



HP 9000 & HP-UX 11i: Roadmap & Updates



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Agenda

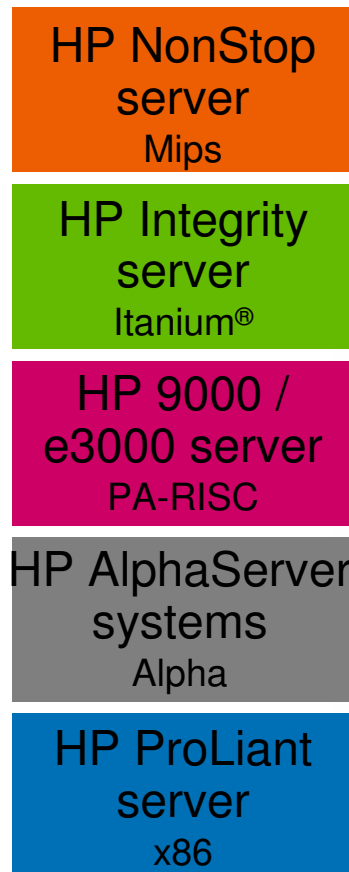
- **HP Integrity & HP 9000 Servers: Roadmap and Updates**
- HP-UX 11i : Roadmap & Updates
HP-UX 11i - Proven foundation for the Adaptive Enterprise

HP's industry standards-based server strategy



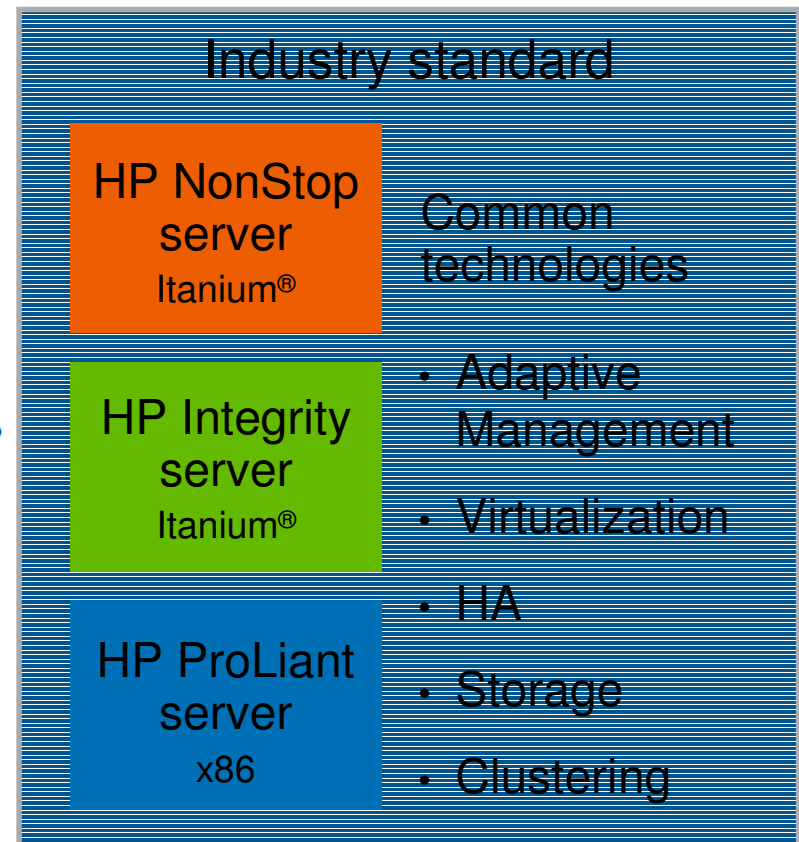
Moving to 3 leadership product lines – built on
2 industry standard architectures

Current



Enabling larger investment in value-add innovation

Future



HP 9000 servers



Max. CPUs

128

HP Superdome server



Up to 128-way scalability with hard and virtual partitioning for leading consolidation

- 4 to 128 PA-8800 processors (max. 64 per partition)
- Up to 1 TB memory
- 192 PCI-X slots (with I/O expansion)
- Up to 16 hard partitions

32

HP 9000 rp8420-32 server



32-way scalability with virtual and hard partitioning for consolidation

- 2 to 32 PA-8800 processors
- Up to 128 GB memory
- 32 PCI-X slots (with SEU)
- Up to 4 hard partitions (with SEU)
- 2 servers per 2m rack

16

HP 9000 rp7420-16 server



16-way flexibility with high performance, density, and partitioning capabilities

- 2 to 16 PA-8800 processors
- Up to 64 GB memory
- 15 PCI-X slots
- Up to 2 hard partitions
- 4 servers per 2m rack

8

HP 9000 rp4440-8 server



8-way app server in ultra-dense 4U chassis

- 2 to 8 PA-8800 processors
- Up to 64 GB memory
- 6 PCI-X slots
- 10 servers per 2m rack

2-4

HP 9000 rp3440-4/
rp3410-2 server









Highly affordable 2-way/4-way ultra-dense entry-level servers

- 1 or 2/2 or 4 PA-8800 processors
- 6 GB/24 GB memory
- 2 PCI-X/4 PCI-X slots
- 20 servers per 2m rack

HP Integrity servers: the broadest line of Itanium[®]-based systems








128	HP Integrity Superdome		Up to 128-way scalability and hard-partitioning capability for leading consolidation	<ul style="list-style-type: none"> Up to 128 Intel[®] Itanium[®] 2 processors or HP mx2 dual-processor modules, consisting of two Intel Itanium 2 processors Up to 1 TB memory 192 PCI-X slots (with I/O expansion) Up to 16 hard partitions
32	HP Integrity rx8620-32 server with server expansion unit (SEU)		32-way scalability and hard-partitioning capability for consolidation	<ul style="list-style-type: none"> 2- to 32-way Intel Itanium 2 processors or HP mx2 dual-processor modules Up to 128 GB memory 32 PCI-X slots (with SEU) Up to 4 hard partitions 2 servers per 2m rack
16	HP Integrity rx7620-16 server		16-way flexibility with high-performance, density, and hard-partitioning capabilities	<ul style="list-style-type: none"> 2- to 16-way Intel Itanium 2 processors or HP mx2 dual-processor modules Up to 64 GB memory 15 PCI-X slots Up to 2 hard partitions 4 servers per 2m rack
8	HP Integrity rx4640-8 server		8-way high-performance servers in ultra-dense and highly scalable models	<ul style="list-style-type: none"> 1- to 8-way Intel Itanium 2 processors or HP mx2 dual-processor modules Up to 64 and 96 GB memory 6 and 10 PCI-X slots 10 and 5 servers per 2m rack
4	HP Integrity rx5670 server		4-way high-performance servers in ultra-dense and highly scalable models	<ul style="list-style-type: none"> 1- to 4-way Intel Itanium 2 processors Up to 64 and 96 GB memory 6 and 10 PCI-X slots
2	HP Integrity rx2600-2 server and rx1600-2 server		2-way ultra-dense, power-packed server redefines entry-level computing	<ul style="list-style-type: none"> 1- to 2-way Intel Itanium 2 (rx2600-2) or Low Voltage Itanium 2 (rx2600-2—1.4 1.0 GHz; rx1600-2—1.0 GHz) processors 1U (rx1600-2) & 2U (rx2600-2) form factor Up to 24 GB memory 4 PCI-X slots 20 servers per 2m rack

