Journal of Quality Measurement and Analysis *JQMA 6(1) 2010, 17-22*
Jurnal Pengukuran Kualiti dan Analisis

MEASUREMENT AND ANALYSIS OF WEB PORTAL'S PERFORMANCE: A CASE STUDY IN UUM

(Pengukuran dan Analisis Prestasi Portal Sesawang: Suatu Kajian Kes di UUM)

RAHELA ABDUL RAHIM, HASLINDA IBRAHIM, SHARIPAH SOAD SYED YAHAYA & KHAIRINI KHALID

ABSTRACT

The main objective of this study is to develop a generalised system-level model based on queuing system at a system level point of view of web server performance for UUM web portal. A system level performance model views the system being modelled as a 'black box' where only the arrival rate and service rate are considered. It is important in order to measure Web server performance metrics such as server utilisation, average server throughput, average number of packet in the server and mean response time. This study refers to infinite population and finite queue. It is a suitable model because it is easy to define and fast to interpret the results yet still represents the real situation.

Keywords: queuing system; generalised system model; web portal

ABSTRAK

Objektif utama kajian ini adalah untuk membangunkan model aras-sistem teritlak berasaskan sistem giliran pada aras sistem untuk menilai prestasi pelayan sesawang yang digunakan ketika mengakses portal sesawang UUM. Model menggambarkan sistem sebagai 'kotak hitam' dengan hanya kadar ketibaan pelanggan dan kadar layanan dipertimbangkan. Ini penting bagi mengukur nilai metrik prestasi pelayan portal sesawang seperti kadar penggunaan pelayan sesawang, purata paket yang dihasilkan bagi setiap pelayan sesawang dan purata masa sambutan. Kajian ini merujuk kepada populasi yang tidak terhingga dan giliran yang terhingga. Ia merupakan model yang sesuai digunakan kerana kepantasan dan kemudahan dalam pentafsiran keputusan tetapi masih menggambarkan keadaan sebenar.

Kata kunci: sistem giliran; model sistem teritlak; portal sesawang

References

Cao J., Anderson M., Nyberg C. & Kihl M. 2003. Web server performance modeling using an M/G/1/K*PS queue. Proceedings of 10th International Conference on Telecommunication, pp. 1501-1506.

Elleithy K.M. & Komaralingam A. 2002. Using a queuing model to analyze the performance of web servers. http://www.citeseer.com. (25 March 2008).

Giordano F.R., Weir M.D. & Fox W.P. 2009. *A First Course in Mathematical Modeling.* Belmont: Brooks/Cole Cengage Learning.

Menasce D.A. & Almeida V.A.F. 2002. *Capacity Planning for Web Performance: Metrics, Model, and Methods*. Upper Saddle River: Prentice Hall.

Stadelmann M.R. & Agrawal S.C. 1996. UNIX web server performance analysis. Proceedings of International CMG conference, pp. 1026-1033.

Tung K.K. 2007. *Topics in Mathematical Modeling.* Upper Saddle River: Princeton University Press.

College of Arts and Sciences, Quantitative Sciences Building
Universiti Utara Malaysia, Sintok, Kedah D.A., MALAYSIA
Emails: rahela@uum.edu.my[*]*, linda@uum.edu.my, sharipah@uum.edu.my*

[*] Corresponding author