

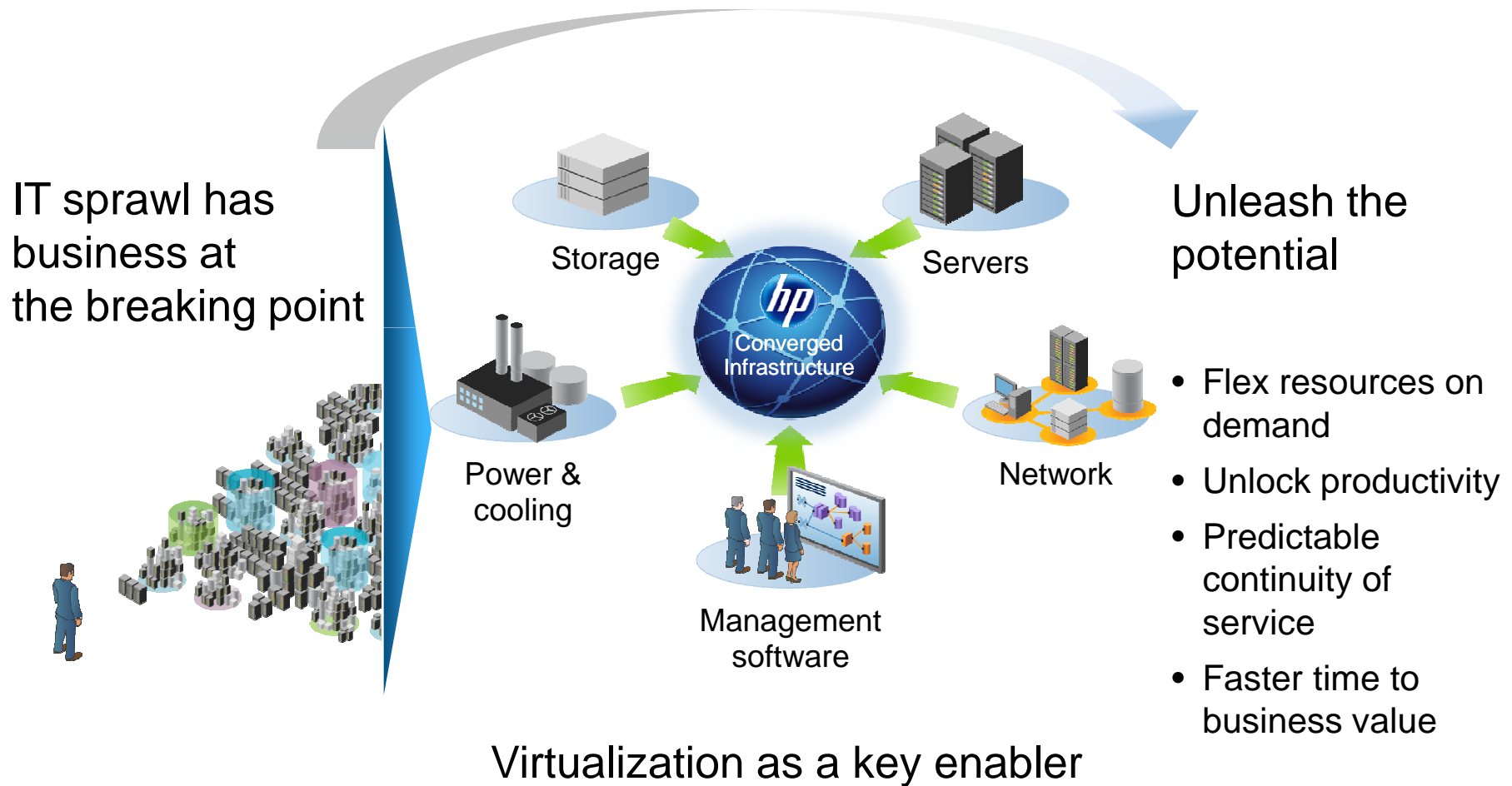
# HP Integrity Servers for OpenVMS

Michael Garri,  
BCS Presales Manager  
HP Deutschland  
September 2011

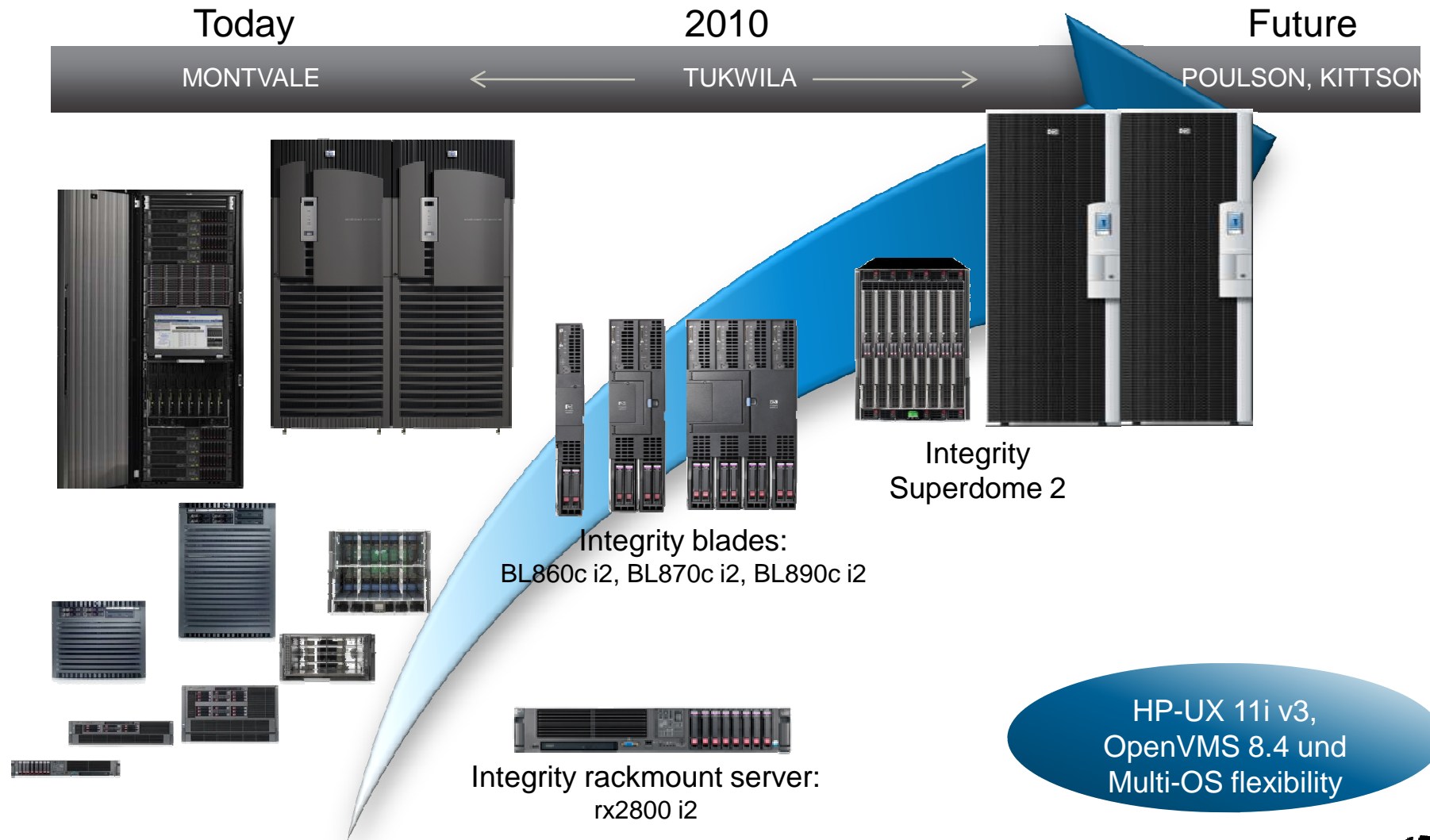
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# Businesses of Tomorrow Will Be Built on a Converged Infrastructure



