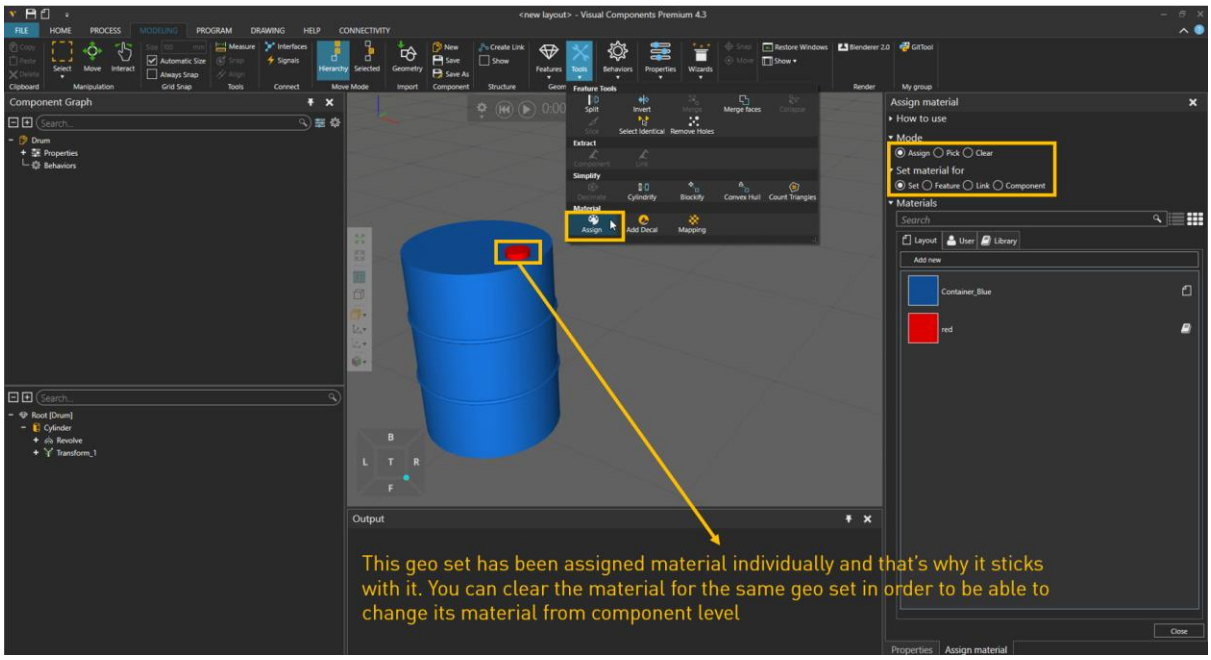

Note: you can choose not to include material upon importing:

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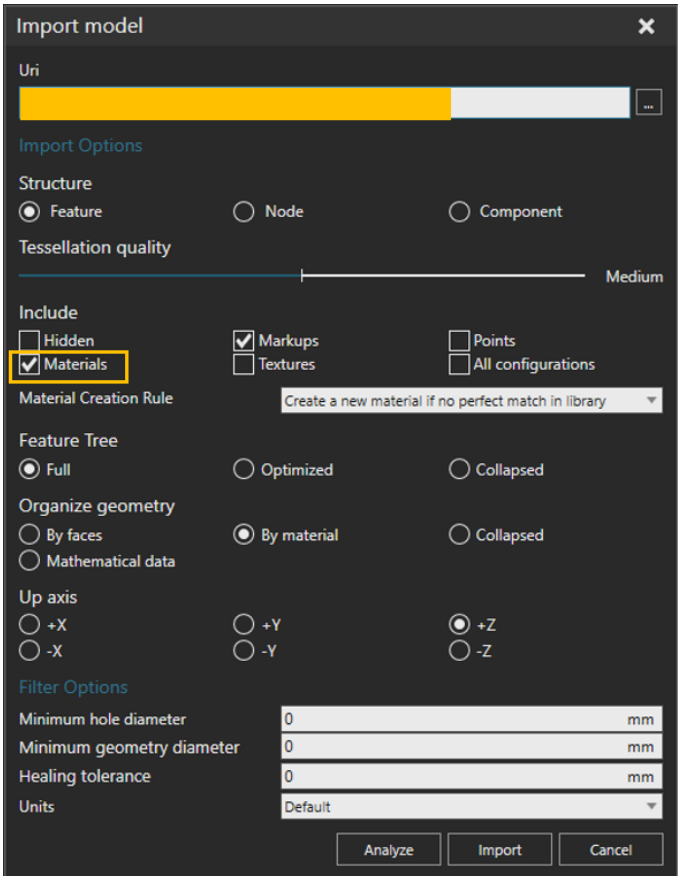
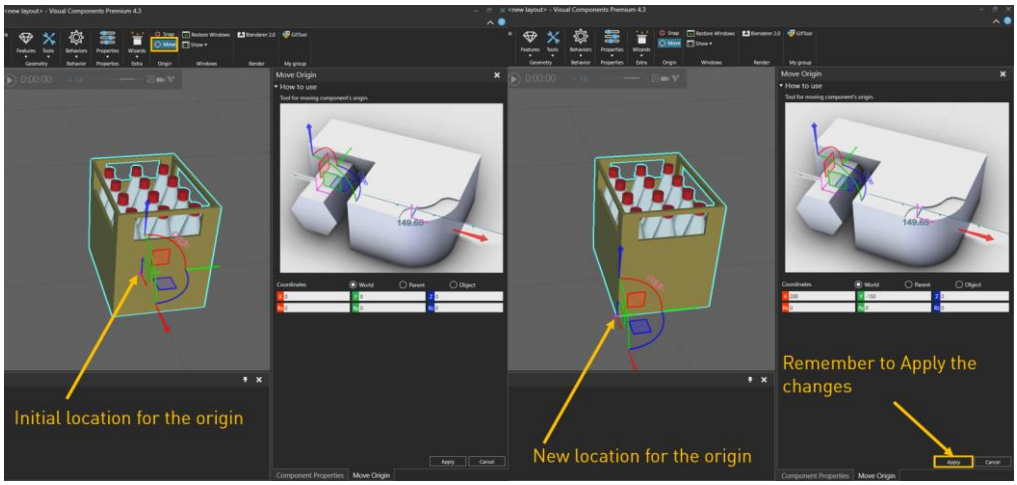


I move the component origin, but it jumps back to its previous place. What more should I do?

Once you move the origin, you need to apply the change.



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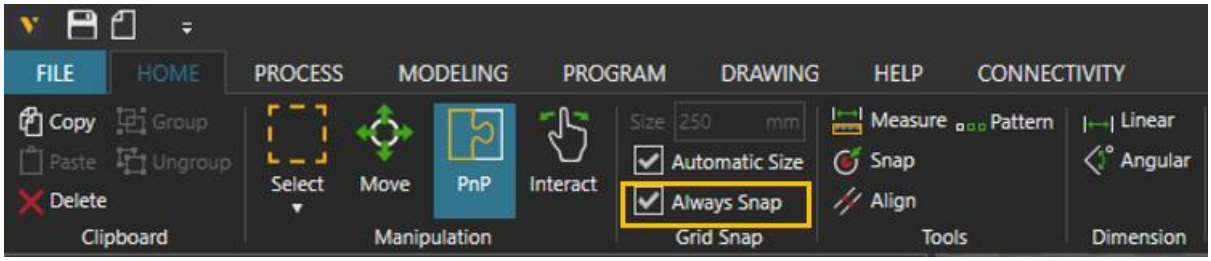
The 3D world interaction with the layout is laggy even before pressing the Play button. How I can I make it smoother?

It could be that you have a large layout that has complex 3D CAD models. At this stage you need to start simplifying your geometries. This tutorial explains possible ways of doing it. In that tutorial two helpful add-ons (tools) are introduced: Triangle Count and Auto Materialize.

I cannot move components around easily; they keep jumping and its not easy to position them precisely. How can I fix this?

It could be that "Always Snap" is checked; in that case it always snaps the XYZ coordinate values using the snap size:



I import a CAD file but the size is wrong. How to I scale it correctly?

