Vorgehensweise für einen erfolgreichen Umstieg

Bad Homburg
08.11.2005

Hans-Jürgen Fuks
Technologie Consultant
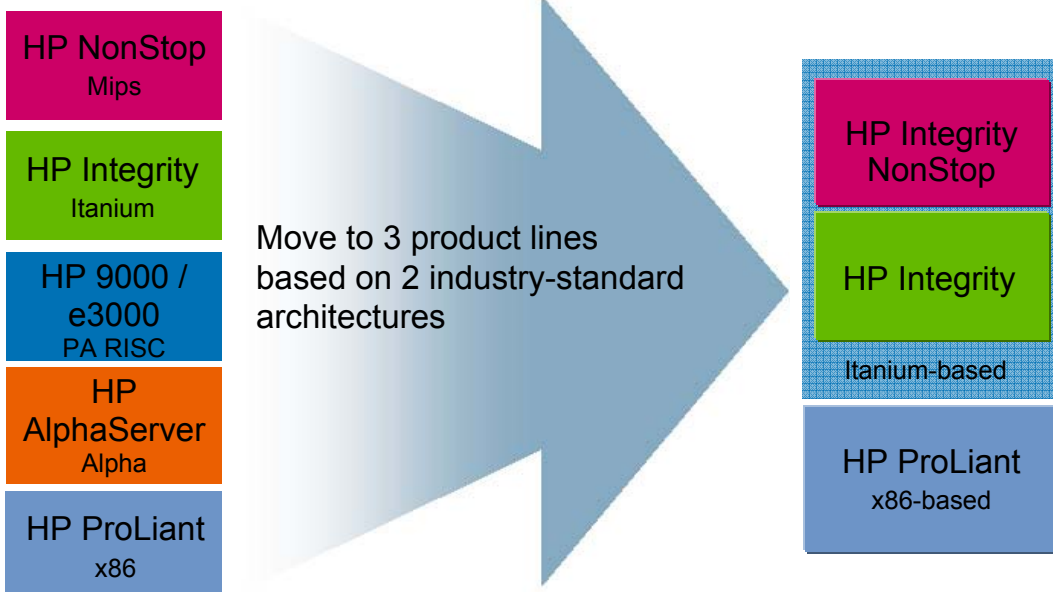Hans-Juergen.Fuks@hp.com

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Agenda

- Wichtige Aspekte für einen erfolgreichen Umstieg

- Vergleich von HP-UX und Tru64 UNIX

- Wie unterstützen wir unsere Kunden
  - Application Transition Tools
  - Database Transition Tools

Wichtige Aspekte für einen erfolgreichen Umstieg

HP's standards-based server strategy

HP NonStop — Mips	
HP Integrity — Itanium	
HP 9000 / e3000 — PA RISC	
HP AlphaServer — Alpha	
HP ProLiant — x86	

Move to 3 product lines based on 2 industry-standard architectures

HP Integrity NonStop

HP Integrity

Itanium-based

HP ProLiant x86-based

Tru64 UNIX® Roadmap

V5.1B with updates, sales until 2006; support at least through 2011

V5.1B-3 June 2005 *Shipping*	V5.1B-4 2006	V5.1B-5 2008 *New!*
• Storage options • Resiliency enhancements • ISV support • HP-UX 11i compatibility tools • Application updates	• Storage options • Resiliency enhancements • Performance enhancements • Enhanced cluster interconnect distance • ISV support • Application updates	• Storage Options • Resiliency enhancements • ISV support • Application updates

Maintain binary compatibility, Continued focus on quality, stability and security


Tru64 UNIX® O/S support Roadmap

V5.1B-4 and V5.1B-5 release dates are estimates

	2005	2006	2007	2008	2009	2010	2011
4.0F/G**	PVS-SE						
5.1A**	PVS-SE						
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						

*Guaranteed 42 month Support V5.1B-3 and beyond ***
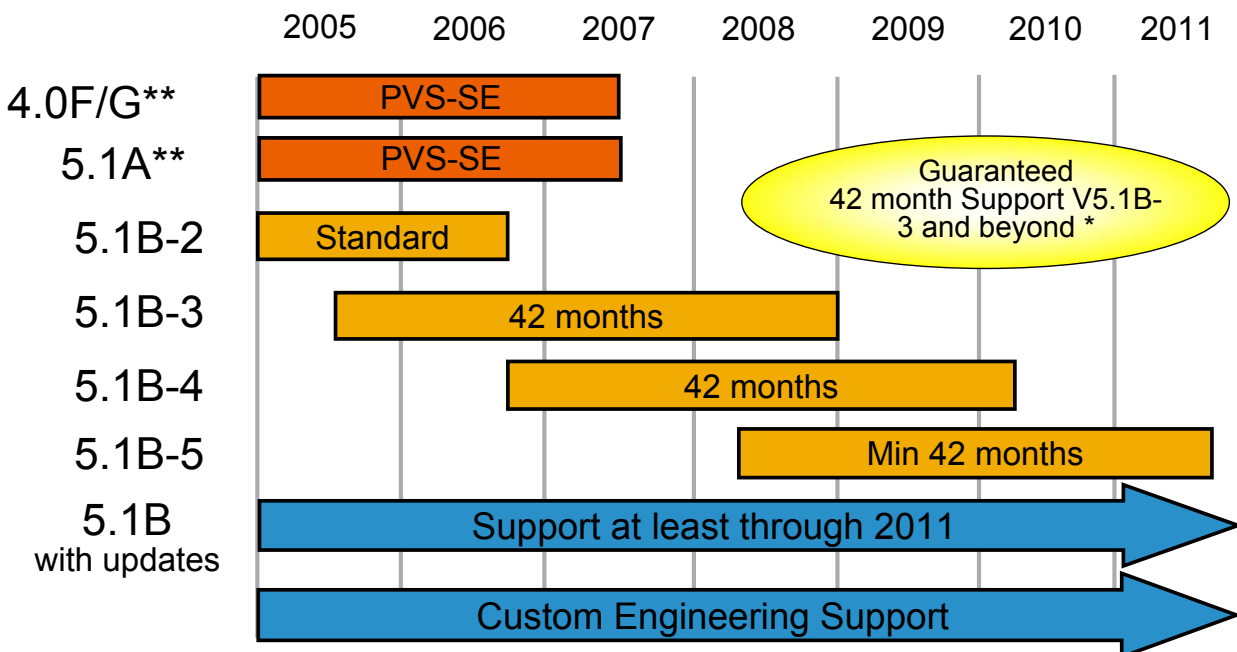
* Certain features may require update to latest release

** Restricted Configurations   *PVS-SE: Prior Version Support – Sustaining Engineering*

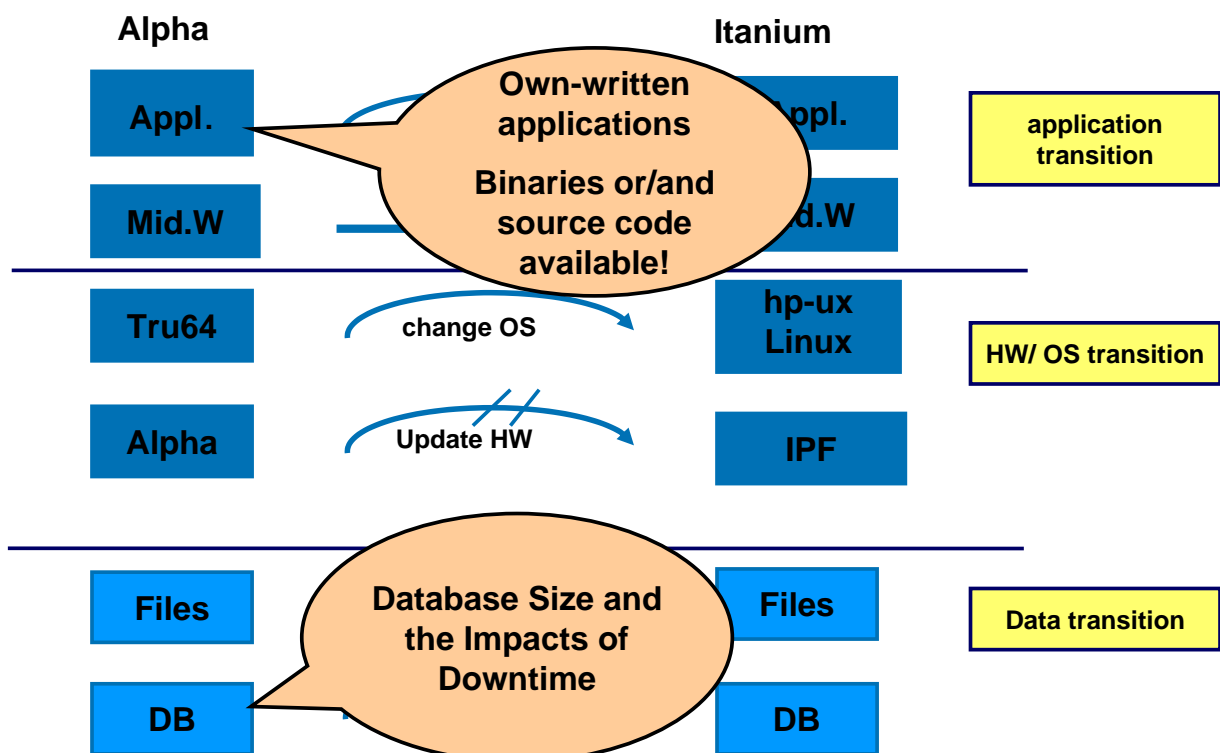# Migrations, a painful process ...
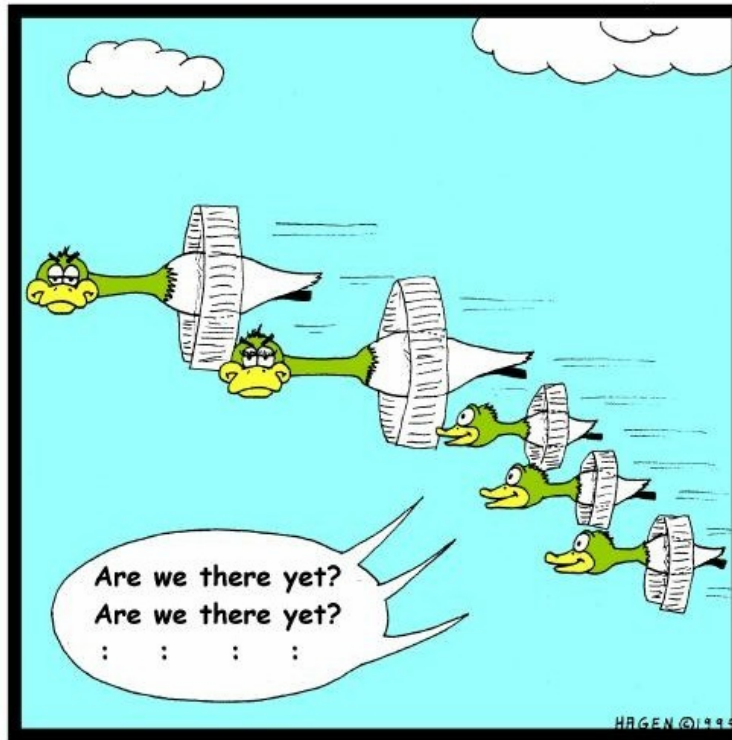
A migrating bird's worst nightmare

Migration Tools

...or a smooth transition

Betrachtung der unterschiedlichen Layers

Alpha

Itanium

Appl.	Own-written applications	Appl.	application transition
Mid.W	Binaries or/and source code available!	Mid.W	
Tru64	change OS	hp-ux Linux	HW/ OS transition
Alpha	Update HW	IPF	
Files	Database Size and the Impacts of Downtime	Files	Data transition
DB		DB	

Klärung von wichtigen Fragen

- Systems in use
- AdvFS and CFS ?!
- Operating system with version numbers
- Applications with version numbers
  - ISV application, version ? Available on source and target
  - Self written source code
- How long will the source plattform, OS, and application supported
- Compiler: C, C++, Fortran, Cobol, …Bliss, Macro32, Mumps, Lisp, Ada, ...
- Layered Products with version numbers
- Databases with version numbers
- Specielle HW or busses: Q-Bus, M-Bus, VME, IEEE488, ...
- Requirements in the next Years (users, database sizes,..)

Auswahl des neuen Serversystems
System in Use

- Choose the right Integrity Server
  - Contact your Account Manager
- Comparison of Old AlphaServer Systems with newer Ones
  - Example: AlphaServer 4100

AlphaServer 4100 5/533 -	1,560
AlphaServer	2,800
AlphaServer 4100	3,660

Important!
Rough System Comparison

The performance numbers provided here are for comparison purposes. These are relative performance numbers using a relational database and commercial transaction processing dominated applications.

