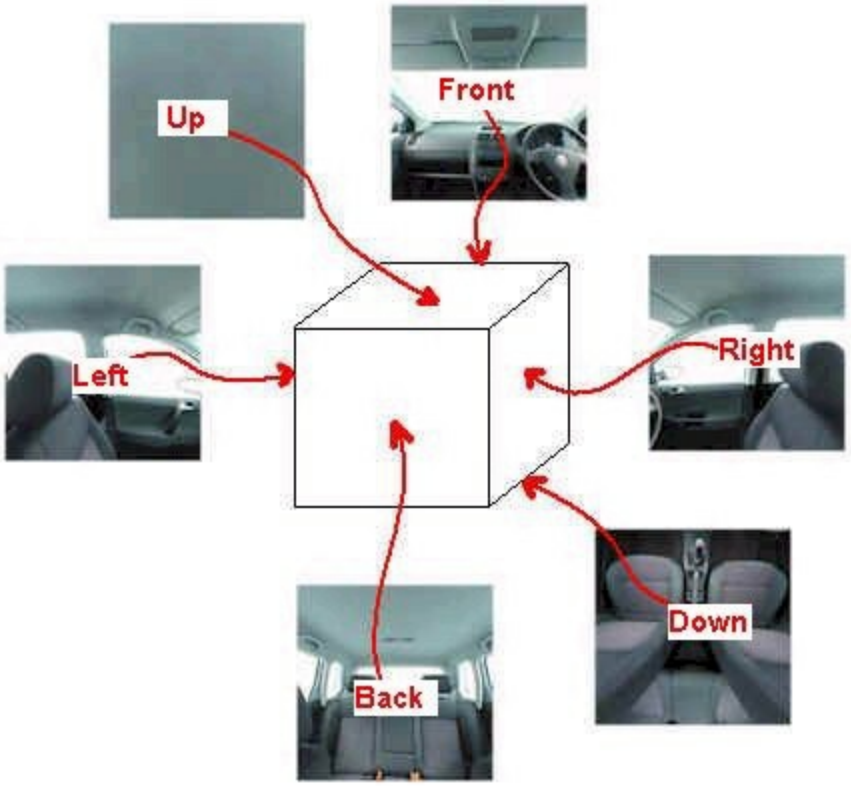
ExTexture

The eXTexture component does cube map texturing. Cube map texturing is a form of environment texture mapping that uses a viewing direction (3D vector) to map into a view plane the six 2D textures arranged like the faces of a cube. To obtain such a 360 degree panorama view of your surroundings you need to take six fisheye photographs each at an orthogonal 90 degree view from the others or to create computer generated cube texture faces. Using six 2D pictures, lets your customers view the interior of a room, a building, a car, and so on. As usual, there are no dependencies to MFC, VB, or not even Open GL.



How to get support?

To keep your business applications running, you need support you can count on.

Here are few hints what to do when you're stuck on your programming:

- Check out the samples - they are here to provide some quick info on how things should be done
- Check out the how-to questions using the eXHelper tool
- Check out the help - includes documentation for each method, property or event
- Check out if you have the latest version, and if you don't have it send an update request here.
- Submit your problem(question) here.

Don't forget that you can contact our development team if you have ideas or requests for new components, by sending us an e-mail at support@exontrol.com (please include the name of the product in the subject, ex: exgrid) . We're sure our team of developers will try to find a way to make you happy - and us too, since we helped.

Regards,
Exontrol Development Team

https://www.exontrol.com

constants AppearanceEnum

Specifies the control's appearance. Use the Appearance property to remove the control's border.

Name	Value	Description
None2	0	No border
Flat	1	Flat border
Sunken	2	Sunken border
Raised	3	Raised border
Etched	4	Etched border
Bump	5	Bump border

constants FaceEnum

The FaceEnum type specifies the face being filled using the Face property. Use the Face property to assign a picture to a face.

Name	Value	Description
exFrontFace	0	Indicates the face on the front.
exBottomFace	1	Indicates the face on the bottom.
exRightFace	2	Indicates the face on the right.
exLeftFace	3	Indicates the face on the left.
exTopFace	4	Indicates the top face.
exDownFace	5	Indicates the down face.

constants PictureDisplayEnum

Specifies how the picture is displayed on the control's background. Use the PictureDisplay property to specify how the control displays its picture.

Name	Value	Description
UpperLeft	0	Aligns the picture to the upper left corner.
UpperCenter	1	Centers the picture on the upper edge.
UpperRight	2	Aligns the picture to the upper right corner.
MiddleLeft	16	Aligns horizontally the picture on the left side, and centers the picture vertically.
MiddleCenter	17	Puts the picture on the center of the source.
MiddleRight	18	Aligns horizontally the picture on the right side, and centers the picture vertically.
LowerLeft	32	Aligns the picture to the lower left corner.
LowerCenter	33	Centers the picture on the lower edge.
LowerRight	34	Aligns the picture to the lower right corner.
Tile	48	Tiles the picture on the source.
Stretch	49	The picture is resized to fit the source.

constants RotateEnum

The RotateEnum expression indicates the direction to rotate the cube. Use the Rotate method to programmatically rotate the cube. Use the AllowRotate property to specify the directions where the user can rotate the cube by dragging.

Name	Value	Description
exRotateLeft	1	Rotates the cube to the left.
exRotateRight	2	Rotates the cube to the right.
exRotateUp	4	Rotates up the cube.
exRotateDown	8	Rotates down the cube.
exRotateAll	255	Allows all directions to rotate the cube.

Texture object

Tip The /COM object can be placed on a HTML page (with usage of the HTML object tag: <object classid="clsid:...">) using the class identifier: {F79381A0-D83A-4DD5-B7AE-F2843712D2FA}. The object's program identifier is: "Exontrol.Texture". The /COM object module is: "ExTexture.dll"

The Texture component supports the following properties and methods:

Name	Description
AllowRotate	Specifies the directions where the user can drag the cube.
AllowZoom	Sets or gets a value that indicates whether the user can magnify the view using the mouse wheel.
Antialiasing	Specifies how the texture is rendered.
Appearance	Retrieves or sets the control's appearance.
AttachTemplate	Attaches a script to the current object, including the events, from a string, file, a safe array of bytes.
BackColor	Specifies the control's background color.
Enabled	Enables or disables the control.
ExecuteTemplate	Executes a template and returns the result.
Face	Specifies the graphic to be displayed on the face.
FaceFromPoint	Retrieves the index of the face from the point.
Font	Retrieves or sets the control's font.
ForeColor	Specifies the control's foreground color.
hWnd	Retrieves the control's window handle.
Images	Sets at runtime the control's image list. The Handle should be a handle to an Images List Control.
Path	Specifies the path where the faces to be displayed are located.
Picture	Retrieves or sets a graphic to be displayed in the control.
PictureDisplay	Retrieves or sets a value that indicates the way how the graphic is displayed on the control's background
ReplaceIcon	Adds a new icon, replaces an icon or clears the control's image list.
Rotate	Rotates the cube in a direction.
RotX	Specifies the rotation angle in Radians along Ox axis.
RotY	Specifies the rotation angle in Radians along Oy axis.

ShowImageList	Specifies whether the control's image list window is visible or hidden.
Template	Specifies the control's template.
TemplateDef	Defines inside variables for the next Template/ExecuteTemplate call.
TemplatePut	Defines inside variables for the next Template/ExecuteTemplate call.
ToolTipDelay	Specifies the time in ms that passes before the ToolTip appears.
ToolTipPopDelay	Specifies the period in ms of time the ToolTip remains visible if the mouse pointer is stationary within a control.
ToolTipText	Specifies the control's tooltip text.
ToolTipTitle	Specifies the title of the control's tooltip.
ToolTipWidth	Specifies a value that indicates the width of the tooltip window, in pixels.
Version	Retrieves the control's version.
Zoom	Zooms the view.

property Texture.AllowRotate as Long

Specifies the directions where the user can drag the cube.

Type	Description
Long	A long expression that specifies an OR combination of RotateEnum values, that specifies the directions where the user can rotate the cube by dragging.

By default, the AllowRotate property is exRotateAll, and that means that the user can rotate the cube to any direction. For instance, if the AllowRotate property is exRotateLeft + exRotateRight, the user can rotate the cube to the left or to the right. Use the Rotate method to programmatically rotate the cube. The control fires the Rotate event when the cube is rotated. Use the RotX and RotY properties to specify the rotation angles.

property Texture.AllowZoom as Boolean

Sets or gets a value that indicates whether the user can magnify the view using the mouse wheel.

Type	Description
Boolean	A boolean expression that specifies whether the user can magnifies the zoom by rotating the mouse wheel.

By default, the AllowZoom property is True. If the AllowZoom property is False, the view is not magnified when the user rotates the mouse wheel. The control fires the Zoom event when the view is zoomed. The Zoom property specifies the zooming factor. The KeyDown event notifies your application that the user presses a key.

For instance, the following sample zooms the view when the user presses the + or - keys from the numeric pad:

```
Private Sub Texture1_KeyDown(KeyCode As Integer, Shift As Integer)
   If (KeyCode = vbKeyAdd) Then
      Texture1.Zoom = Texture1.Zoom - 0.01
   Else
      If (KeyCode = vbKeySubtract) Then
         Texture1.Zoom = Texture1.Zoom + 0.01
      End If
   End If
End Sub
```

property Texture.Antialiasing as Boolean

Specifies how the texture is rendered.

Type	Description
Boolean	True if anti-aliasing is used in texture rendering. We use multiple rendering using 2D jitter matrix (for viewing direction) that imply higher quality in texture mapping (attenuation of jagged edges and better sampling of small texture details) but slower rendering speed.

