

4.38W Recommendations

A few points to consider before talking about Hardware Requirements:

1. 4.38 is different than any previous version of Falcon BMS in terms of demands from the hardware. It will probably utilize more memory, both RAM and Video RAM (AKA VRAM), than any previous version.
2. Make sure your system is healthy and clean (Dust, fans, temperatures etc). 4.38 will push most GPUs to full utilization, all the time.
3. Make sure your system drivers are up to date.
4. If not running in VR and struggling with performance, you may consider to use a frame generation/prediction SW (e.g like LossLess Scaling).
5. We aim for a higher Graphics quality, but not all systems may be able to run with all the options on/maxed. You may want to check some configuration variables that will help you achieve a smoother experience.
6. During install users can choose to run a process that will reduce 8K models art textures (Not terrain!!) to 4K resolution. This will help with systems that struggle with VRAM utilization.

Minimum Requirements:

- **CPU:** I5 or equivalent from the last years with at least 4 cores 8 threads
- **RAM:** 16GB
- **GPU:** GTX-1060 or equivalent with at least 6GB Video memory (Assuming no more than Full HD resolution monitor will be in use).
- **Expected Resolution:** 1920X1080 only – If higher then stronger HW will be necessary.

Note: These specs are the very minimum that will be supported by the BMS team. Users with minimum requirements systems will need to probably give up on most high memory consuming and heavy processing features and settings. Please consider to use all the optimizations from the configuration table below and try to find a good balance between performance and quality.

Recommended System Requirements:

- **CPU:** Top of the line I7/I9 or equivalent with as many cores/threads as possible.
- **RAM:** 32GB – More may be better
- **GPU:** Resolution and VR dependent
 - Full HD (1080P) – GTX-1070 or equivalent/better with at least 8GB VRAM
 - 2560x1440 – RTX-3060TI or equivalent/better – More VRAM better
 - 4K and Wide screens – RTX-3080 or equivalent/better – Better have 12-16GB VRAM
 - VR – The best you can afford! Better aim for at least 16GB VRAM, although lower VRAM cards will work OK.

Performance (and some others) Configuration variables

- Note - Please use configuration variables as necessary by your system - All variables should be added to the [User\Config\Falcon BMS User.cfg](#) file, if not added then the default values will be used.

- Graphics Performance Config variables:

Config Setting	Effect	Importance for Performance
set g_bShadowMapping 0	No shadows mapping, at all	Very high
set g_fNewTerrainTessellationFactor 0.35	Reduced terrain mesh Tessellation distance	Medium-High on Terrain only
set g_bNewTerrainPhotorealForce4KTiles 1 <i>(Or don't download/install the 16K tiles)</i>	Lower res terrain photoreal quality	High (VRAM especially)
set g_fNewTerrainProceduralDistance 0 <i>(Distance is in KM, default is 12, lower values can also be considered for not removing entirely, instead)</i>	No procedural texturing, terrain from close view will look "bare" and lowres	Very high on terrain performance at low and medium altitude
set g_nPrefilterENVSampling 32 <i>(Default is 256)</i>	Lower quality of ENV Mapping (Less texture sampling iterations)	Low-Medium
set g_bNewTerrainUseHiresTiles 0	No hires tiles at selective places like Airbases	Low-Medium
set g_bNewTerrainRenderShrubs 0	No shrubs, bushes or rocks will be generated	Medium
set g_bHdrLighting 0 <i>(Not recommended to disable)</i>	No bloom effects from Sun or other glows, No Tone mapping	Medium
set g_bRenderNewTerrainToENVMap 0 <i>(Not recommended to disable)</i>	Terrain will not be rendered into the ENV Map. Means the ENV map terrain area will be totally fog/blue colored	Medium
set g_bNewTerrainProceduralUse1024Textures 1	Use lower res of procedural tiles	Medium

- Generic CPU and Multi threading Performance Config Variables:

1. `set g_nObjListWorkSizeHint X`

Default value: 1500 – You may want to Try other values. Valid values are 100 – 3000

100 - Maximum parallelism, more threads will be spawned

3000 – Almost no parallelism.

The default was set to 1500 as it was found to be a good balance. However, some systems (Maybe High end as well) may use lower values, maybe at the area of 280-350 and gain some performance.

2. `set g_nAdditionalWorkers x`

Default value: 0

Can be used for 2 purposes:

- Redcue HT cores – e.g if one has a 8 cores 16 threads CPU and he want BMS to not take the 8 threads into account, this values can be used with -8.
- Add additional threads by using for example a value of 2.

- VR Performance Config Variables:

Config Setting	Effect	Importance for Performance
<code>set g_bVRNoPresent 1</code>	Prevent presenting the VR image on the monitor	Low-Medium
<code>set g_bVREnableFFR 1</code> Additional config (See details in Manual, also for the values below) <code>set g_fVRInnermostRadiiFFR 0.6</code> <code>set g_fVRMiddleRadiiFFR 0.9</code> <code>set g_fVRPeripheralRadiiFFR 1.3</code> Only relevant for Nvidia GPUs until further Notice	FFR (Read about it, the manual include a section for it)	Very High

- Additional Config Variables:

Config Setting	Effect	Details
<code>set g_bDetailedFrameRate 0</code>	Render FPS measurement as a simple number in yellow instead of the detailed text	Especially can be nice for VR But also may be used on flat screen if some one prefers