The relative performance numbers are based on **both** measurements and informed estimates that were **not** measured. Therefore, they should only be used to provide rough system comparisons and are not intended to take the place of more rigorous measurements.

http://h18002.www1.hp.com/alphaserver/performance/perf_tps.html

ISV Application available on Integrity Server

ISV Application Status
HP-UX for HP Integrity servers
@hp

PeopleFinder:
Search:
▸ Add My Link

▸ Availability key   ▸ Non-Itanium reports

| HP-UX | » Linux | » NonStop | » OpenVMS | » Windows | » Reports/Links | » Search HP-UX |

Partner Name	Application Name	Market Segment	Comments	HPUX 11i v1.6	HPUX 11i v2.0	Contact
sort	sort	sort				

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Current as of: 10/20/2005 4:32:24 PM

A+B Solutions GmbH	FIT (Factory Integrating Tool)	Industry specific -- Manufacturing solutions			v.2004 (Available)	Burgstedt, Selina updated: 6/21/2005
Ab Initio Software Corporation	Co>Operating System	Infrastructure -- Information and data management and databases			2.14 (Planned CY2005Q2)	Flagg, Daniel updated: 3/4/2005
ABACOM Software GmbH	ABACUS				6.3 (Available)	Burgstedt, Selina updated: 6/29/2005
ABAQUS, Inc.	ABAQUS Explicit	High performance computing -- Computer-aided engineering		6.5 (Available)	6.5 (Available)	Fisher, Lee updated: 9/27/2005
ABAQUS, Inc.	ABAQUS Standard	High performance computing -- Computer-aided engineering		6.5 (Available)	6.5 (Available)	Fisher, Lee updated: 9/27/2005
ABSYSS	Visual Tom	Infrastructure -- Platform infrastructure			4.2 and higher (Available)	Hurou, Jean Bernard updated: 5/2/2005
Abysal Systems, S.A.	Abysal Web DTP	Infrastructure -- Application development and deployment			3.02 (Available)	Jund, Mireille updated: 11/5/2004

https://h20299.www2.hp.com/hpslt/index.aspx?ReturnUrl=%2fCustomerTool%2fDefault.aspx

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ISV Application Service Support Questions

SAP

- SAP will discontinue offering new versions of the SAP solutions on the Tru64 UNIX platform at the end of 2005.
  This means that any future SAP solutions based on the successor(s) of the SAP NetWeaver '04 release will no longer be supported on the Tru64 UNIX Platform

- SAP will clearly meet the maintenance commitments for delivered products it has made as part of the 5-1-2 maintenance strategy, including those on Tru64 UNIX (It will therefore be possible to operate an SAP R/3 Enterprise System (R/3 4.7) on Tru64 UNIX to the end of the extended SAP maintenance (currently planned for March 2012).

ISV Application Service Support Questions

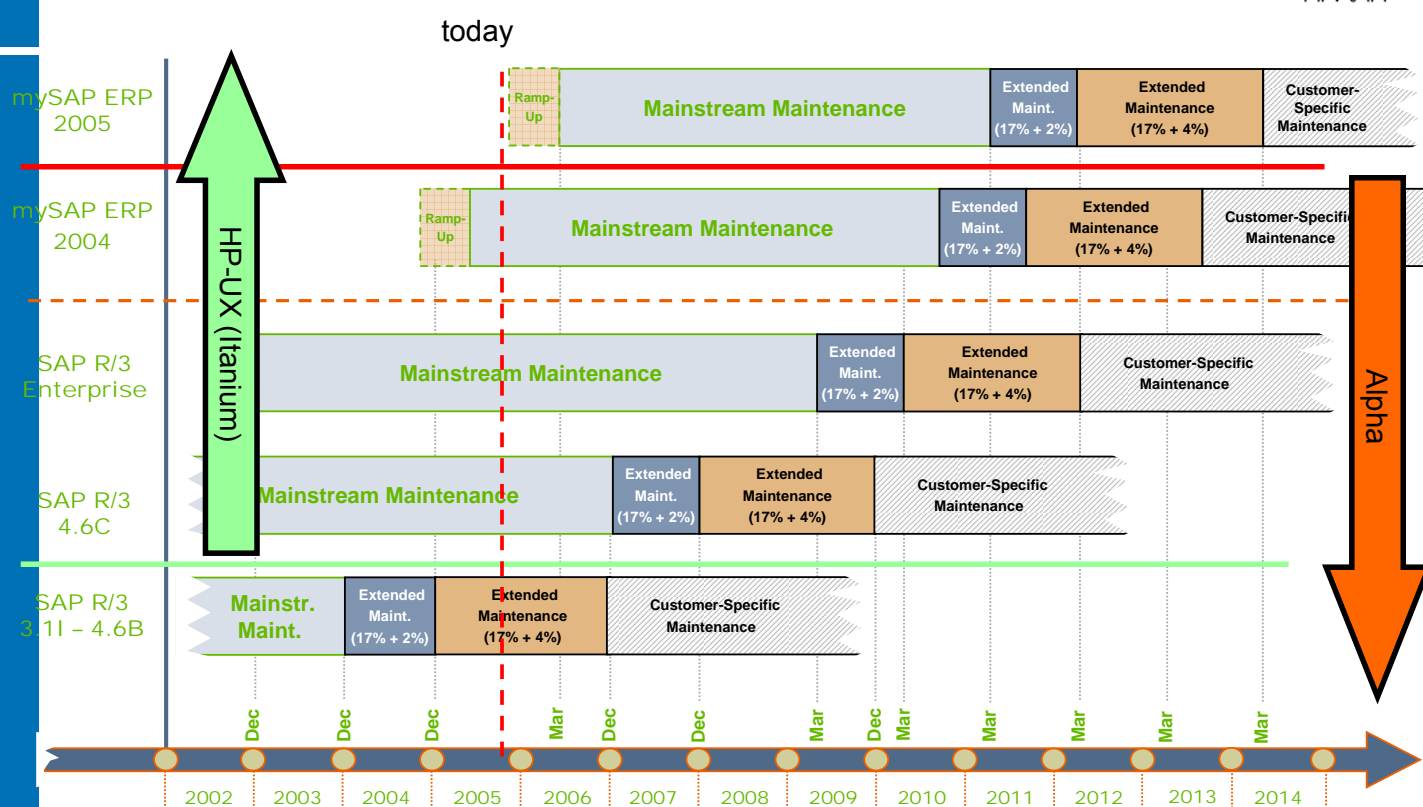|	
ORACLE	Oracle RDBMS (9i/10g), 9iAS, Application Server 10g, E-Business Suite 11iR1, supported **at least through 2011**, except Oracle Collaborate Suite which is supported at least through 2006.
SAP	SAP R/3 Enterprise System (R/3 4.7) on Tru64 UNIX will be supported to the end of the extended SAP maintenance currently planned for **March 2012.**
PeopleSoft	PeopleTools 8.20 and 8.45, supported **at least through 2010**
bea	WebLogic Server, WebLogic Portal, Tuxedo, and BMQ, supported **at least until 2009** – in accordance with BEA standard and extended support agreements, unless the specific BEA product and version is retired on all platforms sooner.
VERITAS	VERITAS NetBackup™ software **support until mid-2008**. See the VERITAS Support Handbook at support.veritas.com for additional support details.
PROGRESS SOFTWARE	OpenEdge™ 10 and Progress® Version 9, supported **at least until 2007**, at least as long as customers with contracts require support.
SYBASE	ASE 12.5 and RepServer 12.6, supported in accordance with Sybase standard and extended support agreements - **at least until 2007** - unless the specific Sybase product and version is obsoleted on all platforms sooner.
sas	
IBM	ed **at least through 2011** with a 12-month advance notice of any change.

http://h30097.www3.hp.com/isv/index.html

Release and Maintenance Strategy

today

HP-UX (Itanium)   **Alpha**

mySAP ERP 2005	Ramp-Up	Mainstream Maintenance	Extended Maint. (17% + 2%)	Extended Maintenance (17% + 4%)	Customer-Specific Maintenance
mySAP ERP 2004	Ramp-Up	Mainstream Maintenance	Extended Maint. (17% + 2%)	Extended Maintenance (17% + 4%)	Customer-Specific Maintenance
SAP R/3 Enterprise		Mainstream Maintenance	Extended Maint. (17% + 2%)	Extended Maintenance (17% + 4%)	Customer-Specific Maintenance
SAP R/3 4.6C	Mainstream Maintenance	Extended Maint. (17% + 2%)	Extended Maintenance (17% + 4%)	Customer-Specific Maintenance	
SAP R/3 3.1I – 4.6B	Mainstr. Maint.	Extended Maint. (17% + 2%)	Extended Maintenance (17% + 4%)	Customer-Specific Maintenance	

Dec 2002   Dec 2003   Dec 2004   Dec 2005   Mar 2006   Dec 2007   Dec 2008   Mar 2009   Dec/Mar 2010   Mar 2011   Mar 2012   Mar 2013   Mar 2014

11/10/2005

This strategy is also valid for all **Industry Add-Ons** based on the releases above.

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Vergleich von HP-UX und Tru64 UNIX

General Aspects
Endian Transition Issue

- Endianism – refers to the byte order of data
  - big-endian Most Significant First
  - Little-endian Least Significant First

- HP-UX = big-endian

- HP Tru64 UNIX = little-endian

Big Endian

Byte 0	Byte 1	Byte 2	Byte 3
U	N	I	X

Little Endian

Byte 3	Byte 2	Byte 1	Byte 0
X	I	N	U

Tru64 UNIX and HP-UX Comparison

- HP-UX is based on System V with features from 4.x BSD

- Tru64 UNIX environment is based on 4.x BSD with features from System V

- HP-UX and Tru64 UNIX conform to multiple common standards

Tru64 to HP-UX: Standards Conformance

Standard	Tru64 UNIX	HP-UX
IEEE POSIX 1001.3c Kernel threads	√	√
IEEE POSIX 1003.1-1996 System calls	√	√
IEEE POSIX 1003.1b Real-time APIs	√	√
IEEE POSIX 1003.2 Commands and Utilities	√	√
X/Open Portability Guide (XPG3, XPG4)	√	√
Single UNIX Specification V1 (UNIX 95)	√	√
Single UNIX Specification V2 (UNIX 98)	√	Almost!

Tru64 to HP-UX: Standards Conformance (cont)

Standard	Tru64 UNIX	HP-UX
System V Interface Definition (SVID3)	√	√
X11 Window System, Font Server and Clients	R6.5	R6.2
OSF/Motif 2.1	√	√
FIPS 151-2	√	√
FIPS 189	√	√
LP64	√	√

Tru64 to HP-UX: Namespaces

Tru64 UNIX	HP-UX	Standard
-D_OSF_SOURCE (Default)	-D_HPUX_SOURCE (Default for-Ae)	Proprietary interfaces
-D_XOPEN_SOURCE=500	-D_XOPEN_SOURCE=500 or -DUNIX_STD=98	UNIX 98
-D_XOPEN_SOURCE_EXTENDED	-D_XOPEN_SOURCE_EXTENDED	UNIX 95
-D_XOPEN_SOURCE (Default)	-D_XOPEN_SOURCE	XPG4
-D_POSIX_SOURCE	-D_POSIX_SOURCE	POSIX
-D_ANSI_C_SOURCE	Default for -Aa and c89	ANSI C

Compilers

- C, C++, Fortran, Java and assembler are covered in porting guide

- Includes tables mapping Tru64 UNIX compiler options to HP-UX compiler options

- Tru64 UNIX Migration Environment for HP-UX includes a cc, c++ and a linker driver to map Compaq C compiler options to the equivalent options for HP C
  - The drivers generate 64bit code by default

- NOTE:
  - HP-UX compilers generate 32-bit objects by default
  - Use +DD64 option to generate 64-bit image

K&R C -> ANSI C

C Compilers

- Both Compaq and HP C compilers support ANSI C

- Strictly conformant code will compile and run without change

- Turn on strict ANSI checking (-std1 option) to find non-compliant code

- HP ANSI C compiler for Integrity platforms does not support K&R mode

C++ Compilers

- Both Compaq and HP C++ compilers support ANSI C++

- Default for Compaq C++ is –std ansi , which supports commonly used extensions.

- Use –std strict_ansi option for Compaq C++ to flag any nonstandard code

- Use –Aa option with HP aC++ to enable ANSI C++ standard features like standard scoping rules for variables declared in conditional statements like for-loops

Wie unterstützen wir unsere Kunden

Application Transition Tools – Methoden und Verfahren

General Aspects
Purpose for Application Migration Tools

- Understand the migration issues and resources available to assist in the transition of application source code from one platform to another.

