GuidosToolbox – Installation

This document provides installation instructions for the image analysis program GuidosToolbox (GTB). The software is available for Linux (64bit), macOS (64bit), and Microsoft Windows (32/64bit) at: http://forest.jrc.ec.europa.eu/download/software/guidos/
GTB includes the IDL Virtual Machine and additional GIS-software (MSPA, GDAL, FWTools) which can be used to export your data as raster image overlays for visualization in Google Earth and to pre-/post-process any raster data. GTB is completely self-contained and fully functional in its own directory. It can be installed/copied to any directory on your system or any external device.

- **System requirements:** PC/Mac with a minimum of 2GB RAM (the more the better)
- **Limitations:** maximum image dimension in pixels:
  to be loaded in GuidosToolbox: 30000×30000,
  for Contortion analysis: 5000×5000,
  for MSPA-analysis: 10000×10000 on MS-Windows; larger on Linux/MacOS and dynamically calculated depending on the available amount of RAM: ~25000×25000 for 16GB RAM and 75000×75000 for 128GB RAM. Images larger than the maximum size for MSPA can be processed via a buffered tiling process called ***MSPA-tiling***, more details in GuidosToolbox under:
  Help → GuidosToolbox Manual and *Help → MSPA Guide*
- **GTB workshop material:** provides additional information, example applications, data setsand instructions to illustrate various processing options. To install, start GTB, from the menu select: *Help → GuidosToolbox Workshop* and follow the instructions.

Linux: (as normal user, not as root!):

a) Download the file ***GuidosToolbox<version>_linux.run*** to your $HOME directory, i.e., ***/home/peter***
b) Open a terminal (konsole, xterm) in this directory and make the installer executable using the command: ***chmod u+x GuidosToolbox<version>_linux.run***
c) Start the installer with the command: ***./GuidosToolbox<version>_linux.run*** and follow the instructions. The installer extracts the directory ***GuidosToolbox*** and creates 3 desktop launchers: ***GTB***, ***GTB_Data***, ***OpenEV***.
d) Start GuidosToolbox in one of the following 3 ways:
- double-click ***GTB*** on your desktop, or
- double-click ***GTB.desktop*** in the directory ***GuidosToolbox***, or
- open a terminal in ***GuidosToolbox*** and enter the command: ***./startGTB.sh***

Note:

- If GuidosToolbox fails to start install *lib64xp6* (or *libxp6, or libXp*) via your software package manager (Synaptic, aptitude, Yast, Yum, etc.) as well as the **gdal** package and a reasonable pdf-reader application other than LibreOffice Draw.
- GuidosToolbox requires ***Gdal***, which can be installed via your package manager of your Linux distribution.
- ***OpenEV*** requires 32bit compatible libraries on a 64bit system. They need to be added manually, e.g., on PCLinuxOS use Synaptic to install *ia32-libs*; on Fedora: *yum install glibc.i686*; on xBuntu: *apt-get install libc6-i386*. OpenEV contains

dynamic links, which are not supported on FAT-formatted disks. You need either a NTFS or better a Linux file system (you can easily convert an existing FAT-formatted USB-stick to NTFS without comprising the integrity of the data, see here).

- ***QGIS*** will be available from the GuidosToolbox menu only if it is found in the running system, or after it has been installed via your package manager of your Linux distribution.
- If you change the path/location of the ***GuidosToolbox*** directory (for example when running from a USB-flashdrive or external USB-disk) you can start the program in the ***GuidosToolbox*** directory using the command ***./startGTB.sh***. Alternatively, you can re-create the desktop-launchers for the new location of this directory with the command ***./makeLaunchers.sh*** and then copy the ***xx.desktop*** files to your desktop and click these to start the programs.
- GuidosToolbox has been successfully tested on the following 64bit Linux distributions: Arch, CentOS, Debian, Fedora, (K)Ubuntu, Mageia, Manjaro, Mint, OpenSuSE, PCLinuxOS, RedHat.

GuidosToolbox is not supported on 32bit Linux systems.
For best compatibility, please use the KDE desktop environment in PCLinuxOS.

