

ORACLE SOLARIS CLUSTER | WHAT'S NEW

KEY BENEFITS

- Built-in virtualization support for safe cloud deployment
- Instant systems failure detection for non-stop availability
- Application prioritization and load balancing across cluster nodes
- Pre-engineered, pre-tested with Oracle applications and Database
- Out-of-the box support for large set of applications and databases
- Reduces significantly recovery time in DR situations
- Complete cloud management with Oracle Enterprise Manager

Oracle Solaris Cluster 4.0 expands the High Availability (HA) and Disaster Recovery (DR) capabilities of Oracle Solaris 11 by adding application and service recovery for both traditional Oracle Solaris enterprise deployments as well as Oracle Solaris-based private, public and hybrid clouds.

Oracle Solaris Cluster 4.0 offers built-in support for cloud implementations through virtual clusters enabling secure deployment of mission critical workloads and best availability for enterprise applications with instant system failure detection for fastest service recovery. It includes out-of-the box support for Oracle Database and Oracle Applications such as Oracle WebLogic Server and is pre-tested with Oracle Sun servers, storage and networking components. Oracle Solaris Cluster leverages the SPARC SuperCluster redundancy and reliability features and delivers the high availability infrastructure for the Oracle Optimized Solutions.

Fully integrated with Oracle Solaris 11, Oracle Solaris Cluster offers a unified installation experience built on the Oracle Solaris Image Packaging System (IPS) and the Oracle Solaris 11 automated installer, and leverages Oracle Enterprise Manager Ops Center to allow for quick deployment of cloud environments and simplified lifecycle management.

Built for business critical clouds

Oracle Solaris Cluster extends Oracle Solaris to provide the infrastructure required for deploying mission critical workloads in virtualized cloud environment. It does support Oracle Solaris Zones and Oracle VM for SPARC and can be configured to offer protection at the application level or at the zone / VM level with policy-based recovery behavior and reliable management of multi-tier dependencies. It does also provide administrative isolation for multi-tenant environments and offers ease of operation through integration with Oracle Enterprise Manager with auto discovery and cluster-wide provisioning, configuration and patching.

Best availability for enterprise application

Tightly coupled with Oracle Solaris, Oracle Solaris Cluster detects systems failures instantly and consistently, providing faster failure notification, application failover and significantly reducing overall service recovery time thus drastically reducing application outages.

Oracle Solaris Cluster provides out-of-the box support for applications and databases from Oracle and mainstream ISVs, avoiding any development and scripting tasks, facilitating immediate deployment in traditional systems or virtual environments. The Oracle Solaris Cluster graphical agent toolkit enables

adding support for custom applications with minimal effort.

Oracle Solaris Cluster does also include built-in multi-site, multi-cluster support, offering reliable protection from disaster through automated application failover and coordination with application-, storage-, host based replication solutions.

Engineered for Oracle

Oracle Solaris Cluster delivers its best with the complete Oracle stack. It is thoroughly tested with Oracle Sun servers, storage systems, networking components and applications. It is pre-engineered with SuperCluster for multi-tier applications and database deployment and included in Oracle Optimized Solutions to provide the high availability infrastructure for leading Oracle applications – PeopleSoft, Siebel CRM, E-Business Suite.

What's New in Oracle Solaris Cluster 4.0 (Oracle Solaris 11)

Oracle Solaris Cluster 4.0 is the first Oracle Solaris Cluster release to introduce support for Oracle Solaris 11. It offers a unified installation experience with Oracle Solaris 11.

- Oracle Solaris Cluster 4.0 uses the new Oracle Solaris Image Packaging System (IPS), to simplify software delivery and facilitate lifecycle management. IPS enables error-free software updates and automatic patch dependencies resolution. Together with the new Oracle Solaris Boot Environment tools which allows for instant snapshot and rollback the use of the new packaging framework with Oracle Solaris Cluster lowers the risk of software update and ultimately enables minimal to no downtime for software maintenance.
- Oracle Solaris Cluster 4.0 supports Oracle Solaris 11's automated installer to provide integrated automated system provisioning. The automated installer enables easy full stack deployment including Oracle Solaris and Oracle Solaris Cluster facilitates multi-node installation.

Oracle Solaris Cluster 4.0 extends Oracle Solaris zones on Oracle Solaris 11 with high availability and disaster recovery support:

- With Oracle Solaris zone cluster customers can create virtual clusters to deploy multiple applications or multi-tiered workloads onto a single physical cluster configuration. Applications can be run in their own specific zone cluster and can be moved to another server on demand or failed over in case of failure following their application specific pre-defined procedures as well as load and priority balancing policies.
- With Oracle Solaris Cluster failover zones the individual zones can be moved to another server on demand or failed over in case of failure. Customers may use failover zones to manage Oracle Solaris 10 or Oracle Solaris 11 native zones. This can facilitate migration of Oracle Solaris 10 zones or systems to Oracle Solaris 11 by providing the same high availability infrastructure support than on Oracle Solaris 10.

