

HP NonStop Strategy & Technology Update

Randy Meyer

Director

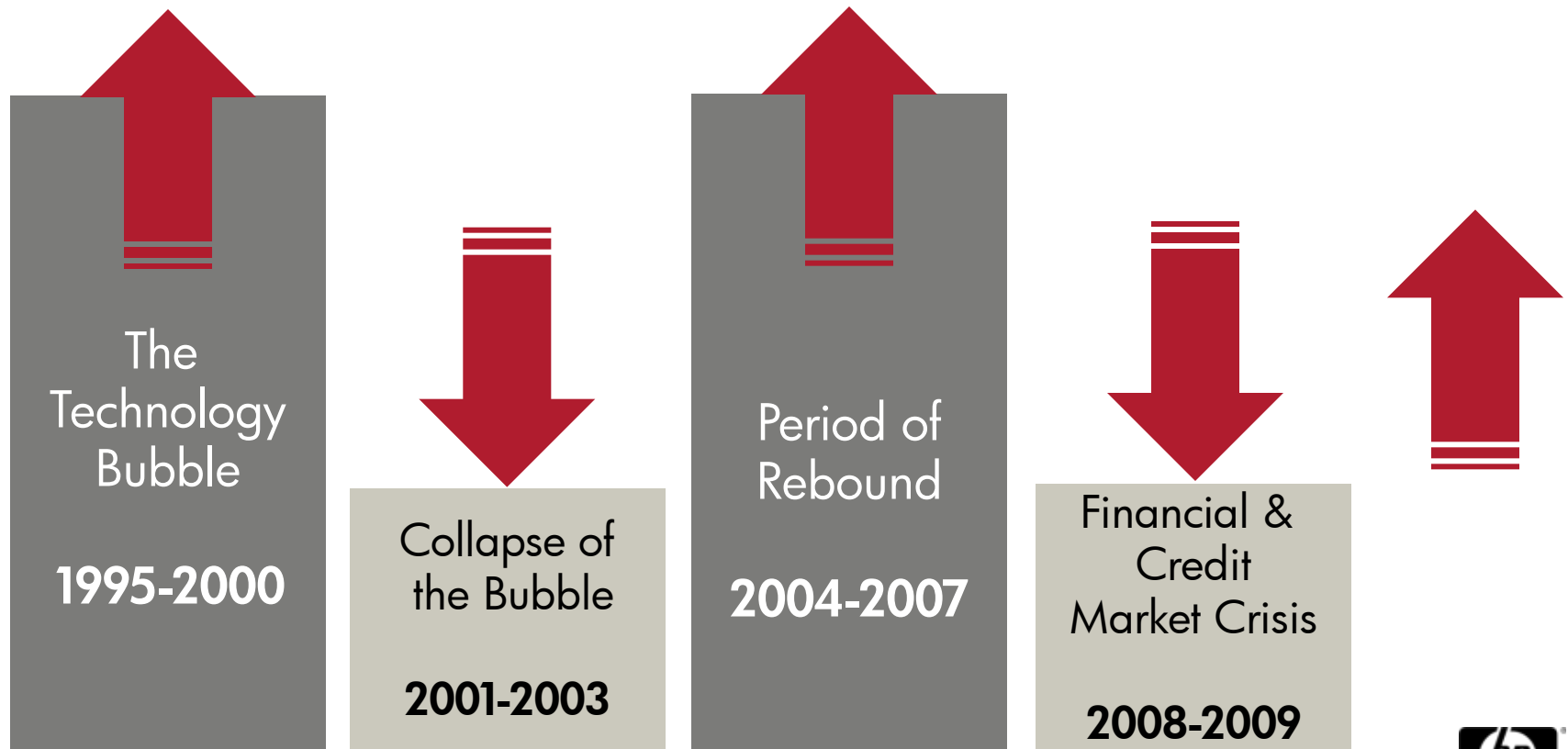
Product Mgmt, Strategy & Technology

NonStop Enterprise Division

CTUG 2009



Have we seen this before?



What we hear from you

“[The CEO] wants IT to find ways to be more efficient, so that... even with less money you can still deliver the strategy”

“Now is the time to improve the efficiency of the IT system itself”



“We're holding off on replacements, but spending wisely where we're investing for the future...”

Costs are under pressure, but we must remain competitive



Challenges create opportunities

“The measure of great companies in this kind of environment is... how do you emerge stronger, relatively speaking, at the end of it?”

- *Mark Hurd*



Integrity NonStop BladeSystem

**First-ever 24/7 mission-critical
computing system built with
bladed modularity and standards**

Double the performance

Half the footprint

100% NonStop

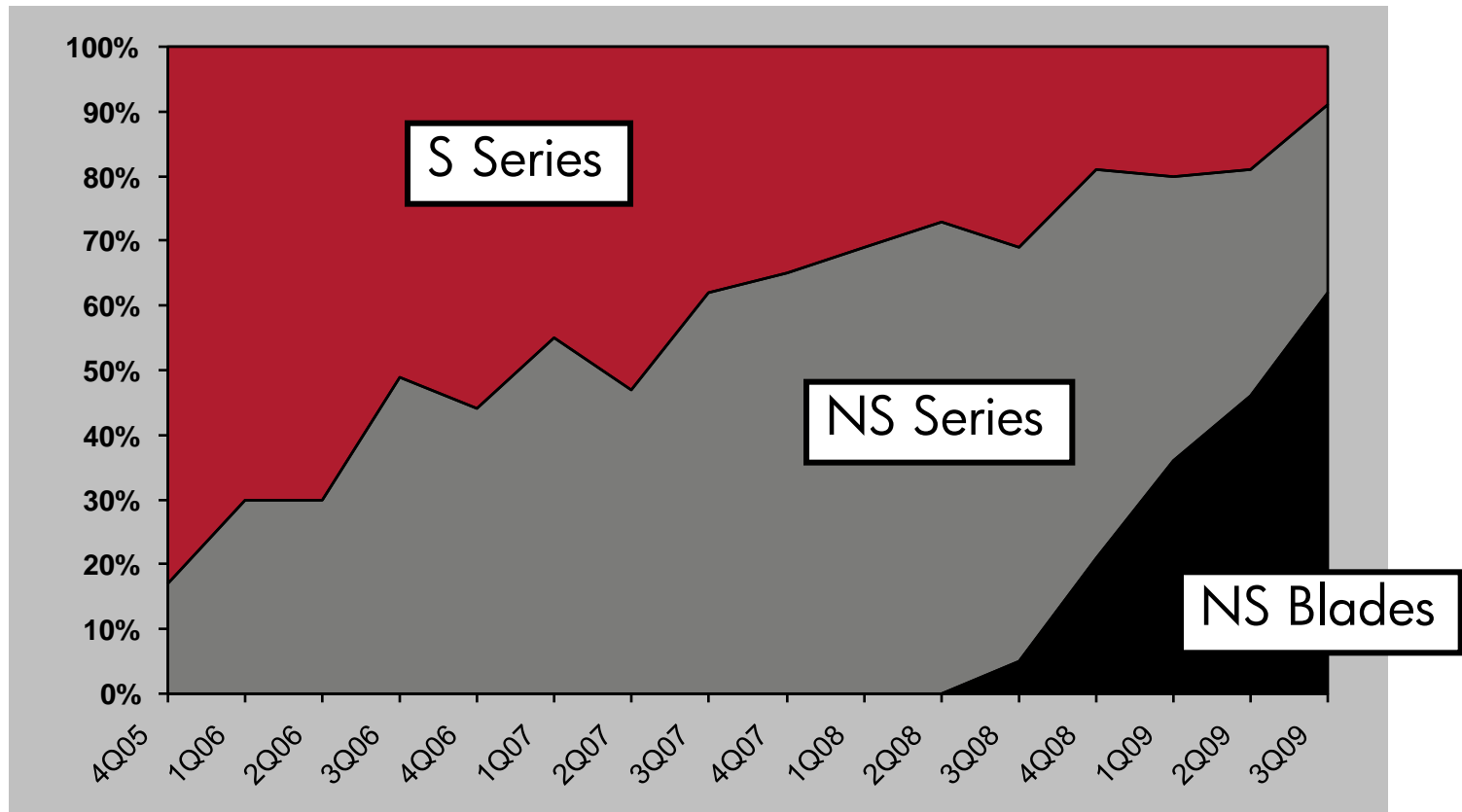


HP NonStop tops IBM and Sun for Server of the Year 2008

The HP Integrity NonStop NB50000c BladeSystem topped IBM's z10 Business Class mainframe and Sun's SPARC Enterprise T5440 server