MacOS:

a) Download the installer ***GuidosToolbox<version>_OSX.dmg*** to a local directory.
b) Delete any previous folder ***/Applications/GuidosToolbox.***
c) Double-click or right-click on the installer GuidosToolbox<version>_OSX.dmg. In the new popup window select: Open with → DiskImageMounter/Installer. Then drag/drop the directory ***GuidosToolbox*** to the folder ***/Applications***.
d) Open the directory ***/Applications/GuidosToolbox*** and double-click on ***mkShortcuts*** to create desktop launchers to the default data directory ***GuidosToolbox/data*** and the ***GuidosToolbox.***
e) Double-click the desktop launcher ***GTB*** to start the application and/or the desktop launcher ***GTB_Data*** to access the default data directory.

Note:

- The Mac version requires a 64bit Intel-processor and macOS Yosemite or later. **Please install the latest version of** XQuartz (https://www.xquartz.org) else GuidosToolbox will fail to start.
- GuidosToolbox requires the GDAL libraries. **Please install the latest version of** GDAL Complete (http://www.kyngchaos.com/software/frameworks) if not already installed in the system. These libraries are also a pre-requisite when installing QGIS (http://www.kyngchaos.com/software/qgis) on macOS.
- You can copy the installed directory ***GuidosToolbox*** to a USB-device (any file system) and then start GuidosToolbox with a double-click on ***GuidosToolbox.app*** inside the ***GuidosToolbox*** directory.
- OpenEV is not available in the macOS-version of GuidosToolbox.

Microsoft-Windows:

a) Download ***GuidosToolbox<version>_32/64windows.exe*** to a local directory. **The downloaded version must fit your CPU-architecture, else GuidosToolbox cannot be installed.**
b) Install GuidosToolbox to its default location ***C:\GuidosToolbox***. **The installation can be performed without administrator rights**. If writing to the C-drive is not allowed the user can choose a different directory and the installer will setup a **standalone directory** '***GTB<version>***'. The standalone version has the same functionality as the default installation but it will not provide any system integration, such as desktop shortcuts, menu entries or an uninstaller.
c) Start GuidosToolbox with a double-click on the desktop launcher or from the start menu (***Start → Programs → GuidosToolbox → GuidosToolbox***). In case of the standalone version double-click the launcher startGTB

Note:

- If you get the **error of a missing MSVCR100.dll** then download and install the Microsoft Visual C++ Redistributable for 64bit (http://www.microsoft.com/en-us/download/details.aspx?id=14632) or 32bit (http://www.microsoft.com/en-us/download/details.aspx?id=5555), resp.
- You can copy the installed directory ***GuidosToolbox*** to a USB-stick (FAT or NTFS) and then start GuidosToolbox or any additional included software component with a double-click on the respective ***startXX-launcher*** in the ***GuidosToolbox*** directory.
- GuidosToolbox has been successfully tested on the following 32/64bit Microsoft Windows platforms: Windows XP SP3, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10.

GuidosToolbox Quickstart:

Please use the default (Geo-)Tiff data format whenever possible!

GuidosToolbox uses a sub-directory ***data*** for reading/saving images (also directly accessible from the desktop launcher) and a sample binary GeoTiff image ***input.tif*** is located in this directory ***data***. When starting GuidosToolbox you can either confirm using the default GuidosToolbox sub-directory ***data*** or browse to your own data directory. Some users have encountered problems when using network data directories so local data directories are preferred.

Do a quick test run:
1) Start GuidosToolbox in the operating system specific way described above.
2) The IDLVM window will open. Simply click on it or on "click to continue".
3) Click "OK" to use the default data directory ***GuidosToolbox/data***.
4) Load the sample image: ***File → Read Image → GeoTiff***, select ***input.tif***, press ***Open***.
5) Perform a MSPA-analysis: ***Image Analysis → Pattern → MSPA***
6) Save the result: ***File → Save Image → GeoTiff***
The MSPA-analysis of ***input.tif*** is saved to the default data directory ***data***.

More information on the features of GuidosToolbox, the MSPA parameters and more is available from the ***Help*** menu in the **GuidosToolbox Manual** and the **MSPA Guide**.

For bug reports, comments, and suggestions please contact: Peter.Vogt@ec.europa.eu