

# Frequently Asked Questions

## Oracle Linux

### Introduction

Oracle Linux is an open-source operating system available under the GNU General Public License (GPLv2). Suitable for general purpose or Oracle workloads, it benefits from rigorous testing of more than 128,000 hours per day with real-world workloads and includes unique innovations such as Ksplice for zero-downtime kernel patching, DTrace for real-time diagnostics, the powerful Btrfs file system, and more.

### Questions and Answers

**Q:** What is Oracle's Unbreakable Enterprise Kernel for Linux?

**A:** Unbreakable Enterprise Kernel is the default kernel for Oracle Linux, and is optimized for enterprise software and hardware. Oracle Linux and the Unbreakable Enterprise Kernel are developed to deliver advanced scalability, reliability and performance improvements for all enterprise applications. Existing applications run unchanged with this kernel in place because all system libraries remain unchanged.

Oracle Unbreakable Enterprise Kernel is the default kernel starting with Oracle Linux 5.6 and Oracle Linux 6. The latest version Unbreakable Enterprise Kernel Release 3 is based on the mainline Linux kernel 3.8.13 and boasts a wide range of new features and improvements relevant for enterprise workloads.

The Unbreakable Enterprise Kernel is the kernel used by Oracle's high-performance Engineered Systems and Oracle recommends use with not only Oracle software but for any enterprise applications running on Linux. Unbreakable Enterprise Kernel Release 1 & 2 are available for both x86 (32bit) and x86-64 (64 bit) servers, and Unbreakable Enterprise Kernel Release 3 is available for x86\_64 (64bit) only.

**Q:** Does Oracle still offer Red Hat Enterprise Linux compatibility?

**A:** Oracle stays committed to offering compatibility with Red Hat Enterprise Linux. For userspace applications, Red Hat Enterprise Linux is fully compatible with Oracle Linux whether it's running the Unbreakable Enterprise Kernel or the Red Hat compatible kernel. We will continue to release and support the Red Hat Compatible Kernel as part of Oracle Linux, in the event it is required for certain hardware or driver support.

**Q:** What are Ksplice zero-downtime updates?

**A:** Ksplice zero-downtime updates, available to Oracle Linux Premier support customers, patch the Linux operating system (OS) kernel, while it is running, without a reboot or any interruption. This unique capability enables you to stay current with important Linux updates without the operational cost and disruption of scheduling maintenance windows and rebooting the operating system. Rebootless updates for Oracle Linux are provided for both Unbreakable Enterprise Kernel as well as Red Hat compatible kernel.

This service is offered to Oracle Linux Premier Support customers at no additional cost.

[Read more about how to get started.](#)

**Q:** What is DTrace for Oracle Linux?

**A:** DTrace is a comprehensive dynamic tracing framework that was initially developed for the Oracle Solaris operating system, and is now available to Oracle Linux customers. DTrace is designed to give operational insights that allow users to tune and troubleshoot the operating system. DTrace provides Oracle Linux developers with a tool to analyze performance, and increase observability into the systems they own to see how they work. DTrace enables higher quality applications development, reduced downtime, lower cost, and greater utilization of existing resources. It is available to download from [ULN](#) for Oracle Linux Support customers.

**Q:** What does Oracle deliver with Linux support?

**A:** The [Oracle Linux Support](#) Program delivers enterprise-class support for Linux with premier backports, comprehensive management, cluster software, indemnification, testing and more, all at significantly lower cost. Customers receive full technical support for Oracle Linux running with either the Unbreakable Enterprise Kernel or the Red Hat Compatible Kernel. Technical support is provided via My Oracle Support, the well-established support infrastructure used by all Oracle products.

**A:** Oracle offers the following for Linux server deployments:

- [Free installable binaries and errata](#) for Oracle Linux;
- Two levels of Linux support to choose from:
  - Basic – 24x7 global support, complete Linux server lifecycle management, cluster software;
  - Premier – 24x7 global support, complete Linux server lifecycle management, cluster software, premier backports, Ksplice Zero-Downtime updates and Oracle Lifetime Support.

