

Khronos OpenGL® Registry

The OpenGL Registry contains specifications of the core API and shading language; specifications of Khronos- and vendor-approved OpenGL extensions; header files corresponding to the specifications; and related documentation including specifications, extensions, and headers for the GLX, WGL, and GLU APIs.

The OpenGL registry is part of the Combined OpenGL Registry (<http://www.khronos.org/registry/OpenGL/>) for OpenGL, OpenGL ES, and OpenGL SC, which includes the XML API registry ([xml/README.adoc](http://www.khronos.org/registry/OpenGL/xml/README.adoc)) of reserved enumerants and functions.

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Current OpenGL API, OpenGL Shading Language and GLX Specifications and Reference Pages

- **Current Specifications (OpenGL 4.6)**
- OpenGL 4.6 API Specification (May 5, 2022)
 - Core Profile Specification ([specs/gl/glspec46.core.pdf](https://www.khronos.org/specs/gl/glspec46.core.pdf))
 - Core Profile Specification with changes marked ([specs/gl/glspec46.core.withchanges.pdf](https://www.khronos.org/specs/gl/glspec46.core.withchanges.pdf))
 - Compatibility Profile Specification ([specs/gl/glspec46.compatibility.pdf](https://www.khronos.org/specs/gl/glspec46.compatibility.pdf))
 - Compatibility Profile Specification with changes marked ([specs/gl/glspec46.compatibility.withchanges.pdf](https://www.khronos.org/specs/gl/glspec46.compatibility.withchanges.pdf))
- OpenGL Shading Language 4.60 Specification (August 14, 2023) (HTML) ([specs/gl/GLSLangSpec.4.60.html](https://www.khronos.org/specs/gl/GLSLangSpec.4.60.html))

(PDF) ([specs/gl/GLSLangSpec.4.60.pdf](https://www.khronos.org/specs/gl/GLSLangSpec.4.60.pdf))

- OpenGL 4.5 API and Shading Language Reference Pages (<http://www.khronos.org/registry/OpenGL-Refpages/gl4/>) (not yet updated)
- **OpenGL X Window System Binding (GLX 1.4) Specification**
- GLX 1.4 Specification ([specs/gl/glx1.4.pdf](https://www.khronos.org/specs/gl/glx1.4.pdf))
- OpenGL Quick Reference Card (<https://www.khronos.org/developers/reference-cards>) (available for different API versions).

API and Extension Header Files

Because extensions vary from platform to platform and driver to driver, OpenGL developers can't expect interfaces for all extensions to be defined in the standard `gl.h`, `glx.h`, and `wgl.h` header files supplied with the OS / graphics drivers. Additional header files are provided here, including:

Almost all of the headers described below depend on a platform header file common to multiple Khronos APIs called `<KHR/khrplatform.h>`.

- `<GL/glext.h>` (`api/GL/glext.h`) - OpenGL 1.2 and above compatibility profile and extension interfaces.
- `<GL/glcorearb.h>` (`api/GL/glcorearb.h`) - OpenGL core profile and ARB extension interfaces, as described in appendix G.2 of the OpenGL 4.3 Specification. Does not include interfaces found only in the compatibility profile.
- `<GL/glxext.h>` (`api/GL/glxext.h`) - GLX 1.3 and above API and GLX extension interfaces.
- `<GL/wglext.h>` (`api/GL/wglext.h`) - WGL extension interfaces.

These headers define interfaces including enumerants; prototypes; and, for platforms supporting dynamic runtime extension queries, such as Linux and Microsoft Windows, function pointer typedefs. Please report problems as Issues (<https://github.com/KhronosGroup/OpenGL-Registry/issues/>) in the OpenGL-Registry ([index.php#repository](https://github.com/KhronosGroup/OpenGL-Registry)) repository.

Khronos Shared Platform Header (`<KHR/khrplatform.h>`)

- The OpenGL headers all depend on the shared `<KHR/khrplatform.h>` (<https://www.khronos.org/registry/EGL/api/KHR/khrplatform.h>) header from the EGL Registry (<http://www.khronos.org/registry/EGL/>). This is a new dependency, introduced in OpenGL-Registry pull request 183 (<https://github.com/KhronosGroup/OpenGL-Registry/pull/183>) for increased compatibility between OpenGL and OpenGL ES headers.

