

Integration with MATLAB

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You can use MATLAB® to evaluate expressions written in MATLAB syntax in Magic Model Analyst. You must install MATLAB® first and set up your system to call and use it in Magic Model Analyst.



Note

- For successful integration, you must use either the 64-bit or 32-bit version of MATLAB (Version 2012a or later) to align it with the 64-bit or 32-bit version of modeling tools, e.g., MagicDraw or Cameo Systems Modeler.



Warning

MATLAB® 2014a on Mac OS is not capable of evaluating and returning values via Simulation Console, which causes MagicDraw to freeze. To solve this problem, please consider upgrading MATLAB® 2014a to 2014b or later.

Disabling OS X El Capitan's System Integrity Protection (SIP)

To disable OS X El Capitan's System Integrity Protection (SIP)

1. Restart your Mac.
2. As soon as the screen turns black, hold down the **command+R** keys to access the Recovery Partition.
3. Release the keys once the Apple logo appears on your screen.
4. Click the **Utilities** menu and select **Terminal**.
5. Type `csrutil disable` into the Terminal window and press **Return**.
6. The Terminal should display a message that SIP was disabled.
7. Restart your Mac for the changes to take effect.
8. Run MagicDraw/Cameo System Modeler and integrate it with MATLAB®.

Integrating MagicDraw or Cameo Systems Modeler with MATLAB® (on Microsoft Windows or Mac OS X)

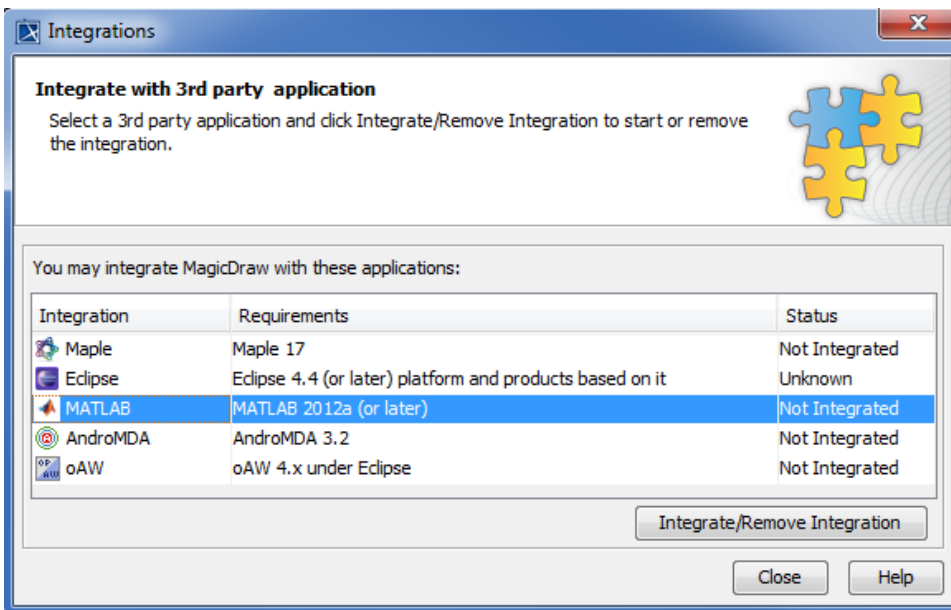


Note

To enable the **Integrations** menu under the **Tools** main menu, you must change the perspective to **System Engineer** or **Software Architect** by doing the following:

To integrate MagicDraw or Cameo Systems Modeler with MATLAB® (on Microsoft Windows or Mac OS X)

1. From the main menu, select **Options > Perspectives > Perspectives**. The **Select Perspective** dialog opens.
1. From the main menu, click **Tools > Integrations**. The **Integrations** dialog opens.
2. Select **System Engineer** or **Software Architect** and click **Apply**. The **Integrations** menu will be enabled.



2. Select **MATLAB®** and click **Integrate/Remove Integration**. The MATLAB® directory selection dialog opens.
3. Specify the directory where you installed MATLAB® and click **OK**.



Note

- If there are problems with integrating MATLAB® on Windows, please ensure that MagicDraw is running with the administrator's privileges, and then try to integrate again.
 - When integrating with MATLAB® for the first time or changing the MATLAB® version, restart your machine.
- You can also integrate MagicDraw or Cameo Systems Modeler with MATLAB® manually using the following steps.
- If the system has been integrated with MATLAB® previously, you do not have to restart the system since system variables have already been updated. Only restart MagicDraw.
 - [Using MATLAB on 32-bit and 64-bit Microsoft Windows](#)
 - [Using MATLAB on Mac OS 10.6 \(Snow Leopard\)](#)
 - [Using MATLAB on 32-bit and 64-bit Linux](#)

Connecting to a running MATLAB session

Simulation Toolkit can make connection to a running MATLAB session, thus all variables in the workspace can be used.

