

RED HAT ENTERPRISE LINUX ATOMIC HOST

A platform optimized for Linux containers

DATASHEET

KEY BENEFITS

- Minimal footprint, optimized to run containers
- Stability and reliability of Red Hat® Enterprise Linux®
- Flexible deployment with portability across open hybrid cloud infrastructure
- Secure isolation of containerized applications and host environments
- Orchestration of containers into unified, large-scale applications
- Simplified maintenance through atomic updating and rollback

Linux containers provide fundamental isolation capabilities and allow an application to be packaged along with its dependencies. By coupling Linux containers with image-based container technology, such as the docker format, and orchestration technology, like Kubernetes, IT organizations can quickly realize the benefits of DevOps practices, including faster delivery of features and continual improvement.

Container technology is not new; it has existed in UNIX derivatives since the early 1980s. Red Hat has been working on Linux container technologies for more than 10 years.

Red Hat Enterprise Linux Atomic Host is a secure, lightweight, and minimal-footprint operating system optimized to run Linux containers. A member of the Red Hat Enterprise Linux family, Red Hat Enterprise Linux Atomic Host couples the flexible, modular capabilities of Linux containers with the reliability and security of Red Hat Enterprise Linux in a reduced image size, to decrease the attack surface and minimize dependency conflicts.

With this offering, Red Hat combines:

- An enterprise-class container-specific host
- New container capabilities in the world's leading enterprise Linux platform
- A certification program for containerized applications
- An extensive ecosystem of support and services

Red Hat's vision for containerized application delivery on an open hybrid cloud infrastructure is comprehensive, including portability across bare metal systems, virtual machines, and private and public clouds.

FEATURES AND BENEFITS

By choosing Red Hat Enterprise Linux Atomic Host, you can take advantage of the fast pace of innovation from open source community projects like the Docker project and Kubernetes, while maintaining a stable platform for production deployment. You can concentrate on customizing and developing containerized applications, while Red Hat maintains the underlying Linux platform on which they depend.

FEATURES

Optimized for containers

Red Hat Enterprise Linux Atomic Host provides a streamlined host platform specifically for application containers. All applications and tools run inside containers.

BENEFITS

The software components included in Red Hat Enterprise Linux Atomic Host, as well as the default system tunings developed by Red Hat engineering, enhance the performance, scalability, and security of containers. This gives you an optimal platform for deploying and running application containers.



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Over 67% of IT professionals plan to run container-based architectures to support new or existing workloads and applications by 2017.

RED HAT HYBRID CLOUD
MANAGEMENT SURVEY,
IDC, OCTOBER 2014

FEATURES

The confidence of Red Hat Enterprise Linux

Red Hat Enterprise Linux Atomic Host is built from Red Hat Enterprise Linux 7.

Minimal footprint

Red Hat Enterprise Linux Atomic Host is a secure and lightweight operating system with which you can control application dependencies through the use of containers.

Portability across open hybrid cloud infrastructure

Red Hat Enterprise Linux Atomic Host can be deployed on physical hardware, certified hypervisors, (including Red Hat Enterprise Virtualization, VMware vSphere, and Microsoft Hyper-V), private clouds such as Red Hat Enterprise Linux OpenStack Platform, and Amazon Web Services and Google Compute Platform public clouds.

Atomic updating and rollback

Red Hat Enterprise Linux Atomic Host features a new update system for operating systems, based on rpm-ostree. RPMs are composed on a server into an OSTree repository, and client systems can replicate these in an image-like fashion.

Orchestrating containers at scale

Through Red Hat's collaboration with Google, Red Hat Enterprise Linux Atomic Host includes Kubernetes, a framework for managing clusters of containers.

Secure by default

Applications are only run within containers, not directly on the host, creating a clear security boundary. Each container is then confined using a combination of SELinux in enforcing mode, control groups, and kernel namespaces. These are the same technologies that have been delivering military-grade security (<http://www.redhat.com/en/insights/security>) to Red Hat customers for more than 10 years.

BENEFITS

Red Hat Enterprise Linux Atomic Host inherits the stability and maturity of Red Hat Enterprise Linux, as well as its hardware certifications. This gives you a vast choice of certified hardware partners.

Red Hat Enterprise Linux Atomic Host couples the flexibility and modular capabilities of Linux containers with the reliability and security of Red Hat Enterprise Linux in a reduced image size. It provides just what is needed to simplify deployment and maintenance.

Organizations can choose the best infrastructure for containerized application deployments.

Updates are composed into atomic trees, which can be downloaded from the Customer Portal and deployed in a single step. The previous version of the operating system is retained, so you can easily roll back to an earlier state. This simplified upgrade and rollback capability reduces the time you spend updating and maintaining systems.

Kubernetes helps you manage connecting and scaling multi-container deployments across multiple container hosts. This means you can orchestrate services running in multiple hosts into unified, large-scale business applications.

You can more effectively isolate vulnerable containers with a secure host that implements a secure environment by default. Integrated technologies prevent a compromised container from affecting other containers or the host.

FEATURES

Support for super privileged containers

Some container-based applications, such as host management applications, need access to the host system or other containers to work properly. With super privileged containers, processes that run from the container have the appropriate rights to manipulate the host file system and host processes as well as processes in other containers.

Access to Red Hat Enterprise Linux platform and other container images for building applications

Red Hat Enterprise Linux Atomic Host provides all of the required tools to build and run based on Red Hat Enterprise Linux, including Red Hat Enterprise Linux 6 and 7 platform container images, as well as the Dockerfiles of popular runtimes.

BENEFITS

You can easily configure super privileged containers through the command-line interface, granting trusted access to the host system and other containers for the container-based applications that need it.

Developers can quickly build containerized applications for deployment on Red Hat Enterprise Linux with access to Dockerfiles of popular programming language stacks and development tools through Red Hat Software Collections. Applications that run on Red Hat Enterprise Linux 6 and Red Hat Enterprise Linux 7 can be deployed in a container on Red Hat Enterprise Linux Atomic Host, opening access to a vast ecosystem of certified applications.

TECHNICAL SPECIFICATIONS

Red Hat Enterprise Linux Atomic Host runs on x86_64 server platforms that are certified to run Red Hat Enterprise Linux.

HW ARCHITECTURE	X86_64
Deployment environment	Physical, virtual, and cloud
Recommended memory requirements ¹	1GB minimum 1GB logical CPU
KERNEL	
Kernel version	3.10
Possible kernel rebase during life cycle	No
Kernel application binary interface (KABI) guarantee	Yes
APPLICATION SOFTWARE	
Userspace software and utilities	Built from a common source for all Red Hat Enterprise Linux variants
Application binary compatibility (ABI) for a given architecture	Yes
Application programming interface (API) compatibility during life cycle	Yes

¹ View <https://access.redhat.com/articles/rhel-limits> for additional information.

Additional information on Red Hat Enterprise Linux life cycle: <https://access.redhat.com/support/policy/updates/errata>

Additional information on production support service level agreements: <https://access.redhat.com/support/offerings/production/sla>

Application binary interface (ABI) compatibility during life cycle	Yes
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Ecosystem of innovation	Yes
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SERVICE LEVEL AGREEMENTS

Product life cycle	3 years
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Production support service level agreement	Standard, Premium
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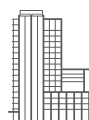
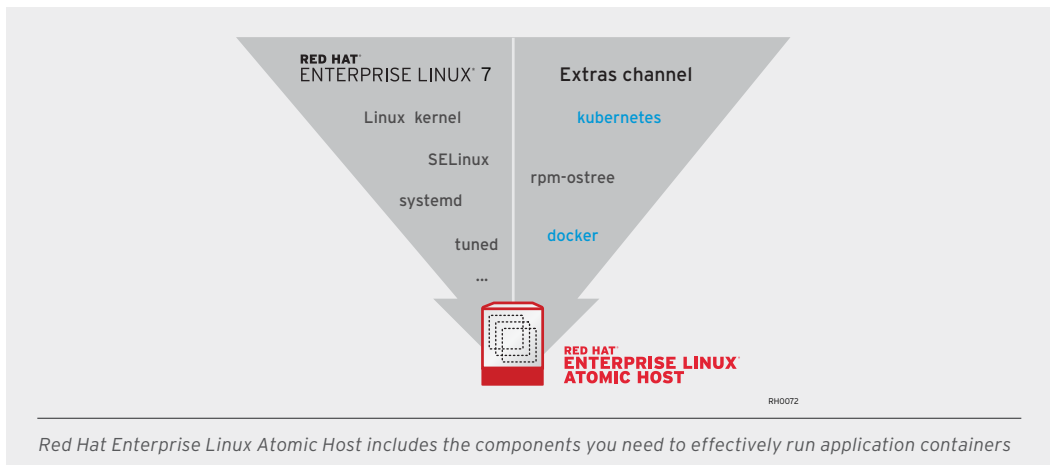
Asynchronous bug fixes (RHBAs)	Urgent and high
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Asynchronous security fixes (RHSAs)	Critical and important
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ADD-ONS

Add-Ons for Red Hat Enterprise Linux Server	No
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Extended Update Support Add-On (EUS)	No
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ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 80 offices spanning the globe, empowering its customers' businesses.



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linkedin.com/company/red-hat

NORTH AMERICA
1 888 REDHAT1

**EUROPE, MIDDLE EAST,
AND AFRICA**
00800 7334 2835
europe@redhat.com

ASIA PACIFIC
+65 6490 4200
apac@redhat.com

LATIN AMERICA
+54 11 4329 7300
info-latam@redhat.com