Conformance Summary 7

Minimum Conformance

Vendors who conform to the specifications outlined by the Common Graphics Environment conform to the following *minimum* requirements. These requirements have been provided here as a reference, so you can code to the maximum portability on CGE platforms.

Enumerated Types

Individual vendors may choose to support more enumerated types than the minimum required for CGE PEX 5.1 compliance. You should invoke the PEXGetEnumTypeInfo function to obtain the actual enumerated types supported. Use the PEXETEnumType to obtain the complete list of CGE PEX 5.1 enumerated types supported by your vendor platform:

Table 7-1 CGE PEX 5.1 Enumerated Types Supported

PEX 5.1 Class	CGE PEX 5.1 Types Supported
PEXETATextStyle	PEXATextNotConnected, PEXATextConnected
PEXETColorApproxModel	PEXColorApproxRGB
PEXETColorApproxType	PEXColorSpace
PEXETColorType	PEXColorTypeIndexed, PEXColorTypeRGB
PEXETCurveApproxMethod	PEXApproxImpDep
PEXETDisplayUpdateMode	Not required.

Table 7-1 CGE PEX 5.1 Enumerated Types Supported *(Continued)*

PEX 5.1 Class	CGE PEX 5.1 Types Supported
PEXETEscape	Not required. See Table 7-2 on page 77 for details on extensions.
PEXETFloatFormat	PEXIEEE_754_32
PEXETGDP2D	Not required.
PEXETGDP	Not required.
PEXETGSE	Not required.
PEXETHatchStyle	Not required. See Table 7-4 on page 78 for details on extensions.
PEXETHLHSRMode	PEXHLHSROff, PEXHLHSRZBuffer, PEXHLHSRZBufferID
PEXETInteriorStyle	PEXInteriorStyleHollow, PEXInteriorStyleSolid, PEXInteriorStyleHatch, PEXInteriorStyleEmpty. See Table 7-5 on page 78 for details on extensions.
PEXETLightType	PEXLightAmbient, PEXLightWCVector, PEXLightWCPoint, PEXLightWCSpot.
PEXETLineType	PEXLineTypeSolid, PEXLineTypeDashed, PEXLineTypeDotted, PEXLineTypeDashDot. See Table 7-3 on page 78 for details on extensions.
PEXETMarkerType	PEXMarkerDot, PEXMarkerCross, PEXMarkerAsterisk, PEXMarkerCircle, PEXMarkerX
PEXETModelClipOperator	PEXModelClipReplace, PEXModelClipIntersection
PEXETParaSurfCharacteristics	PEXPSCNone, PEXPSCImpDep
PEXETPickAllMethod	PEXPickAllAll
PEXETPickDeviceType	PEXPickDeviceDCHitBox
PEXETPickOneMethod	PEXPickLast
PEXETPolylineInterpMethod	PEXPolylineInterpNone, PEXPolylineInterpColor
PEXETPromptEchoType	Not required.

Table 7-1 CGE PEX 5.1 Enumerated Types Supported *(Continued)*

PEX 5.1 Class	CGE PEX 5.1 Types Supported
PEXETReflectionModel	PEXReflectionNone, PEXReflectionAmbient, PEXReflectionDiffuse, PEXReflectionSpecular
PEXETRenderingColorModel	PEXRenderingColorModelImpDep
PEXETSurfaceApproxMethod	PEXApproxImpDep
PEXETSurfaceEdgeType	PEXSurfaceEdgeSolid
PEXETSurfaceInterpMethod	PEXSurfaceInterpNone, PEXSurfaceInterpColor
PEXETTrimCurveApproxMethod	PEXApproxImpDep

Escapes

Some escapes are introduced with CGE PEX 5.1. The following escapes are required to be supported by all CGE PEX 5.1 compliant servers. The PEXETEscape enumerated type lists the escapes supported by your server:

Table 7-2 CGE PEX 5.1 Escape Extensions

CGE PEX 5.1 Escape Extensions
PEXExtEscapeChangePipelineContext, PEXExtETMEscapeChangePipelineContext
PEXExtEscapeChangeRenderer, PEXExtETMEscapeChangeRenderer
PEXExtEscapeGetRendererAttributes, PEXExtETMEscapeGetRendererAttributes
PEXExtEscapeSetTableEntries, PEXExtETMGetTableEntries
PEXExtEscapeGetTableEntry, PEXExtETMGetTableEntry
PEXExtEscapeCreateTM, PEXExtETMCreateTM
PEXExtEscapeCreateTMFromWindow, PEXExtETMCreateTMFromWindow
PEXExtEscapeCreateTMDescription, PEXExtETMCreateDescription
PEXExtEscapeFreeTM, PEXExtETMFreeTM
PEXExtEscapeFreeTMDescription, PEXExtETMEscapeFreeTMDescription
PEXExtEscapeFetchElements, PEXExtETMEscapeFetchElements
PEXExtEscapeQueryColorApprox, PEXExtETMEscapeQueryColorApprox

Line Types

Some extended line types are introduced with CGE PEX 5.1. The following line types are required to be supported by all CGE PEX 5.1 compliant servers, in addition to the line types defined by PEX 5.1. The PEXETLineType enumerated type lists the line types supported by your server:

Table 7-3 CGE PEX 5.1 Line Types

CGE PEX 5.1 Line Types
PEXExtLineTypeCenter, PEXExtETMLineTypeCenter
PEXExtLineTypePhantom, PEXExtETMLineTypePhantom

Hatch Styles

Some hatch styles are introduced with CGE PEX 5.1. The following hatch styles are required to be supported by all CGE PEX 5.1 compliant servers. The PEXETHatchStyle enumerated type lists the hatch styles supported by your server:

Table 7-4 CGE PEX 5.1 Hatch Styles

CGE PEX 5.1 Hatch Styles
PEXExtHatchStyle45Degrees, PEXExtETMHatchStyle45Degrees
PEXExtHatchStyle135Degrees, PEXExtETMHatchStyle135Degrees

Interior Styles

An extended interior style is introduced with CGE PEX 5.1. The following interior style is required to be supported by all CGE PEX 5.1 compliant servers. The PEXETInteriorStyle enumerated type lists the interior styles supported by your server:

Table 7-5 CGE PEX 5.1 Interior Styles

CGE PEX 5.1 Interior Styles
PEXExtInteriorStyleTexture, PEXExtETMInteriorStyleTexture

Extended Enumerated Types

In addition, the following extended enumerated types are required to be supported by all CGE PEX 5.1 servers. PEXExtETEnumType extension returns the list of enumerated types supported by your server. The list includes PEXExtETEnumType itself. You can use this extension to verify that CGE PEX is supported by your server. The extended enumerated types include:

Table 7-6 CGE PEX 5.1 Enumerated Type Extensions

CGE PEX 5.1 Enum Type Extension	Definition
PEXExtETEnumType	Returns the list of extended enumerated types supported. This table contains the possible values.
PEXExtETOC	Returns the list of extended output commands supported. See Table 7-7 on page 82 for details.
PEXExtETPC	Returns the list of extended pipeline context attributes supported. See Table 7-8 on page 83 for details.
PEXExtETRA	Returns the list of extended renderer attributes supported. See Table 7-8 for details.
PEXExtETLUT	Returns the list of extended lookup tables supported. See Table 7-10 on page 84 for details.
PEXExtETID	Returns the list of extended implementation-dependent constants supported. See Table 7-13 on page 87 for details.
PEXExtETTMRenderingOrder	Specifies where in the rendering pipeline a texture map is to be applied. See Table 7-14 on page 87 for details.
PEXExtETTMCoordSource	Specifies the coordinate source within a primitive's vertex data of a texture coordinate. See Table 7-15 on page 88 for details.
PEXExtETTMCompositeMethod	Specifies how the texture map is blended with the primitive's existing data. See Table 7-16 on page 88 for details.
PEXExtETTMTexelSampleMethod	Specifies how texels are sampled from the texture map and mapped to primitive pixels when the area covered by a texel and pixel differ. See Table 7-17 on page 89 for details.

