

# How to upgrade to HP-UX 11i v3



HP Integrity – The Most Trusted. Always.



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# Introducing the speaker

- Bruce Henderson is currently an R&D section manager in the Fort Collins Unix Systems Lab. His Software Deployment section is responsible for SD (Software Distributor), Ignite-UX, Update-UX, DRD (Dynamic Root Disk), and SWA (Software Assistant). Enabling customer and developer migration to HP-UX 11i v3 is one of the strategic focus areas of his team.
- Bruce has held a variety of positions in his 25 plus years at Hewlett Packard. These included software engineer, software architect, program manager, and various management roles.
- He has a degree in Business Administration from the University of Northern Iowa and has done his graduate work in Computer Science at UC Berkeley.



# Agenda

Transitioning to HP-UX11i v3

Transition approaches

Preparation for transition

Software deployment

Best practices



# Why 11i v3?

- TechWise Research Inc. White paper – Quantifying the Total Cost of Upgrade (TCU) from HP-UX Environments to HP-UX 11i v3
- “In three out of the four scenarios studied, the payback period is less than 2 years.”
- “For Oracle database customers, the payback periods are even significantly less which makes the decision to upgrade a no-brainer.”
- “In doing this study, we also found that 20% of respondents are already using HP-UX Version 3 on one or more of their servers.”

[www.hp.com/go/techwise](http://www.hp.com/go/techwise)

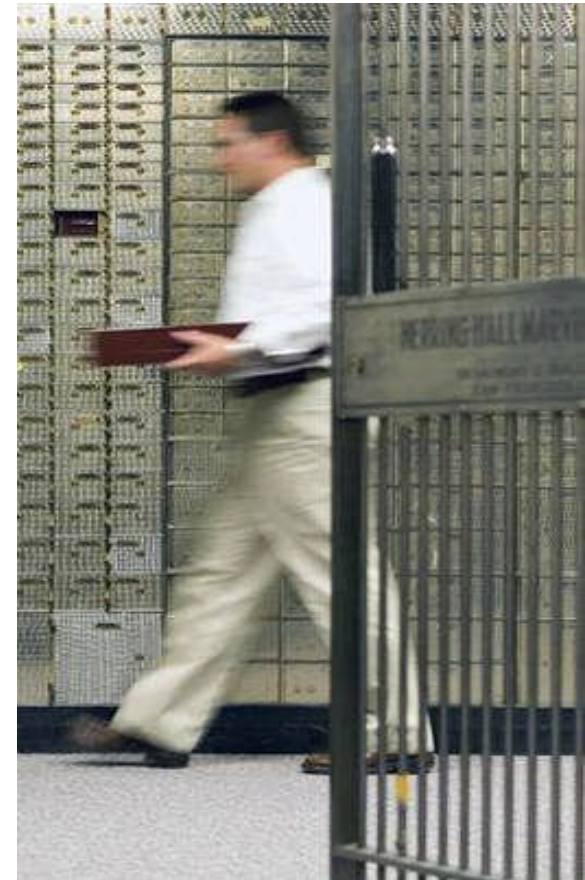


# Why 11i v3?

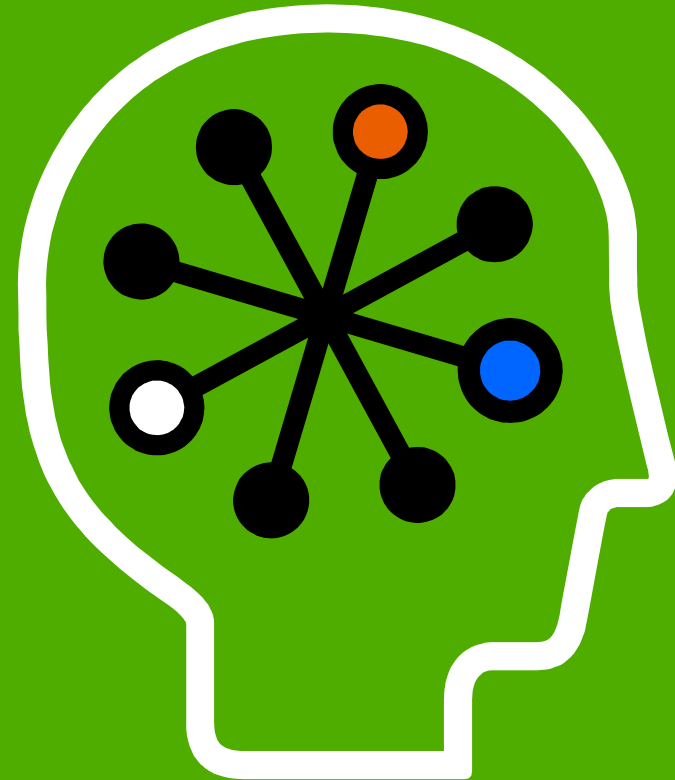
## In their survey TechWise also found

### HP-UX 11i v3 on HP Integrity saves you money

- HP Integrity servers running HP-UX 11i v3 require 68% less time to manage than HP 9000 servers running v1/v2
- HP-UX customers who upgraded to HP-UX 11i v3 reported an average performance increase of 29%
- Consolidating to HP Integrity HP-UX 11i v3 can cut energy usage by more than 50%
- Upgrading to HP-UX 11i v3 on Integrity reduces, on average, the amount of unplanned downtime



