NAME

xgl_gcache_nurbs_curve – builds a Gcache of a NURBS curve

SYNOPSIS

```
#include <xgl/xgl.h>
void  xgl_gcache_nurbs_curve (
        Xgl_gcache              gcache,
        Xgl_ctx                 ctx,
        Xgl_nurbs_curve         *curve,
        Xgl_bounds_f1d          *range, /* optional */
        Xgl_curve_color_spline  *color_spline ); /* optional */
```

DESCRIPTION

This operator caches the NURBS curve defined by curve, range, and color spline parameters in the Gcache *gcache*. Depending on the value of **XGL_GCACHE_NURBS_CURVE_MODE**(3) attribute, tessellation-independent and/or polyline representations are created.

The parameters *curve*, *range*, and *color_spline* have the same meaning as they do in **xgl_nurbs_curve**(3)**.**

A Gcache of a curve can contain 2D or 3D data, so the Context *ctx* can be either a 2D or a 3D context. The attribute **XGL_GCACHE_USE_APPL_GEOM**(3) is ignored. The *Xgl_gcache_nurbs_mode* structure is defined as follows:

```
typedef enum {
        XGL_GCACHE_NURBS_DYNAMIC,
        XGL_GCACHE_NURBS_COMBINED,
        XGL_GCACHE_NURBS_STATIC
} Xgl_gcache_nurbs_mode;
```

If the value of **XGL_GCACHE_NURBS_CURVE_MODE**(3) attribute is XGL_GCACHE_NURBS_STATIC, the following attributes are used to compute the polyline representation of the curve and are also saved in the Gcache for later validation:

XGL_CTX_MIN_TESSELLATION(3)
XGL_CTX_MAX_TESSELLATION(3)
XGL_CTX_NURBS_CURVE_APPROX(3)
XGL_CTX_NURBS_CURVE_APPROX_VAL(3)
XGL_3D_CTX_MODEL_CLIP_PLANE_NUM(3)
XGL_3D_CTX_MODEL_CLIP_PLANES(3)
/* if MODEL_CLIP_PLANE_NUM > 0 */

For Gcache mode XGL_GCACHE_NURBS_STATIC, the Gcache contains the polyline version of the curve in model coordinates (MC).

For Gcache modes XGL_GCACHE_NURBS_DYNAMIC and XGL_GCACHE_NURBS_COMBINED, no context attributes are saved for validation. For XGL_GCACHE_NURBS_DYNAMIC mode, only tessellation-independent form is stored in the Gcache. For XGL_GCACHE_NURBS_COMBINED mode, both tessellation-independent and polyline representations are stored. Also, in these cases, model clipping according to the Context *ctx* is not performed at Gcache creation time.

The display of Gcache is affected by the full transformation and clipping pipeline. The Gcache does not save the value of the parameters *curve*, *range*, and *color_spline*. The application is responsible for building a new Gcache with the new value of these parameters.

RETURN VALUE

Nothing is returned.

SEE ALSO

xgl_object_create(3)
xgl_context_display_gcache(3)
xgl_nurbs_curve(3)
XGL_3D_CTX_MODEL_CLIP_PLANES(3)
XGL_3D_CTX_MODEL_CLIP_PLANE_NUM(3)
XGL_CTX_MAX_TESSELLATION(3)
XGL_CTX_MIN_TESSELLATION(3)
XGL_CTX_NURBS_CURVE_APPROX(3)
XGL_CTX_NURBS_CURVE_APPROX_VAL(3)
XGL_GCACHE_NURBS_CURVE_MODE(3)
XGL_GCACHE_USE_APPL_GEOM(3)