



GRASS 6.4.0 Command list

10 September 2009

Command types:

d.*	display commands
db.*	database commands
g.*	general commands
i.*	imagery commands
m.*	miscellaneous commands
ps.*	postscript commands
r.*	raster commands
r3.*	raster3D commands
v.*	vector commands
wxGUI	GUI frontend (wxPython)
gis.m	GUI frontend (Tcl/Tk)
NVIZ	<i>n</i> -dimensional visualization suite
xganim	raster map slideshow viewer

Display commands:

d.ask	Prompts the user to select a GRASS data base file from among files displayed in a menu on the graphics monitor.
d.barscale	Displays a barscale on the graphics monitor.
d.colorlist	Output a list of all available display colors with a configurable separator (default is comma).

d.colors	Allows the user to interactively change the color table of a raster map layer displayed on the graphics monitor.
d.colortable	Displays the color table associated with a raster map layer.
d.correlate	Prints a graph of the correlation between data layers (in pairs).
d.erase	Erase the contents of the active display frame with user defined color.
d.extend	Sets window region so that all currently displayed raster and vector maps can be shown in a monitor.
d.extract	Selects and extracts vectors with mouse into new vector map.
d.font.freetype	Selects the font in which text will be displayed on the user's graphics monitor.
d.font	Selects the font in which text will be displayed on the user's graphics monitor.
d.frame	Manages display frames on the user's graphics monitor.
d.geodesic	Displays a geodesic line, tracing the shortest distance between two geographic points along a great circle, in a longitude/latitude data set.
d.graph	Program for generating and displaying simple graphics on the display monitor.
d.grid	Overlays a user-specified grid in the active display frame on the graphics monitor.
d.his	Displays the result obtained by combining hue, intensity, and saturation (his) values from user-specified input raster map layers.
d.histogram	Displays a histogram in the form of a pie or bar chart for a user-specified raster map.
d.info	Display information about the active display monitor.
d.labels	Displays text labels (created with v.label) to the active frame on the graphics monitor.
d.legend	Displays a legend for a raster map in the active frame of the graphics monitor.
d.linegraph	Generates and displays simple line graphs in the active graphics monitor display frame.
d.m	Display manager for GRASS.
d.mapgraph	Generates and displays simple graphics on map layers drawn in the active graphics monitor display frame.
d.measure	Measures the lengths and areas of features drawn by the user in the active display frame on the graphics monitor.
d.menu	Creates and displays a menu within the active frame on the graphics monitor.
d.mon	To establish and control use of a graphics display monitor.
d.monsize	Selects/starts specified monitor at specified size.
d.mvmon	Moves displayed maps to another monitor.
d.nviz	Creates fly-through script to run in NVIZ.
d.out.file	Saves the contents of the active display monitor to a graphics file.
d.out.gpsdrive	Export display monitor to a GpsDrive compatible backdrop image.

d.out.png Saves active display monitor to PNG file in home directory.

d.path Finds shortest path for selected starting and ending node.
Vector > Network analysis > Display shortest route (requires XTerm)

d.polar Draws polar diagram of angle map such as aspect or flow directions.

d.profile Interactive profile plotting utility with optional output.

d.rast.arrow Draws arrows representing cell aspect direction for a raster map containing aspect data.

d.rast.edit Interactively edit cell values in a raster map.
Raster > Change category values and labels > Interactively edit category values

d.rast.legend Displays a raster map and its legend on a graphics window.

d.rast.num Overlays cell category values on a raster map layer displayed to the graphics monitor.

d.rast Displays and overlays raster map layers in the active display frame on the graphics monitor.

d.redraw Redraws the current display frame in the GRASS monitor.

d.resize Resizes active display monitor.

d.rgb Displays three user-specified raster map layers as red, green, and blue overlays in the active graphics frame.

d.rhumblines Displays the rhumbline joining two user-specified points, in the active frame on the user's graphics monitor.

d.save Creates a list of commands for recreating screen graphics.

d.shadedmap Drapes a color raster over a shaded relief map using d.his.

d.slide.show Slide show of GRASS raster/vector maps.

d.split.frame Split the display into subframes.

d.split Divides active display into two frames & displays maps/executes commands in each frame.

d.text.freetype Draws text in the active display frame on the graphics monitor using the current font.

d.text Draws text in the active display frame on the graphics monitor using the current font.

d.thematic.area Displays a thematic vector area map in the active frame on the graphics monitor.

d.title Create a TITLE for a raster map in a form suitable for display with d.text.

d.vect.chart Displays charts of vector data in the active frame on the graphics monitor.

d.vect.thematic Displays thematic vector map.

d.vect Displays vector data in the active frame on the graphics monitor.

d.what.rast Allows the user to interactively query the category contents of multiple raster map layers at user specified locations within the current geographic region.

d.what.vect Allows the user to interactively query a vector map layer at user-selected locations within the current geographic region.

d.where Identifies the geographic coordinates associated with point locations in the active frame on the graphics monitor.

d.zoom Allows the user to change the current geographic region settings interactively, with a mouse.

Database management commands:

db.columns List all columns for a given table.
Database > Database information > List columns

db.connect Prints/sets general DB connection for current mapset and exits.
Database > Manage databases > Connect

db.copy Copy a table.
Database > Manage databases > Copy table

db.describe Describes a table in detail.
Database > Database information > Describe table

db.drivers List all database drivers.
Database > Database information > List drivers

db.dropcol Drops a column from selected attribute table.

db.droptable Drops an attribute table.
Database > Manage databases > Remove table

db.execute Executes any SQL statement.
Database > Query > SQL statement

db.in.ogr Imports attribute tables in various formats.
File > Import database table > Multiple import formats using OGR

db.login Sets user/password for driver/database.
Database > Manage databases > Login

db.out.ogr Exports attribute tables into various formats.
File > Export database table > Multiple export formats using OGR

db.select Selects data from table.
Database > Query > Query any table

db.tables Lists all tables for a given database.
Database > Database information > List tables

db.test Test database driver, database must exist and set by db.connect.
Database > Manage databases > Test

General GIS management commands:

- g.access** Controls access to the current mapset for other users on the system.
Config ▸ *GRASS working environment* ▸ *User access*
- g.ask** Prompts the user for the names of GRASS data base files.
- g.copy** Copies available data files in the user's current mapset search path and location to the appropriate element directories under the user's current mapset.
File ▸ *Manage maps and volumes* ▸ *Copy*
- g.dirseps** Internal GRASS utility for converting directory separator characters.
- g.filename** Prints GRASS data base file names.
- g.findetc** Searches for GRASS support files.
- g.findfile** Searches for GRASS data base files and sets variables for the shell.
- g.gisenv** Outputs and modifies the user's current GRASS variable settings.
Config ▸ *GRASS working environment* ▸ *Change settings*
- g.gui** Launches a GRASS graphical user interface (GUI) session.
Config ▸ *GRASS working environment* ▸ *Change default GUI*
- g.list** Lists available GRASS data base files of the user-specified data type to standard output.
File ▸ *Manage maps and volumes* ▸ *List*
- g.manual** Display the HTML man pages of GRASS.
Help ▸ *GRASS help*
- g.mapset** Change current mapset.
Config ▸ *GRASS working environment* ▸ *Change working environment*
- g.mapsets** Modifies the user's current mapset search path, affecting the user's access to data existing under the other GRASS mapsets in the current location.
- g.message** Prints a message, warning, or fatal error the GRASS way.
- g.mkfontcap** Generates the font configuration file by scanning various directories for fonts.
- g.mlist** Lists available GRASS data base files of the user-specified data type to standard output.
File ▸ *Manage maps and volumes* ▸ *List filtered*
- g.mremove** Removes data base element files from the user's current mapset.
File ▸ *Manage maps and volumes* ▸ *Delete filtered*
- g.parser** Full parser support for GRASS scripts.
- g.pnmcomp** Overlays multiple PPM image files.
- g.proj** Converts co-ordinate system descriptions (i.e. projection information) between various formats (including GRASS format).
Config ▸ *Manage projections* ▸ *Manage projections*
- g.region** Manages the boundary definitions for the geographic region.
Config ▸ *Region* ▸ *Set or Display region*
- g.remove** Removes data base element files from the user's current mapset.
File ▸ *Manage maps and volumes* ▸ *Delete*

- g.rename** Renames data base element files in the user's current mapset.
File ▸ *Manage maps and volumes* ▸ *Rename*
- g.setproj** Interactively reset the location's projection settings.
Config ▸ *Manage projections* ▸ *Projection for current location*
- g.tempfile** Creates a temporary file and prints the file name.
- g.transform** Computes a coordinate transformation based on the control points.
- g.version** Displays version and copyright information.
Config ▸ *GRASS working environment* ▸ *Version*

Imagery commands:

- i.atcorr** Performs atmospheric correction using the 6S algorithm.
Imagery ▸ *Atmospheric correction*
- i.cca** Canonical components analysis (cca) program for image processing.
Imagery ▸ *Transform image* ▸ *Canonical correlation*
- i.class** Generates spectral signatures for an image by allowing the user to outline regions of interest.
Imagery ▸ *Classify image* ▸ *Interactive input for supervised classification (requires Xterm)*
- i.cluster** Generates spectral signatures for land cover types in an image using a clustering algorithm.
Imagery ▸ *Classify image* ▸ *Clustering input for unsupervised classification*
- i.fft** Fast Fourier Transform (FFT) for image processing.
Imagery ▸ *Transform image* ▸ *Fast Fourier*
- i.fusion.brovey** Brovey transform to merge multispectral and high-res panchromatic channels.
Imagery ▸ *Brovey sharpening*
- i.gensig** Generates statistics for i.maxlik from raster map.
Imagery ▸ *Classify image* ▸ *Input for supervised MLC*
- i.gensigset** Generates statistics for i.smap from raster map.
Imagery ▸ *Classify image* ▸ *Input for supervised SMAP*
- i.group** Creates, edits, and lists groups and subgroups of imagery files.
Imagery ▸ *Develop images and groups* ▸ *Create/edit group*
- i.his.rgb** Transforms raster maps from HIS (Hue-Intensity-Saturation) color space to RGB (Red-Green-Blue) color space.
Imagery ▸ *Manage image colors* ▸ *HIS to RGB*
- i.ifft** Inverse Fast Fourier Transform (IFFT) for image processing.
Imagery ▸ *Transform image* ▸ *Inverse Fast Fourier*
- i.image.mosaic** Mosaics up to 4 images and extends colormap; creates map *.mosaic.
Imagery ▸ *Develop images and groups* ▸ *Mosaic images*
- i.in.spotvgt** Import of SPOT VGT NDVI file into a raster map.
File ▸ *Import raster map* ▸ *SPOT NDVI import*

i.landsat.rgb Performs auto-balancing of colors for LANDSAT images.

Imagery ▸ Manage image colors ▸ Color balance for RGB

i.maxlik Classifies the cell spectral reflectances in imagery data.

Imagery ▸ Classify image ▸ Maximum likelihood classification (MLC)

i.oif Calculates Optimum-Index-Factor table for LANDSAT TM bands 1-5, & 7.

Imagery ▸ Report and statistics ▸ OIF for LandSat TM

i.ortho.photo Menu driver for the photo imagery programs.

Imagery ▸ Ortho photo rectification (requires Xterm)

i.pca Principal components analysis (pca) program for image processing.

Imagery ▸ Transform image ▸ Principal components

i.points Mark ground control points on image to be rectified.

i.rectify Rectifies an image by computing a coordinate transformation for each pixel in the image based on the control points.

Imagery ▸ Rectify image or raster

i.rgb.his Transforms raster maps from RGB (Red-Green-Blue) color space to HIS (Hue-Intensity-Saturation) color space.

Imagery ▸ Manage image colors ▸ RGB to HIS

i.smap Performs contextual image classification using sequential maximum a posteriori (SMAP) estimation.

Imagery ▸ Classify image ▸ Sequential maximum a posteriori classification (SMAP)

i.spectral Displays spectral response at user specified locations in group or images.

Imagery ▸ Spectral response

i.target Targets an imagery group to a GRASS location and mapset.

