The Study of Advanced Campus Network Application and Integration Model-A Case of Da-Yeh University

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ABSTRACT

How to use the campus network to manage and integrated applied for networking worker has been the major works for them. In the planning and management fields, the most important issue is to save the cost, then to expand and promote the bandwidth and transmission of external networking. About the integrated application fields, the most important issue is how to use the networking devices with some methodology for an advance transport bandwidth. In the case of campus networking environment of Da-Yeh University, this research is devoting into the following theories and applications: Cache Server, L4 switch, NAT (Network Address Translation), ICP (internet communication protocol)、WCCP (Web cache communication Protocol), and TCP/IP (Transport Control Protocol/Internet Protocol) for the campus networking applications. In the discussion and simulation design with literature review chapter, this research has completed in efficacy analysis processes. In the further steps, we try to adjust the whole construction of an efficiency integrated networking planning. About the integrated networking systems, we express them in networking structure and explain the system setting up processes step by step. Fortunately, the results of systems running is very smoothly and useful. Hopefully, it can be a best practice for the institutions and enterprises. 1). To save the rental of bandwidth. 2). To save the cost of network devices and make the systems more stable and convenient management. 3). To promote the efficiency of the bandwidth usage. 4). To reach the load balance and stream for networking. 5). To ban the network worm virus affect and avoid the virus jam the networks. 6). To redirect the network packets for particular session of user.

Keywords : ADSL, Proxy Server, Cache Server, Load Balance.

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REFERENCES

中文 [1] Goldman, J. E. 著，謝楠楨 譯(1997)，資訊通訊-理論與實務，台北:維科出版社。

[2] Richard Stevens W. 著，資訊工業策進會中文化部門 譯(1997)，TCP/IP Illustrated，Volume 1，台北:和碩科技。

[3] 方盈(1999)，TCP/IP通訊協定-理論與實務，三版，台北博碩。

[4] 江輔政(2001)，網路TCP/IP教本，初版，台北:全華。

[5] 林逸祥、林盈達、(2001)，「快取伺服器之比較、追蹤與評估」，2001年台灣區網際網路研討會論文集，2001年10月。

[6] 范修維、廖鴻圖、邱孟佑、伍啟錄(2001)，「ADSL Proxy Server建置與管理」，2001年台灣區網際網路研討會論文集，2001年10月。

[7] 徐武孝、章臨凡、郭益銘、董明智、蘇聖楠，(2002)，網路路由理論與實務，台北，全華。

[8] 梁定澎(1997)，「資訊管理研究方法總論」，資訊管理學報，第4卷，第1期，1997年6月。

[9] 陳雲龍(2002)，網路通訊雜誌，第133期，第135-139頁。

[10] 曾展鵬(2001)，「The Deployment Experience and Survey of the Cooperative Caching Proxy Server」，2001年台灣區網際網路研討會論文集，2001年10月。
[11] 游象甫、曾黎明(2001)，「以即時流量控制之代理伺服器提供 彈性的網路服務」，2001年台灣區網際網路研討會論文集，2001年10月。
[12] 趙錦蓉(2002)，Internet原理與技術，初版，台北:五南。
[13] 劉大川、蔡立恆、陳昌盛(2001)，「Transparent Proxy規劃建置及應用實例」，2001年台灣區網際網路研討會論文集，2001年10月。
[14] 賴守全、張新民、潘仁義(2001)，「多點連外網頁代理系統之設計與實作」，2001年台灣區網際網路研討會論文集，2001年10月。
[15] 蕭文龍（2000），Cisco Router最佳進階實用書，二版，台北: 松崗。 英文 [16] Case, J.D. (1990), "Management of high speed networks with the simple network management protocol(SNMP)", Local Computer Networks, 1990. Proceedings, 15th Conference on, pp.195-199.
[17] Cisco Systems, "Web Cache Communication Protocol Version 2", Cisco Cache Engine User Guide, Version 2.1.0.
[18] Drake, P. (1991), "Using SNMP to manage networks",Designing Resilient Architectures, IEE Colloquium on, pp.2/1-2/4.
[19] Egvang, K. (1994), "The IP Network Address Translator(NAT)", RFC 1631, Gray Communication.
[20] Fielding, R., Gettys, J., Mogul, J., Frystyk, H. & Berners-lee, T. (1997), "Hypertext Transfer Protocol-HTTP/1.1", RFC 2068.
[21] Herbert, D.L., Devgan, S.S. & Beane, C. (2001), "Application of Network Address Translation in a Local Area Network", Southeastern Symposium on System Theory, 2001. Proceedings of the 33rd, pp.315-318.
[22] Lee, J. (1998), "Report on the Costs and Benefits of Cache Hierarchy in Korea", the Third International WWW Caching Workshop, Manchester, England.
[23] Zou, J. (2002), "Architecture and Development of Distributed WWW Caching Proxy", Electrical and Computer Engineering, 2002. IEEE CCECE 2002. Canadian Conference, Volume: 3, pp.1467-1471.
[24] Jones, G.B. (1998), "Managing the message: Message tracking", Network Operations and Management Symposium,1998. NOMS 98., IEEE , Volume: 3 , pp.15-20.
[25] Law, K.L.E., Nandy, B. & Chapman, A. (1997), "A Scalable and Distributed WWW Proxy System", Multimedia Computing and Systems'97. Proceedings, IEEE International Conference, pp.565-571.
[26] Miyoshi, T. (1998), "Consideration about the cache server optimization and stable network access", Knowledge-Base Intelligent Electronic System,1998. Proceedings KES'98. 1998 International Conference on, Volume: 2, pp.21-25.
[27] Nishikawa, N. & Hosokawa, T. (1998), "Memory--based architecture for distributed WWW caching proxy", Computer Networks and ISDN Systems, Volume: 30, no. 1-7, pp. 205-214.
[28] Oetiker, T. (2001),"Monitoring your IT gear: the MRTG story", IT Professional, Volume: 3, Issue: 6, pp. 44-48.
[29] Oguchi, M. & Ono, K. (1996), "Study of Caching Proxy Mechanisms Realized on Wide Area Distributed Networks", Proceedings of 5th IEEE International Symposium on, 1996, pp.443-449.
[30] Danzig, P. (1998), "NetCache architecture and deployment", Computer Networks, Volume: 30, Issue 22-23, pp. 2081-2091.
[31] Postel, J. (1981), "Transmission Control Protocol", RFC 793.
[32] Hussain, S. & Robert, D.M. (2000), "Intelligent Prefetching at a Proxy Server", IEEE, pp.209-211.
[33] Legedza, U. & Guttag, J. (1998), "Using network-level support to improve cache routing", Computer Networks, Volume: 30, Issue 22-23, pp. 2193-2201.
[34] Wessels, D. & Claffy, K. (1997), "Internet Cache Protocol(ICP) version 2", RFC 2186. 相關網址 [35] 財團法人台灣網路資訊中心 http://map.twnic.net.tw [36] 大葉大學電算中心 http://cachelog.dyu.edu.tw/proxy-usage/ [37] 大葉大學電算中心 http://mrtg.dyu.edu.tw/mrtg/ [38] 中華電信HiNet網際資訊網路 http://www.hinet.net [39] NAT位址轉換功能 http://www.sinica.edu.tw/cc/nl/87/1422 /02.txt