14.2 Advanced - Command Line Arguments

Command Line Arguments

Blender 2.76 Usage: blender [args ...] [file] [args ...]

Render Options

`-b, --background`
> Run in background (often used for UI-less rendering)

`-a, --render-anim`
> Render frames from start to end (inclusive)

`-S, --scene <name>`
> Set the active scene `<name>` for rendering

`-f, --render-frame <frame>`
> Render frame `<frame>` and save it. `+<frame>` start frame relative, `-<frame>` end frame relative.

`-s, --frame-start <frame>`
> Set start to frame `<frame>`, supports +/- for relative frames too.

`-e, --frame-end <frame>`
> Set end to frame `<frame>`, supports +/- for relative frames too.

`-j, --frame-jump <frames>`
> Set number of frames to step forward after each rendered frame

`-o, --render-output <path>`

> Set the render path and file name. Use `//` at the start of the path to render relative to the blend file.
>
> The # characters are replaced by the frame number, and used to define zero padding.
>
> - `ani_##_test.png` becomes `ani_01_test.png`
> - `test-######.png` becomes `test-000001.png`
>
> When the filename does not contain #, The suffix #### is added to the filename.

The frame number will be added at the end of the filename, eg:

```
blender -b foobar.blend -o //render_ -F PNG -x 1 -a
```

`//render_` becomes `//render_####`, writing frames as `//render_0001.png`

`-E, --engine <engine>`
    Specify the render engine use -E help to list available engines
`-t, --threads <threads>`
    Use amount of `<threads>` for rendering and other operations [1-64], 0 for systems processor count.

Format Options

`-F, --render-format <format>`
    Set the render format, Valid options are...
        TGA IRIS JPEG MOVIE IRIZ RAWTGA AVIRAW AVIJPEG PNG BMP FRAMESERVER
    (formats that can be compiled into blender, not available on all systems)
        HDR TIFF EXR MULTILAYER MPEG AVICODEC QUICKTIME CINEON DPX DDS
`-x, --use-extension <bool>`
    Set option to add the file extension to the end of the file

Animation Playback Options

`-a <options> <file(s)>`
    Playback `<file(s)>`, only operates this way when not running in background.
        `-p <sx> <sy>` Open with lower left corner at `<sx>`, `<sy>` -m Read from disk (Don't buffer) -f
        `<fps> <fps-base>` Specify FPS to start with -j `<frame>` Set frame step to `<frame>` -s
        `<frame>` Play from `<frame>` -e `<frame>` Play until `<frame>`

Window Options

`-w, --window-border`
    Force opening with borders (default)
`-W, --window-borderless`
    Force opening without borders
`-p, --window-geometry <sx> <sy> <w> <h>`
    Open with lower left corner at `<sx>`, `<sy>` and width and height as `<w>`, `<h>`
`-con, --start-console`
    Start with the console window open (ignored if -b is set), (Windows only)
`--no-native-pixels`
    Do not use native pixel size, for high resolution displays (MacBook `Retina`)

Game Engine Specific Options

`-g` Game Engine specific options
    `-g` *fixedtime*   Run on 50 hertz without dropping frames

    `-g` *vertexarrays*

                                        Use Vertex Arrays for rendering (usually faster)

–g *nomipmap*   No Texture Mipmapping

–g *linearmipmap*

                                Linear Texture Mipmapping instead of Nearest (default)

Python Options

`-y, --enable-autoexec`
    Enable automatic Python script execution
`-Y, --disable-autoexec`
    Disable automatic Python script execution (pydrivers & startup scripts), (default).
`-P, --python <filename>`
    Run the given Python script file
`--python-text <name>`
    Run the given Python script text block
`--python-expr <expression>`
    Run the given expression as a Python script
`--python-console`
    Run blender with an interactive console
`--python-exit-code`
    Set the exit-code in [0..255] to exit if a Python exception is raised (only for scripts executed from the command line), zero disables.
`--addons`
    Comma separated list of addons (no spaces)

