NAME

xgl_transform_scale – combines a Transform with a Scale Transform

SYNOPSIS

```
#include <xgl/xgl.h>

void  xgl_transform_scale (
        Xgl_trans            trans,
        Xgl_pt               *scale_factors,
        Xgl_trans_update     update );
```

DESCRIPTION

Purpose

This operator combines a given Transform with a Scale Transform constructed with the given parameters. The Scale Transform can replace the given Transform, or it can be preconcatenated or postconcatenated with the given Transform.

Parameters

trans The Transform to be updated with a Scale Transform. It must have been created previously with **xgl_object_create**(3).

scale_factors

Contains the scale factors used to construct a Scale Transform. *scale_factors* is a pointer to a structure of type *Xgl_pt* defined as follows:

```
typedef struct {
        Xgl_pt_type       pt_type;     /* type of point */
        Xgl_pt_position   pt;          /* union of pointers to one point */
} Xgl_pt;
```

scale_factors→pt_type is the type of the point in *scale_factors→pt*. The table below gives the valid point types.

scale_factors→pt is a union of pointers. The appropriate pointer, which is determined by *scale_factors→pt_type*, gives the address of a point structure containing coordinates. The valid members of this union are as follows:

Field Name	Type	Point Type
pt.i2d	Xgl_pt_i2d *	XGL_PT_I2D
pt.f2d	Xgl_pt_f2d *	XGL_PT_F2D
pt.d2d	Xgl_pt_d2d *	XGL_PT_D2D
pt.f3d	Xgl_pt_f3d *	XGL_PT_F3D
pt.d3d	Xgl_pt_d3d *	XGL_PT_D3D

The dimension of *trans*, as given by **XGL_TRANS_DIMENSION**(3), and the data type, as given by **XGL_TRANS_DATA_TYPE**(3), do not need to match those of *scale_factors*. If *trans* is 3D and *scale_factors* is 2D, the *z* scale factor of the Scale Transform is set to 0. If *trans* is 2D and *scale_factors* is 3D, the *z* scale factor is ignored.

update Establishes the method of combining the Scale Transform with the target Transform. XGL accepts the following values for Xgl_trans_update:

XGL_TRANS_REPLACE
The Scale Transform replaces the target Transform *trans*.

XGL_TRANS_PRECONCAT
The Scale Transform is preconcatenated to the target Transform *trans*, and the result is stored in *trans*. XGL treats coordinates as row vectors, which means that the matrix of the Scale Transform on the left, multiplied by the matrix of *trans* on the right, replaces the matrix of *trans*.

XGL_TRANS_POSTCONCAT
The Scale Transform is postconcatenated to the target Transform *trans*, and the result is stored in *trans*. XGL treats coordinates as row vectors, which means that the matrix of *trans* on the left, multiplied by the matrix of the Scale Transform on the right, replaces the matrix of *trans*.

RETURN VALUE

Nothing is returned.

SEE ALSO

xgl_object_create(3)
XGL_TRANS_DATA_TYPE(3)
XGL_TRANS_DIMENSION(3)