HP OpenVMS on Integrity Servers
Legendary security, availability, data integrity and easily-managed solutions to real business problems at the right price.
What’s New?

- OpenVMS Version 8.3 is now available!
  - Dual-Core Itanium 2 processors
  - Performance improvements
  - Price/performance improvements
  - New features in key areas
Highlights of what’s new in OpenVMS v8.3

Business Continuity
- Greater efficiency and control
- Shorter data copy times with greater availability

Virtualization
- Greater cost-effectiveness
- New resource control functionality
- Cost-saving power management

Security
- Enhanced adherence to security standards
- Improved Security Technology

Application Development
- Investment protection via re-use of existing applications, data, and business logic

All on completely new HP Integrity servers based on the new dual-core Intel® Itanium®2 processor
Twice the capacity with Integrity servers and Intel Dual-core Itanium 2 processors

- **High-end**
  - Superdome

- **Midrange**
  - rx8640 server
  - rx7640 server

- **Entry class**
  - Greater capacity with HP zx1, zx2, and sx2000 chipset & Intel “Montecito” processor
  - New Unparalleled performance at entry class price points
    - rx6600 server
    - rx3600 server
  - rx4640 server
  - rx2620 server
  - rx1620 server

- **Blades**
  - HP Integrity Blades

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“…HP Integrity rx4640 server with dual-core Intel Itanium 2 processors proved it to be 80 percent faster than our current rx7620 server while consuming only a fraction of the power. ….”

Betandwin
Improved performance

Database (Read/Write Test) V8.3
Data on a RAMdisk

RMS1 (Ramdisk) V8.3
Direct IOs
Significantly improved price/performance with OpenVMS v8.3 on new HP Integrity servers

- Financial services application
- Unaudited, based on a customer test scenario
- All systems 4 cpu and similarly configured
  - AlphaServer ES47: 4 x EV7
  - rx4640: 4x single core Itanium® 9M-based microprocessor
  - rx3600 2x dual core Itanium®-based microprocessor

Transactions / sec. Relative price/performance

<table>
<thead>
<tr>
<th>System</th>
<th>Transactions / sec</th>
<th>Relative Price/Performance</th>
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<tbody>
<tr>
<td>AlphaServer ES47</td>
<td>1500</td>
<td>$$$</td>
</tr>
<tr>
<td>Integrity rx4640</td>
<td>2000</td>
<td>$$</td>
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<tr>
<td>Integrity rx3600</td>
<td>2500</td>
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</table>
Why does OpenVMS have such a great reputation? yet… you may not have heard much about it?

• What I tell my customers now is that you can have 7 by 24 availability, and you can have 7 by 24 by 365 availability, but with OpenVMS you get 7 by 24 by 365 by 8 years, and that’s pretty unbeatable. Peter Clout, president, Vista Control Systems

• OpenVMS is the most secure and reliable operating system we have ever experienced. Gene Batan, Vice President of the Systems and Information Technology Department of Commerzbank, North America

• OpenVMS really is one of the industry’s best kept secrets. Colin Butcher, Director, XDelta Ltd.
Where you find OpenVMS

- OpenVMS Users: Millions of users around the globe
- OpenVMS Systems in use (VAX, Alpha, Integrity): 300,000 in production
- Wherever the most secure, available, reliable, scalable environment is needed

Market Profile:
- #1 rated in Healthcare
- 30% of mobile phones billed in the world
- 50% of the world’s SMS transactions
- Significant world presence in top Exchanges: 6 new in 18 months
- Dominant in automated in Lottery systems
- Leading supplier to the world’s largest CPU chip manufacturer
- Many of the world’s most demanding Government environments requiring security and availability
OpenVMS is a general-purpose operating system with applicability across virtually any vertical or horizontal application area. Key examples: retail, transportation, power distribution, etc.
Business Benefits of OpenVMS
-- going beyond technology --
Today, OpenVMS protects your most vital business investments

- Your data
  - Reliability, flexibility, capacity, and disaster tolerance

- Your customers
  - Security, data integrity, availability

- Your IT budget
  - Manageability through virtualization
    - Maximum flexible use of available resources
  - Scalability – scale up/scale out
  - Easy application upgrades and hardware transitions
    - Excellent application development/maintenance tools
    - Broad spectrum of offerings from application partners
    - Latest storage technologies, hot-swaps and on-the-fly upgrades
Business Benefits

- Security
- Hardware, storage, easy upgrades
- Manageability/Consolidation/Virtualization
- Application Development and ISV Solutions
- Business Continuity

Your Data

Your Customers

Your IT Budget
Why OpenVMS?

**Business Continuity**

- To you, “downtime” is an unacceptable word
- You prefer to measure uptime in years rather than hours or days
Business Continuity

What is “Business Continuity”

The ability for a business to continue operations at a pre-determined level regardless of the impact of adverse internal or external events. With respect to the supportive IT infrastructure it is the goal of:

- 100% continuous cluster availability
- 100% application availability
- 100% cluster reliability and accuracy
- 100% data availability and integrity

Not all business continuity offerings are the same.

What makes OpenVMS different?

- Features that protect the system/cluster from intrusion and denial of service attempts
- Features that enable long distance clusters and keep a system going, even during a real disaster.
- Much more
OpenVMS Business Continuity

Excellence in Cluster/DT Features and Services

OpenVMS Features +

• OpenVMS Clustering
  - Rolling Upgrades
  - All-nodes active model
  - Centralized cluster management

• Fibre Channel Storage
  - Direct access to remotely located storage
  - Distances up to 800 Km
  - Hardware Mirroring (CA)

• Inherent Disaster Tolerance Capabilities
  - Distances up to 800 Km
  - Mirroring via Host Based Volume Shadowing

HP Service Offerings =

• Service Offerings at increasing levels
  - Customer choice of support levels
  - Business Continuity Consulting Services (BCS)
  - Disaster Tolerant Cluster Services (DTCS)

• Rapid Business Recovery
  - Virtually undetectable failover from one site to another
  - Application Failover in minutes
  - Data Access Recovery in seconds

In a Disaster, Your Business stays Running!
OpenVMS Clusters helped Commerzbank tolerate disaster on September 11, 2001

“Because of the intense heat in our data center, all systems crashed except for our AlphaServer GS160... OpenVMS wide-area clustering and volume-shadowing technology kept our primary system running off the drives at our remote site 30 miles away.”

Werner Boensch, Executive Vice President
Commerzbank, North America
Business Continuity

Up to 100% application availability

- High single system RAS
- OpenVMS clusters
  - High availability
  - Disaster tolerance
- OpenVMS Host Based Volume Shadowing and HP continuous access
- Mixed architecture environments
  - VAX and AlphaServer systems
  - AlphaServer systems and HP Integrity servers
New features of OpenVMS v8.3 enhance business continuity

- **New:**
  Cluster satellite boot for HP Integrity servers
  - Any HP Integrity server in the cluster can be used as the boot server
  - Enhanced control and manageability

- **New:**
  Automatic/Restartable MiniCopy
  - Reduces time it takes to complete copy operations
  - Higher availability for shadow sets
  - Increased I/O Performance

Mixed architecture clusters:

HP Integrity servers and AlphaServer systems
Major Aerospace Company

Aerospace; North America

Dramatically boost performance of scientific application with OpenVMS on HP Integrity servers

Challenge
- Needed performance boost to run NASA code supporting computational fluid dynamics application
- Wanted to save cost through consolidation of older systems.
- Wanted to retain and enhance benefits of OpenVMS environment on the newest server platforms
  - Reliability
  - Scalability
  - Performance
- Maintenance costs of existing servers increasing significantly

Solution
- 10 HP Integrity rx2600 Servers
- HP OpenVMS operating system version 8.2
- OpenVMS clustering
- HP Integrity try and buy program

Result
- Increased performance by up to 70 percent
- Achieved payback in just months by offsetting maintenance costs of older systems
- Increased reliability, while doubling workload
- Accelerated time to value due to easy installation
- Planning additional mission-critical projects for OpenVMS on HP Integrity servers
  - Flight Test & Engineering
“For mission-critical applications that require absolute reliability and performance, OpenVMS is our operating system of choice. With OpenVMS on Integrity servers, we now benefit from the trusted, rock-solid functionality and scalability of OpenVMS with the high performance, agility, and simplified management of Integrity servers—all at lower total cost of ownership.”

