

Business practices for HP OpenVMS on HP Integrity servers



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Note: These business practices apply only to OpenVMS on the HP Integrity server line. They do not apply to OpenVMS on AlphaServer systems.



Introduction

The HP OpenVMS operating system has long been a mainstay in environments that require rock-solid computing. Its performance, scalability, availability, ease of management, proven disaster tolerance, and virtually impenetrable security are highly valued in industries such as Financial Services, Telecommunications, Manufacturing, Healthcare, and Government.

HP has maintained its commitment to continuously improve and evolve OpenVMS. One such evolution was the transition, 10 years ago, from 32-bit VAX systems to 64-bit AlphaServer systems. The newest evolution is the porting of OpenVMS to the cost-effective, standards-based HP Integrity server family based on the Intel® Itanium® 2 architecture. OpenVMS customers have a choice of staying with the AlphaServer platform for many more years, moving to HP Integrity servers, or employing a mixed-architecture environment containing both.

Evolving business practices

Along with technological evolution, HP is evolving OpenVMS business practices as well. Simplification, flexibility, and more cost-effective solutions to business problems are the guiding principles underpinning OpenVMS on HP Integrity servers business practices. Customers have been loud and clear in the demand that providers need to simplify their business practices. They are insisting on increased flexibility in procuring and deploying resources. HP has listened and is doing something about it with the development, design, and deployment of OpenVMS on HP Integrity servers.

This white paper provides an overview of the business practices for OpenVMS on HP Integrity servers including

- Operating Environment bundles
- License types
- License management
- License trade-in policies
- Software support offers

Operating Environment bundles

New with OpenVMS on HP Integrity servers is the introduction of Operating Environment bundles.

OpenVMS on HP Integrity servers simplifies software procurement, installation, and management with Operating Environment (OE) bundles. The Foundation Operating Environment (FOE), Enterprise Operating Environment (EOE), and Mission Critical Operating Environment (MCOE) provide the most appropriate software products for each level. In addition, OpenVMS on HP Integrity servers is available in localized versions for Japan, Korea (Hangul), and China (Hanzi).

Foundation Operating Environment

The OpenVMS on HP Integrity servers Foundation Operating Environment (FOE) is a fully featured operating environment. It is a lower-cost OpenVMS solution that delivers manageability and interoperability features for the price-sensitive organization. FOE components include:

- OpenVMS operating system
- OpenVMS unlimited user licensing
- CDSA
- DCE RPC runtime
- DECnet-Plus for OpenVMS end system
- DECnet IV
- DECprint Supervisor (DCPS)
- DECwindows Motif for OpenVMS
- Distributed NetBeans, including plugins for C/C++, Fortran, EDT keypad, and CMS
- Enterprise Directory
- Java™ Platform, Standard Edition, Development Kit (JDK)
- Kerberos
- NetBeans IDE, including plugins for C/C++, Fortran, EDT keypad, and CMS
- Performance data collector

- Secure Web Server (SWS) (based on Apache server), including Tomcat, mod_PHP, mod_Perl, and Perl
- Secure Web Browser (SWB) (based on Mozilla)
- Simple Object Access Protocol (SOAP) Toolkit (based on Apache Axis)
- Secure Socket Layer (SSL) (based on OpenSSL)
- TCP/IP services for OpenVMS
- Universal Description, Discovery, and Integration (UDDI) Client Toolkit (based on UDDI4J)
- (Web) Management agents (for operation with HP Systems Insight Manager)
- Web Based Enterprise Management (WBEM)
- XML Technology (based on Apache Xerces and Xalan)

Enterprise Operating Environment

The OpenVMS on HP Integrity servers Enterprise Operating Environment (EOE) includes all the components of the FOE, as listed above, plus tools to enhance the user experience in the areas of manageability, single-system availability, and performance. EOE components include:

- RMS journaling*
- Volume Shadowing*
- DECram*
- OpenVMS management station*
- Availability Manager (AM)

*Products are also available via a la carte ordering, see page 4.