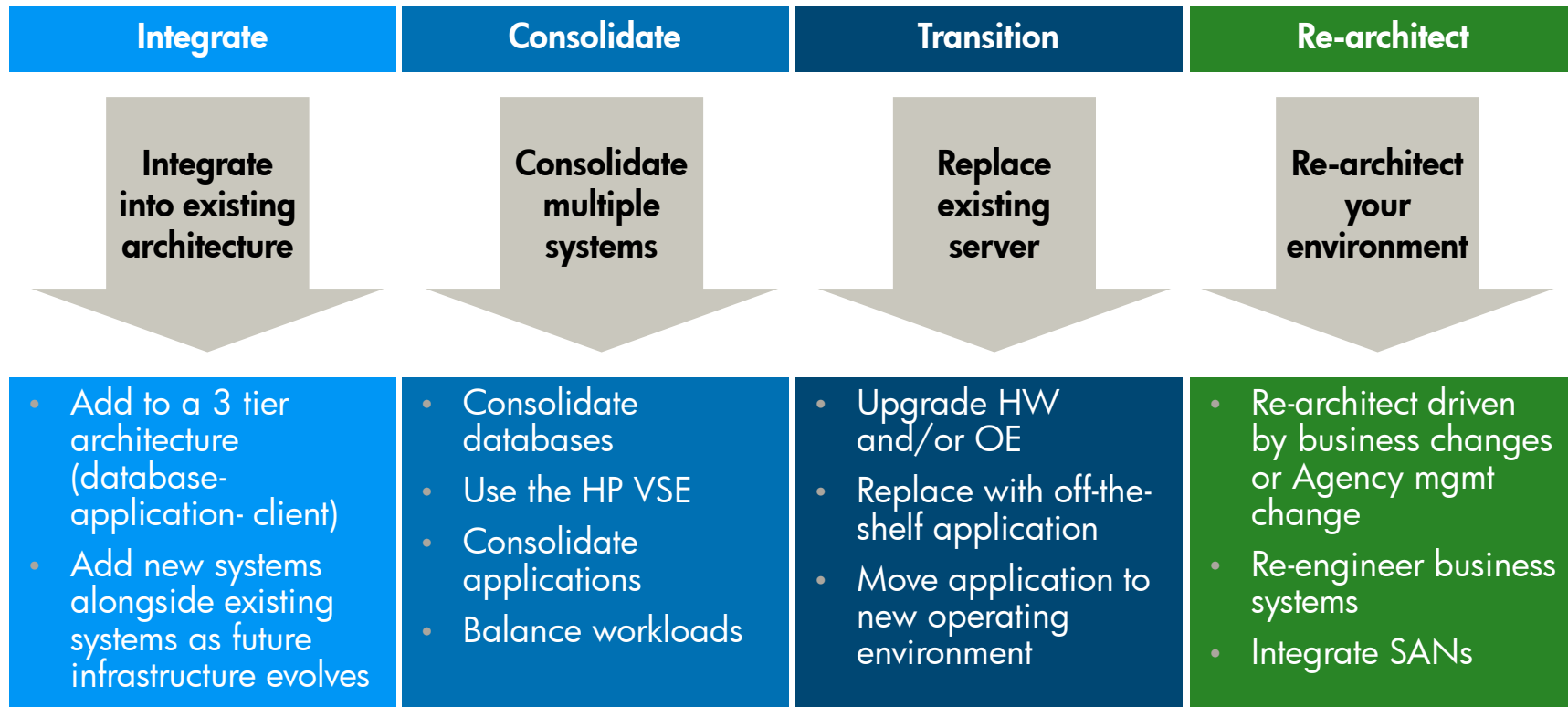
# Transition approaches



# Transition scenarios

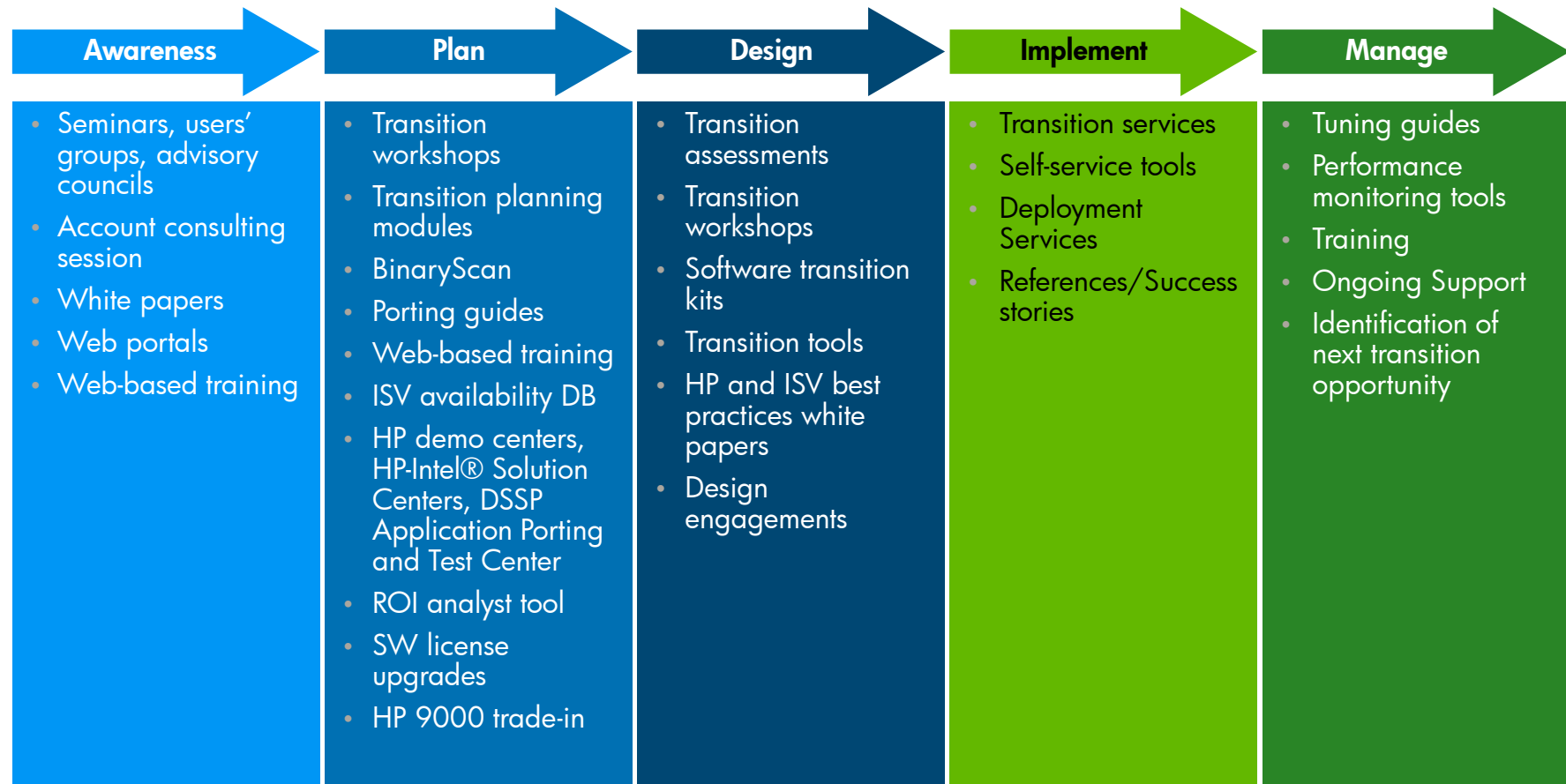
Each customer determines their best route

- Plan**
- Develop strategy, roadmaps, plan timeline and resource requirements
  - Begin preliminary evaluation and design prototype environments



# Transition lifecycle model

## Smoothing the transition with HP resources



# For HP9000 transitions evolution landing page

- Hot links to many transition subjects
  - Case studies
  - Details on the evolution process
  - Details on offers & incentives
  - HP tools
  - Evolution program FAQ's

» HP Home    » Products & Services    » Support & Drivers    » Solutions    » How to Buy

» Contact HP    Search:     » Business systems evolution    All of HP

**hp**

» Business systems evolution

Site information  
» What's new  
» Newsletters  
» Send us your comments

Evolution programs  
» HP 9000 programs  
» HP AlphaServer programs  
» HP e3000 servers  
» HP Integrity NonStop

Learn more about

» Microsoft® Windows  
» HP StorageWorks

» Site map

Business Systems Evolution

## Business systems evolution

Enabling your smooth transition to HP Integrity Systems

» Evolve now to HP Integrity - here are 5 reasons why

» HP Integrity servers  
» Customer Times

### News and Features

- » HP Introduces World's First Blade Server for 24/7 Mission-critical Computing **NEW!**
- » HP 9000 End of Sale Announcement **NEW!**
- » HP 9000 to HP Integrity evolution
- » Sageza Group, Inc., published an analysis of the Integrity Update (Montvale, SAP opportunity), particularly emphasizing the value of the manageability capabilities. **NEW!**
- » Intel announced their next three generations of Itanium processors after Montvale: Tukwila, Poulson and Kittson.
  - » Intel press kit
  - » Intel fact sheet (PDF)
  - » Intel press slide show (PPS)
- » The starting point for growing Outcomes (PPT)
- » Total cost of upgrading HP-UX environments from HP 9000 servers to HP Integrity servers (PDF)
- » The benefits of using HP Integrity servers to consolidate HP 9000 servers (PDF)
- » Features archive

