



# The Professional Video


SourceBook

## Section 13b

### ANIMATION SOFTWARE

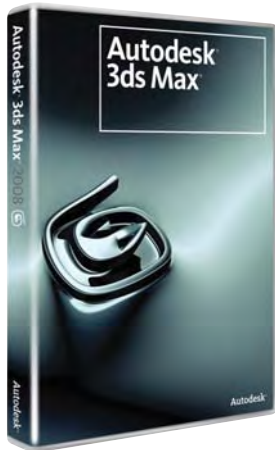
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## 3Ds MAX

### 3D Modeling, Animation and Rendering Software



*Highly and customizable, 3ds Max is a powerful, integrated 3D modeling, animation, and rendering application. Its accessible tools enable artists to quickly ramp up for production. 3ds Max is used by design visualization professionals, game developers, film and video artists, multimedia designers (print and web), and 3D enthusiasts to achieve stunning results in less time. 3ds Max 2008 dramatically improves productivity by streamlining the process of working with complex scenes. This is achieved through significant performance improvements—in areas such as viewport interaction, interactive transform and material assignment—as well as through the addition of new, artist-friendly UI and scene management features. The latest version marks the launch of Review, a toolset that delivers interactive previewing of shadows, the 3ds Max sun/sky system, and Architectural and Design material settings.*

*In addition, 3ds Max 2008 delivers enhanced support for complex pipelines and workflows—an integrated MAXScript ProEditor makes extending and customizing 3ds Max easier than ever. Plus, enhanced DWG file-linking and data support strengthen interoperability with applications such as AutoCAD, AutoCAD Architecture, and RevitArchitecture software. Last, contains numerous Biped improvements, including new ways of layering character motion and exporting it to game engines, as well as tools that give animators new levels of flexibility with regards to their Biped rigs.*



#### FEATURES

##### 3ds Max User Interface— Maximize Your Productivity

- ◆ Artists gain unmatched productivity through a combination of performance and workflow features, including a fast, efficient, WYSIWYG (what you see is what you get) viewport environment, schematic view, multiple coordinate systems, interactive axis constraints, customizable menus and buttons, viewport grips/manipulators, and modeless keyboard entry. Streamline workflows through the creation of hotkeys.
- ◆ The unique modifier stack gives artists the option of using a powerful, visual, parametric workflow: changes made anywhere in the modifier stack, no matter how significant, are automatically propagated to the end result. This feature enables artists to work in a nonlinear fashion—for example, on a completed high-resolution character model, revert to the original low-resolution geometry at the bottom of the stack, and add details, such as buttons on a shirt or tweaks to the nose. Those changes pass up through all the finishing modifiers (such as smoothing, mapping, and skinning) to appear in the completed character.
- ◆ Mouse or tablet-based paintbrush interface for object selection and deformation, vertex color, and radiosity touchup.

##### Data and Scene Management Tools

- Boost productivity and workflow flexibility with external and internal data and scene management features
- ◆ File management utilities—project folders, repathing tools, relative paths, asset tracking, increment on save, auto-backup, resource collector, dynamic texture reloading, and log files—manage daily use and transfer of 3ds Max data between file iterations, users and locations.
  - ◆ Scene Explorer Panel enables users to sort, filter, and search a scene by object type or property (including metadata) with stackable filtering, sorting, and searching criteria. Users can save and store multiple explorer instances and link, unlink, rename, hide, freeze, and delete objects regardless of what objects are currently selected in the scene.
  - ◆ External file referencing (for scenes, objects, or materials) enables efficient team management of complex scenes and animations.
  - ◆ The Layer Manager enables artists to quickly isolate related scene elements by working in layers via the Layer Manager.
  - ◆ Asset Tracker provides source control management for in-use assets. Tightly integrated with Autodesk Vault asset management software and compatible with most third-party asset management solutions.

## 3Ds MAX

### Modeling

Efficiently create parametric shapes and objects to begin modeling quickly

- ◆ The vast selection of ready-to-use geometry includes standard primitives, extended primitives, 2D shapes, and architectural elements, such as doors, windows, and stairs.
- ◆ Compound objects can be created using any of the following operations: Scatter, Connect, Booleans, ShapeMerge, Morph, BlobMesh, Terrain, and Loft.
- ◆ Parametric and compound objects can be converted to any of the following base geometric types for more detailed editing: editable mesh, editable poly, editable patch, or NURBS objects.
- ◆ 2D shapes can be used as a starting point for creating editable splines and spline cages to convert to any of the 3D geometry types.

### Spline/Extended Spline Modeling

- ◆ Precise spline-based curve and surface construction tools include loft, one- and two-rail sweep, beveling, extrude, fillet, cap, offset, lathe, ruled, mirror, multisided blend, and other tools.
- ◆ Surfaces can be attached, detached, aligned, stitched together, extended, filleted, or rebuilt, with a high degree of control over parameterization and continuity.
- ◆ Spline modifiers—for those modeling with the modifier stack—let the user deform, lathe, normalize spline, set spline render properties, sweep, and trim/extend. A range of modifiers is provided for direct manipulation of subobject geometry (for example, Curve CV, Surface CV, surface).

### Polygon Modeling and Texturing

A polygon/trimesh architecture lets artists efficiently create, edit, and texture mesh models. These models can contain color-per-vertex channels, mapping channels, selection channels, and explicit normals, all of which can be animated in the modifier stack.

#### Polygon Modeling Tools:

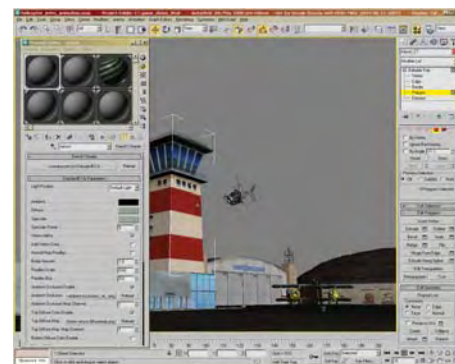
- ◆ A complete set of creation and editing tools includes create, collapse, attach, bridge, flip, hinge from edge, turn, cut, split, slice, quick slice, wedge, bevel, extrude, chamfer vertex, extrude along a curve, mirror, edge loop, and edge ring tools.
- ◆ ProBooleans can be used to re-evaluate and optimize the topology of meshes, and more. The ProCutter tool lets artists quickly fracture geometry into smaller, individual chunks.
- ◆ Workflow features include Preserve UVs, which separates texture coordinates from the polygon vertices to edit the mesh without destroying UV data; sub-object (for example, vertices, edges, faces) selection sets, which intelligently convert between different types of selections (for example, edges to vertices); interactive previewing of edits and animated edits; and the ability to make modeling hotkeys and pivots become temporary overrides.
- ◆ A large range of modeling modifiers is available for working with geometry and sub-object geometry in the modifier stack, including Projection, Edit Normals, Vertex Paint, and those that let you bend, bevel, cap holes, cross section, displace, extrude, and subdivide polygons.

#### Subdivision Surfaces and Polygon Smoothing:

- ◆ Subdivision methods include NURMS Subdivision, which produces an object similar to a NURBS object; classic, which like MeshSmooth produces three- and four-sided facets; and quad output, which produces only four-sided facets.
- ◆ Mesh smoothing of polygon objects provides control over the polygon count of the final mesh for render optimization or level of detail.
- ◆ Subdivision surface and polygon smoothing tools available to those modeling with the modifier stack include a hierarchical subdivisions surface modifier, MeshSmooth, and TurboSmooth.

#### Texture Assignment/Editing:

- ◆ 3ds Max offers a wide range of operations for creative texture and planar mapping, including tiling, mirroring, decals, angle, rotate, blur, UV stretching, and relaxation; Remove Distortion; Preserve UV; and UV template image export.
- ◆ The streamlined texture workflow includes the ability to combine an unlimited number of textures, a material/map browser with support for drag-and-drop assignment, and hierarchies with thumbnails.
- ◆ UV workflow features include Pelt mapping, which defines custom seams and enables users to unfold UVs according to those seams; copy/paste materials, maps and colors; and access to quick mapping types (box, cylindrical, spherical).
- ◆ Artists can use up to 99 UV sets for texture layering.
- ◆ Extensive UVW mapping tools include direct manipulation of texture mapping coordinates.
- ◆ Texture modifiers for working in the modifier stack include Camera Map, Material Modifier, UVW mapping modifiers, UV Xform, Map Scaler, and Surface Mapper.

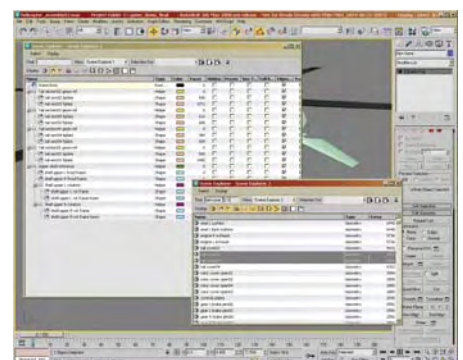
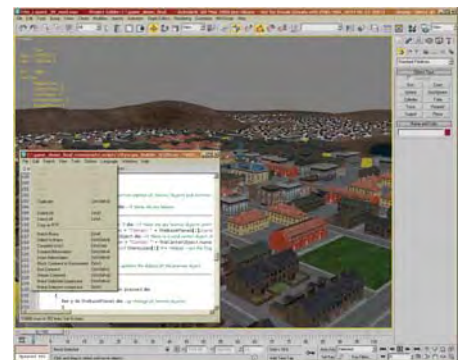
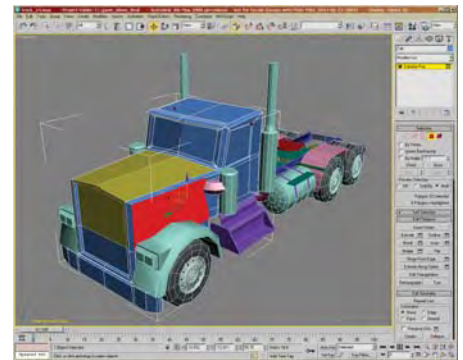
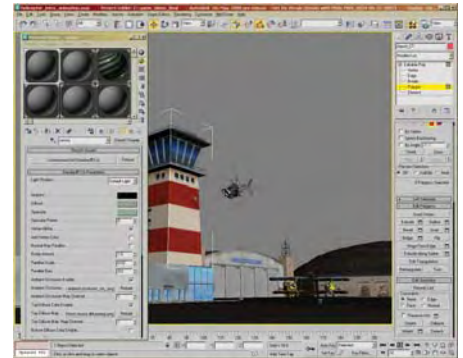


## 3DS MAX

### General Animation

Benefit from a broad range of tools for keyframe and procedural animation that can be used to animate almost any parameter in your scene

- ◆ Set key and auto key modes offer support for different keyframing workflows.
- ◆ Fast and intuitive controls for keyframing—including cut, copy, and paste—let the user create animations with ease.
- ◆ Animation trajectories may be viewed and edited directly in the viewport.
- ◆ Key-based and parametric controllers may be used to animate the full transform or the position, rotation, or scale of objects.
- ◆ Key-based controllers, such as Bézier and TCB, store values and interpolation methods in each key, which can then be edited.
- ◆ Objects can be animated along curves with controls for alignment, banking, velocity, smoothness, and looping, and along surfaces with controls for alignment. Weight path-controlled animation between multiple curves, and animate the weight.
- ◆ Objects can be constrained to animate with other objects in many ways—including look at, orientation in different coordinate spaces, and linking at different points in time. These constraints also support animated weighting between more than one target.
- ◆ Parametric controllers store values that affect the animation throughout: controls are unique to each controller type.
- ◆ Create procedural animation based on numerous built-in controllers include noise, expressions, waveform, spring, and audio.
- ◆ Custom controllers can be used as scripts and expressions. Expressions allow the animation to be controlled by any math function as well as by any MAXScript.
- ◆ Multiple animation tracks can be blended into a single result using a hierarchy of controllers in a list.
- ◆ List controllers can be used to store different poses and versions of animation on the same object or objects. The influence of each controller in the list can be weighted and animated over time.
- ◆ Keyframe animation can be edited track by track using curves along the timeline, so the animator can more easily visualize the components of the interpolation.
- ◆ Reactions can be set up to make objects respond to the animation of other objects.
- ◆ Tools for editing curves include limiting, curve drawing, and curve modifiers.
- ◆ Keys or sets of keys can be slid, moved, and scaled in both time and value.
- ◆ Animation may be edited track by track by copying, pasting, and instancing controllers.
- ◆ Dense animation can be precisely controlled using soft selection falloff and key-reduced into sparse keys that maintain the integrity of the original animation.
- ◆ Sound tracks can be loaded into a Track View for easy syncing with the target animation.
- ◆ Animation can be viewed before and after the current frame, for evaluation of object motion.
- ◆ Modifier stack offers animators another procedural approach to animation as all modifier parameters can be keyed.
- ◆ Point Cache modifier can be used to save and load surface deformations for easy swapping and fast playback.
- ◆ Morpher modifier is an interface for organizing and animating morphing targets and includes support for progressive morphing.
- ◆ Either the Skin or Physique modifier may be used to achieve precise control of skeletal deformation, so the character deforms smoothly as joints are moved, even in the most challenging areas, such as shoulders.
- ◆ Skin deformation can be controlled using direct vertex weights, volumes of vertices defined by envelopes, or both.
- ◆ Weight tables, paintable weights, and saving and loading of weights offer easy editing and proximity-based transfer between models, providing the accuracy and flexibility needed for complicated characters.
- ◆ Rigid bind skinning option is useful for animating low-polygon models or as a diagnostic tool for regular skeleton animation.
- ◆ Additional modifiers, such as Skin Wrap and Skin Morph, can be used to drive meshes with other meshes and make targeted weighting adjustments in tricky areas.



### 3DS MAX

#### Character Generation

Get the tools you need to animate sophisticated digital characters

##### Biped Overview:

- ◆ Integrated Biped toolset provides fast, intelligent biped, physique, and crowd animation functionality.
- ◆ Biped automates the creation of bipedal character skeletons, enabling the user to animate before the biped skeleton structure has been determined and retarget onto bipeds of differing structures.
- ◆ Biped delivers state-of-the-art, intuitive FK/IK blending as well as a powerful IK pivot animating system that lets hands and feet roll and rotate around points other than their base pivots.
- ◆ Biped Xtras let users create and animate extraneous Biped features anywhere on the rig via FK chains that can be attached anywhere and which are parentable to any Biped object (and are animatable in rotation and position). Xtras can be saved as .bip files.
- ◆ Unique Biped and spline dynamics tools enable animators to precisely control the physical forces acting on a character, and can be used to calculate biped airborne trajectory, knee bend on landing, and overall balance.
- ◆ Integrated crowd system lets users control biped characters or any 3ds Max object using intelligent behavioral interactions, like goal seeking and avoidance.
- ◆ Behaviors can be scripted or written as C++ plug-ins and users can move between them based on any scriptable or programmable criteria using cognitive controllers.

##### Skeletons and Inverse Kinematics (IK):

- ◆ Characters can be rigged with custom skeletons using 3ds Max bones, IK solvers, and rigging tools.
- ◆ Expressions, scripts, list controllers, and wiring—can be used along with a set of utilities specific to bones to build rigs of any structure and with custom controls, so animators see only the UI necessary to get their characters animated.
- ◆ Includes four plug-in IK solvers— history-independent solver, history-dependent solver, limb solver, and spline IK solver— reducing the time it takes to create high-quality character animation.

#### High-Level Animation Tools

##### Animation Assets:

- ◆ Biped and 3ds Max objects have systems for storing, loading, and retargeting animation assets. Enables artists to reuse content and greatly expand the usefulness of each clip.
- ◆ Though the Biped file format is specific to itself—thereby offering unparalleled power and ease of restructuring and retargeting—it can also contain 3ds Max animation that a biped may depend on.
- ◆ Animation data can be exported from any object or character to an XML file and then re-imported with track-to-track mapping, or in the case of a character, object-by-object control for retargeting onto characters whose proportions differ from the original.

##### Motion Mixer:

- ◆ Biped and 3ds Max objects are supported by the nonlinear animation mixer. Libraries of motions can be stored for use with the mixer, and motions applied and retargeted to single objects, entire characters, or specific sets of objects and tracks within characters.
- ◆ Lets users intelligently move between motion clips, based on the patterns of the clips themselves, for ultimate smoothness.
- ◆ Muting and soloing capabilities provide control over each animation sequence in isolation or in the context of other animations.

##### Animation Layers:

Both Biped and 3ds Max objects can be animated in layers, allowing for targeted tweaks on even the densest of animation data without compromising the underlying keyframes.

##### Biped Copy/Paste:

A powerful copy and paste system for storing, sharing, and retrieving poses, postures, and tracks on whole bipeds or sets of objects therein, thereby facilitating animation blocking and hand posing.

##### Biped Workbench:

A specialized version of the track view is available for editing, analyzing, and modifying biped animation based on high-level criteria such as acceleration, spikes, and noise.

##### Biped Footsteps:

Bipedal characters can be animated with foot-step gizmos that represent and control the placement of IK constraints for locomotion.

##### Motion Capture:

Motion capture data—both hierarchical and marker—can be easily imported and retargeted onto both bipeds and 3ds Max objects. 3ds Max objects are supported using the HTR and TRC import formats, which can be converted into XML or biped formats for reuse and retargeting on any character.

#### Modifier

Select, model, map, and animate objects and subobjects using the modifier stack

##### Selection:

Subobject selections can be moved up the stack to other modifiers using Mesh Select, Poly Select, Patch Select, and Volume Select.

##### Animated Deformations:

Animated deformers add life to creatures, simulate fluidic effects, and more. Deformers work on all geometry types, including particles.

Modifiers for creating animated deformations include free form, ripple, wave, squeeze, twist, bend, stretch, spherify, noise, displace, skew, and relax.

World Space modifiers operate at the top of the modifier stack and bind objects to animated world conditions, such as surfaces, forces, fields, and deflections.

##### Modeling and Mapping:

Edit mesh, poly, patch, and spline modifiers let the artist use base-level geometry editing tools on parametric objects.

Meshsmooth, Turbosmooth, Subdivide, Tesselate, and HSDS modifiers increase the resolution of objects or subobjects and offer controls specific to each technology.

Reduce the resolution of objects while maintaining important characteristics.

UV Map and UV Unwrap add texture coordinate manipulation tools into the stack of any object.

Other parametric processes—such as adding custom attributes, capping holes in geometry, painting vertex colors, overriding material IDs, and adjusting surface normals—benefit from the modifier stack's flexibility.

## 3DS MAX

### Space Warps

Add world space conditions to control the behavior and interactions of all scene objects

- ◆ Space Warps—objects that can be bound to geometry and particles—introduce world space animation effects.
- ◆ Force-based Space Warps, such as wind and gravity, add natural behavior to selections of objects.
- ◆ Modifier-based Space Warps can be used to deform many objects in relation to each other.
- ◆ Deflectors contain the animation of objects and particles to enable parametric bouncing and friction.
- ◆ Space Warps can be included in dynamics simulations to enhance physical realism.

#### Dynamics:

- ◆ Create effects through the dynamic interaction of geometry, including collisions between rigid and soft bodies
- ◆ The integrated reactor plug-in lets users create a full range of rigid and soft-body dynamics simulations, and is compatible with the 3ds Max Space Warp modifiers.
- ◆ Multiple constraints can be used to create intricate and accurate physical relationships between objects.
- ◆ Simple constraints, such as springs and dashpots, require little computation and create realistic dynamic connections between two objects.
- ◆ Cooperative constraints, such as hinge, car wheel, point-to-point, and rag-doll, although more computationally intensive, enable the user to generate more complex and accurate multi-object simulations.
- ◆ A real-time simulation window facilitates trial-and-error iteration.
- ◆ Realistic, high-speed simulations of multiple rigid objects are easy to set up and iterate upon using reactor object collections.
- ◆ Detailed control over mass, friction, and elasticity lets the user determine each object's physical characteristics.
- ◆ Deformable objects and surfaces can interact with rigid bodies and add secondary motion effects, such as clothing, jiggling fat, and floppy ears.

### Cloth

Use powerful cloth simulation tools to create realistic fabric simulations and tailor-made clothing for characters.

- ◆ Cloth-simulation engine enables users to turn almost any 3D object into clothing, or build garments from scratch.
- ◆ Collision solving is fast and accurate even in complex simulations.
- ◆ Local simulation lets artists drape cloth in real time to set up an initial clothing state before setting animation keys.
- ◆ Cloth simulations can be used in conjunction with other 3ds Max dynamic forces, such as Space Warps.
- ◆ Multiple independent cloth systems can be animated with their own objects and forces.
- ◆ Cloth deformation data can be cached to the hard drive to allow for nondestructive iterations and to improve playback performance.

#### Fashion Design:

- ◆ Several preset cloth types to choose from—and fabric types and weights can be mixed on one garment.

- ◆ Real-world patterns can be used as the basis for clothing—including jackets with collars, vents and lapels, and pants with cuffs and pockets, as well as loose or tight-fitting clothing styles. Seams can be quickly defined and stitched to construct garments on characters.
- ◆ Clothing can be tailored in the stack—hems shortened, darts pinched, sleeves tightened, and more—using standard modeling techniques to quickly customize the fit.

#### Animation:

- ◆ Any cloth object can be animated to achieve the effect of sails, skins, tents, drapery, bedding, and so forth. Clothing moves, folds, and gathers whenever characters move.
- ◆ Texture maps can be used to create wrinkles, deforming the cloth.
- ◆ Animatable cloth constraints allow for greater control of realistic clothing behavior. These constraints can be used to create effects such as wet (clingy) or slippery cloth.

### Particles

Control fully integrated particle effects by forces based on real-world physics or by deformers

#### Extensible Integrated Particle System:

- ◆ Seven different particle emitters give artists a wide range of event-driven and non-event-driven particle behaviors, including spray, snow, blizzard, and super spray.
- ◆ Particle Flow provides a sophisticated event-driven particle toolset that lets the user design the behavior of a particle based on a series of defined events.
- ◆ Workflow features include script and expression-based control over particle attributes, motion, and dynamics; direct manipulators for interactive control of particles, fields, and emitters; and the ability to have particles controlled by texture values.
- ◆ Artists can use geometry instancing to place individual objects, or a sequence of objects, onto any particle.
- ◆ Deformer modifiers—such as bend, twist, and taper—can be applied and layered for non-physically based particle effects.

#### Operators and Tests:

- ◆ Particle systems can be built using operators that control particle characteristics, such as emission, speed, geometry, and materials.
- ◆ Artists can build particle event systems using tests—which trigger changes in behavior—and spawning based on characteristics such as age, speed, and collision.
- ◆ Operators and tests can be customized using scripts or the particle flow API (application programming interface).

#### Forces:

- ◆ Users can bind Space Warps—such as wind, gravity, and vortex—to particle systems and operators to generate world space conditions.
- ◆ Custom forces may be added via the extensive dynamics API.

### 3Ds MAX

#### Multiple Rendering Options

Use multiple renderers, tightly integrated through a consistent rendering interface, to create any look.

##### 3ds Max Production Renderer

- ◆ Fast scanline rendering for efficient, production-quality software renders.
- ◆ Raytrace materials and maps provide realistic reflections and refractions.
- ◆ A full range of effects include depth of field, motion blur, film grain, hair, fur, and lens-based effects.
- ◆ Photometric lighting support allows for the use of real-world lighting profiles.
- ◆ Create atmospheric effects using plug-ins available for volumetric light and fog, as well as for fire.
- ◆ Advanced software shader types include anisotropic, metal, and ink 'n paint (for cartoon looks).
- ◆ High-quality software particle rendering provides fine control over the assignment of materials to particles.
- ◆ mental ray® shading is available for use with conventional 3ds Max materials.

##### Integrated mental ray Renderer

- ◆ 3ds Max physical sun and sky workflow are available via mental ray.
- ◆ Included advanced photorealistic lighting features, such as Global Illumination, caustics, blurry reflections and refractions, ambient occlusion, and motion blurred particles and contours shading.
- ◆ Artists and programmers can create custom mental ray shaders.
- ◆ Users can convert light baking of shadows and lights, including Global Illumination and Final Gather, to file textures or to color-per-vertex data.
- ◆ Photometric lighting support allows for the use of real-world lighting profiles for rendering or lighting analysis.
- ◆ Supports direct rendering of fur and hair.
- ◆ Architectural and car paint shaders provide rich, easy-to-use rendering capabilities.
- ◆ Sky Portal simplifies the process of lighting indoor scenes with outdoor lighting, recreating the lighting of windows, sky lights, open doors and more.

#### Rendering Controls and Effects

Set up and evaluate your scene or create popular effects

##### Viewport Renderer

- ◆ Multithreaded viewport maximizes productivity and creativity; adaptive degradation technology automatically simplifies the scene display to meet user-defined target frame rates.
- ◆ DirectX viewport shading displays materials as they would appear in other real-time applications.
- ◆ Support for all shader types is available via MAXScript—including HLSL and Cg shaders, along with shader performance enhancements. Work with CgFX files alongside .fx files in the viewport.
- ◆ Review gives users immediate feedback on various render settings, including GPU-based, real-time shadow support, including support for self-shadowing and up to 64 lights simultaneously.
- ◆ Preview window lets the user evaluate lighting and material changes to a scene.

##### Render Elements

- ◆ Users can output multiple components from any software renderer simultaneously for re-assembly in a compositor.
- ◆ Output elements include diffuse color, lighting, alpha, reflection, refraction, and shadow.
- ◆ Z-depth and motion vector data can be stored separately for use in post processes.

##### Render to Texture

- ◆ Each object's material and lighting can be baked into new texture maps.
- ◆ Supports output per element to allow for easy generation of specific characteristics, such as diffuse color, height, normal, lighting, and mental ray ambient occlusion.