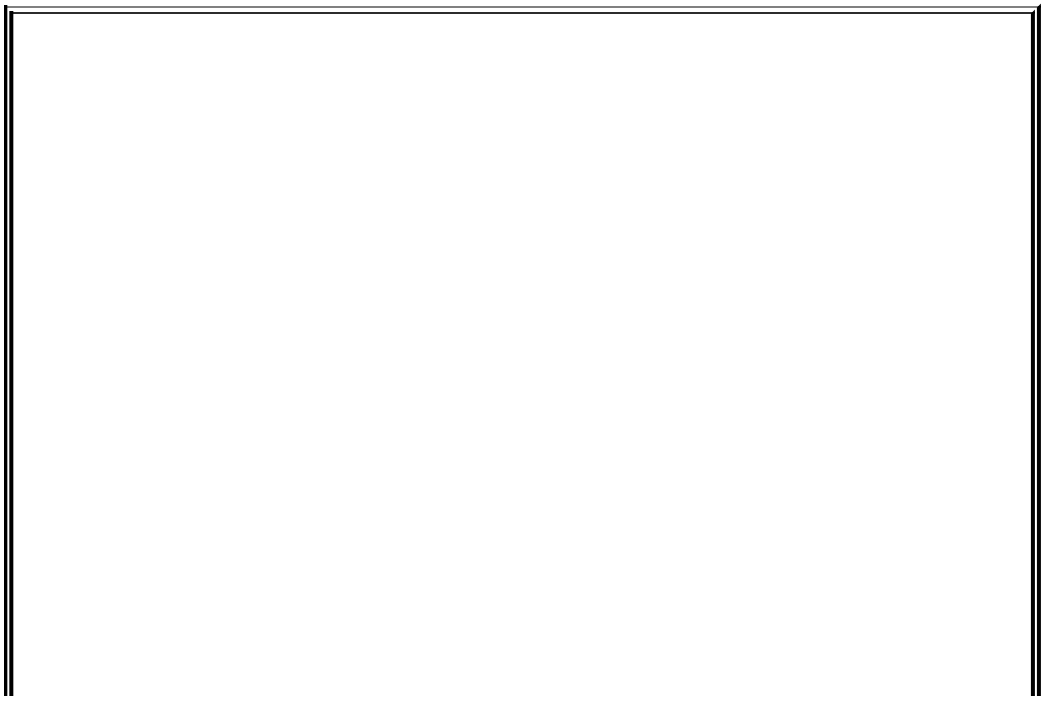
Aliasing is an effect that causes different continuous signals to become indistinguishable (or *aliases* of one another) when sampled. When this happens, the original signal cannot be uniquely reconstructed from the sampled signal.

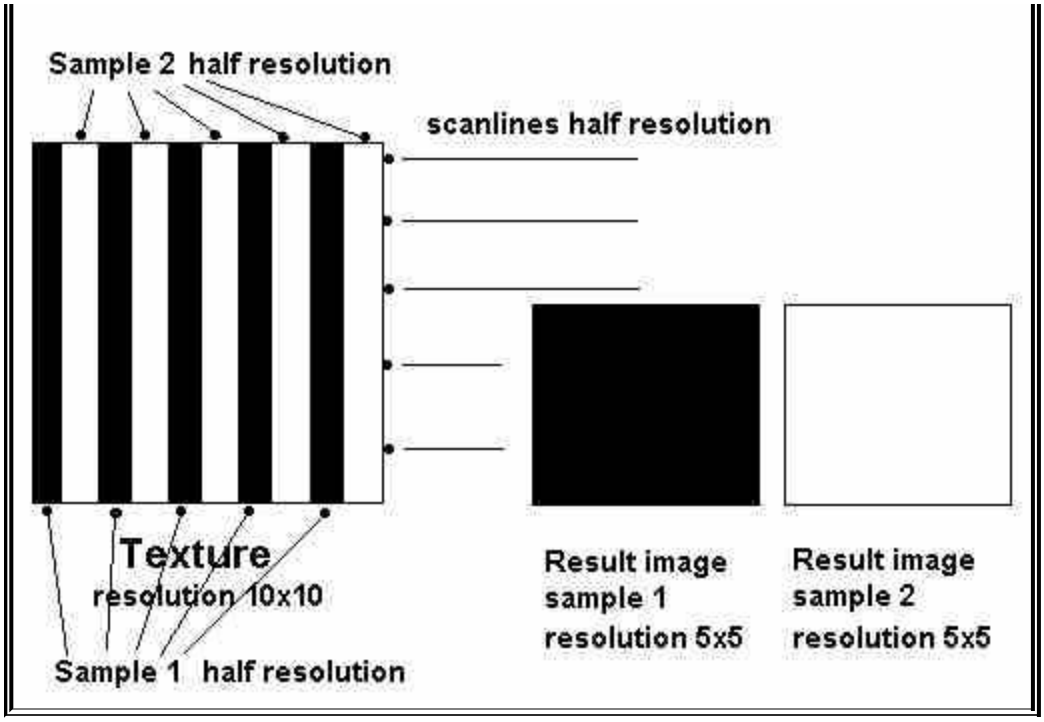
In texture mapping spatial aliasing can appear when binary decisions are taken in sampling of the texture elements (texel).

The final image obtained by rendering a binary texture (sequence of black and white stripes of same size) using a sampling rate half the texture resolution (with starting offset 0 - sample1 and starting offset 1 -sample 2) is an aliased one color image (black and respectively white). The stripes details from the initial texture are missed by using the inadequate sampling rate.

The images obtained by slightly moving the viewing direction around the main direction, are blended together into a final antialised image. Highest number of blended images imply lowest rendering speed but highest quality of the final image.

A classic example of aliasing effect is shown in the following image:




Sample 2 half resolution
scanlines half resolution
Texture
resolution 10x10
Result image
sample 1
resolution 5x5
Result image
sample 2
resolution 5x5
Sample 1 half resolution

property Texture.Appearance as AppearanceEnum

Retrieves or sets the control's appearance.

Type	Description
AppearanceEnum	An AppearanceEnum expression that indicates the control's border.

Use the Appearance property to specify the control's border.

method Texture.AttachTemplate (Template as Variant)

Attaches a script to the current object, including the events, from a string, file, a safe array of bytes.

Type	Description
Template as Variant	A string expression that specifies the Template to execute.

The AttachTemplate/x-script code is a simple way of calling control/object's properties, methods/events using strings. The AttachTemplate features allows you to attach a x-script code to the component. The AttachTemplate method executes x-script code (including events), from a string, file or a safe array of bytes. This feature allows you to run any x-script code for any configuration of the component /COM, /NET or /WPF. Exontrol owns the x-script implementation in its easiest form and it does not require any VB engine or whatever to get executed. The x-script code can be converted to several programming languages using the eXHelper tool.

The following sample opens the Windows Internet Explorer once the user clicks the control (/COM version):

```
AttachTemplate("handle Click(){ CreateObject(`internetexplorer.application`){ Visible = True; Navigate(`https://www.exontrol.com`) } } ")
```

This script is equivalent with the following VB code:

```
Private Sub Texture1_Click()
   With CreateObject("internetexplorer.application")
      .Visible = True
      .Navigate ("https://www.exontrol.com")
   End With
End Sub
```

The AttachTemplate/x-script syntax in BNF notation is defined like follows:

<x-script> := <lines>
<lines> := <line>[<eol> <lines>] | <block>
<block> := <call> [<eol>] { [<eol>] <lines> [<eol>] } [<eol>]
<eol> := ";" | "\r\n"
<line> := <dim> | <createobject> | <call> | <set> | <comment> | <handle>[<eol>]{[<eol>] <lines>[<eol>]}[<eol>]
<dim> := "DIM" <variables>
<variables> := <variable> [, <variables>]

<variable> := "ME" | <identifier>
<createobject> := "CREATEOBJECT(`"<type>"`)"
<call> := <variable> | <property> | <variable>"."<property> | <createobject>"."<property>
<property> := [<property>"."]<identifier>["("<parameters>")"]
<set> := <call> "=" <value>
<property> := <identifier> | <identifier>"("[<parameters>]")"
<parameters> := <value> ["," <parameters>]
<value> := <boolean> | <number> | <color> | <date> | <string> | <createobject> | <call>
<boolean> := "TRUE" | "FALSE"
<number> := "0X"<hexa> | ["-"]<integer>["."<integer>]
<digit10> := 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9
<digit16> := <digit10> | A | B | C | D | E | F
<integer> := <digit10>[<integer>]
<hexa> := <digit16>[<hexa>]
<color> := "RGB("<integer>","<integer>","<integer>")"
<date> := "#"<integer>"/"<integer>"/"<integer>" "[<integer>":"<integer>":"<integer>"]"#"
<string> := ""<text>"" | "`"<text>"`"
<comment> := "'"<text>
<handle> := "handle " <event>
<event> := <identifier>"("[<eparameters>]")"
<eparameters> := <eparameter> ["," <eparameters>]
<parameters> := <identifier>

where:

<identifier> indicates an identifier of the variable, property, method or event, and should start with a letter.
<type> indicates the type the CreateObject function creates, as a progID for /COM version or the assembly-qualified name of the type to create for /NET or /WPF version
<text> any string of characters

The Template or x-script is composed by lines of instructions. Instructions are separated by "\n\r" (newline characters) or ";" character.

The advantage of the AttachTemplate relative to Template is that the AttachTemplate can add handlers to the control events.

property Texture.BackColor as Color

Specifies the control's background color.

Type	Description
Color	A color expression that indicates the control's background color.

Use the Face property to assign a picture to a face of the cube.

property Texture.Enabled as Boolean

Enables or disables the control.

Type	Description
Boolean	A boolean expression that indicates whether the control is enabled or disabled.

Use the Enabled property to disable the control. The mouse or keys are not working in a disabled control.

method Texture.ExecuteTemplate (Template as String)

Executes a template and returns the result.