Older OpenGL and GLX Specifications and Reference Pages

- **OpenGL 4.5**
- (API Core Profile) ([specs/gl/glspec45.core.pdf](https://www.khronos.org/specs/gl/glspec45.core.pdf))

- (API Compatibility Profile) (specs/gl/glspec45.compatibility.pdf)
- OpenGL Shading Language 4.50 Specification (specs/gl/GLSLangSpec.4.50.pdf)
- **OpenGL 4.4**
- (API Core Profile) (specs/gl/glspec44.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec44.compatibility.pdf)
- OpenGL Shading Language 4.40 Specification (specs/gl/GLSLangSpec.4.40.pdf)
- **OpenGL 4.3**
- (API Core Profile) (specs/gl/glspec43.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec43.compatibility.pdf)
- OpenGL Shading Language 4.30 Specification (specs/gl/GLSLangSpec.4.30.pdf)
- **OpenGL 4.2**
- (API Core Profile) (specs/gl/glspec42.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec42.compatibility.pdf)
- OpenGL Shading Language 4.20 Specification (specs/gl/GLSLangSpec.4.20.pdf)
- **OpenGL 4.1**
- (API Core Profile) (specs/gl/glspec41.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec41.compatibility.pdf)
- OpenGL Shading Language 4.10 Specification (specs/gl/GLSLangSpec.4.10.pdf)
- **OpenGL 4.0**
- (API Core Profile) (specs/gl/glspec40.core.pdf)
- A Japanese translation (<http://www.cutt.co.jp/book/978-4-87783-255-1.html>) of the API core profile specification is also available.
- (API Compatibility Profile) (specs/gl/glspec40.compatibility.pdf)
- OpenGL Shading Language 4.00 Specification (specs/gl/GLSLangSpec.4.00.pdf)
- **OpenGL 3.3**
- (API Core Profile) (specs/gl/glspec33.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec33.compatibility.pdf)
- OpenGL Shading Language 3.30 Specification (specs/gl/GLSLangSpec.3.30.pdf)
- **OpenGL 3.2**
- (API Core Profile) (specs/gl/glspec32.core.pdf)
- (API Compatibility Profile) (specs/gl/glspec32.compatibility.pdf)
- OpenGL Shading Language 1.50 Specification (specs/gl/GLSLangSpec.1.50.pdf)
- **OpenGL 3.1**
- (API Specification) (specs/gl/glspec31.pdf)
- (with GL_ARB_compatibility extension) (specs/gl/glspec31undep.pdf)
- OpenGL Shading Language 1.40 Specification (specs/gl/GLSLangSpec.1.40.pdf)
- **OpenGL 3.0**
- (API Specification) (specs/gl/glspec30.pdf)
- OpenGL Shading Language 1.30 Specification (specs/gl/GLSLangSpec.1.30.pdf)
- **OpenGL 2.1**
- (API Specification) (specs/gl/glspec21.pdf)

- [OpenGL Shading Language 1.20 Specification \(specs/gl/GLSLangSpec.1.20.pdf\)](#)
- **OpenGL 2.1 Reference Pages**
- [OpenGL 2.1 Reference Pages \(http://www.khronos.org/registry/OpenGL-Refpages/gl2.1/\)](http://www.khronos.org/registry/OpenGL-Refpages/gl2.1/)
- **OpenGL 2.0**
- [\(API Specification\) \(specs/gl/glspec20.pdf\)](#)
- [OpenGL Shading Language 1.10 Specification \(specs/gl/GLSLangSpec.1.10.pdf\)](#)
- **OpenGL 1.x**
- [OpenGL 1.5 API Specification \(specs/gl/glspec15.pdf\)](#)
- [OpenGL 1.4 API Specification \(specs/gl/glspec14.pdf\)](#)
- [OpenGL 1.3 API Specification \(specs/gl/glspec13.pdf\)](#)
- [OpenGL 1.2.1 API Specification \(specs/gl/glspec121.pdf\)](#)
- [OpenGL 1.1 API Specification \(specs/gl/glspec11.pdf\)](#)
- [OpenGL 1.0 API Specification \(specs/gl/glspec10.pdf\)](#)
- **Older GLX Specifications**
- [GLX 1.3 Specification \(specs/gl/glx1.3.pdf\)](#)
- [GLX 1.3 Protocol Encoding Specification \(specs/gl/glxencode1.3.pdf\)](#)
- [GLX 1.2 Specification \(PostScript format\) \(specs/gl/glx1.2.ps\)](#)
- [GLX Protocol Slides \(PostScript format; only of historical interest\) \(specs/gl/GLXprotocol.ps\)](#)
- **OpenGL Utility Library (GLU) Specification**
- [GLU 1.3 Specification \(November 4, 1998\) \(specs/gl/glu1.3.pdf\)](#)

OpenGL Application Binary Interface for Linux

The OpenGL Application Binary Interface for Linux (ABI/) is also available. **NOTE:** this document is extremely old and of no relevance to modern Linux systems, where the ABI is de-facto defined by the Mesa libraries (<https://docs.mesa3d.org/precompiled.html>) as shipped by distribution vendors.

