How Much Does That Computer Really Cost – The OpenVMS Advantage

Jürgen Probst, Global TCO Director

(with some modifications by Gerrit Woertman based on the Eddie Orcutt presentation)

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In Year 2015…

more user

>1 Billion more
in the network

More devices

15 Billion
connected devices

More data

>1,000 Exabytes
Internet data volume

1. IDC "Server Workloads Forecast" 2009. 2.IDC "The Internet Reaches Late Adolescence" Dec 2009, extrapolation by Intel for 2015 2.ECG "Worldwide Device Estimates Year 2020 - Intel One Smart Network Work" forecast 3. Source: http://www.cisco.com/assets/cdc_content_elements/networking_solutions/service_provider/visual_networking_ip_traffic_chart.html extrapolated to 2015

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Data traffic via the Internet

150,000,000,000,000,000,000 Bytes*

Until 2009

245,000,000,000,000,000,000 Bytes*

only in 2010

*Exabytes

Source:
http://www.cisco.com/assets/cdc_content_elements/networking_solutions/service_provider/visual_networking_ip_traffic_chart.html
http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481360_ns827_Networking_Solutions_White_Paper.html extrapolated to 2015

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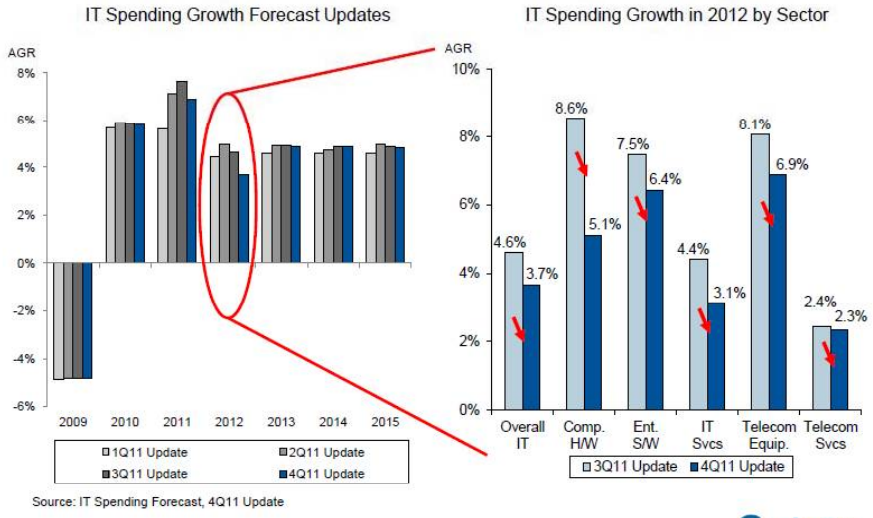
Economic Slowdown, Eurozone Crisis and Thailand Floods dent outlook for 2012

Global IT Spending Forecast Revised Downward From 4.6% to 3.7% For 2012



Source: IT Spending Forecast, 4Q11 Update

Gartner

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Data Center IT Issues and Priorities

The biggest challenge that large enterprises expect to face with respect to their data center hardware infrastructure through the end of 2011 is data growth. Of respondents worldwide, 47% ranked data growth among their top three challenges, while 20% named it as their single biggest challenge. Second and third place went to system performance and scalability (37%), and network congestion and connectivity architecture (36%).

The most significant driver of strategic change in the data center through 2011, according to our respondents, will be business continuity and availability (50%).

Cost containment initiatives ranked second with 37% followed by the need to maintain or improve user service levels and satisfaction at 36%.

Forty-one percent of respondents worldwide plan to invest in cloud computing or cloud services by the end of 2011, though only 25% consider it one of their top three investment priorities.

Source: Gartner, Nov 2010

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“General Motors is not in the business of making cars; General Motors is in the business of making money.”

Alfred P. Sloan
President & CEO of General Motors
1875 - 1966

“Money speaks sense in a language all nations understand…”

Aphra Behn
First professional woman writer in English
1640 - 1689

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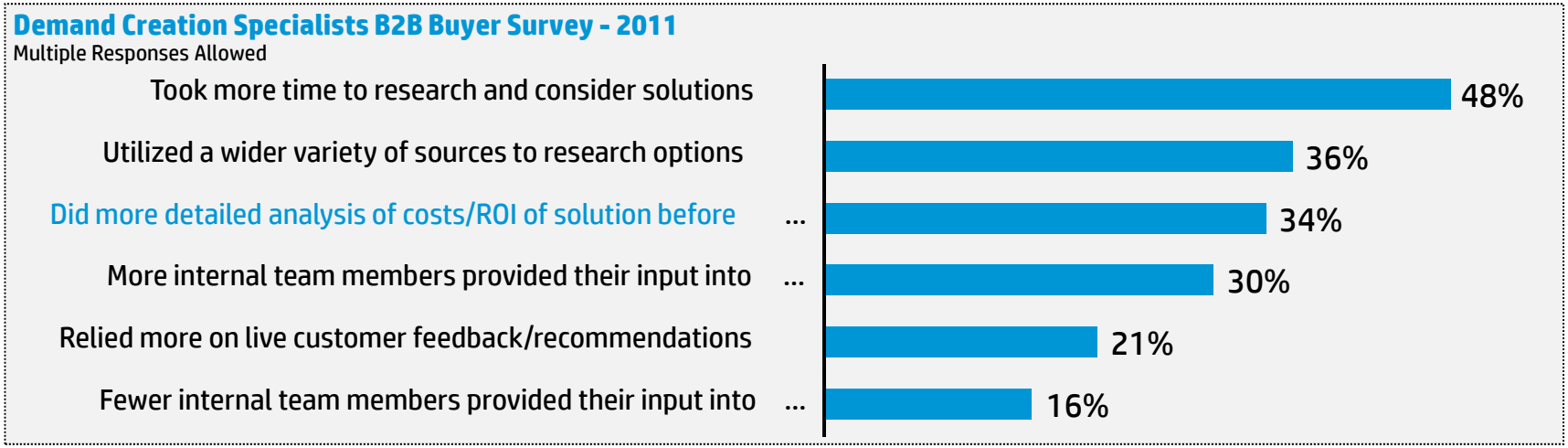
Buyer's Decision Process Significantly Changed



Match and facilitate buyer's decision process:

1. Deliver content to help buyer's adequately research opportunities and solutions,
2. Provide financial justification and business case tools to prove return on investment (ROI),
3. Provide live customer testimonials and advocate communities to help buyers learn from peers the best way to solve opportunities with the proposed solutions.

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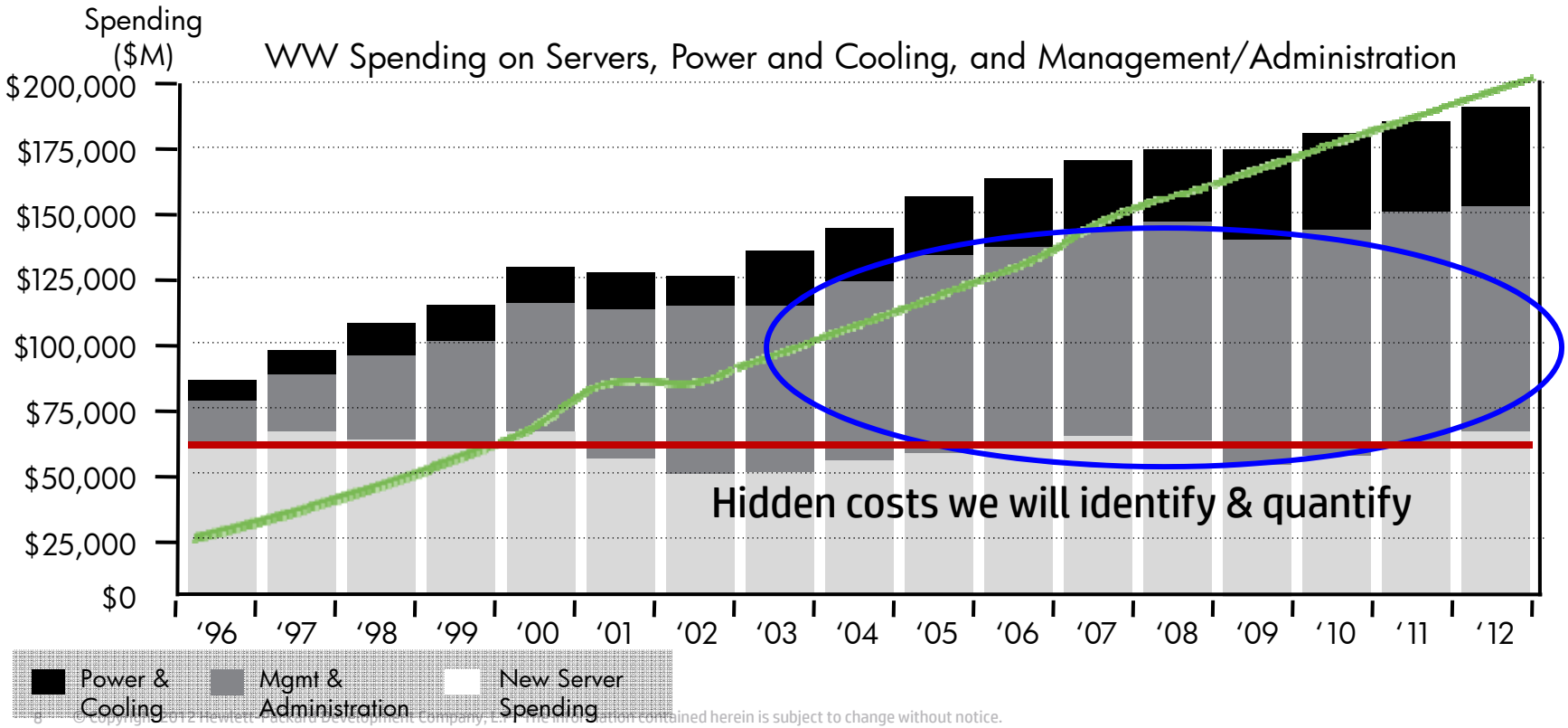
WORLDWIDE SERVER MARKET (1996-2012)

Operational Costs Rise Dramatically



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Source: IDC "Mission-Critical Computing and Unix Systems", Oct 2009

TCO

TCO stands for Total Cost of Ownership and is lifecycle cost

For example, on purchase of new servers, both you and your customer may be focused on the BOM price only (which roughly accounts for 15-25% of the overall cost of the solution offered). But there are other hidden costs as well that are important to your customer, like:

- Cost to Install,
- Ongoing support
- Upgrade
- System Management/IT operations and administration
- Power
- Cooling
- Floor space, other facilities cost etc.

Initial purchase price is just the tip of the iceberg

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Security Attacks are growing enormously

Growth of mobile malware
2.5X

Worldwide malware costs
$1 Billion

Security

IDC
Analyze the Future

70% of Respondents Saying Security is Top Concern In Moving to Public Cloud[1]

PC MAGAZINE
WikiLeaks Suffers Cyber Attack
August 31, 2011

THE HUFFINGTON POST
Security Flaw Could Let Hackers Help Inmates Break Out Of Prison
August 9, 2011

Modern Computer Systems Make Cars a Prime Target for Hackers
DAILY NEWS
September 8, 2011

+MASS DEVICE
Diabetes: Computer security experts uncover vulnerability in insulin pumps
August 4, 2011

PC WORLD
Mobile Apps Fail Big Time at Security, Study Says
August 10, 2011

INTERNATIONAL BUSINESS TIMES
Bart Network Hacked by Anonymous, Passenger Data Leaked
August 15, 2011

MAXIMUM PC
Hackers Expose 75000 Social Security Numbers from University of Wisconsin
August 11, 2011

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1. IDC Market Analysis, January 2010
Source: Juniper, McAfee

Security Threats and Associated Costs

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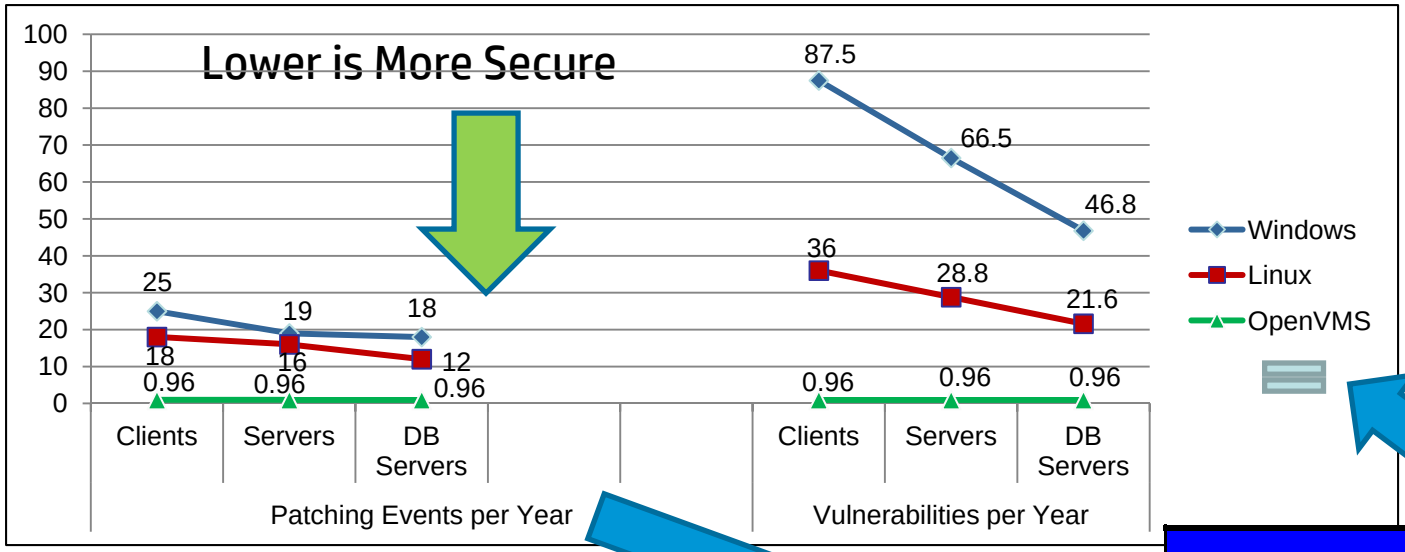
Security Patches Per Year



