The Future of Virtualization: Emerging Trends and the Evolving Vendor Landscape

Description: The Future of Virtualization report examines one of the biggest trends in recent IT history: virtualization. The promise of virtualization technology – whether applied to the server, storage, client/desktop, application or network – is to increase capacity, utilize resources more effectively and reduce costs. It also fits neatly with many organizations' green IT strategies, with its promise to increase utilization of existing assets and eliminate the demand for more energy-guzzling hardware resources. Virtualization is not only a hot topic but also a rapidly evolving area of the IT sector. Despite a tough macroeconomic climate, there is evidence that organizations are willing to invest in virtualization technologies, making it of great interest to incumbent vendors and those eyeing up the future market opportunity.

This report is of interest to any supplier of IT products and services, whether selling direct or through a channel of resellers. This group includes virtualization vendors, hardware vendors, software vendors, open source specialists, system management providers, service providers, data centres, internet-based businesses such as Amazon offering in-cloud applications, value-added resellers and managed network service providers.

Key features of this report

- Insight into the virtualization market opportunity – for example, desktop and application virtualization represent the next growth opportunities, now the server and storage virtualization markets are established
- Market forecasts and cost saving breakdowns
- Analysis of the vendor landscape and exploration of the potential challenges / opportunities ahead for the main players
- Recommended vendor actions
- Case studies of virtualization in action

Scope of this report

- Identify market drivers and future industry ‘sweet spots’
- Refine sales and marketing campaigns to educate end users about the benefits of virtualization and allay any concerns they may have with the technology
- In-depth analysis of emerging trends in the virtualization market
- Identify the main players in the virtualization market
- See evidence of virtualization in action through real-life case studies
- Identify new market opportunities (e.g. SMBs)

Key market issues

Virtualization is an old technology brought into the 21st-century: Virtualization has been available on the mainframe since the 1960s. The current resurgence in virtualization is brought about by the fact that today's hardware provides significantly more horsepower than is needed by the applications that it runs, so CPU utilization rates are at an all-time low.

Virtualization doesn't just improve operational efficiencies: Many organizations initially adopt IT virtualization in order to save costs through server consolidation, but then realise that other benefits are possible when operating with a virtualized infrastructure, and so IT virtualization then becomes a strategic part of the overall IT plan.

Desktop and application streaming will become key components in the way most IT service providers deliver virtual desktops and applications to end users. The technology is not fully mature or robust, however, and service providers and customers shouldn't expect widespread use before 2010.

Network virtualization: The I/O throughput of virtualized systems is one aspect of IT virtualization that will improve significantly over the next two years, as software products gain assistance from developments at
the chip and server bus level.

Cloud computing: It's early days for the delivery of 'Desktop as a Service' from the public cloud, but already Tier 1 IT services vendors are anticipating interest from large enterprises and looking at ways they can integrate cloud-based services (both public and private) into their own managed services offerings.

Competitive landscape: VMware is the most successful vendor in the enterprise server virtualization market today. VMware - like its rivals - is building the management tools that are needed to handle virtual servers. Its message in more recent years has been about cloud computing. Microsoft, however, represents a considerable threat: its IT virtualization strategy is starting to come together and the company now holds a strong enough hand to be considered a player in the game.

Key findings of this report

Virtualization has significant cost benefits for organizations: server consolidation can yield a saving of £2 million over three years for an organization running 250 dual-core servers; and a power saving in the order of £78,000 per 1,000 PCs per year can be realized by moving from a full desktop PCs infrastructure to a server-hosted desktop virtualization solution.

The market for virtualization management solutions will be the most innovative and, potentially, lucrative in the near future.

Financial analysts estimate the market for IT virtualization could be worth over $19 billion.

As many as 16 million desktops could be virtualized by 2011.

The virtualization infrastructure management (VIM) market is undoubtedly going to be the most lucrative aspect of IT virtualization in the longer term, and so is perhaps the most dynamic and active part of the virtualization scene.

Demand for some inclusion of cloud services or proof-of-concept will be a part of 10 per cent to 15 per cent of enterprise requests for desktop services by 2012.

Key questions answered

- What's driving demand for virtualization within organizations?
- What are the barriers to widespread take-up?
- Which are the fastest growing segments of the virtualization market?
- Which are the largest?
- Who are the leading vendors? Which vendor represents the biggest competitive threat?
- How will the market for virtualization develop in the future?
Summary
Introduction
Defining virtualization
Why virtualization is more than a buzzword
The financial benefits
Strategic role for virtualization
Developments in the virtualization market
Storage virtualization
Server virtualization
Client/desktop virtualization
Application virtualization
Network virtualization
Virtualization management
Market outlook
Commoditization enters the virtualization market
Market challenges
Vendor actions

Chapter 3 Emerging trends in server and storage virtualization
Summary
Introduction
Server virtualization
The business case
How it works
Hypervisors
Hosted virtualization
Emerging trends in server virtualization
The time is ripe to move from testing to virtualization
Managing virtualized server environments
High-performance server virtualization
Expect more partnerships between emulation and blade centers
Microsoft makes its entrance
The future for Linux vendors
Storage virtualization
The business case
Emerging trends in storage virtualization
A maturing market
New business drivers
Demand grows for file-based virtualization
Server virtualization and iSCSI work hand in hand
Server and storage virtualization increasingly viewed as complementary technologies

