Load Balancing Algorithms for Peer to Peer and Client Server Distributed Environments

Abstract

Advancements in hardware as well as software technologies have resulted in very heavy use of distributed systems. Because these systems are physically separated so managing the various resources is one of the challenging areas. In this paper will talk about the management of the processing power of the various nodes which are geographically apart. The basic aim is to distribute the processes among the processing units so that the execution time and communication delays can be minimized and resource utilization can be maximized. This distribution of processes is known as load balancing. Load balancing can either be static or dynamic in nature. It has been proved that dynamic load balancing algorithms give better result as compared to static algorithms but they are computationally more intensive. This paper compares the various load balancing algorithms quantitatively. An important issue with dynamic algorithms is that they exchange state information at frequent interval to make decisions. Because there is some communication state delay also before the information reaches its destination so there is some uncertainty in the global state of the system. To overcome this problem fuzzy logic concept can be used which is also discussed here.

Index Terms

Computer Science

Load Balancing Algorithms

Keywords

Distributed Systems  Load Balancing  Execution Time  Resource Utilization

Uncertainty

Fuzzy Logic