Average Number of Vulnerabilities per Patching Event			
	Windows	Linux	OpenVMS
Clients	3.5	2.0	1.0
Servers	3.5	1.8	1.0
DB Servers	2.6	1.8	1.0

OpenVMS is more than an order of magnitude (>10X) more secure than competitor OSes

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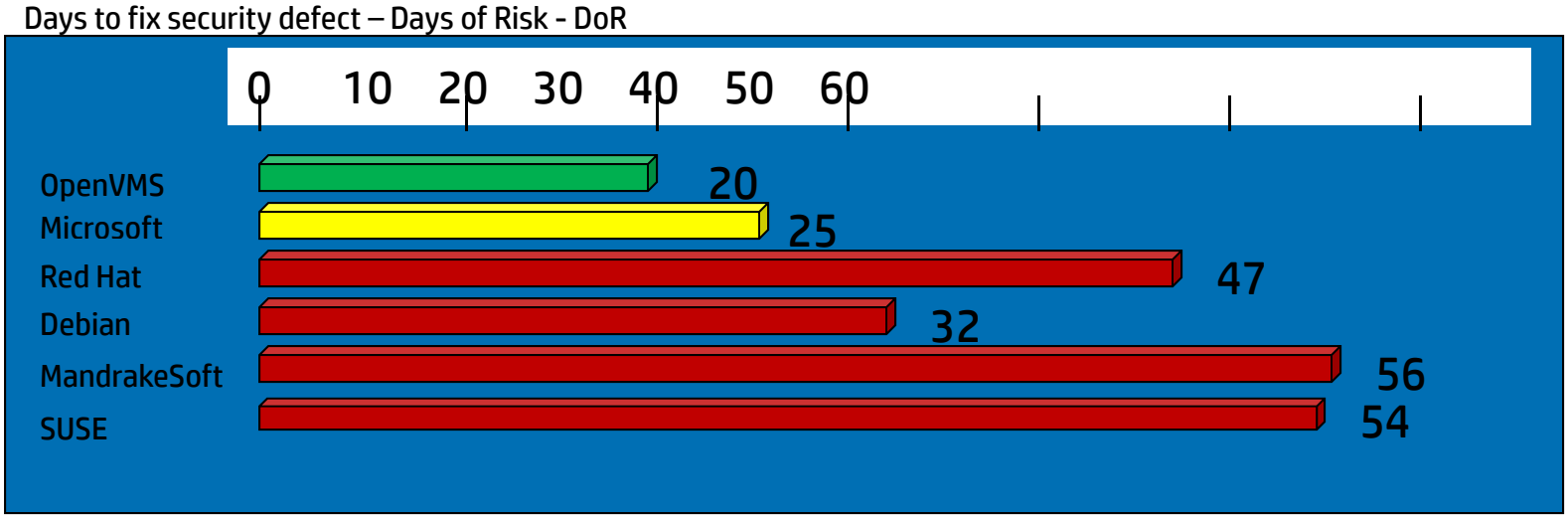
Source: http://download.microsoft.com/download/1/7/b/17b54d06-1550-4011-9253-9484f769fe9f/TCO_SPM_Wipro.pdf

Security Distribution Risk



This is the average time in days to fix a defect (once discovered) and provide a patch kit to the customer

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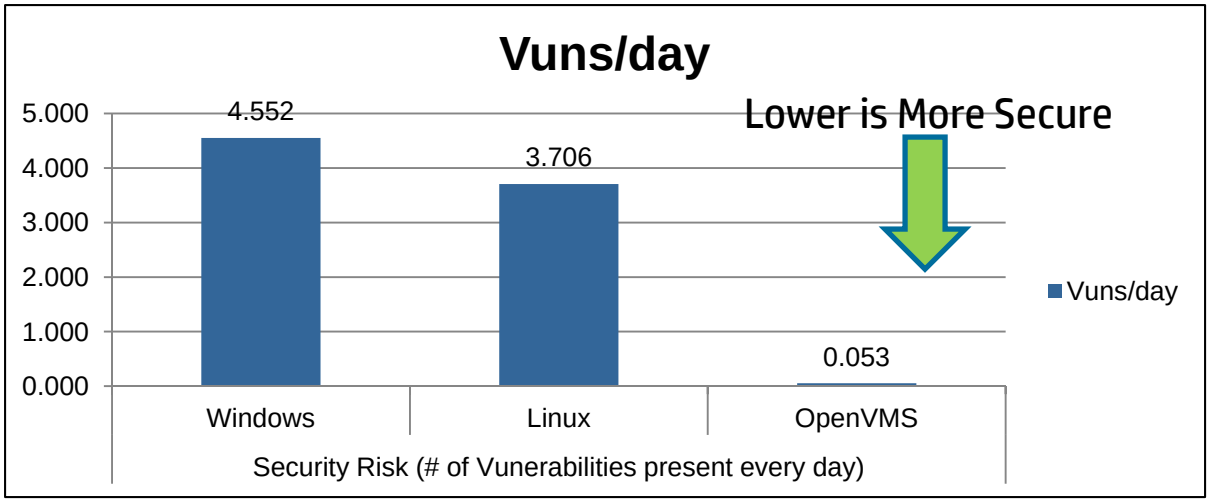
Source: http://download.microsoft.com/download/1/7/b/17b54d06-1550-4011-9253-9484f769fe9f/TCO_SPM_Wipro.pdf

Security Risk



- On Windows servers there are an average of 4.5 vulnerabilities present on any given day
- On Linux servers there are an average of 3.7 vulnerabilities present on any given day
- On OpenVMS servers there are an average of .053 vulnerabilities present on any given day

What do the previous slides tell us?

OpenVMS has 69X – 85X less outstanding defects on any given day than competitor OSes

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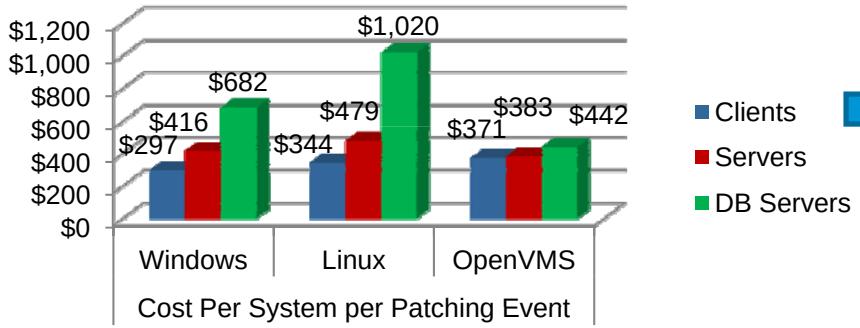
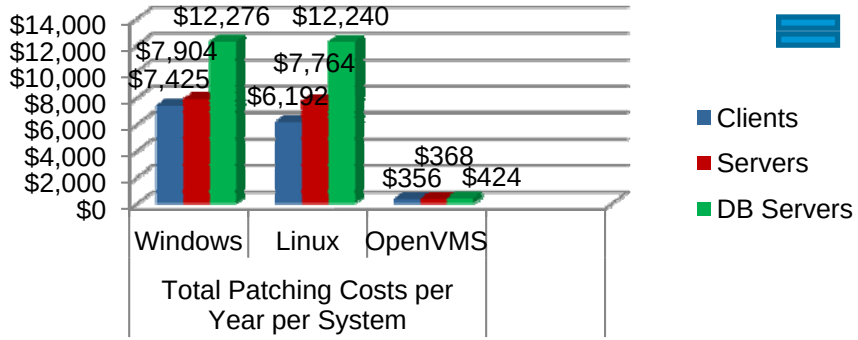
Annual Cost of Security Patching

(Per System – per event & per year)



System	Average Number of Patching Events		
	Windows	Linux	OpenVMS
Clients	25	18	0.96
Servers	19	16	0.96
DB Servers	18	12	0.96



As a more secure OS (significantly fewer patches to apply), OpenVMS is less expensive to patch than Windows and Linux

($7,396 - $11,852 less)

Source: http://download.microsoft.com/download/1/7/b/17b54d06-1550-4011-9253-9484f769fe9f/TCO_SPM_Wipro.pdf for Windows/Linux

OpenVMS Cost Per system = R(C + P)

http://www.absolute.com/Shared/Whitepapers/ABT-AM-PPM-WP-E.sflb.ashx

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Staffing Cost

Staffing

Clients – End Users supported per System Manager

Servers – Servers managed per System Manager

System	Windows	Linux	OpenVMS
Clients	75:1 – 100:1	30:1 - 40:1	50:1 – 60:1
Servers	10:1 – 20:1	30:1 – 40:1	50:1 – 60:1
DB Servers	10:1 – 20:1	30:1 – 40:1	50:1 – 60:1

http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2846915-2,00.html
Yankee group Report - 2005 North American Linux and Windows TCO Comparison, Part 1 – Windows/Linux
Computer World - http://itbenchmark.wordpress.com/2011/03/18/virtualization-and-adminserver-ratio/ 7-2010 OpenVMS -
Source: NASA, MSFC – Huntsville Operations Support Center
http://www.lesscher.nl/Portals/0/ITems08/TCO%20ROI%20Overview.pdf

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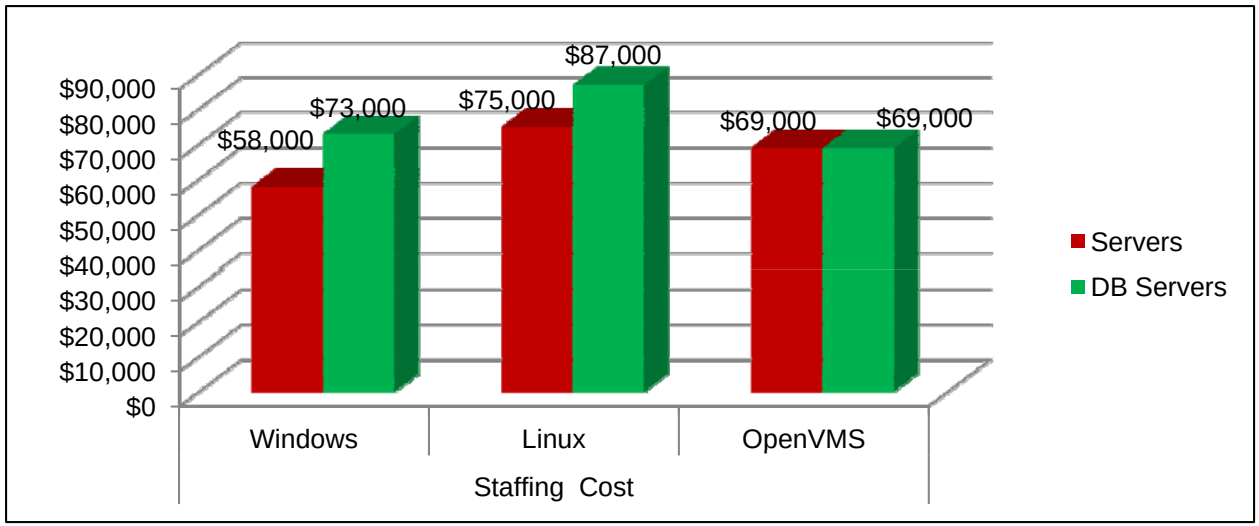
Staffing Costs
(System Manager)



US national average per year

Salary in some US cities may be higher

http://www.simplyhired.com/a/salary/search/q-windows+system+manager

http://www.simplyhired.com/a/salary/search/q-windows+db+system+manager

http://www.simplyhired.com/a/salary/search/q-linux+db+system+manager

http://www.simplyhired.com/a/salary/search/q-OpenVMS+system+manager

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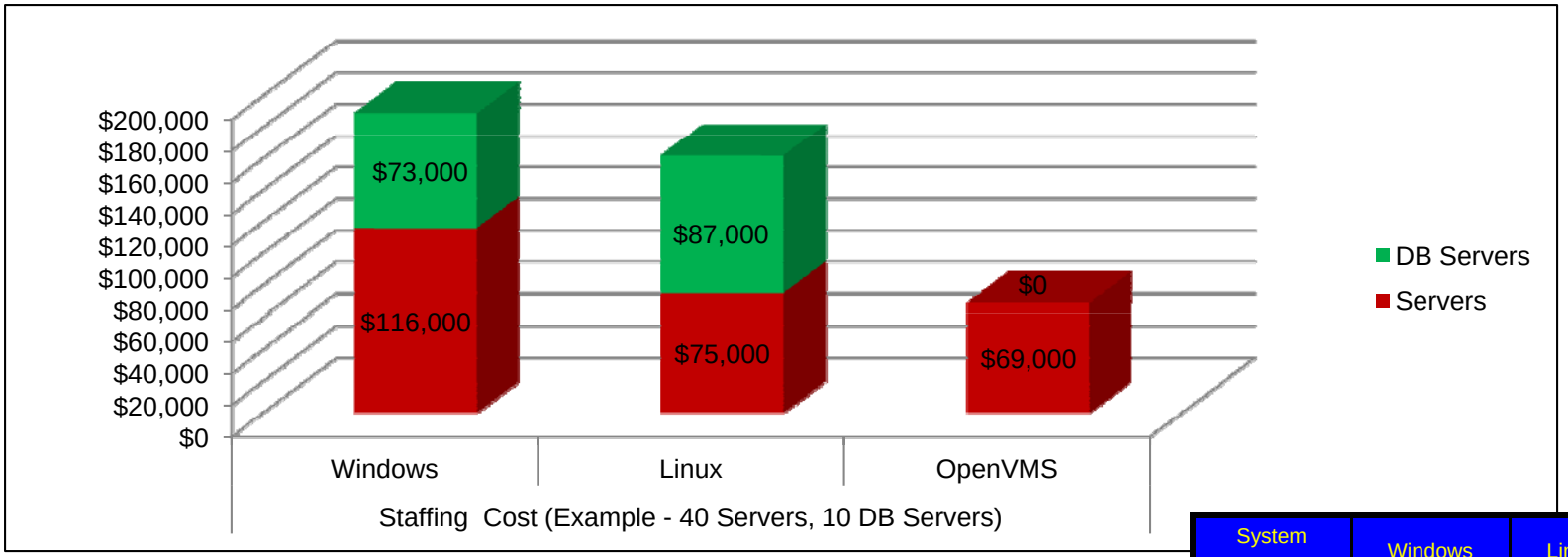
Staffing Costs

Example



System Managers	Windows	Linux	OpenVMS
Servers (40)	2	1	1
DB Servers (10)	1	1	0

Number of System Managers and their costs to manage 40 Application servers and 10 DB servers

OpenVMS ($69,000) is less expensive to manage than Windows ($189,000) and Linux ($162,000)

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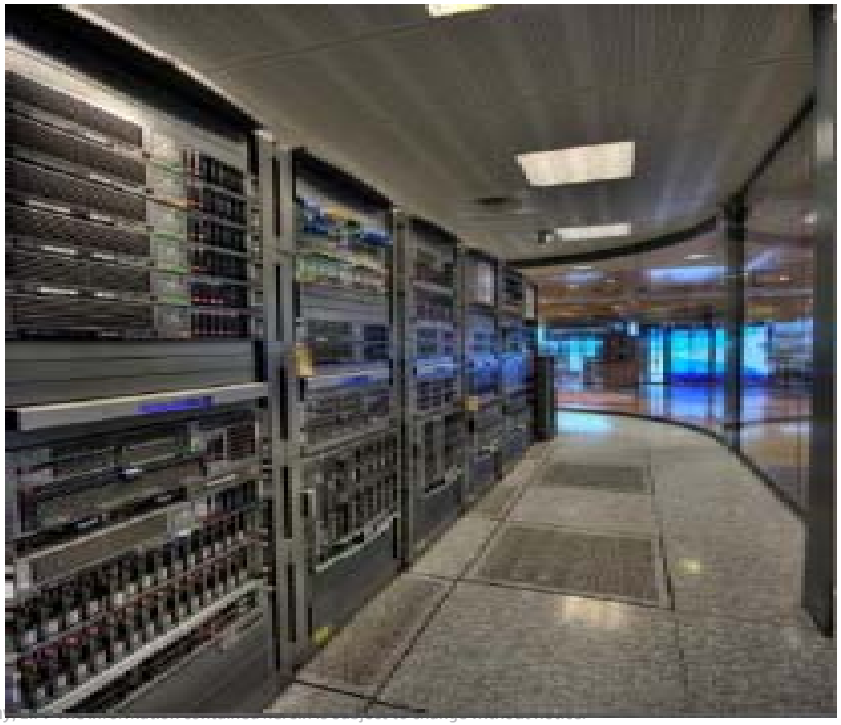
System Operational Costs



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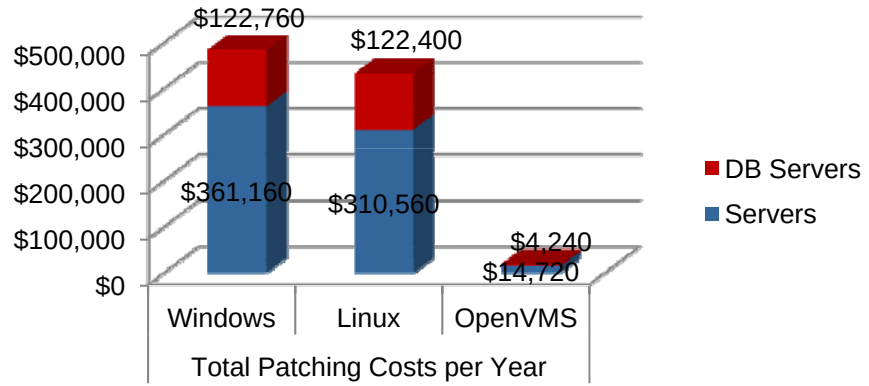
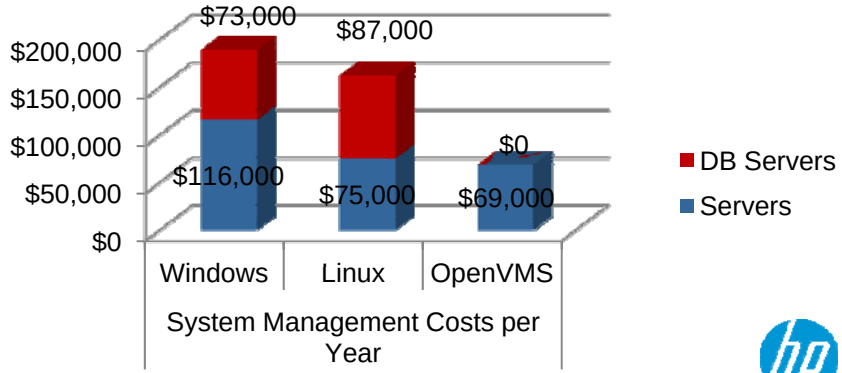
Yearly Operational Costs
(From Previous Example)



For 40 application servers and 10 DB servers

As a more secure OS, VMS is significantly less expensive to patch than Windows and Linux - ($414,000 - $464,960 less)

