

ORACLE SOLARIS 11.2

KEY BENEFITS

- **Engineered for cloud.** Server, storage, and network virtualization. Fast, intelligent provisioning capabilities for rapid service setup and maintenance.
- **Built-in virtualization.** Lowest overhead, lowest latency solution on the market. Software-defined networking drives network virtualization into the network infrastructure. Secure live migration with Oracle VM for Oracle's SPARC and x86 systems. Oracle Solaris Zones now offers the capability to run independent kernel versions to increase operational flexibility.
- **Scalable data management.** Oracle Solaris ZFS offers end-to-end data protection, a greatly simplified administration model removing the need for third-party volume managers, and scale-out design with unlimited capacity for future growth. It also offers integrated data services like encryption, compression, replication, snapshots, and cloning.
- **Advanced protection.** Integrated compliance reporting can reduce time to achieve compliance by an order of magnitude for huge cost savings. Anti-malware protection from hypervisor to application helps prevent threats. Overall, it offers fully integrated security for users, applications, and devices while simplifying administration with fine-grained delegated management, implementing the latest security standards, and continuing Oracle Solaris' leadership position by providing highly secure environments.

Oracle Solaris, "Engineered for Cloud", delivers mission-critical cloud and enterprise infrastructure with built-in virtualization, simplified software lifecycle management, cloud scale data management, and advanced protection cloud environments.

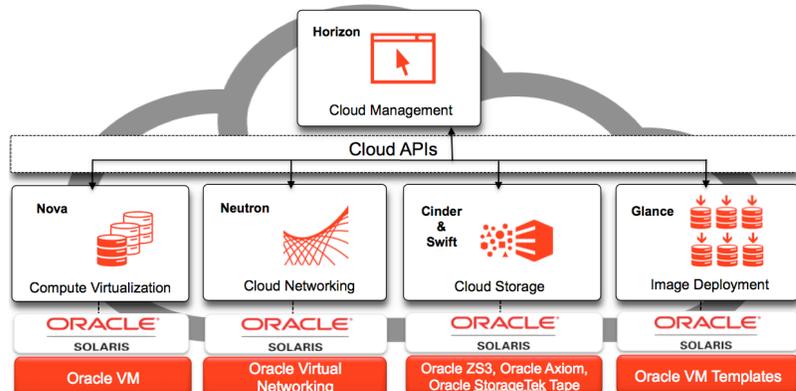
Engineered together with Oracle Database, Oracle Applications, and Oracle's middleware solutions, Oracle Solaris 11 delivers unique features to increase performance, streamline management, and automate support for Oracle deployments.

Best for Cloud

Oracle Solaris running on Oracle's systems brings together mission-critical capabilities with cloud management technologies to deliver mission-critical cloud infrastructure.

Oracle offers two approaches to building an Oracle Solaris-based cloud, through Oracle's Enterprise Cloud Infrastructure Optimized Solution, and new, in Oracle Solaris 11.2, OpenStack—an open source cloud computing project that enjoys significant support in the industry.

OpenStack is a foundation for Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) architectures. It is built around a single pane for management of compute, networking, and storage resources. The following diagram shows how OpenStack layers onto Oracle Solaris, and in turn, onto other Oracle products.



Oracle Solaris integrates OpenStack with enterprise advantages (discussed in more detail below) such as:

- Zero-overhead virtualization, which translates into higher utilization and fewer systems required for your build out
- Simple and straightforward lifecycle management through a new packaging architecture in Oracle Solaris 11 that greatly simplifies system updates by managing all components such as firmware, kernel, services, and utilities
- Automated compliance checking that helps ensure your systems meet security policies, indicates where they don't, and suggests remedial actions in a generated report
- Optimized SPARC and x86 platform support
- The ability to go from zero to OpenStack in about 10 minutes. Download Oracle VM Templates based on the new Unified Archives capability and deploy a single-system, multi-VM OpenStack environment in a matter of minutes.

Oracle Solaris Cluster enables extreme availability for enterprise clouds, where Oracle Solaris Zone Clusters securely consolidate multiple virtualized Oracle Solaris 10 and Oracle Solaris 11 environments. Oracle Solaris Cluster Geographic Edition provides highly available cloud services to span data centers in several locations. Geographic clustering can restart an entire application stack in a dynamic recovery cluster.

