



GSA-5859 / PCA-5017

SIG em Software Livre

GRASS-GIS

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2021

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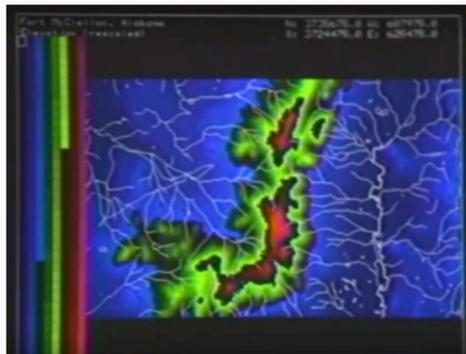
GRASS - Histórico

- Geographic Resources Analysis Support System
- 1982 Fort Hood Information System (FHIS) (Vax11/780)
- 1983 Installation Geographic Information System (IGIS) (SUN-1)
- 1984 GRASS (SUN-1 and Masscomp)
- 1985 GRASS 1.0
- 1987 GRASS 2.0
- 1988 GRASS 3.0
- 1991 GRASS 4.0
- 1997 GRASS 4.2 Baylor University
- 1998 GRASS 4.2.1 Markus Neteler, University of Hannover, Germany
- 1999 GRASS 5.0 Baylor University and Markus Neteler

GRASS - Histórico

- 2001 The GRASS Development Team
- 2002 GRASS 5.0 stable
- 2004 GRASS 5.4.0
- 2005 GRASS 6.0
- 2006 GRASS 6.1
- 2006/7 GRASS 6.2
- 2007/8 GRASS 6.3
- 2008 GRASS 6.4 (+ WinGRASS)
- 2015 GRASS 7.0
- 2019 GRASS 7.6
- 2020 7.8.5

GRASS - Histórico - versão 2.0



```
PLEASE SET GIS SESSION INFORMATION

LOCATION: This is the name of an available geographic location. "openfish"
is the sample data base for which all tutorials are written.

MAPSET: Every GIS session runs under the name of a MAPSET. Associated
with each MAPSET is a rectangular COORDINATE WINDOW and a list
of any new maps created.

The WINDOW defaults to the entire area of the chosen LOCATION.
You may change it later with the commands window.

-----
LOCATION:..... hood.....
MAPSET:..... Johnson.....

AFTER COMPLETING ALL ANSWERS, HIT (ESC) TO CONTINUE
OR (INTERRUPT) TO CANCEL.
```



<https://www.youtube.com/watch?v=U3Hf0qI4JLc>

GRASS - Histórico - versão 4.0

The screenshot displays the GRASS 4.3 graphical user interface. On the left, a terminal window titled 'Konsola - Konsola' shows the following text:

```
Enter the name of an existing vect file
Enter 'list' for a list of existing vect files
Hit RETURN to cancel request
> list
<list>
-----
vect files available in napsset PERMANENT:
fields      t.9961.100      t.9961.300.bks  t.hydr
fields     t.9961.100.all  t.9961.400      t.powe
fields     t.9961.100.bks t.9961.400.all  t.rail
railroads  t.9961.100.bks t.9961.400.all  t.road
roads      t.9961.200      t.9961.400.bks  t.road
roads      t.9961.200.all  t.9961.500      t.road
roads      t.9961.200.bks t.9961.500.all  t.road
roads      t.9961.200.bks t.9961.500.bks  t.road
roads      t.9961.300      t.9961.500.bks  t.road
roads      t.9961.300.all t.county         t.trac
-----

Enter the name of an existing vect file
Enter 'list' for a list of existing vect files
Hit RETURN to cancel request
>
```

At the bottom of the terminal window, there are buttons for 'Neu' and 'Konsola Nr 1'.

On the right, a window titled 'GRASS 4.3 - Monitor: x0' displays a map of Spearfish, SD. The map is overlaid with a grid. The window includes a title bar with 'Spearfish, SD' and 'Geology'. Below the title bar, there are several data fields:

| | | | | |
|--------|---|---------|---|-------|
| REGION | N | 4814000 | E | 80000 |
| S | N | 4818000 | E | 80400 |

Below these fields, there is a 'CELL-SIZE' section with 'Easting' and 'Northing' both set to 20. To the right of these fields is a small thumbnail map. Below the map, there is a legend with the following items:

- lithographic
- transition
- igneous
- sandstone
- limestone
- shales
- sandy shale
- clay shale
- sand

At the bottom left of the monitor window, there is a small logo with the text 'GRASS'.

