Virtual Client Solution: Desktop Virtualization

Powered by eX5 and VMware View

June 29, 2010
## Agenda

1. Virtual client solution overview
2. Addressing companies’ pain points
3. IBM’s Smart Business Desktop Cloud & VCS
4. VMware View 4 with IBM System x and BladeCenter
5. Benefits of Virtual Client
6. Desktop Virtualization and the power of eX5
IBM Virtual Client Solution - VCS

PC
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Customer Pain Points

**PC security challenges**
- Data/infrastructure risks
- Patch compliance
- Regulations
- Viruses

**Infrastructure complexity**
- Multiple platform models
- Refresh cycles
- Standardization and availability
- Image Management

**Rising management costs**
- Deployment
- Support
- Controlling/tracking IT assets
- Unpredictable IT costs
- Power & Cooling

**Distributed workforce**
- Outsourcing and off-shoring
- Mobile and remote workers

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**Client Virtualization:**
- Enhanced security
- Reduced complexity
- Lower TCO
- Increased availability, productivity and user access
IBM Smart Business Desktop Cloud
Moving compute workloads off desktops and onto servers…

Alternative Desktop Spectrum

Shared Services
LAN/WAN based Solution

IBM Content
-Sys x Server
-GTS Planning, design, integration services

Partner Content
-Wyse thin clients
-Partner implementation Services

Channel
-IBM
-IBM resellers

Virtual Desktops (aka VCS)
LAN/WAN based Solution

IBM Content
-Sys x Server, storage
-GTS Planning, design, integration services

Partner Content
-VMware vSphere, VMware View
-Wyse thin clients
-Partner implementation Services

Channel
-IBM
-IBM resellers

OS streaming
LAN based Solution

IBM Content
-Sys x Server
-GTS Planning, design, integration services

Partner Content
-Wyse full streaming client
-Partner implementation Services

Channel
-IBM
-IBM resellers
Desktop Consolidation Market

Hosted Workstations

Virtual Desktops

Shared Services

Hosted Workstations

Virtual Desktops

Shared Services

New Generation Client Computing with Virtual Client Solution
Addressing the Desktop Dilemma with VCS

**User Requirements**
- Personalized Desktops that follow them
- Flexible access anywhere using multiple devices
- Desktop Biz Continuity & Disaster Recovery
- Legacy, Win32, Web apps work well together
- Rich Application Interface

**IT Requirements**
- Manage disparate desktop images easily
- Manage explosion in multitude of devices
- Provide secure, continuous access to desktops, apps
- Manage Legacy, Win32 and Web apps
- Lower management costs

Increase Security and Reduce Costs without Sacrificing End User Productivity
Desktop virtualization is the answer now with VMware View 4 and IBM System x and BladeCenter Servers

- Lower TCO by 50%
- Ease Windows 7 migration
- Technology is ready
- User adoption on the rise
- Broad partner ecosystem support

“...Conditions are ripe for virtual PCs…”
—Wall Street Journal
Breakthrough user experience with VMware View 4

- PCoIP - Built for desktops
- Adaptive protocol designed for LAN and WAN
- End-to-end software solution with optional hardware
- Best desktop experience from task worker to power user
- Adapts to use case
VMware View 4: Best user experience across broadest use cases
IBM & View 4: Breakthrough acquisition cost and TCO

**Total Acquisition Cost Per User**
- $1200
- $1000
- $800
- $600
- $400
- $200

**Time**
- 2009

**Acquisition cost less than $800 per user**

**Traditional PC vs VMware View TCO Comparison**
- VMware View $610 less per user per year - IDC

Source: IDC White Paper 2009
IBM & VMware View 4 + vSphere: Breakthrough Scalability

**Density**
- Highest VM density x86 servers for desktop workloads
- Reduces VM memory requirements for better consolidation and reduced costs

**Scalability**
- Optimized for enterprise desktop delivery
- Automatically balance desktops for optimal performance
- Industry leading system scalability

**Manageability**
- Manage more than 1,000 hosts and up to 10,000 VMs per View instance
- Leverages eX5 industry leading manageability features like remote repurposing and automatic recovery.
Device-centric computing is the problem
Components (Apps, OS, profile and data) bound to device
Virtualization unlocks components
Freedom for users, efficiency and control for IT
Desktop virtualization: Deliver desktops as a managed service
Benefits of delivering desktops as a managed service

IT Control

- Desktops and data are secure in datacenter
- Manage from a central location
- Reduced Costs

End-User Freedom

- Desktops tied to end user identity not devices
- Applications and data available 24/7
- Rich desktop experience
Where do the cost savings come from?

