

# Oracle Linux

## ORACLE<sup>®</sup> Linux

The Oracle Linux operating system is engineered for open cloud infrastructure. It delivers leading performance, scalability, reliability and security for enterprise SaaS and PaaS workloads as well as traditional enterprise applications. Oracle Linux Support offers access to award-winning Oracle support resources and Linux support specialists, zero-downtime updates using Ksplice, additional management tools such as Oracle Enterprise Manager and lifetime support, all at a low cost. Unlike many other commercial Linux distributions, Oracle Linux is easy to download and completely free to use, distribute and update.

### KEY FEATURES

- Free to use, free to distribute, free to update
- Zero-downtime kernel, hypervisor and user space updates with Ksplice
- Comprehensive kernel and application tracing with DTrace
- Linux management and high availability included at no additional charge for Oracle Linux Support customers
- Optimized for Oracle, including Oracle Database and Oracle Applications

### KEY BENEFITS

- Lower costs by only paying for support on the systems you want supported
- Increase security by applying patches sooner and minimizing time spent troubleshooting and updating
- Improve performance of Oracle software and hardware
- Proven performance and reliability in Oracle Engineered Systems and Oracle Cloud

### Latest Linux Innovations

Oracle Linux comes with a choice of two kernels, the Unbreakable Enterprise Kernel (UEK), which is installed and enabled by default, and the Red Hat Compatible Kernel. UEK tracks the latest Linux kernel releases, supplying more innovation than other commercial Linux kernels while providing binary compatibility with applications certified to run on Red Hat Enterprise Linux. UEK is designed for enterprise workloads requiring stability, scalability and performance, such as Oracle Database.

Oracle Linux delivers advanced features for supporting and optimizing the latest enterprise hardware and software. For example:

- **Ksplice Zero Downtime Updates** – Available to Oracle Linux Premier Support customers, Ksplice technology updates the kernels, hypervisors and critical user space libraries without requiring a reboot or interruption. Known Exploit Detection in Ksplice enables auditing and alerting for known privilege escalation vulnerabilities. Only Oracle Linux offers this unique capability, making it possible to keep up with important kernel and user space updates without the operational cost and disruption of rebooting for every update.
- **Security and Compliance** - Oracle Linux 7 has received both a Common Criteria (CC) Certification which was performed against the National Information Assurance Partnership (NIAP) General Purpose Operating System Protection Profile (OSPP) v4.1 as well as a FIPS 140-2 validation of its cryptographic modules.
- **XFS File System** – XFS is a journaling file system known for extreme scalability with near native I/O performance. XFS is the default filesystem for Oracle Linux 7 and Oracle Linux 8. Beginning with Oracle Linux 6.4, customers with Premier Support subscriptions can receive support for the XFS file system at no additional charge.
- **Data Integrity** – Oracle Linux supports the T10 Protection Information Model (T10-PIM) to help prevent silent data corruption.

**SUPPORTED HARDWARE**

Oracle Linux is supported on the following hardware architectures

- x86 (i386 and x86\_64)
- ARMv8 (aarch64)

Running Oracle Linux with UEK gives you additional advanced features and security enhancements. Some of which are:

- **Containers and Orchestration** – Safely and securely run multiple applications on a single host, without the risk of interference with each other. Docker containers are lightweight and resource friendly, which saves on rack space and power. Oracle Container Runtime for Docker and Oracle Container Services for use with Kubernetes provide a comprehensive container and orchestration environment for the delivery of microservices and next generation application development.
- **DTrace** – DTrace is a comprehensive dynamic tracing framework that provides a powerful infrastructure to permit administrators, developers and service personnel to concisely answer arbitrary questions about the behavior of the operating system and user programs in real time.
- **AMD Secure Memory Encryption (SME)** – Oracle Linux 7 with UEK Release 5 enables the hardware accelerated memory encryption, available on AMD EPYC processors based systems, for data-in-use protection.
- **Oracle Cluster File System 2 (OCFS2)** – OCFS2 is a general purpose, extent-based clustered file system that Oracle developed and contributed to the Linux community. It provides an open source, enterprise-class alternative to proprietary cluster file systems, and provides both high performance and high availability.
- **Oracle Workload Optimizations** – Some of the many optimizations available are:
  - Enhanced memory performance, by attempting to better locate a process near its memory and better placement of workloads that do not fit on one NUMA node.
  - Up to 3.6x performance improvement of SPECjbb through optimizations that help eliminate lock contention.
  - Simple to use SSDs as a block cache for slower block devices with bcache. Supports many millions of IOps on NVM-Express and high-end PCI-E devices with a new, scaled multiqueue block layer subsystem.

## Flexible Support Options, Higher Value

Oracle is the only vendor in the industry that offers a complete Linux-based solution stack – applications, middleware, database, management tools, operating system, virtualization, and hardware. With Oracle as your Linux support provider, you have a single point of contact for all your support needs. Oracle delivers enterprise-class support for Oracle Linux and the Unbreakable Enterprise Kernel, including premier backports, indemnification and testing.