Imagery ▸ Develop images and groups ▸ Target group

i.tasscap Tasseled Cap (Kauth Thomas) transformation for LANDSAT-TM data.

Imagery ▸ Tasseled cap vegetation index

i.vpoints Set registration points for an imagery group from a vector map or keyboard entry.

i.zc Zero-crossing 'edge detection' raster function for image processing.

Imagery ▸ Filter image ▸ Edge detection

Imagery photo.* commands:

photo.2image Marks fiducial or reseau points on an image to be ortho-rectified and then computes the image-to-photo coordinate transformation parameters.

photo.2target Create control points on an image to be ortho-rectified.

photo.camera Creates or modifies entries in a camera reference file.

photo.elev Selects target elevation model for ortho-rectification.

photo.init Creates or modifies entries in a camera initial exposure station file for imagery group referenced by a sub-block.

photo.rectify Rectifies an image by using the image to photo coordinate transformation matrix created by photo.2image and the rectification parameters created by photo.2target.

photo.target Selects target location and mapset for ortho-rectification.

Miscellaneous tools:

m.cogo A simple utility for converting bearing and distance measurements to coordinates and vice versa.

File ▸ Bearing/distance to coordinates

m.proj Convert coordinates from one projection to another (cs2cs frontend).

Config ▸ Manage projections ▸ Convert coordinates

PostScript commands:

ps.map Hardcopy PostScript map output utility.

File ▸ Postscript plot

Raster commands:

r.average Finds the average of values in a cover map within areas assigned the same category value in a user-specified base map.

r.basins.fill Generates a raster map layer showing watershed subbasins.

Raster ▸ Hydrologic modeling ▸ Watershed subbasins

r.bilinear Bilinear interpolation utility for raster map layers.

Raster ▸ Interpolate surfaces ▸ Bilinear from raster points

r.bitpattern Compares bit patterns with a raster map.

Imagery ▸ Report and statistics ▸ Bit pattern comparison

r.blend Blends color components of two raster maps by a given ratio.

Raster ▸ Manage colors ▸ Blend 2 color rasters

r.buffer Creates a raster map layer showing buffer zones surrounding cells that contain non-NULL category values.

Raster ▸ Buffer rasters

r.carve Takes vector stream data, transforms it to raster and subtracts depth from the output DEM.

Raster ▸ Hydrologic modeling ▸ Carve stream channels

r.category Manages category values and labels associated with user-specified raster map layers.

Raster ▸ Report and statistics ▸ Manage category information

r.circle Creates a raster map containing concentric rings around a given point.

Raster ▸ Concentric circles

r.clump Recategorizes data in a raster map by grouping cells that form physically discrete areas into unique categories.

Raster ▸ Transform features ▸ Clump

r.coin Tabulates the mutual occurrence (coincidence) of categories for two raster map layers.

Raster ▸ Report and statistics ▸ Mutual category occurrences

r.colors.stddev Set color rules based on stddev from a map's mean value.

Raster ▸ Manage colors ▸ Color tables (stddev)

r.colors Creates/modifies the color table associated with a raster map layer.
Raster ▷ Manage colors ▷ Color rules

r.composite Combines red, green and blue raster maps into a single composite raster map.
Raster ▷ Manage colors ▷ Create RGB

r.compress Compresses and decompresses raster maps.
Raster ▷ Develop raster map ▷ Compress/decompress

r.contour Produces a vector map of specified contours from a raster map.
Raster ▷ Generate contour lines

r.cost Creates a raster map showing the cumulative cost of moving between different geographic locations on an input raster map whose cell category values represent cost.
Raster ▷ Terrain analysis ▷ Cost surface

r.covar Outputs a covariance/correlation matrix for user-specified raster map layer(s).
Raster ▷ Report and statistics ▷ Covariance/correlation

r.cross Creates a cross product of the category values from multiple raster map layers.
Raster ▷ Overlay rasters ▷ Cross product

r.describe Prints terse list of category values found in a raster map layer.
Raster ▷ Report and statistics ▷ Range of category values

r.digit Interactive tool used to draw and save vector features on a graphics monitor using a pointing device (mouse) and save to a raster map.
Raster ▷ Develop raster map ▷ Digitize raster (requires XTerm)

r.distance Locates the closest points between objects in two raster maps.
Raster ▷ Closest points

r.drain Traces a flow through an elevation model on a raster map.
Raster ▷ Terrain analysis ▷ Least cost route or flow

r.external Link GDAL supported raster file to a binary raster map layer.
File ▷ Import raster map ▷ Link to GDAL

r.fill.dir Filters and generates a depressionless elevation map and a flow direction map from a given elevation layer.
Raster ▷ Hydrologic modeling ▷ Depressionless map and flowlines

r.fillnulls Fills no-data areas in raster maps using v.surf.rst splines interpolation.
Raster ▷ Interpolate surfaces ▷ Fill NULL cells

r.flow Construction of slope curves (flowlines), flowpath lengths, and flowline densities (up-slope areas) from a raster digital elevation model (DEM).
Raster ▷ Hydrologic modeling ▷ Flowlines

r.grow.distance Generates a raster map layer of distance to features in input layer.
Raster ▷ Terrain analysis ▷ Distance to features

r.grow Generates a raster map layer with contiguous areas grown by one cell.
Raster ▷ Transform features ▷ Grow

r.gwflow Numerical calculation program for transient, confined and unconfined groundwater flow in two dimensions.

