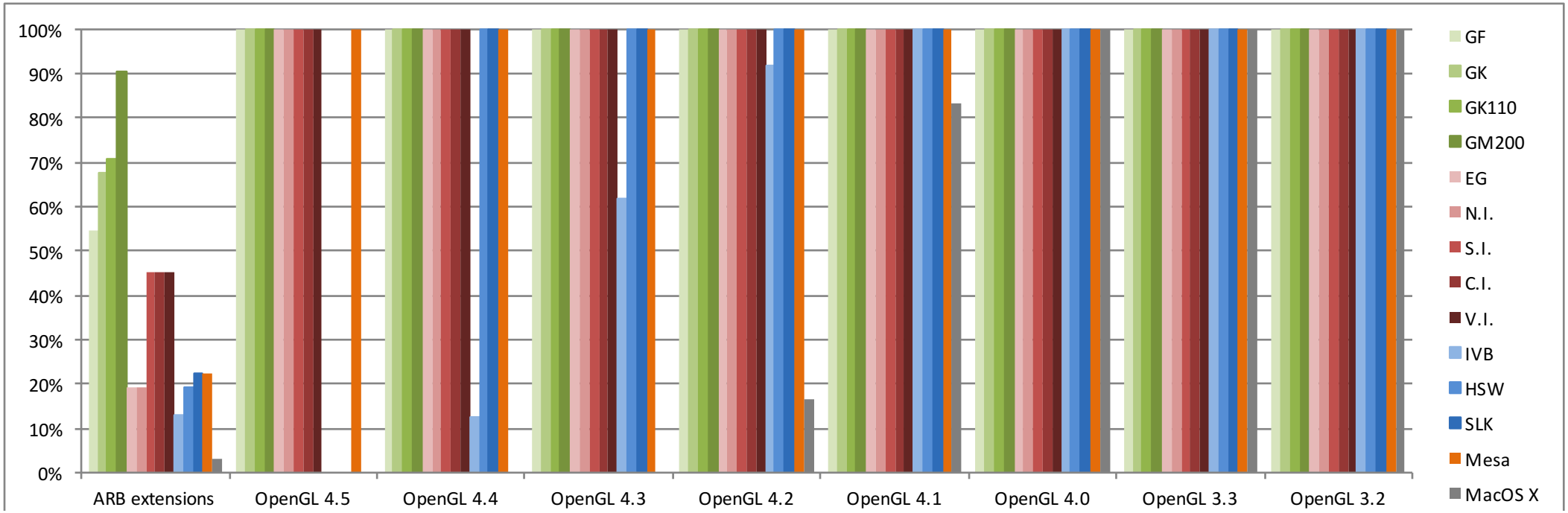
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

July 2016, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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 285 / 290 / Fury
SNB / Sandy Bridge: HD, HD 2000
IVB / Ivy Bridge: HD4000, HD2500
HSW / Haswell: Iris 5X00 series, HD 4X00 series
BSW / Broadwell: Iris 6X00 series, HD 5X00 series

Vendor	NVIDIA				AMD					Intel				Mesa	Apple
Drivers version	364.72				16.4.1					4229	4332	4331	4352	git-12.1	10.11.3
Release date	28/03/2016				04/04/2016					December 2015				26/072016	22/03/2016
Platforms	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB extensions	55%	68%	71%	90%	19%	19%	45%	45%	45%	13%	19%	19%	23%	23%	3%
OpenGL 4.5	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	100%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	100%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
KHR_texture_compression_astc_hdr	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
KHR_no_error	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	V	V	V	X	X
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	X	X	X	X	X	V	V	V	V	X	X
ARB_sparse_texture_clamp	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_shader_viewport_layer_array	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	V	V	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X	V	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	V	X
ARB_shader_clock	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_shader_ballot	X	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_shader_atomic_counter_ops	X	X	X	X	X	X	V	V	V	X	X	X	X	V	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	V	V	V	X	X
ARB_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_post_depth_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X

ARB_pipeline_statistics_query	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_parallel_shader_compile	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_gpu_shader_int64	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_ES3_2_compability	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	V	V	V	V	X
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_gl_spirv	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Support	54%	66%	69%	86%	17%	17%	40%	40%	40%	11%	20%	20%	29%	20%	3%

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	X	X	V	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_shader_framebuffer_fetch	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	V	V	V	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	X	X	V	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	X	X	V
EXT clip_control	X	X	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X

NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V	
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_draw_vulkan_image	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_command_list	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster_dilate	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	

NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
INTEL_multi_rate_fragment_shader	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	V	V	V	X	X	
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	X	V	V	V	X	X	
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	V	V	V	X	X	
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	V	V	V	V	X	
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X	X	X	
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X	X	X	
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	X	X	V	X	
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X	V	X	
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	X	X	V	X	
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X	X	X	
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_gpu_shader_half_float	X	X	X	X	X	X	X	X	V	X	X	X	X	X	X	
AMD_gpu_shader_half_float2	X	X	X	X	X	X	X	X	V	X	X	X	X	X	X	
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_depth_clamp_separate	X	X	X	X	V	V	V	V	V	X	X	X	V	X	X	
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X	X	X	
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V	

Support	40%	46%	49%	71%	22%	24%	41%	42%	44%	7%	15%	15%	21%	15%	8%

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
KHR_context_flush_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
KHR_robust_buffer_access_behavior	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
KHR_robustness	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_ES3_1_compatibility	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_cull_distance	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_direct_state_access	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_shader_texture_image_samples	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	100%	0%

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X

ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	0%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X

ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	100%	17%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

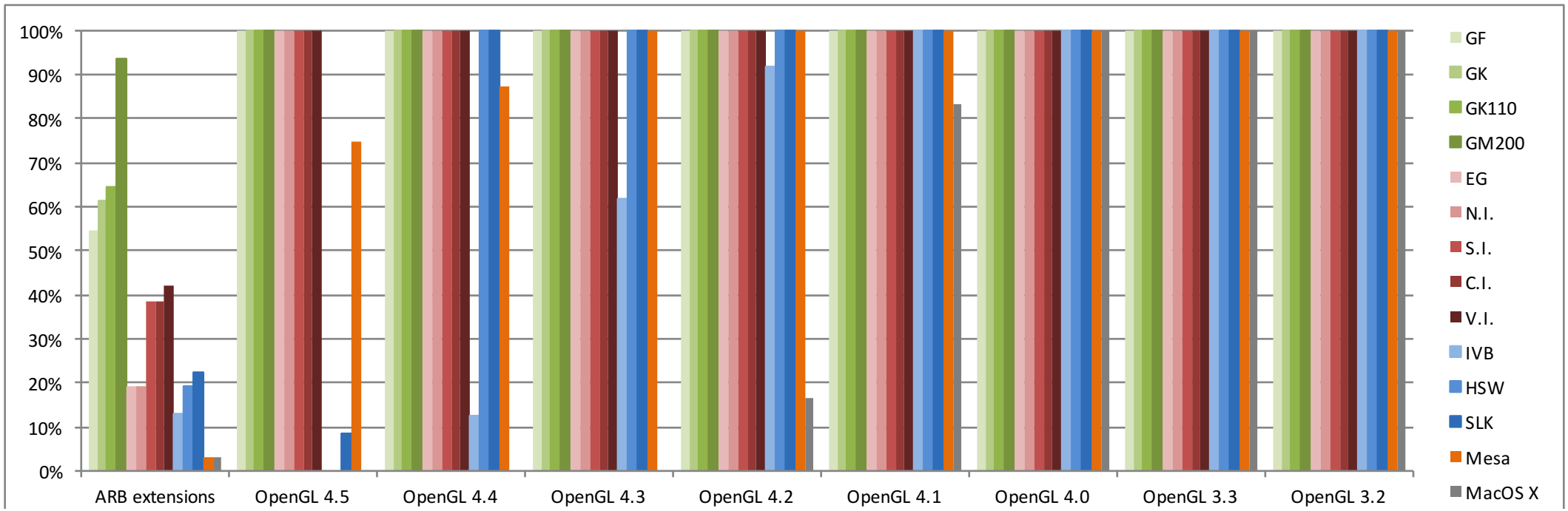
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

April 2016, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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 285 / 290 / Fury
SNB / Sandy Bridge: HD, HD 2000
IVB / Ivy Bridge: HD4000, HD2500
HSW / Haswell: Iris 5X00 series, HD 4X00 series
BSW / Broadwell: Iris 6X00 series, HD 5X00 series

Vendor	NVIDIA				AMD					Intel				Mesa	Apple
Drivers version	364.72				16.4.1					4229	4332	4331	4352	git-11.0	10.11.3
Release date	28/03/2016				04/04/2016					December 2015				02/08/2015	22/03/2016
Platforms	**GF**	**GK**	**GK110**	**GM200**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**BDW**	**SLK**	**Mesa**	**MacOS X**
ARB extensions	55%	61%	65%	94%	19%	19%	39%	39%	42%	13%	19%	19%	23%	3%	3%
OpenGL 4.5	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	8%	75%	0%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	88%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	100%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
KHR_texture_compression_astc_hdr	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
KHR_no_error	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	V	V	V	X	X
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	X	X	X	X	X	V	V	V	V	X	X
ARB_sparse_texture_clamp	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_shader_viewport_layer_array	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	V	X	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	X	X
ARB_shader_clock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_shader_ballot	X	X	X	V	X	X	X	X	V	X	X	X	X	X	X
ARB_shader_atomic_counter_ops	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	V	V	V	X	X
ARB_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_post_depth_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X

ARB_pipeline_statistics_query	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
ARB_parallel_shader_compile	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
ARB_gpu_shader_int64	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
ARB_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
ARB_ES3_2_compability	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X	
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	V	V	V	X	X	
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X	
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X	X	X	
Support	54%	60%	63%	89%	17%	17%	34%	34%	37%	11%	20%	20%	29%	3%	3%	

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	X	X	V	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_shader_framebuffer_fetch	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	V	V	V	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	X	X	V	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	X	X	V
EXT clip_control	X	X	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X

NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V	
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_draw_vulkan_image	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X	
NV_command_list	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster_dilate	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	
NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X	

INTEL_multi_rate_fragment_shader	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	V	V	V	X	X	
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	X	V	V	V	X	X	
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	V	V	V	X	X	
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	V	V	V	V	X	
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X	X	X	
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X	X	X	
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	X	X	V	X	
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X	V	X	
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X	X	X	
AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	X	X	V	X	
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X	X	X	
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_gpu_shader_half_float	X	X	X	X	X	X	X	X	V	X	X	X	X	X	X	
AMD_gpu_shader_half_float2	X	X	X	X	X	X	X	X	V	X	X	X	X	X	X	
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X	X	X	
AMD_depth_clamp_separate	X	X	X	X	V	V	V	V	V	X	X	X	V	X	X	
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X	X	X	
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	X	X	V	
Support	40%	45%	47%	73%	23%	24%	39%	41%	43%	7%	15%	15%	21%	9%	8%	

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
KHR_context_flush_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
KHR_robust_buffer_access_behavior	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
KHR_robustness	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X
ARB_ES3_1_compatibility	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	X	V	V	X
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_cull_distance	V	V	V	V	V	V	V	V	V	X	X	X	X	X	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_direct_state_access	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_shader_texture_image_samples	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	8%	75%	0%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	V	V	V	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	88%	0%

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X

ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	100%	0%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	V	V	V	V	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X

Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	100%	17%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

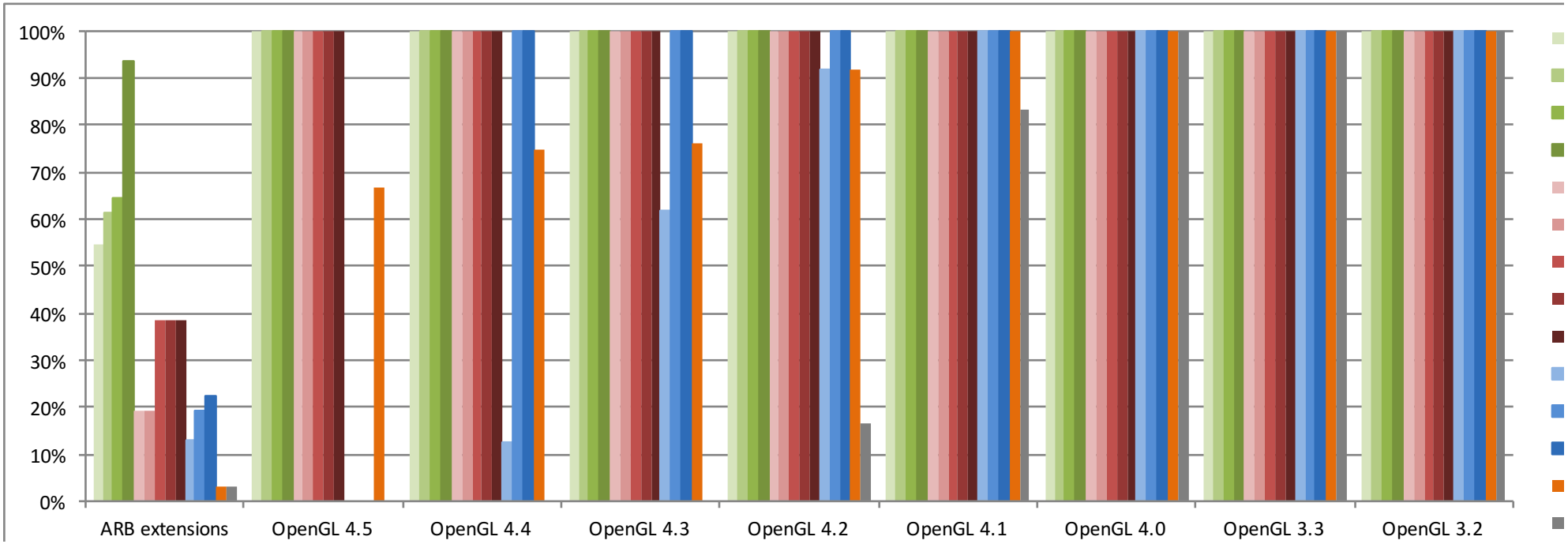
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

October 2015, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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 285 / 290 / Fury
SNB / Sandy Bridge: HD, HD 2000
IVB / Ivy Bridge: HD4000, HD2500
HSW / Haswell: Iris 5X00 series, HD 4X00 series
BSW / Broadwell: Iris 6X00 series, HD 5X00 series

Vendor	NVIDIA				AMD					Intel				Mesa
Drivers version	353.62				15.7.1					4229	4226	4212	4212	git-11.0
Release date	29/07/2015				29/07/2015					Oct 2015				02/08/2015
Platforms	**GF**	**GK**	**GK110**	**GM200**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**BDW**	**SLK**	**Mesa**
ARB extensions	55%	61%	65%	94%	19%	19%	39%	39%	39%	13%	19%	19%	23%	3%
OpenGL 4.5	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	67%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	75%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	76%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	92%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	V	X
KHR_texture_compression_astc_hdr	X	X	X	X	X	X	X	X	X	X	X	X	V	X
KHR_no_error	V	V	V	V	X	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	V	V	V	X
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	X	X	X	X	X	V	V	V	V	X
ARB_sparse_texture_clamp	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shader_viewport_layer_array	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	V	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shader_clock	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_ballot	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_atomic_counter_ops	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_post_depth_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X

ARB_pipeline_statistics_query	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_parallel_shader_compile	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_gpu_shader_int64	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_ES3_2_compability	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	V	V	V	X
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X	X
Support	54%	60%	63%	89%	17%	17%	34%	34%	34%	11%	20%	20%	29%	3%

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	X	X	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	X	X
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_shader_framebuffer_fetch	X	X	X	X	X	X	X	X	X	X	X	X	V	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	V	V	V	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	X	X	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	V	V	V	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	X	X
EXT clip_control	X	X	X	X	X	X	X	X	X	X	V	V	V	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X

NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_command_list	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_conservative_raster_dilate	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X	X
INTEL_multi_rate_fragment_shader	X	X	X	X	X	X	X	X	X	X	X	X	V	X

INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	V	V	V	X
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	X	V	V	V	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	X	X	V	X
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	X	X	V
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	X	X	V
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	V	V	V	X
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	V	V	V	V
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X	X
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	X	X	V
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X	V
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	X	X	V
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gpu_shader_half_float	X	X	X	X	X	X	X	X	V	X	X	X	X	X
AMD_gpu_shader_half_float2	X	X	X	X	X	X	X	X	V	X	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_depth_clamp_separate	X	X	X	X	V	V	V	V	V	X	X	X	V	X
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	X	X
Support	40%	45%	47%	73%	23%	25%	39%	41%	43%	7%	15%	15%	22%	10%

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
KHR_context_flush_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V
KHR_robust_buffer_access_behavior	V	V	V	V	V	V	V	V	V	X	X	X	X	V
KHR_robustness	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_ES3_1_compatibility	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_cull_distance	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_direct_state_access	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_shader_texture_image_samples	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	67%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	100%	100%	100%	75%

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	100%	76%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	100%	92%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	SLK	Mesa
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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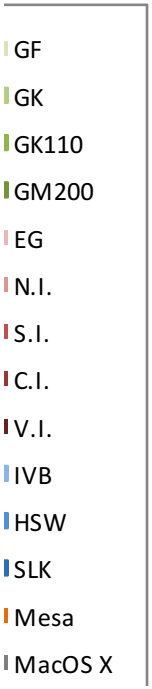