  - **Supported starting points (non-IPF platform/OS pairing)**
    - **HP-UX on HP9000**
    - **Tru64 UNIX on Alpha**
    - **SUN Solaris on Sparc**
  - **End state is IPF platform provided by HP**
    - **HP-UX on Integrity Servers**
    - **Linux on Integrity Servers**

  Throughout presentation, IPF = Intel Itanium Processor Family

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Application Migration Tools
Software Transition Paths

HP-UX PA-RISC ➝ **HP-UX**　**IPF** *newer*

Linux

Tru64 UNIX

Solaris ➝ **Linux**

Coming Soon!
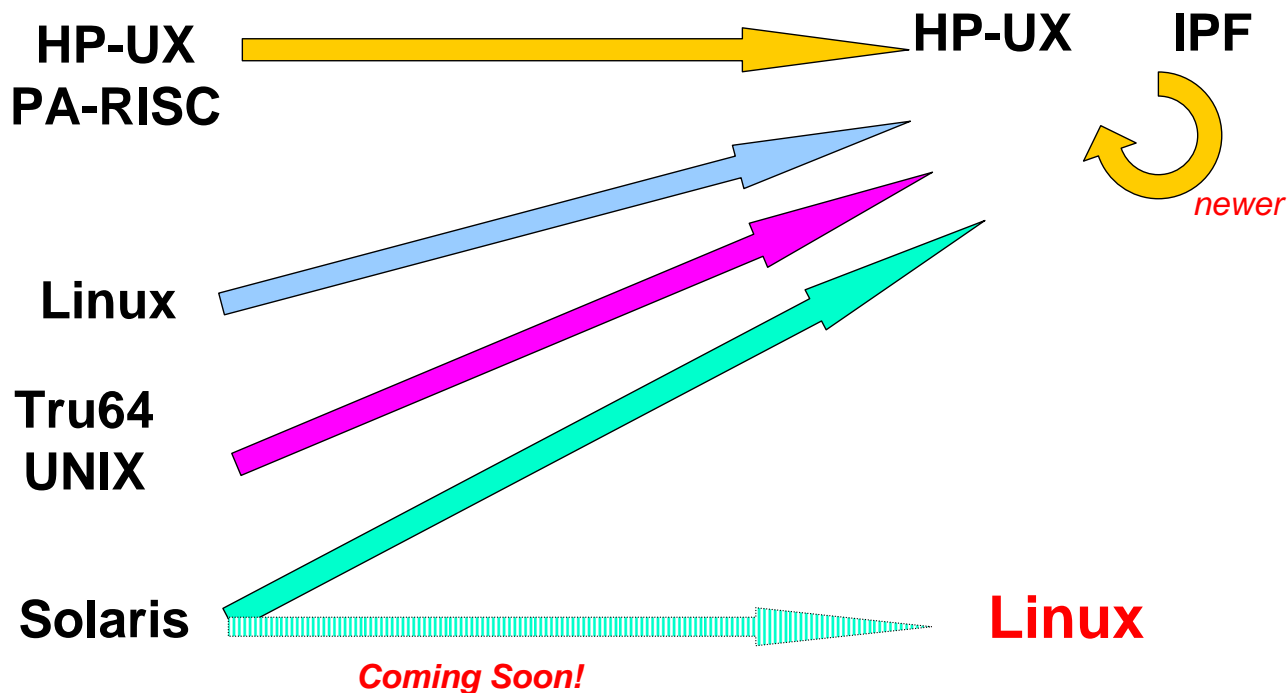
Application Migration Tools
Outline

- ### Before the Transition – Scoping
  - Transition modules
  - binaryScan
  - Porting Assessment Reports
  - Porting Guides

- ### During the Transition – Porting
  - Software Transition Kit (STK)
  - Migration Environment

- ### After the Transition – Deploying
  - Migration Environment

Application Transition Tools & Platform Pairing

Solaris to Linux

Solaris to HP-UX 11i v2

HP-UX to HP-UX 11i v2

Tru64 to HP-UX 11i v2

Application on HP-UX

3 Deploying — *Migration Environment*

2 Qualifying or Porting — *Software Transition Kit* Technical porting documents

1 Planning & Designing — *binaryScan* Porting Assessment Reports Transition Modules

Original code on source platform
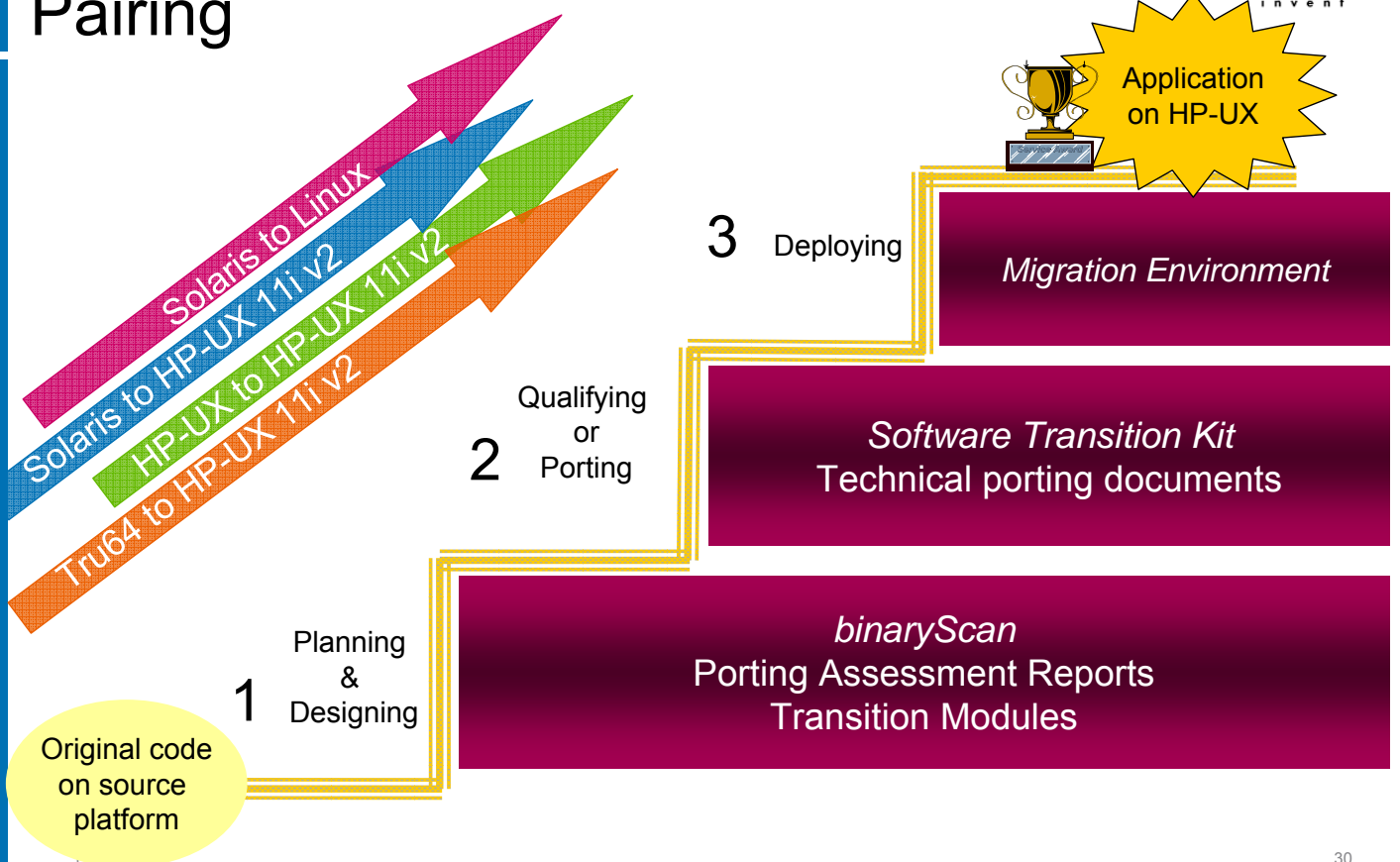
Application Migration Tools
Custom Application Transition Life Cycle

```
           ┌──────────────────────────────────────────────┐
           │              Source platform                 │
           └──────────────────────────────────────────────┘
                         │
        ┌────────┐       │  ┌─────────┐        ┌──────────┐
        │Scoping │ ────────▶│ Porting │ ─────▶ │Deploying │
        └────────┘          └─────────┘        └──────────┘
                                                     │
           ┌──────────────────────────────────────────────┐
           │            Destination platform              │
           └──────────────────────────────────────────────┘
```
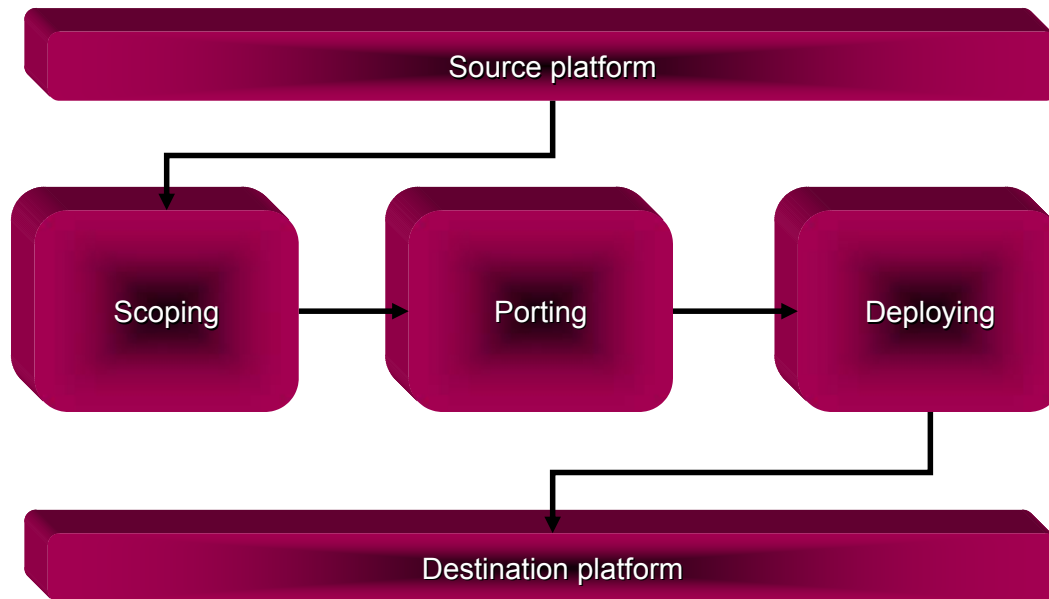
Application Transition Tools Highlights

```
┌──────────────┐        ┌──────────────┐        ┌──────────────┐
│  Planning    │        │  Qualifying  │        │              │
│      &       │ ─────▶ │      or      │ ─────▶ │  Deploying   │
│  Designing   │        │   Porting    │        │              │
└──────────────┘        └──────────────┘        └──────────────┘
```

- *binaryScan*

  A convenient scoping tool to quickly assess the porting effort

- **Porting Assessment Reports**

  A comprehensive analysis of APIs and recommendations by HP experts, available to qualifying customers only

- **Transition Modules**

  A method and framework to approach the transition step by step

- **Software Transition Kits**

  A porting tool giving you access to expert advice while saving time and effort in the porting process

- **Technical documents**

  A series of porting guides, case studies and reference documents

- **HP-UX 11i compilers**

  Include features to make the transition from another platform easier

- *Tru64 UNIX Migration Environment*

  Provides off-the-shelf access to select Tru64 UNIX APIs, commands and utilities on HP-UX 11i v2

Application Migration Tools
Transition Tool-chain Components

- What tools are available and what role do they play?
  - Transition Benefit Calculator for a first financial analysis
  - Transition Modules
    - Early in the planning phase, gives a wide breadth of migration issues
  - Binary Scanner (binaryScan)
    - First tool to use, provides a first-glance of API incompatibilities
  - Porting Assessment Reports
    - Customized porting assessment based on binaryScan output
  - Porting Guide
    - Before starting the port (detailed documents for engineers)
  - Software Transition Kit (STK)
    - Tools and documentation to assist your porting effort
    - Summary and detailed reports of potential source code incompatibilities
  - Migration Environment (ME)
    - Tru64 compatibility layer for HP-UX (APIs and utilities)
    - Facilitates the transition
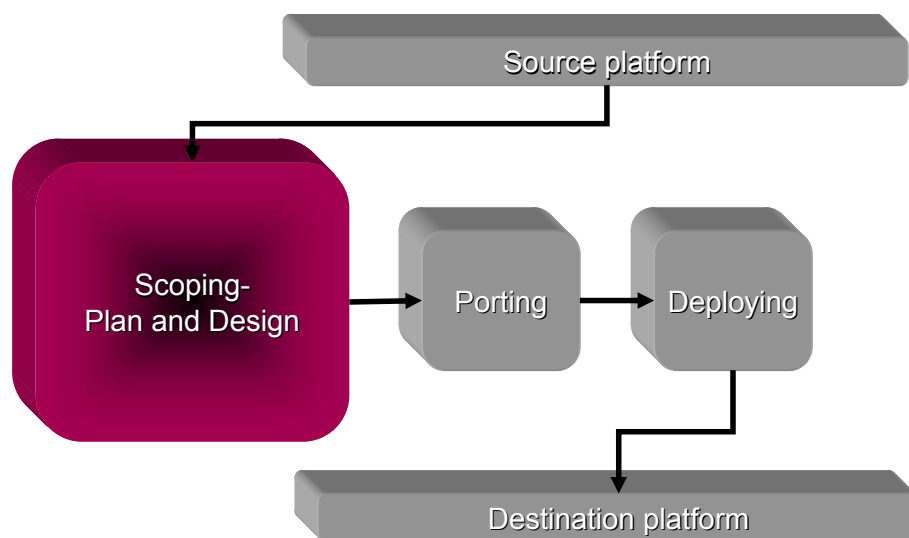
Before the Transition
Scoping

Before The Transition
Planning Tool for financial Analysis

hp Tru64 UNIX® Transition Benefits Calculator, 2nd edition

New Analysis | Open Analysis | Save Analysis | Prepare PDF Report | Prepare RTF Report

Questionnaire | HP-UX 11i Transition Costs | Value of ART Program | HP-UX 11i Transition Benefits | HP-UX 11i ROI

Questionnaire

The Tru64 UNIX® Transition Benefits Calculator, 2nd edition collects personalized information on the current Tru64 UNIX cost of ownership and opportunities for transition. This helps organizations understand the costs and value of various transition options, the benefits of HP transition programs (which help lower the costs and time to transition), and the incremental business value available from HP-UX 11i.

