

Zope on Linux Vs Zope on Windows

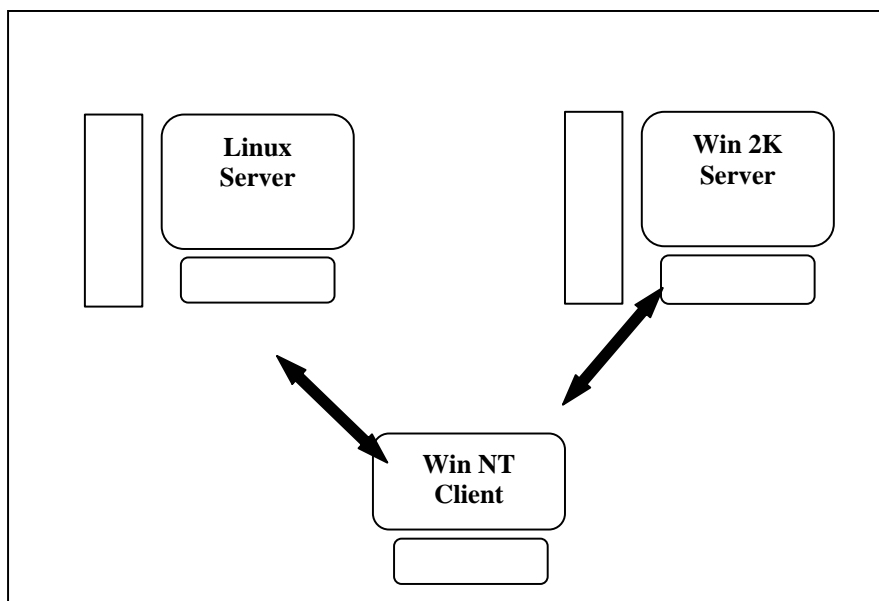
Introduction

Zope runs on both windows and Linux. A typical Zope application uses a database like MySQL which is also in most cases available for both windows and Linux. So if you are deploying a typical web application using Zope, what is the best choice? Does it make a difference in terms of performance? We here at ZeOmega decided to go ahead and test the performance of Zope on Windows and Linux.

We installed a typical Zope instance on a windows machine and a Linux machine; both running mysql in the background and stress tested the machines with a custom test suite created with OpenSTA. We mainly tested Zope for the average response time and the elapsed time. The testing procedure and the results are outlined below. The results may surprise you!

Testing Environment

The test environment consist of an isolated switched LAN with just 3 machines. The client is a Windows NT machine running OpenSTA. The other two machines are Windows 2000 and Linux server respectively. The test was conducted on an isolated LAN so that other traffic and uneven network jitter do not skew the test results.



These were the various hardware and software configurations used:

Hardware Configurations

Server 1 : Linux Red Hat 7.2
DB : Mysql 2.3.2
CPU Type : Intel P-III , 733 MHz
RAM : 256 MB
HDD : 20GB(Seagate)
Memory slots :128MB each
Network Card :100mbps (Realtech)
M/B : Intel 810 E

Server 2 : Windows 2000
DB : Mysql 2.3.2
CPU Type : Intel P-III , 733 MHz
RAM : 256 MB
HDD : 20GB(Seagate)
Memory slots :128MB each
Network Card :100mbps (Realtech)
M/B : Intel 810 E

Client : Celeron 633Mhz
RAM :128 MB
Network Card :100mbps (Realtech)
HDD :20GB(SeaGate)
M/B :Intel 810 E

Software Configurations

Software Tools Used

Testing Tool : Opensta V 1.4.1
Application Server : Zope 2.5.0 with Apache
Web Browser : Internet Explorer v 5.5
Apache Web Server : 1.3.2 - Linux
2.0 – Windows