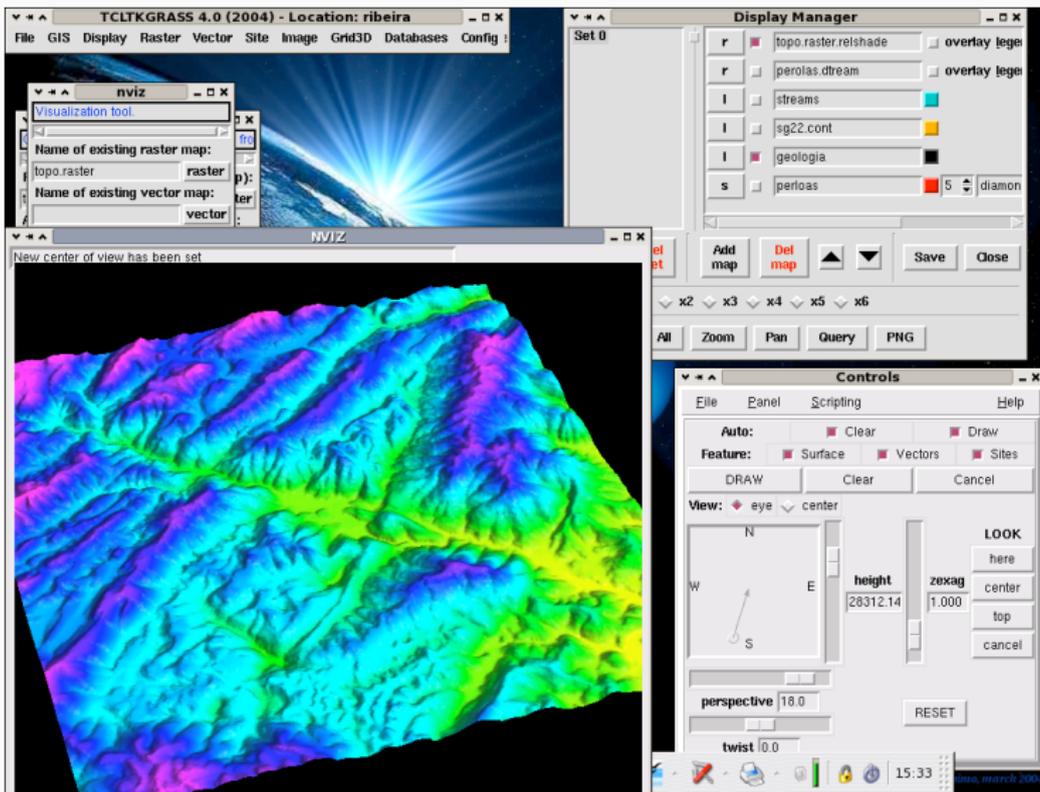
GRASS - Histórico - versão 5.3

The screenshot displays the GRASS GIS 4.0 (2004) interface with the location 'ribeira'. The main window shows a 3D visualization of a terrain with a bright light source, creating a lens flare effect. Overlaid on this are several windows:

- d.shadedmap dialog:** A dialog box for creating a shaded raster map. It includes fields for 'Raster map to be shaded (base map):' (topo.raster), 'Aspect map to be used for shading:' (topo.raster.reishade), and a 'Run' button.
- Display Manager:** A window for managing map layers. It lists layers such as 'topo.raster.reishade', 'perloas.dstream', 'streams', 'sg22.cont', 'geologia', and 'perloas'. It includes controls for 'Add set', 'Del set', 'Add map', 'Del map', 'Save', and 'Close'.
- grass53 terminal:** A terminal window showing the current location and region information. It lists options for selecting a region (Current Region or Region Database) and provides a list of actions like 'Modify current region directly', 'Set from default region', etc.

The bottom right corner of the main window shows a 3D terrain visualization with a color gradient from blue (low elevation) to red (high elevation).

GRASS - Histórico - versão 5.3



GRASS - Histórico - versão 6.2

The screenshot displays the GRASS GIS desktop environment. The main window is titled "GRASS: /usr/bin/gis: Manager - padre@deft1.lampiao". It features a menu bar (File, Config, raster, Vector, Imagery, Volumes, Databases, Help) and a toolbar with various icons. Below the toolbar is a "Map Layers for Display 1" panel showing a layer named "topo_fp@f_lampiao". The main display area shows a topographic map with a color relief overlay. The map is titled "Map Display 1".

