

## What's New, SR2 (17-Oct-2007)

### New Features:

- **Properties - Texture Mapping:** The mapping widget color can now be specified.
- **Save:DWG/DXF:** Export schemes for CAM applications added: CAM Imperial and CAM Metric. These schemes have settings that make it easier to save files that are compatible with laser cutters, routers, and other 2-D CAM equipment.

### Enhanced Features:

- **Layer:** New layers are inserted into the list just below the currently selected layer. If no layer is selected, a new layer is inserted and the end of the list.
- **Smooth:** Right-click one coordinate direction to set it and clear the others.
- **SnapToLocked:** Now can run transparently (inside another command).

### Bug Fixes:

- **.NET SDK:** Fixed a C# const exception in CGetGripPoint::CalculateTransform
- **.NET SDK:** Fixed a crash in MRhinoPolyEdge destructor.
- **Angle:** A different answer resulted from pre-picking and post-picking lines. This is fixed.
- **ArrayPolar:** When display units was set to feet and inches, the Angle to fill prompt incorrectly displayed feet and inches instead of degrees. This is fixed.
- **BlendCrv:** Blending between surface edges deleted surfaces. This is fixed.
- **BlendSrf:** Problems with the PlanarSections options have been fixed.
- **CageEdit:** Bugs fixed:
  - Relationship between cage and captive object could break.
  - Captive objects incorrectly released during transform commands.
  - Mesh vertex normals were incorrectly changed.
  - Captive object incorrectly edited.
- **ClippingPlane:** If a clipping plane was active in a detail, it incorrectly clipped the page geometry. This is fixed.
- Crash fixed in **FilletCorners** command.
- **Dimensions:** Values close to 0 did not honor the precision setting. This is fixed.
- **DupBorder:** Set curves the wrong direction. This is fixed.
- **FilletCorners:** Failure bug fixed.
- **Hatch:** The hatch preview is now the current layer color, not black.
- **Import SKP:** SketchUP SKP import now uses the newest file reading libraries from Google.
- **Intersect:** Failed on fully-multiple knots. This is fixed.
- **Join:** Cancel bug is fixed.
- **Layout:** The grid incorrectly displayed in new page layouts. This is fixed.
- **Loft:** Creating a loft between one curve and a point failed. This is fixed.
- **Maelstrom:** The select objects prompt has been changed.
- **MakeHole:** Bugs fixed:
  - New surfaces made with the Through option were not properly sized.
  - Failure bug.
- **Match:** Failure bug fixed.
- **MoveHole:** A crash occurred when dragging a hole out of its surface boundary. This is fixed.
- **NamedCPlane:** Failed to properly restore. This is fixed.
- **NetworkSrf:** Canceling caused a crash. This is fixed.
- **NetworkSrf:** Scripting version (-NetworkSrf) did not correctly set the tolerance variables. This is fixed.
- **Offset:** Did not correctly handle stacked control points. This is fixed.
- **OffsetSrf:** Offsetting a closed periodic surface resulted in an open surface. This is fixed.
- **Open 3DM files:** Rhino 4.0 cannot read Rhino 5.0 files, but could leave Rhino in a state where it was easy to overwrite the Rhino 5.0 file with an empty model if you try. This is now fixed.
- **OrientOnSrf:** The preview is flipped compared to the final result. This is fixed.
- **PluginManager:** Dialog box column width problem fixed.
- **Print:** Bugs fixed:
  - Margin unit scale settings saved.
  - Selected blocks did not print.
  - Moving print window did not work correctly.
  - Control polygon dots too close together.
  - Preview window display incorrect.
- **Print:** Certain fonts did not display at the same size in Windows GDI and OpenGL display. This is fixed.
- **PrintDisplay:** A problem with highlighting objects has been fixed.
- **Properties - Material:** The dialog box incorrectly reset the materials on meshes. This is fixed.
- **Properties - Texture Mapping:** Texture stretched when mapping widget close to 90 degrees. This is fixed.
- **Properties:** The Match option did not work properly when matching materials. This is fixed.

