

## Improving Energy Efficiency of MapReduce Framework

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### The problem

The increase in power consumption of data-centres has become an important issue of concern. Now the MapReduce clusters constitute a major part of data-centres for BigData processing applications. But the sheer size, high fault-tolerant nature and low utilization levels makes them less energy efficient. So improving the energy efficiency of MapReduce clusters can contribute significantly towards the data-centres energy efficiency.

### Project aims

- To empirically study the impact of various configuration parameters on MapReduce energy efficiency.
- To create MapReduce energy models for accurately predicting energy consumptions.
- To create energy aware scheduling algorithms for MapReduce.

### Expected outcomes

This project aims to have an energy efficient MapReduce framework which can deliver required performance. It would provide the heuristics and models to enable energy-aware configuration of MapReduce framework and jobs. It would provide a energy-adaptive scheduling algorithm for efficient scheduling of MapReduce jobs and tasks. Thus the project outcome would help reduce the power consumption and operational cost of data centers.