

# Havok™ Script

## Professional Grade Scripting



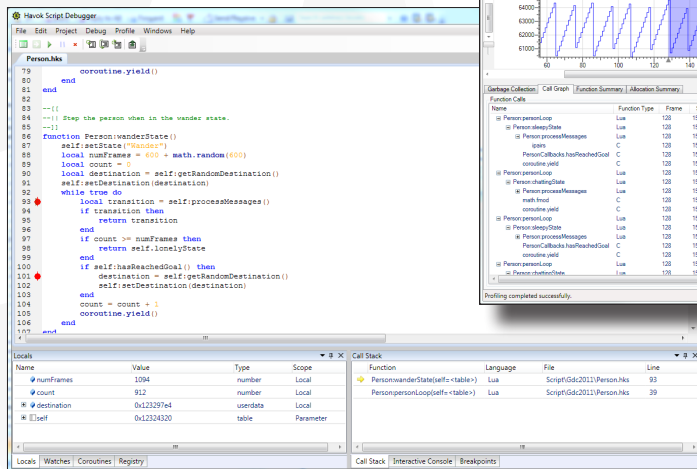
Havok Script is the smallest, fastest Lua compatible Virtual Machine designed for console game development. Havok Script ships with Havok Script Tools including an integrated environment for Microsoft Visual Studio, stand-alone debugger and on-target profiler. Havok Script is significantly faster than standard Lua and through a combination of internal optimizations and use of the Havok Script Profiler customers achieve a significant speed improvement.

### Comprehensive Tool Suite

Havok's goal is to make Lua as dependable, debuggable and inspectable as a pre-compiled language like C++. Havok Script makes this a reality by offering a powerful suite of tools for on-target Lua debugging and profiling.

### Debuggability

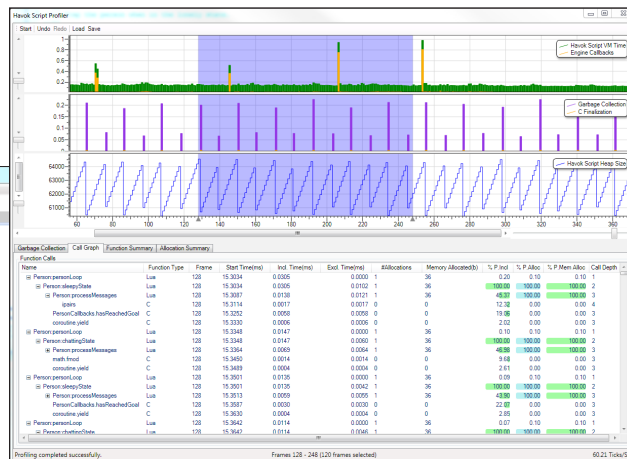
The Havok Script Tools suite offers developers a choice of debugging environments. The Havok Script Plugin, a plugin for Microsoft Visual Studio®, enables developers to step seamlessly from Lua to C++ and back to Lua resulting in a huge improvement in debugging efficiency. By integrating



neatly into Visual Studio, the Havok Script Plugin allows the familiar Visual Studio IDE to become a common environment for developing Lua and C++. For developers needing a light-weight standalone IDE for debugging Havok Script, the Havok Script Debugger offers all of the Lua debugging features of the IDE Plugin.

### Profiling

The Havok Script Profiler is an interactive and intuitive tool providing fine grained Lua performance analysis. By tracking



Fable III uses Havok Script  
Image courtesy of Microsoft Game Studios

**Havok Script**  
Small, fast, and on-target!

Havok Script Debugging Tool & Profiler

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



performance, the Havok Script VM gives a unique opportunity to understand the cost, both in terms of memory and CPU, of each script within your game. The Havok Script Profiler can be deployed across the entire team and will provide instant feedback to your designers/scripters if they have written a non-performing script. Havok Script's continuous transparency on performance helps reduce unnecessary optimization and risk towards the end of development cycle.

## Complete Lua Compatibility

Havok Script is a drop-in replacement for Lua's VM. Existing Lua users can expect to easily integrate Havok Script into their engine and from day one benefit from improved performance and tool support. Havok Script also provides performance and memory enhancing language extensions designed to be

easily exploited without requiring a major redesign.

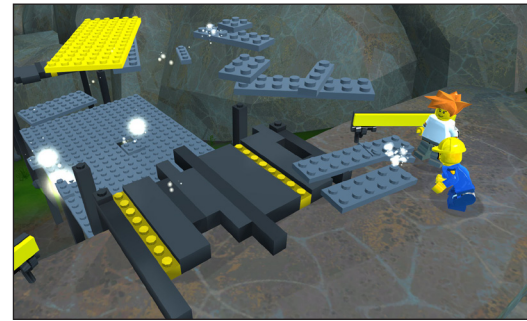
## Speed

Out of the box, Havok Script delivers significant speedups over Lua. Increased speed simply means you'll be able to do much more in script before even having to consider migrating code to C++.

The Havok Script VM has been written from the ground-up and hand-optimized for each supported platform, specifically based on the patterns used by console game developers.

## Memory

Havok Script's technology enables significant reduction in the amount of memory used. In addition, our profiling tools show you exactly where memory is being used so you have visibility into how to optimize.



Lego Universe uses Havok Script  
Image courtesy of NetDevil

HAVOK SCRIPT PLUGIN/DEBUGGER	HAVOK SCRIPT PROFILER
Callstack view	Inclusive and exclusive function times
Locals window	Call graph
Breakpoints (conditions, hit count, coroutines)	Garbage collection times
Interactive console	Allows developers to make full use of the available hardware on all supported platforms
Registry window	Allocation summary
Deploy scripts while debugging	
Debugging Lua -> C++ (Havok Script Plugin only)	

With the combination of faster VM, detailed profiling and language extensions, our customers have seen significant performance improvements over standard Lua. Havok has profiled dozens of real-world code bases, analysed the most common usage patterns and will work closely with you to fine tune performance. Havok Script has been licensed by Sega, Bungie, Lionhead, Masthead Studios, United Front Games, NetDevil and a number of additional undisclosed studios. Havok Script is also currently powering the Supreme Commander 2 published by Square Enix / developed by Gas Powered Games, and Fable 3 published by Microsoft Games Studios / developed by Lionhead Studios.

## Professional Services

Havok offers dedicated on-site 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)