» HP 9000 evolution    » HP Alpha RetainTrust    » HP e3000

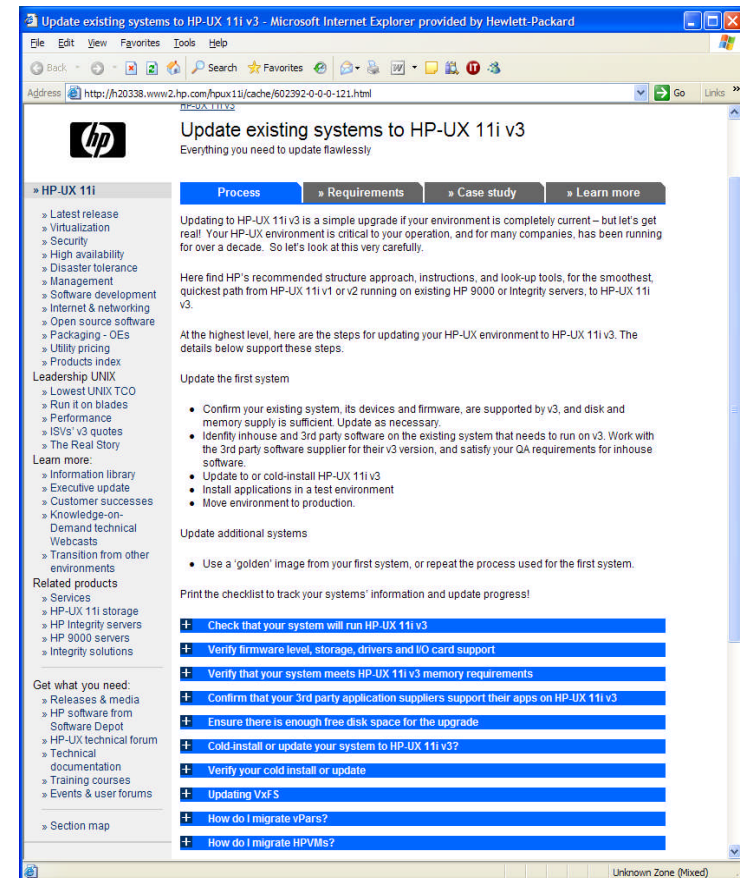
<http://www.hp.com/go/evolution>

# For HP-UX 11i v3 transitions

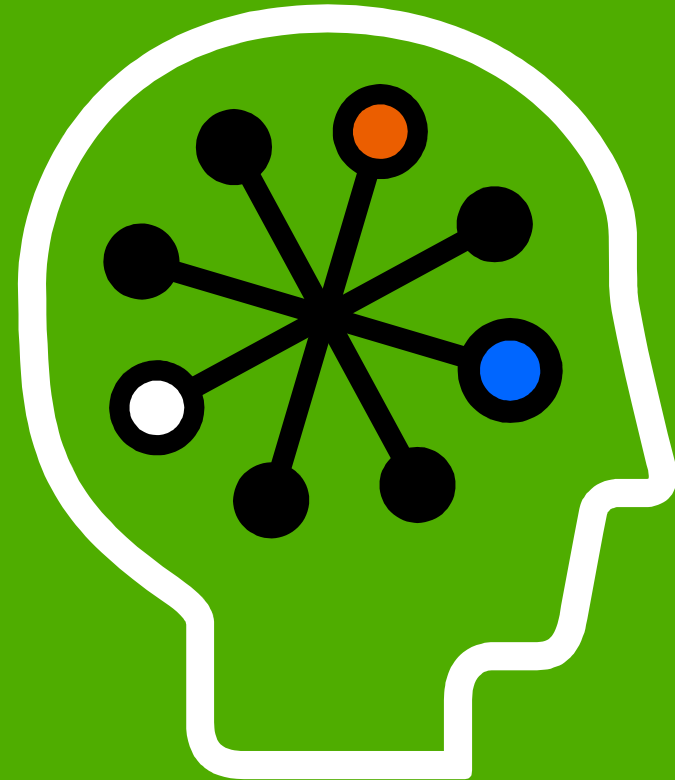
## Transition starting page

- Journey to 11i v3 web site, Everything you need to know:
  - Process
  - Requirements
  - Case studies
  - Finding additional information
  - Checklist to track system information and update progress

[www.hp.com/go/tov3](http://www.hp.com/go/tov3)



# Preparation



# Deploying HP-UX 11i v3

## Overall process

- Process:
  - Check that your system will run HP-UX 11i v3
  - Verify firmware level, storage, drivers and I/O card support
  - Verify that your system meets HP-UX 11i v3 memory requirements
  - Confirm that your 3rd party application suppliers support their apps on HP-UX 11i v3
  - Ensure there is enough free disk space for the upgrade
  - Cold-install or update your system to HP-UX 11i v3?
  - Verify your cold install or update
    - Updating VxFS
    - How do I migrate vPars?
    - How do I migrate HPVMSs?



# Deploying HP-UX 11i v3

## Supported hardware

System	HP-UX 11i v3 Minimum Firmware Level
HP Integrity Itanium Systems	
rx1600 & rx1620 Servers	04.13
rx2600 Server	02.31
rx2620 Server	04.10
rx2660 Server <sup>[1]</sup>	01.05
rx3600 & rx6600 Servers <sup>[1]</sup>	01.31
rx4640 Server	04.10
rx5670 Server	03.23
rx7620, rx8620 & rx8620 IOX	4.2
rx7640, rx8640 & rx8640 IOX	2.0
BL160P Blade Server	TMON 6.0
SuperDome sx1000 chipset	FW version rel_6.2
SuperDome sx2000 chipset	FW version Recipe 5.5d

<sup>[1]</sup> HP-UX 11i v3 does not currently support HP rx2660, rx3600 and rx6600 servers with the PCI/PCI-X/PCI-E backplane. This is expected to be supported in a subsequent release.



# Deploying HP-UX 11i v3

## Supported hardware

System	HP-UX 11i v3 Minimum Firmware Level
HP 9000 PA-RISC Servers	
rp2400/2450	Not Supported
rp2430/2470	Not Supported
rp34xx	PDC 45.44
rp44xx	PDC 45.44
rp5400 & rp5450	Not Supported
rp5430 & rp5470	Not Supported
rp7400	Not Supported
rp7405 & rp7410	FW Version 6.5
rp7420, rp8420 & rp8420 IOX	FW Version 3.2
rp8400	FW Version 6.5
rp7440, rp8440, rp8440 IOX	Firmware Version 6.5
HP 9000 SuperDome PA 8600/PA 8700	FW Version rel_5.5 (PDC FW version 36.8, Utilities 7.34)
HP 9000 SuperDome PA 8800/PA 8900	FW version rel_6.2



# Deploying HP-UX 11i v3

## Supported hardware, FW IO cards, storage devices

- Before installing HP-UX 11i v3, make sure that your drivers, I/O cards, and storage devices are supported
- Run the msv2v3check script
  - Validates whether the drivers, mass storage I/O cards, and mass storage devices installed are supported on HP-UX 11i v3
  - Reports any unsupported drivers, cards, and devices found
  - Checks the minimum firmware versions required for these cards or devices
  - Latest msv2v3check script: <http://www.hp.com/go/softwaredepot>
    - For more details: HP-UX 11i v2 to 11i v3 Mass Storage Stack Update Guide available at:  
<http://docs.hp.com/en/netsys.html#Storage%20Area%20Management>



# Deploying HP-UX 11i v3

## Downloading firmware

- HP Firmware Manager user's guide:  
<http://docs.hp.com/en/9065/FirmwareGuide.pdf>
- HP's main FW and driver download site:  
<http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp?lang=en&cc=us&taskId=135>
- HP-UX supported I/O cards matrix:  
[http://docs.hp.com/en/9551/IOcards\\_PA\\_IPF0308.htm](http://docs.hp.com/en/9551/IOcards_PA_IPF0308.htm)
- SAS HBA support matrix:  
[http://docs.hp.com/en/sas\\_sm/sas\\_support\\_matrix.htm](http://docs.hp.com/en/sas_sm/sas_support_matrix.htm)
- SAS controller FW support guide:  
<http://docs.hp.com/en/J6369-90071>



# Deploying HP-UX 11i v3

## Available ISV software

- Application compatibility problems are defects
  - Binary compatibility assured for applications already available on HP9000 and Integrity Servers
- HP has resources dedicated to helping ISVs make their applications available on Integrity servers
  - DSPP Program – <http://www.hp.com/go/dspp>
  - Access to Virtual Servers – <http://www.hp.com/go/pvp>
- ISV application availability on 11i v3/Integrity continues to grow
  - Over 80% of 11i v3/Integrity applications requested in 2Q09 were available
  - Top Partners: Over 75% of tracked applications are available today (May '09)
  - All Partners: Approximately 600 additional applications have been confirmed available in the past year (May '09)
  - HP has programs in place to continually assess partner availability and meet specific customer demands
- Check out specific partner application support at:
  - <http://www.hp.com/go/isvappstatus>