r.his Generates red, green and blue raster map layers combining hue, intensity and saturation (HIS) values from user-specified input raster map layers.
Raster ▷ Manage colors ▷ RGB to HIS

r.horizon Horizon angle computation from a digital elevation model.
Raster ▷ Terrain analysis ▷ Horizon angle

r.in.arc Converts an ESRI ARC/INFO ascii raster file (GRID) into a (binary) raster map layer.
File ▷ Import raster map ▷ ESRI ASCII grid import

r.in.ascii Converts ASCII raster file to binary raster map layer.
File ▷ Import raster map ▷ ASCII grid import

r.in.aster Georeference, rectify and import Terra-ASTER imagery and relative DEM's using gdalwarp.
File ▷ Import raster map ▷ Terra ASTER HDF import

r.in.bin Import a binary raster file into a GRASS raster map layer.
File ▷ Import raster map ▷ Binary file import

r.in.gdal Import GDAL supported raster file into a binary raster map layer.
File ▷ Import raster map ▷ Import raster data using GDAL

r.in.gridatb Imports GRIDATB.FOR map file (TOPMODEL) into GRASS raster map.
File ▷ Import raster map ▷ GRIDATB.FOR import

r.in.mat Imports a binary MAT-File(v4) to a GRASS raster.
File ▷ Import raster map ▷ MAT – File (v4) import

r.in.poly Creates raster maps from ASCII polygon/line/point data files.
File ▷ Import raster map ▷ ASCII polygons and lines import

r.in.srtm Import SRTM HGT files into GRASS.
File ▷ Import raster map ▷ SRTM HGT import

r.in.wms Downloads and imports data from WMS servers.

r.in.xyz Create a raster map from an assemblage of many coordinates using univariate statistics.
File ▷ Import raster map ▷ Aggregate ASCII xyz import

r.info Output basic information about a raster map layer.
Raster ▷ Report and statistics ▷ Basic raster metadata

r.kappa Calculate error matrix and kappa parameter for accuracy assessment of classification result.
Imagery ▷ Report and statistics ▷ Kappa analysis

r.lake Fills lake from seed at given level.
Raster ▷ Hydrologic modeling ▷ Fill lake

r.le.patch Calculates attribute, patch size, core (interior) size, shape, fractal dimension, and perimeter measures for sets of patches in a landscape.
Raster ▷ Landscape structure modeling ▷ Analyze patches

r.le.pixel Contains a set of measures for attributes, diversity, texture, juxtaposition, and edge.
Raster ▷ Landscape structure modeling ▷ Analyze landscape

r.le.setup Interactive tool used to setup the sampling and analysis framework that will be used by the other r.le programs.
Raster ▷ Landscape structure modeling ▷ Set up (requires XTerm)

r.le.trace Displays the boundary of each r.le patch and shows how the boundary is traced, displays the attribute, size, perimeter and shape indices for each patch and saves the data in an output file.
Raster > Landscape structure modeling > Output

r.li.cwcd Calculates contrast weighted edge density index on a raster map.
Raster > Landscape patch analysis > Contrast weighted edge density

r.li.dominance Calculates dominance's diversity index on a raster map.
Raster > Landscape patch analysis > Dominance's diversity

r.li.edgedensity Calculates edge density index on a raster map, using a 4 neighbour algorithm.
Raster > Landscape patch analysis > Edge density

r.li.mpa Calculates mean pixel attribute index on a raster map.

r.li.mps Calculates mean patch size index on a raster map, using a 4 neighbour algorithm.
Raster > Landscape patch analysis > Patch area mean

r.li.padcv Calculates coefficient of variation of patch area on a raster map.
Raster > Landscape patch analysis > Patch area Coeff Var

r.li.padrange Calculates range of patch area size on a raster map.
Raster > Landscape patch analysis > Patch area range

r.li.padsd Calculates standard deviation of patch area a raster map.
Raster > Landscape patch analysis > Patch area Std Dev

r.li.patchdensity Calculates patch density index on a raster map, using a 4 neighbour algorithm.
Raster > Landscape patch analysis > Patch density

r.li.patchnum Calculates patch number index on a raster map, using a 4 neighbour algorithm.
Raster > Landscape patch analysis > Patch number

r.li.richness Calculates dominance's diversity index on a raster map.
Raster > Landscape patch analysis > Richness

r.li.setup Configuration editor for r.li.'index'.
Raster > Landscape patch analysis > Set up sampling and analysis framework

r.li.shannon Calculates Shannon's diversity index on a raster map.
Raster > Landscape patch analysis > Shannon's diversity

r.li.shape Calculates shape index on a raster map.
Raster > Landscape patch analysis > Shape index

r.li.simpson Calculates Simpson's diversity index on a raster map.
Raster > Landscape patch analysis > Simpson's diversity

r.los Line-of-sight raster analysis program.
Raster > Terrain analysis > Visibility

r.mapcalc Performs arithmetic on raster map layers.

r.mapcalculator Calculate new raster map from a r.mapcalc expression.

r.mask Create a MASK for limiting raster operation.
Raster > Mask

r.median Finds the median of values in a cover map within areas assigned the same category value in a user-specified base map.

r.mfilter.fp Raster map matrix filter.
Imagery > Filter image > Matrix/convolving filter

r.mfilter Raster map matrix filter.

r.mode Finds the mode of values in a cover map within areas assigned the same category value in a user-specified base map.

r.neighbors Makes each cell category value a function of the category values assigned to the cells around it, and stores new cell values in an output raster map layer.
Raster > Neighborhood analysis > Moving window

r.null Manages NULL-values of given raster map.
Raster > Develop raster map > Manage NULL values

r.out.arc Converts a raster map layer into an ESRI ARCGRID file.
File > Export raster map > ESRI ASCII grid export

r.out.ascii Converts a raster map layer into an ASCII text file.
File > Export raster map > ASCII grid export

r.out.bin Exports a GRASS raster to a binary array.
File > Export raster map > Binary export

r.out.gdal.sh Exports GRASS raster into GDAL supported formats.

r.out.gdal Exports GRASS raster maps into GDAL supported formats.
File > Export raster map > Multiple export formats using GDAL

r.out.gridatb Exports GRASS raster map to GRIDATB.FOR map file (TOPMODEL).
File > Export raster map > GRIDATB.FOR export

r.out.mat Exports a GRASS raster to a binary MAT-File.
File > Export raster map > MAT - File (v.4) export

r.out.mpeg Raster File Series to MPEG Conversion Program.
File > Export raster map > MPEG - 1 export

r.out.png Export GRASS raster as non-georeferenced PNG image format.
File > Export raster map > PNG export

r.out.pov Converts a raster map layer into a height-field file for POVRAY.
File > Export raster map > POV - Ray export

r.out.ppm Converts a GRASS raster map to a PPM image file at the pixel resolution of the currently defined region.
File > Export raster map > PPM export

