Sun™ xVM Virtualization Portfolio

Enabling dynamic IT from the desktop to the datacenter

To simplify their infrastructures, reduce costs, and accommodate rapidly changing business needs, many businesses are moving to consolidate and virtualize their IT environments. Day-to-day management of a virtualized infrastructure, however, introduces increasing complexity: Businesses must manage a growing number of virtual machines in addition to physical machines, and use multiple separate tools to manage each operating system. Achieving the full benefits of virtualization requires a broad approach that addresses consolidation as well as simplified management of the virtualized environment.

The Sun™ xVM virtualization portfolio enables you to simplify the management of your heterogeneous environment across the entire stack, from the desktop to the datacenter. Representing the intersection of virtualization and management, Sun xVM technology helps your business to enjoy better system availability, massive scalability, greater openness and interoperability, the highest levels of security, and maximum performance — all while making it easy to manage the physical and virtual IT environment.

The Sun xVM portfolio includes secure, open and interoperable desktop virtualization software, and server virtualization and management technologies. It provides two unique offerings for the desktop: a lightweight, client-side desktop virtualization solution to run and use multiple desktop environments alongside each other, and a highly secure, centralized desktop for remote access and management of the virtual desktop environment.

Sun xVM server virtualization and management technology enables your business to virtualize and manage Solaris™ Operating System, Microsoft Windows, and Linux environments running on Sun and non Sun systems. Designed for extreme scalability, the Sun xVM management software lets you manage thousands of nodes, each of which can support guest operating systems with high levels of availability, reliability, performance, and security. Sun xVM software also brings a range of enterprise-grade Solaris 10 OS features to guest operating systems, extending these powerful capabilities throughout the environment.

The Sun xVM portfolio is designed to enable your business to:

- Build, test, and run applications on a single desktop or laptop using different operating systems side by side with Sun xVM VirtualBox™ software
- Securely and reliably virtualize multiple systems and services in a cost-efficient environment that runs the Solaris, Windows, or Linux operating system with Sun xVM Server
- Provide users secure access to a virtual desktop from nearly any client on the network with Sun Virtual Desktop Infrastructure (VDI) Software
- Discover, provision, update, and manage globally dispersed, heterogeneous IT environments from one console with Sun xVM Ops Center

You can take advantage of the interoperability that Sun xVM products deliver to easily launch a virtualization initiative or to enhance an existing virtualization program. When used together, Sun xVM products provide an end-to-end, high-performance virtualization solution

Highlights

- Run multiple systems and services securely and reliably in one cost-effective physical environment running the Solaris, Windows, or Linux operating system
- Leverage comprehensive offerings from the desktop to the datacenter from a proven virtualization vendor
- Simplify operations through unified management of both physical assets and virtualized environments, even in cross-platform environments
- Enjoy enterprise-class reliability and scalability, sophisticated reliability and security foundations, and interoperability with low barriers to entry and exit
- Ease application migration from development to production environments
- Achieve wider reach with an open-source strategy

that greatly simplifies IT management. And unlike proprietary solutions, Sun xVM software offers ongoing access to the latest innovations as well as a high degree of flexibility to work with existing toolsets as your needs evolve.

Advantages of Sun xVM technology

Control server sprawl and costs

Most servers are under-utilized, yet these servers still consume power — resulting in higher operational costs. Sun xVM virtualization technologies enable you to reduce your carbon footprint and operate a greener datacenter while reducing costs and driving up utilization.