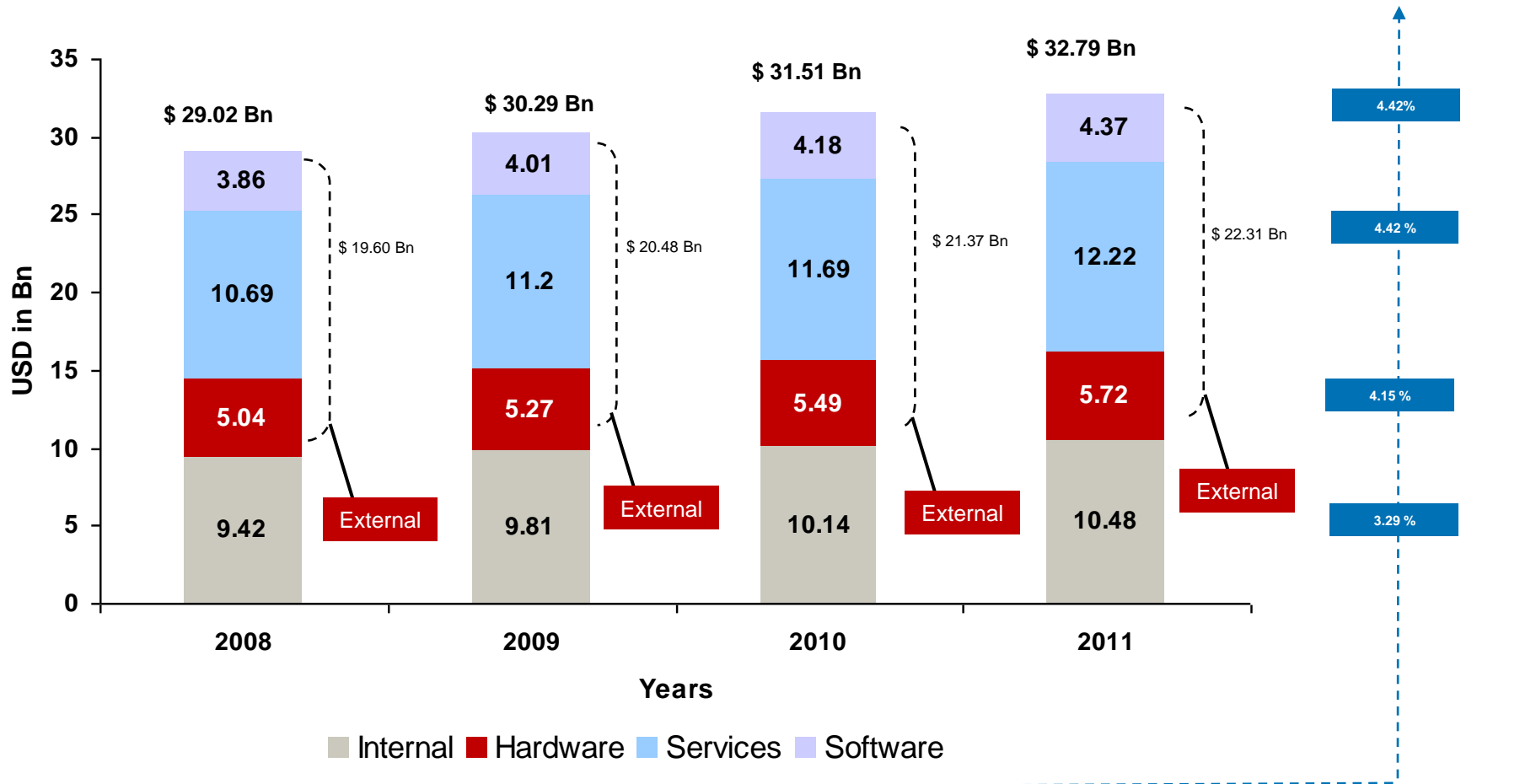


NonStop product adoption



Payments: a growing market

Payments IT spending 2008-2011: Segmental Break up



Source: Datamonitor



Major wins – Financial Services



Global bank based in UK

- New ATM environment on NonStop Blades
- Move applications off legacy mainframe environment.

Global bank based in Netherlands

- Upgrade of ATM on POS environment for increased capacity
- Reduce floor space and power consumption

Global credit card company based in US

- Upgrade to eps

Authorization service provider based in Japan

- Upgrade of credit card authorization network switch
- Increased performance and capacity

Online bank based in Australia

- Established NonStop as strategic payments platform on ACI Base24T

NonStop continues to win with ACI

Forty-nine BASE24 upgrades & BASE24-eps new wins in last two quarters

Three new BASE24/Integrity NonStop BladeSystem Mainframe Modernization projects

Performance Testing of BASE24 on Integrity NonStop BladeSystem is completed showing excellent performance

100% win rate in competitive tenders in installed base



New solution: Opus

- ✓ 100+ installations
- ✓ 67% of India's card based Internet transactions
- ✓ EMV acquiring and issuing for Mitsubishi Group bank, Indonesia
- ✓ 50% of ATMs in East Africa
- ✓ Joint development with HP to port to NonStop platform



**Software Services for
Mission Critical OLTP**



**Payment Products
& Processing Services**



New solution: AJB Software

Company Profile

- Based in Toronto, Canada
- 15 years in operation
- 70 employees
- 136 customers
- 85,000+ locations
- Focused on integrated payment solutions, custom payment solutions and file transfer

Target Markets

- Tier 1 and 2 merchants
- Typically greater than 50 locations
- 23 of the top 100 merchants in North America rely on AJB for their payment solutions
- 11 of the 50 fastest growing international retailers use AJB payment software
- AJB serves multiple industries including: retail, oil & gas, restaurants, hotels, supermarkets, government



NonStop in Telecommunications

Over 200 million subscribers on HP HLRs



- More than 200 million subscribers live
- 130 million subscribers migrated from legacy HLRs
- Strong presence in GSM
- Integrated against virtually all NEP switching environments (E///, Siemens, Nortel, Nokia, Huawei ...)