# Deploying HP-UX 11i v3

## Transitioning your own applications

- Code written for HP-UX 11.00 HP9000 should run on v3 – providing use of published programming interfaces
  - Find details of OS compatibility at:  
[www.hp.com/go/hpux11compatibility](http://www.hp.com/go/hpux11compatibility)
  - Executables written for the HP9000 will run automatically on Integrity under the ARIES translator
  - Cross develop HP9000 applications on Integrity with XPADE
  - Debug HP9000 applications on Integrity – WDB
  - For Java performance monitoring – Jmeter
  - Check out the HP-UX Porting and Archive Centre:
    - <http://hpux.connect.org.uk/>

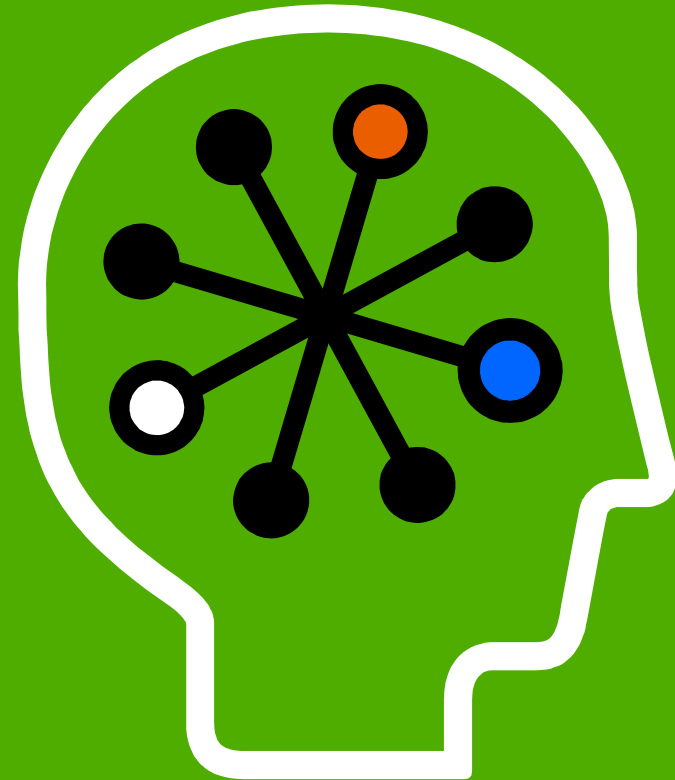


# Deploying HP-UX 11i v3 Background on ARIES

- A dynamic binary translator for HP 9000 HP-UX applications on HP-UX 11i for Integrity Servers
  - Automatically recognizes HP 9000 applications and gets launched
  - Transparent: No manual intervention required for execution
- Excellent alternative to ISV application porting
- Proven solution for many high-profile migrations
- Fully supported by HP
  - Fully supported also under HP VSE (Virtual Server Environment)
- Delivers accuracy, performance for emulated applications
  - Performance better or comparable for all but the fastest (PA8900 based) PA servers
- HP-UX 11i v3 knowledge-on-demand webinar on ARIES – **New!**
- <http://h20338.www2.hp.com/hpux11i/cache/589281-0-0-0-121.html>



# HP-UX 11i v3 deployment



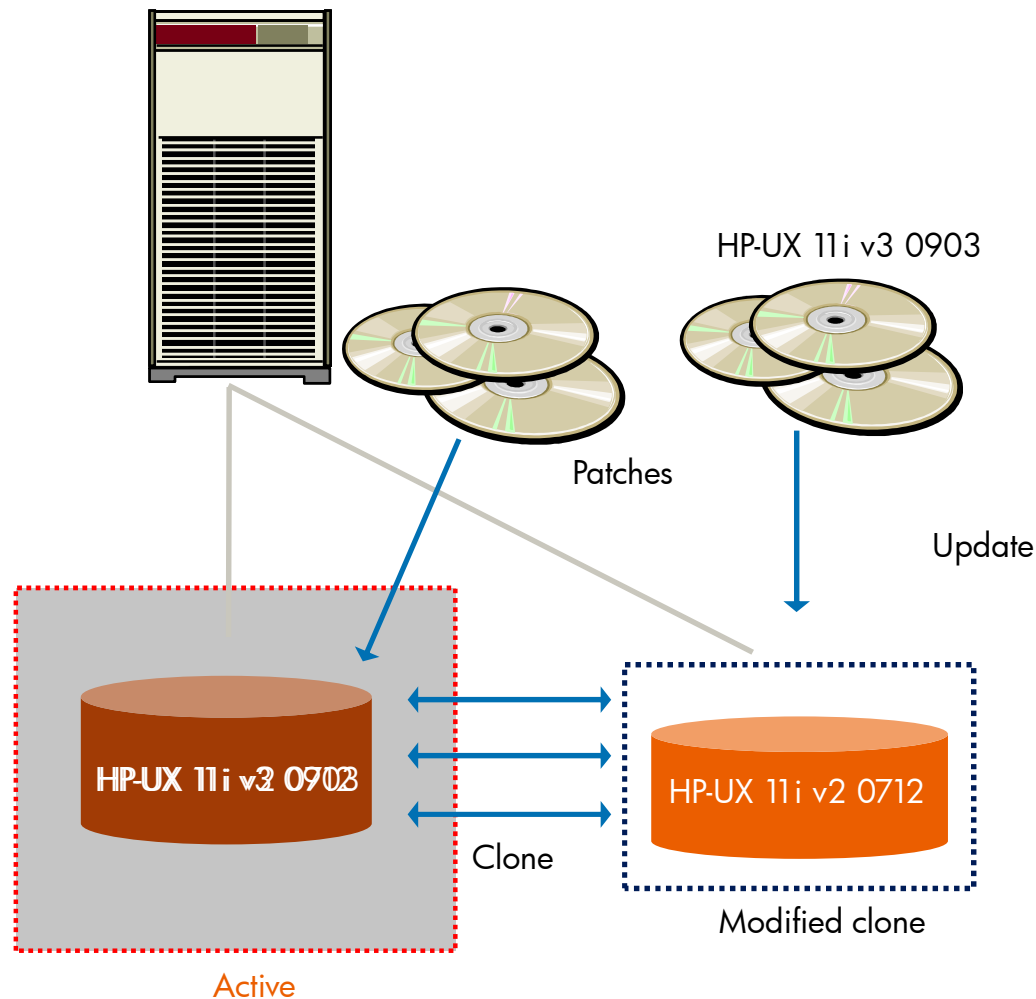
# Deploying HP-UX 11i v3

## OS/OE deployment methods

- Cold install or update from
  - Media
  - Software depot (or Network Depots)
  - Golden images
- SW Assistant (SWA)
- vPars
- HPVM's
- Service guard rolling update
- Dynamic Root Disk (DRD) for "hot maintenance"



# Updating from HP-UX 11i v2 0712 to HP-UX 11i v3 0903



1. Create a clone of the original system image. (`drd clone`)
2. Run `update-ux` in preview mode on the active disk. (`update-ux -p`)
3. Adjust file system sizes on the clone as needed. ([docs.hp.com/en/DRD](http://docs.hp.com/en/DRD))
4. Activate the clone & boot when ready (`drd activate`)
5. Update the active image to HP-UX 11i v3 0903. (`update-ux`)
6. When update completes, have an active image with 11i v3 0903, and a clone with 11i v2

## Could be done here, OR...

1. Create a clone of the active image. (`drd clone -x overwrite=true`)
2. Use SWA to identify patches & fixes to security issues. (`drd mount`, `swa report`, `drd unmount`)
3. Install required patches. (`swa get`, `drd runcmd swinstall`)
4. Boot the clone when ready. (`drd activate`)