# Integrity Server Family

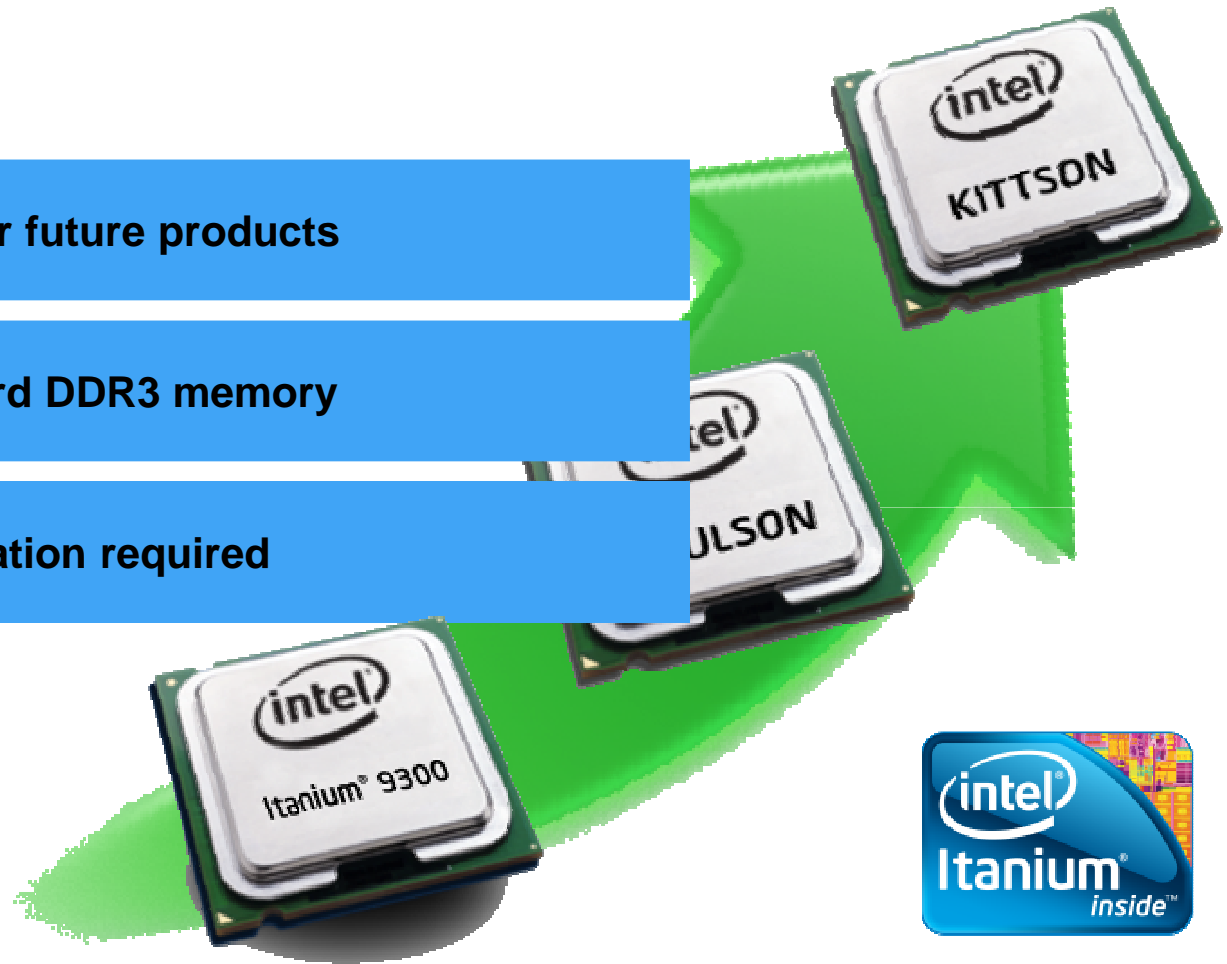


# Intel® Itanium® Platform Longevity

Upgrade path for future products

Industry standard DDR3 memory

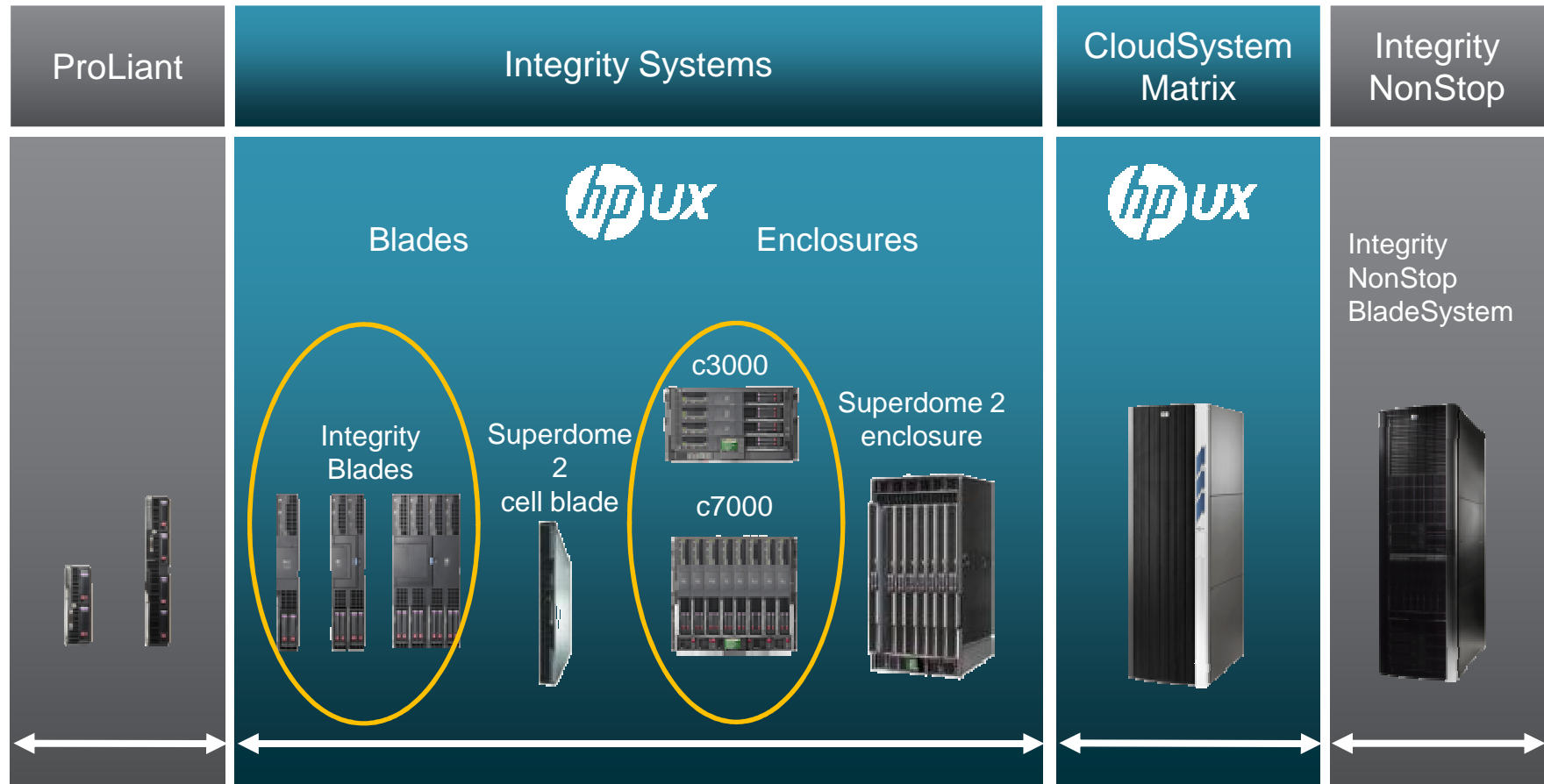
No recompilation required



*Mission Critical Computing for the Next Decade*

# Integrity Server Blades Bring Mission-Critical to Everyone with Unified Blade Architecture

Integrity server blades - Your mission-critical starting point