Type	Description
Template as String	A Template string being executed

Return	Description
Variant	A Variant expression that indicates the result after executing the Template.

Use the ExecuteTemplate property to returns the result of executing a template file. Use the Template property to execute a template without returning any result. Use the ExecuteTemplate property to execute code by passing instructions as a string (template string). For instance, you can use the EXPRINT.PrintExt = CONTROL.ExecuteTemplate("me") to print the control's content.

For instance, the following sample retrieves the the handle of the first visible item:

```
Debug.Print Texture1.ExecuteTemplate("Items.FirstVisibleItem()")
```

Most of our UI components provide a Template page that's accessible in design mode. No matter what programming language you are using, you can have a quick view of the component's features using the WYSWYG Template editor.

- Place the control to your form or dialog.
- Locate the Properties item, in the control's context menu, in design mode. If your environment doesn't provide a Properties item in the control's context menu, please try to locate in the Properties browser.
- Click it, and locate the Template page.
- Click the Help button. In the left side, you will see the component, in the right side, you will see a x-script code that calls methods and properties of the control.

The control's Template page helps user to initialize the control's look and feel in design mode, using the x-script language that's easy and powerful. The Template page displays the control on the left side of the page. On the right side of the Template page, a simple editor is displayed where user writes the initialization code. The control's look and feel is automatically updated as soon as the user types new instructions. The Template script is saved to the container persistence (when Apply button is pressed), and it is executed when the control is initialized at runtime. Any component that provides a WYSWYG Template page, provides a Template property. The Template property executes code from a string (template string).

The Template script is composed by lines of instructions. Instructions are separated by

"\n\r" (newline) characters.

An instruction can be one of the following:

- **Dim** list of variables *Declares the variables. Multiple variables are separated by commas. (Sample: Dim h, h1, h2)*
- variable **=** property(list of arguments) *Assigns the result of the property to a variable. The "variable" is the name of a declared variable. The "property" is the property name of the object in the context. The "list or arguments" may include variables or values separated by commas. (Sample: h = InsertItem(0,"New Child"))*
- property**(** list of arguments **)** = value *Changes the property. The value can be a variable, a string, a number, a boolean value or a RGB value.*
- method**(** list of arguments **)** *Invokes the method. The "list or arguments" may include variables or values separated by commas.*
- **{** *Beginning the object's context. The properties or methods called between { and } are related to the last object returned by the property prior to { declaration.*
- **}** *Ending the object's context*
- object**.** property(list of arguments)**.**property(list of arguments)*....* *The .(dot) character splits the object from its property. For instance, the Columns.Add("Column1").HeaderBackColor = RGB(255,0,0), adds a new column and changes the column's header back color.*

The Template supports the following general functions:

- **RGB(**R,G,B**)** *property retrieves an RGB value, where the R, G, B are byte values that indicates the R G B values for the color being specified. For instance, the following code changes the control's background color to red: BackColor = RGB(255,0,0)*
- **CreateObject(**progID**)** *property creates and retrieves a single uninitialized object of the class associated with a specified program identifier.*

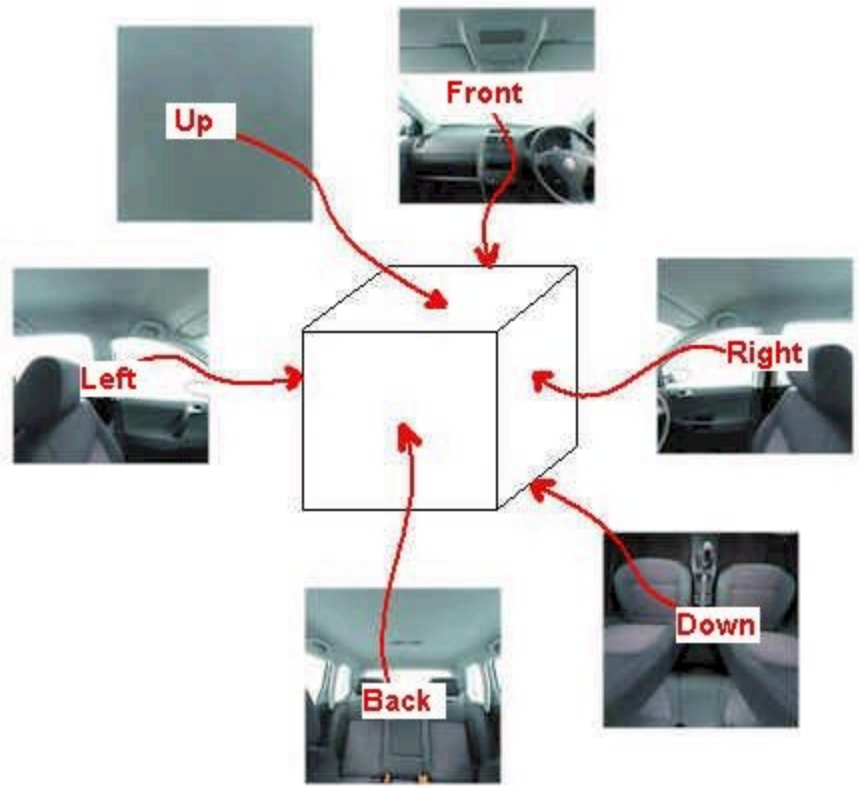
property Texture.Face(F as FaceEnum) as Variant

Specifies the graphic to be displayed on the face.

Type	Description
F as FaceEnum	A FaceEnum expression that indicates the face being loaded.
Variant	A string expression that indicates the name of the BMP being loaded on the specified page. If the Path property is empty, the Face property should indicate the absolute path to the file, else the relative path should be used.

The Face property specifies a 2D picture on the face of the cube. Cube map texturing is a form of texture mapping that uses a 3D direction vector to index into a texture that is six 2D textures arranged like the faces of a cube. Again consider the environment around you now. You can "capture" a 360 degree view of your surroundings by standing in one place and taking six photographs each at an orthogonal 90 degree view from the others. The rendering method of the environment texture is an image ordered method (we scan pixels by final image scanlines) than imply that high resolution textures are rendered nearly as fast as low resolution textures. The rendering speed increase as final image resolution increase.

Below is a set of six such images that capture an indoor environment (in our case a car):



property Texture.FaceFromPoint (X as OLE_XPOS_PIXELS, Y as OLE_YPOS_PIXELS) as FaceEnum

Retrieves the index of the face from the point.

Type	Description
X as OLE_XPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The x values is always expressed in client coordinates.
Y as OLE_YPOS_PIXELS	A single that specifies the current Y location of the mouse pointer. The y values is always expressed in client coordinates.
FaceEnum	A long expression that indicates the index of the face from the point.

The FaceFromPoint property retrieves the index of the face from the cursor. **If the X parameter is -1 and Y parameter is -1 the ItemFromPoint property determines the handle of the item from the cursor**.

The following VB sample displays the index of the face from the cursor:

```
Private Sub Texture1_MouseMove(Button As Integer, Shift As Integer, X As Single, Y As Single)
   Dim i As Long
   With Texture1
      i = .FaceFromPoint(X / Screen.TwipsPerPixelX, Y / Screen.TwipsPerPixelY)
      If (i >= 0) Then
         .Object.ToolTipText = i
      End If
   End With
End Sub
```

property Texture.Font as IFontDisp

Retrieves or sets the control's font.

Type	Description
IFontDisp	A Font object used to paint the items.

Use the Font property to change the control's font .

property Texture.ForeColor as Color

Specifies the control's foreground color.

Type	Description
Color	A color expression that indicates the control's foreground color.

The ForeColor property changes the foreground color of the control's area.

property Texture.hWnd as Long

Retrieves the control's window handle.

Type	Description
Long	A long expression that indicates the control's window handle.

Use the hWnd property to get the control's main window handle. The Microsoft Windows operating environment identifies each form and control in an application by assigning it a handle, or hWnd. The hWnd property is used with Windows API calls. Many Windows operating environment functions require the hWnd of the active window as an argument.

method Texture.Images (Handle as Variant)

Sets at runtime the control's image list. The Handle should be a handle to an Images List Control.

Type	Description
Handle as Variant	The Handle parameter can be: • A string expression that specifies the ICO file to add. The ICO file format is an image file format for computer icons in Microsoft Windows. ICO files contain one or more small images at multiple sizes and color depths, such that they may be scaled appropriately. For instance, Images("c:\temp\copy.ico") method adds the sync.ico file to the control's Images collection *(string, loads the icon using its path)* • A string expression that indicates the BASE64 encoded string that holds the icons list. Use the Exontrol's ExImages tool to save/load your icons as BASE64 encoded format. In this case the string may begin with "gBJJ..." *(string, loads icons using base64 encoded string)* • A reference to a Microsoft ImageList control (mscomctl.ocx, MSComctlLib.ImageList type) that holds the icons to add *(object, loads icons from a Microsoft ImageList control)* • A reference to a Picture (IPictureDisp implementation) that holds the icon to add. For instance, the VB's LoadPicture (Function LoadPicture([FileName], [Size], [ColorDepth], [X], [Y]) As IPictureDisp) or LoadResPicture (Function LoadResPicture(id, restype As Integer) As IPictureDisp) returns a picture object (object, loads icon from a Picture object) • A long expression that identifies a handle to an Image List Control (the Handle should be of HIMAGELIST type). On 64-bit platforms, the Handle parameter must be a Variant of LongLong / LONG_PTR data type (signed 64-bit (8-byte) integers), saved under llVal field, as VT_I8 type. The LONGLONG / LONG_PTR is __int64, a 64-bit integer. For instance, in C++ you can use as Images(COleVariant((LONG_PTR)hImageList)) or Images(COleVariant(

(LONGLONG)hImageList)), where hImageList is of HIMAGELIST type. The GetSafeHandle() method of the CImageList gets the HIMAGELIST handle (long, loads icon from HIMAGELIST type)

property Texture.Path as String

Specifies the path where the faces to be displayed are located.