This calculator is very simple to use. First, provide company and general system information located below. This will provide you with default information on the remaining tabs and a quick analysis. You can save your work and continue to refine the analysis over time by changing default values on the remaining tabs. Collaborate with your colleagues to customize the results for your specific installation, personal costs and business opportunities.

Company Overview

Specify information about the organization, data center and application.

Primary industry classification	Aerospace and Defense
Data center(s) primary geographic location	United States
Currency	United States, Dollar ($)
Data center primary location(s)	Suburban
Annual company sales revenue or equivalent (in 000,000s)	$ 0.00

Current Tru64 UNIX System Profile

Specify the current Tru64 UNIX System platform. Click here for tips on modeling your environment.

Cluster or System Name (specify)	Model	Number of Systems	High Availability Configuration
	None	0	None
	None	0	None
	None	0	None
	None	0	None
	None	0	None

http://www.alinean.com/hp/transition/HP_transition_Calculator.html

| None | 0 | None |
| None | 0 | None |

Before the Transition
Transition Modules

- Transition Modules provide a method and framework to approach the transition
- Goes across the breadth of the transition:
  - Platform infrastructure (servers, operating systems, storage and tape devices)
  - Custom code applications
  - Packaged applications from independent software vendors (ISVs) databases for Oracle
- Includes Configuration Documents, Checklists, Step-by-Step instructions, and Recommendations
- Available for HP-UX to HP-UX 11i and Tru64 UNIX to HP-UX 11i V2 transitions

  Tru64 - http://hp.com/go/transition-modules

Transition module	Description
Platform Infrastructure • Planning module V1.6	Provides high-level planning information and recommendations to help assess your efforts to transition platform infrastructure, including servers, operating systems, storage and tape devices.
Custom Code • Planning & design module V1.4	Provides high-level planning and design information and recommendations to help assess your efforts to transition custom code applications and addresses programming-related transition issues.
Packaged Applications • Planning & design module V1.9	**Updated module:** Provides planning and design information and recommendations to help assess your efforts to transition packaged applications from independent software vendors (ISVs). Click here to see a list of the available Packaged Applications transition white papers.
Database for Oracle • Planning module V1.4	Provides planning information and recommendations to help assess your efforts to transition databases for Oracle.

Objectives & prerequisites

Specifically, these transition modules will

- Provide you a method and framework to approach your transition planning and design.
- Provide you the means to begin to gauge level of effort and transition duration.
- Save you time and effort in planning and designing your transition.
- Help you identify the areas within each module that require further planning or design, and those that do not pertain to your transition.
- Help you define a customized plan for those areas that require further planning and design.

Before the Transition
binaryScan – Transition Planning Tool

- Application transition assessment tool that reports compatibility levels of APIs from the origin platform to the destination platform

- Scans dynamically linked executables on HP-UX, Solaris or Tru64 UNIX

  - **It helps developers with questions such as:**
    - What is my current API compatibility?
    - Am I using any non-standard or non-supported application interfaces?
    - What might my porting investment be?

Before the Transition
binaryScan Details

- Intended for Tru64 UNIX, HP-UX PA-RISC and Solaris to HP-UX/Itanium transitions
- Reports on API Level compatibility
- Supported for Tru64 UNIX, HP-UX PA-RISC and Solaris executables
- Lists all dependencies (shared libraries and symbols) of a dynamic executable file together with an associated disposition code for each listed API
  - Only lists which APIs are found, not the number of instances
- ABI mode
  - Intended only for HP-UX 11.0 to HP-UX 11.11 transitions
  - Reports the use of "private" Application Binary Interfaces (ABIs), for each target
- Identifies Critical/Non critical change, fully supported, migration environment, not documented, no information, not found, not going forward, Cluster and Advfs for Tru64 UNIX changes

<div align="center">

binaryScan
download binaryScan
http://www.hp.com/go/application-transition

</div>

binaryScan summary report

binaryScan detail report

binaryScan
Download and Information Web Pages

binaryScan

Download summary   » Description

Date released	• September 2004 (HP-UX kits) • February 2005 (Solaris and Tru64 UNIX kits)
Cost / warranty	Free / "as-is"
OS platforms	HP-UX 11.0/11i PA-RISC or Itanium®-based server or Solaris 5.8 or later or Tru64 UNIX v4.0D or later (v4.0G or later for GUI)
Hard disk space	HP-UX 11.0 or 11i: 9 MB HP-UX 11i on Integrity: 9.2 MB Solaris: 756 KB Tru64 UNIX: 3.2 MB
Software dependencies	• A web browser (only if HTML report is needed), Mozilla or Netscape 4.7 or higher. • Java® 2 Platform (only if using GUI).

Download now

binaryScan v1.0 for HP-UX
○ .tar for HP-UX on PA-RISC 11.0 and later (2 MB)
○ .tar for HP-UX 11i on Integrity (1.8 MB)

binaryScan v1.1 for Solaris
○ .tar for Solaris (485 KB)

binaryScan v2.1 for Tru64 UNIX
○ .tar for Tru64 UNIX (1.2 MB)

Login is required, and a warranty acceptance precedes the software download.

Download »

Related resources
» Installing binaryScan
» binaryScan quick start instructions
» binaryScan FAQs
» binaryScan reference
» Solaris-to-Linux binaryScan

Description

The binaryScan utility is an application transition assessment tool that reports the compatibility levels of application programming interfaces (APIs) or application binary interfaces (ABIs) from a source operating system to a destination operating system. The utility scans any dynamically linked executables

http://devresource.hp.com/drc/resources/binaryScan/download.jsp

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binaryscan
Test Drive for our customers

HP TestDrive

TestDrive terms & conditions

The Hewlett Packard ("HP") Servers provided by the HP TestDrive Program ("TestDrive") are intended for those users who want to sample the 32- and 64-bit servers running a variety of HP and third-party operating systems and applications. Due to the inherently open nature of these systems, users should not have any expectation that the programs and data they upload for testing are completely and absolutely secure. Since this site allows multiple users to access the TestDrive systems simultaneously in an open environment, use TestDrive as a way to quickly try out the platform, operating system, or software, and not as a clinical means of evaluation. If you're looking for performance proof of the platform, join the DSPP Partner Program and take a secure test-drive behind our firewall, or visit one of HP's Porting Centers.

These systems are provided as a convenience for developers and systems integrators worldwide who would like to test their software applications on x86, PA-RISC, Alpha, Itanium, or StrongARM systems but don't currently have easy or convenient access to such systems. In no event shall HP be liable for any damages resulting from the loss of data or use, lost profits, or special, indirect, incidental, or consequential damages resulting from the use of these machines. If a secure machine is required for testing proprietary or sensitive programs or data, arrangements can be made via membership in the DSPP Partner Program to provide systems for secure testing behind the firewall.

User agrees that he/she is not prohibited by the U.S. or other government export control regulations from accessing this test system. User further agrees that computational product created on this test system will not be exported contrary to U.S. or other government export control regulations. Ref. U.S. Export Administration Regulations 15 CFR Parts 730-774.

Accounts that are inactive for six months will be removed.

Sign up!   http://www.testdrive.hp.com/accounts/register.shtml

binaryscan
Test Drive for our customers

HP TestDrive

Tools

HP is pleased to offer Application Transition tools through the HP TestDrive program

Since this site allows multiple users to access the TestDrive systems simultaneously in an open environment, use this TestDrive as a way to quickly try out the platform, and not as a clinical means of evaluating the performance of the hardware or operating system. If you're looking for performance proof of the platform, join the DSPP Partner Program and take a secure test-drive behind our firewall, or visit one of HP's Applications Migration and Testing Centers

Tools

Application Tran...

HP has the resour...
from your Tru64 U...
applications to HP...
Program is proud...
tools are available...
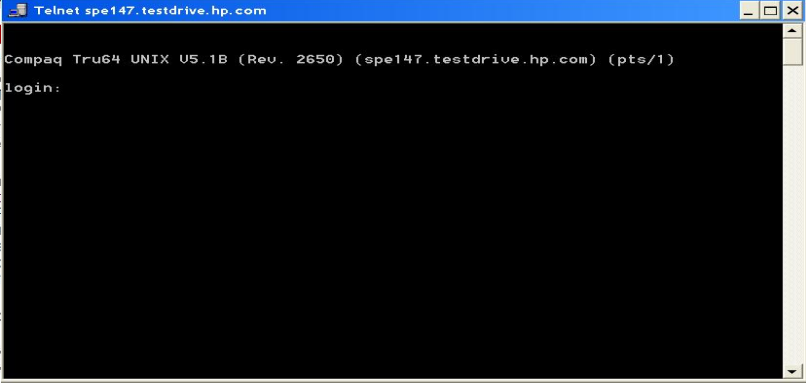
- deploymen...
- planning - ...
- porting - HF...
- porting - Li...
- porting - Re...
- porting - Sc...
- porting - Tr...

The binaryscan to...

- Tru64 UNIX...
- Tru64 UNIX...
- HP-UX v2 on spe176.testdrive.hp.com
- HP-UX v2 on spe191.testdrive.hp.com
- HP-UX v1 on spe192.testdrive.hp.com

The HP-UX STK is installed on the following TestDrive system;

Telnet spe147.testdrive.hp.com

```
Compaq Tru64 UNIX V5.1B (Rev. 2650) (spe147.testdrive.hp.com) (pts/1)

login:
```

http://www.testdrive.hp.com/tools/#transition

Before the Transition
Porting Assessment Reports

- Customer specific analysis of binaryScan data
  - Account Team-Driven
  - Account Team works with customer to obtain binaryScan data
  - Application Migration Team analyzes data, generates report
    - Customized report returned to account team
    - Identifies critical differences, dependencies
    - Includes recommendation on how to plan port
  - Application Migration Team meets with Account Team and customer as necessary

Contact via email: transition-products@hp.com

Before the Transition
Porting Guides

Tru64 UNIX to HP-UX 11i

- The Porting guides are a series of documents that deal with all the potential porting challenges you may incur when transitioning custom code.

- In-depth coverage of porting considerations. Intended for experienced software developers

- Also available on the Web:
  - http://devresource.hp.com/drc/topics/tru64_hpux_tr.jsp
    - Tru64 UNIX to HP-UX
    - Solaris to HP-UX

About this page

This page contains tools and documentation to help you transition your source code to HP-UX 11i v2 operating system from Tru64 UNIX®.

Preparing for your transition
The following information will help you begin to understand the requirements for transitioning your applications to HP-UX 11i v2.

» Transition considerations
» Frequently asked questions: Transitioning your Tru64 UNIX applications to HP-UX
» The application transition tutorial
» Success story: Lyon Highway Monitoring Center (CORALY)

Browse through the tabbed area to access more tools and information.