HP Integrity and HP 9000 Server Roadmap



Revision 4.6 Aug-04

	Current offering	2004	2005	2006
 4-128P	HP 9000 Superdome		CPU: PA-8900 (dual-CPU) OS: HP-UX 11iv1, v2, v3*	New Chipset CPU: PA-8900 OS: HP-UX 11iv1, v2, v3 DDR-II
	HP Integrity Superdome	CPU: Itanium2 9M OS: HP-UX11iv2, Windows, Linux*	CPU: Itanium2 "Montecito" New Chipset OS: HP-UX 11iv2, v3* DDR-II Windows, Linux, OpenVMS	PCI-E
 2-16P 2-32P	HP 9000 rp7410-8, rp8400-16 rp7420-16, rp8420-32		CPU: PA-8900 (dual-CPU) OS: HP-UX 11iv1, v2, & v3*	New Chipset CPU: PA-8900 OS: HP-UX 11iv1, v2, v3 DDR-II
	HP Integrity rx7620-16, rx8620-32	CPU: Itanium2 9M OS: HP-UX11iv2, Windows, Linux*	CPU: Itanium2 "Montecito" New Chipset OS: HP-UX 11iv2, v3* DDR-II Windows, Linux, OpenVMS	PCI-E
 1-8P	HP 9000 rp4440-8		CPU: PA-8900 (dual-CPU) OS: HP-UX 11iv1, v2, v3*	
	HP Integrity rx4640-8	CPU: Itanium2 9M OS: HP-UX11iv2, Windows, Linux*, OpenVMS	CPU: Itanium2 "Montecito" OS: HP-UX 11iv2, v3* Windows, Linux, OpenVMS	New 8p Server & Chipset CPU: Itanium2 "Montecito" OS: HP-UX, Windows, Linux, OpenVMS DDR-II PCI-E
 1-4P	HP 9000 rp3440-4		CPU: PA-8900 (dual-CPU) OS: HP-UX 11iv1, v2, v3*	
	HP Integrity rx2600-2	CPU: Itanium2 9M OS: HP-UX11iv2, Windows, Linux* OpenVMS	CPU: Itanium2 "Montecito" OS: HP-UX 11iv2, v3* Windows, Linux, OpenVMS	New 4p Server & Chipset CPU: Itanium2 "Montecito" OS: HP-UX, Windows, Linux, OpenVMS DDR-II PCI-E
 1-2P	HP Integrity rx1600-2		CPU: DP Itanium2 (+) OS: HP-UX 11iv2, v3*, Windows, Linux, OpenVMS	CPU: Next Gen & Chipset DP Itanium2 OS: HP-UX, Windows, Linux, OpenVMS DDR-II

Timeframes not to scale

8/25/2004

All upgrades "in-box" except as noted

New Chassis Intro.

