Autodesk®

3D Studio® RELEASE 4

THE OPEN STANDARD FOR PROFESSIONAL-QUALITY 3D GRAPHICS AND ANIMATION

A true production studio for the desktop, Autodesk 3D Studio® software is a comprehensive environment for creating professional-quality 3D animations and high-resolution still images. Compatible with Animator Pro®, AutoCAD®, AutoVision™, and the Cyberspace Developer Kit software, and based on a highly extensible plug-in architecture, 3D Studio is supported by a rapidly expanding community of independent developers and can be precisely tailored to individual production needs.

3D MODELING

- 3D Studio software includes a full-featured 3D modeler with floating-point accuracy.
- Modeling tools include both B-spline patch and polygon mesh creation with control down to the vertex level in multiple viewports.
- 2D Bezier spline-creation tools include Lines, Curves, Arcs, Quads, Circles, Ellipses, Regular Polygons, and Freehand.
- 3D Studio reads and writes Adobe® Illustrator™ (AI) Bezier spline files, which can then be saved and loaded into other drawing packages. PostScript® (Type 1) and URW fonts can also be manipulated as spline entities.
- Powerful extrusion tools allow model construction from multiple spline cross sections interpolated along a 3D spline path.
- 3D objects can be precisely arrayed in linear and radial patterns.
- Objects can be modeled over raster bit maps for reference; background images and/or video-safe frames are observable in any viewport.
- Directly loads 3D AutoCAD .DXF™ files by Layer, Color, or Entity and exports .DXF files. ASCII file import and export are also supported.
- Spline-based model deformation tools include Twist, Fit, Scale, Teeter, and Bevel.
- B-spline patch and polygon mesh models can be automatically constructed from top, front, and side profiles.
- 3D Studio software supports 3D Boolean modeling for carving, drilling, and sculpting; and 2D Boolean operations for union, intersection, and subtraction of 2D profiles.
- Fast screen redraw options allow interactive control of complex scenes.
- 3D Studio provides texture-map alignment tools for precise map placement and scaling. Automatic texture-coordinate assignment for extruded objects and particles.
- B-spline patch and polygon mesh objects can be modified by using editing commands like Bend, Skew, and Taper. The Smoothing Groups feature provides additional control over how parts of objects will be rendered.
- An unlimited number of named cameras with real-time zoom, dolly, and field-of-view control can be used.
- Keyboard coordinate entry is supported.
- Project size is limited only by amount of available hard-disk space and/or memory.

MATERIALS EDITING

- 3D Studio software includes an extremely fast, 24-bit, interactive Materials Editor for creating and adjusting any surface material appearance (with alpha control and automatic NTSC color checking).
- Flat, Gouraud, Phong, and Metal shading are supported on material-by-material basis. Wireframe, a special shading attribute, allows the creation of texture-mapped wireframe materials.
- An extensive materials library is supplied. Multiple libraries can be created and modified with the Materials Editor.
- Face Mapping tool automatically fits bit maps to surface topology without assignment of mapping coordinates (for cube or icosahedron mapping, etc.).
- Color values and material map tinting can be controlled with RGB or HLS sliders.
- Multitexture, reflection, bump, opacity, specular, shininess, and self-illumination mapping can be combined with individual percentage contributions for deeply layered surface effects; all mapping types can be composited with associated masks for each type.
- Individual maps and masks can have their own texture-filtering settings plus specific UV scaling, offset, and rotation parameters; individual maps and masks can be created from either the bit map's RGB or alpha component.
- Animated mapping is supported for each type.
- Procedural textures are supported.
- Automatic environment mapping can be used to achieve realistic reflections.
- Sophisticated transparency and reflection-blurring controls are provided.
- An Image Browser Plug-In is provided to let you select maps and backgrounds from either thumbnail representations or keyword searches.

RENDERING

- Photorealistic rendering output is supported at 8, 16, 24, or 32 bits for still images or animations (including alpha channel for compositing).