##### Material Design Workflow

- ◆ Use the Material Editor to design and edit simple to complex shading hierarchies.
- ◆ Material/Map Navigator displays libraries of textures and images or image swatches for easy management and selection.
- ◆ An extensive library of 3D procedural maps includes cellular, dent, falloff, marble, noise, particle age, particle motion blur, planet, smoke, stucco, wood, waves, and more.

##### Render Management

Backburner render management software gives you the ability to render on an unlimited number of networked machines running the same operating system (mental ray excepted).

Load and Save Render Presets contain settings for active renderers, lighting schemes, and overall render quality and enable studios to share render settings between artists, reducing scene setup times and helping maintain consistency across the entire production for most rendering parameters.

#### Hair and Fure System

Easily create hair, fur, and other strand-derived effects via the Hair and Fur modifier.

##### Creation Tools

- ◆ Hair is integrated into the 3ds Max interface, enabling artists to create and manipulate hair directly in the viewports using Hair's selection and styling tools.
- ◆ Hair can be copied and pasted from one object to another.
- ◆ Artists can derive hair from splines and convert it to splines or meshes.
- ◆ Any source object may be instanced as hair strands.

##### Styling

- ◆ Delivers a brush-based interface for the creation of hair and fur styles: control hairs can be directly manipulated along the contours of an object—individually, in groups, or globally—into any number of styles using traditional transformations (move, rotate, and scale) as well as tools for cutting, brushing, clumping, and more.
- ◆ Kinkiness and frizziness can be added and frequency and speed animated.

## 3Ds MAX

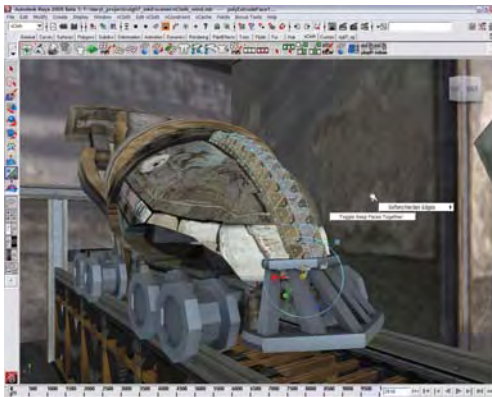
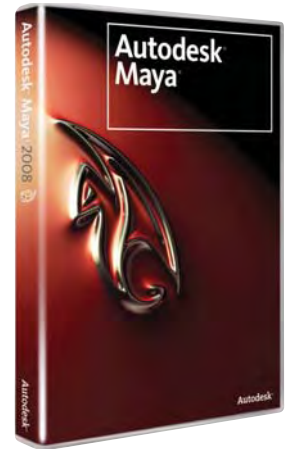
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3ds Max 2009 Commercial Legacy SLM (Mfr #128A1-05A411-2011) .....	<b>2445.00</b>	3ds Max Design 2009 Commercial New SLM (Mfr #495A1-05A111-1001) .....	<b>3495.00</b>
3ds Max 2009 Commercial Legacy SLM Additional Sea (Mfr #128A1-050411-20A1) .....	<b>2445.00</b>	3ds Max Design 2009 Commercial New SLM Additional Seat (Mfr #495A1-050111-10A1) .....	<b>3495.00</b>
3ds Max 2009 Commercial Legacy NLM (Mfr #128A1-05A511-2001) .....	<b>3320.00</b>	3ds Max Design 2009 Commercial New NLM (Mfr #495A1-05A211-1001) .....	<b>4370.00</b>
3ds Max 2009 Commercial Legacy NLM Additional Seat (Mfr #128A1-050511-20A1) .....	<b>3320.00</b>	3ds Max Design 2009 Commercial New NLM Additional Seat (Mfr #495A1-050211-10A1) .....	<b>4370.00</b>
3ds Max 2009 Commercial Crossgrade from VIZ 2008 on Subscription (Mfr #128A1-05A711-1002) .....	<b>695.00</b>	3ds Max Design 2009 Commercial Subscription (1 year) (Mfr #495A0-000110-S001) .....	<b>495.00</b>
3ds Max 2009 Commercial Crossgrade from VIZ 2008 on Subscription Additional Seat (Mfr #128A1-050711-10I2) .....	<b>695.00</b>	3ds Max Design 2009 Commercial Subscription (1 year) (Renewal) (Mfr #495A0-000110-S003) .....	<b>495.00</b>
3ds Max 2009 Commercial Crossgrade from VIZ 2006-2008 (Mfr #128A1-05A711-1001) .....	<b>1495.00</b>	3ds Max Design 2009 Commercial Crossgrade from 3ds Max 2008 (Mfr #495A1-05A711-10I2) .....	<b>895.00</b>
3ds Max 2009 Commercial Crossgrade from VIZ 2006-2008 Additional Seat (Mfr #128A1-050711-10I1) .....	<b>1495.00</b>	3ds Max Design 2009 Commercial Crossgrade from 3ds Max 2008 Additional Seat (Mfr #495A1-050711-10J2) .....	<b>895.00</b>
3ds Max 2009 Commercial Upgrade from 3ds Max 2008 (Mfr #128A1-05A411-10I1) .....	<b>895.00</b>	3ds Max Design 2009 Commercial Crossgrade from 3ds Max R9 (Mfr #495A1-05A711-1022) .....	<b>1795.00</b>
3ds Max 2009 Commercial Upgrade from 3ds Max 2008 Additional Seat (Mfr #128A1-050711-10I1) .....	<b>895.00</b>	3ds Max Design 2009 Commercial Crossgrade from 3ds Max R9 Additional Seat (Mfr #495A1-050711-10K2) .....	<b>1795.00</b>
3ds Max 2009 Commercial Upgrade from 3ds Max R9 (Mfr #128A1-05A411-1021) .....	<b>1795.00</b>	3ds Max Design 2009 Commercial Crossgrade from VIZ 2008 on Subscription (Mfr #495A1-05A711-1002) .....	<b>695.00</b>
3ds Max 2009 Commercial Upgrade from 3ds Max R9 Additional Seat (Mfr #128A1-050411-10K1) .....	<b>1795.00</b>	3ds Max Design 2009 Commercial Crossgrade from VIZ 2008 on Subscription Additional Seat (Mfr #495A1-050711-10I2) .....	<b>695.00</b>
3ds Max Network License Activation Fee (Mfr #12800-000000-0001) .....	<b>875.00</b>	3ds Max Design 2009 Commercial Crossgrade from VIZ 2006-2008 (Mfr #495A1-05A711-1001) .....	<b>1495.00</b>
3ds Max Support Fee (Mfr #99999-000000-0425) .....	<b>395.00</b>	3ds Max Design 2009 Commercial Crossgrade from VIZ 2006-2008 Additional Seat (Mfr #495A1-05A711-1001) .....	<b>1495.00</b>
3ds Max 2008 Commercial New SLM (Mfr #12813-051462-9000) .....	<b>3495.00</b>	3ds Max Design Network License Activation Fee (Mfr #49500-000000-0001) .....	<b>875.00</b>
3ds Max 2008 Commercial New SLM Additional Seat (Mfr #12813-050000-9000) .....	<b>3495.00</b>		
3ds Max 2008 Commercial New NLM (Mfr #12813-051462-8000) .....	<b>4370.00</b>		
3ds Max 2008 Commercial New NLM Additional Seat (Mfr #12813-050000-9100) .....	<b>4370.00</b>		

### MAYA COMPLETE 2008

## Integrated 3D Modeling, Animation and Rendering Software

*Award-winning Maya software is a powerful, integrated 3D modeling, animation, effects and rendering solution that enables leaders in film and television, game development, design visualization, and education to stay ahead of the game. Maya 2008 delivers faster, more efficient tools and workflows for creating the stunning, high-resolution characters, environments, and performances that will populate the games consoles, theater screens, and televisions of the future.*

*Because Maya is based on an open architecture, all your work can be scripted or programmed using a well-documented and comprehensive API (application programming interface), or one of two embedded scripting languages. This, combined with an industry-leading suite of 3D tools, means Maya enables you to create engaging and lifelike digital images, realistic animations, and extraordinary visual effects. Whether you are a film or video artist, game developer, graphic artist, digital publishing professional, or 3D enthusiast, Maya 2008 helps you realize your creative ideas.*



*Maya 2008 features a new non-destructive editing workflow for character rigging and skinning. New and enhanced tools for both the high-level manipulation and component level editing of polygon models. New tools that facilitate fast, precise shaping and forming of models. Redesigned support for Smooth Mesh previewing and workflows lets you create and edit smoothed meshes more efficiently. Multiple enhancements to the high quality render view, including support for layered textures and multiple UV sets, increase the fidelity of interactive previews. In addition, accelerated mental ray texture baking performance significantly improves your productivity. Character animators will enjoy new levels of flexibility in their skinning and rigging workflows. It also lets game developers more effectively create and display sophisticated looks for content destined for the next-generation game*

*consoles. Best of all, working with Maya gives you the widest selection of hardware technologies and operating systems of any 3D package in the entertainment industry.*

### FEATURES

#### NURBS Modeling

Maya software delivers unparalleled, precision surface-modeling tools.

- ◆ Precise spline-based curve and surface construction tools include lofting, birail, beveling, extrusion, trim, boundary, offset, Booleans, rounding, square, and many other tools.
- ◆ Surfaces can be attached, detached, aligned, stitched together, extended, filleted, or rebuilt with a high degree of control over parameterization and continuity.
- ◆ Multiple NURBS patches can be merged into a single polygon mesh.

#### Subdivision Surface and Polygon Proxy Modeling

Get access to a wide range of versatile subdivision surface tools.

##### Subdiv Proxy

- ◆ Rapid construction of high-resolution polygon meshes: Artists can now preview a smoothed mesh while editing the mesh cage.
- ◆ Choice of smoothing techniques provides fine control over the polygon count of the final mesh for rendering or level-of-detail.
- ◆ Variable creasing supported on vertices as well as edges for both the Subdiv Proxy and Smooth Mesh preview.

##### Hierarchical Subdivision Surfaces

- ◆ A distinctive hierarchical approach for local refinement lets artists start modeling with a simple object and selectively generate increasing levels of detail only where needed.
- ◆ Partial and full creasing tools make it easier to construct both rounded, organic forms and hard-edged objects.
- ◆ Streamlined workflow for creative texturing, including UV auto-projection tools and UV Snapshot.

## MAYA COMPLETE 2008

### Polygon Modeling

Maya software provides a full complement of sophisticated polygon modeling tools and UV editing tools.

- ◆ Nonmanifold architecture, focused on the details of creating, editing, and texturing polygonal models, includes multiple sets of animatable color-per-vertex, prelighting, user-defined normals, and normal map generation suitable for games/interactive users.
- ◆ Editing tools, including bridge, poke, cut, wedge, bevel, extrude, chamfer vertex, extrude along a curve, mirror cut, edge loop, edge ring, slide edge, and pick-walk tools.
- ◆ Streamlined workflow for creative texturing—including UV creation and editing, auto-projection and relaxation, interactive lattice and smudge tools, along with quick access to commonly used tools via the UV Texture Editor toolbar.
- ◆ Multiple UV sets allow separate texture coordinates for separate texture channels.
- ◆ Per-instance UV sets allow a single mesh to be used to represent multiple objects, reducing scene overhead.
- ◆ Transfer Polygon attributes enable transfer of UV, color-per-vertex, and vertex position information between polygon meshes of differing topologies, even if they are separated in space or of different proportion/scale.
- ◆ Artists can use the paint tool to blend between source and target deformations.
- ◆ Optimization tools include Polygon reduction, data cleanup, blind data tagging, and level-of-detail tools enable artists to optimize scenes for interactive display.

### 3D Paint

Paint color, bump, displacement, transparency, and other textures directly on surfaces.

- ◆ Integrated texture painting of color, bump, transparency, displacement, and other effects directly onto polygon, NURBS, and subdivision surfaces.
- ◆ Can be used with either image-based brush profiles or any Maya Paint Effects brush.
- ◆ Brush modes include paint, smear, blur, clone, and erase.
- ◆ Automatic conversion of procedural textures and PSD files.

### General Animation

Maya software delivers a broad range of specialized tools for keyframe and procedural animation. Playback speed can be clamped to implement accurate frame rate.