PCI-Express

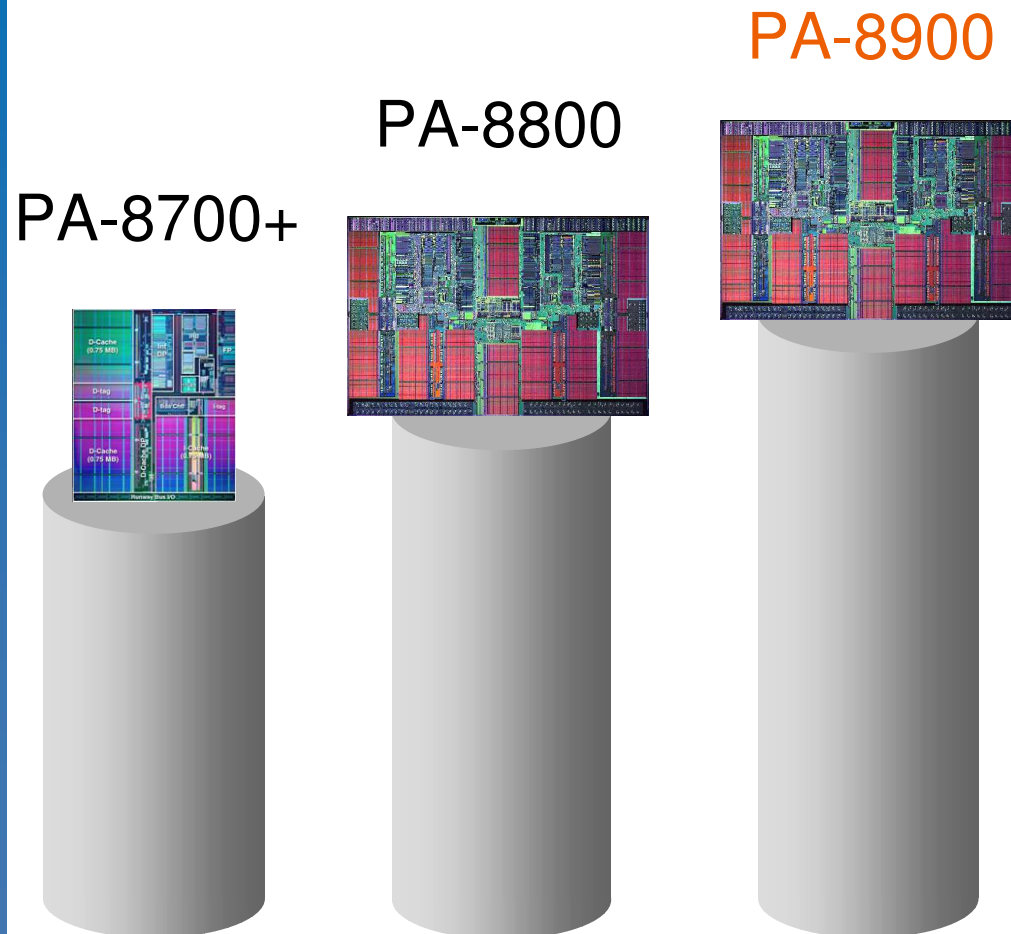
DDR-II Memory

*Not available at initial processor release

Plans subject to change without notice

Solutions and Technology Conference & Expo

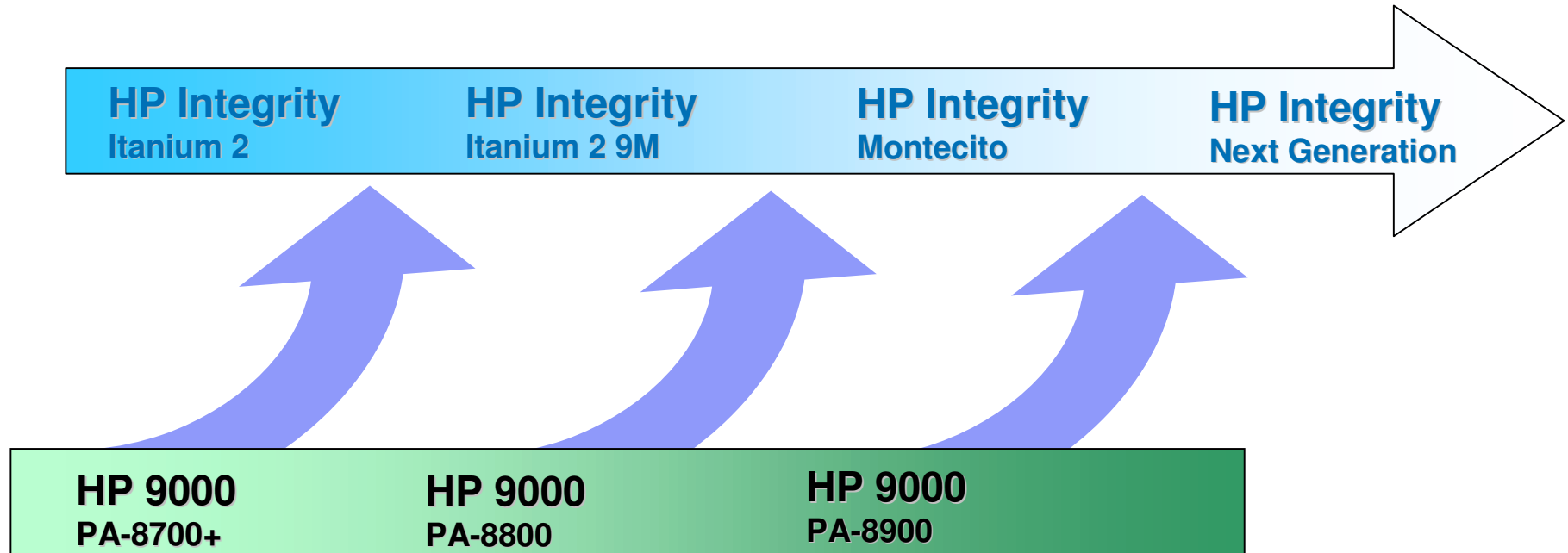
PA-8900: The Ultimate Generation



In 2005, the **PA-8900** will cap the long, successful line of PA-RISC processors. PA-8900 will have several enhancements over PA-8800:

- ← Faster clock frequency
- ← Larger L2 cache
- ← Greater performance

HP 9000 to Integrity migration



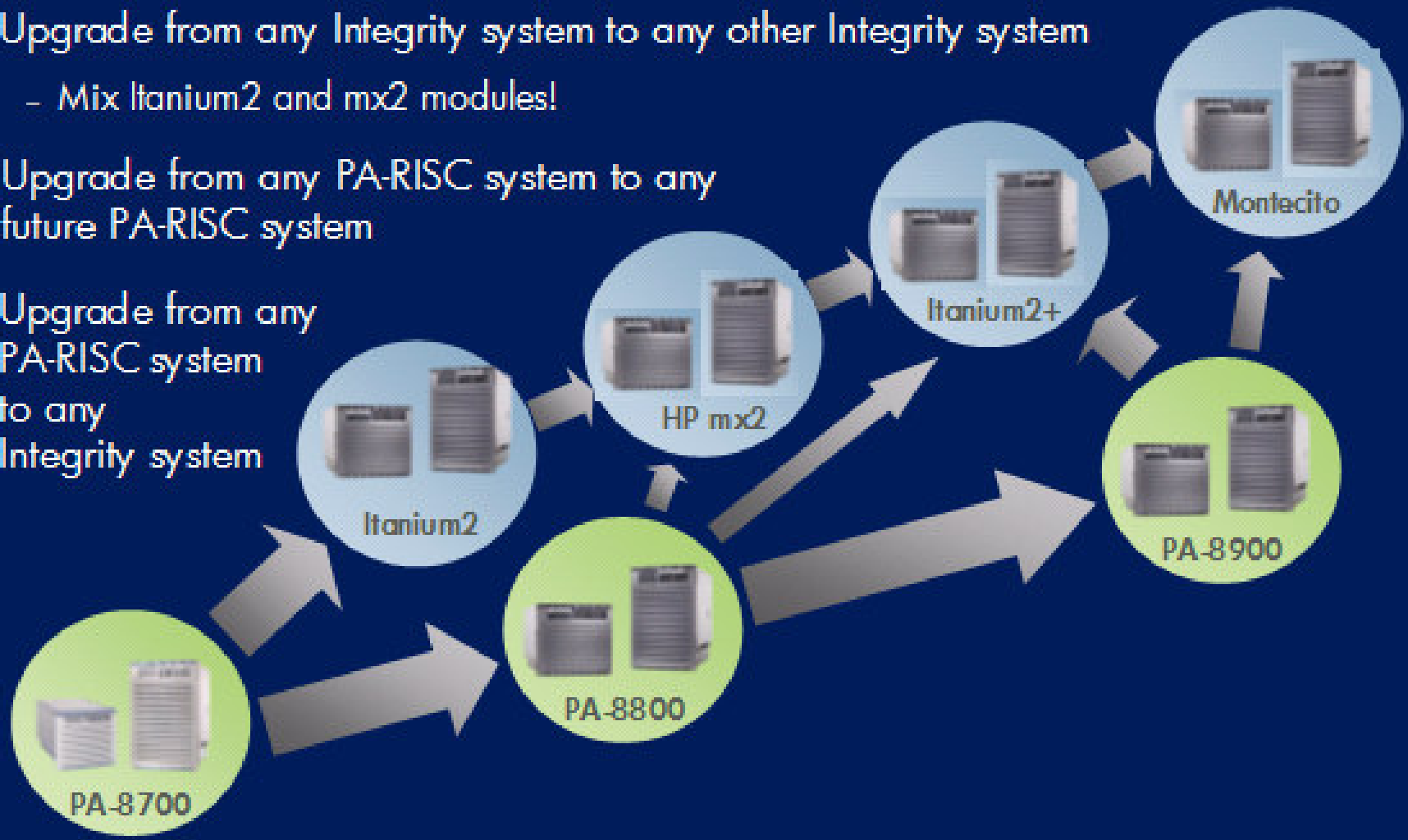
- Customers pick the time that is right for them
- Simple evolution (In-box upgrades)
- Superior investment protection
- Tools, partners & services available to help customers evolve