Type	Description
String	A String expression that indicates the path to load faces, using the Face property.

By default, the Path property is empty. Use the Path property to specify a relative path where the pictures for the faces are located.

property Texture.Picture as IPictureDisp

Retrieves or sets a graphic to be displayed in the control.

Type	Description
IPictureDisp	A Picture object that's displayed on the control's background.

By default, the control has no picture associated. The control uses the PictureDisplay property to determine how the picture is displayed on the control's background. Use the Face property to assign a picture to a face of the cube.

property Texture.PictureDisplay as PictureDisplayEnum

Retrieves or sets a value that indicates the way how the graphic is displayed on the control's background

Type	Description
PictureDisplayEnum	A PictureDisplayEnum expression that indicates the way how the picture is displayed.

By default, the PictureDisplay property is exTile. Use the PictureDisplay property specifies how the Picture is displayed on the control's background. If the control has no picture associated the PictureDisplay property has no effect. Use the Face property to assign a picture to a face of the cube.

method Texture.ReplaceIcon ([Icon as Variant], [Index as Variant])

Adds a new icon, replaces an icon or clears the control's image list.

Type	Description
Icon as Variant	A long expression that indicates the icon's handle.
Index as Variant	A long expression that indicates the index where icon is inserted.
Return	**Description**
Long	A long expression that indicates the index of the icon in the images collection

Use the ReplaceIcon property to add, remove or replace an icon in the control's images collection. Also, the ReplaceIcon property can clear the images collection. Use the Images method to attach a image list to the control.

The following VB sample adds a new icon to control's images list:

```
i = ExTexture1.ReplaceIcon( LoadPicture("d:\icons\help.ico").Handle), i specifies the index where the icon is added
```

The following VB sample replaces an icon into control's images list::

```
i = ExTexture1.ReplaceIcon( LoadPicture("d:\icons\help.ico").Handle, 0), i is zero, so the first icon is replaced.
```

The following VB sample removes an icon from control's images list:

```
ExTexture1.ReplaceIcon 0,  i, i specifies the index of icon removed.
```

The following VB clears the control's icons collection:

```
ExTexture1.ReplaceIcon 0,  -1
```

method Texture.Rotate (Dir as RotateEnum)

Rotates the cube in a direction.

Type	Description
Dir as RotateEnum	A RotateEnum expression that indicates the direction to rotate the cube.

Use the Rotate method to programmatically rotate the cube, in a specified direction. The control fires the Rotate event when the cube is rotated. Use the AllowRotate property to specify the directions where the user can rotate the cube, by dragging. Use the RotX and RotY properties to specify the rotation angles.

property Texture.RotX as Single

Specifies the rotation angle in Radians along Ox axis.

Type	Description
Single	A real value that specifies the clockwise rotation angle of the viewing direction along Ox axis. The angle is in Radians and negative values can be used for counterclockwise rotation

By default, the RotX is 0. Use the Rotate method to rotate the cube in a direction. The control fires the Rotate event when the cube is rotated. Use the AllowRotate property to specify the directions where the user can rotate the cube, by dragging.

property Texture.RotY as Single

Specifies the rotation angle in Radians along Oy axis.

Type	Description
Single	A real value that specifies the clockwise rotation angle of the viewing direction along Oy axis. The angle is in Radians and negative values can be used for counterclockwise rotation.

By default, the RotY is 0. Use the Rotate method to rotate the cube in a direction. The control fires the Rotate event when the cube is rotated. Use the AllowRotate property to specify the directions where the user can rotate the cube, by dragging.

property Texture.ShowImageList as Boolean

Specifies whether the control's image list window is visible or hidden.

Type	Description
Boolean	A boolean expression that specifies whether the control's image list window is visible or hidden.

By default, the ShowImageList property is True. Use the ShowImageList property to hide the control's images list window. The control's images list window is visible only at design time. Use the Images method to associate an images list control to the control. Use the ReplaceIcon method to add, remove or clear icons in the control's images collection.

property Texture.Template as String

Specifies the control's template.

Type	Description
String	A string expression that indicates the control's template

The control's template uses the X-Script language to initialize the control's content. Use the Template property page of the control to update the control's Template property. Use the Template property to execute code by passing instructions as a string (template string).

Most of our UI components provide a Template page that's accessible in design mode. The control's Template page helps user to initialize the control's look and feel in design mode. The Template page displays the control on the left side of the page. On the right side of the Template page, a simple editor is displayed where user has to write the initialization code. The control's look and feel is automatically updated as soon as user types new instructions. The Template script is saved to container persistence (when Apply button is pressed), and it is executed when the control is initialized at runtime. The Template script is composed by lines of instructions. Instructions are separated by "\n\r" (newline) characters.

An instruction can be one of the following:

- Dim list of variables *Declares the variables. Multiple variables are separated by commas. (Sample: Dim h, h1, h2)*
- variable = property(list of arguments) *Assigns the result of the property to a variable. The "variable" is the name of a declared variable. The "property" is the property name of the object in the context. The "list or arguments" may include variables or values separated by commas. (Sample: h = InsertItem(0,"New Child"))*
- property(list of arguments) = value *Changes the property. The value can be a variable, a string, a number, a boolean value or a RGB value.*
- method(list of arguments) *Invokes the method. The "list or arguments" may include variables or values separated by commas.*
- { *Beginning the object's context. The properties or methods called between { and } are related to the last object returned by the property prior to { declaration.*
- } *Ending the object's context*

property Texture.TemplateDef as Variant

Defines inside variables for the next Template/ExecuteTemplate call.

Type	Description
Variant	A string expression that indicates the Dim declaration, or any Object expression to be assigned to previously declared variables.

The TemplateDef property has been added to allow programming languages such as dBASE Plus to set control's properties with multiple parameters. It is known that programming languages such as **dBASE Plus or XBasic from AlphaFive**, does not support setting a property with multiple parameters. In other words, these programming languages does not support something like *Property(Parameters)* = *Value*, so our controls provide an alternative using the TemplateDef method. The first call of the TemplateDef should be a declaration such as "Dim a,b" which means the next 2 calls of the TemplateDef defines the variables a and b. The next call should be Template or ExecuteTemplate property which can use the variable a and b being defined previously.

So, calling the TemplateDef property should be as follows:

```
with (Control)
   TemplateDef = [Dim var_Column]
   TemplateDef = var_Column
   Template = [var_Column.Def(4) = 255]
endwith
```

This sample allocates a variable var_Column, assigns the value to the variable (the second call of the TemplateDef), and the Template call uses the var_Column variable (as an object), to call its Def property with the parameter 4.

Let's say we need to define the background color for a specified column, so we need to call the Def(exCellBackColor) property of the column, to define the color for all cells in the column.

The following **VB6** sample shows setting the Def property such as:

```
With Control
   .Columns.Add("Column 1").Def(exCellBackColor) = 255
   .Columns.Add "Column 2"
   .Items.AddItem 0
   .Items.AddItem 1
```

```
   .Items.AddItem 2
End With
```

In **dBASE Plus**, calling the Def(4) has no effect, instead using the TemplateDef helps you to use properly the Def property as follows:

```
local Control,var_Column

Control = form.Activex1.nativeObject
// Control.Columns.Add("Column 1").Def(4) = 255
var_Column = Control.Columns.Add("Column 1")
with (Control)
   TemplateDef = [Dim var_Column]
   TemplateDef = var_Column
   Template = [var_Column.Def(4) = 255]
endwith
Control.Columns.Add("Column 2")
Control.Items.AddItem(0)
Control.Items.AddItem(1)
Control.Items.AddItem(2)
```

The equivalent sample for **XBasic in A5**, is as follows:

```
Dim Control as P
Dim var_Column as P

Control = topparent:CONTROL_ACTIVEX1.activex
' Control.Columns.Add("Column 1").Def(4) = 255
var_Column = Control.Columns.Add("Column 1")
Control.TemplateDef = "Dim var_Column"
Control.TemplateDef = var_Column
Control.Template = "var_Column.Def(4) = 255"

Control.Columns.Add("Column 2")
Control.Items.AddItem(0)
Control.Items.AddItem(1)
Control.Items.AddItem(2)
```

The samples just call the Column.Def(4) = Value, using the TemplateDef. The first call of TemplateDef property is "Dim var_Column", which indicates that the next call of the TemplateDef will defines the value of the variable var_Column, in other words, it defines the object var_Column. The last call of the Template property uses the var_Column member to use the x-script and so to set the Def property so a new color is being assigned to the column.

The TemplateDef, Template and ExecuteTemplate support x-script language (Template script of the Exontrols), like explained bellow:

The Template or x-script is composed by lines of instructions. Instructions are separated by "\n\r" (newline characters) or ";" character. The ; character may be available only for newer versions of the components.