Major wins - Communications

Multiple Wireless companies based in NA, EMEA and APJ

- GSM and CDMA HLRs
- Mobile Value Added Services
- Very strong ramp for Carrier-Grade Blades

Major Mobile operator in Japan

- Massive Messaging Service

Pan-African mobile telecomm company in South Africa

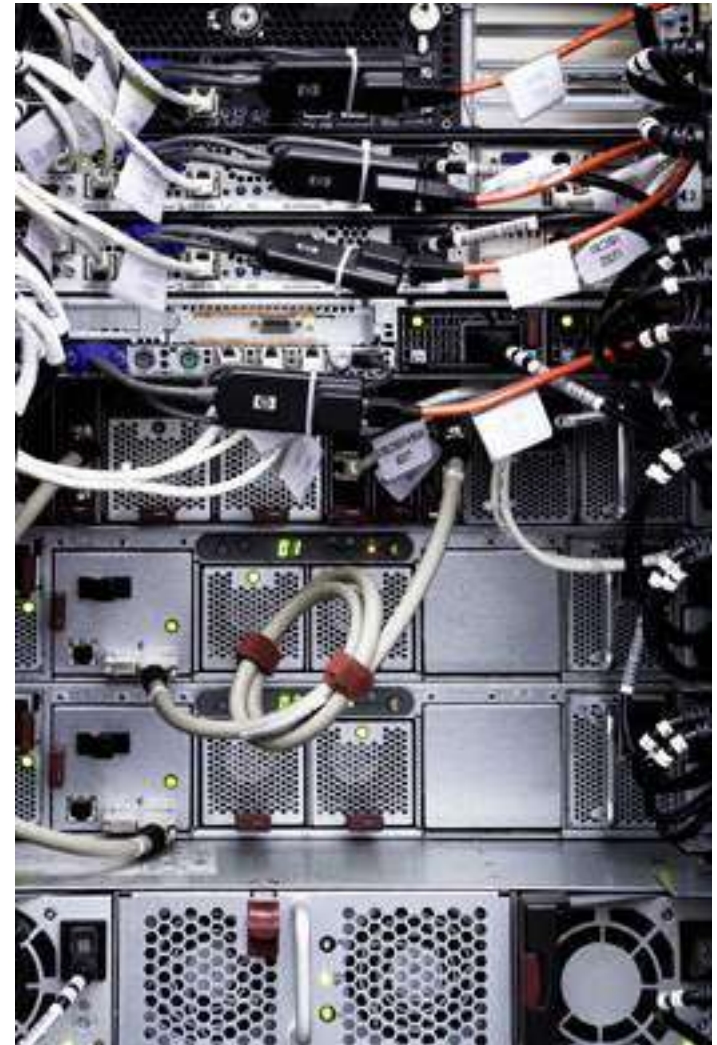
- First cellular network in South Africa
- Upgrade to Blades to support new applications

Fastest-growing mobile operator in India

- Powered up, running and app in place in 6 days
- Full production with nearly 1M subs in 60 days

Major US Satellite Operator

- First blades deployment for ODS in telecommunications



Major Modernization Projects



Major manufacturer

- Needed to integrate NonStop with a variety of other servers to meet customer-mandated quality requirements in a 24x7 production environment
- Highly flexible, messaging-based SOA implemented facilitates application modernization, provides just-in-time information logistics and improved user satisfaction

Major logistics company

- Running the logistics management application on the NonStop platform
- SOA-oriented online communication with SAP and other ERP systems
- Successful modernization of a NonStop application that has stood the test of time
- Simplification of the underlying automation layer, reducing complexity and cost



New solution: Crossflo DataExchange

Crossflo DataExchange Server



- Uses Java/J2EE “run anywhere” code platform
- Services Oriented Architecture (SOA) ensures flexibility
- Compatibility with national data sharing standards
- Publish and Subscribe model for secure data sharing
- Non-disruptive installation, small software footprint



NonStop: Investing for the future

Modernize

Standardize

Customers tell us they want...

**Modern applications
built using modern tools
running on standard platforms
with 24/7 reliability**

How do I get from this...

Legacy software

Job Scheduler

Flowcharts

Cobol Compiler

Vendor management tools

Hierarchical database

Green Screen / CLI

**24/7, scalable
and proven...**

**but expensive, and
needs special skills**

Proprietary hardware

Unusual Chipsets

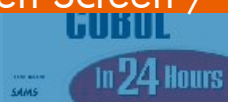
Bus Architectures

MBs of unique storage

Proprietary I/O Bus

Vendor networking protocol

Vendor peripherals



7 Hank Reds

...to this?

