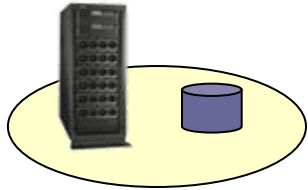# Start With A Solid Foundation – WebSphere Application Server

Smarter Solutions Need To Build On Existing Systems

Smarter Solutions

1. **Start with a Strong Foundation**
2. **Automate Business Processes**
3. **Capture Business Expertise**
4. **Connect Everything with an Intelligent Bus**
5. **Make Smarter Decisions with New Intelligence**
6. **Use the most efficient platform to achieve New Intelligence**
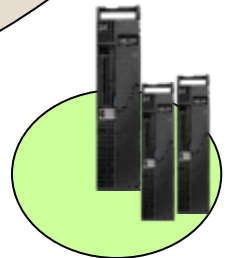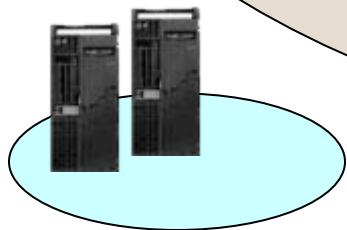
WebSphere Application Server Is The Undisputed Market Leader For The Last 11 Years

- ## Largest Customer Base!
  - ▶ 90% of the World's 100 largest corporations run their businesses on WebSphere Application Server
 - ▶ 7,022 Customers in Production

- ## Unparalleled expertise, and level of investment
  - ▶ Broadest, Deepest portfolio of offerings
  - ▶ 13,000+ assets in the SOA business catalog (90% from business partners)
  - ▶ IBM investing over $1B a year to deliver SOA and Web services capabilities
  - ▶ More than 700 WebSphere patents and over 6,700 IBM developers
  - ▶ Trained IBM SOA community over 100K

- ## Strongest Ecosystem
  - ▶ 7,420 SOA community business partners

Thousands Of Customers Across All Industries And Applications Choose WAS
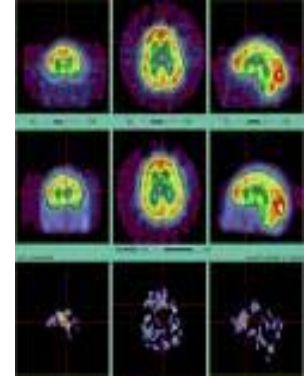
Wimbledon had peak 1 million hits/min, 30K simultaneous access to scoreboard

Schwab.com handles 16.5 million transactions per day

eBay.com is running on WebSphere and handles 1+ Billion page views/day

The IBM employee portal handles 30 million requests a day, maintaining sub-second transaction response times for many applications

Because of Scalability, Reliability & Availability

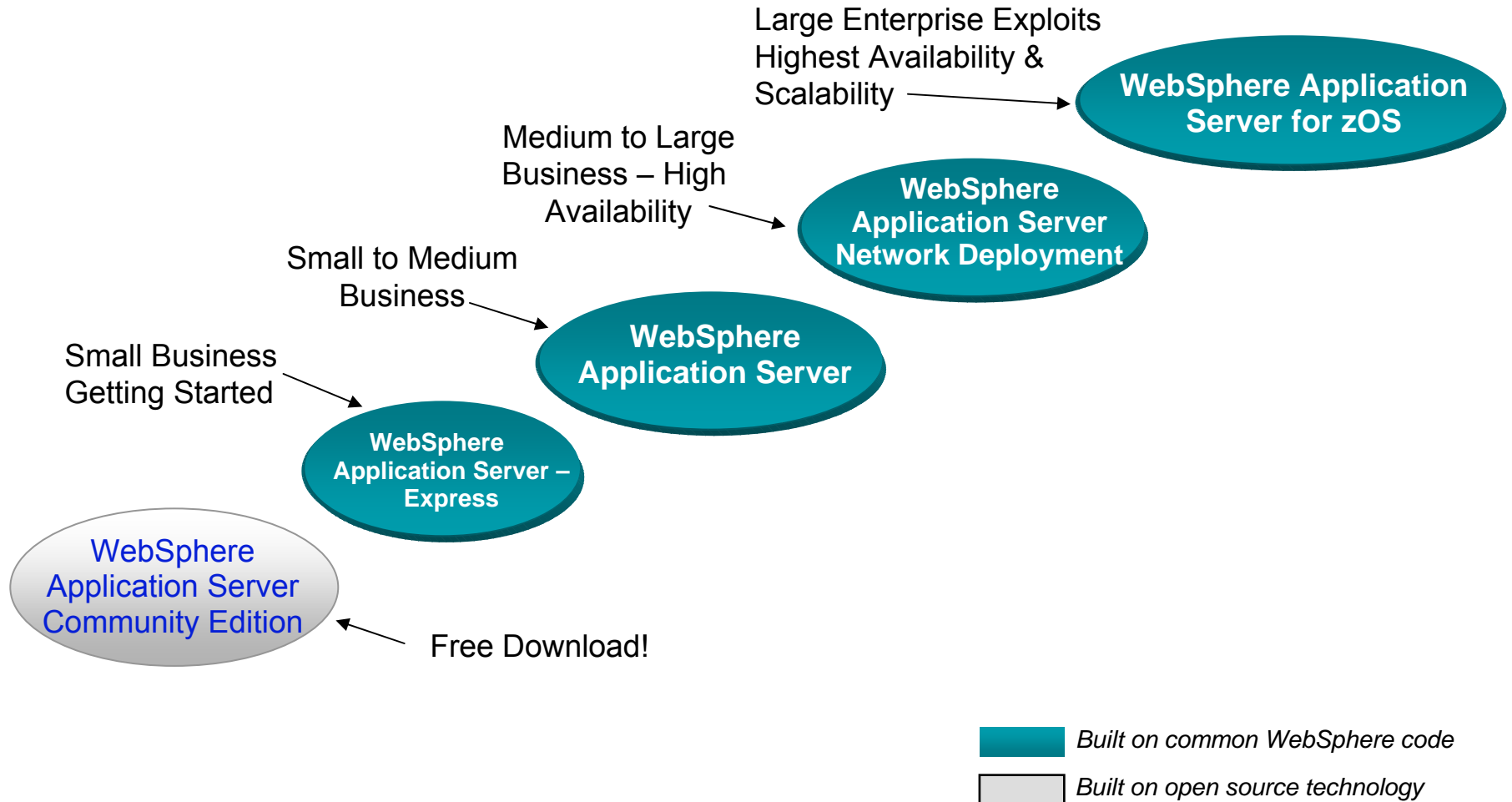|			
eBay	Schwab	Shell	Deutsche Telekom
Bank of Montreal	Farmers Insurance	Dassault Aviation	Office Depot
Nissan AAA Carolinas	Pear's Gourmet	Australian Open	Tony Awards

The WebSphere Application Server Family – Tailored To Customer Needs

Large Enterprise Exploits Highest Availability & Scalability

WebSphere Application Server for zOS

Medium to Large Business – High Availability

WebSphere Application Server Network Deployment

Small to Medium Business

WebSphere Application Server

Small Business Getting Started

WebSphere Application Server – Express

WebSphere Application Server Community Edition

Free Download!

■	*Built on common WebSphere code*
▢	*Built on open source technology*

The WebSphere Application Server Family – Special Purpose Capabilities

WebSphere Application Server Hypervisor Edition

World's first Application Server private cloud

WebSphere Virtual Enterprise

Manage performance, health, and editions of applications for non-stop operation

WebSphere eXtreme Scale

In-memory data grid for extreme transaction processing

WebSphere Compute Grid

Execute and manage Java batch processes

WebSphere Application Server Beats The Competition

- Stable architecture to protect investments

- Best performance

- Best transaction integrity

- Cost of ownership lower than Open Source

- Non-stop operation

- Easy cloud-like deployment

WebSphere Application Server Is The Foundation For IBM's Smart Work Framework

Stable Architecture to Protect Your Investments
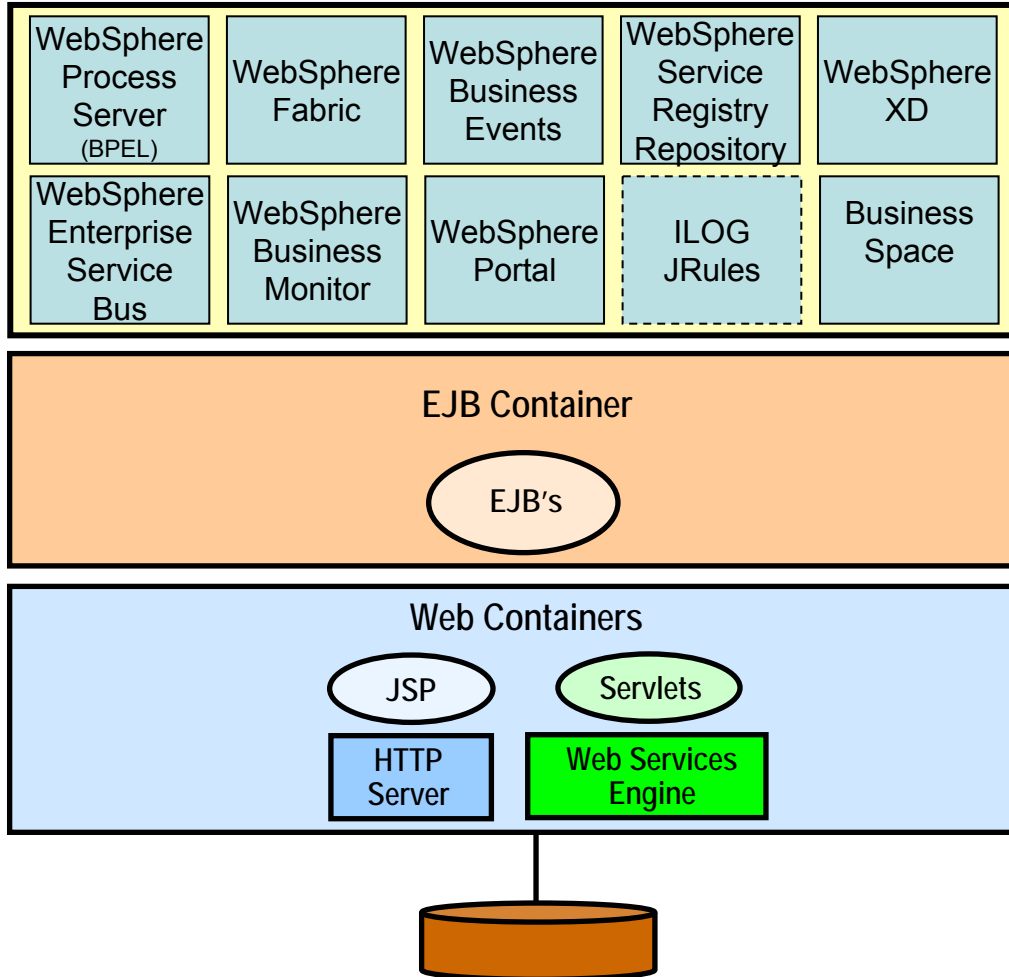
- One integrated framework for smart work solutions

- Based on open standards
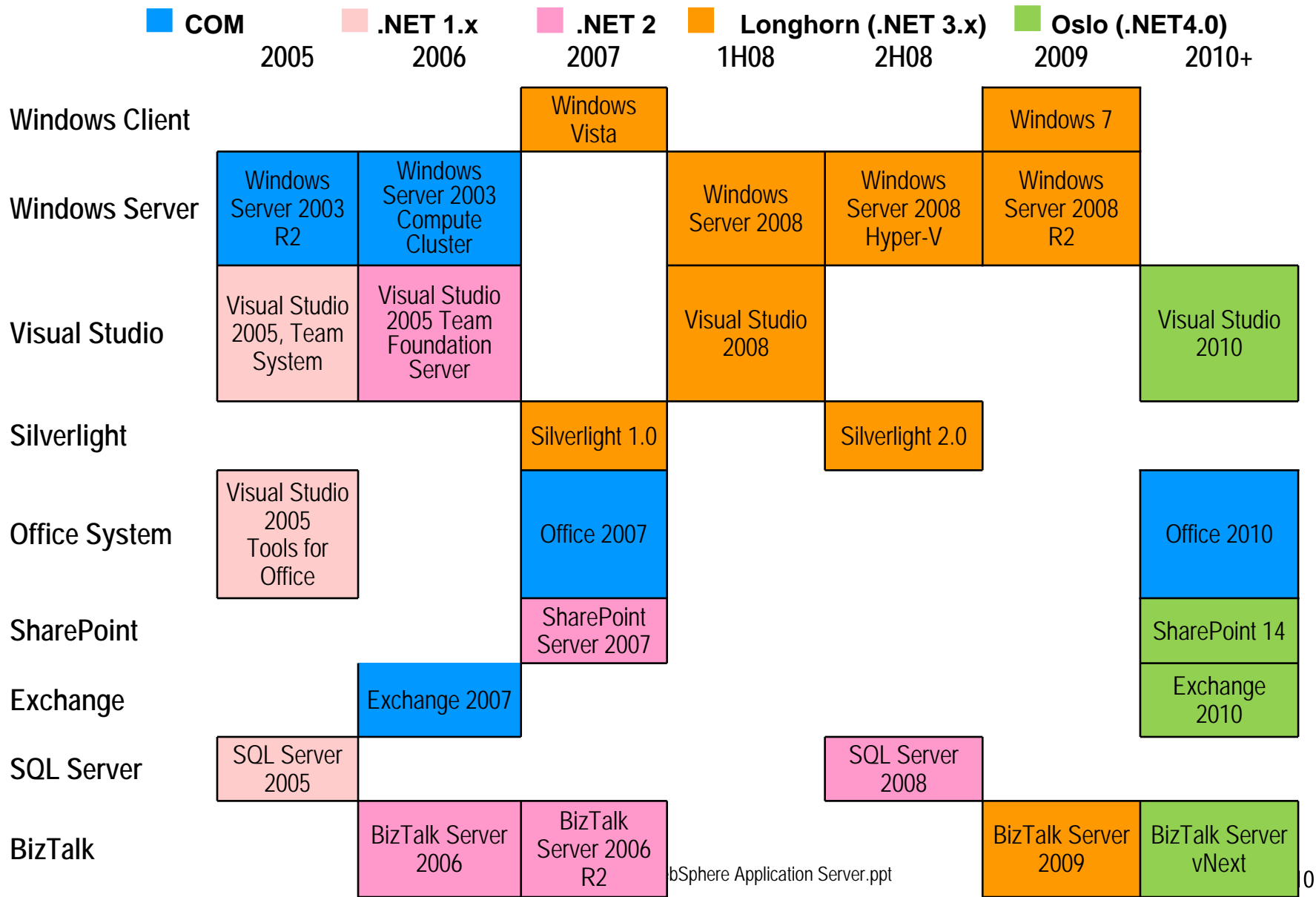
- Built on WebSphere Application Server

WebSphere Application Server (left bracket label)

Framework components: WebSphere Process Server (BPEL), WebSphere Fabric, WebSphere Business Events, WebSphere Service Registry Repository, WebSphere XD, WebSphere Enterprise Service Bus, WebSphere Business Monitor, WebSphere Portal, ILOG JRules, Business Space

EJB Container — EJB's

Web Containers — JSP, Servlets, HTTP Server, Web Services Engine

Oracle Fusion Confusion – Not An Integrated Solution! Which Choices Are Strategic?

Function Area	Oracle Product(s)	BEA Product(s)	Total Number
Application Server	■ Oracle Application Server	■ WebLogic Server ⭐	2
J2EE Development	■ JDeveloper ⭐ ■ (not Eclipse)	■ WebLogic Workshop (Eclipse)	2
Portal/Web 2.0	■ Oracle Portal ⭐ ■ WebCenter	■ AquaLogic User Interaction ⭐ ■ WebLogic Portal	4
Modeling	■ BPA Suite (OEM'd ⭐ IDS Sheer's Aris)	■ AquaLogic BPM	2
BPM	■ JDeveloper and BPEL Process Manager ⭐	■ AquaLogic BPM ⭐ ■ WebLogic Integration	3
BAM	■ Oracle BAM	■ AquaLogic Monitoring ⭐ ■ ProActivity BAM (OEM)	3
ESB	■ Oracle AQ ■ Oracle JMS	■ AquaLogic Service Bus ⭐	3
Registry	■ Systinet (OEM) ⭐	■ Systinet (OEM) ⭐ ■ Flashline	2

⭐ = Oracle has said this one is "strategic"   *Years Of Migration Misery!*

Microsoft Middleware Roadmap Also Creates Migration Misery

Legend: COM | .NET 1.x | .NET 2 | Longhorn (.NET 3.x) | Oslo (.NET4.0)

	2005	2006	2007	1H08	2H08	2009	2010+
Windows Client			Windows Vista			Windows 7	
Windows Server	Windows Server 2003 R2	Windows Server 2003 Compute Cluster		Windows Server 2008	Windows Server 2008 Hyper-V	Windows Server 2008 R2	
Visual Studio	Visual Studio 2005, Team System	Visual Studio 2005 Team Foundation Server		Visual Studio 2008			Visual Studio 2010
Silverlight			Silverlight 1.0		Silverlight 2.0		
Office System	Visual Studio 2005 Tools for Office		Office 2007				Office 2010
SharePoint			SharePoint Server 2007				SharePoint 14
Exchange		Exchange 2007					Exchange 2010
SQL Server	SQL Server 2005				SQL Server 2008		
BizTalk		BizTalk Server 2006	BizTalk Server 2006 R2			BizTalk Server 2009	BizTalk Server vNext

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Transaction Integrity -
A Common Business Challenge

We are going to be selling investment bonds online and need to be sure that our data will be 100% accurate; we can not afford to lose orders!

WebSphere will maintain process integrity and recover from all adverse conditions

**Service Oriented Finance
CIO**

IBM

What Is Transaction Integrity?

Transaction Integrity is fundamental to any business!

- Smarter planet processes usually span different systems and databases

- Data across the business must remain synchronized in logically **consistent** relationships

- Business processes must **not be lost** and must eventually be completed

- Business operations must **continue without error** despite system failures
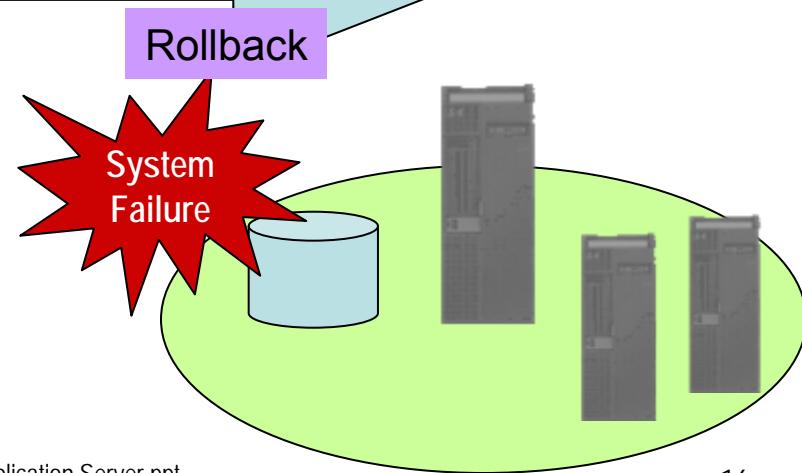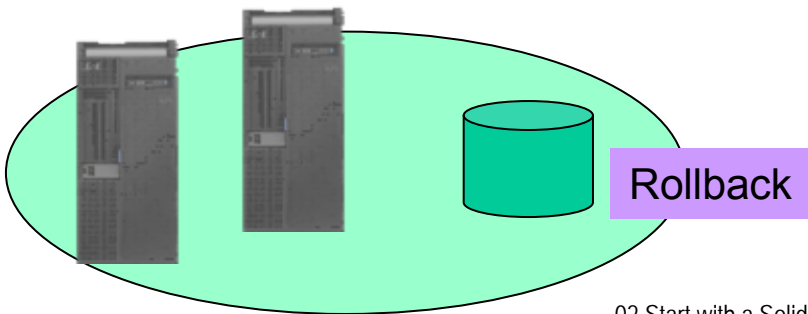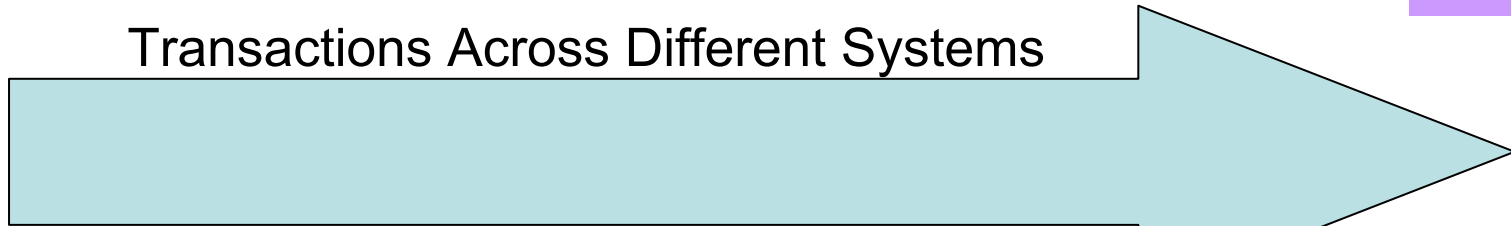
IBM has been doing this right for 35+ years!!

Synchronous Transaction Integrity – Adverse Conditions

Rollback

Rollback
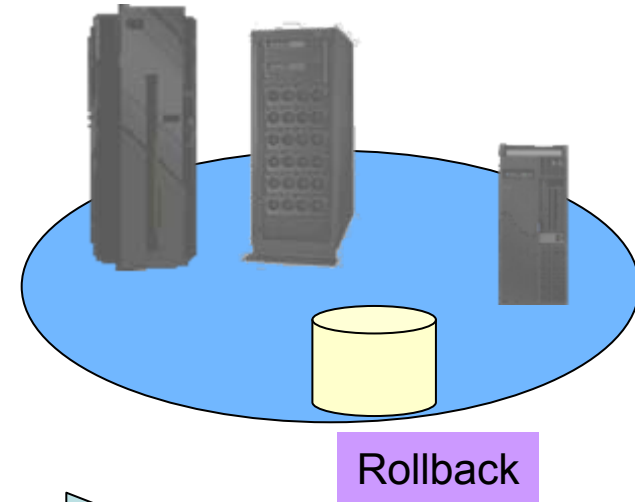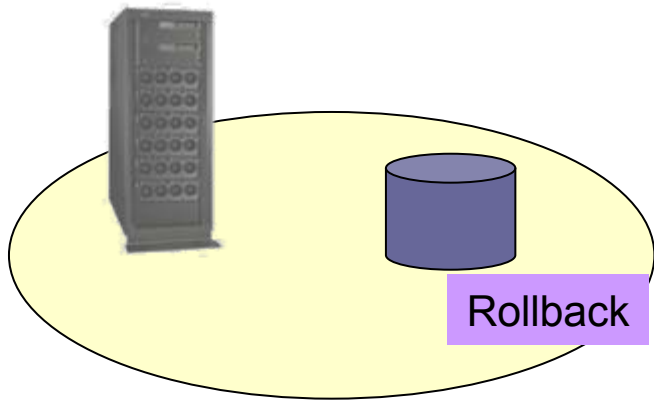
Customer Order

Transactions Across Different Systems
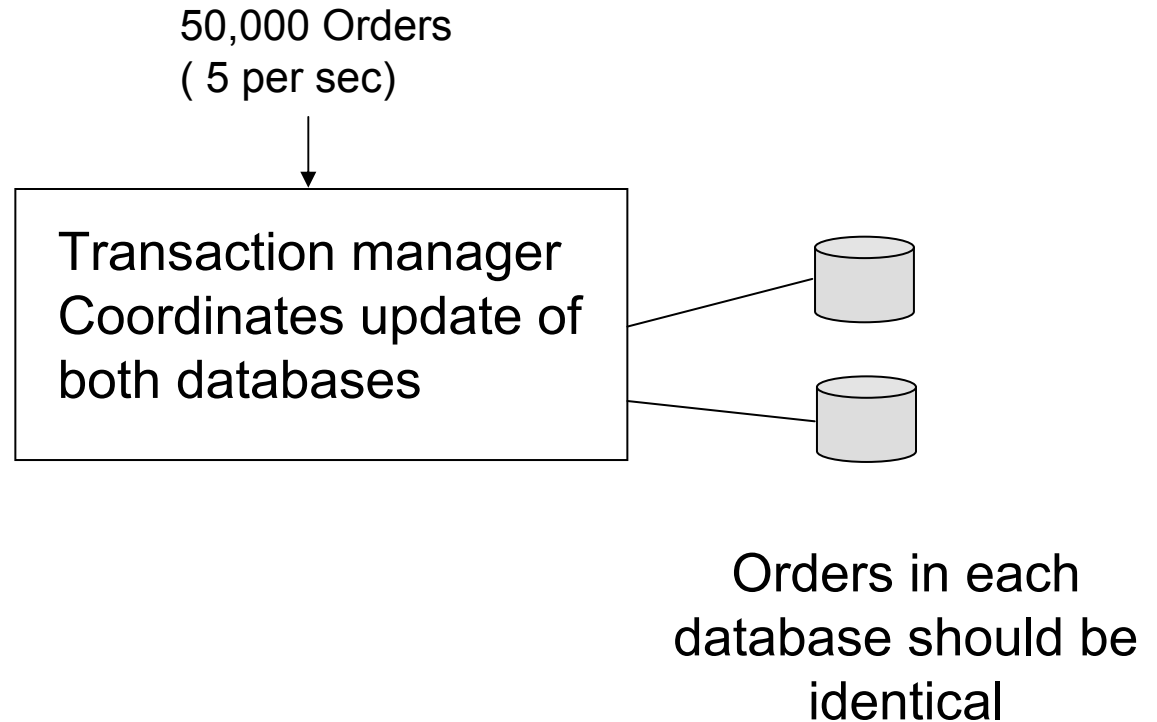
Rollback

System Failure

Rollback

DEMO: IBM Synchronous Application Server Under Load With Network Outage

- Enterprise requirements
  - ▶ Data is always consistent and visible to other instances
  - ▶ Automatic data recovery in the event of a network failure
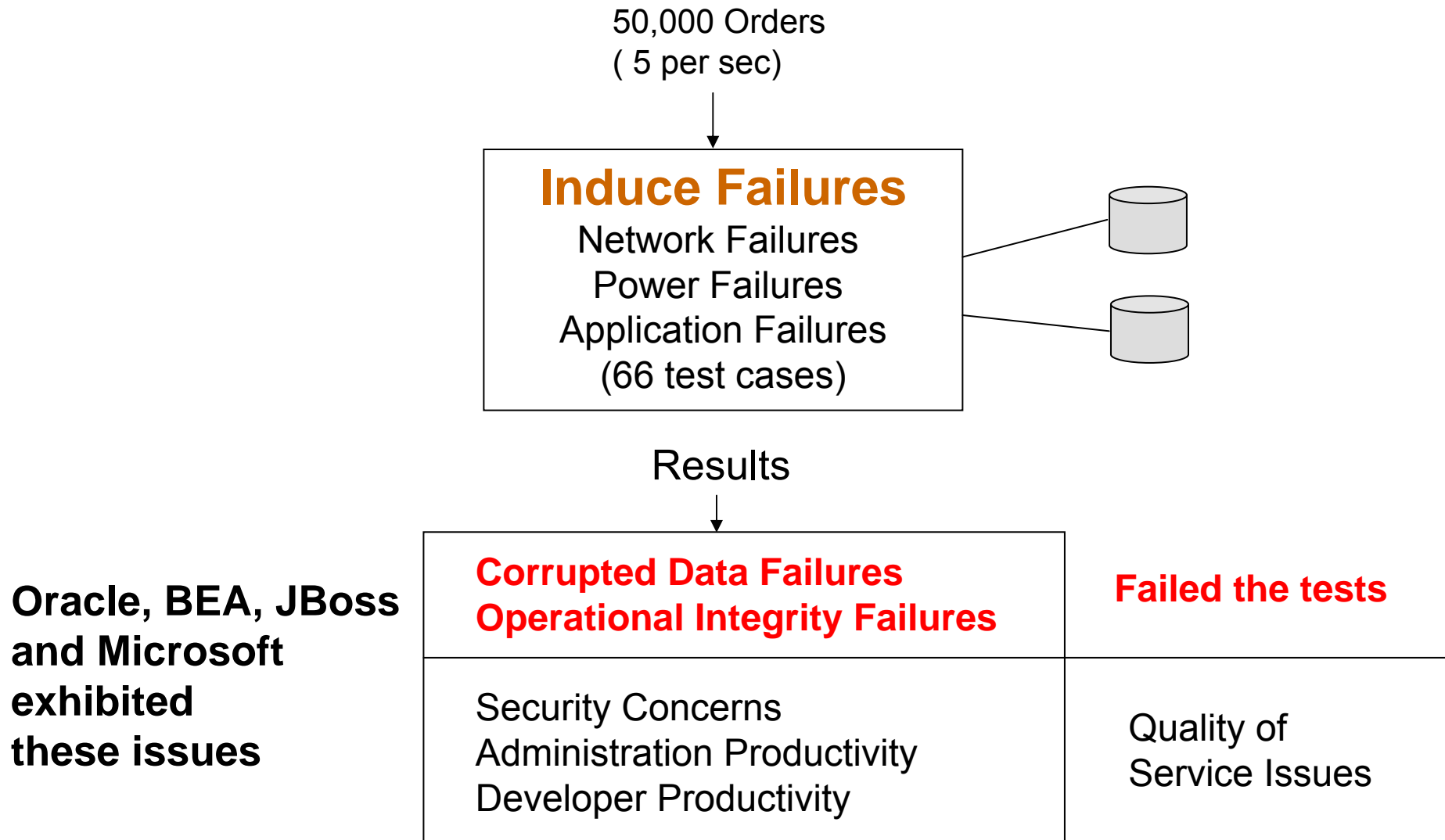 - ▶ Return exception after failure, application may retry

Overview – The IBM Transaction Integrity Study

50,000 Orders
(5 per sec)

Transaction manager
Coordinates update of
both databases

Orders in each
database should be
identical

Overview –
The IBM Transaction Integrity Study

50,000 Orders
(5 per sec)

Induce Failures

Network Failures
Power Failures
Application Failures
(66 test cases)

Results

Oracle, BEA, JBoss and Microsoft exhibited these issues

Corrupted Data Failures
Operational Integrity Failures

Failed the tests

Security Concerns
Administration Productivity
Developer Productivity

Quality of
Service Issues

Transaction Integrity – Test Results

|	
IBM WAS	■ Passed all the failure tests including network failures, power outages and application exceptions. ■ Does corrupt data or degrade performance
JBoss AS	■ Fails to handle a network / power outage causing a corrupted data problem ■ Little to no support for EJB 3.0 development
Oracle OC4J	■ Performance degradation following power outage ■ Frequent reboots of OS due to Application Server hangs
Oracle WebLogic Server	■ Fails to reject incorrect data (duplicate key) ■ Poor recovery from network outages led to corrupted data problems
Microsoft .NET	■ Enabling transaction support exposes serious security risks, such as malicious DLLs being loaded in the kernel

DEMO: JBoss Synchronous Application Server Under Load With Network Outage

- Enterprise requirements
  - ▶ Data is always consistent and visible to other instances
  - ▶ Automatic data recovery in the event of a network failure
  - ▶ Return exception after failure, application may retry
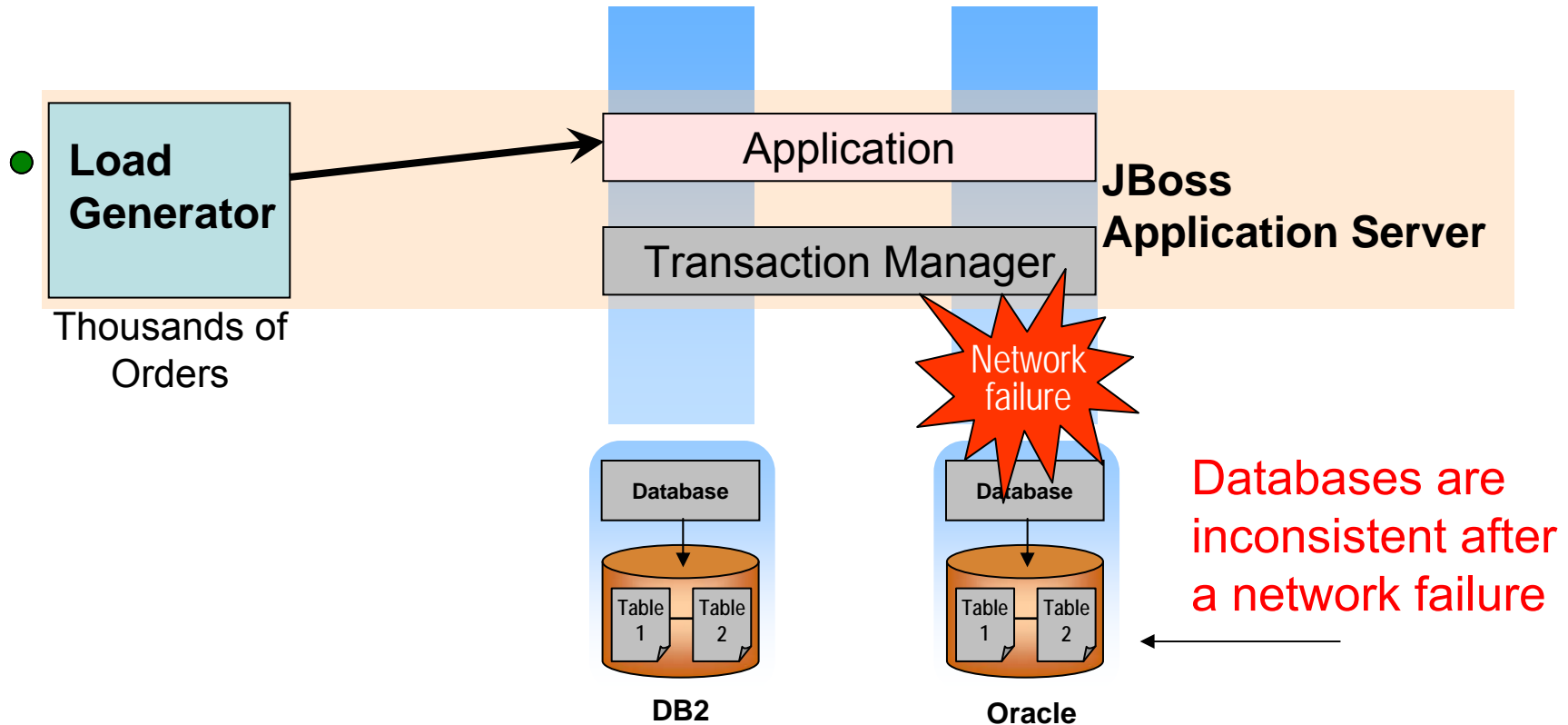
Think About The Business Implications

- Can a business afford to lose orders?

- Would customers tolerate shipments with missing items?

- How are inventory levels managed if your inventory tracking is incorrect?

- How are key databases reconciled that get out of sync?

2+2=4

IBM

WebSphere Application Server Beats The Competition

- Stable architecture to protect investments

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- Cost of ownership lower than Open Source

- Non-stop operation

- Easy cloud-like deployment

A Foundation For Smart Work

Even Open Source offers a Java Enterprise Edition Application Server.

Why should I pay for WebSphere?

It may come as a surprise to you that WebSphere Application Server actually costs less than JBoss.
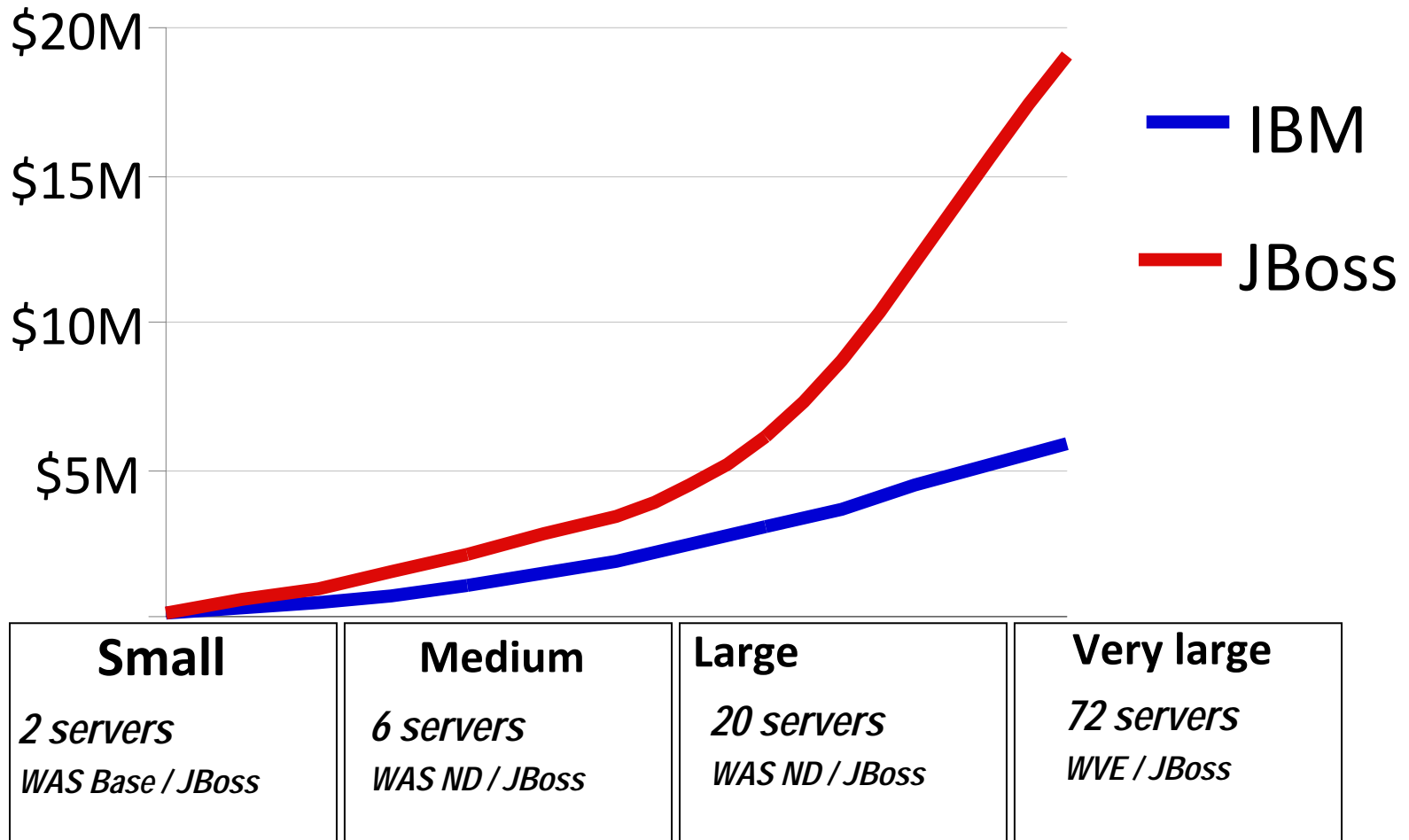
Let me prove it to you!

Service Oriented Finance CIO

IBM

Summa Technologies TCO Study Results: JBoss Costs More Than WebSphere!

Application Server TCO over 5 years for environments of different scale

Source: Summa Technologies, Inc. May 2009 TCO Study

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Service Oriented Finance Needs A Non-Stop Operation

I need not only high availability but the ability to roll out new applications without shutting my existing applications down.

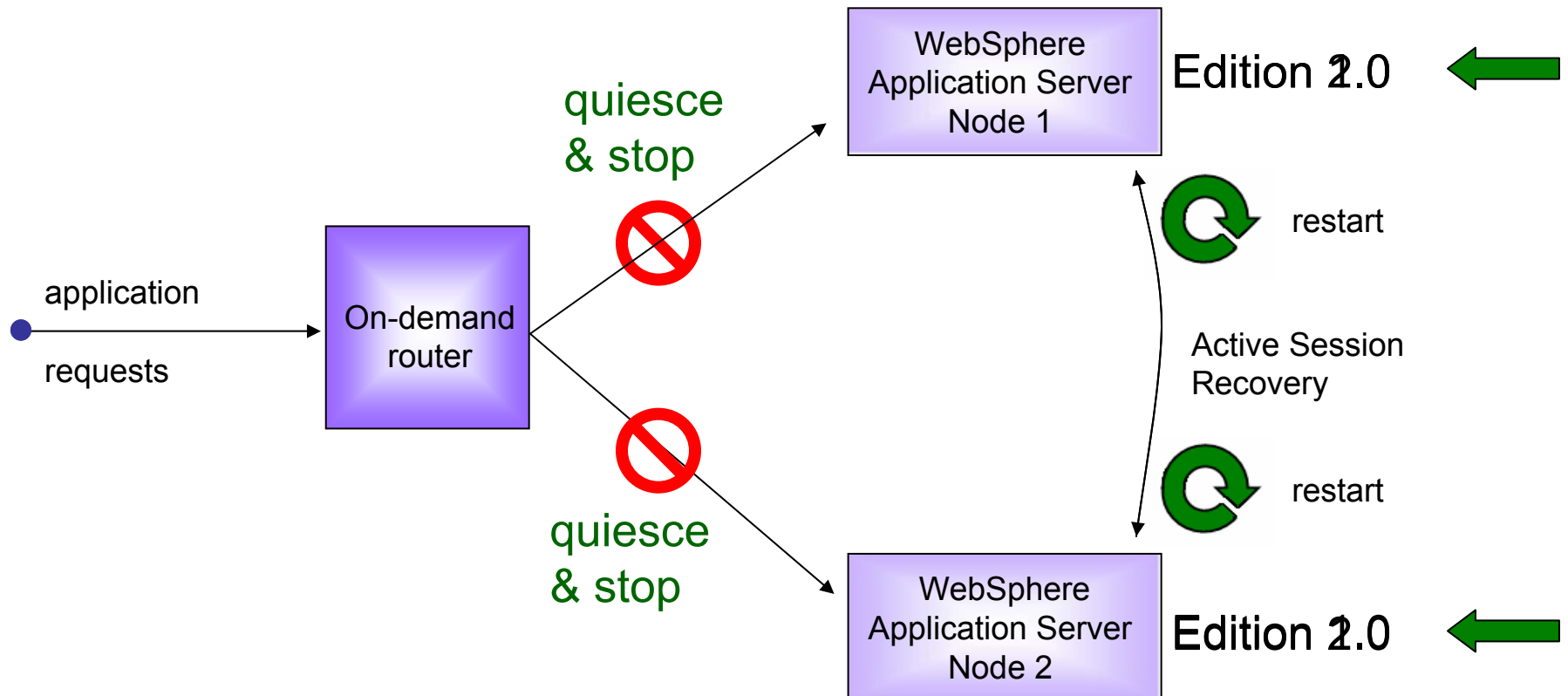WebSphere can do this also! We Call this "non-stop operation"

Let me prove it to you!

CIO

IBM

Demo: Non-Stop Operation During Software Maintenance Or Upgrades

- Deploy new applications with lower risk of losing service.
- Deploy application versions without interruption.

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Leverage WebSphere Cloudburst Appliance For Faster, More Flexible Deployments

- New class of hardware appliance for data centers

- Secure, self-service cloud management device

- Dispenses hardened WAS patterns into a pool/cloud of virtualized hardware running a supported hypervisor (e.g. VMware)
  - ▶ Patterns leverage 10 years of WAS best practices deployment and configuration experience

- Enables consistent and repeatable deployment of application environments based on patterns (e.g. single server, multi-tier, etc.)

WebSphere Cloudburst Appliance
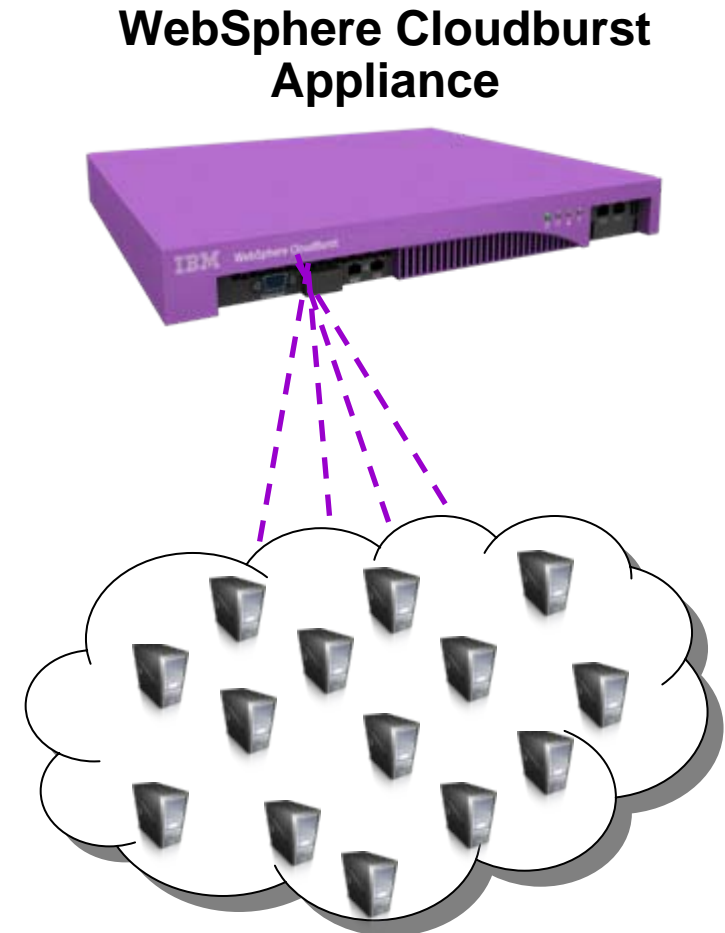
Deploying A New WebSphere System In The Cloud

Select Pattern

WebSphere CloudBurst

CloudBurst Downloads Application

CloudBurst Downloads Virtual Image

WAS HE VM Image
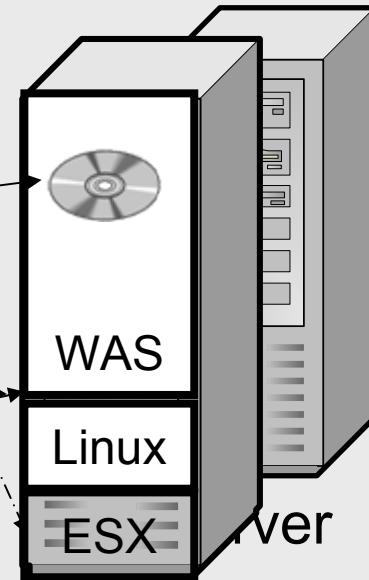
CloudBurst Downloads Customization Information

Private Cloud

CloudBurst Issues *Deploy Image* Command
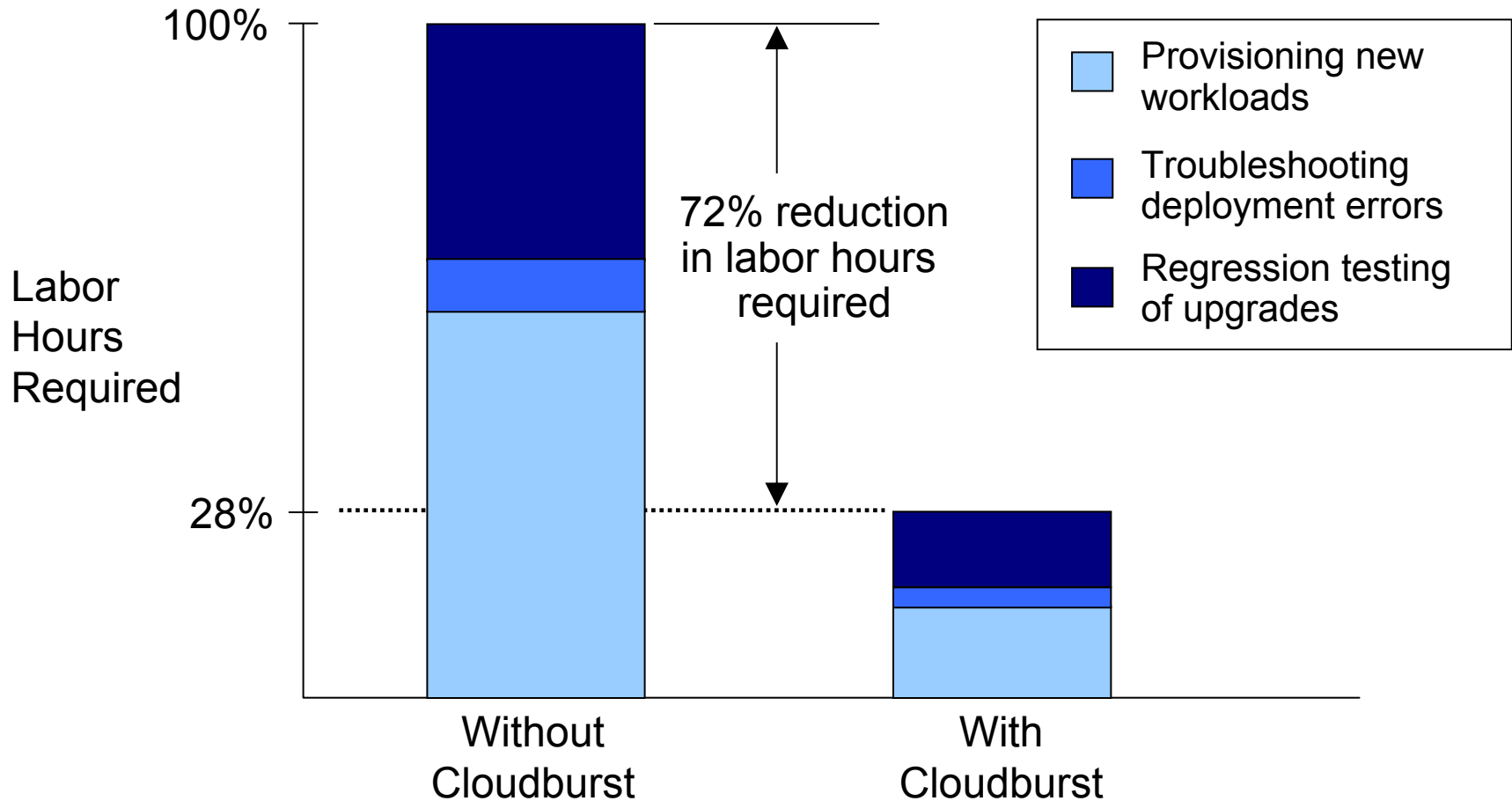
WAS Installs Application

ESX Applies Customization

ESX Installs WAS HE Virtual Machine

WAS

Linux

ESX

Server

Server

WebSphere Cloudburst Can Reduce Labor Requirements By Up To 72%

Source: IBM WebSphere Cloudburst TCO Model (Business Value Assessment - Contact your local IBM representative for more information)

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IBM WebSphere Cloudburst Differentiators

Capabilities	IBM	Microsoft	Oracle
Pre-loaded optimized virtual images for application server	Yes	No	Yes
Pre-defined customizable patterns incorporate best practices	Yes	No	No
Drag and drop tooling for assembling virtual images, scripts and topologies into customized patterns	Yes	No	No
Automatically deploy multiple virtual images based on a pattern	Yes	No	No
Intelligent placement of multiple virtual images based on cloud activity	Yes	No	No
Appliance serves as an encrypted vault where images, patterns, and permissions are stored	Yes	No	No
Efficiently manages virtual images so that common files are stored once and differences can be tracked	Yes	No	No
OVF Standard Packaging	Yes	No	No

Think About It

Can you afford to corrupt the data in your systems?
Can you afford to lose customers because of slow response times?
Do you want to build your enterprise on a solid foundation?

Now I see the value of a strong foundation – WebSphere Application Server.

IBM

Service Oriented Finance CIO

WebSphere Application Server –
The Best Foundation For Your Business

	IBM	Oracle	Open Source	Microsoft
Stable architecture to protect investments	YES	NO	NO	NO
Performance	YES	Competitive	NO	NO
Transaction Integrity	YES	NO	NO	NO
TCO Lower than JBoss	YES	N/A	NO	N/A
Easy Cloud-Like Deployment	YES	NO	NO	NO
Non-Stop Operation	YES	Competitive	NO	NO