Up to 4,096 nodes

Command your mission-critical environment with greater confidence



# Common Modular Building Blocks

Simplicity through standardization

Common  
managemen  
t

Matrix operating environment  
delivered by Insight Dynamics



Onboard Administrator, iLO3



Common  
networking

Virtual Connect



Common  
enclosure

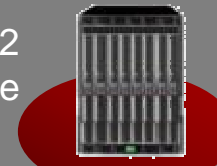
c3000



c7000



Superdome 2  
enclosure

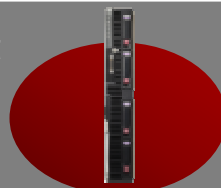


Common spares

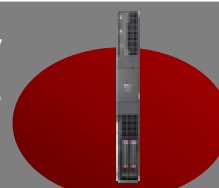


Common  
server  
architecture

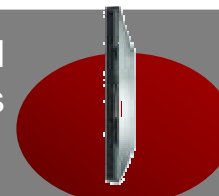
ProLiant  
blades



Integrity  
blades



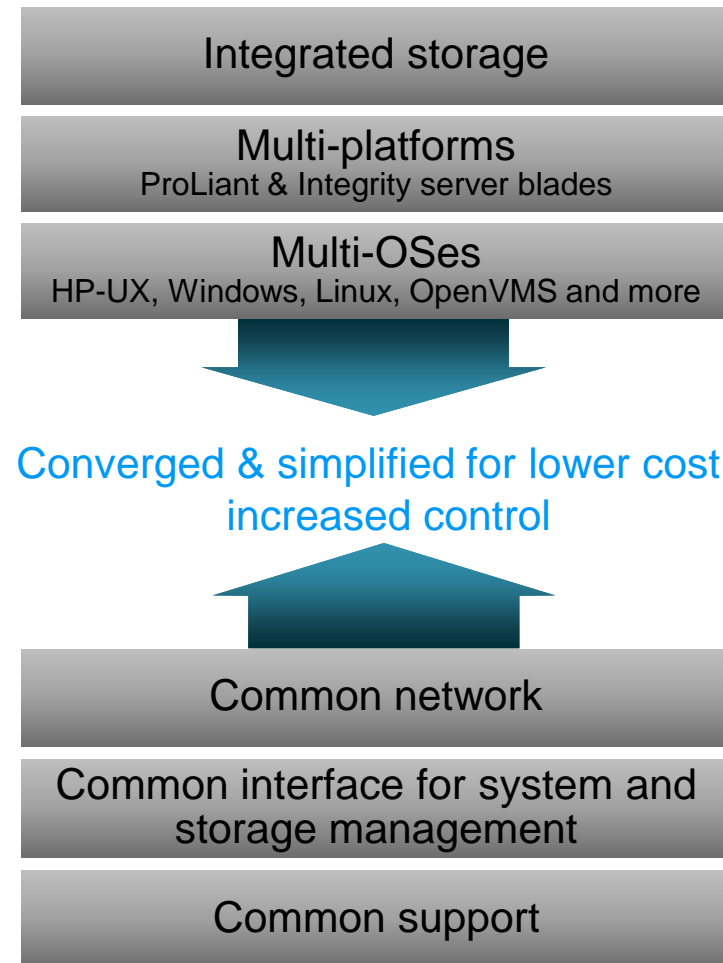
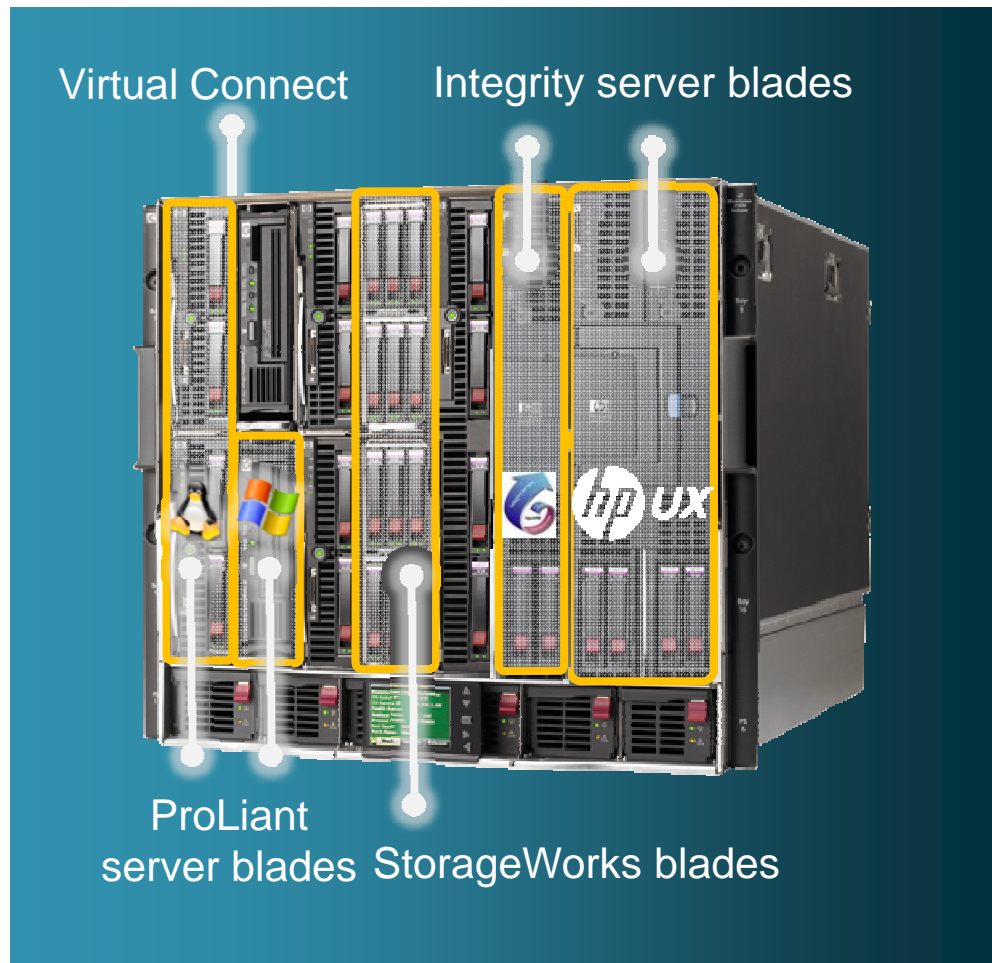
Cell  
blades