Table 7-6 CGE PEX 5.1 Enumerated Type Extensions *(Continued)*

CGE PEX 5.1 Enum Type Extension	Definition
PEXExtETTMBoundaryCondition	Specifies the texturing to be applied to the primitive when the texture coordinates select a point beyond a boundary of the texture map. See Table 7-18 on page 89 for details.
PEXExtETTMClampColorSource	Specifies what color is to be applied if the texture mapping boundary condition ClampColor is used. See Table 7-19 on page 90 for details.
PEXExtETTMDomain	Specifies the texture dimension and what aspect of a primitive is to be modified by texture mapping. See Table 7-20 on page 90 for details.
PEXExtETTexelType	Defines the format of the texture map texel values. See Table 7-21 on page 91 for details.
PEXExtETTMResourceHint	Defines what type of resource optimization hints are to be made. See Table 7-22 on page 92 for details.
PEXExtETTMType	Specifies the type of texture map. See Table 7-23 on page 92 for details.
PEXExtETTMParameterizationMethod	Defines how texture map coordinates are derived. See Table 7-24 on page 93 for details.
PEXExtETTMPerspectiveCorrection	Specifies the method used to compute texture coordinate values in surface interiors when rendering textured surface primitives. See Table 7-25 on page 93 for details.
PEXExtETTMSampleFrequency	Specifies the frequency to sample texels in a texture map when texturing surface primitives. See Table 7-26 on page 94 for details.
PEXExtETPrimitiveAAMode	Specifies what modifications should be made to the image to correct aliasing effects. See Table 7-27 on page 94 for details.

Table 7-6 CGE PEX 5.1 Enumerated Type Extensions *(Continued)*

CGE PEX 5.1 Enum Type Extension	Definition
PEXExtETPrimitiveAABlendOp	Specifies how blending is accomplished with primitive anti-aliasing. See Table 7-28 on page 95 for details.
PEXExtETLineCapStyle	Specifies how the ends of a wide line are rendered. See Table 7-29 on page 95 for details.
PEXExtETLineJoinStyle	Specifies how the intersection between adjacent segments of a wide line are rendered. See Table 7-30 on page 96 for details.

Extended Output Commands

Individual vendors may choose to support more output commands than the minimum required for CGE PEX 5.1 compliance. From the list of OCs defined by the non-extended PEX 5.1, CGE PEX 5.1 requires that all OCs be supported though some CGE vendors may support OCs with the following exceptions:

- *Cell Arrays* may be rendered as simple polyline boundaries, using the current polyline attributes. These OCs include: PEXCellArray, PEXCellArray2D, and PEXExtendedCellArray.
- *Pattern functions* must be supported but are not required to have any visual effect. These OCs include: PEXSetPatternAttributes, PEXSetPatternAttributes2D and PEXSetPatternSize.
- *Text precision* is fully supported for stroked fonts; however:
- PEXStringPrecision: height, width and expansion are evaluated as closely as possible, but in a workstation-dependent way. Up and base vectors, path, alignment, and spacing may not be applied. Clipping is also workstation-dependent.
- PEXCharPrecision: spacing is evaluated exactly. Height, width, expansion, and up and base vectors are evaluated as closely as possible, but in a workstation-dependent way. Clipping is performed at least on a character-by-character basis.
- PEXStrokePrecision: all attributes and clipping are applied exactly.

In addition, the following extended OCs are required to be supported by all CGE PEX 5.1 servers:

Table 7-7 CGE PEX 5.1 OC Extensions

CGE PEX 5.1 OC Extension	CGE PEX 5.1 Extensions Supported
PEXExtTMPerspectiveCorrection	Required.
PEXExtTMSampleFrequency	Required.
PEXExtSetTMResourceHints	Required.
PEXExtOCActiveTextures	Required.
PEXExtOCBFActiveTextures	Required.
PEXExtOCFillAreaSetWithData	Required.
PEXExtOCSetOfFillAreaSets	Required.
PEXExtOCTriangleStrip	Required.
PEXExtOCQuadrilateralMesh	Required.
PEXExtOCPrimitiveAA	Required.
PEXExtOCLineCapStyle	Required
PEXExtOCLineJoinStyle	Required.
PEXExtOCEllipse	Required.
PEXExtOCEllipse2D	Required.
PEXExtOCCircle2D	Required.
PEXExtOCEllipticalArc	Required.
PEXExtOCEllipticalArc2D	Required.
PEXExtOCCircularArc2D	Required.

