Virtualization

Enabling Innovation

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14, February, 2007
Virtualization Adoption Set to Cross the Chasm

“35% of customers plan to implement storage virtualization over the next 12 months . . . Virtualization becoming a key factor in storage purchasing decisions.”

Goldman Sachs IT Survey, February 2006

Source: STG MI (1Q06)
What is Virtualization?

Logical representation of resources not constrained by physical limitations

- Create many virtual resources within single physical device
- Reach beyond the box – see and manage many virtual resources as one
- Dynamically change and adjust across the infrastructure
Virtualization Scope

**Single System**
- Common hardware; multiple OS; partitions; virtual I/O and networks

**Extended System**
- Heterogeneous servers, storage and networks; application-based Grids and networks

**Extended Enterprise**
- Inter- and Intra-enterprise Grids and Global Fabrics
Virtualization Motivators

- Reduce costs: 57%
- Simplify IT infrastructure & admin: 48%
- Increase server utilization: 48%
- Increase scalability of infrastructure: 29%
- Enhance resilience & reliability: 25%
- Improve flexibility to business goals and cycles: 16%
- Improve app performance: 15%
- Automate IT operations: 11%
- Accelerate App Development & deployment: 11%
- Have a single view on the IT environment: 10%
- Manage a heterogeneous server environment: 9%
- Manage a heterogeneous storage environment: 6%
- What apps on what servers. How they relate.: 5%
- Enable a SOA: 4%
- Other: 1%

Source: STG MI (1Q06)
Total cost of ownership (TCO) for servers continues to rise, even as total server spend remains flat—and operational costs are the reason.
Inhibitors to Virtualization Adoption...

For those who have *No* plans to implement

- **No need**: 67%
- **Lack of skills**: 27%
- **Quantify value**: 25%
- **No clear vision from vendors**: 13%
- **Org. barriers**: 13%
- **Chargeback, billing end users**: 5%
- **Product availability**: 3%
- **Other**: 8%

Source: STG MI (1Q06)
Value of a Virtualized Infrastructure

- **Improve TCO**
  - Decrease management cost
  - Increase asset utilization
  - Link infrastructure performance to business goals

- **Access Through Shared Infrastructure**
  - Leverage common tools across many systems
  - Improve business resilience and security
  - Establish Service Oriented Infrastructure Foundation

- **Increase Flexibility**
  - Create pools of system resources
  - Maintain freedom of choice with open standards
  - Simplify by masking complexity
Virtualization in Action
Virtualization Platform

Key Principles
- Comprehensive
- Open
- Heterogeneous
- Common skills

Workload Virtualization
Information Virtualization

Standards and Open Interfaces

Virtual Access and Management

Resource Virtualizers
- Servers
- Storage
- Networks
Built on Standards

Standards and Open Source

- Power.org
- Blade.org
- OASIS
- Java
- GGF
- W3C
- SNIA
- Xen
- OSDL
- Globus
- OSGi
- DMTF
- Open Group
- Eclipse
- Apache
- Trusted Computing Group
- IETF
Virtualization Leadership

- IBM can virtualize up to 80% of a client’s infrastructure
- Over 30,000 UNIX, mainframe, and System i customers exploiting systems-level virtualization
- System x customers deploy over 1,000 virtual servers a day
- IBM is the leading reseller of VMware
- 2,000 storage virtualization customers, +5 every day
- Over 3,400 Virtual Tape Systems supporting 1 Exabyte of data
- Over 500 grid implementations
- Hundreds of in-depth TCO studies

IBM has had the privilege of working with thousands of clients over the past four decades to help them exploit our industry leading capabilities.
Summary

- Improve TCO
- Access Through Shared Infrastructure
- Increase Flexibility

- Develop a strategy
  … think holistically
- Start simple
  … start now
- Maintain flexibility
  … standards are key
- Select a partner with experience

ibm.com/systems/virtualization
Thank You!

Any Questions?
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