With the highest server to system Manager ratio, VMS requires fewer System Managers which reduces personnel costs significantly - ($93,000 - $120,000 less)



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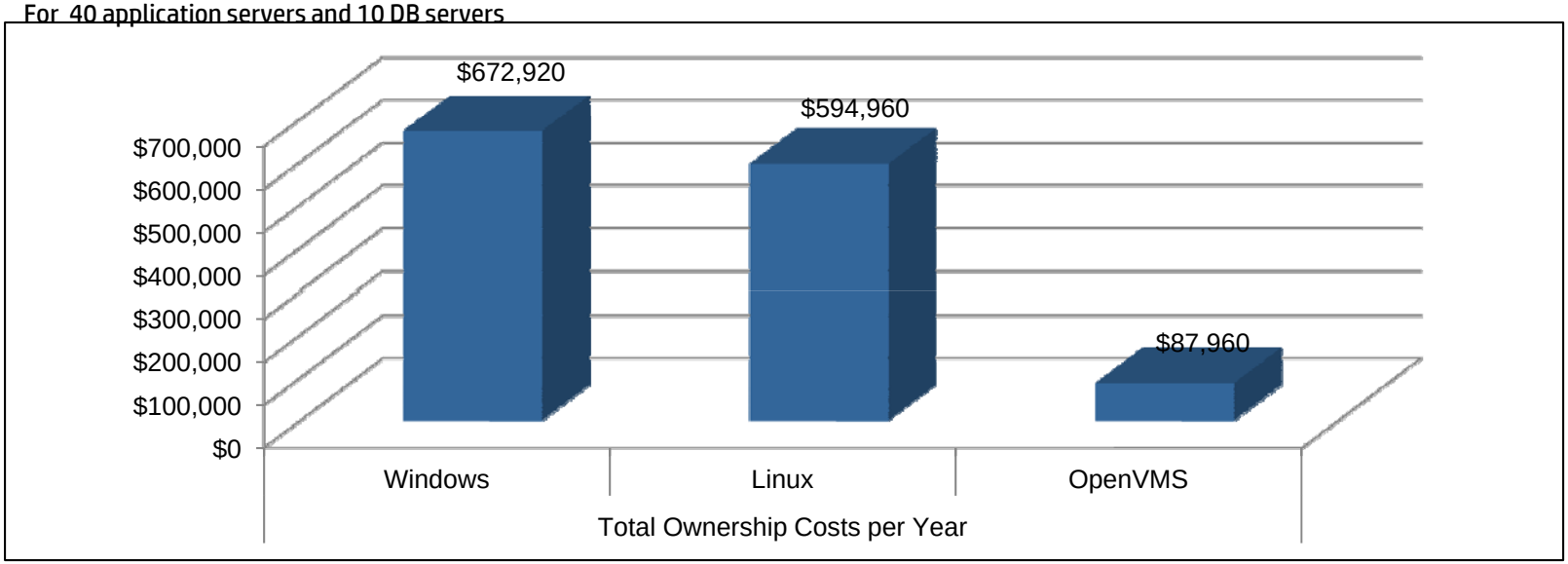
Total Yearly Operational Costs
(From Previous Example)



OpenVMS is 6.7X more cost effective to operate than Linux and 7.6X more cost effective to operate than Windows

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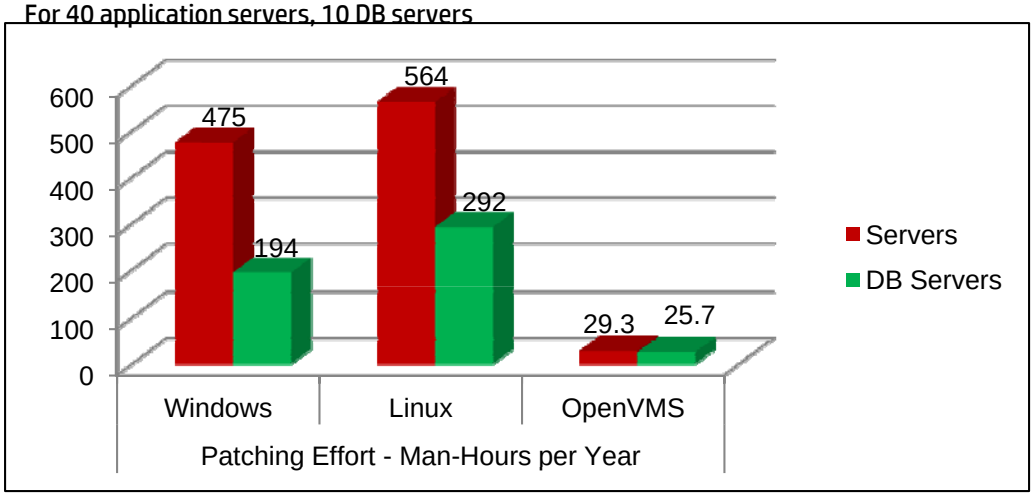
Patching Effort – Man-Hours per Year

(From Previous Example)



This is the amount of time System Managers spend annually doing remedial/patching work instead of providing innovation for the organization

OpenVMS System Managers can spend 12X – 15X more time on innovation (less time on patching)

- Windows – Server + DB Server time is 669 hours or 3.8 months
- Linux – Server + DB Server time is 856 hours or 4.9 months
- OpenVMS – Server + DB Server time is 55 hours or 0.31 months

Source: http://download.microsoft.com/download/1/7/b/17b54d06-1550-4011-9253-9484f769fe9f/TCO_SPM_Wipro.pdf for Windows/Linux

OpenVMS – Patch Set up time + (Number of Systems x patch time) * patches per year

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TCO Analysis

Windows – Linux - OpenVMS

5-Year TCO Server Configuration

Prices are US list	Windows Linux*	OpenVMS	
10 DB Servers	BL620 with 8-cores 32 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA Windows 2008 R2 $398,965	BL620 with 8-cores 32 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA RHEL 5 $328,635	BL860i2 with 8-cores 32 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA OpenVMS BOE $448,809
40 Application Servers	BL460 with 4-cores 16 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA Windows 2008 R2 $874,365	BL460 with 4-cores CPU 16 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA RHEL 5 $592,085	BL860i2 with 4-cores 16 GB Memory 2 – 146GB Internal Disks RAID 1 Dual Port FC HBA OpenVMS BOE $1,077,644
List Price	**$1,273,330**	**$920,720**	**$1,526,453**

All configurations used 42U Racks, Rack PDUs, C7000 Blade Enclosures, ProCurve 6120 Ethernet Blade Switches and B-Series 8/12 FC Switches and 5-Year 24x7 Warranty on HW & SW