Pipeline Context Attributes

Individual vendors may choose to support more pipeline context attributes than the minimum required for CGE PEX 5.1 compliance. From the list of pipeline context attributes defined by the non-extended PEX 5.1, CGE PEX 5.1 requires that all attributes be supported. In addition, the following extended pipeline context attributes apply to extended pipeline contexts and are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETPC enumerated type lists the extended pipeline context attributes supported by the server:

Table 7-8 CGE PEX 5.1 Pipeline Context Extensions

CGE PEX 5.1 Pipeline Context Extension	CGE PEX 5.1 Extensions Supported
PEXExtPCTMPerspectiveCorrection	Required.
PEXExtPCTMResourceHints	Required.
PEXExtPCTMSampleFrequency	Required.
PEXExtPCActiveTextures	Required.
PEXExtPCBFActiveTextures	Required.
PEXExtPCPrimitiveAA	Required.
PEXExtPCLineCapStyle	Required.
PEXExtPCLineJoinStyle	Required.

Renderer Attributes

Individual vendors may choose to support more renderer attributes than the minimum required for CGE PEX 5.1 compliance. From the list of renderer attributes defined by the non-extended PEX 5.1, CGE PEX 5.1 requires that all attributes be supported. The non-extended renderer attributes and requests only apply to PEX 5.1, the following extended renderer attributes apply to extended rendering and are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETRA enumerated type lists the extended renderer attributes supported by the server:

Table 7-9 CGE PEX 5.1 Renderer Extensions

CGE PEX 5.1 Renderer Extension	CGE PEX 5.1 Extensions Supported
PEXExtRATMBindingTable	Required.
PEXExtRATMCoordSourceTable	Required.
PEXExtRATMCompositionTable	Required.
PEXExtRAMTMSamplingTable	Required.

Lookup Tables

Individual vendors may choose to support more lookup tables than the minimum required for CGE PEX 5.1 compliance. From the list of lookup tables defined by the non-extended PEX 5.1, CGE PEX 5.1 requires the following:

- Sparse indexing is supported which enables you to define noncontiguous indices in the lookup table.
- The default table values are required (see Table 7-8)
- When either set or realized values are inquired, implementations return a value. However, implementations may or may not distinguish between set and realized values.
- No table is required to have predefined entries

Table 7-10 CGE PEX 5.1 Lookup Table Requirements

CGE PEX 5.1 Lookup Table Requirements	Default Index	Index Value Range	Minimum Entries Required
PEXLUTColor	1	0 .. 65534	256
PEXLUTColorApprox	0	0 .. 65534	1
PEXLUTDepthCue	0	0 .. 65534	2 (ON and OFF are required)
PEXLUTEdgeBundle	1	1 .. 65535	20
PEXLUTInteriorBundle	1	1 .. 65535	20
PEXLUTLight	1	1 .. 65535	8
PEXLUTLineBundle	1	1 .. 65535	20
PEXLUTMarkerBundle	1	1 .. 65535	20
PEXLUTPattern	1	1 .. 65535	0 (pattern is not required)
PEXLUTTextBundle	1	1 .. 65535	20
PEXLUTTextFont	1	1 .. 65535	1
PEXLUTView	0	0 .. 65534	64

In addition, the following extended lookup tables are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETLUT enumerated type lists the extended lookup tables supported by the server:

Table 7-11 CGE PEX 5.1 Lookup Table Extensions

CGE PEX 5.1 Lookup Table Extension	Default Index	Index Value Range	Minimum Entries Required
PEXExtLUTTMBinding	0	0 .. 65534	20
PEXExtLUTTMComposition	0	0 .. 65534	20
PEXExtLUTTMCoordSource	0	0 .. 65534	20
PEXExtLUTTMSampling	0	0 .. 65534	20

Implementation-Dependent Constants

Individual vendors may choose to support more implementation-dependent constants than the minimum required for CGE PEX 5.1 compliance. You should invoke the PEXGetImpDepConstants function to obtain the actual implementation-dependent constants supported. Use PEXGetImpDepConstants to obtain the complete list of PEX 5.1 implementation-dependent constants supported by your vendor platform:

Table 7-12 PEX 5.1 Constants Supported by CGE PEX 5.1

PEX 5.1 Constants	PEX 5.1 Constants Supported by CGE PEX 5.1
PEXIDBestColorApprox	implementation-dependent
PEXIDDitheringSupported	implementation-dependent
PEXIDDoubleBufferingSupported	implementation-dependent
PEXIDMaxEdgeWidth	implementation-dependent
PEXIDMaxHitsEventSupported	True
PEXIDMaxLineWidth	At least 4 pixels
PEXIDMaxMarkerSize	At least the size of the largest screen dimension
PEXIDMaxModelClipPlanes	At least 6
PEXIDMaxNameSetNames	At least 1024
PEXIDMaxNonAmbientLights	At least 7