Major US Aerospace Company
Why OpenVMS?

Security and Data Integrity

- You want a system that won’t corrupt the disk structure if a power failure or system crash occurs.
- You don’t want to be a member of the Virus-of-the-Week Club.
- 9 out of 10 hackers prefer another operating system – they can’t get in unless someone gives them a password.
OpenVMS Security: *Rock solid*

- Highest security of any general-purpose commercial OS –
- Industry standard security technologies on a C2 compliant, virus resistant, highly available platform

- Rock solid security is why banking funds transfers, exchanges, government defense programs run on OpenVMS.
As hourly downtime rates increase, the difference in security costs between brands may exceed $1 million.

Cluster Security White Paper, 2004
© 2004, TechWise Research, Inc.
Published with permission from TechWise Research, Inc.
Unauthorized use is strictly prohibited.
OpenVMS - secure by design

Control access: Solid security to protect your data, your systems, your customers.

Industry-standard, C2 compliant, virus-resistant, highly available platform.

- Support of Industry Standard Network Security tools
  - Kerberos
  - OpenSSL
  - Improved: SSH (Larger & Faster secure transfers)

- Support Industry Standard encryption
  - SSL, CDSA, GnuPG
  - Improved: AES encryption is now part of the base O/S including Backups!

- New: Secure delivery
  - Digitally signed kits,
  - Automatic checking to indicate if the file was tampered with or corrupted.

- Host Based Cluster wide intrusion detection

- Host Access
  - Single Security Domain across host or cluster
  - Improved: Support for LDAP and Kerberos External Authentication
  - Fine grain privileges
  - OpenView integration
OpenVMS security: many layers – single domain

- Each layer requires its own privileges & authorizations
- A breach in any one layer does not compromise any other layer
- Result:
  - Maximum protection
  - Minimum worry
“We have successfully ported security applications to HP OpenVMS on Integrity servers and realized a 30% performance gain of cryptographic algorithms. In the next years, the Polytech will increase greatly its size and scope. The computing infrastructure must be extremely flexible, scalable, cost-effective and preserve today’s investments. We are confident that HP can give us, in the future as in the past, all these values.”

Marco Mezzalama
Vice-Chancellor
Turin Polytech
Efficient, cost-effective management and virtualization

- You dislike waste of computing capacity
- “Reboot; and if that doesn’t work, Reinstall” is NOT the answer to every problem
- The OS that lets your IT staff sleep at night

Why OpenVMS?
Management Context

System Management
- Control/monitoring of system/cluster
- Managing of system resources
- Execution of administrative and operational tasks

Data Center Management
- Control/monitoring of medium to large OpenVMS environments
- Monitoring of system health, consoles, performance, scheduling/workloads, network and storage across the environment from a desktop

Server Management
- Management from a single point of control
- Hardware and software inventory
- Detect, isolate, and report hardware failures

Enterprise Management
- Management of (large) heterogeneous environments from a single point of control
- Managing every critical resource
  - Optimize system/network availability
  - Improve overall performance and predict system outages.
Management Strategy

System Management
- Tools bundled with OpenVMS
  - Management Station
  - Availability Manager
  - Performance Data Collector (TDC)
  - ECP Performance Analyzer
  - WBEM Services
  - OpenVMS utilities, commands, and APIs

Server Management
- HP Systems Insight Manager
  - SNMP-based (Web) Management Agents today
  - Migrating to WBEM infrastructure in future
  - The base for virtualization tools

Data Center Management
- Point products from 3rd parties with supporting ‘hooks’ from OpenVMS
  - TECsys, CA, BMC, Sightline, Orsyp, COMTEK, Appmind, ISE, Heroix

