Title: Challenges of Mathematica Development on Different OS Platforms
Speaker: Schoeller Porter (Wolfram Research, Inc.)

Abstract

Creating software that runs reliably on many different operating systems and many different processor architectures is a difficult challenge, even with standard programming APIs like POSIX. As the complexity of the program increases, by taking advantage of the capabilities provided by networking and threads, so too does the difficulty in maintaining that software. Mathematica is a system for technical computing with the ability to perform computer algebra, numerical simulations, and advanced visualization, and in doing so relies on many advanced features of operating systems. Additionally, gridMathematica, connects a number of instances of Mathematica together over a network to provide a cohesive parallel computing environment. The combination of these factors makes Mathematica a poster-child for the difficulty in maintaining complex software on multiple systems. This talk will discuss some of the issues that Wolfram Research has encountered in developing Mathematica on Windows, Mac OS X, Linux, and UNIX, and the approach that Wolfram has taken in addressing those issues.

Biography

Schoeller Porter is a Senior Software Engineer at Wolfram Research, Inc. Schoeller joined the company in 2000 and is the technical lead for the team responsible for integrating and marketing gridMathematica with cluster management systems such as Sun Grid Engine. Schoeller authored the Wolfram Education course "Grid Computing with Mathematica" and is responsible for porting and maintaining the Mathematica kernel on a variety of systems including Mac OS X, Linux, and most Unix variants. Prior to Wolfram, Schoeller was at the National Center for Supercomputing Applications, consulting on the high performance computing systems, researching computational fluid dynamics techniques, and working on the Mosaic Web browser. Schoeller holds a degree in Aeronautical and Astronautical Engineering from UIUC and is currently pursuing a degree in business from UIUC, as well.