佐以雲端伺服於物聯網系統的實現與驗證 = The Implementation and Verification for Auxiliary of a Cloud Server in the Intern

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摘 要

隨者雲端運算(cloud computing)技術與具有龐大商機的物聯網(Internet of Thing, IOT)結合興起，透過雲端運算技術的快速運算，進而反應與即時更新等優勢技術，不僅可提高系統的可靠性外，也讓使用者減少成本支出還能創造出許多創新的附加價值，藉以擴張多邊的市場商機。就物聯網與雲端運算技術的整合，為解決隨著電腦技術的發展，資料的存儲量成倍增長，而大量數據往往需要很多時間來進行運算，會對伺服器(server)的負載帶來極高的挑戰。基於此動機，如何建置出符合市場需求、具擴充性及可靠的資料庫顯得格外重要，本文研提在高包容的視窗(Windows)平台上使用具跨平台、延展性及安全性Apache伺服技術，其融合另外兩個子系統於一身，開發出經由雲端運算，而且結合了IOT技術於一體之系統。其中兩子系統包含“ 團控系統 ”與“ 雲耕系統 ”。如此之系統開發完成，對於大量數據的處理有著穩定的表現，並且可以在一般的電腦硬體上順利運作。換句話說，本文對結合完整之雲端伺服系統，得以實現與驗證物聯網技術所開發知系統於雲端應用上的可行性。

關鍵詞 : 物聯網、雲端運算、資料庫、Apache伺服

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參考文獻

[1]Fox, G.C., Kamburugamuve, S., Hartman, R.D.,“ Architecture and Measured Characteristics of a Cloud Based Internet of Things,” Collaboration Technologies and Systems (CTS), 2012 International Conference on , pp. 6-12, 2012.
[2]Sultan Nabil Ahmed,“ Reaching for the“ cloud ”: How SMEs can manage,” International Journal of Information Management, vol. 31, pp. 272-278, 2011.
[3]Miller, H., Veiga, G. J.,“ Cloud computing: Will commodity services bene?t user long term? IT Professional,” pp. 57-59, 2009.
[4]Truong, D.,“ How Cloud Computing Enhances Competitive Advantages: A Research Model for Small Businesses,” The Business Review, Vol. 15(1), pp. 59-65, 2010.
[5]NIST Definition of Cloud Computing v15, 2010. http://csrc.nist.gov/groups/SNS/cloud-computing/cloud-def-v15.doc[6]Yang Jinzhong, Zhang Jianping, Zhang Yuyan, Li Yan ,“ Design of Web-based Environmental Information System for K-12 Schools,”Consumer Electronics, Communications and Networks (CECNet), 2012 2nd International Conference on,pp. 3199-3203, 2012.
[7]O'Sullivan, N.; Edwards, M.,“ Improving Heterogeneous SOA-based IoT Message Stability by Shortest Processing Time Scheduling, ”Vacuum Electronics Conference, 2009. IVEC '09. IEEE International, pp. 423 – 424, 2009.
[8]Nitti, M. ; Girau, R. ; Atzori, L.,“ Trustworthiness Management in the Social Internet of Things,”Advanced Information Networking and

Applications Workshops (WAINA), 2013 27th International Conference on Digital Object Identifier, pp. 302 - 307, 2013.
[9]Truong, D.,“ How Cloud Computing Enhances Competitive Advantages: A Research Model for Small Businesses ”, The Business Review, Vol. 15(1), pp. 59-65, 2010.
[10]NIST Definition of Cloud Computing v15, 2010. http://csrc.nist.gov/groups/SNS/cloud-computing/cloud-def-v15.doc[11]Liu Yuxi, Zhou Guohui,“ Key Technologies and Applications of Internet of Things, ” Intelligent Computation Technology and Automation (ICICTA), 2012 Fifth International Conference on, pp. 197-200, 2012.
[12]Xi Chen, Limin Sun, Hongsong Zhu, Yan Zhen, Hongbin Chen,“ Application of Internet of Things in Power-lines Monitoring, ” Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC), 2012 International Conference on, pp. 423-426.
[13]Carvin Denis, Owezarski Philippe, Berthou Pascal,“ Managing The Upcoming Ubiquitous Computing, ” Network and service management (cnsm), 2012 8th international conference and 2012 workshop on systems virtualiztion management (svm), pp. 276-280, 2012.
[14]Jia Xiaolin, Feng Quanyuan, Fan Taihua, Lei Quanshui,“ RFID Technology and Its Applications in Internet of Things (IOT), ” Consumer Electronics, Communications and Networks (CECNet), 2012 2nd International Conference on, pp. 1282- 1285, 2012.
[15]Zhang Minghui, Sun Fuquan, Xu Cheng,“ Architecture of Internet of Things and its Key Technology Integration Based-on RFID, ” Computational Intelligence and Design (ISCID), 2012 Fifth International Symposium on, pp. 294-297, 2012.
[16]Pereira Pablo Punal, Eliasson Jens, Kyusakov Rumen,“ Enabling Cloud-connectivity for Mobile Internet of Things Applications, ” Service Oriented System Engineering (SOSE), 2013 IEEE 7th International Symposium on, pp. 518-526, 2013.
[17]Hu Xiangyu,“ IOT Application System with Crop Growth Modelsin Facility Agriculture, ”Computer Sciences and Convergence Information Technology (ICCIT), 2011 6th International Conference on, pp. 129-133, 2011.
[18]「Apache http server project」 http:// httpd.apache.org/ , 2010[19]「June 2013 Web Server Survey」 http://news.netcraft.com/archives/2013/06/06/june-2013-web-server-survey-3.html[20]Rao, B.B.P., Saluia, P., Sharma, N., Mittal, A., Sharma, S.V.,“ cloud computing for internet of things and sensing based applications, ”Sensing Technology (ICST), 2012 Sixth International Conference on, pp. 374-380, 2012.
[21]行政院經建會「雲端運算產業發展方案」, 2010. http://www.cepd.gov.tw/m1.aspx?sNo=0013629.
[22]侯安桑, 呂韋毅 ,“ 人員進出管理系統, ” 南台科技大碩士論文,2010.
[23]張逸軒,林泊建,陳俊宇,林俊佑,陳世宇,張文翔,郭泰延,江佳玟“ 雲端點名系統, ” 朝陽科大專題製作,2012.
[24]林松毅、劉瑞榮,“ 物聯網之情境規劃, ” IMP2012 conference on Information Management and Practice 18,2012.
[25]《雲端科技與物聯網展 10月9日登場》工商時報/陳昌博 2012/8/21.