Mission Critical Operating Environment

The premium Mission Critical Operating Environment (MCOE) bundle delivers the ultimate user experience in terms of multi-system availability. This package includes everything in the FOE and EOE plus:

- OpenVMS Clusters*
- Reliable Transaction Router (RTR) Backend*

* Products are also available via a la carte ordering, see below.

In terms of developing both high availability clusters and Disaster Tolerant solutions, OpenVMS Clusters and RTR deliver the best availability in the industry and the lowest total cost of ownership for comparable environments for mission-critical applications¹.

A la carte ordering

EOE and MCOE components (products) not included in the FOE can also be purchased a la carte.

For example, if an organization does not require all the technology offered with the MCOE bundle but does want Volume Shadowing and OpenVMS Clusters, it could buy the OpenVMS on HP Integrity servers FOE license, plus the Volume Shadowing and OpenVMS Clusters licenses.

In summary, with OpenVMS on HP Integrity servers Operating Environment bundles:

- Ordering is easier
- License management is easier because only a single key is required
- Installation is easier from a single DVD
- Support contracts are simpler; a single contract entry is provided for all the components in the Operating Environment selected

License types

OpenVMS on HP Integrity servers are offered with either Per-Processor Licenses or Concurrent Use Licenses.

- Most OpenVMS on HP Integrity server products are offered with Per-Processor Licenses.
- Compiler products are offered with Concurrent Use Licenses, consistent with the concurrent licenses offered today for AlphaServer systems.

Per-Processor License

Per-processor licensing prices software according to the number of processors on which it is running.

One of the main benefits of the Per-Processor License (PPL) is its simplicity. To use a basic example: if a new HP Integrity rx4640 Server is quoted with four installed active processors and the EOE operating environment level, then four EOE PPLs would be quoted. If a two-CPU configuration is quoted, then two EOE licenses would be quoted, one per active CPU.

Another benefit is granularity. Customers need only purchase software and processors as necessary for their compute tasks. They can purchase new systems lightly loaded with processors and find inexpensive pricing for both hardware and software. Additional processors and corresponding PPLs can easily be added later.

Per-processor licensing provides excellent flexibility because it accommodates system partitioning. This allows the movement of licenses within a system complex, and the movement of licenses between systems according to customer needs. In this case, though, care must be taken to ensure that all systems have proper, updated support contracts associated with these per-processor system changes.

¹ "Improving Availability and Lowering TCO with HP Integrity Servers and OpenVMS Comparing mid-range UNIX cluster TCO, availability, and business value", Copyright © 2001-2005 Alinean, Inc..

Ordering simplicity

Operating Environment bundles and per-processor licensing offer many benefits. The most important for an organization's bottom line is the ability to purchase only the software licenses that are required – only the active CPUs on a system or hard partition need to be licensed. In addition, on a system that supports partitions, an organization may purchase only the OE or operating system licenses needed for each partition. For example, one partition may be licensed for an OpenVMS on HP Integrity servers FOE, while another partition is licensed for an OpenVMS on HP Integrity servers MCOE, and yet a third partition is licensed for HP-UX 11i FOE or Windows® server. Note, however, that all active CPUs within a system node or hard partition must be licensed at a single level of OE.

A dramatic example of the simplicity of per-processor licensing is the contrast between a typical order for a four-CPU system for OpenVMS on AlphaServer systems versus OpenVMS on HP Integrity servers. The point is to compare the number of licenses and media kits required to configure, order, and install OpenVMS on the comparable systems. Table 1 shows an example of a typical order for OpenVMS operating system and core layered products on a four-CPU AlphaServer ES80 system.

Table 1 lists each license and media order number required for OpenVMS on AlphaServer systems to make it comparable to the MCOE. The organization will need to configure and install each of the 23 LMF PAKs listed using two media kits and then ensure that it configures the system with the correct license tiers for the AlphaServer ES80 system.