Modern software

Development environments

Management tools

Database programming

Web/GUI interfaces

**Open, low-cost
and more common
skills...**

**but how do I make
it reliable? Scalable?**

Standard hardware

Common chipsets

Blades

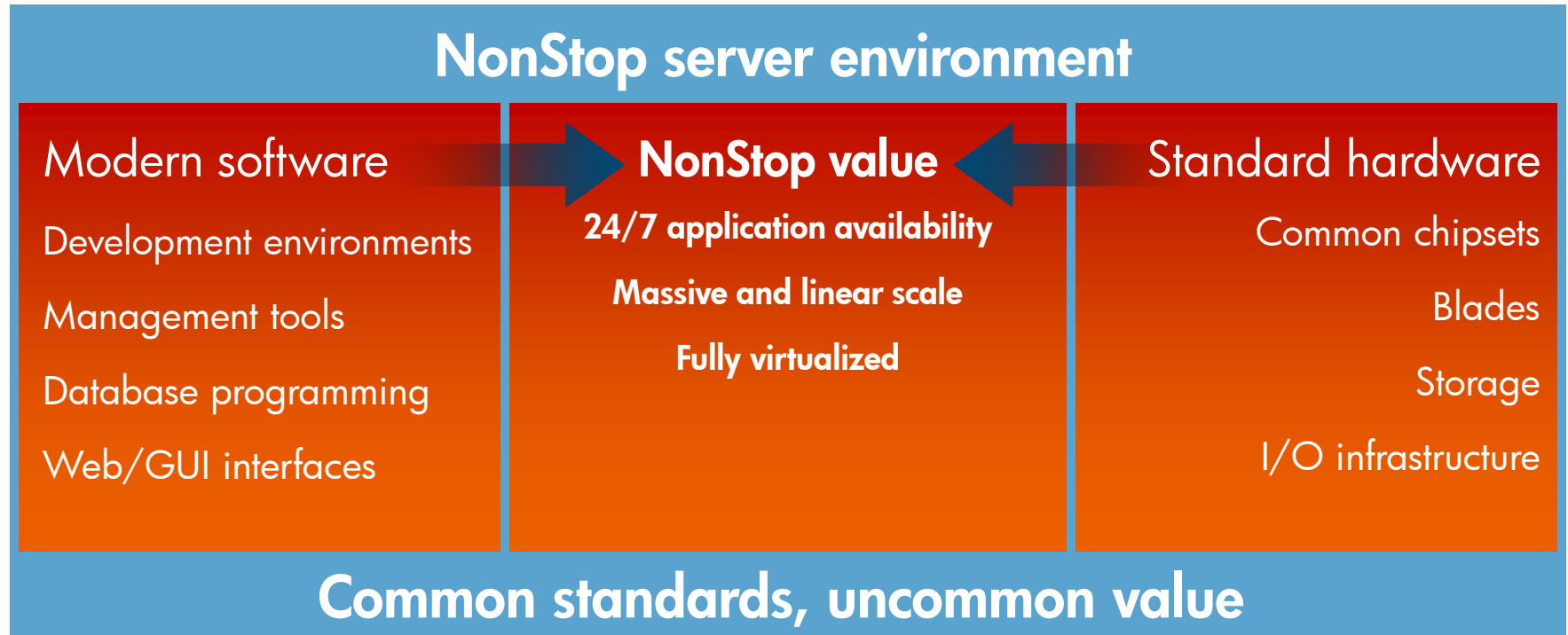
Storage

I/O infrastructure

 HIBERNATE

ROLLBACK • TRUNCATE
ALTER • XSQL

The new NonStop... modern, standard, and 24/7



The NonStop standardization journey



NonStop
S-series

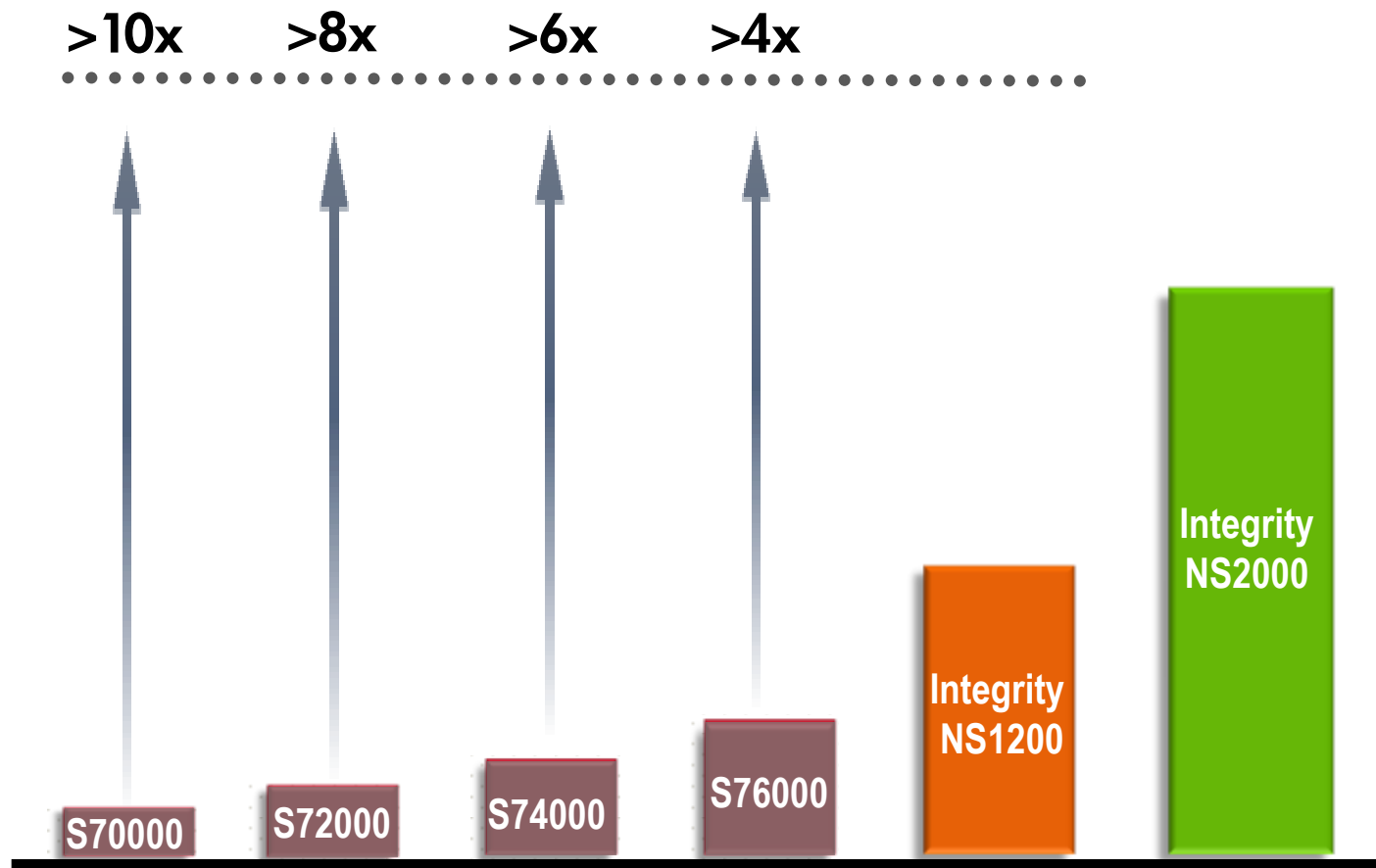
Integrity
NonStop

Integrity
NonStop
BladeSystem



NS2000 Comparison

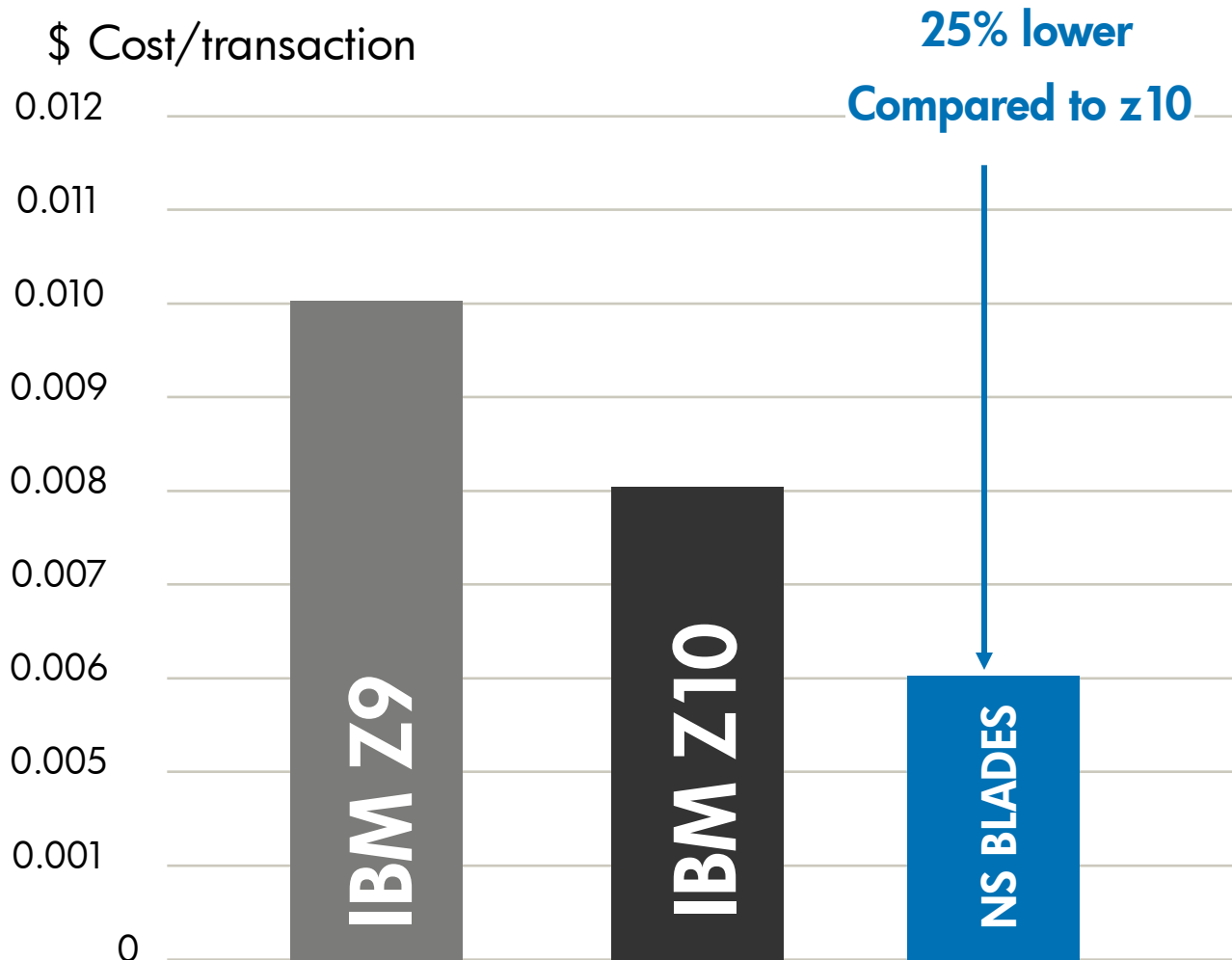
More Than 4x the Performance Capacity



Note: The relative performance shown in this comparison is based the order-entry benchmark using NonStop SQL/MP and Pathway. Other benchmarks and specific customer applications may produce different results.



