

# Havok™ Physics

## Battle-tested



Havok Physics is the leading real-time collision detection and physical simulation solution. Havok Physics offers the fastest, most robust simulation technology available, which is why it has become the gold standard within the games industry.

Havok Physics has been chosen by leading game developers in over 250 launched titles and hundreds more in development.

### Advanced Cross-Platform Optimization

Havok Physics is optimized for use on Microsoft® Xbox 360®, Sony® PLAYSTATION®3, Nintendo® Wii™, Sony® PSP™, Mac, Linux, PC, iPhone/iPad, and Android. The Havok Physics SDK is fully multi-threaded and hand optimized to make full use of the available hardware on all supported platforms.

### Complete Solution for Game Physics

Havok Physics provides comprehensive SDK support for the following areas:

- Collision Detection
  - Most robust, fully featured and battle-tested collision detection technology available
  - Sophisticated Collision Detection Pipeline
  - Continuous Collision Detection
  - Advanced suite of spatial queries useable for anything from audio occlusion to AI visibility checks
  - MOPP™ Technology for highly compact bounding representation for large collision meshes
- Dynamics and Constraint Solving
  - Stable and robust, highly optimized solver
  - Supports a large variety of different constraint types including industry-leading solutions for ragdolls and vehicles
  - Includes constraint motors, customizable constraints, chain constraints and breakable constraints
- Out-of-the-box Character Controller
  - Fully integrated with simulation but designed to give absolute control to the user
- Complete Production-Ready Tool Chain
  - Extensible asset conditioning pipeline with full plug-in support for Autodesk® 3Ds Max®, Maya® and Avid SOFTIMAGE®|XSI®
  - Built on an advanced reflection and serialization system
  - Advanced versioning system ensures backward compatibility of all data and assets
- Visual Debugger
  - Displays and records on-target profiling and debugging data across all supported platforms
  - Fine-grained, real-time multi-threaded performance data shows exactly where cycles are spent across all cores of the target system
  - Data can be recorded and sent for analysis by dedicated Havok support engineers
- Full integration into Havok's growing suite of industry-defining products:
  - Havok Animation
  - Havok Behavior
  - Havok Cloth
  - Havok Destruction
  - Havok AI



Assassin's Creed: Brotherhood  
Image courtesy of Ubisoft

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Halo: Reach  
Image courtesy of Microsoft Game Studios

### Selected Customer Testimonials

“Havok’s flexibility and ease of use have made it one of our cornerstone development tools and almost a recognizable ‘character’ within the Halo 3 engine. Its elegance and scalability mean that it adds features and value to our engine, and yet integrates seamlessly without impacting performance.”

– Eamon McKenzie, Physics Engineer,  
Halo 3, Bungie Studios

“Dynamic simulation is becoming an increasingly important part of our production pipeline, with directors and audiences demanding greater realism and more complex interaction. We have chosen Havok as the basis for our in-house physics system. Havok’s collision system is extremely fast and stable, allowing us to simulate large numbers of objects with relative ease, making it possible to achieve results that would have been nearly impossible without it.”

– Ben Cole, Software Engineer  
Moving Picture Company

“As a part of our long-standing partnership with Havok, nine out of our ten internal studios, including Relic, Rainbow and Volition, are actively using Havok Physics and other Havok products in development today. We have found unique value in Havok’s cross-platform physics solution, and in Havok’s industry-leading support, especially in critical franchises like Saint’s Row, Warhammer 40,000: Dawn of War, Red Faction, Smackdown vs. Raw, and UFC (Ultimate Fighting Championships). Given our confidence and success working with Havok over the years, we are expanding our use of Havok products in seven new multi-platform titles slated for development over the course of the next two years.”

– Roy Tessler  
THQ

### First Class Support

Havok’s dedicated support team is world renowned, having worked with over 70 global publishers and developers operating with tight production deadlines. Havok has dedicated engineers in centers in North America, Europe and Japan who work directly with game teams remotely and on-site.

A designated Havok Account Manager will not only ensure that physics integration goes smoothly, but that developers are best placed to take advantage of the ongoing performance improvements and continually expanding feature-set of the Havok Physics engine.

### Awards

- National Academy of Television Arts & Sciences Technology & Engineering Award
- Develop Award
- Three-time consecutive Game Developer Frontline Award winner
- Computer Graphics World Award



DC Universe Online uses Havok Physics  
Image courtesy of Sony Online Entertainment

### Professional Services

Havok offers dedicated onsite professional services that provide focused assistance to help studios meet the ever-evolving demands of their development cycles.

### For More Information

[www.havok.com](http://www.havok.com)