



Tru64 UNIX – Update & Migration Tools

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Agenda

- Overview
- Support Roadmaps
- Customer Extended Support
- Tru64 UNIX V5.1B
- Tru64 UNIX V5.1B Enhancements
- Future Release and Plans
- Tru64 UNIX to HP-UX Migration Solutions
- Resources


17.04.2007 www.it-symposium2007.de 2



Overview

- Unchanged Roadmaps still on schedule
 - New version added
- V5.1B Support at least until 2011
 - 5 years beyond last alpha server sale date
- PVS extended for selected versions
 - Tru64 UNIX V4.0F/G extended 21 months
 - Tru64 UNIX V5.1A extended 28 months
 - Ends 30 June 2007

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3




Tru64 UNIX® O/S Support Roadmap

	2005	2006	2007	2008	2009	2010	2011
4.0F/G**	PVS-SE						
5.1A**	PVS-SE			Guaranteed 42 month Support V5.1B-3 and beyond *			
5.1B-2	Standard						
5.1B-3	42 months						
5.1B-4	42 months						
5.1B-5	Min 42 months						
5.1B with updates	Support at least through 2011						➔
	Custom Engineering Support						➔

* Certain features may require update to latest release
 ** Restricted Configurations PVS-SE: Prior Version Support – Sustaining Engineering

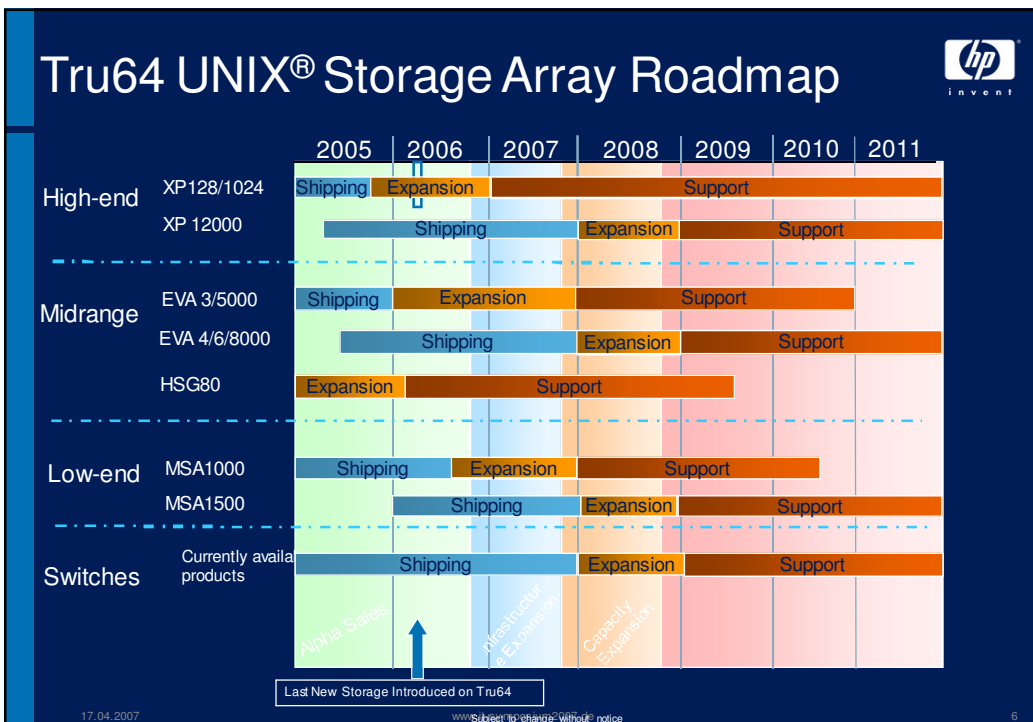
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Customer Extended Support

- „Customers requiring support on earlier patch kits or releases that are no longer supported should contact their HP account teams to determine if custom support is available and under what terms and conditions such custom support may be purchased.“
- CES is an exception support offering and we encourage Customers to install the latest releases to receive the most current updates

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5






Tru64 UNIX V5.1B

- EV7 platform support (Marvel)
 - 2-8, 16 and 32 CPU's (ES47, ES80, GS1280)
- New Management Enhancements
 - SysMan
 - Collect, Collgui, Sys_check
 - Environmental monitoring
 - Improved boot times
 - IPv6 production mode
 - Kernel Crash Dump
 -


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Tru64 UNIX V5.1B

- New monitoring utilities and daemons
 - Essential Services Monitor Daemon (esmd)
 - maintains the availability of essential system daemons
 - Performance Manager metrics server daemon (pmgrd)
 - provides general UNIX performance metrics on request
 - PK-2
 - xmesh (EV7 based systems)
 - utilization reports for mesh components
 - PK-3/PK-4/PK-6


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Tru64 UNIX V5.1B

- Security Enhancements
 - SSH bundled with V5.1B
 - set EnforceSecureRutils=yes
 - rlogin, telnet or rsh equivalent ssh2
 - rcp or ftp equivalent scp2 or sftp
 - Buffer overflow protection (PK-2)


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Tru64 UNIX V5.1B

- New AdvFS Features
 - Online LUN/Unit Expansion
 - mount [-u] -o extend ...
 - vFast Utility
 - continuously defragmenting and balancing files
 - Freeze/Thaw
 - allow coherent hardware snapshots within multivolume
- New LSM Features
 - Fast Plex Attach
 - Volclonedg supports snaps/clones


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Tru64 UNIX V5.1B

- Big Memory Pages Support
 - Support for pages of 64KB, 512KB and 4096KB
 - Optimized page size controlled by kernel
- TruCluster Server Enhancements
 - CFS Load Monitoring Daemon (cfsd)
 - Monitor, report and respond to file system node/cluster activity
 - CAA application resource balancing
 - Parallel roll support
 - Faster SW upgrades


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Tru64 UNIX V5.1B-1

- Binary Compatibility to V5.1B
- Support for 64 CPU EV7 Systems
- Support for DS15
- HP-UX 11i migration tools availability (APCD)
 - filescanner, scansummary, scandetail ...
- V5.1B-1 „Vail“ release includes NHD-7 and PK-3
 - plus updated/new applications


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Tru64 UNIX V5.1B-1

- Enhanced Big Memory Pages Support
 - Application tunable button in 5.1B-1
- Greater file system scalability
 - Higher LSM I/O throughput
 - AdvFS panic avoidance
- Broader support of StorageWorks products
 - MSA1000, EVA, XP-Storage Array...
 - HP Data Protector


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Tru64 UNIX V5.1B-2

- Binary Compatibility to V5.1B
- Support for EV7z
- Updated HP-UX 11i compatibility tools
 - Scanwizards
 - developers documentation
 - HP-UX Manual-Pages included
- V5.1B-2 „Utah“ includes NHD-7 and PK-4
 - plus updated/new applications


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Tru64 UNIX V5.1B-2

- Enhanced Big Memory Pages Support
 - Basic functionality in 5.1B
 - Application tunable in 5.1B-1
 - Support for system page tables in 5.1B-2
 - Will greatly improve performance of
 - Memory Intensive Applications (i.e. DB)
 - Finite Element Applications (i.e. Modeling)


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Tru64 UNIX V5.1B-2

- Reduced time for patch installation
- Faster boot with clustered LSM
- Improved memory channel performance
- Unified Buffer Cache scaling
 - Improved performance (SMP, NUMA, EV7, PCI-X)
- Improved bad disc detection and handling
- XP12000 support added


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Tru64 UNIX V5.1B-3

- Tru64 UNIX V5.1B-3 „Tahoe“ release
 - Support for new I/O operations
 - Enhanced HP-UX 11i compatibility tools
 - Application Updates
 - Quality Updates
- V5.1B-3 includes NHD and PK-5
 - plus updated/new applications


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Tru64 UNIX V5.1B-3

- AdvFS quality updates
- Optimization of NUMA Architecture in EV7
 - Set CPUs in a Resource Affinity Domain (RAD)
- Collect Utility Enhancements
 - Support dynamic changes to AdvFS
- Better Cluster Performance
 - Better performance Cluster inter-node communication
 - Faster Cluster boot time


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Tru64 UNIX V5.1B-3

- Storage Handling Improvements
 - More robust search to determine a path to target disk
 - Support for LSM fast failover
- ISV enablement
 - Improvements to the OS necessitated by ISV partners
- Accounting
 - Refined accounting of system end user utilization time


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Tru64 UNIX V5.1B-3

- LSM fast failover
 - Can be enabled or disabled at any time
 - applies to RAID1 and RAID0+1 only
 - Hotswap configuration not recommended
 - Depends on error type and layer
 - LSM – DRD – CAM
 - DRD will retry on pathing error – transparent to LSM
 - CAM will not limit all retries
 - Multi-path failures
 - Lost packet on fabric
 - Busy device
 - ...


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Tru64 UNIX V5.1B-3

- Patch installation/deleting enhancements
 - License Wrapper included
 - Accept license agreement on patch installation
 - Deleting patch kit in multi-user mode
 - Single user mode still recommended
 - Forced installation on system conflicts
 - Expansion to baseline
 - Limited use still recommended


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Tru64 UNIX V5.1B-3

- Clusterwide *fuser()* command
- Cluster Application Availability (CAA)
 - Improve the overall quality of the code base
- Cluster Alias Serviceability Enhancement
 - Improved debugging capabilities


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Tru64 UNIX V5.1B-3

- LSM performance improvements
 - Mirrored volume plex detach on device error
 - LSM startup and rescan for large cluster environments
- Fast-fail option for LSM mirrored volume I/O
 - Selectable for I/O improvements on device errors
- LSM improved supportability
 - New vold option for real-time debugging


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Tru64 UNIX V5.1B-4

- Binary Compatibility to V5.1B
- Application and Quality Updates
- Performance enhancements
- Enhanced Resiliency & Stability
- Support for enhanced distance clusters added
 - May require custom support statement
- V5.1B-4 includes NHD and PK-6
 - plus updated/new applications


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Tru64 UNIX V5.1B-4

- Application updates
 - TruCluster Server
 - dupclone – install patch kit to alternate disk set
 - AdvFS utilities and LSM enhancements
 - ASU V5.1B-4
 - Internet Express 6.6
 - New bind, sendmail ...
 - APCD applications and components
 - Tru64 UNIX migration tools removed from APCD
 - ...


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Tru64 UNIX V5.1B-4

- Performance enhancements
 - New storage subsystem attributes
 - Tape preferred path
 - Improved boot time for systems with a large number of disks
 - NetRAIN over LAG
 - Improves throughput
 - New ftpd daemon options
 - improves login performance


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Tru64 UNIX V5.1B-4

- Enhanced Resiliency & Stability
 - Updated several commands for improved standards compliance
 - Error Recovery for tape IO
 - New kernel attributes protect against potential ICMP security vulnerabilities
 - Enhancements to the kdbx debugger improve serviceability


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Tru64 UNIX V5.1B-4

- Enhanced distance cluster
 - Maximum of 4 nodes
 - LAN based CI
 - Maximum distance 100 km
 - At least one shared storage array for each side
 - CA mandatory, no LSM mirroring support
 - LSM may be used for striping only


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Tru64 UNIX V5.1B-4

- Enhanced distance cluster
 - Configuration requirements
 - <http://h30097.www3.hp.com/docs/patch/51B/bl27/HTML/apas01.html>
 - Configuration restrictions
 - <http://h30097.www3.hp.com/docs/patch/51B/bl27/HTML/apas02.html>
 - Recommendations
 - <http://h30097.www3.hp.com/docs/patch/51B/bl27/HTML/apas03.html>

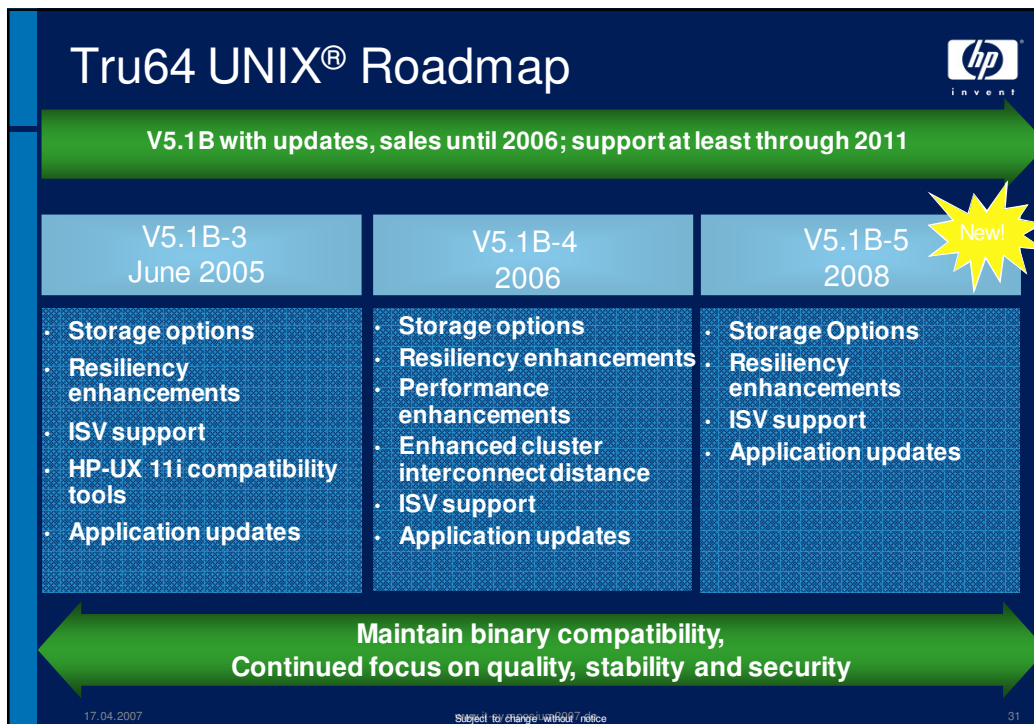
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Future Release and Plans

- Tru64 UNIX Version 5.1B-5
 - Planned for 2008
 - Application updates
 - Quality updates
 - Storage options
 - ???