* Linux SW Warranty only 3-year 24x7

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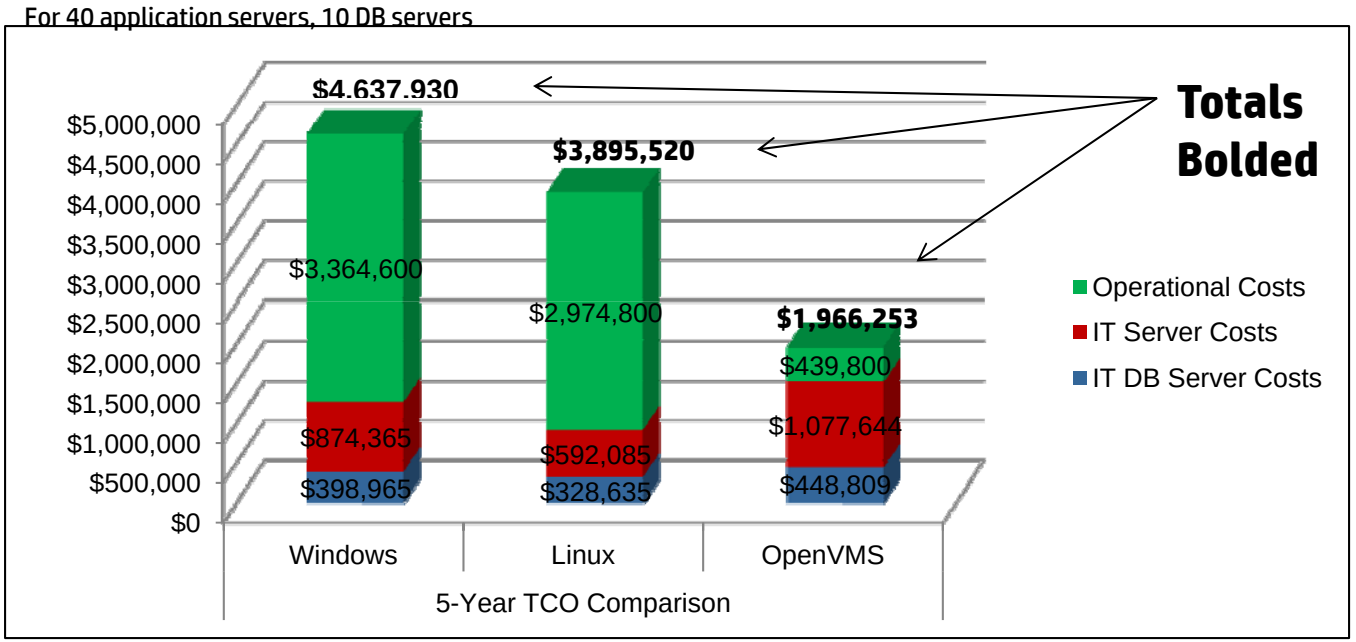
5-Year TCO Comparison
(From Previous Example)



OpenVMS is:

49% less than Linux

57% less than Windows

OpenVMS is $1.92M less expensive than Linux and $2.67M less than Windows over a 5 year lifecycle period

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Alpha to Integrity

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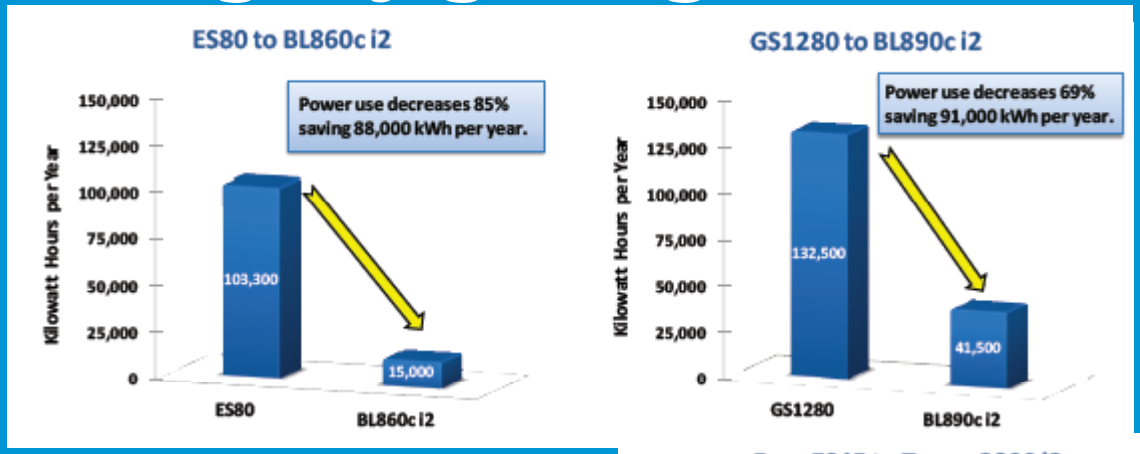
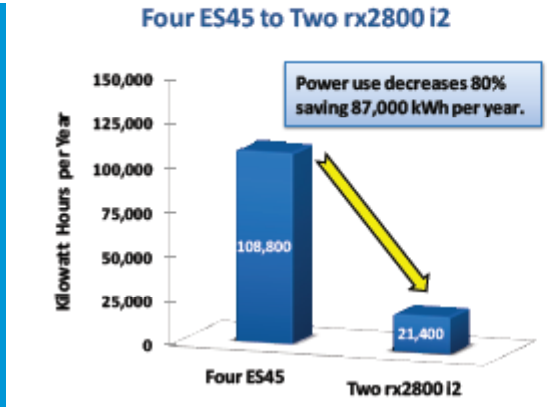
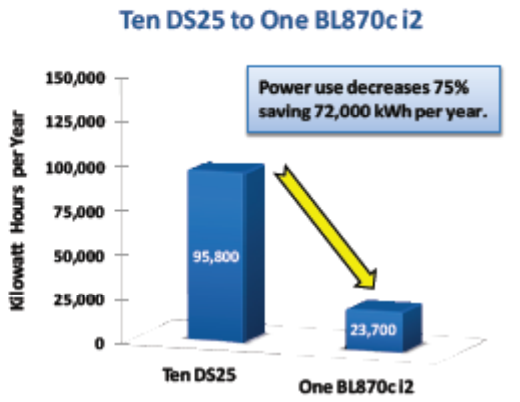
Integrity goes green