**CAPEX Savings**
- Lower overall Hardware cost
- Concurrent user pricing
- Delayed Hardware Refresh

**OPEX Savings**
- Average 50% fewer help desk calls
- 55% reduced desktop management time
- Ability to provision users in minutes
- Patch or update from a single image

**Increased Productivity**
- 68% reduced end-user downtime
- Automated desktop and data backup

* Customer examples compiled from typical cases in the industry
Power IBM’s Smart Business Desktop Cloud with eX5 and VMware View 4 – Built to deliver desktops as a managed service

Platform
VMware vSphere for desktops

Management
VMware View Manager
Vmware View Composer
VMware ThinApp

User Experience
PCoIP
Print
Multi-monitor display
Multimedia
USB redirection
VMware View 4: Seamless Integration with vSphere

- Most widely deployed virtualization platform
- Tuned and optimized specifically for hosting virtual desktops
  - Enterprise levels of scale for the View environment
  - High availability to keep desktops running 24/7 for end-user access
  - High levels of VM density for reduced costs and simplified management
IBM and VMware: Providing higher levels of desktop availability

- **Reduce downtime for desktops**
  - High Availability (HA)
  - Flex Node
  - VMotion
  - Storage VMotion
  - Fault Tolerance

- **Protect critical data and information**
  - Automated backup and data sync
Enterprise class scalability with eX5 and vCenter

- Manage more than 1,000 hosts and up to 10,000 VMs per vCenter instance
- Industry leading server scalability on 2 socket, 4 socket and blades servers
- Save and replicate server profile configurations for faster virtual desktop deployments
VCS: Optimize for desktop delivery

- High VM density for desktop workloads – optimized with highly-scalable IBM eX5 servers
- Automatically balance desktops across servers for optimal performance
- Tuned for large concurrent VM boots
- Optimized for VM suspends and resumes to ensure desktop responsiveness
- Reduce VM memory requirements for better consolidation and reduced costs
Single administrative interface

View Manager – simple web based interface to create desktops, entitle users, set policies and more

VMware View 4.0

5 steps to implement

- Create SQL DB
- Install View Composer
- Install Connection Server
- Define CS Admin
- Install License
Provision desktops in minutes with VMware View 4

- Automate provisioning from a template
- On-demand provisioning
- Multiple types of desktops
  - Persistent, Non-persistent, Individual
- Apply group policies
Secure and Scalable support for desktops and users

- Scalable for large enterprise deployments
- Data stored centrally
- SSL encrypted connections
- Security Server
- Integration with SecurID for two-factor authentication
- Single Sign On Support
  - Smart Card
  - Proximity Card
  - Biometric authentication
Optimize storage with View Composer

Traditional VDI

View Composer

VMware View helps reduce storage costs by 70%
Flexible access to desktops from multiple devices

- **Traditional PC/Laptop**
  - Windows or repurposed PCs

- **Browser Access**
  - Browser access on Windows, Linux, Mac

- **Thin Client Support**
  - Broad industry support
Use Cases:
Customers use Desktop Virtualization in a variety of ways

- **Provide a continuous availability of desktops**
- **Ensure highly available desktop**
- **Provide a cost-effective, simpler, and more reliable disaster recovery solution**

- **Eliminate the need for moves, adds, or changes**
- **Allow third parties to access corporate applications in secure, controlled way**
- **Expedite integration of companies in mergers and acquisition scenarios**

- **Provide offshore developers control while keeping IP in the data center**
- **Remove the need of IT resources at branch**
- **Manage remotely – desktops centralized at branch or in corporate datacenter**

- **Reduce high costs, and application compatibility with OS migrations**
- **Extend life of existing desktop hardware to access virtual Windows PC desktops**
- **Reduce application conflicts and costly application porting**
Windows 7 Migration: Ready, Set, Go …

- Virtualize Windows XP or Vista applications using ThinApp
- Start Windows 7 Pilot
- Use VMware View to deploy Windows 7 as virtual desktop with full application compatibility
# Typical Direct Savings Potential Estimates

<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Estimate</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deskside PC Support</td>
<td>Up to 90%</td>
<td>Desk-side support, other than for hardware failures, is eliminated</td>
<td>(Source: Gartner Research)</td>
</tr>
<tr>
<td>Security &amp; User Admin</td>
<td>Up to 75%</td>
<td>Administration is policy-based and authorized users can be allowed to admin</td>
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<td></td>
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<td>ister their own entitlements (rule-based, delegated admin)</td>
<td></td>
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<tr>
<td>Power &amp; Cooling</td>
<td>Up to 60%</td>
<td>Blade and Thin Client solution gives maximum power efficiency</td>
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Real World Power Savings with Virtual Clients