r.out.ppm3 Converts 3 GRASS raster layers (R,G,B) to a PPM image file at the pixel resolution of the CURRENTLY DEFINED REGION.
File > Export raster map > PPM from RGB export

r.out.tiff Exports a GRASS raster map to a 8/24bit TIFF image file at the pixel resolution of the currently defined region.
File > Export raster map > TIFF export

r.out.vrml Export a raster map to the Virtual Reality Modeling Language (VRML).
File > Export raster map > VRML export

r.out.vtk Converts raster maps into the VTK-Ascii format.
File > Export raster map > VTK export

r.out.xyz Export a raster map to a text file as x,y,z values based on cell centers.
File ▸ Export raster map ▸ ASCII x, y, z export

r.param.scale Extracts terrain parameters from a DEM.
Raster ▸ Terrain analysis ▸ Terrain parameters

r.patch Creates a composite raster map layer by using known category values from one (or more) map layer(s) to fill in areas of 'no data' in another map layer.
Raster ▸ Overlay rasters ▸ Patch raster maps

r.plane Creates raster plane map given dip (inclination), aspect (azimuth) and one point.
Raster ▸ Generate surfaces ▸ Plane

r.profile Outputs the raster map layer values lying on user-defined line(s).
Raster ▸ Report and statistics ▸ Sample transects

r.proj Re-projects a raster map from one location to the current location.
Raster ▸ Develop raster map ▸ Reproject raster

r.quant Produces the quantization file for a floating-point map.
Raster ▸ Develop raster map ▸ Quantization

r.quantile Compute quantiles using two passes.
Raster ▸ Report and statistics ▸ Quantiles for large data sets

r.random.cells Generates random cell values with spatial dependence.
Raster ▸ Generate random cells ▸ Random cells

r.random.surface Generates random surface(s) with spatial dependence.
Raster ▸ Generate surfaces ▸ Random surface with spatial dependence

r.random Creates a raster map layer and vector point map containing randomly located points.
Raster ▸ Generate random cells ▸ Random cells and vector points

r.reclass.area Reclassifies a raster map greater or less than user specified area size (in hectares).
Raster ▸ Change category values and labels ▸ Reclassify by size

r.reclass Creates a new map layer whose category values are based upon a reclassification of the categories in an existing raster map layer.
Raster ▸ Change category values and labels ▸ Reclassify

r.recode Recodes categorical raster maps.
Raster ▸ Change category values and labels ▸ Recode interactively

r.region Sets the boundary definitions for a raster map.
Raster ▸ Develop raster map ▸ Region boundaries

r.regression.line Calculates linear regression from two raster maps: $y = a + b*x$.
Raster ▸ Report and statistics ▸ Linear regression

r.report Reports statistics for raster map layers.
Raster ▸ Report and statistics ▸ Sum area by raster map and category

r.resamp.interp Resamples raster map layers to a finer grid using interpolation.
Raster ▸ Develop raster map ▸ Resample using multiple methods

r.resamp.rst Reinterpolates and optionally computes topographic analysis from input raster map to a new raster map (possibly with different resolution) using regularized spline with tension and smoothing.
Raster ▸ Develop raster map ▸ Resample using spline tension

r.resamp.stats Resamples raster map layers to a coarser grid using aggregation.
Raster ▸ Develop raster map ▸ Resample using aggregate statistics

r.resample GRASS raster map layer data resampling capability.
Raster ▸ Develop raster map ▸ Resample using nearest neighbor

r.rescale.eq Rescales histogram equalized the range of category values in a raster map layer.
Raster ▸ Change category values and labels ▸ Rescale with histogram

r.rescale Rescales the range of category values in a raster map layer.
Raster ▸ Change category values and labels ▸ Rescale

r.ros Generates three, or four raster map layers showing 1) the base (perpendicular) rate of spread (ROS), 2) the maximum (forward) ROS, 3) the direction of the maximum ROS, and optionally 4) the maximum potential spotting distance.
Raster ▸ Wildfire modeling ▸ Rate of spread

r.series Makes each output cell value a function of the values assigned to the corresponding cells in the input raster map layers.
Raster ▸ Overlay rasters ▸ Raster series

r.shaded.relief Creates shaded relief map from an elevation map (DEM).
Raster ▸ Terrain analysis ▸ Shaded relief

r.sim.sediment Sediment transport and erosion/deposition simulation using path sampling method (SIMWE).
Raster ▸ Hydrologic modeling ▸ SIMWE Sediment flux modeling

r.sim.water Overland flow hydrologic simulation using path sampling method (SIMWE).
Raster ▸ Hydrologic modeling ▸ SIMWE Overland flow modeling

r.slope.aspect Generates raster map layers of slope, aspect, curvatures and partial derivatives from a raster map layer of true elevation values. Aspect is calculated counterclockwise from east.
Raster ▸ Terrain analysis ▸ Slope and aspect

r.spread Simulates elliptically anisotropic spread on a graphics window and generates a raster map of the cumulative time of spread, given raster maps containing the rates of spread (ROS), the ROS directions and the spread origins.
Raster ▸ Wildfire modeling ▸ Anisotropic spread simulation

r.spreadpath Recursively traces the least cost path backwards to cells from which the cumulative cost was determined.
Raster ▸ Wildfire modeling ▸ Least - cost spread paths

r.statistics Calculates category or object oriented statistics.
Raster ▸ Overlay rasters ▸ Statistical overlay

r.stats Generates area statistics for raster map layers.
Raster ▸ Report and statistics ▸ General statistics

r.sum Sums up the raster cell values.
Raster ▸ Report and statistics ▸ Sum category values

r.sun Solar irradiance and irradiation model.
Raster ▸ Solar radiance and shadows ▸ Solar irradiance and irradiation

r.sunmask Calculates cast shadow areas from sun position and DEM. Either A: exact sun position is specified, or B: date/time to calculate the sun position by r.sunmask itself.
Raster ▸ Solar radiance and shadows ▸ Shadows map

r.support.stats Update raster map statistics.
Raster ▸ Develop raster map ▸ Update map statistics

r.support Allows creation and/or modification of raster map layer support files.
Raster ▸ Develop raster map ▸ Support file maintenance

r.surf.area Surface area estimation for rasters.
Raster ▸ Report and statistics ▸ Total corrected area

r.surf.contour Surface generation program from rasterized contours.
Raster ▸ Interpolate surfaces ▸ Raster contours

r.surf.fractal Creates a fractal surface of a given fractal dimension.
Raster ▸ Generate surfaces ▸ Fractal surface

r.surf.gauss GRASS module to produce a raster map layer of gaussian deviates whose mean and standard deviation can be expressed by the user. It uses a gaussian random number generator.
Raster ▸ Generate surfaces ▸ Gaussian deviates surface

r.surf.idw Surface interpolation utility for raster map.
Raster ▸ Interpolate surfaces ▸ IDW from raster points

r.surf.idw2 Surface generation program.