Test Cases

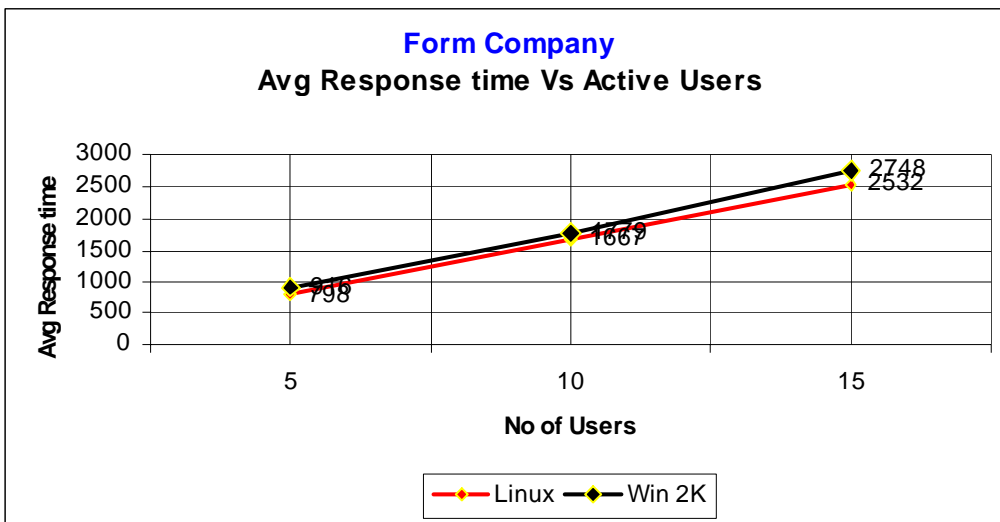
Each of the following tests were performed for at least 3 times to ensure accuracy of the results.

Test case 1: Data Form (Retrieve Data)

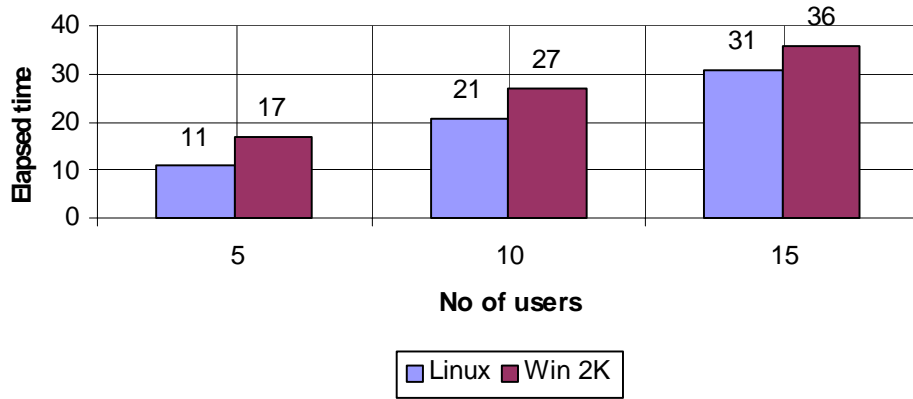
This test involves retrieving a typical page from a Zope server. The server queries the database to retrieve data for 10 fields. Then the page is rendered and sent to the client. There is relatively very little data to be retrieved from the database. The following table shows the

actual timing measured and the performance graphs are plotted. This process is repeated 3 times for both Linux and Windows installations. The following table and the graphs are the average timing form the 3 tests.

No of Users	Average Response time		Elapsed time	
	Linux	Win 2K	Linux	Win 2K
5	798	916	11	17
10	1667	1779	21	27
15	2532	2748	31	36