There are 2 ways of doing it:

If it's only one component, you could use a Transform feature and use scaling expressions in it:

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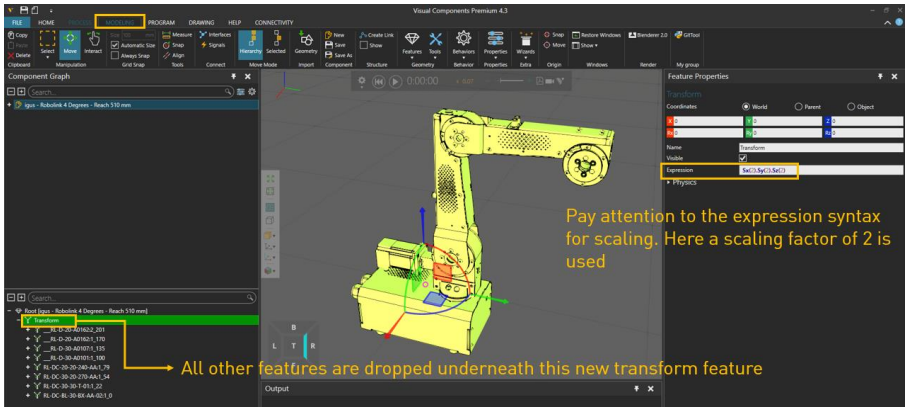

But if you are importing a layout or you have left the scaling of multiple components for the last step, you better write a python script to do the scaling for you.

After scaling, double-check the locations of all the components.

How do I loop my robot program? It works only once.

There are different ways of looping a robot program. There is a tutorial for that on our academy webpage, which is helpful.

My products never make it to the last conveyor and will disappear before reaching it. What's going on?

You probably need to check if your last conveyor is properly attached to its previous conveyor using the PnP tool; if there is a yellow triangle, that means the conveyor is not connected. If successfully connected, that triangle becomes green:

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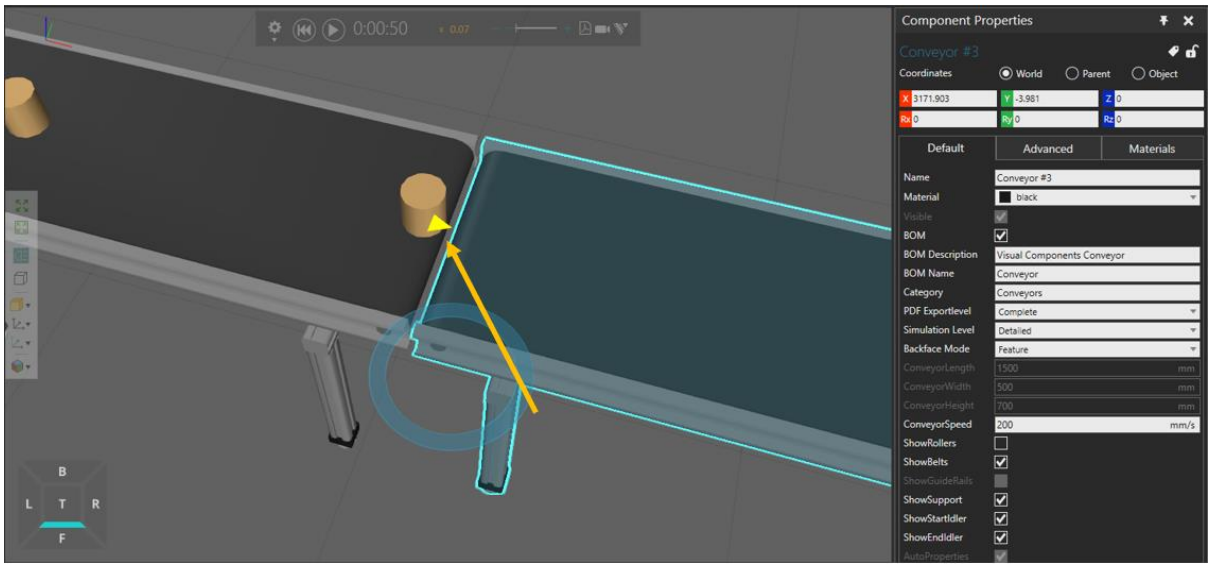
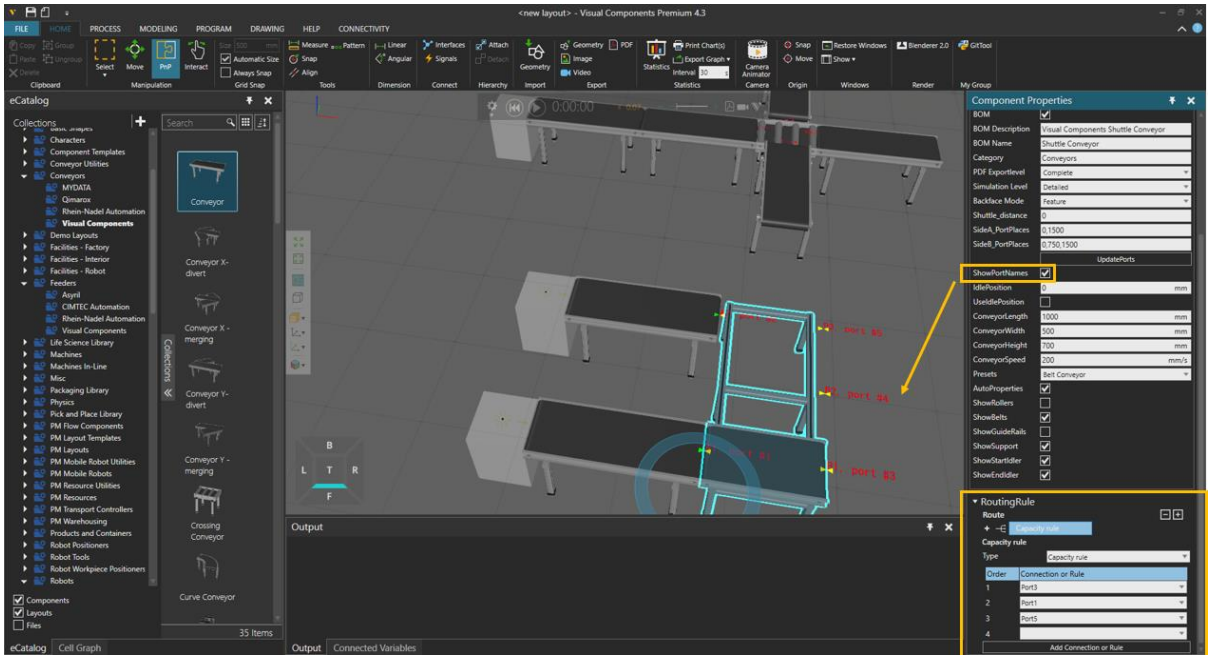


When I use Shuttle Conveyor or Crossing Conveyor, products get stuck or move in wrong directions. How can I fix it?

It could be that the RoutingRule for them is not defined properly. When defining the RoutingRule, make sure to check the property "ShowPortNames" to see the port names:



If you are unsure about how routing products works, we have 3 tutorials on our academy webpage explaining how to route the products in your simulation with PM and also with python API.