ARB and KHR Extensions by number

1. GL_ARB_multitexture ([extensions/ARB/ARB_multitexture.txt](#))
2. GLX_ARB_get_proc_address ([extensions/ARB/GLX_ARB_get_proc_address.txt](#))
3. GL_ARB_transpose_matrix ([extensions/ARB/ARB_transpose_matrix.txt](#))
4. WGL_ARB_buffer_region ([extensions/ARB/WGL_ARB_buffer_region.txt](#))
5. GL_ARB_multisample ([extensions/ARB/ARB_multisample.txt](#))
 GLX_ARB_multisample ([extensions/ARB/ARB_multisample.txt](#))
 WGL_ARB_multisample ([extensions/ARB/ARB_multisample.txt](#))
6. GL_ARB_texture_env_add ([extensions/ARB/ARB_texture_env_add.txt](#))
7. GL_ARB_texture_cube_map ([extensions/ARB/ARB_texture_cube_map.txt](#))
8. WGL_ARB_extensions_string ([extensions/ARB/WGL_ARB_extensions_string.txt](#))
9. WGL_ARB_pixel_format ([extensions/ARB/WGL_ARB_pixel_format.txt](#))
10. WGL_ARB_make_current_read ([extensions/ARB/WGL_ARB_make_current_read.txt](#))
11. WGL_ARB_pbuffer ([extensions/ARB/WGL_ARB_pbuffer.txt](#))

12. GL_ARB_texture_compression (extensions/ARB/ARB_texture_compression.txt)
13. GL_ARB_texture_border_clamp (extensions/ARB/ARB_texture_border_clamp.txt)
14. GL_ARB_point_parameters (extensions/ARB/ARB_point_parameters.txt)
15. GL_ARB_vertex_blend (extensions/ARB/ARB_vertex_blend.txt)
16. GL_ARB_matrix_palette (extensions/ARB/ARB_matrix_palette.txt)
17. GL_ARB_texture_env_combine (extensions/ARB/ARB_texture_env_combine.txt)
18. GL_ARB_texture_env_crossbar (extensions/ARB/ARB_texture_env_crossbar.txt)
19. GL_ARB_texture_env_dot3 (extensions/ARB/ARB_texture_env_dot3.txt)
20. WGL_ARB_render_texture (extensions/ARB/WGL_ARB_render_texture.txt)
21. GL_ARB_texture_mirrored_repeat (extensions/ARB/ARB_texture_mirrored_repeat.txt)
22. GL_ARB_depth_texture (extensions/ARB/ARB_depth_texture.txt)
23. GL_ARB_shadow (extensions/ARB/ARB_shadow.txt)
24. GL_ARB_shadow_ambient (extensions/ARB/ARB_shadow_ambient.txt)
25. GL_ARB_window_pos (extensions/ARB/ARB_window_pos.txt)
26. GL_ARB_vertex_program (extensions/ARB/ARB_vertex_program.txt)
27. GL_ARB_fragment_program (extensions/ARB/ARB_fragment_program.txt)
28. GL_ARB_vertex_buffer_object (extensions/ARB/ARB_vertex_buffer_object.txt)
GLX_ARB_vertex_buffer_object (extensions/ARB/ARB_vertex_buffer_object.txt)
29. GL_ARB_occlusion_query (extensions/ARB/ARB_occlusion_query.txt)
30. GL_ARB_shader_objects (extensions/ARB/ARB_shader_objects.txt)
31. GL_ARB_vertex_shader (extensions/ARB/ARB_vertex_shader.txt)
32. GL_ARB_fragment_shader (extensions/ARB/ARB_fragment_shader.txt)
33. GL_ARB_shading_language_100 (extensions/ARB/ARB_shading_language_100.txt)
34. GL_ARB_texture_non_power_of_two (extensions/ARB/ARB_texture_non_power_of_two.txt)
35. GL_ARB_point_sprite (extensions/ARB/ARB_point_sprite.txt)
36. GL_ARB_fragment_program_shadow (extensions/ARB/ARB_fragment_program_shadow.txt)
37. GL_ARB_draw_buffers (extensions/ARB/ARB_draw_buffers.txt)
38. GL_ARB_texture_rectangle (extensions/ARB/ARB_texture_rectangle.txt)
39. GL_ARB_color_buffer_float (extensions/ARB/ARB_color_buffer_float.txt)
GLX_ARB_fbconfig_float (extensions/ARB/ARB_color_buffer_float.txt)
WGL_ARB_pixel_format_float (extensions/ARB/ARB_color_buffer_float.txt)
40. GL_ARB_half_float_pixel (extensions/ARB/ARB_half_float_pixel.txt)
41. GL_ARB_texture_float (extensions/ARB/ARB_texture_float.txt)
42. GL_ARB_pixel_buffer_object (extensions/ARB/ARB_pixel_buffer_object.txt)
43. GL_ARB_depth_buffer_float (extensions/ARB/ARB_depth_buffer_float.txt)
44. GL_ARB_draw_instanced (extensions/ARB/ARB_draw_instanced.txt)
45. GL_ARB_framebuffer_object (extensions/ARB/ARB_framebuffer_object.txt)
46. GL_ARB_framebuffer_sRGB (extensions/ARB/ARB_framebuffer_sRGB.txt)
GLX_ARB_framebuffer_sRGB (extensions/ARB/ARB_framebuffer_sRGB.txt)
WGL_ARB_framebuffer_sRGB (extensions/ARB/ARB_framebuffer_sRGB.txt)
47. GL_ARB_geometry_shader4 (extensions/ARB/ARB_geometry_shader4.txt)