Enterprise Management
- HP OpenView (preferred)
- Partner with CA and BMC
Systems Management for OpenVMS
Delivering manageable platforms

Enterprise Management
• Heterogeneous coverage
• Increases IT service availability & performance
• Attaches business context to IT service

Server Management
Discovery, inventory, fault and remote management, role-based security, distributed tasks

Central Point of Administration
HP Systems Insight Manager

Performance Management
• Performance Data Collector (TDC)
• ECP Analyzer
• OpenView Performance Agent

Configuration Management
• OpenVMS Clusters
• Partition Manager (Galaxy and vPars)
• Management Station

Workload Management
• Class Scheduler
• Global Workload Manager
• Availability Manager
Virtualization

HP’s definition of Virtualization:
An approach to IT that pools and shares resources so utilization is optimized and supply *automatically* meets demand
OpenVMS virtualization on Integrity – scalability on demand

Control cost: Use what you need and pay for only what you use, consolidate many to few servers for more savings

New:

• Industry-leading capacity enhancements:
  - Instant Capacity (iCAP)
  - Temporary Instant Capacity (TiCAP)
  - Pay Per Use (PPU)

• Power conservation during low cpu demand

Along with global Work Load Manager (gWLM), already operational
Scalability and server consolidation - growth with flexibility

- Capacity on Demand
- Partitioning
- Configure/Reconfigure storage
- Add nodes/move apps
- Remote management and control

OpenVMS
On larger HP Integrity servers and AlphaServer systems

usr
var

Single system image on an OpenVMS cluster

Scale up

Scale out
Global Workload Manager for OpenVMS

- Automated management to defined SLAs
- Class
- Process
- Galaxy (AlphaServer only)
- Real time & historical data
- For more information [www.hp.com/go/gWLM](http://www.hp.com/go/gWLM)
Manageability through Virtualization

- Work load management → maximize efficiency
- Scalability → meet demands uninterrupted
grow capacity without growing organization
- Server consolidation → lower overall cost and complexity
- Superior TCO → better than IBM AIX and Sun Solaris*
- Technological stability → Maximum efficiency and RoIT

*Alinean, 2005; TechWise Research, 2004
# OpenVMS & HP-UX11i on HP Integrity Servers

**Banco Bilbao Vizcaya, Argentaria**

**Using HP Integrity multi-OS capability for efficiency, flexibility, and ease**

## Challenge
- Needed to consolidate disparate server environments
- Desire to gain maximum control and efficiency
- Use the right tool for the right job

## Solution
- 2 HP Integrity Superdome-32 servers
- HP OpenVMS operating system version 8.2
- HP-UX 11i operating system
- HP Essentials Instant Capacity on Demand
- Partner: Cognos

## Result
- Significant cost reduction
- Flexible cost management
- Targeted technology applications
- Reduced management complexity
Your Data

Your Customers

Your IT Budget

Business Continuity

Security

Application Development and ISV Solutions

Manageability / Consolidation / Virtualization

Hardware, storage, easy upgrades
Why OpenVMS?

Most flexible, reliable & adaptable hardware

- HP Integrity servers
  For your most demanding workloads
- HP AlphaServer systems
  In seamless, mixed-architecture clusters
- HP StorageWorks
  Most robust, reliable, and flexible
HP standards-based server strategy

Past

- HP NonStop
  - MIPS
- HP Integrity
  - Itanium
- HP 9000 / e3000
  - PA-RISC
- HP AlphaServer
  - Alpha
- HP ProLiant
  - x86

Today

Focused innovation
- Management
- Virtualization
- HA
- Storage
- Clustering

Moving to 3 product lines based on 2 industry-standard architectures

Customers benefit from increased HP investment in value-add innovation
## Value-add innovation based on standards

<table>
<thead>
<tr>
<th>High Availability</th>
<th>Clustering</th>
<th>Virtualization</th>
<th>Management</th>
<th>HP StorageWorks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust high availability solutions and award-winning mission-critical support</td>
<td>Comprehensive portfolio of solutions for high availability, performance, and improved asset utilization</td>
<td>Leading virtualization solutions provide increased asset utilization and cost reduction to improve the quality of IT services</td>
<td>Single management architecture, resulting in easy management of multiple operating environments</td>
<td>Leadership in network storage with extensive portfolio of modular, open storage solutions</td>
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</tbody>
</table>
HP AlphaServer Roadmap