Oracle Enterprise Manager unifies the management of Oracle software, Oracle Solaris, and systems and storage across the cloud infrastructure. Oracle Enterprise Manager Ops Center addresses hardware, Oracle Solaris, and Oracle VM on both SPARC and x86 platforms. Self-service, provisioning, management, and chargeback can be achieved with Oracle Enterprise Manager Cloud Control 12c.

This combination of capabilities makes Oracle Solaris an ideal base for deployment in public, private, and hybrid clouds where it can provide the basic IaaS support or host applications in a PaaS or SaaS model.

Best for Your Enterprise

Customers running enterprise application environments are focused on reducing risks and costs in their data center.

Reduce risks:

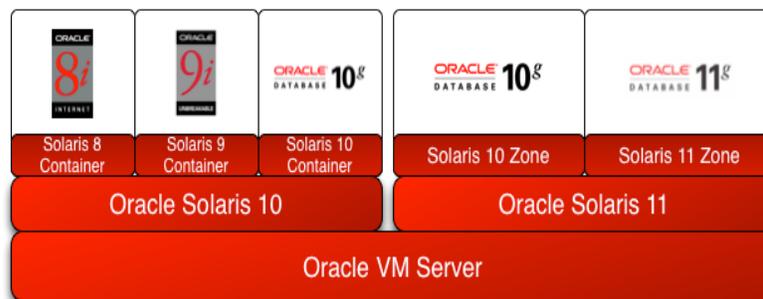
- All Oracle Solaris 11 components are lifecycle managed through the Oracle Solaris Image Packaging System . Package updates also now include firmware updates. With Oracle Solaris, there is one, simple process for updating the system, including virtualization offerings. This simplicity has a huge impact on decreasing time spent patching and updating. and on human error,.
- Kernel software updates always initiate a checkpoint snapshot so any subsequent changes can be rolled back in one step, by reverting to the prechange environment. Rollback is not the risky process of backing out patches one by one, but simply booting back to the prechange environment.

This same approach to managing risk can be used by an administrator for any system software changes. Simplicity reduces chances for error.

- Other ways Oracle Solaris can help reduce risk:
 - High-availability (HA) offerings like Oracle Solaris Cluster, for virtual or physical HA solutions
 - ZFS file system for end-to-end data protection
 - Lower-level redundancy capabilities in every subsystem of Oracle Solaris, such as storage devices and both datalink and IP multipathing

Reduce costs:

- The most obvious savings is realized in the cost of virtualization. Competitive offerings may involve three or four vendors. Oracle Solaris running on Oracle hardware includes all the capabilities of Oracle Solaris virtualization—including the management tools—at no additional cost. One support contact for a system covers all the virtualization instances running in that environment. Oracle Solaris also offers a variety of virtualization technologies, not just a single approach, which an organization can tailor to its specific needs.
- A less-obvious cost savings comes with the extremely low overhead of Oracle Solaris virtualization. When looking at the competitive landscape there are large variations in virtualization overhead, which ultimately lead to a “virtualization overhead tax” of as much as 25 percent. Oracle Solaris Zones are typically below the 1 percent range. The inefficient sharing of server resources in competitive offerings means the purchase of more CPUs just to cover hypervisor overhead leading to smaller workloads versus the ultra-low overhead that Oracle Solaris offers. SPARC systems also play an important role in getting higher utilization due to the power of the latest-generation SPARC processors. Many examples of this power can be found on the Oracle Systems’ [Best Perf](#) blog.
- Through the unique [Oracle Solaris Guarantee Program](#), applications developed on previous Oracle Solaris releases will run unmodified on the latest version of Oracle Solaris 11. This helps remove the cost (and risk) of migrating applications from earlier versions of Oracle Solaris. It’s more than just binary compatibility, as Oracle Solaris Zones (formerly called Oracle Solaris Containers) offer binary *and* environmental compatibility. Note in the diagram below the Oracle Solaris 8 and Oracle Solaris 9 environments running on Oracle Solaris 10, or Oracle Solaris 10 environments running on Oracle Solaris 11. Oracle VM Server can support Oracle Solaris 10 and Oracle Solaris 11 guests as shown below. For further efficiency, Oracle Solaris Zones can be deployed in each guest OS.



This diagram shows how four generations of OS can run in a virtualized system.

IT groups in finance, telecommunications, and government sectors rely on Oracle Solaris to meet their needs for an environment with broad application support, scalability, and security built in. Such customers have application lifecycles spanning many years. No other vendor has such a long and clearly specified [lifetime support policy](#), with service-request submittals for Oracle Solaris 11 accepted into 2024, and for Oracle Solaris 10 into 2021.

Thousands of enterprise applications are available on Oracle Solaris and continue to be supported on the latest release. Many new applications are being developed and certified [to run on Oracle Solaris 11](#). The Oracle PartnerNetwork (OPN) provides a range of services for developers including access to software and tools. Oracle Solaris Studio tools are recommended for building and tuning applications to run on Oracle Solaris. With optimizations for both SPARC and x86 CPUs in the latest tools, code can run up to three times faster.

Best for Oracle Workloads

Oracle Solaris is co-engineered with Oracle's software and hardware to run Oracle's enterprise applications and achieve the highest performance and the best efficiency. This integrated design approach has led to many advances for Oracle environments on Oracle Solaris 11.2:

- Performance boost for Oracle Real Application Clusters (Oracle RAC) with Kernel Mode Acceleration that improves throughput by up to 17 percent and provides more-predictable performance
- Lower memory utilization and better application performance through memory prediction technology, which analyzes application needs to assign appropriate memory resources
- Online resizing of the Oracle Database system global area (SGA) enabled by the new optimized shared memory model and many other Oracle [Database co-engineered enhancements](#)

Oracle Solaris and its virtualization technologies also offer resource management facilities that can help reduce licensing costs by constraining CPU resources for workloads that don't need all system resources.

Oracle rigorously tests the entire Oracle stack so that customers with Oracle environments save time deploying and maintaining systems and reduce ongoing operational risk.

Oracle Enterprise Manager consolidates the enterprise-wide management of traditional

and virtualized IT deployments, providing views into applications, middleware, database, OS, virtualization technologies in Oracle's Sun Servers solutions, and network and storage infrastructure. For example, Oracle Enterprise Manager monitors application network performance and identifies network bandwidth issues so system administrators can set network bandwidth priorities with Oracle Solaris 11 and restore network resources to critical applications.

Oracle offers a number of [optimized solutions](#) to help rapidly deploy and efficiently operate a range of Oracle environments. Designed, tested, and tuned for optimal performance and availability, these solutions use Oracle's engineered systems, servers, and storage; Oracle Solaris; virtualization, Oracle Database; middleware; and Oracle's enterprise applications to deliver the most cost-effective architectures for your data center.

Oracle Solaris 11 is at the heart of Oracle engineered systems—Oracle SuperCluster, Oracle Exadata, Oracle Exalogic Elastic Cloud, Oracle Exalytics T5-8 and Oracle ZFS Storage Appliance—for ultimate reliability, fastest deployment, and lowest cost for Oracle deployments.

And finally, Oracle continues to enhance Java to run best on Oracle Solaris. Watch the official Oracle Systems [performance blog](#) for updates on Java 8 running on Oracle Solaris and Oracle's SPARC systems.

Support and Training

Oracle offers the following support for Oracle Solaris:

- [Oracle Premier Support for Systems](#)
- [Oracle Premier Support for Operating Systems](#)
- [Oracle Solaris Premier Subscription for Non-Oracle Hardware](#)

Oracle University offers Oracle Solaris 11 training and certification programs to help customers and partners quickly obtain the skills needed to manage mission-critical cloud deployments. These programs address all skill levels for administrators and developers and cover all aspects of development, deployment, and management of Oracle Solaris.

Download Oracle Solaris

Oracle Solaris 11.1

Download from either the [Oracle Software Download Center](#) or the [Oracle Technical Network](#) (OTN). The latter provides a no-cost perpetual license for development purposes under the terms of the OTN license.

Oracle Solaris 11.2 Beta

[Download Oracle Solaris 11.2 Beta](#) from OTN to begin exploring:

- OpenStack
- New zone features including complete kernel independence for maximum data center operational flexibility
- Unified Archives that offer a general-purpose solution for creating or deploying Oracle Solaris instances to or from physical or virtual environments

- Integrated compliance reporting that provides the ability to generate Oracle Solaris PCI-DSS compliance reports along with recommended security configurations
- Many other projects detailed in the [What's New for Oracle Solaris 11.2 Beta](#)

Contact Us

For more information about Oracle Solaris, visit oracle.com/solaris or call +1.800.ORACLE1 to speak with an Oracle representative.

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