



RED HAT ENTERPRISE LINUX 5

Feature, function, and benefit summary

Feature	Function	Benefit
Virtualization	Comprehensive para-virtualization and full virtualization capabilities enable multiple operating systems— Red Hat and third party®—to run on the same system. Included with all Red Hat Enterprise Linux® server subscriptions. Virt-manager and libvirt/virsh management tools.	Lower costs, higher availability, increased security, and no more forced upgrades. Para-virtualization, which offers higher performance and extended features, is provided for Red Hat Enterprise Linux 4 and Red Hat Enterprise Linux 5 guests. Straightforward, flexible management.
Red Hat Enterprise Linux Advanced Platform	This new product provides full server and storage virtualization, with multi-guest and multi-system logical volume management, distributed application synchronization, Red Hat Global File System and Red Hat Cluster Suite.	Combines basic virtualization with synergistic storage and clustering components to deliver a complete environment in one product.
Security	SELinux Multi-Level Security allows certification to EAL4+/LSPP. All services protected by targeted policies. GUI-based SE-Troubleshooter provides easy-to-understand, real-time security information. Improved ExecShield stack protection. Support for smart card login. Dm-crypt, a device manager target, can be used to provide encryption for any mountable device.	Security capabilities to meet government requirements. Simplified management reduces costs and skills necessary to ensure highly secure environments. Support for smart card login improves user identification and intrusion detection and prevention. Tightly integrated with Red Hat Directory Server. Storage device encryption allows all data on a device to be protected under an encryption key - this feature is especially valuable for high risk systems, such as laptops.
Auditing	Enhancements to the audit subsystem include the addition of powerful searching and reporting tools and the inclusion of a unique real-time interface. Audit is fully integrated into SELinux (Note that Audit and SELinux are the only Mandatory Access Control security and reporting capabilities in the upstream Linux kernel.)	Audit functionality enables Red Hat Enterprise Linux 5 to meet US Government certifications such as CAPP/LSPP and NISPOM and also assist organizations to meet regulatory requirements such as Sarbanes Oxley and HIPPA.
Microsoft® Windows® interoperability	Extensive Samba enhancements provide improved integration with Microsoft Active Directory, more consistent user/group mapping and nested groups.	Cost reduction through consistent user and resource management. Simplified integration with installed Microsoft file, print, authentication environments.
Simplified product packaging	AS, ES, WS variants eliminated, replaced by consistent server and client products with optional feature upgrades. Red Hat Desktop replaced by Red Hat Enterprise Linux Desktop. Available in single units, with no Red Hat Network Proxy/Satellite server prerequisite.	Two server solutions: <ul style="list-style-type: none">• Red Hat Enterprise Linux - for small-to-medium servers includes virtualization.• Red Hat Enterprise Linux Advanced Platform - for departmental and datacenter systems, ranging from large web servers to corporate databases. Provides extensive server and storage virtualization capabilities. One client solution: <ul style="list-style-type: none">• Red Hat Enterprise Linux Desktop - provides full-featured end-user environment.



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Manageability	The Red Hat Network client, up2date, has been replaced by the open source yum updater and Pup graphical user interface. A Red Hat plugin allows yum to access Red Hat Network channels. Red Hat Network has also been updated to manage virtualized systems. A number of virtualization management tools are provided, including libvirt, virsh, and virt-manager.	The open source yum/Pup updater provides a more powerful package management environment than up2date and is also able to access public repositories. The libvirt virtualization control library provides a standard and stable API for management applications. Virsh allows script control of virtualization activities, while Virt-Manager provides a powerful graphical user interface.
Distributed System Enhancements	AutoFS improvements provide direct map and lazy mount/unmount support. Mount maps can be shared with proprietary UNIX environments. Binds can be authenticated with LDAP servers using Kerberos and Digest-MD5. NFSv4 support for the latest standards-based features, such as SecureNFS and server-side delegation.	Improved security and performance with networked files systems, especially NFS. Improved co-existence with UNIX environments reduces administration costs, improves performance and security, and simplifies migration.
Performance	Numerous performance enhancements include FS-Cache, a local cache for remote file systems, per I/O queue scheduler selection, SMP locking improvements, support for CPU sets, new circular-buffer pipe implementation, and many others.	More efficient hardware resource utilization, improved application throughput. Improved scalability on large SMP (scale-up) systems.
File systems	Red Hat Enterprise Linux includes a single system (or virtualized guest) version of Red Hat Global File System. Ext3 enhancements provide improved performance and scalability to 16TB.	Easy upgrades and scalability. All systems can use the highly scalable Global File System in single-instance mode. Subsequent migration to multi-guest or multi-system shared storage deployments is greatly simplified.
Development tools	GCC 4.1 compiler with Glibc 2.4, combined with SystemTap profiler and Fyrysk debugger, provide industry-leading code generation, kernel profiling, and multi-system/process/thread user mode debugging.	Improved/accelerated application development, debugging, and performance analysis.
Desktop environment	Enhanced graphics subsystem with the Metacity window manager and Compiz compositing manager. Updated application set (GNOME, OpenOffice, Firefox, etc). Greatly improved wireless and laptop support. Extended support for printers and USB devices such as cameras.	Improved desktop end-user experience. Automated configuration of networks and graphics. Numerous eye-candy desktop graphics features (fading, zooming, rotating desktops, etc). Suspend/resume/power management support for many laptops. Improved file format interoperability with Microsoft Office.
Stateless Linux	Collection of technologies to enable a small set of server and client system images to be rapidly deployed onto large numbers of machines. All user data and configuration information is securely replicated on a file server.	Improved security, data management, and administration scalability through simplified provisioning and management of multiple systems (physical or virtual, server or client). Initial technologies provided in Red Hat Enterprise Linux 5, additional features planned for subsequent releases.
Desktop product options	Red Hat Enterprise Linux Desktop provides two upgrade options: Workstation and Multi-OS.	Workstation option provides support for high-end client systems and power users. Multi-OS option enables client-side virtualization.
Multipath I/O	Enhanced to support root device and configurable during system installation.	Enhanced availability and performance through failover and load balancing across multiple I/O configurations.

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