Implementation of teaching website with decentralized authentication mechanism

張偉政、林仁勇

E-mail: 322066@mail.dyu.edu.tw

ABSTRACT

Online teaching has been one of popular web applications in recent years. The more web applications, the more accounts and passwords need to be remembered. This thesis mainly discusses how to modify a single-LDAP authentication module into a multi-LDAP authentication module for open source teaching platform so as to distinguish different accesses to save expenditures such as costs of labor and system development. This thesis is embodied by modifying the LDAP authentication module of Moodle teaching platform. Firstly we keep the original LDAP module used by an LDAP host, then reproduce and modify LDAP authentication modules so as to add authentication modules LDAP2, LDAP3, LDAP4 Added authentication modules (LDAP2, LDAP3, LDAP4) only can be used after changing reference to variables such as access authentication, account data synchronization, language pack, etc. Modified LDAP authentication module provides multi-LDAP authentication options for Moodle teaching platform. Single-LDAP authentication module corresponds to single-LDAP host – based authentication, while multi-LDAP authentication module corresponds to multi-LDAP host – based authentication. This can improve the problem of authentication pending due to ou sequencing in case of multi – ou authentication by single-LDAP authentication module, and also shorten the LDAP authentication time.

Keywords: Free software, online learning, LDAP, Moodle, Decentralized Authentication

Table of Contents

授權書iii 中文摘要iv ABSTRACTv 誌謝vi 目錄vii 圖目錄ix 表目錄x 第一章 緒論1 1.1 研究背景1 1.2 研究動機2 1.3 研究範圍與限制4 1.4 本論文架構5 第二章 網路認證相關文獻探討6 2.1 單一帳號簽入(SSO)6 2.2 遠端用戶撥入驗證服務(RADIUS)7 2.3 可插入式認證模組(PAM)8 2.4 輕量級目錄存取協定(LDAP)的發展與應用10 2.5 各認證方式比較13 第三章 分散式LDAP認證架構17 3.1 多LDAP認證模組架構19 第四章 分散式認證效能24 4.1 測試環境24 4.2 LDAP目錄樹26 4.3 修改與導入多LDAP認證模組27 第五章 結論與未來發展39 5.1 結論39 5.2 未來發展39 參考文獻40

REFERENCES

- [1]江世勇,LDAP 分散式認證架構下之開放原始碼教學網站建置與導入 以高職為例,國立雲林科技大學,民國93年。
- [2] Martin Dougiamas, "Modular Object-Oriented Dynamic Learning Environment(Moodle)", http://docs.moodle.org/en/About_Moodle.
- [3] Modular Object-Oriented Dynamic Learning Environment(Moodle), http://zh.wikipedia.org/zh tw/Moodle.
- [4] Graf, S., & List, B., " An evaluation of open source e-learning platforms stressing adaptation issues.", Proceedings of the IEEE International Conference on Advanced Learning Technologies (ICAL '05), Kauhsiun, Taiwan, 5, 163-165., 2005.
- [5]吳振遠,以Moodle 建置中學數位學習平台之研究,國立交通大學,民國97年。
- [6] K. Zeilenga, "Lightweight Directory Access Protocol(LDAP): Technical Specification Road Map", RFC4510, June 2006.
- [7]Jani Hursti, "Single Sign-On", Department of Computer Science Helsinki University of Technology, Nov. 1997.
- [8]C. Rigney and A. Rubens, "Remote Authentication Dial In User Service(RADIUS)", RFC2138, April 1997.
- [9]V. Samar and R. Schemers, "UNIFIED LOGIN WITH PLUGGABLE AUTHENTICATION MODULES (PAM)", RFC86.0, October 1995.
- [10]蘇建郡、謝仁瑋,利用Reverse Proxy建構安全性單一入口平台,南台科技大學2009資訊工程應用研討會論文。
- [11] C.Rigney and S.Willens, "Remote Authentication Dial In User Service(RADIUS)", RFC2865, June 2000.
- [12] C. Rigney, "RADIUS Accounting", RFC2866, June 2000.
- [13]IEEE_802.1X, http://en.wikipedia.org/wiki/IEEE_802.1X [14]J.Sermersheim, "Lightweight Directory Access Protocol (LDAP): The Protocol Status of This Memo", RFC4511, June 2006.
- [15] M. Wahl, "A Summary of the X.500(96) User Schema for use with LDAPv3", RFC2256, December 1997.