

GCD ON THE COMMAND LINE

DEMONSTRATION

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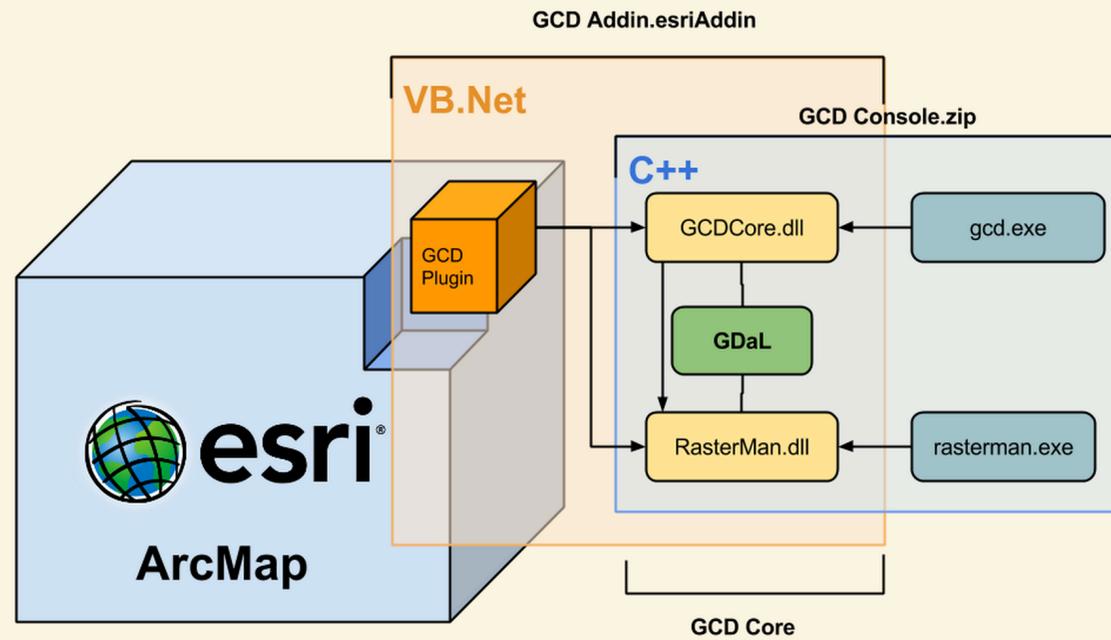
WHERE TO GET IT?

ON THE GCD WEBSITE:

<http://gcd.joewheaton.org/downloads>

- 32-bit only (64-bit coming soon)
- Unzip somewhere convenient: `c:\GCDConsole`
- Self-contained. (no ESRI License / prerequisites).

ARCHITECTURE OVERVIEW



RUNNING A COMMAND

- Open up the DOS: START -> Run: "CMD [enter]"

```
Microsoft Windows [Version 6.3.9600]
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C:\Users\Administrator>cd \GCDCConsole

C:\GCDCConsole>gcd

Geomorphic Change Detection Tool v6.1.6
Usage: gcd <command> [paramters...]

Commands (type gcd followed by the command to retrieve parameter information):

dodstats      Display area & volume of erosion/deposition for a DoD raster.
dodstatsprob  Display DoD statistics for a probabilistic thresholded raster.
dodthresholdproperror  Threshold a DoD using a propagated error raster
dodthresholdprob  Threshold a DoD using probabilistic thresholding.
dodthresholdprob  Threshold a DoD with probabilistic thresholding and a spatial extent
```

BATCH FILE:

```
@ECHO off

REM -----
REM Here is a little batch file that does a DoD
REM -----

gcd dodminlod %1 %2 %3\RawDod.tif %3\ThreshDoD.tif 0

gcd uniformerror %1 %3\UniErr-OLD.tif 0.1

gcd uniformerror %2 %3\UniErr-NEW.tif 0.2

gcd properror %3\UniErr-OLD.tif %3\UniErr-NEW.tif
             %3\Prop-Err.tif

gcd dodthresholdprob %3\RawDod.tif %3\output_thresh_raster.tif
                    %3\UniErr-NEW.tif %3\UniErr-OLD.tif
```

Source: <https://gist.github.com/MattReimer/bd74d1438a825e916caf>

GCD COMMANDS:

GCD . EXE

- `dodstats` : Display area & volume of erosion/deposition for a DoD raster.
- `dodstatsprob` : Display DoD statistics for a probabilistic thresholded raster.
- `dodthresholdproperror` : Threshold a DoD using a propagated error raster
- `dodthresholdprob` : Threshold a DoD using probabilistic thresholding.
- `dodthresholdprobsc` : Threshold a DoD with probabilistic thresholding & spatial coherence.
- `dodminlod` : Calculate a DoD & threshold it using minimum level of detection.
- `dodproperror` : Calculate a raw DEM & threshold it using propagated error.
- `properror` : Calculate a propagated error raster from two error rasters.
- `uniformerror` : Calculate a uniform error raster.

RASTERMAN COMMANDS:

RASTERMAN . EXE

- **raster**: Display basic properties (rows, cols etc) for a raster.
- **stats**: Display specific statistics (mean, max, min, etc) for a raster.
- **bilinear**: Bilinear resample of a raster to produce a new raster.
- **copy**: Copy a raster to produce a new raster with the specified extent.
- **mosaic**: Stitch two or more overlapping rasters.
- **combine**: Combine multiple rasters using one or more methods.
- **makeconcurrent**: Make all input rasters concurrent.
- **mask**: Mask one raster using another raster or a vector.
- **maskval**: Mask one raster using one of its values.
- **setnull**: Set a NoDataValue in a raster based on thresholding.
- **add**: Add two rasters or a raster and a constant.
- **subtract**: Subtract two rasters or a constant from a raster.
- **divide**: Divide a raster by a number or another raster.
- **multiply**: Multiply a raster by a number or another raster.
- **power**: Raise a raster to a power.
- **sqrt**: Get the square root of a raster.
- **invert**: Create a raster from nodata values of another.
- **filter**: Perform operations like "smooth" over a moving window.
- **normalize**: Normalize a raster.
- **fill**: Optimized Pit Removal.
- **dist**: Euclidean distance calculation.
- **linthresh**: Linear thresholding of a raster.
- **hillshade**: Create a hillshade raster.
- **slope**: Create a slope raster.
- **png**: Create a PNG image copy of a raster.
- **csv2raster**: Create a raster from a .csv file
- **raster2csv**: Create a raster from a .csv file
- **extractpoints**: Extract point values from a raster using a csv.

WHY USE COMMAND LINE?

- Faster than clicking.
- Avoid using big tools (ESRI).
- More Control.
- More consistent & repeatable.
- Great for batch processing data.
- Sometimes you don't have a desktop (linux).
- Use for scripting (Python, Ruby, etc...)

LEARN MORE / FIND HELP:

RASTERMAN . EXE

- On GitHub: <https://github.com/NorthArrowResearch/rasterman>

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- <http://gcd.joewheaton.org>