

Installation Guide

*Installation guide for the smile consult GmbH software tools
Janet, Gismo, Davit and Marina*



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1. Introduction

The smile consult software tools are designed as platform independent Java applications and thus can be used on all operating systems for which a Java Virtual Machine of version 1.5 (Java5) or higher is available. The installation package is pre-configured to be used with the 32bit operating system versions of *Windows* (*Windows2000*, *WindowsXP* or *WindowsVista*) as well as on *MacOSX 10.5 (Leopard)* and can be run without further modifications. For a different operating system, eventually a few adjustments have to be applied to the installation. This document will guide through the installation and configuration steps for the widely used operating systems *Windows*, *Linux* and *MacOSX*. Installations for further Unix-like operating systems, especially *Solaris* and *HP-UX*, should refer to the *Linux* section of this document.

The installation package is shipped as a zip-file installer and installation is simply done by extracting the zip-archive. The installation process avoids any modification to system files and directories (e.g. registry entries), so the software can easily be deinstalled from a computer by removing the `/smilesoftware` directory.

After the zip-file is extracted to an arbitrary directory in the file system, the following directory structure can be found.

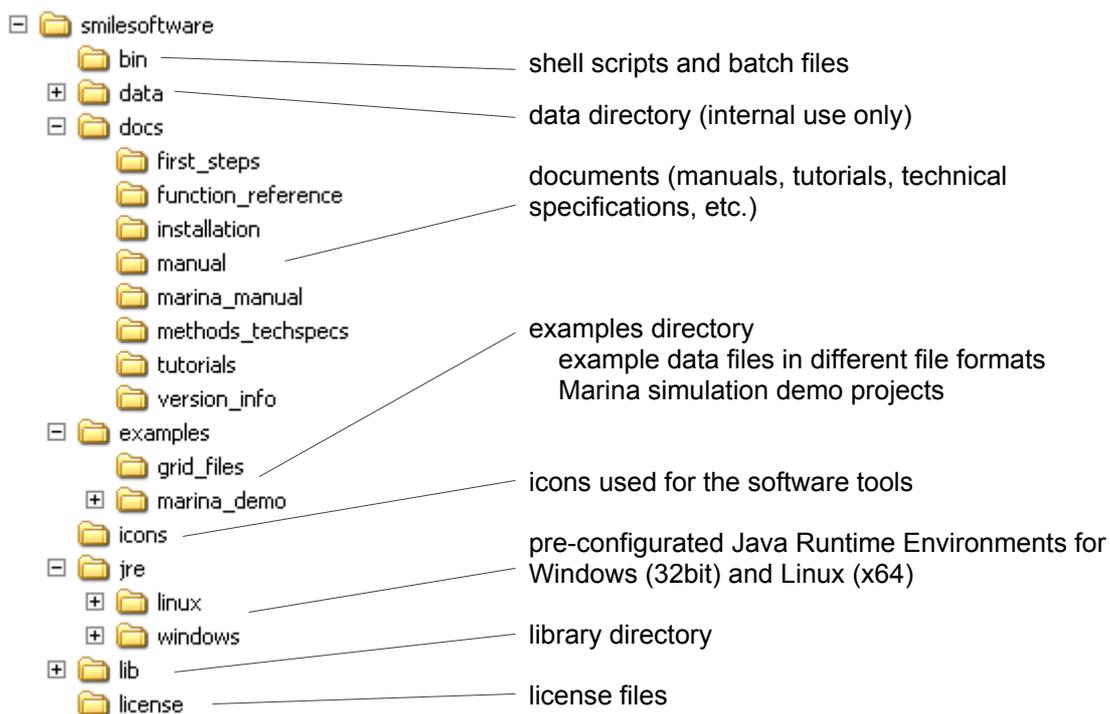


Figure 1: Directory structure of the smile consult GmbH software suite

2. Installation for Windows

2.1. Installation for Windows2000, WindowsXP, WindowsVista (32bit)

Installation is done by extracting the zip-file installer to an arbitrary directory. The tools can then be started using the batch files `janet_win.bat`, `gismo_win.bat`, `davit_win.bat` and `marina_shell_win.bat` that are found in the extracted `/smilessoftware/bin` directory.

