



## GRASS GIS 6.3 Command list

20 November 2006

### 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
gis.m	GUI frontend (Tcl/Tk)
nviz	visualization suite
xganim	raster map slideshow

### 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 GRASS 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
d.colortable	To display 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	Set window region so that all currently displayed raster, vector and sites maps can be shown in a monitor.
d.extract	Select and extract 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 file.
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	Old Tcl/Tk 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	Create fly-through script to run in NVIZ
d.out.file	Saves active display monitor to graphics file in home directory
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	Find shortest path for selected starting and ending node
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 Edit a raster map interactively on the display monitor

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

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

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

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

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

d.text.freetype Draws text in the graphics monitor's active display frame using TrueType fonts.

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

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

d.title Outputs a TITLE for a raster map layer in a form suitable for display by d.text.

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

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

d.vect.thematic Displays thematic vectormap

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.

db.connect Prints/sets general DB connection for current mapset and exits.

db.copy Copy a table. Either 'from\_table' (optionally with 'where') can be used or 'select' option, but not 'from\_table' and 'select' at the same time.

db.describe Describe a table (in detail).

db.drivers List all database drivers.

db.execute Execute any SQL statement.

db.login Set user/password for driver/database.

db.select Select data from database.

db.tables List all tables for a given database.

db.test Test database driver, database must exist and set by db.connect.

## General GIS management commands:

g.access Controls access to the current mapset for other users on the system.

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.

g.filename Prints GRASS data base file names.

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.

g.list Lists available GRASS data base files of the user-specified data type to standard output.

g.manual display the HTML man pages of GRASS

g.mapset Change current mapset

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.mlist Apply regular expressions and wildcards to g.list

g.mremove Apply regular expressions and wildcards to g.remove

g.parser Tool for using the GRASS command line parser for shell scripts

g.pnmcomp Overlays multiple PPM image files.

g.proj Prints and manipulates GRASS projection information files.

g.region Program to manage the boundary definitions for the geographic region.

g.remove Removes data base element files from the user's current mapset.

- g.rename Renames data base element files in the user's current mapset.
- g.setproj Reset the location's projection settings
- 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

### Imagery commands:

- i.cca Canonical components analysis (cca) program for image processing.
- i.class An imagery function that generates spectral signatures for an image by allowing the user to outline regions of interest. The resulting signature file can be used as input for i.maxlik or as a seed signature file for i.cluster.
- i.cluster An imagery function that generates spectral signatures for land cover types in an image using a clustering algorithm. The resulting signature file is used as input for i.maxlik, to generate an unsupervised image classification.
- i.fft Fast Fourier Transform (FFT) for image processing.
- i.fusion.brovey Brovey transform to merge multispectral and high-res panchromatic channels
- i.gensig Generates statistics for i.maxlik from raster map layer.
- i.gensigset Generate statistics for i.smap from raster map layer.
- i.group Creates and edits groups and subgroups of imagery files.
- i.his.rgb Hue-intensity-saturation (his) to red-green-blue (rgb) raster map color transformation function.
- i.ifft Inverse Fast Fourier Transform (ifft) for image processing.
- i.image.mosaic Mosaics up to 4 images and extends colormap; creates map \*.mosaic
- i.in.spotvgt Import of SPOT VGT NDVI file into a raster map
- i.landsat.rgb Auto-balancing of colors for LANDSAT images
- i.maxlik An imagery function that classifies the cell spectral reflectances in imagery data based on the spectral signature information generated by either i.cluster, i.class, or i.gensig.
- i.oif Calculates Optimum-Index-Factor table for LANDSAT TM bands 1-5, & 7
- i.ortho.photo Ortho-rectify entire imagery groups
- i.pca Principal components analysis (pca) program for image processing.
- 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
- i.rgb.his Red-green-blue (rgb) to hue-intensity-saturation (his) raster map color transformation function.

- i.smap Performs contextual image classification using sequential maximum a posteriori (SMAP) estimation.
- i.spectral displays spectral response at user specified locations in group or images
- i.target Targets an imagery group to a GRASS location and mapset.
- i.tasscap Tasseled Cap (Kauth Thomas) transformation for LANDSAT-TM data
- 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 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.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.

### Miscellaneous tools:

- m.cogo A simple utility for converting bearing and distance measurements to coordinates
- m.proj Convert coordinates from one projection to another (cs2cs frontend).

### PostScript commands:

- ps.map Hardcopy PostScript map output utility.

### 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.
- r.bilinear Bilinear interpolation utility for raster map layers.
- r.bitpattern Compares bit patterns with a raster map
- r.blend Blends color components of two raster maps by a given ratio
- r.buffer Creates a raster map layer showing buffer zones surrounding cells that contain non-NULL category values.