Form Company
Elapsed time Vs Active Users

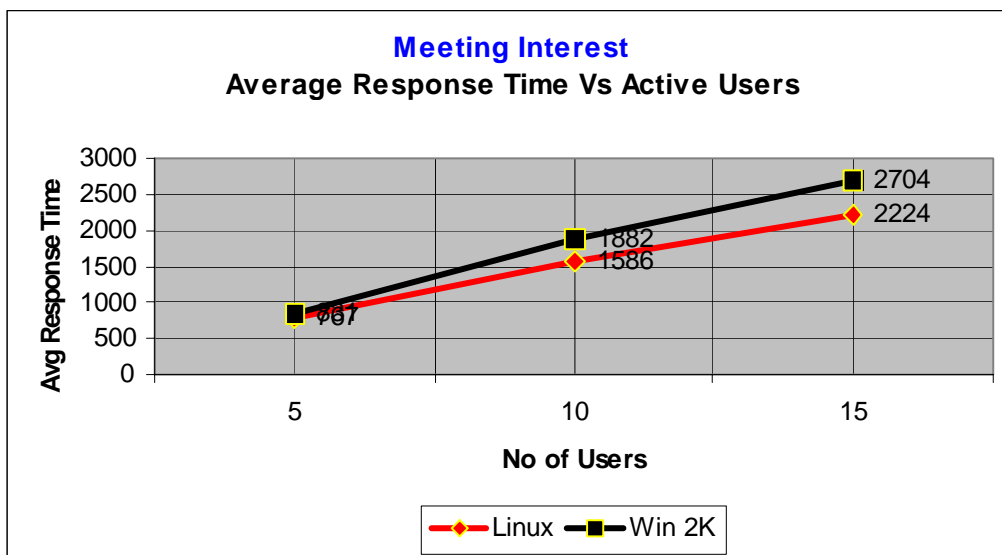


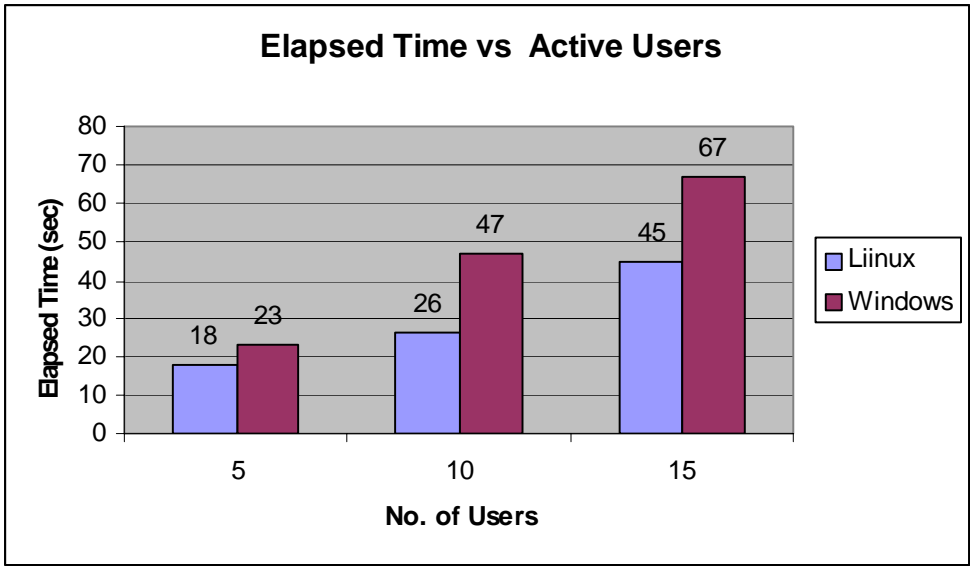
Test case 2: Submit Form (Small Dataset)

This test involves submitting a form which does not contain much data. The server processes the form and updates the database. The form contains 10 fields and the amount of data to be sent to the server is very low. The form contains mostly Yes or No questions. The following table shows the actual timing measured and the performance graphs are plotted. This process is repeated 3 times for both Linux and Windows installations. The following table and the graphs are the average timing from the 3 tests.

Recorded Data:

No of Users	Average Response time(ms)		Elapsed time	
	Linux	Win 2K	Linux	Win 2K
5	767	831	18	23
10	1586	1882	26	47
15	2224	2704	45	67