In the bottom-left corner, there is a terminal window titled "grass6.2" showing the GRASS GIS logo and the following text:

```
Welcome to GRASS 6.3.0svn (2008)
GRASS homepage: http://grass.osgeo.org/
This version running thru: Bash Shell (/bin/bash)
Help is available with the command: g.manual -1
See the licence terms with: g.version -c
If required, restart the graphical user interface with: gis.w
when ready to quit enter: exit

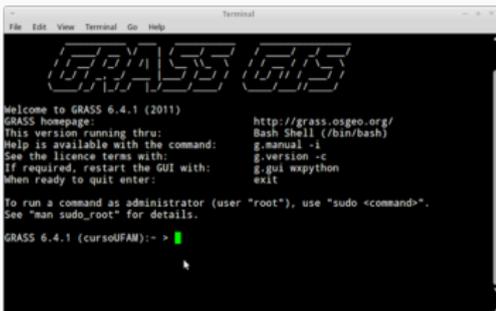
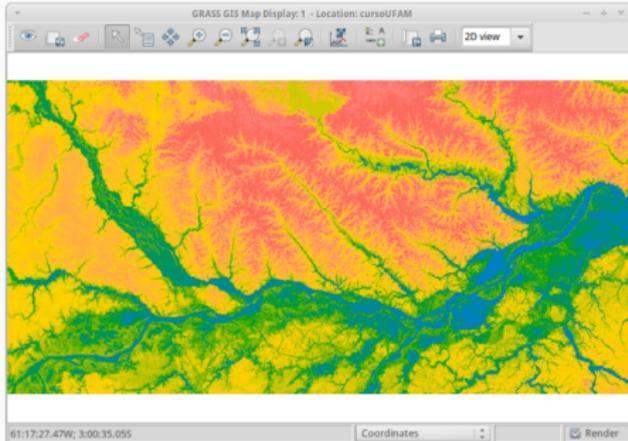
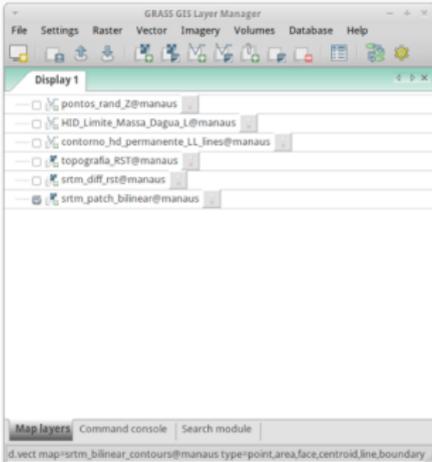
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

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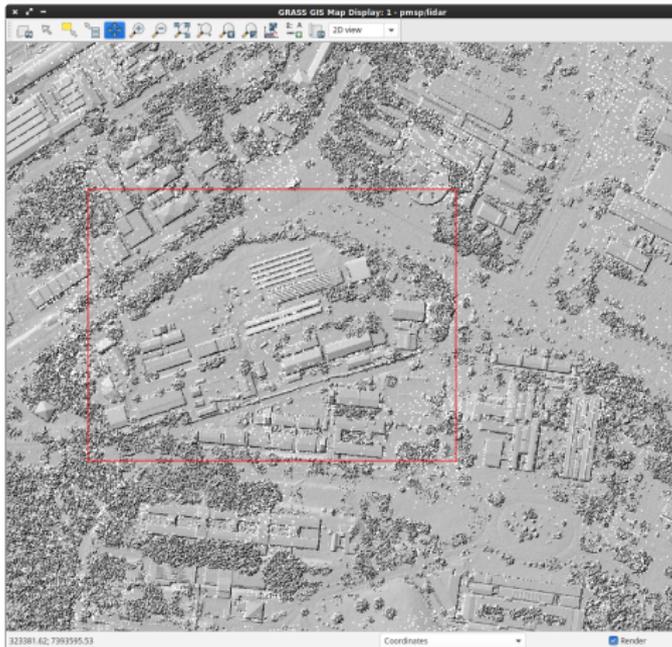
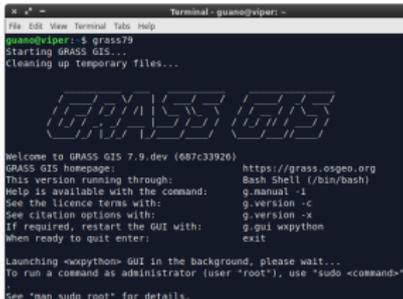
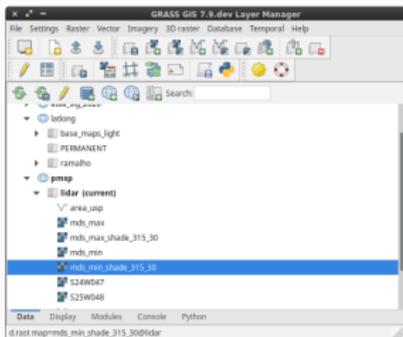
GRASS 6.3.0svn (padre@deft): > |
```

In the bottom-right corner, there is an "Output - GIS.m" window showing the command: `g.pnmcomp in=7442.2.ppm mask=7442.2.ppm opacity=1.0 background=255,255,255 width=521 height=459 output=7442.1.ppm`. Below the command field are buttons for "Save", "Clear", "Run", "Run (background)", "Run (GUI)", and "Run (in XTerm)".

