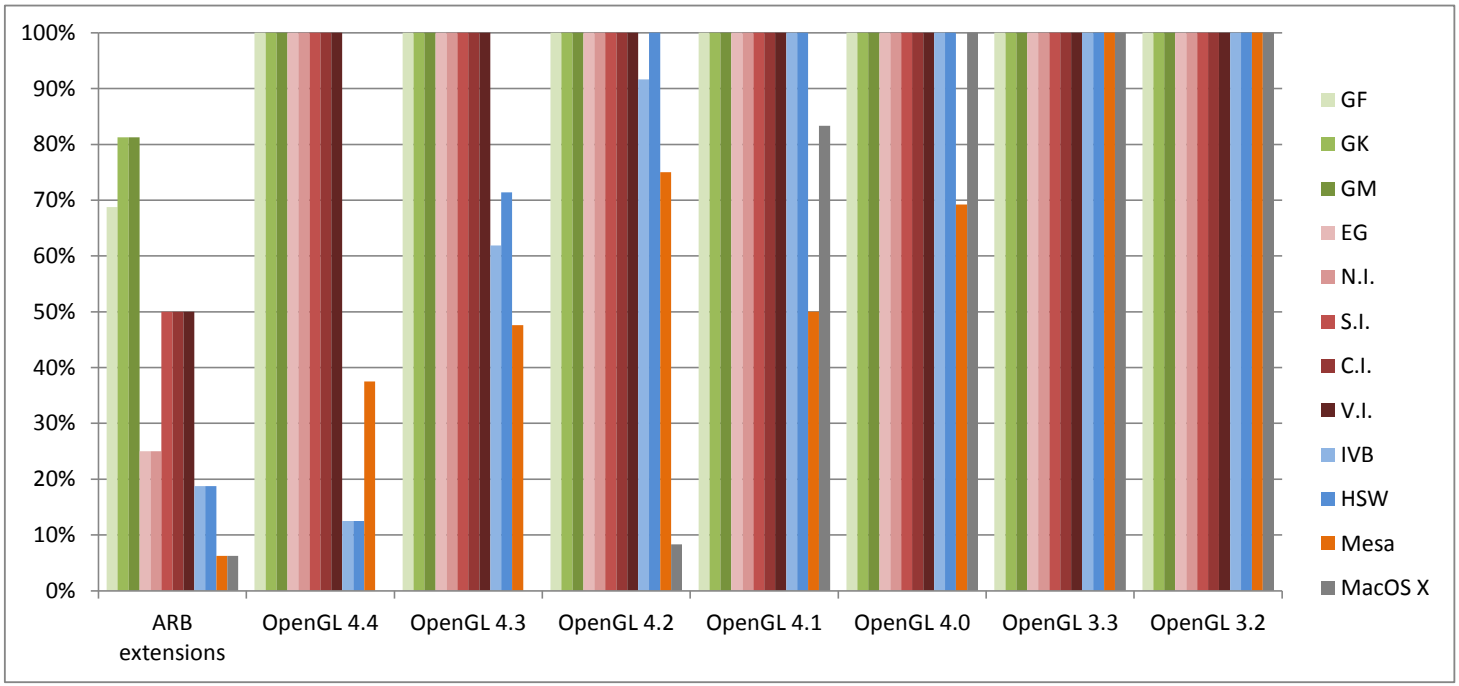
OpenGL hardware matrix

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

Vendor									Intel	Mesa	Apple
Drivers version									3412	git-10.1	10.9
Release date									29/01/2014	20/02/2013	01/10/2013
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%	48%	0%
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	75%	8%
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%



Nomenclature:

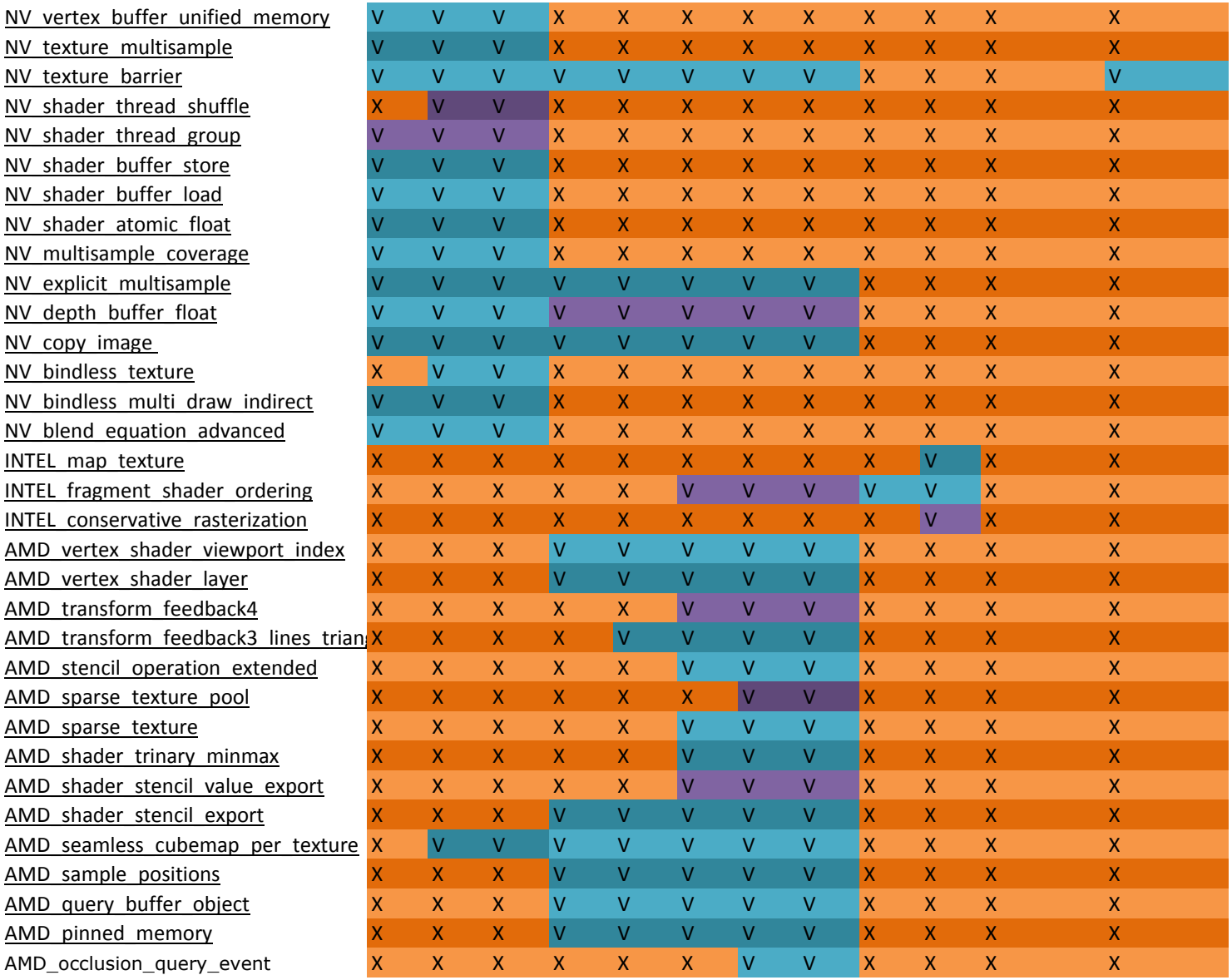
Supported

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_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_sRGB_decode	V	V	V	V	V	V	V	V	V	V	X	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_scal	V	V	V	X	X	X	X	X	X	X	X	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
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 X X
AMD_transform_feedback4 X X X X X V V V X X X X
AMD_transform_feedback3_lines_trian 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 X 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 X 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_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%	57%	59%	32%	35%	59%	62%	62%	11%	14%	3%	11%

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	X	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	V	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
GL_ARB_vertex_attrib_binding	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_texture_view	V	V	V	V	V	V	V	V	X	X	V	X
GL_ARB_texture_storage_multisample	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_texture_query_levels	V	V	V	V	V	V	V	V	X	X	V	X
GL_ARB_texture_buffer_range	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_stencil_texturing	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_shader_storage_buffer_object	V	V	V	V	V	V	V	V	X	V	X	X
GL_ARB_shader_image_size	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_program_interface_query	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_multi_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_invalidate_subdata	V	V	V	V	V	V	V	V	X	X	V	X
GL_ARB_internalformat_query2	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_framebuffer_no_attachments	V	V	V	V	V	V	V	V	V	V	X	X

GL_ARB_fragment_layer_viewport	V	V	V	V	V	V	V	V	X	X	X	X
GL_ARB_explicit_uniform_location	V	V	V	V	V	V	V	V	X	X	X	X
GL_ARB_ES3_compatibility	V	V	V	V	V	V	V	V	V	V	V	X
GL_KHR_debug	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_copy_image	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_compute_shader	V	V	V	V	V	V	V	V	X	V	X	X
GL_ARB_clear_buffer_object	V	V	V	V	V	V	V	V	X	X	V	X
GL_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%	48%	0%

OpenGL 4.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
GL_ARB_transform_feedback_instanced	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_texture_compression_bptc	V	V	V	V	V	V	V	V	V	V	X	X
GL_ARB_texture_storage	V	V	V	V	V	V	V	V	V	V	V	X
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	V	V	V	V	V	V	V	V	X	V	X	X
GL_ARB_shader_atomic_counters	V	V	V	V	V	V	V	V	V	V	V	X
GL_ARB_map_buffer_alignment	V	V	V	V	V	V	V	V	V	V	V	X
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	X
GL_ARB_compressed_texture_pixel_sto	V	V	V	V	V	V	V	V	V	V	X	X
GL_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%	8%

OpenGL 4.1	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
GL_ARB_viewport_array	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_vertex_attrib_64bit	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shader_precision	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_separate_shader_objects	V	V	V	V	V	V	V	V	V	V	X	V
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	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
GL_ARB_transform_feedback3	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_transform_feedback2	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_query_lod	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_gather	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_cube_map_array	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_texture_buffer_object_rgb32	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_tessellation_shader	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_shader_subroutine	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_sample_shading	V	V	V	V	V	V	V	V	V	V	V	V
GL_ARB_gpu_shader5	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_gpu_shader_fp64	V	V	V	V	V	V	V	V	V	V	X	V
GL_ARB_draw_indirect	V	V	V	V	V	V	V	V	V	V	V	V
GL_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
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	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
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%