Beginning February 2012, Oracle extended its support lifecycle for Oracle Linux from 8 years to 10 years. More details can be found [here](#).

**Q:** Who can take advantage of Oracle Linux Support Program?

**A:** Anyone can purchase Linux support from Oracle whether or not they are using Oracle products. Oracle supports both existing Red Hat Enterprise Linux installations as well as new or existing Oracle Linux installations.

In addition, if customers purchase [Oracle Premier Support for Systems](#), Oracle Linux and Oracle VM are free of charge (it is not necessary to purchase support for Oracle Linux or Oracle VM separately for systems covered under your Oracle Premier Support for Systems agreement).

**Q: How can Oracle provide enterprise-quality support for Linux while lowering cost?**

**A:** For decades, Oracle has been supporting customers' enterprise-class software deployments for the most mission critical data centers in the world. As the industry's leading enterprise support provider, Oracle offers:

Thousands of support professionals in 145 countries with 27 local languages and 24x7 global coverage;

- Dedicated Linux engineering team;

- Comprehensive testing and optimization of Linux with third-party hardware, storage, networking, and drivers;
- Complete support for the complete software stack including enterprise applications, middleware, database, Linux, virtualization, servers and storage;
- Services and expertise for installation, configuration and full Linux stack deployment.

**Q:** Why does Oracle offer Linux support?

**A:** Oracle has a long-standing history of supporting standards-based computing to lower the cost of IT infrastructure for customers. Linux is one of the fastest growing operating systems for Oracle software deployments, and as such is very important to our customers. The customer community demands true enterprise quality support for the operating system as they deploy data center solutions with Oracle and Linux. Oracle is deeply committed to delivering high quality enterprise Linux support and advancing Linux technology so that we service our customers better and at the same time accelerate the growth of the Linux operating system as a data center solution. Oracle's backing for Linux, including the Oracle Unbreakable Linux program is critical to the success of Linux in the data center.

**Q:** How does Oracle work with the Linux community?

**A:** Oracle is committed to developing, supporting, and promoting Linux. Oracle has been a key contributor to the Linux community for many years, including major code contributions such as [Oracle Cluster File System](#) (that has been part of the Linux kernel since version 2.6.16) and the [Btrfs file system](#) (integrated into the Linux kernel since version 2.6.29). Oracle's Linux Engineering team is a trusted part of the Linux community and several Oracle employees are Linux mainline kernel maintainers. Oracle will continue contributing Linux-related innovations, modifications, documentation and fixes directly to the Linux community on a timely basis. We will strive to set the standard for collaborating with the Linux community.

Oracle puts tremendous effort into testing Linux to run well in the enterprise. Oracle's Linux test lab uses many test kits that are based on real customer workloads to test and stress Linux for performance, reliability, scalability and high availability. The results of these testing efforts make their way into the Linux kernel as bug fixes and new enhancements, thereby making Linux better for all customers. Learn more about [Oracle's work with the Linux community and with other open source projects](#).

**Q:** 'How does Oracle use Linux to run its business and product development?

**A:** ' Oracle has realized first-hand the benefit of lower IT costs from using Linux in a grid computing infrastructure. [Oracle Managed Cloud Services](#), Oracle's outsourcing business, runs on Linux, as does [Oracle University](#). Oracle also runs the Application Demo Systems and Technology Demo Systems, which consist of several hundred servers, on Linux. These systems are utilized by Oracle's worldwide sales organization to provide Oracle product demonstrations to customers and prospects. Oracle Global IT runs Oracle Linux with more than 42,000 servers, supporting more than 4 million external users and 84,000 internal users.

