

SURVEY ON POWER MANAGEMENT TECHNIQUES (GREEN COMPUTING)

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Abstract

As cloud computing becomes widespread, the energy consumption of the network and computing resources that support the cloud would grow. The energy requirements of data centers in the near future is expected to be in the range of mega watts and would contribute significantly to the economic viability of cloud computing. Developing power-aware task scheduling algorithms for parallel applications executing on cloud platforms would be critical for success of cloud computing. There are two task-scheduling techniques proposed to reduce power consumption in cloud computing systems namely static power management scheduling technique and dynamic power management scheduling techniques. The basic idea of static power management is to calculate beforehand the minimum processor speed that will ensure that the canonical execution of tasks finishes just-in-time. In addition to static power management, the energy can further be reduced by dynamic power management technique in which the processor supply voltage and speed are always adjusted together, by setting the maximum speed under certain supply voltage. The tasks are then run with reduced supply voltage and speed to save energy Both the techniques have advantages and disadvantages. Power aware computing is one of the primary goals in building a new system. By power aware computing, we mean to optimize energy and power consumption as much as possible without compromising much on performance.

Keywords: Green Cloud Computing, Static Scheduling, Dynamic Scheduling, Power Aware Computing.