Oracle Solaris Cluster 4.0 offers reliable protection from disaster for traditional or virtualized workloads on Oracle Solaris 11 through automated application failover and coordination with replication solutions such as StorageTek

Availability Suite 4.0, Oracle Data Guard and a script-based plug-in.

Oracle Solaris Cluster 4.0 includes built-in support for Oracle Solaris 11 services such as Apache, Apache Tomcat, DHCP, DNS, NFS, as well as additional Oracle software such as Oracle Database 11.2.0.3 (single instance and Oracle Real Application Clusters (RAC)) and WebLogic Server. With this out-of-the box support system administrators can easily add increased application availability, as well as simplified service management for Oracle Solaris 11 deployments.

What's New in Oracle Solaris Cluster 3.3 5/11 (Oracle Solaris 10)

Flexibility

- **Oracle's Sun ZFS Storage Appliance as a NAS device**

This feature allows the Sun ZFS Storage Appliance to be used as an NFS server for any HA application running in the Oracle Solaris Cluster framework. It includes the support of fencing to restrict evicted cluster nodes from access to the storage, the use of the Sun ZFS Storage Appliance as a quorum device, and the clearing of NFS locks held by applications failing over to a secondary node. Customers can now fully and safely leverage the benefits of unified storage to deploy mission-critical applications in the Oracle Solaris Cluster environment. Oracle Solaris Cluster protects the data stored on the storage appliance from corruption by storage fencing, and cluster partitioning is avoided through the use of the quorum mechanism. Thanks to those new features, the Sun ZFS Storage Appliance can be configured to provide NFS shares in addition to iSCSI/FC LUNs. All configurations can now be used with Oracle Solaris Cluster to support applications and databases, including Oracle Database single instance (Oracle Solaris Cluster HA for Oracle) and Oracle Real Application Clusters (Oracle RAC).

- **Oracle ACFS**

Oracle ACFS is a multi-writer scalable-file-system and storage-management technology that extends Oracle Automatic Storage Management (Oracle ASM) functionality to support customer files maintained outside of the Oracle Database.

This release adds support for Oracle Automatic Storage Management Cluster File System (Oracle ACFS) into the Oracle Solaris Cluster storage-management stack.

Customers deploying Oracle Solaris Cluster with different applications, including Oracle RAC, in multi-tier deployments can now leverage Oracle ACFS as their general file system to store executables, application data files, and Oracle Database homes.

Diagnosability

• Cluster validation tool extensions

The Oracle Solaris Cluster validation tool has been extended to include cluster verifications based on the best practices defined by the Oracle consulting teams. It includes both static and dynamic checks: it enables detection of the most common installation and configuration errors and can be used to exercise different scenarios, such as fault injections, to validate the correct cluster behavior.

This tool enables customers to identify beforehand potential causes of misbehavior due to installation and configuration errors. Administrators can correct the issues before failure of a component leads to “failure to failover” and service outage.

Virtualization

• New options for Oracle Solaris Containers cluster (aka Oracle Solaris Zones clusters)

Sharing of file systems across virtual clusters:

ZFS, UFS, QFS, and VxFS can be set up in an Oracle Solaris Containers cluster as a highly-available local file system. With this new feature, multiple applications running in these virtual clusters can access the same file systems in read and write mode. This enables applications deployed in different virtual clusters to share common data stored on an HA local file system.

Resource group management:

It is now possible to configure dependencies between applications running in different Oracle Solaris Containers clusters. This enables coordination of the starting, stopping, and failing over of those different applications, even if they are not running in the same virtual cluster. For example, resource group management can be used to enforce that related services always run on the same physical node for performance or consistency reasons, despite switchover or failover.

This release provides increased availability, flexibility, and performance for multi-component applications taking advantage of the fault and resource isolation offered by the Oracle Solaris Containers cluster.

• Out-of-the box support in Oracle Solaris Containers clusters for all currently available application agents

Oracle applications and databases and other ISV applications, including SAP (SAP Netweaver, SAP Livecache, MaxDB), iPlanet Web Proxy, Sybase ASE, DNS, and many more, are now supported in Oracle Solaris Containers clusters without any additional scripting.

Oracle Solaris Cluster provides to mission-critical applications a deployment environment that combines highest reliability, fault and security isolation, and tightest integration with the Oracle Solaris OS virtualization for unparalleled service availability at lower cost. Oracle Solaris Cluster includes for a large number of applications specific, ready-to-use modules which enable rapid deployments of those applications in an Oracle Solaris Cluster environment,

without requiring any specific development.

