



## HP OpenVMS Version 8.3 for AlphaServer and Integrity server systems New Features and Benefits

HP OpenVMS Version 8.3 introduces support for the newest entry-level, mid-range, and high-end Integrity server systems based on the latest generation of Industry standard Itanium processors from Intel, including the BladeSystem c-Class (BL860c). This new release continues support for all of the Integrity servers and options supported in OpenVMS Versions 8.2 and 8.2-1.

OpenVMS Version 8.3 includes all the capabilities of OpenVMS Version 8.2 and Version 8.2-1 plus new features added to the OpenVMS operating system.

OpenVMS Version 8.3 includes expanded cluster configuration support as well as performance and scalability enhancements. OpenVMS Version 8.3 also includes updates for security and standards, and enhanced Adaptive Enterprise support.

OpenVMS Version 8.3 began shipping in H2 2006, and is a replacement for OpenVMS Version 8.2 on Alpha and Version 8.2-1 on Integrity servers. Standard support for OpenVMS Version 8.2 on Integrity systems ended on December 31, 2006. OpenVMS Alpha Version 7.3-2 began Prior Version Support (PVS) on December 31, 2006.

This document describes the new features and enhancements included in OpenVMS Version 8.3 for AlphaServer and Integrity server systems and associated products.

**Note: The information included in this document is subject to change.**

**June 01, 2007**

<b>Warranted Pairs, Migration Support and Upgrade Paths</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Supported v8.3 Upgrade Paths and Warranted Configurations:</b></p> <ul style="list-style-type: none"> <li>• Supported v8.3 Upgrade Paths:               <ul style="list-style-type: none"> <li>• Alpha: from v7.3-2 or v8.2</li> <li>• Integrity: from v8.2 or v8.2-1</li> </ul> </li> <li>• Warranted configurations:               <ul style="list-style-type: none"> <li>• v8.3 Alpha and v8.3 Integrity</li> <li>• v7.3 VAX and v8.3 Alpha</li> </ul> </li> <li>• Migration support:               <ul style="list-style-type: none"> <li>• v7.3-2 Alpha, v8.2 Alpha</li> <li>• v8.2 Integrity, v8.2-1 Integrity</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Increases agility</li> <li>• Retains high RoIT</li> <li>• Improves scalability</li> </ul>

<b>System Support</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>OpenVMS support for the newest Integrity server systems including new entry level, mid-range and high-end systems, which are based on the latest generation of Industry standard Itanium processors.</b></p> <ul style="list-style-type: none"> <li>• BL860c Server Blade (2P/2C; 2P/4C); 1.6GHz/6MB, 1.4GHz/12MB, 1.6GHz/18MB</li> <li>• rx2620, 2P/4C; 1.4Ghz/12MB; 1.6Ghz/18MB</li> <li>• rx2660, 2P/4C; 2P/2C; 1.4Ghz/12MB, 1.6GHz/18MB, 1.6GHz/6MB</li> <li>• rx3600, 2P/4C; 1.4Ghz/12MB; 1.6Ghz/18MB</li> <li>• rx6600, 4P/8C; 1.4Ghz/12MB; 1.6Ghz/18MB; 1.6Ghz/24MB</li> <li>• rx4640, 4P/8C; 1.6Ghz/18MB; 1.6Ghz/24MB</li> <li>• rx7640, 8P/16C; 1.4Ghz/12MB; 1.6Ghz/18MB</li> <li>• FAST Bundle: rx7640 2-, 4 , 8-, 12- and 16-core SMP Base Systems</li> <li>• rx8640, 16P/32C; 1.4Ghz/12MB; 1.6Ghz/18MB; 1.6Ghz/24MB</li> <li>• FAST Bundle: rx8640 4-, 8-, 16-, 24- and 32-core 1.6Ghz/24MB SMP Base Systems</li> <li>• Superdome/sx2000, 64P/128C - maximum nPAR partition size 4 Cells; 1.6Ghz/18MB; 1.6Ghz/24MB; maximum 126Gb memory per cell</li> </ul>	<ul style="list-style-type: none"> <li>• Provides customers with the ability to run their OpenVMS applications on the latest Industry Standard HP Integrity servers</li> <li>• Run increased workloads over earlier versions of Integrity servers</li> <li>• Provides ability to consolidate systems and reduce footprint in labs</li> </ul>
<p><b>DVD Record:</b></p> <ul style="list-style-type: none"> <li>• Provides capability on OpenVMS Alpha and Integrity systems to record to CD-R, CD-RW, DVD+R and DVD+RW media on specific drives and configurations</li> </ul>	<ul style="list-style-type: none"> <li>• Permits OpenVMS users to easily and directly record locally mastered disk volumes or disk image files onto a CD-R, CD-RW, DVD+R, or DVD+RW optical-media recording device</li> </ul>
<p><b>Continued support of Integrity Servers supported in OpenVMS v8.2-1 and v8.2:</b></p> <ul style="list-style-type: none"> <li>• rx1600 2P/2C; 1.0 GHz</li> <li>• rx1620 1.6GHz/3MB 267FSB (DP)</li> <li>• rx1620 1.3GHz/3MB (DP)</li> <li>• rx2600 2P/2C; 1.0, 1.3, 1.4, 1.5 GHz</li> <li>• rx2620 1.6GHz/3MB (DP)</li> <li>• rx2620 1.3GHz/3MB (DP)</li> <li>• rx2620 1.6GHz/6MB</li> <li>• rx4640 4P/4C; 1.3, 1.5 GHz</li> <li>• rx4640 8P/8C (dual-core); 1.1 GHz</li> <li>• rx4640 1.5GHz/4MB</li> <li>• rx4640 1.6GHz/6MB</li> <li>• FAST Bundle: rx4640 4CPU confiig 1.6GHz/9MB</li> <li>• rx7620: 2 cell, 8P/8C; 1.5 GHz/4MB, 1.6GHz/6MB, 32GB memory per cell</li> </ul>	<ul style="list-style-type: none"> <li>• Provides customers with investment protection through the ability to continue to run their OpenVMS applications on previously supported Integrity servers</li> </ul>

