Memory allocation

If you receive an error message saying your modeling tool is out of memory, the application does not have enough memory to operate. You can change the amount of allocated memory directly in the error message dialog or by changing modeling tool properties.

Memory allocation concept

Memory allocation for the product is the same as Java heap size. To increase the amount of memory allocated for the product, simply increase the Java heap size.

Recommended amount of allocated memory

The amount of allocated memory (or Java heap size) should be set to less than the available physical RAM on your computer. To calculate the approximate amount of memory you should allocate, subtract the amount of memory taken by any other processes that will run concurrently with your modeling tool from the total amount of RAM in your computer. Otherwise your JVM process will likely swap, and that will slow down the application.

Do not allocate too much memory

If you increase the Java heap size too much with the 32-bit JVM, you will get an error message that the Java virtual machine cannot be created, and a modeling tool will not start.

The maximum theoretical heap limit for the 64-bit JVM is 4G. In practice, the limit can be much lower, due to various additional constraints such as available swap, kernel address space usage, memory fragmentation, and VM overhead.

- On most 32-bit Windows systems the maximum heap size ranges from 640K to 800M.
- On 32-bit Solaris kernels the address space is limited to 2G.
- On 64-bit operating systems running the 32-bit VM, the max heap size can be higher, approaching 4G on many Solaris systems.
- On 64-bit VMs, the maximum Java heap size is limited only by the amount of physical memory and swap space your system provides.

Changing the amount of allocated memory

You can set the amount of memory allocated for your modeling tool either in the **Environment Options** dialog, in the modeling tool properties file, or in the **Environment Variables** dialog on your machine.

To change the amount of allocated memory in the **Environment Options** dialog

1. In the main menu of your modeling tool, go to **Options** > **Environment**. The **Environment Options** dialog opens.
2. Expand the **General** options group on the left side of the dialog, and select the **Memory Settings** category.
3. In the option specification area on the right side of the dialog, change the value of the **Maximum Heap Size** or **Thread Stack Size** option.

Low memory notification

While working on the project, you can get a *Low memory* notification. This notification is triggered by a mechanism that tracks whether the allocated amount of memory is enough to work with your currently opened projects. Click *Open Environment Options* to open the **Environment options** dialog where you can adjust memory settings.

To change the amount of allocated memory in the modeling tool properties file

To enable/disable notifications about low memory

1. Go to *<modeling tool installation directory>\bin* and open the modeling tool properties file.
2. In the **JAVA_ARGS** line, change the value of the **-Xmx** property. For example, change the **-Xmx800M** to **-Xmx1066M**.
3. Save and close the file.
4. Restart your modeling tool.

1. Go to **Environment Options** > **Display and find Notify about low memory option**
    - Set to *true* to show notifications about low memory.
    - Set to *false* to disable notifications about low memory. Also, this notification can be disabled, by clicking *Do not show again* option in the **Low memory** notification.

To change the amount of allocated memory in the **Environment Variables** dialog on your machine

1. Go to **Control Panel** > **System and Security** > **System** > **Advanced system settings.** The **System Properties** dialog opens.
2. In the **Advanced** tab, click **Environment Variables**. The **Environment Variables** dialog opens.
3. In the **System variables** section, do one of the following:
    a. If the **_JAVA_OPTIONS** variable is not in the variables list, click **New**. **New System Variable** dialog opens.
    b. If the **_JAVA_OPTIONS** variable is in the variables list, select it and click **Edit**. **Edit System Variable** dialog opens.
4. Set **Variable name** to **_JAVA_OPTIONS** and **Variable value** to the desired memory amount, e.g. **-Xmx1066M**. Click **OK**.

Changing options via the **Environment Variables** dialog overrides specified options for all Java applications.

Related pages

- Improving performance
- Background Task Manager
- Memory monitor
- Active validation period