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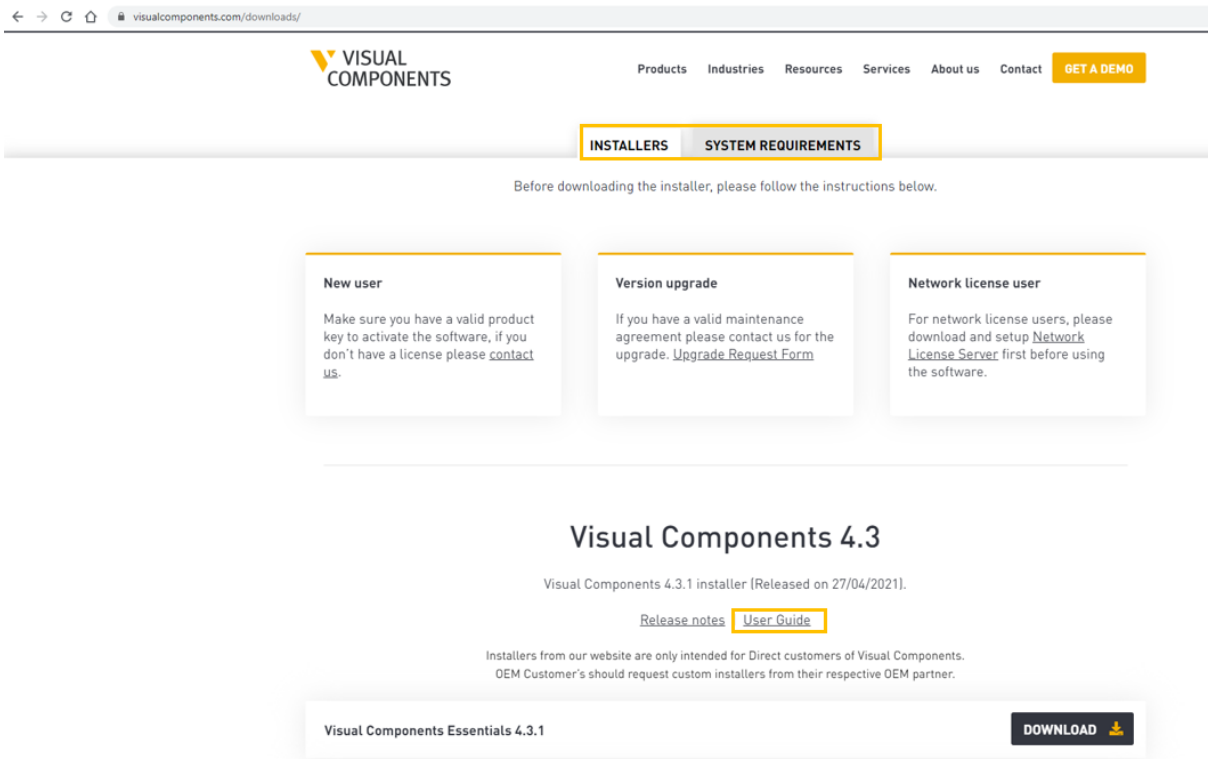
Where can I get the Visual Components python add-ons and how I can use them?

Some tools and functionalities are not included in the Visual Components application, but they are posted on our forum, in Extensions and Python Add-ons. When we post add-ons, we usually mention how to use them as well (with instructions and examples), but in case it wasn't mentioned, here is a tutorial on our Academy webpage.

I want to install the latest Visual Components product but don't know how? Can you help?

From here you can get the latest Visual Components installers. You can also check the system requirement from here. And please remember to read the User Guide carefully beforehand.



*If you had issues with installation or product key activation/deactivation and the information on the website or in the User Guide was not enough, you should always contact your Visual Components provider.

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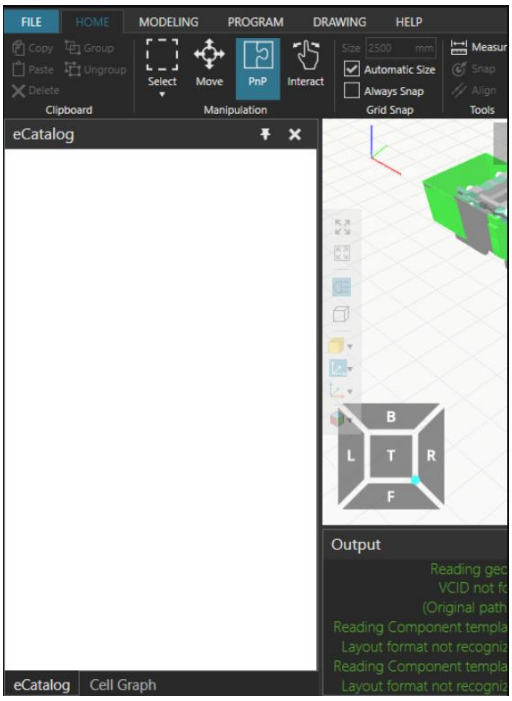
When I launch the application for the first time, the eCatalog is empty and I don't see anything. How do I fix it?



One speculation could be that the eCatalog settings are somehow corrupted and resetting back to the default settings might solve the issue. To do that, you can delete the eCatalog folder from your local app data; just copy this path C:\Users\%username%\AppData\Local\Visual Components and paste it as the following:

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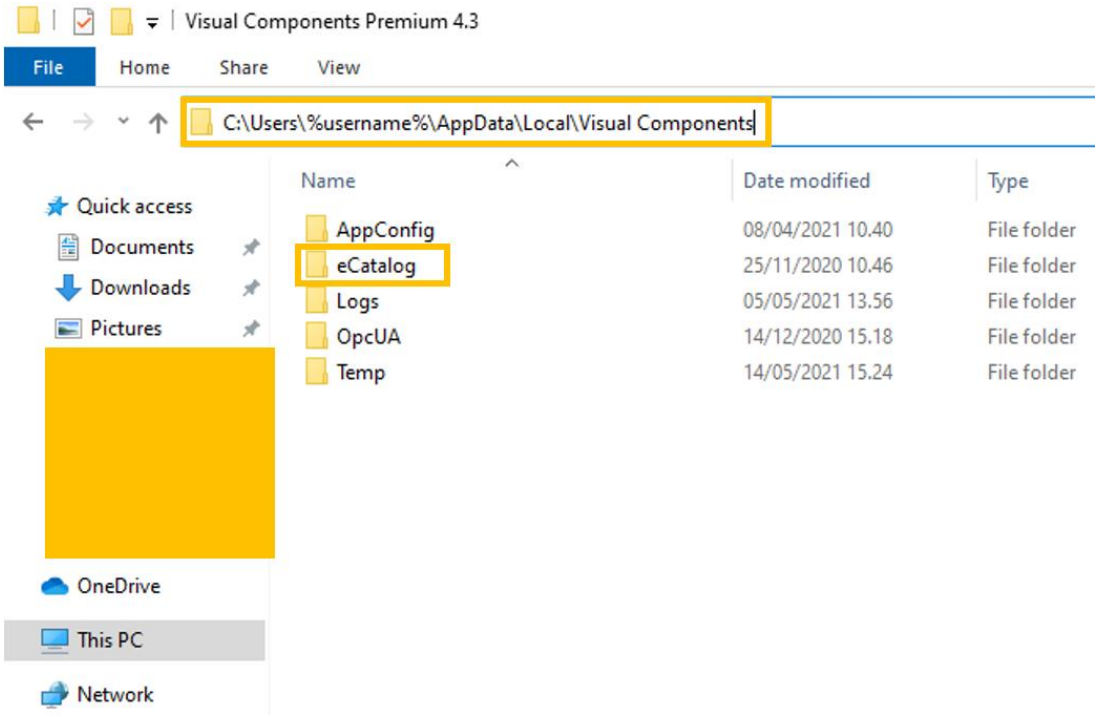

And then delete the eCatalog folder. However, keep in mind that deleting that folder will also delete custom collections and other custom eCatalog settings.

Another reason could be that you use an authenticating proxy server for internet connection, and this is usually the reason why eCat doesn't download. Our eCat server doesn't support authentication and therefore this kind of proxy connection fails. And the solution to that is to ask the IT administrator to bypass the proxy; the URL for that is https://download.visualcomponents.net/elib/4.3/sources.xml, and it's a https webpage using port 443. And if neither of those worked, please contact your Visual Components provider to receive the eCatalog content and instructions to add them manually.

Some useful tips when using Visual Components

Always check the output window for some info/messages

You can use the output window when debugging your .net add-ons, python add-ons, or component level scripts.