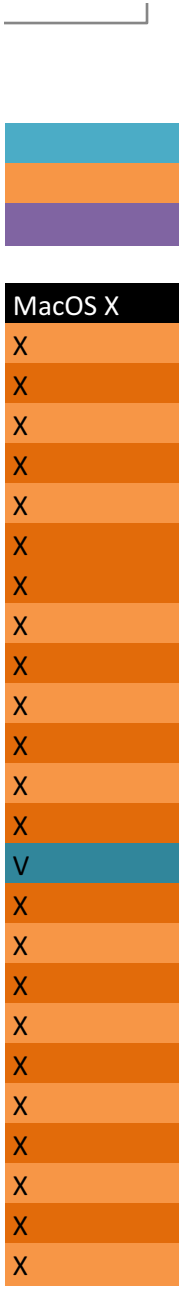
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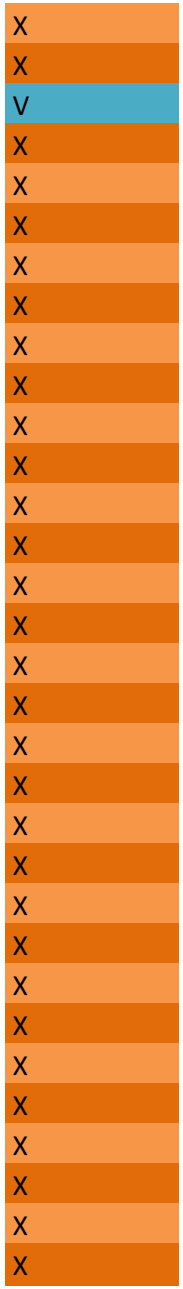
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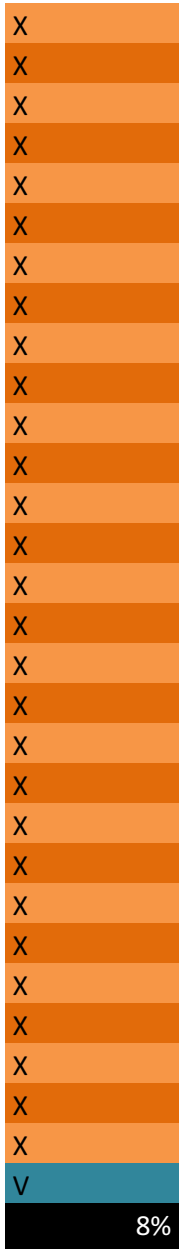
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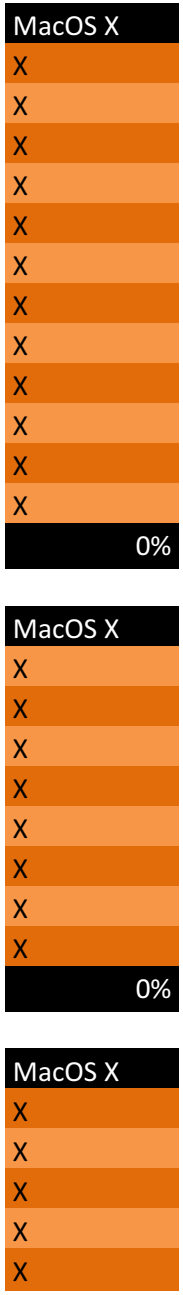
MacOS X
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MacOS X
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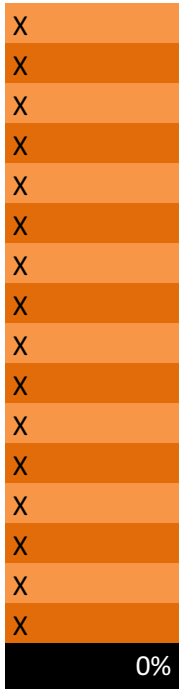
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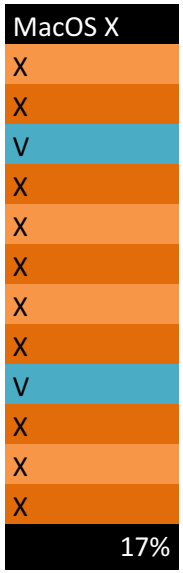
MacOS X
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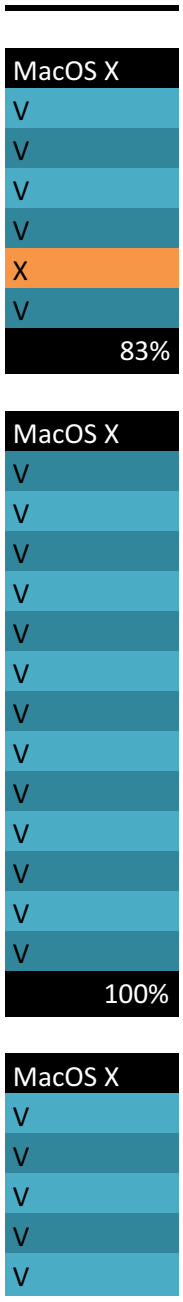
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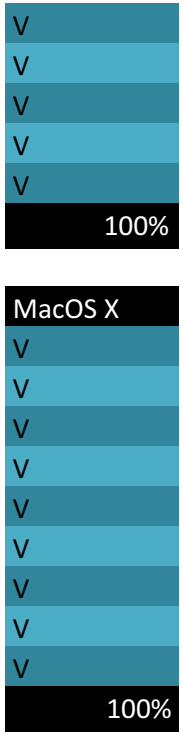
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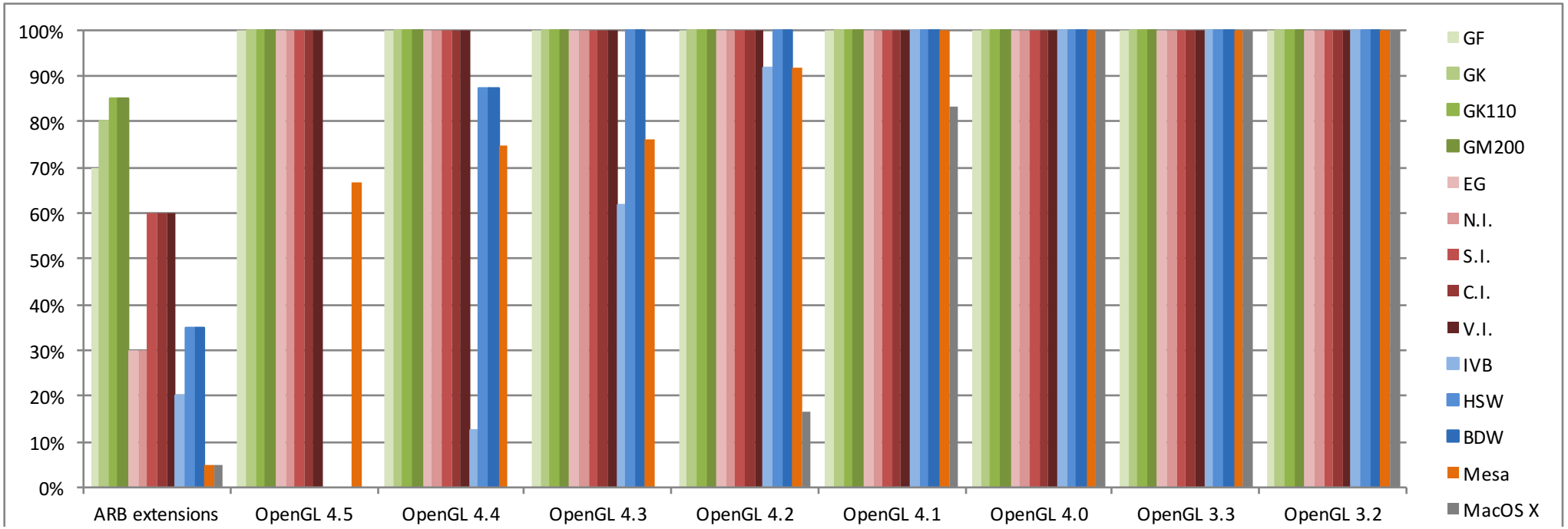
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

August 2015, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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 285 / 290 / Fury
SNB / Sandy Bridge: HD, HD 2000
IVB / Ivy Bridge: HD4000, HD2500
HSW / Haswell: Iris 5X00 series, HD 4X00 series
BSW / Broadwell: Iris 6X00 series, HD 5X00 series

Vendor	NVIDIA					AMD				Intel			Mesa	Apple
Drivers version	353.62					15.7.1				4229	4226	4212	git-11.0	10.10.1
Release date	29/07/2015					29/07/2015				June 2015			02/08/2015	17/11/2014
Platforms	**GF**	**GK**	**GK110**	**GM200**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**BDW**	**Mesa**	**MacOS X**
ARB extensions	70%	80%	85%	85%	30%	30%	60%	60%	60%	20%	35%	35%	5%	5%
OpenGL 4.5	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	67%	0%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	88%	88%	75%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	76%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	92%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	V	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_robustness	V	V	V	V	X	X	X	X	X	V	V	V	X	X
ARB_sparse_texture	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	V	V	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_pipeline_statistics_query	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	V	V	X	X
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X	X
Support	72%	83%	83%	83%	33%	33%	67%	67%	67%	22%	33%	33%	6%	6%

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	X	V	V

EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	X	V
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	V	V	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	X	V	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	X	V
EXT clip_control	X	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	V
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X	X

NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X	X	
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X	X	
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X	
NV_command_list	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster_dilate	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X	X	
NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X	X	
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	V	V	X	X	
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	X	V	V	X	X	
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	V	V	X	X	
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	V	V	X	X	
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	V	V	V	X	
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X	X	
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X	X	
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X	X	
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X	X	
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X	X	
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	X	V	X	
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X	X	
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X	
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	V	X	
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X	X	

AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	X	V	X
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gpu_shader_half_float	X	X	X	X	X	X	X	X	V	X	X	X	X	X
AMD_gpu_shader_half_float2	X	X	X	X	X	X	X	X	V	X	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	X	V
Support	41%	47%	48%	68%	27%	29%	47%	49%	51%	9%	18%	18%	12%	9%

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
KHR_context_flush_control	V	V	V	V	V	V	V	V	V	X	X	X	V	X
KHR_robust_buffer_access_behavior	V	V	V	V	V	V	V	V	V	X	X	X	V	X
KHR_robustness	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_ES3_1_compatibility	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	X	V	X
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	X	V	X
ARB_cull_distance	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	X	V	X
ARB_direct_state_access	V	V	V	V	V	V	V	V	V	X	X	X	V	X
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	V	X
ARB_shader_texture_image_samples	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	67%	0%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	V	V	V	X

ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	V	V	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	88%	88%	75%	0%

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	X	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	V	V	X	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	V	V	X	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	76%	0%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	V	V	X	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	100%	92%	17%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	BDW	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

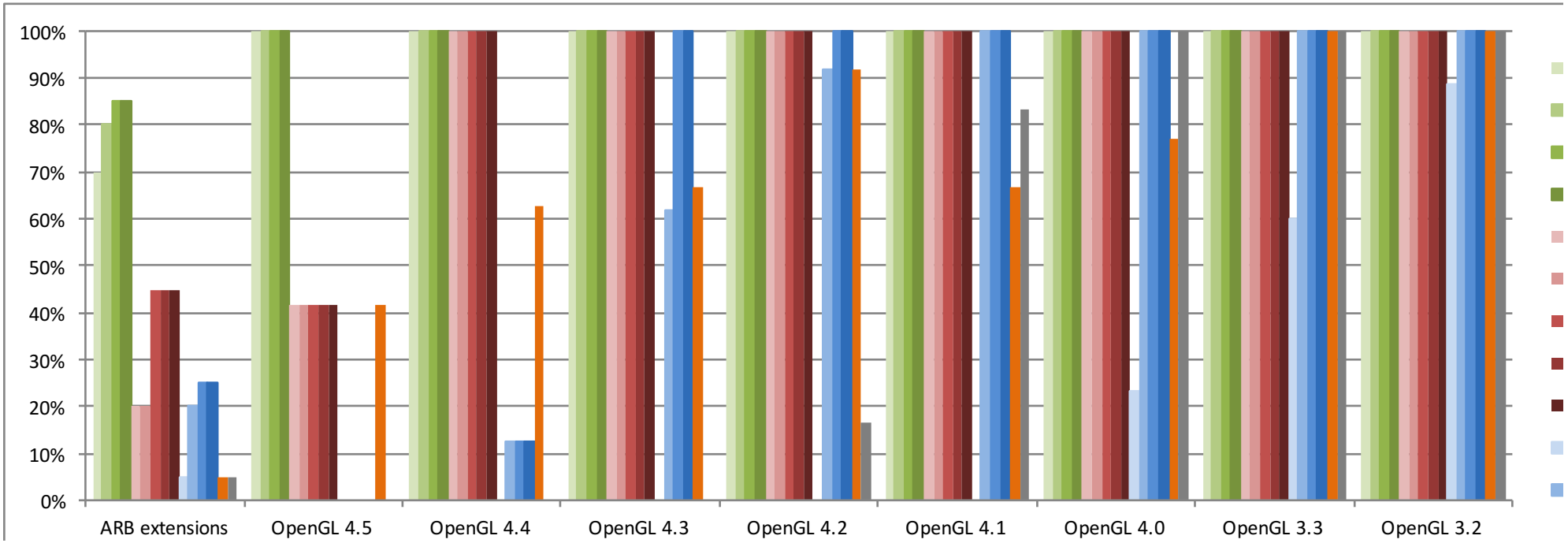
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

June 2015, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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 285 / 290 / Fury
SNB / Sandy Bridge: HD, HD 2000
IVB / Ivy Bridge: HD4000, HD2500
HSW / Haswell: Iris 5X00 series, HD 4X00 series
BSW / Broadwell: Iris 6X00 series, HD 5X00 series

Vendor	NVIDIA				AMD					Intel				Mesa
Drivers version	347.09				14.12					4101	3958	3977	4124	git
Release date	18/12/2014				12/09/2014					26/10/2014				04/01/2015
Platforms	**GF**	**GK**	**GK110**	**GM200**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**SNB**	**IVB**	**HSW**	**BSW**	**Mesa**
ARB extensions	70%	80%	85%	85%	20%	20%	45%	45%	45%	5%	20%	25%	25%	5%
OpenGL 4.5	100%	100%	100%	100%	42%	42%	42%	42%	42%	0%	0%	0%	0%	42%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	13%	13%	13%	63%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	62%	100%	100%	67%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	92%	100%	100%	92%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	67%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	23%	100%	100%	100%	77%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	60%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	V	V	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	X	X	X	X	X	X	V	V	V	X
ARB_robustness	V	V	V	V	X	X	X	X	X	X	V	V	V	X
ARB_sparse_texture	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_pipeline_statistics_query	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X	X
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X	X
Support	72%	83%	83%	83%	22%	22%	50%	50%	50%	6%	22%	22%	22%	6%

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	X	X	V

EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	X	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	X	X
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	X	V	V	V	V
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	X	V	V	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	X	X	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	X	V	V	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	X	X
EXT clip_control	X	X	X	X	X	X	X	X	X	X	X	V	V	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X	X

NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	V	V	V	X
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	X	X	V	V	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	X	V	V	X
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	X	X	V
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	X	X	V
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	X	V	V	X
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	X	V	V	V
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X	X
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	X	X	V
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X	V
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X	X
AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X	X

AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	X	X	V
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	X	X
Support	43%	49%	50%	69%	25%	27%	45%	47%	47%	3%	9%	17%	17%	12%

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
KHR_context_flush_control	V	V	V	V	X	X	X	X	X	X	X	X	X	X
KHR_robust_buffer_access_behavior	V	V	V	V	X	X	X	X	X	X	X	X	X	V
KHR_robustness	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_ES3_1_compatibility	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_cull_distance	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_direct_state_access	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_shader_texture_image_samples	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	X	V
Support	100%	100%	100%	100%	42%	42%	42%	42%	42%	0%	0%	0%	0%	42%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	X	X	X	V
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	X	X	X	V

ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	X	X	X	X	
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	X	X	X	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	13%	13%	13%	63%	

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	X	V	V	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	X	V	V	V	V
KHR_debug	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_copy_image	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	X	V	V	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	X	V	V	V
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	X	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	62%	100%	100%	67%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_storage	V	V	V	V	V	V	V	V	V	X	V	V	V	V

ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	X	V	V	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_base_instance	V	V	V	V	V	V	V	V	V	X	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	92%	100%	100%	92%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_viewport_array	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_shader_precision	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	X	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	67%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	X	V	V	V	X
ARB_sample_shading	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	X	V	V	V	X

ARB_draw_indirect	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	23%	100%	100%	100%	77%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	X	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	60%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	SNB	IVB	HSW	BSW	Mesa
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	X	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%	100%	100%	100%	100%

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17/11/2014
MacOS X
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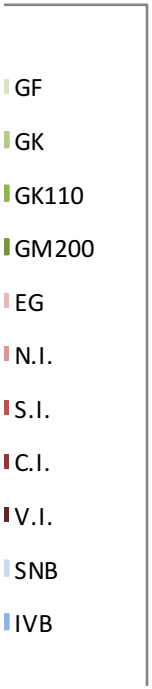

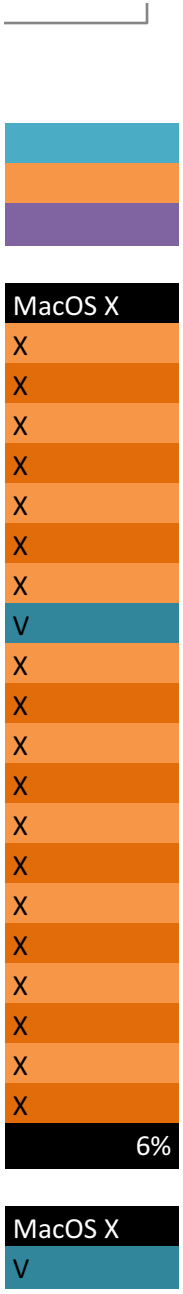
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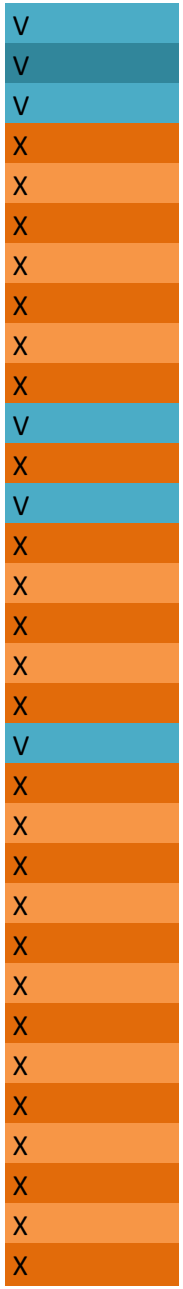
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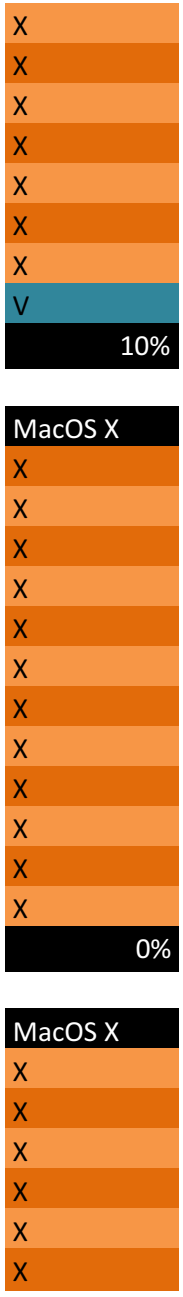
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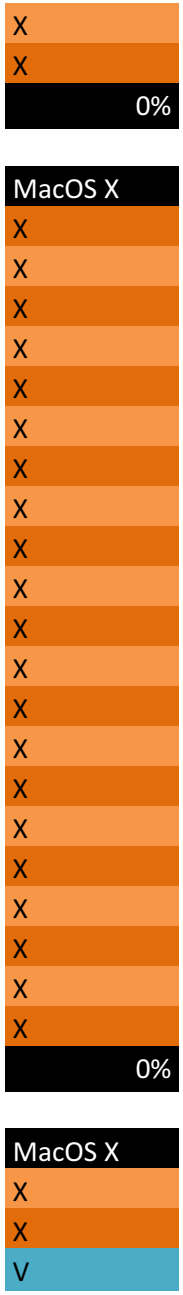
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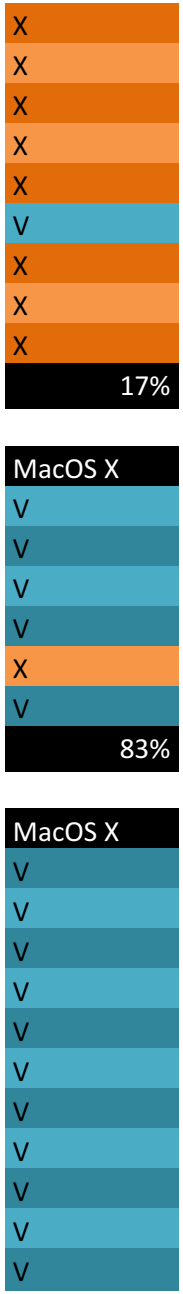
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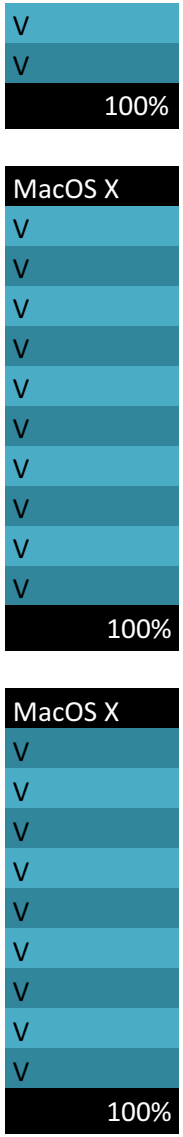
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OpenGL hardware matrix