- ◆ Fast and intuitive controls for keyframing, including cut, copy, and paste, allow animations to be created with ease.
- ◆ Animation of an object along a curve or surface with automatic bank, roll, and yaw.
- ◆ Editing of motion path or other animation parameters during playback.
- ◆ Choice of Euler and quaternion math options provide accurate results in all situations.
- ◆ Animation curves can be templated—to prevent accidental modification.
- ◆ Powerful, precise function curves to control how animated attributes change over time.
- ◆ Rapid and intuitive global editing of keyframe timing.
- ◆ Lattice and fall-off tools aid the manipulation of dense keyframe data such as data from motion capture devices.
- ◆ A comprehensive assortment of constraints, including parent, point, aim, orient (with animatable offsets), as well as scale, geometry, normal, tangent, and pole vector.
- ◆ Multiple animation channels can be mixed with each other into a single result.
- ◆ MEL procedures and expressions can be used to create complex animation as an alternative to traditional keyframing.
- ◆ Complex relationships between animated parameters can be keyframed. Multiple attributes can be controlled with a single slider.
- ◆ Trax Nonlinear Animation:
  - Nondestructive mixing and editing of poses and animation clips (including constraints and expressions) with total control over all aspects of motion blending.
  - Libraries of performances can be stored and edited.
  - Muting and soloing capabilities provide control over each animation sequence in isolation or in the context of other animation.
  - Multiple sound tracks can be matched up visually with animation and played back to facilitate character lip-synching and other audio matching requirements.
- ◆ Animation on selected channels or key frames may be temporarily disabled to focus on a specific motion.
- ◆ Animation can be viewed prior to/after the current frame so you can evaluate motion.
- ◆ Deformations on polygon, NURBS (including curves), and subdivision surface geometry can be cached for faster playback and rendering of scenes, as well as for transfer to other 3D packages such as 3ds Max. Caches can be edited and blended together in Trax.

### Particles and Fields

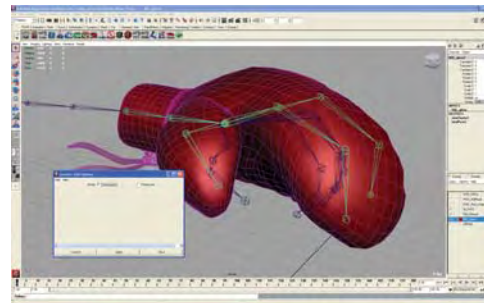
Fully integrated particle effects can be controlled by forces based on real-world physics or by deformers.

- ◆ Fully integrated, with expression-based control over particle attributes, motion, and dynamics.
- ◆ Wizard enables easy particle sprite setup.
- ◆ Direct manipulators provide interactive control of particles, fields, and emitters.
- ◆ Particles can be controlled by texture values.
- ◆ Geometry instancing allows for the placement of individual objects, a sequence of objects, or an array of different objects onto any particle system.
- ◆ Field forces—such as gravity, vortex, air, and turbulence—can be applied to rigid bodies, soft bodies, or particle objects.
- ◆ Collision events can trigger multiple procedural animation effects.
- ◆ Intuitive control of particles via geometric shapes makes it easier to place particles where and when you want them.
- ◆ Standard Maya deformers can be applied and layered—including lattices, clusters, soft modification, and nonlinears—for non-physically realistic effects.
- ◆ Custom fields may be added via the extensive dynamics API.
- ◆ Library of ready-made effects such as fire, curve and surface flow, shatter, fireworks, and lightning.

## MAYA COMPLETE 2008

### Deformation Tools

- ◆ Can be used statically for modeling and sculpting.
- ◆ Animated deformers can add life to creatures and other objects.
- ◆ Includes Lattices, Sculpt Objects, Skin Clusters, Point on Curve Constraints, Blend Shapes, Wires, Wrinkle Tool, Bind/Detach Skin, Flow, Jiggle, and Wrap deformers.
- ◆ Soft Modification tool allows for controllable falloff around vertices or points.
- ◆ Most deformations work on all supported geometry types, including particles.
- ◆ Paintable weights on Clusters, Sculpt Objects, Blend Shapes, Jiggle, and Wires allow you to control the region and extent of the deformation.



### Rigid and Soft Body Dynamics

Create effects through the dynamic interaction of geometry, including collisions between rigid and soft bodies.

- ◆ Realistic, high-speed simulation of multiple rigid objects.
- ◆ Includes dynamic constraints such as nails, hinges, barriers, pins, and springs.
- ◆ Accurate and rapid simulation of flexible objects allows for the rapid creation of secondary motion effects such as muscle jiggle, floppy hats, etc.
- ◆ Powerful spring architecture offers precise control of any flexible surface down to the individual spring.

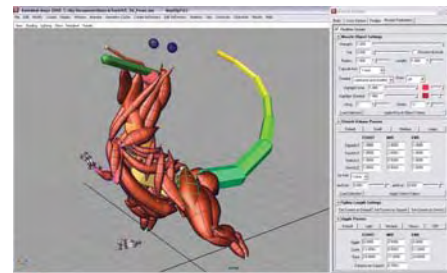
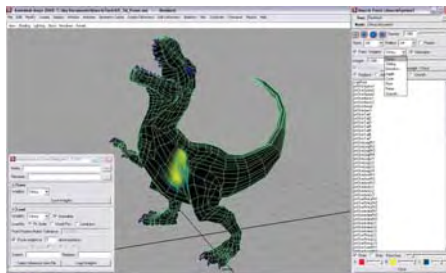
### Toon Shader

- ◆ Supports a wide range of non-photo-realistic rendering styles for traditional 2D cartoons, comic book-style imagery, Japanese manga / anime, and more.
- ◆ Maya Paint Effects brushes can be used on an outline with access to an extensive range of painterly effects as well as line style, placement, and width.
- ◆ Near real-time interactive previews.
- ◆ Can be rendered in mental ray for Maya, or the Maya software or hardware renderers.

### Character Animation

Maya 2008 gives you the tools you need to animate sophisticated digital characters.

- ◆ Skeletons and Inverse Kinematics (IK)
  - Seven built-in IK solvers reduce the time it takes to create high-quality character animation; attributes include joint limits, preferred angles, joint mirroring, etc.
  - Spline IK solver allows for the easy animation of skeletal chains, like a character's spine or tail, and includes easy-to-use twist and roll controls.
  - Single chain and lightweight 2-bone solvers are optimized for real-time interactivity.
  - Spring IK solver allows for precise control over multi-jointed appendages such as insect legs.
- ◆ Full Body IK System
  - Fast easy rigging and posing of characters.
  - Delivers natural articulation of biped and quadruped models.
  - Blendable IK/FK System
  - Smooth blending between IK & FK animation
- ◆ Motion capture, or other animation data, applied to one character can be reapplied to an entirely different character, even one with a different skeletal hierarchy.
- ◆ Original direction of existing motion capture, or other animation data, can be changed at any point in time.



### Maya Artisan

Maya gives you a suite of integrated, pressure-sensitive brush tools with built-in mirroring.

- ◆ Natural brush interface can be used to interactively sculpt polygon, NURBS, and subdivision surfaces.
- ◆ Complex selections of components, such as vertices, faces, edges, can be made without selecting through to the back of the model.
- ◆ Editing smooth skin or soft-body goal weights, painting per vertex color or blind data, adding geometry to the scene, and other complex tasks can be quickly performed.

## MAYA COMPLETE 2008

### Rendering Controls and Effects

Efficient tools help you set up and evaluate your scene or create popular stylized effects.

- ◆ Instantaneous editing of color, texture, lights, shadows, glows, motion blur, and many other effects in final-rendered-quality imagery.
- ◆ Multi-threaded to maximize productivity and creativity.
- ◆ Supported by mental ray for Maya and the Maya software renderer.
- ◆ Can be used to design and edit simple to complex shading networks.
- ◆ Visual outliner (Visor) displays libraries of textures and images, or image swatches for easy management and selection.
- ◆ Bins allow for sorting and organization of rendering nodes such as materials, textures, and lights.
- ◆ Able to render on an unlimited number of networked machines of the same operating system (mental ray excepted).
- ◆ Artists can transfer normal, displacement, diffuse, shaded, ambient occlusion, and custom mental ray shader information between models of differing topologies.
- ◆ An HDR image can be baked from the Transfer Map feature.

### The OpenMaya API/SDK

This key unlocks the power of the Maya software architecture for programmers and technical directors.

- Maya plug-ins and standalone applications that run from the Maya command line can be written using C++.
- Maya scene hierarchy can be traversed with iterators.
- Maya plug-ins can be registered to receive a comprehensive range of Maya messages.
- Manipulators and locators can be created.
- New types of Maya objects can be developed, including file translators, hardware shaders, surface shapes and MEL commands.
- Existing Maya objects, such as geometry, lights, shaders, transforms, scene hierarchy, and dependency graph nodes can be queried and modified.

### Skinning

Animators and animation technical directors usually find it necessary to work iteratively on their rigged characters. Maya 2008 can streamline iterative skinning workflows by enabling you to modify the skeleton of a bound character, without having to rebind it after, thus preserving any work done after the skeleton was bound. This process is supported through new tools for inserting, moving, deleting, connecting, and disconnecting joints on a bound skeleton, as well as support for multiple bind poses.

- ◆ Precise control of skin behavior, even in the most challenging areas such as shoulders.
- ◆ Smooth Bind Skinning allows geometry to be connected to skeletons so that the character deforms smoothly as joints are moved.
- ◆ Substitute Geometry tool allows for easy editing and transferring of skinning information between models.
- ◆ Rigid Bind Skinning provides direct manipulation of geometry by individual joints.
- ◆ Nondestructive workflow for skin editing capabilities include the ability to insert, move, delete, connect, and disconnect joints on a bound skeleton (no need to rebind after changes have been made).
- ◆ Support for multiple bind poses.

### Maya Paint Effects

Ground breaking paint technology for creating amazing natural detail on 2D images (including textures) or 3D objects attached to polygonal and NURBS surfaces.

#### Powerful Painting Techniques:

- Can be used to create animatable effects, such as plants growing, unfurling, or swaying in the wind.
- Artists can define a logotype in oil paint and watch it draw on the screen.
- Game-content artists can paint repeating textures for levels that update right on the model.

#### Maya Paint Effects Brushes:

- More than 500 editable, pressure-sensitive, preset brushes completely integrated within the Maya application.
- Extensive range of traditional painterly brushes, including airbrushes, oil paint, chalk, pastels, pencils, watercolors, wet brushes, and markers.
- Options for a vast range of realistic effects including trees, grass and flowers, realistic hair, eyebrows, and beards.
- Special effects like lightning, clouds, rain, star fields, fireworks, fire, and sparks.
- Mesh brush type creates organic or hard-edged geometry that is convincing even close up. Used with environment reflections it can create looks such as chrome, glass and shiny paint or displacement/ bump mapping.
- Thin Line brush can be used to quickly paint on high-quality hair that can be efficiently rendered.

#### Paint Effects Rendering:

- Strokes can be drawn fully rendered during interactive painting, providing immediate feedback.
- Features fast, resolution-independent final rendering that can include 3D cast shadows, depth-of-field, fog effects, and motion blur.

#### Brush Attributes:

- All brushes can be used in true 3D space (to paint on or between 3D objects in a scene), on a 2D canvas (to create images and textures), or within the 3D Paint tool (to create textures by painting directly on the model).
- Brushes are fully animatable and have built-in preset dynamics such as turbulence and gravity.
- Brushes can be blended together to make an infinite range of new, user-customized presets.
- Brush growth attributes include bend, curl, and twirl.

## MAYA COMPLETE 2008

### Multiple Rendering Options

Multiple renderers, tightly integrated through a consistent rendering interface, let you create any look from photo-realistic imagery to a simple vector graphic.

#### Maya Software Renderer

- ◆ Hybrid design uses fast, selective ray-tracing for maximum efficiency.
- ◆ Multi-threaded, multiprocessor support with built-in memory handling maximizes productivity and provides large scene rendering capabilities.
- ◆ Full range of effects, including depth of field, motion blur, soft shadows, and lens flares.
- ◆ Volumetric materials, such as noise and fog, aid in the creation of environmental effects.
- ◆ Advanced attributes, such as light absorbance and chromatic aberration, provide sophisticated, creative options.
- ◆ Ramp Shader effects include glass, stone, cartoon-like shading, X-ray, etc.
- ◆ Anisotropic and diffraction shaders available.
- ◆ High-quality software particle rendering with a comprehensive assortment of effects—including blob, tube, and cloud rendering—for gas clouds, fire, liquids, etc.

#### mental ray (3.6 core) for Maya

Maya 2008 uses the latest mental ray 3.6 core, which boasts dramatic performance improvements in the translation of polygon meshes and instances for rendering, as well as for IPR (Interactive Photorealistic Rendering) start-up. Additionally, particle types previously supported only in the Maya Hardware renderer can now be rendered in mental ray, eliminating the need to combine outputs from multiple renderers.

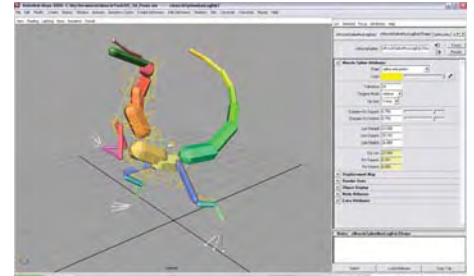
- ◆ User-friendly UI and workflow
- ◆ Advanced photo-realistic lighting features, such as global illumination, caustics, ambient occlusion, blurry reflections and refractions, and motion-blurred particles.
- ◆ Custom mental ray® shaders can be used.
- ◆ Ships with shader presets, including physically accurate sun and sky shaders, a set of architectural shaders for hard-to-realize materials, a round corner shader (softens geometrically precise corners), and more.
- ◆ Photometric lighting support allows for the use of real-world lighting profiles.
- ◆ Light baking of shadows and lights, including global illumination and final gather, can be converted to file textures or to color-per-vertex data. Image-based lighting allows for the emission of photons, caustics, or direct illumination lights from spherical image maps.
- ◆ HDR images can be baked from the mental ray batch bake option.
- ◆ Ability to directly render Maya Fur, Maya Hair, Maya Fluid Effects and shader glow.
- ◆ Photon visualization lets you preview the placement of photons and final gather points in the 3D scene.

