



WebSphere CloudBurst Appliance

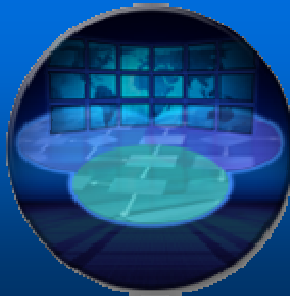
Better, Faster, Cheaper!

The Application Infrastructure Portfolio

Solution Sets

IBM Offerings

Application
Foundation



WebSphere Application Server Family
WebSphere sMash
CICS Transaction Server

Intelligent
Management



WebSphere CloudBurst Appliance
WebSphere Virtual Enterprise

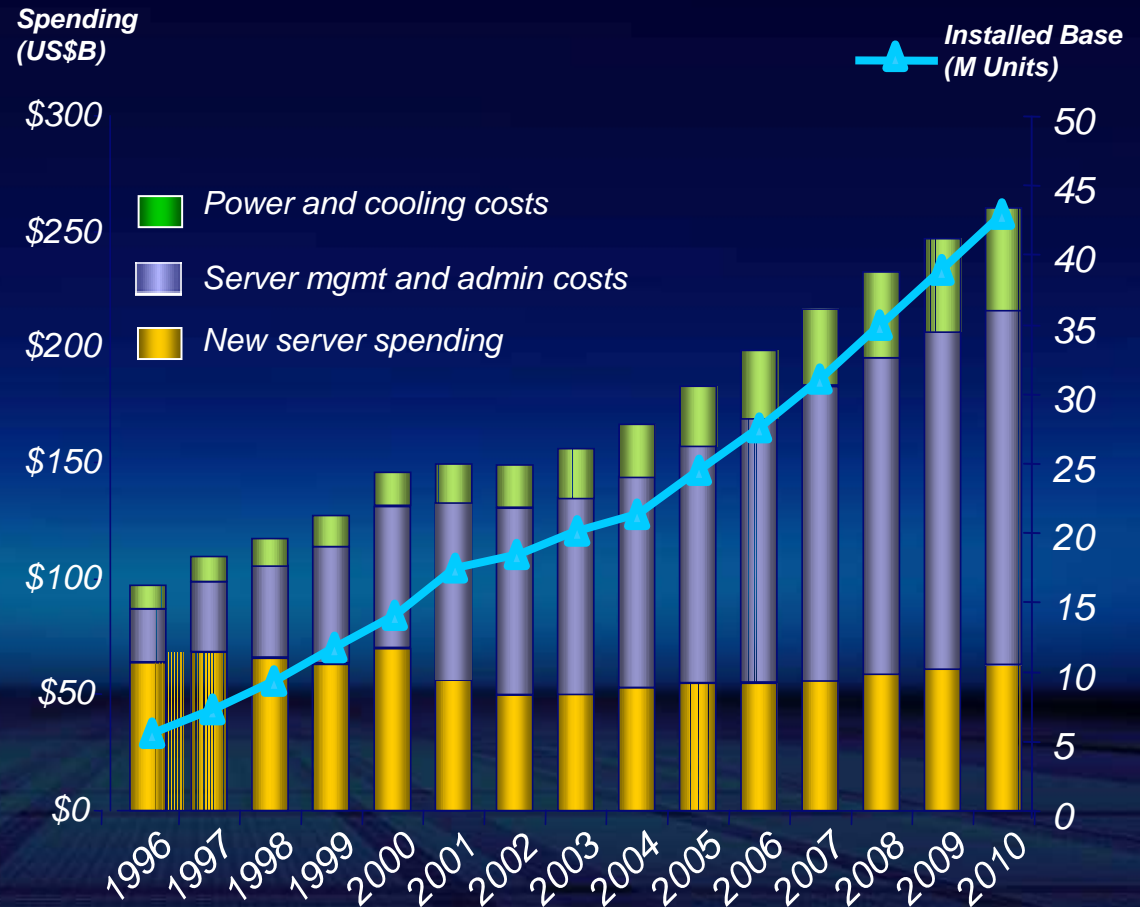
Extreme Transaction
Processing



WebSphere eXtreme Scale
WebSphere Compute Grid
WebSphere RealTime

IT costs are increasing

- Costs to manage systems has doubled since 2000
- Costs to power and cool systems has doubled since 2000
- Devices accessing data over networks doubling every 2.5 years
- Bandwidth consumed doubling every 1.5 years
- Data Doubling every 18 months¹
- Server processing capacity doubling every 3 years²
- 10G Ethernet ports tripling over the next 5 years



Source: IDC, 2008

¹WW TB Capacity Shipped on Enterprise Disk Storage Systems

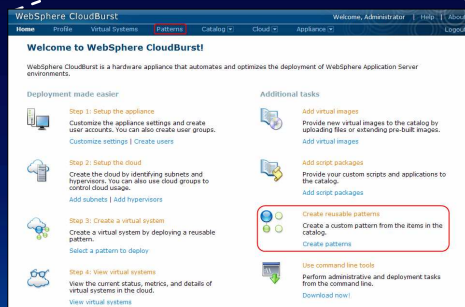
²Server processing consumption doubles every 3 years

What admin & management efficiencies can be made?

- The average lead time to get a new application environment up and running is 4-6 weeks
 - Approvals, procurement, shipment, HW installation, license procurement, OS installation, application installation, configuration
- 30% of bugs are introduced by inconsistent configurations
 - These bugs are often of the most difficult variety to detect
 - They often emerge when moving between dev/test, QA, production
- Because it's so expensive to set up an environment, there is an incentive to hold onto them even when no longer needed "just in case."
 - Future environments = new hardware, instead of recycling returned hardware, and this takes time and money

WebSphere Clouds: 2 products

1) WebSphere CloudBurst Appliance (hardware)



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

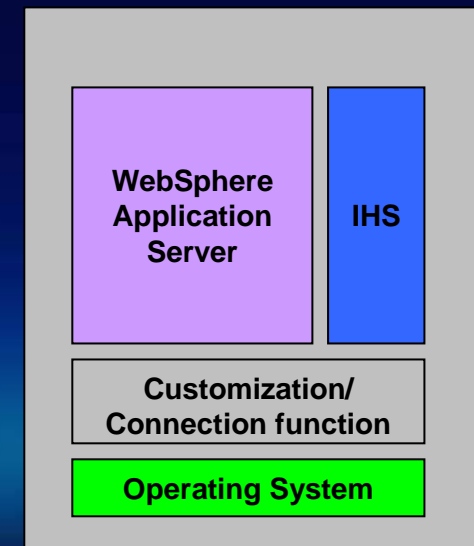


1) User requests WebSphere Application Server Hypervisor Edition Environment to be dispensed



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

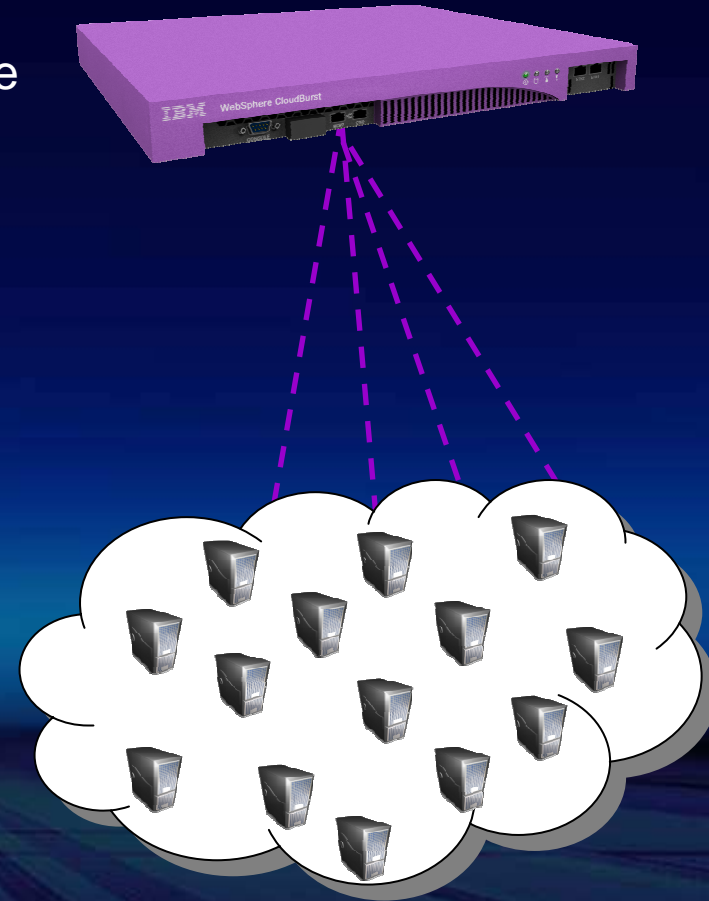
2) WAS HV (Virtual Image-software)



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

WebSphere CloudBurst Appliance

- Secure, self-service cloud management hardware appliance
- Unmatched WAS management (apply maintenance, federate cells, etc. - not black box)
- Dispenses hardened WAS patterns into a pool/cloud of virtualized hardware running a supported hypervisor e.g. VMware ESX or PowerVM.
- Enables consistent & repeatable deployment of application environments based on patterns
- Integrates with existing infrastructure through programmable REST APIs



What's new in WebSphere CloudBurst in 4Q09?

- **PowerVM supported as a deployment target**
 - Same patterns can be used on X86 and PowerVM by simply selecting the appropriate virtual image
 - Test on X86, go live on PowerVM, use WebSphere CloudBurst to manage it all!

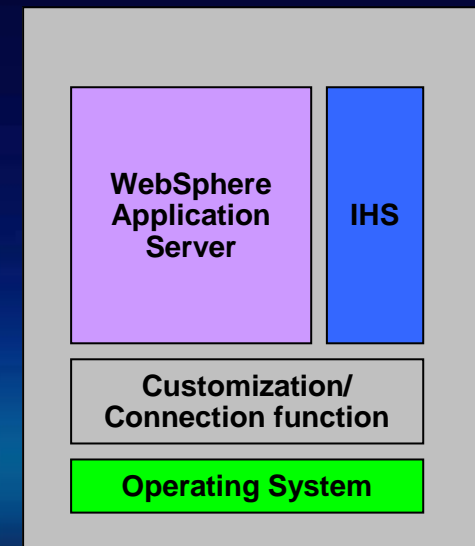
- **Export/Import virtual images and patterns**
 - Enables artifacts to be created/configured once, and then shared amongst multiple WebSphere CloudBurst Appliances throughout the enterprise/globe

- **DB2 trial image preloaded on appliance**

- **Integration w/ Tivoli Service Automation Manager (TSAM) & IBM CloudBurst**
 - WebSphere CloudBurst can be managed and controlled by TSAM.
 - Customers who utilize TSAM for general purpose provisioning can integrate WebSphere CloudBurst into their existing framework for consistency

WAS HyperVisor Edition (WAS HV)

- WAS shipped ready to run on a hypervisor
- No installation required (just run and choose a profile)
- Single virtual image capable of supporting single servers or clusters
- WAS v6.1 and v7 available at GA
- Full support for WAS Feature Packs
- Maintenance, support, and fixes through IBM for both WAS and Operating System
- Based on OVF standard



Server Virtualization Perspectives ...

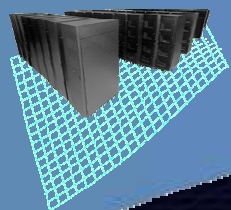
WebSphere CloudBurst Appliance and WebSphere Application Server Hypervisor Edition both leverage the benefits of server virtualization (specifically a type 1 Hypervisor - VMware ESX in first release)

Both offerings extend the benefits received beyond what you get if you just use a hypervisor like ESX alone

2009

1990

Grid Computing



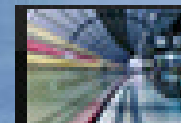
Utility Computing



Software as a Service



Virtualization



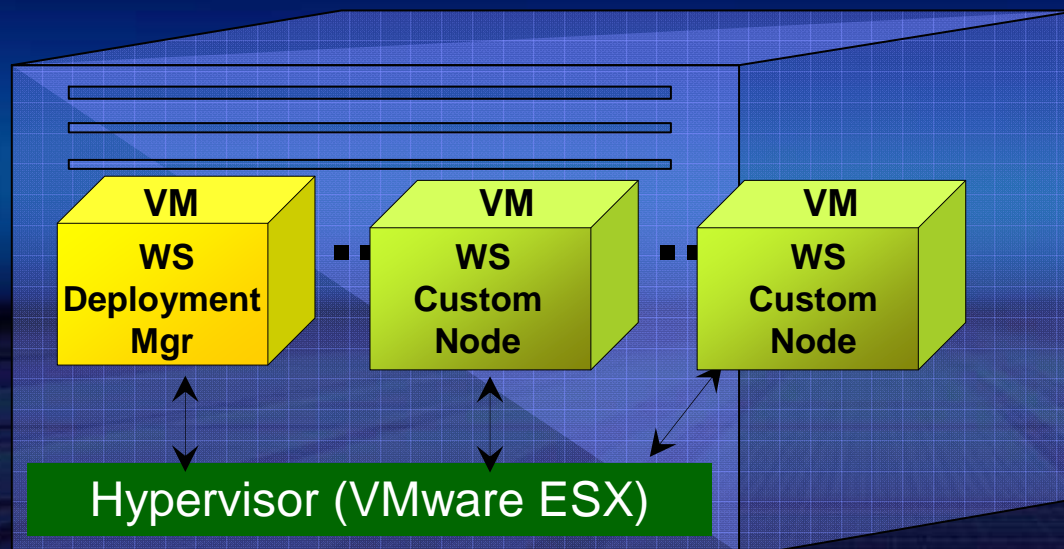
Cloud Computing



High Level Summary of Benefits of Server Virtualization

Allows you to run more than one logical machine on one physical machine; benefits being ...

1. **Increased resource utilization**
2. **Increased agility:** (start/stop and copy/modify of different configs quicker)
3. **Isolation**
4. **Portability**

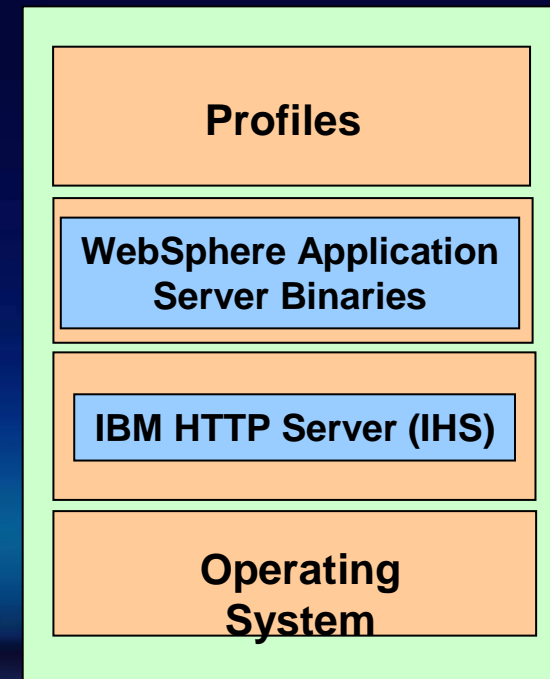


Both type 1 and type 2 hypervisors offer the server virtualization benefits above. Type 2 runs on top of the operating system and type 1 is more efficient since it replaces the operating system while still providing multiple self-contained logical systems with their own operating system to users.

WebSphere Application Server Hypervisor Edition Offers Customers Benefits beyond Server Virtualization

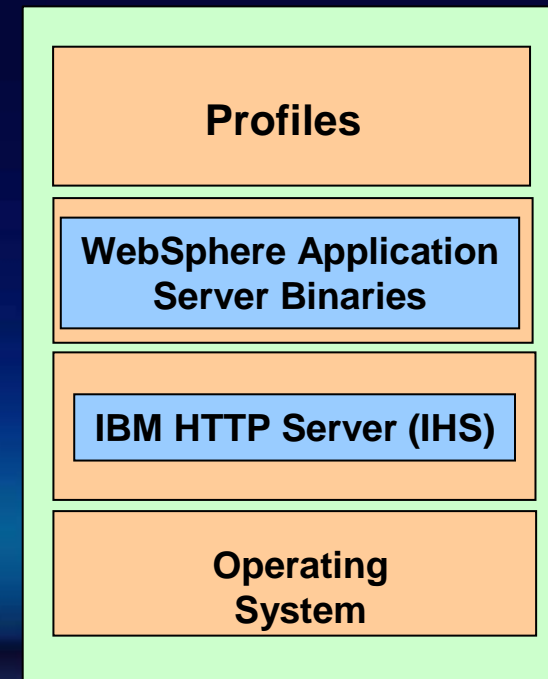
Offers the world-class clustering and high availability that WebSphere Application Server (WAS) offers and all the benefits of server virtualization plus

- Dramatically reduces time to install/config multiple images and keep them updated:
 - The operating system, the web server (HTTP Server), and WebSphere Application Server are already installed for you in a virtual image
 - WAS component profiles already created
 - Auto configs/tunes operating system and WAS following best practices.
 - Ability to create multiple virtual machines from the same virtual image saves on time to transfer images to/from disk, and the number of times an administrator needs to apply fixes/modifications!



WebSphere Application Server Hypervisor Edition Offers Customers Benefits beyond Server Virtualization (*cont.*)

- Follows Open Virtualization Format (OVF) standards providing these benefits:
 - The image is compressed for rapid deployment over a network.
 - Platform independent (for release 1, SUSE 10.2 is the operating system or IBM services can assist with modifying for Red Hat. Additional platforms supported in the next release coming soon.)
 - Industry standard content verification and integrity checking, and provides a basic scheme for the management of software licensing. However, if you do not purchase WebSphere CloudBurst Appliance, you would have to write the code to perform the above



WebSphere CloudBurst Appliance Offers Everything that Server Virtualization and WAS Hypervisor Edition Offer plus:

- WebSphere Application Server systems can be deployed and ready to use in minutes vs days/weeks
- Time/cost saving examples:
 - Several common/best practice WebSphere system configurations ready to deploy out-of-box
 - Drag and drop components and/or scripts to quickly create new system configurations (“patterns”)
 - Move, deploy, config/tune a virtual system in a few clicks/seconds of effort
 - Allows management via the web (Web 2.0), Command Line, or REST APIs
 - Avoids repetitive application of fixes and other changes desired in multiple systems
- User/group security for image management functions
- Appliance form factor provides additional consumability, performance, and security



WebSphere CloudBurst Appliance Offers Everything that Server Virtualization and WAS Hypervisor Edition Offer plus: (cont.)

- Automatically makes smart decisions on where to deploy images based on CPU, memory, and disk available on the servers in the cloud of resources available Cloud resource utilization monitoring and reporting
- Data on user usage of virtual systems and cloud resources for charge back
- Integration with IBM License Metric Tool for sub-capacity license tracking
- Backup/restore (of images, scripts, patterns, user security permissions,...)



IBM CloudBurst and WebSphere CloudBurst

provide cloud management capabilities with different approaches



	WebSphere CloudBurst Appliance	IBM CloudBurst
Offering type	Physical appliance	Services engagement + Bladecenter + set of provisioning and management software
Applicable Scope	Application middleware environments	General purpose cloud provisioning/management
Hardware for cloud	Bring your own (leverage underutilized assets in your datacenter)	Included in the offering (bladecenter w/ 3 blades in it)
Items managed in cloud	GA virtual images from IBM (Hypervisor Edition products) for select products	User-built images (whichever products customer chooses to build)
Launched	May 2009 @ IMPACT in Las Vegas	June 2009 in press release

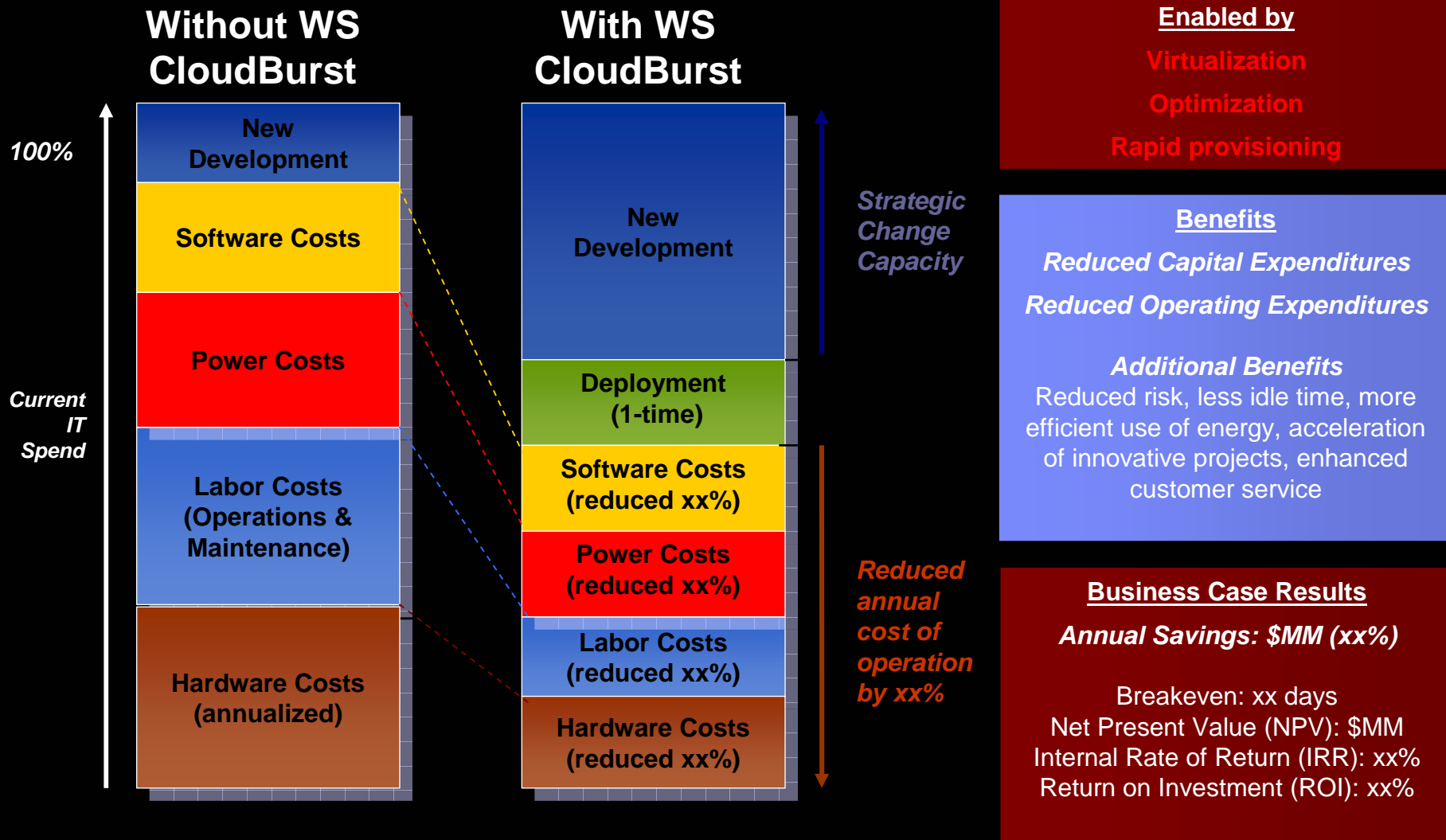
IBM CloudBurst and WebSphere CloudBurst

combine to deliver depth and breadth in cloud management!

- **WebSphere CloudBurst Appliance delivers very deep, purposed value in managing WebSphere environments.**
- **IBM CloudBurst delivers very broad, general-purpose value in managing just about anything, and includes hardware for the cloud**
- **For scenarios which benefit from both, the two products interact.**
 - IBM CloudBurst can serve as the entry point through which WebSphere CloudBurst artifacts may be accessed.
 - A consistent portal is used for all of your infrastructure

TCO Analysis

Quantifies WS CloudBurst Benefits



Insurance Company Improves fix management *Using Smart SOA Infrastructure: WebSphere CloudBurst*



Industry Pains

- Deployment of maintenance takes approx. 30 minutes
- Deployment of maintenance is a manual process, often executed in the middle of the night

Smarter Business Outcomes

- Deployment took 4 minutes!
- Deployment was automated
- Deployment was able to be scheduled, so no one had to wait up to kick off the process



IBM Lab Increases Productivity and Agility Using Smart SOA Infrastructure: WebSphere CloudBurst



Industry Pains

- OS security compliance issues due to virtualization
- Low rates of hardware utilization
- Agile development requires high quality and broader testing

Smarter Business Outcomes

- No OS security compliance violations in 4 months
- Increased server utilization up to 90%
- Reduced standardized topology deployment from over 2 hours down to 18 minutes
- Leveraged existing hardware and software assets



Why Smart SOA Infrastructure?

“The ability to provide compliant patterns and images in our public lab while leveraging the speed and rapid deployment of virtualization is significant for our efforts to consolidate hardware, and reduce costs while at the same time providing onDemand access to development and test environments necessary for Agile development”. **Frank Varone, Test and Quality Manager for WebSphere Application Server**

How does this compare to competition?

We deliver unique value that others cannot deliver:

- We offer a more integrated solution for a particular set of problems (IBM Software-related problems)
- We understand and control the software we dispense, and as a result, can remove more of the expensive, repetitive, and error-prone manual tasks that.
 - Other products can lay down black box images for each node in a WAS cell, but don't know how to:
 - **federate nodes into a cell**
 - **build clusters**
 - **apply maintenance**
- Appliance form factor delivers optimal security, simplicity, performance, and time-to-value
- IBM support – if the need arises, we put people on airplanes, and our clients WILL be successful

Usage Demo

Summary: What does WS CloudBurst do for me?

- Reduce risk/errors by codifying infrastructure
- Security throughout entire virtual image lifecycle
- Drastically reduce set up and configuration time
- Simplify maintenance and management

