WebMWorks: A General Web-Based Modeling and Simulation Environment for Modelica

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In this paper we present a web-based general modeling and simulation environment: WebMWorks on which users can easily perform system design, simulation and analysis in the browser. There are two main roles in the modeling and simulation of multi-domain physical systems using Modelica, one is the model developer, and the other is the model user. The model users usually use the models or libraries provided by the model developers to carry on the system modeling and simulation. The environment is designed to make model developers' cooperation easier and to improve the efficiency of modeling and simulation for model users.

By application of RIA (*Rich Internet Application*) technologies, WebMWorks provides a web-based graphical editor allowing visual modeling of Modelica models. Model users can use the icon editor and diagram editor conveniently via internet. Based on MWorks platform [1], the environment adopts SOA-based architecture and effectively solves the problems of sharing of simulation resources and reuse of the models. It also supports multi-user, multi-task and model sharing. This paper introduces the main characteristics and architecture of WebMWorks, and presents the operational effect of the system. The system based on a layered architecture is shown in Fig.1

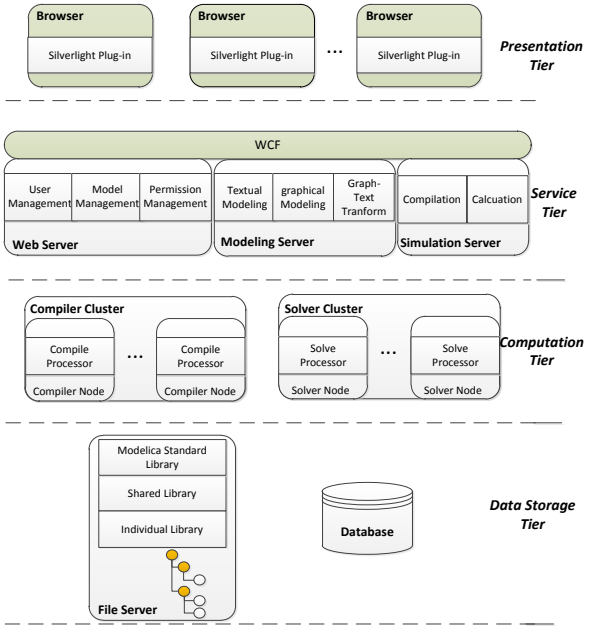

Figure 1: System architecture of WebMWorks

References

[1] F.-L. Zhou, L.-P. Chen, Y.-Z. Wu, J.-W. Ding, J.-J. Zhao, Y.-Q. Zhang. MWorks: a Modern IDE for Modeling and Simulation of Multi-domain Physical Systems Based on Modelica. *Modelica 2006, Vienna Austria, September 2006.*