

Abstract

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A Distance-Aware Design for a Dynamic Self-organizing Server Cluster

Web server clusters are solutions that provide high availability, high performance and fault tolerance requirements. We present a design for a distributed distance aware server cluster that offers single service with QoS objectives: maintains a system response time; minimize the system rejection rate. We used a modified gossip algorithm for node state management information news casting. Our design focuses on two mechanisms: topology construction mechanism; request routing mechanism. The topology construction takes into consideration the physical distances between node as well as the relative utilization of node accordingly. Request routing mechanism directs the service request to a randomly suitable node which processes it redirects it in turn to another node. We evaluated our work through extensive simulation; compared its results to a similar system. Our system shows a better result in terms of the QoS objectives.