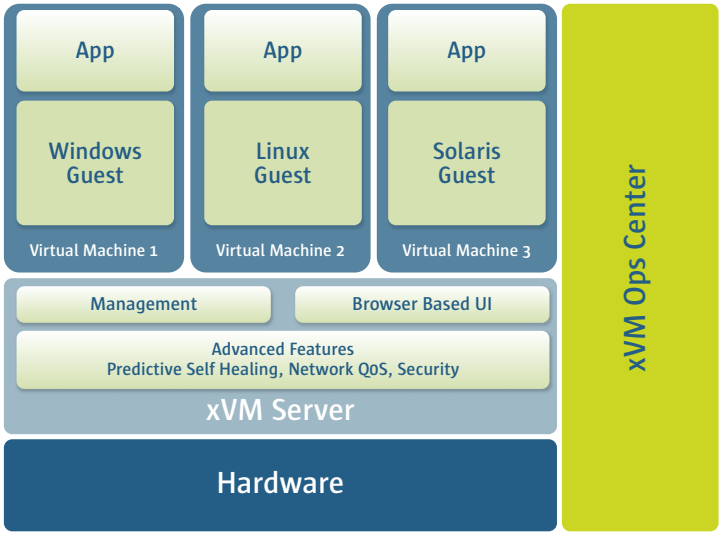
With Sun xVM technology, you can securely consolidate thousands of outdated, inefficient servers onto a few highly reliable, scalable systems and dynamically allocate and share resources for lower-cost, more efficient operations.

Business continuity protection

Business continuity and disaster recovery are a top priority if your business's credibility depends on the integrity of your IT. To reduce downtime, you might rely on live, quick, or regular virtual machine migration. The Sun xVM portfolio can dramatically improve failover and make disaster recovery for a virtual machine much faster than for a physical server.

Planned downtime, which typically accounts for more than 80% of datacenter downtime, can be reduced using the Sun xVM portfolio by dynamically moving workloads to different physical servers without service interruption. Additionally, you can perform server maintenance with no application or service downtime.

The Sun xVM portfolio also includes advanced built-in features that warn of impending failures, enabling IT managers to avoid business-critical application outages.



The Sun xVM server virtualization architecture offers a complete foundation: the quick-start xVM Server hypervisor and the unified virtual and physical systems management for Windows, Linux and Solaris of xVM Ops Center.

Efficient and secure virtual desktop

Businesses today must support a wide variety of mobile and remote users, from telecommuters and salespeople in the field to call center workers, consultants, and contractors. These users access sensitive information assets on a range of equipment, including laptops, thin clients, and unmanaged PCs, making it difficult for IT to provide consistent, secure support.

Sun VDI Software provides secure access to virtual desktop environments running the Solaris, Windows, or Linux operating system, creating pools of virtual machines and assigning users to virtual desktops either dynamically or statically based on each user's access policy.

Fast, cost-effective development and testing

To develop and test applications for different operating systems, developers need access to separate desktops or laptops for each operating system, which is time consuming and expensive.

With xVM VirtualBox software, users can streamline development, testing, and deployment by virtualizing the development environment, enabling applications to be created for the Solaris, Windows, Linux, and Mac OS X operating systems on a single system.

Strong management infrastructure

An agile datacenter requires a solid foundation to keep up with advanced technologies and innovations as they become available. The ability to pool system resources, stay current with patches and updates, and manage file systems in a virtual environment is essential.

Sun xVM Ops Center includes a unified lifecycle management infrastructure that simplifies the discovery, provisioning, updating, and management of physical and virtualized assets in heterogeneous IT environments.

The Sun xVM portfolio

xVM VirtualBox software

One of the most innovative desktop virtualization products on the market today, free and open-source xVM VirtualBox software enables your business to run multiple unmodified operating systems (guests) along with installed applications on top of your existing operating system.

This small-footprint, high-performance virtualization platform installs and runs just like an application on your existing OpenSolaris™, Windows, Linux, or Mac OS X host operating system and supports a large number of guest operating systems.