Blades drive breakthrough TCO advantage versus z9 and z10



**TCO includes basic cost, application cost and downtime cost

Source: Trends in IT Value Report, **2009**, Standish Group International, Inc.



NonStop Multi-core roadmap (J-Series)

2008

NB50000c

Dual-core
BladeSystem



2009

NS2000

Dual-core
rack mount

2010

Quad-core
BladeSystem



2011

Rack mount
refresh

2012

N-core
BladeSystem



NonStop software investments

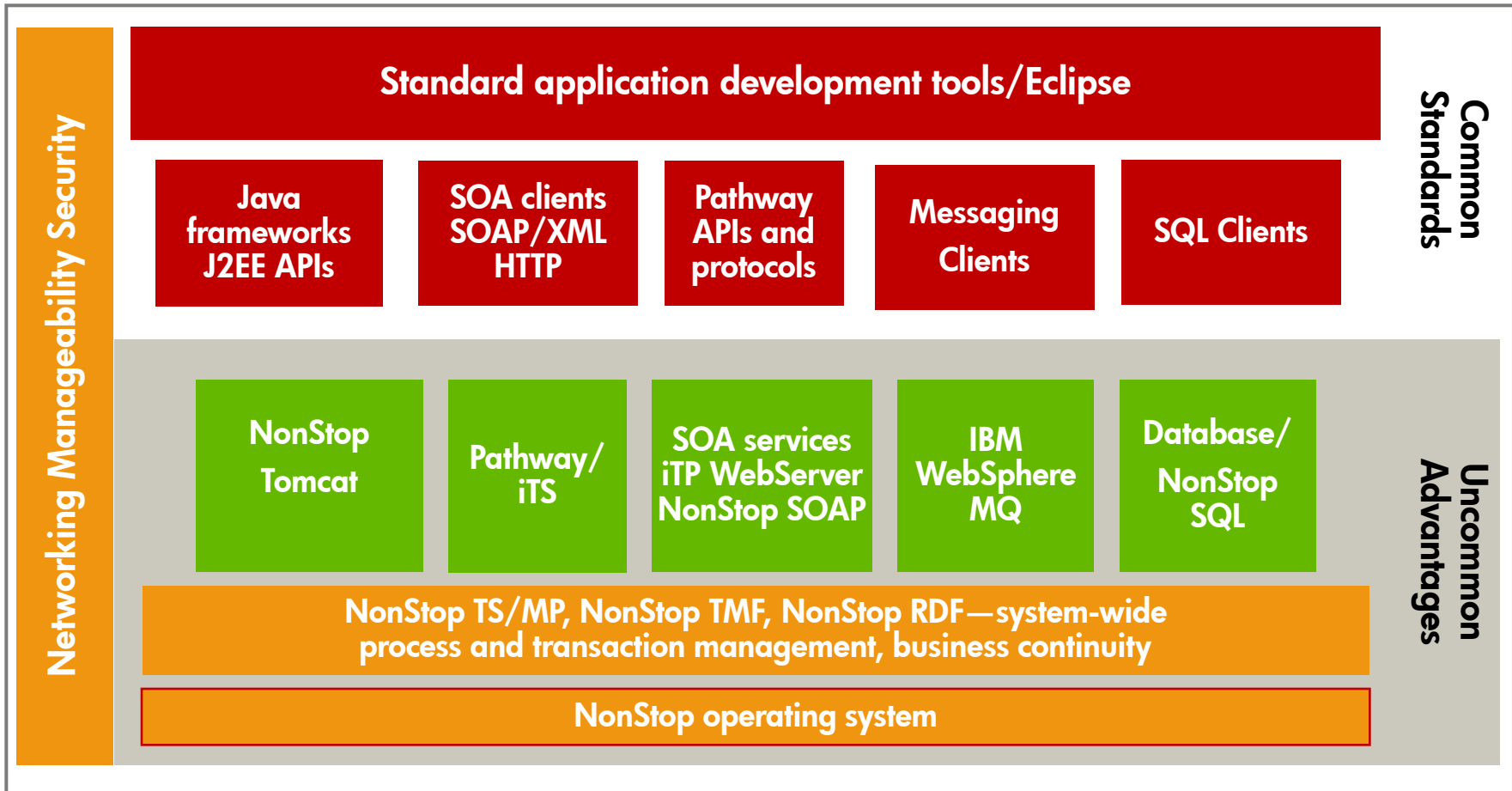
– in a nutshell

- Support industry standard technologies for application development
- Differentiate these standard applications by deploying them into the most scalable and available platform infrastructure (without change)
- Make this infrastructure easily accessible, open, highly secure, and simple to manage

*Common standards, uncommon advantages
The same application runs better on NonStop*



NonStop software stack



Operating system infrastructure – plans

Continuing adherence to industry standards

February 2009

- **Guardian Binary Semaphore – Limits Relief**
 - Increase the number of binary semaphores per process from 64 to 24K

May 2009

- **OSS File Open – Limits Relief**
 - Increase OSS file opens (per CPU including sockets, terminals, disk, ...) from 12K to 64K
 - Increase OSS disk file opens (per CPU) from 12K to 48K
 - Increase OSS open sockets (per CPU) from 4K to 16k

2H 2010

- **Standard Library Support for Non-blocking IO**
 - Non-blocking IO for threaded applications using standard C libraries
- **System Limits Relief**
 - Increase OSS PIDs (per 16P system) to 128K
 - Increase number of Guardian processes to 10K
 - Increase OSS file opens (per CPU) to 128K
 - Increase OSS disk file opens (per CPU) to 96K
 - Increase OSS open sockets (per CPU) to 32K

Time



SOA, Java and Open-source Frameworks

- Java open-source application platform with NonStop fundamentals

April 2009

- **Release NSJava 6.0**
 - Certified implementation of JDK 6.0

July 2009

- **Open Source Java Frameworks**
 - Spring framework for business logic tier
 - Axis 2 for SOA web-services
 - Server Faces and Sprint MVC for Web tier
 - Hibernate for persistence tier

June 2009

- **Large Message Support in SOAP 3.0**
 - SOAP messages limit increased from 32K to 2MB

2010

- **Standards-based SOAP engine (4.0)**
 - Based on open source Apache AXIS2/C architecture (EAP available earlier) Feb. 2010
 - Adheres to SOAP 1.2 standard
- **NonStop Java Server Pages 6.1**
 - Deep port of latest Apache Tomcat servlet engine (version 6.0.18) July 2010