More than 20,000 developers at Oracle use Oracle Linux to develop key Oracle products such as Oracle Database, Fusion Middleware, and E-Business Suite. Nearly 40,000 Oracle Linux systems running over 128,000 compute hours/day of testing in Oracle's product development farm

**Q:** How much do I pay for Linux support from Oracle?

**A:** ' Oracle's pricing for Linux support is simple, and applies to support for Oracle Linux with either Unbreakable Enterprise Kernel and/or Red Hat Compatible Kernel. Support pricing is calculated on a per system basis and customers can choose any level of support (including free) on each server in their deployment.. Please see the [pricing guide](#) for further details.

**Q:** 'Does Oracle indemnify users against intellectual property infringement claims?

**A:** ' Yes. Oracle is committed to the success of the Linux operating system and will stand behind our support offering by providing indemnification for intellectual property claims raised against our customers. This indemnification is offered for all Linux users supported by Oracle, and is included with Oracle Linux support. The indemnification is not in any way limited to the amount of money a customer has paid Oracle. Oracle's indemnification offer is part of Oracle's Linux support contract, which states:

"Provided you are a current subscriber to Oracle Linux support services, if a third party makes a claim against you that any covered programs furnished by Oracle ("material" or "materials"), and used by you for your business operations infringes its intellectual property rights, Oracle, at its sole cost and expense, will defend you against the claim and indemnify you from the damages, liabilities, costs and expenses awarded by the court to the third party

claiming infringement or the settlement agreed to by Oracle, if you do the following:

- Notify Oracle promptly in writing, not later than 30 days after you receive notice of the claim (or sooner if required by applicable law);
- Give Oracle sole control of the defense and any settlement negotiations;
- Give Oracle the information, authority, and assistance it needs to defend against or settle the claim."

With Oracle's offer of comprehensive and thorough indemnification against infringement, users can now deploy Linux without hesitation. Oracle's indemnification offer makes Linux an even more attractive choice for enterprise deployments. Read the [Top Five Facts About Oracle's Indemnification for Linux](#) for more information.

**Q:** Is Oracle taking Red Hat's source code?

**A:** ' Linux is available under the GPL license, which requires free distribution of the source code. A significant amount of code that is shipped by Red Hat as part of its distribution is actually created by developers outside of Red Hat. Oracle takes the source code that Red Hat makes available under GPL. To offer the Red Hat Compatible Kernel, Oracle will track the Red Hat distribution closely to ensure compatibility for users.

**Q:** 'What happens to third party application certification if I start using Oracle Linux Support?

**A:** ' Customers can continue to use any ISV application that has been certified for use with the corresponding Red Hat Enterprise Linux release. Oracle will offer support for the operating system running underneath applications that have been certified with these versions of Red Hat Enterprise Linux.

Since 2002, Oracle has been providing patches and fixes for RHEL while fixing P1 issues for the Linux OS for our customers. Oracle has maintained compatibility with RHEL, proving that Oracle can effectively manage this process with 3rd party applications.

Oracle will offer support for the operating system running underneath any ISV application that has been certified for use with Red Hat Enterprise Linux. An ISV does not need to do anything special to test and certify their application with Oracle Linux. Going forward, ISVs may test and certify Oracle Linux by running the same tests they run against RHEL. For more details, see: [Certifying your applications with Oracle Linux](#).

**Q:** 'What happens if Red Hat does not take Oracle's patches in their release?

**A:** ' Oracle makes all Linux patches and updates available under GPL and anyone, including Red Hat, can take those fixes. Oracle directly provides patches to Red Hat via their public bug tracking system for consideration for inclusion in their next RHEL updates. Oracle synchronizes with every major RHEL software release including updates. If Red Hat fixes the problem (whether incorporating Oracle's patch or not) Oracle will accept and include Red Hat's fix. If Red Hat does not include Oracle fixes in their update releases and does not otherwise resolve the defect, Oracle will include the additional fixes at the time of each major synchronization with the current RHEL software release.