48. GL_ARB_half_float_vertex (extensions/ARB/ARB_half_float_vertex.txt)
49. GL_ARB_instanced_arrays (extensions/ARB/ARB_instanced_arrays.txt)
50. GL_ARB_map_buffer_range (extensions/ARB/ARB_map_buffer_range.txt)
51. GL_ARB_texture_buffer_object (extensions/ARB/ARB_texture_buffer_object.txt)
52. GL_ARB_texture_compression_rgtc (extensions/ARB/ARB_texture_compression_rgtc.txt)
53. GL_ARB_texture_rg (extensions/ARB/ARB_texture_rg.txt)
54. GL_ARB_vertex_array_object (extensions/ARB/ARB_vertex_array_object.txt)
55. WGL_ARB_create_context (extensions/ARB/WGL_ARB_create_context.txt)
56. GLX_ARB_create_context (extensions/ARB/GLX_ARB_create_context.txt)
57. GL_ARB_uniform_buffer_object (extensions/ARB/ARB_uniform_buffer_object.txt)
58. GL_ARB_compatibility (extensions/ARB/ARB_compatibility.txt)
59. GL_ARB_copy_buffer (extensions/ARB/ARB_copy_buffer.txt)
60. GL_ARB_shader_texture_lod (extensions/ARB/ARB_shader_texture_lod.txt)
61. GL_ARB_depth_clamp (extensions/ARB/ARB_depth_clamp.txt)
62. GL_ARB_draw_elements_base_vertex (extensions/ARB/ARB_draw_elements_base_vertex.txt)
63. GL_ARB_fragment_coord_conventions (extensions/ARB/ARB_fragment_coord_conventions.txt)
64. GL_ARB_provoking_vertex (extensions/ARB/ARB_provoking_vertex.txt)
65. GL_ARB_seamless_cube_map (extensions/ARB/ARB_seamless_cube_map.txt)
66. GL_ARB_sync (extensions/ARB/ARB_sync.txt)
67. GL_ARB_texture_multisample (extensions/ARB/ARB_texture_multisample.txt)
68. GL_ARB_vertex_array_bgra (extensions/ARB/ARB_vertex_array_bgra.txt)
69. GL_ARB_draw_buffers_blend (extensions/ARB/ARB_draw_buffers_blend.txt)
70. GL_ARB_sample_shading (extensions/ARB/ARB_sample_shading.txt)
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73. GL_ARB_texture_query_lod (extensions/ARB/ARB_texture_query_lod.txt)
74. WGL_ARB_create_context_profile (extensions/ARB/WGL_ARB_create_context.txt)
75. GLX_ARB_create_context_profile (extensions/ARB/GLX_ARB_create_context.txt)
76. GL_ARB_shading_language_include (extensions/ARB/ARB_shading_language_include.txt)
77. GL_ARB_texture_compression_bptc (extensions/ARB/ARB_texture_compression_bptc.txt)
78. GL_ARB_blend_func_extended (extensions/ARB/ARB_blend_func_extended.txt)
79. GL_ARB_explicit_attrib_location (extensions/ARB/ARB_explicit_attrib_location.txt)
80. GL_ARB_occlusion_query2 (extensions/ARB/ARB_occlusion_query2.txt)
81. GL_ARB_sampler_objects (extensions/ARB/ARB_sampler_objects.txt)
82. GL_ARB_shader_bit_encoding (extensions/ARB/ARB_shader_bit_encoding.txt)
83. GL_ARB_texture_rgb10_a2ui (extensions/ARB/ARB_texture_rgb10_a2ui.txt)
84. GL_ARB_texture_swizzle (extensions/ARB/ARB_texture_swizzle.txt)
85. GL_ARB_timer_query (extensions/ARB/ARB_timer_query.txt)
86. GL_ARB_vertex_type_2_10_10_10_rev (extensions/ARB/ARB_vertex_type_2_10_10_10_rev.txt)
87. GL_ARB_draw_indirect (extensions/ARB/ARB_draw_indirect.txt)
88. GL_ARB_gpu_shader5 (extensions/ARB/ARB_gpu_shader5.txt)

