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Transform Your Data Center with an IBM Cloud

Agenda

Cloud Defined

Market Insights

IBM's Cloud Portfolio

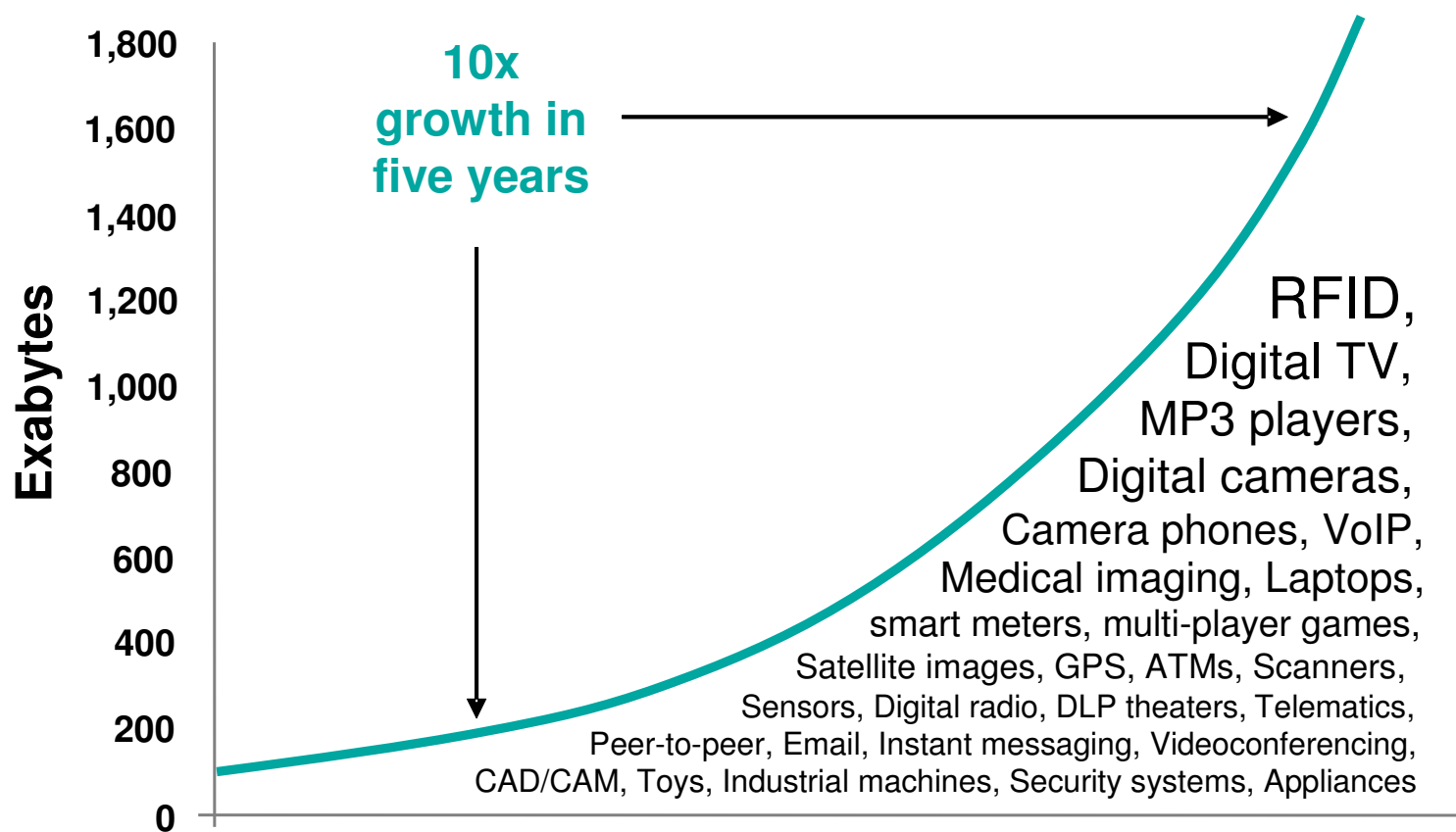Where to Get Started

      Development & Test

      Desktop virtualization

      Storage

      Collaboration/e-Mail

Summary

By 2011, the world will be 10 times more instrumented then it was in 2006. Internet connected devices will leap from 500M to 1 Trillion.

