Appendix A

Scope of GL Subroutines

This appendix lists all the GL subroutines and defines the scope of each subroutine. Each of the GL subroutines has a scope that determines how it affects system resources. Subroutines can affect the state of the currently selected framebuffer, the state of the current window, the state of the current process, or the state of the current graphics connection.

The state types listed in Table A-1 define the scope of GL subroutines. State types describe the system resource on which the subroutine operates.

State type	Description
Colormap	There is a separate screen-wide color map for each framebuffer
Display	A collection of screens and input devices
Framebuffer	A particular set of bitplanes; draw mode dependent
Graphics connection	Graphics client/server connection by `dglopen` or by default
mmode dependent	Depends on the current matrix mode
Obsolete	No longer supported, not recommended
Process	User's GL application
Renders	Renders into current framebuffer, which is selected by drawmode or affects a non-modal framebuffer state, such as texture coordinates, trimming curves
Screen	Collection of framebuffers, color maps, and video hardware
Textport	Affects a different process from the caller's window

Table A-1   GL State Types

Table A-2 lists the state type of each GL programming subroutine.

GL Subroutine	State Type	Comments
acbuf()	Window	
acsize()	Framebuffer	
addtopup()	Graphics connection	
afunction()	Window	
arc()*	Renders	
attachcursor()	Display	
backbuffer()	Framebuffer	Attribute
backface()	Window	
bbox2()*	Window	*Represents a family of subroutines
bgnclosedline()	Renders	
bgnline()	Renders	
bgnpoint()	Renders	
bgnpolygon()	Renders	
bgnqstrip()	Renders	
bgnsurface()	Renders	
bgntmesh()	Renders	
bgntrim()	Renders	
blankscreen()	Screen	
blanktime()	Screen	
blendcolor()	Window	
blendfunction()	Window	
blink()	Colormap	
blkqread()	Graphics connection	

Table A-2   Scope of GL Subroutines

GL Subroutine	State Type	Comments
c()*	Framebuffer	Attribute, OK to call between bgn/end, *Represents a family of subroutines
callfunc()	Process	Not supported over DGLTSOCKET connections
callobj()	Graphics connection	
charstr()	Renders	
chunksize()	Graphics connection	
circ()*	Renders	*Represents a family of subroutines
clear()	Renders	
clearhitcode()	Window	
clipplane()	Window	
clkoff()	Display	
clkon()	Display	
closeobj()	Graphics connection	
cmode()	Framebuffer	Attribute, Takes effect when gconfig() is executed
cmov()*	Window	*Represents a family of subroutines
color()*	Framebuffer	Attribute, OK to call between bgn/end, *Represents a family of subroutines
compactify()	Graphics connection	
concave()	Window	
cpack()	Framebuffer	Attribute, OK to call between bgn/end
crv()	Renders	
crvn()	Renders	
curorigin()	Graphics connection	

Table A-2   **(continued)**   Scope of GL Subroutines

GL Subroutine	State Type	Comments
cursoff()	Window	
curson()	Window	
curstype()	Graphics connection	
curvebasis()	Window	
curveit()	Renders	
curveprecision()	Window	
cyclemap()	Colormap	
czclear()	Renders	
dbtext()	Display	
defbasis()	Graphics connection	
defcursor()	Graphics connection	
deflfont()	Graphics connection	
deflinestyle()	Graphics connection	
defpattern()	Graphics connection	
defpup()	Graphics connection	
defrasterfont()	Graphics connection	
delobj()	Graphics connection	
deltag()	Graphics connection	
depthcue()	Window	
dglclose()	Process	
dglopen()	Process	
dither()	Window	
dopup()	Graphics connection	
doublebuffer()	Framebuffer	Takes effect when gconfig() is executed

Table A-2 **(continued)** Scope of GL Subroutines

GL Subroutine	State Type	Comments
draw()*	Renders	*Represents a family of subroutines
drawmode()	Window	Attribute
editobj()	Graphics connection	
endclosedline()	Renders	
endcurve()	Renders	
endfeedback()	Window	
endfullscrn()	Renders	
endline()	Renders	
endpick()	Window	
endpoint()	Renders	
endpolygon()	Renders	
endpupmode()	Obsolete	
endqstrip()	Renders	
endselect()	Window	
endsurface()	Renders	
endtmesh()	Renders	
endtrim()	Renders	
feedback()	Window	
finish()	Window	
fogvertex()	Window	
font()	Window	Attribute
foreground()	Process	Applies to next winopen(), swinopen(), winconstraints() call
freepup()	Graphics connection	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
frontbuffer()	Framebuffer	Attribute
frontface()	Window	
fudge()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
fullscrn()	Window	
gammaramp()	Screen	
gbegin()	Graphics connection	
gconfig()	Window	
genobj()	Graphics connection	
gentag()	Graphics connection	
getbackface()	Window	
getbuffer()	Framebuffer	
getbutton()	Display	
getcmmode()	Window	
getcolor()	Framebuffer	Attribute
getcpos()	Window	
getcursor()	Window	
getdcm()	Window	
getdepth()	Obsolete	
getdescender()	Window	Attribute
getdev()	Graphics connection	
getdisplaymode()	Framebuffer	Attribute
getdrawmode()	Window	
getfont()	Window	Attribute

