

Paper: Power Provisioning for a Warehouse-sized Computer

At the design of warehouse-sized computing systems, how to provide power and energy is quite important cause the cost of hardware is stable, but the energy consumption of server is steadily increasing. Therefore, predict the power consumption and choose appropriate strategy of power management is important to fully utilize the power budget, with no exceeding maximum capacity. This paper shows some power usage characteristics of three large-scale workloads with the data of the actual datacenter and show the gap between the maximum power in actual and theoretical peak usage, benefits of dynamic power management, reducing peak power consumption with CPU voltage/frequency scaling, and the benefits of building systems with power efficient across the activity range. This paper takes notice of power consumption and explain how it is important. The performance of single core CPU does not increase well as the past and the consumption energy of it is increasing steadily, therefore the power consumption management strategy effects to the total performance of datacenter in nowadays and this paper said it at 2007 interestingly.