

# 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 2 GB 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 sets and instructions to illustrate various processing options. To install, start GTB, from the menu select: *Help* → *GuidosToolbox Workshop* and follow the instructions.

## Linux:

**NOTE:** on Linux servers use the cmd-line only version **GWB** (GuidosToolbox Workbench)

### A) System-wide installation:

GuidosToolbox can be installed for system-wide usage/made available to all users using one of the following options:

- **PCLinuxOS:** Open Synaptic and search for/install **GuidosToolbox**
- **Fedora:** Download the package **GTB-<version>Fedora.x86\_64.rpm** to a local directory. From a root-terminal enter the command: **yum install <full path to the downloaded GTB-<version>Fedora.x86\_64.rpm>**
- **Suse Leap:** Download the package **GTB-<version>SuseLeap.x86\_64.rpm** to a local directory. From a root-terminal enter the command: **rpm -Uvh <full path to the downloaded GTB-<version>SuseLeap.x86\_64.rpm>** (you may have to install *inxi* and other listed dependencies first)
- **\*ubuntu:** Download the package **gtb\_<version>\_amd64.deb** to a local directory. From a root-terminal enter the command: **apt install <full path to the downloaded gtb\_<version>\_amd64.deb>**
- **Other Linux distributions:** One of the above mentioned rpm or deb-packages may work, if not use the standalone version outlined in the following section.

## B) Standalone installation (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**.

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