<b>System Support</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<ul style="list-style-type: none"> <li>FAST Bundle: rx7620, 2-, 4-, 6- and 8-core SMP Base System</li> <li>rx8620; 4 cell, 16P/16C; 1.5 GHz/4MB, or 1.6GHz/6MB, 32GB memory per cell</li> <li>FAST Bundle: rx8620, 2-, 4-, 8-, 12-, and 16-core SMP Base System</li> <li>Superdome: Hard partitions of 4 cells; 1.6/9MB, 64GB memory per cell</li> <li>Superdome/sx1000, 64P, 64C; maximum nPAR partition</li> </ul>	

<b>Performance and Scaling Enhancements</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Shared Address Data</b></p> <ul style="list-style-type: none"> <li>Provides shared address data functionality on Integrity servers equivalent to that on AlphaServers</li> </ul>	<ul style="list-style-type: none"> <li>Provides improved performance on Integrity servers by reducing memory use and image activation time</li> </ul>
<p><b>System Service Interception</b></p> <ul style="list-style-type: none"> <li>Allows an Integrity application to supply pre- and post-processing routines that run before and after each system service it requests</li> </ul>	<ul style="list-style-type: none"> <li>Improves performance of debugger watch points</li> <li>Enables an application to alter system service arguments</li> <li>Enables an application to alter some system service behavior</li> </ul>
<p><b>RMS Global Buffers in P2 Space</b></p> <ul style="list-style-type: none"> <li>Maps RMS global buffers for indexed files to P2 (64-bit address) space to remove per-process limit of less than 1 GB.</li> <li>Increases per-file max size for global cache from signed word (32767) to a signed longword (2.1 billion) for RMS indexed files</li> <li>Allows automatic dynamic calculation of global buffer count based on file size at initial open</li> </ul>	<ul style="list-style-type: none"> <li>Improves overall scalability and performance of RMS global buffers for RMS indexed files</li> <li>Customers no longer need to worry about insufficient Virtual Address space for RMS global buffers</li> <li>Relieves customers from having to re-evaluate buffer counts as files grow</li> </ul>
<p><b>Move code GH region to S2</b></p> <ul style="list-style-type: none"> <li>Moves the GH_RES_CODE huge pages from 32-bit addressable S0/S1 space to 64-bit addressable S2 space</li> </ul>	<ul style="list-style-type: none"> <li>Frees up some of the scarce S0/S1 space</li> <li>Allows installation of larger and many more images using /RESIDENT qualifier</li> </ul>