10x growth in five years

RFID,
Digital TV,
MP3 players,
Digital cameras,
Camera phones, VoIP,
Medical imaging, Laptops,
smart meters, multi-player games,
Satellite images, GPS, ATMs, Scanners,
Sensors, Digital radio, DLP theaters, Telematics,
Peer-to-peer, Email, Instant messaging, Videoconferencing,
CAD/CAM, Toys, Industrial machines, Security systems, Appliances

Exabytes (y-axis: 0, 200, 400, 600, 800, 1,000, 1,200, 1,400, 1,600, 1,800)

Approximately 70% of the digital universe is created by individuals, **but enterprises are responsible for 85%** of the security, privacy, reliability, and compliance.

Operations have industrialized to become smarter

Telcos automate traffic through switches to assure service and lower cost.

Manufacturers use robotics to improve quality and lower cost.

Banks use automated teller machines to improve service and lower cost.

IT also needs to become *smarter* … about delivering "*services*"

- The growing complexity of IT systems and soon a trillion connected things demand that sprawling processes become standardized services that are efficient, secure and easy to access.

- A Service Management System will provide **_visibility, control and automation_** across IT and business services to ensure consistent delivery.

- **"Cloud Computing"** describes a new consumption and delivery model for IT services

Cloud computing defined

A user experience and a business model

- Standardized offerings
- Rapidly provisioned
- Flexibly priced

An infrastructure management and services delivery method

- Virtualized resources
- Managed as a single large resource
- Delivering services with elastic scaling

Similar to Banking ATMs and Retail Point of Sale, Cloud is Driven by:

- Self-Service
- Economies of Scale
- Technology Advancement

Banking

IT

Retail

Cloud Computing - Strategic View

Four major categories of cloud computing services exist.

Industry-Specific Processes   Business Travel

Employee Benefits Management   Procurement

Business Process-as-a-Service

Financials   CRM

Industry Applications

Collaboration   ERP

Software-as-a-Service   HR
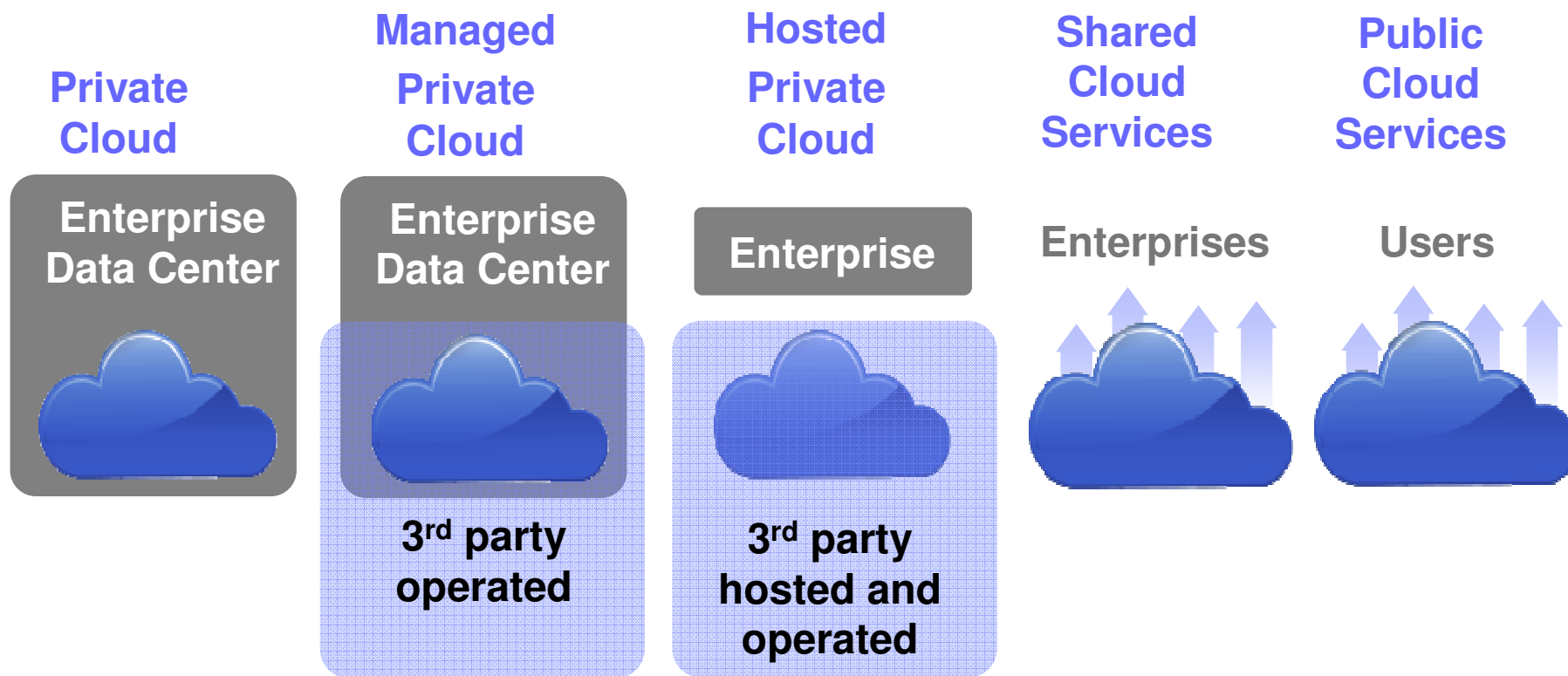
Middleware   Web 2.0 Runtime   Service Mgmt & Security

