

# When to migrate your SAS environment from Tru64 UNIX to HP-UX Integrity servers



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## Introduction

In the coming years, HP will be phasing out Tru64 UNIX® and the AlphaServer enterprise system line in favor of the new Integrity server line based on the Intel® Itanium® 2 processor architecture. With the release of SAS V9.1, the SAS system is now available for the HP-UX 11i v2 operating system on Itanium-based HP Integrity servers<sup>1</sup>. This marks a key point in evaluating Tru64 UNIX® to HP-UX 11i transition decisions. SAS on HP-UX Integrity servers is the recommended software strategy for Tru64 UNIX SAS customers.

Now is the time for your information technology (IT) organizations to begin planning to move your SAS environments to the new platforms. The majority of existing SAS Tru64 UNIX customers can migrate starting now. Several key technical and business planning considerations should be taken into account when deciding transition timing. This document highlights and explains these considerations in order to facilitate your transition planning.

## HP Tru64 UNIX & AlphaServer roadmap

There is no need to rush into a migration. HP recommends that you change your platform strategy only when it makes business sense to do so.

The HP Tru64 UNIX, AlphaServer and Itanium-based HP system product roadmaps allow great flexibility. New features for Tru64 UNIX and new AlphaServer models are still being introduced. Full support will be available through 2011. You can continue to enjoy the benefits of a strong product offering, with new features over the next several years.

Information about transition issues and the HP programs and services available to help you plan, design, implement, and manage your transition is provided through the HP Alpha RetainTrust program. Refer to the following website for more information:

<http://www.hp.com/go/alpha-retaintrust/>

The following website provides detailed information regarding transition and migration subjects:

<http://www.hp.com/go/tru64transition/>

## Migration approaches & rationales

Before discussing the specifics of when to migrate, it makes sense to provide a context for a general migration approach. There are two primary migration approaches:

- **Re-hosting** means simply moving the current solution stack from the existing system to the new platform (HP-UX 11i on HP Integrity servers), without more extensive changes in other aspects of the system environment.
- **Re-architecting** involves a wider scope, in which you re-examine the overall architecture of how SAS is used within your business and consider how the architecture and usage model might be changed to achieve overall business objectives.

With re-hosting, your business processes and SAS solution are functionally unchanged. This is the most straightforward approach and presents the least risk. Immediate benefits that may be realized by this approach are lower operating cost and improved performance.

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<sup>1</sup> Throughout this document, HP-UX will be used to mean HP-UX on HP Integrity servers, as separate and distinct from HP-UX on PA-RISC systems.

Re-architecting involves considering changes to platform infrastructure, adopting new or additional applications and versions of SAS products, incorporating new SAS features, upgrading applications and tools, and so on. Lower operating cost and improved performance may also follow, as well as additional benefits such as process efficiencies, solutions to business challenges, improved business practices, and other business benefits. Offsetting the potential for benefits is a potential for higher risk and implementation cost.

You may choose to re-host, re-architect or do both. You can decide why, how and when to make the transition. You have time to base your choices on sound business analysis such as ROI analysis, forecasts for your future business environment, markets, competition and other factors in order to determine which approach is more beneficial to your company.

In the context of the roadmap for HP enterprise system products and their evolution to the Intel Itanium architecture, re-hosting will almost always be included in your plans.

The opportunity to combine re-architecting with your transition to HP Integrity server platforms is an opportunity to rethink and improve your business strategy and your IT environment.

Each customer is different and as such will have different reasons to migrate. Some of those reasons may include:

- **Features:** You may have a need for new features that become available following SAS 9.1; features and functionality which will only be supported on HP-UX 11i and the HP Integrity server family.
- **Cost:** As older AlphaServers approach the end of warranty service, new systems may be justified based on maintenance contract costs. Combined with a requirement for new SAS features, a new AlphaServer may not be the right choice compared to HP Integrity servers.
- **Performance:** You may obtain better value, efficiency and user satisfaction from the performance capabilities of the HP Integrity server family over older AlphaServer systems (pre-EV68 and EV7).
- **Solutions:** If you are considering a new SAS business solution, you may want to base it on a new IT environment. This is not a migration *per se*, but a new solution environment that should be done with SAS on HP Integrity family, to avoid future migration.
- **TCO:** Action on any or all of these reasons, properly implemented, may result in significantly reduced Total Cost-of-Ownership.

You may find the HP Transition Benefits Calculator useful in analyzing and evaluating your transition. Visit the following website to use the calculator and get additional information:

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

## Migration planning

This section will discuss the various questions you need to consider to determine when you should migrate from Tru64 UNIX to HP-UX 11i. The questions are in the context of what is important to the SAS environment and not the overall checklist of migration questions. This section is divided into several subsections:

1. What version of HP-UX 11i should be used?
2. What are the minimum SAS functionality and migration tasks/issues?
3. What are the database access requirements?

## What version of HP-UX 11i should be used?

You must consider operating system features and functionality currently used by your existing Tru64 UNIX environment and assess whether they are available on the target HP-UX 11i Integrity server environment, or whether satisfactory alternatives are at hand. Some key decision factors are:

- Current OS version
- Tru64 UNIX functionality:
  - Advanced File System (AdvFS)
  - TruCluster Server V5.0 or later versions (for example, Single System Image, High Availability)
  - TruCluster Available Server V1.6 (for example, High Availability)

The minimum version for the SAS 9.1 environment is HP-UX 11i v2. Your answers to the following questions will determine how you should proceed:

- Do you use TruCluster Available Server Version 1.6 (for High Availability, for example)? If yes, then use HP-UX 11i v2 with HP Serviceguard, which provides this functionality and is available now.
- Do you require the functionality of AdvFS? For example, do you presently require it to add or remove volumes or to dynamically add or remove storage space from a file system? If so, you will need to wait for the future release of HP-UX 11i when this functionality will be available, or investigate use of a third party storage volume management software product such as VERITAS VxFS.
- Do you use TruCluster 5.0 or later? The key features used here would be cluster-wide namespace, Single-System Image (SSI), Cluster File System (CFS), cluster alias, Distributed Lock Manager (DLM), Single Security Domain, and cluster-wide access to file systems. These features give each node in the cluster a shared resource environment with all nodes having transparent access to the entire cluster-wide file system. This functionality will be available in a future release of HP-UX 11i.