- Render: A problem with transparency has been fixed.
- **Render:** When Rhino did not have focus, the render calculated was wrong. This is fixed.
- **RoundHole:** Bugs fixed:
  - SmartTrack did not work properly with RoundHole.
  - New surfaces made with the Through option were not properly sized.
- **Save:AI:** An error occurred in Adobe Illustrator when importing a Rhino model with no surfaces. This is fixed.
- **Save:DWG/DXF:** If the normal of a 2-D polylines points in the negative coordinate direction, some CAM software incorrectly mirrored the polylines around the origin. This is fixed.
- **SaveAs:** Did not work properly in Vista OS. This is fixed.
- **SelChain:** Ctrl+Click incorrectly did not allow selecting the last edge segment on a surface. This is fixed.
- **SmartTrack:** Using distance constraint snap to something; the distance constrained point was incorrectly tagged as a smart point. This is fixed.
- **Smooth:** Incorrectly removed trim curves. This is fixed.
- **Split:** The Isocurve option failed when there were stacked control points in the surface. This is fixed.
- **Tab constraint:** The distance constraint and the Tab direction constraint did not work properly together. This is fixed.
- **Tab constraint:** The Tab direction constraint and object snaps did not work properly together. This is fixed.
- **Toolbar buttons:** Several bugs fixed.
- **Trim:** Several bugs fixed.
- **Trim:** The ApparentIntersections option affected the results in an unexpected way. This is fixed.
- **Zebra:** A crash occurred when a mesh had no texture coordinates and an analysis mesh command was used. This is fixed.
- **ZoomTarget:** Did not work properly when a transparent grid was used. This is fixed.

What's New, SR1 (3-Jul-2007)

### **New Features:**

- **Open:DWG/DXF:** DWG Paperspace objects export to and import from Rhino Layouts.

### **Enhanced Features:**

- **ExtractSubCrv:** Ctrl+click now deselects objects.
- **Layer:** If you are in the middle of editing a layer name, pressing the Tab key acts like the equivalent of pressing Enter and then the New Layer button.
- **Length:** Now allows surface edge selection.
- **PictureFrame:** Automatically sets the object display mode so it renders in all viewports. This allows the image on the object to be visible.

### **Bug Fixes:**

- **Arc:** A problem creating an arc of a specific radius, tangent to an existing ellipse and through a point has been fixed.
- **ArrayCrvOnSrf, Divide option:** The resulting objects were one fewer than the number requested. This is fixed.
- **Autosave:**
  - Incorrectly deleted notes being typed when autosave occurred. This is fixed.
  - Now checks for invalid path names.
- **BackgroundBitmap, Scale:** Deleted the image. This is fixed.
- **BlendSrf:**
  - The edge chainer did not stop after going around a closed hole the first time. Edges from both surfaces were incorrectly added to the chain, one after the other. Now the autochaining should stop as soon as the chain forms a closed loop.
  - The Perpendicular object snap now works when adding additional section curves.
- **Boolean2Objects:** Could create a single disjoint polysurface. This is fixed.
- **Calc:** A problem with using numbers in memory has been fixed.
- **ChamferSrf:** Selecting with scripting failed. This is improved.
- **Check:** Did not always find bad surfaces. This is fixed.
- **CommandHelp:**
  - Now intermediate commands in scripts will not force the help to update.
  - The help window no longer requires a mouse click to set focus. This means the window will scroll as soon as the mouse is over it.
- **CurveBoolean:** Incorrectly previewed the curves in black. This has been fixed.