An x-script instruction/line can be one of the following:

- **Dim** list of variables *Declares the variables. Multiple variables are separated by commas. (Sample: Dim h, h1, h2)*
- variable **=** property(list of arguments) *Assigns the result of the property to a variable. The "variable" is the name of a declared variable. The "property" is the property name of the object in the context. The "list or arguments" may include variables or values separated by commas. (Sample: h = InsertItem(0,"New Child"))*
- property**(** list of arguments **)** = value *Changes the property. The value can be a variable, a string, a number, a boolean value or a RGB value.*
- method**(** list of arguments **)** *Invokes the method. The "list or arguments" may include variables or values separated by commas.*
- **{** *Beginning the object's context. The properties or methods called between { and } are related to the last object returned by the property prior to { declaration.*
- **}** *Ending the object's context*
- object**.** property(list of arguments)**.**property(list of arguments)**....** *The .(dot) character splits the object from its property. For instance, the Columns.Add("Column1").HeaderBackColor = RGB(255,0,0), adds a new column and changes the column's header back color.*

The x-script may uses constant expressions as follow:

- *boolean* expression with possible values as *True* or *False*
- *numeric* expression may starts with 0x which indicates a hexa decimal representation, else it should starts with digit, or +/- followed by a digit, and . is the decimal separator. *Sample: 13 indicates the integer 13, or 12.45 indicates the double expression 12,45*
- *date* expression is delimited by **#** character in the format #mm/dd/yyyy hh:mm:ss#. *Sample: #31/12/1971# indicates the December 31, 1971*
- *string* expression is delimited by **"** or ` characters. If using the ` character, please

make sure that it is different than ' which allows adding comments inline. *Sample: "text" indicates the string text.*

Also , the template or x-script code may support general functions as follows:

- **Me** *property indicates the original object.*
- **RGB(**R,G,B**)** *property retrieves an RGB value, where the R, G, B are byte values that indicates the R G B values for the color being specified. For instance, the following code changes the control's background color to red: BackColor = RGB(255,0,0)*
- **LoadPicture(**file**)** *property loads a picture from a file or from BASE64 encoded strings, and returns a Picture object required by the picture properties.*
- **CreateObject(**progID**)** *property creates and retrieves a single uninitialized object of the class associated with a specified program identifier.*

method Texture.TemplatePut (NewVal as Variant)

Defines inside variables for the next Template/ExecuteTemplate call.

Type	Description
NewVal as Variant	A string expression that indicates the Dim declaration, or any Object expression to be assigned to previously declared variables.

The TemplatePut method / TemplateDef property has been added to allow programming languages such as dBASE Plus to set control's properties with multiple parameters. It is known that programming languages such as **dBASE Plus or XBasic from AlphaFive**, does not support setting a property with multiple parameters. In other words, these programming languages does not support something like *Property(Parameters) = Value*, so our controls provide an alternative using the TemplateDef / TemplatePut method. The first call of the TemplateDef should be a declaration such as "Dim a,b" which means the next 2 calls of the TemplateDef defines the variables a and b. The next call should be Template or ExecuteTemplate property which can use the variable a and b being defined previously.

The TemplateDef, TemplatePut, Template and ExecuteTemplate support x-script language (Template script of the Exontrols), like explained bellow:

The Template or x-script is composed by lines of instructions. Instructions are separated by "\n\r" (newline characters) or ";" character. The ; character may be available only for newer versions of the components.

An x-script instruction/line can be one of the following:

- **Dim** list of variables *Declares the variables. Multiple variables are separated by commas. (Sample: Dim h, h1, h2)*
- variable **=** property(list of arguments) *Assigns the result of the property to a variable. The "variable" is the name of a declared variable. The "property" is the property name of the object in the context. The "list or arguments" may include variables or values separated by commas. (Sample: h = InsertItem(0,"New Child"))*
- property**(** list of arguments **)** = value *Changes the property. The value can be a variable, a string, a number, a boolean value or a RGB value.*
- method**(** list of arguments **)** *Invokes the method. The "list or arguments" may include variables or values separated by commas.*
- **{** *Beginning the object's context. The properties or methods called between { and } are related to the last object returned by the property prior to { declaration.*
- **}** *Ending the object's context*
- object**.** property(list of arguments)**.**property(list of arguments)…. *The .(dot) character splits the object from its property. For instance, the*

Columns.Add("Column1").HeaderBackColor = RGB(255,0,0), adds a new column and changes the column's header back color.

The x-script may uses constant expressions as follow:

- *boolean* expression with possible values as *True* or *False*
- *numeric* expression may starts with 0x which indicates a hexa decimal representation, else it should starts with digit, or +/- followed by a digit, and . is the decimal separator. *Sample: 13 indicates the integer 13, or 12.45 indicates the double expression 12,45*
- *date* expression is delimited by **#** character in the format #mm/dd/yyyy hh:mm:ss#. *Sample: #31/12/1971# indicates the December 31, 1971*
- *string* expression is delimited by **"** or ` characters. If using the ` character, please make sure that it is different than ' which allows adding comments inline. *Sample: "text" indicates the string text.*

Also , the template or x-script code may support general functions as follows:

- **Me** *property indicates the original object.*
- **RGB(**R,G,B**)** *property retrieves an RGB value, where the R, G, B are byte values that indicates the R G B values for the color being specified. For instance, the following code changes the control's background color to red: BackColor = RGB(255,0,0)*
- **LoadPicture(**file**)** *property loads a picture from a file or from BASE64 encoded strings, and returns a Picture object required by the picture properties.*
- **CreateObject(**progID**)** *property creates and retrieves a single uninitialized object of the class associated with a specified program identifier.*

property Texture.ToolTipDelay as Long

Specifies the time in ms that passes before the ToolTip appears.

Type	Description
Long	A long expression that specifies the time in ms that passes before the ToolTip appears.

the ToolTipDelay or ToolTipPopDelay property is 0, the control displays no tooltips. The ToolTipPopDelay property specifies the period in ms of time the ToolTip remains visible if the mouse pointer is stationary within a control. Use the ToolTipWidth property to specify the width of the tooltip window.

property Texture.ToolTipPopDelay as Long

Specifies the period in ms of time the ToolTip remains visible if the mouse pointer is stationary within a control.

Type	Description
Long	A long expression that specifies the period in ms of time the ToolTip remains visible if the mouse pointer is stationary within a control.

If the ToolTipDelay or ToolTipPopDelay property is 0, the control displays no tooltips. The ToolTipDelay property specifies the time in ms that passes before the ToolTip appears. Use the ToolTipWidth property to specify the width of the tooltip window

property Texture.ToolTipText as String

Specifies the control's tooltip text.

Type	Description
String	A string expression that defines the Texture's tooltip.

Use the ToolTipText and ToolTipTitle properties to define the Texture's tooltip. Use the ToolTipDelay and ToolTipPopDelay properties to specify the time in ms that passes before the ToolTip appears. Use the **<img>** HTML tag to insert icons inside the Texture's tooltip.

The ToolTipText supports the following HTML tags:

- **bold** bolds a part of the caption.
- <u> underline </u> specifies that the portion should appear as underlined.
- <s> ~~strikeout~~ </s> specifies that the portion should appear as strikeout.
- *italic* specifies that the portion should appear as italic.
- <fgcolor=FF0000> fgcolor </fgcolor> changes the foreground color for a portion.
- <bgcolor=FF0000> bgcolor </bgcolor> changes the background color for a portion.
-
 breaks a line.
- <solidline> draws a solid line. If has no effect for a single line caption.
- <dotline> draws a dotted line. If has no effect for a single line caption.
- <upline> draws the line to the top of the text line
- <r> aligns the rest of the text line to the right side. It has no effect if the caption contains a single line.

property Texture.ToolTipTitle as String

Specifies the title of the control's tooltip.

Type	Description
String	A String expression that defines the control's tooltip title.

Use the ToolTipText and ToolTipTitle properties to define the Texture's tooltip. Use the ToolTipDelay and ToolTipPopDelay properties to specify the time in ms that passes before the ToolTip appears.

property Texture.ToolTipWidth as Long

Specifies a value that indicates the width of the tooltip window, in pixels.

Type	Description
Long	A long expression that indicates the width of the tooltip window.

Use the ToolTipWidth property to change the tooltip window width. The height of the tooltip window is automatically computed based on tooltip's description. The ToolTipPopDelay property specifies the period in ms of time the ToolTip remains visible if the mouse pointer is stationary within a control. The ToolTipDelay property specifies the time in ms that passes before the ToolTip appears.

property Texture.Version as String

Retrieves the control's version.

Type	Description
String	A string expression that indicates the version of the control you are running.

Use the Version property to identify the version of the control you are running.

property Texture.Zoom as Single

Zooms the view.

Type	Description
Single	A Single expression that indicates the zoom factor.

By default, the Zoom factor is 0.14 The Zoom factor should be between 0.01 and 0.21. Any other value is reduced to this range. The Zoom event is fired when the user calls in the code the Zoom method or whether the user rotates the mouse wheel. Use the AllowZoom property to disable zooming the view when the user rotates the mouse wheel.

For instance, use the KeyDown event handler to zoom the view when the user presses the + key, like in the following VB sample:

```
Private Sub Texture1_KeyDown(KeyCode As Integer, Shift As Integer)
   If (KeyCode = vbKeyAdd) Then
      Texture1.Zoom = Texture1.Zoom - 0.01
   Else
      If (KeyCode = vbKeySubtract) Then
         Texture1.Zoom = Texture1.Zoom + 0.01
      End If
   End If
End Sub
```

ExTexture events

Tip The /COM object can be placed on a HTML page (with usage of the HTML object tag: <object classid="clsid:...">) using the class identifier: {F79381A0-D83A-4DD5-B7AE-F2843712D2FA}. The object's program identifier is: "Exontrol.Texture". The /COM object module is: "ExTexture.dll"

The ExTexture component supports the following events:

Name	Description
Click	Occurs when the user presses and then releases the left mouse button over the control.
DblClick	Occurs when the user dblclk the left mouse button over an object.
KeyDown	Occurs when the user presses a key while an object has the focus.
KeyPress	Occurs when the user presses and releases an ANSI key.
KeyUp	Occurs when the user releases a key while an object has the focus.
MouseDown	Occurs when the user presses a mouse button.
MouseMove	Occurs when the user moves the mouse.
MouseUp	Occurs when the user releases a mouse button.
Rotate	Fired when the cube is rotated.
Zoom	Occurs when the view is magnified.

event Click ()

Occurs when the user presses and then releases the left mouse button over the control.

