Oracle VM Server for SPARC (previously called Sun Logical Domains) provides highly efficient, enterprise-class virtualization capabilities for supported SPARC servers. Oracle VM Server leverages the built-in SPARC hypervisor to subdivide a supported platform’s resources (CPUs, memory, network, and storage) by creating partitions called logical (or virtual) domains. Each logical domain can run an independent operating system. Oracle VM Server for SPARC provides the flexibility to deploy multiple Oracle Solaris operating systems simultaneously on a single platform. Oracle VM Server also allows you to create up to 128 virtual servers on one system to take advantage of the massive thread scale offered by the supported SPARC servers.

The Virtualization Platform for Your Enterprise Server Workloads
Oracle VM Server for SPARC integrates both SPARC servers and the Oracle Solaris operating system. This combination helps to increase flexibility, isolate workload processing, and improve the potential for maximum server utilization.

Oracle VM Server for SPARC delivers the following:

- **Leading Price/Performance** – The low-overhead architecture provides scalable performance under increasing workloads without additional license cost. This enables you to meet the most aggressive price/performance requirements.

- **Secure Live Migration** – Enables you to migrate an active domain to another physical machine across the same or different generations of supported SPARC servers while maintaining application services to users. In addition, on-chip cryptographic accelerators deliver secure, wire speed encryption capabilities for live migration – without any additional hardware investment.

- **Single-Root I/O Virtualization (SR-IOV)** – Delivers superior I/O throughput to guest domains that have SR-IOV on supported SPARC platforms. SR-IOV enables the efficient sharing of PCIe network, InfiniBand and Fibre Channel devices among I/O domains so application workloads can achieve native I/O performance.

- **PCIe Direct I/O** – Extends current PCIe support to enable you to assign either individual PCIe cards or entire PCIe buses to a guest domain for any bus on the server platform. This provides I/O configuration flexibility and delivers native I/O throughput.
• **Dynamic Reconfiguration (DR)** – Allows computing resources to be dynamically added to or removed from an active domain. You can make resource assignment changes to CPUs, virtual I/O, SR-IOV virtual functions, cryptographic units (aka MAU), and memory on an active domain. Moreover, cryptographic units and CPUs are dynamically reconfigured together to simplify operations and to ensure consistent performance. These capabilities help organizations better align IT and business priorities.

• **Advanced RAS** – Each logical domain is an entirely independent virtual machine with its own OS. The logical domain supports virtual disk multipathing and failover, as well as faster network failover with link-based IP multipathing (IPMP) support. The logical domain can also handle path failure between an I/O domain and storage. Moreover, the domain is fully integrated with the Solaris FMA (Fault Management Architecture), which enables predictive self healing. FMA also blacklists faulty CPU and memory resources so they are not added to a domain until they are repaired.

• **CPU Whole Core Allocation and Core and Memory Affinity** – Enables organizations to optimize the assignment of virtual CPUs and RAM to deliver higher and more predictable performance for all types of application workloads. With the 3.0 release, the whole core allocation setting is preserved when a domain is live migrated from one server to another.

• **CPU Dynamic Resource Management (DRM)** – Enables a resource management policy and domain workload to trigger automatic addition and removal of CPUs based on domain resource requirements and priorities. This ability helps you to better align your IT and business priorities.

• **Physical-to-virtual (P2V) Conversion** – Quickly convert an existing SPARC server that runs the Solaris 8, Solaris 9, or Oracle Solaris 10 OS into a virtualized Oracle Solaris 10 image. Use this image to facilitate OS migration into the virtualized environment.

• **Server Power Management** – Implements power saving by disabling each core that has all of its CPU threads idle. Power management capability is further improved on newer systems by providing CPU clock speed adjustment, memory power management, and power limit settings to ensure that energy consumption is optimized with utilization. The `ldmpower` command makes it possible to see power consumption information on a per-domain basis. Starting with the 3.0 release, server power management can be used in conjunction with guest domain live migration and Dynamic Resource Management (DRM).

• **Advanced Network Configuration** – Configures your network to use the following features to obtain more flexible network configurations, higher performance, and scalability: Jumbo frames, VLANs, virtual switches for link aggregations, and network interface unit (NIU) hybrid I/O. Virtual network devices can host Oracle Solaris virtual NICs (VNICs) to transparently enable Solaris network virtualization. Network bandwidth controls let administrators set the maximum network traffic of any virtual network device, making it
possible to safely consolidate workloads while ensuring quality of service.

- **Low-Overhead, Higher-Scalability Networking for Oracle Solaris 11** – Extended mapin space permits virtual network devices to use shared memory to exchange network packets, which improves performance and scalability to efficiently drive today’s high speed 10GbE interconnects.

- **Enhanced Management Information Base (MIB)** – Enables the SNMP MIB to use the latest Logical Domains Manager XML interface, permitting third-party management software to access the new features and resource properties.

- **Official Certification Based On Real-World Testing** – You can use Oracle VM Server for SPARC with the most sophisticated enterprise workloads under real-world conditions, including Oracle Real Application Clusters (RAC).

- **Affordable, Full-Stack Enterprise Class Support** – You can obtain worldwide support from Oracle for both your entire virtualization environment and workloads. The support covers hardware, firmware, OS, virtualization, and the software stack.

**SPARC Server Virtualization**

Oracle offers a full portfolio of virtualization solutions to address your needs. SPARC is the leading platform to have the hard-partitioning capability that provides the physical isolation needed to run independent operating systems. Many customers have already used Oracle Solaris Zones for application isolation.

Oracle VM Server for SPARC provides another important feature with OS isolation. This gives you the flexibility to deploy multiple operating systems simultaneously on a single SPARC server with finer granularity for computing resources.

Your organizations can couple Oracle Solaris Zones and Oracle VM Server for SPARC with the breakthrough space and energy savings afforded by SPARC servers to deliver a more agile, responsive, and low-cost environment.

**Unified Server Virtualization Management with Oracle VM Manager**

Beginning with Oracle VM Manager 3.2, Oracle VM Manager can now be used to discover SPARC servers running Oracle VM Server for SPARC 3.0 or later, and perform virtual machine management tasks. Users can create SPARC server pools, virtual machines, as well as manage networking and storage in the same way this is done for x86 environments.
Management with Oracle Enterprise Manager Ops Center

The Oracle Enterprise Manager Ops Center provides full lifecycle management of virtual guests, including Oracle VM Server for SPARC and Oracle Solaris Zones. It helps you streamline operations and reduce downtime. Oracle Enterprise Manager Ops Center is an end-to-end management solution for physical and virtual systems through a single web-based console. This solution automates the lifecycle management of physical and virtual systems and is the most effective systems management solution for Oracle’s Sun infrastructure.

Oracle Solaris Cluster HA Support

The Oracle Solaris Cluster HA for Oracle VM Server for SPARC data service provides a mechanism for orderly startup and shutdown, fault monitoring and automatic failover of the Oracle VM Server guest domain service. In addition, applications that run on a logical domain, as well as the domain’s resources and dependencies can be controlled and managed independently. These resources and dependencies are managed as if they were running in a classic Solaris Cluster hardware node.

Supported Systems

Please refer to the product documentation for a list of supported platforms, a matrix of required software and patches, and other pertinent information.

Warranty

Visit oracle.com/sun/warranty for Oracle's global warranty support information about Sun products.

Oracle Systems Support

Visit oracle.com/support for information about Oracle's support offerings.

Contact Us

For more information about Oracle VM Server for SPARC, visit oracle.com/virtualization or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

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Hardware and Software, Engineered to Work Together