# No-Compromise Converged Infrastructure

Common enclosure and management lowers TCO, provides flexibility



Converged & simplified for lower cost & increased control

Flexibility in a box; change-ready



# Select Base Blade Server

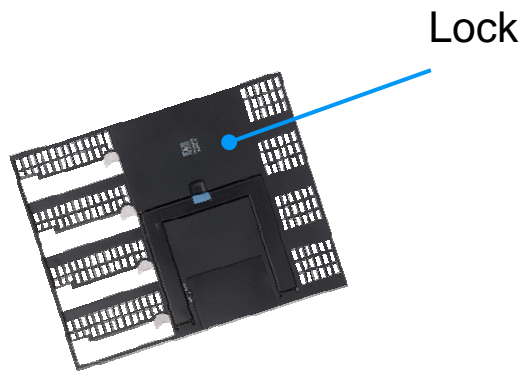


Integrity	BL860c i2	BL870c i2	BL890c i2
Base Server	AD399A for c7000 and c3000	AH383A for c7000 AM329A for c3000	AH384A for c7000 AM330A for c3000
Processor Sockets	2 (max. 8 Cores)	4 (max. 16 Cores)	8 (max. 32 Cores)
DIMM Sockets	24 (max. 192GB)	48 (max. 384GB)	96 (max. 768GB)
HDD Slots	2	4	8
Embedded Controller	1 HP p410i SAS RAID	2 HP p410i SAS RAID	4 HP p410i SAS RAID
Embedded NICs	4* 10GbE w/Flex-10	8* 10GbE w/Flex-10	16* 10GbE w/Flex-10
IO Mezz Slots	3 Gen2 PCIe	6 Gen2 PCIe	12 Gen2 PCIe
Management	Integrity iLO3 Advanced Pack	Integrity iLO3 Advanced Pack	Integrity iLO3 Advanced Pack

