
Evaluation of power capping approach for heterogeneous servers

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Recent computation demands tend towards more heterogeneous data centre platforms and the hardware within data centres tends to be more software aware. Furthermore, the energy demand increases every year, which may lead to greater energy cost. Therefore the energy management software is required to cope with the aforementioned requirements.

In this research the energy and power capping management method is presented and evaluated within the M2DC heterogeneous microserver appliance. The presented power capping method provides the functionality of adjusting appliance's power usage, keeping the current power usage under the required limit and taking into the consideration power reduction consequences on software performance. This method utilizes application profiles, the trade-off between performance and energy efficiency and the priorities thresholds defined by the user. Presentation of the above methodology is concluded with the experiments performed on the real infrastructure.

Keywords: Power Capping, Energy Aware Computing, Energy Efficiency, Application profiles.