Virtual Clients use much less power than traditional desktop deployments

<table>
<thead>
<tr>
<th>Scenario 1: 100 users</th>
<th></th>
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<tbody>
<tr>
<td>• Traditional desktop power consumption*: <strong>15,000 watts</strong></td>
<td></td>
</tr>
<tr>
<td>• Virtual Client power consumption**: <strong>1,948 watts</strong></td>
<td></td>
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<tr>
<td>• Estimated Savings**** ~$1,300 per year!</td>
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<table>
<thead>
<tr>
<th>Scenario 2: 250 users</th>
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<tbody>
<tr>
<td>• Traditional desktop power consumption*: <strong>37,500 watts</strong></td>
<td></td>
</tr>
<tr>
<td>• Virtual Client power consumption***: <strong>3,912 watts</strong></td>
<td></td>
</tr>
<tr>
<td>• Estimated Savings**** ~$4,070 per year!</td>
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90% power reduction !!!

Note: Configuration details in back-up charts
IBM eX5 Hardware Platforms: Desktop Virtualization Foundation

Platform flexibility, industry-leading performance and reliability

**BladeCenter HX5**
- New HX5 with Max5 memory expansion enables best in class price/performance for VDI
- Scalable to 4S, 40 DIMM or 4S, 80 DIMM

**System x3690 X5**
- x3690 X5: Offers best density for enterprise computing. Most popular rack server for VDI deployments
- Up to 16x 2.5” HDDs or 32x 1.8” SSD
- Scalable to 4S, 64 DIMM or 128 DIMM
- 25% memory cost reduction

**System x3850 X5**
- x3850 X5: Most VM-dense rack-based server
- 64 DDR3 DIMMs
- Scalable to 8S, 192 DIMM
- Able to host up to 320 VDI users on single base system

**VDI Highlights:**

**Memory Cost Savings**
- Task users: 10%+
- Power users: 25%+
# IBM Virtual Client Solution

## Achieving Security and Value through Client Virtualization

### Reduce Cost, Reduce Risk, Reduce Complexity...

<table>
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<tr>
<th>Key Features</th>
<th>Customer Benefits</th>
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</table>
| **Enhanced Security** | - Extends IT and security policies from enterprise data center to end user  
- End users access to their desktops, without the data ever leaving your datacenter  
- Zero liability exposure if desktops are lost or stolen  
- Ensure ALL desktops are always up to date with the latest security patches and antivirus updates |
| **Simplify deployment** | - Same or less cost (per user) than a PC  
- Pay as you grow with flex node technology on System x eX5 servers  
- Remote manageability of both physical and virtual system from same source  
- Migrate to a new OS overnight  
- Planning, design, migration, and integration services |
| **Lower TCO** | - Reduce your desktop power consumption by up to 90%  
- Highest memory density in the industry, allows for memory cost savings of up to 25%  
- Multiple entry points, aligned to clients’ needs and situation  
- Eliminate the need for desk side desktop support |
| **Enterprise Class** | - Enterprise class servers at multiple entry points, aligned to clients’ needs and situation  
- Rapidly scale to meet changing business requirements  
- Flexibility, Reliability  
- Best in class services |

### VDI Highlights

- Highest number of enterprise class server platforms  
- Highest Density of enterprise class servers  
- Highest memory density for any Blade server in the market  
- Highest Memory Density for a 2 socket rack server  
- Highest user density for a base x86 system  
- eX5 Memory Cost Savings  
  - Task Users: 10%+  
  - Power Users: 25%+  
- Flexibility  
  - Remotely repurpose eX5 systems using Flex node to enable customers to maximize utilization of their systems during “off” hours

### Where to win

**Target Industries:** Education, Healthcare / Insurance, Financial Sector, Retail & GB  
**Target Customers:** Branch Offices, Call centers, Outsourced/Remote development, Local Governments, K-12 schools, Universities computer labs, Remote Offices, Retail Stores
Key Messages

1. Physical PC’s and data are at risk
   - Client virtualization secures data and the device

2. Traditional PCs are expensive to run
   - Client virtualization lowers cost

3. Users want their own desktop experience
   - IBM Virtual Client allows them to keep it
Thank you!