89. GL_ARB_gpu_shader_fp64 (extensions/ARB/ARB_gpu_shader_fp64.txt)
90. GL_ARB_shader_subroutine (extensions/ARB/ARB_shader_subroutine.txt)
91. GL_ARB_tessellation_shader (extensions/ARB/ARB_tessellation_shader.txt)
92. GL_ARB_texture_buffer_object_rgb32 (extensions/ARB/ARB_texture_buffer_object_rgb32.txt)
93. GL_ARB_transform_feedback2 (extensions/ARB/ARB_transform_feedback2.txt)
94. GL_ARB_transform_feedback3 (extensions/ARB/ARB_transform_feedback3.txt)
95. GL_ARB_ES2_compatibility (extensions/ARB/ARB_ES2_compatibility.txt)
96. GL_ARB_get_program_binary (extensions/ARB/ARB_get_program_binary.txt)
97. GL_ARB_separate_shader_objects (extensions/ARB/ARB_separate_shader_objects.txt)
98. GL_ARB_shader_precision (extensions/ARB/ARB_shader_precision.txt)
99. GL_ARB_vertex_attrib_64bit (extensions/ARB/ARB_vertex_attrib_64bit.txt)
100. GL_ARB_viewport_array (extensions/ARB/ARB_viewport_array.txt)
101. GLX_ARB_create_context_robustness (extensions/ARB/GLX_ARB_create_context_robustness.txt)
102. WGL_ARB_create_context_robustness (extensions/ARB/WGL_ARB_create_context_robustness.txt)
103. GL_ARB_cl_event (extensions/ARB/ARB_cl_event.txt)
104. GL_ARB_debug_output (extensions/ARB/ARB_debug_output.txt)
105. GL_ARB_robustness (extensions/ARB/ARB_robustness.txt)
106. GL_ARB_shader_stencil_export (extensions/ARB/ARB_shader_stencil_export.txt)
107. GL_ARB_base_instance (extensions/ARB/ARB_base_instance.txt)
108. GL_ARB_shading_language_420pack (extensions/ARB/ARB_shading_language_420pack.txt)
109. GL_ARB_transform_feedback_instanced (extensions/ARB/ARB_transform_feedback_instanced.txt)
110. GL_ARB_compressed_texture_pixel_storage
(extensions/ARB/ARB_compressed_texture_pixel_storage.txt)
111. GL_ARB_conservative_depth (extensions/ARB/ARB_conservative_depth.txt)
112. GL_ARB_internalformat_query (extensions/ARB/ARB_internalformat_query.txt)
113. GL_ARB_map_buffer_alignment (extensions/ARB/ARB_map_buffer_alignment.txt)
114. GL_ARB_shader_atomic_counters (extensions/ARB/ARB_shader_atomic_counters.txt)
115. GL_ARB_shader_image_load_store (extensions/ARB/ARB_shader_image_load_store.txt)
116. GL_ARB_shading_language_packing (extensions/ARB/ARB_shading_language_packing.txt)
117. GL_ARB_texture_storage (extensions/ARB/ARB_texture_storage.txt)
118. GL_KHR_texture_compression_astc_hdr (extensions/KHR/KHR_texture_compression_astc_hdr.txt)
GL_KHR_texture_compression_astc_ldr (extensions/KHR/KHR_texture_compression_astc_hdr.txt)
119. GL_KHR_debug (extensions/KHR/KHR_debug.txt)
120. GL_ARB_arrays_of_arrays (extensions/ARB/ARB_arrays_of_arrays.txt)
121. GL_ARB_clear_buffer_object (extensions/ARB/ARB_clear_buffer_object.txt)
122. GL_ARB_compute_shader (extensions/ARB/ARB_compute_shader.txt)
123. GL_ARB_copy_image (extensions/ARB/ARB_copy_image.txt)
124. GL_ARB_texture_view (extensions/ARB/ARB_texture_view.txt)
125. GL_ARB_vertex_attrib_binding (extensions/ARB/ARB_vertex_attrib_binding.txt)
126. GL_ARB_robustness_isolation (extensions/ARB/ARB_robustness_application_isolation.txt)
GL_ARB_robustness_share_group_isolation

