



OpenVMS FAQ

1. Is OpenVMS alive? What is the roadmap?

Yes! OpenVMS is very much alive and the current version for Integrity Servers is v8.3-1H1 which was released in Nov 2007. The current Alpha version is v8.3 which was released in Sep 2006. OpenVMS v8.4 is scheduled to release in H2 2009 to support Tukwila-based servers in addition to those supported currently. Future OpenVMS versions will be released for new Integrity systems and will run on both Alpha and Integrity.

On the occasion of OpenVMS' 30th anniversary in 2007, HP CEO Mark Hurd emphasized that OpenVMS is a key product in HP's portfolio. A 30th-anniversary overview and strategy statement by Ann McQuaid, General Manager, HP OpenVMS Systems Division can be found at <http://h71028.www7.hp.com/ERC/downloads/4AA1-6470ENW.pdf>.

The latest OpenVMS Roadmap presentation may be found at http://h71000.www7.hp.com/openvms/roadmap/openvms_roadmaps.htm

2. How does OpenVMS compare with other High Availability (HA) Operating Systems (OS)?

Here is how OpenVMS compares against other High Availability (HA) operating systems:

- Easier to manage
- Higher availability - In terms of availability, the HP OVMS, IBM and Sun clusters are 99.978%, 99.929% and 99.891% respectively. These differences may seem trivial but in fact they are not!
- More secure -HP OpenVMS was one of the first commercial operating systems to achieve a US Department of Defense C2 security rating and all new releases continue to comply with these rigorous standards.
- Better ability to readily scale up and down with changing workload demands.
- Most popular in environments where stability, reliability, high performance, disaster tolerance, security, scalability and clustering are required.

3. How does TCO and TCU of OpenVMS compare with that of other Operating Systems'?

Among the entry-level and midrange server clusters such as HP OpenVMS on Integrity, IBM AIX System p5 and Sun Solaris Sun-Fire clusters, OpenVMS has the best TCO. ¹ Two important factors contributing to the TCO of a system are the costs involved in application downtime and the costs involved in maintaining and managing the system including power and cooling costs.

¹ http://h71028.www7.hp.com/ERC/downloads/TechWise_TCO2007.pdf

While comparing HP OpenVMS running on HP Integrity servers to proprietary UNIX solutions from IBM and Sun, Alinean Inc. in their Jan 2005 Report found typical TCO savings of 59-84% for the OpenVMS configurations, with average savings of \$10.0 to \$35.9 million in cumulative five year savings.

TCU (Total Cost of Upgrade) of OpenVMS Alpha Servers to Integrity² is also better. The prices HP charges for hardware and software support on Integrity are much lower than the out-of-warranty costs for AlphaServers. Integrity is much more power-efficient than Alpha (almost 50% reduction) and offers better performance (often double).

4. How many Operating Environments are there in OpenVMS? What are the licensing options available with OpenVMS?

OpenVMS has three OEs,

- FOE
- EOE
- MCOE

Each OE bundle includes products that create a complete environment designed for increasing levels of management, availability, and disaster tolerance.

- The Foundation Operating Environment (FOE) is a fully featured operating environment. The Foundation Operating Environment is the core environment. It includes the operating system, networking, and infrastructure software. FOE component products are not available for order separately
- The Enterprise Operating Environment (EOE) includes all of the components of the FOE, plus tools to enhance the user experience in the areas of manageability, single-system availability, and performance. EOE component products that are not included in the FOE can be ordered separately.
- The premium Mission Critical Operating Environment (MCOE) bundle delivers the ultimate user experience in terms of multisystem availability and workload management. The MCOE includes the FOE and EOE, and adds clustering and HP Reliable Transaction Router. MCOE component products not included in the FOE can be ordered separately.

For more information on Operating Environments please refer to http://h71000.www7.hp.com/openvms/integrity/openvms_operating_environments.htm

5. Which hardware platforms are supported by OpenVMS?

² http://h71028.www7.hp.com/ERC/downloads/OpenVMS_ICU_2007.pdf

OpenVMS is supported on the following platforms.

- Integrity – Continuous future support
- Alpha – HP ceased accepting orders for new Alpha Systems after April 27, 2007. HP will continue to offer, indefinitely, factory-refurbished systems and options through the HP Renew Program in EMEA, AP, and Japan; and Technology Value Solutions (TVS) in the Americas. HP will introduce new versions of OpenVMS for Alpha in parallel with new versions of OpenVMS for Integrity Systems. Standard Support for future versions of OpenVMS on Alpha will continue.
- VAX - HP guarantees Prior Version Support for OpenVMS VAX versions of V5.5-2 and V6.2 and Standard Support for V7.3 until 2012.

6. Which is the current version of OpenVMS and what are the new features in the same?

The current version of OpenVMS on Alpha is 8.3 while the current version of OpenVMS on Integrity is 8.3-1H1. The new features in 8.3-1H1 are:

- Enhancements for support of the HP Integrity BL860c Server Blade, including new function codes in system services
- Support for the latest revisions of the Intel® Itanium® processors for these servers:
 - HP Integrity rx2660 server
 - HP Integrity rx3600 server
 - HP Integrity rx6600 server
 - HP Integrity rx7640 server
 - HP Integrity rx8640 server
 - HP Integrity Superdome server SD64B
- System management, including provisioning, providers, and WBEM infrastructure: OpenVMS on HP Integrity rx3600 and rx6600 servers and on HP Integrity BL860c Server Blades can be managed from HP Systems Insight Manager (HP SIM) version 5.1 or later. OpenVMS provides software support so that OpenVMS looks and feels similar to server blades running the HP-UX operating system.
- Support for USB 2.0 HIGH Speed: increases the data transfer rate from the USB-attached DVDs in the rx3600, rx6600, and rx2660 systems as well as on future platforms
- Support for virtual media (vMedia): use vMedia to do initial system installation on a system without a built-in DVD, or remote installation on a system physically located elsewhere

- Support for a Graphics Console: provides a method to boot HP Integrity systems using a graphics display and a USB keyboard and mouse

For a complete list of the new features in the OpenVMS version 8.3-1H1 release, see [HP OpenVMS v8.3-1H1 for Integrity servers new features and release notes](#).

7. Who are the typical customers using OpenVMS?

OpenVMS has been extensively deployed in the following industries for its high availability,

- Banking & Finance [Stock & Trading Exchanges]
- Manufacturing
- Healthcare

Examples of OpenVMS customers are:

- The world's largest CPU chip manufacturing
- Mobile phone billing systems scaling to millions of users – 2/3rd of the world's SMS is sent on OpenVMS
- Major futures and derivative exchanges worldwide
- Automated lottery systems that process millions of transactions
- Major hospitals that rely on high availability
- Many of the world's most demanding Government environments requiring security and availability
- First fully electronic options exchange in the U.S
- Largest equity options exchange in the world

8. Which is the future version of OpenVMS and what are the key new features?

The next scheduled version for OpenVMS is v8.4 which is to be released in Q3 2009 with the expected following features:

- Support for new Integrity systems with Tukwila processors
- Clusters over TCP/IP Protocol
- 64 Core support
- Host-Based Volume Shadowing with up to 6 member shadowsets
- 2 Terabyte Volumes
- Virtualization enhancements
- IPSEC

9. Why port OpenVMS from VAX to Integrity?

Compelling reasons for VAX customers to migrate to OpenVMS on Integrity are:

- Integrity servers offer 64-bit power for demanding applications along with excellent price/performance.
- OpenVMS on Integrity servers has a multi-application capability, customers can consolidate servers and gain ample headroom
- Better power efficiency
- The HP License Trade-in and Transfer policy supports migration from OpenVMS VAX to HP Integrity servers.

10. How can I port my legacy applications to the newer OS and platforms?

The customers that have migrated from legacy systems (VAX and Alpha) to new OS and platforms (Alpha previously and now Integrity) have used one of the following three methods:

Recompile: If the customer has source code for its applications, this is the easiest option. There have been instances where 200,000 lines of Pascal code was migrated from Alpha to newer Integrity platform with changes to only 5 lines of code.

Binary translation: When the customer has only the executable, a binary translation can be done. Recompiling the applications natively on Integrity is the best option.

Emulators: If both the above mentioned methods do not work, then the customer can make use of emulator (like Charon VAX emulator) to run legacy applications on newer platforms.

11. What help can I get to migrate from VAX or Alpha to Integrity?

Over the years, HP has gained substantial experience working with customers to migrate their VAX systems to 64-bit technology. Customers who have made the transition are finding that the benefits far outweigh the effort involved.³

HP provides transition modules to assist in VAX to Integrity migration as given at <http://h71000.www7.hp.com/openvms/integrity/transition/vax/modules.html>.

In addition to HP's consultancy, customers can work with HP preferred system integrators. The system integrators provide packaged solutions that would ensure a seamless transition to the newer platforms.

For migration of applications, assistance is provided at the OpenVMS Customer Lab and porting workshops held by John Egolf.

12. Can I test my applications for compatibility in an OpenVMS environment before I actually do the migration in my production environment?

³ <http://h71028.www7.hp.com/ERC/downloads/5983-2722EN.pdf>

The OpenVMS Customer Lab is a dedicated lab that offers a secure environment for testing application software. It is designed to provide OpenVMS partners, independent software vendors (ISVs), and customers access to cutting-edge HP technology. Guests can schedule hardware, software, and engineering resources to stage their applications in controlled environments before going live in their own production environments.

Typical engagements include:

- Porting to HP Integrity servers—create a side-by-side environment of AlphaServer and Integrity server configurations, and have HP experts close by to assist as needed, and to answer questions
- Validating solutions on new hardware and new versions of the operating system—test solutions on new platforms and mixed-architecture clusters
- Characterizing performance—measure response times and throughput on different size systems such as systems with 8 processors, 16 processors, and 64 processors, and systems with different amounts of memory
- Proof of concept—configure an environment that closely resembles the target configuration and validate the solution before purchasing equipment.

13. If I am a VAX customer but do not have any support agreement/contract how do I get migration support?

HP will assist you with migration support. You may need to contact the Regional BCS Sales Manager or there may be a Regional Program Manager who will work with you on your solution.

14. What is OpenVMS clustering? How is it unique?

An HP OpenVMS Cluster is a highly integrated organization of VAX and HP AlphaServer system—or AlphaServer and HP Integrity server system—applications, operating systems, and storage devices. It can also support a heterogeneous system of VAX/Alpha/Integrity on single OpenVMS cluster (please note that HP provides support to such a cluster only for migration purposes). These systems can be connected to each other and storage components in a variety of ways, depending on the needs of your business.

OpenVMS Cluster systems give you the ultimate in a highly available, scalable, and flexible computing environment. The cluster also allows you to connect systems of all sizes and capacities and achieve an easy-to manage, single virtual system. And the inherent capabilities of OpenVMS clustering allow up to 96 nodes to be connected at distances from just a few inches up to 500 miles apart.

OpenVMS clusters also allow you to include machines running different versions of the operating system in the same cluster. With OpenVMS Cluster configurations, you can connect storage subsystems to I/O interconnects that can be accessed by multiple systems. This means that if a node shuts down, all remaining nodes in the OpenVMS Cluster still have access to its applications and data.

OpenVMS clustering is referred to as “gold standard” due to its distinct features in clustering compared to other standard clustering software.

For more information visit <http://h71000.www7.hp.com/openvms/products/clusters/>

15. How is OpenVMS disaster tolerant?

OpenVMS clusters can provide full capabilities even when physically separated by up to 800 kilometres (500 miles). In addition to clusters, the OpenVMS host-based volume shadowing technology provides exceedingly efficient and reliable data-replication capabilities.

For distances beyond 800 kilometers, OpenVMS is also one of the most reliable, efficient, and effective environments for ensuring business continuity because it can protect data virtually seamlessly and ensure maximum uptime. OpenVMS data protection capabilities have been qualified for distances as great as 90,000 kilometers (60,000 miles).

Disaster Tolerant Management Services from HP Services round out a complete business continuity solution from assessment, to planning, to implementation, to recovery.

In a simulated test of HP’s disaster proof solutions, OpenVMS system was the fastest to recover from a disaster situation. OpenVMS on HP Integrity Superdome was back online in 13.71 secs as compared to 33.96 secs on HP Integrity Nonstop, 72.63 secs on HP-UX on HP Integrity Superdome, 104.33 secs on Windows on HP Integrity Superdome and 113.01 secs on Linux on HP Proliant. To watch the simulated test and for more information visit <http://h71028.www7.hp.com/enterprise/cache/523434-0-0-0-121.html>

For more information on high availability/disaster tolerance for business continuity visit <http://h71000.www7.hp.com/availability/index.html>

16. Does OpenVMS support newer technologies like virtualisation?

OpenVMS has offered business processes the capability to have access to a virtual resource pool of services, applications, servers, storage and networks for a number of years with OpenVMS clusters, hard-partitioning and soft partitioning (OpenVMS Galaxy). OpenVMS has embraced HP virtualization technologies to improve the utilization of

CPUs, assist consolidation of systems, simplify compute complexes and reduce management overhead. HP is delivering these virtualization benefits with the product components that constitute the HP Virtual Server Environment.

For more information on virtualization on OpenVMS, refer to the whitepaper on virtualization at <http://h71028.www7.hp.com/ERC/downloads/4AA0-5801ENW.pdf>

17. Can OpenVMS work with web applications?

Yes, OpenVMS integrates new and existing data and applications into the Web and Internet environment.

Web browsers, web servers and web services are all available on OpenVMS. The various e-business products that are supported on Alpha and I64 are:

- HP Secure Web Browser (SWB)
- The Secure Web Server (SWS)
- XML, SOAP, UDDI and Perl
- Web Services Integration Toolkit (WSIT) for OpenVMS

For more, refer to <http://h71000.www7.hp.com/ebusiness/index.html>

18. Are there any development tools/utilities available on OpenVMS?

The OpenVMS I64 development environment includes:

- Native I64 compilers
- Other development tools
- Linker
- Debugger
- Librarian utility

For OpenVMS I64, native I64 compilers are available for the following languages:

- BASIC
- BLISS (available on the Freeware CD)
- C++
- COBOL
- Fortran
- HP C
- HP Pascal
- Java
- VAX Macro-32
- GNAT Ada

Other significant development tools available:

- DECset, a comprehensive set of development tools
- Distributed Netbeans

19. What are the security features available on OpenVMS? Is it operator safe?

HP OpenVMS provides a full range of security products and services from HP and our partners designed to protect a company's vital assets. The following list mentions some of the security features available on OpenVMS:

- Security services from HP - for user authentication and password changes
- LDAP Authentication Patch Kits - provide optional login and set password functionality that utilizes the SYS\$ACM system service for user authentication and password changes.
- Encryption for OpenVMS including AES Encryption - eliminates the requirement for a separate product installation and product license
- SSL - based on OpenSSL 0.9.7e and includes all of the latest security updates from OpenSSL.org.
- CDSA (Common Data Security Architecture) - provides a stable, standards-based programming interface that enables applications to access operating system security services
- Kerberos - provides strong authentication for client/server applications by using secret-key cryptography
- IPsec - provides an infrastructure to allow secure communications (authentication, integrity, confidentiality) over IP-based networks between systems and devices that implement the IPsec protocol suite
- SSH - encrypts and decrypts data flow between hosts on a network

For more information about the security features and future direction of security on OpenVMS visit <http://h71000.www7.hp.com/openvms/security.html>

20. What is BASEstar? Is it still available on OpenVMS?

BASEstar is a real-time factory floor middleware product used by many manufacturers around the world in both discrete and process industries. In 2005, BASEstar Open was ported to HP's new Integrity Servers. Specifically we have ported BASEstar Open Server, OMNI, OSAP/AP, OSAP/H1, and the S7 DASes to both HP-UX and OpenVMS I64.

21. Do we have DAS that interface with external devices?

Yes, OpenVMS has DAS to interface with external devices. Many standard L0 automation solutions are shipped with off-the-shelf DAS for OpenVMS (for example,

BASEstar Open DAS for Allen-Bradley Data Highway). OpenVMS development environment enables you to create custom DAS if a particular device does not ship with a DAS for OpenVMS.

22. Who are the key ISV's and partners who have applications on OpenVMS? How actively are they involved in creating applications for OpenVMS?

Partners provide a broad range of solutions for OpenVMS on HP Integrity servers and AlphaServer systems. Many partners have already ported their applications to OpenVMS on HP Integrity servers, and more are completing ports every day. More than 1500 applications and service offerings for OpenVMS on HP Integrity servers are now available from familiar names including:

Applied Materials	BEA	CA	Cognos	EMC	Ericom
FISERV	GE Healthcare	Information builders	Intersystems	LogicaCMG	Mimer
MySQL	Oracle	Patsystems	Process Software	RAXCO	Software AG
Software Partners	Sungard	Synergex	TecSys	TIBCO	...and many more

HP actively provides programs and services to ensure that partners can port their applications quickly and easily to the HP Integrity server platform.