Related topics
» Application transition

Other HP sites
» Business systems evolution (HP servers)
» DSPP developer edge
» HP-UX 11i home
» IT Resource Center
» Tru64 UNIX home

What customers are saying
» Successes: Itanium-based solutions from HP
» Successes: Tru64 UNIX to HP-UX transition

» Downloads	Technical resources	» Products & Services

Show me resources for:
☑ All categories

☑ Porting process
☑ Transition tools
☑ Case studies
References
☑ Itanium architecture

ℹ **Understanding the porting process**
» Planning a technology transition
» Tru64 UNIX to HP-UX application transition
» Tru64 UNIX to HP-UX porting guide   Oct 2003
   » Printable version (PDF, 1.8 MB)
» Tru64 UNIX to HP-UX 11i Transition Modules
» Migrating from Tru64 UNIX to HP-UX Shells   Apr 2004
» Performing a port to HP-UX platforms
» Overview of transitioning software to HP-UX on

During the Transition
Porting

Source platform

Scoping → Porting → Deploying

Destination platform
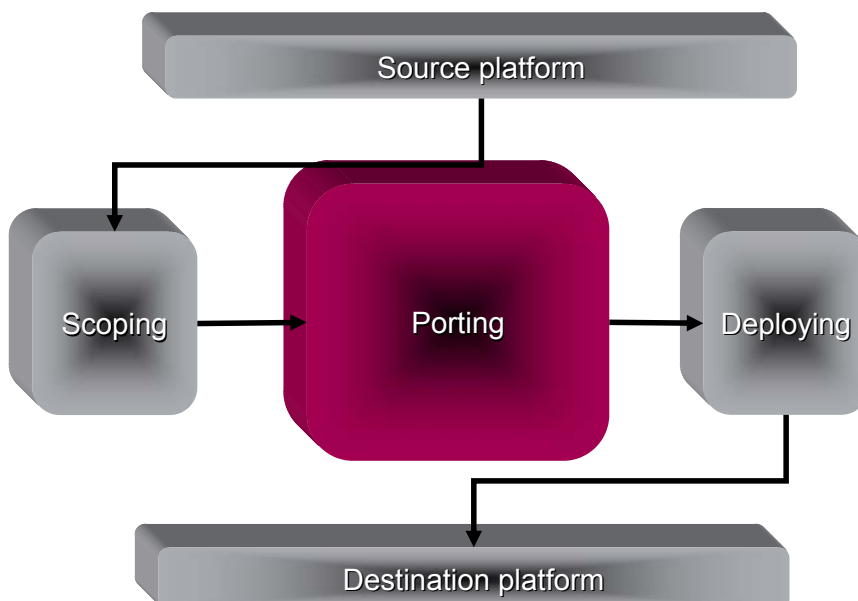
During the Transition
What is the Software Transition Kit? (STK)

A collection of **documentation** and **tools** to help developers get their software ported/transitioned to newer platforms

It helps developers with questions such as:

• What changes must I make to my existing custom code in order for it to work properly on Integrity server platforms?

• Which changes are more important than others (critical vs. non-critical changes)?

• Do I have enough resources to complete my necessary changes?

During the Transition
Software Transition Kit (STK) details

HP Software Transition Kit

• Available in several 'flavors' or variants
  - HP-UX STK
    • From older versions of HP-UX to HP-UX 11i V2 update 2
  - Tru64 UNIX STK
    • From Tru64 UNIX to HP-UX 11i v2 update 2
      - Installable on Tru64 UNIX and HP-UX/Itanium
  - Solaris STK
    • From Solaris to HP-UX 11i v2 update 2
      - Installable on Solaris, HP-UX/PA, HP-UX/Itanium
  - Linux STK
    • From Linux to HP-UX 11i
      - Installable on Linux, HP-UX/PA, HP-UX/Itanium

http://www.hp.com/go/STK

During the Transition
STK - contents

File Scanners

- Assist developers with the identification and resolution of compatibility issues between origin and destination platforms

- Filescanner modes
  - *scansummary*
  - *scandetail*

- *scanwizard*, a wizard for filescanner options

Developer's Documentation

- Transition Documents
  - Transitioning source code
  - Understanding 64-bit
  - Porting Guides

- Technical Reference Material
  - 32/64 bit
  - Compiler related
  - Portability
  - Run-time architecture (PA & Itanium)
  - Threads and MP
  - HP-UX man pages

During the Transition
STK File Scanner

Scan C, C++, Fortran, scripts and Makefiles

- Scan for incompatibilities in:
  - functions
  - commands
  - macros
  - structures and structure members
  - header files
  - language keywords
  - libraries
  - variables

- Output formats
  - HTML (default)
  - Text

- Extremely flexible filtering

- Customize via command line, scanwizard or .scanrc

During the Transition
STK File Scanner

- Executes in one of two modes:

- scansummary
  - Helps investigate or plan a transition
  - Reports **number and types** of API transition impacts in source files
- scandetail
  - Helps perform a transition
  - Identifies **each instance** of an API transition impact in source files

---

During the Transition
STK Scansummary Report

During the Transition
STK Scandetail Report

During the Transition
STK Impact Statement

During the Transition
STK File Scanner Flexibility

- Filterable
  - By Class of Migration Issue
    - For example, to include only Itanium Architecture impacts when running the scansummary and scandetail tools, use the option: +C IPF
    - To exclude these impacts, use the option: -C IPF
  - By Severity
    - Critical – The impact detected must be resolved to transition the source
      - Subcategories include: changed interfaces and unavailable interfaces
    - Non-Critical – The impact detected may been to be resolved to transition source
      - Subcategories include: Warnings and Enhancements.
  - By Identifier Type
    - Functions, headers, keywords, directives, libraries, paths, commands, arguments, structures, structure members, etc.

After the Transition
Deploying
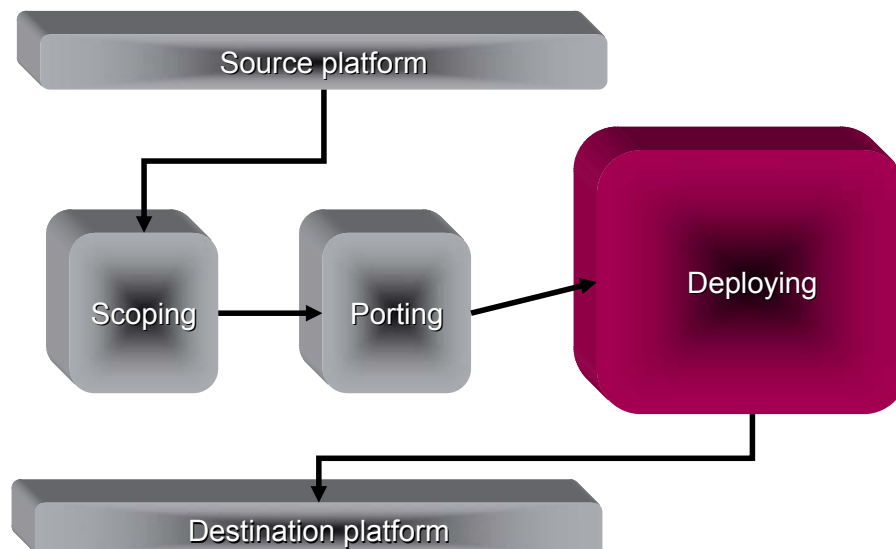
After the Transition
The Tru64 UNIX Migration Environment

- Compatibility layer for Tru64 UNIX APIs, libraries, and commands/utilities on HP-UX
  - Assists customers in becoming more familiar with the HP-UX operating environment

  - The Spring Fusion Release will contain selected Migration Environment APIs that were identified as being critical to customer applications.

  - Also provides some Solaris compatibility
    - Identified in STKS Impact Statements

After the Transition
Tru64 UNIX Migration Environment - Libraries
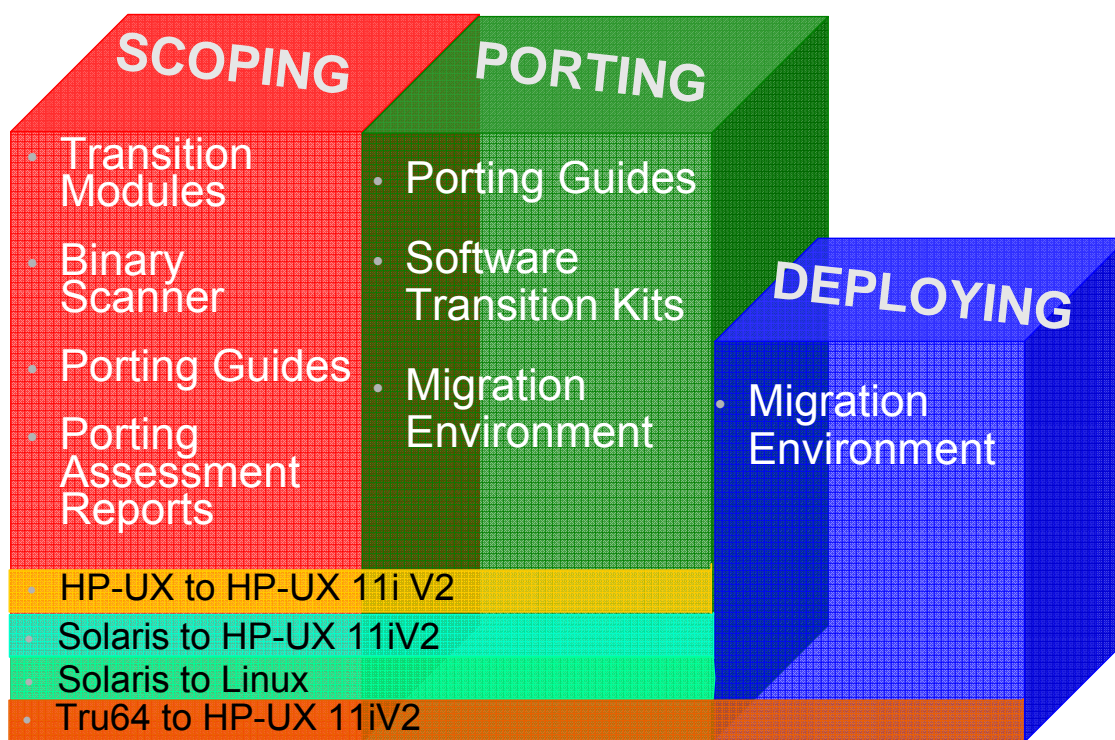
- Interim-use libraries.

- libtru64.so
  - Contains APIs intended to become native on HP-UX
    - APIs identified as critical will be in the Spring Fusion release
    - Update to ME after Spring Fusion release

- libtru64_ext.a
  - Static library that contains APIs that will **NOT** move forward to HP-UX
    - sigvec, sigsetmask, sigblock
      - Use POSIX routines on HP-UX

Transition Paths and Tools at a Glance

SCOPING
- Transition Modules
- Binary Scanner
- Porting Guides
- Porting Assessment Reports

PORTING
- Porting Guides
- Software Transition Kits
- Migration Environment

DEPLOYING
- Migration Environment

- HP-UX to HP-UX 11i V2
- Solaris to HP-UX 11iV2
- Solaris to Linux
- Tru64 to HP-UX 11iV2

Customer Success
From Tru64 UNIX To HP-UX 11iV2

- CORALY (Lyon´s Highway Monitor Center
  - Traffic management & Control system
  - Rule Based System (analyzing, predicting & controling)
  - >15.000 Traffic control devices
  - Transition to HP-UX with 2 rx2620 was seamless
  - Porting 40.000 Lines of Code

The HP Tru64 UNIX Software Transition Kit (STK) and the associated *Tru64 UNIX to HP-UX 11i Porting Guide* helped AMEC SPIE simplify and accelerate the process of porting 40,000 lines of C code to the HP-UX 11i v2 environment. STK pointed out compiler differences between the two operating systems and provided step-by-step guidance throughout the process, enabling developers new to the HP-UX 11i operating system to achieve their desired results within deadline.
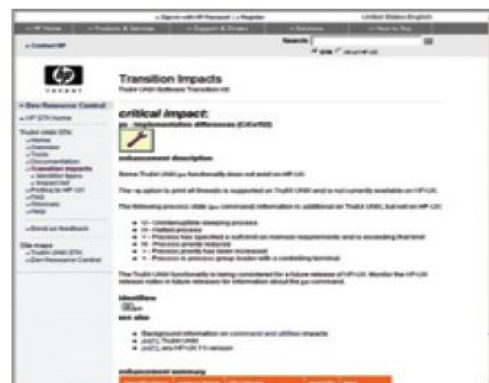
HP transition tools played a key role in customer transition
HP Tru64 UNIX Software Transition Kit, shown here, helped AMEC SPIE port the customer application to HP-UX 11i v2.

Application transition tools roadmap

hp invent

Tru64 UNIX to HP-UX tools
• Binary scanner
• Migration Environment on HP-UX 11i for HP 9000 and Integrity servers
• Software Transition Kit updates
• more migration usage guides
• ISV Roadmap Advisory Tool
• Transition Modules
• C, C++, Fortran compiler compatibility

Solaris to HP-UX tools
• Porting guide
• Binary scanner
• Software Transition Kit
• Transition Modules

PA-RISC to Itanium tools
• Binary scanner
• Software Transition Kit update

2004

Integration with HP-UX 11i
• Critical Tru64 UNIX system calls and APIs into HP-UX 11i v2

Training material
• Step-by-step porting process tutorial

Updated tools
• Enhanced planning tools
• Updated documentation
• Updated STKs
• Updated Transition Modules

2005 +

Application Migration Tools References

hp invent

• Location of Tools
  - http://www.hp.com/go/application-transition
    • To see all the transition products
  - http://www.hp.com/go/STK
    • To get the STK directly

• Contact us via email:
  transition-products@hp.com
  - Porting Assessment Reports
    • Business justification required
  - Questions about tools
    • Technical or non-technical.