(extensions/ARB/ARB_robustness_application_isolation.txt)

127. GL_ARB_ES3_compatibility (extensions/ARB/ARB_ES3_compatibility.txt)

128. GL_ARB_explicit_uniform_location (extensions/ARB/ARB_explicit_uniform_location.txt)

129. GL_ARB_fragment_layer_viewport (extensions/ARB/ARB_fragment_layer_viewport.txt)

130. GL_ARB_framebuffer_no_attachments (extensions/ARB/ARB_framebuffer_no_attachments.txt)

131. GL_ARB_internalformat_query2 (extensions/ARB/ARB_internalformat_query2.txt)

132. GL_ARB_invalidate_subdata (extensions/ARB/ARB_invalidate_subdata.txt)

133. GL_ARB_multi_draw_indirect (extensions/ARB/ARB_multi_draw_indirect.txt)

134. GL_ARB_program_interface_query (extensions/ARB/ARB_program_interface_query.txt)

135. GL_ARB_robust_buffer_access_behavior (extensions/ARB/ARB_robust_buffer_access_behavior.txt)

136. GL_ARB_shader_image_size (extensions/ARB/ARB_shader_image_size.txt)

137. GL_ARB_shader_storage_buffer_object (extensions/ARB/ARB_shader_storage_buffer_object.txt)

138. GL_ARB_stencil_texturing (extensions/ARB/ARB_stencil_texturing.txt)

139. GL_ARB_texture_buffer_range (extensions/ARB/ARB_texture_buffer_range.txt)

140. GL_ARB_texture_query_levels (extensions/ARB/ARB_texture_query_levels.txt)

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144. GL_ARB_buffer_storage (extensions/ARB/ARB_buffer_storage.txt)

145. GL_ARB_clear_texture (extensions/ARB/ARB_clear_texture.txt)

146. GL_ARB_enhanced_layouts (extensions/ARB/ARB_enhanced_layouts.txt)

147. GL_ARB_multi_bind (extensions/ARB/ARB_multi_bind.txt)

148. GL_ARB_query_buffer_object (extensions/ARB/ARB_query_buffer_object.txt)

149. GL_ARB_texture_mirror_clamp_to_edge (extensions/ARB/ARB_texture_mirror_clamp_to_edge.txt)

150. GL_ARB_texture_stencil8 (extensions/ARB/ARB_texture_stencil8.txt)

151. GL_ARB_vertex_type_10f_11f_11f_rev (extensions/ARB/ARB_vertex_type_10f_11f_11f_rev.txt)

152. GL_ARB_bindless_texture (extensions/ARB/ARB_bindless_texture.txt)

153. GL_ARB_compute_variable_group_size (extensions/ARB/ARB_compute_variable_group_size.txt)

154. GL_ARB_indirect_parameters (extensions/ARB/ARB_indirect_parameters.txt)

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156. GL_ARB_shader_draw_parameters (extensions/ARB/ARB_shader_draw_parameters.txt)