The OpenVMS group maintains an extensive partner database that is updated on a regular basis. Customers can choose from several access methods to partner information, including the HP OpenVMS Application Status Report and a partner database search tool. Both of these links are also available from the OpenVMS home page.

23. Will I face an issue to connect the serial and parallel ports to newer platforms?

The latest version of OpenVMS does not enforce any limitation on external hardware connections through serial/parallel port. However, the latest server enclosures are not shipped with parallel and serial ports. There are external devices that can help to connect your external parallel/serial port devices to server enclosures. Please refer to your hardware's user guide for more information.

24. What are the manageability tools that OpenVMS supports?

There is a whole range of system management tools that OpenVMS supports. Most of HP's proprietary system management tools on HP-UX and Windows platforms are available on OpenVMS as well. Also, system management tools on OpenVMS allow OpenVMS system to be managed through the OpenView thus providing a 'single pane of glass view' for all servers in your organization. For more details about system management products that OpenVMS provides, please visit http://h71000.www7.hp.com/openvms/system_management.html.

25. What storage systems can I backup my data on?

Integrated with the OpenVMS environment, HP StorageWorks is architecturally compatible with both HP Integrity server and AlphaServer system platforms. Typical solutions in this area are the MSA, EVA, and XP array families, and SCSI solutions such as Backplane RAID. The major storage interconnects used with OpenVMS are SCSI, IDE ATA, IDE ATAPI and USB. For more information on storage solutions on OpenVMS, visit <http://h71000.www7.hp.com/openvms/storage.html>.

26. Where do I get more information about OpenVMS?

You can get more information about OpenVMS on the product website at <http://www.hp.com/go/openvms/>

27. How can I order OpenVMS and its layered products?

Visit <http://h71000.www7.hp.com/buy.html> for more information on ordering OpenVMS products.

28. What is the support roadmap for OpenVMS? Will I get post sales support?

Yes, you will get post sales support for OpenVMS. Unless otherwise agreed to by Hewlett-Packard Company (HP), HP provides HP Support Services only for the current and immediately preceding versions of HP software, and only when the software is used with hardware that is included in HP-specified configurations. For more information on support roadmap/matrices, please visit OpenVMS support page at http://h71000.www7.hp.com/openvms/openvms_supportchart.html. The page also provides information on extended engineering support. Extended Engineering Support is similar to Prior Version Support (PVS) in that it provides engineering analysis, troubleshooting, solutions and problem resolution. ESS 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.

29. Are there courses available on OpenVMS? How do I get my internal people trained on OpenVMS?

HP OpenVMS customers can now access OpenVMS Fundamentals training via the new, interactive distance learning program. The program is pre-recorded, instructor-led online, self-paced course. It includes an OpenVMS simulated environment on which students can practice. The program offers a follow-on opportunity to access the HP Virtual Lab for hands-on practice in a fully configured OpenVMS environment, with live mentoring from an OpenVMS expert. The content of the program is the same as taught in the instructor-led version. Full curriculum offered on OpenVMS Course offerings, schedule and registration can be done at www.hp.com/learn/openvms.

HP also provides Interactive Distance Learning programs that are customized for different classes of users like system manager and system programmer. For more information on course curriculum or to attend the course, visit <http://h15076.www1.hp.com/education/openvms.htm> or www.hp.com/learn/openvms

30. Where can I find online copies of OpenVMS documentation?

You can find online copies of OpenVMS documentation at <http://h71000.www7.hp.com/doc/index.html> or at www.docs.hp.com

31. What technical journals and white papers are available on OpenVMS?

The white papers offer valuable information about HP OpenVMS, including IT consolidation, clustering, high availability, total cost of ownership (TCO), and more. The OpenVMS team is dedicated in releasing technical journals and whitepapers about the latest offerings on OpenVMS platform. The technical journals and white papers can be downloaded from <http://h71000.www7.hp.com/openvms/whitepapers/index.html>.