Databases   Java Runtime   Development Tooling

Platform-as-a-Service

Servers   Shared, Virtualized Dynamic Provisioning   Data Center Fabric

Storage   Networking

Infrastructure-as-a-Service

Multiple deployment models are possible.

Private Cloud	Managed Private Cloud	Hosted Private Cloud	Shared Cloud Services	Public Cloud Services
Enterprise Data Center	**Enterprise Data Center**	**Enterprise**	**Enterprises**	**Users**
	3rd party operated	**3rd party hosted and operated**		

IBM

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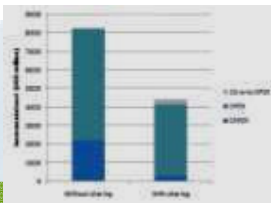
Summary

Source: If applicable, describe source origin

Market Insights:

Cost savings and faster time to value are the leading reasons why companies consider cloud.

Lower IT Operating and Capital Costs

Capex to Opex

Standardization enabled by integrated service management

Cost Savings + **Innovation** = **Value Creation**

Removing IT complexity from end users

Fast access to current technology and powerful computing

Fine grained IT services with rapid provisioning

Source: IBM Market Insights, *Cloud Computing Research*, July 2009. n=362–1,029, depending on the workload.

Market Insights:
Universal interest exists, across all industries and geographies.

