Oracle Solaris Cluster
What’s New

Oracle Solaris Cluster 4 is a comprehensive High Availability and Disaster Recovery solution for Oracle SPARC and x86 environments based on Oracle Solaris 11. It combines extreme service availability for applications and virtualized workloads, operational flexibility, agile deployments and simplified administration for traditional or cloud-based deployments.

Built for Business Critical Clouds
Oracle Solaris Cluster extends Oracle Solaris to provide the infrastructure required for running mission critical workloads in virtualized cloud environment. It protects applications, zones and Oracle VM Server for SPARC deployments with advanced monitoring, policy-based recovery, and reliable management of multi-tier dependencies. With the Oracle Solaris Zone cluster feature, it offers a virtual cluster infrastructure providing fault isolation, separate resource management, private networking, and administrative isolation for multi-tenant environments.

Extreme Availability for Enterprise Applications
Tightly coupled with Oracle Solaris, Oracle Solaris Cluster detects system failures instantly and consistently, providing faster failure notification and faster application failover, significantly reducing overall service recovery time and drastically increasing application uptime.

Oracle Solaris Cluster provides out-of-the-box support for a large number of applications and databases from Oracle and mainstream ISVs, avoiding any development and scripting tasks and facilitating immediate deployment in traditional systems or virtual environments. The Oracle Solaris Cluster agent toolkit enables adding support for custom applications with minimal effort and maximum flexibility.

Oracle Solaris Cluster also includes multi-site, multi-cluster disaster recovery for protecting business services from the consequences of disasters through automated application failover, and coordination with application, storage, and host based replication solutions. It provides orchestrated recovery of multiple applications and their respective replication solutions offering significant gains in terms of reliability, speed of recovery and reduced risk.

Best Availability for Oracle Deployments on Oracle Solaris
Oracle Solaris Cluster offers built-in support for Oracle databases and applications with solution-specific failure detection and automatic recovery for minimized outage. Thoroughly tested with Oracle Sun servers, storage systems, networking components and Oracle Optimized Solutions, Oracle Solaris Cluster is engineered from the ground up to support the stringent requirements of multi-tier mission critical environments such as those deployed on Oracle SuperCluster engineered systems for which it provides the application high availability and disaster recovery framework.

KEY FEATURES
Oracle Solaris Cluster enables customers to build highly available enterprise environments based on Oracle Solaris. It offers:
• Deep integration with Oracle Solaris for fastest failure detection and recovery
• Flexible virtualization support for Oracle Solaris Zones, Oracle Solaris Kernel Zones and Oracle VM for SPARC domains
• Pre-tested, out-of-the-box application support for reliable and automated application service recovery
• Orchestrated multi-tiered application failover and data replication management across multiple sites
• Agile deployment across virtualization and bare-metal environments with Oracle Solaris Unified Archives
• One-step update for OS and cluster
• Oracle x86 and SPARC server support

KEY BENEFITS
• Increased application uptime
• Reliable and fast Disaster Recovery
• No compromise Availability with maximized flexibility and minimized complexity
What’s New in Oracle Solaris Cluster

- Oracle Solaris Cluster 4.2 (Oracle Solaris 11.2 and 11.1)
- Oracle Solaris Cluster 4.1 (Oracle Solaris 11.1)

Oracle Solaris Cluster 4.2

Virtualization

Kernel Zones High Availability
Oracle Solaris Cluster 4.2 adds support for Oracle Solaris Kernel Zones to its HA zone agent providing monitoring, automatic restart and failover as well as warm migration, combining resiliency and resource optimization with the additional flexibility of having zones with independent kernel versions and patch levels.

Load and dependency management for Oracle VM for SPARC guests
The HA agent for Oracle VM for SPARC has been enhanced to better leverage load and dependency management during Live Migration. Excess workload can be evicted before the switchover of a guest domain is executed, leading to higher rate of success for the migration, thereby reducing the potential downtime of the VM.

Lifecycle and operations management

New browser-based management interface
The new graphical user interface offers single point access to status, configuration and management capabilities. Its topology, tree and table views offer easy navigation inside cluster instances both in local or multi-cluster configurations facilitating operations, monitoring, and diagnostics.

Unified Archives for cluster deployment and cloning
With Oracle Solaris’ new Unified Archives format, cluster configurations can now be recovered or cloned easily and rapidly either as physical clusters or virtual clusters.

Increased safety with secure Automated Installer deployments
Installations using the Automated Installer are now more secure through authentication and encryption/decryption of the communication between the Installer and the cluster nodes as well as through the use of HTTPS repository locations.

Enhanced SNMP service
The SNMP service can now be configured to send events for cluster configuration and status changes. This facilitates monitoring from external system management tools using SNMP as the communication protocol.

Disaster recovery

Disaster recovery orchestration
The new orchestrated disaster recovery support enables Oracle Solaris Cluster to manage the automated and synchronized recovery of multiple applications and their
respective replication solution across multiple sites offering significant gains in terms of reliability, speed of recovery and reduced risk.

Application Integration

Generic Data Service agent toolkit version 2
Agent (or data service) development allows you to deploy your application within the Oracle Solaris Cluster infrastructure. The Generic Data Service (GDS) has been designed and developed by Oracle Solaris Cluster engineering to reduce the complexity associated with data service development. GDS v2 further increases flexibility, ease of use and security of this already trusted and robust development tool.

