RhinoTerrain
Terrain modeling & City builder software

3D CURSOR DEMONSTRATOR

RhinoTerrain *Terrain modeling & City builder software*
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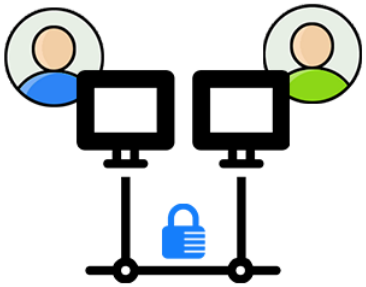

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Our software is available at a reduced price for students, teachers (Educational license) and universities (LAB licenses).

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1 CONTENT

This package contains the 3D cursor demonstrator developed by **RhinoTerrain SAS**.

It consists of:

- RT_3DCursor.rhp: the Rhinoceros V7 plug-in
- ftd2xx.dll: a DLL required by the plug-in
- RT_3DCursor_Sample_01.3dm: an example of a 3D scene

2 INSTALLATION

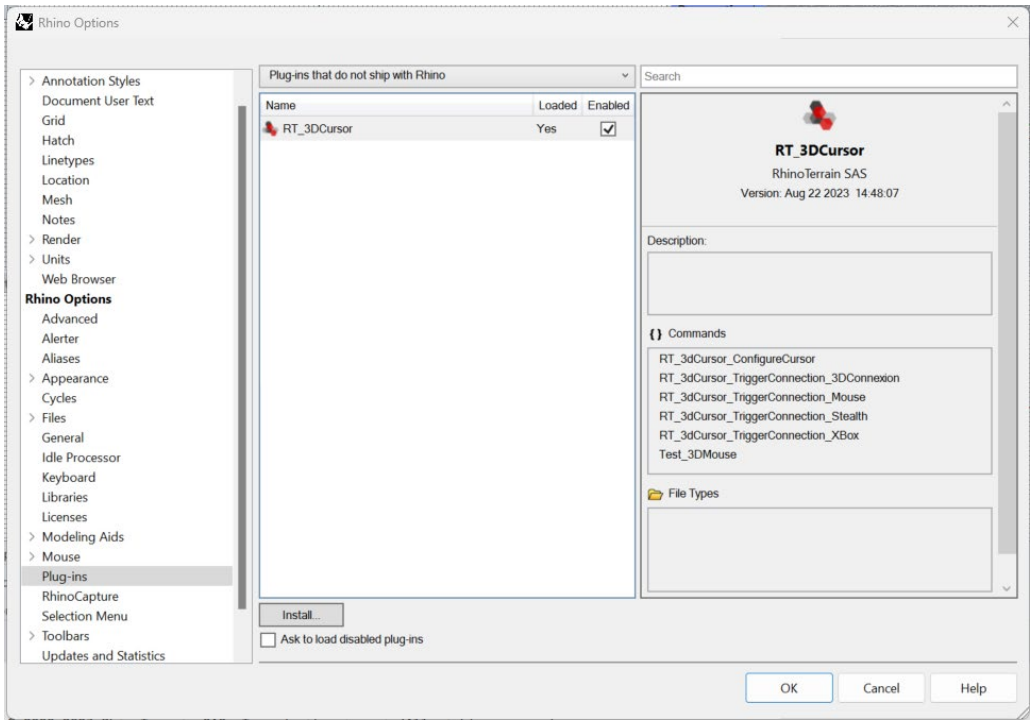
Copy the files `RT_3DCursor.rhp` and `ftd2xx.dll` wherever you like. Just make sure they are in the same directory.

In **Rhinoceros 7**, from the "*Tools*" menu, click on "*Options...*"

In the "*Plug-ins*" section, click on the "*Install*" button.

Browse to the directory where you copied the `RT_3DCursor.rhp` file, select it and click the "*Open*" button.

You should then see the "RT_3DCursor" plug-in appear in the list of installed plug-ins.



3 COMMANDS

There are 5 commands available:

- RT_3DCursor_ConfigureCursor
- RT_3DCursor_TriggerConnection_3DConnexion
- RT_3DCursor_TriggerConnection_Mouse
- RT_3DCursor_TriggerConnection_Stealth
- RT_3DCursor_TriggerConnection_XBox

The "RT_3DCursor_ConfigureCursor" command

This command is used to modify the values of various 3D cursor parameters.