Wie unterstützen wir unsere Kunden

Database Transition Methods

Customer Segmentation and Reasons for Change

today   EoS: Oracle Tru64

20%

mySAP ERP 2005
- Ramp-Up
- Mainstream Maintenance
- Extended Maint. (17% + 2%)
- Extended Maintenance (17% + 4%)
- Customer-Specific Maintenance

mySAP ERP 2004
- Ramp-Up
- Mainstream Maintenance
- Extended Maint. (17% + 2%)
- Extended Maintenance (17% + 4%)
- Customer-Specific Maintenance

SAP R/3 Enterprise
- Mainstream Maintenance
- Extended Maint. (17% + 2%)
- Extended Maintenance (17% + 4%)
- Customer-Specific Maintenance

40%+20%

SAP R/3 4.6C
- Mainstream Maintenance
- Extended Maint. (17% + 2%)
- Extended Maintenance (17% + 4%)
- Customer-Specific Maintenance

SAP R/3 3.1I – 4.6B
- Mainstr. Maint.
- Extended Maint. (17% + 2%)
- Extended Maintenance (17% + 4%)
- Customer-Specific Maintenance

40%

HP-UX (Itanium)

Alpha

Dec | Dec | Dec | Mar | Dec | Dec | Mar | Dec | Mar | Mar | Mar | Mar | Mar

2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

xx%   Est. Percentage of SAP Installations

11/10/2005

64

SAP is Consolidating its Platform Stack
this happened in the past and happens in the future

- Past
  - Reliant Unix - phased out
  - VMS - phased out
  - Alpha/NT - phased out
  - AS 400 (EBCDIC) - phased out
- Future
  - Unicode mandatory for ERP 2005, no MDMP support
    - Unicode conversion for 10% of all SAP installations
  - Informix – no Unicode
  - Tru64 Unix – no support for WEB AS 7.0
  - IA32? switches to IA32_x64

SAP/Tru64 Unix installed base

- Several thousand SAP/Tru64 Unix installations
  - 88% SAP R/3; 8% SAP BW, 4% other
  - 98% based on Oracle databases
- SAP R/3 Versions
  - From SAP 3.1I to SAP Enterprise
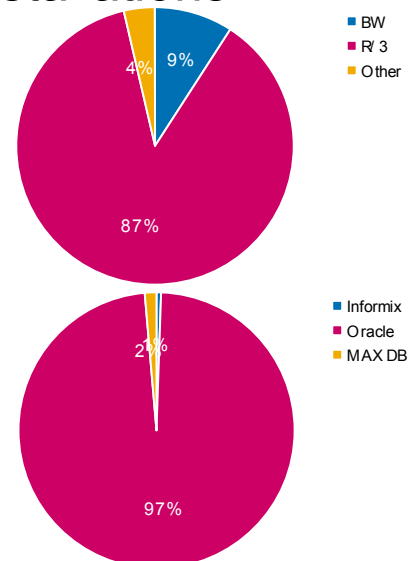- Tru64 Unix Versions
  - From 4.0G to 5.1B
- Alpha Servers
  - From 4100 to GS 1280
- Database sizes
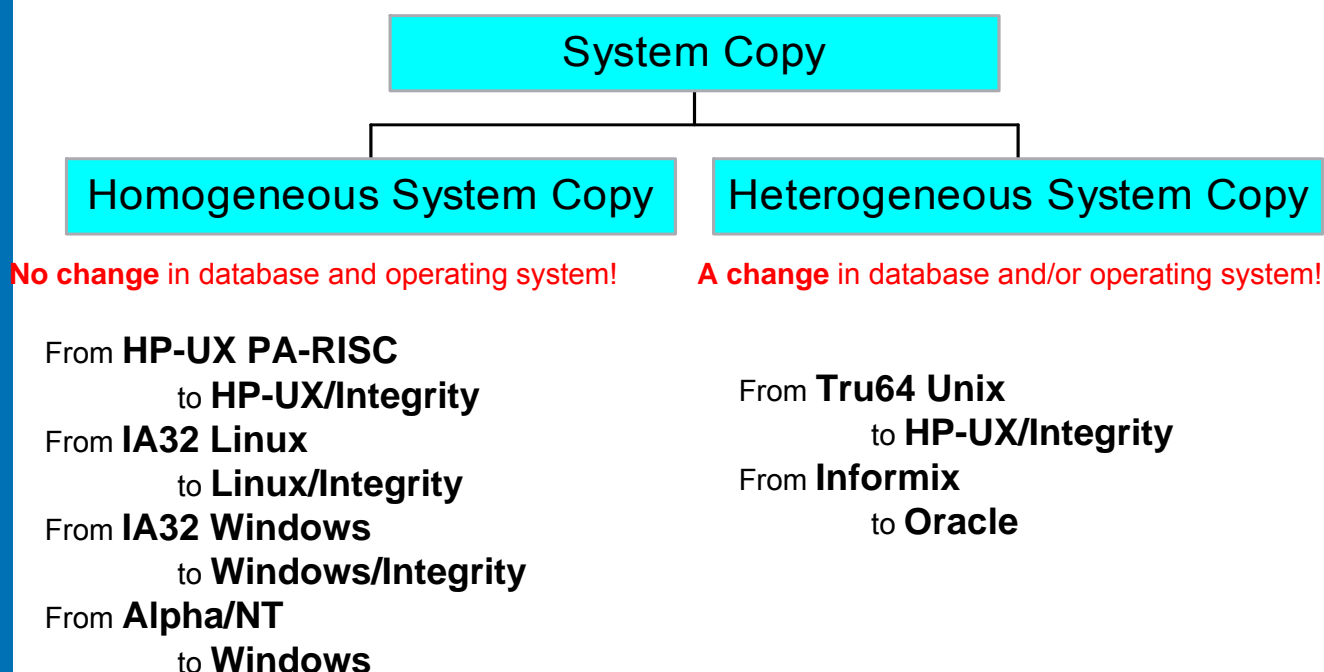 - >20% of all productive installations are TB-sized

BW
R/ 3
Other

9%
4%
87%

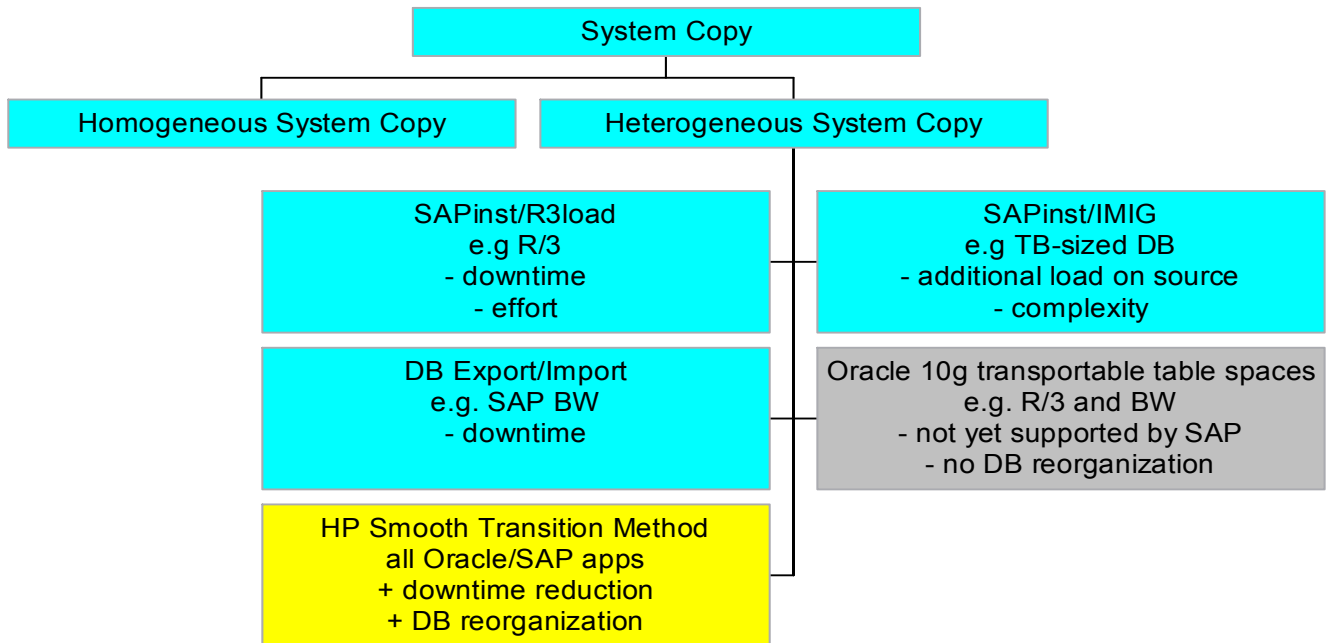**Informix**
Oracle
MAX DB

2%
97%

Tru64 Unix timelines

- All Tru64 UNIX customers are aware that AlphaServer systems will be sold only until 2006, and so have likely considered a transition plan for their Tru64 UNIX systems.

- Platform support secured until 2011

- ISVs have adjusted their long-term plans to support Tru64 Unix platforms
  - Oracle database support (standard and extended) at least until 2010
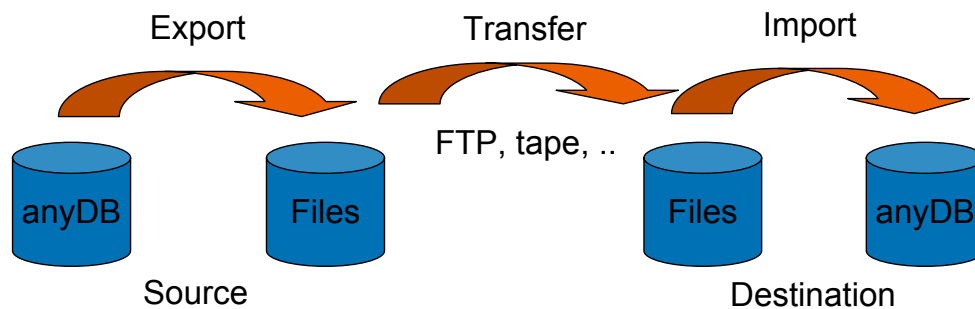

SAP System Copy – Examples

```
                        ┌─────────────────────────┐
                        │      System Copy        │
                        └─────────────────────────┘
                                   │
              ┌────────────────────┴────────────────────┐
   ┌──────────────────────────────┐    ┌──────────────────────────────┐
   │  Homogeneous System Copy     │    │  Heterogeneous System Copy   │
   └──────────────────────────────┘    └──────────────────────────────┘
```

No change in database and operating system!   **A change** in database and/or operating system!

From **HP-UX PA-RISC**
   to **HP-UX/Integrity**
From **IA32 Linux**
   to **Linux/Integrity**
From **IA32 Windows**
   to **Windows/Integrity**
From **Alpha/NT**
   to **Windows**

From **Tru64 Unix**
   to **HP-UX/Integrity**
From **Informix**
   to **Oracle**

SAP System Copy – SAP Methodologies

```
                    ┌─────────────────────┐
                    │     System Copy     │
                    └─────────────────────┘
          ┌──────────────────────┴──────────────────────┐
┌─────────────────────────┐        ┌─────────────────────────────┐
│ Homogeneous System Copy │        │  Heterogeneous System Copy  │
└─────────────────────────┘        └─────────────────────────────┘
```

SAPinst/R3load e.g R/3 - downtime - effort	SAPinst/IMIG e.g TB-sized DB - additional load on source - complexity
DB Export/Import e.g. SAP BW - downtime	Oracle 10g transportable table spaces e.g. R/3 and BW - not yet supported by SAP - no DB reorganization
HP Smooth Transition Method all Oracle/SAP apps + downtime reduction + DB reorganization	

SAP standard migration method

- Heterogeneous System Copy (SAP standard method)

Export   Transfer   Import

FTP, tape, ..