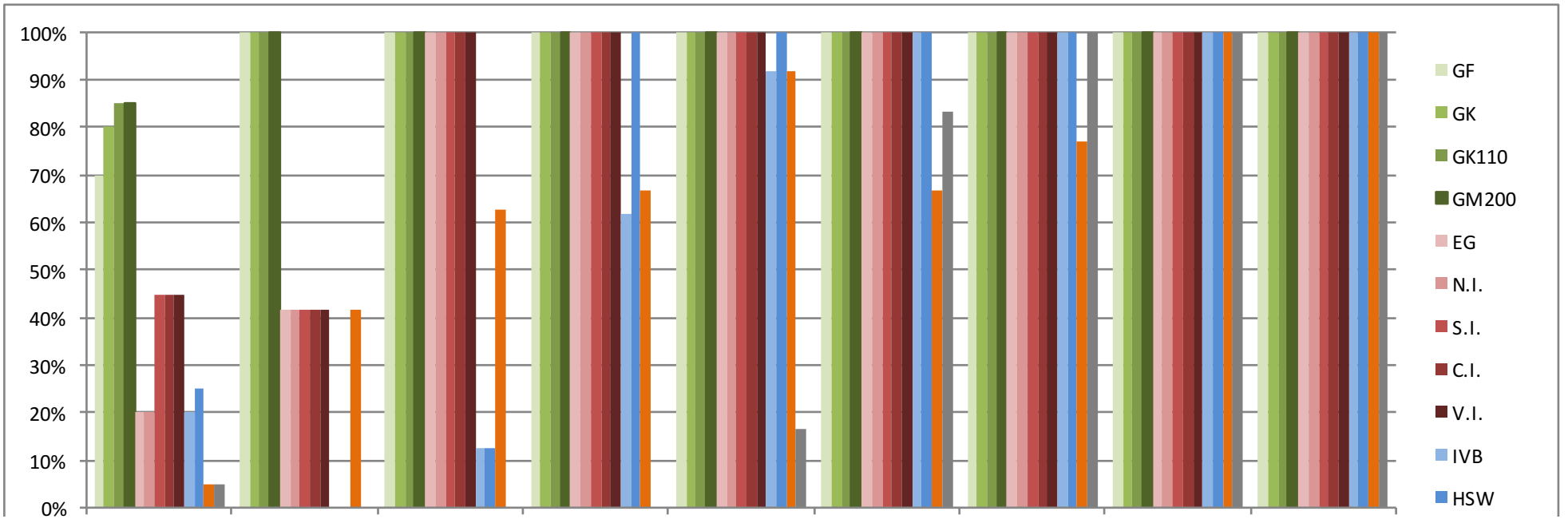
Extensions exposed by OpenGL implementations

January 2015, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series
GK / Kepler: GeForce 600 series, GeForce 700 series
GK110 / Kepler 110: GeForce 780
GM200 / Maxwell: GeForce 900 series
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

Vendor	NVIDIA				AMD					Intel		Mesa	Apple
Drivers version	347.09				14.12					3958	3977	git	10.10.1
Release date	18/12/2014				12/09/2014					26/10/2014		04/01/2015	17/11/2014
Platforms	**GF**	**GK**	**GK110**	**GM200**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**Mesa**	**MacOS X**
ARB extensions	70%	80%	85%	85%	20%	20%	45%	45%	45%	20%	25%	5%	5%
OpenGL 4.5	100%	100%	100%	100%	42%	42%	42%	42%	42%	0%	0%	42%	0%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	63%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	67%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	92%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	67%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	77%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GK110	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
KHR_blend_equation_advanced_coherent	X	X	V	V	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_transform_feedback_overflow_query	V	V	V	V	X	X	X	X	X	V	V	X	X
ARB_robustness	V	V	V	V	X	X	X	X	X	V	V	X	X
ARB_sparse_texture	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_sparse_buffer	V	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X
ARB_shader_group_vote	V	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shader_draw_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	X	X
ARB_robustness_isolation	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_pipeline_statistics_query	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_indirect_parameters	V	V	V	V	X	X	V	V	V	X	X	X	X
ARB_compute_variable_group_size	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	V	X	X	V	V	V	X	X	X	X
Support	72%	83%	83%	83%	22%	22%	50%	50%	50%	22%	22%	6%	6%

OpenGL Extensions	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X

EXT_texture_compression_dxt1	V	V	V	V	X	X	X	X	X	X	X	V	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	X	X	X	V
EXT_texture_filter_minmax	X	X	X	V	X	X	X	X	X	X	X	X	X
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	V	X
EXT_shader_image_load_formatted	X	X	X	V	X	X	X	X	X	X	X	X	X
EXT_sparse_texture2	X	X	X	V	X	X	X	X	X	X	X	X	X
EXT_raster_multisample	X	X	X	V	X	X	X	X	X	X	X	X	X
EXT_post_depth_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X
EXT_polygon_offset_clamp	V	V	V	V	V	V	V	V	V	X	V	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	X	X	X	X	X	X	X	V	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	X	V	X	X
EXT_depth_bounds_test	V	V	V	V	X	X	V	V	V	X	X	X	V
EXT clip_control	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_viewport_array2	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_uniform_buffer_unified_memory	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	X	V
NV_shader_thread_shuffle	X	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_thread_group	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_buffer_store	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_atomic_fp16_vector	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_atomic_int64	X	X	V	V	X	X	X	X	X	X	X	X	X
NV_sample_mask_override_coverage	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_sample_locations	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_path_rendering_shared_edge	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_path_rendering	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	X	X	X	X	X	X	X	X	X

NV_internalformat_sample_query	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_geometry_shader_passthrough	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_framebuffer_mixed_samples	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_fragment_shader_interlock	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_fragment_coverage_to_color	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_fill_rectangle	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	X	X	X	X
NV_depth_buffer_float	V	V	V	V	V	V	V	V	V	X	X	X	X
NV_copy_image	V	V	V	V	V	V	V	V	V	X	X	X	X
NV_conservative_raster	X	X	X	V	X	X	X	X	X	X	X	X	X
NV_bindless_texture	X	V	V	V	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect_count	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect	V	V	V	V	X	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	V	V	V	V	X	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	V	X	X
INTEL_fragment_shader_ordering	X	X	X	X	X	X	V	V	V	V	V	X	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	V	X	X
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	X	V	X
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	X	V	X
AMD_vertex_shader_viewport_index	X	X	X	X	V	V	V	V	V	X	V	X	X
AMD_vertex_shader_layer	X	X	X	X	V	V	V	V	V	X	V	V	X
AMD_transform_feedback4	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	V	V	V	V	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_sparse_texture_pool	X	X	X	X	X	X	X	V	V	X	X	X	X
AMD_sparse_texture	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	V	V	V	X	X	V	X
AMD_shader_stencil_value_export	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_stencil_export	X	X	X	X	V	V	V	V	V	X	X	X	X
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	V	X	X	V	X
AMD_sample_positions	X	X	X	X	V	V	V	V	V	X	X	X	X
AMD_query_buffer_object	X	X	X	X	V	V	V	V	V	X	X	X	X

AMD_pinned_memory	X	X	X	X	V	V	V	V	V	X	X	X	X
AMD_performance_monitor	X	X	X	X	V	V	V	V	V	X	X	V	X
AMD_occlusion_query_event	X	X	X	X	X	X	X	V	V	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	X	V	V	V	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	V	V	V	V	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	X	X	X	V
Support	43%	49%	50%	69%	25%	27%	45%	47%	47%	10%	17%	12%	10%

OpenGL 4.5	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
KHR_context_flush_control	V	V	V	V	X	X	X	X	X	X	X	X	X
KHR_robust_buffer_access_behavior	V	V	V	V	X	X	X	X	X	X	X	V	X
KHR_robustness	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_ES3_1_compatibility	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_clip_control	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_conditional_render_inverted	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_cull_distance	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_derivative_control	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_direct_state_access	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_get_texture_sub_image	V	V	V	V	V	V	V	V	V	X	X	X	X
ARB_shader_texture_image_samples	V	V	V	V	X	X	X	X	X	X	X	X	X
ARB_texture_barrier	V	V	V	V	V	V	V	V	V	X	X	V	X
Support	100%	100%	100%	100%	42%	42%	42%	42%	42%	0%	0%	42%	0%

OpenGL 4.4	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	V	X	X	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	V	X	X	X	X

ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	V	X	X	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	V	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	V	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	63%	0%

OpenGL 4.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_query_levels	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compute_shader	V	V	V	V	V	V	V	V	V	X	V	X	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	V	X	V	V	X
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	V	X	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	67%	0%

OpenGL 4.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	V	X

ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	92%	17%

OpenGL 4.1	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	67%	83%

OpenGL 4.0	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	V	V	V

ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	77%	100%

OpenGL 3.3	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM100	GM200	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

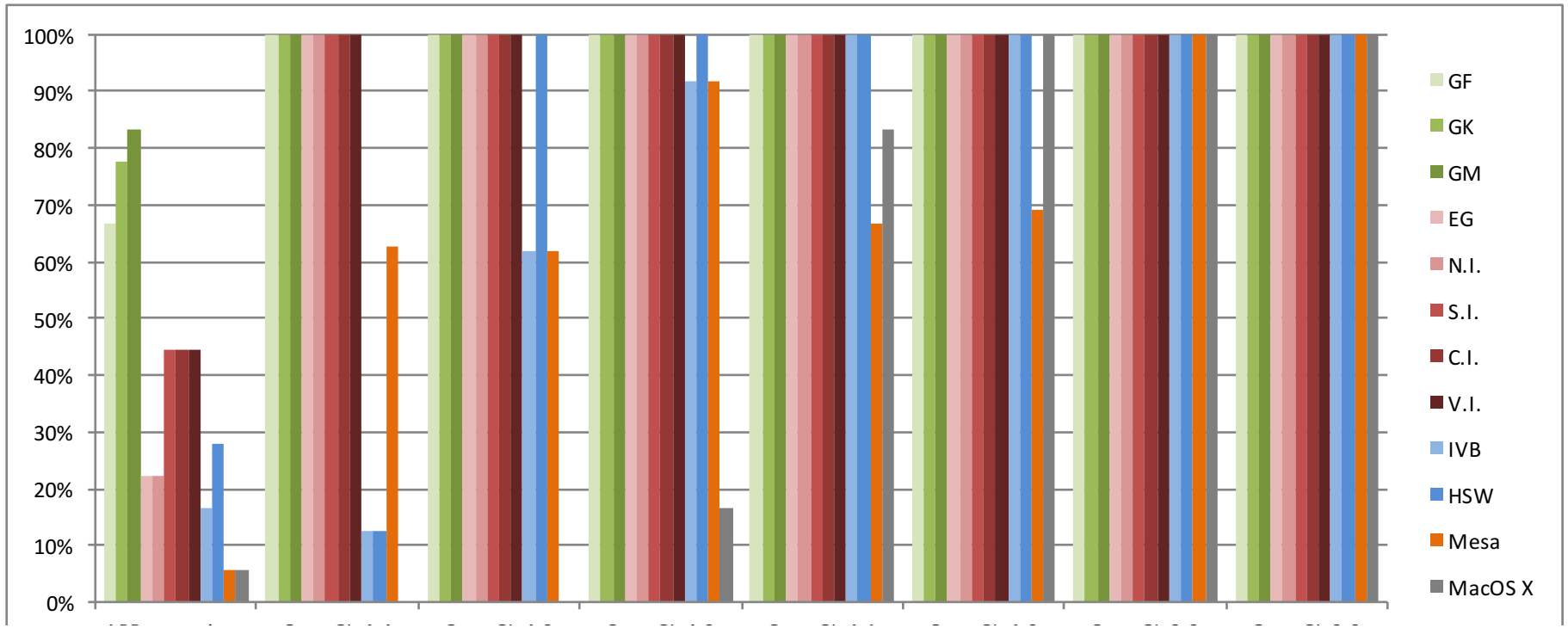
OpenGL hardware matrix

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

Vendor	NVIDIA				AMD				Intel		Mesa	Apple
Drivers version	340.43				14.7 rc1				3621	3652	git	10.9.4
Release date	17/06/2014				09/07/2014				24/06/2014		25/07/2014	30/06/2014
Platforms	**GF**	**GK**	**GM**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**Mesa**	**MacOS X**
ARB extensions	67%	78%	83%	22%	22%	44%	44%	44%	17%	28%	6%	6%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	63%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	62%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	92%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	67%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	69%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
KHR_blend_equation_advanced_coherent	X	X	V	X	X	X	X	X	X	X	X	X
KHR_blend_equation_advanced	V	V	V	X	X	X	X	X	X	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	X	X	X	X	X	V	V	X	X
ARB_sparse_texture	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shading_language_include	V	V	V	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	V	V	V	V	V	X	X	X	X
ARB_shader_group_vote	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shader_draw_parameters	V	V	V	X	X	V	V	V	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	X	X	X	X
ARB_robustness_isolation	V	V	V	X	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	X	X	X	X	X	X	V	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X
ARB_indirect_parameters	V	V	V	X	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	V	V	V	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	X	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	X	X	V	V	V	X	X	X	X
Support	69%	81%	81%	25%	25%	50%	50%	50%	19%	25%	6%	6%

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
EXT_texture_compression_dxt1	V	V	V	X	X	X	X	X	X	X	V	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V

EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	X	X	X	V
EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V	X
EXT_shader_image_load_formatted	X	X	V	X	X	X	X	X	X	X	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	X	X	X	X	X	X	X	V	V
EXT_direct_state_access	V	V	V	V	V	V	V	V	X	V	X	X
EXT_depth_bounds_test	V	V	V	X	X	V	V	V	X	X	X	V
EXT clip_control	X	X	X	X	X	X	X	X	V	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	X	X	X	V
NV_shader_thread_shuffle	X	V	V	X	X	X	X	X	X	X	X	X
NV_shader_thread_group	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_buffer_store	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	V	V	V	X	X	X	X	X	X	X	X	X
NV_shader_atomic_int64	X	X	V	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	X	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	X	X	X	X
NV_depth_buffer_float	V	V	V	V	V	V	V	V	X	X	X	X
NV_copy_image	V	V	V	V	V	V	V	V	X	X	X	X
NV_bindless_texture	X	V	V	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect_count	V	V	V	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect	V	V	V	X	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	V	V	V	X	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	X	X
INTEL_fragment_shader_ordering	X	X	X	X	X	V	V	V	V	V	X	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	V	X	X
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	V	X
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	V	X
AMD_vertex_shader_viewport_index	X	X	X	V	V	V	V	V	X	V	X	X
AMD_vertex_shader_layer	X	X	X	V	V	V	V	V	X	V	V	X
AMD_transform_feedback4	X	X	X	X	X	V	V	V	X	X	X	X

AMD_transform_feedback3_lines_triangles	X	X	X	X	V	V	V	V	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	V	V	V	X	X	X	X
AMD_sparse_texture_pool	X	X	X	X	X	X	V	V	X	X	X	X
AMD_sparse_texture	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	V	V	V	X	X	V	X
AMD_shader_stencil_value_export	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_stencil_export	X	X	X	V	V	V	V	V	X	X	X	X
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	X	X	V	X
AMD_sample_positions	X	X	X	V	V	V	V	V	X	X	X	X
AMD_query_buffer_object	X	X	X	V	V	V	V	V	X	X	X	X
AMD_pinned_memory	X	X	X	V	V	V	V	V	X	X	X	X
AMD_performance_monitor	X	X	X	V	V	V	V	V	X	X	V	X
AMD_occlusion_query_event	X	X	X	X	X	X	V	V	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	V	V	V	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	V	V	V	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	V	V	V	V	X	X	X	X
ATI_texture_mirror_once	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
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	X	X	V	X
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	X	X	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	X	X	V	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	X	X	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	63%	0%

OpenGL 4.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	X	V	V	X
ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_query_levels	V	V	V	V	V	V	V	V	X	V	V	X
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	X	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	X	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	X	V	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	X	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	X	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	X	V	V	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	X	V	V	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compute_shader	V	V	V	V	V	V	V	V	X	V	X	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	X	V	V	X
ARB_arrays_of_arrays	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
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	X

ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X
ARB_base_instance	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%

OpenGL 4.1	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	X	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	67%	83%

OpenGL 4.0	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	X	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	X	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	X	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	69%	100%

OpenGL 3.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

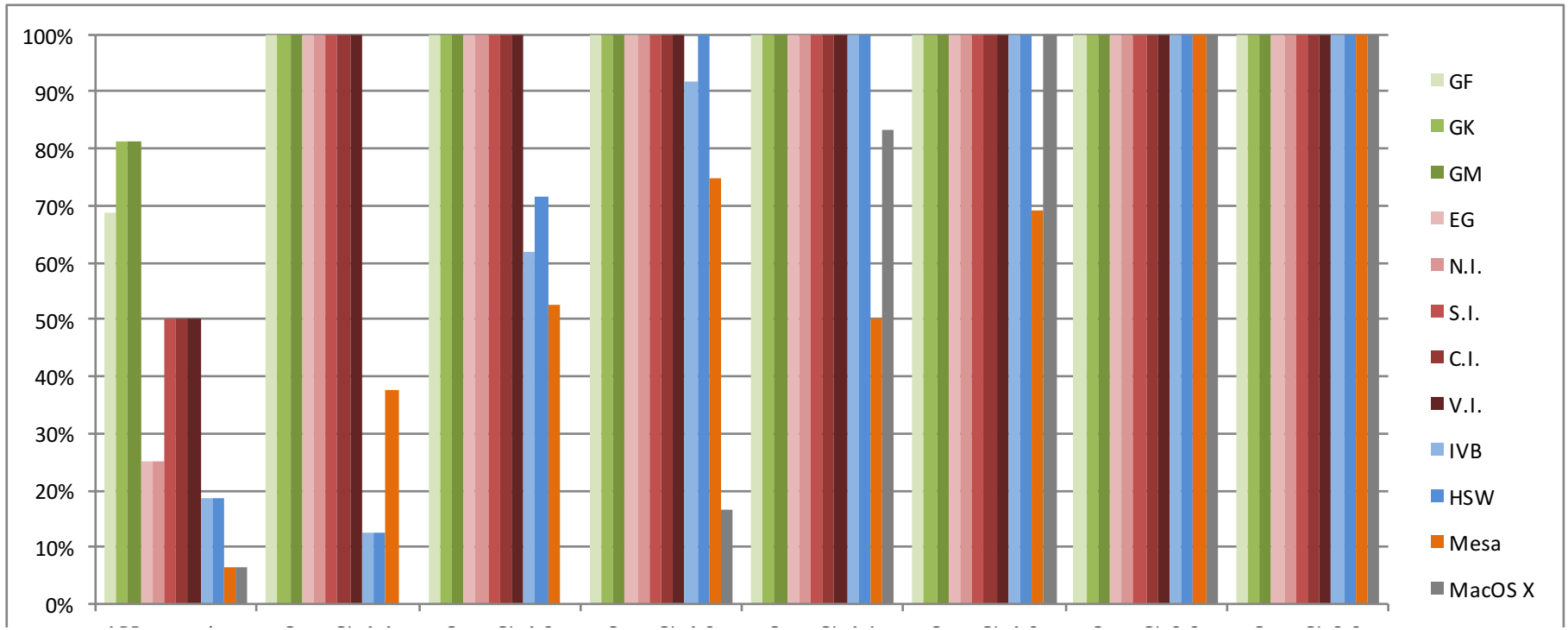
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

May 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

Vendor	NVIDIA							AMD		Intel	Mesa	Apple
Drivers version	337.61 beta							14.4 rc		3574	10.3 git	10.9.2
Release date	17/04/2014							15/04/2014		30/04/2014	18/04/2014	25/02/2014
Platforms	**GF**	**GK**	**GM**	**EG**	**N.I.**	**S.I.**	**C.I.**	**V.I.**	**IVB**	**HSW**	**Mesa**	**MacOS X**
ARB extensions	69%	81%	81%	25%	25%	50%	50%	50%	19%	19%	6%	6%
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	38%	0%
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	62%	71%	52%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	75%	17%
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	83%
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	69%	100%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



ARB extensions | OpenGL 4.4 | OpenGL 4.3 | OpenGL 4.2 | OpenGL 4.1 | OpenGL 4.0 | OpenGL 3.3 | OpenGL 3.2

Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
KHR_blend_equation_advanced	V	V	V	X	X	X	X	X	X	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	X	X	X	X	X	V	V	X	X
ARB_sparse_texture	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shading_language_include	V	V	V	X	X	X	X	X	X	X	X	V
ARB_shader_stencil_export	X	X	X	V	V	V	V	V	X	X	X	X
ARB_shader_group_vote	V	V	V	X	X	V	V	V	X	X	X	X
ARB_shader_draw_parameters	V	V	V	X	X	V	V	V	X	X	X	X
ARB_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	X	X	X	X
ARB_robustness_isolation	V	V	V	X	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X
ARB_indirect_parameters	V	V	V	X	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	V	V	V	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	X	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	V	V	X	X	V	V	V	X	X	X	X
Support	69%	81%	81%	25%	25%	50%	50%	50%	19%	19%	6%	6%

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
EXT_texture_compression_dxt1	V	V	V	X	X	X	X	X	X	X	V	V
EXT_texture_compression_s3tc	V	V	V	V	V	V	V	V	V	V	X	V
EXT_texture_sRGB_decode	V	V	V	V	V	V	V	V	V	V	V	V
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	X	X	X	V

EXT_shader_integer_mix	V	V	V	V	V	V	V	V	V	V	V		X
EXT_shader_image_load_formatted	X	X	V	X	X	X	X	X	X	X	X		X
EXT_framebuffer_multisample_blit_scaled	V	V	V	X	X	X	X	X	X	X	V		V
EXT_direct_state_access	V	V	V	V	V	V	V	V	X	X	X		X
EXT_depth_bounds_test	V	V	V	X	X	V	V	V	X	X	X		V
EXT clip_control	X	X	X	X	X	X	X	X	V	V	X		X
NV_vertex_buffer_unified_memory	V	V	V	X	X	X	X	X	X	X	X		X
NV_texture_multisample	V	V	V	X	X	X	X	X	X	X	X		X
NV_texture_barrier	V	V	V	V	V	V	V	V	X	X	X		V
NV_shader_thread_shuffle	X	V	V	X	X	X	X	X	X	X	X		X
NV_shader_thread_group	V	V	V	X	X	X	X	X	X	X	X		X
NV_shader_buffer_store	V	V	V	X	X	X	X	X	X	X	X		X
NV_shader_buffer_load	V	V	V	X	X	X	X	X	X	X	X		X
NV_shader_atomic_float	V	V	V	X	X	X	X	X	X	X	X		X
NV_multisample_coverage	V	V	V	X	X	X	X	X	X	X	X		X
NV_explicit_multisample	V	V	V	V	V	V	V	V	X	X	X		X
NV_depth_buffer_float	V	V	V	V	V	V	V	V	X	X	X		X
NV_copy_image	V	V	V	V	V	V	V	V	X	X	X		X
NV_bindless_texture	X	V	V	X	X	X	X	X	X	X	X		X
NV_bindless_multi_draw_indirect	V	V	V	X	X	X	X	X	X	X	X		X
NV_blend_equation_advanced	V	V	V	X	X	X	X	X	X	X	X		X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	V	X		X
INTEL_fragment_shader_ordering	X	X	X	X	X	V	V	V	V	V	X		X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	V	X		X
ANGLE_texture_compression_dxt5	X	X	X	X	X	X	X	X	X	X	V		X
ANGLE_texture_compression_dxt3	X	X	X	X	X	X	X	X	X	X	V		X
AMD_vertex_shader_viewport_index	X	X	X	V	V	V	V	V	X	X	X		X
AMD_vertex_shader_layer	X	X	X	V	V	V	V	V	X	X	V		X
AMD_transform_feedback4	X	X	X	X	X	V	V	V	X	X	X		X
AMD_transform_feedback3_lines_triangles	X	X	X	X	V	V	V	V	X	X	X		X
AMD_stencil_operation_extended	X	X	X	X	X	V	V	V	X	X	X		X
AMD_sparse_texture_pool	X	X	X	X	X	X	V	V	X	X	X		X

AMD_sparse_texture	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	V	V	V	X	X	V	X
AMD_shader_stencil_value_export	X	X	X	X	X	V	V	V	X	X	X	X
AMD_shader_stencil_export	X	X	X	V	V	V	V	V	X	X	X	X
AMD_seamless_cubemap_per_texture	X	V	V	V	V	V	V	V	X	X	V	X
AMD_sample_positions	X	X	X	V	V	V	V	V	X	X	X	X
AMD_query_buffer_object	X	X	X	V	V	V	V	V	X	X	X	X
AMD_pinned_memory	X	X	X	V	V	V	V	V	X	X	X	X
AMD_performance_monitor	X	X	X	V	V	V	V	V	X	X	V	X
AMD_occlusion_query_event	X	X	X	X	X	X	V	V	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	V	V	V	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	V	V	V	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	V	V	V	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	V	V	V	V	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	X	X	X	V
Support	49%	56%	57%	32%	35%	57%	60%	60%	12%	15%	16%	13%

OpenGL 4.4	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_buffer_storage	V	V	V	V	V	V	V	V	V	V	V	X
ARB_clear_texture	V	V	V	V	V	V	V	V	X	X	X	X
ARB_enhanced_layouts	V	V	V	V	V	V	V	V	X	X	X	X
ARB_multi_bind	V	V	V	V	V	V	V	V	X	X	X	X
ARB_query_buffer_object	V	V	V	V	V	V	V	V	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	V	V	V	X	X	V	X
ARB_texture_stencil8	V	V	V	V	V	V	V	V	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	V	V	V	X	X	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	38%	0%

OpenGL 4.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_view	V	V	V	V	V	V	V	V	X	X	V	X

ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_query_levels	V	V	V	V	V	V	V	V	X	X	V	X
ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	X
ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	X	X
ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	X	X
ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	X
ARB_invalidate_subdata	V	V	V	V	V	V	V	V	X	X	V	X
ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	X	X
ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	X	X
ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	X	X	X	X
ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	X	X	X	X
ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	X
KHR_debug	V	V	V	V	V	V	V	V	V	V	V	X
ARB_copy_image	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compute_shader	V	V	V	V	V	V	V	V	X	V	X	X
ARB_clear_buffer_object	V	V	V	V	V	V	V	V	X	X	V	X
ARB_arrays_of_arrays	V	V	V	V	V	V	V	V	V	V	X	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	62%	71%	52%	0%

OpenGL 4.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	X
ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	X	X
ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V
ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	V	V	V	V	V	V	V	V	X	V	X	X
ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V
ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	X

ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	X	X
ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	75%	17%

OpenGL 4.1	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V
ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	X	V
ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	X	V
ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	83%

OpenGL 4.0	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V
ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V
ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	X	V
ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	X	V
ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V
ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	X	V
ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	X	V
ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_buffers_blend	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	69%	100%

OpenGL 3.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V

ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	
ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

OpenGL 3.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V
ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3 hardware matrix

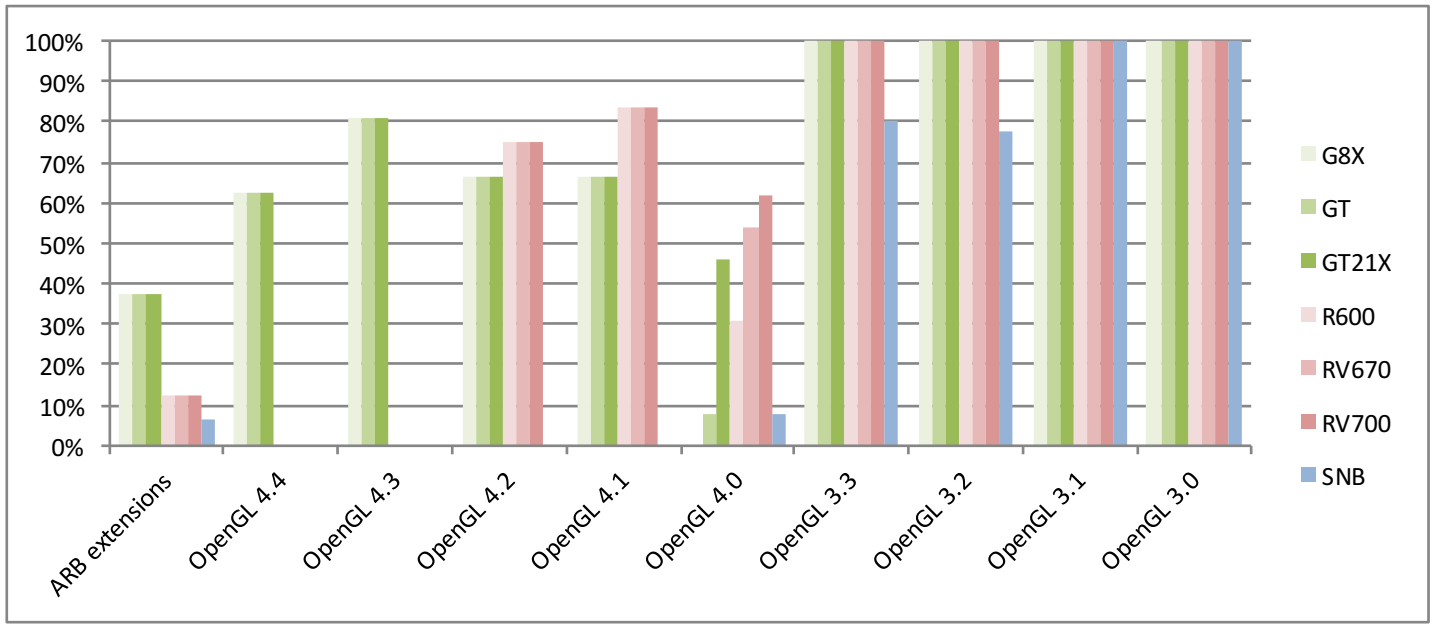
Extensions exposed by OpenGL implementations

April 2014, G-Truc Creation

Vendor	NVIDIA				AMD			Intel
Drivers version	337.50				14.4 rc			3517
Release date	07/04/2014				15/04/2014			11/04/2014
Platforms	**G80**	**G8X**	**GT**	**GT21X**	**R600**	**RV670**	**RV700**	**SNB**
ARB extensions	38%	38%	38%	38%	13%	13%	13%	6%
OpenGL 4.4	63%	63%	63%	63%	0%	0%	0%	0%
OpenGL 4.3	76%	81%	81%	81%	0%	0%	0%	0%
OpenGL 4.2	67%	67%	67%	67%	75%	75%	75%	0%
OpenGL 4.1	67%	67%	67%	67%	83%	83%	83%	0%
OpenGL 4.0	0%	0%	8%	46%	31%	54%	62%	8%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	80%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	78%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%

G80: GeForce 8800
G8X: GeForce 8600, 8400, 9XXX, GTS 1XX
GT: Tesla, GeForce GTX 2XX
GT21X: GeForce GT 21X, GeForce GT 3XX
R600: Radeon HD 2000 series
RV670: Radeon HD 3000 series
RV700: Radeon HD 4000 series

SNB: Sandy Bridge



Nomenclature:

Supported
Not supported

OpenGL Extensions	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	X	X	X	X
ARB_sparse_texture	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X
ARB_shader_group_vote	X	X	X	X	X	X	X	X
ARB_shader_draw_parameters	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	X	X	X	X	X	X	X

ARB_robustness_isolation	V	V	V	V	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	V	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	X
ARB_indirect_parameters	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V
ARB_cl_event	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	X	X	X	X	X	X	X
Support	38%	38%	38%	38%	13%	13%	13%	6%

OpenGL Extensions	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
EXT_texture_sRGB_decode	V	V	V	V	X	X	X	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	X
EXT_shader_integer_mix	V	V	V	V	X	X	X	X
EXT_shader_image_load_formatted	X	X	X	X	X	X	X	X
EXT_framebuffer_multisample_blit_scaled	X	X	X	X	X	X	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	X
EXT_depth_bounds_test	V	V	V	V	X	X	X	X
EXT clip_control	X	X	X	X	X	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	X	X	X	X
NV_texture_multisample	V	V	V	V	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	X
NV_shader_thread_shuffle	X	X	X	X	X	X	X	X
NV_shader_thread_group	X	X	X	X	X	X	X	X
NV_shader_buffer_store	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	X	X	X	X
NV_shader_atomic_float	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	X
NV_depth_buffer_float	V	V	V	V	V	V	V	X
NV_copy_image	V	V	V	V	V	V	V	X
NV_bindless_texture	X	X	X	X	X	X	X	X

NV_bindless_multi_draw_indirect	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X
INTEL_fragment_shader_ordering	X	X	X	X	X	X	X	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X
AMD_transform_feedback4	X	X	X	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X
AMD_sparse_texture_pool	X	X	X	X	X	X	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X
AMD_shader_stencil_value_export	X	X	X	X	X	X	X	X
AMD_shader_stencil_export	X	X	X	X	X	X	V	X
AMD_seamless_cubemap_per_texture	X	X	X	X	X	X	V	X
AMD_sample_positions	X	X	X	X	V	V	V	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X
AMD_pinned_memory	X	X	X	X	V	V	V	X
AMD_occlusion_query_event	X	X	X	X	X	X	X	X
AMD_interleaved_elements	X	X	X	X	X	X	X	X
AMD_gpu_shader_int64	X	X	X	X	X	X	X	X
AMD_gcn_shader	X	X	X	X	X	X	X	X
AMD_framebuffer_sample_positions	X	X	X	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	X
Support	32%	32%	32%	32%	17%	17%	21%	2%

OpenGL 4.4	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_buffer_storage	X	X	X	X	X	X	X	X
ARB_clear_texture	X	X	X	X	X	X	X	X
ARB_enhanced_layouts	V	V	V	V	X	X	X	X

ARB_multi_bind	V	V	V	V	X	X	X	X
ARB_query_buffer_object	X	X	X	X	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	X	X	X	X
ARB_texture_stencil8	V	V	V	V	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	X	X	X	X
Support	63%	63%	63%	63%	0%	0%	0%	0%

OpenGL 4.3	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_vertex_attrib_binding	V	V	V	V	X	X	X	X
ARB_texture_view	X	V	V	V	X	X	X	X
ARB_texture_storage_multisample	V	V	V	V	X	X	X	X
ARB_texture_query_levels	V	V	V	V	X	X	X	X
ARB_texture_buffer_range	V	V	V	V	X	X	X	X
ARB_stencil_texturing	V	V	V	V	X	X	X	X
ARB_shader_storage_buffer_object	X	X	X	X	X	X	X	X
ARB_shader_image_size	X	X	X	X	X	X	X	X
ARB_program_interface_query	V	V	V	V	X	X	X	X
ARB_multi_draw_indirect	X	X	X	X	X	X	X	X
ARB_invalidate_subdata	V	V	V	V	X	X	X	X
ARB_internalformat_query2	V	V	V	V	X	X	X	X
ARB_framebuffer_no_attachments	V	V	V	V	X	X	X	X
ARB_fragment_layer_viewport	V	V	V	V	X	X	X	X
ARB_explicit_uniform_location	V	V	V	V	X	X	X	X
ARB_ES3_compatibility	V	V	V	V	X	X	X	X
KHR_debug	V	V	V	V	X	X	X	X
ARB_copy_image	V	V	V	V	X	X	X	X
ARB_compute_shader	X	X	X	X	X	X	X	X
ARB_clear_buffer_object	V	V	V	V	X	X	X	X
ARB_arrays_of_arrays	V	V	V	V	X	X	X	X
Support	76%	81%	81%	81%	0%	0%	0%	0%

OpenGL 4.2	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB

ARB_transform_feedback_instanced	X	X	X	X	V	V	V	X
ARB_texture_compression_bptc	X	X	X	X	X	X	X	X
ARB_texture_storage	V	V	V	V	V	V	V	X
ARB_shading_language_packing	V	V	V	V	V	V	V	X
ARB_shading_language_420pack	V	V	V	V	V	V	V	X
ARB_shader_image_load_store	X	X	X	X	X	X	X	X
ARB_shader_atomic_counters	X	X	X	X	X	X	X	X
ARB_map_buffer_alignment	V	V	V	V	V	V	V	X
ARB_internalformat_query	V	V	V	V	V	V	V	X
ARB_conservative_depth	V	V	V	V	V	V	V	X
ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	X
ARB_base_instance	V	V	V	V	V	V	V	X
Support	67%	67%	67%	67%	75%	75%	75%	0%

OpenGL 4.1	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_viewport_array	V	V	V	V	V	V	V	X
ARB_vertex_attrib_64bit	X	X	X	X	X	X	X	X
ARB_shader_precision	X	X	X	X	V	V	V	X
ARB_separate_shader_objects	V	V	V	V	V	V	V	X
ARB_get_program_binary	V	V	V	V	V	V	V	X
ARB_ES2_compatibility	V	V	V	V	V	V	V	X
Support	67%	67%	67%	67%	83%	83%	83%	0%

OpenGL 4.0	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_transform_feedback3	X	X	X	X	V	V	V	X
ARB_transform_feedback2	X	X	V	V	V	V	V	X
ARB_texture_query_lod	X	X	X	V	X	X	V	V
ARB_texture_gather	X	X	X	V	X	V	V	X
ARB_texture_cube_map_array	X	X	X	V	X	V	V	X
ARB_texture_buffer_object_rgb32	X	X	X	X	V	V	V	X
ARB_tessellation_shader	X	X	X	X	X	X	X	X
ARB_shader_subroutine	X	X	X	X	X	X	X	X

ARB_sample_shading	X	X	X	V	X	V	V	X
ARB_gpu_shader5	X	X	X	X	X	X	X	X
ARB_gpu_shader_fp64	X	X	X	X	X	X	X	X
ARB_draw_indirect	X	X	X	X	X	X	X	X
ARB_draw_buffers_blend	X	X	X	V	V	V	V	X
Support	0%	0%	8%	46%	31%	54%	62%	8%

OpenGL 3.3	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V
ARB_timer_query	V	V	V	V	V	V	V	V
ARB_texture_swizzle	V	V	V	V	V	V	V	X
ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V
ARB_shader_bit_encoding	V	V	V	V	V	V	V	V
ARB_sampler_objects	V	V	V	V	V	V	V	V
ARB_occlusion_query2	V	V	V	V	V	V	V	V
ARB_instanced_arrays	V	V	V	V	V	V	V	V
ARB_explicit_attrib_location	V	V	V	V	V	V	V	V
ARB_blend_func_extended	V	V	V	V	V	V	V	X
Support	100%	100%	100%	100%	100%	100%	100%	80%

OpenGL 3.2	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_vertex_array_bgra	V	V	V	V	V	V	V	V
ARB_texture_multisample	V	V	V	V	V	V	V	X
ARB_sync	V	V	V	V	V	V	V	V
ARB_seamless_cube_map	V	V	V	V	V	V	V	V
ARB_provoking_vertex	V	V	V	V	V	V	V	V
ARB_geometry_shader4	V	V	V	V	V	V	V	X
ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V
ARB_depth_clamp	V	V	V	V	V	V	V	V
ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	78%

OpenGL 3.1	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_uniform_buffer_object	V	V	V	V	V	V	V	V
EXT_texture_snorm	V	V	V	V	V	V	V	V
ARB_texture_rectangle	V	V	V	V	V	V	V	V
ARB_texture_buffer_object	V	V	V	V	V	V	V	V
NV_primitive_restart	V	V	V	V	V	V	V	V
ARB_draw_instanced	V	V	V	V	V	V	V	V
ARB_copy_buffer	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_vertex_array_object	V	V	V	V	V	V	V	V
EXT_transform_feedback	V	V	V	V	V	V	V	V
ARB_texture_rg	V	V	V	V	V	V	V	V
EXT_texture_shared_exponent	V	V	V	V	V	V	V	V
EXT_texture_integer	V	V	V	V	V	V	V	V
ARB_texture_float	V	V	V	V	V	V	V	V
ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V
EXT_texture_array	V	V	V	V	V	V	V	V
EXT_packed_float	V	V	V	V	V	V	V	V
EXT_packed_depth_stencil	V	V	V	V	V	V	V	V
ARB_map_buffer_range	V	V	V	V	V	V	V	V
ARB_half_float_vertex	V	V	V	V	V	V	V	V
ARB_half_float_pixel	V	V	V	V	V	V	V	V
EXT_gpu_shader4	V	V	V	V	V	V	V	V
ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V
ARB_framebuffer_object	V	V	V	V	V	V	V	V
ARB_depth_buffer_float	V	V	V	V	V	V	V	V
NV_conditional_render	V	V	V	V	V	V	V	V
ARB_color_buffer_float	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
EXT_texture_sRGB	V	V	V	V	V	V	V	V
ARB_pixel_buffer_object	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%

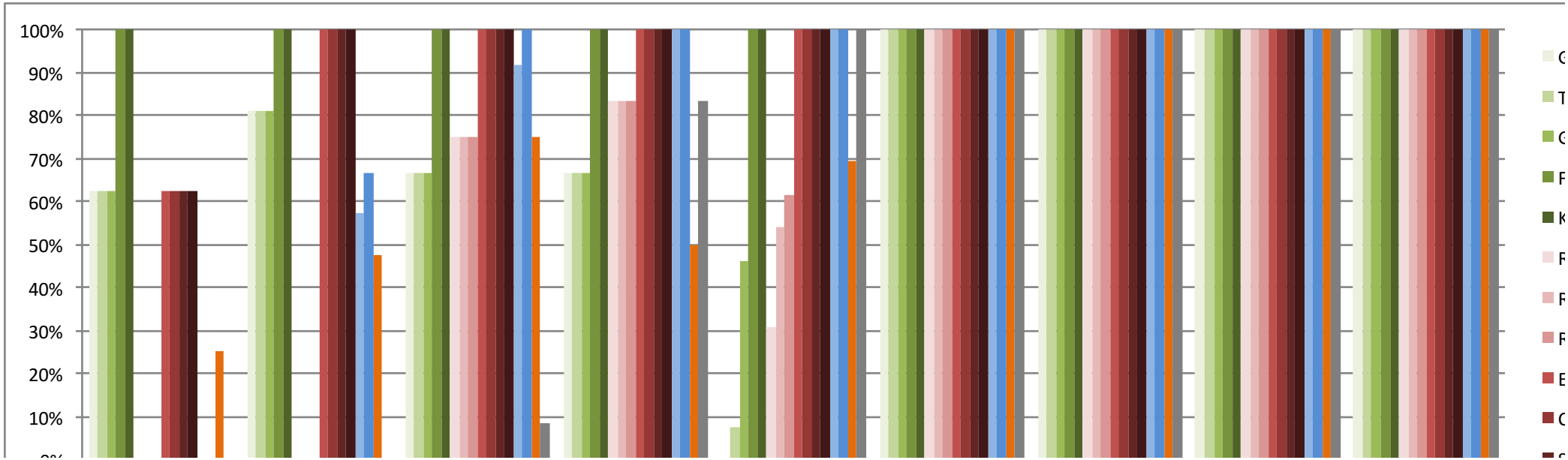
OpenGL 2.0	G80	G8X	GT	GT21X	R600	RV670	RV700	SNB
ARB_vertex_shader	V	V	V	V	V	V	V	V
ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V
EXT_stencil_two_side	V	V	V	V	V	V	V	V
ARB_shading_language_100	V	V	V	V	V	V	V	V
ARB_shader_objects	V	V	V	V	V	V	V	V
ARB_point_sprite	V	V	V	V	V	V	V	V
ARB_fragment_shader	V	V	V	V	V	V	V	V
ARB_draw_buffers	V	V	V	V	V	V	V	V
EXT_blend_equation_separate	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL hardware matrix

Extensions exposed by OpenGL implementations

February 2014, G-Truc Creation

Vendor	NVIDIA						AMD						Intel		Mesa
Drivers version	334.89						14.1 beta						3412		git-10.1
Release date	18/02/2014						01/02/2014						29/01/2014		20/02/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
OpenGL 4.4	63%	63%	63%	100%	100%	0%	0%	0%	63%	63%	63%	63%	0%	0%	25%
OpenGL 4.3	81%	81%	81%	100%	100%	0%	0%	0%	100%	100%	100%	100%	57%	67%	48%
OpenGL 4.2	67%	67%	67%	100%	100%	75%	75%	75%	100%	100%	100%	100%	92%	100%	75%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	100%	100%	50%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	100%	100%	69%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	V	V	X
ARB_sparse_texture	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X
ARB_shader_group_vote	X	X	X	V	V	X	X	X	X	X	V	V	X	X	X
ARB_shader_draw_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	X	X	X	V	X	X	X	V	V	V	V	X	X	X
ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_indirect_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_texture_sRGB_decode	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	V	X	X	X
EXT clip_control	X	X	X	X	X	X	X	X	X	X	X	X	V	V	X
OES_compressed_ETC1_RGB8_texture	X	X	X	X	X	X	X	X	X	X	X	X	V	V	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X

NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	X	X
NV_bindless_multi_draw_indirect	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
NV_blend_equation_advanced	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X
INTEL_fragment_shader_ordering	X	X	X	X	X	X	X	X	X	X	X	X	V	V	X
INTEL_conservative_rasterization	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	V	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	V	X	X	X
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	V	X	X	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	V	X	X	X
AMD_occlusion_query_event	X	X	X	X	X	X	X	X	X	X	X	V	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	V	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
Support	36%	36%	36%	54%	62%	18%	18%	20%	32%	36%	46%	48%	14%	18%	2%

OpenGL 4.4	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
ARB_buffer_storage	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_clear_texture	X	X	X	V	V	X	X	X	V	V	V	V	X	X	X

ARB_enhanced_layouts	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_multi_bind	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
ARB_query_buffer_object	X	X	X	V	V	X	X	X	V	V	V	V	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
ARB_texture_stencil8	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
Support	63%	63%	63%	100%	100%	0%	0%	0%	63%	63%	63%	63%	0%	0%	25%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_texture_view	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_KHR_debug	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_copy_image	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
Support	81%	81%	81%	100%	100%	0%	0%	0%	100%	100%	100%	100%	57%	67%	48%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	75%	75%	75%	100%	100%	100%	100%	92%	100%	75%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	100%	100%	50%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	V	V	V
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	V	V	V
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X

GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	V	V	V
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	100%	100%	69%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergre	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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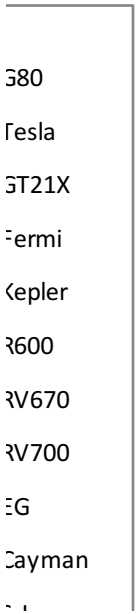

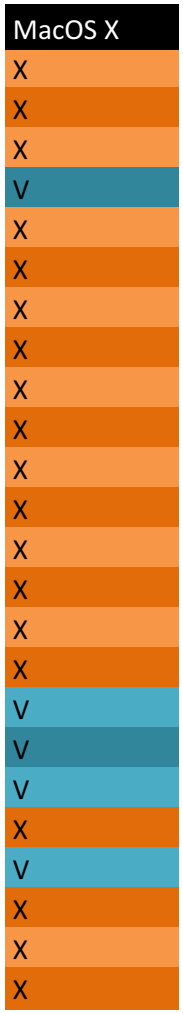
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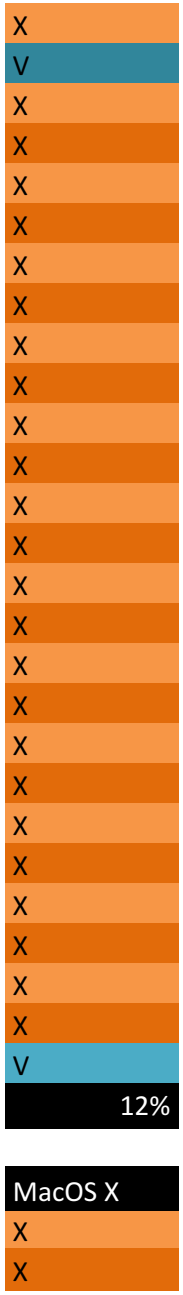
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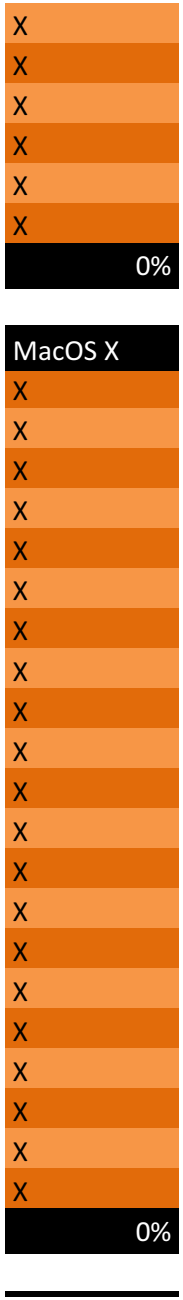
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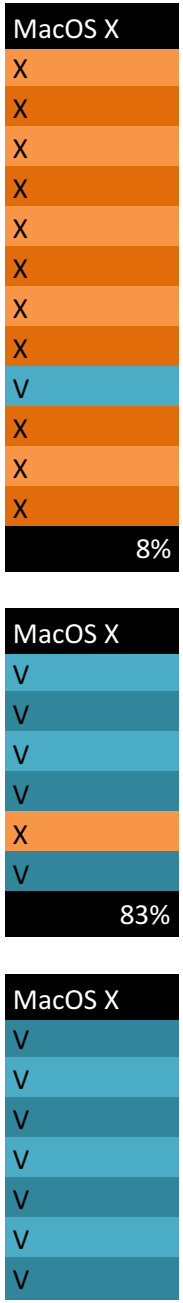
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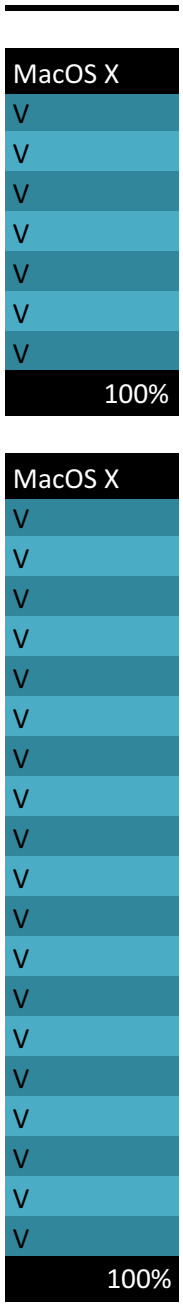
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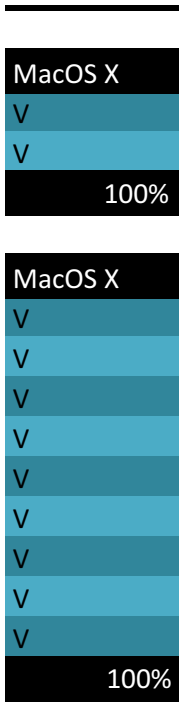
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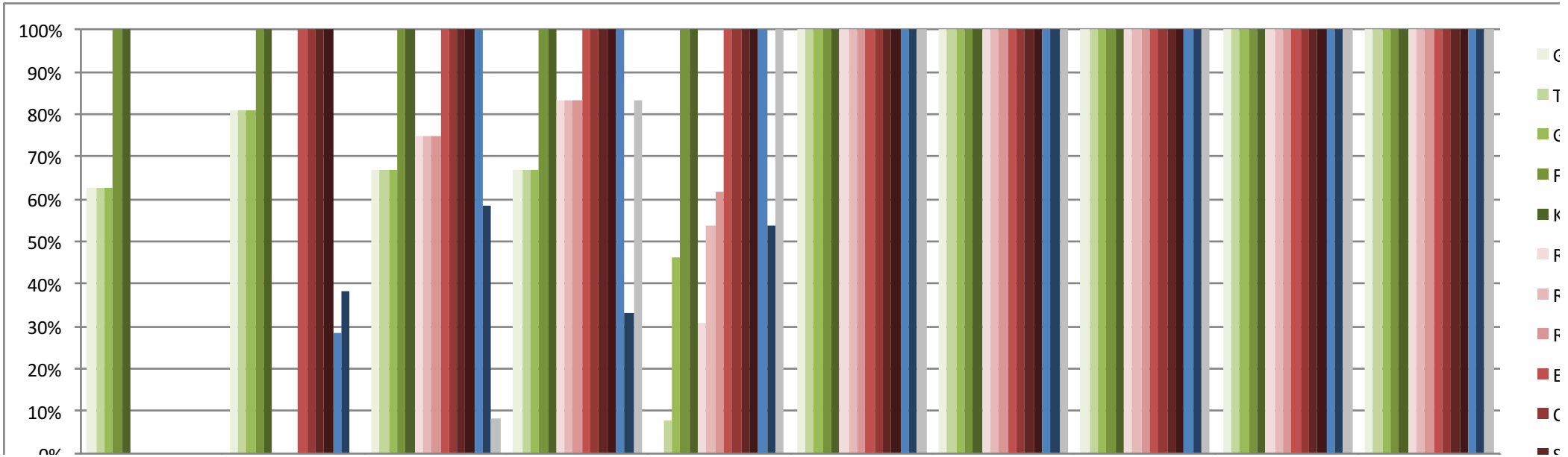
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

November 2013, G-Truc Creation

Vendor	NVIDIA					AMD							Intel		Mesa
Drivers version	331.10 beta					13.11 beta 9.2							3325		git-10.0
Release date	02/10/2013					08/11/2013							30/08/2013		06/11/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
OpenGL 4.4	63%	63%	63%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OpenGL 4.3	81%	81%	81%	100%	100%	0%	0%	0%	100%	100%	100%	100%	19%	29%	38%
OpenGL 4.2	67%	67%	67%	100%	100%	75%	75%	75%	100%	100%	100%	100%	92%	100%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	100%	100%	33%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	100%	100%	54%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_sparse_texture	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X
ARB_shader_group_vote	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_shader_draw_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
ARB_indirect_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	X	X
EXT_texture_sRGB_decode	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
EXT_framebuffer_multisample_blit_scaled	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	V	X	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X

NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X	
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X	
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X	
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X	
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X	
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X	
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X	
NV_blend_equation_advanced	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X	
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	
INTEL_fragment_shader_ordering	X	X	X	X	X	X	X	X	X	X	X	X	V	V	X	
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X	
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X	
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X	
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	V	X	X	X	
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X	
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X	
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	V	X	X	X	
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	V	X	X	X	
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	V	X	X	X	
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	V	X	X	X	
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	V	X	X	X	
AMD_occlusion_query_event	X	X	X	X	X	X	X	X	X	X	X	V	X	X	X	
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	V	X	X	X	
Support	40%	40%	40%	58%	67%	21%	21%	23%	33%	38%	46%	48%	8%	10%	2%	

OpenGL 4.4	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
ARB_buffer_storage	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_clear_texture	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X
ARB_enhanced_layouts	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_multi_bind	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X
ARB_query_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X	X	X	X

ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_texture_stencil8	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	X	X	X	X	X	X	X	X	X	X	X
Support	63%	63%	63%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_view	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	V	V	V	V	X	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	V	V	V	V	V	V	V
GL_ARB_copy_image	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	V	V	V	V	X	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	V	V	V	V	V	V	X
Support	81%	81%	81%	100%	100%	0%	0%	0%	100%	100%	100%	100%	19%	29%	38%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X

GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	V	X	V	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_base_instance	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	75%	75%	75%	100%	100%	100%	100%	92%	100%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	100%	100%	33%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	V	V	V
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	V	V	V
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X

GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	V	V	X
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	100%	100%	54%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergre	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	EG	Cayman	S.I.	C.I.	IVB	HSW	Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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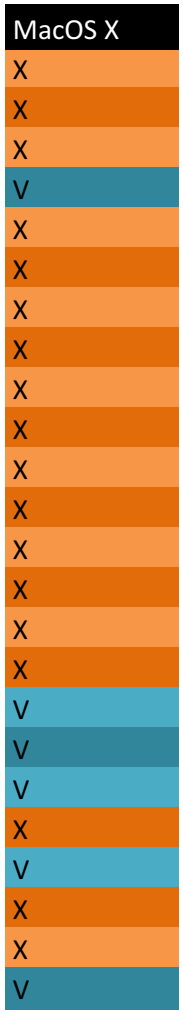
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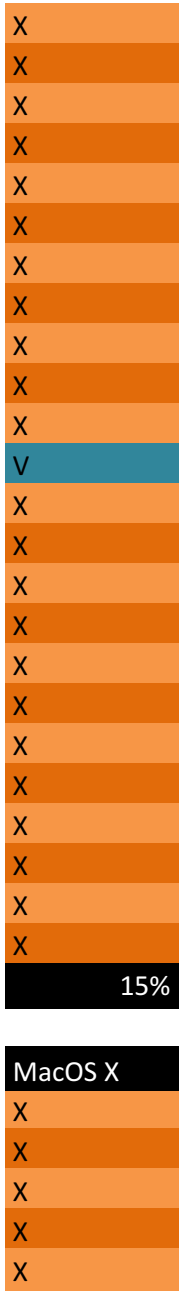
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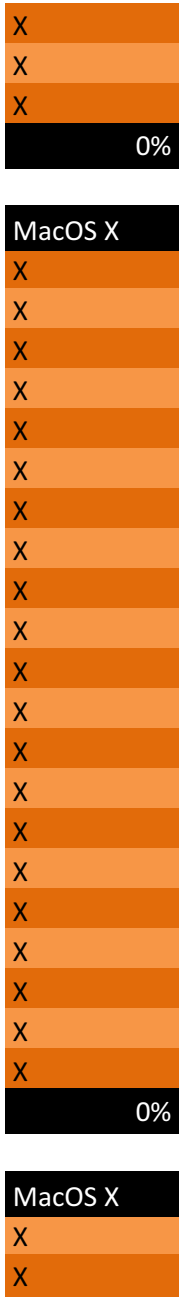
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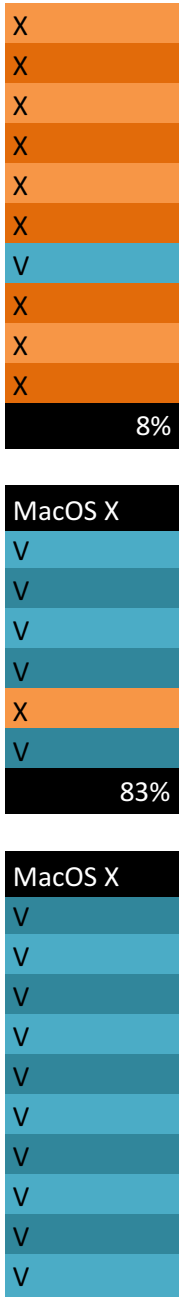
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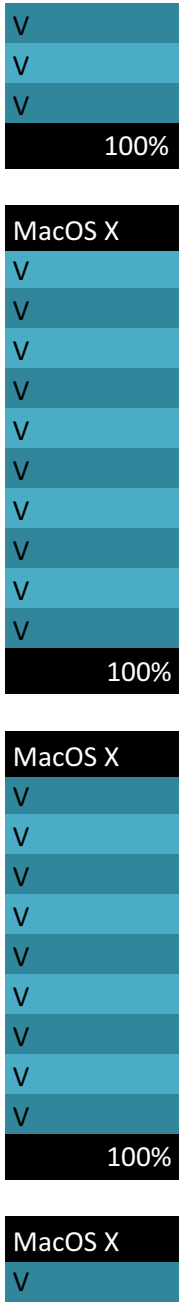
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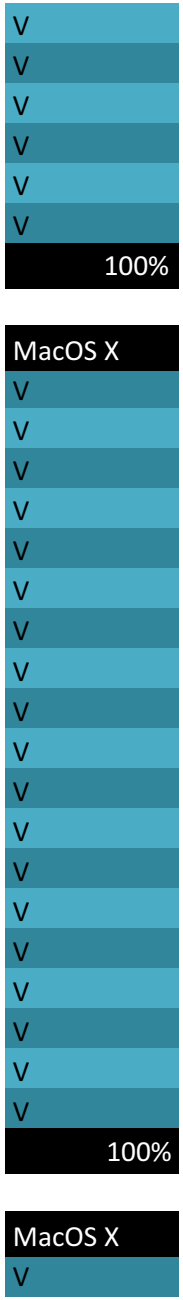
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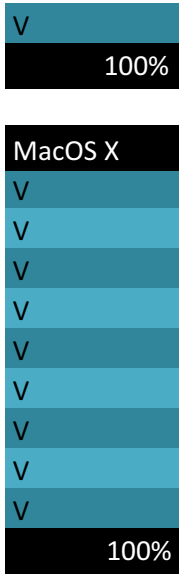
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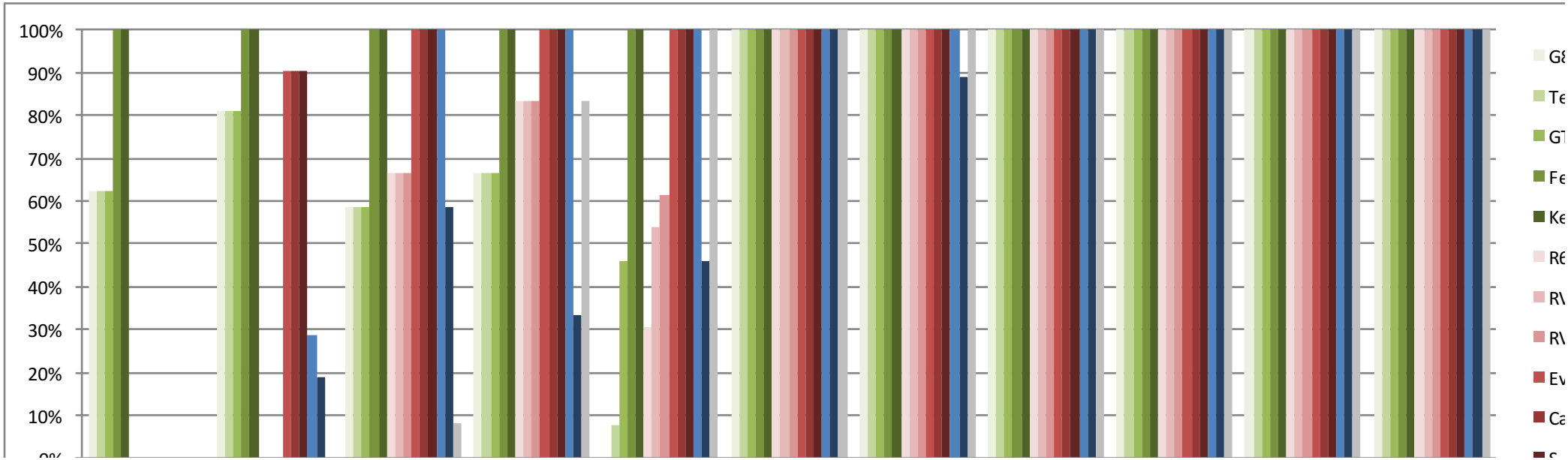
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

September 2013, G-Truc Creation

Vendor	NVIDIA					AMD						Intel	Mesa
Drivers version	326.98 beta					13.4						10.18.10.3277	git-9.2
Release date	28/08/2013					24/04/2013						30/08/2013	30/03/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
OpenGL 4.4	63%	63%	63%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
OpenGL 4.3	81%	81%	81%	100%	100%	0%	0%	0%	90%	90%	90%	29%	19%
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	100%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	33%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	46%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_sparse_texture	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X	X
ARB_shader_group_vote	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_shader_draw_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_seamless_cubemap_per_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X	V
ARB_indirect_parameters	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_compute_variable_group_size	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
ARB_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	V	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_framebuffer_multisample_blit_scaled	X	X	X	V	V	X	X	X	X	X	X	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_texture_barrier	V	V	V	V	V	V	V	V	V	V	V	X	X

NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X	
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X	
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X	
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X	
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X	X	
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X	X	
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X	
NV_bindless_multi_draw_indirect	X	X	X	V	V	X	X	X	X	X	X	X	X	
NV_blend_equation_advanced	X	X	X	V	V	X	X	X	X	X	X	X	X	
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V	X	
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	V	V	X	X	
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X	X	
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X	X	
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X	X	
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X	X	
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X	X	
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X	X	
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X	X	
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X	X	
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X	X	
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X	X	
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X	X	
Support	37%	37%	37%	61%	70%	22%	22%	24%	35%	39%	48%	7%	2%	

OpenGL 4.4	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
ARB_buffer_storage	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_clear_texture	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_enhanced_layouts	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_multi_bind	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_query_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X	X
ARB_texture_mirror_clamp_to_edge	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_texture_stencil8	V	V	V	V	V	X	X	X	X	X	X	X	X

ARB_vertex_type_10f_11f_11f_rev	V	V	V	V	V	X	X	X	X	X	X	X	X	X
Support	81%	81%	81%	100%	100%	0%	0%	0%	90%	90%	90%	29%	19%	

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	V	V	V	V	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	V	V	V	V	V
GL_ARB_copy_image	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	V	V	V	V	X
Support	81%	81%	81%	100%	100%	0%	0%	0%	90%	90%	90%	29%	19%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	100%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	V	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	33%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	V
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X

GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	46%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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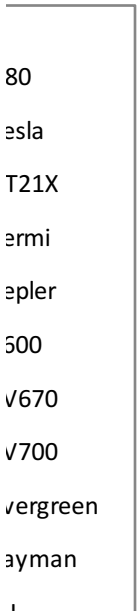

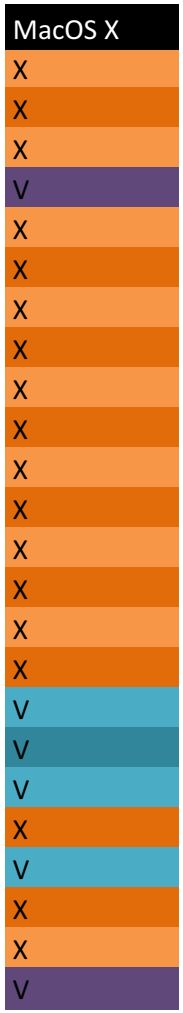
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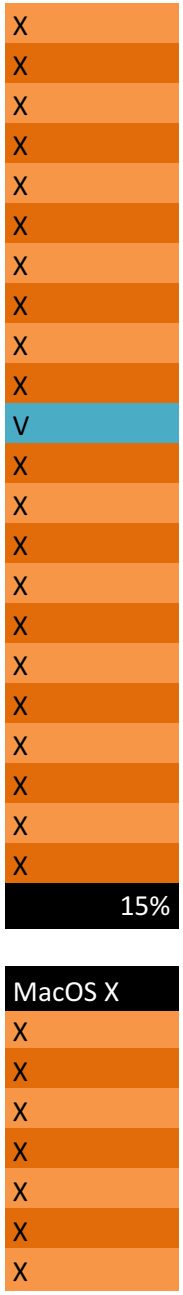
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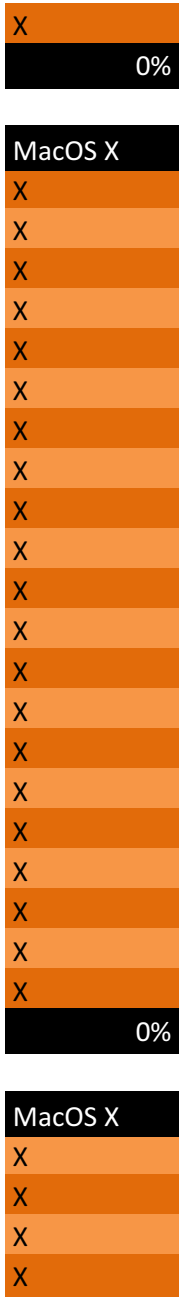
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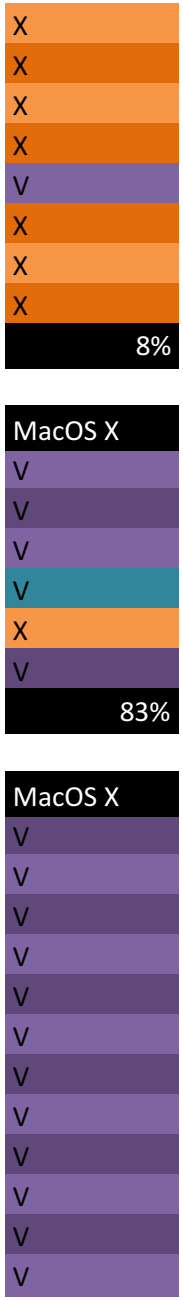
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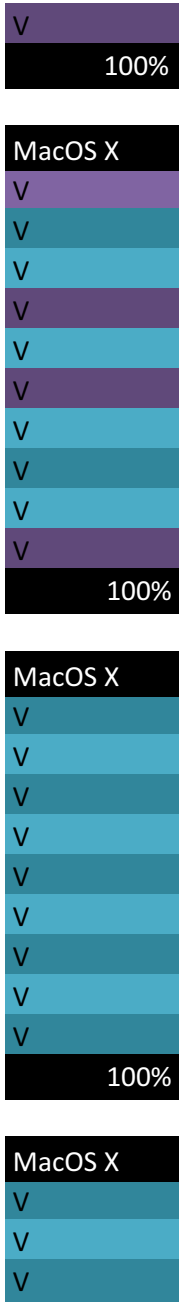
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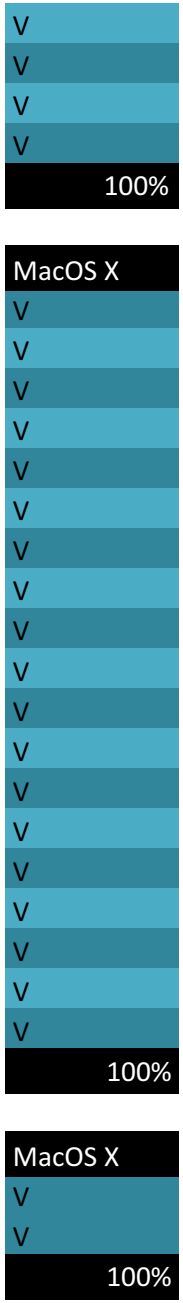
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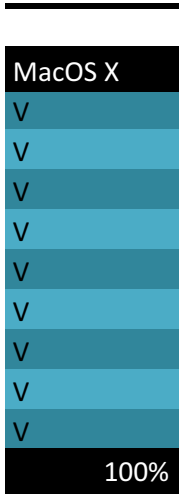
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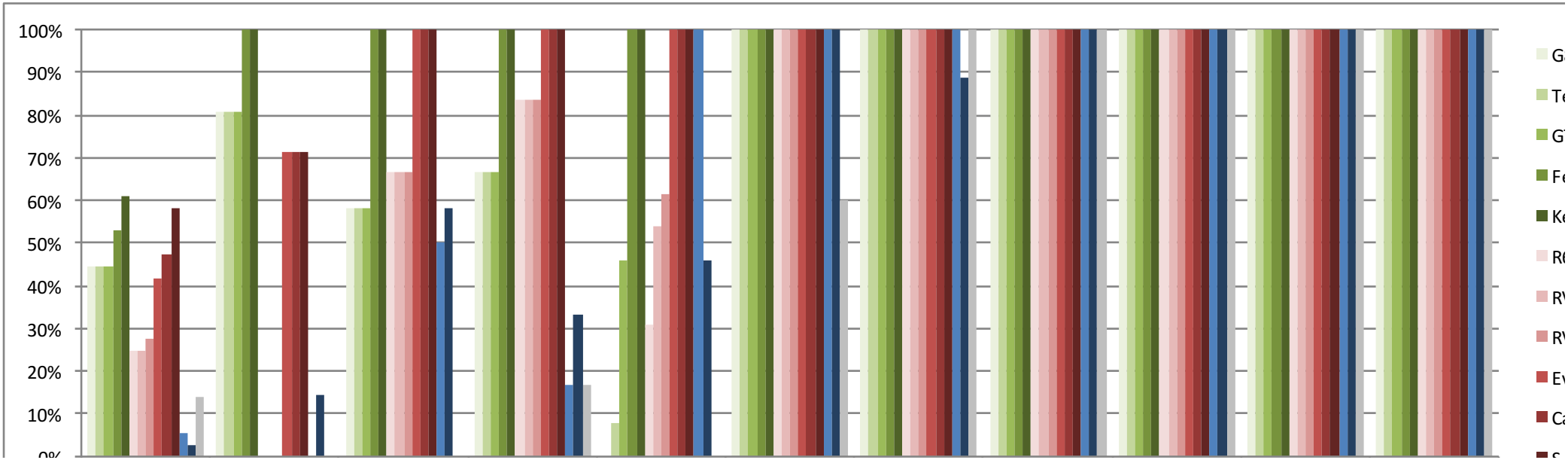
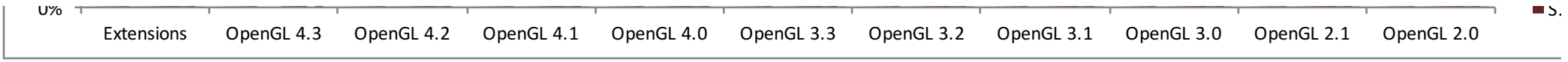
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

Avril 2013, G-Truc Creation

Vendor	NVIDIA					AMD						Intel	Mesa
Drivers version	320.00 beta					13.4						9.18.10.3006	git-9.2
Release date	23/04/2013					24/04/2013						23/02/2013	30/03/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
Extensions	44%	44%	44%	53%	61%	25%	25%	28%	42%	47%	58%	6%	3%
OpenGL 4.3	81%	81%	81%	100%	100%	0%	0%	0%	71%	71%	71%	0%	14%
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	33%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	46%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%





Nomenclature:

Supported

Not supported

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X	X
EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X	X
ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X
ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X	X
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X	X
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	V	V	X	X

INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V	X
EXT_framebuffer_multisample_blit_scaled	X	X	X	X	V	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X	V
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
Support	44%	44%	44%	53%	61%	25%	25%	28%	42%	47%	58%	6%	3%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_copy_image	V	V	V	V	V	X	X	X	X	X	X	X	X

GL_ARB_compute_shader	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	V	V	V	X	X
Support	81%	81%	81%	100%	100%	0%	0%	0%	71%	71%	71%	0%	14%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	X	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	33%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	V
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	46%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Apple
10.8.3
14/03/2013
MacOS X
14%
0%
0%
17%
0%
60%
100%
100%
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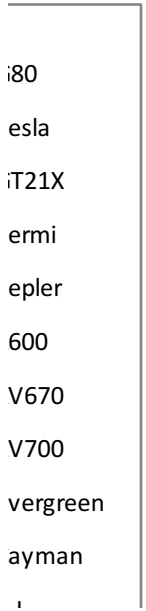

