

REALFLOW

REALFLOW 5: COMPLETE FEATURES LIST

Listed here is a full list of components and features in RealFlow 5, including the RealFlow RenderKit. Also see [RealFlow Product Sheet](#) and [What's New in RealFlow 5](#)

COMPONENTS

- **RealFlow GUI:** a software application to set up and simulate your scenes
- **RealFlow Node:** a software application to simulate your scenes
- **RealFlow RenderKit:** a set of software tools to render simulation data
- **License Manager:** a software application to handle licenses
- **RealFlow Job Manager:** a software application to control simulation jobs
- **Plug-ins:** connect RealFlow with the most popular 3D packages

REALFLOW FEATURES

- **Liquids**
 - Particle-based liquids
 - Grid-based liquids
 - Hybrid technology
 - Large scales
 - Coupling particle-based and grid-based liquids
 - Splash
 - Foam
 - Particle-based
 - Texture-based
 - Mist
 - Statistical spectrum displacement
 - Multi-threaded
- **Gases**
 - Particle-based thermal and iso-thermal gases
- **Elastics**
- **Fibers**
- **Particle emitters**
 - Circle
 - Square
 - Sphere
 - Linear
 - Triangle
 - Spline
 - Cylinder
 - Bitmap
 - Object
 - Fill
 - Binary Loader
 - NBinary Loader
 - Container

- **Bodies**
 - Caronte Body Dynamics solver
 - Rigid bodies
 - Collision primitives: cube, sphere, convex hull and mesh
 - State-of-the-art stacking
 - Multi-threaded
 - Soft bodies
 - Free-form deformation based
 - Efficient for high polygon-count meshes
 - Permanent deformation
 - Multi-threaded
 - Joints
 - Automatic creation and break
 - Ability to connect rigid-rigid, rigid-soft and soft-soft bodies
 - Permanent deformation
- **Fluid surfaces (RealWave)**
 - Statistical spectrum wave for the generation of realistic oceans
 - Control points wave
 - Fractal wave
 - Spectrum wave
 - Gerstner wave
 - SDK built wave
 - Export as a displacement texture
 - Object splash
 - Crest splash
 - Depth texture
 - Downstream
 - Custom geometry
- **MultiBody nodes**
 - For efficient handling of scenes with many objects
- **Meshes**
 - Standard mesh
 - Metaballs
 - Micro-polygons
 - Cloning objects
 - Camera level of detail
 - Camera, objects and RealWave clipping
 - Texture based on particle attributes or particle UV
 - Tension and relaxation filters
 - Camera and geometry clipping
 - Optimized curvature and camera-based
 - Built-in Glsl and custom shaders
 - RFRK mesh (RealFlow RenderKit)
 - Multi-threaded
 - Field Types (Metaballs or Spheres)
 - Auto polygon size
 - Tension and relaxation filters
 - Camera, objects and RealWave© clipping
 - Optimize curvature and camera-based
 - Particle attributes transferred to the mesh
 - Built-in Glsl and custom shaders
 - Grid mesh
 - Able to create mesh mixing a grid-based and a particle-based fluid
 - Texture, Y-planar projection, UV particle and fluid average velocity
 - Tension and relaxation filters
 - Optimized curvature and camera-based
 - Built-in Glsl and custom shaders
- **Cameras**
 - Import/export from/to major 3D platforms
 - Link target
- **CrowdFlow plugin**
 - Flocks
 - Swarms
 - "Follow the leader"

- **Morph plugin**
 - Improves on the built-in Magic daemon
- **Filter daemon**
 - Transfer particles from one emitter to another based on particle attributes
- **Sheeter daemon**
 - Auto-fill areas with low resolution to create thin sheets of fluid
- **External forces**
 - Gravity
 - Attractor
 - Daemon spline
 - Wind
 - Vortex
 - Layered vortex
 - Limbo
 - Tractor
 - Coriolis
 - Ellipsoid
 - Drag
 - Surface tension
 - Noise
 - Heater
 - Magic
 - Object
 - SDK built forces
- **Initial state**
- **Simulation passes**
 - Fluid dynamics
 - Bodies dynamics
- **Python SDK**
 - Commands
 - Batch
 - Simulation Events
 - Forces
 - Particle solvers
 - Waves
 - Version 2.6.2
- **C++ SDK**
 - Commands
 - Batch
 - Simulation Events
 - Forces
 - Particle solvers
 - Waves
 - Job managers
- **Customizable GUI**
 - Tree layout
 - UI dark and light color scheme
 - Commands tool bars
 - Change predefined layouts by using keyboard shortcuts
- **Computation distributed over a network**
 - IDOC (Independent Domain of Computation) nodes
 - Send jobs by using an open plug-in architecture
 - Job manager built-in panel to browse the jobs status
 - Browse the job status using a standard internet browser
- **On-line help system**
 - Global search
 - Parameter context help
 - Node context help
- **Scene import/export as XML format**

- **Textures**
 - Displacement maps
 - Wet/dry
 - Texture based parameters (interaction maps)
 - UV Mapping
 - UV from particle
 - UV sprite
 - Speed
 - Pressure
 - Temperature
 - Fluid average velocity
- **Preview**
 - One-click generation of a preview video/sequence of files
- **Movie player**
 - tga, bmp, jpg and png sequences
 - Write out avi files
 - Real time play
- **Curve and expressions editor**
 - TCB, bezier, linear and stepped curves
 - Pre- and post- curve behavior
 - Tangent tools (break, unify and flat)
 - Copy/paste control points
 - Multi-curve editing
 - Save/load curves to/from crv and xml formats
- **Snap tools**
- **Align tools**
- **Import MXS (Maxwell Render) format**
- **Predefined or user defined OpenGL shaders**
- **Multi-platform**
 - Linux
 - Windows
 - MacOS
- **32/64bits**
- **Multi-threaded**
- **Export simulation data to most popular 3D packages**
 - Autodesk Maya
 - Autodesk 3ds Max
 - Houdini
 - Autodesk Softimage
 - LightWave 3D
 - Cinema4D

//// REALFLOW RENDERKIT FEATURES

A set of tools designed to facilitate the complex task of rendering RealFlow fluids. RFRK generates procedural geometry at render time.

- **RFRK_Mesher:** Generates fluid surface meshes from RealFlow particles
 - Core/Splash filter
 - Boolean operations including merging with RealWave surface
 - Motion blur
 - Particle attributes transferred to the mesh
 - Low memory consumption
 - Multi-threaded
 - Tension and relaxation filters
 - Optimization
 - Clipping
 - Smoothing
 - Memory and threads control

- **RFRK_Particlcr:** Generates different geometry primitives from RealFlow particles
 - Spheres, cubes, sprites and points
 - Multipoint, including control over shape of multipoint cloud
 - Core/Splash filter
 - Size based on camera and particle attributes
 - Motion blur
 - Geometry rendered on demand (mentalray only)
 - Animation curves to control particle size according to magnitudes
- **RFRK_Cloud:** a tool for rendering volumetric data
 - Uses BIN and MTC RealFlow standard file formats for particles and mist
 - Anisotropy
- **RFRK_Displacement.** a tool for rendering displacement maps
- **Available for mental ray, RenderMan and Maxwell Render**

//// LICENSE MANAGER FEATURES

- **Handles RealFlow Renderkit and RealFlow Node licenses in a centralized, unified way**
- **Visualization of license information through a web browser or telnet**
- **Multi-platform, Linux and Windows**

//// REALFLOW JOB MANAGER/NODE FEATURES

- **Monitoring through a web browser**
- **Send jobs from RealFlow GUI**
- **Auto-detection of job nodes**
- **Jobs persistence**
- **Multi-platform, Linux, Windows and MacOS**

//// PLUG-INS

- **Autodesk Maya**
- **Autodesk 3ds Max**
- **Houdini**
- **Autodesk Softimage**
- **LightWave 3D**
- **Cinema4D**



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