Debug Options

`-d, --debug`

    Turn debugging on

- Enables memory error detection
- Disables mouse grab (to interact with a debugger in some cases)
- Keeps Python's `sys.stdin` rather than setting it to None

`--debug-value <value>`
    Set debug value of `<value>` on startup
`--debug-events`
    Enable debug messages for the event system
`--debug-ffmpeg`
    Enable debug messages from FFmpeg library
`--debug-handlers`
    Enable debug messages for event handling
`--debug-libmv`
    Enable debug messages from libmv library
`--debug-cycles`
    Enable debug messages from Cycles
`--debug-memory`
    Enable fully guarded memory allocation and debugging

`--debug-jobs`

    Enable time profiling for background jobs.

`--debug-python`

    Enable debug messages for Python

`--debug-depsgraph`

    Enable debug messages from dependency graph

`--debug-depsgraph-no-threads`

    Switch dependency graph to a single threaded evaluation

`--debug-gpumem`

    Enable GPU memory stats in status bar

`--debug-wm`

    Enable debug messages for the window manager, also prints every operator call

`--debug-all`

    Enable all debug messages (excludes libmv)

`--debug-fpe`

    Enable floating point exceptions

`--disable-crash-handler`

    Disable the crash handler

Misc Options

`--factory-startup`

    Skip reading the startup.blend in the users home directory

`--env-system-datafiles`

    Set the `BLENDER_SYSTEM_DATAFILES` environment variable

`--env-system-scripts`

    Set the `BLENDER_SYSTEM_SCRIPTS` environment variable

`--env-system-python`

    Set the `BLENDER_SYSTEM_PYTHON` environment variable

`-nojoystick`

    Disable joystick support

`-noglsl`

    Disable GLSL shading

`-noaudio`

    Force sound system to None

`-setaudio`

    Force sound system to a specific device NULL SDL OPENAL JACK

`-h, --help`

    Print this help text and exit

`-R`

    Register .blend extension, then exit (Windows only)

`-r`

    Silently register .blend extension, then exit (Windows only)

`-v, --version`

    Print Blender version and exit

`--`

    Ends option processing, following arguments passed unchanged. Access via Python's `sys.argv`

Other Options

`/?`
> Print this help text and exit (windows only)

`--debug-freestyle`
> Enable debug/profiling messages from Freestyle rendering

`--debug-gpu`
> Enable gpu debug context and information for OpenGL 4.3+.

`--disable-abort-handler`
> Disable the abort handler

`--enable-new-depsgraph`
> Use new dependency graph

`--verbose <verbose>`
> Set logging verbosity level.

Experimental features

`--enable-new-depsgraph`
> Use new dependency graph

Argument Parsing

Arguments must be separated by white space, eg:

```
blender -ba test.blend
```

...will ignore the `a`

```
blender -b test.blend -f8
```

...will ignore `8` because there is no space between the `-f` and the frame value

Argument Order

Arguments are executed in the order they are given. eg:

```
blender --background test.blend --render-frame 1 --render-output '/tmp'
```

...will not render to `/tmp` because `--render-frame 1` renders before the output path is set

```
blender --background --render-output /tmp test.blend --render-frame 1
```

...will not render to `/tmp` because loading the blend file overwrites the render output that was set

```
blender --background test.blend --render-output /tmp --render-frame 1
```

...works as expected.

Environment Variables

BLENDER_USER_CONFIG:

Directory for user configuration files.

BLENDER_USER_SCRIPTS:

Directory for user scripts.

BLENDER_SYSTEM_SCRIPTS:

Directory for system wide scripts.

BLENDER_USER_DATAFILES:

Directory for user data files (icons, translations, ..).

BLENDER_SYSTEM_DATAFILES:

Directory for system wide data files.

BLENDER_SYSTEM_PYTHON:

Directory for system python libraries.

TEMP: Store temporary files here.

TMP: or $TMPDIR Store temporary files here.

SDL_AUDIODRIVER:

LibSDL audio driver - alsa, esd, dma.

PYTHONHOME: Path to the python directory, eg. /usr/lib/python.