r.surf.random Produces a raster map layer of uniform random deviates whose range can be expressed by the user.
Raster ▸ Generate surfaces ▸ Random deviates surface

r.terracflow.short Flow computation for massive grids (Integer version).

r.terracflow Flow computation for massive grids (Float version).
Raster ▸ Hydrologic modeling ▸ Flow accumulation

r.texture Generate images with textural features from a raster map.
Raster ▸ Terrain analysis ▸ Textural features

r.thin Thins non-zero cells that denote linear features in a raster map layer.
Raster ▸ Transform features ▸ Thin

r.tileset Produces tilings of the source projection for use in the destination region and projection.
Raster ▸ Develop raster map ▸ Tiling

r.timestamp Print/add/remove a timestamp for a raster map.
Raster ▸ Develop raster map ▸ Timestamp

r.to.rast3 Converts 2D raster map slices to one 3D raster volume map.
File ▸ Map type conversions ▸ Raster series to volume

r.to.rast3elev Creates a 3D volume map based on 2D elevation and value raster maps.
File ▸ Map type conversions ▸ Raster 2.5D to volume

r.to.vect Converts a raster map into a vector map layer.
File ▸ Map type conversions ▸ Raster to vector

r.topidx Creates topographic index $[\ln(a/\tan(\beta))]$ map from elevation map.
Raster ▸ Hydrologic modeling ▸ Topographic index map

r.topmodel Simulates TOPMODEL which is a physically based hydrologic model.
Raster ▸ Hydrologic modeling ▸ TOPMODEL simulation

r.transect Outputs raster map layer values lying along user defined transect line(s).
Raster ▸ Report and statistics ▸ Sample transects (bearing/distance)

r.univar Calculates univariate statistics from the non-null cells of a raster map.
Raster ▸ Report and statistics ▸ Univariate raster statistics

r.univar.sh calculates univariate statistics from a GRASS raster map.

r.volume Calculates the volume of data 'clumps', and (optionally) produces a GRASS vector points map containing the calculated centroids of these clumps.
Raster ▸ Report and statistics ▸ Statistics for clumped cells

r.walk Outputs a raster map layer showing the anisotropic cumulative cost of moving between different geographic locations on an input elevation raster map layer whose cell category values represent elevation combined with an input raster map layer whose cell values represent friction cost.
Raster ▸ Terrain analysis ▸ Cumulative movement costs

r.water.outlet Watershed basin creation program.
Raster ▸ Hydrologic modeling ▸ Watershed basin creation

r.watershed Watershed basin analysis program.
Raster ▸ Hydrologic modeling ▸ Watershed analysis

r.what.color Queries colors for a raster map layer.

r.what Queries raster map layers on their category values and category labels.
Raster ▸ Query by coordinates

Raster 3D commands:

r3.cross.rast Creates cross section 2D raster map from 3d raster map based on 2D elevation map.
Volumes ▸ Cross section

r3.gwflow Numerical calculation program for transient, confined groundwater flow in three dimensions.

r3.in.ascii Convert a 3D ASCII raster text file into a (binary) 3D raster map layer.
File ▸ Import grid 3D volume ▸ ASCII 3D import

r3.in.v5d import of 3-dimensional Vis5D files (i.e. the v5d file with 1 variable and 1 time step).
File ▸ Import grid 3D volume ▸ Vis5D import

r3.info Outputs basic information about a user-specified 3D raster map layer.
Volumes ▸ Report and Statistics ▸ Basic volume metadata

r3.mapcalc Performs arithmetic on 3D grid volume data.

r3.mapcalculator Calculates new grid3D volume from r3.mapcalc expression.

r3.mask Establishes the current working 3D raster mask.
Volumes ▸ 3D Mask

r3.mkdspf Creates a display file from an existing grid3 file according to specified threshold levels.

r3.null Explicitly create the 3D NULL-value bitmap file.
Volumes ▸ Develop volumes ▸ Manage 3D NULL values

- r3.out.asci **Converts a 3D raster map layer into an ASCII text file.**
File ▸ Export grid 3D volume ▸ ASCII 3D export
- r3.out.v5d **Export of GRASS 3D raster map to 3-dimensional Vis5D file.**
File ▸ Export grid 3D volume ▸ Vis5D export
- r3.out.vtk **Converts 3D raster maps (G3D) into the VTK-Ascii format.**
File ▸ Export grid 3D volume ▸ VTK export
- r3.stats **Generates volume statistics for raster3d maps.**
- r3.timestamp **Print/add/remove a timestamp for a 3D raster map.**
Volumes ▸ Develop volumes ▸ Manage timestamp
- r3.to.rast **Converts 3D raster maps to 2D raster maps.**
File ▸ Map type conversions ▸ Volume to raster series
- r3.univar **Calculates univariate statistics from the non-null 3d cells of a raster3d map.**

Vector commands:

- v.buffer **Creates a buffer around features of given type (areas must contain centroid).**
Vector ▸ Buffer vectors
- v.build.all **Rebuilds topology on all vector maps in the current mapset.**
- v.build.polylines **Builds polylines from lines or boundaries.**
Vector ▸ Develop vector map ▸ Build polylines
- v.build **Creates topology for GRASS vector map.**
Vector ▸ Develop vector map ▸ Create or rebuild topology
- v.category **Attach, delete or report vector categories to map geometry.**
Vector ▸ Change attributes ▸ Manage or report categories
- v.centroids **Adds missing centroids to closed boundaries.**
Vector ▸ Develop vector map ▸ Add centroids
- v.class **Classifies attribute data, e.g. for thematic mapping.**
- v.clean **Toolset for cleaning topology of vector map.**
Vector ▸ Develop vector map ▸ Clean vector map
- v.colors **Set color rules for features in a vector using a numeric attribute column.**
Vector ▸ Manage colors ▸ Color tables
- v.convert.all **Convert all old GRASS < Ver5.7 vector maps in current mapset to current format.**
- v.convert **Imports older versions of GRASS vector maps.**
File ▸ Import vector map ▸ Old GRASS vector import
- v.db.addcol **Adds one or more columns to the attribute table connected to a given vector map.**
Database ▸ Manage databases ▸ Add columns
- v.db.addtable **Creates and adds a new attribute table to a given layer of an existing vector map.**
Database ▸ Manage databases ▸ New table
- v.db.connect **Prints/sets DB connection for a vector map to attribute table.**
Database ▸ Vector database connections ▸ Set vector map – database connection

- v.db.dropcol **Drops a column from the attribute table connected to a given vector map.**
- v.db.droptable **Removes existing attribute table of a vector map.**
- v.db.join **Allows to join a table to a vector map table.**
- v.db.reconnect.all **Reconnects vectors to a new database.**
Database ▸ Vector database connections ▸ Reconnect vector to database
- v.db.renamecol **Renames a column in the attribute table connected to a given vector map.**
Database ▸ Manage databases ▸ Rename column
- v.db.select **Prints vector map attributes.**
Database ▸ Query ▸ Query vector attribute data
- v.db.univar **Calculates univariate statistics on selected table column for a GRASS vector map.**
- v.db.update **Allows to update a column in the attribute table connected to a vector map.**
Database ▸ Manage databases ▸ Change values
- v.delaunay **Creates a Delaunay triangulation from an input vector map containing points or centroids.**
Vector ▸ Generate areas from points ▸ Delaunay triangles
- v.digit **Interactive editing and digitization of vector maps.**
- v.dissolve **Dissolves boundaries between adjacent areas sharing a common category number or attribute.**
Vector ▸ Develop vector map ▸ Dissolve boundaries
- v.distance **Finds the nearest element in vector map 'to' for elements in vector map 'from'.**
Vector ▸ Nearest features
- v.drape **Converts vector map to 3D by sampling of elevation raster map.**
Vector ▸ Develop vector map ▸ Create 3D vector over raster
- v.edit **Edits a vector map, allows adding, deleting and modifying selected vector features.**
Vector ▸ Develop vector map ▸ Edit vector map (non – interactively)
- v.external **Creates a new vector as a read-only link to OGR layer.**
File ▸ Import vector map ▸ Link to OGR
- v.extract **Selects vector objects from an existing vector map and creates a new map containing only the selected objects.**
Vector ▸ Query with attributes
- v.extrude **Extrudes flat vector object to 3D with defined height.**
Vector ▸ Develop vector map ▸ Extrude 3D vector map
- v.generalize **Vector based generalization.**
Vector ▸ Develop vector map ▸ Smooth or simplify
- v.hull **Uses a GRASS vector points map to produce a convex hull vector map.**
Vector ▸ Generate areas from points ▸ Convex hull
- v.in.asci **Creates a vector map from ASCII points file or ASCII vector file.**
File ▸ Import vector map ▸ ASCII points/GRASS ASCII vector import
- v.in.db **Creates new vector (points) map from database table containing coordinates.**
Vector ▸ Generate points ▸ Generate from database

v.in.dxf Converts files in DXF format to GRASS vector map format.
File ▷ Import vector map ▷ DXF import

v.in.e00 Import E00 file into a vector map.
File ▷ Import vector map ▷ ESRI e00 import

v.in.garmin Download waypoints, routes, and tracks from a Garmin GPS receiver into a vector map.
File ▷ Import vector map ▷ Garmin GPS import

v.in.geonames Imports geonames.org country files into a GRASS vector points map.
File ▷ Import vector map ▷ Geonames import

v.in.gns Imports US-NGA GEONet Names Server (GNS) country files into a GRASS vector points map.
File ▷ Import vector map ▷ GEONet import

v.in.gpsbabel Import waypoints, routes, and tracks from a GPS receiver or GPS download file into a vector map.
File ▷ Import vector map ▷ GPSTablet GPS import

v.in.mapgen Import Mapgen or Matlab vector maps into GRASS.
File ▷ Import vector map ▷ Matlab and MapGen import

v.in.ogr Convert OGR vector layers to GRASS vector map.
File ▷ Import vector map ▷ Import vector data using OGR

v.in.region Create a new vector from the current region.
Vector ▷ Generate area for current region

v.in.sites.all Converts all old GRASS < Ver5.7 sites maps in current mapset to vector maps.

v.in.sites Converts a GRASS site_lists file into a vector map.
File ▷ Map type conversions ▷ Sites to vector

v.in.wfs Import GetFeature from WFS.

v.info Outputs basic information about a user-specified vector map.
Vector ▷ Reports and statistics ▷ Basic vector metadata

v.kcv Randomly partition points into test/train sets.
Vector ▷ Test/training point sets

v.kernel Generates a raster density map from vector points data using a moving 2D isotropic Gaussian kernel or optionally generates a vector density map on vector network with a 1D kernel.
Raster ▷ Generate surfaces ▷ Gaussian kernel density surface

v.label.sa Create optimally placed labels for vector map(s).