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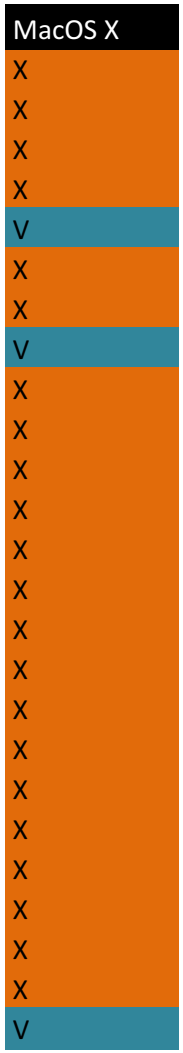

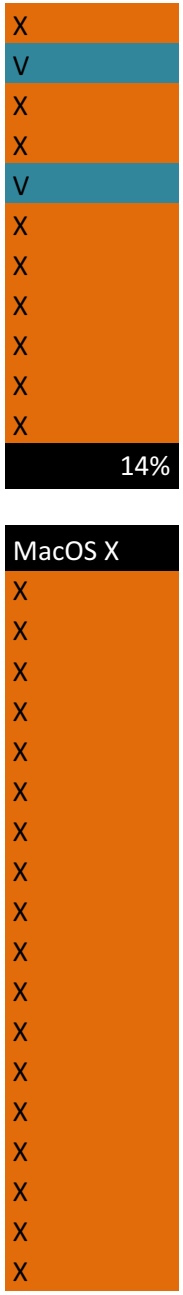
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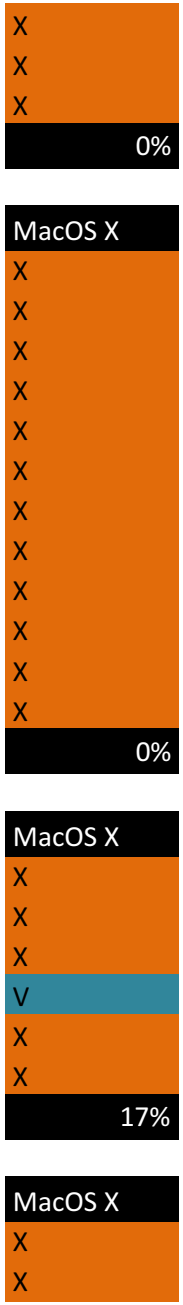
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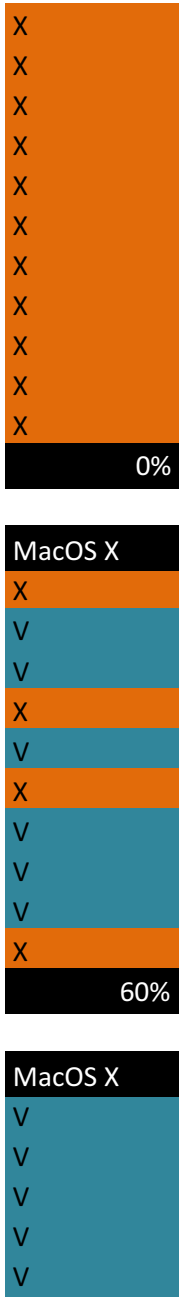
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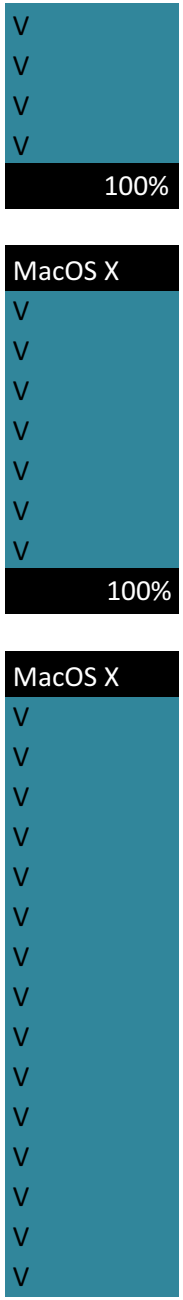
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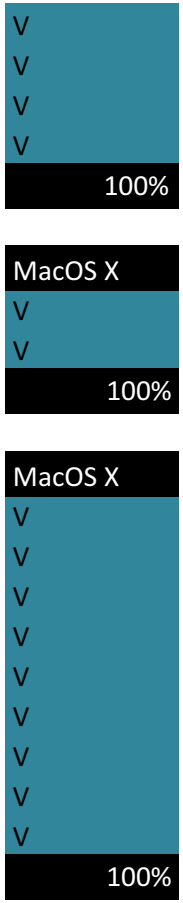
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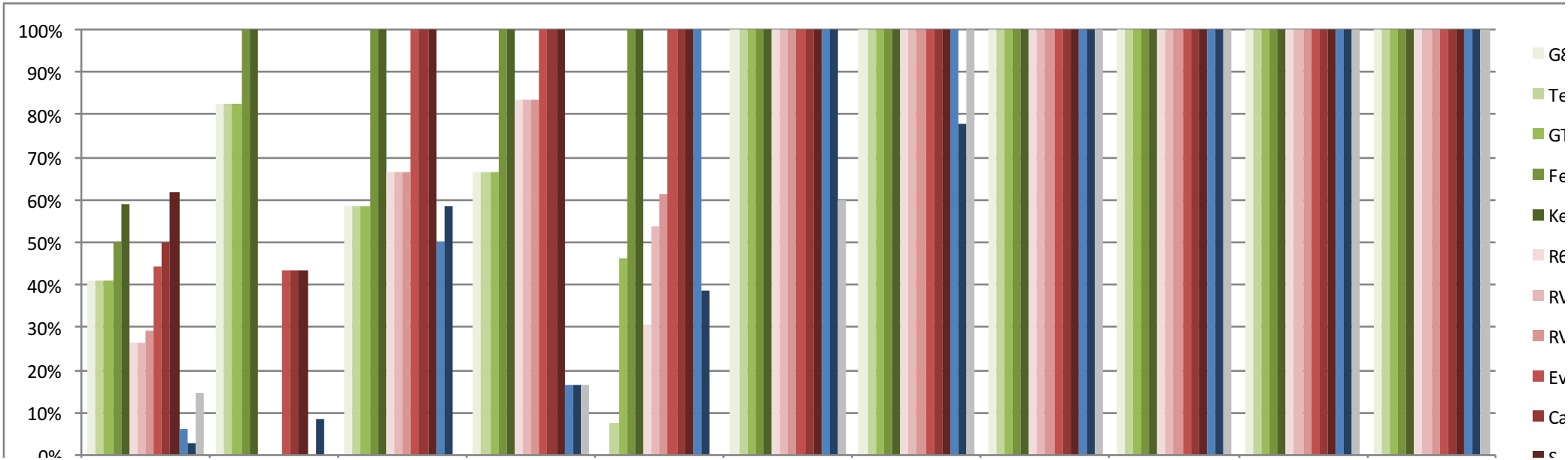
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

March 2013, G-Truc Creation

Vendor	NVIDIA					AMD						Intel	Intel Mesa
Drivers version	314.21 beta					13.3 beta 3						9.18.10.3006	9.1.1
Release date	16/03/2013					18/03/2013						23/02/2013	20/03/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
Extensions	41%	41%	41%	50%	59%	26%	26%	29%	44%	50%	62%	6%	3%
OpenGL 4.3	83%	83%	83%	100%	100%	0%	0%	0%	43%	43%	43%	0%	9%
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

Changes with previous report

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X	X
EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X	X
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X	X
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X
ATI_texture_mirror_once	V	V	V	V	V	V	V	V	V	V	V	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V	X

EXT_framebuffer_multisample_blit_scaled	X	X	X	X	V	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X	V
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
Support	41%	41%	41%	50%	59%	26%	26%	29%	44%	50%	62%	6%	3%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	X	X	X	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	V	V	V	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	X	X	X	X	X

GL_ARB_copy_image	V	V	V	V	V	X	X	X	X	X	X	X		X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	X	X	X	X		X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	V	V	V	X		X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	V	V	V	X		X
Support	83%	83%	83%	100%	100%	0%	0%	0%	43%	43%	43%	0%		9%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	X	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V

GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	X
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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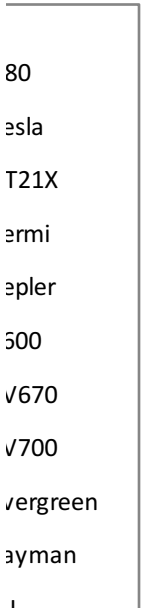

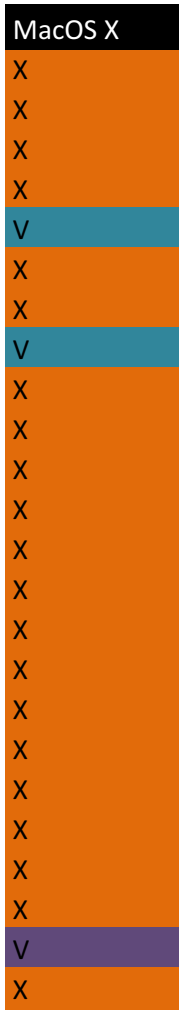
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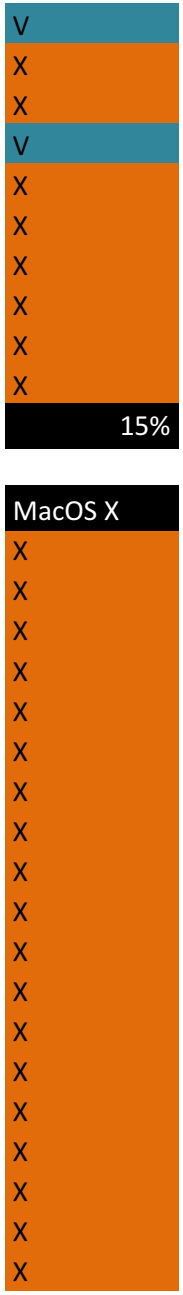
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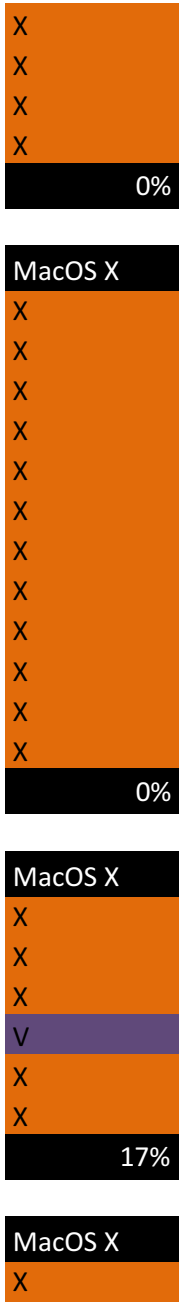
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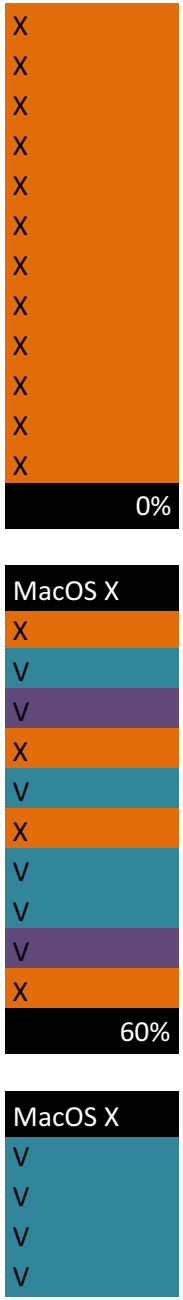
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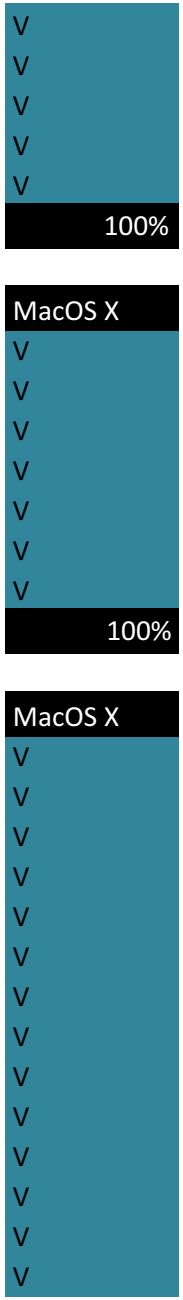
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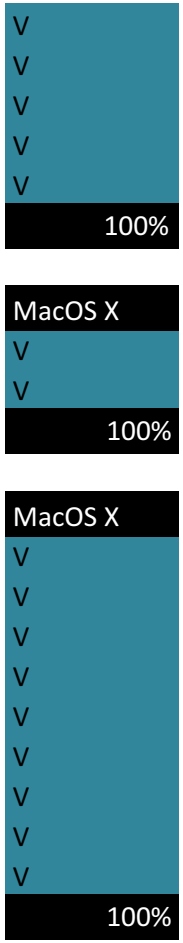
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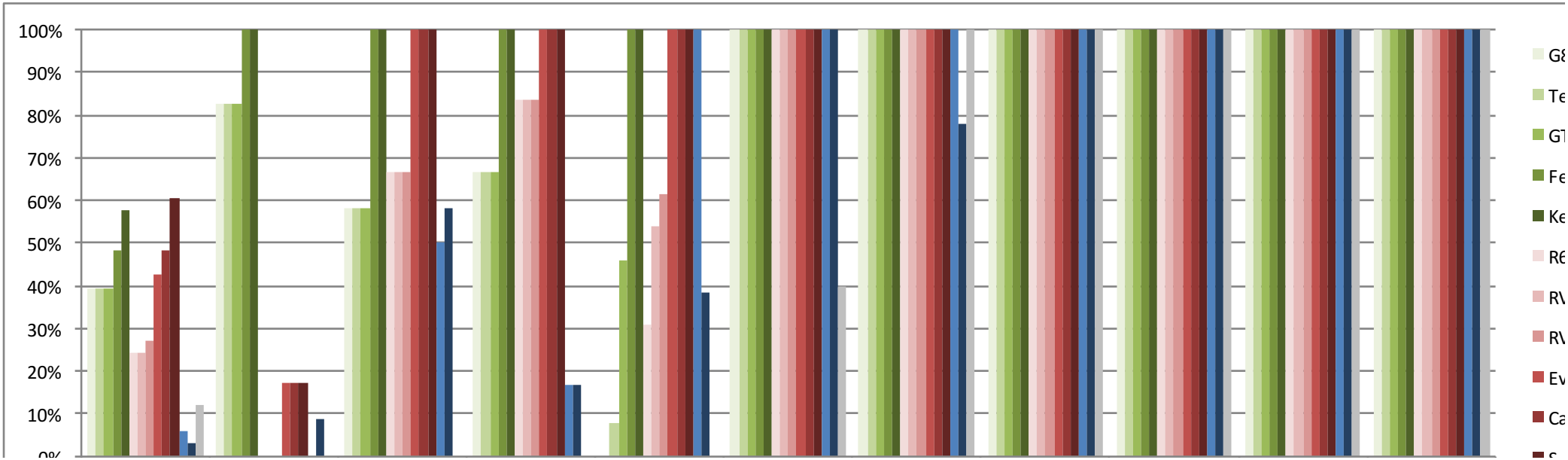
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

February 2013, G-Truc Creation

Vendor	NVIDIA					AMD						Intel	Intel Mesa
Drivers version	314.07					13.2 beta 6						9.18.10.2973	9.1 branch
Release date	18/02/2012					19/02/2013						22/01/2013	22/01/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
Extensions	39%	39%	39%	48%	58%	24%	24%	27%	42%	48%	61%	6%	3%
OpenGL 4.3	83%	83%	83%	100%	100%	0%	0%	0%	17%	17%	17%	0%	9%
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Nomenclature:

Supported

Not supported

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X	X
EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X	X
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X	X
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V	X
EXT_framebuffer_multisample_blit_scaled	X	X	X	X	V	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X	X

EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X	V
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
Support	39%	39%	39%	48%	58%	24%	24%	27%	42%	48%	61%	6%	3%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	X	X	X	X	X
GL_ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	X	X	X	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	X	X	X	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_copy_image	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	X	X	X	X	X

GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	X	X	X	X	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	X	X	X	X	X	X
Support	83%	83%	83%	100%	100%	0%	0%	0%	17%	17%	17%	0%	9%	

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	50%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	X	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	X

GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	X

GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Intel Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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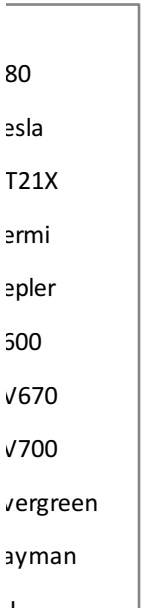