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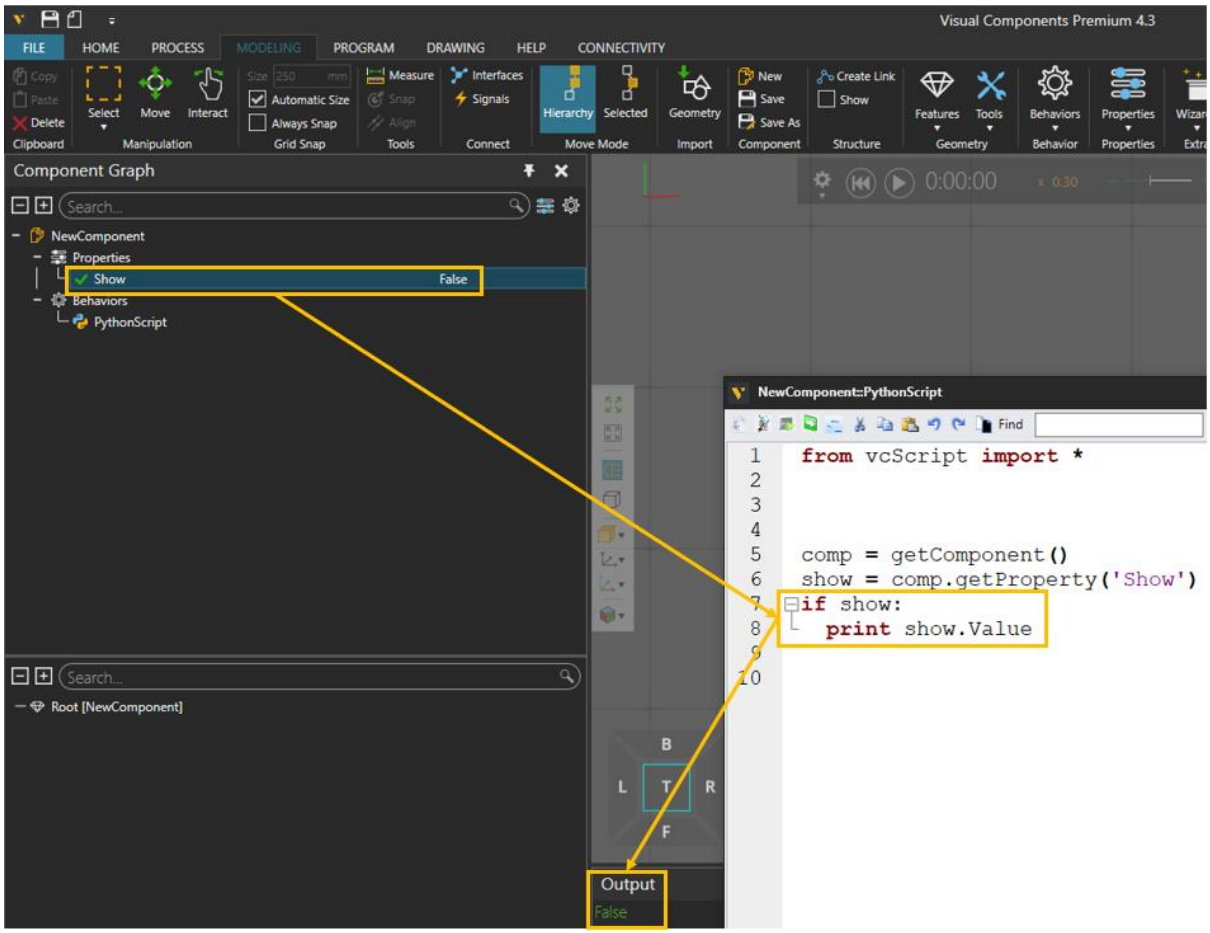
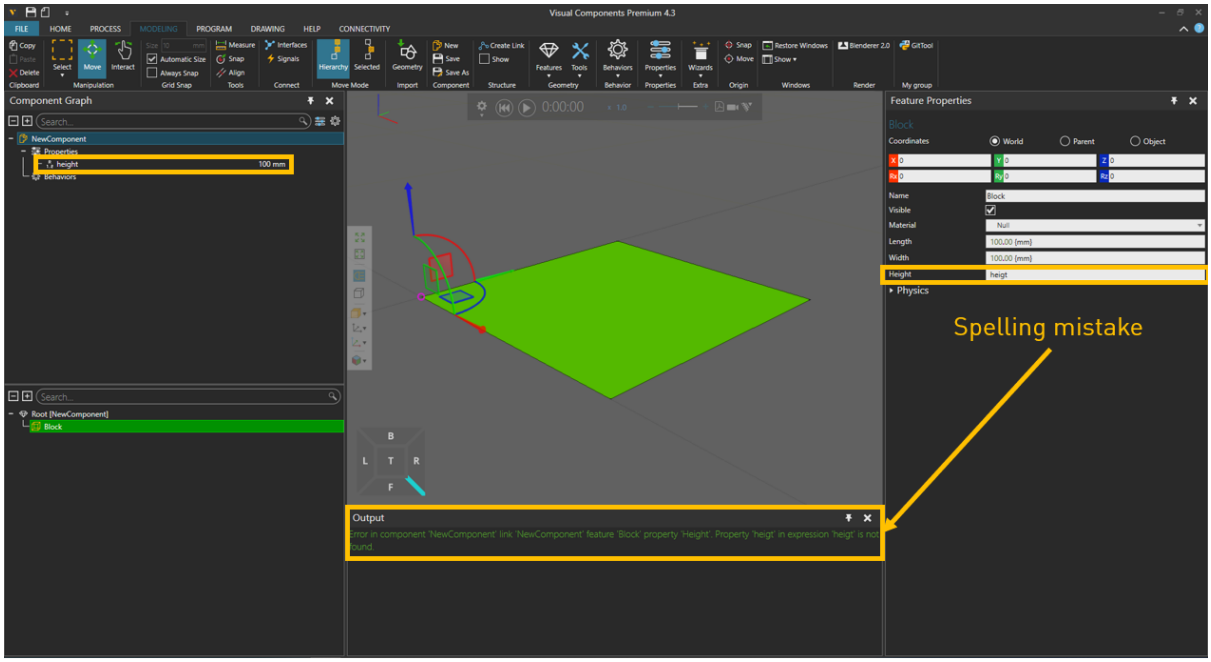


Also the messages could be spelling mistakes in Properties or behaviors during component modeling phase:



Or about robot reachability issues:

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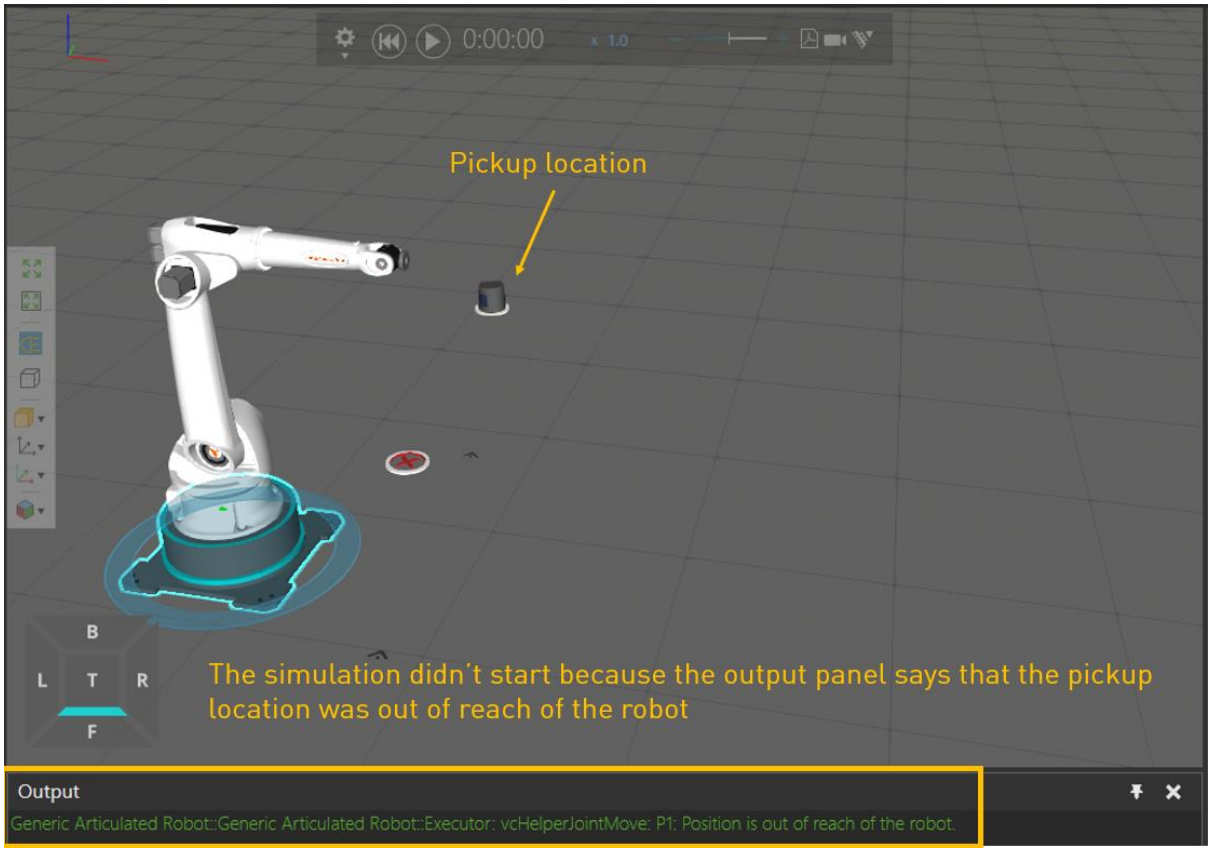
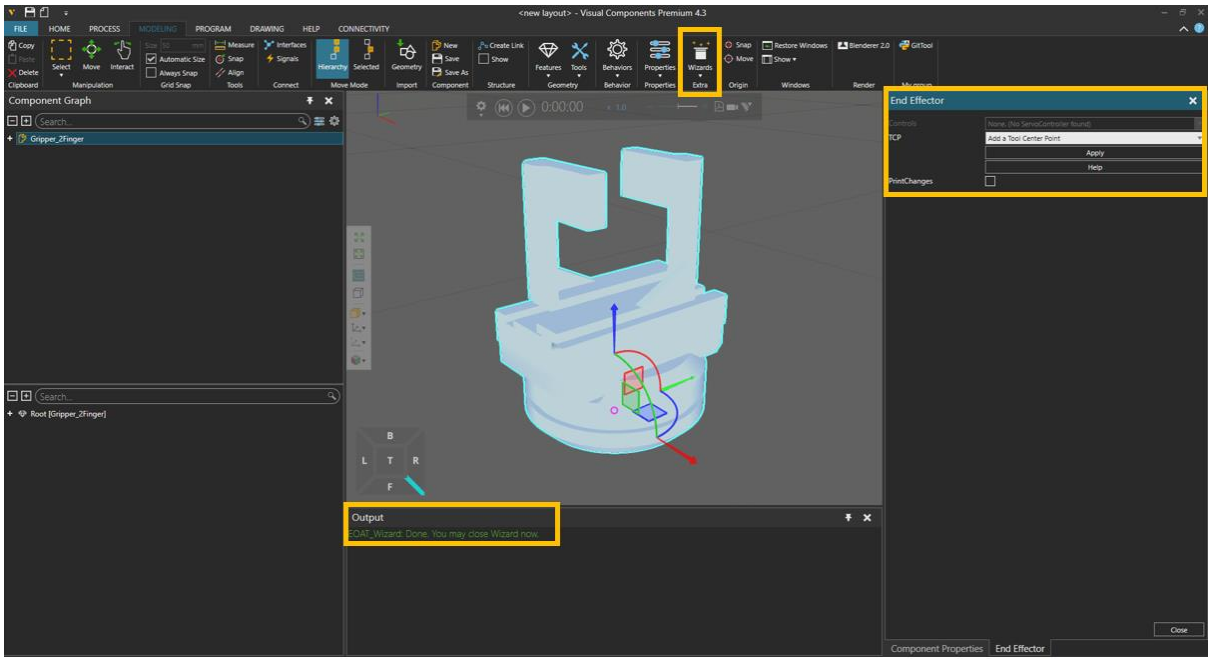


Or when using Wizards, you can check if they were used successfully:



Or you want to check if grippers or other robot tools are connected successfully in order to use them with signals:

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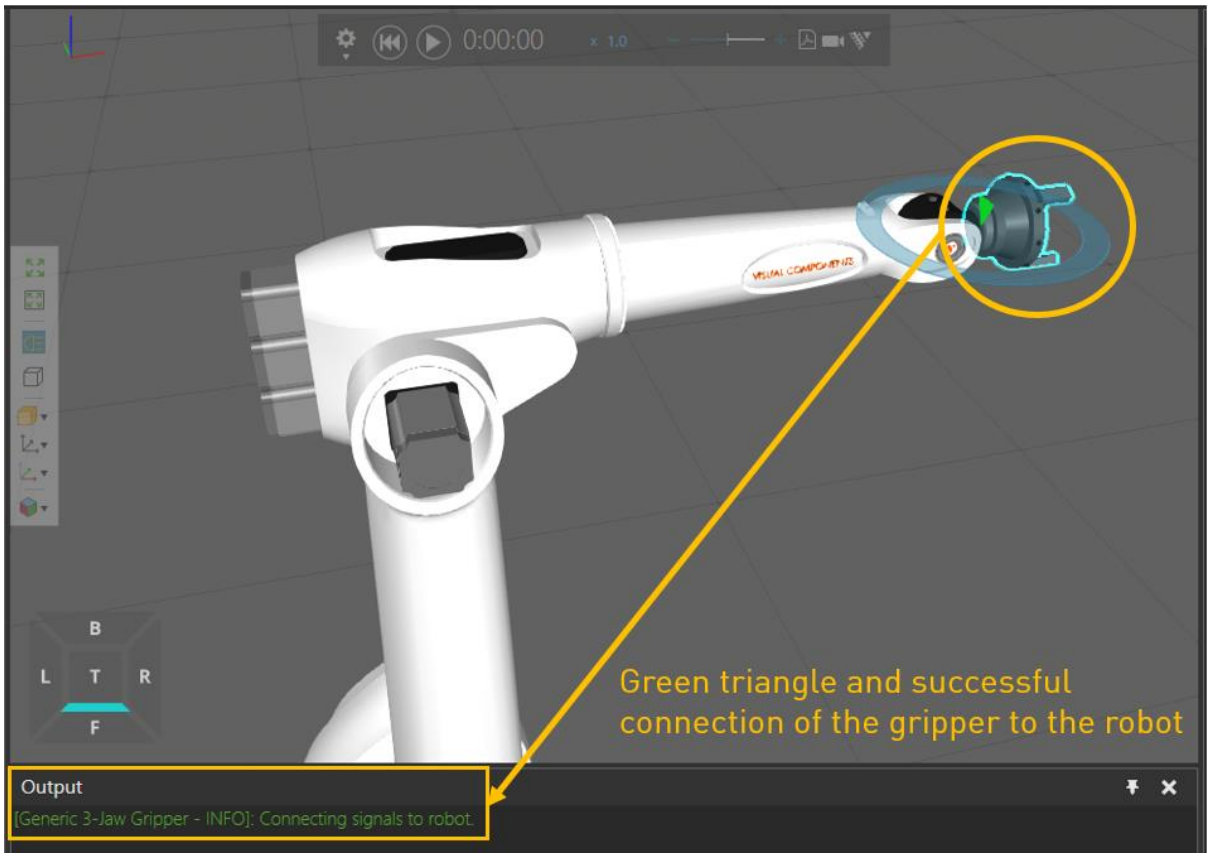
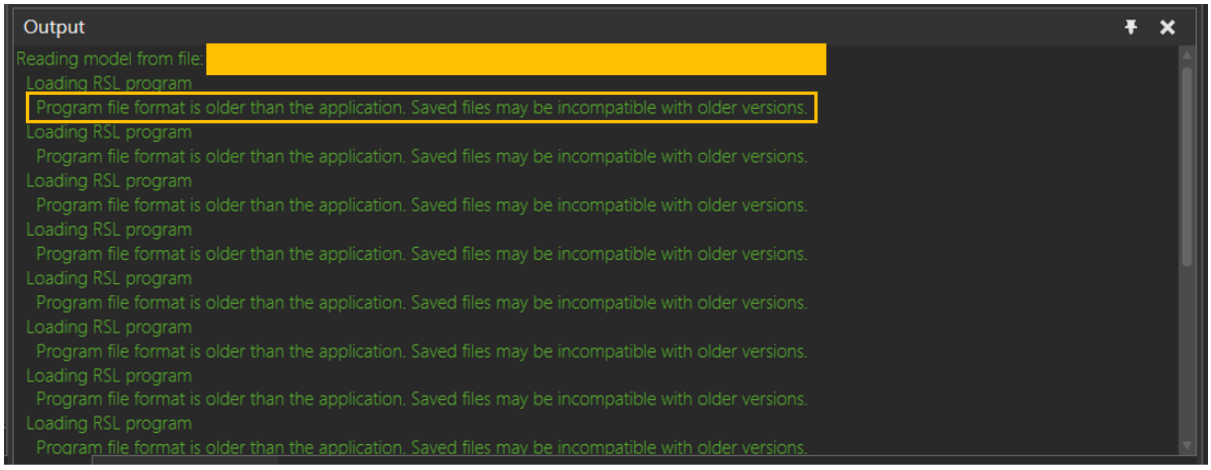
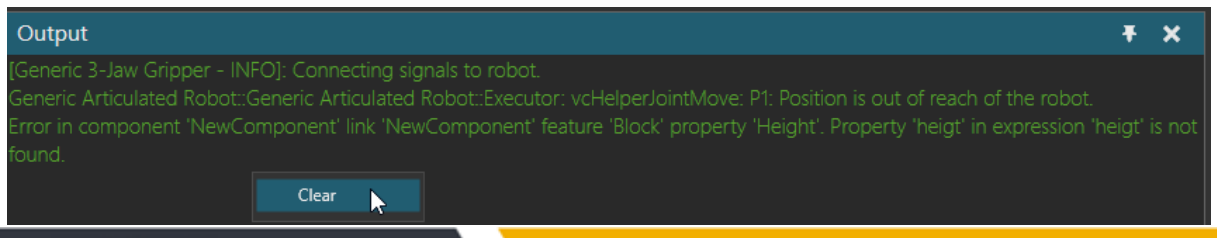