#### Hardware Renderer

- ◆ Generates near-software-quality images at significantly faster render times for broadcast or pre-visualization needs.
- ◆ High-quality rendering in the viewport lets you immediately see the results to changes, no need for a separate rendering calculation.
- ◆ Support for color-per-vertex in both offline rendering and the interactive viewport.
- ◆ Support for DirectX HLSL, CgFX, and ASHLI shaders—includes a user-friendly UI and workflow. Hardware shader API accessible through the OpenMaya API.

#### Vector Renderer

- ◆ Windows 32-bit and Mac OS X on PowerPC systems only.
- ◆ Can be used to turn 3D content into 2D content for the web or print.
- ◆ Output to Macromedia Flash (SWF or SWFT), Illustrator (.ai), SVG, EPS, or bitmap formats.
- ◆ Provides a range of non-photo-realistic looks, including hidden-line rendering.



### Integrated Scripting

Two fully integrated scripting languages let script writers and programmers customize, extend, or manipulate Maya software.

#### MEL:

- Offers full scripting of any Maya software feature—everything can be accessed.
- Artists and technical directors can easily create custom windows and scripts or reconfigure the Maya user interface to make a completely custom application.
- Commands can be issued from an HTML page—scripts can be recognized by an external web browser via the Maya web browser plug-in.
- A Python command allows MEL scripts to call Python code. This gives MEL users the option to mix Python scripts with their MEL scripts, a good way to transition into using Python.

#### Python:

- Integrated into Maya at the same level as MEL.
- Higher-level language constructs allow for increased developer productivity and easier maintenance of code.
- Readily available scripting resources and knowledgeable community of users.
- Highly extensible, with a collection of third-party tools and modules available.
- Bindings to the OpenMaya API give programmers an alternative language for plug-in development.
- The Maya Python modules can be imported into an external stand-alone Python interpreter for batch processing.

## MAYA COMPLETE 2008

### Connectivity and Integration

#### Adobe Photoshop Integration

- ◆ Artists can create shading networks with connections to layers sets in a PSD file and include procedural or 3D painted textures as starting points and UV layouts for reference.
- ◆ Render layers can now be rendered to layered PSD files.
- ◆ Any PSD file can be used as a texture map and rendered directly in the Maya software and hardware renderers and in mental ray for Maya.
- ◆ PSD files containing layer sets can be converted into a layered texture within Maya.
- ◆ A multi-layered PSD file can be automatically connected to multiple material attributes.

#### Adobe Illustrator Object Nodes

- ◆ Supports both beveling and curves.
- ◆ Maintain Construction History enables Illustrator files to be substituted or edited while maintaining the bevel history.

#### Supported Vector Formats\*

PostScript, EPS, Macromedia SWF, Swfit3D, Adobe Illustrator, SVG.

#### Compositing Integration via Render Layers Functionality

- ◆ Allows multiple passes from any of the four Maya renderers, as well as post processes, such as Maya Fur and Maya Paint Effects, to be managed in a single scene.
- ◆ A system of per-layer and per-object overrides means that objects can have different shading and rendering attributes on different layers.
- ◆ Workflow streamlines rendering by preparing renders for optimal output to the compositor of choice—or Photoshop (PSD) or Flash (SWFT) output—with objects and elements isolated in individual layers.
- ◆ Depth and motion vector data can be stored separately and used in post processes.
- ◆ Artists can generate an Autodesk Toxik software composition from within Maya based on the render layers in the scene, streamlining the workflow and allowing for multiple iterations.

## MAYA UNLIMITED 2008

*The ultimate version of Maya software—Autodesk Maya Unlimited—is the choice of digital artists who are looking to make their 3D projects stand out. Maya Unlimited includes all the functionality found in Autodesk Maya Complete and provides professional artists and animators with additional industry-leading innovations such as Maya Fluid Effects, Maya nCloth, Maya Hair, Maya Fur, and Maya Live for the creation of superior digital content. Autodesk Maya Unlimited contains everything in Autodesk Maya Complete, plus:*

#### Maya Fluid Effects:

Simulate and render a huge variety of atmospheric, pyrotechnic, viscous liquid, and open ocean effects. Maya Fluid Effects overcomes one of the greatest barriers in computer animation.

#### Maya Fur:

Easily create realistic fur, short hair, wool and grass on NURBS, subdivision surfaces, or polygonal models. Incredibly realistic styling and rendering of short hair and fur, with Maya Artisan Brush Interface for painting fur attributes.

#### Maya Hair:

Create, style, and render fully dynamic long hair on NURBS or polygon objects. Make any NURBS curve dynamic for use in advanced character rigging and effects. Maya Hair can also be used to create a wide range of non-hair effects.

#### Maya Live:

Combine 2D live-action with 3D elements. Maya Live provides greater flexibility, a fast-integrated 2D Tracker, and an interactive Root Frame Solver. Maya Live also allows you to reconstruct live-action elements as 3D geometry as well as output to external applications.

#### Maya nCloth:

As the first Maya module built on the Autodesk new Nucleus technology, Maya nCloth functionality lets you quickly direct and control cloth and other material simulations in entirely new ways. Maya nCloth objects can be as stiff, viscous, or flowing, and as tightly or loosely woven as you desire. Rapidly create cloth-on-cloth simulations—such as a shirt over pants—with believable influences and collisions. Bend, stretch, shear, dent, or even tear your Maya nCloth fabrics with ease. Beyond cloth, Maya nCloth lets you create deformable plastic and metal simulations, inflatable objects, as well as rigid-body and fluidic-type effects.



## MAYA 2008

Maya Complete 2008 Commercial New SLM (Mfr # 72202-059062-9000) .....	<b>1995.00</b>	Maya Complete 2008 Commercial Upgrade from Maya Complete 8 (Mfr # 72202-059062-9305) .....	<b>1795.00</b>
Maya Complete 2008 Commercial New SLM Gold Bundle (Mfr # 72202-05BNDL-9000) .....	<b>2995.00</b>	Maya Complete 2008 Commercial Upgrade from Maya Complete 8 Additional Seat (Mfr # 72202-050000-9305) .....	<b>1795.00</b>
Maya Complete 2008 Commercial New SLM Flexible Bundle (Mfr # 72202-059062-9012) .....	<b>1700.00</b>	Maya Complete Network License Activation Fee (Mfr # 72200-000000-0001) .....	<b>1000.00</b>
Maya Complete 2008 Commercial New SLM Additional Seat (Mfr # 72202-050000-9000) .....	<b>1995.00</b>	Maya Unlimited 2008 Commercial New SLM (Mfr # 72402-059062-9000) .....	<b>4995.00</b>
Maya Complete 2008 Commercial New SLM Subscription Bundle (Mfr # 72202-05BNDL-1111) .....	<b>2590.00</b>	Maya Unlimited 2008 Commercial New SLM Gold Bundle (Mfr # 72402-05BNDL-9000) .....	<b>6490.00</b>
Maya Complete 2008 Commercial New SLM Gold Bundle Additional Sea (Mfr # 72202-05BNDL-9001) .....	<b>2995.00</b>	Maya Unlimited 2008 Commercial New SLM Additional Seat (Mfr # 72402-050000-9000) .....	<b>4995.00</b>
Maya Complete 2008 Commercial New SLM Flexible Bundle Additional Seat (Mfr # 72202-050000-9012) .....	<b>1700.00</b>	Maya Unlimited 2008 Commercial New SLM Gold Bundle Additional Seat (Mfr # 72402-05BNDL-9001) .....	<b>6490.00</b>
Maya Complete 2008 Commercial New SLM Subscription Bundle Additional Seat (Mfr # 72202-05BNDL-1114) .....	<b>2590.00</b>	Maya Unlimited 2008 Commercial New NLM (Mfr # 72402-059062-9100) .....	<b>6245.00</b>
Maya Complete 2008 Commercial New NLM (Mfr # 72202-05BNDL-9100) .....	<b>2995.00</b>	Maya Unlimited 2008 Commercial New NLM Gold Bundle (Mfr # 72402-05BNDL-9100) .....	<b>7740.00</b>
Maya Complete 2008 Commercial New NLM Gold Bundle (Mfr # 72202-05BNDL-9100) .....	<b>3995.00</b>	Maya Unlimited 2008 Commercial New NLM Additional Seat (Mfr # 72402-050000-9100) .....	<b>6245.00</b>
Maya Complete 2008 Commercial New NLM Flexible Bundle (Mfr # 72202-059062-9111) .....	<b>2700.00</b>	Maya Unlimited 2008 Commercial New NLM Gold Bundle Additional Seat (Mfr # 72402-05BNDL-9103) .....	<b>7740.00</b>
Maya Complete 2008 Commercial New NLM Additional Seat (Mfr # 72202-050000-9100) .....	<b>2995.00</b>	Maya Unlimited Commercial Subscription Gold Support (1 year) (Mfr # 72400-0000SA-G861) .....	<b>1495.00</b>
Maya Complete 2008 Commercial New NLM Subscription Bundle (Mfr # 72202-05BNDL-1112) .....	<b>3590.00</b>	Maya Unlimited Commercial Subscription Gold Support (1 year) (Renewal) (Mfr # 72400-0000SA-G880) .....	<b>1495.00</b>
Maya Complete 2008 Commercial New NLM Gold Bundle Additional Seat (Mfr # 72202-05BNDL-9102) .....	<b>3995.00</b>	Maya Unlimited 2008 Commercial Crossgrade from 3ds Max 2009 (Mfr # 72402-05A711-1004) .....	<b>1495.00</b>
Maya Complete 2008 Commercial New NLM Flexible Bundle Additional Seat (Mfr # 72202-050000-9111) .....	<b>2700.00</b>	Maya Unlimited 2008 Commercial Crossgrade from 3ds Max 2009 Additional Seat (Mfr # 72402-050711-1014) .....	<b>1495.00</b>
Maya Complete 2008 Commercial New NLM Subscription Bundle Additional Seat (Mfr # 72202-05BNDL-1113) .....	<b>3590.00</b>	Maya Unlimited 2008 Commercial Crossgrade from Maya Complete 2008 (Mfr # 72402-059062-9320) .....	<b>2995.00</b>
Maya Complete Commercial Subscription (1 year) (Mfr # 72200-000110-5001) .....	<b>595.00</b>	Maya Unlimited 2008 Commercial Crossgrade from Maya Complete 2008 Additional Seat (Mfr # 72402-050000-9320) .....	<b>2995.00</b>
Maya Complete Commercial Subscription (1 year) (Renewal) (Mfr # 72200-000110-5003) .....	<b>595.00</b>	Maya Unlimited 2008 Commercial Crossgrade from MotionBuilder 7.5 (Mfr # 72402-05A711-1002) .....	<b>995.00</b>
Maya Complete Commercial Subscription Late Processing Fee (Renewal) (Mfr # 72200-000000-9580) .....	<b>100.00</b>	Maya Unlimited 2008 Commercial Crossgrade from MotionBuilder 7.5 Additional Sea (Mfr # 72402-050711-1012) .....	<b>995.00</b>
Maya Complete Commercial Subscription Gold Support (1 year) (Mfr # 72200-0000SA-G861) .....	<b>1295.00</b>	Maya Unlimited 2008 Commercial Upgrade from Maya Unlimited 8.5 (Mfr # 72402-059062-9303) .....	<b>1795.00</b>
Maya Complete Commercial Subscription Gold Support (1 year) (Renewal) (Mfr # 72200-0000SA-G880) .....	<b>1295.00</b>	Maya Unlimited 2008 Commercial Upgrade from Maya Unlimited 8.5 Additional Seat (Mfr # 72402-050000-9303) .....	<b>1795.00</b>
Maya Complete Commercial Subscription Gold Support Uplift (1 year) (Mfr # 72200-000110-5009) .....	<b>700.00</b>	Maya Unlimited 2008 Commercial Upgrade from Maya Unlimited 8 (Mfr # 72402-059062-9305) .....	<b>2795.00</b>
Maya Complete 2008 Commercial Upgrade from Maya Complete 8.5 (Mfr # 72202-059062-9303) .....	<b>895.00</b>	Maya Unlimited 2008 Commercial Upgrade from Maya Unlimited 8 Additional Seat (Mfr # 72402-050000-9305) .....	<b>2795.00</b>
Maya Complete 2008 Commercial Upgrade from Maya Complete 8.5 Additional Seat (Mfr # 72202-050000-9303) .....	<b>895.00</b>	Maya Unlimited Network License Activation Fee (Mfr # 72400-000000-0001) .....	<b>1250.00</b>

## MOTIONBUILDER

Take on the most demanding, high-volume animation projects with confidence. Create state-of-the-art animations in record time. MotionBuilder is the foremost 3D character animation productivity suite for game, film, broadcast, and multimedia production. This award-winning software combines a unique real-time architecture, animation layering, and Story Timeline non-linear editing environment with an intuitive workflow and tools that streamline the character animation pipeline. With a strong focus on workflow efficiency, MotionBuilder enables traditional animators and technical directors alike to take on the most demanding, high-volume animation projects. Available for Windows and Macintosh, MotionBuilder natively supports the platform-independent Autodesk FBX 3D authoring and interchange format that allows Autodesk MotionBuilder to integrate with any application in a production pipeline that supports FBX.



### FEATURES

- ◆ MotionBuilder software is built on a unique, real-time architecture that enables you to work unhindered by the need to create previews of your work. What you see is what you get.
- ◆ Provides a comprehensive suite of real-time animation tools for advanced key frame animation, animation layering, and motion capture editing—so you can quickly generate unsurpassed animation.
- ◆ A comprehensive suite of specialized character performance tools and workflows that address the need to quickly create and edit unsurpassed character performances and scene previews/ pre-visualizations.
- ◆ Create a wider variety of character setups with inverse bending knees or elbows—dogs, birds, or unique creatures of your imagination. Support for inverse bending joints includes the ability to retarget animation from one character to another.
- ◆ The unique MotionBuilder Story Timeline provides an integrated non-linear editor in which to combine audio, video, 3D elements, and camera shot decisions, all in real time.
- ◆ Simplifies the process of working with motion capture data and other dense datasets through an integrated suite of tools for solving, editing, and blending. Add to that the ability to stream and record live data from popular motion capture hardware into MotionBuilder and view the results on a full resolution, fully textured character in real time.
- ◆ Using tools designed to maximize speed and efficiency, you'll get instant playback of character performances, alleviating the need to preview or render your work.
- ◆ MotionBuilder delivers key productivity-enhancing features such as file batching tools, support for multiple animation takes in a single scene, and a streamlined method for loading and saving character animation.
- ◆ In addition to support for external motion capture systems, MotionBuilder supports an unlimited number of built-in or third-party devices, allowing each to be online and live simultaneously in the scene.
- ◆ MotionBuilder functionality can easily be extended via Python scripting, as well through the software's C++ Open Reality SDK.
- ◆ MotionBuilder integrates easily into new and existing production environments with support for third-party asset management systems, hardware rendering and support, as well as support for a wide variety of industry-standard file formats, including native support of Autodesk FBX format.
- ◆ Natively supports Autodesk FBX, an OS-independent, high-end 3D interchange format. Widely used in the digital entertainment industry, the FBX file format—and free Software Development Kit (SDK)—lets you readily acquire and exchange 3D assets and media from a wide variety of sources.
- ◆ Beyond the MotionBuilder animation specific tools, other general 3D functionality is supported, such as lights, cameras, materials, textures, and shaders.
- ◆ With real-time, language-independent phoneme extraction technology, MotionBuilder allows you to rapidly generate realistic lip-sync and facial animation.
- ◆ MotionBuilder offers a task-based, productivity-enhancing user interface that makes the software easy to learn and use—even for non-technical animators.
- ◆ MotionBuilder gives users the flexibility to customize the software's interface with a layout manager, keyboard shortcut selector, and many in-context menus and options to streamline the animation process.

MotionBuilder 7.5 Commercial New SLM (Mfr # 72701-051452-9000).....	<b>3995.00</b>
MotionBuilder 7.5 Commercial New SLM Additional Seat (Mfr # 72701-050000-9000).....	<b>3995.00</b>
MotionBuilder 7.5 Commercial New NLM (Mfr # 72701-051452-9100).....	<b>4995.00</b>
MotionBuilder 7.5 Commercial New NLM Additional Seat (Mfr # 72701-050000-9100).....	<b>4995.00</b>
MotionBuilder Commercial Subscription Gold Support (1 year) (Mfr # 72700-0000SA-G861).....	<b>795.00</b>
MotionBuilder Commercial Subscription Gold Support (1 year) (Renewal) (Mfr # 72700-0000SA-G880) .....	<b>795.00</b>

### COMBUSTION



## Desktop Paint, Color Correction, Compositing and Visual Effects Program

*Combustion is the all-in-one professional compositing application designed to enable the full creative potential of digital video artists. With its easy-to-use interface, nondestructive workflow, and extensive toolset, Combustion delivers incredible power at an economical price and instantly augments the creative potential of any serious desktop video artist. A single integrated application for vector paint, motion graphics design, animation, and compositing.*

*Advanced visual effects tools include keying, color correction, tracking, grain management, and masking tools. Comprehensive paint and rotoscoping tools, including fully customizable brushes. Comprehensive animation tools, animation curve editor, keyframing, and expressions. Intuitive schematic view to simplify visualization and organization of complex effects. OpenGL application programming interface acceleration, multi-processor support, and extensive caching for improved system performance. Multiple simultaneous viewports with real-time RAM looped playback. Resolution-independence with 8-, 10-, 12-, 16-, and 32-bit (float) per component image processing.*

#### FEATURES

##### Composite

- ◆ Composite two inputs using any one of a variety of transfer modes
- ◆ 3D perspective positioning and animation
- ◆ 3D animatable camera with real-world camera attributes
- ◆ Unlimited color light sources, with attributes like spot, point, and distant light
- ◆ Realistic ray-traced shadows and reflections
- ◆ Layer projection to create stained glass-type lighting effects
- ◆ High-quality motion blur with multiple transfer modes
- ◆ Multiple object parenting, hinging, and path alignment
- ◆ Nest multiple layers inside a composite for greater efficiency

##### Color Correction

- ◆ Comprehensive color correction tools, including Color Balance, Brightness/Contrast, Levels, Gamma, Equalize, Tint, Curves, Shadow/Midtone/Highlight adjustment, and more
- ◆ NTSC and PAL color limiting and RGB and HSV color space models
- ◆ Precise and automatic color matching of footage from different sources

##### Paint

- ◆ B-splines with edge softness for greater control when defining shapes
- ◆ Control point grouping to facilitate roto work and shape animation
- ◆ Corner Radius specifies corner curvature when creating rectangles
- ◆ Integrated pivot point adjustment and rotation directly in vector object
- ◆ Real-Time Roto—paint in one viewport while watching the result loop playback in another
- ◆ All paint strokes and objects are resolution-independent vectors and fully editable
- ◆ 30+ real-time draw modes, including smooth, brightness, blur, emboss, and more
- ◆ Cloning and reveal controls for interactive painting between video clips and frames
- ◆ Custom brushes help you create unique tools for advanced effects and textures

##### Timewarp

- ◆ Time-remapping operator for creating slow-motion and speed-up effects
- ◆ Timing, speed, and duration controls for advanced manipulation of speed changes
- ◆ User-definable between-frame interpolation to create smooth blends or trails

##### Particle System

- ◆ Real-time particle system for creating smoke, fire, explosions, water, and other effects.
- ◆ Includes a library of hundreds of preset effects, each one fully customizable.
- ◆ Create your own particle effects using sprites created from custom bitmaps, or use any element in the Combustion workspace—such as text or paint objects—as a particle.
- ◆ Use deflectors to bounce particles during animations.
- ◆ Motion-track emitters to lock particle effects to moving objects in an image sequence.
- ◆ Control the color, emission, and behavior properties of the particles, including direction, life, number, spin, bounce, velocity, randomness, and more.

##### Motion Tracking

- ◆ Four-corner pinning and image stabilization to remove unwanted camera roll, shake, and jitter.
- ◆ Unlimited number of track points for complex changes in position, scale, and rotation
- ◆ Animate any keyframeable parameter using the tracker in context.
- ◆ Export tracking data to other compositing systems as ASCII data.

## COMBUSTION

### Color Warper

- ◆ Performs primary and selective color correction allowing for precise fine-tuning with multiple levels of adjustment in a single pass
- ◆ Interactive adjustment of gamma, gain, offset, hue, saturation, and contrast; apply animatable settings to all channels or independently to R, G, and B
- ◆ Intuitive hue shift and tint color wheel for fast, accurate color balancing; visual color sampling palette for precise color matching
- ◆ Interactive Histogram and Curves editing modes for subtle, precision tweaking of color components
- ◆ Independent controls for color correcting shadow, midtone, and highlight regions—features user-definable luminance ranges
- ◆ “Match” feature for fast scene-to-scene color correction
- ◆ “Selective” feature for sampling up to three different color regions for isolated correction
- ◆ High-quality RGB vector scope, and a 3D histogram for precise color monitoring

### Edit Operator

- ◆ Simultaneously trim head and tail (maintains duration)
- ◆ Current and total duration displayed in the timeline segment
- ◆ Assemble clips, and render them or use them as layers in a composite
- ◆ Trim, slip, slide, and ripple clips with transitions
- ◆ In-context editing between the edit operator and your composites
- ◆ Use multiple edit operators to easily create complex effects
- ◆ Full support for multiple resolutions—mix and match clips as needed

### Keying

- ◆ Professional bluescreen/greenscreen keying with advanced matte control tools
- ◆ Intuitive Keyer—RGB, YUV, HLS, Channel, Luminance, RGB-CMYL, and custom
- ◆ Matte edge and softness controls, including levels, shrink and erode, and Gaussian blur
- ◆ Advanced spill and color-suppression controls

### CG/ Text Effects

- ◆ Fast, interactive text editor for resolution-independent, nondestructive text animation
- ◆ Direct WYSIWYG manipulation of text within the context of the overall composite
- ◆ Font attributes (face, outline, shadow) have individual color, gradient, texture controls
- ◆ Control of phrases, words, and even single characters for precise editing and animation
- ◆ Animate text along a path, with full onscreen editing of path control points
- ◆ Support for Adobe PostScript and TrueType fonts; international right-left, vertical text entry; double-byte (Asian, Arabic fonts)
- ◆ Generators for creating frame counters, time-code burn-in, sequential and random numbers

### Selections and Masks

- ◆ B-spline shapes for smoother control of edges when creating masks. Create animatable, trackable shapes using Bézier, B-Spline, Freehand, Rectangle, and Ellipse tools
- ◆ Animatable magic wand—keyframe or track the magic wand selection point
- ◆ Keyer-based selection for advanced color-based extraction and rotoscoping
- ◆ Edge gradient—a powerful three-spline rotoscoping technology for variable-edge softness; inner and outer mask or selection softness for motion blur compensation
- ◆ Boolean operations for combining masks and selections, including add, subtract, intersect, and replace
- ◆ Create multiple and articulated shapes in a single pass for faster rotoscoping

### Audio

- ◆ Supports QuickTime, AVI, WAV, and AIFF files
- ◆ Synchronize audio to operator in the process tree, or use as a global reference track
- ◆ Display the audio waveform over the timeline for accurate synchronization
- ◆ Simultaneously play audio in real time with cached animation
- ◆ Volume controls and VU/Peak meters

### Advanced Film Tools

- ◆ Export OpenEXR file sequences for easy integration into film pipelines
- ◆ Look-up Tables (LUTs) enable artists to accurately display digital film scans on computer monitors
- ◆ Add Grain and Remove Grain filters include automatic grain matching with presets for popular film stocks
- ◆ Native 10-bit Cineon support—paint or roto-scope directly in 10-bit log without conversion

### Filters and Plug-Ins

- ◆ Fast GBlur, an optimized, high-quality blur filter with constant-speed rendering independent of blur radius
- ◆ GBuffer Builder can custom-combine your image bitmaps into RPF files for use with Combustion software’s 3D Post operators
- ◆ 3D Post effects for RPF/RLA images, including 3D depth of field, 3D fog, 3D glow, 3D lens flare, and 3D motion blur
- ◆ De- and re-interlace, 3:2 pull-down removal/addition, reverse dominance, and broadcast-safe
- ◆ Save effect operator presets to create a library and share effects
- ◆ Compatible with most Adobe Photoshop and Adobe After Effects plug-ins

### Keyframe and Timeline Controls

- ◆ Customizable channel filtering in the timeline
- ◆ Layer-based timeline and animation curve editor
- ◆ Markers provide ability to add notes and visual cues to your timeline
- ◆ Clip trimming, advanced keyframe, and object control
- ◆ Perform copy/paste and math operations on channels or groups of keyframes
- ◆ Automatic ease in/out control over single or multiple keyframes
- ◆ Define curve interpolation per keyframe, and define extrapolation per channel

**Combustion 4.0** Compositing Software for Windows

(Mfr # 622040914089000 • B&H # AUC4W) .....

**889.95**

## LIGHTWAVE 3D



## Model/Animate/Render

*LightWave is the most complete and robust 3D system right out of the box anywhere at any price. It is a thriving, dynamic system, ever evolving to meet the user needs. Newtek works closely on a day-to-day basis with LightWave artists so they know exactly what you are trying to accomplish. The LightWave renderer is first class, best in show and infinitely easier to set up and use than any other. It serves as the centerpiece in the production pipeling of many facilities both large and small. Render nodes are free and set up is quite straightforward.*

*LightWave Modeler excels both as a subdivision surface*

*and a polygonal modeler, fast, efficient and again, straightforward in functionality. In addition, an industry leading node-based texturing and shading system allows you to create any look you desire - quickly and easily.*

*LightWave has long been a mainstay in production and TV studios, creating fantastic effects for blockbuster movies, such as 300, The Guardian, The Da Vinci Code, Pan's Labyrinth and The Aviator, as well as shows such as CSI: Miami, CSI: NY, Battlestar Galactica, Drive and many others. LightWave works along side other 3D applications and compositing programs to help produce results in the studio pipeline. LightWave's open formats make integration into the pipeline a straightforward process. Lightwave works the way you do. Smart and efficient. A program that's intuitive and responsive. Powerful enough to tackle any job, yet simple enough to be mastered by a single artist. Everything you need is in the box, no "unlimited" this or "advanced" that, no up sell and no extras.*

### FEATURES

#### General Controls

- ◆ Support fractional frames at make key for IK Booster
- ◆ Tool for moving an object on or by an offset distance across the surface of a target mesh.
- ◆ A new rotation controller offers quaternion rotations to minimize gimbal lock.
- ◆ Tool which modifies a channel based on closest distance between an object and a mesh or other items.
- ◆ Align to Path command now offers a robust new align-to-path algorithm, unaffected by very slow or no motion. The original Align is renamed to more accurately describe its function, "Align to Velocity."
- ◆ Squash and stretch tool
- ◆ Free-form and locked IK goals
- ◆ Separate animated channels
- ◆ Animatable UV coordinates

#### Motion Mixer

- ◆ Non-linear animation system for blending any curve track inside of LightWave 3D; Perfect for blending motions, endomorphs or any animatable parameter in LightWave
- ◆ Load and save Hierarchical Motion (HMOT) data containing all relevant components, motions and channels for a character group
- ◆ Position and scale motions and groups of channels in track view
- ◆ Quickly blend multiple motion tracks together with user definable curve
- ◆ Channel editor enables/disables independent items or channels from each HMOT behavior
- ◆ Absolute and Relative Offset motions settings
- ◆ Animation baking for full scene or defined range
- ◆ Select by Descendants, Hierarchy, Actor or Motion

#### Graph Editor

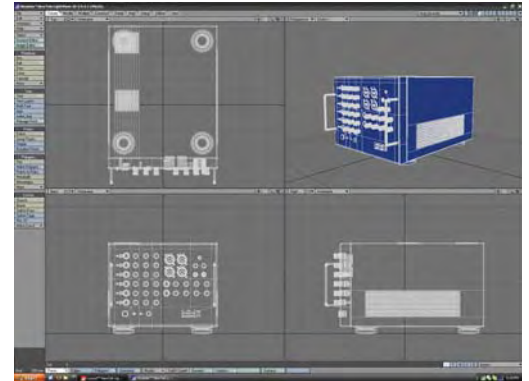
- ◆ Completely new Channel Editing System
- ◆ OpenGL interface allows editing hundreds of realtime curves and thousands of key frames
- ◆ Multiple curve types (Linear, Bezier, Stepped, Hermite Spline, TCB) allows for multi-select and editing of heterogeneous curve types - includes key roll option, interactive key copy, and much more
- ◆ Track Layout's selection option, automatically updates current selection of editable curves to match selected item
- ◆ Curve View allows collapsible curve list and options sections to provide optimized space for curve editing
- ◆ Lock Motion Keys in Time provides quick method for locking channels for '5.6 style' curve editing
- ◆ Customizable key editing behaviors and interface

## LIGHTWAVE 3D

### Motion & Displacement Controllers

- ◆ Modified bones deformation algorithm reduces cross talk between bones, providing a more natural deformation of skin surfaces without any point assignment required
- ◆ Spline-based motion and deformation
- ◆ New bones system with support for direct vertex assignment and soft influence as defined by user-created weight maps
- ◆ Facial animation tool with Endomorphs and Motion Mixer.
- ◆ Follower channel modifier to link any items channel to another
- ◆ Oscillator channel modifier allows sinusoidal motions to be automatically generated with control of phase, time offset and damping
- ◆ Texture motion provides a method for adding a texture to a motion path
- ◆ Displacement of geometry along normals, in 3D space or along a specific axis - multiple layers allow combinations
- ◆ Integrated Sub-division Bump Displacement creates an accurate displacement of vertices on the surface at the time of subdivision creating very natural, high definition geometric bumping
- ◆ Integrated expressions engine and channel repository allowing all animated items in a scene to be referenced, link, or drive one another; also allows surfaces to be modified based on various input parameters or even linked to motions or any other envelope in the scene
- ◆ New Bone Editing Tools will make character rigging a snap.
- ◆ Import/Export RIG functions give you the ability to reuse and share rigs from object to object, via the new .rig file format.
- ◆ Bone Edit Mode allows you to edit your character rigs quickly and easily within the scene you are creating.
- ◆ Bones On/Off activates/deactivates all bones in all loaded objects.
- ◆ IK Booster offers one-click IK setup and intuitive tools to help with setup of constraints
- ◆ Morph Mixer offers faster performance and an incredible range of control for object morphing, including character animation, in an intuitive interface.

### Modeler



- ◆ Phantom subpatch point selector allows users to click directly on the subpatch curve intersection for editing
- ◆ Translate Plus allows you to use a point's normal, a segment, or a segment's normal to define how to move, rotate, scale a selection. You can even just use global X, Y, or Z.
- ◆ Move Plus adds translation along local normal or averaged normal using the right mouse button.
- ◆ Segment Scale allows users to move points along an edge.
- ◆ Point Normal Move allows you to select the points you want to move on their normals, then click and drag on the screen to move them in and out.
- ◆ Divide will divide edges into two segments based on point selection. Also has polygon mode for splitting polygons.
- ◆ Make Pole triangulates all selected polygons with a pole at the center. Can be used with the Fix Pole tool to open up geometry for manipulation.
- ◆ SuperShift is an interactive tool to smooth shift and bevel polygons. Can work with averaged normals when shifting or scaling.
- ◆ Bridge Tool easily joins selected sets of polygons to reshape a mesh with bridges or tunnels, or join meshes.
- ◆ Edge Tools split and modify polygon edges. When tools are activated, handles appear on polygon edges that can be drawn between and moved to create a set of polygon splits.
- ◆ Fix Poles will take a group of connected triangles which share a point, and create a bevel which will help smoothing.
- ◆ Rotate Skelegons allows you to quickly adjust the bank handles of skelegons as well as preview rotational deformations (this includes the deformation of sub-patches).
- ◆ Create JointMorph works a lot like Rotate Skelegons but is helpful when creating endomorphs for joints.
- ◆ Enhanced "Make Polygon" tool that works in Symmetry mode and will also close holes in geometry.
- ◆ Convert between polygons and subdivision surfaces at any time during the modeling and animation process
- ◆ Intelligentities with Endomorphs, Skelegons and MultiMeshes
- ◆ Endomorphs allow morph data to be stored in the object file so changes can be made to the base model without disturbing targets
- ◆ Segment Scale allows users to move points along an edge.
- ◆ Point Normal Move allows you to select the points you want to move on their normals, then click and drag on the screen to move them in and out.

**LightWave 3D v9** for Mac and Windows (Mfr # LW040000-0901 • B&H # NELW3D9M) .....**Call**

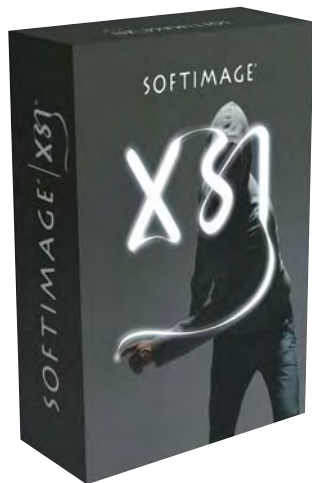
#### 3D Arsenal Creation Theatre for LightWave 3D

Lets you easily create 3D logos, text effects and 3D special effects with virtually no learning curve. Works with your copy of LightWave 3D utilizing its rendering engine and features a custom interface to facilitate easy graphic creation. Additionally, you'll get 11 plug-ins that will function in LightWave 7.5 and 8.x. You'll also get 750 templates to get you started. For Windows (Mfr # AR00090-4010 • B&H # NE3DAW), for Mac (Mfr # AR040030-4010 • B&H # NE3DALWM).....**295.00**

**Class on Demand Training:** Lightwave "KICK ASS" LOGOS (Mfr # 96007 • B&H # CLTLKL) .....**59.95**

**Class on Demand Training:** What's new in Lightwave 9.2 (Mfr # 98030 • B&H # CLTWN9) .....**59.95**

### SOFTIMAGE|XSI 6.5



## 3D Animation and Visual-Effects Software

*SOFTIMAGE|XSI 6.5 is an advanced 3D animation and visual-effects software that features a complete toolset for everything from 3D modeling and animation, to rendering and compositing. With XSI 6.5, artists can create compelling 3D character performances, immersive 3D worlds and mind-blowing visual-effects that push the boundaries of art and technology. SOFTIMAGE|XSI 6.5 is the most advanced 3D animation software for games, film and television. Now you can model, animate and render with*



*unparalleled performance. The XSI Gigapolygon core, capable of handling massively detailed models with millions of polygons, is the number one reason why leading entertainment companies are switching their next generation projects to XSI. Built on the newest code base and designed for the way the artist thinks, XSI empowers you to bring your creative vision to life.*

### FEATURES

#### Gigapolygon Core

The gigapolygon core in XSI is the engine that moves millions of polygons in real-time and allows you to non-destructively sculpt them without losing UVs, shapes, weight maps and skinning information. It offers a built-in advantage for next generation games and film pipelines that increasingly require finely sculpted, massively detailed characters and environments. The gigapolygon core allows XSI to load this dense information into memory, reducing it in a way that retains definition so you can edit it in a manageable way.

#### Iterative Workflow

XSI offers the best iterative workflow of any 3D package. Non-destructive tools let you add new details to rigged or shape-animated characters whenever you want, without tedious hours of rework. Full mental ray integration means you can generate full-quality previews directly in an XSI viewport for hassle-free client-attended review and approval sessions. And with XSI's built-in compositor you can preview the results of multi-pass renders without switching environments. .

#### Animation Tools

- ◆ Fast, flexible animation is the heart of XSI. Streamlined workflows make it easy to pose and keyframe highly detailed characters. You get more keying done while watching your character in the viewports, without having to open another editor. Real-time playback means you can see what you're doing without waiting for animation previews.
- ◆ A clean, responsive curve editor and dopesheet make it easy to manipulate animation. Easy animation layering and mixing simplify the process of breaking animation into parts and moving it around.
- ◆ Animation layers give you an interactive and non-destructive way to add keyframes on top of existing animation, so you can work with motion capture data without wading through highly dense FCurves.
- ◆ New Character Key Sets let you easily set keyframes on predefined sets of parameters for a faster animation workflow. Updates and enhancements to the dopesheet and Fcurve editor, improve the artist's workflow across the board. Fast, flexible and intuitive, XSI is the leading character animation solution.

#### Paint and Composite

Can your 3D software edit textures and image-based lighting in real time? XSI's built-in compositor is designed to do just that. Based on Avid's Matador, Media Illusion, and Elastic Reality, XSI Illusion is a fully integrated, resolution-independent 2D paint and compositing module. With over 130 film-quality effects and more than 60 programmable brushes for 2D raster and vector painting, you can use XSI Illusion to rough out final shots, touch up your textures, morph, warp and rig images, create custom mattes and tweak the results of a multi-pass render – all without switching apps.

#### Film-Quality Normal Map Generation

Going far beyond normal maps, XSI "Ultimapper" tool can generate all kinds of cinematic-quality maps from arbitrarily complex models in just a few clicks, while taking full advantage of the sophisticated rendering possibilities of mental ray. Ultimapper can generate normal, ambient occlusion, difference, light, and albedo maps with an instant mental ray, DirectX, or OpenGL preview directly in the XSI viewports.

## SOFTIMAGE|XSI 6.5

### Shade and Texture

From scales and skin, to metal and stone, to cartoon ink and paint, XSI's Quick Shade technology and texturing tools help you get the look you want—fast. An interactive texture editor lets you unfold UVs and place texture maps precisely. The powerful render tree and texture layer editor make it easy to build complex materials. A fully integrated customizable shaderball engine renders preview thumbnails wherever you need them.

A generalized shaderball engine, gives you step-by-step previews of your materials wherever you need them, while the new material manager offers a dedicated view to create, assign, edit, and manage the materials that bring your scenes to life. XSI's shaderball is completely customizable and fully integrated; from the render tree, to the texture layer editor, the new material manager and material panel, to the separate shaderball windows.

### Model

With a complete modeling toolkit that takes full advantage of the Gigapolygon core architecture,



XSI lets you work with unprecedented levels of detail. Push millions of polygons interactively, using tools that make 3D modeling feel like sculpting. No more waiting for your 3D software to catch up to your imagination!