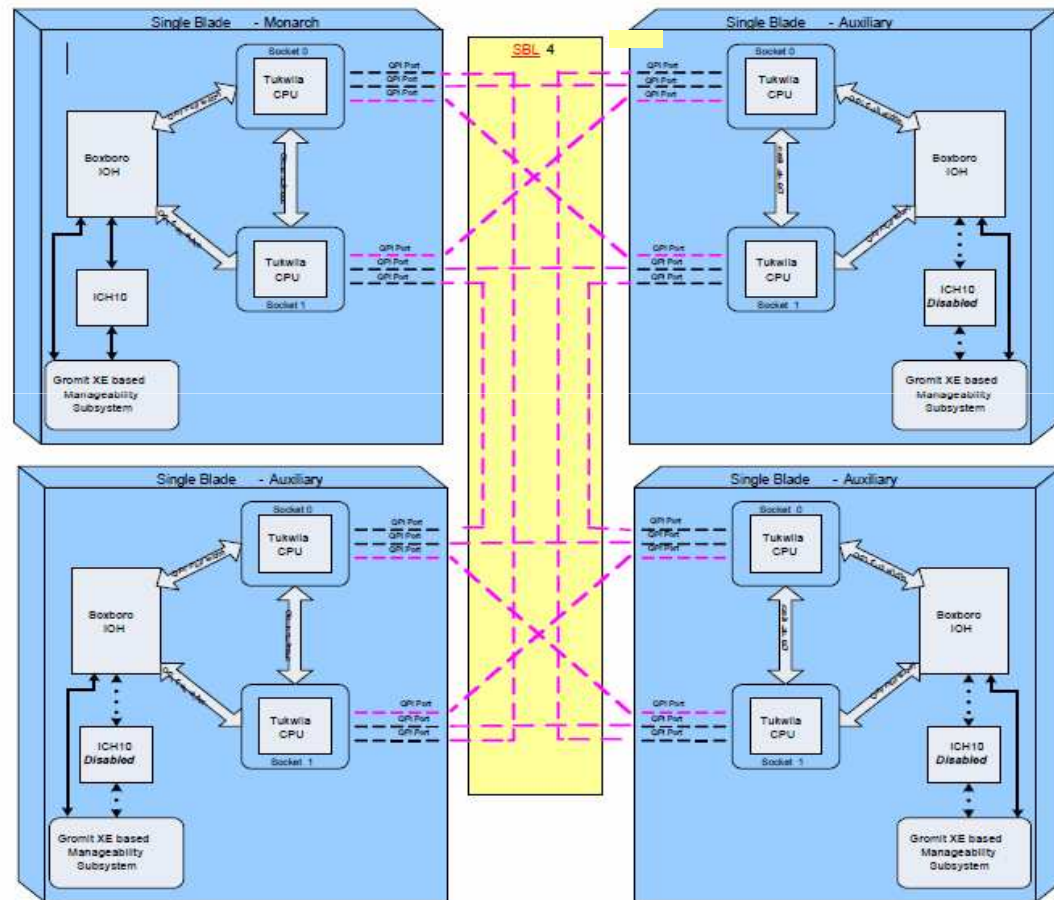
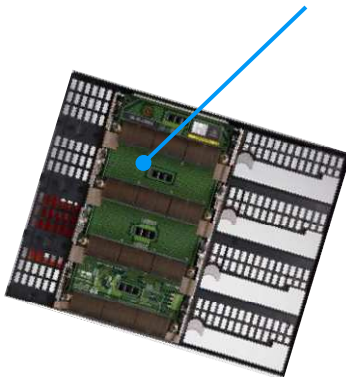




# Blade Link, @ BL890c i2



Connectors for 4 Blades



# Upgrade Kits

Blade Link enables easy and flexible upgrades

Feature  
Enhancement!

## Upgrade Kits

### Hardware Components



Upgrade blade  
No Blade Link



BL2 (3 options)  
BL870c i2 Blade Link



BL4 (2 options)  
BL890c i2 Blade Link

## Upgrade Types

1

### Additions

have a single BL8x0c i2 blade and want to upgrade

1. Order upgrade blade(s)
  - Upgrade blade is CTO and must include at least one processor; other components can be added (memory, IO, etc.)
2. Order required Blade Link
3. Proper OE license to be purchased; trade-in available
4. Proper support level to be purchased

2

### Combinations

have multiple BL8x0c i2 blades and want to upgrade by combining them

1. Order required Blade Link
2. Proper OE license to be purchased; trade-in available
3. Proper support level to be purchased

3



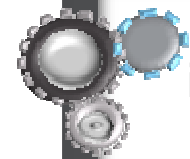
### Conversions

have a single BL8x0c i2 blade and want to convert (e.g. from odd to even slot)

1. Order required Blade Link
2. No OE license change required
3. No support level change required

# OpenVMS V8.4 on BL8x0c i2 servers

New Integrity Systems have flexible Mission-Critical Server blades combined with the efficiency of HP BladeSystem to accelerate IT effectiveness:

 <p>Scale up, out, and within</p>	<p>to meet any business demands with maximum flexibility &amp; offering industry's first 8 socket scale-up server blade</p> <ul style="list-style-type: none"><li>• Overall savings of 55% over 3 years</li><li>• 2x performance boost on database workloads</li><li>• Up to 20x more networking bandwidth, reduce cabling by 97%, eliminate admin tasks by 60% and save up to 40% in CapEX with Virtual Connect</li></ul>
 <p>Always-on resiliency</p>	<p>keeps businesses running without interruption</p> <ul style="list-style-type: none"><li>• 2x the CPU core reliability than industry volume processors</li><li>• 17x higher reliability than single-chip spare with Double-chip spare</li><li>• Up to 100% application availability</li></ul>
 <p>Industry-leading integrated infrastructure management</p>	<p>save time, conserve valuable IT resources, and simplify daily operations</p> <ul style="list-style-type: none"><li>• Reduce costs, increase flexibility and deploy faster with HP Virtual Machine</li><li>• 3x faster virtual media performance with Integrated Lights Out 3</li></ul>

“World’s first scalable blades built on the industry’s #1 blade infrastructure”

# Virtual Connect Flex-10 for mission-critical integrity



Increased network scalability and configuration flexibility with up to 20x increase in networking bandwidth

Enabling workload mobility for any mission critical application

20X

Up to twenty times higher bandwidth

4X




Four times more connections

20%

Up to 20% less power per core



Oracle, SAS

	BL860c i2	BL870c i2	BL890c i2
			
Built-In Flex-10 VC module + VC 3.0 FW	16 FlexNICs	32 FlexNICs	64 FlexNICs
Add Flex-10 Capable mezz cards	24 FlexNICs	48 FlexNICs	64 FlexNICs
OpenVMS Support upto 52 NICs on a Blade system			

Wire-once and change data center connections on the fly with up to 128 FlexNICs scalability



# New Integrity rx2800 i2 Server Overview

## Management

- Integrity Integrated Lights Out 3
- Integrity iLO 3 Advanced Pack
- Integrated VGA console
- Systems Insight Display

## High availability

- Memory double chip spare
- Redundant hot-plug power
- Redundant hot-swappable fans
- Internal SAS RAID
- Processor de-allocation on failure

## Operating Systems Support

- HP-UX 11i v3
- OpenVMS 8.4
- Windows 2008 R2

## Processors and chipset

- Intel® Itanium® 9300-series processors (Tukwila family)
- Intel® E7500 Scalable Memory Buffer (Mill Brook)
- Intel® E7500 IOH (Boxboro)
- Intel® ICH10 south bridge

## Memory

- ~6X memory BW increase over previous generation
- 24 PC3-8500 DIMM sockets
- 192 GB capacity with 8GB DIMMs



Base warranty: 3-year  
next day, on-site

## Form factor

- 2 EIA units (U)/3.5" height
- 20 servers per 42U rack
- Designed for data center and utility closet operation (5–35°C)
- Standalone, pedestal and 'Office Friendly' options

## I/O subsystem

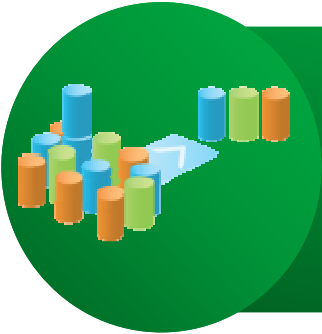
6 Gen2 PCIe slots (2 x8, 4 x4)  
Integrated p410i RAID controller  
Integrated 4 Port 1000Base-TX LAN  
1000Base-T, USB, serial ports

## Additional IO options

- 8 hot-plug SFF SAS 6Gbps HDDs
- DVD-ROM or DVD+RW
- Integrated RAID support



# OpenVMS V8.4 on rx2800 i2 servers



## COMPACT SCALING

- Run OpenVMS workloads with outstanding performance, scale, and resiliency in a 2U footprint
- Up to 9x performance boost vs. previous generation servers



## OUT-OF-THE-BOX SAVINGS

- Maximize resources with up to 58% lower TCO
- Lower power usage and advance energy efficiency with ENERGY STAR® compliant server



## OPERATIONAL EXCELLENCE

- Increase productivity with industry-leading IT tools
- With new remote management, control servers from anywhere, at anytime

OpenVMS  
V8.4 on  
rx2800 i2  
Servers



# OpenVMS V8.4 on rx2800 i2 servers

Improved resiliency

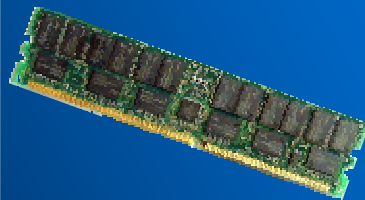
## Processing

- Error correction codes (ECC), parity protection
- Soft Error hardened latches
- Cache Safe technology



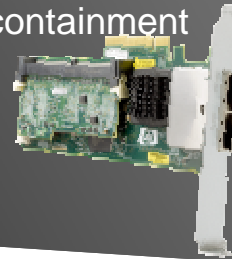
## Memory

- Double-chip sparing & ECC
- Pro-active memory scrubbing
- Address/control parity checking



## I/O

- PCIe Advanced Error Reporting
- PCIe link cyclic redundancy check
- Isolated I/O buses for error containment



## Components

- Color coded latches for faster upgrades and repairs
- Redundant, hot-swap power supplies and fans