Oracle Support for Oracle Linux installations is significantly lower in cost than competing vendors' Linux support. You are free to decide which of your systems should be covered by a support subscription, and at which level each of them should be supported. This makes Oracle Linux an ideal choice for both your development and production systems. You decide which support coverage is the best for each of your systems individually, while keeping all of them up-to-date and secure with the same level of bug fixes and security errata.

Oracle Linux is also the Linux development standard at Oracle. The same Oracle products customers deploy in their data center and in the cloud were developed using Oracle Linux. In addition, Oracle understands mission-critical application requirements and Oracle Linux is developed and tested to provide the reliability, scalability, security and performance for these demanding enterprise workloads.

**RELATED PRODUCTS**

Oracle Linux users can easily virtualize their applications by using Oracle VM VirtualBox or Oracle VM Server for x86 for a variety of use cases

- Oracle VM VirtualBox
- Oracle VM Server for x86

**RELATED SERVICES**

Support services for Oracle Linux:

- Oracle Linux Support
- Oracle Premier Support for Systems

## Comprehensive Management Software

The right to use Oracle Enterprise Manager is included with every Oracle Linux Support subscription at no additional cost. Oracle Enterprise Manager is a feature-rich systems and applications management suite, capable of managing thousands of servers from a central and easy to use web-based interface.

To ease migrations from existing infrastructures, Oracle Linux also includes and supports Spacewalk.

## Oracle Linux Cloud Native Environment

Oracle Linux Cloud Native Environment is a curated set of open source software selected from the Cloud Native Computing Foundation® (CNCF®) projects. Oracle uses a process of curation, integration, testing, and developer preview to ensure these solutions are enterprise grade prior to delivery to Oracle Linux Premier subscription customers.

## Enterprise High Availability

Oracle Clusterware, an enterprise high availability software solution, is included with Oracle Linux Support subscriptions. Oracle Clusterware enables independent servers to operate together as a single system and provides high availability for both Oracle and third-party workloads.

Oracle also provides support for Corosync and Pacemaker, the de-facto standard open source high availability solution for Linux, along with support for HAProxy and keepalived which provide load balancing services.

## Virtualization Made Easy

With your Oracle Linux Support subscription there is no need to worry about whether the system will run as a physical or virtual instance because it is all included in the price of a single subscription. Users can run Oracle Linux on the host and as many Oracle Linux guest instances as desired, without additional cost.

Oracle Linux includes support for the Kernel-based Virtual Machine (KVM) hypervisor, including support for Intel VT-x and VT-d hardware extensions along with the Secure Encrypted Virtualization (SEV) for AMD-V enabled processors. Oracle Linux Virtualization Manager is the server virtualization management platform that can be easily deployed to configure, monitor, and manage an Oracle Linux KVM with enterprise-grade performance and support from Oracle.

Oracle VM VirtualBox is shipped with Oracle Linux. It is used by millions of developers around the world to develop, test, and build virtual appliances. Customers develop applications on a desktop and get ready for deployment into Oracle Cloud and other cloud services.

## Free and Easy to Download, Install, Use and Distribute

Oracle Linux can be downloaded, used and distributed free of charge, with easy access to installation ISOs. Oracle provides access to the individual RPM packages, including

all security updates and bug fixes (errata) via yum repositories, without requiring a support subscription; excluding updates to Ksplice and Oracle Linux 5, which may require Oracle Linux Premier or Extended Support. The source code of the Unbreakable Enterprise Kernel is also available via public git repositories, providing a complete and detailed revision history (including patches and comments) of the operating system core.

## Established Member of the Linux Community

Many of Oracle's Linux engineers participate in the Linux community as maintainers of projects in the upstream Linux source process, and work closely with other maintainers. This work helps to develop features and improvements that benefit Linux overall and can later be delivered as part of Oracle Linux.

## Oracle Linux Partner Ecosystem

Oracle works closely with industry leading [ISV and IHV partners](#) to enable fully tested, certified and supported solutions for Oracle Linux and virtualization customers. With an extensive ecosystem, customers can improve time to market and simplify deployment.

A thriving [ISV ecosystem](#) allows customers to rest assured that when they want to move workloads between different deployment models – Oracle Linux on-premises to Oracle Linux in the cloud – the transition can be virtually seamless.

The [Hardware Compatibility Program](#) helps ensure major and emerging server and storage hardware solutions are qualified on Oracle Linux and Oracle VM.

## Migrating from Red Hat Enterprise Linux

Migrating an existing system from RHEL to Oracle Linux is simple. There is no need to re-install the operating system or any application. Oracle can also take over support for your existing RHEL systems. Just follow the instructions outlined at <https://linux.oracle.com/switch.html>.

### CONTACT US

For more information about Oracle Linux, visit [oracle.com/linux](https://linux.oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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### Integrated Cloud Applications & Platform Services

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