

# Oracle Linux

A secure and high-performance operating environment, [Oracle Linux](#) delivers the operating system, virtualization, management, automation, and cloud native computing tools in a single, easy-to-manage support offering. Oracle Linux provides a 100% application binary-compatible alternative to Red Hat Enterprise Linux and CentOS Linux and is supported across both distributed and multicloud environments.

## Software features and benefits

Choice of OS kernels:

- Oracle Linux comes with a choice of two kernels for the x86\_64 platform: the [Unbreakable Enterprise Kernel \(UEK\)](#), which is installed and enabled by default, and the Red Hat compatible kernel (RHCK). For the Arm (aarch64) platform, Oracle Linux ships with the UEK kernel.
- UEK delivers the latest Linux operating system innovations and business-critical performance and security optimizations for cloud and on-premises deployments, while providing binary compatibility with applications certified to run on Red Hat Enterprise Linux (RHEL). UEK Release 7, based on the mainline long term support (LTS) Linux kernel version 5.15, includes many upstream enhancements and is available with Oracle Linux 8 and 9.
- RHCK, like UEK, enables users to run their existing RHEL-compatible software on Oracle Linux without modification. RHCK users also have access to additional fixes from Oracle.

Security and compliance:

- [Oracle Ksplice](#) provides zero-downtime patching for the kernel, hypervisor, and critical user space libraries without requiring a reboot or interruption.
- Ksplice [known exploit detection](#) enables auditing and alerting for known privilege escalation vulnerabilities.
- Oracle Linux 8 and Oracle Linux 9 have received [Common Criteria \(CC\) Certifications](#). Oracle Linux KVM and Oracle Linux Virtualization Manager have also completed the first [KVM CC evaluation](#). Several cryptographic modules in Oracle Linux 8 and Oracle Linux 9 have completed [FIPS 140-3 validations](#) or are in the process of being validated.
- Oracle Linux has an open source utility, [OpenSCAP](#) (Security Content Automation Protocol), for testing security compliance against the published [STIG \(Security Technical Implementation Guide\)](#).

Virtualization:

- A kernel-based virtual machine (KVM) hypervisor is included with Oracle Linux, supporting Intel VT-x and VT-d hardware extensions and Secure Encrypted Virtualization (SEV) for AMD-V enabled processors.
- [Oracle Linux Virtualization Manager](#) configures, monitors, and manages Oracle Linux KVM environments.

Containers and orchestration:

- [Oracle Cloud Native Environment](#) is software for configuring, deploying, updating, and upgrading infrastructure for running cloud native applications. It is based on open standards, specifications, and APIs defined by the Open Container Initiative and Cloud Native Computing Foundation (CNCF), including a CNCF-certified Kubernetes module, container runtimes, service mesh, storage, networking, observability, and diagnostics.

#### File systems:

- XFS is the default file system for Oracle Linux 7, 8, and 9.
- Additional file systems include Btrfs, for large storage subsystems and Oracle Cluster File System 2 (OCFS2), a general purpose, extent-based clustered file system.
- Oracle Linux also supports the T10 Protection Information Model (T10-PIM) to help prevent silent data corruption.

#### High availability:

- [High availability services in Oracle Linux](#) consist of several open source packages, including the Corosync and Pacemaker features. These tools enable you to achieve high availability for applications and services that are running on Oracle Linux.
- Oracle Linux provides [load balancing](#) of network traffic with two integrated software components: HAProxy and Keepalived. The HAProxy feature provides load balancing and high-availability services to TCP and HTTP, while Keepalived performs load balancing and failover tasks on both active and passive routers. The NGINX software component can also be used in Oracle Linux for load balancing.
- [Oracle Clusterware](#) provides a server failover capability that helps protect Oracle and non-Oracle applications. It can be a valuable component of a business continuity infrastructure for applications and databases managed in a cluster environment.

#### Management tools:

- [Oracle Linux Automation Manager and Engine](#), based upon the open source AWX and Ansible projects respectively, enable users across an organization to create, share, and manage infrastructure automation tasks.
- [Oracle OS Management Hub](#) simplifies the management and monitoring of updates and patches for Oracle Linux systems across distributed environments, through a centralized management console.
- [DTrace](#), a dynamic tracing framework, provides insight into the behavior of the operating system and user programs in real time.
- [Gprofng](#) is a next-generation application profiling tool that can be used to diagnose performance bottlenecks in software applications.

## Run Oracle Linux on-premises or in the cloud

You can choose to run the same Oracle Linux on-premises or [in the cloud](#), including Oracle Cloud Infrastructure, Microsoft Azure, Amazon Web Services, and Google Cloud. This simplifies the process of moving workloads between on-premises and cloud-based environments, providing a consistent and reliable OS experience.

Oracle offers [Oracle Autonomous Linux](#) instances in Oracle Cloud Infrastructure. Autonomous Linux provides a self-patching, self-tuning runtime environment that helps eliminate complexity, and increase security and availability. Visit [Oracle Linux for Oracle Cloud Infrastructure](#) documentation to learn how to run [Oracle Linux in Oracle Cloud Infrastructure](#).