Or if you have made your layout in older VC versions, you might get prompt messages such as:



Its a good practice is to clear old messages in the output panel so that it becomes easier to read the new ones. You can do that by Right-clicking in the output panel and then press Clear:



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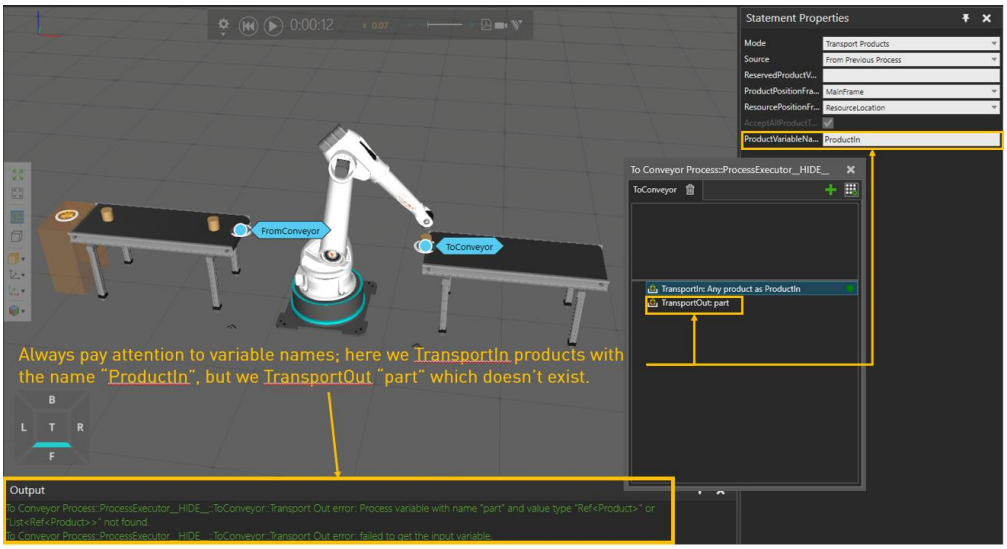
When using Process Modeling, always pay attention to variable names

PM processes handle errors with "on error resume next" principle, thus usually only the first error in output is useful and fixing it will fix others. Also do not ignore errors in output even though your layout seemingly does what you want.



Better to save the components and layouts in the My Models folder

If you are experiencing a long delay when saving layouts, consider storing your geometry files and components in your My Models folder. This has shown to improve both loading and saving layout performance.

The My Models folder is in your Documents library in the Visual Components folder. My Models is a system source, so it is automatically added and linked to your eCatalog panel. Adding subfolders in My Models is a helpful way to keep track and organize files, which will also be accessible from the eCatalog panel.

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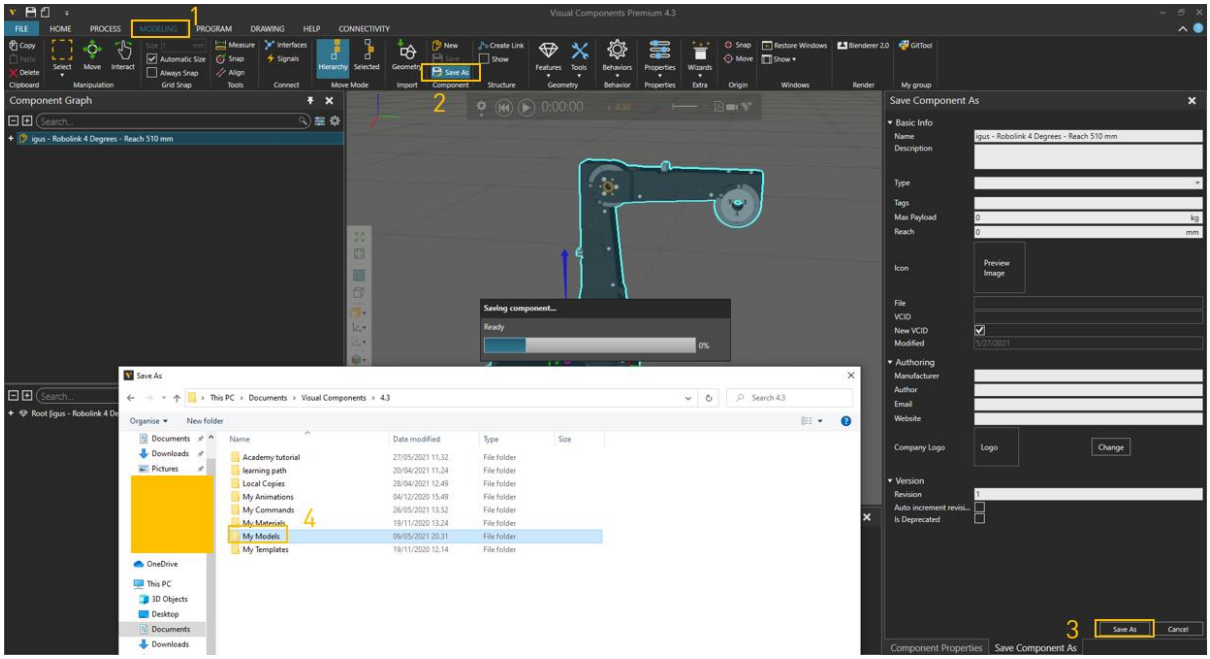
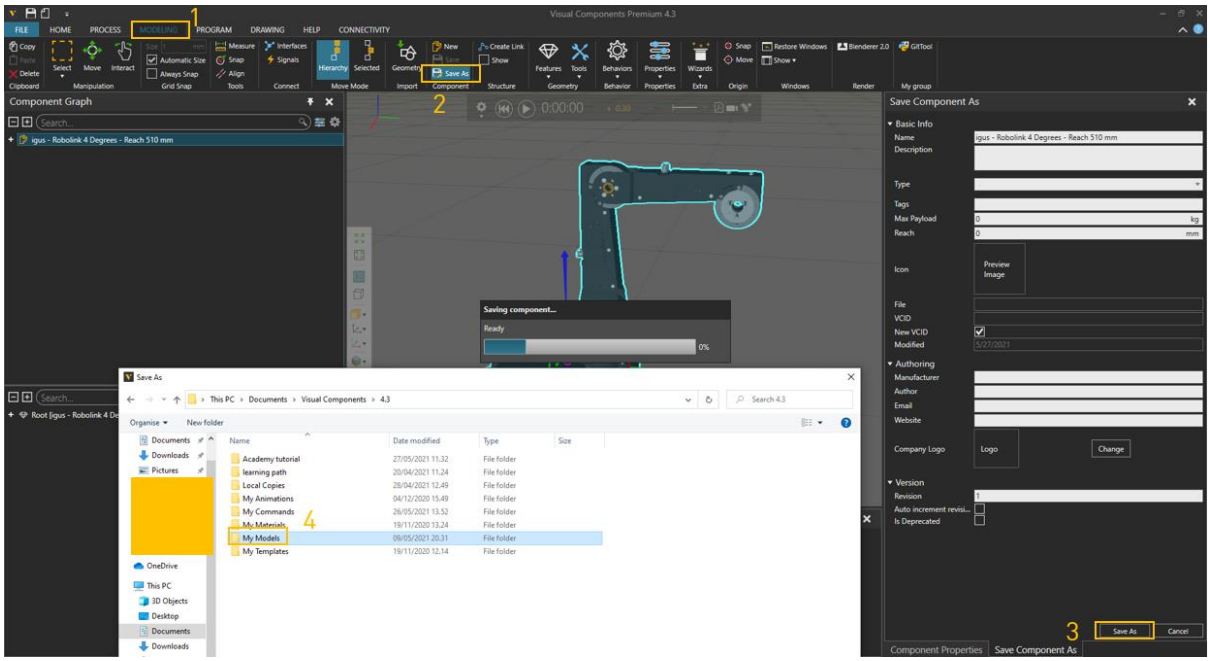