Table 1. OpenVMS mission-critical software for 4-CPU AlphaServer ES80 system

SKU	Description	QTY	#PAKS
OpenVMS Licenses Packaged with AlphaServer ES80 system			
QL-MT1AG-6Q	OpenVMS Alpha Base License ES80	1	1
QL-OLXAG-AA	TCP/IP Services for OpenVMS	1	1
QL-5LQAG-AA	Archive Backup System for OpenVMS Management Tools	1	1
QL-5LSA9-3B	Archive Backup Agent for Windows NT™	1	1
QL-MTFAG-AA	DECnet-Plus for OpenVMS Alpha End System	1	1
QL-MV4AG-AA	DECwindows Motif for OpenVMS Alpha	1	1
QM-5LKAA-AB	Pathworks 32, v7.3	3	3
QM-5SUAA-AK	Pathworks v6.1 for OpenVMS Advanced Server v7.3A	2	2
QM-5TB9A-AA	Office Server for OpenVMS	1	1
QM-5TD9A-AQ	Office Server Client Access License	2	2
QL-MT1A9-6S	OpenVMS Alpha2 SMP ES80	2	4
A la Carte Mission-Critical Licenses			
QL-MT2AG-AA	HP OpenVMS Alpha Unlimited G tier License	1	1
QL-MUZAG-AA	HP VMScluster OpenVMS Alpha G tier License	1	1
QL-0VHAG-AA	RMS Journaling V/A Traditional License	1	1
QL-2A1AG-AA	HP Volume Shadowing OpenVMS Alpha G tier License	1	1
QL-MV3AG-AA	HP DECram for OpenVMS Alpha G tier License	1	1
Operating System and Layered Product Media			
QA-MT1AA-H8	HP OpenVMS Alpha Media Kit CD-ROM	1	
QA-03XAA-H8	HP OpenVMS Software Library Media Package	1	
		Total PAKS	23

OpenVMS mission-critical software for 4-CPU AlphaServer ES80 system comparable to the functionality offered in the MCOE for OpenVMS on HP Integrity servers.

Table 2 is an example of a software order for a four-CPU HP Integrity rx4640 Server with the OpenVMS Mission Critical Operating Environment. The MCOE components are comparable to the software ordered in Table 1. The customer will only need to configure and install one LMF PAK using one media kit. This clearly illustrates how OpenVMS on HP Integrity servers is easier to order, configure, and install.

Table 2. OpenVMS mission-critical software for 4-CPU HP Integrity rx4640 Server

SKU	Description	QTY	#PAKS
Mission-Critical Operating Environment Licenses			
BA399AC	HP I64 MCOE PPL LTU max4 sockt w/sys	4	1
MCOE Product Media			
BA324AA	HP OpenVMS I64 MCOE Media	1	
Total PAKS			1

Example of ordering MCOE software for a four-CPU Integrity rx4640 Server.

So, to order licenses and software for an HP Integrity server, the customer orders:

- The OE level of choice: FOE, EOE, or MCOE. One PPL license per active CPU.
- Additional layered product licenses as preferred by the customer.
- Software support: choose from the support offers described in the software support section (p.10).
- OE Media DVD set: Order the OE DVD set that matches the OE license. For example, if the customer orders FOE licenses, he must order the FOE Media DVD set. Note that the OE Media DVD set includes the OE binaries, the LP binaries (called the LP Library), and Online Documentation for OEs and LPs.

Exact Quantity Product Authorization Keys

For OpenVMS on HP Integrity servers, Product Authorization Keys (PAKs) are delivered as "Exact Quantity PAKs" (EQPs). This means that customers receive one PAK for every license product-number line item ordered, regardless of the quantity ordered. Customers who know in advance how they want the PAKs split can build an order with multiple line items each with the quantity they want. For example, if customers order one line item of FOE with a quantity of six, they receive one PAK representing the six licenses. If they order six line items of FOE with quantity one per line item, then they receive six PAKs representing those six licenses. In either case, once they load the PAKs on their systems, they can use the LMF interface to assign them to different nodes within a cluster, or issue them to other nodes elsewhere.