HP Integrity servers leverage customer investments

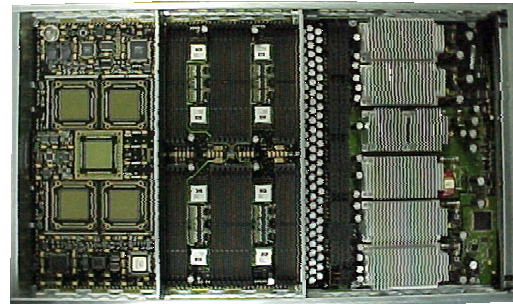
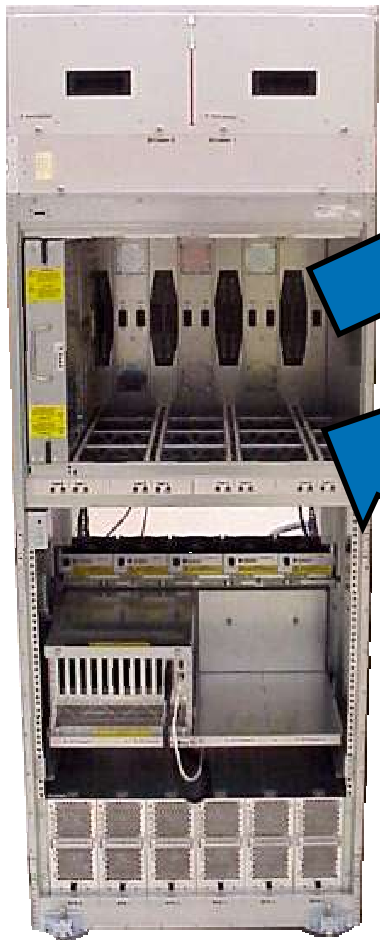


Benefit: Investment protection

- Upgrade from any Integrity system to any other Integrity system
 - Mix Itanium2 and mx2 modules!
- Upgrade from any PA-RISC system to any future PA-RISC system
- Upgrade from any PA-RISC system to any Integrity system

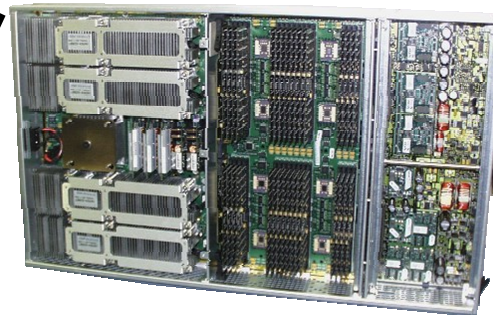


Cell board swap converts from PA8600-8700+
to PA-8800/8900, and all Itanium® CPUs



Superdome "Yosemite"
cell board for PA
8600, 8700, and
8700+

The same (existing) chassis is used for all
products.



Superdome "Pinnacles"
cell board for PA
8800, 8900, and all
Itanium® processors

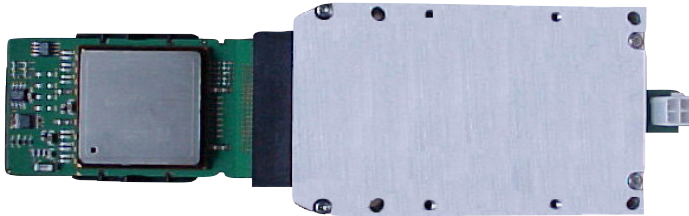
Superdome is shown, but an identical path exists for the
rp8400 and rp7410.

HP innovation with new mx2 dual-processor module

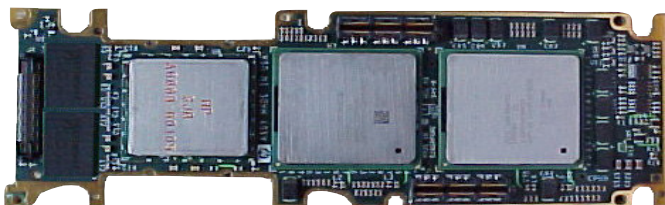


Enables two CPUs to utilize the same socket
as a standard Itanium 2 processor

Intel
Itanium 2
6m
processor



HP mx2
Module

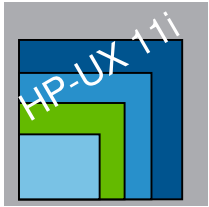


Key Features of mx2:

- Two Itanium 2 Processors
- Each CPU has its own L1 caches
- Large 32MB, unified L4 cache
- OS Binary compatibility with single Itanium 2 processors (Utilizes same binaries)
- Fully compatible with zx1 and sx1000 chipsets (available as in-box upgrade)

Agenda

- HP 9000 & HP Integrity Servers: Roadmap and Updates
- **HP-UX 11i: Roadmap & Updates**
HP-UX 11i - Proven foundation for the Adaptive Enterprise



HP-UX 11i - proven foundation for the Adaptive Enterprise



Integrated Virtualization

Optimal utilization through shared and pooled resources
Automatically meets service levels based on business priorities
Continuous application availability within and across data centers
Capabilities developed first on HP-UX 11i

Management

Intelligent management visualizes and adapts configurations
Integrated with state-of-the-art multi-OS management solutions – HP OpenView and HP Systems Insight Manager

Standardization

Exceeds UNIX standards – robustness, security, and quality
Designed and optimized for scaleable high performance.
Strong affinity - Linux and HP-UX 11i