Type	Description

The Click event is fired when the user releases the left mouse button over the control. Use a MouseDown or MouseUp event procedure to specify actions that will occur when a mouse button is pressed or released. Unlike the Click and DblClick events, MouseDown and MouseUp events lets you distinguish between the left, right, and middle mouse buttons. You can also write code for mouse-keyboard combinations that use the SHIFT, CTRL, and ALT keyboard modifiers.

Syntax for Click event, **/NET** version, on:

C#

```
private void Click(object sender)
{
}
```

VB

```
Private Sub Click(ByVal sender As System.Object) Handles Click
End Sub
```

Syntax for Click event, **/COM** version, on:

C#

```
private void ClickEvent(object sender, EventArgs e)
{
}
```

C++

```
void OnClick()
{
}
```

C++ Builder

```
void __fastcall Click(TObject *Sender)
{
}
```

Delphi

```
procedure Click(ASender: TObject; );
begin
end;
```

Delphi 8 (.NET only)

```
procedure ClickEvent(sender: System.Object; e: System.EventArgs);
begin
end;
```

Powe…

```
begin event Click()
end event Click
```

VB.NET

```
Private Sub ClickEvent(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles ClickEvent
End Sub
```

VB6

```
Private Sub Click()
End Sub
```

VBA

```
Private Sub Click()
End Sub
```

VFP

```
LPARAMETERS nop
```

Xbas…

```
PROCEDURE OnClick(oTexture)
RETURN
```

Syntax for Click event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="Click()" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function Click()
End Function
</SCRIPT>
```

Visual Data…

```
Procedure OnComClick
   Forward Send OnComClick
```

```
End_Procedure
```

Visual Objects

```
METHOD OCX_Click() CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_Click()
{
}
```

XBasic

```
function Click as v ()
end function
```

dBASE

```
function nativeObject_Click()
return
```

event DblClick (Shift as Integer, X as OLE_XPOS_PIXELS, Y as OLE_YPOS_PIXELS)

Occurs when the user dblclk the left mouse button over an object.

Type	Description
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys.
X as OLE_XPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The x values is always expressed in container coordinates.
Y as OLE_YPOS_PIXELS	A single that specifies the current Y location of the mouse pointer. The y values is always expressed in container coordinates.

The DblClick event notifies that the user dbl clicks the control.

Syntax for DblClick event, **/NET** version, on:

C#
```
private void DblClick(object sender,short Shift,int X,int Y)
{
}
```

VB
```
Private Sub DblClick(ByVal sender As System.Object,ByVal Shift As Short,ByVal X As Integer,ByVal Y As Integer) Handles DblClick
End Sub
```

Syntax for DblClick event, **/COM** version, on:

C#
```
private void DblClick(object sender,
AxEXTEXTURELib._ITextureEvents_DblClickEvent e)
{
}
```

C++
```
void OnDblClick(short Shift,long X,long Y)
{
}
```

C++ Builder
```
void __fastcall DblClick(TObject *Sender,short Shift,int X,int Y)
{
```

```
}
```

Delphi

```
procedure DblClick(ASender: TObject; Shift : Smallint;X : Integer;Y : Integer);
begin
end;
```

Delphi 8 (.NET only)

```
procedure DblClick(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_DblClickEvent);
begin
end;
```

Powe…

```
begin event DblClick(integer Shift,long X,long Y)
end event DblClick
```

VB.NET

```
Private Sub DblClick(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_DblClickEvent) Handles DblClick
End Sub
```

VB6

```
Private Sub DblClick(Shift As Integer,X As Single,Y As Single)
End Sub
```

VBA

```
Private Sub DblClick(ByVal Shift As Integer,ByVal X As Long,ByVal Y As Long)
End Sub
```

VFP

```
LPARAMETERS Shift,X,Y

```

Xbas…

```
PROCEDURE OnDblClick(oTexture,Shift,X,Y)
RETURN
```

Syntax for DblClick event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="DblClick(Shift,X,Y)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function DblClick(Shift,X,Y)
End Function
```

```
</SCRIPT>
```

Visual Data…

```
Procedure OnComDblClick Short llShift OLE_XPOS_PIXELS llX OLE_YPOS_PIXELS llY
    Forward Send OnComDblClick llShift llX llY
End_Procedure
```

Visual Objects

```
METHOD OCX_DblClick(Shift,X,Y) CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_DblClick(int _Shift,int _X,int _Y)
{
}
```

XBasic

```
function DblClick as v (Shift as N,X as OLE::Exontrol.Texture.1::OLE_XPOS_PIXELS,Y as OLE::Exontrol.Texture.1::OLE_YPOS_PIXELS)
end function
```

dBASE

```
function nativeObject_DblClick(Shift,X,Y)
return
```

event KeyDown (KeyCode as Integer, Shift as Integer)

Occurs when the user presses a key while an object has the focus.

Type	Description
KeyCode as Integer	An integer that represent the key code.
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys at the time of the event. The shift argument is a bit field with the least-significant bits corresponding to the SHIFT key (bit 0), the CTRL key (bit 1), and the ALT key (bit 2). These bits correspond to the values 1, 2, and 4, respectively. Some, all, or none of the bits can be set, indicating that some, all, or none of the keys are pressed. For example, if both CTRL and ALT are pressed, the value of shift is 6.

Use KeyDown and KeyUp event procedures if you need to respond to both the pressing and releasing of a key. You test for a condition by first assigning each result to a temporary integer variable and then comparing shift to a bit mask. Use the And operator with the shift argument to test whether the condition is greater than 0, indicating that the modifier was pressed, as in this example:

ShiftDown = (Shift And 1) > 0
CtrlDown = (Shift And 2) > 0
AltDown = (Shift And 4) > 0
In a procedure, you can test for any combination of conditions, as in this example:
If AltDown And CtrlDown Then

Syntax for KeyDown event, **/NET** version, on:

C#

```
private void KeyDown(object sender,ref short KeyCode,short Shift)
{
}
```

VB

```
Private Sub KeyDown(ByVal sender As System.Object,ByRef KeyCode As
Short,ByVal Shift As Short) Handles KeyDown
End Sub
```

Syntax for KeyDown event, **/COM** version, on:

C#

```
private void KeyDownEvent(object sender,
AxEXTEXTURELib._ITextureEvents_KeyDownEvent e)
```

```
{
}
```

C++

```
void OnKeyDown(short FAR* KeyCode,short Shift)
{
}
```

C++ Builder

```
void __fastcall KeyDown(TObject *Sender,short * KeyCode,short Shift)
{
}
```

Delphi

```
procedure KeyDown(ASender: TObject; var KeyCode : Smallint;Shift : Smallint);
begin
end;
```

Delphi 8 (.NET only)

```
procedure KeyDownEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_KeyDownEvent);
begin
end;
```

Powe…

```
begin event KeyDown(integer KeyCode,integer Shift)
end event KeyDown
```

VB.NET

```
Private Sub KeyDownEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_KeyDownEvent) Handles KeyDownEvent
End Sub
```

VB6

```
Private Sub KeyDown(KeyCode As Integer,Shift As Integer)
End Sub
```

VBA

```
Private Sub KeyDown(KeyCode As Integer,ByVal Shift As Integer)
End Sub
```

VFP

```
LPARAMETERS KeyCode,Shift

```

Xbas…

```
PROCEDURE OnKeyDown(oTexture,KeyCode,Shift)
RETURN
```

Syntax for KeyDown event, **/COM** version (others), on:

Java…
```
<SCRIPT EVENT="KeyDown(KeyCode,Shift)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…
```
<SCRIPT LANGUAGE="VBScript">
Function KeyDown(KeyCode,Shift)
End Function
</SCRIPT>
```

Visual Data…
```
Procedure OnComKeyDown Short llKeyCode Short llShift
    Forward Send OnComKeyDown llKeyCode llShift
End_Procedure
```

Visual Objects
```
METHOD OCX_KeyDown(KeyCode,Shift) CLASS MainDialog
RETURN NIL
```

X++
```
void onEvent_KeyDown(COMVariant /*short*/ _KeyCode,int _Shift)
{
}
```

XBasic
```
function KeyDown as v (KeyCode as N,Shift as N)
end function
```

dBASE
```
function nativeObject_KeyDown(KeyCode,Shift)
return
```

event KeyPress (KeyAscii as Integer)

Occurs when the user presses and releases an ANSI key.

Type	Description
KeyAscii as Integer	An integer that returns a standard numeric ANSI keycode.

The KeyPress event lets you immediately test keystrokes for validity or for formatting characters as they are typed. Changing the value of the keyascii argument changes the character displayed. Use KeyDown and KeyUp event procedures to handle any keystroke not recognized by KeyPress, such as function keys, editing keys, navigation keys, and any combinations of these with keyboard modifiers. Unlike the KeyDown and KeyUp events, KeyPress does not indicate the physical state of the keyboard; instead, it passes a character. KeyPress interprets the uppercase and lowercase of each character as separate key codes and, therefore, as two separate characters.

Syntax for KeyPress event, **/NET** version, on:

C#

```
private void KeyPress(object sender,ref short KeyAscii)
{
}
```

VB

```
Private Sub KeyPress(ByVal sender As System.Object,ByRef KeyAscii As Short)
Handles KeyPress
End Sub
```

Syntax for KeyPress event, **/COM** version, on:

C#

```
private void KeyPressEvent(object sender,
AxEXTEXTURELib._ITextureEvents_KeyPressEvent e)
{
}
```

C++

```
void OnKeyPress(short FAR* KeyAscii)
{
}
```

C++ Builder

```
void __fastcall KeyPress(TObject *Sender,short * KeyAscii)
{
}
```

Delphi

```
procedure KeyPress(ASender: TObject; var KeyAscii : Smallint);
begin
end;
```

Delphi 8 (.NET only)

```
procedure KeyPressEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_KeyPressEvent);
begin
end;
```

Powe…

```
begin event KeyPress(integer KeyAscii)
end event KeyPress
```

VB.NET

```
Private Sub KeyPressEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_KeyPressEvent) Handles KeyPressEvent
End Sub
```

VB6

```
Private Sub KeyPress(KeyAscii As Integer)
End Sub
```

VBA

```
Private Sub KeyPress(KeyAscii As Integer)
End Sub
```

VFP

```
LPARAMETERS KeyAscii
```

Xbas…

```
PROCEDURE OnKeyPress(oTexture,KeyAscii)
RETURN
```

Syntax for KeyPress event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="KeyPress(KeyAscii)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function KeyPress(KeyAscii)
End Function
</SCRIPT>
```

Visual Data…

```
Procedure OnComKeyPress Short llKeyAscii
    Forward Send OnComKeyPress llKeyAscii
End_Procedure
```

Visual Objects

```
METHOD OCX_KeyPress(KeyAscii) CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_KeyPress(COMVariant /*short*/ _KeyAscii)
{
}
```

XBasic

```
function KeyPress as v (KeyAscii as N)
end function
```

dBASE

```
function nativeObject_KeyPress(KeyAscii)
return
```

event KeyUp (KeyCode as Integer, Shift as Integer)

Occurs when the user releases a key while an object has the focus.