License management

OpenVMS on HP Integrity servers will continue to use LMF, the license management tool used for AlphaServer systems. HP made this decision after learning that customers overwhelmingly preferred to have LMF as their license management tool. HP has, therefore, invested in making improvements to LMF that will support the license compliance management attributes of the product.

Soft compliance

The most significant enhancement to LMF for OpenVMS on HP Integrity servers is the introduction of soft compliance for PPLs. Soft compliance is a method of license management that ensures service continuation even if insufficient licenses are available.

HP views LMF as a license compliance management tool, allowing customers to manage to the HP license terms and conditions. The soft compliance enhancement ensures service continuation while alerting customers to potential non-compliant licensing situations.

License trade-In policy

The license trade-in and transfer policy can be used when transitioning to HP Integrity servers and HP 9000 servers. The specific cross-platform paths included in this policy are shown in Table 3.

Table 3. License trade-in policy cross-platforms paths

Moving From	To
HP-UX11i on HP 9000 servers	HP-UX 11i on HP Integrity servers or OpenVMS on HP Integrity servers
Tru64 UNIX on AlphaServer systems	HP-UX 11i on HP 9000 servers, HP-UX 11i on HP Integrity servers, or OpenVMS on HP Integrity servers
OpenVMS on VAX or AlphaServer systems	OpenVMS on HP Integrity servers, HP-UX 11i on HP 9000 servers, or HP-UX 11i on HP Integrity servers
MPE on e3000 servers	HP-UX 11i on HP 9000 servers, HP-UX 11i on HP Integrity servers, or OpenVMS on HP Integrity servers

The cross-platform trade-in policy is defined by support – or service – customers, and non-support customers. The definition of support is that the license being traded in is under a support contract that includes rights to new versions for the software product licensed.

Licenses under support can be traded in for equivalent product license(s) on the new platform at no charge. The customer must commit to continue support for the new licenses that are being purchased. For the non-support customer, licenses can be traded in for an equivalent license purchase at 40% of the new license price. The customer must commit to support on the new licenses for one year and the support must be pre-paid.

All license trade-ins apply to equivalent products or equivalent operating environment licenses. HP defines what product licenses are equivalent.

Table 4 demonstrates the equivalency mapping from the OpenVMS operating system and core layered products to the new Operating Environments. This example maps OpenVMS on an AlphaServer system to OpenVMS OEs on an HP Integrity server.

Table 4. Equivalency Mapping

Trade-in Original Licenses	Credit for Equivalent OE License
OpenVMS Alpha Product License	OpenVMS on HP Integrity servers OE License
OpenVMS Base OpenVMS SMP OpenVMS Users Enterprise Integration Package	Foundation Operating Environment
Volume Shadowing RMS Journaling DECram	Enterprise Operating Environment
VMS Clusters	Mission Critical Operating Environment

Equivalency mapping from the OpenVMS operating system and core layered products to the new Operation Environments

The first four products listed under the OpenVMS Alpha column on the left – the OpenVMS Base, SMP Extensions, Users, and Enterprise Integration licenses – are traded in together as a unit and the customer receives credit for the Foundation Operating Environment, which includes similar functionality packaged in a single license.

Likewise, for the second category, including Volume Shadowing, RMS Journaling and DECram, if the customer is licensed for two or all three of these products, she may trade in the OpenVMS Base, SMP Extensions, Users, and Enterprise Integration licenses in addition to at least two of the three layered products listed, and receive credit towards the Enterprise Operating Environment.

To qualify for the Mission Critical Environment license and in order to receive full MCOE trade-in credit, the customer must trade in licenses for all applicable products for FOE and EOE plus OpenVMS Clusters.

All license trade-ins require proof of license for the licenses being traded in to receive the credit.