HP-UX 11i – Most Advanced Integrated Virtualization

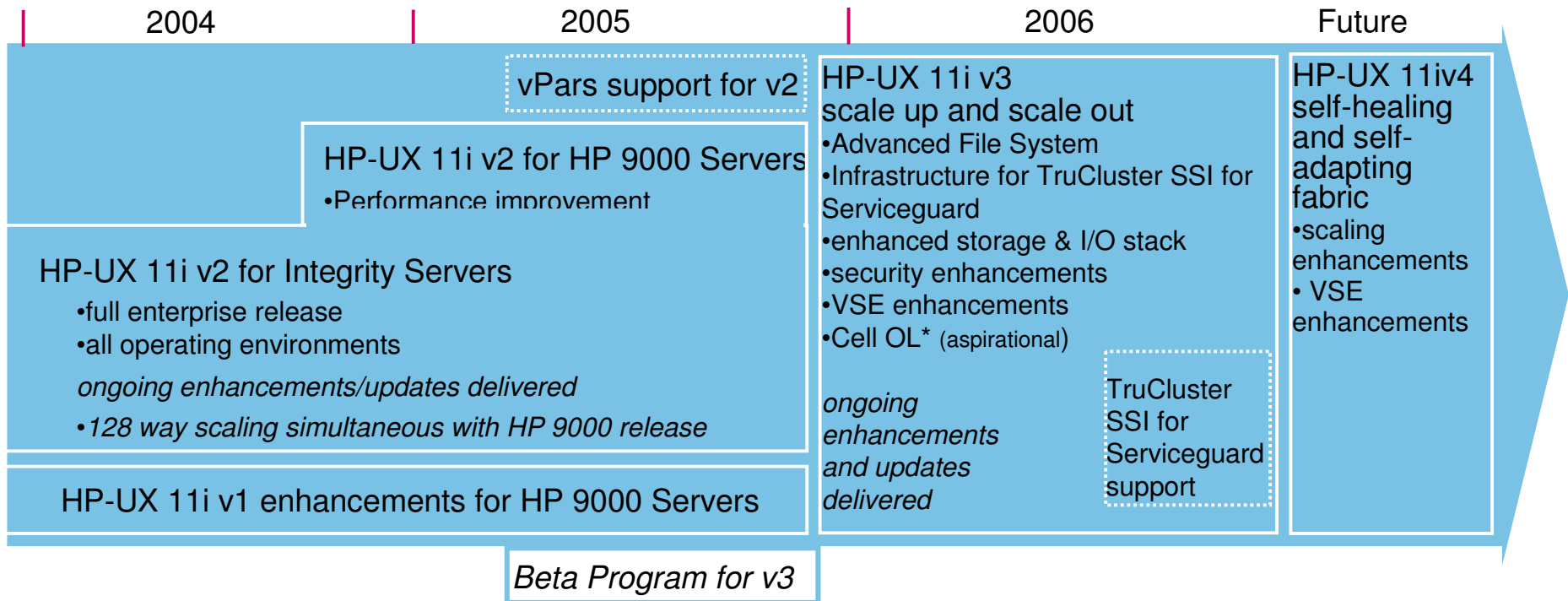


- **First to market** with integrated virtualization: HP VSE launched in May 2003
 - **Only goal-based policy engine** in the UNIX market
 - 60% of high-end server use partitions (nPars and/or vPars)
 - Over 60% of high-end servers ship with workload management tools
- **#1 UNIX Disaster Tolerant** Solutions with HP Serviceguard
 - **Only continuously available** UNIX Oracle solution
 - 50% of HP-UX 11i servers ship with Serviceguard solutions
- **HP #1 UNIX® market share** by revenue 2003



HP-UX 11i roadmap

The UNIX foundation of the Adaptive Enterprise



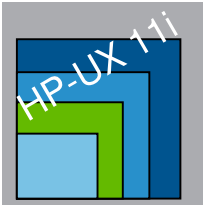
HP-UX 11i is your operating environment for IT enterprise virtualization – flexibility is key

HP-UX 11i v2 Full ecosystem accelerated making it the version of choice

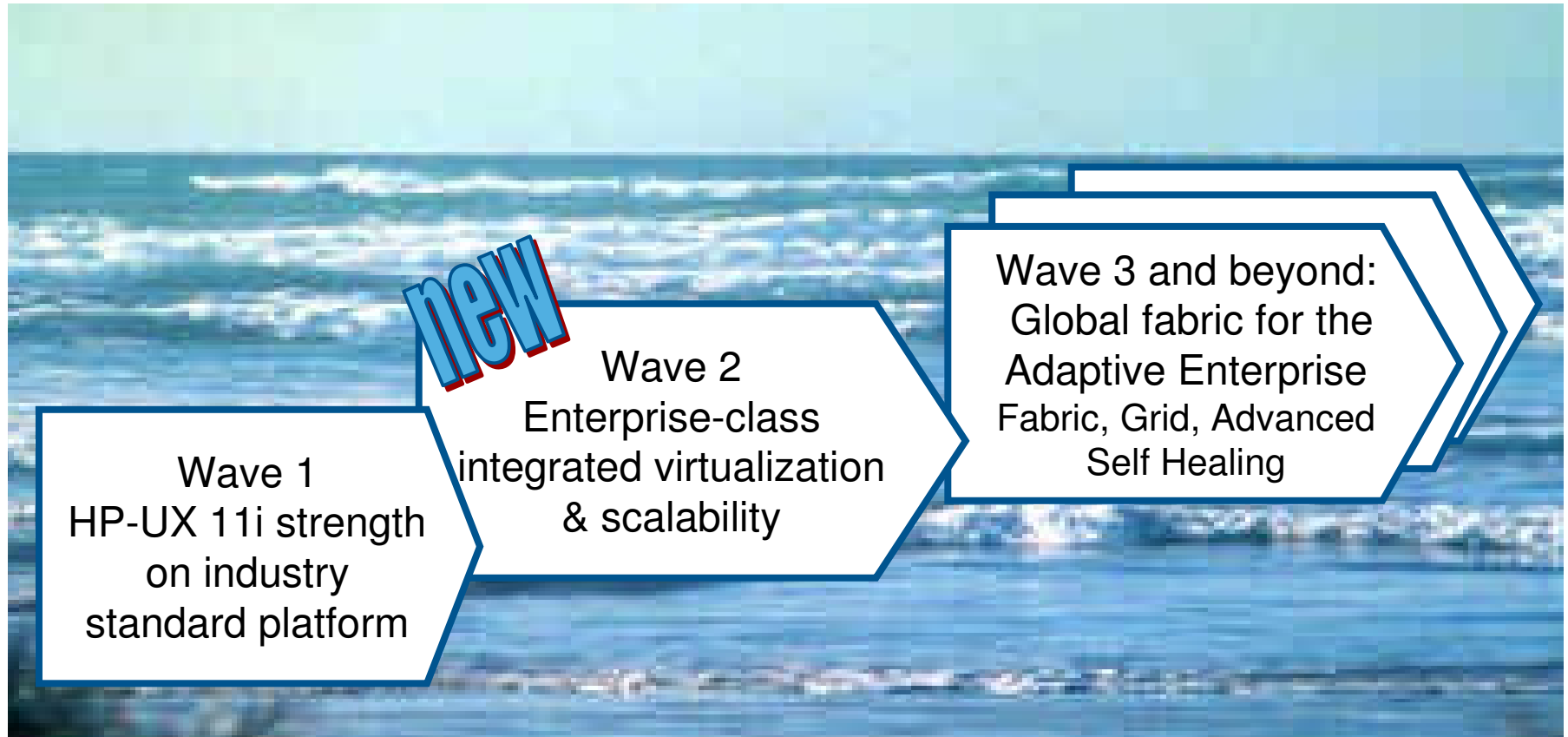
- Simplicity with the common release for HP 9000 and Integrity servers

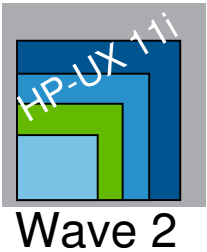
HP-UX 11i v3 Advances leadership in scale-up and scale-out

- HP remains committed to Tru64 UNIX customers bringing best technology from Tru64 UNIX into HP-UX 11i & Serviceguard (AdvFS and TruCluster Single System Image)



HP-UX 11i: Investing for leadership today and tomorrow





Enterprise-class integrated virtualization & scalability



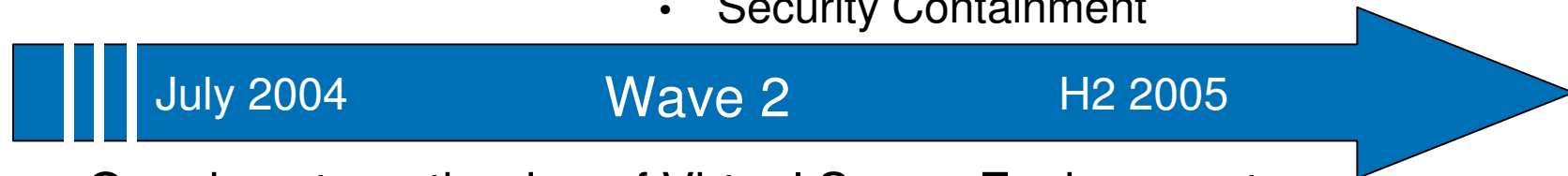
new

HP-UX 11i v2 on HP 9000 and Integrity

- Common code with release of HP-UX 11i v2 on HP 9000
- Scalability to 128 way

Ongoing strengthening of HP-UX 11i v2:

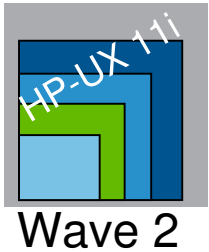
- Security Containment



Ongoing strengthening of Virtual Server Environment:

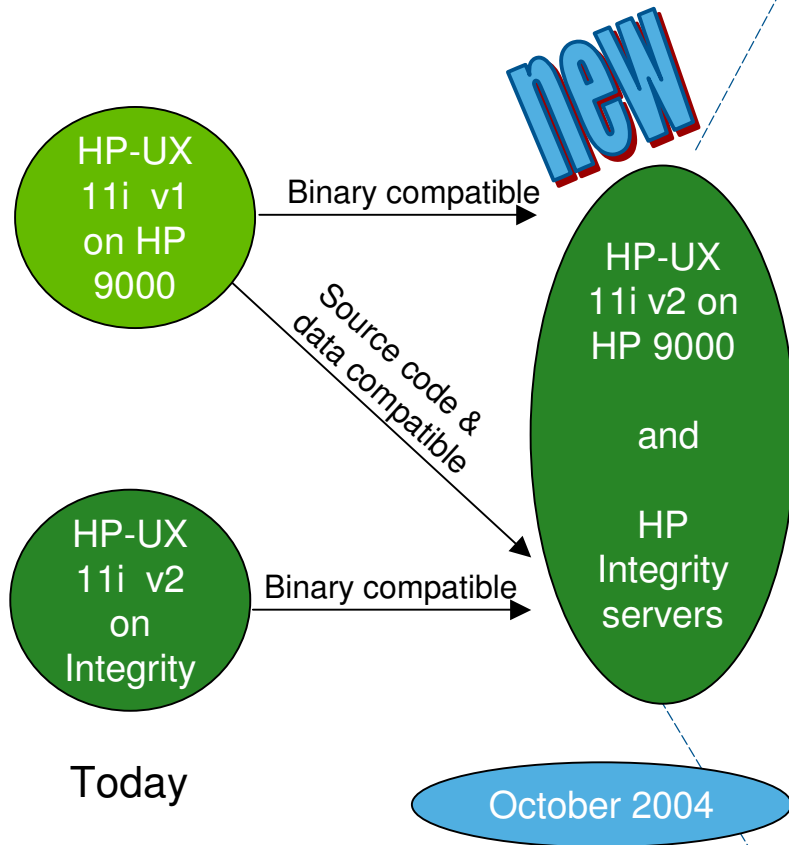
- Serviceguard enhancements
 - HP Virtual Server Environment Suites
 - global Workload Manager
 - vPars on Integrity
 - Secure resource partitions
 - Sub-CPU partitioning - HP Integrity Virtual Machines





Common Release smoothes evolution

HP-UX 11i v2 on HP 9000



Applications just work – No retesting required

- binary compatibility guarantee (for same hardware architecture)
- no recompile required on same architecture

Easier system administration

- same install, patch, update processes for both architectures

Performance/scalability enhancements for HP 9000

- 15-25% performance up to 2x plus
- large file system to 32 TB
- 1-128-way support

Scalability enhancements for HP Integrity servers

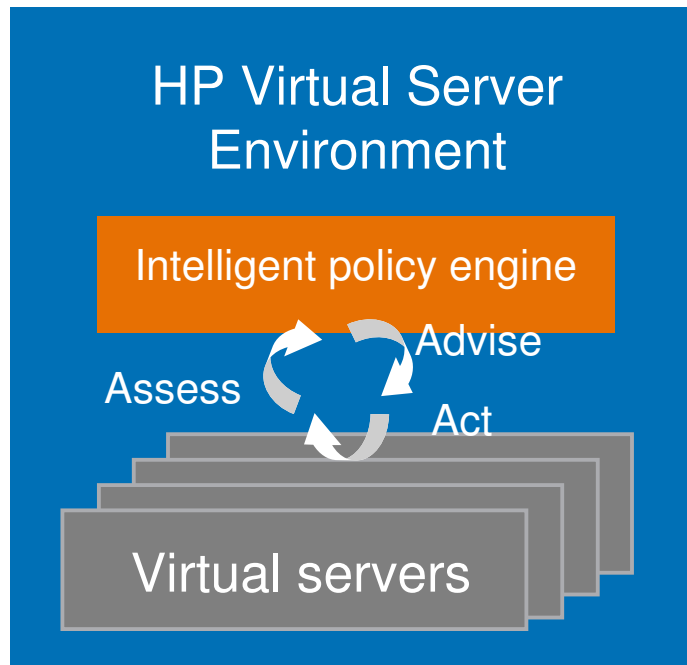
- 1-128-way support

Integrated partner testing

- verified configurations for SAS and Business Intelligence stacks

Customers choose standard solutions to cut cost and simplify change

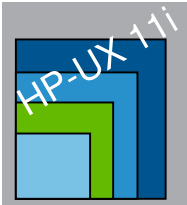
HP Virtual Server Environment: Integrated Virtualization for HP Integrity Servers