Time



NonStop SQL/MX Roadmap

2007

2008

2009

2010

2011

2012

2013

2014

SQL/MX 2.1.1 – G06.27 September 2005

S-series

SQL/MX 2.3 GA – H06.10 May 2007

SQL/MX 2.3.1 – H06.13/J06.03 Feb. '08

SQL/MX 2.3.2 – H06.16/J06.05 Nov. '08

SQL/MX 2.3.3 – H06.19/J06.08 Sept. '09

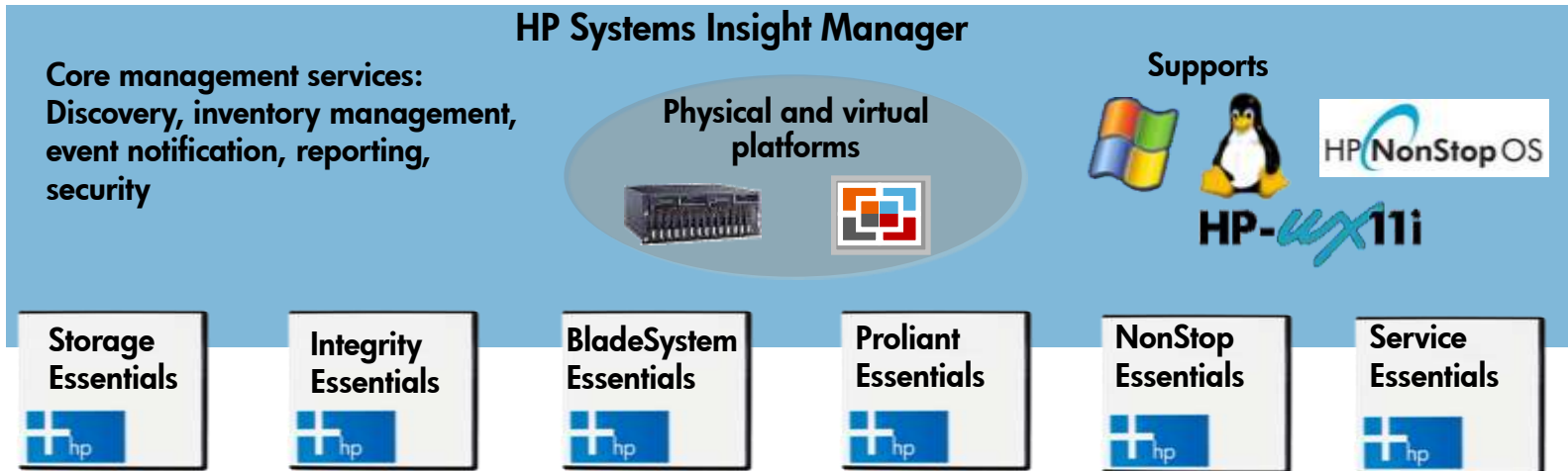
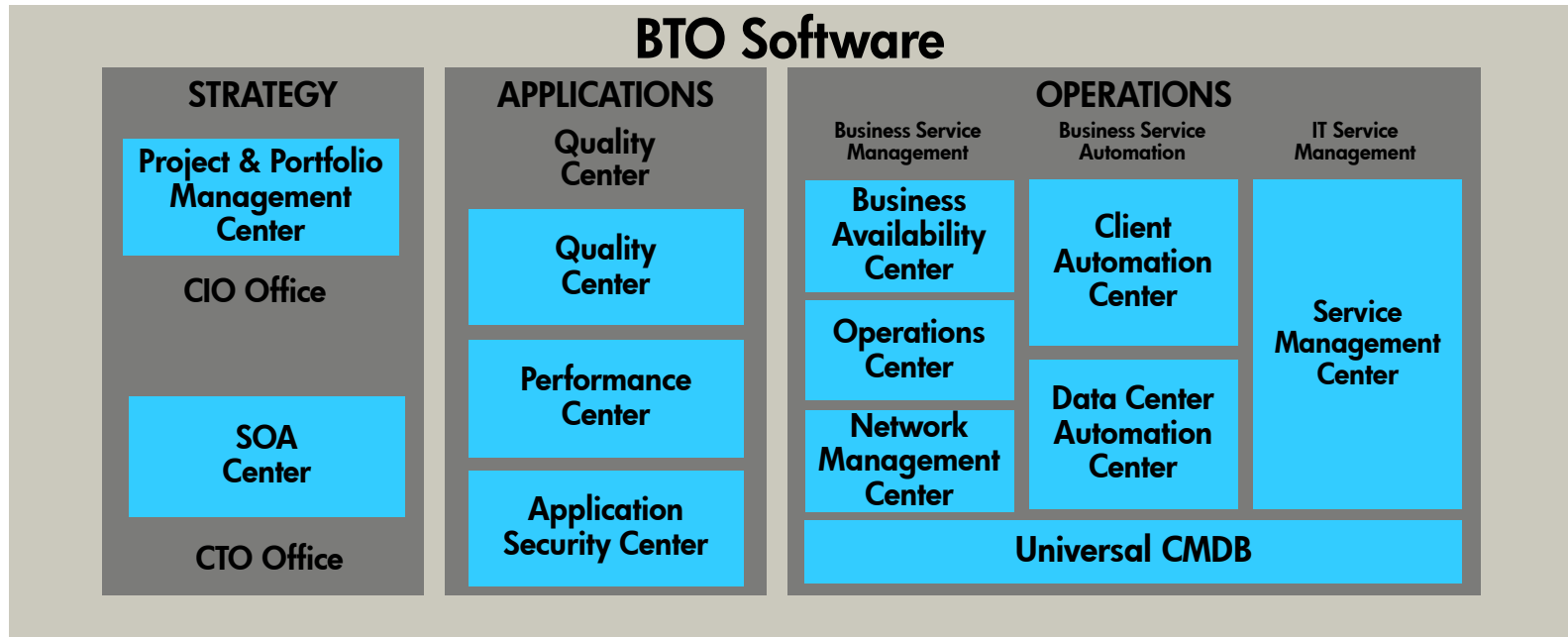
Integrity NonStop

SQL/MX 2.3.4 – February 2010

SQL/MX 3.0 – February 2011



HP SIM, Essentials and BTO products



NonStop Security Products

What does HP offer today?



On Platform Security

Safeguard

NS System Console Security Program

Secure iTP
WebServer/SOAP

Data In Motion

SSH Server

IPSec

Atalla NSP
(Encryption Processors)



Data At Rest

Volume Level Encryption (Oct. CA, Feb. 2010 GA)

Secure VTS
(Virtual Tape System)

Audit and Compliance

CLW (Compliance Log Warehouse)

Data Sanitization

SafeArt (Safeguard reporting)