<b>Storage, I/O, and LAN</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Multipath Enhancement for Active-Active Feature of EVA and MSA Controllers</b></p> <ul style="list-style-type: none"> <li>Allows multipath to make correct path selection (prefer active optimized path over an active non-optimized path) for devices connected to EVA XL controller</li> </ul>	<ul style="list-style-type: none"> <li>Improves I/O performance</li> <li>Performance improvement will vary depending on I/O size and queue depth; the longer the queue depth, the greater the improvement users will notice</li> </ul>
<p><b>Support for New 4Gb Fibre Channel adapters for Integrity servers</b></p>	<ul style="list-style-type: none"> <li>Improved storage performance with new SAN technology</li> </ul>

<b>Storage, I/O, and LAN</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
	<ul style="list-style-type: none"> <li>Allows full-speed connectivity to 4Gb-capable switches and arrays</li> <li>Allows for connectivity to existing 2Gb SAN configurations</li> </ul>
<b>PCIe</b>	<ul style="list-style-type: none"> <li>Supports higher bandwidth technologies such as SAS, 4GB Fiber Channel, and 10GB Ethernet</li> </ul>
<b>Terminal MUX Driver for USB</b> <ul style="list-style-type: none"> <li>Provides way to add additional serial lines to an Integrity server without the need for a PCI options card</li> <li>Provides drivers for USB-based serial devices that utilize specific chipsets</li> </ul>	<ul style="list-style-type: none"> <li>Provides serial connectivity similar to what is available on AlphaServers but without requiring a PCI slot</li> </ul>
<b>VLAN (Virtual LAN)</b> <ul style="list-style-type: none"> <li>Adds VLAN support to LAN drivers</li> <li>Allows LAN domain to be segmented in smaller broadcast domains or segments called VLANs</li> <li>Only hardware which provides VLAN hardware assist will be supported</li> <li>The LAN drivers for the full range of Gbit NICs supported by OpenVMS</li> </ul>	<ul style="list-style-type: none"> <li>Allows more flexibility in configuring and designing networks</li> <li>Simplifies switch configuration</li> <li>Reduces system complexity by reducing the number of NICs required for connectivity</li> <li>Allows implementation of site security policies based on VLANs</li> <li>Increases ability for OpenVMS systems to coexist with other systems on the network</li> </ul>
<b>LAN Failover Improvements</b> <ul style="list-style-type: none"> <li>Enhancements provide: <ul style="list-style-type: none"> <li>failover priority implementation</li> <li>removal of multicasting restriction</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves performance and manageability for LAN failover sets</li> </ul>
<b>Gbit Dynamic Interrupt Mitigation</b> <ul style="list-style-type: none"> <li>Drivers dynamically adjust the interrupt mitigation parameters allowing driver to change behavior of each NIC according to the current load</li> </ul>	<ul style="list-style-type: none"> <li>Improves performance under variable load conditions</li> </ul>
<b>10 Gigabit Ethernet for I64</b> <ul style="list-style-type: none"> <li>Support for the AB287A 10 Gigabit PCI-X LAN adapter. The AB287A connects to a LAN operating at 10 gigabits per second in full-duplex mode</li> </ul>	<ul style="list-style-type: none"> <li>Increases network performance</li> <li>Sustains throughput close to the bandwidth offered by the PCI or PCI-X slot into which it is installed</li> </ul>
<b>(SAS) Serial Attached SCSI</b> <ul style="list-style-type: none"> <li>Support for Serial Attached SCSI as the primary local disk interconnect for some new Integrity Server systems</li> <li>Supports direct-attached SAS disk and Integrated RAID 1</li> <li>SAS HBA options will ship with 8 internal ports</li> </ul>	<ul style="list-style-type: none"> <li>Provides a high performance, low-cost storage solution</li> <li>Integrated RAID 1 (mirroring) functionality</li> </ul>