**Q:** 'Which hardware architectures is Oracle Linux supported on?

**A:** ' Oracle Linux is supported on x86 (32 bit), x86-64 (64 bit) and Itanium (ia64) according to this list of [Oracle Linux Supported Releases](#).

**Q:** 'Where can I find details about certified hardware for Oracle Linux?

**A:** ' You can read more about certified hardware for Oracle Linux [in this document](#).

**Q:** Is Oracle Linux support included with Oracle's Sun Fire and Sun Blade systems?

**A:** ' Yes, when you purchase Oracle's Sun x86 systems with Premier Support for Systems, Oracle Linux Premier support is included (as well as support for Oracle VM and Oracle Solaris). Read more about [Oracle Premier Support for Systems](#).

**Q:** 'How can I find out which third party providers have endorsed Oracle?

**A:** ' Oracle has strategic partnerships with key industry vendors including the ones that run on Linux. Visit the [Partner Endorsements page](#) to see the third party solutions which support for the Oracle Linux support program.

**Q:** How do I get updates for Oracle Linux?

**A:** ' Oracle provides security updates and bug fixes (errata) for Oracle Linux for free from the public yum repositories on <http://public-yum.oracle.com/>. The availability of free errata makes Oracle Linux an ideal choice for both your development and production systems. Customers can freely choose which of their systems should be covered by a support subscription, and at which support level.

The [Unbreakable Linux Network](#) (ULN) is a comprehensive resource for Oracle Linux support subscribers, and offers access to additional Linux software (e.g. ASMLib, DTrace) as well as patches, updates and fixes. ULN is similar to Red Hat Network (RHN). Read the [Unbreakable Linux Network white paper](#) for more information. To access ULN, a valid Customer Support Identifier (CSI) is required. To obtain a CSI, purchase Linux support from the [Oracle Linux Store](#) or through your Oracle Sales contact.

**Q:** 'How can users manage their Linux servers once they download patches from ULN?

**A:** ' The base installation of Oracle Enterprise Manager 12c includes several features free of charge with the purchase of an Oracle Linux support contract. These features include server, storage and virtualization management features such as:

- Configuration management
- Advanced alert management
- Host monitoring and management
- Linux OS patching

In addition, several Oracle Enterprise Manager Ops Center features are included free of charge, including:

- Bare metal OS provisioning
- Compliance automation
- Historical monitoring

To download Oracle Enterprise Manager 12c, visit the [Oracle Enterprise Manager Downloads page](#).

Oracle also provides support for Spacewalk, the Open Source Linux management product. More information about Oracle's Spacewalk support can be found in the [Spacewalk Release Notes](#).

**Q:** Is clustering software included with Oracle Linux support?

**A:** ' Oracle Linux support customers at the Basic and Premier support levels can download and deploy Oracle Clusterware at no additional license fee or support cost. Oracle Clusterware is portable cluster software that groups together individual servers so they can cooperate as a single system. A fundamental component of Oracle Real Application Clusters, Oracle Clusterware can operate independently and helps ensure the protection of an application, Oracle or third-party.

Oracle Clusterware enables high availability, an essential component of business continuity, for applications and databases managed in the cluster environment—including

Oracle Single Instance Databases, Oracle Application Servers, Oracle Enterprise Manager components, third party databases, and other applications. For more information, read the [Oracle Clusterware for Oracle Linux FAQ](#).

**Q:** Does Oracle provide support for the Red Hat Scalable File System Add-on?

**A:** The Red Hat Scalable File System Add-on is a solution which incorporates the **Linux XFS filesystem** and is available, for an additional cost per socket-pair, with the Red Hat Enterprise Linux Server subscription. Oracle Linux customers with Premier Support subscriptions can receive support for XFS on Oracle Linux 6 no additional charge. Beginning with Oracle Linux 7, XFS is the default file system and is included with Basic and Premier Support subscriptions, at no additional charge. This support includes both the Unbreakable Enterprise Kernel (UEK) and the Red Hat compatible kernel. For the Unbreakable Enterprise Kernel, you must use Release 2 or higher.