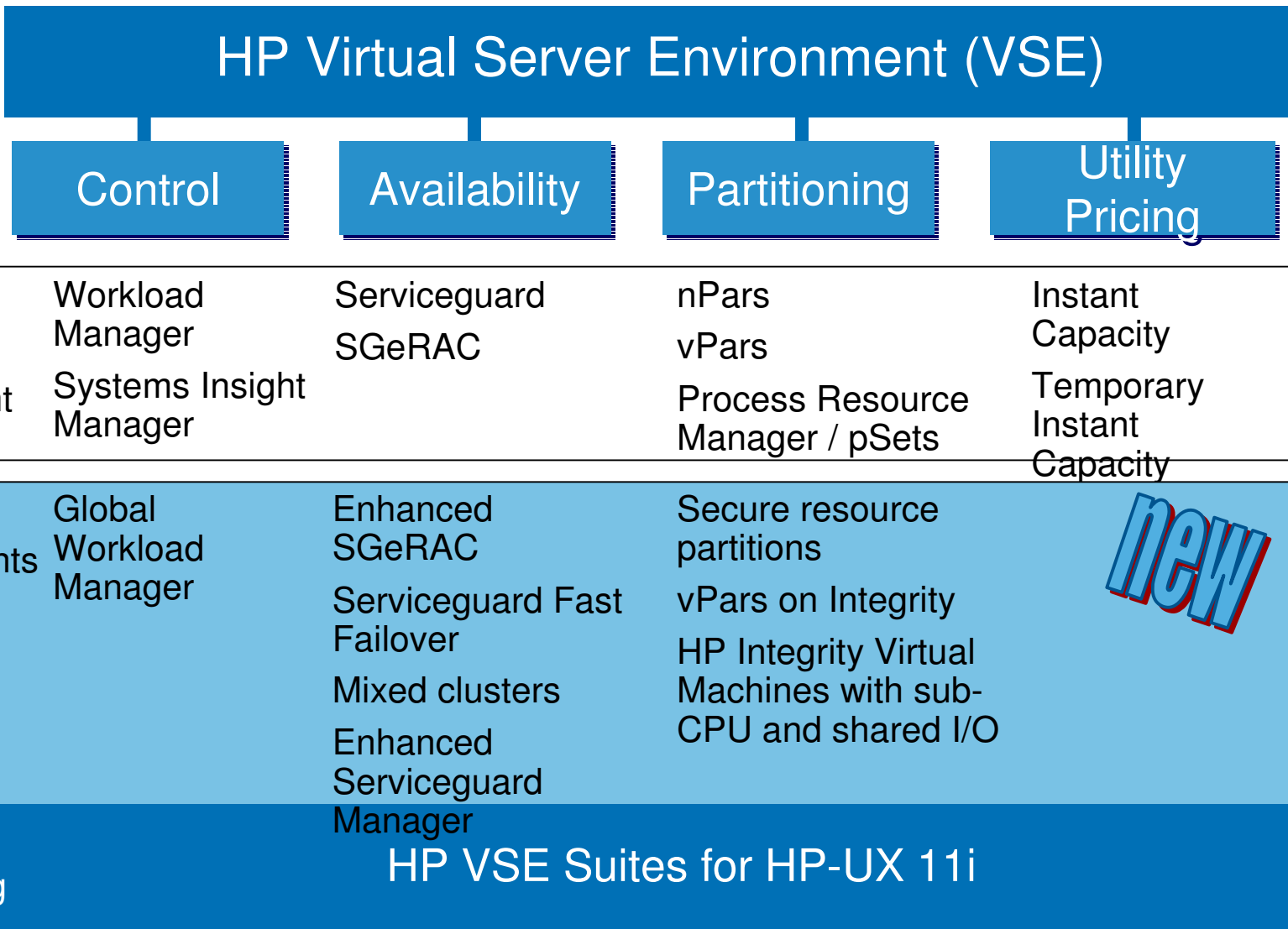
- Consolidates and virtualizes server resources for optimum utilization
- Dynamic resource utilization
 - Dynamic resource allocation in a multi-OS environment
- Maintain continuous service levels
 - Simple policy management and highly available
- Pay only for what you use
 - Utility pricing

First on HP-UX 11i - the proven foundation for
integrated virtualization





Enhancing HP VSE for HP-UX 11i – proven foundation for the Adaptive Enterprise

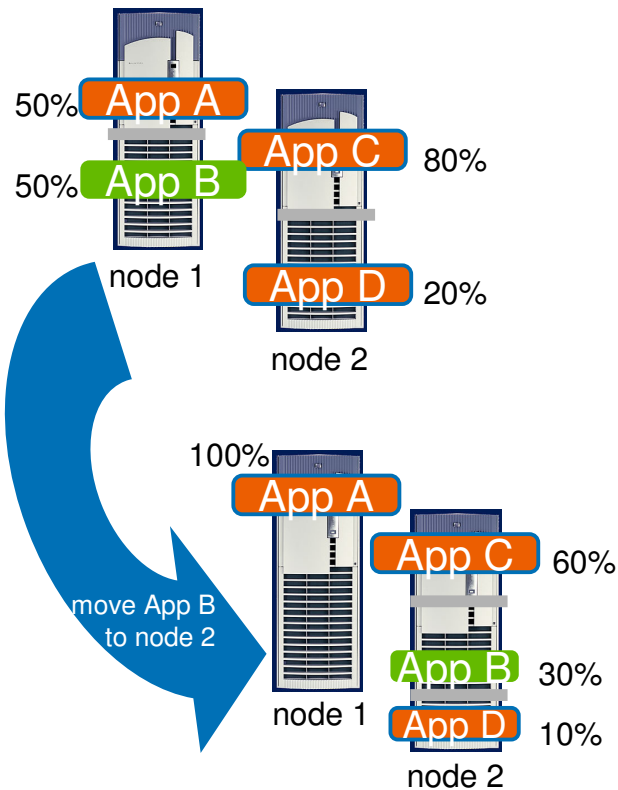


Serviceguard – strengthening the unique integration of virtualization and high availability

NEW

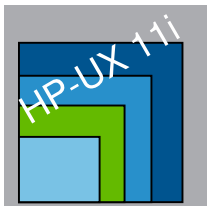
Shipping now

VSE uniquely integrated with HA today



SGeRAC integrated with BEA and VSE provides continuous availability and no loss of transactions while preserving Service Level Objectives

- Serviceguard extension for Faster Failover delivers 6x improvement in failover time – within 5 seconds
- Investment protection for platform migration
 - Mixed clusters for HP 9000 and Integrity systems
- Simplified and enhanced cluster management for HP-UX and Linux
 - Serviceguard Manager GUI eases configuration and administration
 - Security enhanced with role-based access

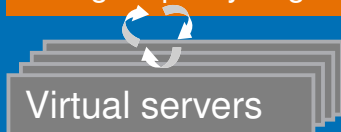


HP VSE Suites: Easy-to-buy Mission-Critical Virtualization



HP VSE for HP-UX 11i

Intelligent policy engine



HP VSE Suites benefits

- Easy to order – great price
- Up to 60 % faster to implement for BEA and Oracle
- Management and provisioning built in
 - HP SIM and Ignite-UX

HP Mission-critical VSE Suite

Mission-critical and goal-based virtualization

- Standard VSE Suite & HP-UX 11i Mission-critical OE
- Includes beyond the Standard VSE Suite:
 - Serviceguard
 - GlancePlus Pak

HP Standard VSE Suite

Goal-based virtualization

- HP-UX Workload Manager
- Virtual partitions

Availability: Q4 2004 for HP-UX 11i v1, Mid H1 2005 for HP-UX 11i v2

Optimum utilization while maintaining service levels ...
fast and easy!