157. GL_ARB_shader_group_vote (extensions/ARB/ARB_shader_group_vote.txt)

158. GL_ARB_sparse_texture (extensions/ARB/ARB_sparse_texture.txt)

159. GL_ARB_ES3_1_compatibility (extensions/ARB/ARB_ES3_1_compatibility.txt)

- 160. GL_ARB_clip_control (extensions/ARB/ARB_clip_control.txt)
- 161. GL_ARB_conditional_render_inverted (extensions/ARB/ARB_conditional_render_inverted.txt)
- 162. GL_ARB_cull_distance (extensions/ARB/ARB_cull_distance.txt)
- 163. GL_ARB_derivative_control (extensions/ARB/ARB_derivative_control.txt)
- 164. GL_ARB_direct_state_access (extensions/ARB/ARB_direct_state_access.txt)
- 165. GL_ARB_get_texture_sub_image (extensions/ARB/ARB_get_texture_sub_image.txt)
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- 167. GL_ARB_texture_barrier (extensions/ARB/ARB_texture_barrier.txt)
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- 175. GL_KHR_no_error (extensions/KHR/KHR_no_error.txt)
- 176. GL_ARB_ES3_2_compatibility (extensions/ARB/ARB_ES3_2_compatibility.txt)
- 177. GL_ARB_fragment_shader_interlock (extensions/ARB/ARB_fragment_shader_interlock.txt)
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- 179. GL_ARB_parallel_shader_compile (extensions/ARB/ARB_parallel_shader_compile.txt)
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- 192. GL_KHR_parallel_shader_compile (extensions/KHR/KHR_parallel_shader_compile.txt)
- 193. GL_ARB_polygon_offset_clamp (extensions/ARB/ARB_polygon_offset_clamp.txt)
- 194. GL_ARB_spirv_extensions (extensions/ARB/ARB_spirv_extensions.txt)
- 195. GL_ARB_texture_filter_anisotropic (extensions/ARB/ARB_texture_filter_anisotropic.txt)
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- 2. GL_EXT_blend_color (extensions/EXT/EXT_blend_color.txt)
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- 4. GL_EXT_texture (extensions/EXT/EXT_texture.txt)
- 6. GL_EXT_texture3D (extensions/EXT/EXT_texture3D.txt)
- 7. GL_SGIS_texture_filter4 (extensions/SGIS/SGIS_texture_filter4.txt)
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- 10. GL_EXT_copy_texture (extensions/EXT/EXT_copy_texture.txt)
- 11. GL_EXT_histogram (extensions/EXT/EXT_histogram.txt)
- 12. GL_EXT_convolution (extensions/EXT/EXT_convolution.txt)
- 13. GL_SGI_color_matrix (extensions/SGI/SGI_color_matrix.txt)
- 14. GL_SGI_color_table (extensions/SGI/SGI_color_table.txt)
- 15. GL_SGIS_pixel_texture (extensions/SGIS/SGIS_pixel_texture.txt)
- 16. GL_SGIS_texture4D (extensions/SGIS/SGIS_texture4D.txt)
- 17. GL_SGI_texture_color_table (extensions/SGI/SGI_texture_color_table.txt)
- 18. GL_EXT_cmyka (extensions/EXT/EXT_cmyka.txt)
- 20. GL_EXT_texture_object (extensions/EXT/EXT_texture_object.txt)
- 21. GL_SGIS_detail_texture (extensions/SGIS/SGIS_detail_texture.txt)
- 22. GL_SGIS_sharpen_texture (extensions/SGIS/SGIS_sharpen_texture.txt)
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- 27. GL_EXT_rescale_normal (extensions/EXT/EXT_rescale_normal.txt)
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- 34. GL_SGIX_shadow (extensions/SGIX/SGIX_shadow.txt)
- 35. GL_SGIS_texture_edge_clamp (extensions/SGIS/SGIS_texture_edge_clamp.txt)
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79. GL_EXT_clip_volume_hint (extensions/EXT/EXT_clip_volume_hint.txt)

80. GL_SGIX_list_priority (extensions/SGIX/SGIX_list_priority.txt)

81. GL_SGIX_ir_instrument1 (extensions/SGIX/SGIX_ir_instrument1.txt)

83. GLX_SGIX_video_resize (extensions/SGIX/GLX_SGIX_video_resize.txt)

84. GL_SGIX_texture_lod_bias (extensions/SGIX/SGIX_texture_lod_bias.txt)

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139. GL_EXT_pixel_transform_color_table (extensions/EXT/EXT_pixel_transform_color_table.txt)

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