Support for latest database version and ecosystem components

Oracle 12.1 new RAC database options: Oracle Multitenant, service agent, policy managed database; ACFS

New Oracle applications
- J.D. Edwards EnterpriseOne 9.1
- Oracle Exalogic Traffic Director 11.1.1.7
- GoldenGate 12c

New application versions
- Oracle Business Intelligence 11.1.1.7 (new on Oracle Solaris 11)
- Oracle Siebel 8.2.2, TimesTen 11.2.2, Weblogic Server 12.1, MySQL 5.5; SAP Sybase 15.7, SAP LiveCache/MaxDB 7.9, Samba 3.6.23, PostgreSQL 9.2

Oracle Solaris Cluster 4.1

Virtualization

Oracle Solaris 10 Zone Cluster
Oracle Solaris 10 can now be deployed inside an Oracle Solaris Zone cluster in addition to Oracle Solaris 11. This new feature enables the deployment of Oracle Solaris 10 applications in a protective clustering environment within an Oracle Solaris 11 based system. Customers can thus leverage Oracle Solaris 11 best of breed features such as network virtualization and enhanced installation tools while minimizing the risk to new application environments by deploying tested and mature Oracle Solaris 10 solutions. The resulting benefits are protected customer investments and lower TCO.

Exclusive IP in Oracle Solaris Zone Cluster
Oracle Solaris Zone clusters can now be configured with "Exclusive IP" which is the Oracle Solaris 11 default. This enables the use of all advantages of the Oracle Solaris network virtualization within a Zone cluster.

Availability

Dynamic Reconfiguration for M8000/M9000 memory boards
Oracle Solaris Cluster now enables the replacement of a system board with kernel memory through Dynamic Reconfiguration on a live Cluster node. The heartbeat
monitoring for the node being updated is suspended, and re-enabled at the completion of the reconfiguration operation. This feature delivers improved serviceability for M-8000/9000 servers by facilitating repair situations in which halting the node is not desired. It lowers the risk and time when the remaining cluster node represents a single point of failure.

SDP/Infiniband (IB) integration for Oracle SuperCluster
This tighter integration between Oracle Solaris Cluster and SDP simplifies configuration when using IB as the cluster interconnect as well as providing a faster and more reliable link failure detection. This feature enables SDP to quickly failover connections upon single link failure and enables applications to quickly initiate recovery upon node failure.

Faster failure detection and fail-fast for storage
It is now possible to define an upper bound limit for I/O probes, which leads to faster reporting of a device failure. In addition, a fail-fast option is available, for an immediate reboot of a node when a storage error is detected. Those options enable the reduction of storage failure detection time from minutes to seconds and improve service recovery time.

Improved protection for HA-ZFS data integrity
With this version Oracle Solaris Cluster offers improved protection for ZFS in an HA configuration. With even more verifications that a ZFS pool is not in an imported state on any of the nodes in the current cluster before importing the pool it further avoids possible data corruption due to multiple imports.

Improved per-node dependency management
With the per-node resource dependencies, it becomes simpler to configure separate failover IP addresses for each node eliminating the TCP timeout on the client side when a cluster node goes down. The client can recover immediately by connecting to a different server enabling a reduction of service downtime from minutes to seconds.

Disaster Recovery
ZFS Storage Appliance replication
This release adds the support of ZFS Storage Appliance replication for geo clusters. It enables automated disaster recovery in geographically dispersed multi-cluster configurations equipped with ZFS Storage Appliance (ZFS SA) such as SPARC SuperCluster. It coordinates the ZFS SA replication mechanism and the application failover procedures, allowing for safer recovery procedures in case of maintenance operations or complete site failure.

Security

Full support of Oracle Solaris Trusted Extensions on Oracle Solaris 11.1
This release extends the support of Oracle Solaris Trusted Extensions to any validated Oracle Solaris Cluster configurations based on Oracle Solaris Zone clusters on Oracle Solaris 11.1.

Oracle Solaris Cluster provides High Availability in multi-level security environments for mission-critical applications with this feature.
Agent framework security enhancements
This new version facilitates the development of new agents by providing appropriate methods to store sensitive information in secure data store and to develop agents that must run without root privileges.

Ease of Use
Configuration wizards for Zone cluster, PeopleSoft and WebLogic Server
The configuration wizards guide the users through the resource configuration step-by-step. It automatically discovers default values and auto-selects them to minimize manual interaction. It also presents possible options for multiple choices, allows manual entry of values and verifies the validity of the choices. The wizards help avoid configuration errors, lower the need for training for beginners and save time for advanced users.

Application Integration
New applications
- Oracle Web Tier for Oracle Fusion 11.1.1.4 and 11.1.1.5
- Oracle PeopleSoft Job Scheduler 8.52
- Oracle External Proxy 10gR2, 11gR1 and 11gR2

New supported application versions
- Oracle E-Business Suite 12.1
- Oracle iPlanet Web Server 7.0
- Oracle PeopleSoft App Server 8.52
- Oracle WebLogic Server 10.3.5, 10.3.6
- Glassfish Server MQ 4.5.2
- MySQL Cluster 7.2
- SAP 7.3

Note: The Oracle Solaris Cluster qualification list is regularly updated. Please contact check the Oracle Solaris Cluster Compatibility guide.