

**NAME**

`asy` – Asymptote: a script-based vector graphics language

**SYNOPSIS**

`asy` [*options*] [*file ...*]

**DESCRIPTION**

**Asymptote** is a powerful descriptive vector graphics language for technical drawings, inspired by MetaPost but with an improved C++-like syntax. Asymptote provides for figures the same high-quality level of typesetting that LaTeX does for scientific text.

**OPTIONS**

If no arguments are given, Asymptote runs in interactive mode.

If "-" is given as the file argument, Asymptote reads from standard input.

A summary of options is included below. The effect of most options can be negated by prepending **no** to the option name. Default values for most options may also be entered in the file **.asy/config.asy** in the user's home directory using the long form:

```
import settings;
batchView=true;
```

For a complete description, see the Info files.

**-GPUblockSize n**

Compute shader block size [8].

**-GPUcompress**

Compress GPU transparent fragment counts [false].

**-GPUindexing**

Compute indexing partial sums on GPU [true].

**-GPUinterlock**

Use fragment shader interlock [true].

**-GPUlocalSize n**

Compute shader local size [256].

**-V,-View**

View output; command-line only.

**-absolute**

Use absolute WebGL dimensions [false].

**-a,-align C|B|T|Z**

Center, Bottom, Top, or Zero page alignment [C].

**-aligndir pair**

Directional page alignment (overrides align) [(0,0)]. -animating [false]

**-antialias n**

Antialiasing width for rasterized output [2].

**-auto3D**

Automatically activate 3D scene [true].

- autobillboard**  
3D labels always face viewer by default [true].
- autoimport str**  
Module to automatically import.
- autoplain**  
Enable automatic importing of plain [true].
- autoplay**  
Autoplay 3D animations [false].
- autorotate**  
Enable automatic PDF page rotation [false].
- axes3** Show 3D axes in PDF output [true].
- batchMask**  
Mask fpu exceptions in batch mode [false].
- batchView**  
View output in batch mode [false].
- bw** Convert all colors to black and white false.
- cd directory**  
Set current directory; command-line only.
- cmyk** Convert rgb colors to cmyk false.
- c,-command str**  
Command to autoexecute.
- compact**  
Conserve memory at the expense of speed false.
- compress**  
Compress images in PDF output [true]. -convertOptions str []
- d,-debug**  
Enable debugging messages [false].
- devicepixelratio n**  
Ratio of physical to logical pixels [1].
- digits n**  
Default output file precision [7].
- divisor n**  
Garbage collect using purge(divisor=n) [2]. -dvipsOptions str []
- dvisvgmMultipleFiles**  
dvisvgm supports multiple files [true]. -dvisvgmOptions str [--optimize]
- embed**  
Embed rendered preview image [true].
- e,-environment**  
Show summary of environment settings; command-line only.

- exitonEOF**  
Exit interactive mode on EOF [true].
- fitscreen**  
Fit rendered image to screen [true].
- framerate frames/s**  
Animation speed [30]. -glOptions str []
- globalread**  
Allow read from other directory true.
- globalwrite**  
Allow write to other directory false.
- gray** Convert all colors to grayscale false. -gsOptions str []
- h,-help**  
Show summary of options; command-line only.
- historylines n**  
Retain n lines of history [1000]. -htmlviewerOptions str -hyperrefOptions str  
[setpagesize=false,unicode,pdfborder=0 0 0]
- ibl** Enable environment map image-based lighting [false].
- iconify**  
Iconify rendering window [false].
- image str**  
Environment image name [snowyField].
- imageDir str**  
Environment image library directory [ibl].
- inlineimage**  
Generate inline embedded image [false].
- inlinetex**  
Generate inline TeX code [false].
- inpipe n**  
Input pipe [-1].
- interactiveMask**  
Mask fpu exceptions in interactive mode [true].
- interactiveView**  
View output in interactive mode [true].
- interactiveWrite**  
Write expressions entered at the prompt to stdout [true]. -interrupt [false]
- k,-keep**  
Keep intermediate files [false].
- keepaux**  
Keep intermediate LaTeX .aux files [false].