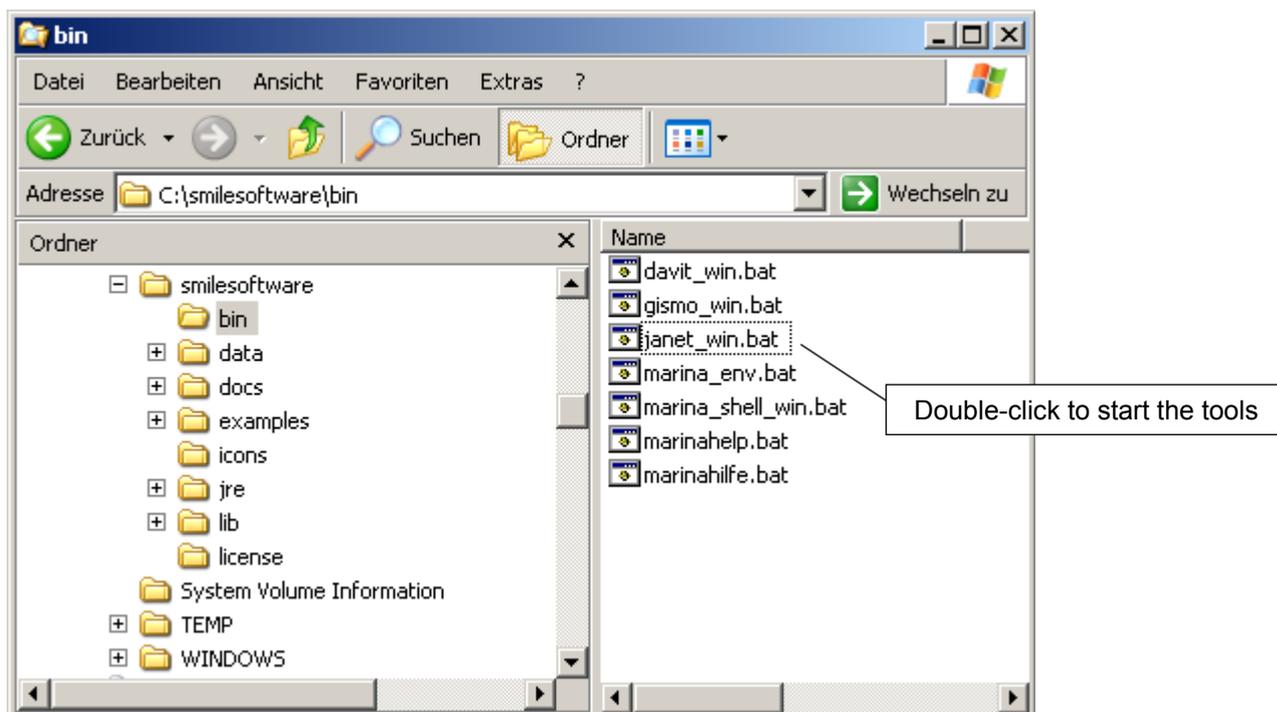


Figure 2: Batch files to start the software tools for the Windows operating system

The build-in 3D visualization based on Java3D is fully configured and uses the OpenGL driver of the graphics adapter. The driver must support OpenGL version 1.3 or higher. Alternatively DirectX can be used with Windows, switching to DirectX is shown in the „Troubleshooting“ section.

2.2. Installation for Windows2000, WindowsXP, WindowsVista (64bit)

Using the software tools with the 64bit version of Windows requires the installation of an appropriate version of the Java Virtual Machine. The download of a Java Runtime Environment (JRE) or a Java Development Kit (JDK) can be found at the Java sites at <http://java.sun.com/javase/downloads/index.jsp>.

After downloading and installing the JRE/JDK the batch files `janet.bat`, `gismo.bat`, `davit.bat` and/or `marina_env.bat` in the `/smilessoftware/bin` directory have to be modified. The variable `JAVA_PATH` has to be adjusted to the local java installation path. The section to be edited is marked in the scripts. For example the edited file might result in the following lines:

```

rem -----
rem 2. for Windows 64bit adjust to local installation path
rem -----
set JAVA_PATH=c:\jre1.6.0_12\bin

```

The pre- and postprocessing tools Janet, Gismo and Davit use a build-in 3D graphics engine based on Java3D. The hardware accelerated visualization relies on dynamic link libraries intergrated in the installation package. If an AMD64 microprocessor architecture is used, the library path to these files has to be adjusted according the following example:

```

rem -----
rem 3. set to directory to "amd64", if AMD64 microprocessor is used
rem -----
set JAVA3D_LIBRARY_PATH=%SMILESOFTWARE_LIBRARY_PATH%\java3d\windows\amd64

```

After the modification steps are finished, the tools can then be started using the links `janet_win.bat`, `gismo_win.bat`, `davit_win.bat` and `marina_shell_win.bat` that are found in the extracted `/smilesoftware/bin` directory.

