



**Exceed business
expectations**

OpenVMS continues to be an exceptionally robust and flexible operating system. We're delivering on our promise of excellence.

Your success depends on application availability and uptime

Your organization requires a superior IT infrastructure, one that serves your crucial business processes while providing scalability, security, and reliability for the applications that support those mission-critical workloads. You also need systems that deliver strong return on investment (ROI) and have the ability to integrate with your existing IT environment. It is also important to capitalize on virtualization, security, systems management, and business continuity.

VSI OpenVMS V8.4-1H1 can deliver on those requirements. While most enterprise-class IT environments measure uptime in days, weeks, or months, customers using OpenVMS environments regularly characterize uptime in terms of years. OpenVMS has been one of the leading operating systems in the industry, delivering superior application availability—with an appropriately configured cluster—and managing large volumes of information reliably.

Capitalize on performance improvements, binary compatibility, robust security mechanisms, high uptime, attractive licensing policies, and best-in-class total cost of ownership benefits with the latest generation of HP Integrity servers running VSI OpenVMS V8.4-1H1.

What is new with VSI OpenVMS V8.4-1H1?

With the latest release of OpenVMS, VSI demonstrates its commitment to developing technologies that accelerate your business growth, lower your costs, and mitigate your risks.

VSI OpenVMS V8.4-1H1 provides:

Support for HP Integrity i4 servers

VMS Software, Inc. is continuing the development prowess and customer-first approach that are so closely associated with the OpenVMS operating system. VSI has assembled a team of veteran OpenVMS developers, many from the core DEC/Compaq/HP teams responsible for the technical excellence that has been the hallmark of OpenVMS. This dedicated team brings you VSI OpenVMS V8.4-1H1, a release that enables support for HP Integrity i4 servers based on the Intel® Itanium® Processor 9500 Series.

With an increase in the number of cores per socket, you can expect enhanced performance. On the HP Integrity rx2800 i4 server, you can expect up to 3.5x performance, 21 percent less energy consumption, and 33 percent lower total cost of ownership (TCO).¹ Additionally, with the per-socket-based licensing, you can reduce your license costs significantly.

Clusters over TCP/IP

Use of industry-standard TCP/IP networking brings efficiencies to cluster interconnect technology, reducing the need to route dedicated system communications services traffic over costly LAN bridging or Layer 2 services.

LAN convergence with Flex-10 technology

Reduce management requirements, the number of NICs and interconnect modules needed, and power and operational costs by configuring a single 10GbE port to represent four FlexNICs.

Volume shadowing with an increase of up to six member disks

With an increase to six supported shadow sets, a balanced multi-site cluster can be designed with either:

- Two sites with three disks per site
- Three sites with two disks per site

These options meet one of the leading-edge design standards for disaster-tolerant storage configurations today. In addition, enhancements to the minicopy and minimerge functions improve availability by reducing the time needed to write a copy of the data to disk and synchronizing or merging data following a disk failure.

Improved performance

Compile and link tests performed on HP Integrity i4 servers running OpenVMS V8.4-1H1 execute 31 percent faster than the same tests performed on HP Integrity i2 servers running OpenVMS V8.4-1H1.²

Robust security

Strengthen the use of the Secure Sockets Layer (SSL) protocol with a refresh based on the new opentls.org base level—0.9.8 stream. In addition, improve authentication using Lightweight Directory Access Protocol (LDAP) by adding the mapping of the login name to the VMS username in an Active Directory environment.

Two operating environments

A streamlined operating environment (OE) portfolio offers two OEs—base OE and high availability OE—to better match your business requirements.

¹www8.hp.com/us/en/products/integrity-servers/product-detail.html?oid=5330448

²Internal test, VMS Software, Inc., May 2015

“We can’t allow much more than five minutes of downtime, which is why we have always relied on HP OpenVMS for its reliability, fault tolerance, and robust clustering capabilities.”