- **Detail:** A problem with the scale display has been fixed.
- **Display:** Under some conditions, it was possible to eliminate selection highlight. This is fixed.
- **DocumentProperties:** The preview image of a perspective viewport was not properly saved. This is fixed.
- **Dot:** Zoom Extents did not work properly with annotation dots. This has been improved.
- **DupBorder:** Incorrectly did not duplicate the border of a selected face in a closed polysurface. This is fixed.
- **Ellipse:** The FromFoci option gave the wrong result if a plane could not be found that passed through the points. This is fixed.
- **EvaluatePt:** The display did not show negative coordinates with preceding hyphens. This is fixed.
- **ExtendCrvOnSrf:** Works better now to exclude curve ends not on the surface within tolerance.
- **ExtractSrf:** Analysis display modes did not persist on resulting surfaces. This is fixed.
- **ExtrudeCrv:** Typing C to toggle capping incorrectly changed the extrusion direction. This is fixed.
- **Faro digitizer:** Failed to properly register. This is fixed.
- **Fillet:** In some cases, the fillet arc extended the wrong direction. This is fixed.
- **FilletCorners:**
  - Incorrectly left a closed curve open. This is fixed.
  - The fillets were not properly tangent to the adjacent curves. This is fixed.
- **FilletEdge:**
  - Sometimes created a bad surface. This is fixed.
  - The feedback color was incorrectly set to black instead of the object wireframe color. This is fixed.
  - When the **RailType** is **DistFromEdge**, the fillet cross section is not an arc, but the feedback handles incorrectly showed the section as an arc.
- **German Language Version:** After running Rhino once, many of the MeshTools commands would fail to run. This has been fixed.
- **Installer:** several minor installer bugs have been fixed.
- **Intersect:** In some cases only a short segment of the intersection was extracted. This is fixed.
- **Join:** Incorrectly created inside-out closed polygon. This is fixed.
- **JoinEdge:** Incorrectly did not allow window selection. This is fixed.
- **Layer:** Layer name changes were incorrectly handled by Undo. This is fixed.
- **LayerStateManager:** Restoring a layer state failed when the current layer was off. This is fixed.
- **Layout:**
  - Dimensions and Distance gave different answers based on the zoom level. This is fixed.
  - Double clicking the layout viewports incorrectly caused details to become active/inactive. When the double click occurred, the command prompt lost
- **Layout:** Several problems with custom sheet sizes have been fixed.
- **License Manager:**
  - A conflict when user name had an ampersand (&) has been fixed.
  - If a workgroup node cannot connect to the Zoo, Rhino will now ask for a cd-key.
- **Make2D:** Incorrectly included unselected grouped objects. This is fixed.
- **Make2D:** Worked differently when preselecting and post-selecting objects in groups. This is fixed.
- **Match:** Incorrect results occurred in some circumstances. This is fixed.
- **MatchMeshEdge:** Crash bug fixed.
- **MatchMeshEdge:** Improved handling of texture coordinates, vertex normals, colors, and other vertex information. This is fixed.
- **MeshOutline:** Failed to create curves in ortho views. This is fixed.
- **MeshTrim:** Failure bug has been fixed.
- **MoveFace:** Incorrectly did not move two selected faces. This is fixed.
- **MoveUVN:** If more than one control point was selected, only one of the points moved properly. Other points moved more than the specified distance. This is fixed.
- **MPlane:** After moving an object with a mobile construction plane, Undo breaks the connection between the MPlane and the object. This is fixed.
- **New:** When using a template file with fewer than four viewports, four viewports were incorrectly created anyway. This is fixed.
- **Notes:** Autosave while typing notes incorrectly deleted the notes. This is fixed.
- **OffsetCrvOnSrf:** Crash bug fixed.
- **OffsetSrf:**
  - Edge curves did not align properly under some circumstances. This is fixed.
  - It was not possible to select faces in a polysurface. This is fixed.
- **OnCrv** object snap: Crash when selecting a surface edges. This is fixed.
- **Open:DGN:**