HP Compliance Log Warehouse

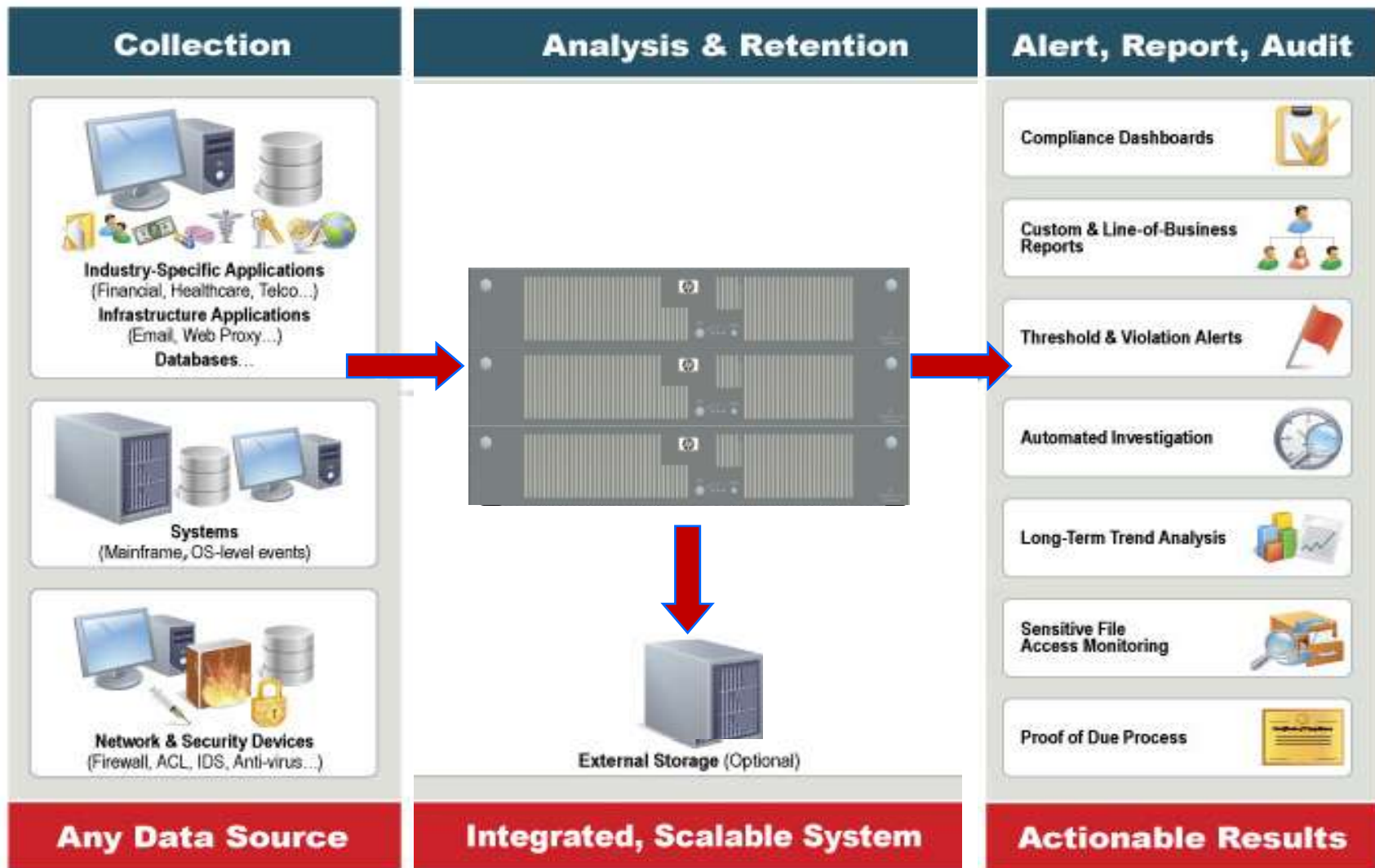
Pre-configured security appliance

- Provisioning is simplified
 - Integrated 2U Integrity server-based appliance
 - Intuitive parameters make for simple and quick initialization and configuration
- Solution performance
 - CLW is tuned and optimized for a log data management application
- Support is simplified
 - One source for customer support and no finger pointing
- Provides a rapid return on your CLW investment

HP Compliance Log Warehouse:
built to specifically address
your ever evolving security
and compliance needs

HP Compliance Log Warehouse

How it Works



A modern application environment, with NonStop fundamentals

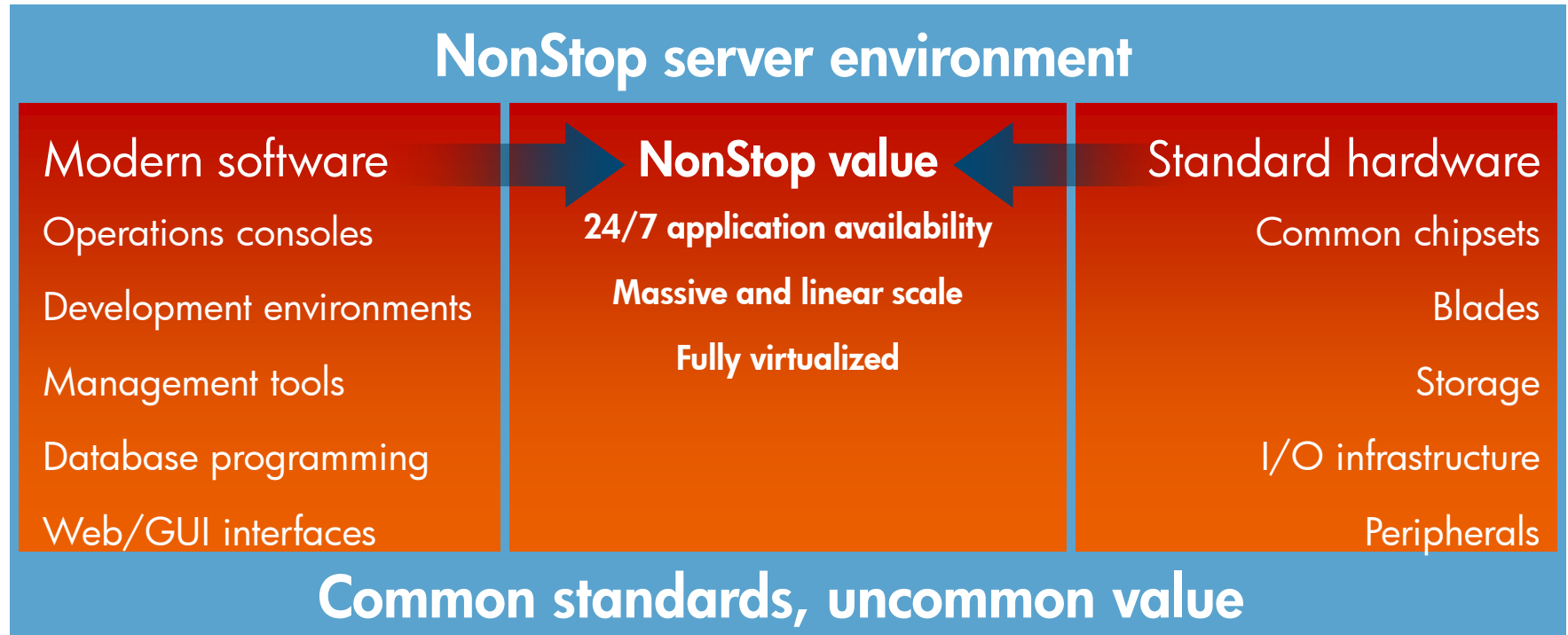
Develop Application programming models	ECLIPSE	Open Source Java Frameworks
		Apache Tomcat
		Certified Java SE Platform (JDK and JRE)
		SOA Infrastructure (SOAP, XML, HTTP, WSDL)

Deploy Application infrastructure	NonStop TS/MP
	NonStop OS

Differentiate	Network access	SOA infrastructure	Open source Java frameworks	Business logic	Database
Transparent Scalability	✓	✓	✓	✓	✓
Transparent Fault Tolerance	✓	✓	✓	✓	✓



The new NonStop... modern, standard, and 24/7





Half the footprint... **and** double the performance

Integrity NonStop

8 CPUs/performance = 1x



Integrity NonStop BladeSystem

8 CPUs/performance = 2x



Delivering:

Higher performance

Higher density

Lower cost



Customers still see the value of HP NonStop

Financial Services

“Our new Faster Payments service is a critical part of the UK’s financial infrastructure so **it has to be constantly available**. We chose the HP Integrity NonStop to deliver that hard requirement because it has proven to **be the best platform for highly critical financial services.**”

Imran Ali,
Director Faster Payments



Communications Media & Entertainment

“Practically everything is built redundantly so that **availability is ensured at all times**. Other large systems strive to realize this mirroring nowadays, But the Integrity NonStop server always **takes it a couple of steps further**. That’s what makes it **unique.**”

Bruno Dujardin
Systems manager

The logo for belgacom, with the word 'belgacom' in a lowercase, blue, sans-serif font.

