Energy-efficient Query Processing in Web Search Engines

ABSTRACT

Web search engines continuously crawl and index an immense number of Web pages to return fresh and relevant results to the users' queries, most users will receive results in sub-second times , in line with their expectations

EXISTING SYSTEM

Web search engines are composed by thousands of query processing nodes, i.e., servers dedicated to process user queries. Such many servers consume a significant amount of energy, mostly accountable to their CPUs, but they are necessary to ensure low latencies, since users expect sub-second response times (e.g., 500 ms). However, users can hardly notice response times that are faster than their expectations.

DISADVANTAGES

- Consumes more energy.
- Effects environment.
- Uses more electric power

PROPOSED SYSTEM

We intend the Predictive Energy Saving Online Scheduling algorithm (PESOS), which considers the tail latency requirement of queries as an explicit parameter. Via the DVFS technology, PESOS selects the most appropriate CPU frequency to process a query on a per-core basis, so that the CPU energy consumption is reduced while respecting required tail latency. The algorithm bases its decision on *query efficiency predictors* rather than core utilization. Query efficiency predictors are techniques to estimate the processing time of a query before its processing. They have been proposed to improve the performance of a search engine, for instance to take decision about query scheduling or query processing parallelization.

ADVANTAGES

- Consumes less energy
- Saves environment
- Query efficiency

MODULES

Predictive Energy Saving Online Scheduling (PESOS) algorithm

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.
Database	:	MySQL 5.0
Database Connectivity	:	JDBC