## Ideal platform for application development and deployment

Oracle Linux has been making [application development](#) and deployment easier since its debut in 2006. It has been completely free to download and use. The same version of software can be run across build, development, QA/test, and production systems, in the cloud or on-premises.

ISO installation images are available from the [Oracle Linux yum server](#) and [Oracle Software Delivery Cloud](#). Individual RPM packages are available on the [Oracle Linux yum server](#) and the [Unbreakable Linux Network \(ULN\)](#). Container images are available via [Oracle Container Registry](#), [GitHub Container Registry](#) and [Docker Hub](#).

There are additional Oracle Linux resources such as [scripts to build Oracle Linux images](#), [virtual machine templates](#), and [Vagrant projects](#) that can help users rapidly build and provision Oracle Linux instances for [Oracle VirtualBox](#), KVM, Oracle Cloud, or other clouds.

## Oracle Linux compatibility

Oracle Linux is 100% application binary compatible with Red Hat Enterprise Linux (RHEL). Migrating an existing system from RHEL or CentOS Linux to Oracle Linux does not require the operating system or any application to be reinstalled; simply follow the instructions outlined at [linux.oracle.com/switch.html](https://linux.oracle.com/switch.html) and [linux.oracle.com/switch/centos](https://linux.oracle.com/switch/centos). We recommend Oracle Linux professional services to help ensure a smooth transition from Red Hat support to Oracle Linux support.

[Independent software vendors](#) (ISVs) and [independent hardware vendors](#) (IHV) work closely with Oracle to provide collaborative support to customers running Oracle Linux and Virtualization environments.

## Established member of the Linux community

Oracle is a platinum member of the [Linux Foundation](#) and the [Cloud Native Computing Foundation](#), and one of the industry's largest [contributors to open source](#). Additionally, Oracle is a founding member of the [Open Enterprise Linux Association \(OpenELA\)](#), exemplifying Oracle's commitment to keep Linux open and free.

Oracle's commitment to Linux began in 1998 with the release of the first commercial relational database on the operating system. This was accompanied by a long-term vision to enhance and extend the performance, scalability, reliability, and security of Linux for business and government. This vision continues to bear fruit through the many projects and code contributions that Oracle shares with the Linux community. For example, over the years Oracle has become one of the [top contributors to the Linux kernel](#). By developing innovative features that we freely share with the community, Oracle's Linux engineering teams strive to make the operating system better for all.

## Free and comprehensive training and learning resources

In addition to documentation, Oracle offers [free and comprehensive training resources](#) such as learning paths, tutorials, hands-on labs, and videos to help users develop applications on Oracle Linux and get the best value from their Oracle Linux deployments.

## Supported hardware

Oracle Linux is supported on the following hardware architectures

- 64-bit Intel and AMD (x86\_64)
- 64-bit [Arm](#) (aarch64)

Visit the Oracle Linux and Virtualization [Hardware Certification List \(HCL\)](#) for details.

## Related services

Support services for Oracle Linux are available with

- [Oracle Linux Support](#)
- [Oracle Premier Support for Systems](#)
- [Oracle Cloud Infrastructure](#) (OCI) subscriptions include Oracle Linux Premier Support for [Oracle Linux instances in OCI](#) without additional cost

## Flexible support options and more 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 their Linux support provider, customers can have a single point of contact for all their support needs.

[Oracle Linux Support](#) can be significantly lower in cost than competing vendors' Linux support. Customers can decide which of their 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 development and production systems.

Support coverage	Premier Plus	Premier	Basic
24x7 telephone and online support	✓	✓	✓
Around-the-clock access to enhancements, updates, and errata	✓	✓	✓
TSANet, OCVS (Partner relationships)	✓	✓	✓
Oracle OS Management Hub	✓	✓	✓
High availability with Oracle Clusterware	✓	✓	✓
Comprehensive tracing with DTrace	✓	✓	✓
Oracle Linux load balancer	✓	✓	✓
Container runtimes	✓	✓	✓
Comprehensive indemnification	✓	✓	✓
Oracle Linux Virtualization Manager	✓	✓	✗
Zero-downtime patching with Ksplice	✓	✓	✗
Oracle Linux Automation Manager/Engine	✓	✓	✗
Oracle Cloud Native Environment (Kubernetes)	✓	✓	✗
HA with Corosync and Pacemaker	✓	✓	✗
Premier backports	✓	✓	✗
Lifetime sustaining support	✓	✓	✗
Unlimited virtual machines per host (Physical CPU Pair)	✓	✗	✗

## Resources

- Learn more at [oracle.com/linux](https://oracle.com/linux)
- [Download Oracle Linux](#)
- [Oracle Linux documentation and training](#)
- [Oracle Linux and Virtualization ISV catalog](#)
- [Oracle Linux and Virtualization hardware certification list \(HCL\)](#)

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