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

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

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

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

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

r.colors Creates/Modifies the color table associated with a raster map layer.

r.composite Combines red, green and blue map layers into a single composite map layer.

r.compress Compresses and decompresses raster files.

r.contour Produces a GRASS binary vector map of specified contours from GRASS raster map layer.

r.cost Outputs a raster map layer showing the cumulative cost of moving between different geographic locations on an input raster map layer whose cell category values represent cost.

r.covar Outputs a covariance/ correlation matrix for user-specified raster map layer(s).

r.cross Creates a cross product of the category values from multiple raster map layers.

r.describe Prints terse list of category values found in a raster map layer.

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.

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

r.drain Traces a flow through an elevation model on a raster map layer.

r.fill.dir Filters and generates a depressionless elevation map and a flow direction map from a given elevation layer

r.fillnulls Fills no-data areas in raster maps using v.surf.rst splines interpolation

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

r.grow Generates a raster map layer with contiguous areas grown by one cell.

r.his Generates red, green and blue raster map layers combining hue, intensity, and saturation (his) values from user- specified input raster map layers.

r.in.arc Convert an ESRI ARC/INFO ascii raster file (GRID) into a (binary) raster map layer.

r.in.ascii Convert an ASCII raster text file into a (binary) raster map layer.

r.in.aster georeferencing, rectification, and import of Terra-ASTER imagery and relative DEM's using gdalwarp

r.in.bin Import a binary raster file into a GRASS raster map layer.

r.in.gdal Import GDAL supported raster file into a binary raster map layer.

r.in.gridatb Imports GRIDATB.FOR map file (TOPMODEL) into GRASS raster map

r.in.mat Import a binary MAT-File(v4) to a GRASS raster.

r.in.poly Create raster maps from ascii polygon/line data files in the current directory.

r.in.srtm Import SRTM HGT files into GRASS

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.

r.info Outputs basic information about a user-specified raster map layer.

r.kappa Calculate error matrix and kappa parameter for accuracy assessment of classification result.

r.lake Fills lake from seed at given level

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

r.le.pixel Contains a set of measures for attributes, diversity, texture, juxtaposition, and edge.

r.le.setup Interactive tool used to setup the sampling and analysis framework that will be used by the other r.le programs.

r.le.trace Display the boundary of each r.le patch and show how the boundary is traced, display the attribute, size, perimeter, and shape indices for each patch, and save the data in an output file.

r.los Line-of-sight raster analysis program.

r.mapcalc Extensible raster map calculator

r.mapcalculator r.mapcalculator - Calculates new raster map from r.mapcalc expression

r.mask Create a MASK for limiting raster operation

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 Raster file 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.

r.null Creates explicitly the NULL-value bitmap file.

r.out.arc Converts a raster map layer into an ESRI ARCGRID file.

r.out.ascii Converts a raster map layer into an ASCII text file.

r.out.bin Exports a GRASS raster to a binary array.

r.out.gdal Exports GRASS raster data into various formats (requires GDAL)

r.out.gridatb Exports GRASS raster map to GRIDATB.FOR map file (TOPMODEL)

r.out.mat Exports a GRASS raster to a binary MAT-File.

r.out.mpeg Raster File Series to MPEG Conversion Program.

r.out.png Export GRASS raster as non-georeferenced PNG image format.

r.out.pov Converts a raster map layer into a height-field file for POVRAY.

r.out.ppm Converts a GRASS raster file to a PPM image file at the pixel resolution of the CURRENTLY DEFINED REGION.

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.

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

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

r.out.vtk Converts raster maps into the VTK-Ascii format

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

r.param.scale Extracts terrain parameters from a DEM. Uses a multi-scalar approach by taking fitting quadratic parameters to any size window (via least squares)

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.

r.plane Creates raster plane map given dip (inclination), aspect (azimuth), and one point

r.profile Outputs the raster map layer values lying on user-defined line(s).

r.proj Re-project a raster map from one location to the current location.

r.quant This routine produces the quantization file for a floating- point map.

r.random.cells Generates random cell values with spatial dependence.

r.random Creates a raster map layer and vector point map containing randomly located sites.

r.random.surface Generates random surface(s) with spatial dependence.

r.reclass.area Reclasses a raster map greater or less than user specified area size (in hectares)

r.reclass Creates a new map layer whose category values are based upon the user's reclassification of categories in an existing raster map layer.

r.recode Recode raster maps.

r.region Sets the boundary definitions for a raster map.

r.regression.line Calculates linear regression from two raster maps:  $y = a + b*x$

r.report Reports statistics for raster map layers.

r.resamp.interp Resamples raster map layers using interpolation.

r.resamp.rst Reinterpolates and computes topographic analysis from input raster file to a new raster file (possibly with different resolution) using regularized spline with tension and smoothing.

r.resamp.stats Resamples raster map layers using aggregation.

r.resample GRASS raster map layer data resampling capability.

r.rescale.eq Rescales histogram equalized the range of category values in a raster map layer.

r.rescale Rescales the range of category values in a raster map layer.

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.

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

r.shaded.relief Creates shaded relief map from an elevation map (DEM).

r.sim.sediment Overland flow hydrologic model based on duality particle- field concept (SIMWE)

r.sim.water Overland flow hydrologic model based on duality particle- field concept (SIMWE)

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.

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. It optionally produces raster maps to contain backlink UTM coordinates for tracing spread paths.

r.spreadpath Recursively traces the least cost path backwards to cells from which the cumulative cost was determined.

r.statistics Category or object oriented statistics.

r.stats Generates area statistics for raster map layers.

r.sum Sums up the raster cell values.

r.sun Computes direct (beam), diffuse and reflected solar irradiation raster maps for given day, latitude, surface and atmospheric conditions. Solar parameters (e.g. sunrise, sunset times, declination, extraterrestrial irradiance, daylight length) are saved in the map history file. Alternatively, a local time can be specified to compute solar incidence angle and/or irradiance raster maps. The shadowing effect of the topography is optionally incorporated.

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.

r.support Allows creation and/or modification of raster map layer support files.

r.support.stats Update raster map statistics

r.surf.area Surface area estimation for rasters.

r.surf.contour Surface generation program from rasterized contours.

r.surf.fractal Creates a fractal surface of a given fractal dimension.

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.

r.surf.idw Surface interpolation utility for raster map layers.

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.

r.terraflow Flow computation for massive grids (Float version).

r.texture Generate images with textural features from a raster map

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

r.tileset Produces tilings of the source projection for use in the destination region and projection.

r.timestamp Print/add/remove a timestamp for a raster map.

r.to.rast3 Converts 2D raster map slices to one 3D raster volume map

r.to.rast3elev Creates a 3D volume map based on 2D elevation and value raster maps

r.to.vect Converts a raster map into a vector map layer.

r.topidx Creates topographic index,  $\ln(a/\tan(\beta))$ , map from elevation map.

r.topmodel Simulates TOPMODEL which is a physically based hydrologic model.

r.transect Outputs raster map layer values lying along user defined transect line(s).

r.univar Calculates univariate statistics from the non-null cells of a raster map.

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.

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.

r.water.outlet Watershed basin creation program.

r.watershed Watershed basin analysis program.

r.what Queries raster map layers on their category values and category labels.

### Raster 3D commands:

r3.cross.rast Creates cross section 2D raster map from g3d raster volume map based on 2D elevation map

r3.in.ascii Convert a 3D ASCII raster text file into a (binary) 3D raster map layer

r3.in.v5d import of 3-dimensional Vis5D files (i.e. the v5d file with 1 variable and 1 time step)

r3.info Outputs basic information about a user-specified 3D raster map layer.

r3.mapcalc Extensible raster map calculator (3D version)

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

r3.mask Establishes the current working 3D raster 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.

r3.out.ascii Converts a 3D raster map layer into an ASCII text file

r3.out.v5d Export of GRASS 3D raster file to 3-dimensional Vis5D file.

r3.out.vtk Converts 3D raster maps (G3D) into the VTK-Ascii format

r3.timestamp print/add/remove a timestamp for a 3D raster map

r3.to.rast Converts 3D raster maps to 2D raster maps

### Vector commands:

v.buffer Create a buffer around features of given type (areas must contain centroid).

v.build.all Rebuild topology on all vector maps in the current mapset

v.build Creates topology for GRASS vector data.

v.build.polylines Build polylines from lines.

v.category Attach, delete or report vector categories to map geometry.

v.centroids Adds missing centroids to closed boundaries

v.clean Toolset for cleaning the vector topology

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.

v.db.addcol adds one or more columns to the attribute table connected to a given vector map

v.db.addtable creates and adds a new attribute table to a given layer of an existing vector map

v.db.connect Prints/sets DB connection for a vector map to attribute table

v.db.droptable removes existing attribute table of a vector map

v.db.reconnect.all Reconnect vectors to a new database

v.db.select Print vector attributes

v.db.update allows to assign a new value to a column in the attribute table connected to a given map

v.delaunay Create a Delaunay triangulation from an input vector map containing points or centroids.

v.digit Interactive editing and digitization of vector maps.