HP-UX 11i v1 for HP 9000 servers

Q3 and Q4 2004



Scalability and Performance

- 10 Gigabit Ethernet
- 2 port RAID 320

Enhanced Security and Manageability

- Enhanced IPsec
- LDAP –UX 3.3, 4.0
- Netscape Directory Server 6.2
- AAA 7.0
- IDS 3.0
- HP SIM 4.1, 4.2
- DVD R + W support
- gWLM 1.0 supports multi-sys workloads

High Availability

- Serviceguard Extension for Faster Failover (SGeFF)
- Serviceguard extensions for Oracle9i Real Application Clusters (SGeRAC) v11.16 to support SGeFF
- Metrocluster with RAC
- Metrocluster beyond 100km
- Continentalclusters with logical data replication
- Continentalclusters with continuous access EVA
- Continentalclusters with 1->N and N->1 configurations

Web and Internet Services

- Internet Express v3 adds Vocal, Nesus, OpenSAML and more
- QoS



HP-UX 11i v2 for Integrity Servers

Q3 and Q4 2004



Hardware Enablement

- 4 Gb Fibre Channel
- 2-port Gb Ethernet

Scalability and Performance

- 2-port 4x Infiniband support for High Performance Cluster and Oracle RAC

Partitioning

- nPars multi-OS support for HP-UX 11i, Linux and Windows

Enhanced Security and Manageability

- WLM 2.3 supports >64 FSS – no reboot
- gWLM 1.0 supports multi-OS system workloads
- LDAP – UX 3.3, 4.0
- HP SIM 4.1, 4.2
- Enhanced IPsec
- DVD R and W support (released)
- AAA Radius 7.0

High Availability

- Serviceguard Extension for Faster Failover (SGeFF)
- Serviceguard extensions for Oracle9i Real Application Clusters (SGeRAC) v11.16 to support SGeFF
- Continentalclusters with RAC and EMC SRDF
- MetroCluster with EMC SRDF
- MetroCluster with RAC
- Continentalclusters with logical data replication

Web and Internet Services

- HP-UX Internet Express v3 adds Vocal, Nesus, OpenSAML and more
- HP-UX Internet Express 4.0
- Routing Protocols
- Enhanced HP SDK/RTE, Java 2 Standard Edition for HP-UX 11i



Meet the Technology Planners

Tuesday August 17, 4:00-5:15



What is it?

- An unstructured **one-on-one** meeting with HP planners and technologists.
- Areas covered include:
 - HP-UX System Admin tools – SAM to WLM
 - HP Hardware and Software product roadmaps
 - HP-UX Software Migration, updates, patches
 - Security
 - Linux
 - OpenVMS, Tru64 OS strategy

Why should I attend?

- Understand HP's future directions
- Ask your questions about HP's plans, roadmaps
- Give HP feedback on their plans, your experiences
- Influence HP's future directions



Suggested HP-UX 11i & HP Integrity Sessions ...



- **Tuesday, August 17th**
 - TruCluster/SSI for HP-UX 11i v3 NDA: ID#4068A, 130pm – 245pm
 - Roadmap and Strategy for Enterprise Systems: ID#3238, 130pm- 245pm
 - Global Workload Manager Beta: ID#3868A, 400pm - 515pm

Suggested HP-UX 11i & HP Integrity Sessions ...



- **Wednesday, August 18th**
 - HP-UX 11i Future Directions NDA: ID#4075, 800am- 915am
 - Automating Your Virtual Server Environment: ID#3228, 800am – 915am
 - The Future of Superdome: A Glimpse into the World's Best-In Class, High-End Server: ID#3301, 800am - 915am
 - HP Integrity Multi-OS Virtual Machines NDA: ID#4173, 130pm - 245pm
 - Future Directions for the HP-UX Operating Environments: ID#3164, 130pm– 245pm
 - HP Advanced FileSystem for HP-UX 11i v3 NDA: #4067A, 400pm- 515pm



Suggested HP-UX 11i & HP Integrity Sessions ...



- **Thursday, August 19th**
 - Transitioning Custom Applications to HP-UX 11i on Integrity Servers: ID#3848, 800am – 915am
 - HP-UX 11i v2 Security Containment NDA: #4066, 1100am – 1215pm
 - New HA and RAS Advances on Next Generation Itanium Servers: ID#3631, 1100am – 1215pm
 - HP Integrity Server Management Processor: Deep Dive and New Features for Managing Multiple Systems: ID#3472, 130pm – 245pm



Suggested HP-UX 11i & HP Integrity Sessions ...



- **Friday, August 20th**
 - Increasing Your Return on IT Investment by Virtualizing Server Resources: ID#3235, 800am – 915am
 - BECU Achieves Success with HP-UX 11i v2/HP Integrity: ID#4077, 930am – 1045am



Thank you for your attention!

For more information, please visit us:

HP Integrity Servers: www.hp.com/go/integrity

HP 9000 Servers: www.hp.com/go/HP9000

HP-UX 11i: www.hp.com/go/hpux11i/rocks



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RECOMMENDED TRAINING VENUE FOR THE
HP Certified Professional



HP-UX 11i Recently Released Functionality – January through May 2004



HP-UX 11i v1

Scalability and Performance

- 2-port Ultra 320 SCSI
- 2-port Gigabit Ethernet

Partitioning

- vPars supports PA-8800 mid and high end servers
- vPars supports iCOD & WLM concurrently
- PRM/WLM 2.2 dynamic iCOD CPU migration

Enhanced Security and Manageability

- MD5 Secure checksum for file integrity check

Secure Mobile Infrastructure

- Mobile IPv6
- IPv6 to IPv4 Transition
- IP over Infiniband

Web and Internet Services

- HP-UX Web Server Suite 2.0
- Default Gateway
- Large Send
- HP SDK/RTE, Java 2 Standard Edition for HP-UX 11i
- HP-UX Internet Express 2.0

- HP-UX Web Server Suite 2.0

HP-UX 11i v2

Hardware Enablement

- Support for HP mx2 dual processor module
- Auto Port Aggregation

Enhanced Security and Manageability

- MD5 Secure checksum for file integrity check
- PRM/WLM 2.2 dynamic iCOD CPU migration

Secure Mobile Infrastructure

- Mobile IPv6 to support Mobility in IPv6 environment
- PPPv6 point-to-point protocol in IPv6 environment
- PPPoE (over Ethernet) to improve performance for DSL connections
- IPv6 to IPv4 transitions – more tunneling methods in mixed IPv4/IPv6 environments, IP over Infiniband

Web and Internet Services

- HP-UX Web Server Suite 2.0
- HP SDK/RTE, Java 2 Standard Edition for HP-UX 11i
- HP-UX Internet Express 2.0
- Large Send
- Default Gateway Support
- Multimedia Support – RTP/RTCP/RTSP/SDP
- Netscape Directory Server 6.11 on Integrity
- HP-UX Web Server Suite 2.0



HP-UX 11i Release Lifecycle Dates

Public Name	Lab Name	Release Date	End of Sales	End of Support
HP-UX 10.20	10.20	Aug 1996	Jun 2002	Jun 2003
HP-UX 11.0	11.0	Nov 1997	Mar 2004*	Dec 2006
HP-UX 11i v1	11.11	Dec 2000	Estimate Dec 2006	Estimate 2010
HP-UX 11i v1.5	11.20	Aug 2001	Nov 2002	Feb 2003
HP-UX 11i v1.6	11.22	Aug 2002	April 2004	Oct 2005
HP-UX 11i v2 on Integrity	11.23	Oct 2003	Estimate 2008	Estimate 2013

* Sales for HP-UX 11.0 officially ended in March 2004, but it is on blind CPL until Jan 2005.