Type	Description
KeyCode as Integer	An integer that represent the key code.
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys at the time of the event. The shift argument is a bit field with the least-significant bits corresponding to the SHIFT key (bit 0), the CTRL key (bit 1), and the ALT key (bit 2). These bits correspond to the values 1, 2, and 4, respectively. Some, all, or none of the bits can be set, indicating that some, all, or none of the keys are pressed. For example, if both CTRL and ALT are pressed, the value of shift is 6.

Use the KeyUp event procedure to respond to the releasing of a key.

Syntax for KeyUp event, **/NET** version, on:

C#

```
private void KeyUp(object sender,ref short KeyCode,short Shift)
{
}
```

VB

```
Private Sub KeyUp(ByVal sender As System.Object,ByRef KeyCode As Short,ByVal
Shift As Short) Handles KeyUp
End Sub
```

Syntax for KeyUp event, **/COM** version, on:

C#

```
private void KeyUpEvent(object sender,
AxEXTEXTURELib._ITextureEvents_KeyUpEvent e)
{
}
```

C++

```
void OnKeyUp(short FAR* KeyCode,short Shift)
{
}
```

C++ Builder

```
void __fastcall KeyUp(TObject *Sender,short * KeyCode,short Shift)
{
```

```
}
```

Delphi

```
procedure KeyUp(ASender: TObject; var KeyCode : Smallint;Shift : Smallint);
begin
end;
```

Delphi 8 (.NET only)

```
procedure KeyUpEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_KeyUpEvent);
begin
end;
```

Powe…

```
begin event KeyUp(integer KeyCode,integer Shift)
end event KeyUp
```

VB.NET

```
Private Sub KeyUpEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_KeyUpEvent) Handles KeyUpEvent
End Sub
```

VB6

```
Private Sub KeyUp(KeyCode As Integer,Shift As Integer)
End Sub
```

VBA

```
Private Sub KeyUp(KeyCode As Integer,ByVal Shift As Integer)
End Sub
```

VFP

```
LPARAMETERS KeyCode,Shift

```

Xbas…

```
PROCEDURE OnKeyUp(oTexture,KeyCode,Shift)
RETURN
```

Syntax for KeyUp event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="KeyUp(KeyCode,Shift)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function KeyUp(KeyCode,Shift)
End Function
```

```
</SCRIPT>
```

Visual Data…

```
Procedure OnComKeyUp Short llKeyCode Short llShift
    Forward Send OnComKeyUp llKeyCode llShift
End_Procedure
```

Visual Objects

```
METHOD OCX_KeyUp(KeyCode,Shift) CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_KeyUp(COMVariant /*short*/ _KeyCode,int _Shift)
{
}
```

XBasic

```
function KeyUp as v (KeyCode as N,Shift as N)
end function
```

dBASE

```
function nativeObject_KeyUp(KeyCode,Shift)
return
```

event MouseDown (Button as Integer, Shift as Integer, X as OLE_XPOS_PIXELS, Y as OLE_YPOS_PIXELS)

Occurs when the user presses a mouse button.

Type	Description
Button as Integer	An integer that identifies the button that was pressed to cause the event
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys when the button specified in the button argument is pressed or released.
X as OLE_XPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The X value is always expressed in container coordinates.
Y as OLE_YPOS_PIXELS	A single that specifies the current Y location of the mouse pointer. The Y value is always expressed in container coordinates.

Use a MouseDown or MouseUp event procedure to specify actions that will occur when a mouse button is pressed or released. Unlike the Click and DblClick events, MouseDown and MouseUp events lets you distinguish between the left, right, and middle mouse buttons. You can also write code for mouse-keyboard combinations that use the SHIFT, CTRL, and ALT keyboard modifiers.

Syntax for MouseDown event, **/NET** version, on:

C#

```
private void MouseDownEvent(object sender,short Button,short Shift,int X,int Y)
{
}
```

VB

```
Private Sub MouseDownEvent(ByVal sender As System.Object,ByVal Button As
Short,ByVal Shift As Short,ByVal X As Integer,ByVal Y As Integer) Handles
MouseDownEvent
End Sub
```

Syntax for MouseDown event, **/COM** version, on:

C#

```
private void MouseDownEvent(object sender,
AxEXTEXTURELib._ITextureEvents_MouseDownEvent e)
{
}
```

C++

```
void OnMouseDown(short Button,short Shift,long X,long Y)
{
}
```

C++ Builder

```
void __fastcall MouseDown(TObject *Sender,short Button,short Shift,int X,int Y)
{
}
```

Delphi

```
procedure MouseDown(ASender: TObject; Button : Smallint;Shift : Smallint;X :
Integer;Y : Integer);
begin
end;
```

Delphi 8 (.NET only)

```
procedure MouseDownEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_MouseDownEvent);
begin
end;
```

Powe…

```
begin event MouseDown(integer Button,integer Shift,long X,long Y)
end event MouseDown
```

VB.NET

```
Private Sub MouseDownEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_MouseDownEvent) Handles MouseDownEvent
End Sub
```

VB6

```
Private Sub MouseDown(Button As Integer,Shift As Integer,X As Single,Y As Single)
End Sub
```

VBA

```
Private Sub MouseDown(ByVal Button As Integer,ByVal Shift As Integer,ByVal X As
Long,ByVal Y As Long)
End Sub
```

VFP

```
LPARAMETERS Button,Shift,X,Y

```

Xbas…

```
PROCEDURE OnMouseDown(oTexture,Button,Shift,X,Y)
RETURN
```

Syntax for MouseDown event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="MouseDown(Button,Shift,X,Y)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function MouseDown(Button,Shift,X,Y)
End Function
</SCRIPT>
```

Visual Data…

```
Procedure OnComMouseDown Short llButton Short llShift OLE_XPOS_PIXELS llX
OLE_YPOS_PIXELS llY
    Forward Send OnComMouseDown llButton llShift llX llY
End_Procedure
```

Visual Objects

```
METHOD OCX_MouseDown(Button,Shift,X,Y) CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_MouseDown(int _Button,int _Shift,int _X,int _Y)
{
}
```

XBasic

```
function MouseDown as v (Button as N,Shift as N,X as
OLE::Exontrol.Texture.1::OLE_XPOS_PIXELS,Y as
OLE::Exontrol.Texture.1::OLE_YPOS_PIXELS)
end function
```

dBASE

```
function nativeObject_MouseDown(Button,Shift,X,Y)
return
```

event MouseMove (Button as Integer, Shift as Integer, X as OLE_XPOS_PIXELS, Y as OLE_YPOS_PIXELS)

Occurs when the user moves the mouse.

Type	Description
Button as Integer	An integer that corresponds to the state of the mouse buttons in which a bit is set if the button is down.
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys.
X as OLE_XPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The x values is always expressed in container coordinates.
Y as OLE_YPOS_PIXELS	A single that specifies the current Y location of the mouse pointer. The y values is always expressed in container coordinates.

The MouseMove event is generated continually as the mouse pointer moves across objects. Unless another object has captured the mouse, an object recognizes a MouseMove event whenever the mouse position is within its borders.

Syntax for MouseMove event, **/NET** version, on:

C#
```
private void MouseMoveEvent(object sender,short Button,short Shift,int X,int Y)
{
}
```

VB
```
Private Sub MouseMoveEvent(ByVal sender As System.Object,ByVal Button As Short,ByVal Shift As Short,ByVal X As Integer,ByVal Y As Integer) Handles MouseMoveEvent
End Sub
```

Syntax for MouseMove event, **/COM** version, on:

C#
```
private void MouseMoveEvent(object sender,
AxEXTEXTURELib._ITextureEvents_MouseMoveEvent e)
{
}
```

C++
```
void OnMouseMove(short Button,short Shift,long X,long Y)
```

```
{
}
```

C++ Builder

```
void __fastcall MouseMove(TObject *Sender,short Button,short Shift,int X,int Y)
{
}
```

Delphi

```
procedure MouseMove(ASender: TObject; Button : Smallint;Shift : Smallint;X :
Integer;Y : Integer);
begin
end;
```

Delphi 8 (.NET only)

```
procedure MouseMoveEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_MouseMoveEvent);
begin
end;
```

Powe…

```
begin event MouseMove(integer Button,integer Shift,long X,long Y)
end event MouseMove
```

VB.NET

```
Private Sub MouseMoveEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_MouseMoveEvent) Handles MouseMoveEvent
End Sub
```

VB6

```
Private Sub MouseMove(Button As Integer,Shift As Integer,X As Single,Y As Single)
End Sub
```