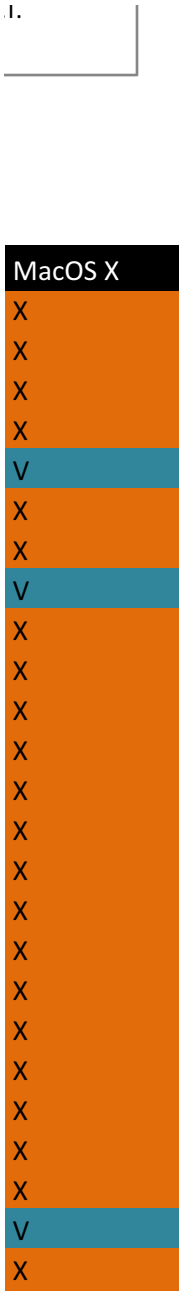
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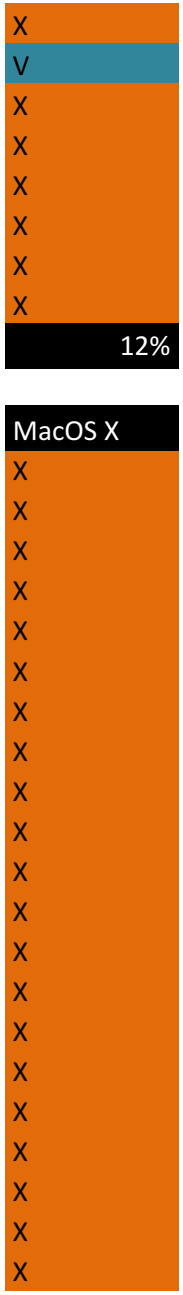
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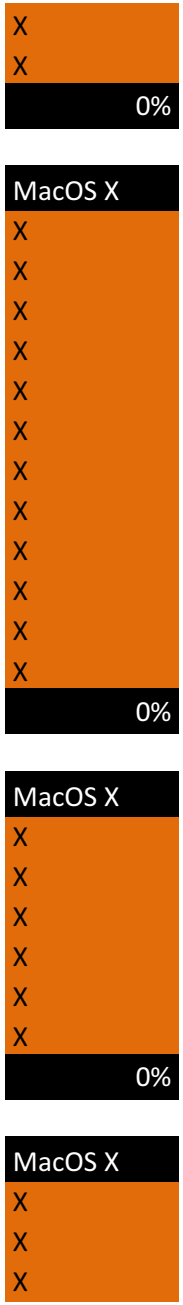
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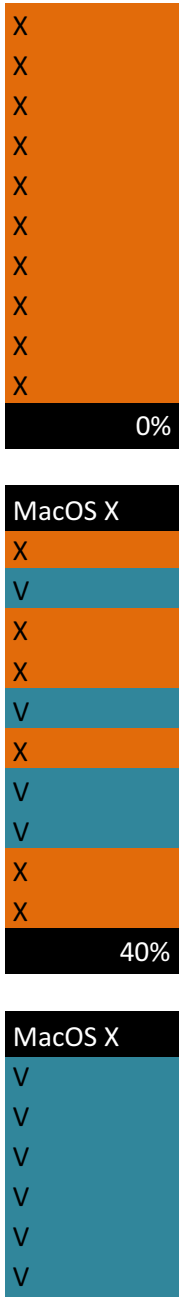
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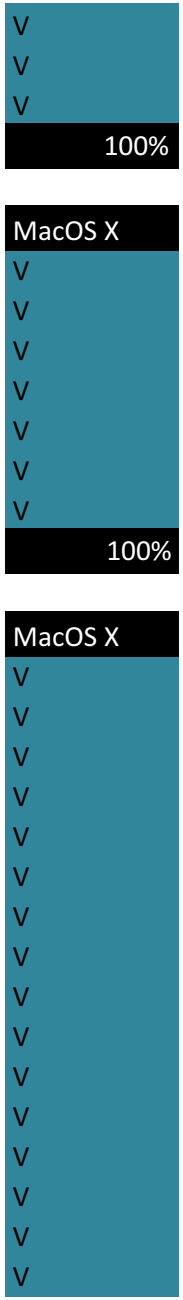
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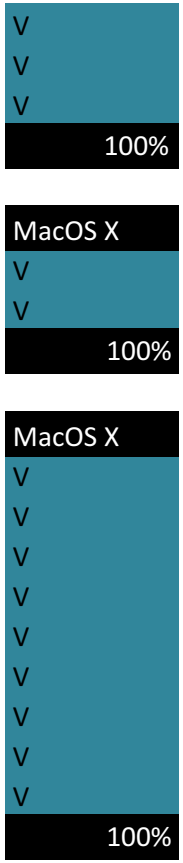
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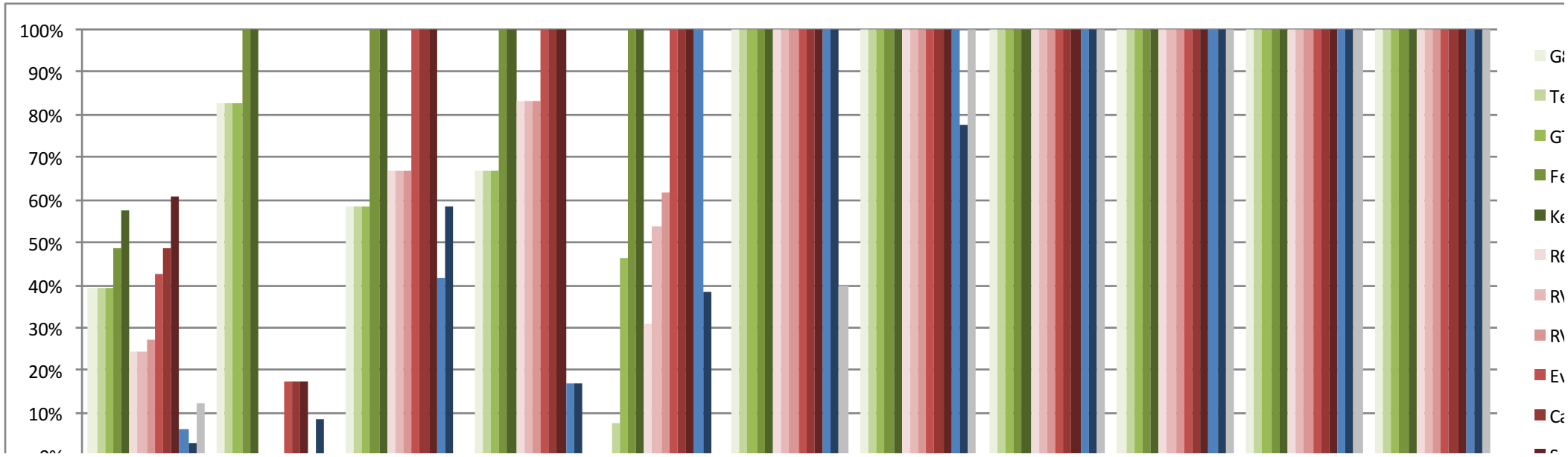
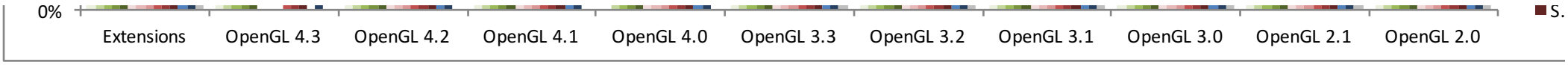
OpenGL hardware matrix

Extensions exposed by OpenGL implementations

January 2013, G-Truc Creation

Vendor	NVIDIA					AMD						Intel	Intel Mesa
Drivers version	313.95 beta					13.02 beta						15.31.64.2885	9.1 branch
Release date	28/01/2013					18/01/2013						16/12/2012	22/01/2013
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
Extensions	39%	39%	39%	48%	58%	24%	24%	27%	42%	48%	61%	6%	3%
OpenGL 4.3	83%	83%	83%	100%	100%	0%	0%	0%	17%	17%	17%	0%	9%
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	42%	58%
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%





Nomenclature:

Supported

Not supported

OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X	X
EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	X	X
KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X	X
NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X	X
EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X	X
AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X	X
AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X	X
ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X	X
NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X	X
NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X	X
NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X	X
AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X	X
AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X	X
AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X	X
AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X	X
NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X	X
INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V	X
EXT_framebuffer_multisample_blit_scaled	X	X	X	X	V	X	X	X	X	X	X	X	X
NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X	X

EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X	X
EXT_depth_bounds_test	V	V	V	V	V	X	X	X	X	X	V	X	X
ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X	V
NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X	X
ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X
ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X	X
AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X	X
NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X	X
Support	39%	39%	39%	48%	58%	24%	24%	27%	42%	48%	61%	6%	3%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	X	X	X	X	X
GL_ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	X	X	X	X	V
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	V	V	V	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	X	X	X	X	V
GL_KHR_debug	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_copy_image	V	V	V	V	V	X	X	X	X	X	X	X	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	X	X	X	X	X

GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	X	X	X	X	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	X	X	X	X	X	X
Support	83%	83%	83%	100%	100%	0%	0%	0%	17%	17%	17%	0%	9%	

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	X	V
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	42%	58%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	X	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	X	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%	17%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V	X

GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V	X
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V	X
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	38%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V	X

GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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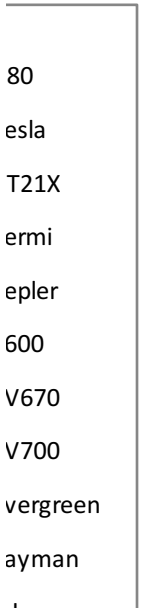

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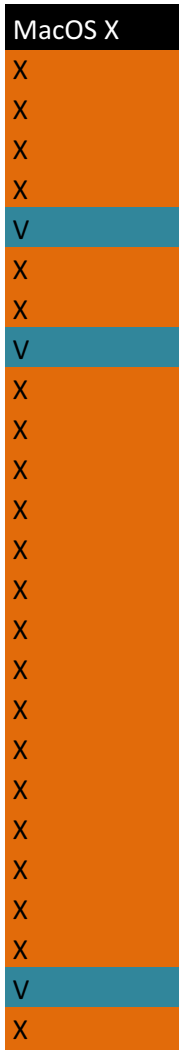

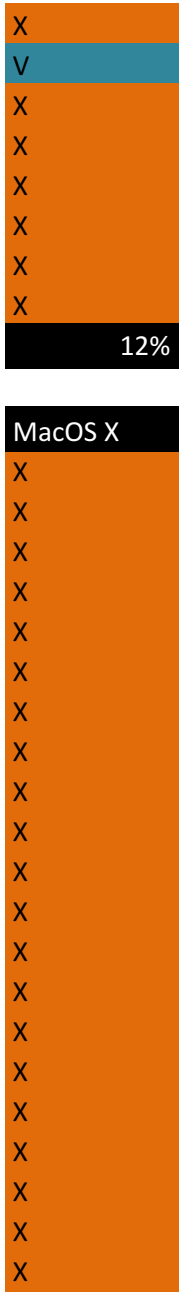
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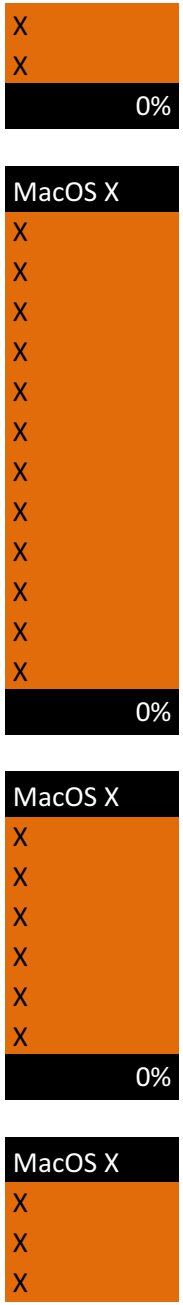
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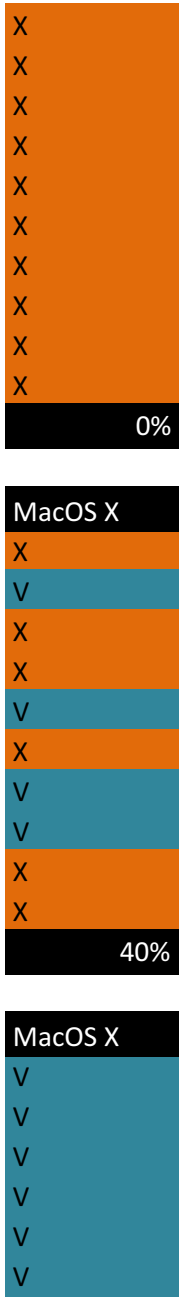
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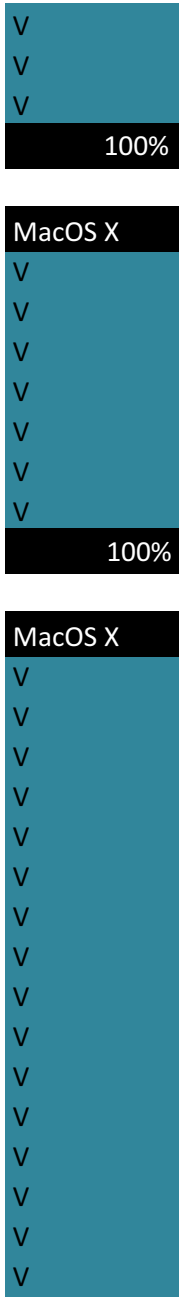
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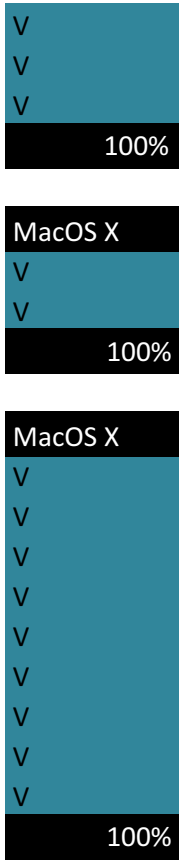
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OpenGL hardware matrix

Extensions exposed by OpenGL implementations

December 2012, G-Truc Creation

Nomenclature:

Supported

Not supported

Vendor	NVIDIA					AMD						Intel
Drivers version	310.70					12.11 beta 11						15.31.64.2885
Release date	18/12/2012					07/12/2012						16/12/2012
OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_AMD_vertex_shader_viewport_index	X	X	X	X	X	X	X	X	V	V	V	X
GL_AMD_vertex_shader_layer	X	X	X	X	X	X	X	X	V	V	V	X
GL_NV_vertex_buffer_unified_memory	V	V	V	V	V	X	X	X	X	X	X	X
GL_AMD_transform_feedback3_lines_triangles	X	X	X	X	X	X	X	X	X	V	V	X
GL_EXT_texture_sRGB_decode	X	X	X	V	V	X	X	X	V	V	V	X
GL_KHR_texture_compression_astc_ldr	X	X	X	X	X	X	X	X	X	X	X	X
GL_NV_texture_multisample	V	V	V	V	V	X	X	X	X	X	X	X
GL_EXT_texture_mirror_clamp	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_robustness	V	V	V	V	V	X	X	X	X	X	X	X
GL_AMD_stencil_operation_extended	X	X	X	X	X	X	X	X	X	X	V	X
GL_AMD_sparse_texture	X	X	X	X	X	X	X	X	X	X	V	X
GL_ARB_shading_language_include	V	V	V	V	V	X	X	X	X	X	X	X
GL_AMD_shader_trinary_minmax	X	X	X	X	X	X	X	X	X	X	V	X
GL_ARB_shader_stencil_export	X	X	X	X	X	X	X	X	V	V	V	X
GL_NV_shader_buffer_store	X	X	X	V	V	X	X	X	X	X	X	X
GL_NV_shader_buffer_load	V	V	V	V	V	X	X	X	X	X	X	X
GL_NV_shader_atomic_float	X	X	X	V	V	X	X	X	X	X	X	X
GL_AMD_seamless_cubemap_per_texture	X	X	X	X	V	X	X	V	V	V	V	X

GL_AMD_sample_positions	X	X	X	X	X	V	V	V	V	V	V	X
GL_AMD_query_buffer_object	X	X	X	X	X	X	X	X	V	V	V	X
GL_AMD_pinned_memory	X	X	X	X	X	V	V	V	V	V	V	X
GL_NV_multisample_coverage	V	V	V	V	V	X	X	X	X	X	X	X
GL_INTEL_map_texture	X	X	X	X	X	X	X	X	X	X	X	V
GL_EXT_framebuffer_multisample_blit_scaled	X	X	X	X	V	X	X	X	X	X	X	X
GL_NV_explicit_multisample	V	V	V	V	V	V	V	V	V	V	V	X
GL_EXT_direct_state_access	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_debug_output	V	V	V	V	V	V	V	V	V	V	V	X
GL_NV_copy_image	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_cl_event	X	X	X	X	X	X	X	X	X	X	X	X
GL_AMD_blend_minmax_factor	X	X	X	X	X	X	X	X	X	V	V	X
GL_NV_bindless_texture	X	X	X	X	V	X	X	X	X	X	X	X
Support	35%	35%	35%	45%	55%	23%	23%	26%	42%	48%	58%	3%

OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_vertex_attrib_binding	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_texture_view	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_texture_query_levels	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_texture_buffer_range	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_stencil_texturing	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_shader_storage_buffer_object	X	X	X	V	V	X	X	X	X	X	X	X
GL_ARB_shader_image_size	X	X	X	V	V	X	X	X	X	X	X	X
GL_ARB_robustness_isolation	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_robust_buffer_access_behavior	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_program_interface_query	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_multi_draw_indirect	X	X	X	V	V	X	X	X	X	X	X	X
GL_ARB_invalidate_subdata	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_internalformat_query2	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_fragment_layer_viewport	V	V	V	V	V	X	X	X	X	X	X	X

GL_ARB_explicit_uniform_location	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	X	X	X	X	X	X	X
GL_KHR_debug	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_copy_image	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_compute_shader	X	X	X	V	V	X	X	X	X	X	X	X
GL_ARB_clear_buffer_object	V	V	V	V	V	X	X	X	X	X	X	X
GL_ARB_arrays_of_arrays	V	V	V	V	V	X	X	X	X	X	X	X
Support	83%	83%		100%	100%	0%	0%	0%	0%	0%	0%	0%

OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_transform_feedback_instanced	X	X	X	V	V	V	V	V	V	V	V	X
GL_ARB_texture_compression_bptc	X	X	X	V	V	X	X	X	V	V	V	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_packing	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_shading_language_420pack	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_shader_image_load_store	X	X	X	V	V	X	X	X	V	V	V	X
GL_ARB_shader_atomic_counters	X	X	X	V	V	X	X	X	V	V	V	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_internalformat_query	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_conservative_depth	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compressed_texture_pixel_storage	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_base_instance	X	X	X	V	V	X	X	X	V	V	V	V
Support	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	42%

OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_vertex_attrib_64bit	X	X	X	V	V	X	X	X	V	V	V	X
GL_ARB_shader_precision	X	X	X	V	V	V	V	V	V	V	V	X
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_get_program_binary	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_ES2_compatibility	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	17%

OpenGL 4.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_transform_feedback3	X	X	X	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	X	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	X	X	V	V	V	X	X	V	V	V	V	V
GL_ARB_texture_gather	X	X	V	V	V	X	V	V	V	V	V	V
GL_ARB_texture_cube_map_array	X	X	V	V	V	X	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	X	X	X	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	X	X	X	V	V	X	X	X	V	V	V	V
GL_ARB_shader_subroutine	X	X	X	V	V	X	X	X	V	V	V	V
GL_ARB_sample_shading	X	X	V	V	V	X	V	V	V	V	V	V
GL_ARB_gpu_shader5	X	X	X	V	V	X	X	X	V	V	V	V
GL_ARB_gpu_shader_fp64	X	X	X	V	V	X	X	X	V	V	V	V
GL_ARB_draw_indirect	X	X	X	V	V	X	X	X	V	V	V	V
GL_ARB_draw_buffers_blend	X	X	V	V	V	V	V	V	V	V	V	V
Support	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%

OpenGL 3.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_vertex_type_2_10_10_10_rev	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_timer_query	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_swizzle	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rgb10_a2ui	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_bit_encoding	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sampler_objects	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_occlusion_query2	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_instanced_arrays	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_explicit_attrib_location	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_blend_func_extended	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_vertex_array_bgra	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_texture_multisample	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_sync	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_seamless_cube_map	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_provoking_vertex	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_geometry_shader4	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_coord_conventions	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_clamp	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_elements_base_vertex	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_uniform_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_snorm	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rectangle	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_primitive_restart	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_instanced	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_copy_buffer	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_compatibility	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_vertex_array_object	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_transform_feedback	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_rg	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_shared_exponent	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_integer	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_float	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_compression_rgtc	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_texture_array	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_float	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_packed_depth_stencil	V	V	V	V	V	V	V	V	V	V	V	V

GL_ARB_map_buffer_range	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_vertex	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_half_float_pixel	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_gpu_shader4	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_sRGB	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_framebuffer_object	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_depth_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V
GL_NV_conditional_render	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_color_buffer_float	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_EXT_texture_sRGB	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_pixel_buffer_object	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	N.I. Cayman	S.I.	HD 4000
GL_ARB_vertex_shader	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_non_power_of_two	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_stencil_two_side	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shading_language_100	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_shader_objects	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_point_sprite	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_fragment_shader	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_draw_buffers	V	V	V	V	V	V	V	V	V	V	V	V
GL_EXT_blend_equation_separate	V	V	V	V	V	V	V	V	V	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%