<b>Clusters and Shadowing</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Cluster Satellite Boot for Integrity</b></p> <ul style="list-style-type: none"> <li>• Provides support for Integrity-to-Integrity satellite booting</li> <li>• Any currently-supported Integrity system can be used as a boot server</li> <li>• Cross-architecture booting (booting an Integrity satellite node from an Alpha boot server and vice-versa) will not be supported</li> </ul>	<ul style="list-style-type: none"> <li>• Full cluster feature capability on Integrity servers as on AlphaServers</li> </ul>
<p><b>PE Driver Data Compression</b></p> <ul style="list-style-type: none"> <li>• Reduces number of bits being moved between sites by compressing data</li> </ul>	<ul style="list-style-type: none"> <li>• Provides improved performance for moving large amounts of data over cluster communications such as during shadow merges and copies</li> <li>• Improves performance for Disaster Tolerant sites</li> </ul>
<p><b>PE Driver Multi-Gbit Scalability</b></p> <ul style="list-style-type: none"> <li>• Replaces PE driver's current hard coded transmit and receive VC window sizes with auto calculated sizes based on bandwidth of LAN paths between two nodes</li> <li>• Provides interfaces for SCACP &amp; AM management control/over-ride of automatic sizes</li> <li>• Adds display of management window size settings and new size modifiers to SCACP's SET VC command.</li> <li>• Adds a CALCULATE WINDOW_SIZE command to SCACP</li> </ul>	<ul style="list-style-type: none"> <li>• Improves performance and scalability</li> </ul>
<p><b>Lock Re-mastering Improvements</b></p> <ul style="list-style-type: none"> <li>• Provides more control over lock re-master decision making with the new LOCKRMWT system parameter</li> <li>• Remote activity thresholds necessary to move a tree are now computed based on local activity rates</li> </ul>	<ul style="list-style-type: none"> <li>• Provides greater control of application performance within an OpenVMS cluster</li> <li>• Reduces the possibility of lock trees thrashing between nodes in an OpenVMS cluster</li> </ul>
<p><b>Host Based Volume Shadowing Automatic MiniCopy</b></p> <ul style="list-style-type: none"> <li>• Enhances the ability of HBVS</li> <li>• Combines existing features in HBVS, host based mini merge (HBMM) and HBVS mini copy</li> <li>• Creates a MiniCopy bitmap when members are removed due to a loss of connectivity between sites</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces time it takes to complete copy operations</li> <li>• Higher availability for shadow sets</li> <li>• Increased I/O Performance</li> </ul>

<b>Security</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Secure Software Delivery</b></p> <ul style="list-style-type: none"> <li>• Provides capability to create a digital signature (manifest file) for any file</li> <li>• Provides ability to validate a file using the digital signature</li> </ul>	<ul style="list-style-type: none"> <li>• Increases security and integrity of downloaded kits</li> <li>• Secure Delivery integration into PCSI ensures that layered products and OpenVMS patches that are delivered as</li> </ul>

<b>Security</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<ul style="list-style-type: none"> <li>Used in OpenVMS V8.3 to protect software product kits</li> </ul>	<ul style="list-style-type: none"> <li>signed kits can be installed with the assurance that they have not been tampered with</li> </ul>
<p><b>ACME Login</b></p> <ul style="list-style-type: none"> <li>New LOGINOUT and SET PASSWORD images that utilize the SYS\$ACM system service and ACME-SERVER process to provide user authentication services and password changes</li> </ul>	<ul style="list-style-type: none"> <li>Extends existing external authentication functionality with new authentication agents such as the LDAP ACME agent, a Kerberos KDC, or a user defined authorization source</li> </ul>
<p><b>LDAP ACME</b></p> <ul style="list-style-type: none"> <li>New LDAP ACME agent providing LDAP directory-based password authentication</li> </ul>	<ul style="list-style-type: none"> <li>Standard LDAP directory-based password authentication provides a global authentication policy across systems using external authentication</li> </ul>
<p><b>Kerberos Version 3.0 for OpenVMS (based on MIT Kerberos V5 Release 1.4.1.)</b></p> <ul style="list-style-type: none"> <li><b>Kerberos ACME agent</b>—Provides Kerberos credentials as part of the OpenVMS login process. The user authentication is processed against Kerberos’s KDC database instead of OpenVMS User Authorization File</li> <li><b>Support AES Encryption</b>—Kerberos for OpenVMS now includes support for AES (Advanced Encryption Standard)</li> <li><b>Support for Kerberized SSH</b>—Enable functionality for SSH to interface with Kerberos. Kerberized SSH allows you to use Kerberos credentials with your SSH (secure shell) connection</li> <li><b>TCP Support in Client Libraries</b>—Kerberos for OpenVMS includes TCP support in client libraries. This is a Microsoft interoperability enhancement for tickets with a great deal of PAC data</li> </ul>	<ul style="list-style-type: none"> <li>Provides OpenVMS system managers with additional flexibility</li> <li>Allows consolidation of user databases so multiple OpenVMS systems/clusters can be configured to automatically use single KDC for user authentication</li> </ul>
<p><b>AES Encryption &amp; Integration into Operating System</b></p> <ul style="list-style-type: none"> <li>Encryption for OpenVMS is updated with a new symmetric encryption algorithm, Advanced Encryption Standard (AES)</li> <li>Encryption integrated into OpenVMS Operating System replacing currently shipping stub library</li> </ul>	<ul style="list-style-type: none"> <li>AES is accepted by the US government as an approved standard (FIPS 197) for protecting sensitive data</li> <li>Allows customers to protect their data and keep it confidential</li> <li>New AES functionality allows encryption of files with 128, 192 or 256 bit key lengths in ECB, CBC, CFB, and OFB modes</li> <li>Program APIs support DES and AES</li> <li>Full backward compatibility and functionality with the DES algorithm for BACKUP/ENCRYPT of save-sets</li> </ul>

