

OPTIMIZE PERFORMANCE LOAD BALANCING TECHNIQUES: USING BINARY VOTE ASSIGNMENT GRID QUORUM (BVAGQ): A SYSTEMATIC REVIEW

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ABSTRACT

This paper present load balancing technique in a heterogeneous environment like Grid, which allows the usage for geographically widely distributed and multi-owner resources to solve large-level application, usage of load balancing algorithms was important to keep maintaining the balance of workload between emerged infrastructures like grid. This replication generally referred as mechanism to improve availability and performance in distributed databases especially handling fragmented database replication becomes demanding issue. Intended in this paper we address various kinds of load balancing algorithms for the heterogeneous network like grid, especially Binary Vote Assignment Grid Quorum (BVAGQ) and to identify various metric and gaps between them. Many load balancing algorithms are already implemented which work against various issues like heterogeneity, scalability, etc. Different load balancing algorithms for the grid environment work on various metrics such as make span, time, average resource utilization rate, communication overhead, reliability, stability, and fault tolerance. However the aim is to find improved query response time and overall throughput as compared to other scheme.

Key words: Grid Computing, Load Balancing, Distributed Computing, Resource Management, Fault Tolerance

1. Introduction

1.1 Inspiration for Computational Grids

Led by Alessandro Volta's invention of the electrical battery in 1800, Thomas Edison and Nikola Tesla initiated the way for electricity's extensive usage by developing the electric bulb and alternating current (AC) respectively. Figure 1.1 shows Volta demonstrated the battery for Napoleon I in 1801 at the French National Institute, Paris. Despite of Volta envisioning it, his invention evolved into a worldwide electrical power Grid that provides dependable, consistent, and pervasive access to utilize the power and has become an integral part of modern society. Inspired by the electrical power Grid's pervasiveness, high usability and learning ability, and reliability, computer scientists in the mid-1990s began exploring the

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