Always simplify the CAD files and save them as separate components, and only then start building the layout.

For simplifying the CAD files have a look at this tutorial and use Triangle Count and Auto Materialize add-ons.

And here is how you save imported CAD files as separate components:



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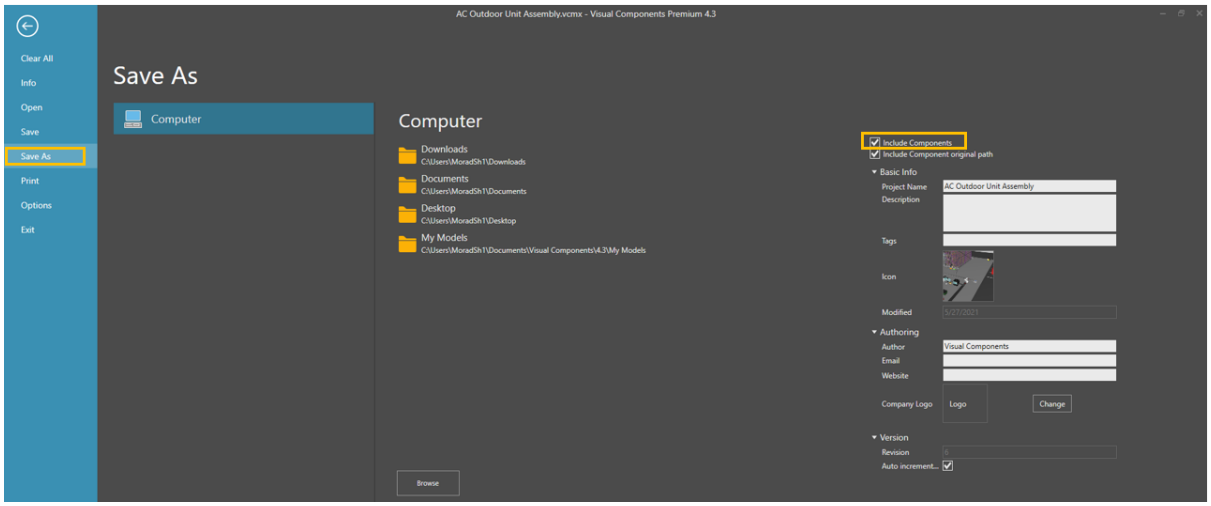
Save your layouts with "Include components" checked.

The Include Components option allows you to save a layout with its components. This is also known as packaging components.
Use this option if you need to share a layout with someone who may not have components in that layout, for example a VC Support agent.



For simulation or interaction with the 3D world, Shaded rendering mode has a better performance.

In this tutorial, you can find more information on the simulation performance and rendering.

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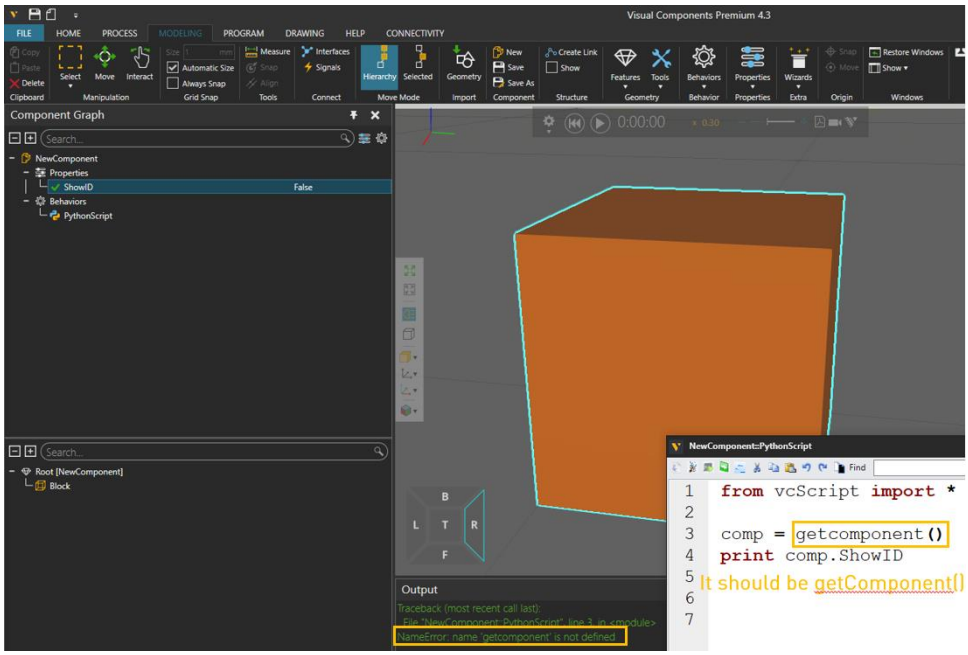
Python debugging

Check your spelling

Remember that the python editor inside of Visual Components does not have any spelling check. Check for the spelling errors in the output panel (this also includes capital letters)