When a system is being traded in and the customer is setting up a new environment, HP allows a parallel usage period of the hardware. Parallel usage of software licenses is allowed for the same period of time while the customer migrates the environment.

Product equivalency

Table 5 is an example of layered product equivalency that shows HP-defined equivalent products. On the left side it details the “from” platforms that licenses can be traded “from” and on the right side it defines the “to” platforms that licenses can be traded “to.”

Table 5. Layered product equivalency map

FROM Platforms:					TO Platforms:	
OpenVMS VAX system	OpenVMS AlphaServer system	Tru64 UNIX AlphaServer system	MPE/iX e3000 server	HP-UX 11i on HP 9000 server	OpenVMS on HP Integrity servers	HP-UX 11i on HP Integrity servers
Fortran VV	Fortran VA	Fortran UA	Fortran iX	HP Fortran 90	Fortran I64	Fortran HP-UX
C++ VV	C++ VA	C++ UA	C++ iX	HP aC++	HP C++ I64	HP aC++

To illustrate the “to-from” license movement, imagine a Fortran customer moving from OpenVMS on AlphaServer systems to OpenVMS on HP Integrity servers. The Fortran VA license can be traded in and the customer can receive credit for an equivalent HP Fortran I64 license.

Trade-in credit

Table 6 describes the methodology for applying a trade-in credit. When a customer trades in a license, the new license is added to the order along with the applicable trade-in credit option.

Table 6. License Trade-in Credit

Support Customer	Product Description	Product Number	License of Credit Price*
Purchase	4-socket Enterprise OE for HP Integrity server	BA397AC	\$6,160
Add 100% Credit	In-support cross-platform PPL trade-in from OpenVMS VAX or AlphaServer system	BA397ACN#109	(\$6,160) Net \$0
Non-Support Customer	Product Description	Product Number	License of Credit Price*
Purchase	4-socket Enterprise OE for HP Integrity server	BA397AC	\$6,160
Add 60% Credit	Out-of-support cross-platform PPL trade-in from VAX or AlphaServer system	BA397ACN#113	(\$3,696) Net \$2,464

Methodology for applying a trade-in credit.

*Prices are subject to change.

In the example shown in Table 6, the customer is trading in OpenVMS operating system licenses plus Volume Shadowing, and RMS Journaling licenses from a four-CPU server toward Enterprise Operating Environment PPLs for an HP Integrity server.

The customer purchases EOE licenses for the HP Integrity server for the number of CPUs on the new server, and adds the line item and quantity to the order. If a support customer, and the licenses are under rights-to-new-version support, the customer receives 100% credit for the trade-in, for the number of CPUs licensed on the traded in server (in this case, four) by adding the credit option line item to the order. These net out the line item at \$0, up to a quantity of four EOE's. Because the original server was licensed for four CPUs, the customer is allowed credit up to a quantity of four EOE's on the new server.

An out-of-support – or non-support – customer may also trade in. The credit option line item is different and it will credit 60% when placed on the order. This will net out to the line item for the license at 40% or \$2,552.

Software support offers

Software services are offered and recommended for OpenVMS on HP Integrity servers Operating Environments and layered products.

The licensing and support model for HP Integrity servers differs from the model for AlphaServer systems. For HP Integrity servers, no a la carte update licenses will be offered for updating license rights for new versions of the software. Under the HP Integrity server model, rights to future versions may only be obtained through a software services contract, or by purchasing a new, full-price license.

HP Integrity servers are able to run several operating systems including OpenVMS, HP-UX 11i, Microsoft® Windows® Server 2003, and Linux. The same customer may require support on more than one of these operating system environments. The HP services portfolio has been designed to offer a full spectrum of services that are consistent across these various operating system environments.

The fact that HP has implemented an integrated order process for HP Integrity servers so it will be easy to order HP-UX 11i, OpenVMS, Microsoft® Windows® Server 2003, and Linux – all for the same server on the partitioned HP Integrity server product lines – makes a consistent service portfolio an absolute necessity.

