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Abstract

As the next generation of Internet services requires more highly scalable and available server systems, the cost-effective cluster of a large number of distributed computers becomes a popular solution. In this paper, we investigate to design and develop a server load balancing mechanism on cluster architecture, called the ALBM cluster. In order to construct the more scalable and reliable Internet service system, the ALBM cluster system consists of independent but co-operable components. The ALBM cluster system supports adaptive load balancing among servers via its adaptive load balancer (ALB) component in Layer 4 level and Layer 7 level. The Management Station (M-Station) and the Administrator Console are in charge of cluster management, system configuration management, and performance counter management. The Node Service is a system-level agent that is deployed into a server node. The node management and

cluster management are the major tasks of the agent. Beside, the ALBM cluster is a flexible open system whose features of functionality can change or be easily expanded without affecting the rest of the system. In this paper, we also present a set of our experimental results to compare the performance of the ALBM cluster with that of LVS scheduling cluster system. We compare performance results of the ALBM with RR, LC, and WLC scheduling algorithms of a LVS cluster in both of homogeneous and heterogeneous system environments.



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Keywords

Cluster computing; Load balancing; LVS (Linux Virtual Server); Performance counter; Scalability; Availability

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Eunmi Choi is an assistant professor in the School of Computer Science and Electronic Engineering at Handong Global University, South Korea, where she has been since 1998. Her current research interests include distributed system, distributed and parallel processing, cluster computing, distributed objects and component technology, and Internet security. Professor Choi received her MS and a PhD in computer science from Michigan State University in 1991 and 1997, respectively, and a BS in computer science from Korea University in 1988.

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