2005
- Q1: Jan-Mar
- Q2: Apr-Jun
- Q3: Jul-Sep
- Q4: Oct-Dec

- GS1280
- ES80/ES47
- ES45
- DS25
- DS15

2006
- Q1: Jan-Mar
- Q2: Apr-Jun
- Q3: Jul-Sep
- Q4: Oct-Dec

- EV7 M8/M16/M32/M64 1.3/1.15 GHz
- ES80 EV7 1.15/1.0 GHz M2/M4/M6/M8
- ES47 EV7 1.15/1.0GHz M2/M4/Tower
- ES45 EV68 1.25GHz
- DS25 EV68 1GHz
- DS15 EV68 1GHz

2007
- Q1: Jan-Mar
- Q2: Apr-Jun
- Q3: Jul-Sep
- Q4: Oct-Dec

Options:
- CPU
- MEMORY
- IO
- Storage
- Network

Support until at least 2011

Subject to change without notice
## HP Integrity Server Roadmap

<table>
<thead>
<tr>
<th>Current offering</th>
<th>2H/2006</th>
<th>2007</th>
<th>2008</th>
<th>Future</th>
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<tbody>
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<td><strong>HP Integrity</strong></td>
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<td>HP-UX, Windows, Linux, OpenVMS</td>
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**Timeframes not to scale**

**Current offering subject to change**

**All upgrades “in-box” except as noted**

**Not available at initial processor release**

**Revision:** OB.07.06.0  July-06
Easy Hardware Upgrade/Expansion

- Online addition of hardware:
  - Disks, tapes
  - Complete server addition / removal from cluster
  - No need to restart the system

- Unique cluster capabilities make it easy
  - Active / Active utilization
  - Load balancing / Load sharing

- Online repairs in many cases
  - Disks, tapes, interconnects
OpenVMS Clusters –
the evolution continues with third architecture

NOTE: Support for VAX and Integrity mixed environment is not supported in a production environment.
OpenVMS Storage Environment: Open, standard, heterogeneous

- Supports all HP StorageWorks products
- Supports mixed architecture servers within a cluster
- Supports mixed storage solutions within a cluster
- Allows customers to mix Enterprise Storage with Departmental Storage without restriction to support multiple business needs within a single environment

![Diagram of OpenVMS Storage Environment](image-url)
“Our mixed cluster of OpenVMS on HP Integrity servers and AlphaServer systems provides us with the high availability and security required by our faculty, students and staff. By integrating proven technology with the latest advancements in performance and price/performance, we take advantage of a 25-year investment in this operating system, while preparing a smooth transition to the next generation of computing platforms.”

Jean-Pierre Petit
Chairman, Computer Engineering Department
ESME-Sudria
Your Data

Business Continuity

Security

Hardware, storage, easy upgrades

Manageability, Consolidation, Virtualization

Application Development and ISV Solutions

Your Customers

Your IT Budget
Why OpenVMS?

Fast, flexible, standards-based development

- You prefer not to redo good work
- Even if it’s a UNIX® application you can move it to OpenVMS
- The right tool for the right job
Application Development and ISV Solutions

Solutions that run your business

- OpenVMS is a multi-purpose operating system that easily scales and simultaneously runs multiple active multi-user processes.

- OpenVMS handles the most demanding database and transaction workloads
  - Very large databases
  - Applications requiring realtime capability, e.g. manufacturing production
  - Highly scaleable and secure transactions, e.g. funds transfers
  - Transaction guarantee via software fault tolerance with Reliable Transaction Router

- Heterogeneous interoperability across multiple architectures and multiple operating systems.