<b>UNIX Portability</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<b>Symbolic Link and POSIX-Compliant Pathname Support</b> <ul style="list-style-type: none"> <li>Provides Open Group compliant symbolic links support and POSIX-compliant pathname support on OpenVMS</li> <li>RMS and CRTL have been modified to understand POSIX-compliant pathnames</li> </ul>	<ul style="list-style-type: none"> <li>Makes it easier for partners and customers who port UNIX and LINUX applications to OpenVMS or who use a UNIX style development environment to reduce the application development costs and complexity previously associated with such porting efforts</li> </ul>
<b>Byte Range Locking</b> <ul style="list-style-type: none"> <li>Implements Open Group's standard byte range locking functionality into OpenVMS through addition of new sub-commands to an existing API and existing module</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<b>GNV Update</b> <ul style="list-style-type: none"> <li>Relevant GNV utilities such as ln (which can create a symbolic link) and ls (which can display the contents of a symbolic link) are updated to provide access to and management of symbolic links</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>

<b>Virtualization and Utility Pricing</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<b>Pay Per Use (PPU) Support:</b> <ul style="list-style-type: none"> <li>For HP OpenVMS Integrity cell based servers that are leased with HP Finance</li> <li>This program ensures customers only pay for the CPU cycles actually consumed</li> <li>Usage is monitored 24x7 and data sent to a separate Metering Agent which in turn communicates with the HP PPU Web Portal</li> <li>After 48 hours the customer can obtain various reports, a complete breakdown of CPU usage, and the costs incurred</li> </ul>	<ul style="list-style-type: none"> <li>Provides metered resource utilization on cell based HP OpenVMS Integrity systems.</li> <li>Utilization can be either actual percentage of utilization of each CPU, known as <i>Percent CPU</i>, or count of the number of active CPUs in the system at any given moment, known as <i>Active CPU</i></li> <li>Can realize significant lease cost savings</li> <li>For increased workloads or CPU failures, idle CPUs can be turned on instantly without taking down the system</li> <li><i>Percent CPU</i> ensures all CPUs are active for good response, but customer is only charged for cycles used</li> <li>In any one month the customer will not pay for more than 105% of the standard lease no matter how much the CPU population is utilized</li> <li>Over the full term of the lease – three or four years as initially specified by the customer – the customer will not pay more than 100% of the standard lease - guaranteed</li> <li>Customer has complete billing information breakdown and can therefore charge Business Units accordingly</li> </ul>

<b>Virtualization and Utility Pricing</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
	<ul style="list-style-type: none"> <li>Disaster Recover Scenario: Make significant savings if a system is maintained as a hot or cold standby system. Utilizing <i>Active CPU</i>, only one of the CPUs in the standby system need be active. Activate the rest of the CPU population only when required in the event of an emergency.</li> </ul>
<p><b>iCAP and TiCAP</b></p> <ul style="list-style-type: none"> <li>Instant Capacity on Demand (iCAP) provides the ability to instantly increase installed processing capacity on specified HP OpenVMS Integrity call based servers that are purchased outright</li> <li>Customers purchase an HP OpenVMS Integrity server with a specified number of active and deactivated (iCAP) CPUs (the latter at 25% of List Price)</li> <li>Prior to activation, a Right To Use (RTU) license must be purchased from HP and an encrypted codeword obtained from the HP iCAP Web Portal</li> <li>Upon registering the codeword on the system the specified number of CPUs are <u>permanently</u> activated</li> <li>Temporary capacity (TiCAP) licenses can also be purchased to temporarily activate iCAP CPUs in increments as low as 30 minutes</li> <li>Each TiCAP license constitutes 30 CPU days and may be spread across the whole iCAP population if required</li> </ul>	<ul style="list-style-type: none"> <li>Reduces initial capital expenditure costs if the full CPU population is not required at the beginning</li> <li>Component Without Usage Rights (CWUR) license allows access to additional processing capacity on an as-needed basis</li> <li>Activate iCAP CPUs only when workloads demand greater throughput</li> <li>Pay for the iCAP CPUs at the current price, thereby realizing savings due to ongoing CPU price erosion</li> <li>Instantly activate iCAP CPUs without taking down the system</li> <li>Instantly activate an iCAP CPU if an active CPU 'goes bad' without any cost penalty</li> <li>Disaster Recover Scenario: Make significant savings if a system is maintained as a hot or cold standby system. All but one of the CPUs in the standby system can be iCAP CPUs, turned on with a TiCAP license only when required in the event of an emergency.</li> </ul>