# Deploying HP-UX 11i v3

## Changing file system sizes in a DRD environment

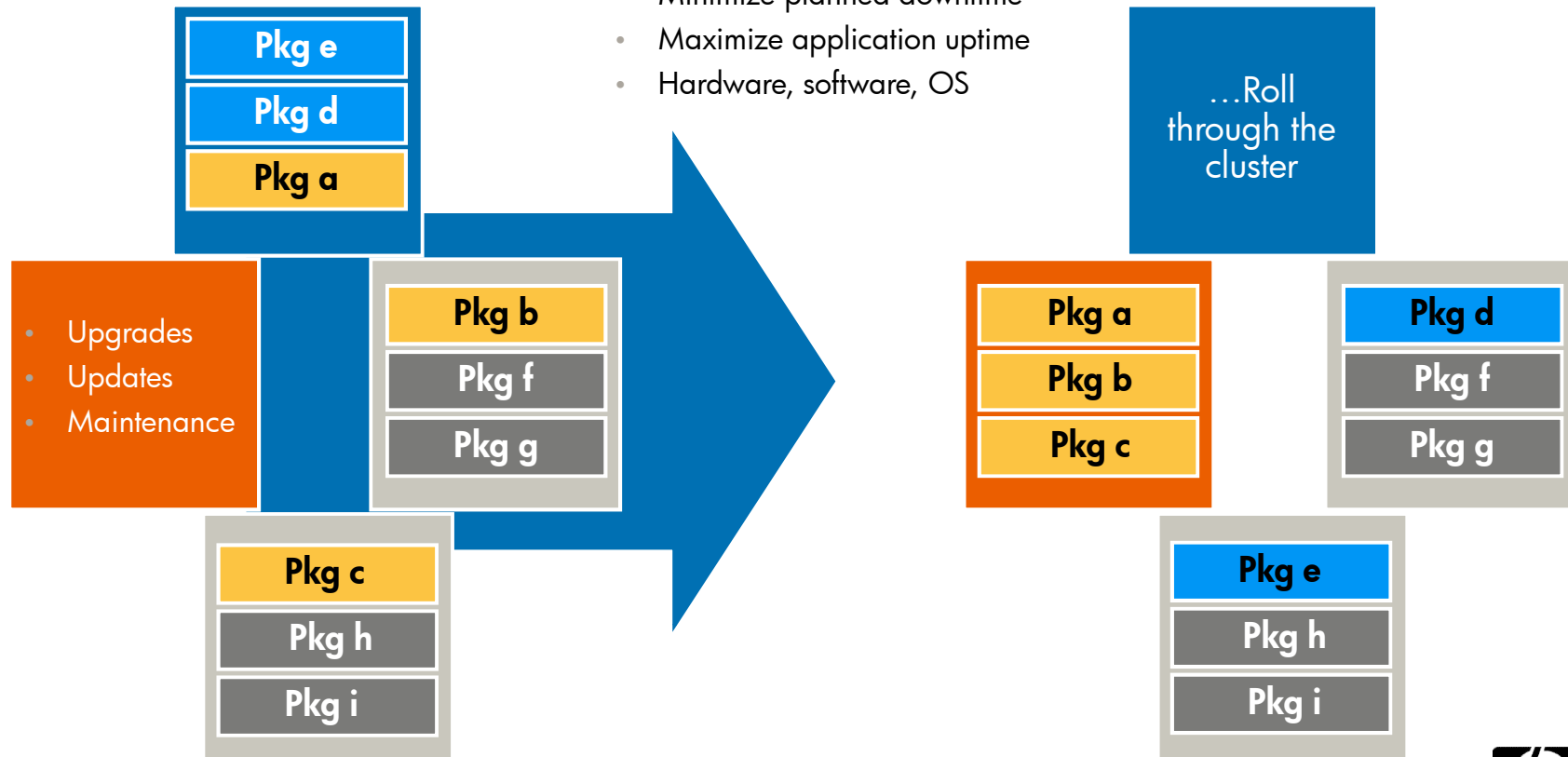
- **Resizing of file systems** is not incorporated into clone itself, but inactive image eliminates need for single user mode
  - Use lvextend and extendfs – complete directions can be found in the DRD info library whitepaper: Using the Dynamic Root Disk Toolset; OR
  - Use SMH (System Management Homepage) from booted system on drd00 volumes (not through drd runcmd); OR
  - Use new vgmodify command (see [http://docs.hp.com/en/vgmodify/vgmodify\\_wp.pdf](http://docs.hp.com/en/vgmodify/vgmodify_wp.pdf))
- Can also **expand/stand** (LVM only)
  - Complete directions can be found in the DRD info library whitepaper: Using the DRD Toolset to Extend the/stand File System in an LVM Environment

# Deploying HP-UX 11i v3

## Maximize availability

### Rolling upgrades using HP Serviceguard

- Minimize planned downtime
- Maximize application uptime
- Hardware, software, OS



# Deploying HP-UX 11i v3 online guest migration benefits

- Improve application availability: applications remain available while...
  - Patching or updating VM host software or firmware
  - Re-configuring VM Host hardware
  - Moving a workload in response to predictive failure alerts
- Improve utilization: balance server workloads
  - Move workload to a machine with more capacity
  - Separate workloads which peak simultaneously



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Preparation for LVM 2.x

- The volume group must be deactivated during migration
- The volume group must be cluster unaware (`vgchange -c n`) before changes are made. After the volume group migration, you can then make the volume group cluster aware (`vgchange -c y`)
- No physical volume in the volume group is configured as a cluster lock disk for a high availability cluster
- All physical volumes belonging to the volume group must be accessible
- Dynamically extend the physical volume from the storage end and run the `vgversion` command later



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Using `vgversion` for LVM 2.x

- Back up the volume group configuration using `vgcfgbackup -f`
- Will the migration operation be successful?
  - `# vgversion -V 2.0 -r -v vg01` # Review the migration operation
- Does the physical volumes have enough space to write the metadata of the final volume group version?
- Made changes – check one more time
  - `# vgversion -V 2.0 -r vg01` # Note `-r`, review mode
- Migrate your volume group
  - `# vgchange -a n vg01` # Deactivate the volume group
  - `# vgversion -V 2.0 vg01` # Migrate the volume group
  - `# vgchange -a y vg01` # Activate the volume group

# Deploying HP-UX 11i v3

## Transitioning Symantec products

Product	HP-UX 11i v1	HP-UX 11i v2	HP-UX 11i v3
Veritas Volume Manager LTU for servers Version 3.5	First sold: Sept 2002	First sold: Sept 2003	
Veritas Volume Manager LTU for servers Version 4.1		First sold: Nov 2005	First sold: Feb 2007
Veritas Volume Manager LTU for servers Version 5.0		First sold: Oct 2006	First sold: June 2008
VERITAS Cluster Volume Mgr LTU for HP-UX Version 3.5	First sold: Sept 2002	First sold: Sept 2003	
VERITAS Cluster Volume Mgr LTU for HP-UX Version 4.1		First sold: Dec 2005	
VERITAS Cluster Volume Mgr LTU for HP-UX Version 5.0		First sold: May 2007	First sold: June 2008