2.3. Configuring the Memory Settings for the Windows Installation

The tools are started with a memory setting of 1 GB. The memory size is set as an option in the batch files. To in- or decrease the memory size, edit the value of `JVM_MEM`. The memory size is given in megabytes and is edited in the following section off he start script:

```

rem -----
rem 1. adjust memory setting
rem -----
set JVM_MEM=1000

```

It has to be taken into account that the Java Virtual Machine cannot address more than about 1200 megabytes when run under Windows 32bit. Using the software tools with a 64bit operating system of Windows does not have this limitation to 1.2 GB.

2.4. Creating Desktop Links for Windows

A link to the software tools can easily be created on the user's desktop. The link is created with the Windows Explorer to the specific batch file and then copied to the desktop. Optionally the link can be configurated using the icons from the `/smilesoftware/icons` directory.

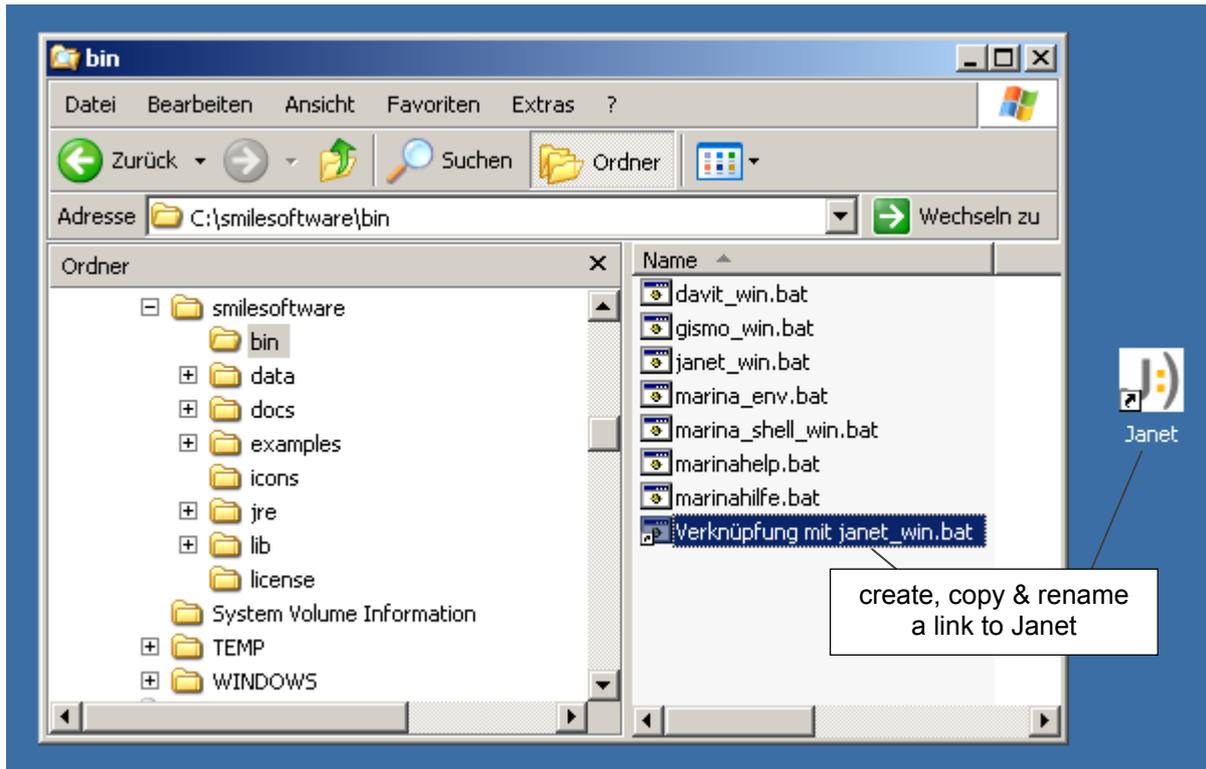


Figure 3: Creating a link to the software tools on the desktop

3. Installation for Linux

Installation is done by extracting the zip-file installer to an arbitrary directory. The default installation directory used in the shell scripts is `/opt/smilessoftware`, so it is recommended to extract the archive to `/opt`.