– Kay Belke, Software Engineer, Fraport AG
(parent company of Frankfurt Airport)

“Our use of OpenVMS goes back more than 15 years with the inauguration of our FX trading platform. We selected OpenVMS because it was and continues to be the leading distributed OS. OpenVMS provides robust reliability and DR capabilities and built-in networking, as well as the tools to customize components of the system to effectively solve our unique architectural challenges.”

– Rob Perez, Head of FX Development,
ICAP Electronic Broking

Performance from new HP Integrity i4 servers

OpenVMS V8.4-1H1 is available on the new HP Integrity BL8x0c i4 Server Blades, as well rackmount HP Integrity rx2800 i4 systems, all equipped with the Intel Itanium Processor 9500 Series. With VSI OpenVMS V8.4-1H1 on the HP Integrity i4 servers you can expect to see a considerable performance improvement over the previous generation HP Integrity i2 servers. Tests conducted on OpenVMS V8.4-1H1 with HP Integrity i4 servers reported lower memory latency (ranging from 18 percent to 56 percent) and greater memory bandwidth (ranging from 62 percent to 143 percent).³ Servers featuring Intel Itanium Processor 9500 Series contain double the core-count of the Intel Itanium Processor 9300 Series. As a result, smaller systems can process the same workload, helping you realize greater capital and operating expenditure benefits.

VSI OpenVMS V8.4-1H1—a solid foundation for your business

OpenVMS remains the operating system of choice for businesses—financial service firms and stock exchanges, manufacturing plants, telecommunications providers, government agencies, and health care offices—that require high uptime, scalability to millions of users, and ease of manageability. VSI OpenVMS V8.4-1H1 support for Integrity i4 servers is proof of our dedication to developing technologies that allow your organization to build a stable, rock-solid infrastructure—giving you the confidence to respond quickly and efficiently to the demands of a dynamic environment.

OpenVMS V8.4-1H1 draws on over 30 years of nearly continuous evolution and improvement to build upon the same inherent qualities since the inception of OpenVMS, including:

Stay competitive with high application availability

OpenVMS delivers comprehensive, system-wide application and data availability. This type of seamless business continuity enhances productivity, enriches customer loyalty, and supports your revenue streams. OpenVMS has pioneering and industry-leading clustering, enabling continuous sharing and balancing of an application and its workload among all nodes in a cluster, resulting in superior application uptime. OpenVMS clustering technology provides support of up to 96 nodes that can span a distance of 500 miles or 800 kilometers. These cluster nodes act as “one system,” so an application can operate across multiple nodes simultaneously. If one node fails, another node can seamlessly take over the workload. OpenVMS provides availability in multiple ways, including clustering, host-based volume shadowing, and transaction- and message-based shadowing.

Expand and extend instantly as your business grows

Due to its flexible operating system design, OpenVMS can scale out or scale up depending on workload demands. If the workload is increasing, you can scale out by adding another node to the cluster—with no interruption to the rest of the cluster—or scale up to support Integrity eight-socket server blades with 32 cores and 64 hyperthreads.

Simplify your system management and maintenance

Due to the unique design of OpenVMS, an entire cluster can be managed as one node—from any point in the cluster or even remotely—so fewer resources are required to maintain OpenVMS systems. When the nodes are using shared disks, system software, management utilities, patches, and commands are implemented only once at a node and take effect across the entire system.

This implies reduced TCO and maintenance of nodes—especially important if there are a large number of nodes.

Security that is reassuring

OpenVMS is secure by design and has earned a reputation as being one of the most secure operating systems commercially available.⁴ As an example, OpenVMS has recorded one of the lowest number of Computer Emergency Response Team (CERT) advisories over a 10-year period compared to other operating systems. Offering multi-level security, OpenVMS provides different layers of security with each layer requiring its own credentials to gain certain privileges. A breach in one layer does not compromise another layer. OpenVMS security is highly configurable to enable the end user to achieve the level of security required.

