

Disclaimer: The procedures described in the following are meant as an example, how to install sybil and sybilSBML on Windows 10, 64-bit. Where appropriate, we added links to the original descriptions underlying specific steps. The necessary procedures on your specific platform or version of Windows 10 operating system can be different. We give absolutely no warranty, that this procedure will work or that there are no negative consequences of the procedure on your system. We are not claiming, that this instruction is the only and best way to install the software. NEVER use any commands given in the following description, if you are not aware of what you are doing and what the commands exactly do and mean. Only download software from trustworthy locations. Always have backups of your system.

1. Installing R for Windows:

Step 1: Installing R for Windows

Download the R installer package from <https://cran.r-project.org/bin/windows/base/>. In this description, Version [R-4.1.0-win.exe](#) was used.

Start the `R-4.1.0-win.exe` installer

- Install R for Windows 4.1.0 into default folder `C:\Program Files\R\R-4.1.0`
- Uncheck "32-bit-Files" checkbox
- Check default "No (accept defaults)" at customizing startup options
- Select the default "R" at Select Start Menu Folder:
- Select Additional Tasks:
- Select default "Save version number in registry" and "Associate R with .RData files"

Step 2: Adding R to the Path environment variable

After installation open the search in the start menu of Windows 10, type "env" and choose "Edit the system environment variables"

Click on "Environment variables"

In the "User variables for ..." section click on Path

Add `C:\PROGRA~1\R\R-4.1.0\bin` to the Path environment variable

Log off and in

The command `R --version` in a Windows terminal should display the installed R version ("R version 4.1.0 ...")

2. Installing the binary package version of sybilSBML:

A binary package version of sybilSBML, that was linked against the static version of the libSBML library can be downloaded [here](#). The source code of libSBML can be found [here](#). The source code of sybilSBML can be obtained from [here](#). Although this installation procedure is probably the easiest, keep in mind, that installing binary packages is always a security risk for your system. It is also possible to install the package from sources (see section 3).

Step 1: Installing sybil package and sybilSBML packages

```
install.packages("sybil")
```

Step 2: Installing the binary sybilSBML package for Windows

Download the latest binary package version of sybilSBML [here](#). In this description, `sybilSBML_3.1.3.zip` was used. In R for Windows, type the following commands in the R environment (modify example file path shown here for the correct location of the `.zip` file):

```
install.packages("C:/Users/traes/Desktop/sybilSBML_3.1.3.zip", repos = NULL)
```

Step 3: Loading libraries

You should now be able to load the libraries by starting R and typing the following commands:

```
library(sybil)
library(sybilSBML)
```

3. Installing the source package version of sybilSBML:

This procedure is more comprehensive, since it is necessary to install the Windows toolset ([Rtools40](https://cran.r-project.org/bin/windows/Rtools/)), [libSBML](https://cran.r-project.org/bin/windows/Rtools/) and set some environment variables. In the following, we will go through the necessary steps to install sybil with sybilSBML from source code on Windows 10, 64-bit. Please make sure, that you adjust individually presented paths according to the situation on your system.

Step 1: Installing the R Windows toolset

Information source: <https://cran.r-project.org/doc/manuals/R-admin.html#The-Windows-toolset>

Section "3.1 Building from source"

Subsection "3.1.1 The Windows toolset"

Download the Rtools installer from <https://cran.r-project.org/bin/windows/Rtools/>. In this description, `rtools40v2-x86_64.exe` was used.

Start the Rtools40 installer

- Install Rtools40 into default destination folder `C:\rtools40`
- Select default additional tasks: "Save version information to registry" and "Create start-menu icons to msys2 shells"

Step 2: Add environment variable `RTOOLS40_HOME`

After installation open the search in the start menu of Windows 10, type "env" and choose "Edit the system environment variables"

Click on "Environment variables"

In the "User variables for ..." section click on "New"

Add variable `RTOOLS40_HOME` with value `C:\rtools40`

Restart Windows

The command `echo %RTOOLS40_HOME%` in terminal should print out `C:\rtools40`

Step 3: Adding Rtools 40 to the Path in the R environment

Information source: <https://cran.r-project.org/bin/windows/Rtools/>

Section: "Putting Rtools on the PATH"

Start R in a Windows terminal by command `R`

In the R console, write command:

```
writeLines('PATH="%RTOOLS40_HOME%\usr\bin;%PATH"', con = "~/.Renviron")
```

Restart R

The command `Sys.which("make")` should print

```
C:\\rtools40\\usr\\bin\\make.exe
```

Building packages from source should be possible at this point, so we verify it by installing package `jsonlite` from source:

```
install.packages("jsonlite", type = "source")
```

if you are asked, if you want to create a personal library, answer "yes" and accept the default folder of the personal library.

The package should install with no problem, if Rtools40 is installed and everything is set correctly.

Step 4: Install libSBML 5.19.0 for Windows 64-bit

Download the libSBML-installer from [here](#). In this case `libSBML-5.19.0-win-x64.exe` was used.

Start the libSBML installer

- Install libSBML into the default destination directory
`C:\Program Files\SBML\libSBML-5.19.0-libxml2-x64`
- In the select bindings menu, no selections are necessary.

Step 5: Add environment variable LIB_SBML

After installation open the search in the start menu of Windows 10, type "env" and choose "Edit the system environment variables"

Click on "Environment variables"

In the "User variables for ..." section click on "New"

Add variable `LIB_SBML` with value `C:\PROGRA~1\SBML\libSBML-5.19.0-libxml2-x64\win64`

- Make sure, that you do not forget the `\win64` at the end

Log off and in

Step 6: Install sybil

Start R in a Windows terminal and execute the following command:

```
install.packages("sybil")
```

Step 7: Installing sybilSBML

In a Windows terminal type the following command (modify example file path shown here for the correct location of the `.tar.gz` file)

```
R CMD INSTALL C:\Users\traes\Desktop\sybilSBML_3.1.3.tar.gz
```

Step 10: Loading libraries

You should now be able to load the libraries by starting R and typing the following commands:

```
library(sybil)  
library(sybilSBML)
```