<b>Networking</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>HP TCP/IP Services for OpenVMS v5.6 Enhancements:</b></p> <ul style="list-style-type: none"> <li><b>NFS Server Support for Integrity servers</b>– Includes NFS server support for OpenVMS Integrity servers</li> <li><b>NFS Client TCP Support</b>–NFS client TCP support added; allows NFS clients, as well as the server, to run over TCP in addition to the more traditional UDP mode of operation.</li> <li><b>NFS Symbolic Link Support</b>–NFS server is able to recognize symbolic links and create them as necessary</li> <li><b>SCP/SFTP</b>–Preserves OpenVMS file attributes</li> </ul>	<ul style="list-style-type: none"> <li>Provides NFS server support on Integrity server platforms</li> <li>Useful to customers when mounting filesystems across a Wide Area Network or traversing a firewall</li> <li>Recognizes symbolic links</li> <li>OpenVMS SSH file attributes are supported</li> </ul>



<b>Networking</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p>(customer issues on VMS SSH file formats not being supported on both client and server)</p> <ul style="list-style-type: none"> <li>• <b>TCP/IP\$CONFIG.COM enhancements</b>– failsafe IP</li> <li>• <b>SSH upgrades with Kerberos support</b>– Introduces support for Kerberos. The SSH password authentication method has been enhanced to support Kerberos. Three new SSH authentication methods based on Kerberos are now supported: gssapi-with-mic, Kerberos-2@ssh.com, and Kerberos-tgt-2@ssh.com</li> <li>• <b>DNS/BIND 9 resolver and version 9.3.1 server Updates</b>–New version of BIND resolver, including the ability to resolve DNS entries via the IPv6 transport. New version of BIND server brings several incremental improvements related to security and stability</li> <li>• <b>NTP Security Update (SSL)</b>–New features offer cryptographic security</li> <li>• <b>SMTP Multi-Domain Zone</b>–SMTP will now recognize more than one domain name for direct local delivery</li> <li>• <b>TELNET Upgrade with Kerberos Support</b>–TELNET server and client are now supported with the upgraded Kerberos version that ships with OpenVMS Version 8.3</li> <li>• <b>TELNET Server Device Limit</b>–Telnet server is no longer limited to 9999 sessions or TN devices</li> <li>• <b>IPv6 Support for LPD and TELNETSYM</b>–LPD and TELNETSYM printing software allow you to print via the IPv6 transport</li> <li>• <b>FTP Performance Enhancement for VMS Plus Mode</b>–Streamlined the FTP service, specifically for the case where both server and client are OpenVMS systems</li> <li>• <b>Improved Interface Configuration in TCPIP\$CONFIG</b>–The menu-driven process of defining local interfaces and IP addresses has been significantly reworked to provide better support for failsafe IP</li> <li>• <b>Encryption for OpenVMS is now installed as part of the OpenVMS installation</b>–The menu-driven process of defining local interfaces and IP addresses has been significantly reworked</li> </ul>	<p>on both client and server.</p> <ul style="list-style-type: none"> <li>• Provides IP failover enhancements</li> <li>• Three new Kerberos SSH password authentication methods have been added to improve SSH password authentication</li> <li>• Provides thread safety and communication with the BIND Server over IPv6 connections</li> <li>• Improves security and stability</li> <li>• Improved cryptographic security</li> <li>• Enhances the protection against an attacker trying to compromise the accuracy of your system clock</li> <li>• Provides Kerberos support for TELNET server and client</li> <li>• More Telnet server sessions available</li> <li>• Provides IPv6 printing capability</li> <li>• FTP performance improvement</li> <li>• Customer installations are improved by adding menu driven process for interface configuration</li> <li>• Customer installs are improved by adding encryption menu driven process</li> <li>• Provides better support for failsafe IP</li> </ul>