- Layers were not handled correctly when .dgn was used as a worksession file. This is fixed.
- A crash bug has been fixed.
- **Open:DWG/DXF:** Bugs fixed
  - 2-D Pline
  - DIMSCALE
  - Layout import
- **Open:DWG/DXF:** A crash occurred when there were proxy objects in the DWG file. The crash is fixed. Rhino does not support proxy objects.
- **Open:SKP:** Rhino did not read SKP version 6. This is fixed.
- **Open:SLC:** Failed on some files. This is fixed.
- **Open:** SolidWorks - If the SW file contains geometry imported via iges or other non-SW source, two copies of that geometry were created in the Rhino file. This is fixed.
- **Open:** SolidWorks unit settings were not imported correctly. This is fixed.
- **Options:**
  - Scripting crosshair visibility did not work properly. This is fixed.
  - There was no provision for exporting and importing the top level of Context menu settings in Options>Context menu. This is fixed.
  - Sub-pages did not appear as options in the script version. This is fixed.
  - **Advanced Display:** The curve thickness can no longer be set to 0.
- **Options:** Advanced Display: When the Options dialog box closed, the Transparency setting incorrectly reset to 100 disabling GhostedViewport mode. This is fixed.
- **OptionsPage:** The Render page incorrectly appeared as an option for this command. This is fixed.
- **Osnap:**
  - Now the Alt key enables the osnap dialog only when dragging point-like objects (for example, control points). It no longer enables the dialog when dragging whole objects.
  - **Near:** Apparent Ortho/Int snapping failed. This is fixed.
- **PictureFrame:** Luminosity now set high so that lights do not affect the image.
- **Plug-ins:** .NET plug-ins did not load properly over a network. This is fixed.
- **Print:**
  - A problem with the Epilog laser engraver has been fixed.
  - Paper Size settings were not stored between Rhino sessions. This is fixed.
  - Objects set to No Print would incorrectly print. This is fixed.
- **Print** and **PrintPreview:** A problem with print preview and printing to a DesignJet500 has been fixed.
- **Print:** Settings are now saved between sessions.
- **Print:** Solid Hatch printed incorrectly. This is fixed.
- **PrintDisplay:** The display was not updating correctly when changing the width for a layer. This is fixed.
- **ProjectToCPPlane:** Failed when using polycurve or arcs. This is fixed.
- **Properties:**
  - Changing a material by browsing did not work properly, this is fixed.
  - Setting isocurve density to 0 did not work properly. This is fixed.
  - Material properties did not display the Render plug-in name. This is fixed.
  - Setting isocurve density to 0 did not work properly. This is fixed.
  - When a Detail view was changed, the Properties dialog box did not properly update. This is fixed.
- **Properties:** The Shadow intensity setting was not exposed in the scriptable light properties. This is fixed.
- **RailRevolve:** The result could be incorrectly rotated in some cases. This is fixed.
- **Rebuild:**
  - Incorrect preview color fixed.
  - Now gives feedback on failure.
- **Revolve:** With a slightly non-planar curve as input, incorrectly created a surface of revolution rather than a NURBS surface. This is fixed.
- **Rib:** The rib direction could be incorrect in some cases. This is fixed.
- **RoundHole/RevolvedHole/PlaceHole:** Did not properly display the current object isocurves. This is fixed.
- **Save:**
  - **3DS:** A problem with exporting bumpmap files has been fixed.
  - **FBX:** Command failed when no material is set for the objects. This is fixed.
  - **WMF:** Incorrectly did not allow setting a width. This is fixed.
  - **LWO/FBX:** Incorrectly did not allow scripting without prompts. This is fixed.
- **Save:3ds:** Rhino incorrectly set the texture path in the materials of objects to an absolute path that was the same as the 3ds file. Now it only uses the actual filename and not an absolute path.

- **Save:DWG/DXF:** Bugs fixed:
    - If the Rhino file had no Layout, AutoCAD 2007 would not read it.
    - Polylines mirrored incorrectly
    - Leaders in orientation other than wcs oriented wrong
  - **Save:WMF:** Text dot hatching was incorrect. This is fixed.
  - **Select:** Pressing Esc incorrectly did not unselect hidden objects that are members of selected groups. This is fixed.
  - **Select:** Window selection incorrectly selected polysurface faces. This is fixed.
  - **SetView:** The World Bottom view was not properly created. This is fixed.
  - **ShowEdges:** Failed under some circumstances. This is fixed.
  - **Smash:** Point objects were improperly placed in some circumstances. This is fixed.
  - **SpaceBall/Mouse:** It is now again possible to set the rotation/translation scale to a negative value to flip the puck direction.
  - **Split:** Several bugs have been fixed.
  - **SplitMeshEdge:** A display bug has been fixed.
  - **Splop:** Did not properly pay attention to flipped normals. This is fixed.
  - **Spotlight:** A problem with dragging spotlight control points has been fixed.
  - **SwapMeshEdge:** Did not work properly in macros. This is fixed.
  - **Sweep1:** Bugs fixed:
    - Failed if the rails were preselected.
    - Refit and Rebuild options did not work properly.
  - **Sweep2:** A problem with tangency/curvature setting has been fixed.
  - **Toolbars**
    - Minimizing floating toolbars and dialog boxes has been improved.
    - Several errors in the button macros have been corrected.
    - You can now select more than one toolbar at a time from the list of toolbars that appears when you right-click the docking area.
  - **Trim:**
    - Broke History without warning. This is fixed.
    - Edges from tangent curves were merged after trim. They no longer are.
  - **Trim:** A failure bug has been fixed.
  - **Trim:** Trimming surfaces did not work with lines extended with ExtendLines=Yes. This is fixed.
  - **UnrollSrf:** Several bugs have been fixed.
  - **Untrim:** Incorrectly allowed selecting an unjoined polysurface edge. This is fixed.
  - **Viewports:** Double clicking the viewport title incorrectly caused the layout view to be visible. This is fixed.
  - **Windows Vista Compatibility:** All bugs related to Rhino 4.0 Vista Compatibility have been fixed. This includes black viewports, startup error messages, and slow drawing.
  - **ZoomExtents:** Crashed when zooming on bad objects. This is fixed.
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