# *the* *Availability Digest*

HP Clarifies the Future of OpenVMS
July 2013

Despite previous concerns of many in the HP community that HP's robust OpenVMS operating system may be headed for extinction, HP recently released an OpenVMS roadmap that indicates that OpenVMS support will continue for years to come.

The OpenVMS roadmap has been laid out in some detail in a customer letter from Ric Lewis, VP and General Manager, Enterprise Servers Business, posted to OpenVMS.org on June 6, 2013,[1] and in an HP press release issued on June 10, 2013.[2] According to the roadmap, the latest version of OpenVMS, V8.4, running on Integrity i2 servers, will be provided full HP support through 2020 and perhaps beyond.
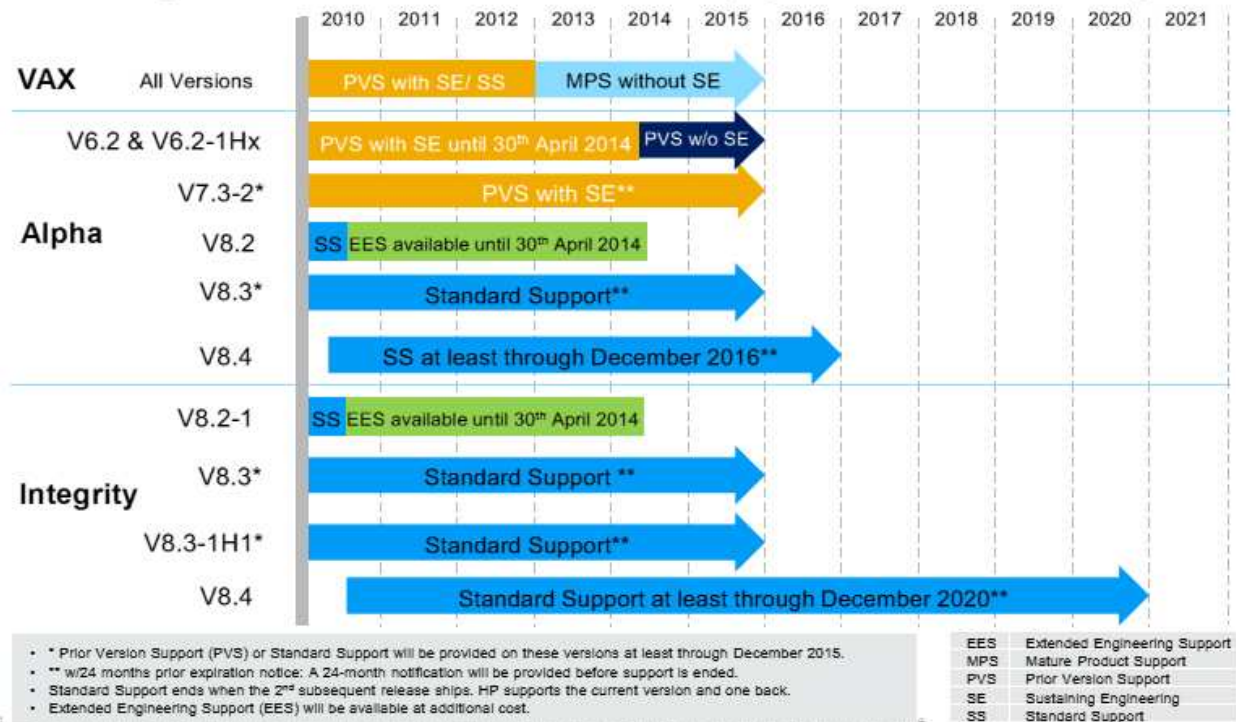
HP OpenVMS Roadmap, May 2013. http://hp.com/go/openvms/roadmap/

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[1] Updated OpenVMS Roadmap and HP Letter, *OpenVMS.org*; June 6, 2013.
http://www.openvms.org/stories.php?story=13/06/06/2422149
[2] HP Extends Support for OpenVMS through Year 2020, *HP Press Release*; June 10, 2013.
http://www8.hp.com/us/en/hp-news/press-release.html?id=1424702

The HP OpenVMS Roadmap

In the OpenVMS Roadmap depicted above, a bar that ends in an arrowhead implies support is extended to *at least* that date. A square end is a cutoff date.

Integrity i2

The scope of HP's support plans for OpenVMS V8.4 on HP Integrity i2 (Tukwila) servers includes:

- Standard Support for the V8.4 OpenVMS operating environment through at least 2020.
- Sales of Integrity i2 servers for OpenVMS through at least 2015.
- Sales of Integrity i2 server upgrades for OpenVMS through at least 2016.
- Integrity i2 server hardware support through at least 2020.
- OpenVMS will not be offered on HP Integrity i4 (Poulson) servers.

Alpha

The scope of HP's support plans for OpenVMS on Alpha servers includes:

- OpenVMS V8.4: Standard Support through at least 2016.
- OpenVMS V8.3: Standard Support through at least 2015.
- OpenVMS V8.2: Extended Engineering Support through April, 2014.
- OpenVMS V7.3-2: Prior Version Support with Sustaining Engineering through at least 2015.
- OpenVMS V6.2 and V6.2-1Hx: Prior Version Support with Sustaining Engineering through April 2014, then Prior Version Support without Sustaining Engineering through at least 2015.

Integrity

The scope of HP's support plans for OpenVMS on Integrity servers includes:

- Standard Support for the V8.4 OpenVMS operating environment through at least 2020.
- OpenVMS V8.3-1H1: Standard Support through at least 2015.
- OpenVMS V8.3: Standard Support through at least 2015.
- OpenVMS V8.2-1: Extended Engineering Support through April, 2014.

VAX

The scope of HP's support plans for OpenVMS on VAX servers includes:

- VAX, all versions: Mature Product Support without Sustaining Engineering through at least 2015.

Detailed Software Support

A more detailed software support schedule may be found in the HP document "OpenVMS Operating System and Operating Environments Support Chart."[3]

HP Levels of Support

Standard Support

On the software side, Standard Support includes Engineering Support such as security updates, ECO patch kits and support for some new hardware like 3PAR from OpenVMS Engineering.

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[3] http://h71000.www7.hp.com/openvms/openvms_supportchart.html

For all versions of OpenVMS that are covered by Standard Support, a 24-month notification will be provided before Standard Support actually ends. At or before the time the 24-month notice of the end of Standard Support is given, HP will also decide and announce whether Extended Engineering Support or Mature Product Support with Sustaining Engineering will be offered afterward (this would be a BCS/OpenVMS Engineering decision).

There will then also be a 24-month notice given before the end of Engineering support. At the end of Engineering support, HP may decide to offer Mature Product Support without Sustaining Engineering.

Note that there is no firm ending date for OpenVMS support running on Integrity or Alpha platforms except for OpenVMS 8.2 (see the magic words "at least" in the roadmap). HP will continue to provide regular software updates and support for most OpenVMS versions to ensure that its thousands of OpenVMS customers can confidently run their environments for the next several years with updates and support from HP and with consideration for extensions.

Clearly, if an OpenVMS legacy system currently is providing mission-critical services for an organization, the company should seriously consider upgrading to OpenVMS 8.4 running on HP Integrity i2 servers to gain maximum support from HP.

Prior Version Support with Sustaining Engineering

Prior Version Support with Sustaining Engineering (PVS-SE) provides full remedial support with escalation to HP OpenVMS Engineering for problem resolution. PVS-SE includes ready access to technical experts by phone or email, online access to tools and technical information, problem analysis and resolution, software patch testing, and critical onsite support.

Prior Version Support without Sustaining Engineering

Prior Version Support (PVS) without Sustaining Engineering provides software usage assistance, advisory and remedial support for past versions of selected operating systems and selected layered software. It includes access to existing patches. PVS is offered in recognition that some customers have migration timelines that lag HP's software release schedules.

Extended Engineering Support

In some cases Prior Version Support is replaced by the Extended Engineering Support (EES) offering. EES is Engineering-level support, including new bug fixes, beyond the end of Standard Support. Extended Engineering Support is similar to PVS-SE in that it provides engineering analysis, troubleshooting, solutions and problem resolution. EES is a customizable support offering and may be purchased for any OpenVMS Integrity or OpenVMS Alpha version beginning with OpenVMS Alpha Version 8.2 and OpenVMS Integrity Version 8.2-1.

Mature Product Support with Sustaining Engineering

Mature Product Support (MPS) generally applies to the last version of a product release, which would be V7.3 for VAX and V8.4 for Alpha and Integrity. MPS with Sustaining Engineering (MPS-SE) provides bug fixes, enhancements, and telephone/email/chat support.

Mature Product Support without Sustaining Engineering

MPS is equivalent to MPS-SE but without bug fixes and enhancements. It does provide access to existing patches.

Hardware Support

HP will sell i2 Servers/Blades with OpenVMS through at least 2015, with upgrades through at least 2016. If customers need to be able to buy new i2 hardware longer than that, they should let HP know (Alpha sales were extended by 6 months beyond the initial dates as a result of customer feedback).

After that, HP Financial Services will undoubtedly offer i2 hardware in refurbished form, as they have continued to do for Alpha servers to this day. There will be lots of i2 hardware traded in by HP-UX customers upgrading to i4 servers, so there should be no shortage of refurbished i2 hardware.

HP provides Hardware Support for a minimum of 5 years after the last-sale date. If i2 sales do, in fact, end in 2015, i2 hardware support is extended to at least 2020. If circumstances (such as spare parts stock levels) allow, and if customer demand is still present, hardware support may be available for longer than 5 years, as has been the case for VAX and Alpha systems.

Let HP Hear From You

HP is asking customers for feedback on the 2015 and 2016 end dates for i2 Servers and upgrades. If customers need to be able to buy new i2 Servers for longer than that, or if they need software support for a longer period of time, they should let HP know. The Alpha server last-sale dates were extended in response to customer input.

The Long History of OpenVMS

OpenVMS is over 35 years old. Actually, it had its roots two decades before that. In the late 1950s, a young, brilliant engineer named Ken Olsen was working on the first transistorized computer, TX-0, for the U.S. Air Force at MIT's Lincoln Laboratories. He came up with a way to package transistorized flip-flops, gates, and other digital circuits into pluggable packages much like vacuum tubes. Ken decided to start his own company making these devices. To the derision of many of his associates, he gave away 70% of his company to a venture capital firm, American Research and Development, for a paltry USD $70,000. The new company was Digital Equipment Corporation, also known as DEC.

DEC launched a series of computers, all with the acronym PDP (Programmable Data Processor), using Ken's "flip chips." At that time, memory was core memory (yes – those little physical rings of ferrite material woven together). There was no standard word size, though a standard character was 6 bits (ASCII had yet to be defined). The PDP-1 was an 18-bit machine. The PDP-8 was a 12-bit machine. The PDP-10 was a 36-bit mainframe. The PDP-11 was a 16-bit machine, the first to use an 8-bit ASCII character set. Basic memory size was typically 4K words.[4]

The PDP-11 morphed into the VAX (Virtual Address Extension) processor running the VMS (Virtual Memory System) operating system in 1977. VAX was a 32-bit upgrade to the 16-bit PDP-11 to provide virtual-memory capabilities. VMS was derived from RSX-11M, the multiuser operating system of the PDP-11.

The VAX was later ported to DEC's high-speed Alpha RISC chips. After Compaq acquired DEC and then after HP acquired Compaq, HP ported what is now OpenVMS (VMS had been given a POSIX-like personality) to its Itanium servers and then to its i2 Itanium blade servers.

OpenVMS split-site clusters are still today the epitome of continuous availability.[5] Multiple nodes can be distributed geographically, all running the same application and accessing a synchronized distributed

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[4] In 1969, a small payroll company, MiniData Services, was started by Dr. Bill Highleyman, Managing Editor of the Availability Digest. It used an 8K PDP-8 with 32K of disk memory to process multiple small payrolls in a single run. Try doing that today!
[5] OpenVMS Active/Active Split-Site Clusters, *Availability Digest*; June 2008.
   http://www.availabilitydigest.com/public_articles/0306/openvms.pdf

database. A node can fail, and no one notices the outage because all traffic is simply routed to the surviving nodes.

The Option of Emulation

For those concerned about the long-term outlook for OpenVMS systems, there are two options:

- Port applications to other platforms (HP-UX, HP NonStop, Linux, Windows).
- Emulate the VAX or Alpha on commodity hardware.

To aid in porting, HP offers support services for OpenVMS transitions to NonStop, HP-UX, Linux, and Windows environments.

Several companies offer emulation solutions, One such company is AVTware (www.avtware.com) Its products, vtVAX and vtAlpha, are bare metal emulators that run on standard PCs. vtVAX and vtAlpha can run together on the same platform and also can run in a VMware, Linux, or Windows environment. According to AVTware, the OpenVMS operating system, DEC layered software, third party packages and homegrown user applications execute unmodified on vtVAX and vtAlpha. No code conversion is required. Users do not need to be retrained.

There are many other OpenVMS VAX and Alpha emulators being offered, including:

- Charon-VAX, Charon-Alpha, Personal Alpha (http://www.stromasys.com/
- NuVAX (http://www.logical-co.com/nuvax/)
- Trailing Edge SIMH (http://simh.trailing-edge.com/vax.html)
  (Note: This was developed by Bob Supnik, who led the Alpha project at DEC, and is available as freeware with open source.)
- Reviver VAX (http://www.comwaretech.com/VAX/VAX-emulator.html)
- Avanti, FreeAXP, and support for the freeware SIMH (www.migrationspecialties.com)
- AlphaVM, AlphaVM-free (http://emuvm.com/)
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There is also interest in the OpenVMS community in the possibility of an open-source OpenVMS-compatible operating system development project, which would be related to OpenVMS in the same way that Linux is related to UNIX. One such open source project already exists: FreeVMS (http://www.freevms.net/).

Perhaps at least one of the existing emulator vendors may produce an Itanium emulator. However, to put things into perspective, emulators typically come into the picture after hardware support for the original hardware platform ends and when the performance of a host platform has grown to the point where the emulator running on top of the host has become as fast or faster than the original hardware platform.

What About HP's Other Proprietary Operating Systems?

HP has announced ongoing support for its HP-UX and NonStop systems. HP now supports HP-UX on the Itanium Poulson chip, and it will support NonStop on this chip by the end of 2013. Both HP-UX and NonStop will be ported to Integrity servers with the Kittson chip in the future.

HP-UX updates will ship once per year rather than twice per year as previously done.

Summary

Unfortunately, the press has turned HP's announced further support for OpenVMS upside down. Consider the article in the prestigious U.K. publication, *The Register*, entitled "Windows NT granddaddy

OpenVMS taken out back, single shot heard." The article then goes on with a glowing description of OpenVMS.

The glowing description is well deserved. For decades, OpenVMS has been a mainstay of large, mission-critical systems. Users have said:[6]

"Uptime isn't measured in days and weeks at most, but in months and years."
"Adding a machine to a cluster is a matter of minutes and not hours."
"A reboot is just to know you can, rather than when you need to."
"You don't get woken up in the middle of the night."
"The best operating system ever made."
"I've been using VMS for 90% of my working career, but wished I was on VMS 100%."

Since the late 1970s, OpenVMS clusters and active/active NonStop systems have been the gold standard for applications that require continuous availability.

HP's OpenVMS roadmap has set date-certain schedules for ongoing support of OpenVMS V8.4, with possible extensions if warranted. HP has made it clear that the latest version of OpenVMS will be supported for years to come. There is plenty of time to plan a strategy for continuing to run your OpenVMS systems and applications.

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[6] HP OpenVMS 35 years, *openvms.org.*
http://h71000.www7.hp.com/openvms/35th/testimonials.html