Parameters

- **Reset**
  Moves the cursor to just in front of the camera
- **OnClosest**
- **OnPrev**
- **OnNext**
- **StayOnObjects**
  Default value=`false`
  If the value is `false`: the cursor is free.
  If `true`: the cursor tries to stay on a surface
- **CursorType**
  Default value=`Cross3d`

  Used to select the type of cursor.
  The possible values are: `Point`, `Cross2d`, `Cross3d`, `Circle`, `Sphere`, `Cube` and `Diamond`.

  Depending on the cursor type selected, other parameters appear.

  If *CursorType*=`Point`
  - **Diameter**
    Default value=`0.3` : size according to the unit of the current document

  If *CursorType*=`Cross2d`
  - **Branch**
    Default value=`1.5` : length according to the unit of the current document
  - **InnerGap**
    Default value=`0.1` : size according to the unit of the current document

  If *CursorType*=`Cross3d`
  - **Branch**
    Default value=`1.5` : length according to the unit of the current document
  - **InnerGap**
    Default value=`0.1` : size according to the unit of the current document

If *CursorType*=`Circle`

- **Radius**
  Default value=`0.5` : radius according to the unit of the current document
- **PointSize**
  Default value=`0.1` : size according to the unit of the current document

If *CursorType*=`Sphere`

- **Radius**
  Default value=`0.5` : radius according to the unit of the current document
- **PointSize**
  Default value=`0.1` : size according to the unit of the current document

If *CursorType*=`Cube`

- **Side**
  Default value=`1.0` : length according to the unit of the current document
- **PointSize**
  Default value=`0.1` : size according to the unit of the current document

If *CursorType*=`Diamond`

- **HalfDiagonal**
  Default value=`0.5` : length according to the unit of the current document
- **PointSize**
  Default value=`0.1` : size according to the unit of the current document

- **Done**
  Stop the command. Equivalent to using the [`ESC`] or [`Return`] key.

The "RT_3DCursor_TriggerConnection_3DConnexion" command

This command starts the 3D cursor and connects it to a 3Dconnexion mouse.

The joystick moves the cursor. Depth is on the front to back axis, while moving the cursor up and down is done by pressing/pulling the joystick.

Turning the joystick rotates the camera around the cursor.

The "RT_3DCursor_ TriggerConnection_Mouse" command

This command starts the 3D cursor and connects it to the basic 2D Windows mouse.

- The 3D cursor follows the 2D cursor. The wheel changes the depth.
- **Right-click** to move the camera around the cursor.
- **Right-click + `[Shift]`** moves the camera so that the cursor is always under the mouse.
- **Right click + `[Ctrl]`** to zoom in and move the camera towards the cursor.
- Turning the wheel with **`[Shift]`** or **`[Ctrl]`** pressed also zooms in.

The "RT_3DCursor_ TriggerConnection_Stealth" command

This command starts the 3D cursor and connects it to a Stealth 3D mouse.

The cursor follows the movement of the mouse, and the **scroll wheel** is the depth control.

The "RT_3DCursor_ TriggerConnection_XBox" command

This command starts the 3D cursor and connects it to a Xbox pad.

- **Left joystick** to move the on-screen cursor.
- **LT/RT triggers** to control depth.
- **Right joystick** to rotate the cursor.
- **Left joystick + RB/LB** to move the camera.
- **Right joystick + RB/LB** to zoom in.
- Press the **Left joystick** to reset the cursor in front of the camera.
- **Back** (or **Select** for older pad) to toggle between free movement and moving on surfaces.
- **Up** and **down arrows** to move to next/previous surface.
- **A** button to simulate a left mouse click.
- **B** button to simulate a right click (/!\ avoid it).
- **Left** and **right arrows** to change cursor type (axis, circle, sphere, etc..)
- **X** and **Y** keys to change the size of the cursor.
- **X** and **Y** keys with **RB/LB** pressed to change the internal size of the cursor.

4 WHERE TO START

In **Rhinoceros 7**, load the file RT_3DCursor_Sample_01.3dm

Start the `RT_3DCursor_ConfigureCursor` command.

Define the 2 options as follows:

- **StayOnObjects**=`True`
- **CursorType**=`Circle`

Start the `RT_3DCursor_TriggerConnection_Mouse.`

Mouve the mouse on the 3D objects, in the *Perspective* view.

You'll notice that the 3D cursor 'sticks' to the surfaces.

This is particularly noticeable where 2 objects meet, as in the image below: