

# Study of DNS-Based Load-Balancing Methods

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## ABSTRACT

In this thesis, we propose an adaptive weighted scheduling method to distribute the service requests to a pool of servers for maximum performance. This method assigns a service request to a server whose CPU load is the smallest. The scheduling process is embedded in a DNS-server. The simulation results show that the proposed scheduling method can improve the system performance very well.

Keywords : Load balance、DNS Server、Algorithm。

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## REFERENCES

- [1] 資策會IDEAS-FIND/經濟部技術處, Available at <http://www.find.org.tw/find/home.aspx>
- [2] ISC, Available at <http://www.isc.org/>
- [3] J. F. Huber, " Mobile next-generation networks, " IEEE Multimedia. Vol.11, Jan-March 2004, pp.72-83
- [4] T. Brisco, " DNS support for load balancing, " RFC 1794, April 1995.
- [5] 台灣微軟網站, Available at <https://www.microsoft.com/taiwan>
- [6] V. Cardellihi, M. Colajanni, P. Yu, " Dynamic load balancing on web-server system, " IEEE Internet Computing, vol.3, May 1999, pp.28-39.
- [7] H. Bryhni, E. Klovning, and O. Kure, " A comparison of load balancing techniques for scalable web servers, " IEEE Network, vol.14, July-August 2000, pp.58-64.
- [8] V. Cardellini, M. Colajanni and P. Yu, " Redirection algorithms for load sharing in distributed web-server systems, " Proceedings of IEEE. 19th Int. Conf. on Distributed Computing Systems (ICDCS ' 99), May 1999, pp.528-535.
- [9] A. Bestavms, M. Cmvella, J. Liu, and D. Martin, " Distributed packet rewriting and its application to scalable server architectures, " Proceeding of 6th IEEE Int. Conf. on Network Protocols (ICNP ' 98), Oct. 1998, pp.290-297.
- [10] P. Srisuresh and D. Gan, " Load balancing using IP network address Translation (LSNAT) , " RFC 2391, August 1998.
- [11] O. Damani, P. Chung, Y. Huang, C. Kintala, and Y. Wang. " ONE-IP: Techniques for Hosting a Service on a Cluster of Machines, " Computer Networks and ISDN Systems, vol.29, April. 1997, pp.1019-1027.
- [12] K. Egevang and P. Francis, " The IP network address translator (NAT) , " RFC 1631, May 1994.
- [13] B. Carpenter, " Architectural principles of the internet, " RFC 1958, June 1996.
- [14] B. Carpenter and S. Brim, " Middleboxes: Taxonomy and Issues, " RFC 3234, February 2002.
- [15] LVSKB, Available at [http://kb.linuxvirtualserver.org/wiki/Main\\_Page](http://kb.linuxvirtualserver.org/wiki/Main_Page)
- [16] BIND, Available at <http://www.isc.org/BIND/>