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
getgconfig()	Window	
getgdesc()	Screen	
getgpos()	Window	
getheight()	Window	Attribute
gethitcode()	Window	
getlsbackup()	Window	Attribute
getlsrepeat()	Window	Attribute
getlstyle()	Window	Attribute
getlwidth()	Window	Attribute
getmap()	Framebuffer	
getmatrix()	mmode dependent	
getmcolor()	Colormap	
getmmode()	Window	
getmonitor()	Screen	
getmultisample()	Window	
getnurbsproperty()	Window	
getopenobj()	Graphics connection	
getorigin()	Window	
getothermonitor()	Obsolete	
getpattern()	Window	
getplanes()	Window	
getport()	Obsolete	
getresetls()	Window	
getscrbox()	Window	
getscrmask()	Window	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
getshade()	Obsolete	
getsize()	Window	
getsm()	Window	Attribute
getvaluator()	Display	
getvideo()	Screen	
getviewport()	Window	
getwritemask()	Framebuffer	Attribute
getwscrn()	Window	
getzbuffer()	Framebuffer	
gexit()	Graphics connection	
gflush()	Window	
ginit()	Graphics connection	
glcompat()	See below	
GLC_OLDPOLYGON	Window	
GLC_ZRANGEMAP	Graphics connection	
glresources()		
glxchoosevisual()	Graphics connection	
glxgetconfig()	Graphics connection	
glxlink()	Graphics connection	
glxunlink()	Graphics connection	
glxwindone()	Graphics connection	
glxwinset()	Graphics connection	
greset()	Window	
gRGBcolor()	Framebuffer	Attribute
gRGBcursor()	Obsolete	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
gRGBmask()	Framebuffer	Attribute
gselect()	Window	
gsync()	Window	
gversion()	Screen	
iconsize()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
icontitle()	Window	
imakebackground()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
initnames()	Window	
ismex()	Obsolete	
isobj()	Graphics connection	
isqueued()	Graphics connection	
istag()	Graphics connection	
keepaspect()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
lampoff()	Display	
lampon()	Display	
lcharstr()	Renders	
leftbuffer()	Framebuffer	Attribute
linesmooth()	Window	
linewidth()	Window	Attribute
linewidthf()	Window	

Table A-2   **(continued)**   Scope of GL Subroutines

GL Subroutine	State Type	Comments
lmbind()	See below	
BACKMATERIAL	Window	
MATERIAL	Window	OK to call between bgn/end
LMODEL	Window	
LIGHT	Window	
lmcolor()	Window	OK to call between bgn/end
lmdef()	See below	
DEFMATERIAL	Graphics connection	
DEFLMODEL	Graphics connection	
DEFLIGHT	Graphics connection	
loadmatrix()	mmode dependent	
loadname()	Window	
logicop()	Window	
lookat()	mmode dependent	
lrectread()	Window	
lrectwrite()	Window	
lRGBrange()	Window	
lsbackup()	Window	
lsetdepth()	Window	
lshaderange()	Window	
lsrepeat()	Window	Attribute
lstrwidth()	Window	Attribute
makeobj()	Graphics connection	
maketag()	Graphics connection	

Table A-2 **(continued)** Scope of GL Subroutines

GL Subroutine	State Type	Comments
mapcolor()	Colormap	There is a separate screen-wide color map for each framebuffer
mapw()	Window	
mapw2()	Window	
maxsize()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
minsize()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
mmode()	Window	
monobuffer()	Framebuffer	Attribute
move()*	Renders	*Represents a family of subroutines
msalpha()	Window	
msmask()	Window	
mspattern()	Window	
mssize()	Framebuffer	
mswapbuffers()	Window	
multimap()	Framebuffer	Takes effect when gconfig() is executed
multisample()	Window	
multmatrix()	mmode dependent	
n()*	Window	*Represents a family of subroutines, OK to call between bgn/end
newpup()	Graphics connection	
newtag()	Graphics connection	
nmode()	Window	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
noborder()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
noise()	Graphics connection	
noport()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
normal()	Obsolete	
nurbscurve()	Renders	
nurbssurface()	Renders	
objdelete()	Graphics connection	
objinsert()	Graphics connection	
objreplace()	Graphics connection	
onemap()	Framebuffer	Takes effect when gconfig() is executed
ortho()	mmode dependent	
ortho2()	mmode dependent	
overlay()	Window	Takes effect when gconfig() is executed
pagecolor()	Textport	
passthrough()	Window	
patch()	Renders	
patchbasis()	Window	
patchcurves()	Window	
patchprecision()	Window	
pclos()	Renders	
pdr()*	Renders	*Represents a family of subroutines