To connect Simulation Toolkit to a running MATLAB session through sharing

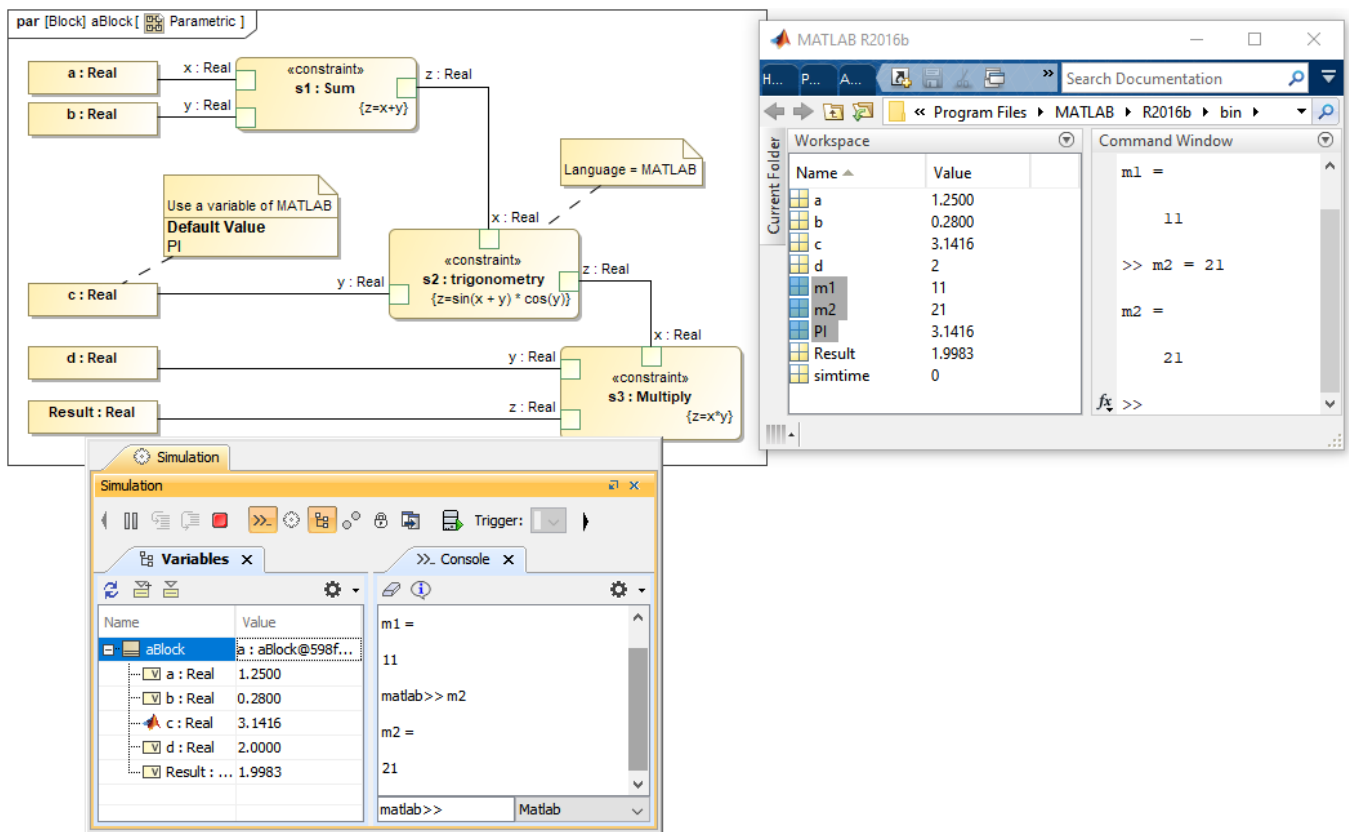
- Execute the **matlab.engine.shareEngine** command through the MATLAB Command window.



Note

- [MATLAB must be integrated successfully](#) before the connection is made.

• If the sharing command shown above is not executed, the other MATLAB session loaded by Simulation Toolkit will be used instead of the shared one. After the session connection, Simulation Toolkit can access variables in the MATLAB shared workspace that are not in the SysML model. You can define some variables in MATLAB, e.g., *m1* and *m2* and solve parametric in Simulation Toolkit. These two groups of variables are then merged and can be accessed in MATLAB as shown in the following figure.



Variables in the shared MATLAB workspace can be used in either Simulation Toolkit or MATLAB.

Related pages

- [Integration with external Evaluators](#)
- [Using MATLAB on 32-bit and 64-bit Microsoft Windows](#)
- [Using MATLAB on Mac OS 10.6 \(Snow Leopard\)](#)
- [Using MATLAB on 32-bit and 64-bit Linux](#)