- In conjunction with its partners, OpenVMS has the tools and technology:
  - To create the solution to your enterprise application integration and evolution problem while leveraging all the strengths of OpenVMS and protecting your investment.
New in OpenVMS application development

- Investment protection
  - Re-use existing applications, data, and business logic
- Customize and upgrade
  - Full set of features to enable customization and facilitate easy porting from VAX and AlphaServer systems to new Integrity servers
Web integration tool kit

New:

- Tools to expose legacy application logic as part of implementing an integration solution
  - Tools can be used either individually or in combination
  - Generates JavaBean, Java, and JavaServer Page (JSP) clients
OpenVMS for Integrity server - development and integration technology from HP and partners

- Web servers and browsers
  - Secure Web Server (Apache)
  - Secure Web Browser (Mozilla)
- Development tools
  - Distributed NetBeans including support for C/C++, Pascal, Fortran, COBOL, MMS, BASH, DCL, CMS plus new toolkit for handling legacy apps.
  - Synergex Synergy (DIBOL)
- Security tools enhanced in V8.3
  - CDSA, including secure delivery and hrs
  - AES encryption, Kerberos enhancements, ACME agent, Kerberized SSH, KRB5 libraries, HP SSL
ISV Solutions for OpenVMS on HP Integrity servers

• Ongoing engagement with OpenVMS ISVs to ensure application availability on HP Integrity servers.
  − Over 1,100 applications from more than 550 partners are committed to move to OpenVMS on integrity
  − More than 700 applications and service offerings are currently available.

• Key databases are available including Oracle Rdb. (Oracle Server, November, 2006)

• HP-sponsored partner programs are assisting partners with porting and marketing their applications on Integrity servers.

• Many vertical market solutions already implemented or in process – several new commodity exchanges
Some examples
“When we looked for a computer platform on which to build our applications, we chose OpenVMS because of its security, reliability, and stability. Now OpenVMS offers even more value to our customers because of its availability on standards-based HP Integrity servers.”

Walter Kuhn  
Head of Development  
PKE Electronics AG
OpenVMS education Services – Making the most of HP OpenVMS

For System Managers

- HP OpenVMS Fundamentals
  - U3716S 5 days
- HP OpenVMS system mgmt I: essentials for established sys
  - U3724S 5 days
- HP OpenVMS system mgmt II: install, config & customization
  - U3723S 5 days
- Managing complex HP OpenVMS systems
  - U3726S 5 days
- HP OpenVMS v7.3 system performance management
  - U3727S 5 days
- TCP/IP services for HP OpenVMS
  - U3728S 5 days
- HP OpenVMS v7.3 internals for system managers
  - U3729S 5 days

For Programmers

- Electives
  - HP OpenVMS boot camp
    - U3385S 10 days
- HP OpenVMS v7.3 technical update seminar
  - U3730S 1 day
- HP OpenVMS advanced server
  - U3731S 5 days
- HP OpenVMS fundamentals
  - U3716S 5 days
- HP OpenVMS v7.3 alpha programming features I
  - U3717S 5 days
- HP OpenVMS v7.3 alpha programming features II
  - U3718S 5 days
- HP OpenVMS v7.3 alpha internals I
  - U3719S 5 days
- HP OpenVMS v7.3 alpha internals II
  - U3720S 5 days
- HP OpenVMS v7.3 alpha internals III
  - U3721S 3 days
- HP OpenVMS v7.3 crash dump analysis
  - U3723S 5 days
- HP OpenVMS v7.3 galaxy & NUMA prog & internals
  - U3722S 2 days

www.hp.com/learn/openvms
## OpenVMS education Services – Certifications

<table>
<thead>
<tr>
<th>Certification</th>
<th>Pre-requisite</th>
<th>Recommended courses</th>
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</thead>
<tbody>
<tr>
<td>Certified system administrator - HP OpenVMS v7</td>
<td>None</td>
<td>HP OpenVMS fundamentals (U3716S) HP OpenVMS system management I: essentials for established systems (U3724S) HP OpenVMS system management II: installation, configuration &amp; customization (U3725S) HP OpenVMS system performance management (U3727S)</td>
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<tr>
<td>OpenVMS systems administration exam #HP0-651</td>
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<tr>
<td>Certified system engineer - HP OpenVMS v7</td>
<td>Certified system administrator - HP OpenVMS v7</td>
<td>TCP/IP services for HP OpenVMS (U3728S) HP OpenVMS v7.3 internals for system managers (U3729S) HP OpenVMS system performance management (U3727S)</td>
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<tr>
<td>HP OpenVMS v7 advanced administration, performance and support exam #HP0-450 and HP OpenVMS v7 network administration exam #HP0-436</td>
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</table>