VBA

```
Private Sub MouseMove(ByVal Button As Integer,ByVal Shift As Integer,ByVal X As
Long,ByVal Y As Long)
End Sub
```

VFP

```
LPARAMETERS Button,Shift,X,Y

```

Xbas…

```
PROCEDURE OnMouseMove(oTexture,Button,Shift,X,Y)
RETURN
```

Syntax for MouseMove event, **/COM** version (others), on:

Java…
```
<SCRIPT EVENT="MouseMove(Button,Shift,X,Y)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…
```
<SCRIPT LANGUAGE="VBScript">
Function MouseMove(Button,Shift,X,Y)
End Function
</SCRIPT>
```

Visual Data…
```
Procedure OnComMouseMove Short llButton Short llShift OLE_XPOS_PIXELS llX
OLE_YPOS_PIXELS llY
    Forward Send OnComMouseMove llButton llShift llX llY
End_Procedure
```

Visual Objects
```
METHOD OCX_MouseMove(Button,Shift,X,Y) CLASS MainDialog
RETURN NIL
```

X++
```
void onEvent_MouseMove(int _Button,int _Shift,int _X,int _Y)
{
}
```

XBasic
```
function MouseMove as v (Button as N,Shift as N,X as
OLE::Exontrol.Texture.1::OLE_XPOS_PIXELS,Y as
OLE::Exontrol.Texture.1::OLE_YPOS_PIXELS)
end function
```

dBASE
```
function nativeObject_MouseMove(Button,Shift,X,Y)
return
```

The following VB sample displays the index of the face from the cursor:

```
Private Sub Texture1_MouseMove(Button As Integer, Shift As Integer, X As Single, Y As
Single)
    Dim i As Long
    With Texture1
        i = .FaceFromPoint(X / Screen.TwipsPerPixelX, Y / Screen.TwipsPerPixelY)
        If (i >= 0) Then
```

```
        .Object.ToolTipText = i
      End If
    End With
End Sub
```

event MouseUp (Button as Integer, Shift as Integer, X as OLE_XPOS_PIXELS, Y as OLE_YPOS_PIXELS)

Occurs when the user releases a mouse button.

Type	Description
Button as Integer	An integer that identifies the button that was pressed to cause the event.
Shift as Integer	An integer that corresponds to the state of the SHIFT, CTRL, and ALT keys when the button specified in the button argument is pressed or released.
X as OLE_XPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The x values is always expressed in container coordinates.
Y as OLE_YPOS_PIXELS	A single that specifies the current X location of the mouse pointer. The x values is always expressed in container coordinates.

Use a MouseDown or MouseUp event procedure to specify actions that will occur when a mouse button is pressed or released. Unlike the Click and DblClick events, MouseDown and MouseUp events lets you distinguish between the left, right, and middle mouse buttons.

Syntax for MouseUp event, **/NET** version, on:

C#

```
private void MouseUpEvent(object sender,short Button,short Shift,int X,int Y)
{
}
```

VB

```
Private Sub MouseUpEvent(ByVal sender As System.Object,ByVal Button As
Short,ByVal Shift As Short,ByVal X As Integer,ByVal Y As Integer) Handles
MouseUpEvent
End Sub
```

Syntax for MouseUp event, **/COM** version, on:

C#

```
private void MouseUpEvent(object sender,
AxEXTEXTURELib._ITextureEvents_MouseUpEvent e)
{
}
```

C++

```
void OnMouseUp(short Button,short Shift,long X,long Y)
{
}
```

C++ Builder

```
void __fastcall MouseUp(TObject *Sender,short Button,short Shift,int X,int Y)
{
}
```

Delphi

```
procedure MouseUp(ASender: TObject; Button : Smallint;Shift : Smallint;X :
Integer;Y : Integer);
begin
end;
```

Delphi 8 (.NET only)

```
procedure MouseUpEvent(sender: System.Object; e:
AxEXTEXTURELib._ITextureEvents_MouseUpEvent);
begin
end;
```

Powe…

```
begin event MouseUp(integer Button,integer Shift,long X,long Y)
end event MouseUp
```

VB.NET

```
Private Sub MouseUpEvent(ByVal sender As System.Object, ByVal e As
AxEXTEXTURELib._ITextureEvents_MouseUpEvent) Handles MouseUpEvent
End Sub
```

VB6

```
Private Sub MouseUp(Button As Integer,Shift As Integer,X As Single,Y As Single)
End Sub
```

VBA

```
Private Sub MouseUp(ByVal Button As Integer,ByVal Shift As Integer,ByVal X As
Long,ByVal Y As Long)
End Sub
```

VFP

```
LPARAMETERS Button,Shift,X,Y

```

Xbas…

```
PROCEDURE OnMouseUp(oTexture,Button,Shift,X,Y)
RETURN
```

Syntax for MouseUp event, **/COM** version (others), on:

Java…

```
<SCRIPT EVENT="MouseUp(Button,Shift,X,Y)" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…

```
<SCRIPT LANGUAGE="VBScript">
Function MouseUp(Button,Shift,X,Y)
End Function
</SCRIPT>
```

Visual Data…

```
Procedure OnComMouseUp Short llButton Short llShift OLE_XPOS_PIXELS llX
OLE_YPOS_PIXELS llY
    Forward Send OnComMouseUp llButton llShift llX llY
End_Procedure
```

Visual Objects

```
METHOD OCX_MouseUp(Button,Shift,X,Y) CLASS MainDialog
RETURN NIL
```

X++

```
void onEvent_MouseUp(int _Button,int _Shift,int _X,int _Y)
{
}
```

XBasic

```
function MouseUp as v (Button as N,Shift as N,X as
OLE::Exontrol.Texture.1::OLE_XPOS_PIXELS,Y as
OLE::Exontrol.Texture.1::OLE_YPOS_PIXELS)
end function
```

dBASE

```
function nativeObject_MouseUp(Button,Shift,X,Y)
return
```

event Rotate ()

Fired when the cube is rotated.

Type	Description

The Rotate event notifies your application that the user rotates the cube. Use the Rotate method to rotate the cube programmatically. Use the AllowRotate property to specify the directions where the user can rotate the cube, by dragging. Use the RotX and RotY properties to specify the rotation angles.

Syntax for Rotate event, **/NET** version, on:

C#
```
private void Rotate(object sender)
{
}
```

VB
```
Private Sub Rotate(ByVal sender As System.Object) Handles Rotate
End Sub
```

Syntax for Rotate event, **/COM** version, on:

C#
```
private void Rotate(object sender, EventArgs e)
{
}
```

C++
```
void OnRotate()
{
}
```

C++ Builder
```
void __fastcall Rotate(TObject *Sender)
{
}
```

Delphi
```
procedure Rotate(ASender: TObject; );
begin
end;
```

Delphi 8 (.NET only)
```
procedure Rotate(sender: System.Object; e: System.EventArgs);
begin
end;
```

Powe…
```
begin event Rotate()
end event Rotate
```

VB.NET
```
Private Sub Rotate(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles Rotate
End Sub
```

VB6
```
Private Sub Rotate()
End Sub
```

VBA
```
Private Sub Rotate()
End Sub
```

VFP
```
LPARAMETERS nop
```

Xbas…
```
PROCEDURE OnRotate(oTexture)
RETURN
```

Syntax for Rotate event, **/COM** version (others), on:

Java…
```
<SCRIPT EVENT="Rotate()" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…
```
<SCRIPT LANGUAGE="VBScript">
Function Rotate()
End Function
</SCRIPT>
```

Visual Data…
```
Procedure OnComRotate
    Forward Send OnComRotate
End_Procedure
```

Visual Objects
```
METHOD OCX_Rotate() CLASS MainDialog
RETURN NIL
```

X++
```
void onEvent_Rotate()
{
```

```
}
```

XBasic

```
function Rotate as v ()
end function
```

dBASE

```
function nativeObject_Rotate()
return
```

event Zoom ()

Occurs when the view is magnified.

Type	Description

The Zoom event notifies your application that the view is zoomed. Use the Zoom property to specify the zoom factor. Use the AllowZoom property to disable zooming the view while using the mouse wheel.

Syntax for Zoom event, **/NET** version, on:

C#

```
private void Zoom(object sender)
{
}
```

VB

```
Private Sub Zoom(ByVal sender As System.Object) Handles Zoom
End Sub
```

Syntax for Zoom event, **/COM** version, on:

C#

```
private void Zoom(object sender, EventArgs e)
{
}
```

C++

```
void OnZoom()
{
}
```

C++ Builder

```
void __fastcall Zoom(TObject *Sender)
{
}
```

Delphi

```
procedure Zoom(ASender: TObject; );
begin
end;
```

Delphi 8 (.NET only)

```
procedure Zoom(sender: System.Object; e: System.EventArgs);
begin
end;
```

Powe…
```
begin event Zoom()
end event Zoom
```

VB.NET
```
Private Sub Zoom(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles Zoom
End Sub
```

VB6
```
Private Sub Zoom()
End Sub
```

VBA
```
Private Sub Zoom()
End Sub
```

VFP
```
LPARAMETERS nop

```

Xbas…
```
PROCEDURE OnZoom(oTexture)
RETURN
```

Syntax for Zoom event, **/COM** version (others), on:

Java…
```
<SCRIPT EVENT="Zoom()" LANGUAGE="JScript">
</SCRIPT>
```

VBSc…
```
<SCRIPT LANGUAGE="VBScript">
Function Zoom()
End Function
</SCRIPT>
```

Visual Data…
```
Procedure OnComZoom
    Forward Send OnComZoom
End_Procedure
```

Visual Objects
```
METHOD OCX_Zoom() CLASS MainDialog
RETURN NIL
```

X++
```
void onEvent_Zoom()
{
```

```
}
```

XBasic

```
function Zoom as v ()
end function
```

dBASE

```
function nativeObject_Zoom()
return
```