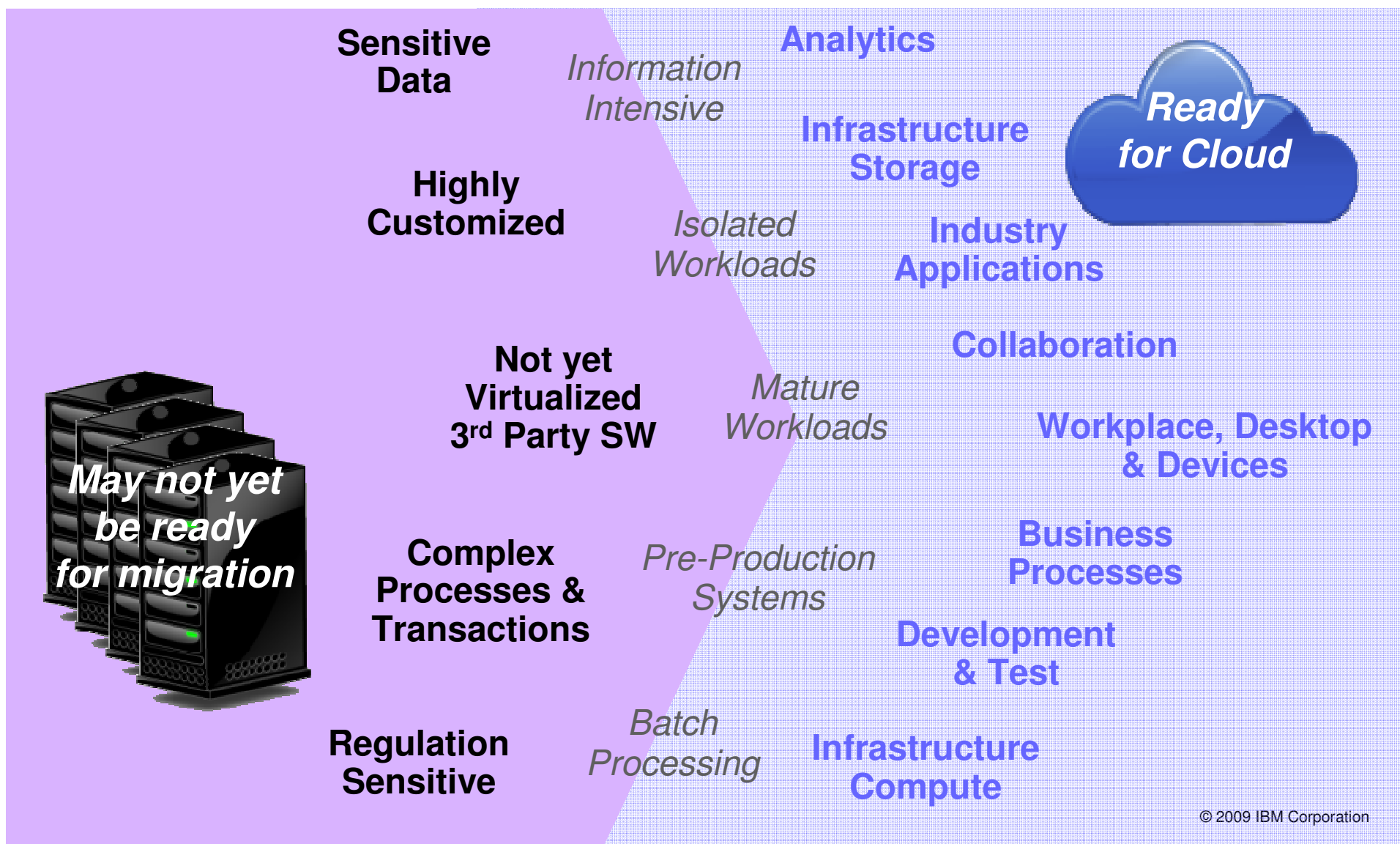|	
Cost takeout is cited as the top value consideration	*Cost savings is the key driver of public cloud adoption with clients seeking a 20 - 30% improvement in order to adopt*
Security and control are top concerns	*Over two-thirds say security is the top inhibitor to their use of public clouds*
Workloads and patterns are emerging	*Almost all workloads require connection to other IT services* *Collaboration and analytics meta-patterns are occurring*
Industries with the greatest cost pressures lead adoption	*Over 50% of clients in Retail, Manufacturing, Utilities, Government have cloud projects budgeted or in process*

Source: IBM Market Insights, *Cloud Computing Research*, July 2009. n=362–1,029, depending on the workload.

Market Insights:

Some workloads are ready for cloud delivery,

Sensitive Data

Information Intensive

Analytics

Infrastructure Storage

Ready for Cloud

Highly Customized

Isolated Workloads

Industry Applications

May not yet be ready for migration

Not yet Virtualized 3rd Party SW

Mature Workloads

Collaboration

Workplace, Desktop & Devices

Complex Processes & Transactions

Pre-Production Systems

Business Processes

Development & Test

Regulation Sensitive

Batch Processing

Infrastructure Compute

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Where to Get Started

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   Desktop virtualization

   Storage

   Collaboration/e-Mail

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IBM's cloud portfolio addresses the 6 strategic plays and differentiates IBM's offerings.

Four categories of offerings across IBM's brands:

- **IBM Smart Business On the IBM Cloud (Public Cloud Services)**

- **IBM Smart Business Cloud (Private Cloud Services)**

- **IBM Business and Technology Consulting Services**

- **IBM Software and Hardware Technologies**

IBM Differentiators

Workload optimization
Rapid return-on-investment and productivity gain
Deployment choices
Public, private, hybrid models fit client IT needs
Integrated service management
Lowers operational costs, drives efficiency, enhances security

IBM Cloud Portfolio – Commercial Clients
Public and Private Cloud Services

Workload → Deployment	Development & Test	Infrastructure Compute & Platform	Infrastructure Storage	Desktop & Devices	Analytics	Collaboration	Business Services
Smart Business on the IBM Cloud *Standardized services on the IBM Cloud*	Smart Business Development and Test on the IBM Cloud	Smart Business Compute on the IBM Cloud Managed Security Services Tivoli Live	Information Protection Services	Smart Business Desktop on the IBM Cloud		LotusLive LotusLive iNotes LotusLive Notes	BPM Blueworks Smart Business Expense Reporting (GERS)
	IBM Software on the IBM Cloud WebSphere Application Server, WebSphere sMash, WebSphere Portal, DB2, Informix Dynamic Server, Lotus Domino, Lotus Web Content Mgmt			Smart Business End User Support			
Smart Business Cloud *Private cloud services built and/or managed by IBM*	Smart Business Development and Test Cloud	Cast Iron	Smart Business Storage Cloud	Smart Business Desktop Cloud	Smart Analytics Cloud		

<u>IBM Cloud Portfolio</u>
Business and Technology Consulting Services for Cloud Computing

Plan	Build	Deliver
• **Strategy and Change Services for Cloud Adoption***	• **Testing Services for Cloud***	• **Resiliency Validation for Cloud Computing**
• **Strategy and Change Services for Cloud Providers***	• **Implementation Services for Cloud Computing**	• **Virtualization Security Solutions** (from IBM Internet Security Systems)
• **Cloud Rapid Assessment Tool** (no charge – online)	• **Security Consulting Services in Support of Cloud Computing**	• **Software Support Services – Enhanced Technical Support**
• **Cloud Exploration Workshop** (no charge)	• **Express Managed e-Mail Security and Express Managed Web Security**	• **Managed Support Services – Managed Technical Support**
• **Infrastructure Strategy and Design Services for Cloud Computing**		• **Software Support Services**
• **Resiliency Consulting Services**		• **Hardware Maintenance Services**
• **Data Center and Facilities Strategy Services**		• **Information Protection Services**
• **Data Center Family™ Solutions – Design Services**		
• **Networking Strategy and Optimization**		

* GBS Services

IBM Cloud Portfolio
Software and Hardware Technologies for Cloud Computing

Business Process-as-a-Service

Software-as-a-Service

Middleware
- WebSphere Application Server Hypervisor Edition
- WebSphere Cloudburst Appliance
- CastIron Appliance
- DB2
- Informix Enterprise Server
- System Z Solution Edition for Cloud Computing

Analytics
- Cognos 8 Business Intelligence

Service Management & Security
- Tivoli Service Automation Manager
- Virtual Server Security for VMWare
- Rational Quality Manager
- Rational AppScan

Development Tooling
- Rational Software Delivery Services
- Rational Asset Manager
- Rational System Architect
- Rational Requirements Composer
- Rational Project Conductor

Platform-as-a-Service

Server & Storage Systems
- System x with new ex5 technology
- Power Systems with POWER7
- System z
- Scale out NAS Storage Systems

Workload Optimized Systems
- IBM Cloudburst
- Smart Analytics System
- Information Archive

Infrastructure-as-a-Service

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Private clouds

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IBM CloudBurst

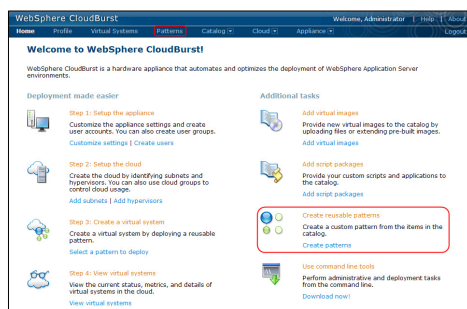*A Breakthrough in Service Delivery for Data Center Workloads with a fully configured pre-integrated system*

- For IT executives seeking a breakthrough in:
  - Delivery of service
  - Reduction in cost
  - Transformation of the data center into a Dynamic Infrastructure

- A complete system that integrates the service management software system with servers, storage, and Quickstart services, and financing to quickly enable a private cloud

- "Fit for purpose" based on the architectures required by specific workloads

Service Design

Service Subscription

Service Operations

Service Delivery

Service Activation
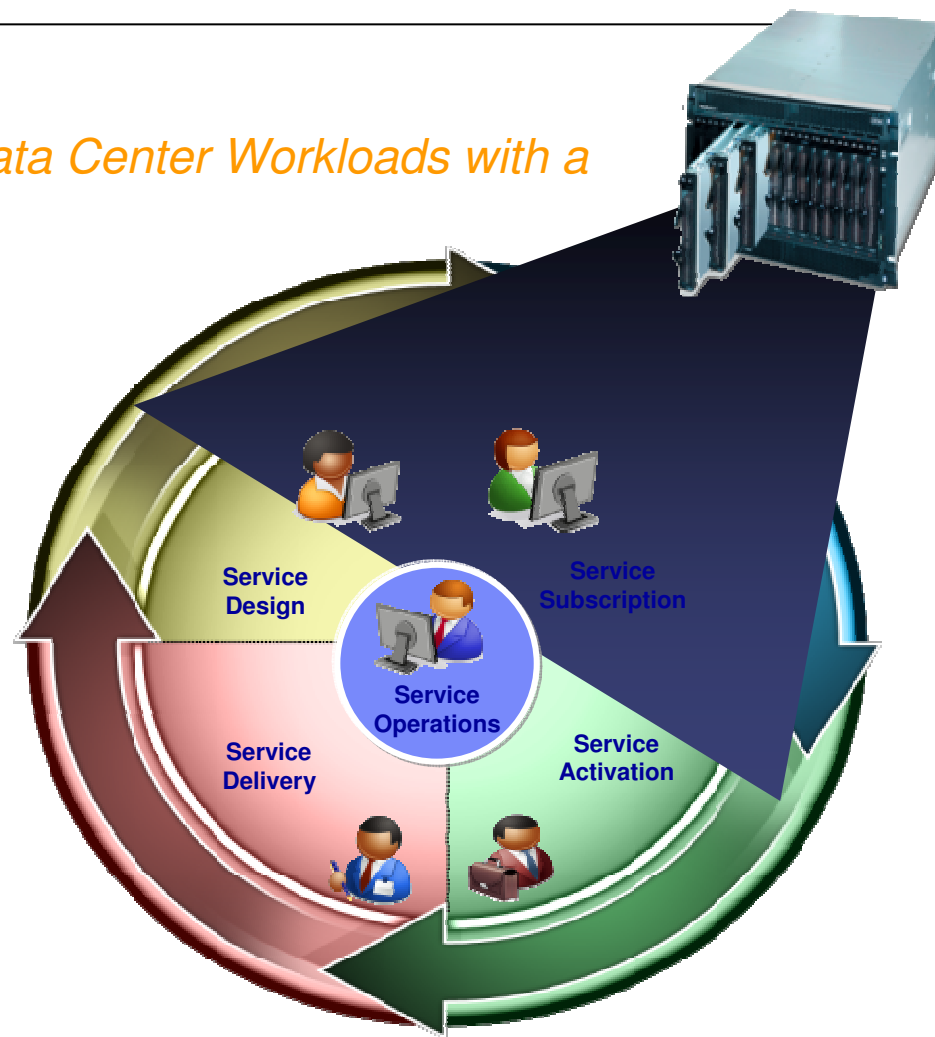
Hardware + Software + Services Starts at ~ $200k

WebSphere Clouds: 2 products

1) WebSphere CloudBurst Appliance (hardware)

2) WAS HV (Virtual Image-software)

2) CloudBurst dispenses WebSphere Application Server Hypervisor Edition Servers into a set of other machines

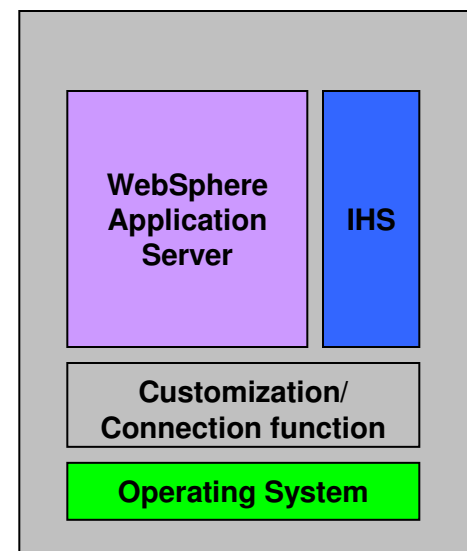**1) User requests WebSphere Application Server Hypervisor Edition Environment to be dispensed**

3) User can access WebSphere Application Server Hypervisor Edition Servers (Virtual Image)

WebSphere Application Server

IHS

Customization/ Connection function

Operating System

The WebSphere CloudBurst appliance dispenses these virtual images into a private cloud

IBM Smart Business Development and Test Cloud
A secure, private cloud environment clients can use to test applications before sending them to production

- Creates a more efficient test environment that improves productivity and reduces costs

- Includes an operating system, middleware, storage, network and virtual images, along with pre-integrated set of services, from planning through implementation

- Clients can leverage their existing systems or IBM's new CloudBurst

Development and Test Environments in the Cloud

Customer Benefits:

- **Reduce IT labor cost by 50% + - reduce labor for configuration, operations, management and monitoring of the test environment**

- **75% + Capital utlization improvement; Significant license cost reduction**

- **Reduce Test Provisioning cycle times from weeks to minutes**

- **Reduce risk and improve Quality- eliminate 30% + of all defects that come from faulty configurations.**

Smart Business Development and Test on the IBM Cloud
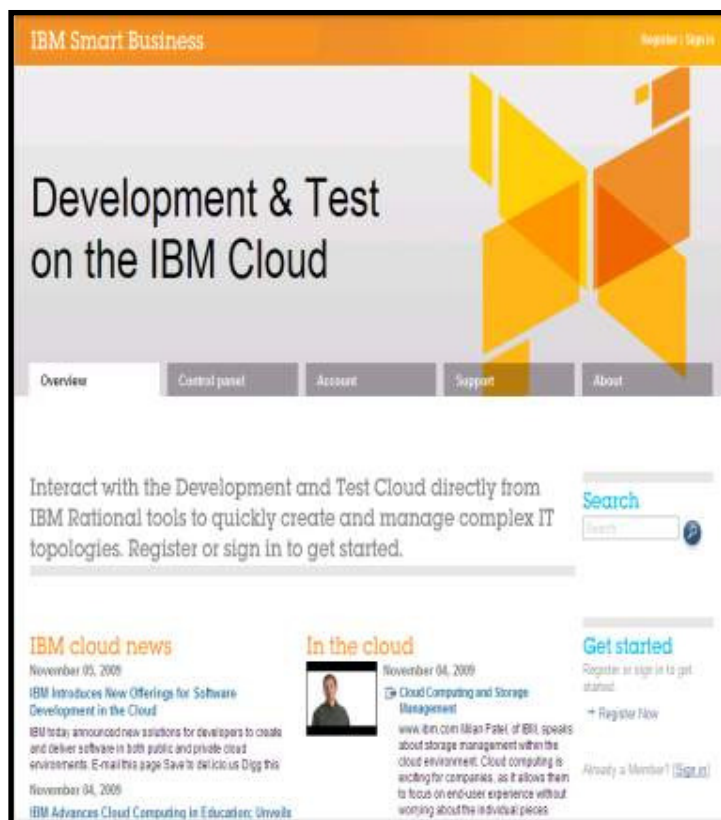
Usage-based, simple pricing with no hidden charges

For pricing, see:
Smart Business Development and Test on ibm.com

What is the service?

- A dynamic virtual development and test infrastructure service, designed for the enterprise, on the IBM Cloud

What is the client buying?

- Choice of virtual server configurations
- Option to add persistent storage charged per usage
- Network bandwidth charged per usage
- Choice of pre-configured software images
  - Rational Application Lifecycle Management software
  - Lotus, WebSphere, DB2 and Informix stacks

What payment options are available?

- Pay-as-you-go option (per VM hour charge)
- Shared Reserved option
  - 6 bundles (small, medium, large for 6 or 12 months)
  - Reserved capacity plus discounted usage rate

What support is available?