The installation furthermore requires a locally installed Java Runtime Environment (JRE) or a Java Development Kit (JDK) of version 1.5 (Java5) or higher. The availability of Java might be easily checked by executing `java -version` in a shell or by inspecting the `/opt` and `/usr` directories. If Java has to be newly installed, installation packages for several processor architectures can be found on Sun's Java site at <http://java.sun.com/javase/downloads/index.jsp>.

In a next step the shell scripts `janet_linux.sh`, `gismo_linux.sh`, `davit_linux.sh` and/or `marina_linux.sh` from the `/smilessoftware/bin` directory have to be modified. The local installation path and the path to the JRE/JDK are edited at the marked lines, e.g.:

```
#-----
# 1. set to local installation path
# -----
export SMILES SOFTWARE_PATH=/opt/smilessoftware
```

```
#-----
# 2. set to local Java path
#-----
export JAVA_PATH=/opt/jdk1.6.0/bin
```

To enable Java3D for *Linux* the path to the shared libraries for the microprocessor architecture of the computer has to be set. Shared libraries for the widely used i386 and amd64 processor families are included in the installation package. The following lines of the shell script show the default settings and can be modified by replacing i386 with amd64.

```
#-----
# 3. adopt Java3D path to directory "/i386" or "/amd64"
#-----
export JAVA3D_CLASSPATH=$SMILESOFTWARE_LIBRARY_PATH/java3d/linux
export JAVA3D_LIBRARY_PATH=$SMILESOFTWARE_LIBRARY_PATH/java3d/linux/i386
```

After including the /smilesoftware/bin in the user profile's PATH variable, the software tools can be started with

```
janet_linux.sh 1200
gismo_linux.sh 1200
davit_linux.sh 1200
marina_shell_linux.sh config.xml or marina_shell_linux.sh -gui
```

The argument passed to the shell scripts is the amount of heap size for the Java Virtual Machine in megabytes. It is recommended to run the tools with an adequate memory size to avoid out of memory errors for larger datasets (>500M).

4. Installation for MacOSX 10.5 (Leopard)

Installation for MacOSX is done by extracting the zip-file installer to the /Applications directory. The software tools can then be started by running the shell scripts janet_macosx.command, gismo_macosx.command, davit_macosx.command and/or marina_macosx.command from the /Applications/smilesoftware/bin directory. Starting can be done using the Terminal (shell) program or by simply double-clicking the specific files in the Finder software.

The installation package includes all libraries required for Java3D for MacOSX, so the build-in 3D graphics engine for Janet, Gismo and Davit can be used without further modifications.

4.1. Configuring the Memory Settings for the MacOSX Installation

The memory settings can be modified by changing the value of JVM_MEM in the shell scripts. The value is set in megabytes and is edited in the marked line, e.g.:

```
#-----
# 1. adjust memory setting
#-----
export JVM_MEM=1000M
```

4.2. Creating Desktop Links for MacOSX

A link can be created by generating an alias for the specific shell script and dragging the alias to the desktop. Figure 4 illustrates the creation of a link for the preprocessor Janet.

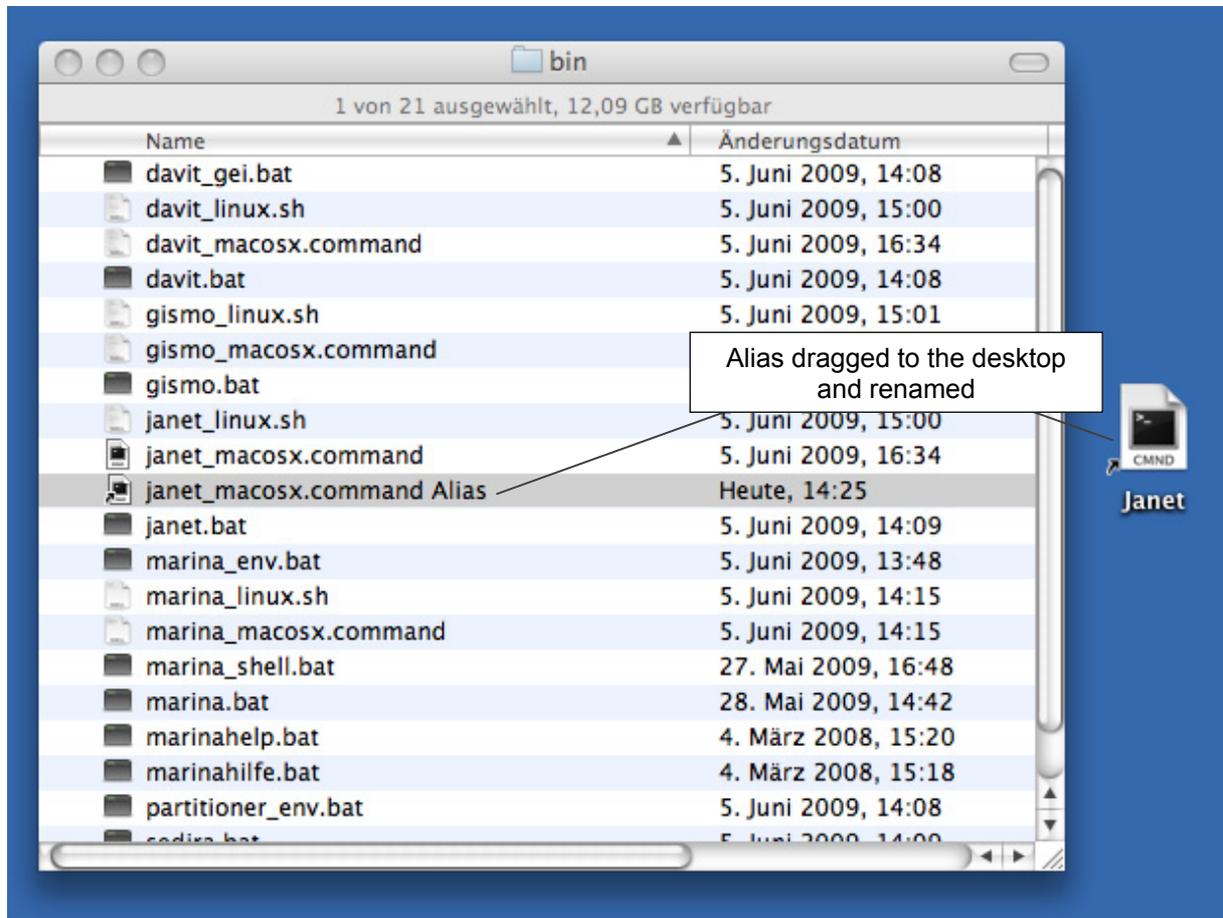


Figure 4: Creating a link to the software tools on the desktop

5. Troubleshooting

5.1. Java3D is not running with Windows (32bit)

Problems with Java3D on the 32bit version of Windows (2000, XP or Vista) might occur if the driver of the graphics adapter does not support OpenGL 1.3. In these cases an error message is shown when a 3D visualization is created.

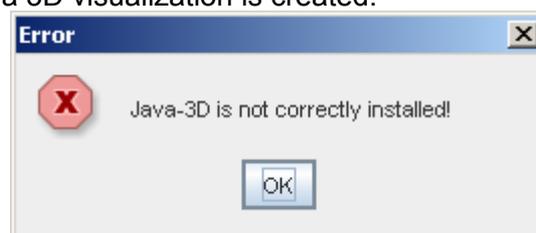


Figure 5: Error message for 3D visualization

To solve this problem, it is NOT recommended to install an additional Java3D installation package, since all required resources are integrated in the software package and installation might cause version conflicts if the Java3D version does not fit to the one used for the tools (Java3D 1.5.1) .

It is recommended to

- a) Switch to DirectX or
- b) Update the driver software for the graphics adapter

The DirectX version of Java3D is enabled by adding the command option `-Dj3d.rend=d3d` to the shell scripts in the `/smilesoftware/bin` directory. For example to change the batch file for the preprocessor Janet, the last line of the shell script

```
java -Xmx%JVM_MEM%M de.smile.gui.janet.JanetGui
```

has to be modified to

```
java -Xmx%JVM_MEM%M -Dj3d.rend=d3d de.smile.gui.janet.JanetGui
```