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Tru64 to HP-UX Migration Solutions



- Software Transition Kit (STK)
 - File scanning utilities for code analysis
 - Identify and resolve compatibility issues
 - Tru64 UNIX C, C++ and Fortran API's
 - Makefile and shell scripts
 - New STK update covers HP-UX features like
 - cluster and file system transition issues
 - additional library, API and command coverage
 - identify option-level command usage


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Tru64 to HP-UX Migration Solutions

- Software Transition Kit (STK)
 - Document updates included
 - Porting guide
 - Shell migration
 - Fortran application porting
 - Removed from APCD's
 - <http://devresource.hp.com/drc/STK/newTru64.jsp>


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Tru64 to HP-UX Migration Solutions

<i>Existing Tru64 Solutions</i>	<i>Equivalent HP-UX Solutions</i>
<i>LSM</i>	<i>VxVM + HP File Mover Tool</i>
<i>AdvFS</i>	<i>VxFS + HP File Mover Tool</i>
<i>AdvFS & LSM</i>	<i>Storage Foundation + HP FMT</i>
<i>TruCluster (v4 and v5)</i>	<i>HP Serviceguard + Storage Foundation (v4) or Storage Foundation CFS (v5)</i>
<i>TruCluster for Oracle customers (v4 and v5)</i>	<i>HP Serviceguard + Storage Foundation (v4) for Oracle or Storage Foundation CFS for Oracle (v5)</i>
<i>TruCluster for Oracle RAC customers (v5)</i>	<i>HP Serviceguard + Storage Foundation CFS for Oracle RAC</i>


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Tru64 to HP-UX Migration Solutions

- HP File Mover Tool (FMT)
 - Designed to assist customers with data migrations
 - In-house application developed by HP
 - Moves directory contents
 - Source system (Tru64 UNIX) Target system (HP-UX 11i)
 - Will not handle ISV files (database files for instance)
 - Will not handle application binaries
 - Will handle SOME endian issues
 - Incompatible file systems between Tru64 UNIX and HP-UX
 - Endian conversion program for customer specific binary formats


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Tru64 to HP-UX Migration Solutions

- HP File Mover Tool
 - Client Server Design
 - A set of programs that operate in four sequential stages
 - Stage 1: Analysis
 - Stage 2: Transfer
 - Stage 3: Endian Conversion (optional)
 - Stage 4: Verification


17.04.2007 www.it-symposium2007.de 36



Resources

- Tru64 UNIX to HP-UX migration information
 - Application Transition Homepage
 - <http://devresource.hp.com/drc/topics/apprans.jsp>
 - Tru64 UNIX HP-UX Transition Tools
 - http://h30097.www3.hp.com/transition/app_tools.htm
 - Tru64 UNIX HP-UX Transition Modules
 - <http://h30097.www3.hp.com/transition/modules.html>


17.04.2007 www.it-symposium2007.de 37



Resources

- Sustaining Engineering Supported Product List
 - <http://h20219.www2.hp.com/services/cache/11774-0-0-225-121.html>
- Tru64 UNIX Technical Updates
 - http://h30097.www3.hp.com/docs/pub_page/update_list.html
- Tru64 UNIX and TruCluster Server Info
 - <http://h30097.www3.hp.com/unix/v51b4.html>
- Tru64 UNIX Reference Pages
 - http://h30097.www3.hp.com/docs/pub_page/doc_list.html

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Resources

- Tru64 UNIX product updates
 - www.hp.com/go/tru64unix
- Tru64 UNIX Patch information
 - www.itrc.hp.com
- EES/CES
 - <http://h30097.www3.hp.com/ees>
- Tru64 UNIX Transition Benefits Calculator
 - www.hp.com/go/artvalue
- Transition to HP-UX 11i
 - www.hp.com/go/transitiontools
- HP-UX 11i product updates
 - www.hp.com/go/hpux11i

17.04.2007 www.it-symposium2007.de 39