- Web-based forum for users to submit requests
- Premium support 24X7 *

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IBM Smart Business Desktop Cloud

Characterized by thin clients, with higher levels of security and resilience, improved backup and recovery…and reduced cost and complexity associated with managing the desktop/laptop environment

Integrating hardware, software and services in an innovative solution

- Allows clients to create a private cloud that enables internet-based PCs and other devices to access applications and data through a centrally managed computing environment

- Maintains highest levels of quality and security in accessing critical information remotely, from any device, anywhere

- Helps clients quickly scale their IT infrastructures to address business demands, while reducing cost and complexity

- Helps clients use up to 73 percent less power than traditional desktops and laptops

Available as two different offerings:

- Implementation only services
- Implementation and Managed services

Customer Benefits

- **Reduce deskside support costs by 85-90%**
- **Reduce help desk calls by 20-40%**
- **Reduce OS and application update costs**
- **Easily ensure desktop security and resiliency**
- **Use up to 73% less power over traditional fat client deployments**

IBM Smart Business Storage Cloud

Business Challenge: *Storage and Data Optimization*

- Speed deployment of storage applications
- Allow storage infrastructure to adapt dynamically to business requirements
- Improve cross-company collaboration and file/data sharing while controlling capital expenditures

Solution: *Scalable and Integrated IBM Storage Cloud*

- Lower the total cost of ownership related to enterprise storage, including:
  - Exceptional scalability in thruput and capacity
  - Dynamic Information Lifecycle Management
  - Multi tier storage support, including tape media
  - Rich set of services including management, hosting and expert services in data migration & performance tuning

Why IBM?

- Built on unique models and technology originally developed jointly in collaboration between IBM's own CIO and IBM Research

- Leading global skills and proven storage cloud computing environments for mission-critical business applications

Customer Example:
A telecommunications firm needed a highly scalable and cost-effective environment for providing an innovative new online media and content services to their users, allowing them to share photos, video and audio including unlimited media storage and unlimited uploads.

Start small and grow rapidly - the initial client solution consisted of 50 servers, 3TB of SAN storage, networking and 80TB of Scale out File Services storage. The client expects the dedicated storage cloud component to grow to in excess of 1 Petabyte within a short period and the number of servers to potentially grow to hundreds. This telecommunications firm found that SBSC dedicated storage cloud services offer a predictable cost model for planning and growth.

LotusLive Offerings

Web Conferencing

LotusLive Meetings
(Sametime Unyte Meeting)

Full-featured Web conferencing service includes polling, hand raising, record & playback.

- *Supports G1 languages*

Starting at $6 per user per month

LotusLive Events
(Sametime Unyte Events)

Internet-based event capabilities. Provides tools to create & manage webinars.

*Starting at $79 per user per month
Unlimited events*

**For pricing, see:
Lotus Live on the web**

Collaboration

LotusLive Engage

An integrated suite of Web collaboration and business networking solutions including:

- *On line Meetings*
- *Files*
- *Chat service*
- *Activities*
- *Survey Forms*
- *Live Charts*
- *Profiles and Contacts*

Starting at $8 per user per month

Lotus Live Connections

An integrated suite of Web collaboration and business networking solutions including:

- *Files*
- *Chat service*
- *Activities*
- *Profiles and Contacts*

Starting at $6 per user per month*

eMail

LotusLive Notes
(Lotus Notes Hosted Messaging)

Full-featured, dedicated hosted email service (rich client and browser)

- *Supports 27 Languages*
Add-ons

**LotusLive Mobile for Blackberry
LotusLive Sametime IM**

*Starting at $9 per user per month
Minimum 1000 authorized users*

LotusLive iNotes

Web-based Email service with personal calendar & shared contacts. Mobile sync capability.

Starting at $3 per user per month*

*Bundle Connections and iNotes for $7 per user per month

Other Cloud sessions this week at SHARE

What does Cloud have to do with me?
Wednesday 3:00 to 4:00, Room 201

Optimize Your Heterogeneous SOA Infrastructure

Thursday 8:00 to 9:00, Room 201

In Summary

- **Cloud economics and technologies are real**
  - **Clients can achieve significant ROI**
  - **Enterprises can speed innovation**
  - **Multiple deployment models will co-exist**
  - **Workloads will drive adoption**

- **IBM's portfolio supports Cloud requirements**
  - **Smart Business On the IBM Cloud Services**
  - **Smart Business Cloud Services**
  - **Business and Technology Consulting Services**
  - **Software and Hardware Technologies**

- **For most clients, three offerings are priorities**
  - **Development & Test Cloud**
  - **Desktop virtualization**
  - **Collaboration and e-Mail**

- **IBM has significant experience and credibility, starting with its own cloud implementation**