Web-based (HTML5) interactive graphics forfusion research and collaboration

E.N. Kim, D.P. Schissel, G. Abla, S. Flanagan, X. Lee

Abstract

With the continuing development of web technologies, it is becoming feasible for websites to operate a lot like a scientific desktop application. This has opened up substantially more possibilities for utilizing the web browser for interactive scientific research and simultaneously providing new means of on-line communication and collaboration. This paper describes the research and deployment for utilizing these enhanced web graphics capabilities on the fusion research tools which has led to a general toolkit that can be deployed as required. It allows users to dynamically create, interact with and share with others, the large sets of data generated by the fusion experiments and simulations. Hypertext Preprocessor (PHP), a general-purpose scripting language for the Web, is used to process a series of inputs, and determine the data source types and locations to dynamically fetch and organize the data. Protovis, a Javascript and SVG based web graphics package, then quickly draws the interactive graphs and makes it available to the worldwide audience. This toolkit has been deployed to both the simulation and experimental arenas. The deployed applications will be presented as well as the architecture and technologies used in producing the general graphics toolkit.