GRASS - Histórico - versão 6.4



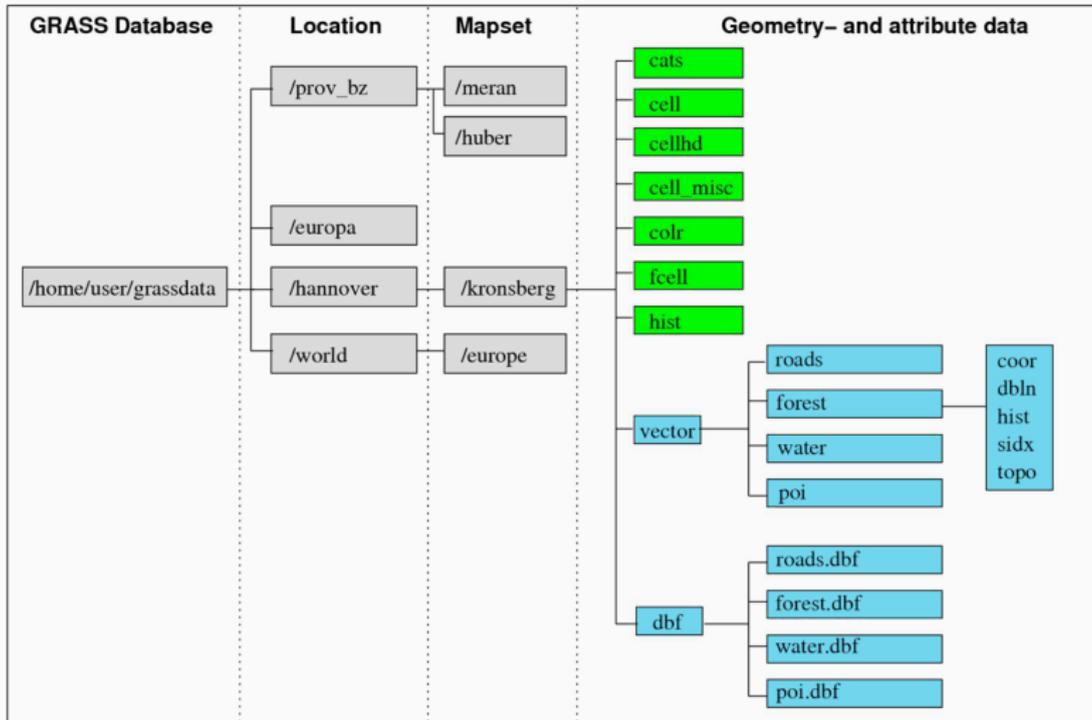
GRASS - Histórico - versão 7.9dev



Organização dos projetos

- Hierarquia baseada em **Locations** e **mapsets**
- A Location compreende toda a área de trabalho (p.ex., `America_do_Sul`)
- O mapset é a porção ativa e utilizada para análise, que pode ser do mesmo tamanho ou menor que a location (p.ex., `Sao_Paulo`, `area_mestrado`, etc)
- Vários mapsets podem ser definidos para a mesma location.
- Dados de interesse comum (tais como modelos de relevo, imagens de satélite etc) podem ser armazenados em um mapset especial ao qual todos os usuários têm acesso, chamado de **PERMANENT**, que é criado automaticamente ao se criar uma nova Location

Organização dos projetos



- Um conceito importante dentro do GRASS é o de **region**, que define, dentro do mapset, a área de interesse e a resolução espacial dos mapas raster. Tanto a resolução espacial quanto as coordenadas do retângulo envolvente da region podem ser facilmente alteradas sem a necessidade de reinicialização do sistema ou a criação de novos projetos; é possível salvar as configurações da region para acessá-la facilmente quando necessário.
- É preciso frisar que todas as análises envolvendo mapas raster (análise de terreno, álgebra de mapas, interpolação de superfícies etc) são efetuadas de acordo com as configurações da region ativa, e que esta não necessariamente corresponde com as configurações do Display.

GRASS - region