Application Integration

- **New supported application versions**

- Apache Tomcat 5.5.x and 7.0.6
- Agfa IMPAX 6.4
- IBM WebSphere MQ Message Broker 7.0
- MySQL 5.5
- Samba 3.5.5
- SAP kernel 7.11
- Sun GlassFish Message Queue 4.4 Update 1
- SWIFTAlliance Access and Gateway 7.0

- **New supported database versions**

- 11g Release 2: 11.2.0.1, 11.2.0.2, Oracle RAC in Oracle Solaris Containers clusters, clustered Oracle ASM
- 10g Release 2 (10.2.0.5)
- 9i RAC and 10g Release 2 Oracle RAC on x64 supported in Oracle Solaris Containers

Out-of-the-box support of extensive set of leading applications and databases eliminates lengthy scripting and delivers higher reliability when deploying applications in a clustered environment.

Disaster Recovery

- **Oracle Data Guard replication for Oracle Database single instance in geo clusters**

The Oracle Solaris Cluster Geographic Edition feature now supports Oracle Data Guard for application-based replication to protect Oracle single-instance databases in multi-cluster, geographically-distributed configurations.

Oracle Solaris Cluster Geographic Edition enables automated disaster recovery in geographically-dispersed multi-cluster configurations. It provides protection for application services from outage due to total site failure and limits service interruption due to local cluster or site maintenance, by coordinating the different replication mechanism and application failover procedures. In case of disaster, the automation offered by Oracle Solaris Cluster Geographic Edition enables higher confidence in success of the recovery procedures: the procedures can be tested in advance, human errors happening in stress situations are avoided, and the level of expertise for staff on duty is reduced. Now customers can get maximum availability with automated disaster recovery of both Oracle single-instance database and Oracle RAC based deployments with Oracle Data Guard in a multi-cluster configuration.

- **ZFS qualified with storage-based replication for multi-site and multi-cluster configurations**

This release adds the support of storage-based replication solution such as

Hitachi Universal Replicator in both campus cluster (one cluster stretched across multiple metropolitan sites) and geo clusters (multiple clusters across unlimited distances).

Oracle Solaris Cluster provides more choice for the most demanding customers: it deploys a proven disaster-recovery solution and combines the use of ZFS, the most innovative file system, with the customer's choice of storage and data replication.

- **New three-data-center (3DC) topology**

This release adds support for three-data-center, or 3-site topologies (“3DC”) based on an Oracle Solaris Cluster Geographic Edition partnership that combines one campus cluster and one standard cluster and leverages application-based replication between the two clusters. It is, for example, possible to use Oracle single-instance databases in 3-site topologies, combining the benefits of metro clustering with geographic separation.

This feature eliminates the need to trade off disaster survivability against data integrity: a campus cluster is used with synchronous replication or shared storage and small geographic separation to provide data integrity in case of a local outage, and a geo cluster is deployed with application-based asynchronous replication and wide geographic separation to protect against disasters.

Ease of Use

- **Wizard for Oracle 11g Release 2 HA for Oracle/Oracle RAC configurations**

A new configuration wizard has been introduced to facilitate Oracle Database 11g Release 2 in HA for Oracle or Oracle RAC configurations in the Oracle Solaris Cluster environment. It delivers a web- or CLI-based interface and provides automatic discovery of components, immediate validation, and on-line help.

This wizard enables you to configure, rapidly and simply, complex Oracle Database 11g Release 2 HA for Oracle and Oracle RAC environments. The wizards lower the need of training for beginners and save time for advanced users.

Security

- **Full support of Oracle Solaris Trusted Extensions**

This release extends the support of Oracle Solaris Trusted Extensions to any validated Oracle Solaris Cluster configurations based on Oracle Solaris Containers clusters.

Oracle Solaris Cluster provides High Availability in multi-level security environments for mission-critical applications with this feature.

What's New in Oracle Solaris Cluster 3.3 (Oracle Solaris 10)

Availability

- Active Monitoring of Storage Resources
- Flexible load distribution of application services

Virtualization

- Oracle Solaris Containers cluster support for Oracle Business Intelligence Enterprise Edition, Oracle WebLogic Server, MySQL cluster, PeopleSoft, TimesTen
- NAS support in Containers cluster
- Global File System support with Containers cluster

Hardware Integration

- Infiniband on public network and as storage connectivity
- Support for Reliable Data Sockets (RDS) over Infiniband (IB) for Oracle RAC in Containers cluster

Application Integration - New supported applications, versions and configurations

- New agents: Oracle Business Intelligence Enterprise Edition, PeopleSoft Enterprise, MySQL Cluster, TimesTen
- Updates on Oracle E-Business Suite, WebLogic Server, MySQL, SAP
- Oracle 11gR2 database and RAC support

Disaster Recovery

- Oracle Solaris Containers cluster with Geographic Edition
- Oracle Unified Storage 7xxx in Campus Cluster deployments

Security

- Qualification with Oracle Solaris Trusted Extensions

Ease of Use

- Wizards for ASM configurations set-up
- User Interface performance improvements in large configurations
- Power Management User interface
- Node Rename

Contact Us

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

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