anyDB   Files   Files   anyDB

Source   Destination

DB size/ downtime relationship
SAP standard migration method

Downtime
in days

5

2

1

0,5

0

Statistics run

Index creation

Table data

DB structure

0,1 TB   0,5 TB   2 TB   DB size
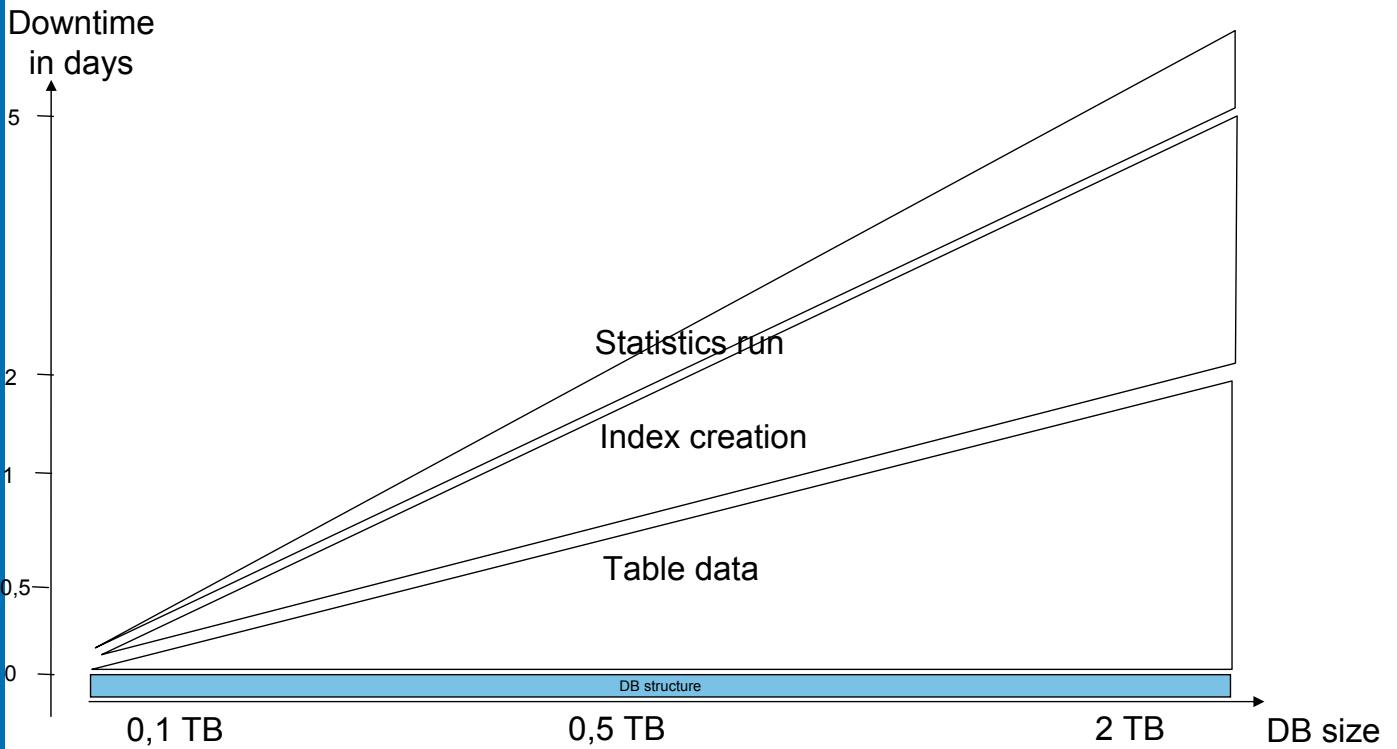
Smooth Transitions

- Heterogeneous System Copy (SAP standard method)

Export   Transfer   Import

FTP, tape, ..

anyDB   Files   Files   anyDB

Source   Destination

- Smooth Transition

T64   HP-UX

Oracle   CTAS, FastTblcopy via Dblink   Oracle

Export/Import

Source   Destination
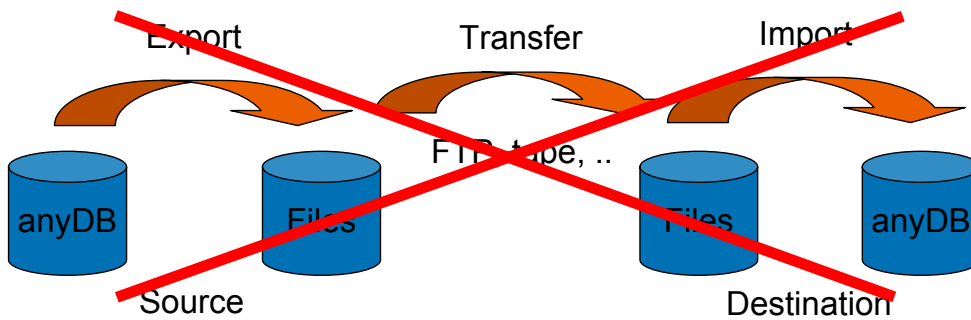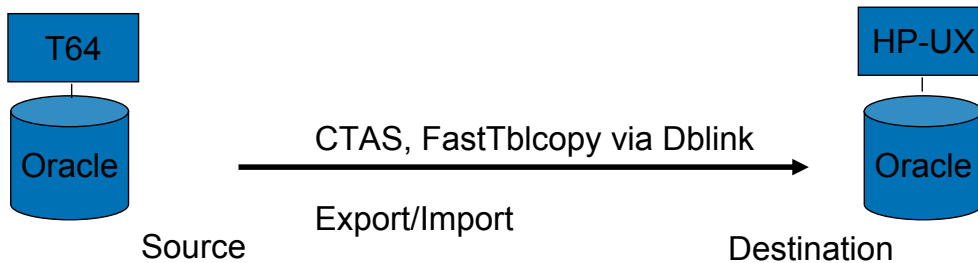
DB size/downtime relationship
New HP smooth transition procedure

Downtime
in hours

Throughput measured on 4-way environments

48 –

24 –

12 –

0 –

Statistics run

Index creation

Table data

DB structure

| 0,1 TB | 0,5 TB | 1,0 TB | 1,5 TB | 2,0 TB | 2,5 TB | 3 TB |

DB size
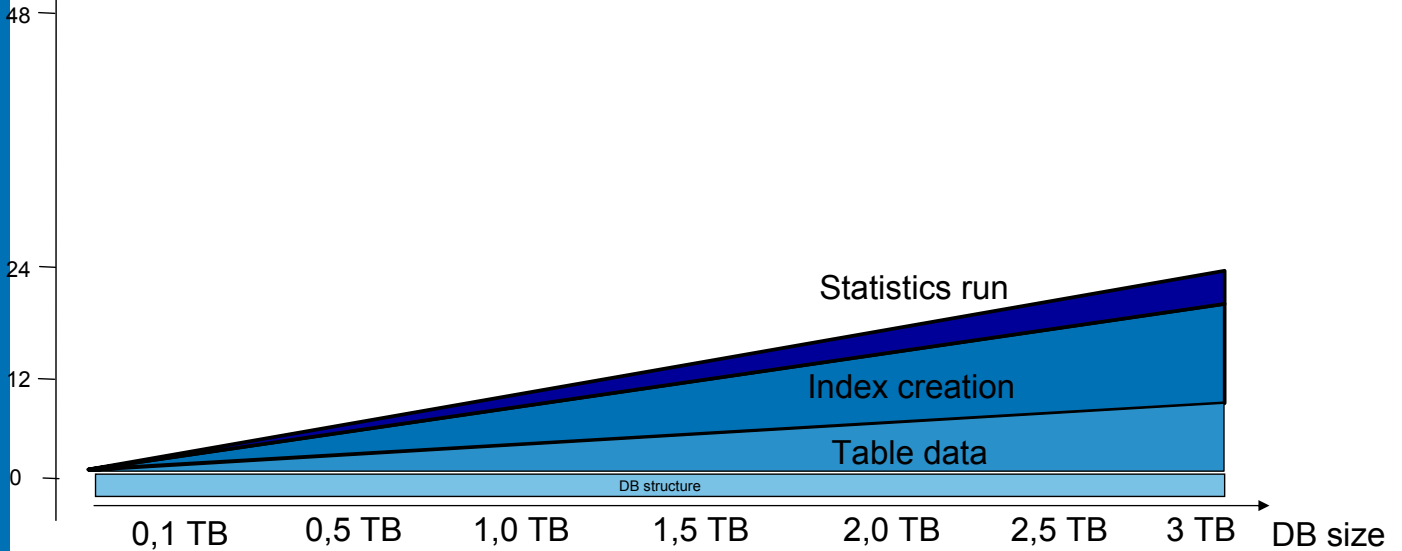
Smooth Transitions:
Parallel Execution of Transitions

P01

Oracle

Oracle Transition Script Generator

controlfile

....

controlfile

P0n

Oracle

Oracle Transition Script Generator

Scripts

Multiple transitions controlled via

Job Execution Plan

UC4 Scheduler

Scripts

HP-UX

Oracle

....

HP-UX

Oracle

Multiple SAP Systems
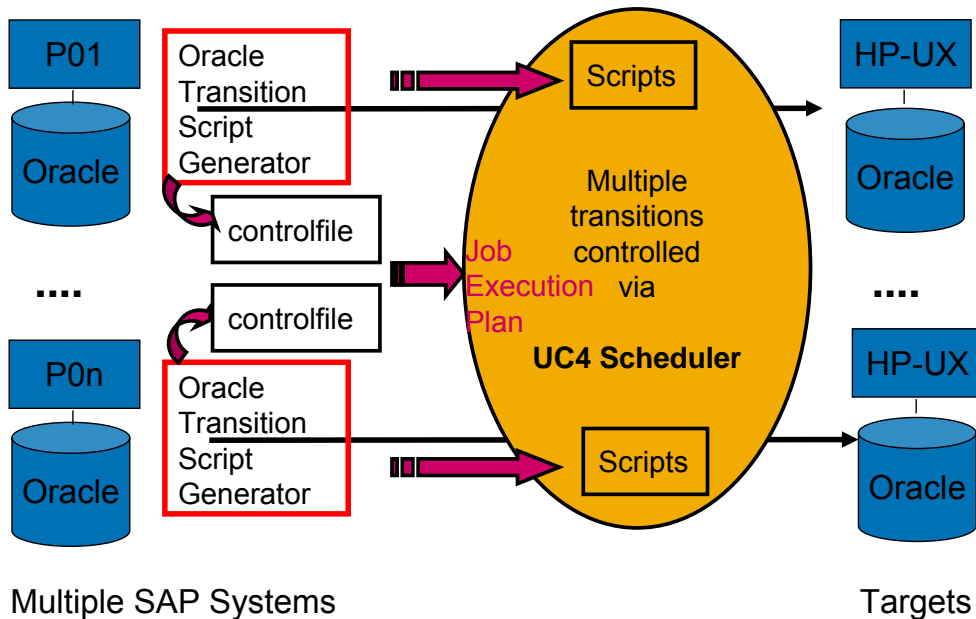
Targets

Smooth Transitions:
Pre & Post Migration Tasks

Pre-migration
tasks

Migration
tasks

Tru64

Oracle

Multiple
tasks controlled
via

UC4 Scheduler

HP-UX

Oracle

Post-migration
tasks
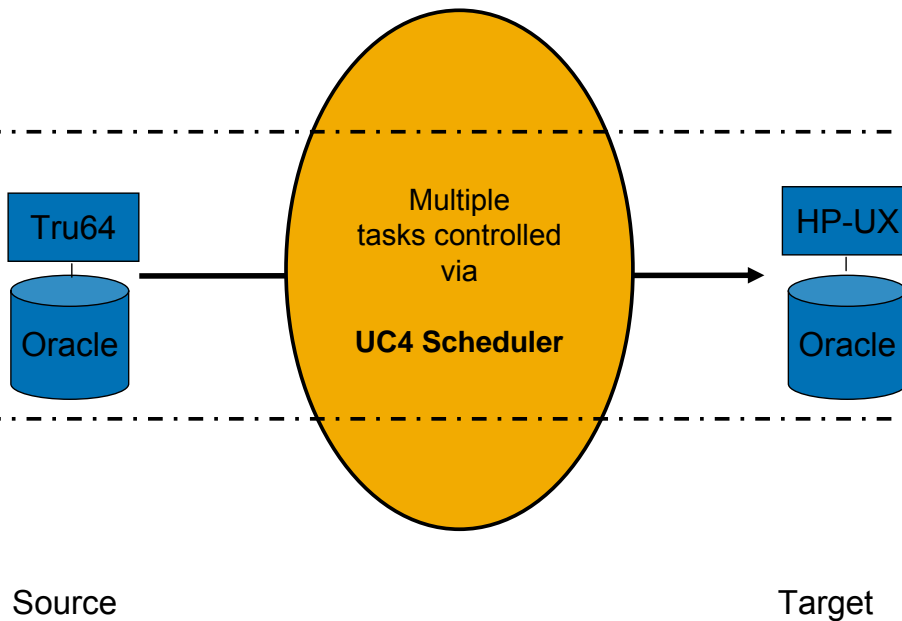
Source

Target

HP STM Prerequisites

- Source platform: Oracle (>= 8.1.7), any SAP and any OS

- Target platform: HP-UX/Integrity works best

- Fast LAN, GbE required

- Source and target shouldn't share any storage or server components

- Check SAP PAMs for availability and SAP versions required

HP Smooth Transition Method Characteristics

➢ Reducing downtime by a factor of 5 - 10
  ➢ Throughput from 70GB/h up to 180GB/h
  ➢ Time measured from stop of SAP until the first SAP GUI appears on new platform

➢ Reducing consulting effort

➢ Reducing complexity

➢ Support via **HP, Oracle**

➢ DB Reorganisation inclusive

➢ Risc mitigation

➢ Migration costs reduction

HP Smooth Transition Method Unique Advantage Points

• **Flexibility** – customizable toolset (migrations, reorganizations, database copy)

• State-of-the-Art Oracle target database setup (including **LMTS, ASSM**)

• High degree of **automation & resilience**

• Massive **reductions of downtime & consulting efforts**

Hubert Burda Media
need to change the SAP landscape

After 4 years of operation, server and storage hardware were outdated
- Server and storage are the end of their lifecycles
- overall TCO was too high
- new projects ante portas
  - BW
  - Portal
  - CRM
  - ECC (+ additional countries, e.g. Russia)