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
perspective()	mmode dependent	
pick()	Window	
picksize()	Window	
pixmode()	Window	
pmv()*	Renders	*Represents a family of subroutines
pnt()*	Renders	*Represents a family of subroutines
pntsize()	Renders	
pntsizef()	Renders	
pntsmooth()	Window	
polarview()	mmode dependent	
polf()*	Renders	*Represents a family of subroutines
poly()*	Renders	*Represents a family of subroutines
polymode()	Window	
polysmooth()	Window	
popattributes()	Window	
popmatrix()	mmode dependent	
popname()	Window	
popviewport()	Window	
prefposition()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints()() call
prefsize()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
pupmode()	Obsolete	
pushattributes()	Window	

Table A-2   **(continued)**   Scope of GL Subroutines

GL Subroutine	State Type	Comments
pushmatrix()	mmode dependent	
pushname()	Window	
pushviewport()	Window	
pwlcurve()	Renders	
qcontrol()	Display	
qdevice()	Graphics connection	
qenter()	Graphics connection	
qgetfd()	Graphics connection	
qread()	Graphics connection	
qreset()	Graphics connection	
qtest()	Graphics connection	
rcrv()*	Renders	*Represents a family of subroutines
rdr()*	Renders	*Represents a family of subroutines
readdisplay()	Graphics connection	
readpixels()	Renders	
readRGB()	Renders	
readsource()	Framebuffer	
rect()*	Renders	*Represents a family of subroutines
rectcopy()	Renders	
rectread()	Renders	
rectwrite()	Renders	
rectzoom()	Renders	
resetls()	Window	
reshapeviewport()	Window	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
RGBcolor()	Framebuffer	Attribute, OK to call between bgn/end
RGBcursor()	Obsolete	
RGBmode()	Framebuffer	OK to call between bgn/end, Attribute
RGBrange()	Obsolete	
RGBwritemask()	Framebuffer	Attribute
ringbell()	Display	
rmv()*	Renders	*Represents a family of subroutines
rot()	mmode dependent	
rotate()	mmode dependent	
rpatch()	Renders	
rpdr()*	Renders	*Represents a family of subroutines
rpmv()*	Renders	*Represents a family of subroutines
sbox()*	Renders	*Represents a family of subroutines
scale()	mmode dependent	
sclear()	Framebuffer	
scrbox()	Window	
screenspace()	Window	
scrmask()	Window	
scrnattach()	Display	
scrnselect()	Graphics connection	
scrsubdivide()	Graphics connection	
setbell()	Window	
setcursor()	Window	
setdblights()	Display	

Table A-2 **(continued)** Scope of GL Subroutines

GL Subroutine	State Type	Comments
setdepth()	Obsolete	
setlinestyle()	Window	Attribute
setmap()	Framebuffer	
setmonitor()	Screen	
setnurbsproperty()	Window	
setpattern()	Window	Attribute
setpup()	Graphics connection	
setshade()	Obsolete	
setvaluator()	Display	
setvideo()	Screen	
shademodel()	Window	Attribute
shaderange()	Obsolete	
singlebuffer()	Framebuffer	Takes effect when gconfig() is executed
smoothline()	Obsolete	
spclos()	Obsolete	
splf()*	Renders	*Represents a family of subroutines
stencil()	Framebuffer	
stensize()	Framebuffer	
stepunit()	Graphics connection	Applies to next winopen(), swinopen(), winconstraints() call
stereobuffer()	Framebuffer	Attribute
strwidth()	Window	Attribute
subpixel()	Window	
swapbuffers()	Window	

Table A-2   (continued)   Scope of GL Subroutines

GL Subroutine	State Type	Comments
swapinterval()	Window	
swaptmesh()	Window	
swinopen()	Window	
swritemask()	Framebuffer	
t()*	Window	*Represents a family of subroutines
tevbind()	Window	
tevdef()	Graphics connection	
texbind()	Window	
texdef2d()	Graphics connection	
texdef3d()	Graphics connection	
texgen()	Window	
textcolor()	Textport	
textinit()	Textport	
textport()	Textport	
tie()	Graphics connection	
tlutbind()	Window	
tpoff()	Textport	
tpon()	Textport	
translate()	mmode dependent	
underlay()	Window	Takes effect when gconfig() is executed
unqdevice()	Graphics connection	
v()*	Renders	*Represents a family of subroutines
videocmd()	Screen	
viewport()	Window	

Table A-2   **(continued)**   Scope of GL Subroutines

GL Subroutine	State Type	Comments
winattach()	Obsolete	
winclose()	Window	
winconstraints()	Window	
windepth()	Window	
window()	mmode dependent	
winget()	Window	
winmove()	Window	
winopen()	Window	
winpop()	Window	
winposition()	Window	
winpush()	Window	
winset()	Window	
wintitle()	Window	
wmpack()	Framebuffer	Attribute
writemask()	Framebuffer	Attribute
writepixels()	Renders	
writeRGB()	Renders	
xfpt()*	Renders	*Represents a family of subroutines
zbsize()	Framebuffer	
zbuffer()	Framebuffer	
zclear()	Framebuffer	
zdraw()	Framebuffer	
zfunction()	Framebuffer	
zsource()	Framebuffer	
zwritemask()	Framebuffer	

Table A-2   (continued)   Scope of GL Subroutines