Table 7-12 PEX 5.1 Constants Supported by CGE PEX 5.1 *(Continued)*

PEX 5.1 Constants	PEX 5.1 Constants Supported by CGE PEX 5.1
PEXIDMaxNURBOrder	At least 6
PEXIDMaxTrimCurveOrder	At least 6
PEXIDMinEdgeWidth	At least 1 pixel
PEXIDMinLineWidth	At least 1 pixel
PEXIDMinMarkerSize	implementation-dependent
PEXIDNominalEdgeWidth	1 pixel
PEXIDNominalLineWidth	1 pixel
PEXIDNominalMarkerSize	implementation-dependent
PEXIDNumSupportedEdgeWidths	At least 1
PEXIDNumSupportedLineWidths	0 (continuous)
PEXIDNumSupportedMarkerSizes	0 (continuous)
PEXIDTransparencySupported	True. The transmission coefficient varies from 0.0 (opaque) to 1.0 (fully transparent). If transparency is supported through the screen door algorithm, then a minimum of 4 screens are supported.
PEXIDChromaticityRedU	implementation-dependent
PEXIDChromaticityRedV	implementation-dependent
PEXIDLuminanceRed	implementation-dependent
PEXIDChromaticityGreenU	implementation-dependent
PEXIDChromaticityGreenV	implementation-dependent
PEXIDLuminanceGreen	implementation-dependent
PEXIDChromaticityBlueU	implementation-dependent
PEXIDChromaticityBlueV	implementation-dependent
PEXIDLuminanceBlue	implementation-dependent
PEXIDChromaticityWhiteU	implementation-dependent
PEXIDChromaticityWhiteV	implementation-dependent
PEXIDLumianceWhite	implementation-dependent

In addition, the following extended implementation-dependent constants are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETID enumeration type lists the extended implementation-dependent constants supported by your server:

Table 7-13 CGE PEX 5.1 Implementation-dependent Constants

CGE PEX 5.1 Imp. Dep. Extension	CGE PEX 5.1 Imp. Dep. Supported
PEXExtIDMaxTextureMaps	implementation-dependent
PEXExtIDMaxFastTMSize	implementation-dependent
PEXExtIDPowerOfTwoTMSizesRequired	implementation-dependent
PEXExtIDSquareTMRequired	implementation-dependent

Texture Mapping Rendering Order

Texture mapping rendering order is introduced with CGE PEX 5.1. The following texture mapping rendering orders are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMRenderingOrder enumerated type lists the texture mapping rendering orders supported by your server:

Table 7-14 CGE PEX 5.1 Texture Mapping Rendering Orders

CGE PEX 5.1 Rendering Order	CGE PEX 5.1 Types Supported
PEXExtTMRenderingOrderPreSpecular	Not required.
PEXExtTMRenderingOrderPostSpecular	Required.

Texture Mapping Coordinate Source

Texture mapping coordinate source is introduced with CGE PEX 5.1. The following texture mapping coordinate sources are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMCoordSource enumerated type lists the texture mapping coordinate sources supported by your server:

Table 7-15 CGE PEX 5.1 Texture Mapping Coordinate Sources

CGE PEX 5.1 Coordinate Source	CGE PEX 5.1 Type Supported
PEXExtTMCoordSourceVertexCoord	Not required.
PEXExtTMCoordSourceVertexNormal	Not required.
PEXExtTMCoordSourceFloatData	Required.

Texture Mapping Composite Method

Texture mapping composite method is introduced with CGE PEX 5.1. The following texture mapping composite methods are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMCompositeMethod enumerated type lists the texture mapping composite methods supported by your server:

Table 7-16 CGE PEX 5.1 Texture Mapping Composite Methods

CGE PEX 5.1 Composite Method	CGE PEX 5.1 Types Supported
PEXExtTMCompositeReplace	Required.
PEXExtTMCompositeModulate	Required.
PEXExtTMCompositeBlendEnvColor	Not required.
PEXExtTMCompositeDecal	Not required.
PEXExtTMCompositeDecalBackground	Not required.
PEXExtTMCompositeReplaceBlendedColors	Not required.