Manufacturing

“We place enormous trust in the reliability of the NonStop system. Our NonStop applications are **always available**. We take them for granted, just like the water that comes out of the tap.”

Hans-Joachim Gebel
CIO



Healthcare and Public Sector

“The ability to move in the direction of **real-time data sharing** for health information exchange is incredibly important. We need a system with this kind of capability, and the HP Integrity NonStop platform provides it ”

Ray Rogers
CEO

The logo for the National Center For Health Care Informatics, with the text 'National Center For Health Care Informatics' in a blue, serif font, and a faint medical symbol in the background.

Customers are still seeing clearly the VALUE in Nonstop and ACI

Forty-nine BASE24 upgrades & BASE24-eps new wins in last two quarters

Three new BASE24/Integrity NonStop BladeSystem (e.g. Mainframe Modernization)

Performance Testing of BASE24 on Integrity NonStop BladeSystem is completed - with excellent performance

100% win rate in competitive tenders in installed base



A focused, multiyear strategy

#1 or 2 in all categories

Services
EDS...

Software
Mercury, Opsware, Peregrine...

Products
Compaq...

HP has successfully integrated 30 companies
in the past 42 months

2001 · 2002 · 2003 · 2004 · 2005 · 2006 · 2007 · 2008 · 2009



Offering the most comprehensive computing portfolio

HP ProLiant Server



XC3000
HPTC cluster

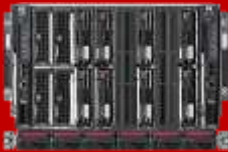


HP ProLiant
DL series



HP ProLiant
BL series

HP BladeSystem Server



Enclosures



Server & Storage
Blades (incl.
BL860c/BL870c)

HP Integrity Server

✓ Dual Core Intel® Itanium® Processor

High-end



HP Integrity Superdome

Midrange



HP Integrity rx8640

HP Integrity rx7640



Entry-class



HP Integrity
rx2660



HP Integrity
rx3600



HP Integrity
rx6600

HP Integrity NonStop Server

Intel®
Itanium®
architecture



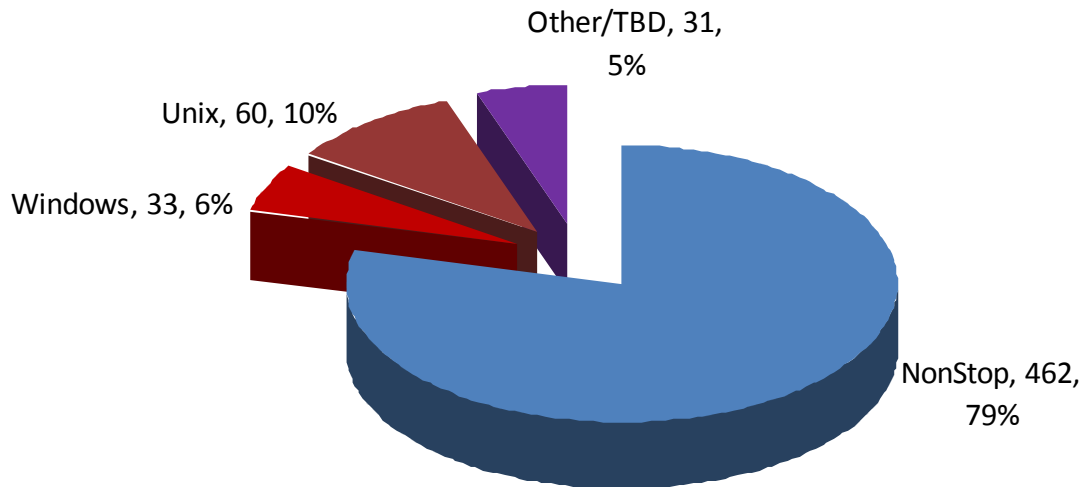
NonStop
Advanced
Architecture



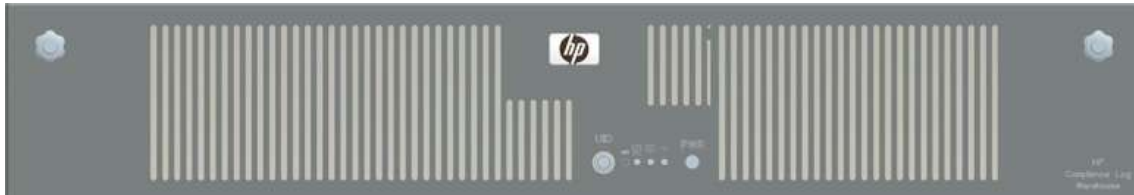
HP in Payments

586 Customers In 78 Countries

2008 Payment Platforms



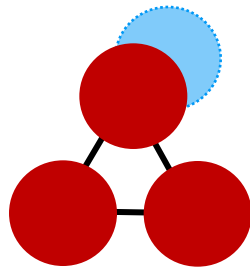
Modular building blocks deliver scalability and high-availability



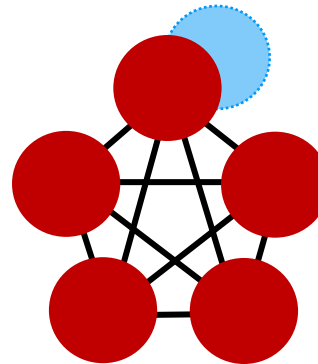
Each node is a pre-configured Integrity-based server with custom bezel and configured OS and CLW solution software



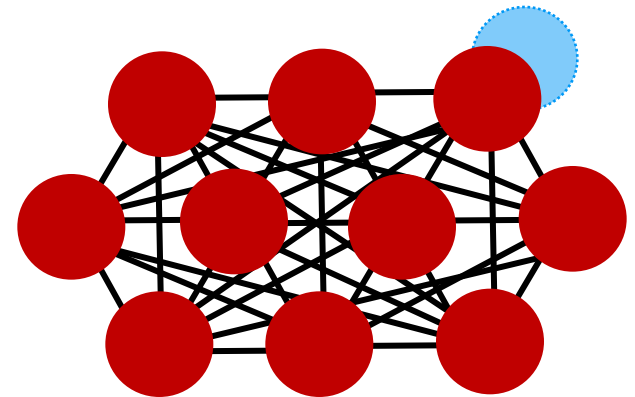
1-node:
1 server



3-node:
4 servers

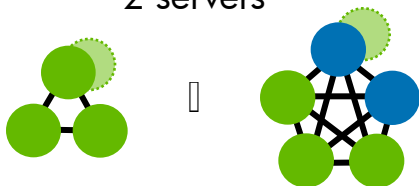


5-node:
6 servers

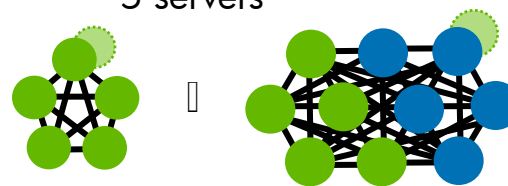


10-node:
11 servers

3- to 5-Node Upgrade:
2 servers



5- to 10- Node Upgrade:
5 servers



Additional Collector Node:
1 server