OpenVMS offers industry-leading clustering, industry-leading uptimes (measured in years), and world-class security (significantly lowers TCO) unparalleled in the industry. It was designed from day one as a multi-user system with the aim of making it crash proof by using four access modes (user, supervisor, exec, and kernel), which acts like an internal firewall to isolate trusted system code from untrusted user code that limits the impact of bugs and malicious intent.

³ Internal test, VMS Software, Inc., May 2015

⁴ A search of Common Vulnerabilities and Exposures (CVE) at NIST’s CVE and Common Configuration Enumeration CCE Vulnerability Database with keyword OpenVMS indicates this. Visit: web.nvd.nist.gov/view/vuln/search-advanced?cid=4

Rely on VSI OpenVMS V8.4-1H1

VSI OpenVMS V8.4-1H1 is designed to perform under the most extreme conditions. Its capacity for transaction support, reliability, and security are among the proven benefits that you can rely on anytime, anywhere. That means you can shift the focus of your time and talent to other operations necessary for the success of your business.

The high uptime of OpenVMS, rock-solid reliability, virtually bulletproof security, and almost limitless scalability keep numerous enterprises up and running. Our continued enhancements to HP OpenVMS, such as those in OpenVMS V8.4-1H1, underscore our commitment to the technology and therefore our clients who rely on us. We want to evolve with their businesses.

Developing solutions for major social and environmental challenges

hp.com/hpinfo/globalcitizenship

The core of your next-generation data center

HP Converged Infrastructure strategy helps organizations synchronize business and IT to capitalize upon change, bringing together the storage, networking, virtualization, and management software needed to create the next-generation data center that operates efficiently and effectively.

OpenVMS plays an important role in the converged infrastructure portfolio, providing organizations the highly available, stable foundation required for important enterprises. Key focus areas for OpenVMS in a converged infrastructure environment include:

- **Unified blade architecture**

OpenVMS V8.4-1H1 supports the new HP Integrity i4 blade servers. The blade scale architecture includes a common, modular platform for a uniform way to connect to networks and to manage all blade parameters, including energy utilization.

- **Mission-critical HP FlexFabric**

OpenVMS V8.4-1H1 supports scalable blade links, which combine multiple blades into a single scalable system. HP Virtual Connect support is available for OpenVMS V8.4-1H1.

HP Technology Services

Our services deliver confidence, reduce risk, and help customers realize agility and stability. With expertise in different operating systems and every major technology, we are uniquely positioned to provide consistent, global, end-to-end support.

With HP Foundation Care Services, you enjoy support that is simple, affordable, scalable, and personal. As easy to buy as HP Care Pack Services, it encompasses a streamlined selection of standardized service levels to help you resolve your problems faster and keep your business running. Foundation Care Services supports all HP enterprise technologies—including servers, storage, and networking products—as well as industry leading software from Microsoft®, Red Hat®, SUSE, OpenVMS, Ubuntu, VMware®, and others. hp.com/services/foundationcare

HP Proactive 24 Service provides proactive and reactive support, delivered under the direction of an account support manager. The support includes an assigned account team, remote monitoring, an account support plan, 24x7 hardware support with four-hour onsite response, 24x7 software support with two-hour response, and flexible call submittal. Customer incidents are addressed 24x7, 365 days a year. hp.com/services/proactivecare

HP Critical Service (CS) is for environments where downtime cannot be tolerated. It offers an integrated set of proactive and reactive services and utilizes an IT Infrastructure Library (ITIL)-based framework of proven, integrated processes to help improve availability and performance across your IT infrastructure. CS provides an assigned account team composed of highly trained IT professionals that address issues, mitigate risks, and reduce incidents.

HP Datacenter Care delivers the experience you need for your New Style of IT, accelerates innovation as you free up your resources, facilitates transitions to hybrid IT, improves IT stability as you reduce complexity and risk in the data center, increases the value of IT to the business with support aligned to your business and budget needs, and reduces critical outages while optimizing performance and operational efficiency. hp.com/services/support

HP Storage Services portfolio helps you manage, enhance, reduce costs, and streamline your storage environments. hp.com/services/storage

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