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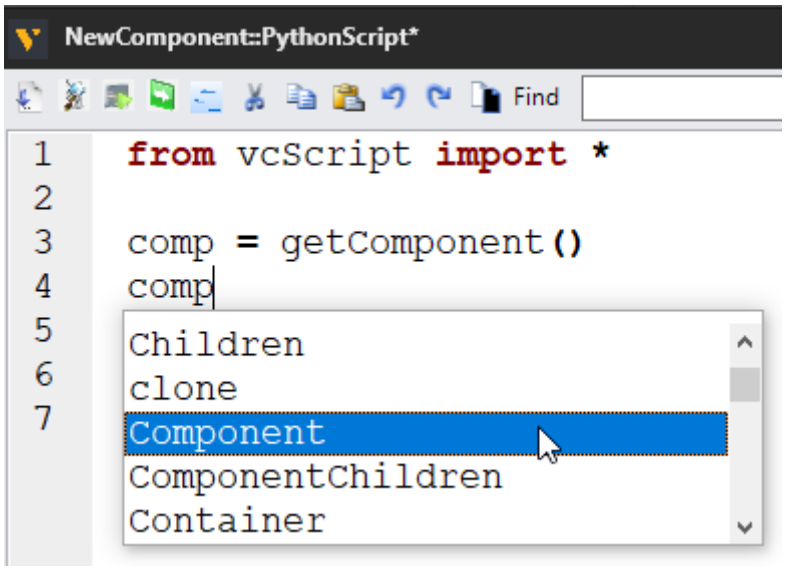
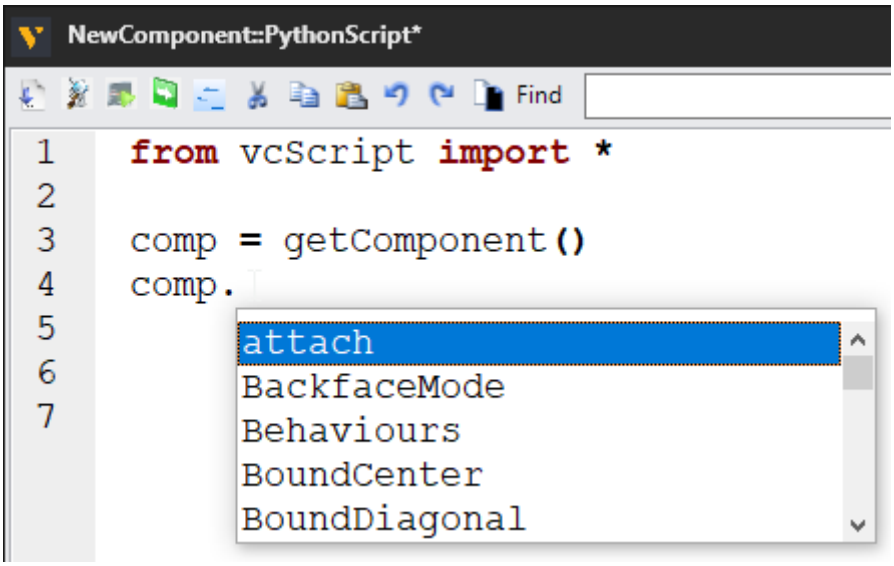
Use keyboard shortcut to avoid certain spelling mistakes

You can use Ctrl + Space to see the existing options:



You should also get the attributes/methods of objects using "dot" -> (".").



Understand time-consuming methods and event handlers

All the time-consuming methods must be called in OnRun function (or in functions, that are called from OnRun).

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-delay()

-servo.move()

-servo.moveJoint()

-condition()

-triggerCondition()

-etc

All other functions that are event handlers, must not block the simulation, therefore they should not consume time:

-OnSignal

-OnStart

-OnReset

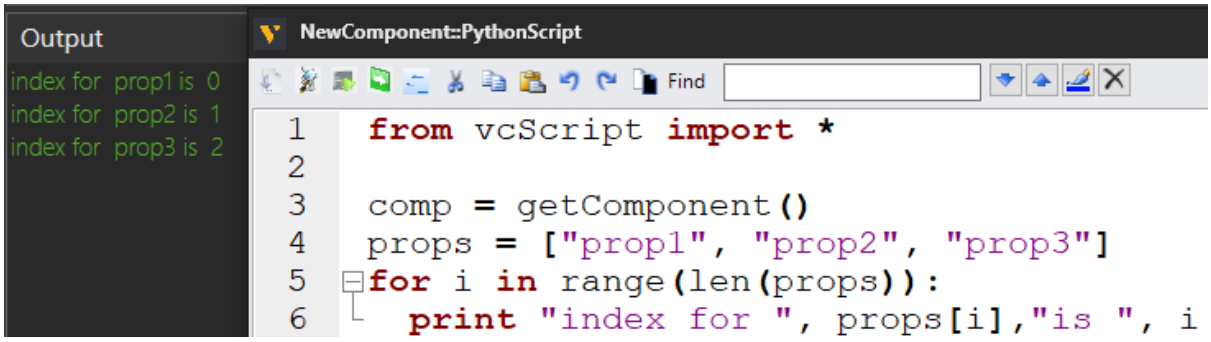
-OnFinalize

-OnSimulationUpdate

-etc

Check if you are following the general python scripting practice

- In python, the indexing starts from 0:



- Check that your condition lines and loops end in ":"

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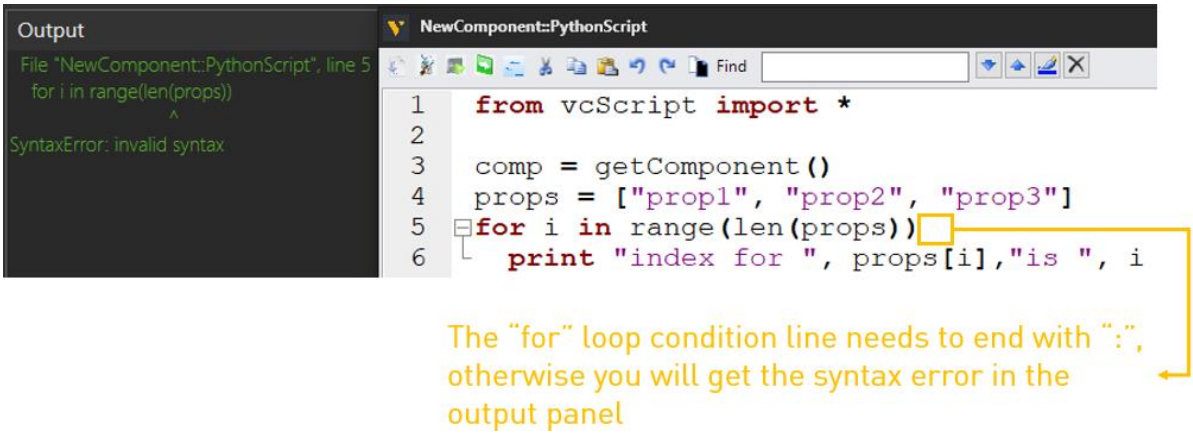
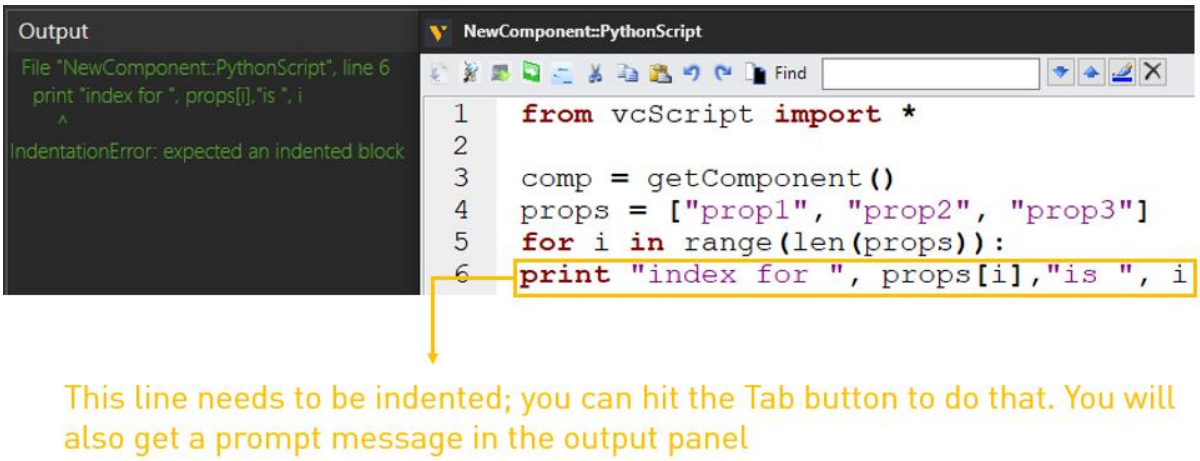


- Check that you have consistent indentation in your scripts; that's a standard scripting practice in python:



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