Packages are the HP primary method for bringing services to market. They define service capabilities in pre-specified service levels that address mainstream service requirements

The following service packages are available to respond to the software services needs of at least 80% of HP Integrity server customers.

Base services

Software product updates

As HP releases updates to software and reference manuals, these updates are made available to the customer. This service also includes a license to use and copy the software updates for each system covered by the original software license. For OpenVMS on HP Integrity servers, the customer has the option to sign up through the HP IT Resource Center to become a Software Update Manager (SUM) user to be notified when a new software revision is available. Once customers sign up for SUM access, they no longer automatically receive software updates on media. They must contact HP through SUM to request the software updates. One advantage is the customer may request physical media or download the software update where this option is available. SUM also allows the customer to view order status and history to proactively manage and plan for software updates.

Software support

HP software support is composed of comprehensive software services that enable customers to increase the availability of their IT infrastructure. HP support engineers work with the customer to resolve software problems. HP has established formal escalation procedures to facilitate complex problem resolution. Local HP management coordinates problem escalation, enlisting the skills of appropriate HP resources and/or selected third parties to assist with the problem solving.

As HP releases updates to software and reference manuals, these updates are made available to the customer. This service also includes a license to use and copy the software updates for each system covered by the original software license. For OpenVMS on HP Integrity servers, the customer has the option to sign up through the HP IT Resource Center to become a Software Update Manager (SUM) user to be notified when a new software revision is available. Once a customer signs up for SUM access, the customer no longer automatically receives software updates on media. The customer must contact HP through SUM to request the software updates. One advantage is the customer may request physical media or download the software update where this option is available. SUM also allows the customer to view order status and history to proactively manage and plan for software updates.

In addition, this service provides electronic access to related product and support information, enabling any customer IT staff member to locate this commercially available essential information.

Support plus

HP support plus service is composed of comprehensive hardware and software services that enable customers to increase the availability of their IT infrastructure. HP engineers work with the customer's IT team to help resolve hardware and software problems. HP has established formal escalation procedures to facilitate complex problem resolution. Local HP management coordinates problem escalation, enlisting the skills of appropriate HP resources and/or selected third parties to assist with the problem solving.

As HP releases updates to software and reference manuals, these updates are made available to the customer. This service also includes a license to use and copy the software updates for each system covered by the original HP software license. For OpenVMS on HP Integrity servers, the customer has the option to sign up through the HP IT Resource Center to become a Software Update Manager (SUM) user to be notified when a new software revision is available. Once a customer signs up for SUM access, the customer no longer automatically receives software updates on media. The customer must contact HP through SUM to request the software updates. One advantage is the customer may request physical media or download the software update where this option is available. SUM also allows the customer to view order status and history to proactively manage and plan for software updates.

In addition, this service provides electronic access to related product and support information, enabling any customer IT staff member to locate this commercially available essential information.

Mission-critical services

- Proactive Essentials is the HP entry-level mission-critical service.
- Proactive 24 service offers great value in helping IT departments enhance their effectiveness.
- The Critical Service offering collaboratively increases IT availability and minimizes outages for IT departments whose role has evolved to that of service provider.
- The Mission Critical Partnership is designed for environments where IT is inseparable from the business and support must be focused around the business application. This offering provides a support solution tailored to the unique customer business requirements. A tailored scope of works puts focus and emphasis on the support elements that are truly crucial to "always on" computing.

For detailed information on services please visit www.hp.com/hps/portfolio/index.html

Summary

HP customers have been loud and clear in their demand for increased simplicity and flexibility in procuring and deploying resources. As this white paper illustrates, HP is listening and evolving OpenVMS business practices to support simplification, flexibility, and more cost-effective solutions to business problems.

For more information

To learn more about OpenVMS on HP Integrity servers business practices, please visit www.hp.com/go/openvms

To learn more, visit www.hp.com.

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