<b>System Management</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>OpenView Performance Agent (OVPA)</b></p> <ul style="list-style-type: none"> <li>• HP OpenView Performance Agent (OVPA) is the collection, logging and alarming component of the HP OpenView Performance family. With its powerful end-to-end application response measurement capabilities, OVPA is the core enabling technology in any performance management, resource planning, and service management strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Low overhead, continuous collection and logging of more than 300 global process, application, and system metrics</li> <li>• Sophisticated alarming on combinations of metrics, user definable symptoms, and by the length of time a threshold value has been exceeded</li> <li>• Full support for the Application Response Measurement (ARM) standard for end-to-end management</li> <li>• Easy integration of data from any external source using built-in Data Source Integration (DSI) technology</li> <li>• Ability to export data in several standard formats, to generate and send SNMP based alarms, and to generate local actions triggered by alarms</li> <li>• Provides a standalone solution with OpenView Performance</li> <li>• Manager and OpenView Reporter</li> <li>• Provides integration with OpenView Operations and Network Node Manager</li> </ul>
<p><b>WBEM Infrastructure and nPAR Provider</b></p> <ul style="list-style-type: none"> <li>• Required for iCAP, TiCAP, and PPU</li> <li>• Web-Based Enterprise Management (WBEM) is an industry standard for monitoring and controlling resources</li> <li>• The nPar WBEM Provider supports initial and ongoing configuration of cellular systems</li> </ul>	<ul style="list-style-type: none"> <li>• Provides flexibility to configure and re-configure computing resources based upon changing needs and requirements</li> </ul>

<b>e-Business and Integration</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Web Services Integration Toolkit (new product)</b></p> <ul style="list-style-type: none"> <li>• Set of tools can expose legacy application logic as part of implementing an integration solution</li> <li>• Tools can be used either individually or in combination</li> <li>• Generates JavaBean, Java, and JavaServer Page (JSP) clients</li> </ul>	<ul style="list-style-type: none"> <li>• Investment protection via re-use of existing applications, data, and business logic</li> </ul>

<b>Other</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
<p><b>Time Zone Updates</b></p> <ul style="list-style-type: none"> <li>• Updates embedded timezone tables to reflect the</li> </ul>	<ul style="list-style-type: none"> <li>• Provides accurate time</li> </ul>

<b>Other</b>	
<b>FEATURE</b>	<b>BENEFIT</b>
mandated change resulting from legislation passed by the US Congress to extend daylight-saving time by four weeks beginning in 2007	
<b>DECwindows Enhancements:</b> <ul style="list-style-type: none"> <li>• Enhanced DTGREET to enable reappearance of greeting text on login box</li> <li>• Ensure logical name creation in process logical name table</li> <li>• Ensure correct working of XtAppAddTimeout API when system time changes</li> <li>• Supports ACME login and Kerberos changes</li> </ul>	<ul style="list-style-type: none"> <li>• Ensures reappearance of the welcome message in the event of a login timeout</li> <li>• XtAppAddtimeout corrections ensures that applications that use this API work well when system time changes</li> </ul>
<b>PCSI Enhancements</b> <ul style="list-style-type: none"> <li>• Provide PCSI capability to:               <ol style="list-style-type: none"> <li>1) Validation of a signed software product kit during installation using its digital signature file; this authenticates the originator of the kit and verifies its contents</li> <li>2) Full support for software installation to an ODS-5 volume</li> </ol> </li> <li>• Ability to verify the integrity of the PCSI database and make limited repairs via a DCL command</li> <li>• PCSI product database verification is also automatically performed before an install operation</li> </ul>	<ul style="list-style-type: none"> <li>• Secure Delivery integration into PCSI ensures that layered products and OpenVMS patches that are delivered as signed kits can be installed with the assurance that they have not been tampered with</li> <li>• Full ODS-5 support allows software developers to take advantage of ODS-5 file naming enhancements</li> <li>• The customer can detect problems with the product database and take corrective action before attempting to install software</li> </ul>