GRASS GIS

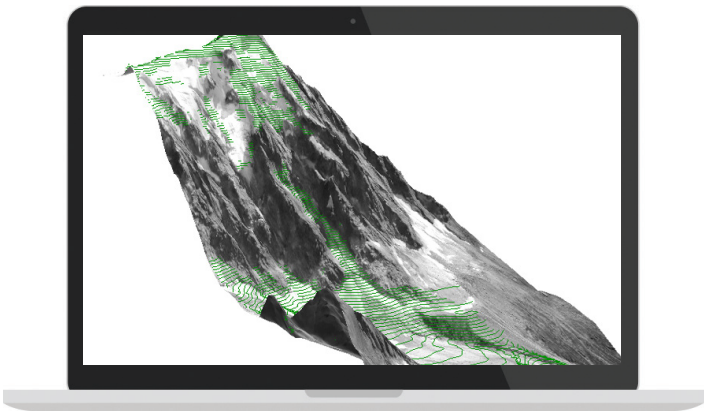
OSGeo Project

Bringing advanced geospatial technologies to the world

A mature spatial analysis suite

GRASS GIS is powerful free and open source software for performing spatial analysis. It consists of more than 500 modules (plus hundreds of user add-ons that can extend its functionality) for processing vector, raster, voxel and temporal data.

Many interfaces to other programs in related domains like geostatistics, databases, web map services and even other GIS software exist. It can serve as a desktop GIS, with a modern graphical user interface, as well as the backbone of a GIS infrastructure. **GRASS GIS** is used in scientific applications, commercial settings and by public authorities all over the world.



A long term endeavor

GRASS GIS was born more than 30 years ago... and the latest commit is probably just few hours old! Many people have contributed to improve the software. Its strength and success rely on an active development team and the feedback of a wide contributor community; both combine their efforts to make GRASS GIS easier, more useful and powerful to everybody.

GRASS GIS

Features

- GRASS GIS supports nearly all common GIS file formats through the use of the GDAL/OGR library
- **Raster analysis:** map algebra, interpolation, mask, correlation/covariance analysis...
- **3D raster (voxel) analysis:** 3D map algebra, 3D interpolation, 3D visualization...
- **Image processing:** aerial/UAV image, satellite data, supervised/unsupervised/object classification...
- **DTM analysis:** contour/surface generation, cost-path slope-aspect analysis, hydrology
- **Vector analysis:** buffer, overlays, network analysis...
- **Temporal (4D) framework:** support for time series big spatio-temporal environmental data
- **Point cloud analysis:** LiDAR, interpolation...
- **Spatial statistics:** correlation/covariance analysis, regression..
- **Geocoding:** raster and vector maps
- **SQL-support:** database interfaces

Interfaces

GRASS GIS can be used through different interfaces:

- the simplest for new users is the Graphical User
- Interface (GUI) with several powerful tools
- power users use the text-based command line interface (CLI)
- C API
- for the Python language there is a scripting library and an object-oriented Python API
- web interface through WPS servers
- QGIS has two different ways to run GRASS GIS modules
- R also has an interface to GRAS GIS, called rgrass7

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