Extending OpenMP to Overcome the Interoperability Challenges

Abstract

OpenMP has become a very successful user-model for developing parallel applications. However, there are still some challenges in terms of OpenMP interoperability with other programming APIs as well as within itself. In this paper, we introduce some extensions to the OpenMP runtime library related to the interoperability problem. Also, we evaluate and compare the performance of the different waiting thread behaviors (PASSIVE jACTIVE). In addition, we introduce a new function to shutdown or unload the whole runtime library when exiting the parallel region in order to prove that it would take longer time than awakening a sleeping thread.

References

3. Leonardo Dagum and Ramesh Enon. Openmp: an industry standard api for

Index Terms

Computer Science

Information Sciences

Keywords

OpenMP, parallel programming, interoperability, multi-threading