

Oracle Linux

Oracle Linux is an open and complete operating environment that helps accelerate digital transformation. It delivers leading performance and security for hybrid and multi cloud deployments. Oracle Linux is 100% application binary compatible with Red Hat Enterprise Linux. And, with an Oracle Linux Support subscription, customers have access to award-winning Oracle support resources and Linux support specialists, zero-downtime patching with Ksplice, cloud native tools such as Kubernetes and Kata Containers, KVM virtualization and oVirt-based virtualization manager, DTrace, clustering tools, Spacewalk, Oracle Enterprise Manager, and lifetime support. All this and more is included in a single cost-effective support offering. Unlike many other commercial Linux distributions, Oracle Linux is easy to download and completely free to use, distribute, and update.

Latest Linux Innovations

Oracle Linux powers [Oracle Autonomous Linux](#), extending autonomous capabilities to Linux. Oracle Autonomous Linux is the first and only autonomous operating environment that helps greatly reduce complexity and human error to deliver increased cost savings, security, and availability for customers.

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 (RHEL). UEK is designed for enterprise workloads requiring stability, scalability, and performance, such as Oracle Database.

Oracle Linux is a great platform for [application development](#) and deployment. 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



Key Features

- Free to use, free to distribute, free to update
- Zero-downtime kernel, hypervisor and user space updates with Ksplice
- KVM server virtualization and oVirt-based virtualization manager
- Cloud native tools such as Kubernetes and Kata Containers
- Comprehensive kernel and application tracing with DTrace
- Linux management and high availability
- Optimized for highly demanding workloads

Key Benefits

- Increase security by applying patches with zero-downtime
- Improve performance of enterprise workloads
- Proven performance and reliability in Oracle Engineered Systems and Oracle Cloud
- Simplify operations with a single complete support offering
- Lower total cost of ownership (TCO)

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](#) and [FIPS 140-2 validation](#) of its cryptographic modules. Oracle has implemented the published [Security Technical Implementation Guide \(STIG\)](#) in [Security Content Automation Protocol \(SCAP\)](#) format.
- **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 8.

Running Oracle Linux with UEK gives you additional advanced features and security enhancements, including:

- **Unbreakable Enterprise Kernel** - UEK for Oracle Linux provides the latest open source innovations and business-critical performance and security optimizations for cloud and on-premises deployment. UEK Release 6, based on the mainline Linux kernel version 5.4, is available on Oracle Linux 7 and 8. This release also includes many upstream enhancements.
- **Containers and Orchestration** – Oracle Linux Cloud Native Environment is an integrated suite for the development and management of cloud native applications. Based on the Open Container Initiative (OCI) and Cloud Native Computing Foundation (CNCF) standards, Oracle Linux Cloud Native Environment delivers a simplified framework for installations, updates, upgrades, and configuration of key features for orchestrating microservices.
- **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.
- **Persistent Memory (PMEM)** – Oracle provides the latest full set of Linux PMEM support beginning with Oracle Linux 7 with UEK Release 5.
- **AMD Secure Memory Encryption (SME)** – Beginning with UEK Release 5, Oracle Linux enables the hardware accelerated memory encryption, available on AMD EPYC processor-based systems, for data-in-use protection.
- **Btrfs** – The Btrfs file system is designed to meet the expanding scalability requirements of large storage subsystems for Linux. It provides copy-on-write functionality, checksum functionality, transparent compression, transparent defragmentation, and integrated logical volume management.
- **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 high performance and high availability, offering an open source, enterprise-class alternative to proprietary cluster file systems.
- **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

- 64-bit Intel and AMD (x86-64)
- 64-bit Arm (aarch64)

Visit Oracle Linux [Hardware Compatibility List \(HCL\)](#).

Related products

- [Oracle VM VirtualBox](#)
- [Oracle Enterprise Manager](#)
- [Oracle Engineered Systems](#)

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, hardware, engineered systems, and cloud. 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, 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

Oracle Linux Cloud Native Environment

[Oracle Linux Cloud Native Environment](#) is a curated set of open source software selected from open source projects such as those from the Cloud Native Computing Foundation. Oracle uses a process of curation, integration, testing, and developer preview to help ensure these solutions are enterprise grade prior to delivery to Oracle Linux Premier Support customers. Kubernetes, Kata Containers, Istio, and more are included and supported.

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 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.

Related services

Support services for Oracle Linux

- [Oracle Linux Support](#)
- [Oracle Premier Support for Systems](#)
- [Oracle Cloud Infrastructure](#)

Customers develop applications on a desktop and easily deploy the software into Oracle Cloud and other cloud services.

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.

Comprehensive Management Software

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. The base installation of Oracle Enterprise Manager is included with every Oracle Linux Support subscription at no additional cost.

To ease migrations from existing infrastructures, Oracle Linux also includes and supports [Spacewalk](#). Spacewalk provides an effective set of tools for managing the Oracle Linux software life cycle in small or large deployments. Spacewalk also helps you automate a kickstart installation, system configuration, and maintenance tasks, which enables you to rapidly deploy proven and consistent software configurations for Oracle Linux systems.

Additionally, customers have the option of using the Oracle [OS Management Service](#) which provides tools to automate common operating system management tasks such as patch and package management, and security and compliance reporting for Oracle Linux and Microsoft Windows compute instances deployed in Oracle Cloud.

Oracle Linux Partner Ecosystem

Oracle Linux is 100% application binary compatible with Red Hat Enterprise Linux, which means the vast majority of applications run unchanged on Oracle Linux. Oracle also 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.

Established Member of the Linux Community

Oracle is committed to cultivating, supporting, and promoting popular [open source technologies](#) that customers can confidently deploy in business-critical environments. Oracle is a platinum member of the Linux Foundation as well as a platinum member of CNCF.

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 be delivered as part of Oracle Linux.

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 security updates and bug fixes (errata) via yum repositories, without requiring a support subscription; excluding updates to Ksplice and Oracle Linux Extended Support, 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.

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>.

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