PERFORMANCE EVALUATION OF A WEB BASED SYSTEM
CASE STUDY: LAMP BASED LEARNORG MOODLE

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Abstract

Web based applications are widely deployed around the world for everyday activities of an average person ranging from simple entertainment to complex social, economic, political, educational and scientific tasks. LAMP that abbreviates the combination of Linux, Apache, My SQL and PHP is a popular set of technologies on which most of the web applications are deployed. Although LAMP based web applications arc deployed in millions, the question is whether the intended purposes of these applications are fulfilled satisfactorily from the end user's point of view. The response time and the server resource utilization are the most noteworthy yardsticks using which performance is quantified

This study proposes a proper performance evaluation procedure and recommends an appropriate set of tools and techniques that can be used for the same. The typical method of evaluating performance is to monitor only the server side resource utilization. Many popular tools report the server resource utilization as average values over a period of few minutes whereas most of the user interactions span only for a few seconds. These average values may indicate that the servers are functioning smoothly, while the users may be suffering from poor response from the server. In contrast, this study proposes that while the response time at the user's end is being monitored, the server resources must also be tracked and analyzed.

The case study of LeamOrg- Moodle is used to exemplify the proposed procedure and how the same can be extended. The popular Belief of network always being the bottleneck was not supported by the empirical results of the study. The results obtained for the system under study revealed that the memory can also be a resource bottleneck.

DECLARATION

The work included in this report was done by me, and only by me, and the work has not been submitted for any other academic qualification at any institution.

Candidate: S. J Sooriyaarachchi

Signature:

Date: ..08./03./2010.....

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I certify that the declaration above by the candidate is true to the best of my knowledge and that this report is acceptable for evaluation for the MSc Research Project

Supervisor: Vishaka Nanayakkara

Signature:

Date: 08/03/2010.....

UOM Verified Signature

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AB	-	Apache Benchmark
CMS	-	Content Management System
CORBA	-	Common Object Request Broker Architecture
CPU	-	Central Processing Unit
DAV	-	Distributed Authoring and Versioning
DNS	-	Domain Name Service
FTP	-	File Transfer Protocol
HTML	-	Hypertext Markup Language
HTTP	-	Hypertext Transfer Protocol
I/O	-	Input Output
ID	-	Identifier
IMAP	-	Internet Message Access Protocol
LAMP	-	Linux+Apache+MySQL+PHP (or Perl or Python...)
LDAP	-	Lightweight Directory Access Protocol
MIB	-	Management Information Base
MIME	-	Multipurpose Internet Mail Extensions
MOODLE	-	Modular Object Oriented Learning Environment
MRTG	-	Multi Router Traffic Grapher
ODBC	-	Open Database Connectivity
PDF	-	Portable Document Format
PHP	-	Hypertext Preprocessor scripting language
POP	-	Post Office Protocol
RRD	-	Round Robin Database
RTT	-	Round Trip Time
SLA	-	Service Level Agreement
SNMP	-	Simple Network Management Protocol
SQL	-	Structured Query Language
SUT	-	System under Test
TCP	-	Transmission Control Protocol
WSLT	-	Web Server Load Tool