



Mystery Solved! Linux is Cheaper - PERIOD

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Welcome to Issue # 347 of the VirtualBEACON™

STAT-BIT

In our August DARTS we asked SURF members to complete the following sentence, "Most of my installed Servers and Switches are..."

The results were:

- ...2 years' old or less: 46%
- ...3 years' old: 41%
- ...4 years' old: 9%
- ...over 4 years' old: 4%

EDITORIAL

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Over the past 6 years the VirtualADVISOR has tracked IT Infrastructure Total Cost of Ownership (TCO). During this period the industry has experienced significant changes. The dot com train came to a dot stop; mega mergers, the open source movement, and economic pressures driving purchasing trends caused the enterprises to cut costs. Early research on Linux yielded little interest in 2001; however, recent research shows that the Linux landscape is changing. Open source interest is rising and Linux is achieving major vendor support and user endorsements. Could it be the economic pressures are, in fact, having an effect on platform choices?

In December 2003, The Standish Group's on-going research program, DARTS, yielded the following:

"If you plan to replace servers for mission critical applications, which platforms would you consider?"

The answers were as follows:

- Microsoft - 38%
- Linux - 27%
- Sun Unix Systems - 20%
- IBM Mainframes (any type) - 18%
- HP Unix Systems - 13%
- Other Unix - 13%
- Have no plans - 27%

In February, we asked the same group, "What percentage of your servers will run Linux by the end of 2004?" Their response was:

- Zero: 27%
- Under 25%: 61%
- Over 25%: 12%

Linux has garnered support and mind share to rival all but Microsoft. In 2004 IBM, HP, Sun, Oracle, Sybase, Dell, plus other middleware and application providers, announced Linux strategies.

One of the major decision making factors driving the Linux phenomena is cost. The Standish CENTS (Comparative Economic Normalization Technology Study) database for the VirtualADVISOR tracks 2000 live user TCO cases across 16 platforms and 52 applications. More than one-third of those cases are Linux and Windows-based platforms. All cases are updated on a quarterly basis.

To establish a common performance reference the following research criteria was used:

Average Database size is 75GB, 2000 Peak hours/year at 20TPS at peak and 5TPS off peak, TP monitor, and hardware utilization at 75%. The applications measured are Customer Resource Management (CRM), Portfolio Management, Purchasing and Billing using the four leading database (RDMS) products running on Windows and Linux on Intel hardware.

The following chart provides the results of the Virtual Advisor research:

	Oracle		IBM DB2		Microsoft SQL		Sybase ASE		
	Basic	Application	Basic	Application	Basic	Application	Basic	Application	
CRM									
LINTEL	2,836	13,104	2,509	12,400	N/A	N/A	2,434	11,352	
WINTEL	5,439	22,440	4,811	21,146	4,893	21,181	4,669	19,383	
Portfolio Management									
LINTEL	810	3,679	694	3,427	N/A	N/A	664	3,116	
WINTEL	1,359	5,521	1,165	5,112	1,199	5,193	1,114	4,651	
Purchasing									
LINTEL	578	2,616	498	2,446	N/A	N/A	469	2,210	
WINTEL	1,072	4,341	923	4,037	899	3,892	869	3,649	
Billing									
LINTEL	362	1,540	272	1,342	N/A	N/A	259	1,219	
WINTEL	719	2,749	540	2,370	546	2,382	515	2,153	

Notes: Shown in (\$1000) annual cost over a 3-year lease. To achieve purchase cost, multiply by 2.4.

ANALYSIS

Basic Costs

Basic Cost = Hardware + Operating System + System Operations Manpower + Maintenance.

Three factors affect the basic cost. First, the operating system licensing cost (Linux wins hands down). Second is Scalability, as transaction complexity goes up, the additional Windows licenses increase costs. Third, most users find that the Linux operation is sufficiently close enough to the Unix operating system so they can use the Unix operation's staff to run the Linux operations. If a migration from Unix to Windows were the case, then training and staff retention may become a cost issue.

Conclusion: Linux does have a significant basic cost advantage over Windows.

While basic cost is only 10% of the TCO and all primary database costs are in the applications cost category, the basic costs do vary depending on the database chosen. The areas of differentiation are; disk requirements, core code performance and ease of operations; VirtualADVISOR shows Sybase ASE delivering the most economic performance in these areas for both Linux and Windows platforms.

Conclusion: Database efficiencies do affect basic cost; however, the ratios appear to be the same for Linux and Windows, with the only change dependent on the database solution chosen.

Application Costs

Application Costs = Basic Costs + Software Infrastructure + Database and Systems Administration + Application Maintenance.

Application costs are much more complex than basic costs. The cost of the software infrastructure, such as the hardware cost allocation (basic cost), middleware, database license, application costs (either purchased or in-house developed), support and administration labor are all in play. Linux is winning due to lower basic cost issues; middleware and applications are in competition with lower cost open source solutions and migration of Unix applications; and administrative and operations personnel, already familiar with Unix, are driving the lower cost of Linux Applications TCO.

Conclusion: Linux extends the TCO advantage at the application level.

Application Cost is forty to fifty percent (40% to 50%) of the TCO. In this area, database costs have a significant impact. Licensing fees, manpower (DBAs) and maintenance fees all play a significant roll. Oracle and Microsoft SQL Server have a higher DBA requirement than DB2 and Sybase ASE. Overall, Sybase ASE again is shown to be the most cost effective database platform for Linux and Windows-based applications.

Conclusion: Database complexity and requirements for support by DBAs (manpower) makes a big difference in the application cost space. Licensing cost takes a sound number two position. The rising competition of open source, Unix migrated or in house developed and maintained applications, takes the third seat in driving down and evoking a cost control effect on the Linux TCO.

OVERALL CONCLUSION:

Linux is here to stay. Linux will continue to attack Microsoft.

Overall, the most cost-effective solution running to date is Sybase ASE running on Linux platforms.

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