Texture Mapping Texel Sample Method

Texture mapping texel sample method is introduced with CGE PEX 5.1. The following texture mapping sample methods are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMTexelSampleMethod enumerated type lists the texture mapping sample methods supported by your server:

Table 7-17 CGE PEX 5.1 Texture Mapping Texel Sample Methods

CGE PEX 5.1 Texel Sample Method	CGE PEX 5.1 Methods Supported
PEXExtTMTexelSampleSingleBase	Required.
PEXExtTMTexelSampleLinearBase	Not required.
PEXExtTMTexelSampleSingleInMipMap	Not required.
PEXExtTMTexelSampleLinearInMipMap	Not required.
PEXExtTMTexelSampleSingleBetweenMipMaps	Not required.
PEXExtTMTexelSampleLinearBetweenMipMaps	Not required.

Texture Mapping Boundary Condition

Texture mapping boundary condition is introduced with CGE PEX 5.1. The following texture mapping boundary conditions are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMBoundaryCondition enumerated type lists the texture mapping boundary conditions supported by your server:

Table 7-18 CGE PEX 5.1 Texture Mapping Boundary Conditions

CGE PEX 5.1 Boundary Condition	CGE PEX 5.1 Conditions Supported
PEXExtTMBoundaryCondClampColor	Required.
PEXExtTMBoundaryCondClampAbsolute	Required.
PEXExtTMBoundaryCondWrap	Not required.
PEXExtTMBoundaryCondMirror	Not required.

Texture Mapping Clamp Color Source

Texture mapping clamp color source is introduced with CGE PEX 5.1. The following texture mapping clamp color sources are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETTMClampColorSource enumerated type lists the texture mapping clamp color sources supported by your server:

Table 7-19 CGE PEX 5.1 Texture Mapping Clamp Color Sources

CGE PEX 5.1 Clamp Color Source	CGE PEX 5.1 Type Supported
PEXExtTMClampColorSourceBoundary	Required.
PEXExtTMClampColorSourceExplicit	Required.

Texture Mapping Domain

Texture mapping domain is introduced with CGE PEX 5.1. The following texture mapping domains are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMDomain enumerated type lists the texture mapping domains supported by your server:

Table 7-20 CGE PEX 5.1 Texture Mapping Domains

CGE PEX 5.1 Domain	CGE PEX 5.1 Type Supported
PEXExtTMDomainColor1D	Not required.
PEXExtTMDomainColor2D	Required.
PEXExtTMDomainColor3D	Not required.

Texture Mapping Texel Type

Texture mapping texel type is introduced with CGE PEX 5.1. The following texture mapping texel types are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMTexelType enumerated type lists the texture mapping texel types supported by your server:

Table 7-21 CGE PEX 5.1 Texture Mapping Texel Types

CGE PEX 5.1 Texel Type	CGE PEX 5.1 Types Supported
PEXExtTexelLuminanceFloat	Not required.
PEXExtTexelLuminanceInt8	Not required.
PEXExtTexelLuminanceInt16	Not required.
PEXExtTexelLuminanceAlphaFloat	Not required.
PEXExtTexelLuminanceAlphaInt8	Not required.
PEXExtTexelLuminanceAlphaInt16	Not required.
PEXExtTexelRGBFloat	Required.
PEXExtTexelRGBInt8	Required.
PEXExtTexelRGBInt16	Not required.
PEXExtTexelRGBAlphaFloat	Required.
PEXExtTexelRGBAlphaInt8	Required.
PEXExtTexelRGBAlphaInt16	Not required.

Texture Mapping Resource Hints

Texture mapping resource hints is introduced with CGE PEX 5.1. The following texture mapping resource hints are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETTMResourceHints enumerated type lists the texture mapping resource hints supported by your server:

Table 7-22 CGE PEX 5.1 Texture Mapping Resource Hints

CGE PEX 5.1 Resource Hints	CGE PEX 5.1 Types Supported
PEXExtTMResourceHintNone	Required.
PEXExtTMResourceHintSpeed	Required.
PEXExtTMResourceHintSpace	Required.

Texture Mapping Type

Texture mapping type is introduced with CGE PEX 5.1. The following texture mapping types are required to be supported by all CGE PEX 5.1 compliant servers. The PEXExtETTMType enumerated type lists the texture mapping types supported by your server:

Table 7-23 CGE PEX 5.1 Texture Mapping Types

CGE PEX 5.1 Texture Mapping Type	CGE PEX 5.1 Types Supported
PEXExtTMTypeMipMap	Required.