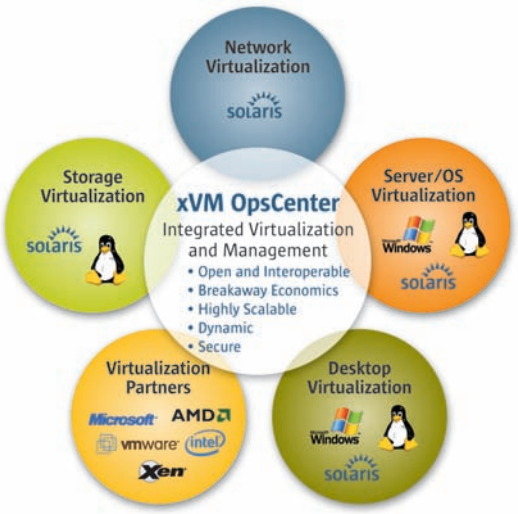
With xVM VirtualBox, you gain:

- A streamlined, modular architecture with well-defined internal programming interfaces and a client/server design, making it easy to control from several interfaces at once
- A virtualization platform with a small footprint that's easy and fast to install and start
- Superior performance made possible through special software (similar to paravirtualized drivers) that can be installed inside Windows and Linux virtual machines to improve performance and make integration much more seamless
- Access to global Sun xVM VirtualBox community contributions
- Seamless local and remote USB device support, allowing the guest operating system full access to any USB devices connected to the host system; unique USB-over-RDP support allows remote clients to share USB devices over a network with a guest operating system hosted on another server

xVM Server

The cornerstone of the Sun xVM portfolio, xVM Server is an enterprise-class, open-source hypervisor that enables your business to securely and reliably enable, monitor, and manage multiple environments and services on one physical environment running the Solaris, Windows, or Linux operating system. xVM Server provides the advanced network virtualization capability necessary to dynamically manage your environment, so you can respond quickly to changing business demands.

xVM Server supports Sun and non Sun x86/x64 and SPARC® processor-based platforms and enables Solaris, Windows, and Linux guest operating systems to run on those platforms. It ensures that guest operating systems get the right quality of service and are securely separated from each other. Additionally, xVM Server natively supports the VMware VMDK appliance format, which allows you to easily port existing virtual servers to xVM and back. The built-in management functionality of Sun xVM Ops Center allows integration with other complementary best-of-breed management platforms through standard WS Man APIs.



The xVM Ops Center console gives you expansive visibility into your IT operations from the desktop to the datacenter.

xVM Server delivers:

- Advanced enterprise features from the Solaris OS such as Predictive Self-Healing and Failover Management (FMA) technology, which enable administrators to detect an impending failure and take appropriate action; FMA also helps users diagnose an uncorrectable fault that crashed a server and prevent the server from automatically being put back into service only for the cycle to repeat
- Enterprise-grade security that provides network traffic encryption between guests to mitigate the risk of potential attacks among guests on a node
- Solaris Dynamic Tracing (DTrace) technology that enables users to find and fix performance problems for real-time application debugging and optimization

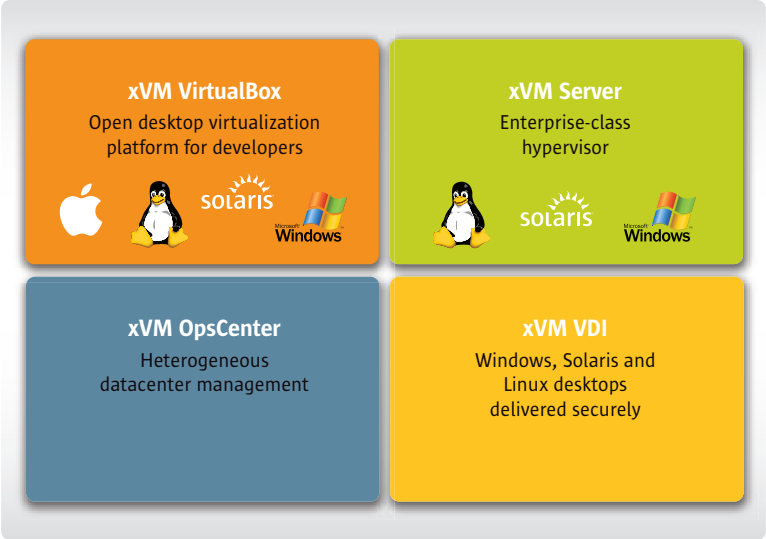
Sun Virtual Desktop Infrastructure Software

Sun VDI Software is a remote access and virtual desktop management product that delivers full-screen desktop environments running on virtual machines on VMware Infrastructure 3 to a variety of client devices. Using Sun VDI Software, your business can easily establish and manage Solaris, Windows, and Linux operating systems' virtual desktop sessions and provide access to users of nearly any modern client device, including those running the Solaris, Windows (even Windows Mobile), Linux, or Mac OS X operating system.

Sun VDI software enables:

- Desktop access from a variety of client devices, including those running the Solaris, Windows, Linux, or Mac OS X operating system. Because the license is offered per concurrent user, your business can purchase, for example, a Sun Ray™ client for a user's work desktop and allow that user to access the same session via a home PC under just one license
- Efficient and highly secure connections by leveraging Sun's industry-leading Appliance Link Protocol (APL) technology. Sun's use of

strong cryptography and innovative protocol design means that datacenter desktops can be delivered over the LAN, WAN, or even the Internet — safely, swiftly, and securely
- Extensive built-in desktop brokering and support through the included Sun Virtual Desktop Connector, which manages access to virtual desktop environments hosted on VMware Infrastructure 3
- Comprehensive virtual machine lifecycle management, providing administrators with fine-grained control over the virtual machine lifecycle. Administrators can manually or dynamically assign users a virtual machine based on policies and can set absolute lifespans as well as rules for what should happen to the virtual machine once it expires



The Sun xVM virtualization portfolio: xVM VirtualBox for developer desktop virtualization, Sun VDI Software for secure, remote desktops, xVM Server for quick server virtualization, and xVM Ops Center to manage virtual and physical environments.

xVM Ops Center

xVM Ops Center is a highly scalable datacenter management platform that enables you to provision and administer both physical and virtual datacenter assets. Designed with large enterprises in mind, xVM Ops Center can uniquely scale across campuses, aggregating management functions across multiple nodes and covering large installations with an integrated view of the available systems. Through a single console, IT administrators can discover, provision, update, and manage globally dispersed, heterogeneous IT environments.

xVM Ops Center marks the next phase of virtualization: the intersection of virtualization and management across the whole stack. It offers:
- Unparalleled heterogeneous support for management of Sun and non Sun hardware as well as support for the Solaris, Windows, and Linux operating systems
- Simplified discovery that provides an easy way to discover and identify all relevant assets in the datacenter
- Dependency mapping based on a unique patch Knowledge Base, providing assurance that updates and provisioning take place with the most complete understanding of the operating system and related security patches without negatively impacting applications running in your environment
- Firmware provisioning that simplifies the process of firmware updates on servers using firmware images and profiles
- Bare metal operating system provisioning that automates provisioning of the required operating system on a server based on policies
- Robust update and patch management, enabling security, compliance, and verification that critical applications are kept up-to-date with current security patches
- Remote monitoring, management, and alerting for more extensible, distributed management of globally dispersed environments
- Scalability from one to thousands of nodes across multiple locations using a unique three-tiered deployment architecture
- Single console management for physical as well as virtual systems using a browser-based interface

Why Sun xVM portfolio?

The Sun xVM portfolio is an open and scalable solution that brings together best-of-breed virtualization components and world-class services to address the entire environment, from the desktop to the datacenter. Your business can develop applications seamlessly for multiple platforms, deploy robust virtual machines for multiple operating system environments, improve manageability of virtualized datacenters, and securely manage desktop infrastructures to run internal and customer-facing services with lower overhead and greater assurance.

Whether your business is just beginning to virtualize systems or is further down the path, the Sun xVM family of products provides the performance, scalability, and flexibility necessary to meet your needs.

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