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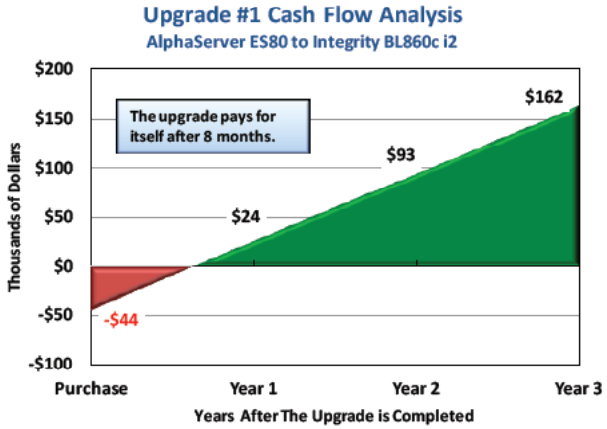
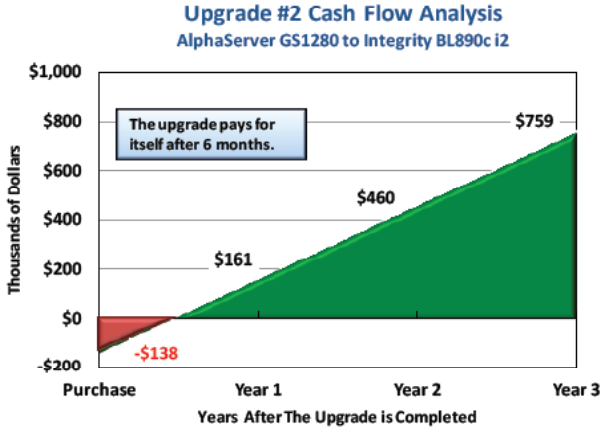
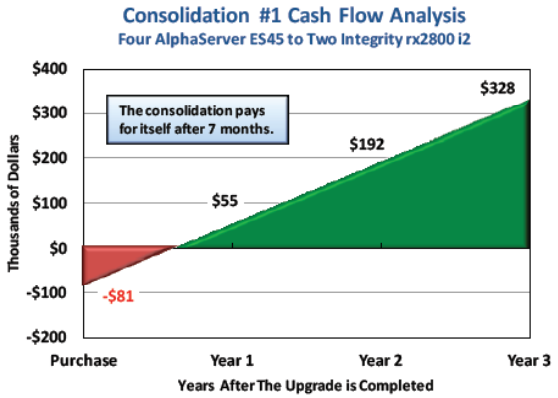
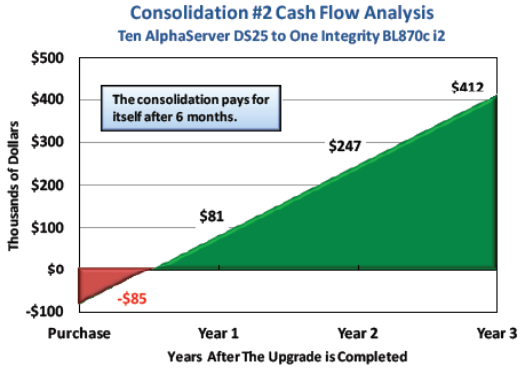
Source: TechWise Research Inc, August 2012

Payback below 12 month!









Source: TechWise Research Inc, August 2012

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Alinean

Value-Based Sales and Marketing Tools

powered by intel

PROFILE

- Founded in 2001
- Over 30+ full time ex-Gartner business value / ROI experts
- IT content experts from top IT vendors including IBM, HP, Sun, SAS, Oracle, Siemens, CSC

HISTORY

- Original pioneers (1994) of B2B Value Selling Tools
- Sold first TCO/ROI software company to Gartner in 1998
- 1st scalable business value platform – XcelLive™

PEDIGREE

- Over 70 customers and 600 B2B sales / marketing tools across an array of B2B disciplines
- Endorsed as best practice by many leading vendors including Microsoft, HP, IBM, EMC, NetApp, Siemens Healthcare.
- Partnerships with IDC, Morningstar, Rosetta, and ZDE

Powered by Alinean...

CUSTOMERS

Microsoft, EMC², ca, DELL, IBM, hp, intel, ORACLE, at&t, BlueCoat, JBoss, Motorola, SYBASE, vmware, sonexis, Cisco Systems, CITRIX, UNISYS, symantec., SIEMENS, accenture, BakBone, Novell, Juniper, Thomson Reuters, Iron Mountain, SONICWALL

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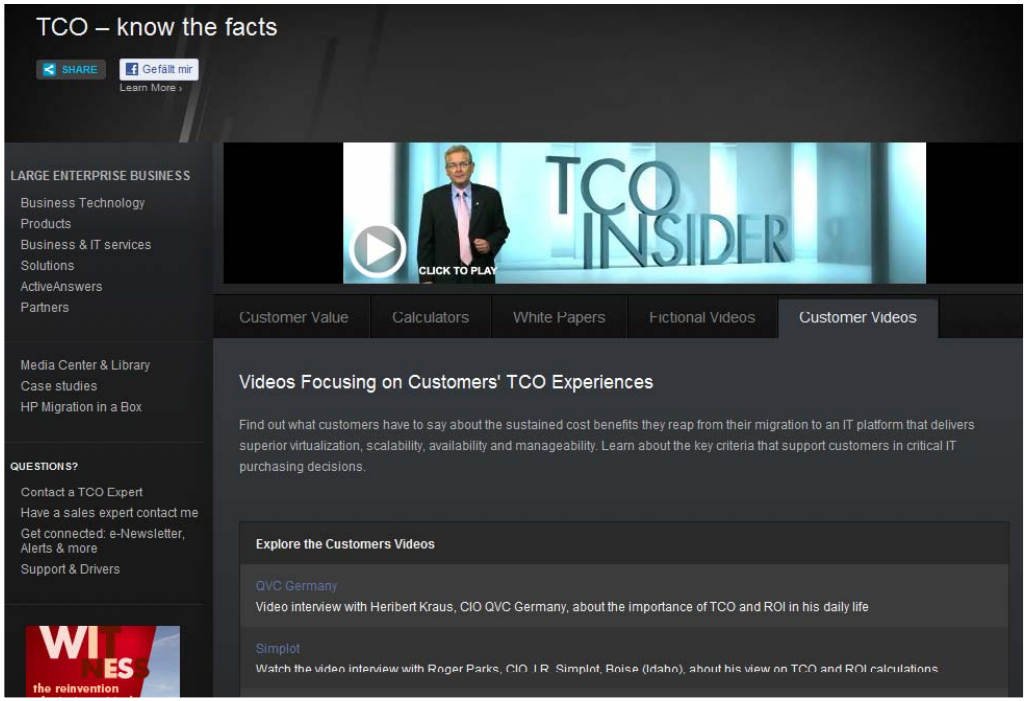
www.hp.com/go/tco



Available Calculators

- IBM POWER TCO Challenge
- Oracle SUN TCO Challenge
- HP9000 and Alpha TCO Challenge
- HP ProLiant Gen8 Benefits and Savings Calculator
- IBM Mainframe TCO Challenge
- HP 3PAR Benefits and Savings Calculator
- P6000 Benefits and Savings Calculator

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