In summary, if you have requirements for AdvFS or TruCluster Server 5.0 technologies which cannot otherwise be met, you will need to wait for a future release of HP-UX where these features are planned. Otherwise, your migration can proceed using HP-UX 11i v2.

## What are the minimum SAS functionality and migration tasks/issues?

This section will deal with the various SAS features and functionality that may be issues for planning migration timing.

If you are running versions of SAS older than 8.2, you may find it helpful to upgrade to 8.2 before starting the migration from Tru64 UNIX to HP-UX. This paper and the companion white paper *How to migrate your SAS environment from Tru64 to HP-UX 11i Integrity Servers* (currently under development) use SAS 8.2 as the basis for the migration discussion.

Do you require any SAS products on Tru64 UNIX that are not available with SAS 9.1 on HP-UX 11i? This can be determined by looking at the SAS `setinit.sas` file in the install directory of the SAS product. Also, you will need to determine if all the licensed products are actually being used or will be used on the new system. Compare this with the following [SAS 9.1 product table](#).

If you require any products that are not currently available on HP-UX 11i, you will need to look further to see when they will be available. Contact your SAS account manager for further information to use to adjust your migration schedule.

**SAS 9.1 product table**

(Y = Yes product is available, N = Not available at present time, U = Under development)

<b>SAS 9.1 product</b>	<b>HP-UX 11i</b>	<b>Tru64 UNIX</b>
Base SAS	Y	Y
Enterprise Miner Server	Y	Y
IT Service Vision Server	Y	Y
Risk Dimensions	N	Y
SAS Consolidation & Reporting	Y	Y
SAS Data Quality Server	Y	Y
SAS High-Performance Forecasting	Y	Y
SAS Integration Technologies	Y	Y
SAS Inventory Replenishment Plan	Y	Y
SAS/AF	Y	Y
SAS/Assist	Y	Y
SAS/Connect	Y	Y
SAS/EIS	Y	Y
SAS/ETS	Y	Y
SAS/FSP	Y	Y
SAS/Genetics	Y	Y
SAS/GIS	Y	Y
SAS/Graph	Y	Y
SAS/IML	Y	Y
SAS/Insight	Y	Y
SAS/IntrNet	Y	Y
SAS/LAB	Y	Y
SAS/MDDDB Server	Y	Y
SAS/OR	Y	Y
SAS/QC	Y	Y
SAS/Share	Y	Y
SAS/Spectraview	Y	Y
SAS/Stat	Y	Y
SAS/Secure 168-bit	Y	Y
SAS/Test	Y	Y
SAS/Toolkit	N	Y
SAS/Warehouse Administrator	Y	Y
WebHound	N	Y

## What are the database access requirements?

Do you use any SAS/Access products? The following table indicates SAS Access product availability for HP-UX 11i and Tru64 UNIX.

### Access product table

(Y = Yes product is available, N = Not available at present time, U = Under development)

Access product	HP-UX 11i	Tru64 UNIX
SAS/Access BAAN	N	Y
SAS/Access Informix	U	Y
SAS/Access ODBC	Y	Y
SAS/Access Oracle®	Y	Y
SAS/Access PC File Formats	Y	Y
SAS/Access PeopleSoft	N	Y
SAS/Access R/3	Y	Y
SAS/Access SAP BW	Y	Y
SAS/Access Sybase	N	Y

If the product needed is available, you can proceed with your migration at this time. Note however, that the target environment may require a newer version of the database product to work with SAS 9.1. You can look at the SAS website for a list of minimum supported database versions:

<http://www.sas.com/technologies/dw/etl/access/relational.html>

If the database resides on the same server as the SAS software, the database migration and SAS migration must be coordinated, which may affect migration timing. One solution is to have the database and the SAS software reside on different systems. The database and SAS migration can then be independent if the database version matches what is required by SAS 9.1. This could help resolve the timing issue and may also have business and performance benefits.

## Conclusion and summary

The majority of existing SAS Tru64 UNIX customers can migrate starting now with the release of SAS 9.1 on HP Integrity servers. Environments that require AdvFS functionality may need to wait until HP-UX 11i v3 is released and those that require TruCluster functionality may need to wait for its release on HP-UX or consider Serviceguard. Most SAS products available on Tru64 UNIX are also available on HP-UX 11i. Products needed but not available can be flagged as migration timing issues and worked out over time.

## For more information

For additional information and assistance, contact:

[transition.modules@hp.com](mailto:transition.modules@hp.com)

For pre-sales technical assistance, contact:

[SASTech@hp.com](mailto:SASTech@hp.com)

Refer to the following website for more information about the Alpha RetainTrust program and other sources of support:

<http://www.hp.com/go/alpha-retaintrust/>

Refer to the following websites for technical and planning information about transition subjects:

<http://www.hp.com/go/tru64transition/>

<http://www.hp.com/go/transition-modules>

Refer to the following website for the SAS migration community:

<http://support.sas.com/rnd/migration/>

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5982-4894EN, 04/2004