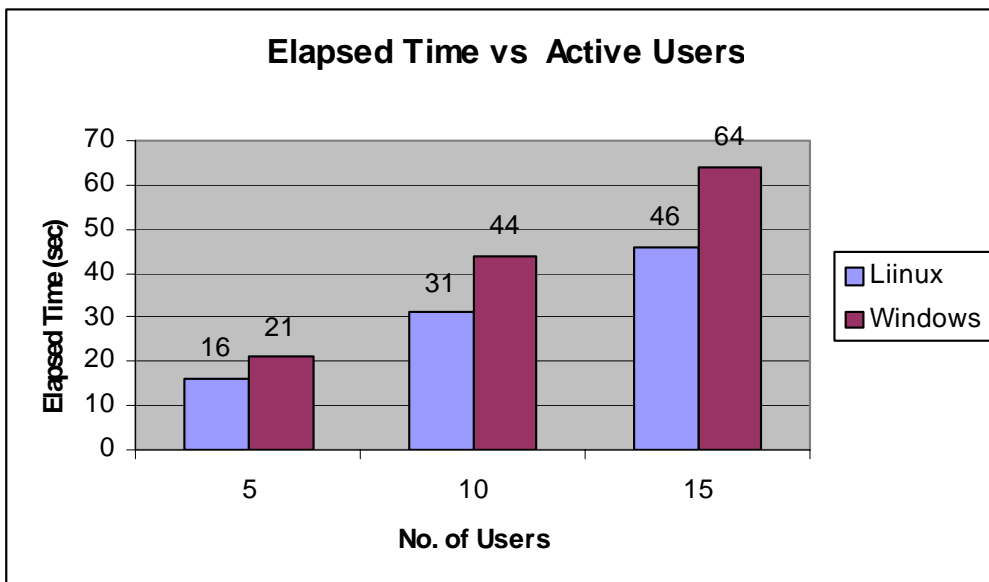
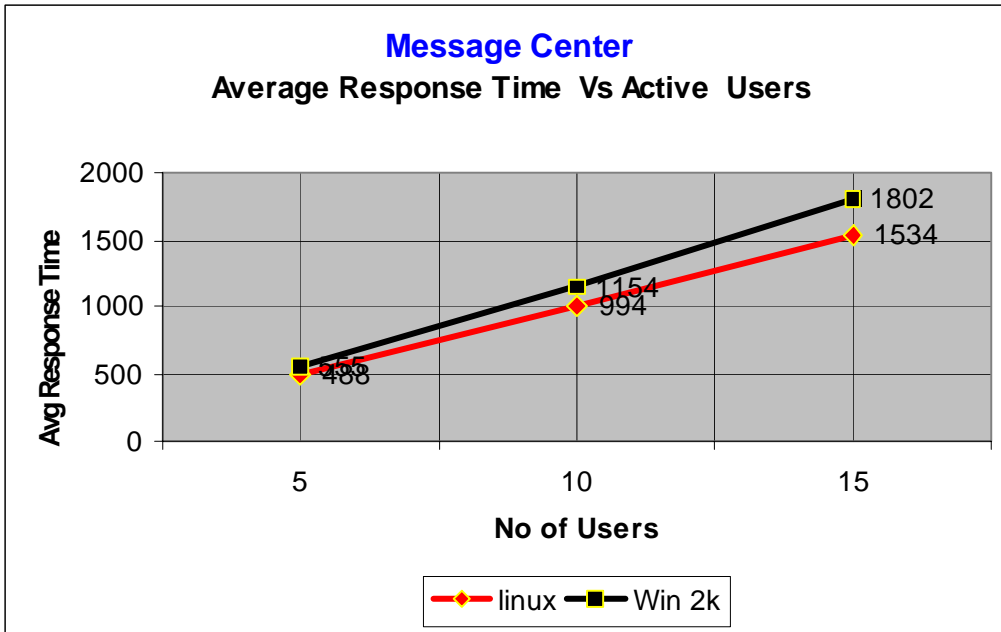




Test case 3: Submit Form (Large Dataset)

This test involves submitting a form which contains much data. The server processes the form and updates the database. The form contains 10 fields and the amount of data to be sent to the server is considerably high. The form contains test fields requires a text answer and for the test, each of the answers were 100 characters in length. The following table shows the actual timing measured and the performance graphs are plotted. This process is repeated 3 times for both Linux and Windows installations. The following table and the graphs are the average timing form the 3 tests.

No of Users	Average Response Time (ms)		Elapsed Time(sec)	
	Linux	Win 2K	Linux	Win 2K
5	488	555	16	21
10	994	1154	31	44
15	1534	1802	46	64



Results

The results show that Zope with MySQL on Linux performed better for all the test cases than Zope with MySQL on Windows. We feel while Zope itself performs about the same way on Windows and Linux, It is the database operations where the difference lies. The difference is very small for database read and it becomes larger for database writes and increases as the amount of data to be written into the database increases. We feel MySQL performs slightly better on Linux due to more optimized implementation. Also python implementation is better

in Linux and hence overall a Zope application on Linux beats its Windows counterpart hands down.