**Q:** Does Oracle provide support for Red Hat Global File System (GFS), Red Hat Cluster Suite (RHCS), or Red Hat Application Server (RHAS)?

**A:** Red Hat Global File System (GFS) and Red Hat Cluster Suite (RHCS) are part of RHEL5 and Oracle Linux 5 so they are supported by Oracle under the Linux Support Program. However, since GFS and RHCS are not included with RHEL4, Oracle Linux 4 and earlier versions, they are not supported by Oracle with RHEL4, OL4, and earlier versions. Beginning with Red Hat Enterprise Linux 6, several features were separated into add-ons, requiring a separate purchase, such as the High Availability Add-On for clustering and the Resilient Storage Add-On for GFS2. Oracle Linux Support does not include support for these add-ons.

Oracle Linux software already includes the [Oracle Cluster File System \(OCFS2\)](#). Developed by Oracle, OCFS2 is a shared storage file system integrated into the Linux kernel (2.6.16 and higher) and released under the GNU General Public License.

**Q:** Does Oracle Support KVM as part of Red Hat Enterprise Linux?

**A:** KVM is the default hypervisor for Red Hat Enterprise Linux and is part of the Red Hat Enterprise Linux kernel. Because it is part of the distribution, it is supported by Oracle under the Oracle Linux support program. However, Oracle does not support Oracle products on KVM. Oracle delivers Oracle VM Server for x86, free server virtualization

software that fully supports both Oracle and non-Oracle applications, and delivers more efficient performance backed by world-class support at a significantly lower cost. Learn more about [Oracle VM Server for x86](#).

**Q:** What is required to transition my existing RHEL installation from RHN to Unbreakable Linux Network (ULN)?

**A:** There is no need to reinstall the operating system. To connect your RHEL systems with the [Unbreakable Linux Network](#), follow the steps [outlined here](#). In summary, you register for an account with ULN using a valid customer support identifier (CSI), then you download and install registration software and use it to your register your server. Once you have completed these steps, you may use yum or up2date to download and install updates from ULN.

**Q:** When switching to Oracle Linux support for my current Red Hat Enterprise Linux installations, am I required to remove any Red Hat logos or other Red Hat files from my system?

**A:** As per the [Red Hat license agreement](#), as long as you do not redistribute the Red Hat Enterprise Linux software, you do not have to change or remove any packages in the Red Hat Enterprise Linux distribution when switching to Oracle Linux Support. In order to receive updates for Oracle Linux, you must register your system with Unbreakable Linux Network by following instructions in this document.

**Q:** What do I need to do to migrate from SUSE Linux (SLES) to Oracle Linux?

**A:** Oracle has developed a simple process for customers who are moving from SLES to Oracle Linux. Begin by reviewing the information found at [Migration Made Easy: SUSE Linux to Oracle Linux](#). Next, familiarize yourself with Oracle Linux by [downloading the distribution from our website](#). Purchase your Oracle Linux Support subscription by contacting your Oracle sales representative or by visiting the [Oracle Store](#). Remember, Oracle Linux is free to download and distribute, so you only need to purchase the number of subscriptions you need support for. Plan your migration, and while you are transitioning from SLES to Oracle Linux, you will receive configuration and troubleshooting support for SLES under your Oracle Linux Support subscription. And if you need additional assistance in planning and implementing a migration strategy, [Oracle Consulting](#) is available to help with their SLES to Oracle Linux migration services.

**Q:** How do I get more information and purchase Linux support from Oracle?

**A:** To get more information, visit [oracle.com/linux](http://oracle.com/linux) and to purchase Linux support, visit [shop.oracle.com](http://shop.oracle.com).



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**Hardware and Software, Engineered to Work Together**

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