HPC on Playstation 3?

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Abstract A lot have been said about the Cell Broadband Engine Architecture (CBEA), and that the PlayStation 3 Games have not reached the computing power that this processor supposly has, the basic question is if it really has that computing power? This video game console has a Cell Broadband Engine but it also has a hard drive with 5400 RPM, and only 256 MB of RAM. This paper is intended to reveal the truth about all the ideas that are going around, about if the Sony PlayStation 3 can be actually a computing tool, and if it really worths it. Also we will explain the issues of programming in CBEA that the reader must consider, if planning to code for it. The goal of this paper is to establish the comparative results about scalability using three standard codes tested in the PS3 to check if it can be used for HPC. Those tests are: AXPY, DOT, and Matrix–Vector product, also these results are the computational cores of further developments, its second goal is to create a mini–practical guide for cell programmers.

Keywords: Cell Broadband Engine, Cell Processors, Playstation 3, Computational Cores.