v.dissolve Dissolve boundaries between adjacent areas sharing a common category number

v.distance Find the nearest element in vector 'to' for elements in vector 'from'. Various information about this relation may be uploaded to the attribute table of input vector 'from' or printed to stdout

v.drape Convert 2D vector to 3D vector by sampling of elevation raster. Default sampling by nearest neighbor

v.external Create a new vector as a read-only link to OGR layer.

v.extract Selects vector objects from an existing vector map and creates a new map containing only the selected objects. If 'list', 'file' and 'where' options are not specified, all features of given type and layer are extracted, categories are not changed in that case.

v.extrude Extrudes flat vector object to 3D with defined height

v.hull Uses a GRASS vector points map to produce a convex hull vector map

v.in.ascii Convert GRASS ascii file or points file to binary vector.

v.in.db Create new vector (points) from database table containing coordinates.

v.in.dxf Converts files in DXF format to GRASS vector file format.

v.in.e00 Import of E00 file into a vector map.

v.in.garmin Upload Waypoints, Routes, and Tracks from a Garmin GPS receiver into a vector map.

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

v.in.gpsbabel Download Waypoints, Routes, and Tracks from a GPS receiver or a GPS ascii file into a vector map.

v.in.mapgen Import Mapgen or Matlab vector maps into GRASS.

v.in.ogr Convert OGR vectors to GRASS. Available drivers:

v.in.region Create a new vector from current region.

v.in.sites.all Convert 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 file.

v.info Outputs basic information about a user-specified vector map layer.

v.kcv Randomly partition points into test/train 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

v.label Create paint labels for GRASS vector file and attached attributes.

v.lidar.correction Correction of the v.lidar.growing output. It is the last of the three algorithms for LIDAR filtering

v.lidar.edgedetection Detect the object's edges from a LIDAR data set.

v.lidar.growing Building contour determination and Region Growing algorithm for determining the building inside

v.lrs.create Create Linear reference system

v.lrs.label Create stationing from input lines, and linear reference system

v.lrs.segment Create points/segments from input lines, linear reference system and positions read from stdin

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

v.mkgrid Creates a (binary) GRASS vector map of a user-defined 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.

v.net.alloc Allocate subnets for nearest centres (direction from centre). Centre node must be opened (costs >= 0). Costs of centre node are used in calculation

v.net Network maintenance.

v.net.iso Split net to bands between cost isolines (direction from centre). Centre node must be opened (costs >= 0). Costs of centre node are used in calculation

v.net.path Find shortest path on vector network.

v.net.salesman Create a cycle connecting given nodes (Traveling salesman problem). Note that TSP is NP-hard, heuristic algorithm is used by this module and created cycle may be sub optimal.

v.net.steiner Create Steiner tree for the network and given terminals. Note that 'Minimum Steiner Tree' problem is NP-hard and heuristic algorithm is used in this module so the the result may be sub optimal.

v.normal Tests for normality for points.

v.out.ascii Convert a GRASS binary vector map to a GRASS ASCII vector map

v.out.dxf Exports GRASS vector files to DXF file format.

v.out.ogr Convert to one of the supported OGR vector formats.

v.out.pov Convert to POV-Ray format, GRASS x,y,z -> POV-Ray x,z,y

v.out.vtk Convert a GRASS binary vector map to VTK ASCII output

v.outlier Removes outliers from vector point data

v.overlay Overlay 2 vector maps.

v.parallel Create parallel line to input lines.

v.patch Creates a new binary vector map layer by combining other binary vector map layers.

v.perturb Random location perturbations of GRASS vector points

v.proj Allows projection conversion of vector files.

v.qcount indices for quadrat counts of sites lists

v.random Randomly generate a 2D/3D GRASS vector points map.

v.rast.stats Calculates univariate statistics from a GRASS raster map based on vector objects

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

v.report Reports geometry statistics for vectors

v.sample Sample a raster file at site locations

v.segment Create points/segments from input lines, and positions read from stdin in format:

v.select Select features from ainput by features from binput

v.split Split lines to shorter segments.

v.surf.bspline Bicubic or bilinear interpolation with Tykhonov regularization

v.surf.idw Surface interpolation from vector point data by Inverse Distance Squared Weighting.

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.

v.to.db Load values from vector to database.

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

v.to.rast Converts a binary GRASS vector map layer into a GRASS raster map layer.

v.to.rast3 Converts a binary GRASS vector map (only points) layer into a 3D GRASS raster map layer.

v.transform Transforms an vector map layer from one coordinate system into another coordinate system.

v.type Change the type of geometry elements.

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

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

v.voronoi Create a Voronoi diagram from an input vector map containing points or centroids.

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

v.what.rast Uploads raster values at positions of vector points to the table

v.what.vect Uploads vector values at positions of vector points to the table