- ◆ A Gigapolygon core architecture that can push millions of subdivided polygons interactively lets you scale your creations to unprecedented levels of detail. With XSI, you'll never have to wait for your 3D software to catch up to your imagination.
- ◆ The world's fastest subdivision surface modeler is powered by the Gigapolygon core so you can work in real time at any mesh resolution. You can continue to use all polygon mesh modeling tools on subdivided meshes - even animated characters - and move points directly on the subdivision surface.
- ◆ Enjoy working without speed, editing or geometry restrictions—XSI can subdivide triangles, quads and n-sided polygons with all subdivision types, including mixed subdivision types for triangulated meshes.

### Completely Non-Destructive Character Set-up & Rigging

Softimage believes that you should be able to change whatever you want, whenever you want, so they built XSI with innovative character rigging and animation tools that allow you to make changes at any time without destroying any work.

XSI makes life easier by allowing modeling, texturing, and even rigging changes to take place on rigged & animated characters without re-construction of bones, bone weights or shape animation. Easily add new details to rigged or shape-animated characters without the hours of tedious rework, even in mixed pipelines.

### Powerful Animation Mixing

XSI was the first application to feature true, non-linear character animation. With its unique clip-based interface, the XSI Animation Mixer gives you the high-level control and low-level precision you need to create compelling 3D character performances. The mixer is the heart of XSI's animation power, offering both high-level control and low-level precision. Mix anything — animation clips, composite clips, constraints, expressions, shapes, textures, etc — and even sync audio using the mixer's intuitive clip-based editing interface. Easily handle motion capture sequences using motion matching, marker placement, offsets and frequency-based transitions. Transition a walk to a run without slipping feet, or link one character's animation to another's in just a few clicks. Only XSI can non-destructively animate, blend, offset and re-use any motion source.

## SOFTIMAGE|XSI FOUNDATION

### Powerful Personal 3D Suite

*XSI Foundation is hands-down the most complete entry-level 3D animation package available. It's packed with professional-grade features and powered by the XSI Gigapolygon core so it doesn't slow you down. Whether you're new to 3D, a long-time enthusiast or a freelance artist looking for an affordable solution, XSI Foundation is ideal for you. Boasting the world's fastest subdivision surface modeler, intuitive tools that make 3D modeling feel like sculpting, and a unique non-destructive environment, XSI Foundation keeps you focused on the art. With the XSI Gigapolygon core under the hood, you can push millions of subdivided polygons interactively, and scale your creations to unprecedented levels of detail. With XSI, you never have to wait for your 3D software to catch up to your imagination.*

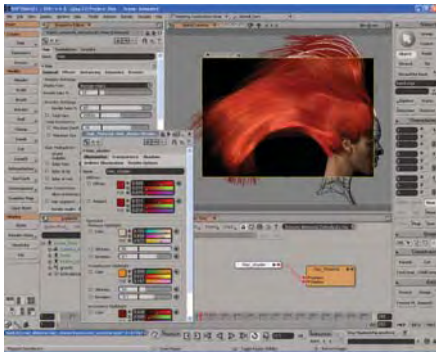
- ◆ Fast, flexible animation is the heart of XSI. Streamlined workflows make it easy to pose and keyframe highly detailed characters. You get more keying done while watching your character in the viewports, without having to open another editor. Real-time playback means you can see what you're doing without waiting for animation previews. A clean, responsive curve editor and dopesheet make it easy to manipulate animation.
- ◆ From scales and skin, to metal and stone, to cartoon ink and paint, XSI's Quick Shade technology and texturing tools help you get the look you want. A fast, interactive texture editor lets you unfold UVs and place texture maps precisely, while the powerful render tree and texture layer editor make it easy to build complex materials. A fully integrated customizable shaderball engine renders preview thumbnails wherever you need them, so you can see what your materials look like, and how they're built.
- ◆ A shared-memory architecture with the award-winning mental ray renderer built right in makes XSI the best 3D animation package for cinematic-quality multi-pass rendering. You can delve into powerful shaders in the render tree and set up breathtaking photorealistic lighting with just a few clicks. The Gigapolygon core and shared-memory architecture mean that you can render more detail using less memory than in any other package.

## SOFTIMAGE|XSI 6.5

### Tweak Component Tool

Featuring optional component manipulators and quick manipulation planes, the Tweak Component Tool makes it easy for you to work at your own artistic rhythm. This all-in-one manipulation tool for fast freeform modeling allows you to move, rotate, scale or translate points, edges and polygons - all with a single key. You can also loop and range select any component or even slide your selection to exactly match its neighbor's position.

### XSI Hair and Fur



Create long, luxurious, and truly realistic hair and fur with dynamic effects—all rendered using mental ray. XSI hair offers a range of specialized tools for creating hair, including the innovative proportional grooming tool. Use any native XSI deformers, including lattices and curves, for precise, natural hair styling with complete control over the animation.

### Integrated Syflex Cloth

Syflex is an incredibly fast and stable simulation engine that lets you create a broad range of cloth and flesh effects directly within the XSI interface. Extremely simple to learn and use, Syflex makes it easy to create digital cloth.

### Powerful mental ray rendering

With the award-winning mental ray renderer deeply integrated in XSI, you can render production-quality previews, create detailed shaders and materials, and set up cinematic-quality multi-pass rendering all from within the XSI interface. And with the Gigapolygon core under the hood, you can render more detail using less memory than in any other 3D package.

### Collaborate

A successful production is a team effort, so XSI features the industry's best collaborative environment. Delta Referencing technology allows multiple artists to work on the same 3D assets without getting in each other's way. Crosswalk import/export tools let you move XSI content in and out of other major 3D applications such as Autodesk 3ds Max and Maya.

- ◆ Reliable interoperability is the most important part of a mixed-tool pipeline—and that's exactly why Softimage developed Crosswalk. Crosswalk is an ongoing initiative to help seamlessly transfer XSI content into and out of any previously established 3D pipeline. You can transfer assets using the latest dotXSI and COLLADA standards, and take advantage of enhanced import/export tools to get assets in and out of Autodesk 3ds Max and Maya pipelines. Artists can modify assets and then update them non-destructively, for true collaborative workflow. Spend less time moving your characters and more time animating them.
- ◆ Delta Referencing technology allows multiple artists to work on the same 3D assets without getting in each other's way. Delta referencing technology is a breakthrough approach to collaborative 3D animation, offering studios the first core architecture for production-level referencing. This lightweight referencing system allows production teams to store 3D assets, and the changes made to those assets, in external files that can be assembled dynamically to produce characters, props and environments.

### Reuse

Working with multiple characters often involves tedious manual tasks that you need to repeat for each character. XSI saves you time where it matters most with tools to transfer character setups and animation across rigs. Using the XSI Generalized Attribute Transfer Operator ("GATOR"), you can easily transfer any surface properties between models, regardless of complexity or topology. You can transfer any surface attribute—including materials, UV's textures, weight maps, skinning, and shape animation—even between rigged character models. Gator can also be used to combine models, allowing completed, textured, animated models to be merged without losing important characteristics.

MOTOR is the world's first system for moving keyframe animation across characters, regardless of their proportions or control structures. MOTOR is an intelligent and dependable solution for transferring motion from one character rig to another—think GATOR for character animation. Now you can transfer motion between character rigs of all sizes and proportions, all while preserving keyframe timing. Build reusable libraries of animation by importing and retargeting motion capture data onto arbitrary XSI character rigs.

### Programmable realtime shaders

Be ready for the massive power of next-generation GPUs. The sophisticated, completely programmable display architecture integrated in XSI ensures precise visual correspondence between your work-in-progress and your target platform, eliminating unnecessary revision cycles. The dedicated XGS display SDK allows nearly any custom drawing process to be added to geometry views. XSI also features comprehensive support for .FX shaders, with real-time previewing, enabling artists to work with the exact same shaders that run in the game engine.

### Render

A shared-memory architecture with the award-winning mental ray renderer built right in makes XSI the best 3D animation package for cinematic-quality multi-pass rendering. You can delve into powerful shaders in the render tree and set up breathtaking photorealistic lighting with just a few clicks. The Gigapolygon core and shared-memory architecture mean that you can render more detail using less memory than in any other package. And integrated frame buffers allow you to render a single default pass that outputs many common channels to separate files.

## SOFTIMAGE|XSI 6.5

### Built-in Illusion Compositor

XSI is the only 3D package that comes with a built-in compositor. You can touch up textures, morph and warp images, create custom mattes, tweak the results of a multi-pass render, or even finish your 3D visual-effects shots using over 130 film-quality effects and over 60 programmable brushes for 2D raster and vector painting.

### Scripting and Development

- ◆ Dedicated Tools Development Environment (TDE) for customization and plug-in development makes XSI a developer's dream come true. While other packages force you to learn obscure and limited programming languages, XSI offers flexibility to use the best language for the job. You can create, manage and deploy all of your tools, plug-ins, and workgroups from a single interface, and develop using industry standard languages like C# an object-oriented programming language popular with next-gen 3D game developers, Python, Jscript, and C++.
- ◆ The TDE contains multiple script editors, each with syntax help, breakpoints, and external debugging links. Its tree-based Add-On manager can create self-installing shaders, events, and plug-ins from development wizards, using standard scripting languages or directly in C++. Develop in the TDE and enjoy the refined workflow that XSI artists have enjoyed for years.
- ◆ With a completely programmable realtime shader pipeline, a dedicated framework to host custom applications, and a rendering SDK that makes it possible to integrate 3rd party renderers, XSI is simply the most customizable 3D package available.
- ◆ Supports leading game engines and development frameworks for next-generation games, casual games, mods for existing titles and even Flash-based 3D games, including:
  - Microsoft XNA
  - Valve Source
  - Crytek CryEngine 2 – in development
  - Epic Unreal Technology 3
  - Anark Gameface
  - COLLADA-enabled engines
  - Papervision 3D
  - OC3 Entertainment FaceFX

### SOFTIMAGE|XSI 6.5 is Available in Two Versions:

- SOFTIMAGE|XSI 6.5 Essentials** — All features as described on pages 1166-1168. Equips artists with everything they need to create compelling 3D characters and content for games, film and television. Comes standard with XSI Hair and Fur and Syflex Cloth Simulation.
- SOFTIMAGE|XSI 6.5 XSI Advanced** — Includes everything technical directors and studio IT managers need to set up and run a creative animation facility. Like a studio in a box, XSI Advanced includes everything in XSI Essentials plus:
  - 36 Nodes of mental ray Rendering Power: XSI Advanced comes with 5 licenses of XSI Batch rendering (\$7475 MSRP value). It's a massive boost for your render farm, giving you 12-cpus of mental ray rendering, and an additional 24-nodes of Satellite rendering.
  - Behavior Crowd Simulation: Behavior is a powerful framework for choreographing tens, or even hundreds of thousands of XSI-created characters. It includes tools for everything from populating scenes to character dynamics to flocking.

## SOFTIMAGE|CAT

### Character Animation Plug-in for Autodesk 3ds Max

*SOFTIMAGE|CAT is a character animation plug-in for Autodesk 3ds Max. CAT is designed by animators, for animators to take the tedious technicalities out of 3D character animation. Its complete toolset enables easy character rigging, non-linear animation, animation layering, motion capture import, muscle simulation, and more. CAT is fast, stable, simple, and packed with cutting-edge features that give artists an easier way to animate characters in 3ds Max.*

- ◆ CAT makes it easy to create any kind of character rig. Build custom rigs lightning-quick, or use presets to create everything from humans and horses, to lizards and dragons, to spiders, crabs, and creepy-crawlies of all kinds. Include as many spines, heads, bones, fingers and toes as you want. CAT even supports highly complex rigs like centipedes, which are impossible to create using standard 3ds Max tools!
- ◆ Animating with CAT is easy. In just a few clicks, you can create walk cycles using CAT's procedural animation tools and drive your character by attaching it to a path. The CAT rig automatically calculates foot placement, even on undulating terrain! Test and tweak 'til your heart's content—CAT will display the results instantly!
- ◆ CAT makes it easy to achieve high quality character animation quickly, reliably, and repeatably. Animation layering and clip editing allow you to create clips and reuse animations non-destructively. You can blend between distinct animations or add additional detail and secondary motion without sacrificing the base animation. Intuitive procedural systems like the CAT spine let you animate extremely complex character movements in a matter of clicks.
- ◆ The all new CATMuscle adds incredible realism to your character animations by simulating muscle movements under the skin! CATMuscle is a fully scaleable solution for solving skin deformation problems. Provides you with the tools you need to achieve a smooth, organic skin deformation across a wide range of motion. It's easy to learn, and requires no understanding of anatomy.
- ◆ Layers can now have a setup controller rather than just a setup value. Any complex procedural animation can be configured onto the "Setup" or "Base" controller. Bones can also contain a setup controller, which is used to drive animation. These controllers can contain procedural animation such as constraints, and script controllers. Setup controllers for layers and bones are saved, and loaded with rig presets.