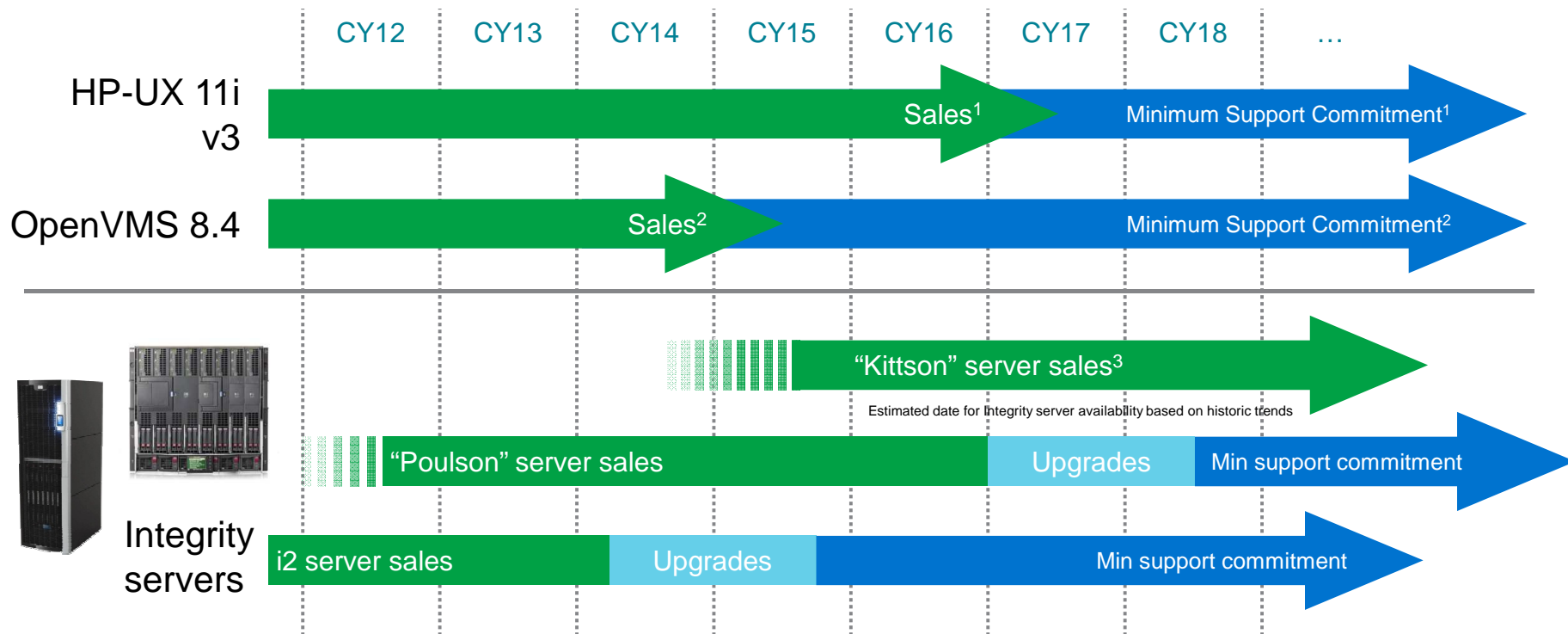


OpenVMS

HP mission-critical services

Data center infrastructure

# HP Integrity Lifecycles



Roadmap is subject to change without notice.

Integrity server dates reflect historic new platform development lifecycles. Three generations of platforms are currently planned by HP and Intel. Actual availability may not follow historic trends.

<sup>1</sup> The current minimum support commitment for HP-UX 11i v3 is 2020. HP-UX 11i v3 is planned to be supported on "Poulson" and "Kittson"-based Integrity servers. End of sales and minimum support commitment dates are planned to be extended accordingly.

<sup>2</sup> OpenVMS 8.4 is planned to be supported on "Poulson"-based Integrity servers. End of sales and minimum support commitment dates are planned to be extended accordingly.

<sup>3</sup> "Kittson"-based Integrity server sales remain active 12-18 months after replacement systems are introduced.

# HP OpenVMS – Delivering Lasting Value

## Future:

- Align with hardware roadmap and support new Poulson based Integrity platforms with OpenVMS v8.4
- Continued quality, performance and scalability enhancements

## Current release:

- OpenVMS v8.4 Update:
  - New Integrity rack systems running Itanium processors
  - Virtual Connect / Flex 10 Support for HP Integrity BL8x0c i2 systems
- OpenVMS v8.4 (Integrity and Alpha)
  - New Integrity systems running Itanium processors
  - OpenVMS as a guest operating system on HP Integrity Virtual Machine
  - Clusters over TCP/IP protocol
  - Performance enhancements

## Previous releases:

- OpenVMS v8.3-1H1 (Integrity only)
  - Intel® Itanium® processor 9100 series
  - BL860c & BL870c Blade Systems, c7000 & c3000 enclosures
- OpenVMS v8.3 (Integrity and Alpha)

Time



*THANK YOU*