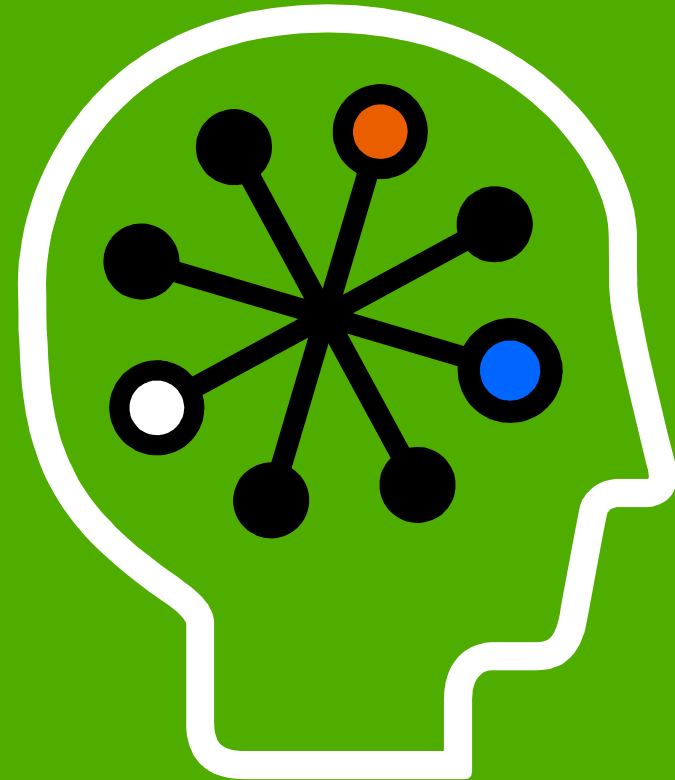
# Deploying HP-UX 11i v3

## Transitioning Symantec products

Product	HP-UX 11i v1	HP-UX 11i v2	HP-UX 11i v3
OnLineJFS License for Servers v 3.5	First sold: Sept 2002	First sold: Sept 2003	
VERITAS VxFS (Online JFS) HP-UX LTU v 4.1		First sold: Nov 2005	First sold: Feb 2007
VERITAS VxFS (Online JFS) HP-UX LTU v 5.0		First sold: Oct 2006	First sold: June 2008
HP Storage Management for Oracle v 4.1		First sold: Dec 2005	
HP Storage Management for Oracle LTU v 5.0			First sold: June 2008
EOE W/HP Storage Management for Oracle Premium v 5.0			First sold: June 2008



# Best practices



# Deploying HP-UX 11i v3

## Tips from HP ambassadors

- In the real world, you may have problems – make sure you have a tested contingency plan
- Use DRD for your failback during 11i v3 update
- Create a DRD clone and use it to expand your file systems before updating
- Always check before you continue – swverify, update-UX preview, check\_patches, SWA (OS patch levels)



# Deploying HP-UX 11i v3

## Tips from HP ambassadors

- Migrating to 11iv3 virtual machines using cold install (from old PA-RISC and HP-UX platforms) – no major roadblocks, leveraging ARIES with no problems
- The projects mainly acquired new hardware and did a cold-install of HP-UX 11.31 and then migrated applications and data
- Use MSV2V3Check
- ARIES does work, there is a performance penalty



# Deploying HP-UX 11i v3

## Tips from HP ambassadors

- Be prepared to `vgexport` and `vgimport` all your SAN volume groups after the upgrade
- Physically check the interoperability of your storage with HP-UX11 iv3 prior to migration
- Switch SFM off during update
- Remember that you can find the ILO (console) IP settings from HP-UX operating system level!
  - `# /opt/sfm/bin/CIMUtil -e root/cimv2 HP_ManagementProcessor`
  - `# cat cim-request.xml`
  - `# /opt/hpsmh/data/htdocs/comppage/getMPInfo.cgi`



# Deploying HP-UX 11i v3

## Tips from HP ambassadors

- Customized Shell/Perl scripts that worked in older HP-UX releases often had to be modified in some way as they did not work as expected in HP-UX 11.31
- Customers had problems with hidden kernel parameters – nfile
  - Find it with # **kctune -v nfile** or # **print\_manifest**



# Deploying HP-UX 11i v3

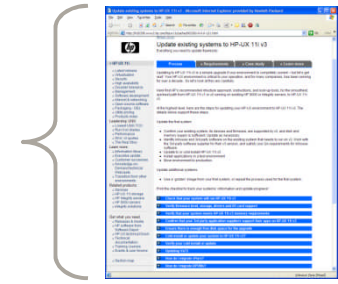
## Getting help

- The migration competency center can help with:
  - Account consulting sessions
    - The goal is to help address technology and business issues
  - Transition consulting workshops
    - The goal is to work together towards a high-level Transition Plan
  - Stack assessments
  - Porting & migration assistance
- This is an HP internal service – work through your Sales, Services, Channels or Partners worldwide



# Deploying HP-UX 11i v3

## Getting help



## Learn more

- HP-UX 11i v3 technical documentation
- Analyst reports, roadmaps, brochures, data sheets, white papers
- Resources for updating to HP-UX 11i v3
- Where to get software
- Programs and education

# HP-UX 11i v3 knowledge-on-demand topics

Free, 1-hour lab-to-you webcasts for developers & system admins in channels, isvs & end users

24 Webcasts with more topics coming online - Transcripts in English plus French, Italian, Chinese (simplified and traditional), Korean, Japanese, and Spanish.

## Developers' series

- **Foundation track**
  - How to upgrade to HP-UX 11i v3
  - **HP-UX 11i v3 performance & scalability**
  - HP-UX 11i v3 performance troubleshooting – tools and tips **New!**
  - HP-UX open source resources
  - Unified file cache
  - HP Caliper integrity performance tool – new features for understanding performance
  - The mercury library – increasing application performance
  - Software Transition Kits (STKs) for HP-UX 11i v3
  - Aries emulation: run HP 9000-built HP-UX 11i applications on HP integrity servers **New!**
- **Java developers track**
  - Java memory management – internals and performance
  - HPjmeter – measure Java application performance on HP-UX 11i
  - **Solving Java performance problems**
- **C/C++ developers track**
  - **pPthreads enhancements in HP-UX 11i v3**
  - **Using compilers to get optimal performance**
  - **HP Code advisor: A powerful new C/C++ analysis tool for HP-UX**
  - **Hyper-threading on HP-UX 11i v3**
  - Kernel tracing on HP-UX 11i

## Development series

- **HP-UX 11i v3 operating system optimization**
  - How to upgrade to HP-UX 11i v3
  - HP-UX 11i v3 performance troubleshooting – tools and tips – an overview **New!**
  - **HP-UX 11i v3 performance & scalability**
  - Dynamic nPartitions
  - **GlancePlus**
  - NUMA tuning: Getting the most out of your cellular server
  - SAP on HP-UX 11i v3: Maximizing integrity server performance **New!**
- **Optimize Java application at runtime**
  - Java memory management – internals and performance
  - HPjmeter – measure Java application performance on HP-UX 11i
  - **Solving Java performance problems**
- **Optimizing high availability configurations**
  - **Manage your Serviceguard environment**
  - **Using what's new in Serviceguard**
- **Optimizing virtualized configurations**
  - HP Virtual server environment for HP-UX 11i **New!**
  - Capacity advisor **coming soon!**
  - Workload monitoring and management **coming soon!**

[www.hp.com/go/kod](http://www.hp.com/go/kod)



# For more information

- Contact your local HP Account Team and HP Authorized Provider
- Visit the HP 9000 evolution web site
  - [www.hp.com/products1/evolution/9000/](http://www.hp.com/products1/evolution/9000/)
- Visit customer success stories and case studies
  - <http://h71028.www7.hp.com/integrity/cache/405502-0-0-0-121.aspx>
- Explore training
  - <http://h15076.www1.hp.com/education/curr-unix.htm>
- Firmware updates – <http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp>
- HP technical documentation – <http://www.docs.hp.com/>
- HP-UX 11i v3 release notes – <http://docs.hp.com/en/oshpux11iv3>
- HP-UX 11i v3 installation and update guide – <http://docs.hp.com/en/oshpux11iv3>
- HP-UX 11i websites
  - Main site [www.hp.com/go/hpux11i](http://www.hp.com/go/hpux11i)
  - HP software downloads [www.hp.com/go/softwaredepot](http://www.hp.com/go/softwaredepot)
- DSPP website – [www.hp.com/go/dspp](http://www.hp.com/go/dspp)
- ISV integrity application availability
  - How to get listed [www.hp.com/go/ISVapplicationstatus](http://www.hp.com/go/ISVapplicationstatus)
  - Where customers can view available applications [www.hp.com/go/isvappstatus](http://www.hp.com/go/isvappstatus)



# For more information

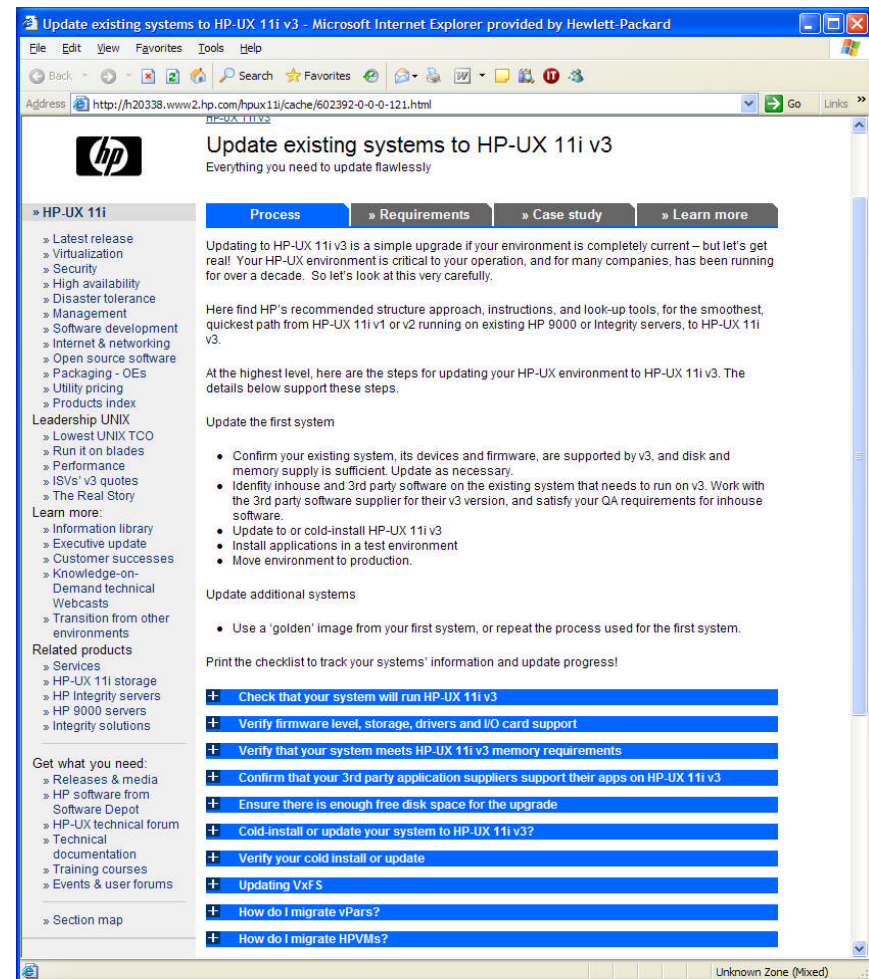
## Helpful LVM transition white papers:

- LVM new features in HP-UX 11i v3 (September 2008)
  - [http://docs.hp.com/en/LVM-11iv3features/LVM\\_New\\_Features\\_11iv3\\_final.pdf](http://docs.hp.com/en/LVM-11iv3features/LVM_New_Features_11iv3_final.pdf)
- Using the vgversion command to perform LVM volume group version migration (April 2009)
  - <http://docs.hp.com/en/5992-6592/vgversion-wp.pdf>
- LVM migration from legacy to agile naming model
  - [http://docs.hp.com/en/LVMmigration1/LVM\\_Migration\\_to\\_Agile.pdf](http://docs.hp.com/en/LVMmigration1/LVM_Migration_to_Agile.pdf)

# Transitioning to HP-UX 11i v3

- Create a process
- Understand requirements
- Use available resources
- Execute and verify your results

[www.hp.com/go/tov3](http://www.hp.com/go/tov3)



The screenshot shows a web browser window displaying the HP website page for updating existing systems to HP-UX 11i v3. The page title is "Update existing systems to HP-UX 11i v3" and the subtitle is "Everything you need to update flawlessly". The page is organized into several sections:

- HP-UX 11i**: A navigation menu with links to "Latest release", "Virtualization", "Security", "High availability", "Disaster tolerance", "Management", "Software development", "Internet & networking", "Open source software", "Packaging - OEs", "Utility pricing", and "Products index".
- Leadership UNIX**: A navigation menu with links to "Lowest UNIX TCO", "Run it on blades", "Performance", "ISVs' v3 quotes", and "The Real Story".
- Learn more:** A navigation menu with links to "Information library", "Executive update", "Customer successes", "Knowledge-on-Demand technical Webcasts", and "Transition from other environments".
- Related products**: A navigation menu with links to "Services", "HP-UX 11i storage", "HP Integrity servers", "HP 9000 servers", and "Integrity solutions".
- Get what you need:** A navigation menu with links to "Releases & media", "HP software from Software Depot", "HP-UX technical forum", "Technical documentation", "Training courses", and "Events & user forums".
- Section map**: A navigation menu with a link to "Section map".

The main content area is titled "Update existing systems to HP-UX 11i v3" and includes the following text:

Updating to HP-UX 11i v3 is a simple upgrade if your environment is completely current – but let's get real! Your HP-UX environment is critical to your operation, and for many companies, has been running for over a decade. So let's look at this very carefully.

Here find HP's recommended structure approach, instructions, and look-up tools, for the smoothest, quickest path from HP-UX 11i v1 or v2 running on existing HP 9000 or Integrity servers, to HP-UX 11i v3.

At the highest level, here are the steps for updating your HP-UX environment to HP-UX 11i v3. The details below support these steps.

Update the first system

- Confirm your existing system, its devices and firmware, are supported by v3, and disk and memory supply is sufficient. Update as necessary.
- Identify inhouse and 3rd party software on the existing system that needs to run on v3. Work with the 3rd party software supplier for their v3 version, and satisfy your QA requirements for inhouse software.
- Update to or cold-install HP-UX 11i v3
- Install applications in a test environment
- Move environment to production.

Update additional systems

- Use a 'golden' image from your first system, or repeat the process used for the first system.

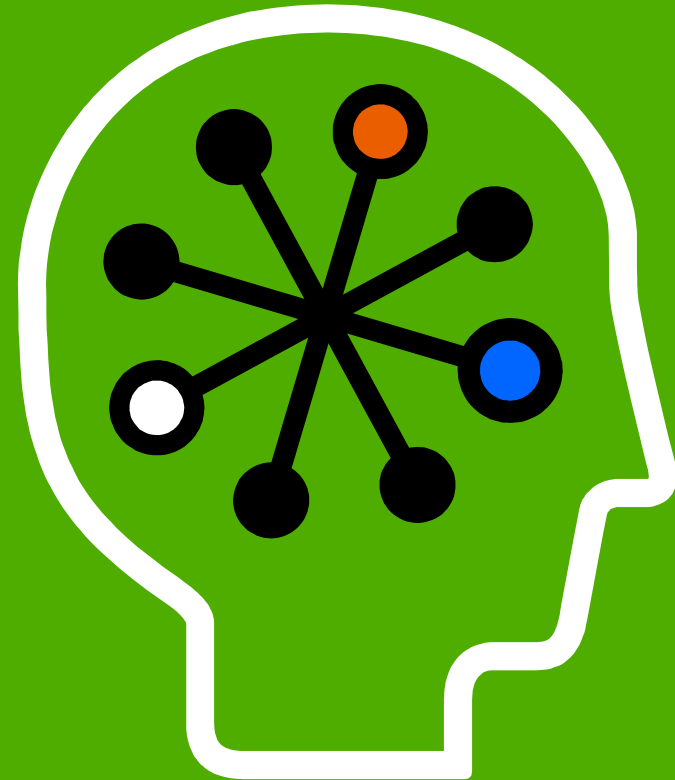
Print the checklist to track your systems' information and update progress!

The checklist includes the following items:

- + Check that your system will run HP-UX 11i v3
- + Verify firmware level, storage, drivers and I/O card support
- + Verify that your system meets HP-UX 11i v3 memory requirements
- + Confirm that your 3rd party application suppliers support their apps on HP-UX 11i v3
- + Ensure there is enough free disk space for the upgrade
- + Cold-install or update your system to HP-UX 11i v3?
- + Verify your cold install or update
- + Updating VxFS
- + How do I migrate vPars?
- + How do I migrate HPVMs?

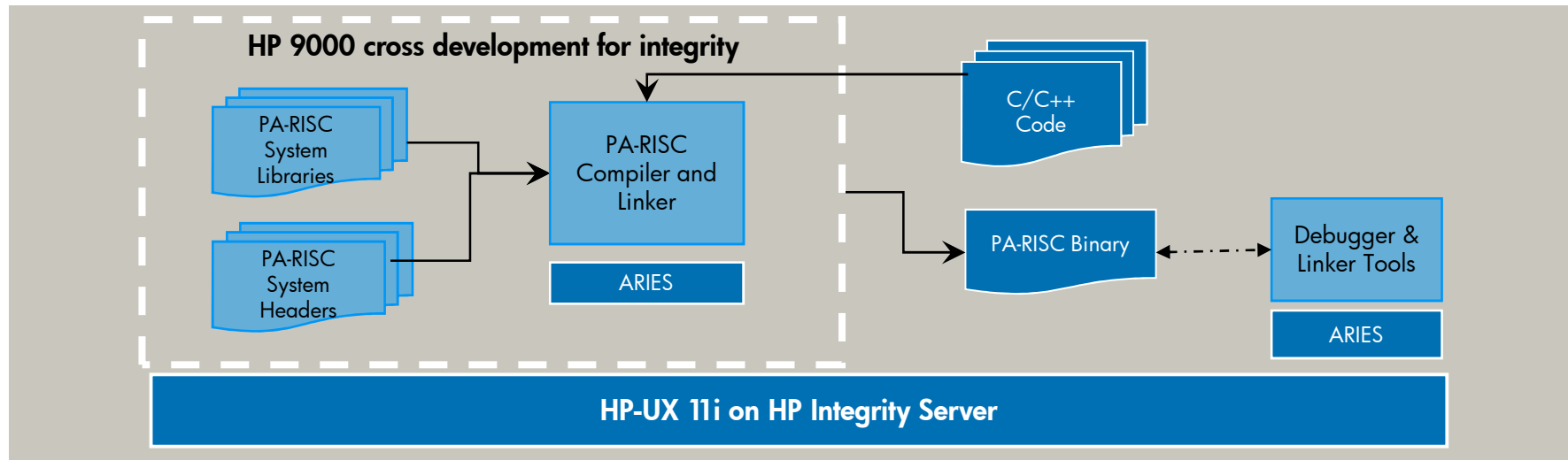


Backup slides



# HP 9000 cross development environment for integrity – new!

Provides complete and simplified cross development environment for HP 9000 on Integrity



- Self contained, fully functional HP 9000 compiling and linking
- Need to built applications to be run under Aries on Integrity systems
- No risk of specifying incompatible header files
- Available for HP-UX 11i v2 and HP-UX 11iv 3

Reduce dependency on HP 9000 systems

Leverage the power of Integrity systems

<http://www.hp.com/go/xpade>

# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition vPars with minimal impact

- Preparation
  - Verify HW/FW required
  - vPars environment – HP-UX 11i v3 (A.05.03) or mixed
  - Upgrade the nPar?
  - Update or cold install?
- Update steps
  - Copy OE and vPars bundles to the same depot
  - Make sure that all the virtual partitions are up
    - `virtualpartition1# vparstatus`
  - Turn off gWLM
  - Record the current autoboot and autosearch settings
    - The update process sets autoboot to manual
    - **If updating in a mixed environment – set autoboot to manual**



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition vPars with minimal impact

- More update steps
  - Install the latest Update-UX bundle onto each virtual partition
    - virtualpartition1 # **swinstall -s depot1:/release/1131/HPUX11i-OE-Ent.DVD Update-UX**
    - There is now a -p (preview) option
  - Update with the latest OE and vPars bundles
    - virtualpartition2 # **update-ux -s depot1:/release/1131/HPUX11i-OE-Ent.DVD HPUX11i-OE-Ent T1335CC**
  - Check results
    - virtualpartition2 # **swlist -l bundle | grep -i OE**
    - HPUX11i-OE-Ent B.11.31 HP-UX Enterprise Operating Environment



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition vPars with minimal impact

- More update steps
  - Reboot nPar and vPars monitor
    - Reboot the nPartition to ISL> or EFI
    - MON> **reboot**
  - Load the vPars monitor
    - Shell> **fs0:**
    - fs0:\> **hpux**
    - HPUX> **boot vpmom**
  - Boot the virtual partitions
    - MON> **vparload -all**



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition vPars with minimal impact

- More update steps
  - Turn autoboot and autosearch settings back to the original settings recorded earlier
    - virtualpartition1 # **vparmodify -p virtualpartition1 -B auto**
    - virtualpartition1 # **vparmodify -p virtualpartition1 -B nosearch**
  - Verify each virtual partition running correct vPars version
    - virtualpartition1 # **vparstatus -P**



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- Restrictions
  - Integrity VM Version 4.0 runs only on HP-UX 11i v3, September 2008 (Update 3 release or later)
  - No HFS file systems mounted
  - No HP SIM CMS software installed
  - vPars not installed
  - Only layered SW required to manage the system or virtual machines
  - Must allow VM installation process to configure the system for HPVM performance
  - Adequate disk space for root file systems
  - Able to reboot production guests
  - Able to update older guests to supported versions of guest OS
  - 1 GB of memory free



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- Preparation
  - Verify HW/FW required
    - Run `msv2v3check`
  - Update or cold install?
  - Which OE?
  - Guests ready to upgrade?
    - Run `hpvmupgrade -e`
  - Create a recovery image
  - Back up VM host and all guests
  - Gracefully shut down all guests
  - Run `vgexport(1M)` on all non-root LVM volume groups



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- Update steps
  - Do not select:
    - HPSIM-HP-IX(OE) – HP SIM Server bundle
    - T1335CC(OE) – vPars for HP-UX 11i v3
    - VseAssist(OE) – Virtual Server Environment Configuration assistant
    - VSEMgmt(OE) – Virtual Server Environment Management
    - T2787AC – Virtualization Manager
  - May select:
    - Serviceguard
    - Performance monitoring and error handling diagnostics
  - Adjust root file systems



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- More update steps
  - Install the latest Update-UX bundle
    - **# swinstall -s my.server.foo.com:/OEdepot/path Update-UX**
    - There is now a -p (preview) option
  - Update from the VSE-OE depot
    - **# update-ux -s my.server.foo.com:/OEdepot/path HPUX11i-VSE-OE T2767BC**
  - Check results
    - **# swlist -l bundle | grep -i OE**
    - HPUX11i-OE-Ent B.11.31 HP-UX Virtual Server Operating Environment



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- More update steps
  - Remove any blocking layered products
    - Hierarchical Files System (HFS) files in the /etc/fstab file
    - HP System Insight Manager (HP SIM) Server bundle
    - HP-UX Virtual Partitions bundle
  - Remove layered products that might require a new 11i v3 compatible version
  - Update non-OE applications from the Application media or depot
    - **# swinstall -s my.server.foo.com:/Ardepot/path VMMGR**



# Deploying HP-UX 11i v3

## OS/OE Deployment methods

### Transition HPVM's with minimal impact

- More update steps
  - Make sure you have latest AVIO for host and guest
  - Verify guests are problem free
    - Use the **hpvmupgrade** utility
    - Start and stop each guest, one at a time, and make sure that they boot to their OS
  - Use physical backing store?
    - Run `hpvmdevtranslate`
    - Creates script to modify backing devices
    - Review and edit script

Technology for better business outcomes

