

OpenGL hardware matrix

Extensions exposed by OpenGL implementations

July 2014, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series

GK / Kepler: GeForce 600 series, GeForce 700 series

GM / Maxwell: GeForce 750

EG / Evergreen: Radeon HD 5000 series, Radeon HD 6000 series

N.I. / Northern Islands: Radeon HD 6900 series

S.I. / Southern Islands: Radeon HD 7000 series, Radeon R7 250X, Radeon R7 265, Radeon R9 280

C.I. / Sea Islands: Radeon HD 7790, Radeon R7 240, Radeon R7 250, Radeon R7 260, Radeon R9 270

V.I. / Volcanic Islands: Radeon R9 290

IVB / Ivy Bridge: HD4000, HD2500

HSW / Haswell: Iris 5000 series, HD 4X00 series

[illegible]

<u>EXT framebuffer multisample blit scaled</u>	V	V	V	X	X	X	X	X	X	X	V	V
<u>EXT direct state access</u>	V	V	V	V	V	V	V	V	X	V	X	X
<u>EXT depth bounds test</u>	V	V	V	X	X	V	V	V	X	X	X	V
<u>EXT clip control</u>	X	X	X	X	X	X	X	X	V	V	X	X
<u>NV vertex buffer unified memory</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV texture multisample</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV texture barrier</u>	V	V	V	V	V	V	V	V	X	X	X	V
<u>NV shader thread shuffle</u>	X	V	V	X	X	X	X	X	X	X	X	X
<u>NV shader thread group</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV shader buffer store</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV shader buffer load</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV shader atomic float</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV shader atomic int64</u>	X	X	V	X	X	X	X	X	X	X	X	X
<u>NV multisample coverage</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV explicit multisample</u>	V	V	V	V	V	V	V	V	X	X	X	X
<u>NV depth buffer float</u>	V	V	V	V	V	V	V	V	X	X	X	X
<u>NV copy image</u>	V	V	V	V	V	V	V	V	X	X	X	X
<u>NV bindless texture</u>	X	V	V	X	X	X	X	X	X	X	X	X
<u>NV bindless multi draw indirect count</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV bindless multi draw indirect</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>NV blend equation advanced</u>	V	V	V	X	X	X	X	X	X	X	X	X
<u>INTEL map texture</u>	X	X	X	X	X	X	X	X	X	V	X	X
<u>INTEL fragment shader ordering</u>	X	X	X	X	X	V	V	V	V	V	X	X
<u>INTEL conservative rasterization</u>	X	X	X	X	X	X	X	X	X	V	X	X
<u>ANGLE texture compression dxt5</u>	X	X	X	X	X	X	X	X	X	X	V	X
<u>ANGLE texture compression dxt3</u>	X	X	X	X	X	X	X	X	X	X	V	X
<u>AMD vertex shader viewport index</u>	X	X	X	V	V	V	V	V	X	V	X	X
<u>AMD vertex shader layer</u>	X	X	X	V	V	V	V	V	X	V	V	X
<u>AMD transform feedback4</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD transform feedback3 lines triangles</u>	X	X	X	X	V	V	V	V	X	X	X	X
<u>AMD stencil operation extended</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD sparse texture pool</u>	X	X	X	X	X	X	V	V	X	X	X	X
<u>AMD sparse texture</u>	X	X	X	X	X	V	V	V	X	X	X	X

<u>AMD shader trinary minmax</u>	X	X	X	X	X	V	V	V	X	X	V	X
<u>AMD shader stencil value export</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD shader stencil export</u>	X	X	X	V	V	V	V	V	X	X	X	X
<u>AMD seamless cubemap per texture</u>	X	V	V	V	V	V	V	V	X	X	V	X
<u>AMD sample positions</u>	X	X	X	V	V	V	V	V	X	X	X	X
<u>AMD query buffer object</u>	X	X	X	V	V	V	V	V	X	X	X	X
<u>AMD pinned memory</u>	X	X	X	V	V	V	V	V	X	X	X	X
<u>AMD performance monitor</u>	X	X	X	V	V	V	V	V	X	X	V	X
<u>AMD occlusion query event</u>	X	X	X	X	X	X	V	V	X	X	X	X
<u>AMD interleaved elements</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD gpu shader int64</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD gcn shader</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD framebuffer sample positions</u>	X	X	X	X	X	V	V	V	X	X	X	X
<u>AMD blend minmax factor</u>	X	X	X	X	V	V	V	V	X	X	X	X
<u>ATI texture mirror once</u>	V	V	V	V	V	V	V	V	X	X	X	V
Support	49%	56%	59%	31%	34%	56%	59%	59%	11%	20%	16%	13%

OpenGL 4.4	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
<u>ARB buffer storage</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB clear texture</u>	V	V	V	V	V	V	V	V	X	X	V	X
<u>ARB enhanced layouts</u>	V	V	V	V	V	V	V	V	X	X	X	X
<u>ARB multi bind</u>	V	V	V	V	V	V	V	V	X	X	V	X
<u>ARB query buffer object</u>	V	V	V	V	V	V	V	V	X	X	X	X
<u>ARB texture mirror clamp to edge</u>	V	V	V	V	V	V	V	V	X	X	V	X
<u>ARB texture stencil8</u>	V	V	V	V	V	V	V	V	X	X	V	X
<u>ARB vertex type 10f 11f 11f rev</u>	V	V	V	V	V	V	V	V	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	75%	0%

OpenGL 4.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
<u>ARB vertex attrib binding</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB texture view</u>	V	V	V	V	V	V	V	V	X	V	V	X
<u>ARB texture storage multisample</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB texture query levels</u>	V	V	V	V	V	V	V	V	X	V	V	X

<u>ARB texture buffer range</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB stencil texturing</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB shader storage buffer object</u>	V	V	V	V	V	V	V	V	X	V	X	X
<u>ARB shader image size</u>	V	V	V	V	V	V	V	V	V	V	X	X
<u>ARB program interface query</u>	V	V	V	V	V	V	V	V	V	V	X	X
<u>ARB multi draw indirect</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB invalidate subdata</u>	V	V	V	V	V	V	V	V	X	V	V	X
<u>ARB internalformat query2</u>	V	V	V	V	V	V	V	V	V	V	X	X
<u>ARB framebuffer no attachments</u>	V	V	V	V	V	V	V	V	V	V	X	X
<u>ARB fragment layer viewport</u>	V	V	V	V	V	V	V	V	X	V	V	X
<u>ARB explicit uniform location</u>	V	V	V	V	V	V	V	V	X	V	V	X
<u>ARB ES3 compatibility</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>KHR debug</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB copy image</u>	V	V	V	V	V	V	V	V	V	V	X	X
<u>ARB compute shader</u>	V	V	V	V	V	V	V	V	X	V	X	X
<u>ARB clear buffer object</u>	V	V	V	V	V	V	V	V	X	V	V	X
<u>ARB arrays of arrays</u>	V	V	V	V	V	V	V	V	V	V	X	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	62%	0%

OpenGL 4.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
<u>ARB transform feedback instanced</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB texture compression bptc</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB texture storage</u>	V	V	V	V	V	V	V	V	V	V	V	V
<u>ARB shading language packing</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB shading language 420pack</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB shader image load store</u>	V	V	V	V	V	V	V	V	X	V	X	X
<u>ARB shader atomic counters</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB map buffer alignment</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB internalformat query</u>	V	V	V	V	V	V	V	V	V	V	V	V
<u>ARB conservative depth</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB compressed texture pixel storage</u>	V	V	V	V	V	V	V	V	V	V	V	X
<u>ARB base instance</u>	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	92%	17%