[www.hp.com/learn/openvms](http://www.hp.com/learn/openvms)
Moving forward with OpenVMS on HP Integrity servers

- New line of multi-core servers
- A smooth, logical upgrade path
- Programs to assist you
OpenVMS V8.3
Available: H2 2006
Platforms: Alpha and Integrity
• New Platform support with dual-core
• rx2620 & rx4640 dual-core upgrades
• VLAN support
• Performance & Scalability enhancements
• Industry Standards: Web Services, Java, Security, UNIX/Linux interoperability
• Virtualization: iCAP, TiCAP, and PPU

OpenVMS V8.3-1 H1
Available: H2 2007
Platform: Integrity only
• Multi-core upgrade support
• New I/O option support (PCI Express)
• Next Generation
• Integrity Blades Support

OpenVMS V8.4
Available: 2008
Platforms: Alpha and Integrity
• Storage performance and connectivity
• Performance & Scalability enhancements
• Industry Standards: Security, Integration software, Web Services, Java, UNIX/Linux Interoperability
• Virtualization: VSE Manager
• HP Integrity Virtual Machine support for OpenVMS

OpenVMS V8.n
Available: +18 24 months Platforms: Alpha and Integrity
• New Integrity systems
• Industry standards
• Performance & Scalability enhancements
• Virtualization

OpenVMS releases continue…
License transfer policies for OpenVMS on HP Integrity servers from AlphaServer or VAX systems

- **Services contract (with license to use)**
  - Even swap at no charge for “equivalent product”
  - Parallel usage for a set period
  - Must purchase at least one year of support

- **No services contract**
  - 60% discount on new license price
  - Parallel usage for a set period
  - Must purchase at least one year of support
HP’s evolution value proposition

Business value
- Compelling business reason
- No transition for the sake of technology
  - Minimize transition costs
  - Why HP?

Risk mitigation
- Application availability
  - Minimize impact to existing staff
- New environment superset of old
  - Deliver on product roadmaps

Customers continue to view HP as their trusted IT advisor throughout the multiyear transition period
Alpha RetainTrust transition program

- Accelerate top ISV transition to Integrity
  - 8,000+ ISVs available now across all integrity OEs
  - Itanium Solution Alliance to add more
  - OpenVMS 8.3 Integrity ISV apps – over 700 available out of >1100 planned
  - Porting seminars
  - Emulators to run applications that are not ported
  - GTM programs with key ISV partners

- Complete portfolio
  - Generous hardware and storage investment protection programs
  - 100% trade-in for OS & layered OS products for Integrity equivalents
  - Flexible financing, trade-up credit, parallel usage of old and new systems

- Fee-based services
  - IT strategy and architecture
  - HP Start-up and Implementation services
  - HP Integrity services and support

- Comprehensive customer programs
  - 1 to 1; 1 to many.
  - International Customer Executive Council, Technical Advisory Forums, Meet the Customer Forums...

- Industry-leading products
  - Industry-standard architecture approach across multiple operating systems
  - Incredibly reliable, flexible systems to meet our customer’s needs

- Complimentary services & tools
  - Robust porting, planning, and deployment tools
  - Solution stack assessment
  - Consulting Sessions and Transition Workshops
  - HP Demo Centers, HP-Intel Solution Centers (proof-of-concept)

www.hp.com/go/ART
HP OpenVMS on Integrity Servers
Legendary security, availability, data integrity and easily-managed solutions to real business problems at the right price.

HP OpenVMS has always had integrity

Now HP Integrity servers have OpenVMS