



# Optimization of load distribution and balancing Over multiple server in cloud

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**Abstract:** Performance of the cloud of can be optimized by load distribution and balancing. Energy efficiency is one of the most important issues for large-scale server systems in current and future data centers. The multi service processor technology provides new levels of performance and energy efficiency. The present paper aims to develop power and performance constrained load distribution methods for cloud computing in current and future large-scale data centers. In particular, we address the problem of optimal power allocation and load distribution for multiple heterogeneous multi server processors across clouds and data centers. Our strategy is to formulate optimal power allocation and load distribution for multiple servers in a cloud of clouds as optimization problems, i.e., power constrained performance optimization and performance constrained power optimization. Our research problems in large-scale data centers are well-defined multivariable optimization problems, which explore the power-performance tradeoff by fixing one factor and minimizing the other, from the perspective of optimal load distribution. It is clear that such power and performance optimization is important for a cloud computing provider to efficiently utilize all the available resources.

**Keywords:** Load distribution, load balancing, multi server processor, partition, Cloud cluster

