Best Practices: Migration Planning for Alpha Server Users

OpenVMS and Tru64 Unix users commonly ask several questions regarding best practices for ongoing Alpha and Itanium deployments, or migration to x86 or reduced instruction set computer platforms.

Overview

During the next decade, the Alpha installed base will represent a substantial migration challenge (and opportunity) for HP and its competitors. However, no generic guidance will fit all users. Depending on geography, workload and vertical industry, some will find Alpha platforms a safe choice for several more years, whereas others should be planning their migrations immediately.

Key Findings

- HP has pledged to support Alpha platforms and the OpenVMS and Tru64 Unix operating systems (OSs) through 2013.
- For OpenVMS users planning a long-term future with the OS, the only option is to plan the migration to Itanium.
- Ramp-up of the OpenVMS Itanium software portfolio has been impressive; however, many independent software vendors (ISVs) will not port their applications, and OS migration will be necessary for some.
- Most ISVs will already promote packaged OpenVMS applications on other platforms such as HP-UX, other Unix versions or other x86 operating systems, such as Windows and Linux.
- Tru64 applications will require a complete migration to new platforms; don't expect ISVs to be enthusiastic about maintaining support.

Recommendations

- Profile the complete suite of applications, tools and utilities running on Alpha servers.
- Lobby ISVs to provide written support guarantees, especially for vital applications that cannot be easily substituted. Although OpenVMS applications can be ported to run on HP Integrity servers, validate the support plans of ISVs carefully.
- Consider alternative platforms (including HP-UX) for packaged applications. Migration to OpenVMS on Itanium has been painless for most of those who've done it. Depending on the solution, the migration to another OS could be equally or even more difficult.
- Consider virtualization. Although there are virtual machine (VM) emulators for Tru64 and OpenVMS, validate ISV support and performance to choose the right target hardware.

Analysis

Gartner continues to receive inquiries from clients that have investments in Tru64 Unix and OpenVMS on Alpha (and, occasionally, even VAX/VMS on older, 32-bit VAX hardware), so questions about the future of OpenVMS/VMS and HP's ability to assist with managed services or OpenVMS migrations are commonplace. This compilation of frequently asked questions and our up-to-date opinions are based on the best practices we observe by other users at different stages of their deployments or migration planning and execution.

## When will HP stop selling Alpha-based computers and upgrades?

New Alpha systems were dropped from the HP price list in April 2007, while upgrades and other options for existing systems were sold until April 2008. HP will continue to sell factory-refurbished systems until the end of October 2009, which will be available through the HP Renew Program in Europe, the Middle East and Africa (EMEA), as well as the Asia/Pacific (APAC) region and Japan. These systems will be available through Technology Value Solutions in the Americas. Alpha revenue has steadily declined during the past several years (see Figure 1).

Figure 1. Alpha Revenue Chart (2002 to Present)

Millions of Dollars
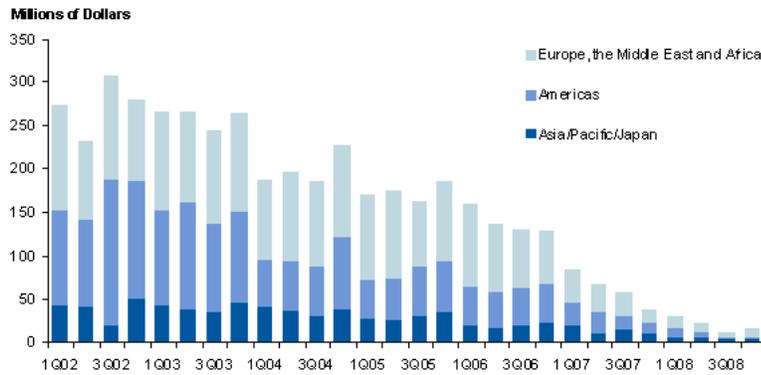
Source: Gartner (March 2009)

What are the estimates for the support of Alpha servers by HP? Does Gartner know when HP will stop its support?

Similar to most other hardware vendors, HP's standard practice is to support servers obsoleted from the price list for at least five years after new servers cease to ship. Hence, in May 2007, HP pledged support until at least the end of 2012. In October 2008, this guarantee was extended until the end of 2013. Support includes Tru64 Unix and OpenVMS systems. HP will ship remarketed systems until 2009, so the support date could be extended again; however, users should not assume this will occur.

Users planning to run Alpha servers for production workloads beyond the official support date should expect ongoing support to be provided only on an individual basis. Such special support contracts are often limited in what can be supported (for instance, it may become difficult for HP to source hardware components in the event of failure) and can be extremely expensive, so they should be avoided in most cases.

Are the migration options different for Tru64 and OpenVMS users?

All Alpha users ultimately face a hardware migration, but the degree of mandatory software change varies between Tru64 Unix and OpenVMS. Tru64 is at end-of-life, and the only migration option is to switch to another hardware and OS target. However, no generic guidance overrides all others, and numerous factors will dictate the best migration path. These options are explored later in this research. Where the current application is also available from the ISV for another OS, the migration effort could be relatively minor.

A complete change of application will typically be necessary only for home-grown code or obsolete applications that have no onward usage model. Therefore, porting of Tru64 applications would be more complex, because the OS and the underlying hardware would change. However, most Tru64 users have been running largely packaged applications, and it has been common knowledge that Tru64 users face a migration effort since shortly after HP's acquisition of Compaq in 2001. So the surviving Tru64 installed base is small, and most users will be well-advanced in their migration planning.

The situation for OpenVMS is different, because HP has ported the OpenVMS OS to Itanium. It is theoretically possible to plan for long-term OpenVMS deployment on HP Integrity servers.

Based on Itanium processors, what are the prospects for OpenVMS? Is migrating to Itanium a low-risk strategy?

Users that want to stay loyal to OpenVMS in the long term have little choice but to plan the migration to Itanium. With at least three future generations in the Itanium road map (Tukwila, Paulson and Kittson), we expect HP to continue to build and sell Itanium servers for many years to come. As a result, OpenVMS (and other OSs) should be fully supported on Itanium servers through 2020 at least.

However, all Itanium vendors will introduce new hardware platforms later in 2009, and hardware support for current systems will probably not extend beyond 2015. Migrating Alpha users would have to verify the Integrity support position for storage and other peripheral technology. From a hardware perspective, OpenVMS is a viable Itanium OS.

Is OpenVMS on Itanium a safe target for business-critical business workloads?

The adoption rate for OpenVMS on Itanium has been better than Gartner initially expected. Technically, we have few fears about the engineering effort that HP has invested. OpenVMS is well-supported as a regular hardware partition on Superdomes and other multipartitionable Integrity servers. We do not expect HP to sell Itanium-based servers that are dedicated to running OpenVMS (although technically there is no reason why they couldn't do this).

The management software stack that HP has on Integrity servers is skewed toward Unix support. Although we expect management tool functionality for Linux and Windows users on Itanium to improve, users should validate the support that new functionality will have for OpenVMS.

What about third-party OpenVMS applications that need to be migrated to Itanium? Are companies converting these products?

We were initially concerned that it would be hard to build enthusiasm among ISVs for an OS that lacks a business future. So far, we have been impressed with the speed of Itanium adoption among OpenVMS software vendors, so our early assessment was too pessimistic. However, it is also possible that the initial spurt of ISV enthusiasm will not be sustained across the OpenVMS community.

The software portfolio for OpenVMS on Itanium has been growing quickly, but some Alpha software vendors are unlikely to bring their applications across. The port itself is relatively straightforward, and HP has created porting tools to simplify the process. We have heard positive feedback from ISVs who have used the tools, but HP cannot help ISVs manage the resources needed to maintain two versions of what they will regard as a stable (at best) OS — namely, on Alpha and Itanium hardware. Hence, only a subset of OpenVMS applications, tools and utilities is likely to ever be supported on Itanium. However, this subset will probably be larger for some vertical markets or geographies than others, so an Itanium migration will be more feasible for some organizations than others.

Users that want to migrate to Itanium should poll their software vendors to determine whether applications are ported. HP maintains good details of which vendors have migrated and will strongly encourage recalcitrant vendors, if required. We urge all OpenVMS users to demand written pledges of long-term support from software vendors as part of their due-diligence planning. In addition to established OpenVMS ISVs such as Oracle, this should include vendors of system management utilities, which are equally vital to the ongoing deployment of servers.

I want to migrate completely away from OpenVMS or Tru64. Which platform(s) should I consider?

Some OpenVMS users will choose to migrate, regardless of what HP or their ISVs say or do. Others will be forced to migrate once they realize that vital ISVs are not as committed as they would like them to be. Several factors will determine the best target platform.

The x86 OSs, such as Linux or Windows, should be the default choice for total migrations, because these environments are growing, and most ISVs regard Windows and/or Linux as their primary platforms for new investment. If there is no Unix adoption, then this should always be the favored option.

However, as with any hardware migration, the vertical-scaling demands of the workload are paramount. Larger and newer Alpha platforms could be running applications that demand more vertical scaling than most or all x86 servers can provide, and this typically dictates migration to a reduced instruction set computer (RISC) or Itanium platform. For older and/or smaller Alpha platforms, a migration to Windows or Linux on x86 should deliver adequate performance, as long as maximum availability does not become a challenge.

Where HP has "inherited" an Alpha user through the Compaq acquisition, and there is limited loyalty to the company, vendors such as IBM or Sun Microsystems will be better-positioned to benefit if there is already investment in rival Unix versions.

OpenVMS is an excellent OS with good uptime and rich functionality. Even today, it is debatable whether the best of Unix can offer the same levels of capability as legacy operating systems such as OpenVMS or IBM's i5OS ("i" OS). Even when x86 servers can deliver the required scaling, the breadth of Windows or Linux uptime functions, or the maturity of vendor high-availability programs, may not be enough. For those users that are able to defer the migration for another two or three years, Windows or Linux become more-viable targets as they mature.

OpenVMS systems do not function in a vacuum. They must integrate with the rest of the data center's portfolio of solutions. Hence, coexistence with other OSs and servers will be an influence, especially if users can leverage their familiarity to fast-track any migration. Alternative proprietary midrange OSs, such as IBM's i5OS (now branded IBM i), could be viable targets when users want to leverage their investments.

For most users, HP's preferred migration option will be HP-UX on Integrity servers; this will be particularly appealing when organizations have experience with OpenVMS and HP-UX, because they can plan to implement both environments on common platforms. When users are running mainly packaged applications, they will find that ISVs become more enthusiastic about HP-UX. However, when organizations have no legacy experience with HP-UX, the move to HP-UX will involve a complete hardware switch and a steep learning curve.

If the Unix investment is all made with Sun or IBM, the last thing the end user may want is yet another Unix OS in the data center. For such users, the migration to Sun or IBM Unix servers would probably involve little, if any, additional effort. HP will logically provide financial incentive schemes to help users migrate from Alpha to Itanium, so users should demand that IBM or Sun match those schemes. IBM and Sun have created competitive attack campaigns aimed at enticing Tru64 and OpenVMS users away from HP.

When should we plan to migrate? For how long is it "safe" to run OpenVMS or Tru64 on Alpha?

For hardware that was bought within the last few years, there should be no hardware or OS support issues until at least 2013. The potential "Achilles heel" will always be the ISV software portfolio. Users that don't depend very much on third-party applications have the least to fear, although they should also verify ongoing support for necessary tools and utilities. However, those that depend on third-party code will find the enthusiasm of the ISV to be crucial. When an ISV is unwilling to pledge long-term support for OpenVMS (and the intent to port to Itanium if that is of value), users should start planning for a quicker migration to an alternative platform.

Can I migrate my applications without developing new ones? For instance, is it possible to run OpenVMS workloads as a VM on other platforms such as Windows or Linux?

CHARON-AXP is a proven Alpha emulator that runs OpenVMS or Tru64 applications on x86 hardware running Windows. The ISV also offers emulation for VAX and even PDP-11 code. CHARON is available in EMEA through Stromasys, and in North America through Salem Automation and specialists such as Migration Specialties International. HP offers support programs for CHARON. Boston Business Computing also offers OpenVMS emulation tools and there are open-source initiatives, such as eVAX, OpenDCL, TS10 and SimH (although these are mainly aimed at VAX or PDP-11 users). As with all emulation, users should carefully validate the degree of ISV support and perform careful capacity planning for the new platforms.

How do I undertake the migration? Are there vendors who can help me achieve this?

HP offers tools and programs to facilitate migration from Alpha platforms to HP-branded servers, and tools are available to help ISVs switch their OpenVMS applications from Alpha to Itanium. Relative performance data for Alpha systems is also available. This may help users size their new server requirements. However, HP competitors also offer migration services, such as IBM and Fujitsu Australia. Many third-party migration and support specialists also have programs in place (see Table 1).

Table 1. Third-Party Migration and Support Specialists

Company	Location	Web Site
Alpha Point	Italy	www.alphapoint.it
Attunity	U.S., U.K., Israel, Hong Kong	www.attunity.com
Boston Business Computing	U.S.	www.bosbc.com
CipherSoft	Canada, U.S.	www.ciphersoftinc.com
Epic Systems	U.S.	www.epicsyscorp.com
Migration Specialties International	U.S.	www.migrationspecialties.com
Software Concepts International (SCI)	U.S.	www.sciinc.com
Sector7	U.S.	www.sector7.com
Stromasys	Switzerland, Netherlands, U.S., Hong Kong, France	www.stromasys.ch
Transoft	U.S., U.K.	www.transoft.com
XDelta	U.K.	www.xdelta.co.uk

Source: Gartner (March 2009)

More information on Alpha migration specialists and services can be found at www.openvms.org .