- Rendering to screen and/or to files at any resolution is possible in both frame and field modes.
- Super Truecolor 64-bit computation provides superb color fidelity and gamma correction (for accurate colors on any output device).
- Workstation-quality analytical antialiasing is supported.
- 3D Studio software can render on a frame-by-frame basis across a network. Any supported, networked machine can either submit or process rendering jobs, and the network adapts to any change automatically.
- Network assignment can be automatic (to any available machine), or specific PCs can be assigned to handle particular processes.
- With a single product license, up to 9,999 networked machines can be used for rendering.
- Each networked machine has a unique name and identification number and generates a log file that can be viewed from any other machine.
- Network rendering can be output to local or server drives.
- Motion-blur, supported for both objects and scenes, has assignable shutter speed and blur amount.
- Layered fog, full-screen fog, and distance shading can be used for atmospheric effects.
- Fast color Preview renderer works in any camera viewport and allows interactive camera adjustments.
- An unlimited number of named spotlights with control of color, cone shape, and shadow-casting parameters can be used.
- Ray tracing provides crisp shadows in any size scene; omni lights and spotlights have controllable falloff over distance; individual objects can be excluded from any omni light or spotlight effect.
- Spotlights can be assigned to still or animated colored bit maps to simulate slide or film projectors; rectangular spotlight "barn door" effect can be used; spotlights can be rolled for animated rotating effects.
- Images can be saved in .GIF, .JPG, .TGA, .TIF, .BMP, and .EPS formats.
- Precise palette control over rendered images is provided with optional dithering and compression controls.
- Backgrounds for renderings can be solid colors, gradients, picture files, animations, or external procedures.
- Match Perspective to accurately render models over digitized photo backgrounds is supported.

ANIMATION

- 3D Studio software provides professional keyframing control over objects, cameras, and lights.
- The program offers extensive, spline-based, motion-path creation and controls, including automatic banking.
- True 3D inverse kinematics is supported with user-assignable joint parameters including limits, precedence, and damping.
- Inverse kinematics can be interactively keyframed or made to follow the motion of other objects in the scene.
- Surface materials can be morphed (e.g., transparent plastic morphs to solid metal).
- Fast, colored motion tests can be created with locked, frame-per-second playback control.
- Low- or high-resolution .FLC files for Animator Pro can be created or viewed. Numbered sequences of still images can also be rendered to disk.
- Full object hierarchies with independent-object pivot points are supported.
- Accurately imports DXF motion paths from AutoCAD software.
- Hierarchies can selectively inherit position, rotation, scale, squash, and stretch in any combination.
- Animation from libraries can be applied to any object.
- True 3D object metamorphosis and object instancing are supported.
- Ambient light, omni light, and spotlight characteristics can be animated.
- Camera and lights can be slaved to each other or to objects; camera position, field-of-view, and roll can be animated.
- Acceleration and deceleration can be controlled for visual ease-in/ease-out.
- BASIC-like keyframe scripting language offers a precise way to automate repetitive operations or to create algorithmic or data-driven animations.

POSTPRODUCTION

- Video Post feature allows compositing of unlimited layers of images and animations with precise alpha control.
- Full time-line control is supported with transition effects such as fade-in, fade-out, and user-customizable transitions.
- Entire 3D "movies" can be edited inside the program for first-generation final presentations (to video or .FLC format).
- Multiple image-processing effects can be invoked for each frame.

3D STUDIO PLUG-IN SUPPORT

The open architecture of 3D Studio allows for the use of IPAS Plug-Ins, which support advanced modeling, animation, image-processing, procedural textures, and bit-map functions. Particle systems, ripples, skeletal animation, image filters, and motion capture are but a few of the hundreds of 3D Studio Plug-Ins available from independent software vendors. A 3D Studio Plug-In Developer Kit is also available separately from Autodesk. For more information, consult your Authorized Autodesk Multimedia Dealer or the Autodesk Multimedia Forum (GO ASOFT) on CompuServe®.

THE WORLD-CREATING TOOLKIT® ON CD-ROM

3D Studio ships with the World-Creating Toolkit® containing more than 500MB of prebuilt objects, textures, and backgrounds, royalty-free.

BOX CONTENTS

Contents include 1.44MB disks, *Reference Manual, Tutorial Guide* (including over 20 tutorials), *Installation Guide, Advanced User Guide, New Features*, and the World-Creating Toolkit for 3D Studio on CD-ROM.

SYSTEM REQUIREMENTS

- IBM® or COMPAQ® 386/486/Pentium®-based computers or 100 percent compatibles
- MS-DOS® 3.3 or later
- 8MB RAM
- Hard disk with 20MB of available free space
- Intel® math coprocessor
- Super VGA display device (at least 640 x 480 x 256 colors)
- Pointing device (Microsoft®-compatible mouse, SummaSketch®-compatible digitizing tablet, or Autodesk Device Interface™ [ADI®] pointing device)

OPTIONAL

- Targa®-compatible display (e.g., Truevision)
- ADI-compatible displays
- ADI-compatible printing devices
- ADI-compatible VTR controllers (e.g., Sony EVO 9650 or LVR 3000)
- CD-ROM drive
- LAN software and cabling

For the location of the Authorized Autodesk Multimedia Dealer nearest you, call 800-879-4233. Outside the US and Canada, fax your request for information to 415-507-6117 (Asia/Pacific); 415-507-6110 (Latin America); or +41-22-788-21-44 (Europe). For more-detailed communications about Autodesk and its products and services, browse our World Wide Web site at http://www.autodesk.com.

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