Burda Digital Systems
Time to Change

In 2004 Burda Digital System
•decided to
- •renew the technology environment and
- •to undergo a complete technology refresh

•issued a RFP to HP and IBM
- •Won by HP, main reason was the flexibility of HP

Renewed HP Hardware and Software environment based on
- •HP Integrity servers (rx8620),
- •HP-UX,
- •Service Guard and
- •EVA storage

Hubert Burda Media
productive SAP System Landscape 2004

Burda Digital Systems was operating in 2004
- 5 productive R/3 systems
- 1 productive SAP BW system
- Overall 17 SAP instances

Consolidated in 2001

on 2 clustered AlphaServer GS160

GS160   EMA 12000   GS160
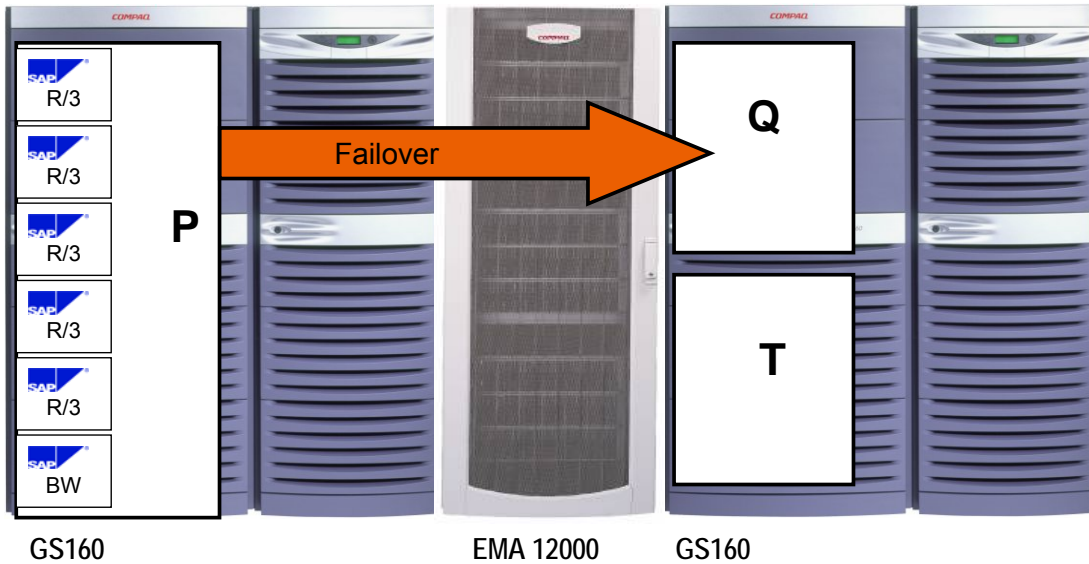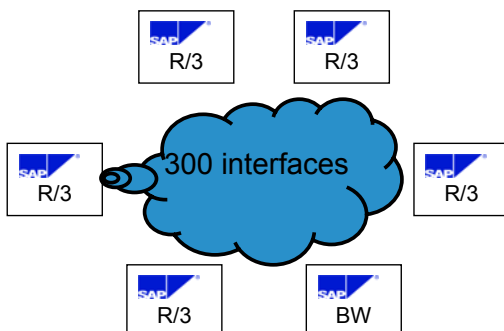

Burda Digital Systems
Planning the Transition Project

Initial planning was to migrate the productive SAP landscape over 2 weekends

- none of the productive systems was so large that it couldn't be migrated within a weekend
- But migrating 6 productive SAP instances, one weekend was clearly not sufficient

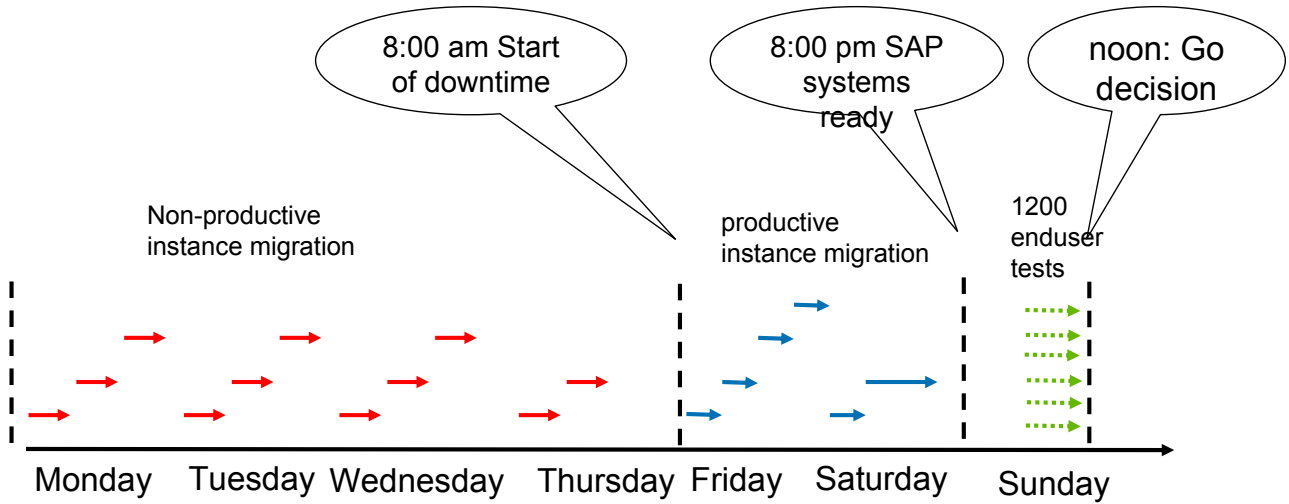**Using HPSTM all productive SAP instances could be migrated within one weekend**

Burda Digital Systems

Executing the Transition Project

First test migrations using HPSTM in early January 2005 ...
At one week in February 2005:

Burda Digital Systems
Feb/2005 SAP System Landscape

rx8620   2 * EVA5000 (12TB)   rx8620
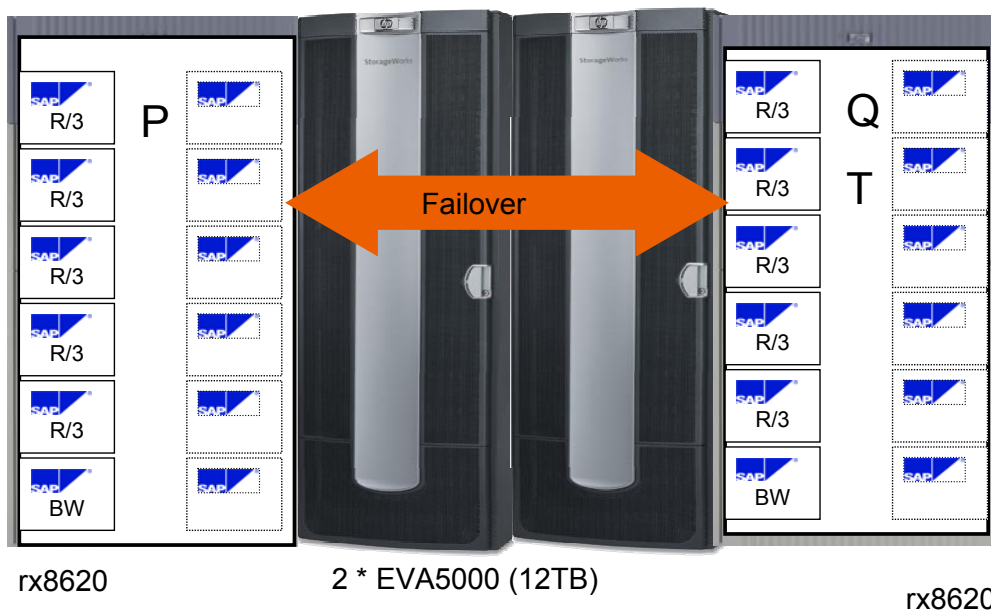
Burda Digital Systems
Additional Arguments for HPSTM

Problems with standard SAP migration procedure:
- Only limited free space on old storage system for dump files
- limited I/O throughput on old storage to run migrations in parallel
- massive read and write operations on old storage systems
- negative impact on overall performance if migrations are executed in parallel

Benefits of the smooth transition procedure
- Parallal execution of Export/Import and CTAS
- Separation of read and write cycles (read on source system, writes on target system)
- Less I/O load
- Reduction of temporary storage space
- Downtime reductions, because Tablespaces are created outside the downtime window

---

Burda Digital Systems
Transition Project Findings

„This project was a 100% success"

„Cooperation between HP, Oracle and Burda Digital main reason for success"

„We liked the flexibility of HP and Oracle"

„All guarantees came true: response times, sizings, ..."

Hubert Burda Media
success story available

Kundenreferenz

Zeit gewonnen – SAP-Migration auf
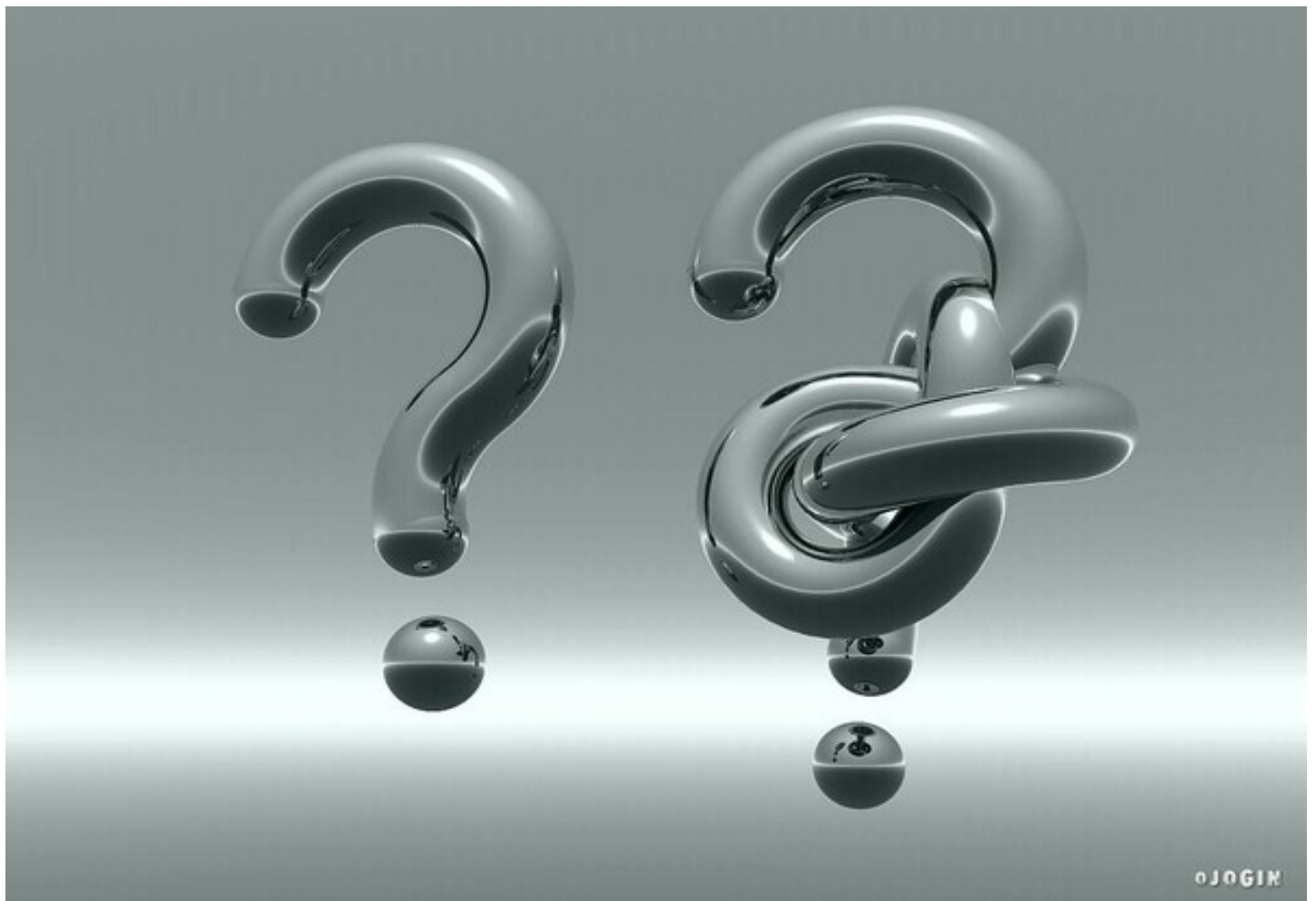HP Integrity Server bei der Burda Digital GmbH

„Dass die komplexe SAP R/3-Migration
reibungslos verlief, ist das Ergebnis der
kooperativen Zusammenarbeit von allen
Beteiligten. Wir haben Know-how, Service-
Qualität und Zeit gewonnen."
Mathias End, Leiter Systemtechnik,
Burda Digital GmbH