v.label Creates paint labels for a vector map from attached attributes.
Vector ▷ Develop vector map ▷ Create labels

v.lidar.correction Correction of the v.lidar.growing output. It is the last of the three algorithms for LIDAR filtering.
Vector ▷ Lidar analysis ▷ Correct and reclassify objects

v.lidar.edgedetection Detects the object's edges from a LIDAR data set.
Vector ▷ Lidar analysis ▷ Detect edges

v.lidar.growing Building contour determination and Region Growing algorithm for determining the building inside.
Vector ▷ Lidar analysis ▷ Detect interiors

v.lrs.create Create Linear Reference System.
Vector ▷ Linear referencing ▷ Create LRS

v.lrs.label Create stationing from input lines, and linear reference system.
Vector ▷ Linear referencing ▷ Create stationing

v.lrs.segment Creates points/segments from input lines, linear reference system and positions read from stdin or a file.
Vector ▷ Linear referencing ▷ Create points/segments

v.lrs.where Finds line id and real km+offset for given points in vector map using linear reference system.
Vector ▷ Linear referencing ▷ Find line id and offset

v.mkgrid Creates a GRASS vector map of a user-defined grid.
Vector ▷ Generate grid

v.neighbors Makes each cell value a function of the attribute values assigned to the vector points or centroids around it, and stores new cell values in an output raster map layer.
Raster ▷ Neighborhood analysis ▷ Neighborhood points

v.net.alloc Allocate subnets for nearest centres (direction from centre).
Vector ▷ Network analysis ▷ Allocate subnets

v.net.iso Splits net by cost isolines.
Vector ▷ Network analysis ▷ Split net

v.net.path Finds shortest path on vector network.
Vector ▷ Network analysis ▷ Shortest path

v.net.salesman Creates a cycle connecting given nodes (Traveling salesman problem).
Vector ▷ Network analysis ▷ Traveling salesman analysis

v.net.steiner Create Steiner tree for the network and given terminals.
Vector ▷ Network analysis ▷ Steiner tree

v.net.visibility Visibility graph construction.
Vector ▷ Network analysis ▷ Visibility network

v.net Performs network maintenance.
Vector ▷ Network analysis ▷ Network maintenance

v.normal Tests for normality for points.
Vector ▷ Reports and statistics ▷ Test normality

v.out.ascii Converts a GRASS binary vector map to a GRASS ASCII vector map.
File ▷ Export vector map ▷ ASCII points/GRASS ASCII vector export

v.out.dxf Exports GRASS vector map layers to DXF file format.
File ▷ Export vector map ▷ DXF export

v.out.gpsbabel Exports a vector map to a GPS receiver or file format supported by GpsBabel.
File ▷ Export vector map ▷ Multiple GPS export formats using GPSTablet

v.out.ogr Converts to one of the supported OGR vector formats.
File ▷ Export vector map ▷ Multiple export formats using OGR

v.out.pov Converts to POV-Ray format, GRASS x,y,z -> POV-Ray x,z,y.
File > Export vector map > POV - Ray export

v.out.svg Exports a GRASS vector map to SVG.
File > Export vector map > SVG export

v.out.vtk Converts a GRASS binary vector map to VTK ASCII output.
File > Export vector map > VTK export

v.outlier Removes outliers from vector point data.
Vector > Remove outliers in point sets

v.overlay Overlays two vector maps.
Vector > Overlay vector maps > Overlay vector maps

v.parallel Creates parallel line to input vector lines.
Vector > Develop vector map > Parallel lines

v.patch Create a new vector map layer by combining other vector map layers.
Vector > Overlay vector maps > Patch vector maps

v.perturb Random location perturbations of GRASS vector points.
Vector > Generate points > Perturb points

v.proj Allows projection conversion of vector maps.
Vector > Develop vector map > Reproject vector map

v.qcount Indices for quadrat counts of sites lists.
Vector > Reports and statistics > Quadrat indices

v.random Randomly generate a 2D/3D vector points map.
Vector > Generate points > Generate random points

v.rast.stats Calculates univariate statistics from a GRASS raster map based on vector polygons and uploads statistics to new attribute columns.
Vector > Update area attributes from raster

v.reclass Changes vector category values for an existing vector map according to results of SQL queries or a value in attribute table column.
Vector > Change attributes > Reclassify

v.report Reports geometry statistics for vectors.
Vector > Reports and statistics > Report topology by category

v.sample Samples a raster map at vector point locations.
Vector > Update point attributes from raster > Sample raster neighborhood around points

v.segment Creates points/segments from input vector lines and positions.
Vector > Develop vector map > Split polylines

v.select Selects features from vector map (A) by features from other vector map (B).
Vector > Query with another vector map

v.split Split lines to shorter segments.

v.support Updates vector map metadata.

v.surf.bspline Bicubic or bilinear spline interpolation with Tykhonov regularization.
Raster > Interpolate surfaces > Bilinear and bicubic from vector points

v.surf.idw Surface interpolation from vector point data by Inverse Distance Squared Weighting.
Raster > Interpolate surfaces > IDW from vector points

v.surf.rst Spatial approximation and topographic analysis from given point or isoline data in vector format to floating point raster format using regularized spline with tension.
Raster > Interpolate surfaces > Regularized spline tension

v.to.3d Performs transformation of 2D vector features to 3D.
File > Map type conversions > 2D vector to 3D vector

v.to.db Populates database values from vector features.
Vector > Reports and statistics > Upload or report topology

v.to.points Create points along input lines in new vector with 2 layers.
Vector > Generate points > Generate points along lines

v.to.rast Converts a binary GRASS vector map into a GRASS raster map .
File > Map type conversions > Vector to raster

v.to.rast3 Converts a binary GRASS vector map (only points) layer into a 3D GRASS raster map layer.
File > Map type conversions > Vector to volume

v.transform Performs an affine transformation (shift, scale and rotate, or GPCs) on vector map.
Vector > Develop vector map > Reposition vector map

v.type Change the type of geometry elements.
Vector > Develop vector map > Convert object types

v.univar Calculates univariate statistics for attribute. Variance and standard deviation is calculated only for points if specified.
Vector > Reports and statistics > Univariate attribute statistics

v.univar.sh Calculates univariate statistics on selected table column for a GRASS vector map.

v.vol.rst Interpolates point data to a G3D grid volume using regularized spline with tension (RST) algorithm.
Volumes > Interpolate volume from points

v.voronoi Creates a Voronoi diagram from an input vector map containing points or centroids.
Vector > Generate areas from points > Voronoi diagram/Thiessen polygons

v.what.rast Uploads raster values at positions of vector points to the table.
Vector > Update point attributes from raster > Sample raster maps at point locations

v.what.vect Uploads vector values at positions of vector points to the table.
Vector > Update point attributes from areas

v.what Queries a vector map layer at given locations.
Vector > Query with coordinate(s)