- level n**  
Postscript level [3].
- l, -listvariables**  
List available global functions and variables [false].
- localhistory**  
Use a local interactive history file [false].
- loop** Loop 3D animations [false].
- lossy** Use single precision for V3D reals [false].
- lsp** Interactive mode for the Language Server Protocol [false].
- m, -mask**  
Mask fpu exceptions; command-line only.
- maxtile pair**  
Maximum rendering tile size [(1024,768)].
- maxviewport pair**  
Maximum viewport size [(0,0)].
- multiline**  
Input code over multiple lines at the prompt [false].
- multipleView**  
View output from multiple batch-mode files [false].
- multisample n**  
Multisampling width for screen images [4].
- offline**  
Produce offline html files [false].
- O, -offset pair**  
PostScript offset [(0,0)].
- f, -outformat format**  
Convert each output file to specified format.
- o, -outname name**  
Alternative output directory/file prefix.
- outpipe n**  
Output pipe [-1].
- paperheight bp**  
Default page height [0].
- paperwidth bp**  
Default page width [0].
- p, -parseonly**  
Parse file [false].
- pdfreload**  
Automatically reload document in pdfviewer [false]. -pdfreloadOptions str []

- pdfreloaddelay usec**  
Delay before attempting initial pdf reload [750000]. -pdfviewerOptions str []
- position pair**  
Initial 3D rendering screen position [(0,0)].
- prc** Embed 3D PRC graphics in PDF output [false].
- prerender resolution**  
Prerender V3D objects (0 implies vector output) [0].
- prompt str**  
Prompt [> ].
- prompt2 str**  
Continuation prompt for multiline input [..]. -psviewerOptions str []
- q,-quiet**  
Suppress welcome text and noninteractive stdout [false].
- render n**  
Render 3D graphics using n pixels per bp (-1=auto) [-1].
- resizestep step**  
Resize step [1.2].
- reverse**  
reverse 3D animations [false].
- rgb** Convert cmyk colors to rgb false.
- safe** Disable system call true.
- scroll n**  
Scroll standard output n lines at a time [0].
- shiftHoldDistance n**  
WebGL touch screen distance limit for shift mode [20].
- shiftWaitTime ms**  
WebGL touch screen shift mode delay [200].
- spinstep deg/s**  
Spin speed [60].
- svgemulation**  
Emulate unimplemented SVG shading [true].
- tabcompletion**  
Interactive prompt auto-completion [true].
- tex engine**  
latex|pdflatex|xelatex|lualatex|tex|pdftex|luatex|context|none [latex].
- thick** Render thick 3D lines [true].
- thin** Render thin 3D lines [true].
- threads**  
Use POSIX threads for 3D rendering [true].

- toolbar**  
Show 3D toolbar in PDF output [true].
- s,-translate**  
Show translated virtual machine code [false].
- twice** Run LaTeX twice (to resolve references) [false].
- twosided**  
Use two-sided 3D lighting model for rendering [true].
- u,-user str**  
General purpose user string.
- v3d** Embed 3D V3D graphics in PDF output [false].
- v,-verbose**  
Increase verbosity level (can specify multiple times) 0.
- version**  
Show version; command-line only.
- vibrateTime ms**  
WebGL shift mode vibrate duration [25].
- viewportmargin pair**  
Horizontal and vertical 3D viewport margin [(0.5,0.5)].
- wait** Wait for child processes to finish before exiting [false].
- warn str**  
Enable warning; command-line only.
- webgl2**  
Use webgl2 if available [false].
- where**  
Show where listed variables are declared [false].
- wsl** Run asy under the Windows Subsystem for Linux [false].
- xasy** Interactive mode for xasy [false].
- zoomPinchCap limit**  
WebGL maximum zoom pinch [100].
- zoomPinchFactor n**  
WebGL zoom pinch sensitivity [10].
- zoomfactor factor**  
Zoom step factor [1.05].
- zoomstep step**  
Mouse motion zoom step [0.1].

## SEE ALSO

Asymptote is documented fully in the asymptote Info page. The manual can also be accessed in interactive mode with the "help" command.

**AUTHOR**

Asymptote was written by Andy Hammerlindl, John Bowman, and Tom Prince.

This manual page was written by Hubert Chan for the Debian project (but may be used by others).