Texture Mapping Parameterization Method

Texture mapping parameterization method is introduced with CGE PEX 5.1. The following texture parameterization methods are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below.The PEXExtETTMParameterizationMethod enumerated type lists the texture mapping parameterization methods supported by your server:

Table 7-24 CGE PEX 5.1 Texture Mapping Parameterization Methods

CGE PEX 5.1 Parameterization Method	CGE PEX 5.1 Methods Supported
PEXExtTMParamExplicit	Required.
PEXExtTMParamReflectSphereVRC	Required.
PEXExtTMParamReflectSphereWC	Not required.
PEXExtTMParamLinearVRC	Not required.

Texture Mapping Perspective Correction

Texture mapping perspective correction is introduced with CGE PEX 5.1. The following texture mapping perspective corrections are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMPerspectiveCorrection enumerated type lists the texture mapping perspective corrections supported by your server:

Table 7-25 CGE PEX 5.1 Texture Mapping Perspective Corrections

CGE PEX 5.1 Perspective Correction	CGE PEX 5.1 Types Supported
PEXExtTMPerspCorrectNone	Required.
PEXExtTMPerspCorrectVertex	Not required.
PEXExtTMPerspCorrectPixel	Required.

Texture Mapping Sample Frequency

Texture mapping sample frequency is introduced with CGE PEX 5.1. The following texture mapping sample frequencies are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETTMSampleFrequency enumerated type lists the texture mapping sample frequencies supported by your server:

Table 7-26 CGE PEX 5.1 Texture Mapping Sample Frequencies

CGE PEX 5.1 Sample Frequency	CGE PEX 5.1 Types Supported
PEXExtTMSampleFrequencyPixel	Required.
PEXExtTMSampleFrequencyInterpDep	Not required.

Primitive Anti-Aliasing Mode

Primitive anti-aliasing mode is introduced with CGE PEX 5.1. The following primitive anti-aliasing modes are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETPrimitiveAAMode enumerated type lists the primitive anti-aliasing modes supported by your server:

Table 7-27 CGE PEX 5.1 Primitive Anti-Aliasing Modes

CGE PEX 5.1 Primitive Anti-Aliasing Mode	CGE PEX 5.1 Modes Supported
PEXExtPrimAANone	Required.
PEXExtPrimAAPoint	Not required.
PEXExtPrimAAVector	Not required.
PEXExtPrimAAPointVector	Not required.
PEXExtPrimAAPolygon	Not required.
PEXExtPrimAAPointPolygon	Not required.
PEXExtPrimAAVectorPolygon	Not required.
PEXExtPrimAAPointVectorPolygon	Not required.

Primitive Anti-Aliasing Blend Operation

Primitive anti-aliasing blend operation is introduced with CGE PEX 5.1. The following primitive anti-aliasing blend operations are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETPrimitiveAABlendOp enumerated type lists the primitive anti-aliasing blend operations supported by your server:

Table 7-28 CGE PEX 5.1 Primitive Anti-Aliasing Blend Operations

CGE PEX 5.1 Blend Operations	CGE PEX 5.1 Operations Supported
PEXExtPrimAABlendOpImpDep	Required.
PEXExtPrimAABlendOpSimpleAlpha	Not required.

Line Cap Style

Line cap style is introduced with CGE PEX 5.1. The following line cap styles are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtLineCapStyle enumerated type lists the line cap styles supported by your server:

Table 7-29 CGE PEX 5.1 Line Cap Styles

CGE PEX 5.1 Line Cap Styles	CGE PEX 5.1 Styles Supported
PEXExtLineCapStyleButt	Required.
PEXExtLineCapStyleRound	Not required.
PEXExtLineCapStyleProjecting	Not required.

Line Join Style

Line join style is introduced with CGE PEX 5.1. The following line join styles are required to be supported by all CGE PEX 5.1 compliant servers, with the exceptions noted below. The PEXExtETLineJoinStyle enumerated type lists the line join styles supported by your server:

Table 7-30 CGE PEX 5.1 Line Join Styles

CGE PEX 5.1 Line Join Styles	CGE PEX 5.1 Styles Supported
PEXExtLineJoinStyleImpDep	Required.
PEXExtLineJoinStyleRound	Not required.
PEXExtLineJoinStyleMiter	Not required.
PEXExtLineJoinStyleBevel	Not required.