Chapter 4 Emerging trends in client/desktop virtualization
Summary
The business case
Market development
As many as 16 million desktops could be virtualized by 2011
The limitations of thin clients
HVD
Limitations of HVD
Virtualizing the desktop and application delivery has different challenges to server and storage virtualization
Emerging trends in client/desktop virtualization
VDI now a common accepted term for centralized server-based desktop virtualization
Combining the benefits of server and desktop virtualization
The emergence of the Bring Your Own Computer model
Developments in storage and image optimization could increase take-up of VDI
Desktop as a service: an alternative to in-house VDI?
CIOs should investigate the new generation of desktop virtualization software tools
There will be no one set desktop PC model in the future
The limitations of VDI
VDI isn’t necessarily suited to large-scale deployments
VDI is well suited to mid-market companies
Chapter 5 Emerging trends in application virtualization

Summary
The business case
Application virtualization
Market development
The benefits of application virtualization
Application virtualization in action: case studies
Flexible application delivery at Fontys University
Increasing processing capacity for complex applications at BNP Paribas
Emerging trends in application virtualization
Interest in application virtualization amongst vendors heats up
Combining desktop and application virtualization
Application virtualization inside presentation virtualization
The limitations of application virtualization

Chapter 6 Emerging trends in network virtualization

Summary
The business case
Virtual private networking (VPN)
Virtual LAN technologies
Network virtualization
Market development
Network virtualization in action: case studies
Creating a virtual network infrastructure at Zurich Airport
Emerging trends in network virtualization
Network and I/O virtualization still a nascent area of development
More network virtualization vendors 'standardize' their offering
The network of the future: an integrated platform

Chapter 7 Future roadmap for virtualization

Summary
Introduction
Back-up and disaster recovery
Automating virtualization management
The SMB opportunity
Cloud computing
Cloud computing and virtualization
Opening the market to shared services

Chapter 8 Pitfalls to virtualization

Summary
Introduction
The pitfalls
Server sprawl
Tackling server sprawl
Potential conflicts from resource sharing
Software provisioning
Non-standardization of protocols, formats, and programming interfaces
Software licensing and auditing
Users test the virtualization waters
Security
Virtual security
Securing the virtual network
Securing virtual network appliances
New risks introduced by virtualization
Security steps for virtualized server environments
Use a bare metal hypervisor for live system deployment
Securing each virtual machine
Configuration and change control
Virtual machine templates
Access control
Secure idle virtual machines
Secure virtualized clients
Configuration and audit management
Protecting stored VM images
Securing mobile devices

Chapter 9 The competitive vendor landscape
Summary
Introduction
Server virtualization vendors
Storage virtualization vendors
Desktop virtualization vendors
Application virtualization vendors
Network virtualization vendors
Vendor strategies
Major players
VMware
Microsoft
Citrix
Citrix and Microsoft
System management players
Sun Microsystems
BMC
CA
HP
IBM
Cisco Systems
Other vendors
Red Hat
Oracle
Symantec
Index

List of Figures
Figure 2.1: Virtualization promises to increase resource utilization
Figure 2.2: Virtualization adoption
Figure 3.3: Hypervisors enable server virtualization
Figure 4.4: How users access a virtual desktop
Figure 5.5: How application virtualization works
Figure 6.6: Virtual networking – VMware ESX Server
Figure 7.7: Virtualization offers low cost disaster recovery
Figure 7.8: A conceptual model of cloud computing
Figure 8.9: Physical server sprawl presents a challenge to businesses
Figure 8.10: Securing each virtual machine - VMsafe
Figure 9.11: VMware’s virtual infrastructure
Figure 9.12: VMware squares up to Microsoft
Figure 9.13: CA survey of large enterprises – virtual server management needs are not being met
Figure 9.14: System management players summary

List of Tables
Table 2.1: A summary of the benefits of virtualization
Table 4.2: The potential savings
Table 5.3: Application problems plague organizations

Ordering:
Order Online - http://www.researchandmarkets.com/reports/1096238/
Order by Fax - using the form below
Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct and select the format(s) you require.

Product Name: The Future of Virtualization: Emerging Trends and the Evolving Vendor Landscape
Web Address: http://www.researchandmarkets.com/reports/1096238/
Office Code: SCEJDY8G

Product Formats
Please select the product formats and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy:</td>
<td>USD 2975 + USD 56 Shipping/Handling</td>
</tr>
<tr>
<td>Electronic (PDF) - Single User:</td>
<td>USD 2875</td>
</tr>
<tr>
<td>Electronic (PDF) - Enterprisewide:</td>
<td>USD 10781</td>
</tr>
</tbody>
</table>

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: Mr  [ ]  Mrs  [ ]  Dr  [ ]  Miss  [ ]  Ms  [ ]  Prof  [ ]
First Name: ___________________________________________  Last Name: ___________________________________________
Email Address: * _________________________________________
Job Title: ______________________________________________
Organisation: __________________________________________
Address: _______________________________________________
City: ___________________________________________________
Postal / Zip Code: _______________________________________
Country: _______________________________________________
Phone Number: __________________________________________
Fax Number: ____________________________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ___________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp