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Download and installation

Download

GSvit can be downloaded as stable version, which is recommended, either as binary package for many different operating systems or as source code. A current development version can be also obtained from Subversion repository, however this is not recommended as code under development might behave unexpectedly. See GSvit download pages for more details.

Binary installation

GSvit computational core and its GUI (XSvit) are distributed together for all the platforms. For running it you need Gwyddion to display the output images. Gwyddion is a data processing tool widely used in Scanning Probe Microscopy field and similar surface topography areas; in GSvit it is used for output visualisation, surface topography data input and some internal data management tasks.

If you would like to run your calculations on a computer graphics card you need to have a CUDA capable card and a NVIDIA driver installed.

Windows

Since version 1.6 both the computational core (GSvit) and the GUI (XSvit) are distributed in a single package. The installer creates a desktop icon for XSvit, so you can create the necessary files and run the calculation from this environment. Of course, you can run the computational core directly provided all the necessary files were created in beforehand. In that case you have to first start a command prompt (*cmd.exe*) and run GSvit from there.

We recommend to first uninstall any pre-1.7 version of GSvit as a different set of libraries is distributed since version 1.8.

Please note that Gtk, Gwyddion and CUDA libraries are shipped with GSvit. You don't have to install them separately.

Since we switched to MS Visual Studio 2015 with version 1.8.2, you need to have runtime libraries for this version. If you have sufficiently new Windows OS (not sure what "sufficiently" is), you should already have them. If not, you can download them from Microsoft websites upon registration to Microsoft.

The default installation paths on 64-bit systems are *C:\Program Files (x86)\GSvit\bin\gsvit3d.exe* for the 32-bit version, and *C:\Program Files\GSvit\bin\gsvit3d.exe* for the 64-bit version.

The 32-bit binary can run on 64-bit systems too, but there are considerable constraints to the model size due to memory addressing limitations of the 32-bit architecture.

The 64-bit version does not contain the parameter file viewer XSvit. The reason is that 64-bit GtkGLExt libraries are not available. If you want to use XSvit with 64-bit GSvit, we recommend to install both the 32- and 64-bit versions (to different folders). Then set GSvit executable path in File/Preferences to the 64-bit GSvit executable. Now you can run more demanding computations from

XSvit using 64-bit GSvit.

Linux

Due to process complexity, precompiled packages prepared using openSUSE Build Service are no longer provided.

Installing from source tarball

If you plan to modify the source code, you have to install Gwyddion's development package as well as development packages of GTK+ 2 and GtkGLExt. For Gwyddion, please follow the official pages on how to install it properly.

In order to build GSvit with GPU support, you need to install the NVIDIA CUDA Toolkit. It can be downloaded from NVIDIA's site. Linux users should refer to their distribution documentation and consider installing from proper repositories.

Linux

All you need is included in the tarballs, but you are free to checkout the svn repository to get the current development version.

The software should be installed using standard Linux procedure

```
./configure
make
make install
```

You can specify the path where to install GSvit by a configure option `--prefix=path`.

A binary RPM can also be built from the source code tarball directly by issuing the following command: `rpmbuild -tb gsvit-X.Y.Z.tar.xz`.

Using a non-packaged CUDA installation

The *PATH* variable is used to search for Nvidia's compiler NVCC. In order to find it, you need to set this variable accordingly, e.g. `export PATH=/usr/local/cuda-X.Y/bin:$PATH`. Alternatively, you can provide path by option `--with-cuda=path` to `./configure`.

Please don't forget to adjust also your *LD_LIBRARY_PATH* variable, e.g. by `export LD_LIBRARY_PATH=/usr/local/cuda-X.Y/lib64:/usr/local/cuda-X.Y/lib:$LD_LIBRARY_PATH`. Or you can update the `/etc/ld.so.conf` file to contain the CUDA lib directory, however this needs root's permissions.

Gwyddion

GSvit is also dependent on Gwyddion's libraries, so you need first to install this software. You can download and install it using procedures described on the official Gwyddion download. You also need to have Gwyddion open source software installed to provide output to .gwy files.

If you installed Gwyddion in a nonstandard location, you have to set up the *PKG_CONFIG_PATH* variable, e.g. by `export PKG_CONFIG_PATH=/home/username/somedir/gwyddion-X.Y/lib/pkgconfig:$PKG_CONFIG_PATH`.

The software has primarily been tested on openSUSE, Fedora and Debian, but hopefully should run on any system with CUDA and Gwyddion.

Windows

We can provide MS Visual C++ 2015 solution and project files upon request.

Installing the development (unstable) version

The development version can be checked out from the Subversion repository by issuing the following command: `svn checkout svn://svn.code.sf.net/p/gsvit/code/trunk gsvit`. For Windows, we have good experience with TortoiseSVN as a Subversion client.

Under Linux environment the software should be installed using the standard source installation procedure, except `./configure` is replaced by `./autogen.sh`. Note that you can also pass arguments such as `—prefix=path`.

Under Windows environment we use MS Visual Studio 2015, and we can provide a solution and project files together with all the necessary dependencies upon request. This MSVC version is able to compile 64-bit binaries, and indeed we succeded to complete the build. However, the 64-bit XSvit binary behaves oddly so we decided not to publish GSvit-x64 for now. We plan to put these together with all dependencies in the svn repository.

From:
http://gsvit.net/wiki/ - **GSvit documentation**

Permanent link:
http://gsvit.net/wiki/doku.php/start:installation?rev=1539350409

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